IMPLEMENTATION POLICY FOR MLRA OFFICE No. 9 OFFICIAL SOIL SERIES DESCRIPTIONS

Supersedes Implementation Policy for MLRA Office No. 9 Official Soil Series Descriptions, May 1999. This policy was originally sent out for use in May 1999 by the MO9 Staff. This document updates the 1999 version and is intended for those soil scientists hired since 1999.

This policy is intended only for Official Series Descriptions (OSDs) that are the responsibility of the Temple MLRA office. The policy for completion of all future Official Soil Series Descriptions is as follows:

All new OSDs submitted to the Temple MLRA office must use the new guidelines and template.

Prior to the Final Field Review, all new OSDs used in a survey area should be reformatted using the new guidelines and template.

Responsibility for reformatting all other OSDs will be handled on a case-by-case basis between the MO and the project office.

Upon receiving an OSD, the MO will run the OSD through spell check and the OSD checking program. Any OSDs not passing spell check and/or the OSD checking routine will be returned to the originating office for correction.

ALL FORMATTING WILL BE DONE USING GUIDANCE GIVEN IN NSSH.

For information on proper formatting, refer to NSSH Part 614 (Exhibit 2).

Series and revisions will be sent in a word document (*.doc) format using Courier New font, size 10!! There is no need to bold, italicize, use hidden characters, or to use fonts other than above. Special care is required to follow spacing requirements. Make sure commas, hyphens, and colons are used properly.

If any of these formatting issues are wrong, the OSD will not be accepted into the database.

It is very important to read, understand and follow the guidance in the NSSH.

Should you or your staff find any inconsistencies or errors in this document, please contact Jamey Douglass.

SUPPLEMENTAL GUIDELINES FOR COMPLETING OFFICIAL SOIL SERIES DESCRIPTIONS

Author's Initials: A maximum of 3 sets of initials will be allowed. The first initials will be those of the original author, also the 2 most recent people to edit the series will follow. The most recent individual will be listed last. The original author should only put their initials on the original draft. The soil data quality specialist who edits the OSD at the MLRA office is responsible for adding their initials. It is recommended that the initials not be changed, by the soil data quality specialist, if the edit is minor and inconsequential. Correcting a "typo" or a misspelled word would be a minor and inconsequential edit.

Introductory Paragraph: The following format for the introductory paragraph should be used:

The Alpha series consists of ? (depth), ? drained, that formed in ? (parent material--modifier, kind and origin) derived from ?. These ? (slope class) soils are on ? (landform(s)). Slope ranges from ? to ? percent. Mean annual precipitation is about ? mm (in) and the mean annual temperature is about ? degrees C (degrees F).

NOTE--USE ONLY TERMS RECOGNIZED IN PART 629 OF THE NSSH, GLOSSARY OF LANDFORM AND GEOLOGIC TERMS, NASIS GEOMORPHIC FEATURES LIST OR THE FIELD BOOK FOR DESCRIBING AND SAMPLING SOILS .

DEPTHS ARE RECORDED IN CM(IN) AS SHOWN BELOW. DEPTHS IN INCHES(IN), SHOULD BE ROUNDED UP OR DOWN AS APPROPRIATE.

Example 1:

The Alpha series consists of moderately deep to shale, well drained soils that formed in loamy slope alluvium derived from sandstone overlying clayey residuum derived from shale. Alpha soils are on backslopes of hills. Slopes range from 15 to 40 percent. Mean annual precipitation is about 457 mm (18 in) and the mean annual temperature is about 7 degrees C (44 degrees F).

Example 2:

The Alpha series consists of soils that are moderately deep to sandstone. These well drained soils formed in loamy alluvium derived from sandstone of Permian age. These steep or very steep upland soils are on backslopes of hills. Slope ranges from 15 to 40 percent. Mean annual temperature is about 14 degrees C (58 degrees F), and mean annual precipitation is about 457 mm (18 in).

TAXONOMIC CLASS:

TYPICAL PEDON**:** The following format for the typical pedon should be used:

Alpha ? (surface texture), -- on a ? (aspect), ? (slope shape), ? percent slope in ? (land cover) at an elevation of ? m (ft). (Colors are for dry soil unless otherwise noted.) Note: aspect, percent slope, and elevation are optional. These data are useful information for soils typically mapped in the drier climates and steeper landscapes found in the western part of the MLRA. Moisture and temperature effects of slope and aspect become important in the drier and steeper landscapes. Description of colors depends on the soil moisture regime. If soils are in Udic/Ustic or dry, colors are listed for dry soils first, with moist colors in (). In Udic and aquic, or wet soils, moist colors are listed first, followed by dry colors.

Example:
Alpha loam, on a north-facing, convex, 20 percent slope in rangeland at an elevation of 609 m (2,000 ft). (Colors are for dry soil unless otherwise noted.)

Pedon Description: Refer to part 614 of the NSSH and the Field Book for Describing and Sampling Soils, for more detailed guidance on the content of pedon descriptions. Below are a few additional guidelines.

Surface fragments (rock or pararock) and surface litter are described just above the first horizon, where required.

Example:
The surface is covered by about 15 percent channers, 30 percent cobbles, 5 percent stones, and 3 percent boulders. The fragments are sandstone. The average distance between stones is 5 ft and between boulders is 10 ft. About 10 percent is bare ground and 5 percent is covered by litter.

In accordance with NSSC Soil Technical Note No. 2, dated May 1992, "The soil surface is the top of the mineral surface, or for soils with an O horizon, the soil surface is the top of the part of the O horizon that is at least partially decomposed. The top of any surface horizon identified as an O horizon, whether Oi, Oe, Oa is considered the soil surface. Recent litter or duff mulch can be described but is not part of the horizonation. The proper way to record the depth of an O horizon is as follows:

Example:
Oi--0 to 5 cm (0 to 2 in);

Below is the sequence of features described for a horizon as outlined in part 614 of the NSSH.

* color (dry or moist, the most common condition),

Example of a horizon with reticulate mottles:

BCt—107 to 127 cm (42 to 50 in); variegated matrix with 35 percent light gray (10YR 7/2), 35 percent red (2.5YR 5/6), and 30 percent brownish yellow (10YR 6/8) clay;

* texture,
* color (dry or moist, opposite of the condition initially given),
* mottles (dry or moist, non-wetness related; these are sometimes referred to as "lithochromic"),
* structure (Commas are not used to separate terms in the phrase that describes structure. The word "structure" is used only once in describing compound structure, for example, "weak coarse prismatic structure parting to moderate medium subangular blocky.")
* consistence (dry, moist, stickiness, plasticity),
* roots,
* pores,

Additional features as follows:

* slickensides, pressure faces
* clay films,
* durinodes
* concretions,
* redoximorphic features. (see Field Book for Describing and Sampling Soils, Version 2.0), list redox concentrations (masses, concretions, or nodules), first; then redox depletions (iron or clay depletions) last. Include amount (%), size, contrast, hardness, shape, kind, location, boundary, color, and moisture status.

Example of a horizon with redoximorphic features, populated in NASIS Pedon:

> Btcv1—89 to 145 cm (35 to 57 in); brownish yellow (10YR 6/6) sandy clay loam, brownish yellow (10YR 6/6), dry; weak coarse prismatic structure parting to weak medium and coarse angular blocky; firm, hard; common very fine roots; common very fine tubular pores; 10 percent distinct yellowish brown (10YR 5/6) clay films on faces of peds; 1 percent fine black (7.5YR 2.5/1) iron-manganese nodules and 3 percent fine very dark brown (7.5YR 2/2) iron-manganese masses; 7 percent fine and medium distinct red (2.5YR 4/6) masses of oxidized iron with clear boundaries in matrix; 20 percent medium and coarse distinct strong brown (7.5YR 5/8) masses of oxidized iron with clear boundaries in matrix; 12 percent medium red (2.5YR 4/8) plinthite nodules; 4 percent fine spherical strongly cemented dark brown (7.5YR 3/4) ironstone nodules; slightly acid, pH 6.1, (pH meter 1:1 water); gradual smooth boundary.

* plinthite,
* salts,
* carbonates, (amount, size, kind, calcium carbonate equivalent)
* sodium,
* pebbles, stones, and other fragments, (amount (%), size (mm), kind, shape, roundness, hardness)
* brittleness,
* effervescence; i.e. slightly effervescent
* reaction
* lower boundary, and
* range in thickness—If two horizons are the same horizon symbol (A1, A2), then the combined thickness statement goes at the lower of the two. In the subsoil, the combined thickness statement goes with the second to the last horizon if applicable.

TYPE LOCATION**:** The location description is placed first followed by the Public Land Survey location if available. The following format should be used:

? County, ? (state); about ? miles ? of ? (general location); located about ? feet ? and ? feet ? of the ? corner of sec. ?, T. ?., R. ?. (Public Land Survey location); ? USGS quad; Latitude: ? degrees, ? minutes, ? seconds N; Longitude: ? degrees, ? minutes, ? seconds W, ? NAD ?. (North American Datum and year)

> Example:
> Bell County, Texas; From the intersection of Texas State Highway 53 and Loop 363 east of Temple, approximately 8.1 miles east on Texas Highway 53, 200 ft south in pastureland. Anywhere USGS quad; Latitude, 35 degrees, 40 minutes, 20 seconds N; Longitude, 108 degrees, 30 minutes, 20 seconds W. NAD 83.

RANGE IN CHARACTERISTICS**:** Refer to part 614.06 of the NSSH for detailed guidelines on this section. It is imperative that only representative pedon descriptions be used to develop the range of characteristics. Ranges should be limited to those ranges that have been observed in the field, or are supported by lab data. For example, the observed range of the percent clay in the particle-size control section for a pedon is 35 to 45 percent. This range, 35 to 45 percent clay, should be listed in the range of characteristics, and not the default range of 35 to 60 percent clay for the fine particle-size class. Care should be exercised to insure that ranges of characteristics do not exceed the limits of the taxonomic class, or overlap ranges for competing series.

In the OSD template, the statement "Depths are measured from the top of soil surface." is listed after the Range In Characteristic heading. This statement applies to soils that have "O" horizons. This statement should be deleted for soils that do not have "O" horizons.

The range in characteristics section is divided into two parts. The first part addresses the whole soil and the second part addresses the individual horizons.

NOTE--The following examples, for the range of characteristics section, are not totally inclusive or applicable to every pedon. Some items can be added or deleted as needed and justified.. **For example, in east Texas the soil moisture control section for many wet soils is not relevant to taxonomic class and discussion of the parameters of the SMCS in these areas, or for very wet soils, is not needed.** However, the order, content, and format should be followed.

Soil moisture: The moisture pattern of the soil moisture control section (SMCS) is defined here. Ideally, data on the actual number of days dry or moist would be known and listed here. The time of the year that the SMCS is wettest and driest needs to be identified. Such information is important for differentiating series that are morphologically similar but occur in different climatic patterns.

Some soils have SMCS that do not correlate to the "climatic" precipitation amount for the area. Some examples would be soils that occupy the lowest positions on a landform that receive additional run-on water. These soils have a higher "effective" precipitation. For those soils that this situation applies, explanations for the difference between the "climatic" precipitation and the "effective" precipitation should be given. Keep in mind that any precipitation amounts listed in the OSD are "climatic" precipitation amounts, and not "effective" precipitation amounts.

SMCS statements are more critical in central and western parts of the MO. As an example, a detailed description of the SMCS in marsh soils, or soils in East Texas in the udic moisture regime, are not as critical.

Following are some examples of soil moisture statements:

> Example 1:
> An ustic soil moisture regime. The soil moisture control section is dry in some or all parts for more than 90 but less than 150 cumulative days in normal years. June through August and December through February are the driest months. These soils are intermittently moist in September through November and March through May.
>
> Example 2:
> An ustic moisture regime bordering on aridic. The soil moisture control section is dry in some or all parts for more than 180 but less than 225 cumulative days in normal years. The soil is intermittently moist in some part from December to March; intermittently moist from July to September; driest in May and June; ustic moisture regime bordering on aridic.

Mean annual soil temperature: If field measurements of soil temperature are not available, the standard of adding 2 degrees F. to the mean annual air temperature to arrive at the range for soil temperature can be used.

Particle-size control section (weighted average): It is important that the particle-size control section be clearly defined. As a minimum the clay content must be listed. For many soils the sand content and size fraction is very important and is listed. The amount, lithology, and size of coarse fragments is also listed. List only the observed ranges and not "default" ranges. For example, if a soil has a fine-loamy particle-size class, do not automatically default to 18 to 35 percent clay when the observed range is only 18 to 25 percent clay.

> Example:
> Clay content: 18 to 25 percent
> Sand content: 15 to 50 percent fine sand and coarser
> Coarse fragments: 15 to 30 percent limestone gravel and cobbles

Endosaturation and Episaturation: These terms are used to describe the water table,

or zones of saturation. Give the depth range to the zone of saturation and the months that zone is saturated.

Example:
Depth to episaturation: 50 to 100 cm (20 to 40 in) from May to September.

Individual horizon(s): The following format for the ranges for individual horizons should be used. The properties in the format below are not inclusive or applicable to all pedons. Properties may be added or deleted as needed and justified.

If the soil is described as having a solum 150 to more than 203 cm (60 to more than 80 in), a C, R, etc. horizon must be described. If an R layer occurs at 190 cm (75 in), it must be described in the range in characteristics. The use of "where present" is acceptable in describing C, R, or other layers.

? horizon
Hue: ?
Value: ?
Chroma: ?
Texture: ?
Clay content: ? to ? percent
Clay films: location ?, contrast ?
Redox concentration: amount ?, size ?, contrast ?, boundary ?, location ?
Redox depletion: amount ?, size ?, contrast ?, boundary ?, location ?
Coarse fragments: ?
Pararock fragments: ?
Base saturation: ? to ? percent
Calcium carbonate equivalent: ? to ? percent
Identifiable secondary carbonates: amount ?, size ?, kind ?, location ?
EC (dS/cm): ? to ?
Gypsum: ? to ? percent
SAR: ? to ?
Brittleness: ? to ? percent
Effervescence: ?
Reaction: ?

Hue/Value/Chroma: The range for hue should read red to brown, not brown to red. For example, the range for hue should read "5YR or 7.5YR" and not "7.5YR or 5YR". Use the term "to" in place of "through" when listing a range of two or more hues, values, or chromas. The term "to" is understood to include the end value. If the range is the same for both dry and moist colors (value and chroma), then this should be stated by adding the phrase "dry or moist".

Example:
Hue: 7.5YR to 2.5Y
Value: 3 to 5 dry, 3 or 4 moist
Chroma: 2 or 3 dry or moist

Texture: Textures may be written out or abbreviated. Abbreviations used must match those listed in part 618 of the newest version online of the NSSH. For surface horizons, it is suggested that only the surface textures used in approved map units be listed even though other surface textures may have been observed in the field.

Coarse fragments and pararock fragments: List only ranges for volume (percent), lithology (kind), and size class. Do not list ranges for roundness, rupture resistance classes, or shape. Roundness, rupture resistance, and shape should be described in the pedon description.

Example:
Coarse fragments are limestone or mostly limestone with some sandstone fragments; 35 to 70 percent total coarse fragments; 35 to 50 percent gravel; 10 to 30 percent cobbles; 0 to 10 percent stones.

Reaction: Soil reaction should be listed from acid to alkaline.

Example:
Soil reaction ranges from slightly acid to slightly alkaline.

COMPETING SERIES: Competitors are listed alphabetically. Tentative series are listed if the series being described is also tentative. If the series being described is established, tentative series may be listed if they are identified as tentative by placing "(T)" after the series name. State abbreviations are optional, but have been found to be useful information in many cases. Competing statements are written individually in the order of listing, except for those soils with the same competing characteristics that can be grouped together. As a general rule concerning format, if there are less than 3 competing series a narrative format can be used. The semi-tab format should be used if there are more than 3 competing series.

To locate Competing series, go to http://soils.usda.gov/technical/classification/osd/ Use "View OSDs by Query" (with FTP option).

Look for **The classification fields on this query form can be automatically populated with the classification for a selected series. This enables you to easily query for all series with the same taxonomic classification. Click here to activate this process.**

Use the "click here", enter new series (the classification fields will automatically be populated), use the "process" button, then view the selected OSD's. Competing series might include soil series outside your MLRA or state!

If a competing series does not exist, select closely similar soil(s) from the same geographic area to compete against. Following is an example of such a statement:

There are no competing series. A closely similar series is the Alpha series. Alpha soils have a mollic epipedon more than 20 in thick.

Before writing competing statements, it is critical that the soil series being described has a complete and concise range of characteristics and other properties identified. Poorly written OSD's make it much more difficult to differentiate series. Competing statements should only identify the "major" differences in properties. Differences in every property need not be described. When writing competing statements address only those properties that are distinctly different between the competitors. Properties that overlap can not be used to differentiate series. Only properties in the series control section can be used to separate series.

Do not use different horizonation symbols as a reason to compete series. However, the pedogenic process represented by the symbol may be used if it is diagnostic. Following are some examples:

"Alpha soils have BA horizons" should not be used because the BA horizon is not diagnostic.

"Alpha soils have a Bt horizon" is not correct. "Alpha soils have an argillic horizon" or "Alpha soils have accumulations of illuviated clay" are correct.

"Alpha soils have Bk horizons" is not correct. "Alpha soils have accumulations of secondary calcium carbonate" or "have a calcic horizon" are correct.

"Alpha soils have Bg horizons" is not correct. "Alpha soils have gleyed horizons" is correct.

"Alpha soils lack an argillic horizon" is not correct. "Alpha soils do not have an argillic horizon" is correct.

The particular property, or feature, that is used as the basis for competing, must be clearly described in the series being described and in the competitors. In the following example the Alpha soil is being competed against the Beta soil.

The statement "Beta soils have a soil moisture control section that is driest during May and June." is correct only if the soil moisture control section for the Alpha soil is described as not being driest during May and June. If no description for the soil moisture control section exists for the Alpha soil, then the statement about Beta soils being driest in May and June can not be used. This would apply to any property or feature used as a basis for competing series.

The following is a list of features used to differentiate soils. It is suggested that this list be used as key for writing competing statements. For example, if item 1 (soil depth) can not be used as a property to compete on, then go to item 2 (soil color), and so on until a property is found that can be used as a basis for competing. This list is not inclusive for all pedons but will work for most soils.

soil depth,
soil color (Hue),
presence or absence of a diagnostic horizon or feature,
soil chemistry (base saturation, salinity, sodicity, percent gypsum, pH, etc.),
content and/or type of rock or pararock fragments,
thickness of the epipedon,
thickness of a diagnostic horizon,
soil temperature,
soil moisture,
other.

Due to many recent revisions to Soil Taxonomy, and limited staff, many series do not have updated classifications. This has created the dilemma of how to write competing series sections for the current competitors and previous competitors. It is suggested that the previous competitors be competed. To handle this situation use the following wording:

COMPETING SERIES: Current competitors are the Alpha and Beta series. Competitors prior to the Ninth Edition, 2003 (*or whatever the latest version is)* of Keys to Soil Taxonomy are the Delta and Gamma series.

> Alpha and Delta soils have a lithic contact with sandstone at a depth of 50 to 100 cm (20 to 40 in).
>
> Beta and Gamma soils have a calcic horizon.

GEOGRAPHIC SETTING**:** The following semi-tab format should be used. Others items can be added as needed to help describe the setting.

Parent material: ?
Landform: ?
Slope: ? to ? percent
Mean annual air temperature: ? to ? degrees C (degrees F)
Mean annual precipitation: ? to ? cm (in)
Precipitation pattern: ?
Frost-free period: ? to ? days
Elevation: ? to ? m (ft)
Thornthwaite annual P-E indices: ? to ?

NOTE--Any climatic entries should be from data from the standard "normal" period which covers the years 1971-2000 (this period will change in the year 2010). The information can be accessed at the following Internet site: **http://www.wcc.nrcs.usda.gov/climate/wetlands.html**. In addition, precipitation amounts must represent the precipitation that actually falls and not an "effective" precipitation amount.

Parent material: Describe the modifier, kind, and origin of the parent material. Use only terms recognized in part 629, Glossary of Landforms and Geologic Terms in the NSSH, or NASIS Geomorphic Features list. The name of the geologic formation can also be identified. Naming the geologic formation does not necessarily limit the use of the series to that particular formation.

Example:
Parent material: Loamy slope alluvium derived from limestone overlying clayey residuum derived from shale of the Markley Formation.

Landform: List the landform(s) and position(s) on the landform(s) (if significant). Use only terms recognized in part 629, Glossary of Landforms and Geologic Terms in the NSSH, or NASIS list. If the soil only occurs on the toeslopes of hills, then identifying the toeslope position is significant. If a soil occurs throughout a flood plain, or on dunes, identifying a position is not significant.

Example:
Landform: summits of mesas and dip slopes of cuestas

Precipitation pattern: Briefly describe the timing and form of precipitation. Make sure to include the wettest and driest months for those settings that do not have even precipitation throughout the year. If the precipitation is truly even throughout the year this needs to be stated.

Example 1 (Even throughout the year):
Precipitation falls evenly throughout the year.

Example 2 (One precipitation peak):
Precipitation is mostly even throughout the year with the exception of May and June being the driest months and July and August being the wettest months. Summer precipitation occurs during intense thunderstorms.

Example 3 (Two precipitation peaks):
Precipitation falls mostly during the months of March through May and August through October. June and July are the driest months.

Frost-free period: In part 618.10 (a) of the online NSSH frost-free period is defined as the expected number of days between the last freezing temperature in spring and the first freezing temperature in fall. The term "freeze-free period" would be better suited for this definition. Sub-freezing temperatures can occur without a frost occurring. Most climate data records give days between freezing temperatures and not days between frosts. For the purpose of continuity, the term "frost-free period" will be used. However, consider it synonymous with "freeze-free period".

GEOGRAPHICALLY ASSOCIATED SOILS**:** A narrative or semi-tabular format may be used. Identify the landform position and how the soils differ from the named series. Do not list all the differences. List only the most obvious difference. Do not repeat the difference for a soil that has been listed in the competing series section. This section applies to only those soils associated at the original type location or soil survey area. This section should only be updated when the type location has been moved to an area with different associated soils or the names of the associated soils have changed. The number of series listed should be less than 6 in most cases.

Example:
GEOGRAPHICALLY ASSOCIATED SOILS**:** These are the Alpha, Beta, and Delta series
Alpha soils: less than 50 cm (20 in) to sandstone bedrock and occur on summits of ridges.
Beta soils: do not have calcic horizons and are on similar positions.
Delta soils: have mollic epipedons and are on toeslopes of hills.

DRAINAGE AND PERMEABILITY**:** List drainage, permeability, runoff, a flooding (or ponding) statement if flooded (or ponded), and normal depths to water table, if present. Use the current runoff terms listed in MO9 Guidesheet for Runoff Classes (10/12/99). The runoff terms "slow" and "rapid" have been replaced by "low", "medium", and "high". State the appropriate runoff for each slope class given on MO-9 Guidesheet for Runoff Classes 10/12/99.

Example:

DRAINAGE AND PERMEABILITY: Poorly drained. Permeability is slow. Runoff is low on slopes less than 1 percent, medium on 1 to 3 percent slopes. The soil is flooded frequently for very brief to brief periods following intense thunderstorms. A fluctuating water table occurs between 46 to 107 cm (1.5 to 3.5 ft) of the surface during the months March to June and September to December in most years.

USE AND VEGETATION**:** List the major use or uses. Do not confuse cover type terms, such as rangeland, with land use terms, such as livestock grazing. List key species of the native plant community or the present community, if the native community is not known. An additional option is to list the correlated ecological site name, and number, for the series at its type location. The purpose for listing the ecological site is to provide a baseline concept of the potential vegetative community at the original type location for the series.

Example 1:
The major uses are crop production and livestock grazing. The native plant community is little and big bluestems, indiangrass, switchgrass, sideoats grama, with scattered elm, and hackberry trees.

Example 2:
The major use is livestock grazing. The native plant community is buffalograss, tobosa, sideoats grama, burrograss vine mesquite, and sand muhly. The ecological site is Loamy (081AY301TX).

DISTRIBUTION AND EXTENT**:** List the geographic distribution and extent by referencing a general state or MLRA location. Give the Land Resource Region (LRR) and the MLRA that the series occurs in. List the Land Resource Unit (LRU) if applicable. Give the extent of the series using the following guidelines:

Small extent or not extensive--less than 10,000 acres,
Moderate extent or moderately extensive--10,000 to 100,000 acres,
Large extent or extensive--more than 100,000 acres.

Example:
Northwest Anystate; LRR H, MLRA 77C; moderate extent.

MLRA OFFICE RESPONSIBLE**:** List the MLRA office that is responsible for the series. The format of the entry is city, state. For example: Temple, Texas.

SERIES PROPOSED OR ESTABLISHED**:** One of these headings is used, depending on the current status of the series. List the year, county and state where the series was first proposed or established. The name of the soil survey area is included if it includes more than one county or parts of a county. List the source of the name for the series. If the name is coined, state so.

The format that should be used is :
? county, ? state, ? soil survey area, ? year. The name ? .

NAMING CONVENTIONS, A NOTE FROM WAYNE GABRIEL

Coined names should only be used when all other names are exhausted. Coined names should be American (English I think) only.

A professionally produced government document like a soil survey, paid for by taxpayers, city, and county governments is no place for us to infuse nonsense or inappropriate cuteness.

Nonsense coined words especially when they look like Spanish confuse the user about spelling, they make it hard to relate series names to anything real they can relate to or remember, and make it harder for the public to understand soils (Our Mission). Nonsense words can potentially have a negative connotation in the language they mimic. Nonsense words potentially are a reflection that the soil survey is nonsense or that we are insensitive to local or area culture.

We owe it to all taxpayers who are paying for the soil survey to deliver a high quality professional product that will be a positive reflection of the resources and culture in the county.

Example:
Leon County, Texas, 1989. The name "" comes from ?.

REMARKS: This section identifies pertinent information about the series. If a Benchmark soil, state first. State the reason this soil was developed, if possible.

Example:
These soils were formerly included with the Faddin series. The Faddin series has a mollic epipedon. This soil has mollic colors in the surface layer but is too thin to qualify for a mollic epipedon.

If the series name is difficult to pronounce, this is the place to phonetically spell it out. Kiomatia (Ki-o-mee-sha)

Diagnostic horizons and features recognized in this pedon are: The purpose of the section is to identify significant changes in the concept of the series, and to list the diagnostic horizons and features that define the series.
In most cases the section will include only a listing of diagnostic horizons and features recognized in the pedon. However, if a soil has been reclassified due to changes in series concept, excluding advances in Soil Taxonomy, state the justification for reclassification before the diagnostic horizons and features section. This provides a historical record of the evolution of the series concept. Also, if the type location for the series has been moved, state the reason for the move.

The zone and horizons representing the diagnostic horizons and features are identified. It is not necessary to repeat criteria from Soil Taxonomy. For example, do not repeat the requirements for a mollic epipedon for a soil that has a mollic epipedon that occurs from 0 to 15 in and includes the A and Bt1 horizons. All that is needed is to identify the zone and horizons that are included in the mollic epipedon. The following format should be used. This format is not inclusive for all pedons and can be modified as needed and justified.

Particle-size control section: The zone from ? to ?.
(? horizons)
? epipedon: The zone from ? to ? cm (in). (? horizons)
? horizon: The zone from ? to ? cm (in). (? horizons)
? horizon: The zone from ? to ? cm (in). (? horizons)
Lithic contact: The contact with ? at ? cm (in). (? horizons)
Paralithic contact: The contact with ? at ? cm (in). (? horizons)
Redoximorphic concentrations: In the zone from ? to ? cm (in).
(? horizons)
Redoximorphic depletions: In the zone from ? to ? cm (in).
(? horizons)
Vertic features: The presence of ? at ? to ? cm (in). (? horizons)
Endosaturation: The zone of saturation at ? to ? cm (in). (? horizons)
Episaturation: The zone of saturation at ? to ? cm (in). (? horizons)
Abrupt textural change: At the upper boundary of the ? horizon.
Lithologic discontinuity: At the upper boundary of the ? horizon.
Other features: ?

Additional Comments: Any remarks that would help to better define the series or address unresolved problems are recorded here. Also stated is whether or not the assigned cation-exchange activity class is supported by lab data, or is inferred from lab data from similar soils in the area. Give the lab sample numbers that are used to support the cation-exchange activity class.

The assignment of the cation-exchange activity class is supported by lab sample(s) numbers ?.
or,

The assignment of the cation-exchange activity class is inferred from lab data from similar soils in the surrounding area.

If the classification has changed, with this version, give the old classification here.

ADDITIONAL DATA**:** List any supporting laboratory, or other, data collected for this pedon. Give the name of the lab and the soil survey sample number.

TAXONOMIC VERSION: Keys to Soil Taxonomy, Ninth Edition, 2003.

The latest edition of the Keys to Soil Taxonomy is given as way to help keep track of the vintage of the classification represented by the current description.

National Cooperative Soil Survey
U.S.A.

A common mistake is spacing in U.S.A. (no spaces between or after the last period)

PROCESSING OFFICIAL SOIL SERIES DESCRIPTIONS

There are multiple steps that an official soil series description (OSD) must go through before it is stored in the Official Soil Series Description database in Fort Worth, Texas. Following is a listing of the general steps involved in processing an OSD.

A new series is deemed necessary by the soil survey project leader and/or the soil data quality specialist.
A series name is chosen and checked against existing series names for any possible conflict or similarity. The soil data quality specialist "reserves" the series name by entering the series in the Soil Classification (SC) database in Fort Worth. The SC record for that series must be populated before the OSD can be stored in the OSD database.

Using the OSD template, a first draft version of the OSD is created at the soil survey project office. The draft can be created in the word processing program. When completed, the OSD is spell checked. The OSD is then electronically forwarded to the MO for review and processing using the Internet e-mail system. The series is transmitted using the attachment function of the program. (Contact the MO office if instructions on attaching files are needed). The MO reviews and edits the OSD as needed. The OSD is spell checked and again run through the OSD checking routine.

Once all checks have been passed, the OSD will be routed to the field for a 10 day comment period. After the comment period, the OSD is transmitted from the MO to Fort Worth for storage in the OSD database. At Fort Worth, the OSD is again checked before adding to the database.

After checking the OSD, Fort Worth notifies the MO if the OSD passed the checking routine, or if errors were encountered. Any errors are corrected by the MO. After errors are corrected by the MO, the OSD is then resubmitted. After passing all checks, the OSD is stored in the OSD database.

Once the OSD is stored in the OSD database it is readily accessible through the Internet at the following address:
http://soils.usda.gov/technical/classification/osd/index.html

The OSD database has some interactive functions built into the system. For example, section heading such as "Type Location" or "Competing Series" are automatically emboldened as are the horizonation symbols in the pedon description section. Also, names of series are highlighted in blue and underlined. Clicking on the name of the series will automatically bring up the OSD for that series. However, just because an OSD passed all checking routines and is stored in the OSD database, does not guarantee that all the interactive functions are operable for that particular OSD. Following are some additional guidelines that should be followed to ensure that the interactive functions will work for your OSD.

All blank lines must have a paragraph mark (represented by the symbol ¶) in column 1. Any extra spaces (or other formatting symbols) at the beginning of the line will not work.

There should only be one (1) blank line above each section heading. More that one (1) blank line above the section heading will prevent the heading from being emboldened.

All series names must match the spelling of the series name that is stored in the OSD database and the Soil Classification database.

LINKS BETWEEN THE OSD DATABASE AND THE SOIL CLASSIFICATION DATABASE

The official series description database (OSD) and the soil classification (SC) database make up the NRCS soil series database. The SC database is stored as an Informix database. The OSD database is stored in a series of text (unformatted) files. Only MO staffs can make updates to either the OSD or SC databases.

The OSD and SC databases have common data elements that are linked and kept synchronous. Any change to these data elements in the SC database are automatically, and immediately, made in the corresponding OSD database record. The data elements automatically changed as needed in the OSD are:

classification, series status, MO responsible, state type location, and states using.

When an OSD is stored in the OSD database the current date is automatically put on the OSD and the series description date in the SC database is automatically updated. Any change made in the SC file causes the date on the OSD to be automatically changed.

When the series status is changed in the SC record, the series status at the top of the corresponding OSD is automatically changed. However, the **"**SERIES PROPOSED**"** section is not changed automatically to **"**SERIES ESTABLISHED**"**. This needs to be updated manually and the OSD resubmitted.

LOCATION ? ??

Tentative Series
?-?-?
??/200?

? SERIES

The ? series consists of ?, ? drained soils. These ? sloping soils formed in ? derived from ? on ? of the ? Formation. Slope ranges from ? to ? percent. Mean annual temperature is about ? degrees C (degrees F), and mean annual precipitation is about ? mm (in).

TAXONOMIC CLASS: ?

TYPICAL PEDON: ?, on a ? facing, ? percent slope in ?; elevation is ? m (ft) (Colors are for ? soil unless otherwise stated.)

?--? to ? cm (in); ? (? To ? cm (in) thick)

?--? to ? cm (in); ? (? To ? cm (in) thick)

?--? to ? cm (in); ? (? To ? cm (in) thick)

?--? to ? cm (in); ? (? To ? cm (in) thick)

?--? to ? cm (in); ? (? To ? cm (in) thick)

?--? to ? cm (in); ? (? To ? cm (in) thick)

?--? to ? cm (in); ? (? To ? cm (in) thick)

TYPE LOCATION: ? County, ?; about ? miles ?; ? miles ?; located about ? feet ? and ? feet ? in ?. (Latitude: ? degrees, ? minutes, ? seconds N; Longitude: ? degrees, ? minutes, ? seconds W. ? topographic quadrangle; NAD ?).

RANGE IN CHARACTERISTICS:

Soil Moisture: An ? soil moisture regime. The soil moisture control section is ? in some or all parts for ? than ? days in normal years. ? through ? are the driest months, while ? through ? is the wettest.

Mean annual soil temperature: ? to ? degrees C (degrees F)
Depth to lithic contact: ? to ? cm (in)
Depth to paralithic contact: ? to ? cm (in)
Depth to abrupt textural change: ? to ? cm (in)
Depth to albic materials: ? to ? cm (in)
Depth to albic horizon: ? to ? cm (in)
Depth to argillic horizon: ? to ? cm (in)
Depth to secondary calcium carbonate: ? to ? cm (in)
Depth to calcic horizon: ? to ? cm (in)
Depth to petrocalcic horizon: ? to ? cm (in)
Depth to cambic horizon: ? to ? cm (in)

Depth to durinodes: ? to ? cm (in)
Depth to duripan: ? to ? cm (in)
Depth to fragipan: ? to ? cm (in)
Depth to glossic horizon: ? to ? cm (in)
Depth to gypsiferous materials: ? to ? cm (in)
Depth to gypsic horizon: ? to ? cm (in)
Depth to petrogypsic horizon: ? to ? cm (in)
Depth to natric horizon: ? to ? cm (in)
Depth to salt accumulations: ? to ? cm (in)
Depth to salic horizon: ? to ? cm (in)
Depth to redox concentrations: ? to ? cm (in)
Depth to redox depletions: ? to ? cm (in)

Depth to Endosaturation: ? to ? cm (in)
Depth to episaturation: ? to ? cm (in)
Thickness of the ?, ? to ? cm (in)
Vertic features: ? to ? cm (in)

Particle-size control section (weighted average)
Clay content: ? to ? percent
Sand content: ? to ? percent
Coarse Fragments: ? to ? percent
CEC/clay ratio: ? to ?

? Horizon
Hue: ?
Value: ?
Chroma: ?
Texture: ?
Clay content: ? to ? percent
Clay films: location ?, contrast ?
Redox concentrations: amount-, size-, contrast-, boundary-, location-, shades-
Redox depletions: amount-, size-, contrast-, boundary-, location-, shades-
Iron-manganese concentrations: amount-, size-, kind-
Coarse fragments: ?
Pararock fragments: ?
Base saturation: ?
Calcium carbonate equivalent: ? to ? percent
Identifiable secondary carbonate: amount-, size-, kind-, location-
Gypsum: ? to ? percent
EC (dS/m): ? to ?
SAR: ? to ?
Brittleness: ? to ? percent
Effervescence: ?
Reaction: ?

? Horizon
Hue: ?
Value: ?
Chroma: ?
Texture: ?
Clay content: ? to ? percent
Clay films: location ?, contrast ?
Redox concentrations: amount-, size-, contrast-, boundary-, location-, shades-
Redox depletions: amount-, size-, contrast-, boundary-, location-, shades-
Iron-manganese concentrations: amount-, size-, kind-
Coarse fragments: ?
Pararock fragments: ?
Base saturation: ?
Calcium carbonate equivalent: ? to ? percent
Identifiable secondary carbonate: amount-, size-, kind-, location-
Gypsum: ? to ? percent
EC (dS/m): ? to ?
SAR: ? to ?
Brittleness: ? to ? percent
Effervescence: ?
Reaction: ?

? Horizon
Hue: ?
Value: ?
Chroma: ?
Texture: ?
Clay content: ? to ? percent
Clay films: location ?, contrast ?
Redox concentrations: amount-, size-, contrast-, boundary-, location-, shades-
Redox depletions: amount-, size-, contrast-, boundary-, location-, shades-
Iron-manganese concentrations: amount-, size-, kind-
Coarse fragments: ?

Pararock fragments: ?
Base saturation: ?
Calcium carbonate equivalent: ? to ? percent
Identifiable secondary carbonate: amount-, size-, kind-, location-
Gypsum: ? to ? percent
EC (dS/m): ? to ?
SAR: ? to ?
Brittleness: ? to ? percent
Effervescence: ?
Reaction: ?

? Horizon
Hue: ?
Value: ?
Chroma: ?
Texture: ?
Clay content: ? to ? percent
Clay films: location ?, contrast ?
Redox concentrations: amount-, size-, contrast-, boundary-, location-, shades-
Redox depletions: amount-, size-, contrast-, boundary-, location-, shades-
Iron-manganese concentrations: amount-, size-, kind-
Coarse fragments: ?
Pararock fragments: ?
Base saturation: ?
Calcium carbonate equivalent: ? to ? percent
Identifiable secondary carbonate: amount-, size-, kind-, location-
Gypsum: ? to ? percent
EC (dS/m): ? to ?
SAR: ? to ?
Brittleness: ? to ? percent
Effervescence: ?
Reaction: ?

COMPETING SERIES: These are the ? series. Similar soils are the ?, ?), ?, ? and the tentative ? series.
? soils: ?
? soils: ?
? soils: ?
? soils: ?
? soils: ?
? soils: ?

GEOGRAPHIC SETTING:
Parent material: ? derived from ?
Landform: ?
Slope: ? to ? percent
Mean annual air temperature range: ? to ? degrees C (degrees F)
Mean annual precipitation range: ? to ? mm (in)
Precipitation Pattern:
Frost-free period: ? to ? days
Elevation: ? to ? m (ft)
Thornthwaite annual P-E indices: ? to ?

GEOGRAPHICALLY ASSOCIATED SOILS: These are the ? (TX), ? (TX), ? (TX), ? (TX) and the tentative ? (T) series.
? soils: ?
? soils: ?
? soils: ?
? soils: ?

DRAINAGE AND (? TBD): ? drained. Runoff is ?. ? flooded for ? per year. The soil is ponded or the surface is saturated for ? periods during the months of ? to ? and ? to ?.

USE AND VEGETATION: Used for ?. Native vegetation consists of ?. (? range site, PE ?-?, ?TX).

DISTRIBUTION AND EXTENT: ?, ?; Land Resource Region ?; MLRA ?; the series is of ? extent.

MLRA OFFICE RESPONSIBLE: Temple, Texas

SERIES PROPOSED: ? County, Texas, 200?, ? soil survey area, Texas, 200?. The name is from a .

REMARKS: The series was formerly included in the ? series. The series was separated based on ?.

Diagnostic horizons and features recognized in this pedon are:
Particle size control section: ? to ? in. (? horizon)

? epipedon: ? to ? cm (in). (? horizons)

? horizon: ? to ? cm (in). (? horizons)

? horizon: ? to ? cm (in). (? horizons)

Lithic contact: The contact with ? at ? cm (in). (? horizon)
Paralithic contact: The contact with ? at cm (in). (? horizon)
Redoximorphic concentrations: ? to ? cm (in). (? horizons)
Redoximorphic depletions: ? to ? cm (in). (? horizons)
Vertic features: The presence of ? at ? to ? cm (in). (? horizons)
Endosaturation: The zone of saturation at ? to ? cm (in). (? horizons)
Episaturation: The zone of saturation at ? to ? cm (in). (? horizons)
Aquic conditions: ? to ?
Abrupt textural change: At the upper boundary of the ? horizon.
Lithologic discontinuity: At the upper boundary of the ? horizon.
Other features: ?

Additional Comments: ?

The assignment of the cation-exchange activity class is supported by laboratory data number S0?TX-???-??? from ? County, Texas.
or
The assignment of the cation-exchange activity class is inferred from lab data from S0?TX-???-??? from ? County, Texas.

ADDITIONAL DATA: TAMU?/NSSL? Data from type location S0?TX-???-???. Particle-size analysis, salinity and sodicity tests were performed at the project office on ? pedons.

TAXONOMIC VERSION: Keys to Soil Taxonomy, Ninth Edition, 2003

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