United States Department of Agriculture

USDA

NRCS Natural Resources Conservation Service

NASIS Pedon
Data Entry Guide

MLRA Region 14
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General Information

Credit is given to John T. Haagen, NASIS Database Manager, MO-1, Portland, OR, and Paul R. Finnell, NASIS Database Manager, MO-5, Salina, KS, for compiling much of the information included in this document. Minor revisions and appendices added by MO Region 14 staff.

This document includes instructions for entering and editing pedon descriptions, field notes, transect data, and creating site associations. The document is organized in a sequence that one might logically follow to describe a site and/or pedon, and then the child tables are arranged in alphabetical order. Data fields with each table are listed in the default order they are displayed from left to right on the screen. While every data field is discussed, it is not necessary to populate every field. Enter data you have available for a full pedon description, partial pedon description, field note, etc. Numerous screen captures are included as examples.

References

NSSH National Soil Survey Handbook, 2000
SSM Soil Survey Manual, October, 1993
FBDSS Field Book for Describing and Sampling Soils. **Version 2.0 September 2002**
Keys to Soil Taxonomy, 8th ed., 1998

About NASIS Pedon

NASIS Site, Pedon, Transect and Site Association tables provide the capability to record field data collected in the form of pedon/profile descriptions, transects, field notes and selected field measured properties. Soil moisture (water table) and soil temperature data may also be recorded.

To begin entering a pedon description, you **must** first establish a site record in the Site table. If you decide that a site record already exists for this site, you **do not** have to create a new one. Then a site observation record must be established in the Site Observation table, and linked to the appropriate site record from the Site table. The site observation record contains the date of the observation. Now data related to the pedon and its horizons may be entered. **The Site and Site Observation tables must be populated before you can enter pedon and horizon data.** The pedon record in the Pedon table **must** be linked to the appropriate site and site observation records.

Sites may be grouped into Site Associations for various purposes of study or evaluation, and pedons may be grouped into Transects. If you have previously populated a site record, but did not populate the site observation and/or pedon tables before exiting NASIS, you can find that site record by going to the FILE menu, then SELECT, to open the NASIS Select Manager. From here run the NSSC Pangaea titled “Sites not linked to pedons by NASIS site”. Follow the instructions in the query description window to run the query. Your site record should be included in the resulting selected set. Also, if you remember what you populated as the User Site ID, you may query for the site record using the NASIS Pangaea query entitled “Sites by User Site ID”.

See Exhibit 1. MO14 - Basic Steps to Setting up a Pedon for general instructions.

Notes on populating Pedon data elements

The sections below include notes and instructions on almost every column in the NASIS Site, Site Association, Pedon and Transect tables. However, **it is not necessary to populate every field**. Some pedons may have been described years ago and complete data is not available**. Enter only data that you have available**. New descriptions should be as complete as possible.

The procedure for entering a pedon is:

1. Enter information in the Site table. Generally, each site record will have only one pedon description associated with it.
2. Enter information in the Site Observation Table.
3. Enter information in the Pedon table.
4. Enter all the horizons in the Pedon Horizon Table.
5. Then, enter the information in the child or hanging tables (color, structure, etc.) for each horizon. For example, enter all the colors for all horizons, then all the structures, and then all the concentrations.
6. Data entry speed and efficiency may be gained by use of Copy and Paste and then edit the differences.

If the Pedon is part of a Transect:

Follow the procedure above, BUT, make:

Step 1. Enter Information in the Transect table, insert a row and define the Transect. This information will be needed when populating the Pedon table.

If the Site is part of an Site Association (such as a workplan or special study):

Follow the procedure above, BUT, when finished entering all the sites, go to the Site Association Table and define an Association and enter all the associated sites in the Site Association Site table.

NASIS Site/Pedon concepts

Site

A site is a particular point on the surface of the Earth. In some situations it may have some aerial extent beyond the limits of a pedon. A site has a geographic location. Site attributes are those attributes of a site that would be collected regardless of what type of underlying resource inventory (forest, range, soil, crop) data are being collected. Some site attributes are considered to be temporal, and others are not, although the boundary is somewhat arbitrary. Site attributes include geographic location, geomorphic setting, climate, existing vegetation and other non-soil related attributes.

Data may be collected at a particular site at different points in time, such as soil moisture or soil temperature measurements, or vegetative production data. Although the soil described at a particular site is typically composed of a single pedon, the database provides the capability to record more than one pedon description at a site. A site may be a member of one or more site associations. There is no direct relationship between sites and transects.

Pedon

The following is the definition of a pedon that is found in the Soil Survey Manual (United States Department of Agriculture Handbook No. 18, October 1993):

> *A pedon is regarded as the smallest body of one kind of soil large enough to represent the nature and arrangement of horizons and variability in the other properties that are preserved in samples.*
>
> *A pedon extends down to the lower limit of a soil. It extends through all genetic horizons and, if the genetic horizons are thin, into the upper part of the underlying material. The pedon includes the rooting zone of most native perennial plants. For purposes of most soil surveys, a practical lower limit of the pedon is bedrock or a depth of about 2 meters, whichever is shallower.*
>
> *The surface of a pedon is roughly polygonal and ranges from 1 square meter to 10 square meters in area, depending on the nature of the variability in the soil.*

A pedon record may be a full or partial profile description, or it may be related field measurements such as Ksat or near surface temporal property measurements (field measured properties). A pedon is observed and/or described at a particular site. Therefore, a pedon is always associated with one and only one site. A pedon may be a member of one and only one transect. There is no direct relationship between pedons and site associations.

Transect

A transect is a series of samplings (in this case, pedons) across a landscape in order to gather data for some stated purpose, such as map unit content or diversity. Other types of data collected along transects may also be recorded, such as depths to a particular soil property or feature.

A transect is typically composed of multiple pedons. There is no direct relationship between transects and sites, or transects and site associations.

Site Association

A site association is a grouping (other than transects) of related sites. There is no standard set of reasons as to why someone might want to establish a group of related sites. Possible groupings might include soil moisture or temperature study sites in a particular area, sites related to a particular map unit, some special soil study, etc. A site association might facilitate locating a group of site records in the database at a later time.

A site association is typically composed of multiple sites. There is no direct relationship between site associations and pedons, or site associations and transects.

Site table

The Site table is intended to record geographic information related to the point where the profile description is taken. Other information about the site that does not tend to change with time may also be recorded. In most cases, there will be a separate site record for each profile description. However, one site may have more than one pedon description linked to it.

Source Site Site — **A non-editable column.** Name of the MO that owns the site data. Automatically assigned by the database.

Rec ID — **A non-editable column.** Record ID number that is automatically assigned by the database each time a new record is inserted.

User Site ID — Enter the ID label used to identify each site. The purpose of this field is to allow the user to place a label on the site to assist with relocating the particular site record in the database at a later time.

The "user site ID" should be something meaningful and descriptive to the user, but should not include any reference to time, as the basic site data are time independent. Likewise, a site should not be named for any particular purpose, as a site is intended to be a generic point on the earth. There are no national guidelines on the naming convention.

See 2. MO14 - Site and Pedon ID Guide

The NSSL intends to use the "yyyyzzxx123456" convention, where "yyyy" is the 4-digit **year** when the data or samples were collected; "zz" is the 2-character **country code**, such as "US"; the "xx" is the 2-character **state FIPS code**, such as "NE" for Nebraska; the "123" is the 3-digit **county FIPS code**, and the "456" is the 3-digit **consecutive pedon number** for that county in that calendar year.
[2002USNC001001]
[Old System—S04NC001-001]

Lat. Degrees — Enter the integer value for the degrees latitude. This information should be entered for all pedons. NOTE: Lat/Long coordinates should be entered for all sites, especially newly described sites. Other location descriptors may also be used as desired. If you would like to be able to generate an Arcview coverage of the location of your pedon sites, make sure you enter the Latitude, Longitude, the direction, and Datum information. This information is most accurate if generated by a GPS unit, however it can also be obtained from topographic maps if a GPS is not available. This information can be exported from NASIS Pedon and a map generated for your survey area. UTM data can also be used, but it may be a little harder to obtain. ***(FBDSS 6-1...2)***

Lat. Minutes — Enter the integer value for minutes latitude.

Lat. Seconds — Enter the floating point value for seconds of latitude.

Lat. Direction — Enter direction north or south.

Long. Degrees Enter the integer value for the degrees longitude.

Long. Minutes Enter the integer value for minutes longitude.

Long. Seconds Enter the floating point value for seconds of longitude.

Long. Direction Enter direction east or west.

Datum Name Enter NAD27 or NAD83 depending on the source material used to locate the site.

Location Description Enter a narrative description giving the location of the site. This field may be used to describe the location from a specific landmark or town. For example: 2 miles south of Roseburg, Oregon.

PLSS Section Details Give the location in number of feet from a specified section corner. If the specific location is unknown, list the quarter section, 1/16th section, or as close as you can get. If the area is not sectionized, use Location Description field to specify the location.

PLSS Section Enter the section number in which the site occurs.

PLSS Township Enter the township in which the site occurs, such as 29S.

PLSS Range Enter the range in which the site occurs, such as 3E.

PLSS Meridian Enter the name of the base meridian. For example: Willamette or Boise meridian.

UTM Zone Enter the applicable UTM zone for the location.

UTM Northing Enter the distance, in meters, north from the UTM zone origin. For North, origin is the equator and is equal to zero.

UTM Easting Enter the distance, in meters, proceeding east for the UTM zone. The UTM zone central meridian is the origin and is designated a value of 500,000 meters creating a "false" easting.

Elevation Enter elevation of site in meters. ***(FBDSS 1-4)***

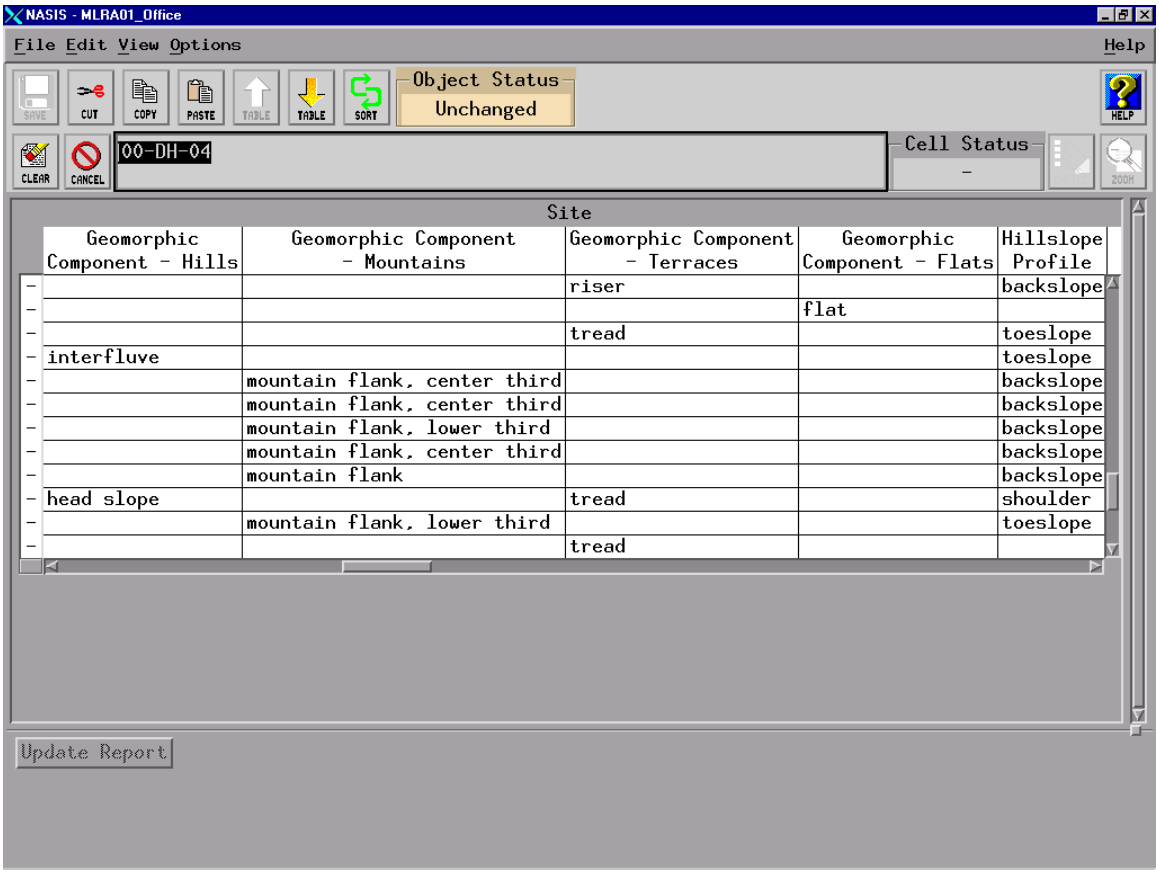
Geomorphic Component – Hills Select one of these 4 positions (hills, mountains, terraces, or flats), and enter the geomorphic position of the site from the choice list. It is not necessary to populate more than one of these columns and will usually be redundant or illogical if there are. See example below. ***(FBDSS 1-7)***

Geomorphic Component – Mountains ***(FBDSS 1-8)***

Geomorphic Component – Terraces ***(FBDSS 1-7)***

Geomorphic Component – Flats ***(FBDSS 1-9)***

Hillslope Profile Enter location on the hillslope from the choice list. ***(FBDSS 1-6)***



In the above examples, interfluve and toeslope do not occur together and this would be an illogical entry. The entry head slope-tread-shoulder is also incorrect. Populate only one of the 4 Geomorphic Component columns.

Slope Position Enter position from choice list.

Slope Gradient Enter percent slope.

Aspect Enter aspect in degrees azimuth. ***(FBDSS 1-5)***

Slope Length USLE Enter length of slope from origin of overland flow to point of deposition or where water enters a channel.

Upslope Length Enter length of slope above site location.

Slope Shape Across Enter slope shape across the slope, or select from choice list. ***(FBDSS 1-6)***

Slope Shape Up/Down Enter slope shape up/down the slope, or select from choice list. ***(FBDSS 1-6)***

Slope Complexity Enter slope shape up/down the slope, or select from choice list. ***(FBDSS 1-5)***

Local Physiographic Name Enter a local name if one appears on 7.5 minute USGS quad, if applicable.

Geologic Formation Enter name of geologic formation from state geology map.

Bedrock Depth Enter the depth to the top of bedrock in centimeters, if observed. Enter the same value as for the profile description. If the profile has an organic surface layer, the depth would be from the top of the organic layer. If the profile has both a Cr and R horizon, depth to bedrock should be to the Cr.

Bedrock Kind Enter a single type of bedrock from the choice list.

Bedrock Hardness Enter the hardness, expressed as a cementation class, or select from choice list. DO NOT repeat data in Pedon horizon/Rupture Cement data field.

Bedrock Fracture Interval Enter the range of fracture interval, expressed as a class, or select from choice list. ***(FBDSS 1-22)***

Bedrock Weathering Enter the degree of bedrock weathering or select from choice list.

Bedrock Strike Enter the azimuth of the apparent direction of a horizontal line in the plane of an inclined stratum.

Bedrock Dip Low Enter the low range, in degrees, of the apparent inclination of the bedrock from a horizontal plane.

Bedrock Dip High Enter the high range, in degrees, of the apparent inclination of the bedrock from a horizontal plane.

Drainage Class Enter a single drainage class for the profile. ***(FBDSS 1-10)***

Site Permeability Enter the overall permeability class of the profile **exclusive** of the bedrock. ***(NSSH 618-27).***

Runoff Class Enter appropriate class. ***(NSSH 618-34).***

Parent Material Group Name (Calculated field) Enter data in Site Parent Material Table. This field must be recalculated each time there is a change of data in the Site Parent Material table. Generally there should be only one type of parent material: whatever the soil developed from at this specific site. Do not enter the various kinds of parent material the series may have developed in. If the soil developed in multiple layers of material, this information can be recorded in the Site Parent Material table.

Plant Association Name Guidelines for properly naming plant associations are still being developed. Until notified differently, use current Forest Service ecological site names, range site names or others as appropriate.

Climate Station ID Enter the station identifier as assigned by the agency responsible for maintaining the station.

Climate Station Name Enter the full descriptive name of the station as recognized by the agency responsible for the station.

Climate Station Type Enter whether this is an U.S. Official station or other type.

Frost Free Days Enter the **average** number of days between the last occurrence of 0 degrees Celsius in the spring and the first occurrence of 0 degrees Celsius in the fall.

MAP Enter mean annual precipitation in millimeters.

REAP This column is used to provide an estimate of the actual amount of moisture available for use by plants or for soil forming processes. The amount may be more, less, or the same as the Mean Annual Precipitation of the area. It may vary from MAP as a function of slope, aspect, run-on, runoff, etc. The values for REAP are estimated by comparing the vegetation, soil moisture and temperature characteristics existing at the site, with some other location with a similar characteristics and which is considered to be in a neutral setting with respect to slope, aspect, run-on, runoff, etc. The MAP values of the neutral site are used as the REAP values at the site in question.

MAAT Enter mean annual air temperature in degrees Celsius.

MAST Enter mean annual soil temperature in degrees Celsius at the critical depth.

MWAT Enter mean winter air temperature in degrees Celsius. This value is the mean of the December, January, and February mean air temperatures.

MSAT Enter the mean summer air temperature in degrees Celsius. This value is the mean of the mean June, July and August mean air temperatures.

MSST Enter the mean summer soil temperature in degrees Celsius. This value is the mean of the June, July and August mean soil temperature at the critical depth.

MWST Enter mean winter soil temperature in degrees Celsius. This value is the mean of the December, January, and February mean soil temperatures at the critical depth.

Flooding Frequency Enter estimated frequency from choice list. The entry here applies to the site being described, not the map unit or series. ***(FBDSS 1-11)***

Flooding Duration Enter estimated duration from choice list. The entry here applies to the site being described, not the map unit or series. If frequency is none, leave this column blank. ***(FBDSS 1-12)***

Flooding Month Enter the beginning month in which flooding is likely to occur.

Ponding Frequency Enter the estimated frequency from the choice list. The entry here applies to the site being described, not the map unit or series**.** ***(FBDSS 1-12)***

Ponding Duration Enter the estimated ponding duration from the choice list. The entry here applies to the site being described, not the map unit or series. If frequency is none, leave this column blank. ***(FBDSS 1-12)***

Ponding Month Enter the beginning month in which the soil is ponded.

Water Table Duration Enter the cumulative annual duration, in days, that the water table is present in the soil**. Enter only if you have actual data.**

Site Site **A non-editable column.** MLRA office that owns the database. Entered automatically by the database.

Group **A non-editable column.** Name of the Group that own the record. Ownership is established by the current group when you create the record. If you belong to more than one group, be sure to change to the correct group before creating the record.

User **A non-editable column.** Name of the NASIS user to last update a record. Entered automatically by database.

Last Updated **A non-editable column.** Date and time that each record was last edited. Entered automatically by database.

Site – Area Overlap table

This table is used to specify all the various subdivisions that the site occurs in. It is similar to the Mapunit Overlap table. Enter a new record for each area type, such as County, Survey Area, State, Geographic Province, etc

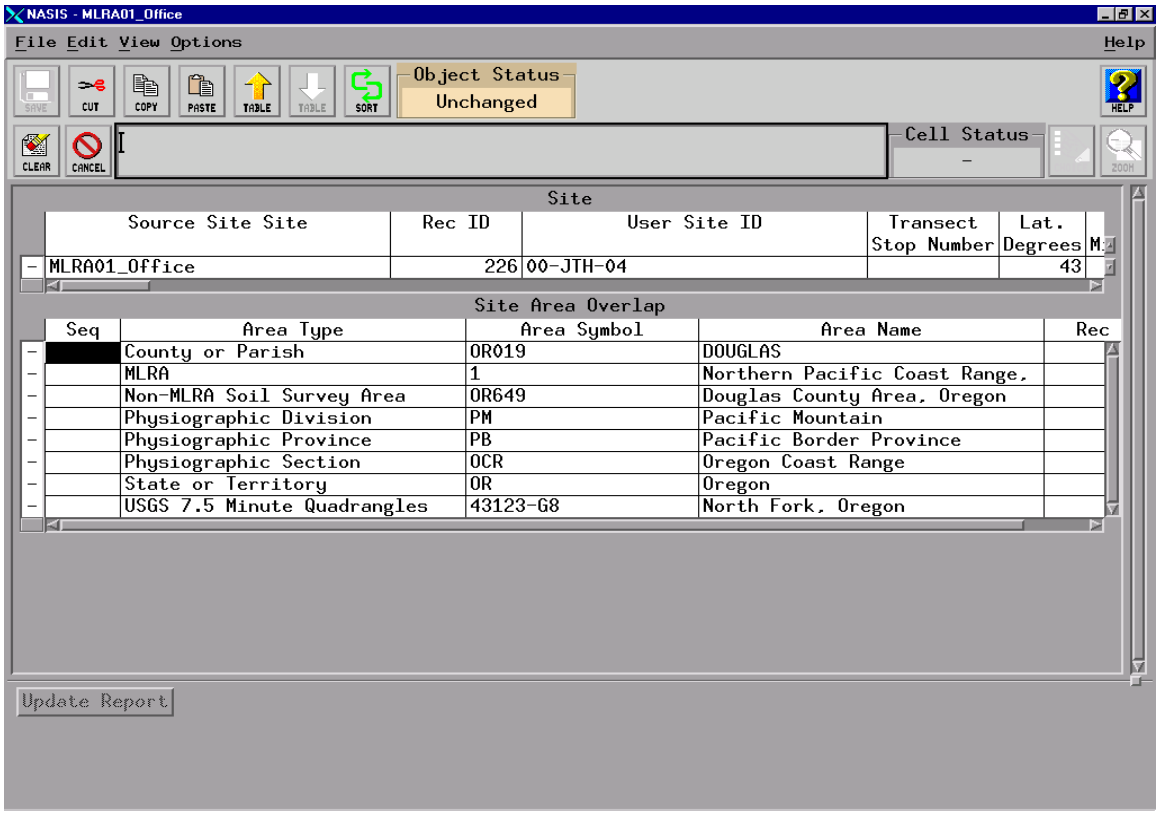
State, County, MLRA, and Survey Area should be entered for all sites. ***(FBDSS 3-2...9)***

Seq Most tables have a "Seq" column. This column is sometimes used to force the table to be sorted in a certain order. It generally is not necessary to populate this field. It is useful in some tables, and they are so noted.

Area Type Enter a new record for each area type you want to specify. Select type name from the choice list. The 'State Physiographic Area" type that appears on the pedon report is a local option. There is no default choice list for this area type.

Area Symbol Enter area symbol from the choice list for each area type.

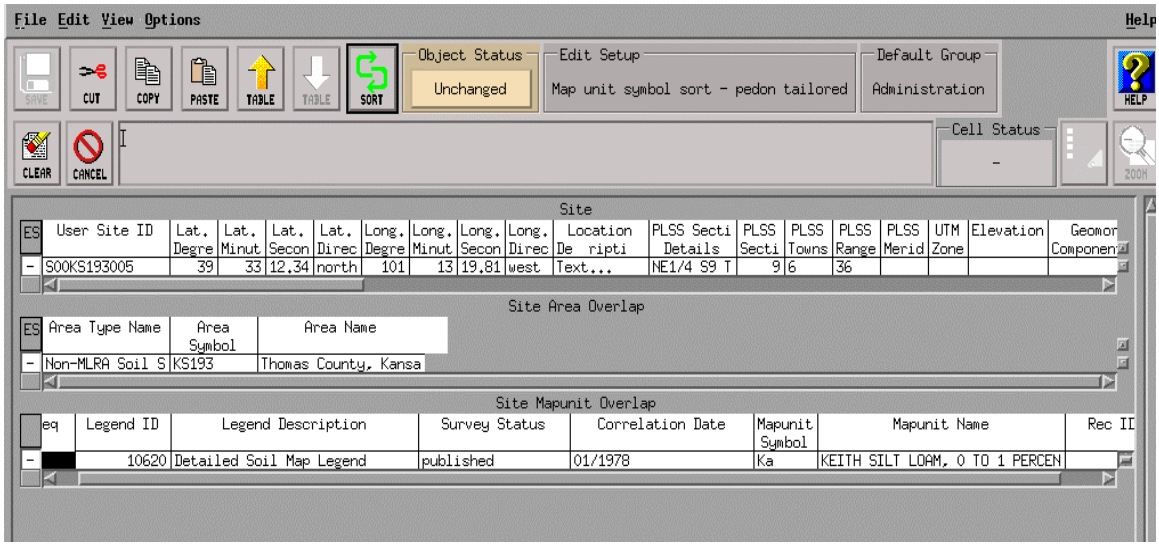
Area Name Name will be automatically entered when symbol is entered, or symbol will be automatically entered if you enter the name.



In the above example, User Site ID 00-JTH-04 occurs in all the areas listed in the Area Type column. You can specify as many area types as you feel are necessary keeping in mind that each area you list facilitates querying all pedons within that area. If you want to be able to query all pedons by topo quad, you will have to list that area type also.

Site – Mapunit Area Overlap table

This table allows the author to link a Site (and subsequently a Pedon) to a map unit within a Legend. This link can be accomplished even if the author does not have permission in the particular legend.



In this example, this site is linked to the Thomas County, Kansas Legend to the Ka map unit.

Seq Num Entries are not necessary, however if you enter a sequence number in one row, enter a number in all rows.

Legend ID With the correct row highlighted in the Site Area Overlap table, select the appropriate legend from the available choice list. Selections available on the choice list are dependent upon the area displayed in the Site Area Overlap table

Legend Description Automatically populated when Legend ID is selected

Survey Status Automatically populated when Legend ID is selected**.**

Correlation Date Automatically populated when Legend ID is selected.

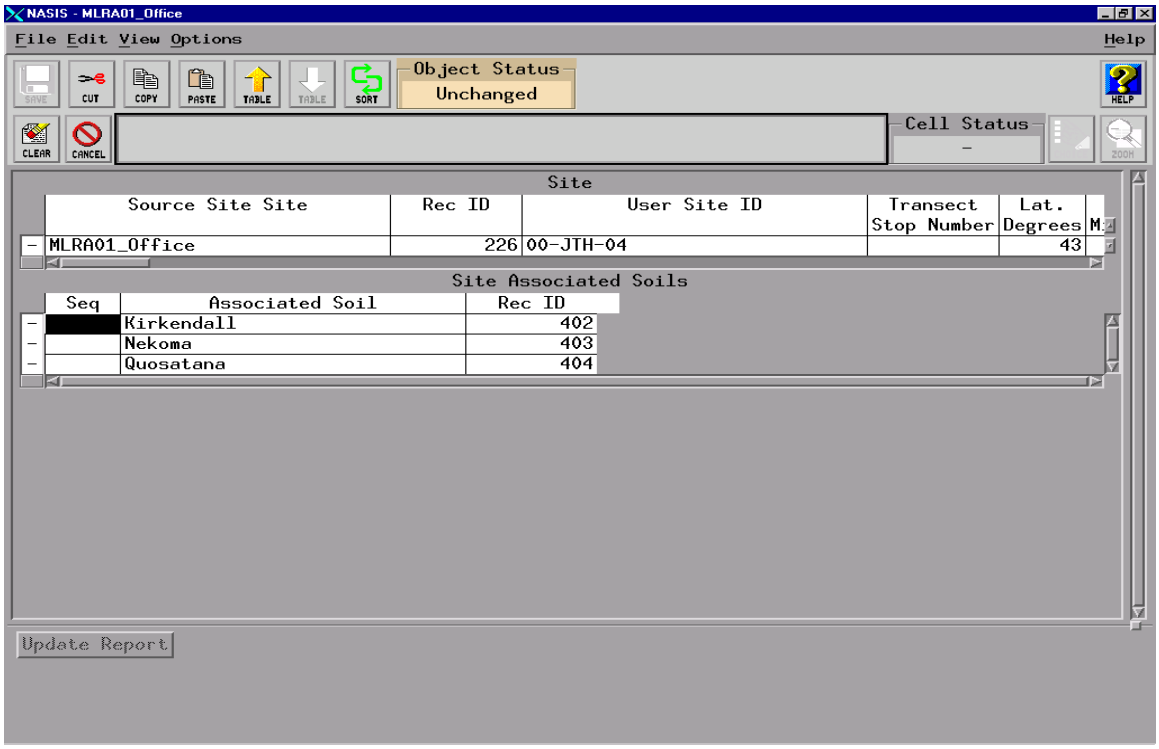
Mapunit Symbol Enter the appropriate mapunit symbol, or select from the choice list , which is dependent upon the given legend

Mapunit Name Automatically populated when Mapunit Symbol is selected.

Site – Associated Soils table

Seq

Associated soil Enter the name(s) of other soil series/taxa mapped in proximity to the described site, each on a separate row. The soils entered with differ depending whether the pedon is for an OSD, a typical pedon, or a pedon associated with a transect



Site – Geomorphic Description table

This table is constructed like, and should be populated similarly as the Component Geomorphic Description table. It is used to describe the geomorphic setting of the site being described. When describing one feature as occurring on another feature, remember that smaller features can only occur on larger features.

Seq

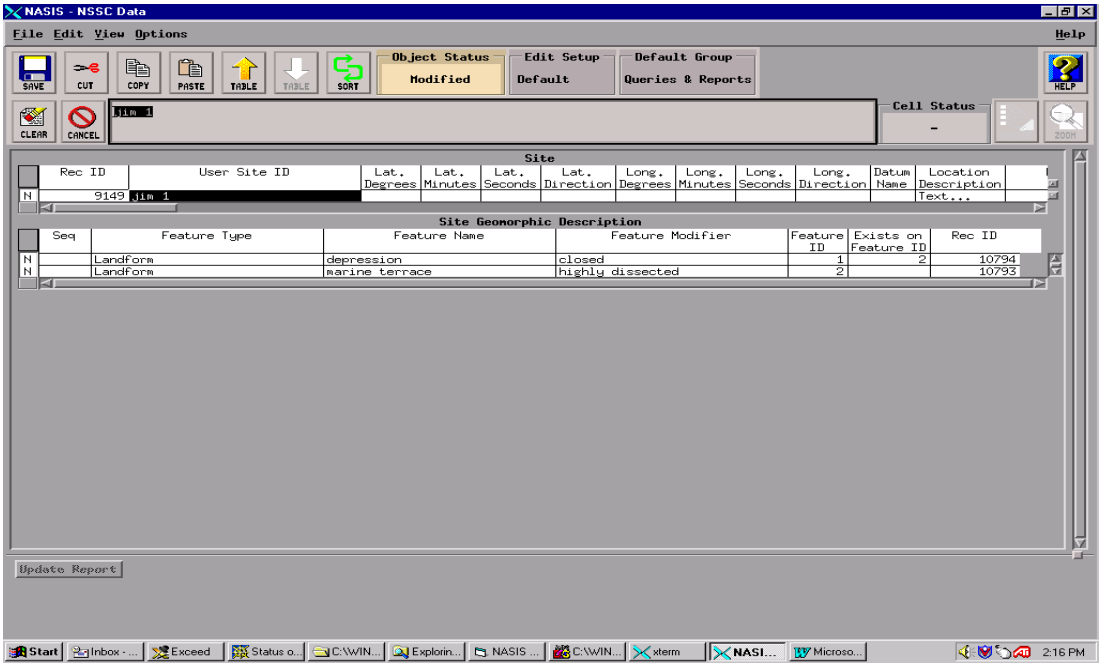
Feature Type Enter one of the 4 choices from the choice list. ***(FBDSS 3-10)***

Feature Name Enter the appropriate feature name for the selected feature type from the choice list. ***(FBDSS 3-10)***

Feature Modifier A user specified term(s) (60 character maximum) used in association with geomorphic features to further define, clarify, and describe the setting of a soil in the landscape. The terms may, for example, describe relative position, mode of formation, degree of degradation, slope, or geologic time of origin. An example entry could be "highly dissected".

Feature ID Enter a numeric value starting with 1 if you want to identify a landscape feature that occurs on another landscape feature.

Exists on Feature ID Enter the numeric value of the Feature ID in another row on which this feature exists (see example below).



In the above example, the pedon report will list "closed depression on highly dissected marine terrace".

Site – Parent Material table

This table is used to describe to parent material(s) in which the soil at this site was formed. If multiple layers of material exist, each is described on a separate row. Data entered in this table are used to calculate the contents of the Parent Material Group Name column in the Site table. Generally there should be only one type of parent material: whatever the soil developed from at this specific site. If the soil developed in multiple layers of material, this information should be recorded in the Parent Material table. Do not enter all the various kinds of parent material the series or mapunit component may have developed in.

Seq

Vertical Order Assign each different kind of parent material a sequential numerical value to specify the order of occurrence in the profile, beginning with "1" for the surface material and continuing downward through the profile. The order in which the different parent materials are printed in the report is determined by the value in this column. More than one record can have the same value. For example, if you had loess and colluvium over glacial till, loess and colluvium would each have a value of one and glacial till would have a value of 2.

Textural Modifier Enter a textural modifier term if appropriate. For example, loamy, gravelly, etc. Select from choice list.

General Modifier Enter a text string (60 character maximum) that modifies or further describes the parent material being described, if needed or desired. Example entries could be "highly weathered", "ancient", or "oxidized".

Kind Enter the specific type of parent material the soil being described has developed in. If the soil developed in multiple kinds of material, enter each kind of parent material on a separate row. Use choice list**. Do not enter the complete range of parent material for the series.** ***(FBDSS 1-17...19)***

Origin Enter type of bedrock the parent material was derived from. This is primarily intended to be populated when parent material kind = "residuum". Where the parent material was derived from several types of rock, enter a record for each type. ***(FBDSS 1-20...21)***

Weathering Enter degree of weathering from the choice list. ***(FBDSS 1-22)***

Site – Text table

This table is used to store notes related to the Site being described.

Seq

Date The current date is automatically entered when a new row is added. You may enter a different date as needed to record the date the note was actually written.

Author Enter full name of person making the note. Do not use initials only.

Kind Enter from choice list.

Category The entry in this field can be anything as needed to categorize the note being recorded. Several MOs have developed lists to be used in their area of responsibility for consistency purposes. Consult these lists as applicable.

Subcategory Same as above.

Text Enter the text body of the note.

Site – Observation table

This table should have an observation record for **each date** that you record information. If all you do at the site is record a pedon description, there will be only one record for that date. However, if you record soil temperature or soil moisture data at this site, there will be an observation record for each time you record the data.

Seq

Observation Date The current date is automatically entered when a new row is added. This can be edited to record the date the observation was actually made.

Observation Date Kind Enter from choice list.

Air Photo ID If the observation site is recorded on an aerial photo, record the number of the photograph.

Surface Water Kind Enter from choice list whether flooded, ponded, or none at the time the field observation was made.

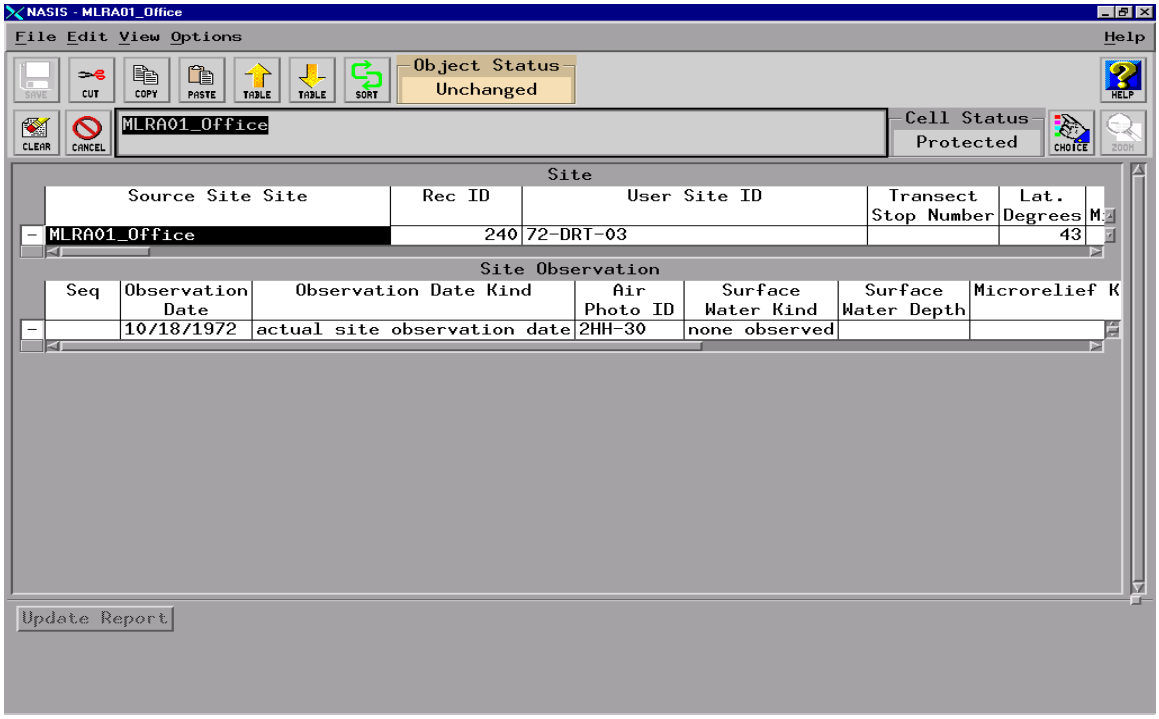
Surface Water Depth If there is water on the surface, enter depth in centimeters (generally only applicable to “ponded” water).

Microrelief Kind Enter micro-high or micro-low, or select from choice list.

Microrelief Elevation Enter the vertical difference in elevation, in centimeters.

Microrelief Pattern Specify whether or not there is a pattern, from choice list.

Yield Study ID Enter the ID label of your choice to designate a yield study area. Use up to 10 characters, letter or numbers or any combination.



Site – Erosion Accelerated table

Seq

Kind Enter from choice list whether the erosion is sheet, gully, etc. ***(FBDSS 1-23)***

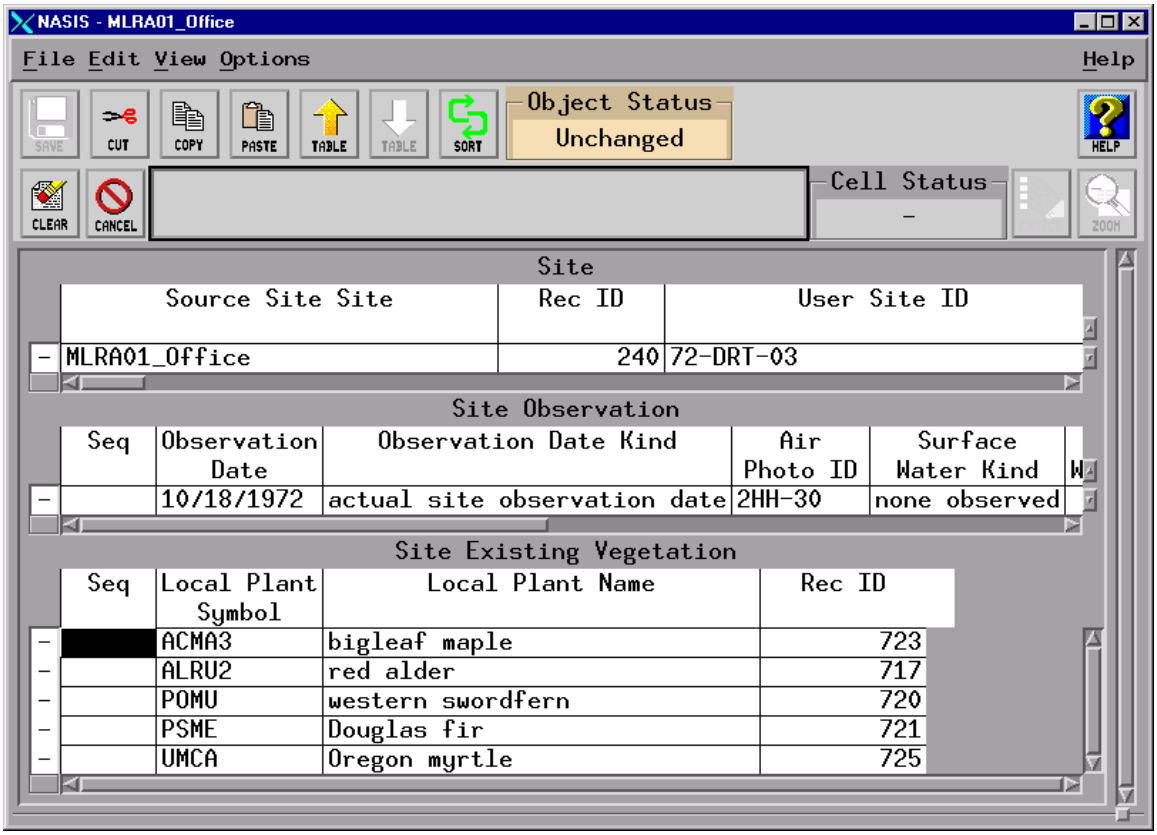
Site – Existing Vegetation table

This table stores information related to the kinds of vegetation found at the site at the time of observation.

Seq

Local Plant Symbol Enter plant symbol from Local Plant Table, or pick from the choice list. The choices are selectable by MLRA Office. If you need to use a plant symbol that is not in the Local Plants Table, contact the MO database manager to have it entered in the table.

Local Plant Plant name is entered automatically when plant symbol is entered. The symbol will be automatically entered if you enter the correct common name. A choice list is also available if you wish to select by plant name.



Site – Observation Text table

Seq

Date The current date is automatically entered when a new row is opened. This may be edited to as needed to record the actual date the note was written.

Author Enter full name of the person who wrote the note, not initials.

Kind Enter from choice list.

Category The entry in this field can be anything as needed to categorize the note being recorded. Several MOs have developed lists to be used in their area of responsibility for consistency purposes. Consult these lists as applicable.

Subcategory Same as above.

Text Enter notes related to site properties.

Site – Soil Moisture table

The Site Soil Moisture table describes the soil moisture profile at the time of the observation. Layer depths here may or may not coincide to depths of morphological horizons in the Horizon table. This table may be used to record the moisture state of a soil at different periods throughout the year by entering a new record for **each** observation date.

Seq

Top Depth Enter depth to the top of the moisture layer being described.

Bottom Depth Enter depth to the bottom of the described moisture layer.

Observed Moisture State Enter moisture status of the layer, or select from choice list. ***(FBDSS 1-13)***

Vol Moisture % Enter the amount of water **measured** in the soil layer expressed as a volume %, using field measurement methods. Do not guess.

Moisture Tension Enter the moisture tension in bars, as **measured** by field methods. Do not guess.

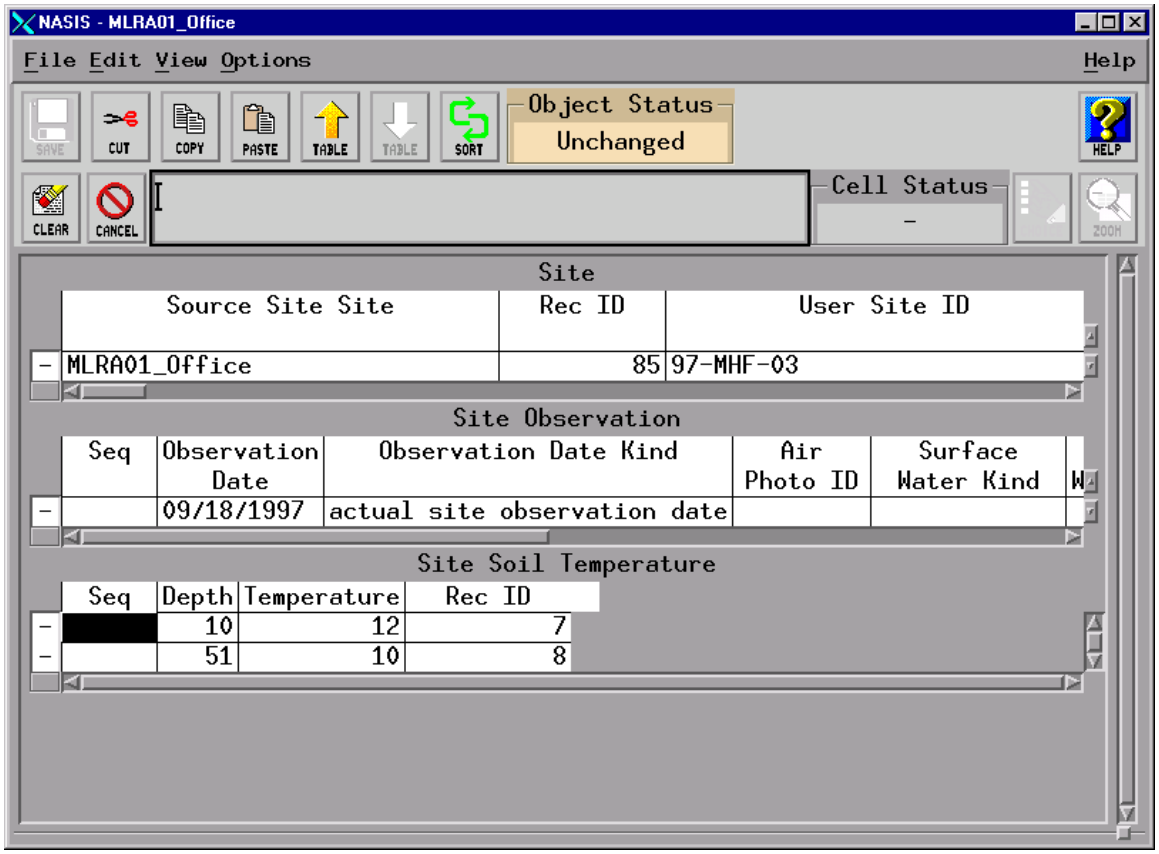
Site – Soil Temperature table

This table is used to record **measured** soil temperature data at the site. Values can be recorded at different depths in the soil profile. This table may be used to record the soil temperature data of a soil at different periods throughout the year by entering a new record for each observation date.

Seq

Depth Enter depth at which temperature is taken, in centimeters. If temperature is measured at different depths, enter each on a separate row.

Temperature Enter measured temperature in degrees Celsius as an integer value.



This site had temperatures recorded at depths of 10 and 51 centimeters (4 and 20 inches) on September 18, 1997.

Pedon table

The Pedon table is used to record soil profile information at a specific Site. More than one pedon description, or related information, can be recorded and linked to a single site record. This may occur when several profile descriptions are taken over time to record changes in the soil, or when multiple people independently describe the site on the same day and all descriptions are to be recorded.

Note: Before entering data here, data must first be entered in the Site and Site Observation tables. The pedon record can then be linked to the appropriate observation record.

User Pedon ID Enter a unique identifier for the pedon being described. No specific requirements have been developed on a national basis for this identifier. For consistency purposes, each MO should develop guidelines for populating this data field. **See Exhibit 2.**

Pedon Record Origin This field is to identify where a specific pedon record originated. If being entered directly into NASIS, enter "NASIS". Pedon records converted from PDP 3.x will display "converted from PDP". Records imported from the Windows Pedon program will display "Windows Pedon".

Describer's Name Enter full name of the person(s) that described the pedon. Do not use initials only. When entering pedons from previously published soil survey reports, and the original 232 is not available, enter the name of the project leader. If the project leader is not known, enter "unknown". Multiple names may be entered, separated by commas (up to 150 characters). Entry in a consistent format is important for querying purposes.

Site ID The pedon record you are creating must be linked to a Site record. The Site ID and User Site ID columns work together. They are used to identify the Site record to which this pedon is linked. The same choice list is available for both columns. When you enter data in one of the columns, NASIS automatically enters the corresponding data in the other column. Select the appropriate Site from the choice list. This column displays the record ID number of the selected site. It is entered automatically when a site is selected.

User Site ID This column displays the User Site ID of the site you select to link this pedon to. It is automatically entered when you select a site from the choice list.

Site Observation ID The Site Observation ID, Observation Date, and Observation Date Kind columns work together. They are used to link this pedon to a particular Site Observation record stored in the Site Observation table. The same choice list appears for either column. Select the appropriate observation record from the choice list. When you enter data in one of the columns, NASIS automatically enters the corresponding data in the other columns.

If you have made more than one site observation, for example, recording soil temperatures, you will have to select the observation for the date in which the pedon was described.

Observation Date See above.

Observation Date Kind See above.

User Transect ID A transect record must be entered into the Transect table before an entry can be made here. This column and the following 2 work together. If one is populated, the others are automatically filled in. They are used to link this pedon record to the appropriate transect. Choose the appropriate transect from the choice list (this list could be lengthy).

Transect Author See above.

Transect ID See above.

Transect Stop Number Enter the stop number on the transect from which this pedon description originated.

Transect Interval Enter the distance from the previous transect stop to this stop, in meters.

Soil Name As Sampled Enter the name of the series, or other taxonomic unit, assigned to the pedon at the time it was described. The soil name as sampled would normally not be changed. This is a record of the describer's original thoughts of what soil or other taxonomic unit that this pedon represented.

Correlated Soil Name This column should be updated with progressive correlations if the series/taxon name is changed. The associated taxonomic classification should also be updated if it has been changed in a correlation. For newly collected pedons, this column may be left blank until the series/taxon name has been through a correlation.

Taxon Kind Enter from choice list.

Pedon Type Enter the type of pedon as it relates to the series.

Pedon Purpose Enter the reason the pedon was described.

Pedon # Enter the consecutive number of the pedon sampled in a particular survey area.

Exposure Size Enter the size of the exposure (probe diameter, shovel slice, pit, etc.), in meters or centimeters, from which the description is made.

Exposure UOM Specify meters or centimeters.

Cover Kind 1 Current cover type at the description site. Select from choice list. First level or general type of cover. ***(FBDSS 1-15…16)***

Cover Kind 2 Secondary level or more specific cover type related to Cover Kind 1. Select from choice list. ***(FBDSS 1-15…16)***

Erosion Class Enter class of accelerated erosion. ***(SSM p86) (FBDSS 1-23)***

Taxonomic Class Calculated field. Enter data in the following columns and recalculate this field each time a change is made in any of the following fields.

Order Enter order from choice list. ***(Keys to Soil Taxonomy 8th ed.)***

Suborder Enter suborder from choice list. ***(Keys to Soil Taxonomy 8th ed.)***

Great Group Enter great group from choice list. ***(Keys to Soil Taxonomy 8th ed.)***

Subgroup Enter subgroup from choice list. ***(Keys to Soil Taxonomy 8th ed.)***

Particle Size Enter particle size from choice list. ***(Keys to Soil Taxonomy 8th ed. p295)***

Particle Size Mod Enter modifier if appropriate, from choice list.

CEC Activity Cl Enter activity class from choice list, based on CEC to clay ratio. ***(Keys to Soil Taxonomy 8th ed. p303)***

Reaction Enter reaction class from choice list. ***(Keys to Soil Taxonomy 8th ed. p304)***

Temp Class Enter the taxonomic family temperature class used to construct the official classification name. If the temperature class is embedded in the classification name, leave this field null. ***(Keys to Soil Taxonomy 8th ed. p304)***

Moist Subclass Enter the soil moisture subclass regardless of whether it is included in the name of the subgroup. ***(Keys to Soil Taxonomy 8th ed. p32)***

Temp Regime Enter the actual soil temperature regime. This field is used to sort components by soil temperature. ***(Keys to Soil Taxonomy 8th ed. p34)***

Keys to Taxonomy Edition Used Enter the edition of Keys to Taxonomy used to assign the taxonomic classification. Select from the choice list.

PSC Top Depth Enter depth to the top of the particle size control section in centimeters. ***(Keys to Soil Taxonomy 8th ed. p297)***

PSC Bottom Depth Enter depth to the bottom of the particle size control section in centimeters. ***(Keys to Soil Taxonomy 8th ed. p297)***

Current Weather Enter current weather conditions when pedon was described.

Current Air Temp Enter current air temperature, in degrees Celsius, when the pedon was described.

Lab Source ID If soil samples associated with this descriptions were sent to a laboratory for analysis, enter name of the lab providing data. If samples were processed at the old Riverside, CA lab, enter “Riversi”; if processed at the current Soil Survey Laboratory at the National Soil Survey Center, enter “SSL”. If samples were processed at one of the state university or Department of Transportation labs, enter an appropriate label. This field will only accept 7 characters. Entries in

this field should be consistently entered from on pedon to another to facilitate querying of the database.

Lab Pedon # Enter pedon number **assigned** by Soil Survey Laboratory (SSL), or other laboratory if the pedon was sampled and analyzed. The number will not be available until after the samples have been submitted to the lab.

Pedon Site **Non-editable column.** MLRA office that owns the data. Automatically entered by NASIS.

Group **Non-editable column.** Name of the user group that owns the data. Automatically entered by NASIS.

User **Non-editable column.** Name of NASIS user entering or last editing the data. Automatically entered by NASIS.

Last Updated **Non-editable column.** Date and time record was last edited. Automatically entered by NASIS.

Source Pedon Site **Non-editable column.** Automatically entered by NASIS.

Pedon – Diagnostic Features table

This table is used to record the occurrence of diagnostic features (as defined in *Keys to Soil Taxonomy, 8th ed.*) that are observed in the pedon being described.

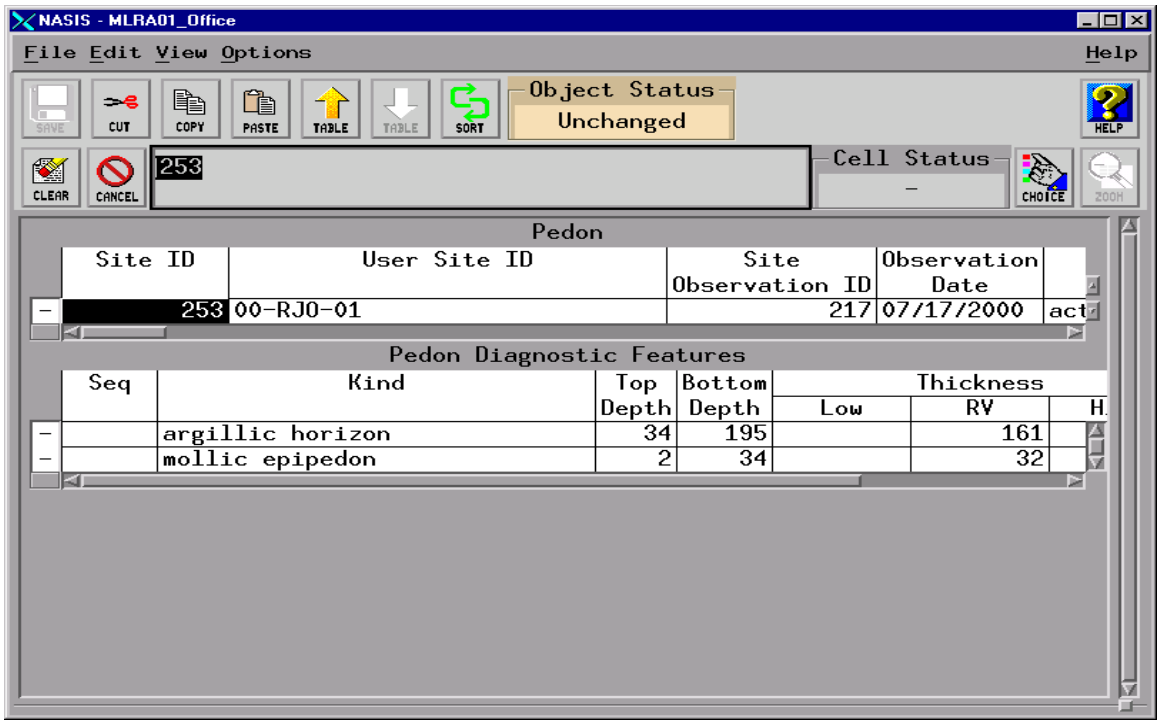
Seq

Kind Enter one record for each diagnostic feature that applies to the pedon being described. Select from choice list. ***(Keys to Soil Taxonomy 8th ed. p13)***

Top Depth Enter depth to the top of the specified feature – in centimeters.

Bottom Depth Enter depth to the bottom, if observed, of the specified feature – in centimeters.

Thickness Enter difference between top and bottom depths in RV column. Enter low and high values if you observed variations in thickness of the feature within the profile being described.



Pedon – Field Measured Property table

This table is used to record data that does not have a specific field in any other NASIS table. Entered measured data in this table that apply to the pedon as a whole. Data related to a specific horizon should be entered in the Horizon Field Measured Property table. Data entered in this table will be in the database, but currently is not printed out in the pedon report.

Seq

Name Enter the name of the property you want to record. There is no choice list for this item. You need to be consistent on how this is entered from one pedon to another to facilitate querying the data.

Value Enter the measured or observed value obtained.

Unit of Measure Specify the unit of measure for the value. Again, the unit of measure should be consistent from one pedon to another in order to make use of the data later.

Pedon – Restrictions table

This table is used to record the occurrence of root-restrictive features that are observed in the pedon being described.

Seq

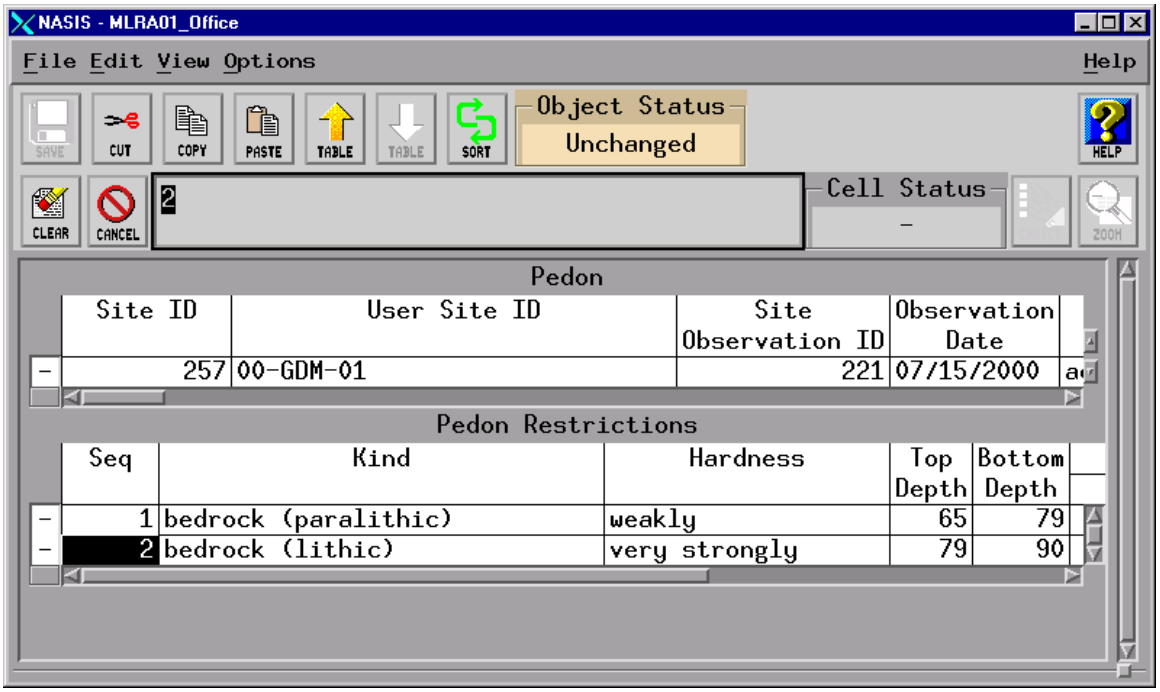
Kind Enter the kind of restrictive layer observed. Select from the choice list. If more than one kind is observed, enter each on a separate row.

Hardness Enter the degree of cementation of the restrictive layer, if applicable.

Top Depth Enter the depth to the top of the restrictive layer – in centimeters.

Bottom Depth Enter the depth to the bottom of the restrictive layer – in centimeters, if observed. See screen print below for bedrock example. Depths entered here should correspond to the respective horizon depths.

Thickness Enter the RV thickness. If variation in thickness is observed, enter low and high values for the range.



Pedon – Surface Fragments table

This table is used to record the occurrence of fragments (=> 2mm in size; => 2 cm for wood fragments) on top of the soil. Included are pieces of rock, wood, nodules, concretions, and pieces of pedogenically cemented material such as petrocalcic horizons and ortstein. Fragments that occur in the soil mass are recorded in the Horizon Fragments table.

Seq

Cover % Enter the percent of the ground surface covered by fragments. ***(SSM p145-150)***

Spacing Enter the average distance between stones and/or boulders (fragments => 250 mm), measured between edges. ***(SSM p145-150)***

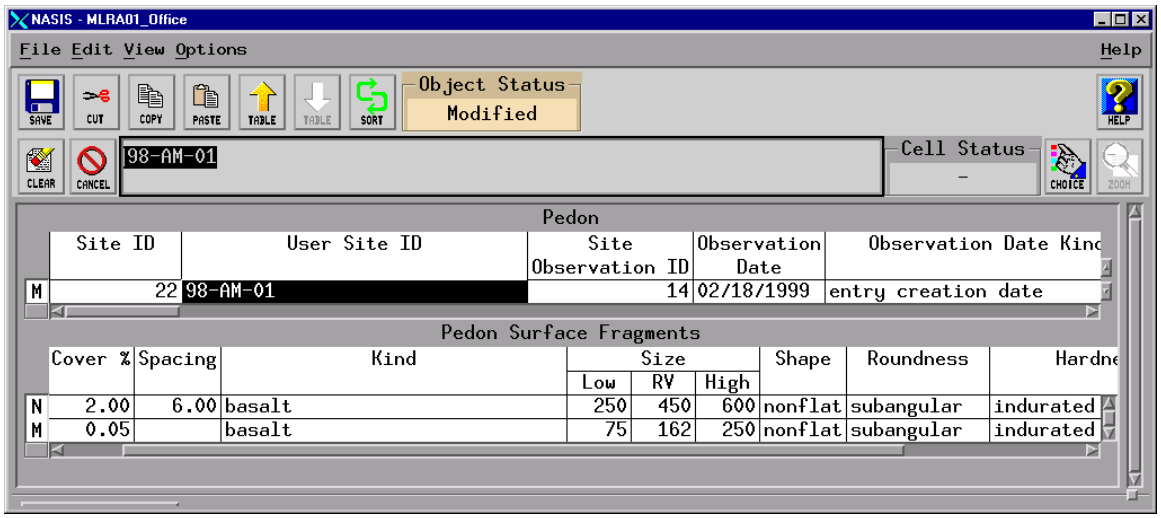
Kind — Enter the lithology/composition of the fragments from choice list. If there are multiple kinds of rock, enter a record for each with appropriate data on separate rows.

Size — Enter each size as a separate record. Use the average axial dimension for the RV and record the range in low and high. **Do not overlap size fractions.** Use of quasi-standard size classes (2-5, 5-20, 20-75, 75-250, 250-600, etc.) is desirable, but not required.

Shape — Record whether fragments are flat or nonflat from choice list.

Roundness — Record the angularity of fragments from choice list.

Hardness — Record the degree of cementation (hardness) from choice list. Degree of cementation must be entered to distinguish between fragments and parafragments.

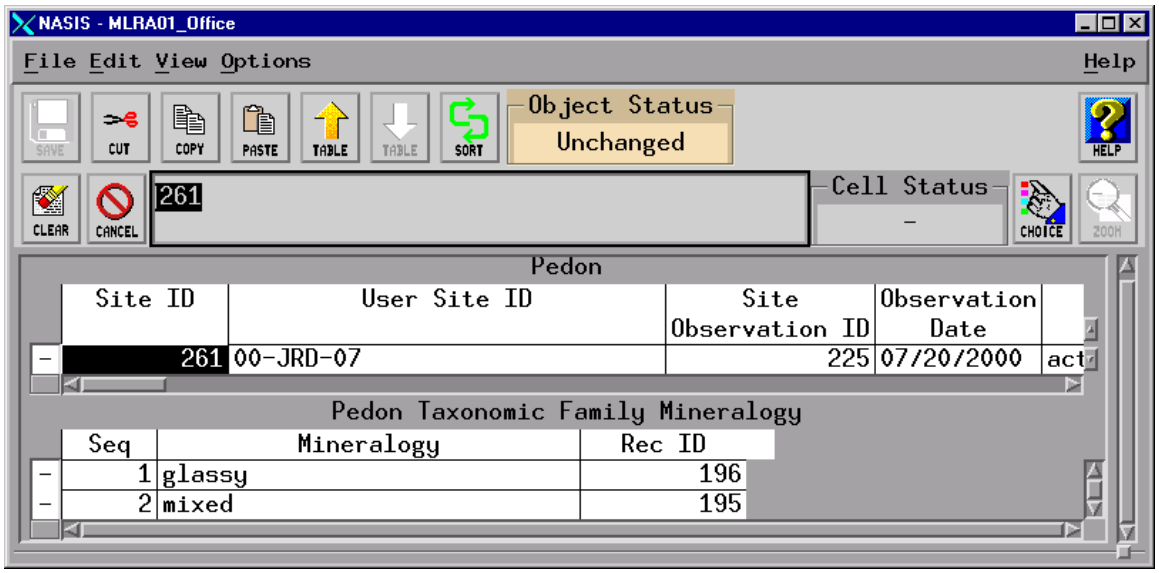


In this example, the soil surface has both cobbles and stones. The percent cover is recorded for both, but spacing is recorded only for stones and boulders. Percent cover is more important for fragments less than 250mm as it affects erosion hazard. Spacing is more significant for stones and boulders as it impacts the use of tillage implements.

Pedon – Taxonomic Family Mineralogy table

Seq — This is an instance where the sequence number is important. Assign sequence numbers in the order that the mineralogy classes should be displayed. If numbers are not assigned, classes will be displayed in alphabetical order.

Mineralogy — Enter mineralogy class from choice list. If more than one is applicable, enter each on a separate row.



Pedon – Taxonomic Family Other Criteria table

Seq

Family Other Record soil characteristics other than the defined family characteristics of particle-size, mineralogy, reaction classes, and soil temperature classes. These include depth, consistence, coatings, and permanent cracks. ***(Keys to Soil Taxonomy, 8th ed. p297-310)***

Pedon – Taxonomic Moisture Class table

Seq

Moisture Class Record the soil moisture class even though it may be evident in the classification name. Where it is not evident, this field will provide clear identification of the actual moisture regime.

Pedon – Text table

Seq

Date Date the note is recorded. The current date is entered automatically by database, but can be edited as needed.

Author Enter the name of the person making the note. Do not use initials.

Kind Enter kind of note from choice list.

Category The entry in this field can be anything as needed to categorize the note being recorded. Several MOs have developed lists to be used in their

area of responsibility for consistency purposes. Consult these lists as applicable.

Subcategory Same as above.

Text Enter the body of the note.

Pedon Horizon table

The following tables are used to record data for each horizon.

Note: **Dual horizons** (E and Bt, B/E, E/B, etc. horizons) should be entered as two separate horizon records; for example one for the E part of the horizon and the second for the B part of the horizon. Both records would have the same horizon depths and horizon designations assigned.

Seq

Observation Method Enter the type of excavation used to observe each horizon. If the upper part is observed in a pit, and the lower part of the profile was described using an auger hole, so indicate. ***(FBDSS 2-1)***

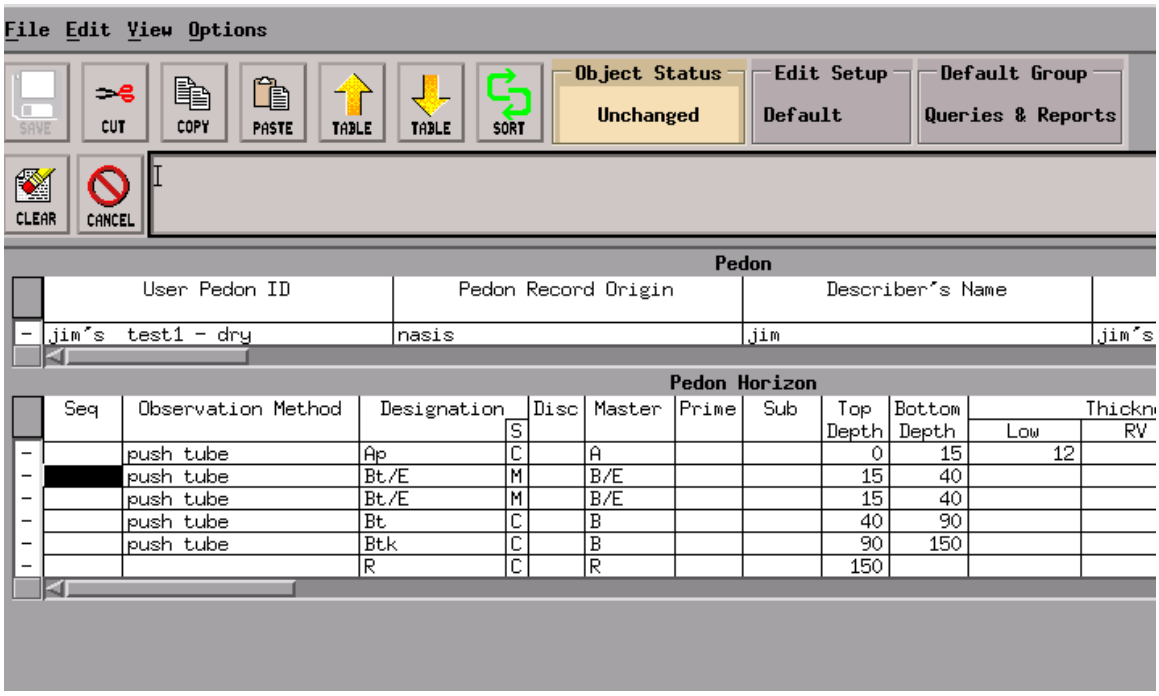
Designation Calculated field. Enter data in adjacent columns, except for situations as described in the example below. ***(FBDSS 2-2...4)***

Disc Enter the numeric value if a discontinuity is present. If no discontinuity exists, and entry of "1" is not needed.

Master Enter the master horizon designation for each layer described. Select from choice list.

Sub If the master horizon is subdivided, enter a consecutive numeric value for each subdivision.

Prime If two or more horizons of the same kind are separated by one or more horizons of a different kind in a pedon, identical letter and number symbols can be use for these horizons that have the same characteristics, e.g. A-E-Bt-E-Btx-C, identifies two E horizons. To emphasize this characteristic, the prime (') symbol is added after the master horizon designation of the lower of the two horizons that have identical designations, e.g. A-E-Bt-E'-Btx-C. The prime symbol, when appropriate is applied to the master horizon designation, and any lowercase letter symbols follow it: B't. In rare cases when three layers have identical letter symbols, double prime symbols can be used for the lower of these horizons: E". ***(Keys to Soil Taxonomy)***



In this example, the "Bt/E" has been entered manually because the horizon suffix cannot be calculated correctly by NASIS. The M in the status box indicates this is a manual entry. In order to correctly describe a dual horizon such as this, the same horizon must be entered twice, the Bt part is described in the first record and the E part is described in the second record. **Note: horizon subscripts are entered in the Pedon Horizon Designation Suffix table.**

Top Depth	Enter depth to the top of the horizon in centimeters. ***(FBDSS 2-4...5)***
Bottom Depth	Enter depth to the bottom of the horizon in centimeters.
Thickness	Enter the difference between top and bottom in the RV column. If variations of thickness are observed in the profile, enter Low and high values.
Tex Mod & Class	Calculated field only. No manual entry is permitted. Enter data in Pedon Horizon Texture table, then run the calculation.
Stratified?	If the horizon is stratified, enter "yes"; otherwise "no".
Est Clay %	Enter field estimated clay. For Andisols, enter apparent clay content. Do not enter lab data.
Est Silt %	Enter field estimated silt content. Do not enter lab data.
Est Sand %	Enter field estimated sand content. Do not enter lab data.
Variegated Colors?	Indicate whether colors are variegated or not.
Rubbed Fiber %	Enter rubbed fiber content for Histosols and organic materials.
Unrubbed Fiber %	Enter the unrubbed fiber content for Histosols and organic materials.

Observed Moisture State Enter the moisture state of each horizon at the time it was described.

Rupture Moist Enter the moist rupture resistance class. ***(FBDSS 2-50)***

Rupture Dry Enter the dry rupture resistance class. ***(FBDSS 2-50***)

Rupture Cement Enter the rupture resistance class for cemented horizons. DO NOT enter data for bedrock layers. Bedrock hardness should be populated in the Site table. ***(FBDSS 2-50***)

Rupture Plate Enter the rupture resistance class for horizons with platy structure.

Manner of Failure Record the manner in which the soil specimen fails under pressure. ***(FBDSS 2-52)***

Stickiness Enter the applicable stickiness class for the horizon, or select from the choice list***. (FBDSS 2-53)***

Plasticity Enter the applicable plasticity class for the horizon, or select from the choice list. ***(FBDSS 2-53)***

Tough Class Enter the applicable toughness class for the horizon, or select from the choice list.

Penetration Resistance Enter the applicable penetration resistance class for the horizon, or select from the choice list. ***(FBDSS 2-54…55)***

Penetration Orientation Enter the appropriate direction in which the penetrometer was inserted into the soil. If penetration resistance was not recorded, leave blank.

Ksat Enter Ksat only if you have actual measured data. In this column enter the calculated mean value of the individual measurements taken for this horizon. Estimated permeability based on soil properties should be entered in the following Permeability Class column. ***(FBDSS 2-69…70)***

Ksat Std Dev Enter the standard deviation of the individual measurements taken for this horizon.

Ksat Rep # Enter the number of replications or individual measurements taken for this horizon.

Permeability Class Enter estimated class from choice list. If you have measured data, enter the class that includes the Ksat Rep value. ***(NSSH 618-73), (FBDSS 2-69…70)***

Field pH ***(FBDSS 2-70)***

pH Method Enter the method used to determine pH. If you are using an unlisted method, enter this data in the Pedon Horizon Field Measured Property table.

Efferv Class Enter the class, or select from choice list. If there is no reaction, enter none. ***(SSM p192) (FBDSS 2-71)***

Efferv Loc obsolete Obsolete data field. Do not enter anything in this field. "Location" by definition refers to the soil matrix. It was used in the conversion of pedon data not directly entered in NASIS.

Efferv Agent Enter chemical agent used to test for carbonates from choice list.

Alpha Dipyr reaction Enter whether the reaction is positive or negative. If the soil is not tested, leave blank. ***(FBDSS 2-72***)

EC Enter the electrical conductivity of the soil. Use only measured values. ***(NSSH 618-9) (FBDSS 2-72***)

EC Method Enter the method used to determine electrical conductivity. If you are using an unlisted method, enter this data in the Pedon Horizon Field Measured Property table.

SAR Enter SAR value from lab data. If SAR in negligible, enter 0. ***(NSSH 618-36)***

Excav Diff Enter from choice list. The class entered is dependent on the soil moisture status entered in the Observed Moisture State column above. ***(NSSH 618-12) (FBDSS 2-55)***

Boundary Distinctness Enter the applicable term for the horizon, or select from the choice list. ***(FBDSS 2-5)***

Boundary Topography Enter the applicable term for the horizon, or select from the choice list. ***(FBDSS 2-5)***

Total Volume % Enter the range in volume percent of the pedon that the horizon occupies. A low, RV and high value may be entered, as integers. If you have dual horizons such as B/E, it may be useful information to record the extent of each part in these 2 columns.

Lateral Area % Enter the range in horizontal cross section of the pedon that the horizon occupies. A low, RV and high value may be entered, as integers.

Pedon Horizon – Cementing Agent table

Seq

Cementing Agent For cemented horizons, record the material that is cementing the horizon. Otherwise nothing is entered in this table. ***(FBDSS 2-51***)

Pedon Horizon – Color table

Note: Colors listed here are for the soil matrix only. Colors of mottles, concentrations, or redoximorphic features, etc. are recorded in their respective tables.

Seq

Color % Enter the percent that each matrix color occupies in the horizon. If 2 or more colors, enter each color in a separate record/row. If only one matrix color, leave Color % blank. ***(FBDSS 2-7...2-8)***

Phys State **If desired**, describe color location or condition of the sample. Select from choice list. ***(FBDSS 2-8).***

Hue Enter the appropriate Munsell color hue, or select from choice list.

Value Enter or select from choice list.

Chroma Enter or select from choice list.

Moist State Enter moisture state in which the color was determined. Enter dry and moist colors on separate rows. If you have entered colors for "reduced" and/or "oxidized" Phys State (gleyed horizons), the moisture status should be "moist" for both states. Dry colors may also be entered for these situations as desired.

Pedon Horizon – Concentrations table

This tab is used to record the description of concentrations, other than those described as redoximorphic features that may occur in each horizon. A separate row/record is used to describe each different size or kind of feature.

Seq

Percent Enter percent cross sectional area occupied by concentrations. For old descriptions and OSD's, convert few, common and many to percent. ***(FBDSS 2-9).*** Enter each combination of size and kind on separate rows. ***(FBDSS 2-18...24)***

Size Enter the size of each group of concentrations being described, in millimeters. **See Exhibit 4. MO14 – Size Combination Chart.**

Contrast Enter the appropriate contrast class, or select from choice list. ***(FBDSS 2-11)***

Hardness Enter the appropriate cementation class to describe the hardness of the feature or pick from the choice list. ***(FBDSS 2-50***)

Shape Enter the shape class of the feature or pick from the choice list. ***(FBDSS 2-23***)

Kind Enter the kind of feature being described, or pick from the choice list. ***(FBDSS 2-20***)

Location Enter the location term to describe the location of the feature within the horizon or pick from the choice list. ***(FBDSS 2-24)***

Boundary Enter the distinctness of the boundary of the feature being described or pick from the choice list. ***(FBDSS 2-24)***

Pedon Horizon – Concentrations Color table

This table is used to record the color(s) associated with each feature described in the above table. If multiple colors occur on each feature, enter each color on a separate row.

Seq

Color % Enter the percent of the feature occupied by each color and size combination described.

Hue Enter or select from choice list.

Value Enter or select from choice list.

Chroma Enter or select from choice list.

Moist State Enter the moisture state that corresponds to the color recorded.

Pedon Horizon – Designation Suffix table

Seq

Suffix Enter the applicable Designation Suffix, or pick from choice list. If multiple suffixes apply, enter each on a separate row. Order is not important. The calculator will determine correct horizon designation. ***(FBDSS 2-3)***

Pedon Horizon – Features table

This table is used to record special features observed within the horizon.

Seq

Kind Select applicable horizon feature(s) from choice list. If more that one kind is observed in a horizon, enter each on a separate row. ***(FBDSS 2-67)***

Total volume % Enter the estimated mean volume percent of the horizon that the described feature occupies in the RV column. If variation in the percentage is noted, record values in the low and high columns.

Lateral Area % Enter the estimated mean horizontal cross sectional area of the horizon that the described feature occupies in the RV column. If variation in the percentage is noted, record values in the low and high columns.

Pedon Horizon – Field Measured Property table

This table is used to record data that do not have a specific field in any other table. Enter measured or observed data in this table that apply to the specific horizon. Data related to the whole pedon should be entered on the Pedon Field Measured Property table.

Seq

Name Enter the name of property that does not already have a column available for entering data. You need to consistently enter this name from one horizon record to another.

Value Enter the measured value.

Unit of Measure Enter the units of measure for the value. Again you need to enter a particular unit in a consistent manner, i.e. “ppm” or “mg/kg”.

Pedon Horizon – Fragments table

This table is used to record the occurrence of fragments that are => 2 mm (=> 20 mm for wood fragments) within the horizon. Included are pieces of rock, wood, nodules, concretions, and pieces of pedogenically cemented material such as petrocalcic horizons and ortstein. Fragments that occur on top of the soil are recorded in the Pedon Surface Fragments table.

Seq

Vol % Enter the volume percent of each size and kind of rock fragment.

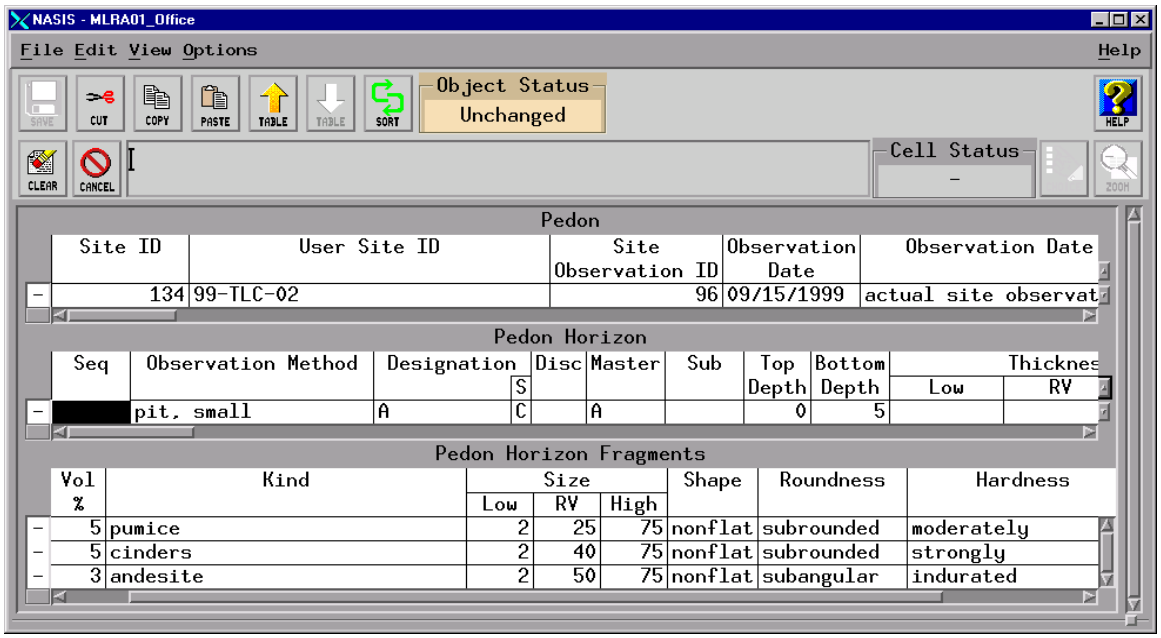
Kind Enter the lithology/composition of the fragment being described, or pick from the choice list. If you identify several different kinds of rock fragments, enter each in a separate record. For example, if a horizon is described as having 20 percent basalt and sandstone fragments, enter 10 percent basalt and 10 percent sandstone in separate records. Do not enter 20 percent of each, or else the total comes out to 40 percent. ***(FBDSS 2-37)***)

Size Enter each size as a separate record. Use the average axial dimension for the RV and record the range in low and high. Minimum and maximum values should be what you find in the soil. It is not necessary to use standard size ranges, although if a wide range of sizes are present, it may be helpful later on if quasi-standard size groups are used such as 2-5, 5-20, 20-75 mm. Do not overlap size fractions. ***(FBDSS 2-40)***

Shape Record whether fragments are flat or nonflat from choice list.

Roundness Record the angularity of fragments from choice list. ***(FBDSS 2-38)***

Hardness Record the degree of cementation from choice list. Degree of cementation must be entered to distinguish between fragments and parafragments. ***(FBDSS 2-39)***



Pedon Horizon – Mottles table

This table is used to record color variations in the soil that occur as a result of lithochromic (non-wetness related) origin. ***(FBDSS 2-7...13)***

Seq

Percent Enter the percent of the area occupied by each color and size combination described. For old descriptions and OSD's, convert few, common and many to percent. ***(FBDSS 2-9.***

Size Enter the size class of the mottle being described or pick from the choice list. **See 4. MO14 – Size Combination Chart.**

Contrast Enter the appropriate class term, or pick from the choice list. ***(FBDSS 2-11)***

Hue Enter or select from choice list.

Value Enter or select from choice list.

Chroma Enter or select from choice list.

Shape Enter the shape class of the mottles.

Moist State Enter the moisture state that corresponds to the color recorded.

Location – obsolete **Enter nothing here.** ***(FBDSS 2-13…14)***

Pedon Horizon – Ped Void Surface Features table

This table is used to describe features that occur on the surface of peds or walls of voids.

Seq

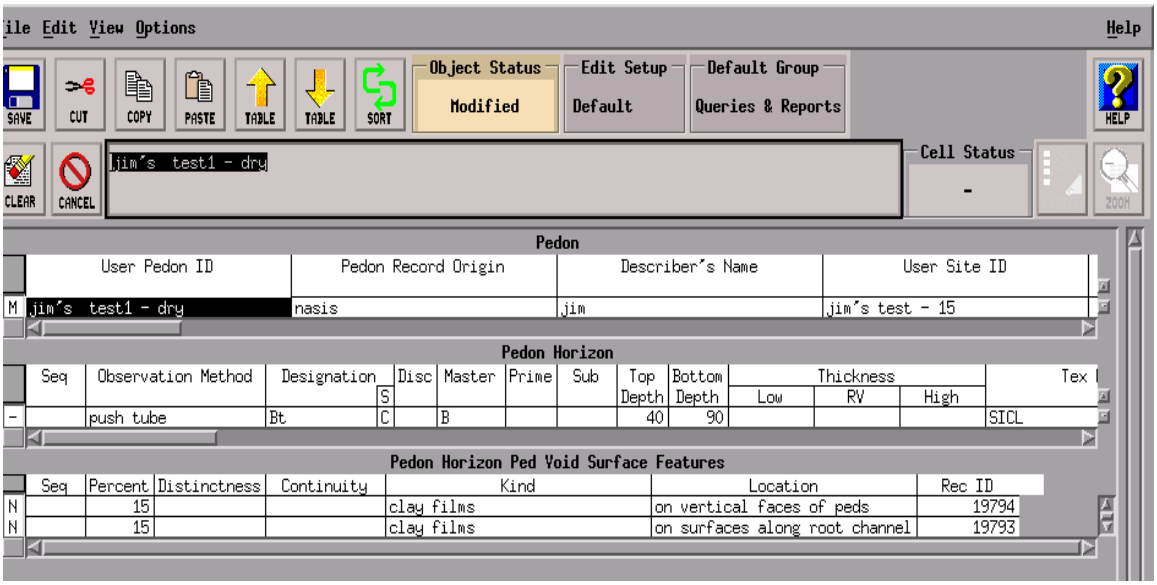
Percent Enter percent of surface that each described feature covers. For old descriptions and OSD's, convert few, common and many to percent. ***(FBDSS 2-27)***

Distinctness Enter the appropriate distinctness class, or pick from the choice list. ***(FBDSS 2-28)***

Continuity Enter the appropriate class term, or pick from the choice list. ***(FBDSS 2-27)***

Kind Enter the kind of feature being described, or pick from choice list. ***(FBDSS 2-25)***

Location Enter the location term to describe the location of the feature within the horizon. ***(FBDSS 2-28)***



This pedon was entered from an OSD and ped coatings were not completely described. "Clay films" is entered twice because they occur in 2 separate locations.

Pedon Horizon – Ped Void Surface Features Color table

This table is used to record the color(s) associated with each feature described in the above table. If multiple colors occur on each feature, enter each on a separate row.

Seq

Color % Enter the percent of the feature occupied by each color. If multiple colors occur for the feature, enter each color on a separate row**.** ***(FBDSS 2-9)***

Hue Enter or select from choice list.

Value Enter or select from choice list.

Chroma Enter or select from choice list.

Moist State Enter the moisture state that corresponds to the color recorded.

Pedon Horizon – Pores table

Seq

Quantity Enter the number of pores per unit area. For old descriptions, convert classes of few, common, or many to a quantity value. The following conversions may be used: ***(FBDSS 2-57)***

See Exhibit 3. MO14 – Quantity Conversions.

Size Enter the appropriate size class of pores being described, or select from the choice list. If multiple combinations of size, shape, and continuity are present, enter each on a separate row. ***(FBDSS 2-57…58)*****. See Exhibit 4. MO14 – Size Combination Chart.**

Continuity Enter the appropriate class, or select from the choice list. ***(FBDSS 2-51)***

Shape Enter shape of pores from choice list. Interstitial pores are packing voids and should not be used unless the horizon consists of coarse sand or rock fragments. ***(FBDSS 2-50)***

Pedon Horizon – Redoximorphic Features table

This table is used to record the description of redoximorphic features that may occur in each horizon. A separate row/record is used to describe each different size or kind of feature.

Seq

Percent Enter percent of cross sectional surface area that each described feature covers. For old descriptions and OSD's, convert few, common and many to percent. ***(FBDSS 2-16).*** **See Exhibit 3. MO14 – Quantity Conversions.**

Size Enter the size of the feature being described. ***(FBDSS 2-50).***. **See Exhibit 4. MO14 – Size Combination Chart.**

Contrast Enter the appropriate contrast class. ***(FBDSS 2-11)***

Hardness Enter the appropriate cementation class to describe the hardness of the feature. ***(FBDSS 2-50)***

Shape Enter the shape class of the feature. ***(FBDSS 2-23)***

Kind Enter the kind of feature being described, or pick from the choice list. ***(FBDSS 2-15)***

Location Enter the location term to describe the location of the redox feature within the horizon. ***(FBDSS 2-24)***

Boundary Describe the distinctness of the boundary of the redox feature being described. ***(FBDSS 2-24)***

Pedon Horizon – Redoximorphic Features Color table

This table is used to record the color(s) associated with each feature described in the above table. If multiple colors occur on each feature, enter each on a separate row.

Seq

Color % Enter the percent of the feature occupied by each color. If multiple colors occur for the feature, enter each color on a separate row. ***(FBDSS 2-9)***

Hue Enter or select from choice list.

Value Enter or select from choice list.

Chroma Enter or select from choice list.

Moist State Enter the moisture state that corresponds to the color recorded.

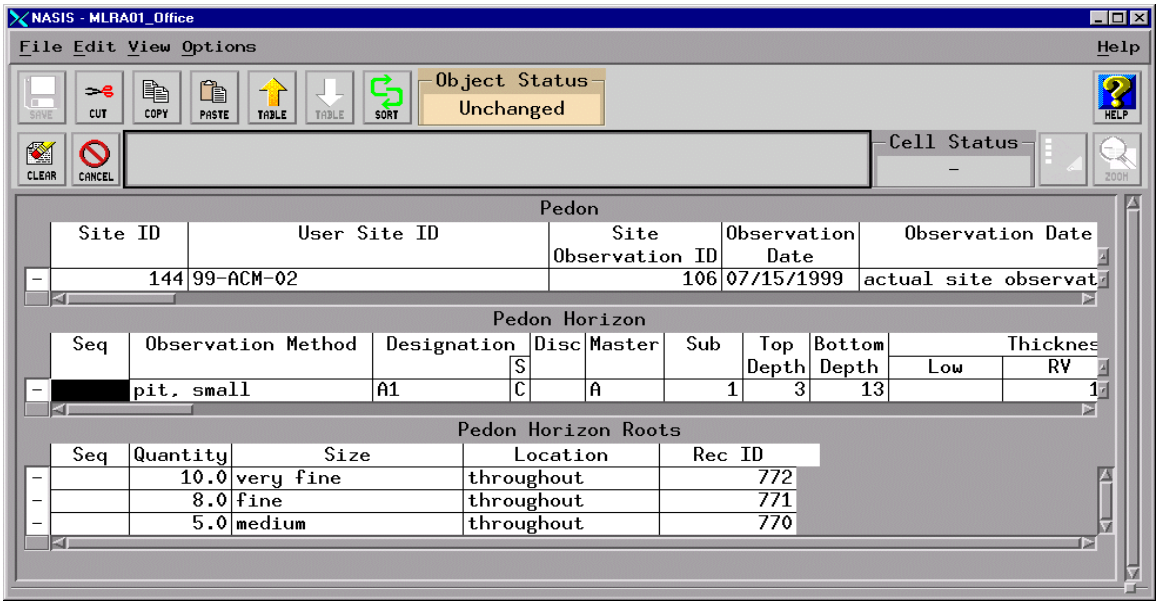
Pedon Horizon – Roots table

Seq

Quantity Enter the actual number of roots per unit area. Note: the reference area varies depending on the size of root. For old descriptions, the following conversions are suggested: **(FBDSS 2-56).**
See Exhibit 3. MO14 – Quantity Conversions and Exhibit 4. MO14 – Size Combination Chart.

Size Enter the appropriate size class of roots being described, or select from the choice list. If multiple sizes are present, enter each on a separate row. ***(FBDSS 2-56)***

Location Enter the appropriate term to describe where the roots are located in the horizon, or pick from the choice list. ***(FBDSS 2-58)***



The pedon report will list this A1 horizon as having many roots of each size because the quantity of each size is >= 5.

Pedon Horizon – Sample table

If samples were collected from this horizon and submitted to a laboratory for analysis, this tab is used to record the sample ID(s) that the lab assigned to the sample(s). Therefore, this information cannot be filled in until the lab has assigned the ID. If the horizon was sub-sampled and multiple IDs were assigned, enter each on a separate row here.

Seq

Lab Sample # Enter sample number(s) for each horizon as assigned by the respective laboratory. The numbers will not be available until after the samples have been submitted to the lab.

Pedon Horizon – Soil Structure table

Seq

Grade Enter structure grade from choice list. When structure is massive or single grain, enter "structureless" as the grade. ***(FBDSS 2-43)***

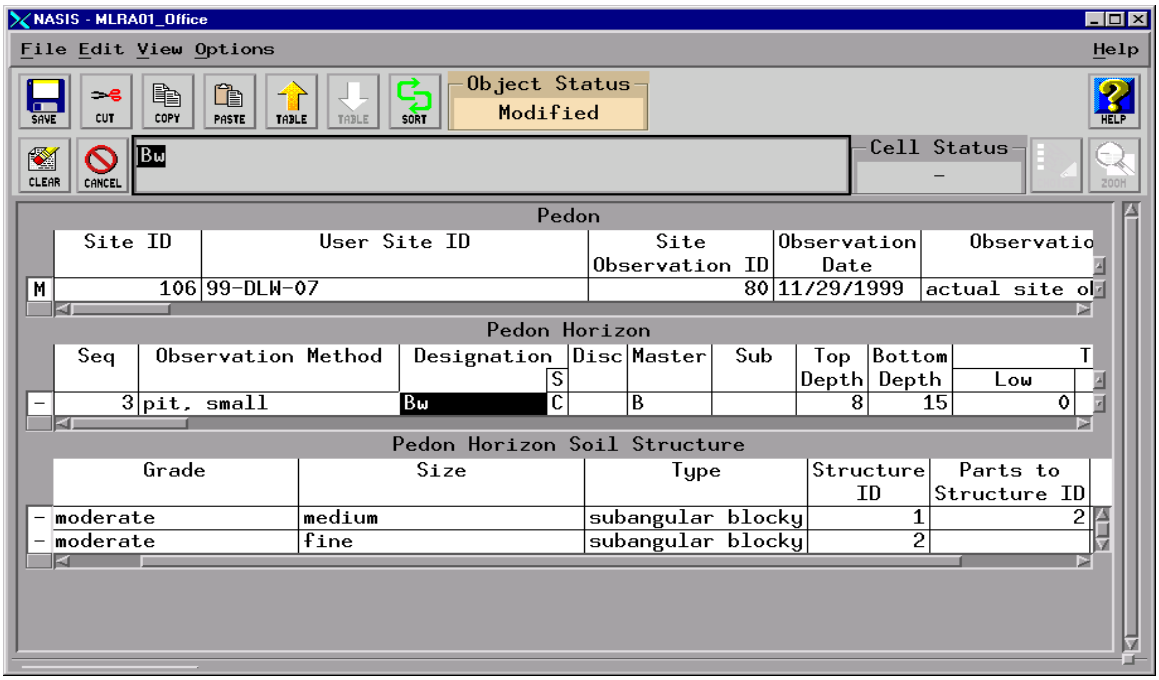
Size Enter the size class of the structure, or pick from the choice list. ***(FBDSS 2-43)***

Type Enter the type of structure, or pick from the choice list. ***(FBDSS 2-41)***

Structure ID Enter a unique numeric identifier for each row in this screen, if the primary structure parts to a smaller, secondary structure.

Note: If the structure type breaks/parts to a finer size and/or different type, you must assign structure ID's to each record and enter a value in the "Parts to Structure ID" column. Otherwise, each size and type combination will be listed separately as though they both occur in place in the profile. If both sizes occur in place, it is not necessary to assign Structure ID numbers. (See example in the graphic above)

Parts to Structure ID This column is used to indicate which structure, described on another row, that this structure parts to. Enter the Structure ID assigned to the other row. (See graphic and note below)



Pedon Horizon – Text table

Seq

Date Enter the date the note is recorded. The current date is entered automatically by database, but may be edited as needed.

Author Enter the name of the person making the note. Do not use initials.

Kind Enter kind of note from choice list.

Category The entry in this field can be anything as needed to categorize the note being recorded. Several MOs have developed lists to be used in their area of responsibility for consistency purposes. Consult these lists as applicable.

Subcategory Same as above.

Text Enter the body of the note.

Pedon Horizon – Texture table

Note: Each horizon should have an entry in either the "Texture" or "In Lieu" column, but not both.

Seq

Texture Enter the appropriate USDA texture class. If more than one occur in a horizon, enter each on a separate row. ***(FBDSS 2-28...2-30)***

In Lieu Enter the applicable term used in lieu of texture. Organic surface layers and bedrock should have an entry in this column.

Pedon Horizon – Texture Modifier table

Seq This is an instance in which a sequence number is necessary. In order for the rock fragment modifier to come out first, it must either appear first in the list of modifiers, or have a sequence number of 1. For example, if you have a texture of stony ashy loam, the modifiers must be listed thus: ***(FBDSS 2-32)***

1. ST
2. ASHY

Modifier Enter the applicable texture modifier(s), each on a separate row. These terms may modify either the USDA texture class or the terms used in lieu of texture in the Pedon Horizon Texture table.

Site Association table

This table is used to record information about the grouping of individual sites for some purpose, other than transects. There is no standard set of reasons as to why someone might want to establish a group of related sites. Possible groupings might include soil moisture or temperature study sites in a particular area, sites related to a particular map unit, some special soil study, etc. A site association might facilitate locating a group of site records in the database at a later time. Transects are special kinds of groupings, and information related to them is recorded in the Transect table.

User Site Association ID Enter a unique identifier for the Site Association being described. The purpose of this field is to allow the user to place a label on the Site Association to assist with relocating the particular record in the database at a later time.

The "user site association ID" should be something meaningful and descriptive to the user. There are no national guidelines on the naming convention. Some states and/or MOs have established a convention to be used in their area. These guidelines should be consulted.

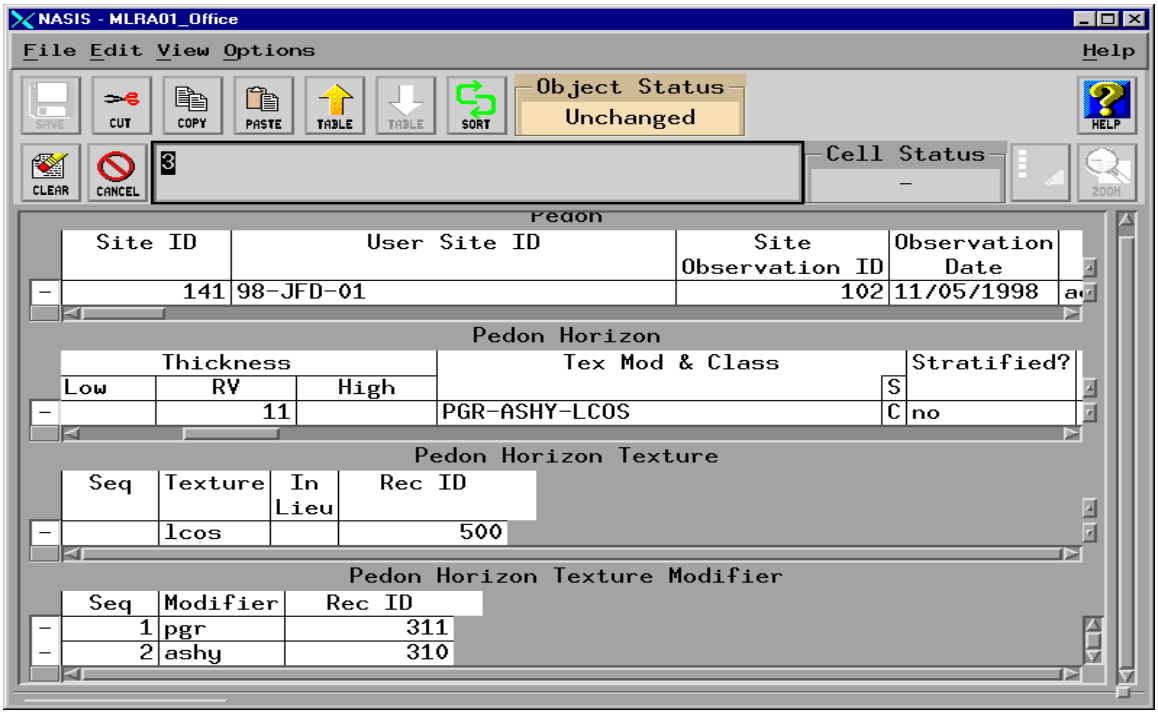
Site Association Site **Non-editable column.** MLRA office that owns the data. Automatically entered by NASIS.

Group **Non-editable column.** Name of the user group that owns the data. Automatically entered by NASIS.

User **Non-editable column.** Name of NASIS user entering or last editing the data. Automatically entered by NASIS.

Last Updated **Non-editable column.** Date and time record was last edited. Automatically entered by NASIS.

Source Site Association Site **Non-editable column.** Automatically entered by NASIS.



Site Association – Site table

This table is used to record which sites are members of a particular site association.

Seq

Site ID The Site ID and User Site ID columns are connected. If either is populated, the corresponding entry is automatically entered in the other. Select the desired sites from the choice list.

User Site ID Same as above.

Site Association – Text table

This table is used to store text notes that may help explain the purpose to the Site Association. The notes may be grouped or categorized by populating the Kind, Category, and Subcategory fields as needed.

Seq

Date Enter the date the note is recorded. The current date is entered automatically by database, but may be edited as needed.

Author Enter the name of the person making the note. Do not use initials.

Kind Enter kind of note from choice list.

Category The entry in this field can be anything as needed to categorize the note being recorded. Several MOs have developed lists to be used in their

area of responsibility for consistency purposes. Consult these lists as applicable.

Subcategory Same as above.

Text Enter the body of the note.

Transect table

This table is used to record general information about the transect being described. Data collected at the individual stops on each transect are recorded in the Pedon, Site and Site Observation tables.

A transect is a series of samplings (in this case, pedons) across a landscape in order to gather data for some stated purpose, such as map unit content or diversity. Other types of data collected along transects may also be recorded, such as depths to a particular soil property or feature.

User Transect ID Enter a unique identifier for the Transect being described. The purpose of this field is to allow the user to place a label on the transect to assist with relocating the particular transect record in the database at a later time.

The "user transect ID" should be something meaningful and descriptive to the user. There are no national guidelines on the naming convention. Some states and/or MOs have established a convention to be used in their area. These guidelines should be consulted. An appropriate method would be: Area Symbol-Mapunit symbol-Transect number
(e.g. NC000-123B-001)

Transect Author Enter the transect author's name(s), do not use just initials.

Transect Kind Enter the transect kind, or select from choice list.

Transect Selection Method Enter the method by which the location at which to conduct the transect was selected, or select from choice list.

Transect Delineation Size Enter the size, in acres, of the map delineation in which the transect is done, if mapped.

Transect Direction Enter the direction, in degrees, from the starting point in which the transect is done, if a straight-line transect.

Transect Site Non-editable column. MLRA office that owns the data. Automatically entered by NASIS.

Group Non-editable column. Name of the user group that owns the data. Automatically entered by NASIS.

User Non-editable column. Name of NASIS user entering or last editing the data. Automatically entered by NASIS.

Last Updated Non-editable column. Date and time record was last edited. Automatically entered by NASIS.

Source Transect Site Non-editable column. Automatically entered by NASIS.

Transect – Text table

This table is used to store text notes that may help explain the purpose of the transect. Actual notes collected during or along the transect should be entered either in the Pedon Text or Site Observation Text table as appropriate. The notes may be grouped or categorized by populating the Kind, Category, and Subcategory fields as needed.

Seq

Date Enter the date the note is recorded. The current date is entered automatically by database, but may be edited as needed.

Author Enter the name of the person making the note. Do not use initials.

Kind Enter kind of note from choice list.

Category The entry in this field can be anything as needed to categorize the note being recorded. Several MOs have developed lists to be used in their area of responsibility for consistency purposes. Consult these lists as applicable.

Subcategory Same as above.

Text Enter the body of the note.

Exhibit 1. MO14 - Basic Steps to Setting up a Pedon

The first step to working in PEDON is to establish the basic "Site" and "Pedon" tables and to complete the necessary links. This can be done by creating new site and pedon records or copying and pasting from established records and changing the appropriate links. ***NOTE****--Any reference to a column location may only apply when using the "John Kelley-DMU & Pedon editing" edit setup.*

To create a <u>new</u> Site and Pedon record:

Column Location

1. **View: Sites / Site**
   F8 to create a new row in the table. ***(Be sure to record the Site Rec ID!!)*** **[C1]**
   Edit the "<u>User Site ID</u>" according to the MO or SO guideline. (e.g. 2002USNC001001-Appling)

2. **View: Sites / Site Area Overlap**
   F8 to create a new row in the table.
   Populate "Area Type Name" from the choice list—
   (Use the Local list for "Working Legends" or <u>National list</u> for "Non-MLRA Soil Survey Area")
   Chose the correct "Area Symbol", e.g. NC097, from the choice list.
   Some data will automatically be populated.
   Consider adding State, County, and MLRA area types
   SAVE… You have now linked the site to a Soil Survey Area, MLRA, State, County, etc..

3. **View: Sites / Site Mapunit Overlap**
   F8 to create a new row in the table.
   Select from the choice list to populate the correct Legend ID for the survey area
   Click on Mapunit Symbol
   Type the correct Mapunit Symbol or select from the choice list.
   (You can use an "*" to query for all mapunits.
   Some data will automatically be populated.
   SAVE… You have now linked the site to a map unit.

4. **View: Site Observations / Site Observation**
   F8 to create a new row in the table. ***(Be sure to record the Site Observation Rec ID!!)*** **[C2]**
   Populate Observation Date Kind"
   SAVE… You have now completed the basic "Site Observation" table data.

5. **View: Pedons / Pedon**
   F8 to create a new row in the Pedon table. (***Be sure to record the Pedon Rec ID!!)*** **[C1]**
   Enter the Site Rec ID number (from step 1) in the Rec ID" column (column 4).
   Enter the Site Observation ID number (from step 4) in the "Site Observation ID" column or **[C2]**
   select from the choice list.
   Complete the "Soil Name as Sampled" and "Correlated Soil Name" columns.
   Return to column 2 and enter the "<u>User Pedon ID</u>" according to the MO or SO guideline.
   (e.g. Appling-TP, Iredell County, NC)
   SAVE… You have now completed the basic "Pedon" table data.

6. **View: Sites / Site Mapunit Overlap**
   File / Load Related (Mapunit)
   View: Legend / Correlation
   Click on DMU ID
   File / Load Related (DMU)
   View: Component / Component Pedon
   F8 to create a new row
   Enter the Pedon Rec ID number (from step 5). **[C1]**
   Some data will automatically be populated.
   Change Rep Pedon to "yes".
   SAVE… You have now linked the pedon to a component.

CONGRATULATIONS!!! You are now ready to start entering site and pedon data.

You can reload the pedon by using one of the local queries:

Query Name:	*Query Parameter:*
PEDON – Pedon by “Correlated Soil Name”	Appling
PEDON – Pedon by “Pedon REC ID"	123456
PEDON – Pedon by “Soil Name As Sampled”	Appling
PEDON – Pedon by "User Pedon ID"	Appling-TP, Iredell County, NC
PEDON – Sites by "User Site ID"	2002USNC001001-Appling

You can download pedon descriptions by using one of the "Local" reports:

PEDON – Pedon Description – centimeters (inches)

You can identify pedons in the database by using one of the "Local" reports:

PEDON – List of Pedons for MO14 by Pedon REC ID
PEDON – List of Pedons for MO14 by Series
PEDON – List of Pedons for MO14 by User Pedon ID

Exhibit 2. MO14 - Site and Pedon ID Guide

Reference Guide--	***User Site ID--***	***User Pedon Id--***
NASIS PEDON Guide *(SSL format)*	YYYYZZXX123456 YYYY = Calendar year ZZ = Country code XX = State 123 = FIPS code 456 = Consecutive sample # per cal year 2002USNC001001	See MO Guide
MO14 Guide	**YYYYZZXX123456** **YYYY = Calendar year** **ZZ = Country code** **XX = State** **123 = FIPS code** **456 = Consecutive sample no. per cal year** **2004USNC001001-Alpha** **—or—** **S04NC-001-001-Alpha**	**Alpha-OSD Smith County, NC** **Alpha-TP Smith County, NC** **Alpha-RP Smith County, NC** **Alpha-(Transect ID number) or Alpha-(Pedon ID number)** **-OSD=Official Series Desc.** **-TP=Typical Pedon** **-RP=Representative Pedon**
Virginia Guide	**S**CY**VA**-001-**001**-soil S04VA-001-001-Emporia	Use soil name, soil phase, mapunit ID, sample number, etc.

Recommended Local Queries to load pedon data:

PEDON – Pedons by “Correlated Soil Name”
PEDON – Pedons by “Pedon REC ID"
PEDON – Pedons by “Soil Name as Sampled”
PEDON – Pedons by "User Pedon ID"
PEDON – Sites by "User Site ID"

Recommended report to list pedons from MO14:

PEDON – List of Pedons for MO14 by Pedon REC ID
PEDON – List of Pedons for MO14 by series
PEDON – List of Pedons for MO14 by pedon ID

Exhibit 3. MO14 - Quantity Conversions

(Conversion in pedon descriptions from classes to percent.)

Roots & Pores					
Quantity	**Average Count**	**Default**	**size (mm)**	**area accessed**	**size class**
few	<1	(0.5)	<1 mm	cm^2	very fine
very few	<0.2	(0.1)	1 - <2 mm	cm^2	fine
moderately few	0.2-<1	(0.5)	2 - <5 mm	dm^2	medium
common	1-4	(3.0)	5 - <10 mm	dm^2	coarse
many	>5	(10)	>10 mm	m^2	very coarse

Mottles-- **Redox Features--** **Concentrations** --mica flakes --glauconite pellets --diatoms --shell fragments (<2mm)	**Range --- Default**		**Ped & Void Surface Features** --clay films; bridging --organic stains --skeletans, etc.	**Range --- Default**	
			Very Few	<5	(2)
Few	<2	(1)	Few	5-25	(10 or 15)
Common	2-20	(10)	Common	25-50	(35)
Many	>20	(35 or 50)	Many	50-90	(70)
			Very Many	>90	(95)

Soil Reaction	**Range --- Default**	
Ultra acid	<3.5	(3.0)
Extremely acid	3.5-4.4	(4.0)
Very strongly acid	4.5-5.0	(4.7)
Strongly acid	5.1-5.5	(5.3)
Moderately acid	5.6-6.0	(5.8)
Slightly acid	6.1-6.5	(6.3)
Neutral	6.6-7.3	(7.0)
Slightly alkaline	7.4-7.8	(7.6)
Moderately alkaline	7.9-8.4	(8.1)
Strongly alkaline	8.5-9.0	(8.7)
Very strongly alkaline	>9.0	(9.5)

Exhibit 4. MO14 – Size Combination Chart (Allowable size entries not listed in NASIS choice list.)

Combinations:	**Roots or Pores**	**RMFs, Mottles, or Concentrations**	**Structure**
very fine and fine	YES	---	YES
fine and medium	YES	YES	YES
medium and coarse	YES	YES	YES
coarse and very coarse	NO	YES	YES
very coarse and extremely coarse	---	YES	NO
very fine to medium	YES	---	NO
fine to coarse	YES	YES	YES
medium to very coarse	NO	NO	NO
coarse to extremely coarse	--	NO	NO

Exhibit 4. MO14 - Example Pedon Report of the "Alpha-OSD" Pedon
Report: PEDON – Pedon Description – centimeters (inches)

Oe--0 to 5 centimeters (0.0 to 2.0 inches); moderately decomposed plant material; abrupt smooth boundary.

Oe--5 to 15 centimeters (2.0 to 5.9 inches); very dark grayish brown (2.5Y 3/2) woody mucky peat; 50 percent unrubbed fiber, 20 percent rubbed; 60 percent sand; 25 percent silt; 15 percent clay; 20 percent 20- to 100-millimeter wood fragments; sulfurous odor; very strongly acid, pH 4.5, pH meter 1:2 calcium chloride; ultra acid, pH 2.4, Hellige-Truog after moist incubation; 55 percent estimated mineral soil material (weight percent); abrupt smooth boundary.

A--15 to 30 centimeters (5.9 to 11.8 inches); dark brown (10YR 3/3) mucky gravelly silt loam, brown (10YR 4/3), dry; 5 percent medium distinct irregular strong brown (7.5YR 5/6) mottles; moderate fine granular structure; friable, nonsticky, nonplastic; moderately fluid; common fine roots throughout; many medium moderate-continuity tubular pores; very strongly acid, pH 5.0, Hellige-Truog; 5 percent 5- to 25-millimeter thick lenses of loamy fine sand (volume percent); 5 percent white uncoated sand grains (volume percent); clear smooth boundary.

Btx--30 to 46 centimeters (11.8 to 18.1 inches); 40 percent yellowish brown (10YR 5/6) broken face and 30 percent yellowish red (5YR 5/8) broken face and 20 percent reddish brown (2.5YR 4/4) crushed loam, brownish yellow (10YR 6/6) and reddish yellow (5YR 6/8) and reddish brown (2.5YR 5/4), dry; 25 percent clay; weak coarse prismatic structure parting to moderate medium subangular blocky structure; firm by silica, slightly sticky, nonplastic; brittle; low toughness; low horizontal penetration resistance; moderate excavation difficulty; common fine roots between peds and common medium roots throughout; many fine to coarse low-continuity tubular and common very coarse low-continuity vesicular pores; 5 percent patchy faint reddish yellow (7.5YR 6/6) clay films on vertical faces of peds and 5 percent prominent slickensides (pedogenic) and 5 percent discontinuous distinct white (N 8/0) skeletans on all faces of peds and 15 percent faint clay bridging between sand grains; 3 percent fine distinct reticulate very pale brown (10YR 8/2) clay depletions throughout and 3 percent medium distinct irregular pale brown (10YR 6/3) iron depletions with diffuse boundaries throughout and 3 percent fine distinct cylindrical yellowish red (5YR 4/6) iron-manganese masses throughout and 5 percent coarse and very coarse distinct spherical extremely weakly cemented strong brown (7.5YR 5/6) masses of oxidized iron throughout and 6 percent medium prominent platy weakly cemented red (2.5YR 4/6) plinthite nodules throughout and 10 percent coarse and very coarse distinct spherical light brown (7.5YR 6/4) masses of oxidized iron throughout; 1 percent fine mica flakes along lamina or strata faces and 3 percent fine glauconite pellets throughout and 10 percent medium faint spherical moderately cemented diatoms with clear boundaries throughout and 2 percent fine to coarse dendritic dark brown (10YR 3/3) worm casts at top of horizon; 1 percent flat angular indurated 2- to 150-millimeter ironstone nodules and 5 percent nonflat subrounded indurated 2- to 75-millimeter sandstone fragments; 10 percent stone line and 5 percent lamellae (volume percent); 100 percent stone line and 75 percent lamallae (lateral area percent); negative reaction to alpha-alpha' dipyridyl; electrical conductivity of 2.0 mmhos/cm by colormetric; sodium adsorption ratio of 4.0; very slight effervescence, by HCl, 1 normal; strongly acid, pH 5.3, Hellige-Truog; about 75 percent of the horizon is firm and brittle; gradual smooth boundary.

C--46 to 66 centimeters (18.1 to 26.0 inches); yellowish brown (10YR 5/6) stratified loam to sand; 25 percent clay; massive; firm, moderately cemented by iron, slightly sticky, nonplastic; common fine roots between peds; 3 percent medium distinct irregular pale brown (10YR 6/3) iron depletions with diffuse boundaries throughout and 10 percent coarse and very coarse distinct spherical light brown (7.5YR 6/4) masses of oxidized iron throughout; 2 percent fine to coarse dendritic weakly cemented dark brown (10YR 3/3) durinodes at top of horizon; 5 percent nonflat subrounded indurated 2- to 75-millimeter sandstone fragments; strongly acid, pH 5.3, Hellige-Truog; soil parts on medium plate-like divisions along depositional planes; gradual smooth boundary. Lab sample # 4031003S

Cr--66 to 86 centimeters (26.0 to 33.9 inches); moderately cemented gneiss bedrock, fractured at intervals of 4 to less than 18 inches; moderate excavation difficulty; abrupt wavy boundary.

R--86 centimeters (33.9 inches); bedrock; very strongly cemented; very high excavation difficulty.

Exhibit 5. MO14 - Recommended Order of Soil Features for Pedon Descriptions*

	FBDSS V2 -page-
SOIL HORIZONS--	
Horizon Designation: Ap--	2-2
Depth: 0 to 00 centimeters (0.0 to 00.0 inches);	2-4
Moist Matrix Color: 00 *percent* color-name (hue value/chroma) *and *, dry;*	2-7
Texture: modifier texture,	2-29
Dry Matrix Color: color-name (hue value/chroma) physical state *and*;	2-7
Unrubbed Fiber Content: 00 *percent unrubbed fiber,*	(2-34)
Rubbed Fiber Content: 00 *percent rubbed;*	(2-34)
Sand percent: 00 *percent-sand*;	
Silt percent: 00 *percent-silt*;	
Clay percent: 00 *percent clay*;	
Mottles: 00 *percent* size contrast shape color-name (hue value/chroma) kind *mottles*;	2-9
Structure: grade size type *structure parting to * structure*;	2-41
Consistence--	
dry rupture resistance class: class,	2-50
moist rupture resistance class: class,	2-50
rupture cementation class: class by cementing agent	2-50-51
stickiness: class,	2-53
plasticity: class;	2-53
manner of failure: class;	2-52
toughness: class *toughness;*	(SSM) 179
penetration resistance: class orientation *penetration resistance*;	2-54
excavation difficulty (use if root limiting): class-*excavation difficulty*;	2-55
Roots: quantity-class size-*roots* location *and **;	2-56
Pores: quantity-class size continuity-class *continuity* shape *pores and **;	2-56
Ped and Void Surface Features: 00 *percen*t continuity contrast color-name (hue value/chroma) moisture-state kind location *and **;	2-25
Redoximorphic features--	
depletions: 00 *percent* size contrast shape cementation-class color-name (hue-value/chroma) kind *with* boundary-class-*boundaries* location *and *;*	2-15
concentrations: 00 *percent*-size contrast shape cementation class color-name (hue-value/chroma) kind *with* boundary-class *boundaries* location and *;	2-15
Concentrations: 00 *percent* size contrast shape cementation class color-name (hue-value/chroma) kind moisture-state boundary location and *;	2-18
Fragments (rock, pararock, or wood): 00 *percent* shape roundness cementation-class 00 to 00-*millimeter* kind *fragments*;	2-37
Special Features or Pedon Horizon Features--	
00 *percent* kind *(volume percent);*	2-67
00 *percent* kind *(lateral area percent);*	2-67
Reaction to alpha-alpha'-dipyridyl: positive or negative *reaction to alpha-alpha'-dipyridyl*;	2-72
Soil Odor: sulphurous or petrochemical-*odor;*	2-73
Electrical Conductivity*: electrical conductivity of* 0.0 *mmhos/cm by* method;	2-72
Sodium Adsorption Ratio (SAR): *sodium adsorption ratio of* 0.0;	2-72
Effervescence: effervescence class *effervescence by*, agent;	2-71
Soil Reaction: *reaction-class, pH* 0.0, method;	2-70
Formatted Horizon Notes: additional note;	------
Lower boundary: distinctness topography *boundary*.	2-5
SSL Horizon Sample Number: 0000000S	------
BEDROCK LAYERS--	
Cr--0 to 00 centimeters (0.0 to 00.0 inches); * *bedrock;* cementation-class *cemented; fractured at intervals of* 00 *to less than* 00 *inches;* excavation-difficulty-class *excavation difficulty;* distinctness topography *boundary*.	1-22
R--00 centimeters (00.0 inches); * *bedrock;* cementation-class *cemented; fractured at intervals of* 00 *to less than* 00 *inches;* excavation-difficulty-class *excavation difficulty*.	1-22

*** Based on NASIS (5.1) Pedon Reports.**

Terms in italic are automatically generated by the report.

List of Pedons for MO-14 sorted by Pedon REC ID 10/2003

Pedon REC ID	Date	Site ID	Author	Series	Class
75,809	07/01/1989	89VA127012-1 Johnst		JOHNSTON	modal pedon for map unit
75,814	07/01/1989	89VA127017-1 Nawney		NAWNEY	modal pedon for map unit
75,823	07/01/1989	89VA127026-1 Slagle		SLAGLE	modal pedon for map unit
75,828	07/01/1989	89VA127031-1 Tomotl		TOMOTLEY	modal pedon for map unit
98,215	06/17/1991	Ackwater	R.L. Hodges	Peawick	modal pedon for series
98,270	05/24/1990	Bibb	R.L. Hodges	Bibb	modal pedon for series
98,286	11/14/1991	Bohicket	R.L. Hodges	Bohicket	modal pedon for series
98,287	03/22/1989	Bolling	R.L. Hodges	Tetotum	modal pedon for series
98,291	05/01/1989	Burrowsville	R.L. Hodges	Savannah	modal pedon for series
98,295	05/05/1988	Caroline	R.L. Hodges	Mattaponi	modal pedon for series
98,312	04/27/1990	Chickahominy	R.L. Hodges	Chickahominy	modal pedon for series
98,316	07/15/1981	Chipley	W.F. Kitchel	Chipley	modal pedon for series
98,325	04/25/1991	Craven	P.J. Thomas	Craven	modal pedon for series
98,330	03/13/1988	Dogue	R.L. Hodges	Dogue	modal pedon for series
98,344	03/24/1991	Emporia	R.L. Hodges	Emporia	modal pedon for series
98,345	03/21/1989	Emporia gravelly	R.L. Hodges	Emporia gravelly	modal pedon for map unit
98,346	04/15/1991	Craven eroded	R.L. Hodges	Craven eroded	modal pedon for map unit
98,347	03/22/1989	Exum	R.L. Hodges	Exum	modal pedon for series
98,349	10/03/1987	Jedburg	R.L. Hodges	Yemassee	modal pedon for series
98,352	03/12/1989	Kempsville	R.L. Hodges	Kempsville	modal pedon for series
98,353	03/12/1989	Kenansville	R.L. Hodges	Kenansville	modal pedon for series
98,354	01/30/1991	Kinston	R.L. Hodges	Kinston	modal pedon for series
98,355	02/02/1991	Lakeland	R.L. Hodges	Lakeland	modal pedon for series
98,360	04/12/1989	Lawnes	R.L. Hodges	Lawnes	typical pedon for series
98,364	07/15/1981	Leon	W.F. Kitchel	Leon	modal pedon for series
98,368	03/16/1990	Levy	R.L. Hodges	Levy	modal pedon for series
98,372	05/22/1989	Montross	R.L. Hodges	Montross	modal pedon for series
98,373	07/15/1991	Nahunta	R.L. Hodges	Chapanoke	modal pedon for series
98,409	02/10/1992	Nansemond	R.L. Hodges	Nansemond	modal pedon for series
98,410	07/15/1981	Nawney	W.F. Kitchel	Nawney	modal pedon for series
98,411	03/16/1990	Nevarc	R.L. Hodges	Nevarc	modal pedon for series
98,412	06/23/1989	Newflat	R.L. Hodges	Newflat	modal pedon for series
98,419	07/12/1988	Pamunkey	R.L. Hodges	Pamunkey	modal pedon for series
98,420	01/28/1991	Rains	R.L. Hodges	Myatt	modal pedon for series
98,422	11/10/1990	Remlik	R.L. Hodges	Remlik	modal pedon for series
98,425	05/02/1989	Rumford	R.L. Hodges	Suffolk	modal pedon for series
98,426	08/24/1991	Slagle	R.L. Hodges	Slagle	modal pedon for series
98,427	06/23/1990	Tetotum	R.L. Hodges	Altavista	outside range of series
98,429	05/22/1989	Uchee	R.L. Hodges	Uchee	modal pedon for series
98,471	07/05/1988	S88NC-171-7-5-88#1	Roger Leab	Pacolet	modal pedon for series
98,812	08/03/1999	1999USMD003009-Wist	E. Earles and	Collington, wet sub	typical pedon for series

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Pedon REC ID	Date	Site ID	Author	Series	Class
98,846	07/05/1988	S88NC-171-7-5-88#1	Roger Leab	Pacolet	typical pedon for series
99,142	06/14/1990	Cecil			
99,335	09/14/1988	88-VA025-3 Mattapon	Susan Hoey	Mattaponi	modal pedon for series
99,336	06/25/1996	96-VA025-18 Georgev	John David Har	Georgeville	modal pedon for series
99,337	07/19/1998	98-VA025-21 Ashlar	John David Har	Ashlar	modal pedon for series
99,574	08/21/2000	00-VA025-33 Iredell	John David Har	Iredell	modal pedon for series
99,575	06/14/1990	90-VA025-1 Cecil	Joanne Dixon	Cecil	modal pedon for series
99,576	11/22/1999	99-VA025-27 Madison	John David Har	Madison	modal pedon for series
99,689	05/18/2000	00-VA025-30 Turbev	John David Har	Turbeville	modal pedon for series
99,690	09/14/1988	88-VA025-2 Appling	Susan Hoey	Appling	modal pedon for series
99,691	04/10/1990	90-VA025-5 Helena	Joanne Dixon	Helena	modal pedon for series
99,692	09/30/1997	97-VA025-20 Wedowe	John David Har	Wedowee	modal pedon for series
99,937	08/29/1987	VA117-Abell	B. Stoneman		
99,938	08/29/1987	VA117-Altavista	B. Stoneman		
99,939	08/29/1987	VA117-Appling	B. Stoneman		
99,940	08/29/1987	VA117-Buncombe	B. Stoneman		
99,941	08/29/1987	VA117-Cecil	B. Stoneman		
99,942	08/29/1987	VA117-Chewacla	B. Stoneman		
99,943	08/29/1987	VA117-Congaree	B. Stoneman		
99,944	08/29/1987	VA117-Cullen	B. Stoneman		
99,945	08/29/1987	VA117-Enott	B. Stoneman		
99,946	08/29/1987	VA117-Georgeville	B. Stoneman		
99,947	08/29/1987	VA117-Goldston	B. Stoneman		
99,948	08/29/1987	VA117-Helena	B. Stoneman		
99,949	08/29/1987	VA117-Herndon	B. Stoneman		
99,950	08/29/1987	VA117-Hiwassee	B. Stoneman		
99,951	08/29/1987	VA117-Iredell	B. Stoneman		
99,952	08/29/1987	VA117-Louisburg	B. Stoneman		
99,953	08/29/1987	VA117-Masada	B. Stoneman		
99,954	08/29/1987	VA117-Mattaponi	B. Stoneman		
99,955	08/29/1987	VA117-Nason	B. Stoneman		
99,956	08/29/1987	VA117-Orange	B. Stoneman		
99,957	08/29/1987	VA117-Pacolet	B. Stoneman		
99,958	08/29/1987	VA117-Tatum	B. Stoneman		
99,959	08/29/1987	VA117-Toccoa	B. Stoneman		
99,960	08/29/1987	VA117-Wedowee	B. Stoneman		
99,961	08/29/1987	VA117-Wehadkee	B. Stoneman		
99,962	08/29/1987	VA117-Worsham	B. Stoneman		
99,990	09/29/1998	HERNDON-VA083_TP	H. Gillispie	Hendon	modal pedon for series
99,992	06/01/1993	GEORGEVILLE_VA083_T	H. Gillispie	Georgeville	modal pedon for series
99,998	09/23/1998	BADIN_VA083_TP	D. EASTHAM	Badin	modal pedon for series

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Pedon REC ID	Date	Site ID	Author	Series	Class
108,230	12/03/1999	99-VA025-29 Appling	John David Har	Appling	
111,441	08/14/2000	00-VA025-37 Wedowe	John David Har	Wedowee	
111,442	08/03/2000	00-VA025-31 Wedowe	John David Har	Wedowee	
111,453	09/27/1994	94-VA025-16 Helena	Joanne Dixon	Helena	
111,477	09/03/1995	95-VA025-19 Ashlar	John David Har	Ashlar	
111,479	07/21/1998	98-VA025-23 Rion	John David Har	Rion	modal pedon for series
111,487	08/03/2000	00-VA025-34 Iredell	John David Har	Iredell	
111,489	07/02/2001	01-VA025-47 Mattapo	John David Har	Mattaponi	
111,490	11/29/1999	99-VA025-28 Madison	John David Har	Madison	
111,491	09/21/1990	90-VA025-8 Cecil	Joanne Dixon	Cecil	
111,533	08/21/2000	00-VA025-38 Worsham	John David Har	Worsham	modal pedon for series
111,534	06/12/1990	90-VA025-4 Santuc	Joanne Dixon	Santuc	modal pedon for series
111,535	09/16/1992	92-VA025-11 Wehadke	Joanne Dixon	Wehadkee	modal pedon for series
111,652	04/02/1998	Colvard			
112,688	12/13/2001	NATHALIE_VA083_TP	D. EASTHAM	Nathalie	typical pedon for series
112,689	12/13/2001	JACKLAND_VA083_TP	D. EASTHAM	Jackland	modal pedon for series
112,690	12/13/2001	BENTLEY_VA083_TP	G. HAMMER	Bentley	typical pedon for series
112,691	12/13/2001	HATBORO_VA083_TP	D. EASTHAM	Hatboro	modal pedon for series
112,692	12/13/2001	RHODHISS_VA083_TP	D. EASTHAM	Rhodhiss	modal pedon for series
112,694	12/13/2001	TURBEVILLE_VA083_TP	D. EASTHAM	Turbeville	modal pedon for series
112,695	12/13/2001	DELILA_VA083_TP	D. EASTHAM	Delila	typical pedon for series
112,696	12/13/2001	CLIFFORD_VA083_TP	H. GILLISPIE	Clifford	modal pedon for series
112,742	12/17/2001	FAIRVIEW_VA083_TP	D. EASTHAM	Fairview	modal pedon for series
112,747	12/17/2001	TOAST_VA083_TP	D. EASTHAM	Toast	modal pedon for series
113,116	01/08/2002	DAN RIVER_VA083_TP	D. EASTHAM	Dan River	typical pedon for series
113,117	01/08/2002	ORANGE_VA083_TP	D. EASTHAM	Orange	modal pedon for series
113,118	01/08/2002	CLOVER VA083	H. GILLISPIE	Clover	typical pedon for series
113,119	01/08/2002	CODORUS_VA083_TP	D. EASTHAM	Codorus	modal pedon for series
113,120	01/08/2002	LACKSTOWN_VA083_TP	H. GILLISPIE	Lackstown	typical pedon for series
113,121	01/08/2002	COMUS_VA083_TP	D. EASTHAM	Comus	modal pedon for series
113,122	01/08/2002	GOLDSTON_VA083_TP	D. EASTHAM	Goldston	modal pedon for series
113,123	01/08/2002	NANFORD_VA083_TP	D. EASTHAM	Nanford	modal pedon for series
113,124	01/08/2002	TARRUS_VA083_TP	D. EASTHAM	Tarrus	modal pedon for series
113,125	01/08/2002	SPRIGGS_VA083_TP	D. EASTHAM	Spriggs	modal pedon for series
113,126	01/08/2002	DANRIPPLE_VA083_TP	D. EASTHAM	Danripple	typical pedon for series
113,127	01/08/2002	MINNIEVILLE_VA083_T	H. GILLISPIE	Minnieville	modal pedon for series
113,128	01/08/2002	OAK LEVEL_VA083_TP	D. EASTHAM	Oak Level	typical pedon for series
113,419	08/28/1990	90-VA025-9 Chewacla	Joanne Dixon	Chewacla	modal pedon for series
113,427	04/10/1991	91-VA025-7 Emporia	Joanne Dixon	Emporia	modal pedon for series
113,435	07/06/2001	01-VA025-42 Tatum	John David Har	Tatum	modal pedon for series

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Pedon REC ID	Date	Site ID	Author	Series	Class
113,436	07/06/2001	01-VA025-41 Badin	John David Har	Badin	
113,528	11/26/2001	HALIFAX_VA083_OLD_T	D. EASTHAM	Halifax	within range of series
114,220	05/11/2000	VA029003 Diana Mill	WFK HTS MHC	Diana Mills	
114,223	08/13/1978	acre-VA550	Danny Hatch "D		
114,229	10/19/1988	S88VA-063-3-Hayesvi		Hayesville	
114,232	01/31/2002	DEVOTION-VA083_TP	H GILLISPIE	Devotion	modal pedon for series
114,236	04/11/2003	Acredale-VA550		Acredale	
114,326	02/05/2002	RASALO_VA083_TP	D. EASTHAM	RASALO	typical pedon for series
114,327	02/05/2002	WOLFTRAP_VA083_TP	H. GILLISPIE	WOLFTRAP	typical pedon for series
114,328	02/05/2002	VIRGILINA_VA083_TP	D. EASTHAM	VIRGILINA	typical pedon for series
114,329	02/05/2002	STRAIGHTSTONE_VA083	H. GILLISPIE	STRAIGHTSTONE	typical pedon for series
114,330	02/05/2002	MONTONIA_VA083_TP	D. EASTHAM	MONTONIA	modal pedon for series
114,331	02/05/2002	EASTHAMLET_VA083_TP	D. EASTHAM	EASTHAMLET	typical pedon for series
114,332	02/05/2002	CID_VA083_TP	D. EASTHAM	CID	modal pedon for series
114,333	04/29/2002	POINDEXTER_VA083_TP	D. EASTHAM	Poindexter	modal pedon for series
114,334	02/05/2002	APPOMATTOX_VA083_TP	D. EASTHAM	APPOMATTOX	modal pedon for series
114,459	06/26/2001	01-VA025-52 Badin	John David Har	Badin	modal pedon for series
114,460	07/03/2001	01-VA025-49 Georgev	John David Har	Georgeville	
114,461	07/03/2001	01-VA025-50 Mattapo	John David Har	Mattaponi	
114,546	06/09/1999	99-VA025-54 Cecil,s	Tiffany Smith	Cecil	
114,547	02/04/2002	02-VA025-53 Enon	John David Har	Enon	
114,691	10/19/1988	S88VA-063-3-Hayesvi		Hayesville	
115,341	03/04/2002	Rhodhiss	D. EASTHAM	Rhodhiss	within range of series
115,343	03/04/2002	BANISTER_TP_VA083	D. EASTHAM	Banister	typical pedon for series
115,344	03/04/2002	KIKORA_TP_VA083_TP	D. EASTHAM	Kinkora	modal pedon for series
115,585	03/10/2002	HALIFAX_VA083_TP	H. Gillispie	Halifax	typical pedon for series
115,602	03/11/2002	02-VA025-57 Ashlar	John David Har	Ashlar	
115,603	03/11/2002	02-VA025-56 Rion	John David Har	Rion	
115,604	03/11/2002	02-VA025-55 Rion	John David Har	Rion	
115,695	03/14/2002	02-VA025-58 Herndon	John David Har	Herndon	
115,710	03/18/2002	02-VA025-59 Goldsto	John David Har	Goldston	modal pedon for series
116,173	03/25/2002	02-VA025-60 Georgev	John David Har	Georgeville	
116,174	03/25/2002	02-VA025-61 Herndon	John David Har	Herndon	modal pedon for series
116,179	09/16/1992	WEHADKEE_VA083_TP	Joanne Dixon	WEHADKEE	modal pedon for series
116,181	03/28/2002	02-VA025-62 Rivervi	John David Har	Riverview	modal pedon for series
116,182	08/28/1990	CHEWACLA-VA083-TP	Joanne Dixon	CHEWACLA	modal pedon for series
116,186	07/02/2001	MATTAPONI_VA083_TP	Susan Hoey	Mattaponi	modal pedon for series
116,187	05/18/2000	TURBEVILLE_TP_THERM	John David Har	Turbeville	modal pedon for series
116,253	04/04/2002	02-VA025-62 Pacolet	John David Har	Pacolet	modal pedon for series
116,316	04/15/2002	2002USNJ015002-Glas	Scott Keenan	Glassboro	typical pedon for series
116,352	11/16/1999	2002USNJ015001-Aura	Scott Keenan	Aura	typical pedon for series

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Pedon REC ID	Date	Site ID	Author	Series	Class
116,372	04/15/2002	2002USNJ005001-Budd	Scott Keenan	Buddtown	typical pedon for series
116,374	04/22/2002	2002USNJ007001-Dept	Scott Keenan	Deptford	typical pedon for series
116,585	04/22/2002	2002USNJ005002-Jade	Scott Keenan	Jaderun	typical pedon for series
116,586	04/22/2002	2002USNJ015003-Quak	Scott Keenan	Quakerbridge	typical pedon for series
116,593	04/23/2002	02-VA025-63 Goldsto	John David Har	Goldston	
116,855	05/09/2002	2002USMD039001-Anne	Susan Demas	Annemessex	typical pedon for series
116,858	08/23/2001	2000USMD041021-Cros	Carla Baker	Crosiadore	typical pedon for series
116,860	01/18/2002	2002USMD039675-Quin	Susan Y. Demas	Quindocqua	typical pedon for series
116,861	05/09/2002	2002USMD045001-Rock	Jim Brewer	Rockawalkin	typical pedon for series
116,862	05/09/2002	2002USMD041002-Zeki	Jim Brewer	Zekiah	typical pedon for series
117,010	05/06/2002	02-NC185 GEORGEVILL	BARRY WARD	Georgeville	
117,014	05/06/2002	02-NC185 GEORGEVILL	BARRY WARD	Georgeville	
117,031	08/21/2000	2002USVA025033-Ired	John David Har	Iredell	
117,037	05/16/2002	02-NC185 Herndon	Barry Ward	Herndon	
117,140	05/14/2002	02-NC185 Mandale	Barry Ward	Mandale	
117,179	02/01/2002	2002USNC033001	david clapp	Casville	within range of map unit
117,184	05/29/2002	2002USNC001001-Alph	John Kelley	Alpha-OSD	typical pedon for series
117,315	06/04/2002	2002USMD003001-Issu	Susan Davis	Issue	
117,319	06/04/2002	2002USMD003001-Wide	Susan Davis	Widewater	
117,323	06/04/2002	2002USDE005001-Salt	Phil King	Saltpond	
117,358	06/04/2002	2002USNC097001-Ired	Robert Ranson	Iredell	modal pedon for series
117,538	04/26/2001	2002USNC033002	david clapp	Fairview	modal pedon for map unit
117,566	06/10/2002	2002USN015001-Marl	Scott Keenan	Marlton	
117,596	06/11/2002	2002USNJ029001-Phal	Scott Keenan	Phalanx	
117,604	06/11/2002	2002USNJ015001-Kres	Scott Keenan	Kresson	
117,608	06/11/2002	2002USNJ009001-Swai	Scott Keenan	Swainton	
117,627	06/13/2002	2002USNJ005001-Tint	Unknown	Tinton	typical pedon for series
117,793	05/24/2002	02-NC185 Mattaponi	Barry Ward	Mattaponi	
117,809	10/13/1995	02-NC185 Cecil	Clare Cole	Cecil	
117,836	06/24/2002	89-VA067-003-Elsinb		Elsinboro	within range of series
117,876	06/24/2002	98-VA067-012-Maggod		Maggodee	within range of series
118,099	05/18/1998	02-NC185 Appling	Barry Ward	Appling	
118,311	07/18/2002	02-NC185 Pacolet	Barry Ward	Pacolet	
118,503	11/02/1998	02-NC185 Chewacla	Barry Ward		
119,478	11/02/1998	02-NC185 Wehadkee	Barry Ward	Wehadkee	
119,480	05/15/1998	02-NC185 Helena	Barry Ward	Helena	
119,486	05/19/1998	02-NC185 Wedowee	Barry Ward	Wedowee	
128,267	06/05/1989	SC091-Cecil	Ed Herren/Emor	Cecil	
128,276	05/19/1998	02-NC185 Wedowee	Barry Ward	Wedowee	
128,281	05/18/2000	02-NC185 Turbeville	Barry Ward	Turbeville	

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128,449	05/06/1987	SC091-Pacolet	Ed Herren	Pacolet	
128,530	10/02/2002	LIGNUM_VA083_TP		LIGNUM	modal pedon for series
128,532	10/02/2002	APPOMATTOX_VA083_TP	H. GILLISPIE	Appomattox	modal pedon for series
128,533	10/02/2002	MEADOWS_VA083_TP		MEADOWS	typical pedon for series
128,534	08/29/1987	MASADA_VA083_TP		MASADA	modal pedon for series
128,535	08/29/1987	Toccoa_VA083_TP	D. HARPER	Toccoa	modal pedon for series
128,536	10/02/2002	PINKSTON_VA083_TP		Pinkston	modal pedon for series
128,537	10/02/2002	STONEVILLE_VA083_TP		STONEVILLE	modal pedon for series
128,551	10/02/2002	RIVERVIEW_VA083_TP	John David Har	RIVERVIEW	modal pedon for series
128,553	10/02/2002	DOGUE_VA083_TP	D. EASTHAM	Dogue	modal pedon for series
128,567	05/13/1998	CLIFFORD_VA083_TP_E	D. EASTHAM	Clifford	modal pedon for map unit
128,569	03/01/2000	MINNIEVILLE_VA083_T	D. EASTHAM	Minnieville	modal pedon for map unit
128,633	11/13/2000	TURBEVILLE_VA083_TP	H. GILLISPIE	Turbeville	modal pedon for map unit
129,508	11/20/2002	2002USNC097001-Chew	Milton Martine	Chewacla	typical pedon for series
129,943	11/22/2002	2002USNC097001-Minn	Milton Martine		
130,373	12/16/2002	Calverton-OSD	JHE-DDR	Calverton	typical pedon for series
130,485	12/13/2001	Nathalie-OSD	D. EASTHAM	Nathalie	typical pedon for series
130,492	07/16/1992	02-VA059-02 Codorus	JG/DH	Codorus	typical pedon for series
130,505	06/11/1991	02-VA059-01 Glenelg	JMG/ACB/ELC	Glenelg	typical pedon for series
130,517	02/16/1988	02-VA059-03 Kelly	RJ	Kelly	typical pedon for series
130,551	07/11/1992	02-VA059-04 Hatboro	JG/MF	Hatboro	typical pedon for series
130,552	02/05/1988	02-VA059-05 Manassa	Loudoun	Manassas	typical pedon for series
130,553	12/18/2002	Jackland-OSD	Garland Robert	Jackland	
130,554	08/21/2000	02-VA059-06 Worsham	John David Har	Worsham	
130,604	12/23/2002	Beltsville-OSD	JAK	Beltsville	
130,608	12/23/2002	Bowmansville-OSD	ACB,RRD	Bowmansville	typical pedon for series
130,627	06/09/1995	02-VA059-07 Bowmans	ACS/MDF	Bowmansville	typical pedon for series
130,634	12/23/2002	Brecknock-OSD	EJM-EAW	Brecknock	typical pedon for series
130,650	12/23/2002	Bermudian-OSD	EJM-EAW	Bermudian	typical pedon for series
130,669	07/12/2000	02-VA059-08 Bucks	jhs	Bucks	
130,670	07/14/2000	02-VA059-09 Bucks	jhs	Bucks	
130,671	03/07/1995	02-VA059-10 Bucks	jhs	Bucks	
130,672	12/17/1899	02-VA059-11 Bucks	jhs	Bucks	
130,673	12/26/2002	Catlett-OSD	RSW-JHE-DDR	Catlett	typical pedon for series
130,927	03/07/1988	02-VA059-12 Catlett	RJ	Catlett	within range of series
130,928	01/02/2003	Croton-OSD	CFE-MLM-MJL	Croton	modal pedon for series
130,931	01/02/2003	Elbert-OSD	ACB-RRD	Elbert	modal pedon for series
130,936	01/02/2003	Birdsboro-OSD	EJM-EAW	Birdsboro	typical pedon for series
130,977	01/06/2003	Elkton-OSD	JAK	Elkton	modal pedon for series
130,981	01/06/2003	Galestown-OSD	JEB/Rev. JAK	Galestown	typical pedon for series
131,020	02/05/2002	Rasalo-OSD	D. EASTHAM	RASALO	typical pedon for series

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131,022	02/01/1974	02-VA059-13 Fairfax		FAIRFAX	modal pedon for map unit
131,062	01/08/2003	Glenville-OSD	BHS-GHL	Glenville	modal pedon for series
131,063	01/08/2002	Oak Level-OSD	D. EASTHAM	Oak Level	typical pedon for series
131,066	07/01/1978	02-VA059-14 Lenoir	rag-enh	LENOIR	modal pedon for map unit
131,202	12/07/2002	2002FNCN001001	John Kelley	Bolou-001	modal pedon for map unit
131,281	01/15/2003	Huntington-OSD	LDS-WFH	Huntington	typical pedon for series
131,288	01/15/2003	Lloyd-OSD	RLV	Lloyd	typical pedon for series
131,414	01/21/2003	Louisburg-OSD	RLV	Louisburg	typical pedon for series
131,509	12/07/2002	2002FNCN001003	John Kelley	Bolou-003	modal pedon for map unit
131,518	12/08/2002	2002FNCN001004	John Kelley	Bolou-004	modal pedon for map unit
131,626	12/08/2002	2002FNCN001005	John Kelley	Bolou-005	modal pedon for map unit
131,629	12/09/2002	2002FNCN001006	John Kelley	Bolou-006	modal pedon for map unit
131,630	12/09/2002	2002FNCN001007	John Kelley	Bolou-007	modal pedon for map unit
131,631	12/11/2002	2002FNCN001008	John Kelley	Xinxing-008	modal pedon for map unit
131,705	01/27/2000	2003USYS001001-Clif	John Kelley	Clifford	modal pedon for series
131,995	12/11/2002	2002FNCN001009	John Kelley	Xinxing-009	modal pedon for map unit
132,000	12/12/2002	2002FNCN001010	John Kelley	Xinxing-010	modal pedon for map unit
132,045	12/12/2002	2002FNCN001011	John Kelley	Xinxing-011	modal pedon for map unit
132,046	12/12/2002	2002FNCN001012	John Kelley	Xinxing-012	modal pedon for map unit
132,072	07/01/1978	78VA041002-1 Applin		APPLING	within range of map unit
132,073	07/01/1978	78VA041049-1 Wedowe		WEDOWEE	within range of map unit
132,074	07/01/1978	78VA041010-1 Colfax		COLFAX	within range of map unit
132,078	07/01/1978	78VA041030-1 Masada		MASADA	within range of map unit
132,079	07/01/1978	78VA041045-1 Turbev		TURBEVILLE	within range of map unit
132,081	07/01/1978	78VA041028-1 Watere		WATEREE	within range of map unit
132,095	10/02/2002	75VA087037-1 Riverv		RIVERVIEW	modal pedon for series
132,108	07/01/1978	78VA041025-1 Kempsv		KEMPSVILLE	modal pedon for map unit
132,160	07/01/1978	78VA041001-1 Abell		ABELL	modal pedon for map unit
132,161	07/01/1978	78VA041002-2 Applin		APPLING	modal pedon for map unit
132,162	07/01/1978	78VA041003-1 Atlee		ATLEE	modal pedon for map unit
132,163	07/01/1978	78VA041004-1 August		AUGUSTA	modal pedon for map unit
132,164	07/01/1978	78VA041005-1 Bourne		BOURNE	modal pedon for map unit
132,165	07/01/1978	78VA041007-1 Cecil		CECIL	modal pedon for map unit
132,166	07/01/1978	78VA041008-1 Chasta		CHASTAIN	modal pedon for map unit
132,167	07/01/1978	78VA041009-1 Chewac		CHEWACLA	modal pedon for map unit
132,168	07/01/1978	78VA041010-2 Colfax		COLFAX	modal pedon for map unit
132,169	07/01/1978	78VA041016-1 Dogue		DOGUE	modal pedon for map unit
132,170	07/01/1978	78VA041017-1 Dunbar		DUNBAR	modal pedon for map unit
132,171	07/01/1978	78VA041018-1 Durham		DURHAM	modal pedon for map unit
132,172	07/01/1978	78VA041019-1 Edgehi		EDGEHILL	modal pedon for map unit

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132,173	07/01/1978	78VA041021-1 Facevi		FACEVILLE	modal pedon for map unit
132,174	07/01/1978	78VA041023-1 Gritne		GRITNEY	modal pedon for map unit
132,175	07/01/1978	78VA041024-1 Grover		GROVER	modal pedon for map unit
132,176	07/01/1978	78VA041025-2 Kempsv		KEMPSVILLE	modal pedon for map unit
132,178	07/01/1978	78VA041030-2 Masada		MASADA	modal pedon for map unit
132,179	07/01/1978	78VA041033-1 Norfol		NORFOLK	modal pedon for map unit
132,180	07/01/1978	78VA041035-1 Orange		ORANGEBURG	modal pedon for map unit
132,181	07/01/1978	78VA041038-1 Pounce		POUNCEY	modal pedon for map unit
132,182	07/01/1978	78VA041039-1 Roanok		ROANOKE	modal pedon for map unit
132,183	07/01/1978	78VA041043-1 Tetotu		TETOTUM	modal pedon for map unit
132,184	07/01/1978	78VA041044-1 Toccoa		TOCCOA	modal pedon for map unit
132,185	07/01/1978	78VA041045-2 Turbev		TURBEVILLE	modal pedon for map unit
132,186	07/01/1978	78VA041047-1 Varina		VARINA	modal pedon for map unit
132,187	07/01/1978	78VA041049-2 Wedowe		WEDOWEE	modal pedon for map unit
132,188	07/01/1978	78VA041050-1 Worsha		WORSHAM	modal pedon for map unit
132,298	02/04/2003	Manor-OSD	WDC	MANOR	typical pedon for series
132,356	05/11/1994	1994USNC171001-Arka	Roger Leab - D	Chewacla	modal pedon for series
133,227	04/21/2003	Matapeake-01	GCR	Matapeake	typical pedon for series
133,260	02/24/2003	Montalto-OSD	Rev. WDC	Montalto	typical pedon for series
133,266	02/24/2003	Sassafras-OSD	JEB/Rev. JAK	Sassafras	typical pedon for series
133,431	02/26/2003	Wickham-OSD	Rev.AG	Wickham	typical pedon for series
133,524	10/04/2001	Oak Level_VA083_ERO	H. GILLISPIE	Oak Level	modal pedon for map unit
133,541	08/11/1998	SC091-Hard Labor	Emory Holsonba	Hard Labor	
134,555	04/09/2003	2003USNC71001001-Si	R. Leab-D. Cla	Siloam	typical pedon for series
134,572	08/13/1978	acre-VA550			
134,578	04/11/2003	Yeopim-VA550		Yeopim	
134,579	04/11/2003	Weeksville-VA550			
134,580	04/11/2003	Wando-VA550			
134,581	04/11/2003	Tomotley-VA550			
134,582	04/11/2003	Tetotum-VA550			
134,583	04/11/2003	Roanoke-VA550			
134,584	04/11/2003	Rappahannock-VA550			
134,585	04/11/2003	Pungo-VA550			
134,586	04/11/2003	Portsmouth-VA550			
134,587	04/11/2003	Pocaty-VA550			
134,588	04/11/2003	Pasquotank-VA550			
134,589	04/11/2003	Pactolus-VA550			
134,590	04/11/2003	Nimmo-VA550			
134,591	04/11/2003	Nawney-VA550			
134,592	04/11/2003	Munden-VA550			
134,593	04/11/2003	Hyde-VA550			

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Pedon REC ID	Date	Site ID	Author	Series	Class
134,594	04/11/2003	Dragston-VA550			
134,595	04/11/2003	Dorovan-VA550			
134,596	04/11/2003	Deloss-VA550			
134,597	04/11/2003	Conetoe-VA550			
134,598	04/11/2003	Chesapeake-VA550			
134,599	04/11/2003	Chapanoke-VA550			
134,600	04/11/2003	Cape Fear-VA550			
134,601	04/11/2003	Bojac-VA550			
134,602	04/11/2003	Bertie-VA550			
134,603	04/11/2003	Belhaven-VA550			
134,604	04/11/2003	Arapahoe-VA550			
134,605	04/11/2003	Altavista-VA550			
134,912	07/01/1978	78VA041047-1 Udorth		UDORTHENTS	modal pedon for map unit
135,094	05/05/2003	Woodstown-OSD	JEB-WDC/Rev. J	Woodstown	typical pedon for series
135,107	05/06/2003	Mattapex-OSD	JEB/Rev. JAK	Mattapex	typical pedon for series
135,421	02/05/2002	APPOMATTOX_VA083_TP	D. EASTHAM	APPOMATTOX	modal pedon for series
135,422	10/02/2002	APPOMATTOX_VA083_TP	H. GILLISPIE	Appomattox	modal pedon for series
135,423	09/23/1998	BADIN_VA083_TP	D. EASTHAM	Badin	modal pedon for series
135,424	03/04/2002	BANISTER_TP_VA083	D. EASTHAM	Banister	typical pedon for series
135,425	12/13/2001	BENTLEY_VA083_TP	G. HAMMER	Bentley	typical pedon for series
135,426	08/28/1990	CHEWACLA-VA083-TP	Joanne Dixon	CHEWACLA	modal pedon for series
135,427	02/05/2002	CID_VA083_TP	D. EASTHAM	CID	modal pedon for series
135,428	05/13/1998	CLIFFORD_VA083_TP_E	D. EASTHAM	Clifford	modal pedon for map unit
135,429	12/13/2001	CLIFFORD_VA083_TP	H. GILLISPIE	Clifford	modal pedon for series
135,430	01/08/2002	CLOVER VA083	H. GILLISPIE	Clover	typical pedon for series
135,431	01/08/2002	CODORUS_VA083_TP	D. EASTHAM	Codorus	modal pedon for series
135,432	01/08/2002	COMUS_VA083_TP	D. EASTHAM	Comus	modal pedon for series
135,433	01/08/2002	DAN RIVER_VA083_TP	D. EASTHAM	Dan River	typical pedon for series
135,434	01/08/2002	DANRIPPLE_VA083_TP	D. EASTHAM	Danripple	typical pedon for series
135,435	12/13/2001	DELILA_VA083_TP	D. EASTHAM	Delila	typical pedon for series
135,436	01/31/2002	DEVOTION-VA083_TP	H GILLISPIE	Devotion	modal pedon for series
135,437	10/02/2002	DOGUE_VA083_TP	D. EASTHAM	Dogue	modal pedon for series
135,438	02/05/2002	EASTHAMLET_VA083_TP	D. EASTHAM	EASTHAMLET	typical pedon for series
135,439	12/17/2001	FAIRVIEW_VA083_TP	D. EASTHAM	Fairview	modal pedon for series
135,440	06/01/1993	GEORGEVILLE_VA083_T	H. Gillispie	Georgeville	modal pedon for series
135,441	01/08/2002	GOLDSTON_VA083_TP	D. EASTHAM	Goldston	modal pedon for series
135,442	03/10/2002	HALIFAX_VA083_TP	H. Gillispie	Halifax	typical pedon for series
135,443	12/13/2001	HATBORO_VA083_TP	D. EASTHAM	Hatboro	modal pedon for series
135,444	09/29/1998	HERNDON-VA083_TP	H. Gillispie	Hendon	modal pedon for series
135,445	12/13/2001	JACKLAND_VA083_TP	D. EASTHAM	Jackland	modal pedon for series

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135,446	03/04/2002	KIKORA_TP_VA083_TP	D. EASTHAM	Kinkora	modal pedon for series
135,447	01/08/2002	LACKSTOWN_VA083_TP	H. GILLISPIE	Lackstown	typical pedon for series
135,448	10/02/2002	LIGNUM_VA083_TP		LIGNUM	modal pedon for series
135,449	08/29/1987	MASADA_VA083_TP		MASADA	modal pedon for series
135,450	07/02/2001	MATTAPONI_VA083_TP	Susan Hoey	Mattaponi	modal pedon for series
135,451	10/02/2002	MEADOWS_VA083_TP		MEADOWS	typical pedon for series
135,452	01/08/2002	MINNIEVILLE_VA083_T	H. GILLISPIE	Minnieville	modal pedon for series
135,453	03/01/2000	MINNIEVILLE_VA083_T	D. EASTHAM	Minnieville	modal pedon for map unit
135,454	02/05/2002	MONTONIA_VA083_TP	D. EASTHAM	MONTONIA	modal pedon for series
135,455	01/08/2002	NANFORD_VA083_TP	D. EASTHAM	Nanford	modal pedon for series
135,456	12/13/2001	NATHALIE_VA083_TP	D. EASTHAM	Nathalie	typical pedon for series
135,457	01/08/2002	OAK LEVEL_VA083_TP	D. EASTHAM	Oak Level	typical pedon for series
135,458	01/08/2002	ORANGE_VA083_TP	D. EASTHAM	Orange	modal pedon for series
135,459	10/02/2002	PINKSTON_VA083_TP		Pinkston	modal pedon for series
135,460	04/29/2002	POINDEXTER_VA083_TP	D. EASTHAM	Poindexter	modal pedon for series
135,461	02/05/2002	RASALO_VA083_TP	D. EASTHAM	RASALO	typical pedon for series
135,462	12/13/2001	RHODHISS_VA083_TP	D. EASTHAM	Rhodhiss	modal pedon for series
135,463	10/02/2002	RIVERVIEW_VA083_TP	John David Har	RIVERVIEW	modal pedon for series
135,464	01/08/2002	SPRIGGS_VA083_TP	D. EASTHAM	Spriggs	modal pedon for series
135,465	10/02/2002	STONEVILLE_VA083_TP		STONEVILLE	modal pedon for series
135,466	02/05/2002	STRAIGHTSTONE_VA083	H. GILLISPIE	STRAIGHTSTONE	typical pedon for series
135,467	01/08/2002	TARRUS_VA083_TP	D. EASTHAM	Tarrus	modal pedon for series
135,468	12/17/2001	TOAST_VA083_TP	D. EASTHAM	Toast	modal pedon for series
135,469	08/29/1987	Toccoa_VA083_TP	D. HARPER	Toccoa	modal pedon for series
135,470	12/13/2001	TURBEVILLE_VA083_TP	D. EASTHAM	Turbeville	modal pedon for series
135,471	11/13/2000	TURBEVILLE_VA083_TP	H. GILLISPIE	Turbeville	modal pedon for map unit
135,472	05/18/2000	TURBEVILLE_TP_THERM	John David Har	Turbeville	modal pedon for series
135,473	02/05/2002	VIRGILINA_VA083_TP	D. EASTHAM	VIRGILINA	typical pedon for series
135,474	09/16/1992	WEHADKEE_VA083_TP	Joanne Dixon	WEHADKEE	modal pedon for series
135,475	02/05/2002	WOLFTRAP_VA083_TP	H. GILLISPIE	WOLFTRAP	typical pedon for series
135,656	05/12/2003	Woodstown-01	GCR	Woodstown	typical pedon for series
135,682	02/20/2003	Matapeake-OSD	WDC-JEB/Rev. J	Matapeake	typical pedon for series
136,384	07/08/2003	2003USNC097001-Codo		Codorus	modal pedon for series
136,778	02/05/2002	CID_VA025_TP	D. EASTHAM	CID	modal pedon for series
136,780	10/02/2002	LIGNUM_VA025_TP		LIGNUM	modal pedon for series
136,782	08/29/1987	MASADA_VA025_TP		MASADA	modal pedon for series
136,798	08/29/1987	Toccoa_VA025_TP			
136,799	02/05/2002	CID_VA025_TP			
136,800	10/02/2002	LIGNUM_VA025_TP			
136,801	08/29/1987	MASADA_VA025_TP			
136,939	08/18/2003	Lenoir-OSD	RAG, ENH	Lenoir	typical pedon for series

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137,140	08/18/2003	Marumsco-OSD	JHE-DDR	Marumsco	typical pedon for series
137,141	07/24/2003	Downer83A	GCR-JDH-DNS	Downer	typical pedon for series
137,311	04/15/2003	Sassafras54B	JDH	Sassafras	modal pedon for map unit
137,328	07/07/2003	Beltsville37B	JDH-DNS	Beltsville	
137,331	06/26/2003	Lenoir53A	GCR	Gunston	modal pedon for map unit
137,337	07/21/2003	Nathalie60C	DNS	Nathalie	typical pedon for series
137,360	07/29/2003	Rhodhiss63E	DNS	Rhodhiss	typical pedon for series
137,367	08/13/2003	Glenelg55D	DNS	Glenelg	modal pedon for map unit
137,395	08/18/2003	Beltsville38B	JDH-GCR	Beltsville	modal pedon for map unit
137,405	08/18/2003	Marumsco61D	JDH-GCR	Marumsco	modal pedon for map unit
137,406	07/11/2003	Marumsco49B	GCR	Marumsco	typical pedon for series
137,407	07/31/2003	Mattapex46B	GCR	Mattapex	modal pedon for map unit
137,408	08/11/2003	Matapeake45B	GCR	Matapeake	modal pedon for map unit
137,411	08/12/2003	Elkton85A	GCR	Elkton	modal pedon for series
137,414	08/18/2003	Lenoir53Axtra	JDH-GCR	Lenoir	within range of map unit
137,482	07/28/2003	Nathalie60D	DNS	Nathalie	typical pedon for series
137,483	04/15/2003	Lunt49B	JDH	Lunt	modal pedon for map unit