

Soil Information for North Dakota

The NRCS Electronic Field Office Technical Guide (eFOTG) tabular soil data are available as follows.

Stored Reports

The stored reports those that are currently not available in the Web Soil Survey (WSS). They contain soil data for an entire soil survey area, are located in eFOTG – Section II – Soil Information by county subfolder, and include the following.

- Frozen Highly Erodible Land (HEL) List – County Name
- Interpretive Table – County Name
- Productivity Index – County Name

Electronic Reports

Electronic reports are available with accompanying maps, interpretations, and/or reports in the WSS at the following URL. WSS creates a custom soil survey report for an area of interest that may be downloaded in Adobe PDF format.

<http://websoilsurvey.nrcs.usda.gov/app/>

Instructions for generating reports are available in the WSS application. Once an area of interest (AOI) is selected; the following interpretations and reports are available for use.

Soil Map

Map Unit Description -. Each map unit on the Map Unit Legend is hyperlinked to its map unit description report. Click on the name of the desired map unit to generate this report.

The screenshot displays the USDA Web Soil Survey interface. On the left, the 'Map Unit Legend' for Adams County, North Dakota (ND001) is shown. A red circle highlights the map unit 'E0303B Sinnigam-Janesburg loams, 0 to 6 percent slopes'. A red arrow points from this entry to the 'Map Unit Description' report on the right. The report provides detailed information for map unit E0303B, including its setting, composition, and properties.

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
E0303B	Sinnigam-Janesburg loams, 0 to 6 percent slopes	1,043.7	0.2%
E0303E	Sinnigam-Janesburg complex, 3 to 25 percent slopes, very stony	6,674.7	1.1%
E0315B	Watrous loam, 0 to 6 percent slopes	2,881.9	0.5%
E0415A	Belfield-Daglum complex, 0 to 2 percent slopes	64,475.6	10.2%
E0421A	Belfield-Daglum clay loams, saline, 0 to 2 percent slopes	4,365.8	0.7%
E0454B	Daglum-Rhoades complex, 0 to 6 percent slopes	60.1	0.0%
E0515B	Rhoades-Daglum complex, 0 to 6 percent slopes	25,921.2	4.1%

Map Unit Description Report – Map Unit Description

Adams County, North Dakota

E0303B–Sinnigam-Janesburg loams, 0 to 6 percent slopes

Map Unit Setting
 Elevation: 1,650 to 3,600 feet
 Mean annual precipitation: 13 to 18 inches
 Mean annual air temperature: 39 to 45 degrees F
 Frost-free period: 120 to 135 days

Map Unit Composition
 Sinnigam and similar soils: 54 percent
 Janesburg and similar soils: 18 percent
 Minor components: 28 percent

Description of Sinnigam

Setting
 Landform: Divides
 Down-slope shape: Linear
 Across-slope shape: Convex
 Parent material: Clayey alluvium over residuum weathered from sedimentary rock

Properties and qualities
 Slope: 0 to 6 percent
 Depth to restrictive feature: 10 to 20 inches to lithic bedrock
 Drainage class: Well drained
 Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)

Soil Data Explorer

Suitabilities and Limitations for Use

Building Site Development

- Corrosion of Concrete
- Corrosion of Steel
- Dwellings with Basements
- Dwellings without Basements
- Lawns, Landscaping, and Golf Fairways
- Local Roads and Streets
- Small Commercial Buildings
- Unpaved Local Roads and Streets

Construction Materials

- Gravel Source
- Gravel Source (MN)
- Roadfill Source
- Sand Source
- Source of Reclamation Material
- Topsoil Source

Disaster Recovery Planning

- Catastrophic Mortality, Large animal Disposal, Pit
- Catastrophic Mortality, Large Animal Disposal, Trench
- Clay Liner Material Source
- Composting Facility -Subsurface
- Composting Facility – Surface
- Composting Medium and Final Cover
- Rubble and Debris Disposal, Large-Scale Event

Land Classifications

- Conservation Tree and Shrub Group
- Ecological Site ID
- Ecological Site Name
- Farmland Classification
- Hydric Rating by Map Unit
- Nonirrigated Capability Class
- Nonirrigated Capability Subclass
- Soil Taxonomy Classification

Land Management

- Agronomic Concerns, Available Water Capacity (ND)
- Agronomic Concerns, Natural Fertility (ND)
- Agronomic Concerns, Pesticide and Nutrient Leaching (ND)
- Agronomic Concerns, Pesticide and Nutrient Runoff (ND)
- Agronomic Concerns, Physical Limitations (ND)
- Agronomic Concerns, Rooting Depth (ND)
- Agronomic Concerns, Sodicity (ND)
- Agronomic Concerns, Subsurface Salinity (ND)
- Agronomic Concerns, Surface Crusting (ND)
- Agronomic Concerns, Surface Salinity (ND)
- Agronomic Concerns, Tillth and/or Compaction (ND)
- Agronomic Concerns, Water Erosion (ND)
- Agronomic Concerns, Wind Erosion (ND)
- Construction Limitations for Haul Roads and Log Landings
- Erosion Hazard (Off-Road, Off-Trail)
- Erosion Hazard (Road, Trail)
- Harvest Equipment Operability
- Mechanical Site Preparation (Deep)
- Mechanical Site Preparation (Surface)
- Potential for Damage by Fire
- Potential for Seedling Mortality
- Soil Rutting Hazard
- Suitability for Hand Planting
- Suitability for Log Landings
- Suitability for Mechanical Planting
- Suitability for Roads (Natural Surface)

Military Operations

- Bivouac Areas
- Excavations for Crew-Served Weapon Fighting Positions
- Excavations for Individual Fighting Positions
- Excavations for Vehicle Fighting Positions
- Helicopter Landing Zones
- Vehicle Trafficability, Type 1, 1 Pass, Wet Season
- Vehicle Trafficability, Type 1, 50 Passes, Wet Season
- Vehicle Trafficability, Type 1, Dry Season
- Vehicle Trafficability, Type 2, 1 Pass, Wet Season
- Vehicle Trafficability, Type 2, 50 Passes, Wet Season
- Vehicle Trafficability, Type 2, Dry Season
- Vehicle Trafficability, Type 3, 1 Pass, Wet Season
- Vehicle Trafficability, Type 3, 50 Passes, Wet Season
- Vehicle Trafficability, Type 3, Dry Season
- Vehicle Trafficability, Type 4, 1 Pass, Wet Season
- Vehicle Trafficability, Type 4, 50 Passes, Wet Season
- Vehicle Trafficability, Type 4, Dry Season
- Vehicle Trafficability, Type 5, 1 Pass, Wet Season
- Vehicle Trafficability, Type 5, 50 Passes, Wet Season
- Vehicle Trafficability, Type 5, Dry Season
- Vehicle Trafficability, Type 6, 1 Pass, Wet Season
- Vehicle Trafficability, Type 6, 50 Passes, Wet Season
- Vehicle Trafficability, Type 6, Dry Season
- Vehicle Trafficability, Type 7, 1 Pass, Wet Season
- Vehicle Trafficability, Type 7, 50 Passes, Wet Season
- Vehicle Trafficability, Type 7, Dry Season

Recreational Development

- Camp Areas
- Off-Road Motorcycle Trails
- Paths and Trails
- Picnic Areas
- Playgrounds

Sanitary Facilities

- Daily Cover for Landfill
- Sanitary Landfill (Area)
- Sanitary Landfill (Trench)
- Septic Tank Absorption Fields
- Sewage Lagoons

Vegetative Productivity

- Crop Productivity Index
- Range Production (Normal Year)

Waste Management

- Disposal of Wastewater by Irrigation
- Disposal of Wastewater by Rapid Infiltration
- Land Application of Municipal Sewage Sludge
- Manure and Food-Processing Waste
- Overland Flow Treatment of Wastewater
- Slow Rate Treatment of Wastewater

Water Management

- Embankments, Dikes, and Levees
- Excavated Ponds (Aquifer-Fed)
- Irrigation, General
- Irrigation, Micro (Above Ground)
- Irrigation, Micro (Subsurface Drip)
- Irrigation, Sprinkler (Close Spaced Drops)
- Irrigation, Sprinkler (General)
- Irrigation, Surface (Graded)
- Irrigation Surface (Level)
- Pond reservoir Areas
- Subsurface Water Management, Installation (ND)
- Subsurface Water Management, Outflow Quality (ND)
- Subsurface Water Management, Performance (ND)

Soil Properties and Qualities

Soil Chemical Properties

- Calcium Carbonate (CaCO₃)
- Cation-Exchange Capacity (CEC-7)
- Effective Cation-Exchange Capacity (ECEC)
- Electrical Conductivity (EC)
- Gypsum
- pH (1 to 1 Water)
- Sodium Adsorption Ratio (SAR)

Soil Erosion Factors

- K Factor, Rock Free (Kf)
- K Factor, Whole Soil (Kw)
- T Factor
- Wind Erodibility Group
- Wind Erodibility Index

Soil Physical Properties

- Available Water Capacity
- Available Water Storage
- Available Water Supply, 0 to 100 cm
- Available Water Supply, 0 to 150 cm
- Available Water Supply, 0 to 25 cm
- Available Water Supply, 0 to 50 cm
- Bulk Density, 15 Bar
- Bulk Density, One-Tenth Bar
- Bulk Density, One-Third Bar
- Linear Extensibility
- Liquid Limit
- Organic Matter

- Percent Clay
- Percent Sand
- Percent Silt
- Plasticity Index
- Saturated Hydraulic Conductivity (Ksat)
- Saturated Hydraulic Conductivity (Ksat), Standard Classes
- Surface Texture
- Water Content, 15 Bar
- Water Content, One-Third Bar

Soil Qualities and Features

- AASHTO Group Classification (Surface)
- Depth to a Selected Soil Restrictive Layer
- Depth to Any Soil Restrictive Layer
- Drainage Class
- Frost Action
- Frost-Free Days
- Hydrologic Soil Group
- Map Unit Name
- Parent Material Name
- Representative Slope
- Unified Soil Classification (Surface)

Water Features

- Depth to Water Table
- Flooding Frequency Class
- Ponding Frequency Class

Soil Reports

AOI Inventory

- Component Legend
- Descripción de la Unidad de Mapa
- Descripción de la Unidad de Mapa (Breve, Generada)
- Map Unit Description
- Map Unit Description (Brief)
- Map Unit Description (Brief, Generated)
- Selected Soil Interpretation Description and Criteria Summary
- Selected Soil Interpretations
 - * Refer to page 6 for a list of available interpretations.
- Survey Area Data Summary
- Survey Area Map Unit Symbols and Names

Building Site Development

- Dwellings and Small Commercial Buildings
- Roads and Streets, Shallow Excavations, and Lawns and Landscaping

Construction Materials

- Source of Reclamation Material, Roadfill, and Topsoil
- Source of Sand and Gravel

Disaster Recovery Planning

- AWM – Large Animal Disposal, Pit

Land Classifications

- Conservation Tree and Shrub Suitability Groups
- Forage Suitability Groups
- Hydric rating by map unit (5 categories)
- Hydric Soil List – All Components
- Hydric Soils
- Land Capability Classification
- NCCPI Overall
- NCCPI Submodels
- Prime and other Important Farmlands
- Taxonomic Classification of the Soils

Land Management

- Damage by Fire and Seedling Mortality on Forestland
- Forestland Planting and Harvesting
- Forestland Site Preparation

- Haul Roads, Log Landings, and Soil Rutting on Forestland
- Hazard of Erosion and suitability for Roads on Forestland

Recreational Development

- Camp Areas, Picnic Areas, and Playgrounds
- Paths, Trails, and Golf Fairways

Sanitary Facilities

- Landfills
- Sewage Disposal

Soil Chemical Properties

- Chemical Soil Properties

Soil Erosion

- RUSLE2 Related Attributes
- Windbreaks and Environmental Plantings

Soil Physical Properties

- Engineering Properties
- Particle Size and Coarse Fragments
- Physical Soil Properties

Soil Qualities and Features

- Soil Features

Vegetative Productivity

- Rangeland and forest Vegetation Classification, Productivity, and Plant Composition
- Rangeland Productivity
- Rangeland Productivity and Plant Composition

Waste Management

- Agricultural Disposal of Manure, Food-Processing Waste, and Sewage Sludge
- Agricultural Disposal of Wastewater by Irrigation and Overland Flow
- Agricultural Disposal of Wastewater by Rapid Infiltration and Slow Rate Treatment
- Large Animal Carcass Disposal

Water Features

- Water Features

Water Management

- Irrigation – General and Sprinkler
- Irrigation – Micro
- Irrigation – Surface
- Ponds and Embankments

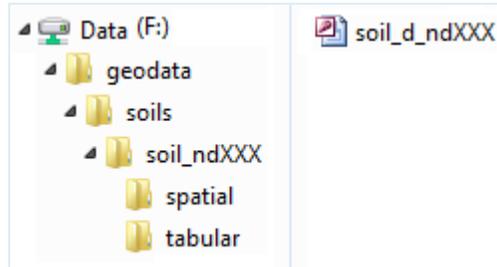
Selected Interpretations Available

Interpretation Name	Interpretation Name
1 AGR-Available Water Capacity (ND)	58 FOR - Road Suitability (Natural Surface)
2 AGR-Natural Fertility (ND)	59 FOR - Soil Rutting Hazard
3 AGR-Pesticide and Nutrient Leaching (ND)	60 GRL - Fencing, Post Depth =<24 inches
4 AGR-Pesticide and Nutrient Runoff (ND)	61 GRL - Fencing, Post Depth =<36 inches
5 AGR-Physical Limitations (ND)	62 Ground Penetrating Radar Penetration
6 AGR-Rooting Depth (ND)	63 MIL - Bivouac Areas (DOD)
7 AGR-Sodicity (ND)	64 MIL - Excavations Crew-Served Weapon Fighting Position (DOD)
8 AGR-Subsurface Salinity (ND)	65 MIL - Excavations for Individual Fighting Position (DOD)
9 AGR-Surface Crusting (ND)	66 MIL - Excavations for Vehicle Fighting Position (DOD)
10 AGR-Surface Salinity (ND)	67 MIL - Helicopter Landing Zones (DOD)
11 AGR-Tilth and/or Compaction (ND)	68 MIL - Trafficability Veh. Type 1 1-pass wet season (DOD)
12 AGR-Water Erosion (ND)	69 MIL - Trafficability Veh. Type 1 50-passes wet season (DOD)
13 AGR-Wind Erosion (ND)	70 MIL - Trafficability Veh. Type 1 dry season (DOD)
14 AWM - Irrigation Disposal of Wastewater	71 MIL - Trafficability Veh. Type 2 1-pass wet season (DOD)
15 AWM - Land Application of Municipal Sewage Sludge	72 MIL - Trafficability Veh. Type 2 50-passes wet season (DOD)
16 AWM - Manure and Food Processing Waste	73 MIL - Trafficability Veh. Type 2 dry season (DOD)
17 AWM - Overland Flow Process Treatment of Wastewater	74 MIL - Trafficability Veh. Type 3 1-pass wet season (DOD)
18 AWM - Rapid Infiltration Disposal of Wastewater	75 MIL - Trafficability Veh. Type 3 50-passes wet season (DOD)
19 AWM - Slow Rate Process Treatment of Wastewater	76 MIL - Trafficability Veh. Type 3 dry season (DOD)
20 DHS - Catastrophic Mortality, Large Animal Disposal, Pit	77 MIL - Trafficability Veh. Type 4 1-pass wet season (DOD)
21 DHS - Catastrophic Mortality, Large Animal Disposal, Trench	78 MIL - Trafficability Veh. Type 4 50-passes wet season (DOD)
22 DHS - Potential for Radioactive Bioaccumulation	79 MIL - Trafficability Veh. Type 4 dry season (DOD)
23 DHS - Potential for Radioactive Sequestration	80 MIL - Trafficability Veh. Type 5 1-pass wet season (DOD)
24 DHS - Rubble and Debris Disposal, Large-Scale Event	81 MIL - Trafficability Veh. Type 5 50-passes wet season (DOD)
25 DHS - Site for Composting Facility - Subsurface	82 MIL - Trafficability Veh. Type 5 dry season (DOD)
26 DHS - Site for Composting Facility - Surface	83 MIL - Trafficability Veh. Type 6 1-pass wet season (DOD)
27 DHS - Suitability for Clay Liner Material	84 MIL - Trafficability Veh. Type 6 50-passes wet season (DOD)
28 DHS - Suitability for Composting Medium and Final Cover	85 MIL - Trafficability Veh. Type 6 dry season (DOD)
29 ENG - Construction Materials - Gravel Source (MN)	86 MIL - Trafficability Veh. Type 7 1-pass wet season (DOD)
30 ENG - Construction Materials; Gravel Source	87 MIL - Trafficability Veh. Type 7 50-passes wet season (DOD)
31 ENG - Construction Materials; Reclamation	88 MIL - Trafficability Veh. Type 7 dry season (DOD)
32 ENG - Construction Materials; Roadfill	89 NCCPI - National Commodity Crop Productivity Index (Ver 2.0)
33 ENG - Construction Materials; Sand Source	90 NCCPI - NCCPI Small Grains Submodel (II)
34 ENG - Construction Materials; Topsoil	91 Nitrogen Loss Potential (ND)
35 ENG - Daily Cover for Landfill	92 URB/REC - Camp Areas
36 ENG - Dwellings W/O Basements	93 URB/REC - Off-Road Motorcycle Trails
37 ENG - Dwellings With Basements	94 URB/REC - Paths and Trails
38 ENG - Lawn, Landscape, Golf Fairway	95 URB/REC - Picnic Areas
39 ENG - Local Roads and Streets	96 URB/REC - Playgrounds
40 ENG - Sanitary Landfill (Area)	97 WMS - Embankments, Dikes, and Levees
41 ENG - Sanitary Landfill (Trench)	98 WMS - Excavated Ponds (Aquifer-fed)
42 ENG - Septic Tank Absorption Fields	99 WMS - Irrigation, General
43 ENG - Sewage Lagoons	100 WMS - Irrigation, Micro (above ground)
44 ENG - Shallow Excavations	101 WMS - Irrigation, Micro (subsurface drip)
45 ENG - Small Commercial Buildings	102 WMS - Irrigation, Sprinkler (close spaced outlet drops)
46 ENG - Unpaved Local Roads and Streets	103 WMS - Irrigation, Sprinkler (general)
47 FOR - Construction Limitations for Haul Roads/Log Landings	104 WMS - Irrigation, Surface (graded)
48 FOR - Hand Planting Suitability	105 WMS - Irrigation, Surface (level)
49 FOR - Harvest Equipment Operability	106 WMS - Pond Reservoir Area
50 FOR - Log Landing Suitability	107 WMS - Subsurface Water Management, Outflow Quality
51 FOR - Mechanical Planting Suitability	108 WMS - Subsurface Water Management, System Installation
52 FOR - Mechanical Site Preparation (Deep)	109 WMS - Subsurface Water Management, System Performance
53 FOR - Mechanical Site Preparation (Surface)	110 WMS - Surface Water Management, System
54 FOR - Potential Erosion Hazard (Off-Road/Off-Trail)	111 WMS-Subsurface Water Management, Installation (ND)
55 FOR - Potential Erosion Hazard (Road/Trail)	112 WMS-Subsurface Water Management, Outflow Quality (ND)
56 FOR - Potential Fire Damage Hazard	113 WMS-Subsurface Water Management, Performance (ND)
57 FOR - Potential Seeding Mortality	

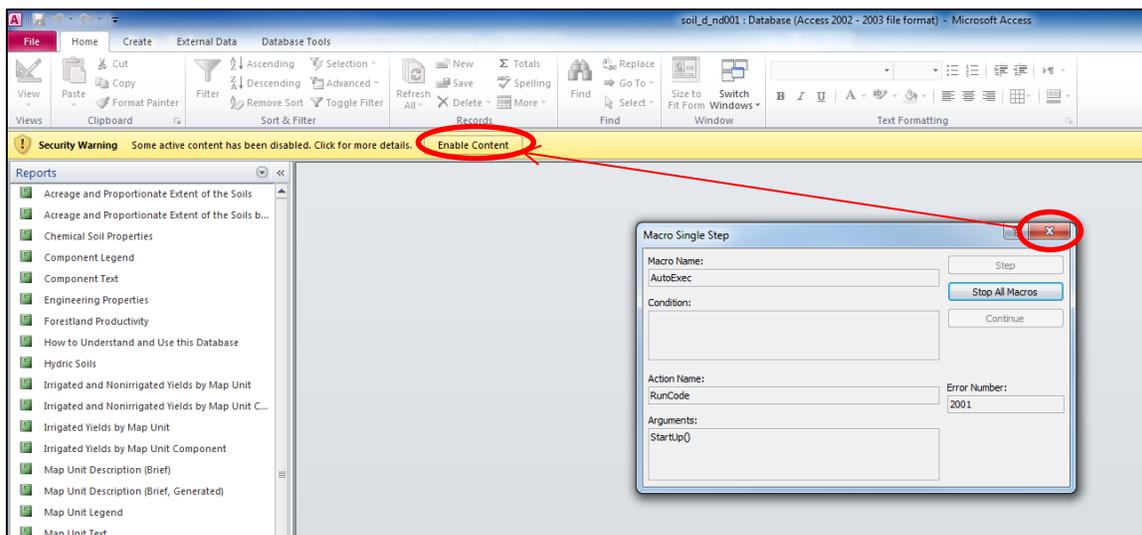
The SSURGO tabular data are in a Microsoft Access database that contains a set of reports similar to those formerly available on the Soil Data Mart before it was incorporated into WSS 3.0. These data are available on the service center servers in the following directory, where XXX is the county FIPS code.

(e.g. The file path for the Adams County database is F:\geodata\soils\soil_nd001\tabular\soil_d_nd001.mdb)

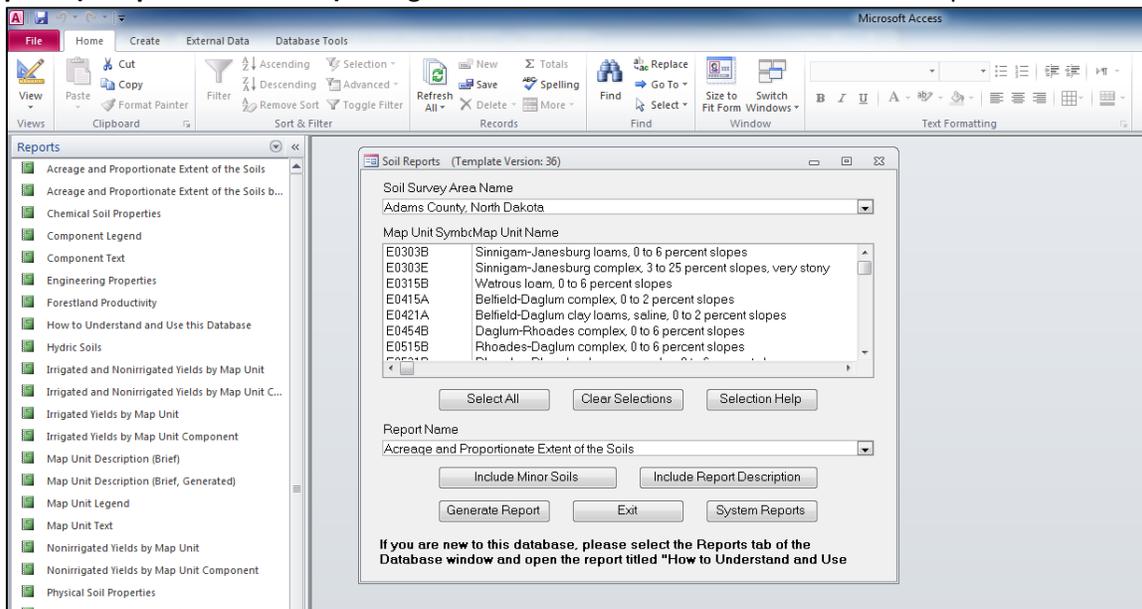
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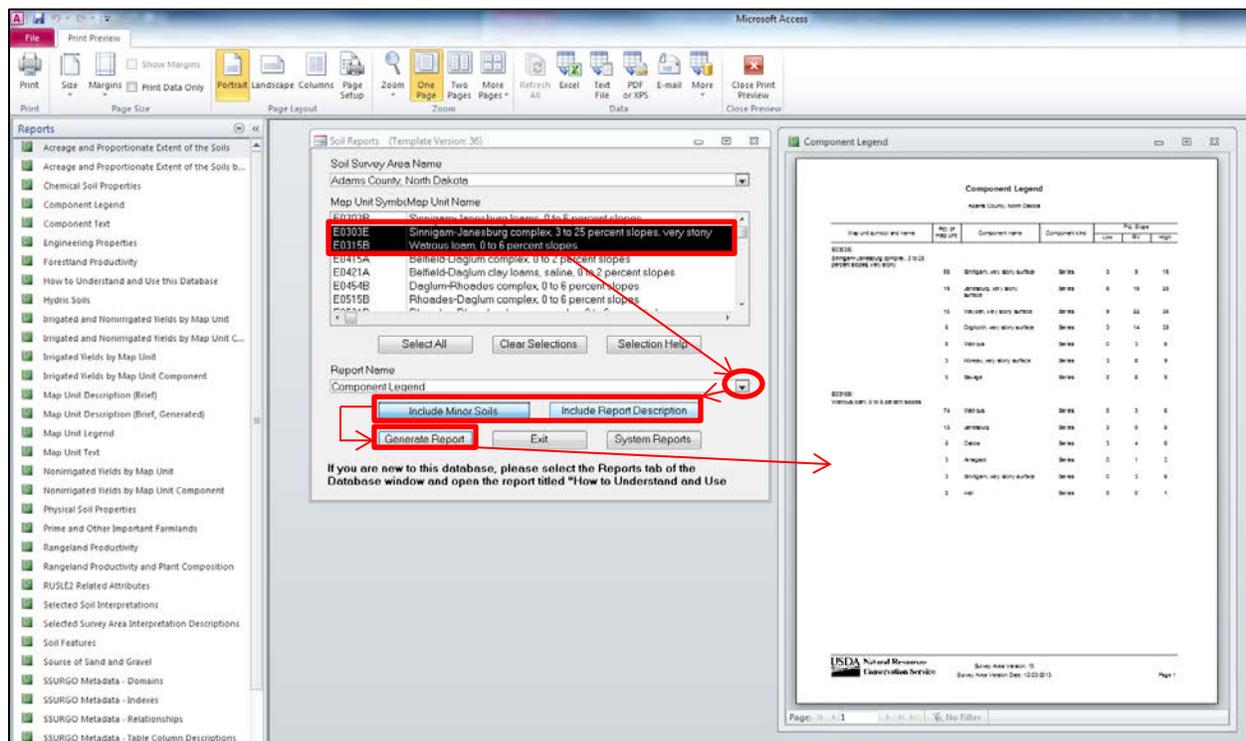
When the soil_d_ndXXX.mdb file is opened, a screen similar to the one below will appear. Close the **Macro Single Step** dialogue box and click on the **Enable Content** button in the **Security Warning** banner.



A **Soil Reports (Template Version 36)** dialogue box similar to the one shown below will open.



To run a report, select the map unit(s) to be included in the report. Next, use the drop down box to select the desired report, choose to **Include Minor Soils** and/or to **Include Report Description** and click **Generate Report**.



Reports Available in the Microsoft Access Template Database

- Acreage and Proportionate Extent of the Soils
- Acreage and Proportionate Extent of the Soils by County
- Agricultural Disposal of Manure, Food-Processing Waste, and Sewage Sludge
- Agricultural Disposal of Wastewater by Irrigation and Overland Flow
- Agricultural Disposal of Wastewater by Rapid Infiltration and Slow Rate Treatment
- Camp Areas, Picnic Areas, and Playgrounds
- Chemical Soil Properties
- Component Legend
- Component Text
- Damage by Fire and Seedling Mortality on Forestland
- Dwellings and Small Commercial Buildings
- Engineering Properties
- Forestland Site Preparation
- Haul Roads, Log Landings, and Soil Rutting on Forestland
- Hazard of erosion and Suitability for Roads on Forestland
- Hydric Soils
- Irrigation – General and Sprinkler
- Irrigation – Micro
- Irrigation – Surface
- Landfills
- Map Unit Description (Brief)
- Map Unit Description (Brief, Generated)
- Map Unit Description (Brief, Tabular)
- Map Unit Legend
- Map Unit Text
- Paths, Trails, and Golf Fairways
- Physical Soil Properties
- Ponds and Embankments
- Prime and Other Important Farmlands
- Rangeland Productivity
- Rangeland Productivity and Plant Composition
- Roads and Streets, Shallow Excavations, and Lawns and Landscaping
- RUSLE2 Related Attributes
- Selected Soil Interpretations (Refer to page 6 for a list of available interpretations)
- Selected Survey Area Interpretation Descriptions
- Sewage Disposal
- Source of Reclamation Material, Roadfill, and Topsoil
- Source of Sand and Gravel
- Survey Area Data Summary
- Taxonomic Classification of the Soils
- Water Features
- Wind Erosion Prediction System Related Attributes
- Windbreaks and Environmental Plantings