

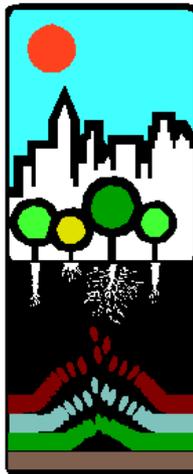
Interagency Applications of the Soil Data Viewer

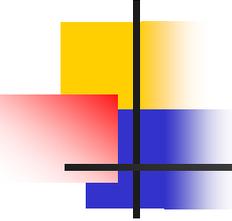
Western Regional NCSS Conference

Telluride, Colorado

July 9, 2002

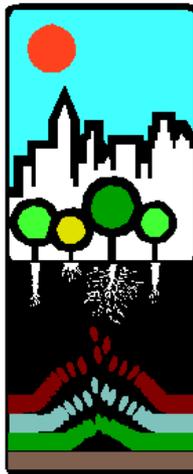
Ken Harward, Project Manager
NRCS Information Technology Center
Fort Collins, Colorado

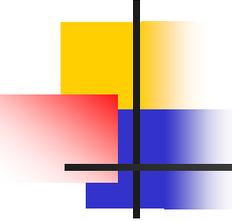




Presentation Outline

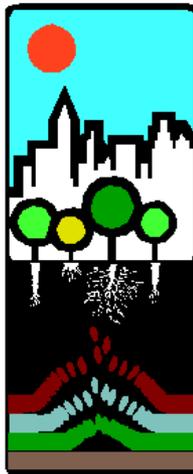
- Overview of Soil Data Viewer
- Adding Agency Specific Interpretations to SDV
- SDV Business Rules File
- Recommendations for Managing an Agency Specific SDV Business Rules File

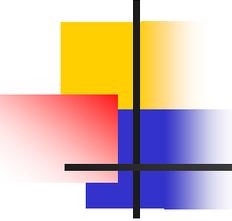




What is Soil Data Viewer

- An application used as an extension to ArcView[©] to render maps of soil properties or soil interpretations on the fly.
- A standalone application to generate tabular reports of soil interpretations or soil properties.
- SDV provides a single value for a soil polygon or map unit instead of a value for each component of a map unit.



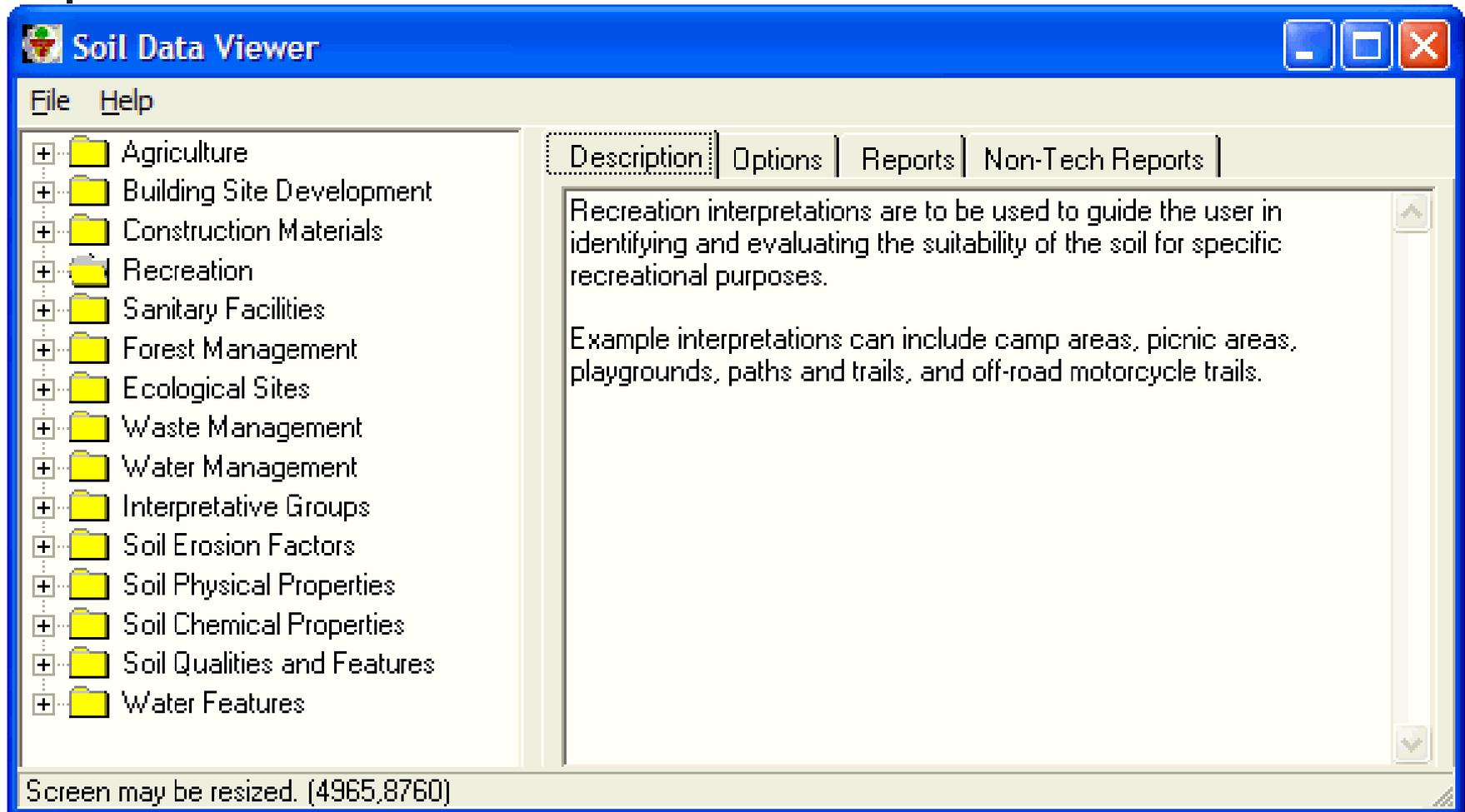


Soil Data Viewer Objectives

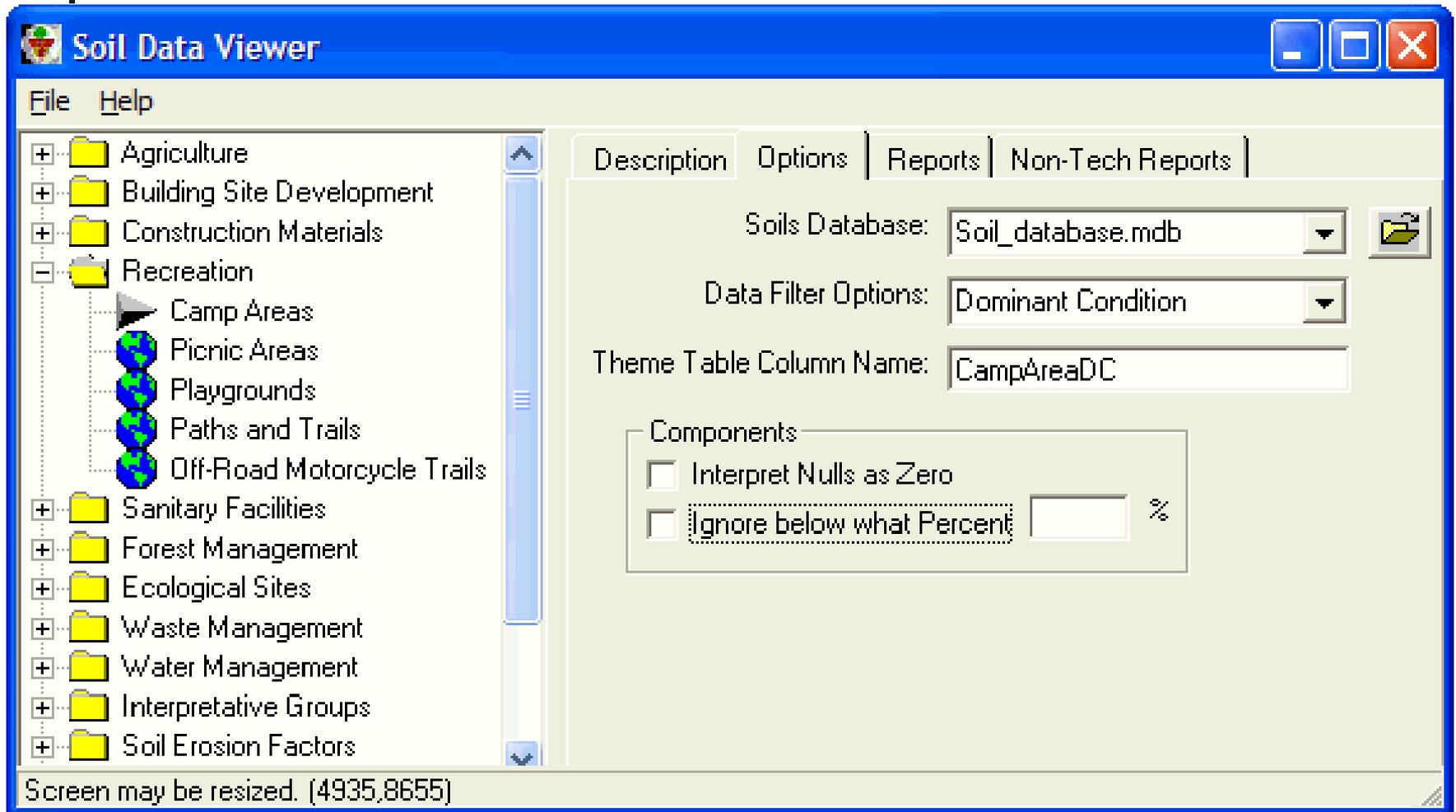
- Shield users and applications from the complexity of the soil database
- Encapsulate business rules for appropriate use of soil data
- Insulate users and applications from structural changes to the soil database
- Provide easy to use tool for analyzing and using soil data



Soil Data Viewer Interface



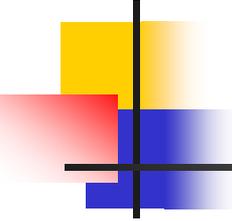
Soil Data Viewer Interface



Adding Agency Specific Interpretations to SDV

1. Add the new interpretation to NASIS
 - Expert knowledge of soil and other properties for the interpretation
 - Expert knowledge of the NASIS interpretation generator and database
 - Include the new interpretation in a NASIS export
2. Add the new interpretation to the Soil Data Viewer business rules file





SDV Business Rules File

- MS Access database separate from the soil database
- Lists viewable interpretations and soil properties
- Defines valid and default methods of processing
- Defines tie breaker rules
- Stores SQL information: table, column, query



SDV Rules File User Guide

Address  http://www.itc.nrcs.usda.gov/soildataviewer/user_guides.htm   Go

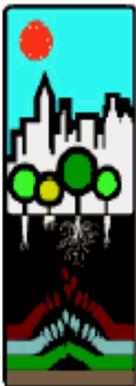
United States Department of Agriculture

 **NRCS** Natural Resources Conservation Service



SOIL DATA VIEWER

User Guides

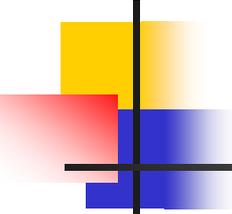


The following users guides are available for downloading

Technical Guides

- [Modifying SDV Rules File for Local Interpretations](#)

http://www.itc.nrcs.usda.gov/soildataviewer/user_guides.htm



Modifying the SDV Rules File

United States Department of Agriculture

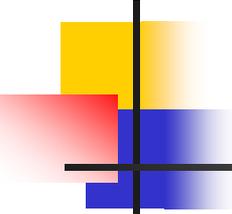


Modifying Soil Data Viewer 3.0 Rules File for Local Interpretations

June 7, 2002

Soil Survey Division

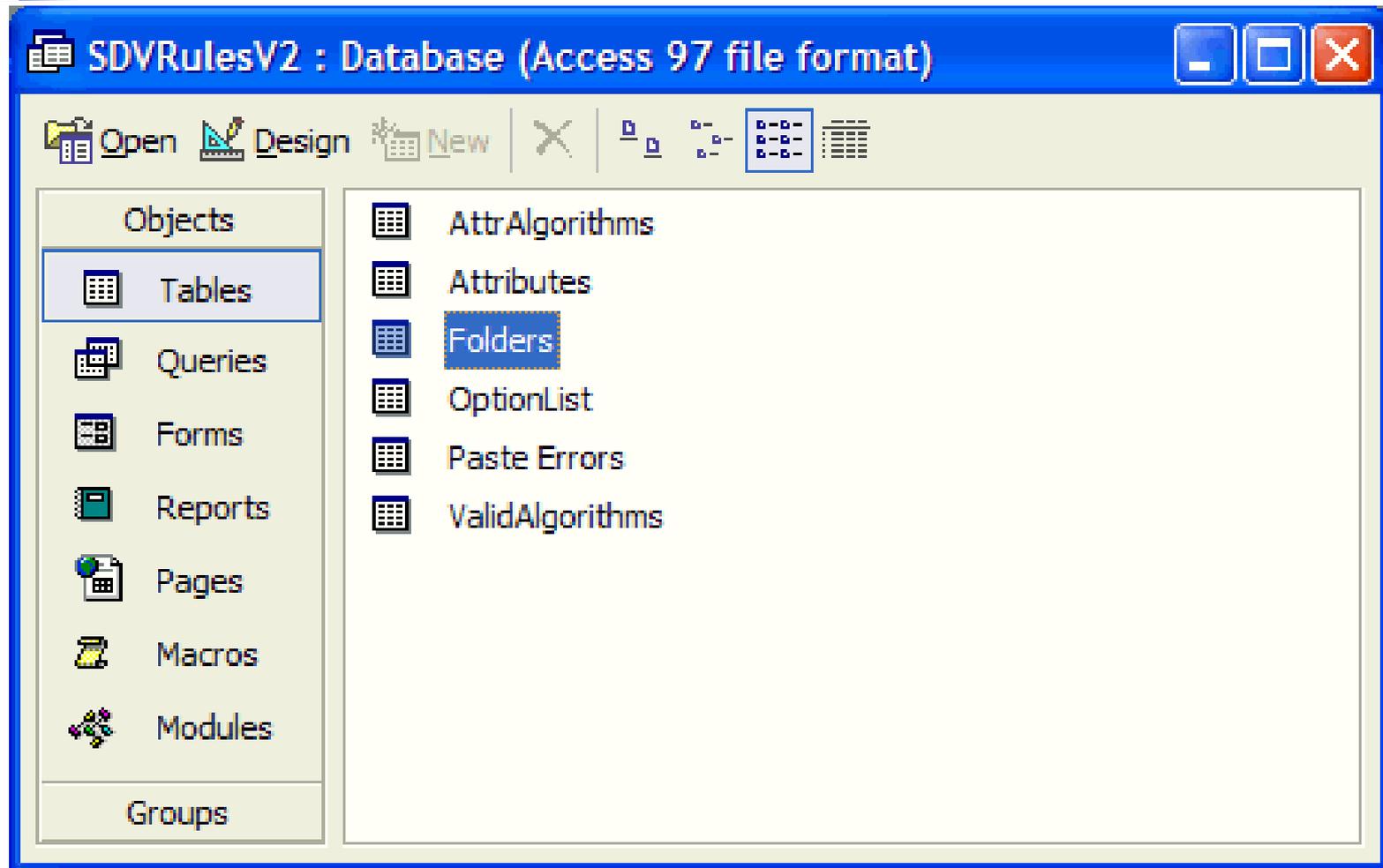
National Soil Survey Center



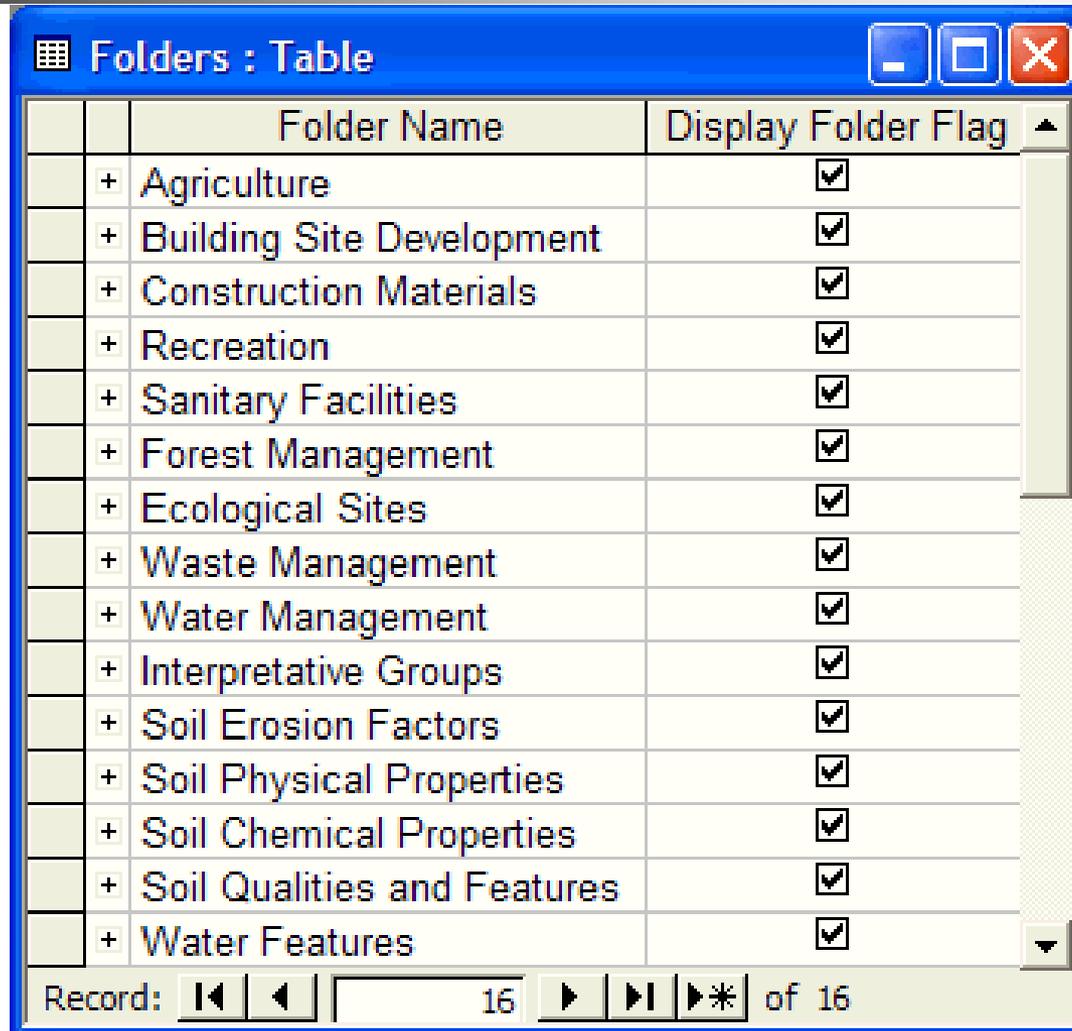
Cookbook Approach

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SDV Rules File – Six Tables



SDV Rules File – Folder Options



The screenshot shows a window titled "Folders : Table" with a blue title bar. The window contains a table with two columns: "Folder Name" and "Display Folder Flag". The table lists 16 folders, each with a plus sign in the first column and a checked checkbox in the second column. The status bar at the bottom indicates "Record: 16 of 16".

	Folder Name	Display Folder Flag
+	Agriculture	<input checked="" type="checkbox"/>
+	Building Site Development	<input checked="" type="checkbox"/>
+	Construction Materials	<input checked="" type="checkbox"/>
+	Recreation	<input checked="" type="checkbox"/>
+	Sanitary Facilities	<input checked="" type="checkbox"/>
+	Forest Management	<input checked="" type="checkbox"/>
+	Ecological Sites	<input checked="" type="checkbox"/>
+	Waste Management	<input checked="" type="checkbox"/>
+	Water Management	<input checked="" type="checkbox"/>
+	Interpretative Groups	<input checked="" type="checkbox"/>
+	Soil Erosion Factors	<input checked="" type="checkbox"/>
+	Soil Physical Properties	<input checked="" type="checkbox"/>
+	Soil Chemical Properties	<input checked="" type="checkbox"/>
+	Soil Qualities and Features	<input checked="" type="checkbox"/>
+	Water Features	<input checked="" type="checkbox"/>

Record: 16 of 16

Soil Data Viewer Default Interpretations Tree

The screenshot displays the 'Soil Data Viewer' application window. The title bar includes the application name and standard window controls (minimize, maximize, close). The menu bar contains 'File' and 'Help'. The main interface is divided into two panes. The left pane shows a tree view of soil data categories, each with a yellow folder icon and a plus sign to its left. The right pane has a tabbed interface with four tabs: 'Description' (selected), 'Options', 'Reports', and 'Non-Tech Reports'. The 'Description' tab is active, showing two paragraphs of text. The status bar at the bottom indicates 'Screen may be resized. (4965,8760)'.

Soil Data Viewer

File Help

- + Agriculture
- + Building Site Development
- + Construction Materials
- + Recreation
- + Sanitary Facilities
- + Forest Management
- + Ecological Sites
- + Waste Management
- + Water Management
- + Interpretative Groups
- + Soil Erosion Factors
- + Soil Physical Properties
- + Soil Chemical Properties
- + Soil Qualities and Features
- + Water Features

Description | Options | Reports | Non-Tech Reports

Recreation interpretations are to be used to guide the user in identifying and evaluating the suitability of the soil for specific recreational purposes.

Example interpretations can include camp areas, picnic areas, playgrounds, paths and trails, and off-road motorcycle trails.

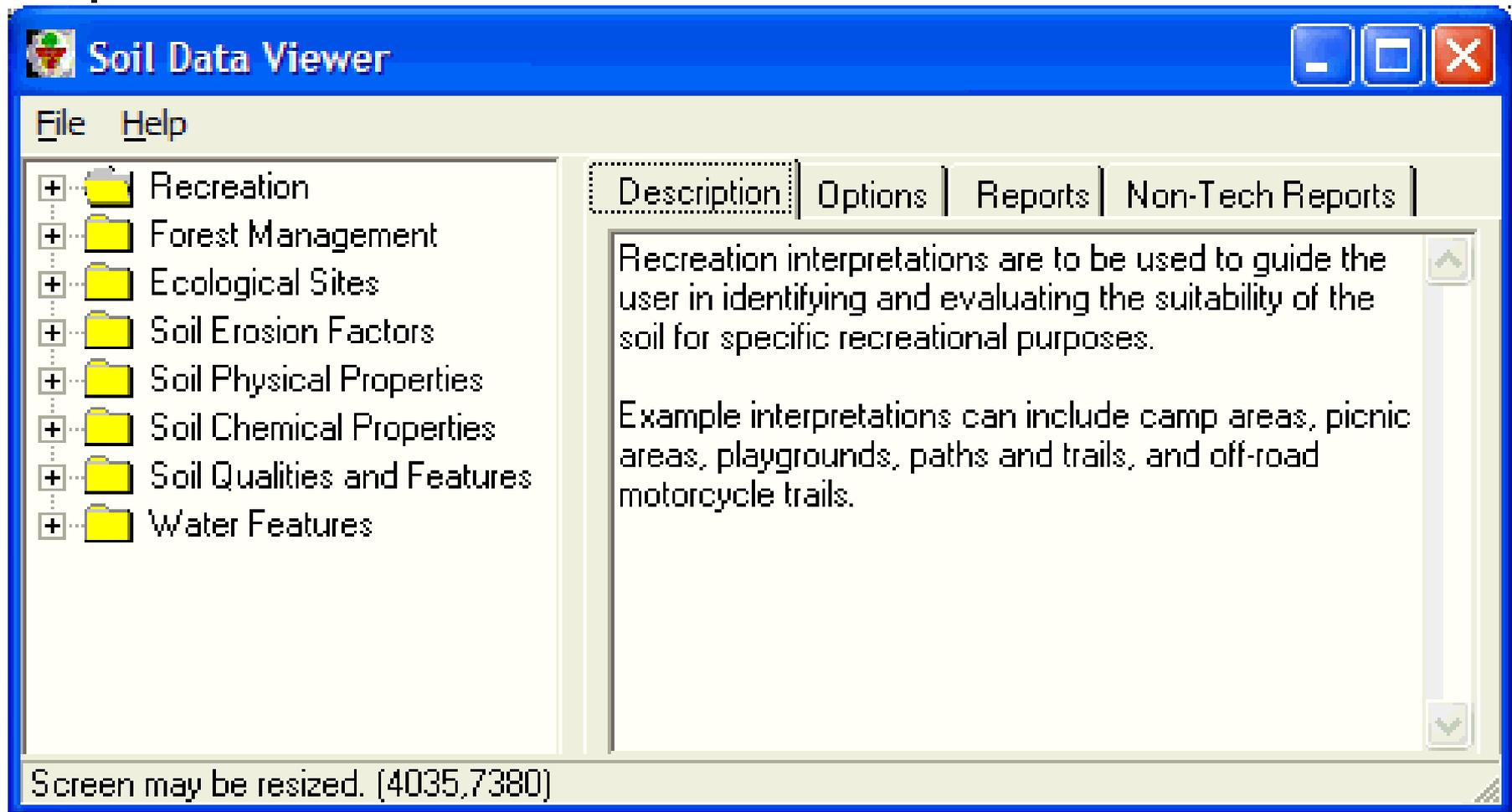
Screen may be resized. (4965,8760)

SDV Rules File – Folder Options

	Folder Name	Display Folder Flag
+ Agriculture		<input type="checkbox"/>
+ Building Site Development		<input type="checkbox"/>
+ Construction Materials		<input type="checkbox"/>
+ Recreation		<input checked="" type="checkbox"/>
+ Sanitary Facilities		<input type="checkbox"/>
+ Forest Management		<input checked="" type="checkbox"/>
+ Ecological Sites		<input checked="" type="checkbox"/>
+ Waste Management		<input type="checkbox"/>
+ Water Management		<input type="checkbox"/>
+ Interpretative Groups		<input type="checkbox"/>
+ Soil Erosion Factors		<input checked="" type="checkbox"/>
+ Soil Physical Properties		<input checked="" type="checkbox"/>
+ Soil Chemical Properties		<input checked="" type="checkbox"/>
+ Soil Qualities and Features		<input checked="" type="checkbox"/>
+ Water Features		<input checked="" type="checkbox"/>

Record: 16 of 16

SDV Interpretation Tree with Changed Rules File



The screenshot displays the 'Soil Data Viewer' application window. The title bar includes the application icon and the text 'Soil Data Viewer'. Below the title bar is a menu bar with 'File' and 'Help' options. The main area is divided into two panes. The left pane shows a tree view with a '+' icon next to each folder name: Recreation, Forest Management, Ecological Sites, Soil Erosion Factors, Soil Physical Properties, Soil Chemical Properties, Soil Qualities and Features, and Water Features. The right pane has a tabbed interface with four tabs: 'Description' (which is selected and has a dotted border), 'Options', 'Reports', and 'Non-Tech Reports'. The 'Description' tab contains two paragraphs of text. The first paragraph states: 'Recreation interpretations are to be used to guide the user in identifying and evaluating the suitability of the soil for specific recreational purposes.' The second paragraph states: 'Example interpretations can include camp areas, picnic areas, playgrounds, paths and trails, and off-road motorcycle trails.' A vertical scrollbar is visible on the right side of the text area. At the bottom of the window, a status bar reads 'Screen may be resized. (4035,7380)'.

Soil Data Viewer

File Help

- + Recreation
- + Forest Management
- + Ecological Sites
- + Soil Erosion Factors
- + Soil Physical Properties
- + Soil Chemical Properties
- + Soil Qualities and Features
- + Water Features

Description | Options | Reports | Non-Tech Reports

Recreation interpretations are to be used to guide the user in identifying and evaluating the suitability of the soil for specific recreational purposes.

Example interpretations can include camp areas, picnic areas, playgrounds, paths and trails, and off-road motorcycle trails.

Screen may be resized. (4035,7380)

SDV Rules File – Attributes Table

Attributes : Table		
	Theme Label	Description of Node
+	Drainage Class	Drainage class (natural) refers to the frequency and duration of wet periods.
+	Depth to Restrictions	Depth to Restriction (selected type) such as bedrock, cemented pan, or other restriction.
+	Hydrologic Group	Hydrologic soil groups are based on estimates of runoff potential. Soils are grouped into three hydrologic soil groups based on runoff potential.
+	Representative Slope	Component Representative Slope. Slope gradient is the difference in elevation between two points divided by the horizontal distance between the two points.
+	Frost Action	Potential Frost Action is the rating for the susceptibility of the soil to up to 100% frost action.
+	Frost Free Days	Frost Free Days is the expected number of days between the last freezing temperature and the first freezing temperature.
+	Corrosion Concrete	Various metals and other materials corrode when they are on or in the soil.
+	Corrosion Steel	Various metals and other materials corrode when they are on or in the soil.
▶	Camp Areas	Camp areas are tracts of land used intensively as sites for tents, trailers, and other recreational facilities.
+	Picnic Areas	Picnic areas are natural or landscaped tracts used primarily for preparing and eating food.
+	Playgrounds	Playgrounds are areas used intensively for games, such as baseball and softball.
+	Paths and Trails	Paths and trails are used for walking, horseback riding, and similar uses.
+	Off-Road Motorcycle	Off-road motorcycle trails are primarily for recreational use. Trails for other uses are also possible.
+	Septic Tank Absorption	Septic tank absorption fields are areas in which effluent from a septic tank is absorbed into the soil.
+	Sewage Lagoons	Sewage lagoons are shallow ponds constructed to hold sewage while a treatment process takes place.

Record: 73 of 98

SDV Rules File – Display Flag

		Theme Label	Display Attribute
	+	Camp Areas	<input checked="" type="checkbox"/>
	+	Picnic Areas	<input checked="" type="checkbox"/>
	+	Playgrounds	<input checked="" type="checkbox"/>
	+	Paths and Trails	<input checked="" type="checkbox"/>
	+	Off-Road Motorcycle Trails	<input checked="" type="checkbox"/>
	+	Septic Tank Absorption Fields	<input checked="" type="checkbox"/>
	+	Sewage Lagoons	<input checked="" type="checkbox"/>
	+	Sanitary Landfill (Trench)	<input checked="" type="checkbox"/>

Record: 1 of 98

SDV Recreational Interpretation Tree

The screenshot displays the 'Soil Data Viewer' application window. The title bar reads 'Soil Data Viewer' and includes standard window controls (minimize, maximize, close). The menu bar contains 'File' and 'Help'. The left pane shows a tree view with the following categories:

- Recreation
 - Camp Areas (selected)
 - Picnic Areas
 - Playgrounds
 - Paths and Trails
 - Off-Road Motorcycle Trails
- Forest Management
- Ecological Sites
- Soil Erosion Factors
- Soil Physical Properties
- Soil Chemical Properties
- Soil Qualities and Features
- Water Features

The right pane has tabs for 'Description', 'Options', 'Reports', and 'Non-Tech Reports'. The 'Options' tab is active, showing the following settings:

- Soils Database: Soil_database.mdb
- Data Filter Options: Dominant Condition
- Theme Table Column Name: CampAreaDC
- Components:
 - Interpret Nulls as Zero
 - Ignore below what Percent %

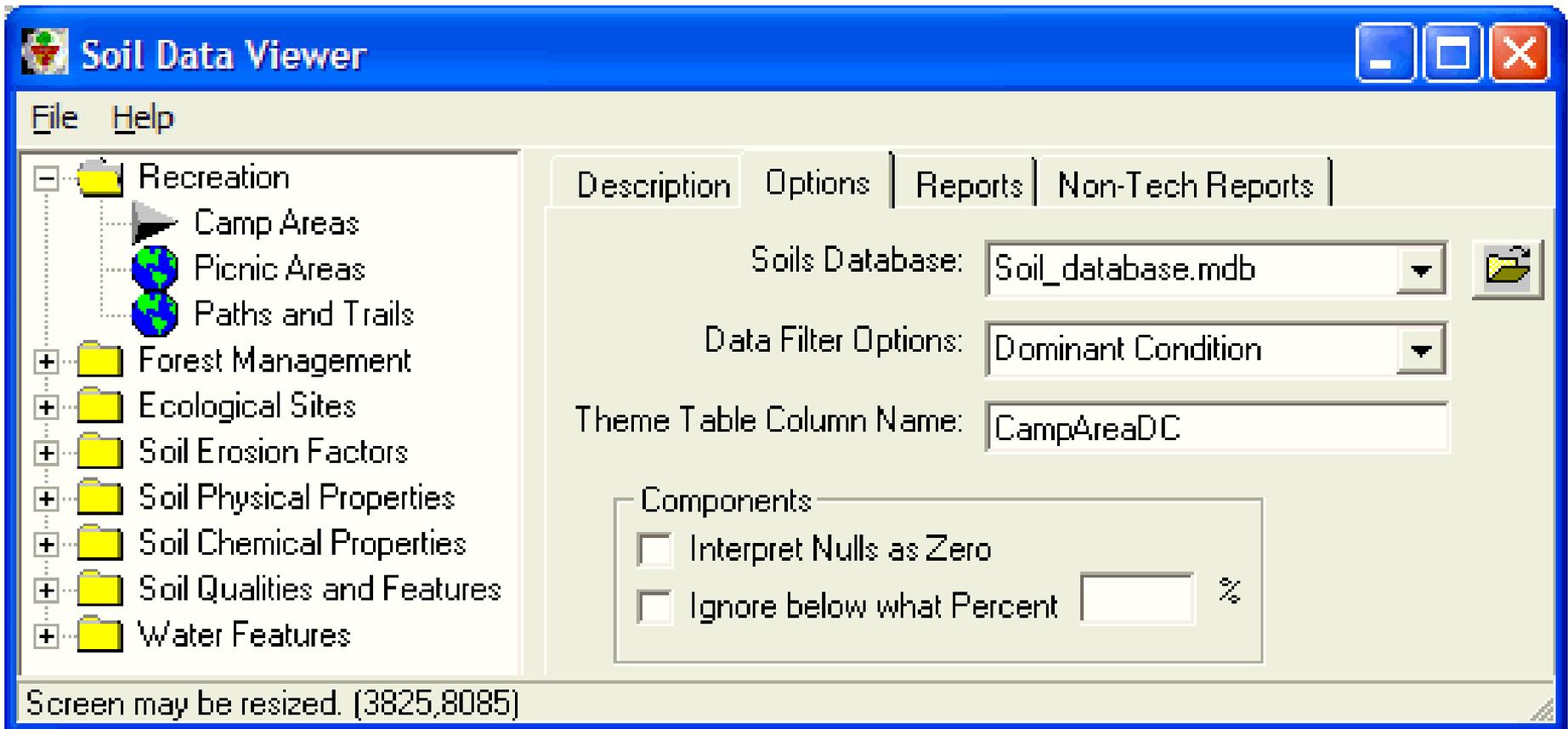
At the bottom of the window, a status bar reads: 'Screen may be resized. (4200,8565)'.

SDV Rules File – Display Flag

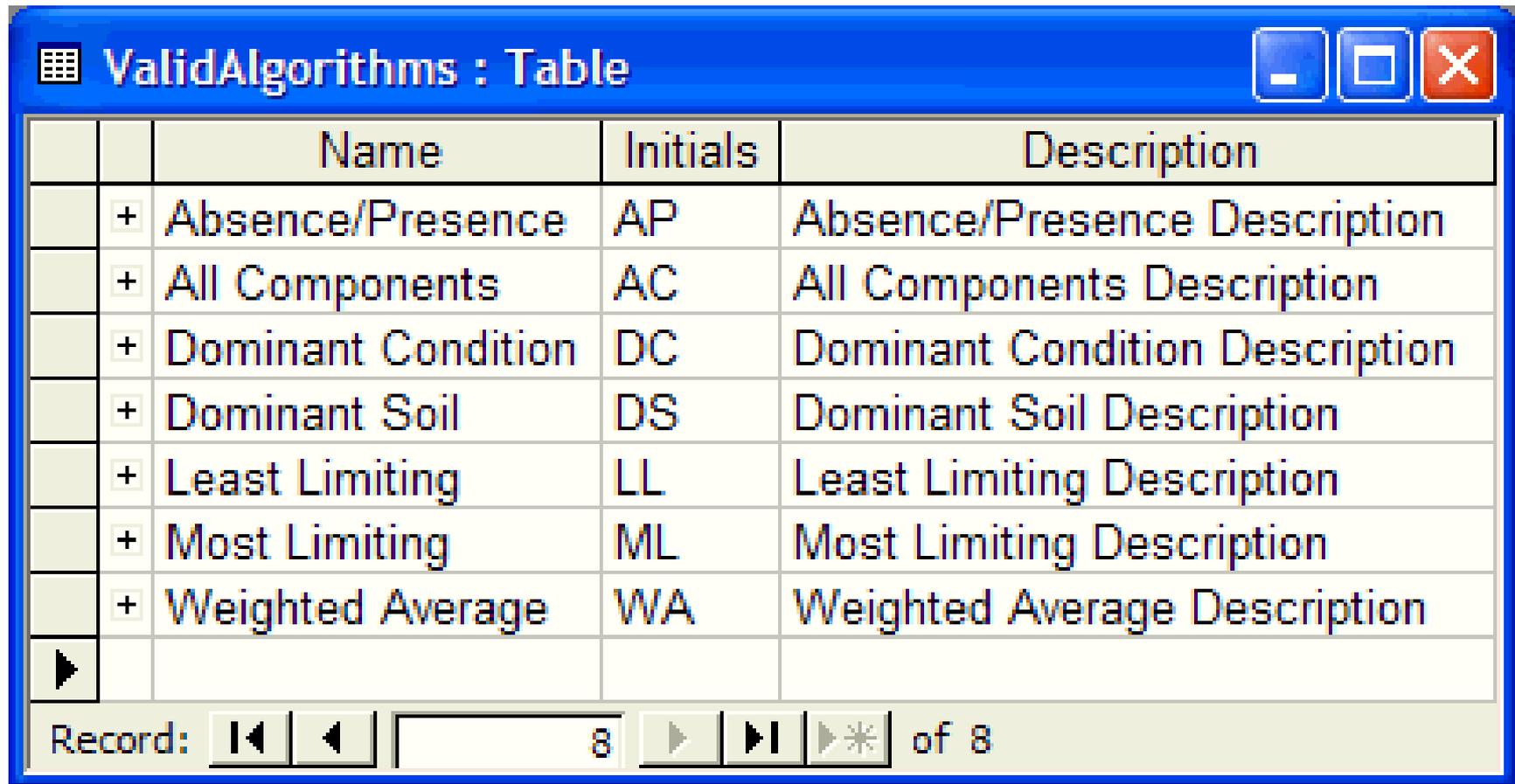
		Theme Label	Display Attribute
	+	Camp Areas	<input checked="" type="checkbox"/>
	+	Picnic Areas	<input checked="" type="checkbox"/>
	+	Playgrounds	<input type="checkbox"/>
	+	Paths and Trails	<input checked="" type="checkbox"/>
	+	Off-Road Motorcycle Trails	<input checked="" type="checkbox"/>
	+	Septic Tank Absorption Fields	<input checked="" type="checkbox"/>
	+	Sewage Lagoons	<input checked="" type="checkbox"/>
	+	Sanitary Landfill (Trench)	<input checked="" type="checkbox"/>

Record: 77 of 98

SDV Recreational Interpretation Tree - Modified



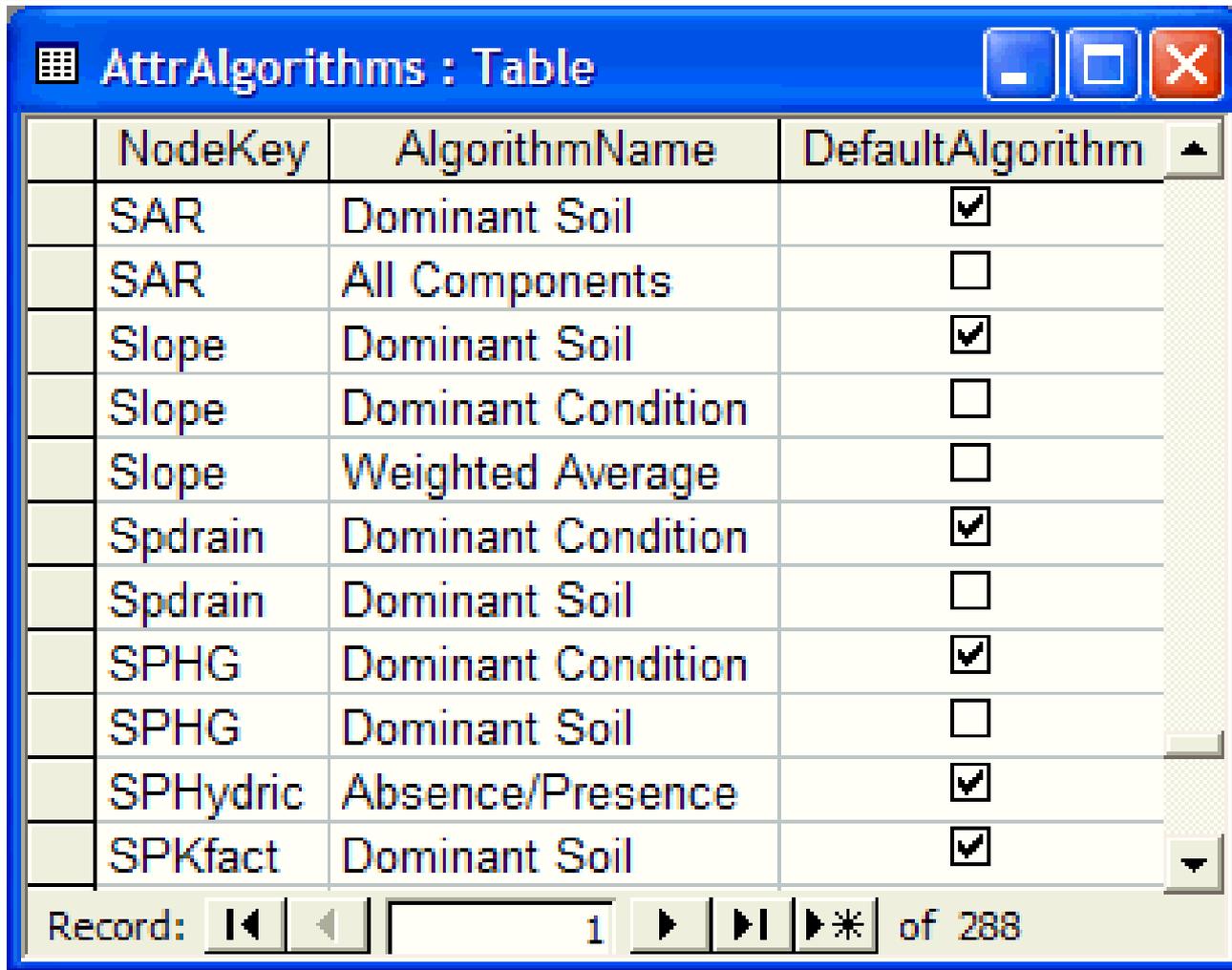
SDV Rules – Valid Algorithms



		Name	Initials	Description
	+	Absence/Presence	AP	Absence/Presence Description
	+	All Components	AC	All Components Description
	+	Dominant Condition	DC	Dominant Condition Description
	+	Dominant Soil	DS	Dominant Soil Description
	+	Least Limiting	LL	Least Limiting Description
	+	Most Limiting	ML	Most Limiting Description
	+	Weighted Average	WA	Weighted Average Description
▶				

Record:  8 of 8

SDV Rules – Default Algorithm



NodeKey	AlgorithmName	DefaultAlgorithm
SAR	Dominant Soil	<input checked="" type="checkbox"/>
SAR	All Components	<input type="checkbox"/>
Slope	Dominant Soil	<input checked="" type="checkbox"/>
Slope	Dominant Condition	<input type="checkbox"/>
Slope	Weighted Average	<input type="checkbox"/>
Spdrain	Dominant Condition	<input checked="" type="checkbox"/>
Spdrain	Dominant Soil	<input type="checkbox"/>
SPHG	Dominant Condition	<input checked="" type="checkbox"/>
SPHG	Dominant Soil	<input type="checkbox"/>
SPHydric	Absence/Presence	<input checked="" type="checkbox"/>
SPKfact	Dominant Soil	<input checked="" type="checkbox"/>

Record: 1 of 288

Recommendations for Interagency Applications of SDV

- Establish an SDV business rules file guru to maintain a master rules file for your agency.
- Use the display flag for major groupings (folders) and specific interpretations or properties (themes) vs. deleting items.
- Work with experienced NASIS interpretation experts to add new interpretations and to include these with NASIS exports.

