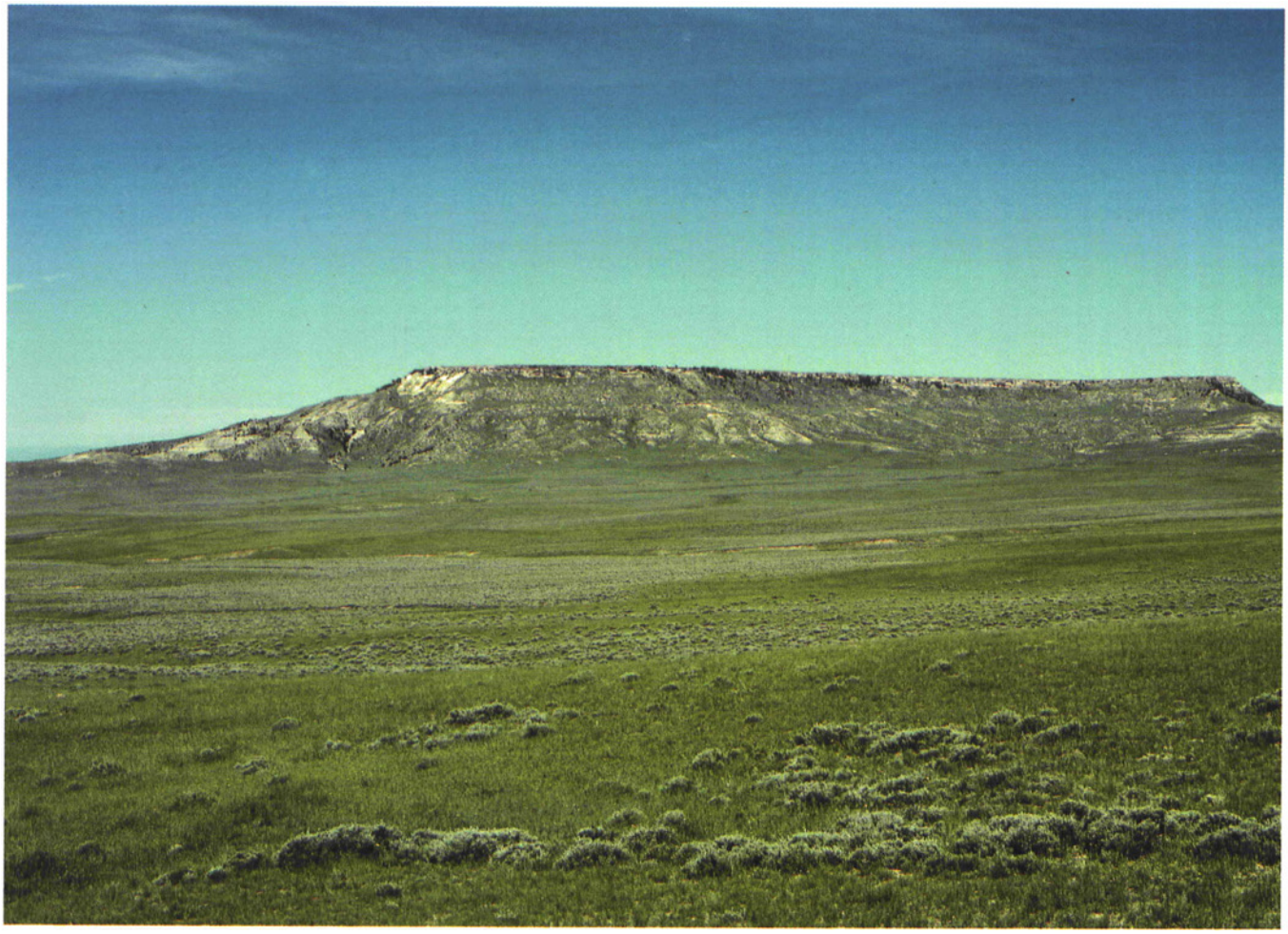
United States Department of Agriculture

Natural Resources Conservation Service

In cooperation with the University of Wyoming Agricultural Experiment Station, United States Forest Service, and the Bureau of Land Management

Soil Survey of Campbell County, Wyoming, Southern Part Part II



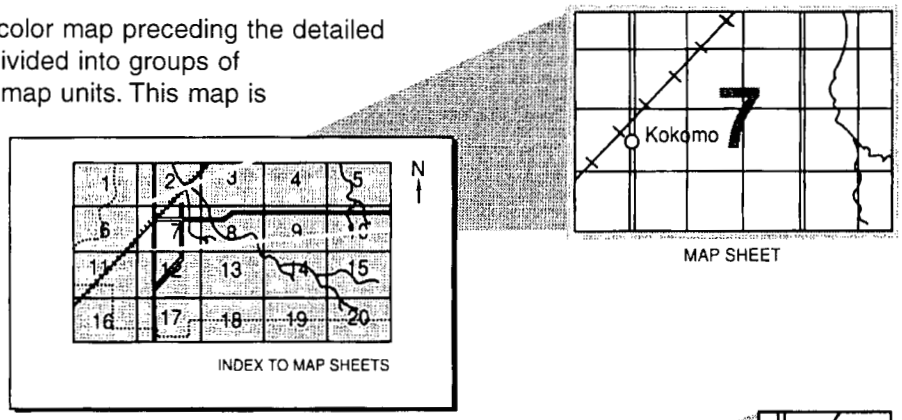
How to Use This Soil Survey

This survey is divided into three parts. Part I includes general information about the survey area; descriptions of the detailed soil map units and soil series in the area; and a description of how the soils formed. Part II describes the use and management of the soils and the major soil properties. This part may be updated as further information about soil management becomes available. Part III includes the maps.

General Soil Map

The general soil map, which is the color map preceding the detailed soil maps, shows the survey area divided into groups of associated soils called general soil map units. This map is useful in planning the use and management of large areas.

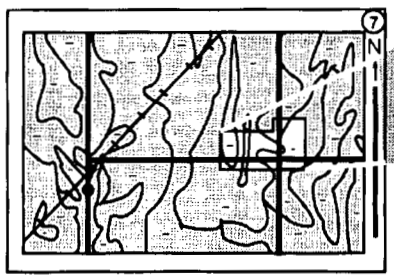
To find information about your area of interest, locate that area on the map, identify the name of the map unit in the area on the color-coded map legend, then refer to the section **General Soil Map Units** for a general description of the soils in your area.



NOTE: Map unit symbols in a soil survey may consist only of numbers or letters, or they may be a combination of numbers and letters.

Detailed Soil Maps

The detailed soil maps follow the general soil map. These maps can be useful in planning the use and management of small areas.



MAP SHEET

To find information about your area of interest, locate that area on the **Index to Map Sheets**, which precedes the soil maps. Note the number of the map sheet and turn to that sheet.

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the **Contents**, which lists the map units by symbol and name and shows the page where each map unit is described.

The **Contents** shows which table has data on a specific land use for each detailed soil map unit. Also see the **Contents** for sections of this publication that may address your specific needs.

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 1993. Soil names and descriptions were approved in 1995. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1995. This survey was made cooperatively by the Natural Resources Conservation Service and the Bureau of Land Management, Forest Service, Wyoming Agricultural Experiment Station, and University of Wyoming Extension Service. The survey is part of the technical assistance furnished to the Intermountain Soil and Water Conservation District.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

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Cover: This landform is a result of the resistance of the overlying material (hard conglomerate sandstone and siltstone of the White River formation) to weathering and erosion. The White River formation is more resistant to weathering than the underlying Wasatch formation.

Additional information about the Nation's natural resources is available on the Natural Resources Conservation Service homepage on the World Wide Web. The address is http://www.nrcs.usda.gov.

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Detailed Soil Map Unit Legend

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104—Arwite fine sandy loam, 6 to 15 percent slopes
105—Arwite-Elwop fine sandy loams, 0 to 6 percent slopes
106—Arwite-Elwop fine sandy loams, 6 to 15 percent slopes
107—Arwite-Vonalf fine sandy loams, 0 to 6 percent slopes
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Soil Survey of Campbell County, Wyoming, Southern Part

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as rangeland; as sites for buildings, sanitary facilities, highways and other transportation systems; and for wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

The classification and extent of the soils in this county are shown in the tables "Classification of the Soils" and "Acreage and Proportionate Extent of the Soils" which follow this section.

Classification of the Soils

(An asterisk in the first column indicates a taxadjunct to the series. See text for a description of those characteristics that are outside the range of the series.)

Soil name	Family or higher taxonomic class
Absted	Fine, smectitic, mesic Haplic Ustic Natrargids
Aridic Ustorthents	Aridic Ustorthents
Arvada	Fine, smectitic, mesic Vertic Natrargids
Arwite	Fine-loamy, mixed, superactive, mesic Aridic Haplustalfs
Ashollow	Coarse-loamy, mixed, superactive, calcareous, mesic Aridic Ustorthents
Bidman	Fine, smectitic, mesic Ustic Paleargids
Boruff	Fine, smectitic, calcareous, mesic Vertid Fluvaquents
Bowbac	Fine-loamy, mixed, superactive, mesic Ustic Haplargids
Brislawn	Fine, smectitic, mesic Aridic Paleustalfs
Cambria	Fine-loamy, mixed, superactive, mesic Ustic Haplargids
Clarkelen	Coarse-loamy, mixed, superactive, calcareous, mesic Ustic Torrifluvents
*Clarkelen	Coarse-loamy, mixed, superactive, nonacid, mesic Ustic Torrifluvents
Cromack	Fine, smectitic, mesic Aridic Haplustepts
Cushman	Fine-loamy, mixed, superactive, mesic Ustic Haplargids
Decolney	Fine-loamy, mixed, superactive, mesic Ustic Haplargids
Deekay	Fine-loamy, mixed, superactive, mesic Aridic Haplustalfs
Draknab	Sandy, mixed, mesic Ustic Torrifluvents
Echeta	Fine, smectitic, mesic Torrertic Haplustepts
Elwop	Fine-loamy, mixed, superactive, mesic Aridic Haplustalfs
Embry	Coarse-loamy, mixed, superactive, nonacid, mesic Ustic Torriorthents
Emigha	Fine-silty, mixed, superactive, mesic Ustifluventic Haplocambids
Fairburn	Loamy, mixed, superactive, calcareous, mesic, shallow Aridic Ustorthents
Felix	Very-fine, smectitic, mesic Aridic Epiaquerts
Forkwood	Fine-loamy, mixed, superactive, mesic Ustic Haplargids
Gateson	Fine-loamy, mixed, superactive, mesic Aridic Haplustalfs
Haverdad	Fine-loamy, mixed, superactive, calcareous, mesic Ustic Torrifluvents
Heldt	Fine, smectitic, mesic Ustertic Haplocambids
Hiland	Fine-loamy, mixed, superactive, mesic Ustic Calciargids
Hilight	Clayey, smectitic, nonacid, mesic, shallow Ustic Torriorthents
Ironbutte	Loamy-skeletal over fragmental, mixed, superactive, nonacid, mesic Aridic Ustorthents
Iwait	Fine-loamy, mixed, superactive, calcareous, mesic Aridic Ustorthents
Jayem	Coarse-loamy, mixed, superactive, mesic Aridic Haplustolls
Jaywest	Fine, smectitic, mesic Aridic Paleustalfs
Julesburg	Coarse-loamy, mixed, superactive, mesic Aridic Argiustolls
Keeline	Coarse-loamy, mixed, superactive, calcareous, mesic Ustic Torriorthents
Keyner	Fine-loamy, mixed, superactive, mesic Haplic Ustic Natrargids
Kishona	Fine-loamy, mixed, superactive, calcareous, mesic Ustic Torriorthents
Lawver	Fine, smectitic, mesic Ustic Paleargids
Leiter	Fine, smectitic, mesic Aridic Haplustalfs
Lismas	Clayey, smectitic, nonacid, mesic, shallow Aridic Ustorthents
Maysdorf	Fine-loamy, mixed, superactive, mesic Ustic Calciargids
Mittenbutte	Loamy, mixed, superactive, calcareous, mesic, shallow Aridic Ustorthents
*Mittenbutte	Loamy, mixed, superactive, nonacid, mesic, shallow Aridic Ustorthents
Moorhead	Fine, smectitic, mesic Aridic Haplustalfs
Moskee	Fine-loamy, mixed, superactive, mesic Aridic Argiustolls
Muleherder	Loamy-skeletal over fragmental, mixed, superactive, mesic Aridic Haplustepts
Niobrara	Mixed, mesic, shallow Aridic Ustipsamments
*Niobrara	Mixed, mesic, shallow Aridic Ustipsamments
Nuncho	Fine, smectitic, mesic Aridic Argiustolls
Oldwolf	Fine-loamy, mixed, superactive, mesic Aridic Haplustalfs
Orpha	Mixed, mesic Ustic Torripsamments
Oshoto	Fine-silty, mixed, superactive, mesic Aridic Haplustalfs
Parmleed	Fine, smectitic, mesic Ustic Paleargids
Pitchdraw	Coarse-loamy, mixed, superactive, calcareous, mesic Aridic Ustorthents
Platmak	Fine, smectitic, mesic Aridic Paleustolls
Pugsley	Fine-loamy, mixed, superactive, mesic Ustic Haplargids
Rauzi	Fine-loamy, mixed, superactive, mesic Aridic Haplustalfs
Recluse	Fine-loamy, mixed, superactive, mesic Aridic Argiustolls
Renohill	Fine, smectitic, mesic Ustic Haplargids

Classification of the Soils--Continued

Soil name	Family or higher taxonomic class
Rockybutte	Fine-loamy, mixed, superactive, mesic Aridic Haplustalfs
Rockypoint	Fine-loamy, mixed, superactive, calcareous, mesic Aridic Ustifluvents
Sabatka	Fine, smectitic, mesic Aridic Haplustepts
Samday	Clayey, smectitic, calcareous, mesic, shallow Ustic Torriorthents
Samsil	Clayey, smectitic, calcareous, mesic, shallow Aridic Ustorthents
Savageton	Fine, smectitic, mesic Ustic Haplocambids
Shingle	Loamy, mixed, superactive, calcareous, mesic, shallow Ustic Torriorthents
Silhouette	Fine, smectitic, mesic Ustic Haplocambids
Sodawells	Coarse-loamy, mixed, superactive, calcareous, mesic Aridic Ustifluvents
Spottedhorse	Fine, smectitic, mesic Aridic Paleustalfs
Taluce	Loamy, mixed, superactive, calcareous, mesic, shallow Ustic Torriorthents
*Taluce	Loamy, mixed, superactive, nonacid, mesic, shallow Ustic Torriorthents
Teckla	Fine-loamy, mixed, superactive, mesic Ustic Haplargids
Terro	Coarse-loamy, mixed, superactive, mesic Ustic Haplargids
Theedle	Fine-loamy, mixed, superactive, calcareous, mesic Ustic Torriorthents
Torriarents	Torriarents
Torriorthents	Torriorthents
Tullock	Mixed, mesic Ustic Torripsamments
Turnercrest	Coarse-loamy, mixed, superactive, calcareous, mesic Ustic Torriorthents
*Turnercrest	Coarse-loamy, mixed, superactive, nonacid, mesic Ustic Torriorthents
Ucross	Fine-loamy, mixed, superactive, calcareous, mesic Aridic Ustorthents
Ulm	Fine, smectitic, mesic Ustic Haplargids
Ustic Torriorthents	Ustic Torriorthents
Valent	Mixed, mesic Aridic Ustipsamments
Vonalee	Coarse-loamy, mixed, superactive, mesic Ustic Haplargids
Vonalf	Coarse-loamy, mixed, superactive, mesic Aridic Haplustalfs
Wags	Fine, smectitic, nonacid, mesic Ustic Torriorthents
Wibaux	Loamy-skeletal over fragmental, mixed, superactive, nonacid, mesic Ustic Torriorthents
*Wibaux	Loamy-skeletal over fragmental, mixed, superactive, nonacid, mesic Ustic Torriorthents
Worf	Loamy, mixed, superactive, mesic, shallow Ustic Haplargids
Worfka	Clayey, smectitic, mesic, shallow Ustic Haplargids
Wyarno	Fine, smectitic, mesic Ustic Haplargids
Wyotite	Fine-silty, mixed, superactive, mesic Ustic Haplargids
Xema	Coarse-loamy, mixed, superactive, mesic Aridic Haplustalfs
Ziggy	Fine-loamy, mixed, superactive, mesic Aridic Haplustepts
Zigweid	Fine-loamy, mixed, superactive, mesic Ustic Haplocambids

Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
100	Aridic Ustorthents, saline, 0 to 4 percent slopes	1,548	*
101	Arvada, thick surface very fine sandy loam, 0 to 6 percent slopes	3,890	0.2
102	Arvada, thick surface-Arvada-Slickspots complex, 0 to 6 percent slopes	36,028	2.0
103	Arwite fine sandy loam, 0 to 6 percent slopes	11,006	0.6
104	Arwite fine sandy loam, 6 to 15 percent slopes	2,257	0.1
105	Arwite-Elwop fine sandy loams, 0 to 6 percent slopes	6,623	0.4
106	Arwite-Elwop fine sandy loams, 6 to 15 percent slopes	7,885	0.4
107	Arwite-Vonalf fine sandy loams, 0 to 6 percent slopes	6,961	0.4
108	Arwite-Vonalf fine sandy loams, 6 to 15 percent slopes	2,684	0.1
109	Bidman loam, 0 to 6 percent slopes	9,374	0.5
110	Bidman loam, loamy substratum, 0 to 6 percent slopes	3,961	0.2
111	Bidman-Parmleed loams, 0 to 6 percent slopes	36,035	2.0
112	Bidman-Parmleed loams, 6 to 15 percent slopes	8,726	0.5
113	Bidman-Ulm loams, 0 to 6 percent slopes	26,627	1.5
114	Bowbac-Taluce-Badland complex, 3 to 20 percent slopes	1,074	*
115	Bowbac-Worf fine sandy loams, 3 to 15 percent slopes	2,420	0.1
116	Cambria-Kishona-Zigweid loams, 0 to 6 percent slopes	28,172	1.6
117	Cambria-Kishona-Zigweid loams, 6 to 15 percent slopes	11,599	0.6
118	Clarkelen-Draknab complex, 0 to 3 percent slopes	2,429	0.1
119	Clarkelen-Embry fine sandy loams, 0 to 4 percent slopes	5,139	0.3
120	Clarkelen-Keeline association, 0 to 6 percent slopes	2,316	0.1
121	Cushman-Cambria loams, 0 to 6 percent slopes	17,480	1.0
122	Cushman-Cambria loams, 6 to 15 percent slopes	21,127	1.2
123	Cushman-Renohill loams, 6 to 15 percent slopes	3,321	0.2
124	Cushman-Shingle loams, 6 to 15 percent slopes	9,295	0.5
125	Cushman-Terro complex, 6 to 15 percent slopes	311	*
126	Cushman-Theedle loams, 0 to 6 percent slopes	8,590	0.5
127	Cushman-Theedle loams, 6 to 15 percent slopes	12,765	0.7
128	Cushman-Worf loams, 3 to 15 percent slopes	10,501	0.6
129	Decolney-Hiland fine sandy loams, 0 to 6 percent slopes	16,891	0.9
130	Decolney-Hiland fine sandy loams, 6 to 15 percent slopes	2,923	0.2
131	Deekay loam, 0 to 6 percent slopes	5,801	0.3
132	Deekay-Moorhead loams, 0 to 6 percent slopes	11,431	0.6
133	Deekay-Moorhead loams, 6 to 15 percent slopes	2,251	0.1
134	Deekay-Oldwolf loams, 0 to 6 percent slopes	16,292	0.9
135	Deekay-Oldwolf loams, 6 to 15 percent slopes	14,117	0.8
136	Deekay-Ziggy loams, 0 to 6 percent slopes	5,027	0.3
137	Echeta clay loam, 0 to 6 percent slopes	2,075	0.1
138	Echeta-Cromack clay loams, 6 to 15 percent slopes	2,710	0.2
139	Embry-Orpha complex, 3 to 15 percent slopes	6,322	0.4
140	Embry-Taluce sandy loams, 3 to 20 percent slopes	3,100	0.2
141	Emigha loam, 0 to 3 percent slopes	2,538	0.1
142	Emigha, sodic-Arvada, thick surface complex, 0 to 4 percent slopes	4,190	0.2
143	Felix clay, ponded, 0 to 2 percent slopes	4,999	0.3
144	Forkwood loam, 0 to 6 percent slopes	17,180	1.0
145	Forkwood-Cambria loams, 0 to 6 percent slopes	27,808	1.6
146	Forkwood-Cushman loams, O to 6 percent slopes	93,833	5.2
147	Forkwood-Cushman loams, 6 to 15 percent slopes	52,821	2.9
148	Forkwood-Ulm loams, 0 to 6 percent slopes	42,956	2.4
149	Forkwood-Ulm loams, 6 to 15 percent slopes	5,313	0.3
150	Gateson-Taluce-Turnercrest complex, 6 to 30 percent slopes	11,461	0.6
151	Haverdad loam, 0 to 3 percent slopes	9,753	0.5
152	Haverdad-Clarkelen complex, 0 to 4 percent slopes	2,082	0.1
153	Haverdad-Kishona association, 0 to 6 percent slopes	11,770	0.7
154	Heldt clay loam, 0 to 6 percent slopes	4,048	0.2
155	Heldt-Bidman complex, saline, 0 to 3 percent slopes	3,411	0.2
156	Hiland fine sandy loam, 0 to 6 percent slopes	5,334	0.3
157	Hiland-Bowbac fine sandy loams, 0 to 6 percent slopes	60,415	3.4
158	Hiland-Bowbac fine sandy loams, 6 to 15 percent slopes	53,710	3.0
159	Hiland-Vonalee fine sandy loams, 0 to 6 percent slopes	12,405	0.7
160	Hiland-Vonalee fine sandy loams, 6 to 15 percent slopes	5,527	0.3

* See footnote at end of table.

Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
161	Hilight-Taluce, cool-Wags complex, 6 to 40 percent slopes	5,187	0.3
162	Lismas-Mittenbutte, cool-Sabatka complex, 6 to 40 percent slopes	2,965	0.2
163	Hilight-Wags-Badland complex, 3 to 45 percent slopes	80,864	4.5
164	Lismas-Sabatka-Badland complex, 3 to 45 percent slopes	6,967	0.4
165	Jayem fine sandy loam, 6 to 20 percent slopes	1,906	0.1
166	Jaywest loam, 0 to 6 percent slopes	4,668	0.3
167	Jaywest-Moorhead loams, 0 to 6 percent slopes	11,357	0.6
168	Jaywest-Spottedhorse loams, 0 to 6 percent slopes	8,484	0.5
169	Julesburg fine sandy loam, 0 to 6 percent slopes	1,225	*
170	Keeline-Tullock loamy sands, 6 to 30 percent slopes	13,678	0.8
171	Keeline-Tullock-Niobrara, dry complex, 3 to 30 percent slopes	10,236	0.6
172	Keyner fine sandy loam, 0 to 6 percent slopes	10,761	0.6
173	Lawver-Teckla-Wibaux complex, 0 to 6 percent slopes	6,217	0.3
174	Brislawn-Rockybutte-Ironbutte complex, 0 to 10 percent slopes	4,222	0.2
175	Lawver-Wibaux complex, 6 to 30 percent slopes	2,865	0.2
176	Leiter-Cromack clay loams, 3 to 15 percent slopes	1,839	0.1
177	Maysdorf fine sandy loam, 0 to 6 percent slopes	5,189	0.3
178	Maysdorf sandy clay loam, 0 to 6 percent slopes	701	*
179	Maysdorf-Pugsley sandy loams, 0 to 6 percent slopes	10,371	0.6
180	Maysdorf-Pugsley sandy loams, 6 to 15 percent slopes	6,226	0.3
181	Moorhead clay loam, 0 to 6 percent slopes	10,473	0.6
182	Moorhead loam, 0 to 6 percent slopes	2,209	0.1
183	Moorhead-Leiter clay loams, 0 to 6 percent slopes	8,315	0.5
184	Moorhead-Leiter clay loams, 6 to 15 percent slopes	8,574	0.5
185	Moskee fine sandy loam, 0 to 6 percent slopes	2,789	0.2
186	Moskee fine sandy loam, 6 to 10 percent slopes	124	*
187	Nuncho loam, 0 to 6 percent slopes	3,063	0.2
188	Orpha-Tullock loamy sands, 6 to 30 percent slopes	3,288	0.2
189	Oshoto-Moorhead loams, 0 to 6 percent slopes	2,109	0.1
190	Parmleed-Renohill complex, 3 to 15 percent slopes	5,154	0.3
191	Pits-Dumps complex	14,818	0.8
192	Platmak loam, 0 to 6 percent slopes	1,565	*
193	Pugsley-Decolney sandy loams, 0 to 6 percent slopes	1,304	*
194	Pugsley-Decolney sandy loams, 6 to 15 percent slopes	3,121	0.2
195	Rauzi fine sandy loam, 0 to 6 percent slopes	1,980	0.1
196	Rauzi sandy clay loam, 0 to 6 percent slopes	1,226	*
197	Rauzi-Elwop fine sandy loams, 2 to 10 percent slopes	3,041	0.2
198	Recluse loam, 0 to 6 percent slopes	1,458	*
199	Renohill-Savageton clay loams, 0 to 6 percent slopes	1,264	*
200	Renohill-Savageton clay loams, 6 to 15 percent slopes	2,747	0.2
201	Renohill-Shingle-Worf complex 3 to 15 percent slopes	4,458	0.2
202	Renohill-Worfka clay loams, 3 to 15 percent slopes	3,308	0.2
203	Rockypoint-Iwait association, 0 to 6 percent slopes	2,514	0.1
204	Samday-Samday, cool-Shingle clay loams, 6 to 40 percent slopes	7,685	0.4
205	Samday-Savageton clay loams, 3 to 15 percent slopes	7,108	0.4
206	Samday-Shingle-Badland complex, 10 to 45 percent slopes	16,975	0.9
207	Cromack-Fairburn-Ucross complex, 3 to 20 percent slopes	5,913	0.3
208	Savageton-Silhouette clay loams, 0 to 6 percent slopes	4,550	0.3
209	Savageton-Silhouette clay loams, 6 to 15 percent slopes	3,053	0.2
210	Shingle-Taluce complex, 3 to 30 percent slopes	11,667	0.7
211	Shingle-Worf loams, 3 to 30 percent slopes	10,117	0.6
212	Teckla very fine sandy loam, 0 to 10 percent slopes	2,445	0.1
213	Terro-Taluce sandy loams, 6 to 30 percent slopes	4,153	0.2
214	Theedle-Kishona loams, 0 to 6 percent slopes	37,258	2.1
215	Theedle-Kishona loams, 6 to 20 percent slopes	72,449	4.0
216	Theedle-Kishona-Shingle loams, 3 to 30 percent slopes	35,213	2.0
217	Theedle-Shingle loams, 3 to 30 percent slopes	105,717	5.9
218	Theedle-Turnercrest-Kishona complex, 3 to 15 percent slopes	10,481	0.6
219	Torriarents-Torriorthents complex, reclaimed	3,175	0.2
220	Pitchdraw-Ashollow-Niobrara complex, 3 to 30 percent slopes	8,099	0.5
221	Turnercrest-Keeline-Taluce fine sandy loams, 6 to 30 percent slopes	17,870	1.0
222	Turnercrest-Wibaux, thin solum-Taluce complex, 6 to 40 percent slopes	1,258	*

* See footnote at end of table.

Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
223	Ucross loam, 1 to 9 percent slopes	2,562	0.1
224	Ucross-Iwait loams, 0 to 6 percent slopes	5,901	0.3
225	Ucross-Iwait-Fairburn loams, 3 to 30 percent slopes	25,650	1.4
226	Ulm loam, 0 to 6 percent slopes	8,024	0.4
227	Ulm clay loam, 0 to 6 percent slopes	18,642	1.0
228	Ulm-Renohill clay loams, 0 to 6 percent slopes	16,140	0.9
229	Ulm-Renohill clay loams, 6 to 15 percent slopes	3,707	0.2
230	Urban land-Deekay-Moorhead complex, 0 to 6 percent slopes	3,879	0.2
231	Urban land-Leiter-Moorhead complex, 3 to 10 percent slopes	779	*
232	Urban land-Pitchdraw-Ashollow complex, 6 to 15 percent slopes	604	*
233	Ustic Torriorthents, gullied	77,884	4.3
234	Ustic Torriorthents-Badland complex, 10 to 100 percent slopes	29,768	1.7
235	Vonalee fine sandy loam, 0 to 10 percent slopes	3,346	0.2
236	Vonalee-Terro fine sandy loams, 2 to 10 percent slopes	11,884	0.7
237	Vonalf fine sandy loam, 0 to 6 percent slopes	1,176	*
238	Vonalf-Xema fine sandy loams, 3 to 10 percent slopes	8,149	0.5
239	Ironbutte-Fairburn-Mittenbutte complex, 6 to 40 percent slopes	5,669	0.3
240	Wibaux-Wibaux, thin solum complex, 6 to 40 percent slopes	31,560	1.8
241	Ironbutte-Ironbutte, thin solum channery loams, 6 to 40 percent slopes	6,837	0.4
242	Ironbutte-Deekay-Moorhead association, 3 to 30 percent slopes	9,328	0.5
243	Wibaux, thick solum-Wibaux channery fine sandy loams, 3 to 40 percent slopes	8,935	0.5
244	Muleherder-Ironbutte channery loams, 3 to 40 percent slopes	5,491	0.3
245	Wibaux-Shingle-Badland complex, 6 to 60 percent slopes	8,136	0.5
246	Wyarno-Ulm clay loams, 0 to 6 percent slopes	1,268	*
247	Wyotite-Ulm loams, 0 to 6 percent slopes	2,226	0.1
248	Ziggy-Iwait loams, 0 to 6 percent slopes	6,924	0.4
249	Ziggy-Iwait loams, 6 to 15 percent slopes	2,207	0.1
250	Ziggy-Ucross-Oldwolf loams, 3 to 15 percent slopes	15,628	0.9
251	Water	285	*
	Total	1,793,243	100.0

* Less than 0.1 percent.

Agronomy

Crops and Pasture

General management needed for crops and pasture is suggested in this section. The estimated yields of the main crops and pasture plants are listed, the system of land capability classification used by the Natural Resources Conservation Service is explained, and prime farmland is described.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading "Detailed Soil Map Units." Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Crops in Campbell County - Southern Part

All of the cropland in the survey area is nonirrigated, and winter wheat and alfalfa are the principle crops. Oats, barley, and grass hay are also grown. Summer fallow in alternate years is necessary to ensure a grain crop. About 56 percent of all cropland is used for hay production. About 34 percent is used for winter wheat, 12 percent for oats, and 8 percent for barley.

Wind erosion is the major conservation problem in the area. The risk of wind erosion can be reduced by using a resource management system that includes such practices as minimum tillage, stubble mulch tillage, and wind stripcropping.

Water erosion is a concern on some soils, especially where slopes exceed six percent. Application of a resource management system that includes such practices as contour stripcropping, terraces, grassed waterways, and stubble mulch tillage helps to overcome this problem.

An adequate level of fertility can be maintained without adding fertilizer.

Compaction as a result of tillage is a concern on some of the soils. Avoiding tillage when the soils are wet helps to maintain soil tilth.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, for woodland, or for engineering purposes.

In the capability system, as described in "Land Capability Classification" (USDA-NRCS, 1996) soils are generally grouped at three levels - capability class, subclass, and unit. Only class and subclass are used in this survey.

Capability classes, the broadest groups, are designated by numerals 1 through 8. The numerals indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have few limitations that restrict their use.

Class 2 soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.

Class 5 soils are not likely to erode but have other limitations, impractical to remove, that limit their use.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation.

Class 7 soils have very severe limitations that make them unsuitable for cultivation.

Class 8 soils and miscellaneous areas have limitations that nearly preclude their use for commercial crop production.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w, s,* or *c*, to the class numeral, for example, 2e. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); s shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c*, used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w, s,* or *c* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, rangeland, woodland, wildlife habitat, or recreation.

The capability classification of map units in this survey area are given in the table "Land Capability and Yields per Acre of Crops and Pasture."

Yields per Acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in the table "Land Capability and Yields per Acre of Crops and Pasture." In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of map units in the survey area also is shown in the table.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations also are considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in the table are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Prime Farmland

Prime farmland is one of several kinds of important farmland defined by the U.S. Department of Agriculture. It is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forest land, or other land, but it is not urban or built-up land or water areas. The soil qualities, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. It is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing

season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

A recent trend in land use in some parts of the survey area has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

There are no mapping units in this survey area that qualify as prime farmland.

Rangeland

Glen Mitchell, area range conservationist, Natural Resources Conservation Service, Sheridan, Wyoming, helped prepare this section.

About 90 percent of the survey area is rangeland. More than 75 percent of the farm income is derived from livestock. Livestock operations are fairly evenly divided between cattle and sheep. The average size of ranches in the area is about 5,000 acres.

Annual precipitation varies from about 11 inches in the southern part of the survey area, to about 15 inches in the north. The area is well suited to livestock grazing. During most winters, snow cover is light and extended periods of supplemental feeding are not necessary.

Soil characteristics vary throughout the survey area. In general, soils in the eastern one-fourth of the survey area are shallow and moderately deep loams, clay loams, and clays. These soils are underlain by shale and sandstone. They support predominantly short and mid grasses, with coniferous tree species occurring on some sites in the Rochelle Hills. Soils in the central part of the survey area consist predominantly of moderately deep to very deep sandy loams, loams, and clay loam. They support a mixture of short, mid, and a few tall grass species. Soils in the western one-third of the survey area are shallow to very deep, and are predominantly loams and clay loams, with sandy loam and clay soils occurring in localized areas. These soils support a mixture of short and mid grasses and shrubs.

In areas that have similar climate and topography, differences in the kind and amount of vegetation produced on rangeland are closely related to the kind of soil. Effective management is based on the relationship between the soils and vegetation and water.

The table, "Rangeland Productivity and Characteristic Plant Community," shows for each soil that supports rangeland vegetation suitable for grazing, the ecological site; the total annual production of vegetation in favorable, normal, and unfavorable years; the characteristic vegetation; and the average percentage of each species. An explanation of the column headings in the table follows.

An *ecological site* is a distinctive kind of rangeland that produces a characteristic natural plant community that differs from natural plant communities on other ecological sites in kind, amount, and proportion of range plants. The relationship between soils and vegetation was ascertained during this survey; thus, ecological sites generally can be determined directly from the soil map. Soil properties that affect moisture supply and plant nutrients have the greatest influence on the productivity of range plants. Soil reaction, salt content, and a seasonal high water table are also important.

Total dry-weight production is the amount of vegetation that can be expected to grow annually on well managed rangeland that is supporting the potential natural plant community. It includes all vegetation, whether or not it is palatable to grazing animals. It includes the current year's growth of leaves, twigs, and fruits of woody plants. It does not include the increase in stem diameter of trees and shrubs. It is expressed in pounds per acre of air-dry vegetation for favorable, normal, and unfavorable years. In a favorable year, the amount and distribution of precipitation and the temperatures make growing conditions substantially better than average. In a normal year, growing conditions are about average. In an unfavorable year, growing conditions are well below average, generally because of low available soil moisture.

Dry weight is the total annual yield per acre of air-dry vegetation. Yields are adjusted to a common percent of air-dry moisture content. The relationship of green weight to air-dry weight varies according to such factors as exposure, amount of shade, recent rains, and unseasonable dry periods.

Characteristic vegetation—the grasses, forbs, and shrubs that make up most of the potential natural plant community on each soil—are listed by common name.

Under *rangeland composition*, the expected percentage of the total annual production is given for each species making up the characteristic vegetation. The amount that can be used as forage depends on the kinds of grazing animals and on the grazing season.

Range management requires a knowledge of the kinds of soil and of the potential natural plant community. It also requires an evaluation of the present range condition. Range condition is determined by comparing the present plant community with the potential natural plant community on a particular range site. The more closely the existing community resembles the potential community, the better the range condition. Range condition is an ecological rating only.

The objective in range management is to control grazing so that the plants growing on a site are about the same in kind and amount as the potential natural plant community for that site. Such management generally results in the optimum production of vegetation, control of undesirable brush species, conservation of water, and control of erosion. Sometimes, however, a range condition somewhat below the potential meets grazing needs, provides wildlife habitat, and protects soil and water resources.

Range management practices that are important to maintain productivity are proper grazing use and planned grazing systems that include proper distribution, proper season of use, and deferred grazing. Practices such as watering facilities, fences, and proper salt placement are needed to obtain proper grazing use. Improvements such as brush management, range seeding, and range renovation are dependent on the soil and climate of a given site.

Windbreaks and Environmental Plantings

Windbreaks protect livestock, buildings, and yards from wind and snow. They also protect fruit trees and gardens and furnish habitat for wildlife. Several rows of low- and high-growing broadleaf and coniferous trees and shrubs provide the most protection.

Field windbreaks are narrow plantings made at right angles to the prevailing wind and at specific intervals across the field. The interval depends on the erodibility of the soil. Field windbreaks protect cropland and crops from wind, help to keep snow on the fields, and provide food and cover for wildlife.

Environmental plantings help to beautify and screen houses and other buildings and to abate noise. The plants, mostly evergreen shrubs and trees, are closely spaced. To ensure plant survival, a healthy planting stock of suitable species should be planted properly on a well prepared site and maintained in good condition.

Most of the survey area is treeless. Trees are primarily limited to the major stream drainages, where they receive additional moisture as runoff. They also occur along the steep breaks that form the Rochelle Hills. Windbreaks have been planted in the area since the time of settlement. Most of the early plantings were for farmstead and livestock protection, and many farmstead and ranch headquarters still need this kind of protection. In planting a windbreak, the purpose of the planting, the suitability of the soils, the adaptability of the trees and shrubs to the site, and the location of the windbreak should be considered.

The establishment of a windbreak and the continued growth of the trees depend upon the careful selection of the site and of the trees and shrubs to be planted, adequate site preparation, and adequate maintenance of planted trees or seedlings. Grasses and weeds should be controlled before trees are planted, and regrowth of ground cover should be controlled during the life of the windbreak. Some replanting is generally needed after the first or second year. A supplemental watering system will ensure a higher rate of survival and promote vigorous growth.

A windbreak provides protection for a distance of about ten times the height of the trees. Low-growing shrubs should be planted in the rows on the windward side, medium or tall shrubs in the next rows, and tall trees in the center, or in the leeward rows. For adequate protection in the winter, each windbreak should be made up of at least three rows. One of the rows should be a medium-growing evergreen such as Rocky Mountain juniper or eastern redcedar. Evergreens live longer and provide more protection than broadleaf trees, but they are harder to establish and grow more slowly.

Information on the height that locally grown trees and shrubs are expected to reach in 20 years on various soils and additional information on planning windbreaks and screens and planting and caring for trees and shrubs can be obtained from the local office of the Natural Resources Conservation Service or of the Cooperative Extension Service or from a commercial nursery.

Land Capability and Yields per Acre of Crops and Pasture

(Yields in the "N" columns are for nonirrigated areas; those in the "I" columns are for irrigated areas. Yields are those that can be expected under a high level of management. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil.)

Map symbol and soil name	Land capability		Barley		Grass hay		Oats		Pasture		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Tons	Tons	Bu	Bu	AUM	AUM	Bu	Bu
100:												
Aridic Ustorthents, saline	4s	---	---	---	---	---	---	---	---	---	---	---
101:												
Arvada, thick surface	4s	---	---	---	---	---	---	---	---	---	---	---
102:												
Arvada, thick surface	4s	---	---	---	---	---	---	---	---	---	---	---
Arvada	6s	---	---	---	---	---	---	---	---	---	---	---
Slickspots	8	---	---	---	---	---	---	---	---	---	---	---
103:												
Arwite	3e	---	38.00	---	1.20	---	36.00	---	0.80	---	35.00	---
104:												
Arwite	4e	---	---	---	1.00	---	---	---	0.70	---	---	---
105:												
Arwite	3e	---	---	---	1.20	---	---	---	0.80	---	---	---
Elwop	4e	---	---	---	1.00	---	---	---	0.70	---	---	---
106:												
Arwite	4e	---	---	---	---	---	---	---	---	---	---	---
Elwop	4e	---	---	---	---	---	---	---	---	---	---	---
107:												
Arwite	3e	---	---	---	1.20	---	---	---	0.80	---	---	---
Vonalf	3e	---	---	---	1.20	---	---	---	0.80	---	---	---
108:												
Arwite	4e	---	---	---	---	---	---	---	---	---	---	---
Vonalf	4e	---	---	---	---	---	---	---	---	---	---	---

Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Barley		Grass hay		Oats		Pasture		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Tons	Tons	Bu	Bu	AUM	AUM	Bu	Bu
109:												
Bidman	4e	---	---	---	0.90	---	---	---	0.70	---	---	---
110:												
Bidman, loamy substratum	4e	---	---	---	---	---	---	---	---	---	---	---
111:												
Bidman	4e	---	---	---	0.90	---	---	---	0.70	---	---	---
Parmleed	4e	---	---	---	0.70	---	---	---	0.60	---	---	---
112:												
Bidman	4e	---	---	---	---	---	---	---	---	---	---	---
Parmleed	4e	---	---	---	---	---	---	---	---	---	---	---
113:												
Bidman	4e	---	---	---	0.90	---	---	---	0.70	---	---	---
Ulm	4e	---	---	---	0.90	---	---	---	0.70	---	---	---
114:												
Bowbac	4e	---	---	---	---	---	---	---	---	---	---	---
Taluce	7e	---	---	---	---	---	---	---	---	---	---	---
Badland	8s	---	---	---	---	---	---	---	---	---	---	---
115:												
Bowbac	4e	---	---	---	---	---	---	---	---	---	---	---
Worf	7e	---	---	---	---	---	---	---	---	---	---	---
116:												
Cambria	4e	---	---	---	---	---	---	---	---	---	---	---
Kishona	4e	---	---	---	---	---	---	---	---	---	---	---
Zigweid	4e	---	---	---	---	---	---	---	---	---	---	---

Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Barley		Grass hay		Oats		Pasture		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Tons	Tons	Bu	Bu	AUM	AUM	Bu	Bu
117:												
Cambria	4e	---	---	---	---	---	---	---	---	---	---	---
Kishona	4e	---	---	---	---	---	---	---	---	---	---	---
Zigweid	4e	---	---	---	---	---	---	---	---	---	---	---
118:												
Clarkelen	4e	---	---	---	---	---	---	---	---	---	---	---
Draknab	4e	---	---	---	---	---	---	---	---	---	---	---
119:												
Clarkelen	4e	---	---	---	---	---	---	---	---	---	---	---
Embry	4e	---	---	---	---	---	---	---	---	---	---	---
120:												
Clarkelen	4e	---	---	---	---	---	---	---	---	---	---	---
Keeline	4e	---	---	---	---	---	---	---	---	---	---	---
121:												
Cushman	4e	---	---	---	---	---	---	---	---	---	---	---
Cambria	4e	---	---	---	---	---	---	---	---	---	---	---
122:												
Cushman	4e	---	---	---	---	---	---	---	---	---	---	---
Cambria	4e	---	---	---	---	---	---	---	---	---	---	---
123:												
Cushman	4e	---	---	---	---	---	---	---	---	---	---	---
Renohill	4e	---	---	---	---	---	---	---	---	---	---	---
124:												
Cushman	4e	---	---	---	---	---	---	---	---	---	---	---
Shingle	7e	---	---	---	---	---	---	---	---	---	---	---

Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Barley		Grass hay		Oats		Pasture		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Tons	Tons	Bu	Bu	AUM	AUM	Bu	Bu
125:												
Cushman	4e	---	---	---	---	---	---	---	---	---	---	---
Terro	6e	---	---	---	---	---	---	---	---	---	---	---
126:												
Cushman	4e	---	---	---	---	---	---	---	---	---	---	---
Theedle	4e	---	---	---	---	---	---	---	---	---	---	---
127:												
Cushman	4e	---	---	---	---	---	---	---	---	---	---	---
Theedle	4e	---	---	---	---	---	---	---	---	---	---	---
128:												
Cushman	4e	---	---	---	---	---	---	---	---	---	---	---
Worf	7e	---	---	---	---	---	---	---	---	---	---	---
129:												
Decolney	4e	---	---	---	0.80	---	---	---	0.70	---	---	---
Hiland	4e	---	---	---	0.80	---	---	---	0.70	---	---	---
130:												
Decolney	4e	---	---	---	---	---	---	---	---	---	---	---
Hiland	4e	---	---	---	---	---	---	---	---	---	---	---
131:												
Deekay	3e	---	37.00	---	1.20	---	40.00	---	0.80	---	33.00	---
132:												
Deekay	3e	---	37.00	---	1.20	---	40.00	---	0.80	---	33.00	---
Moorhead	3e	---	35.00	---	1.30	---	40.00	---	0.80	---	31.00	---
133:												
Deekay	4e	---	---	---	---	---	---	---	---	---	---	---
Moorhead	4e	---	---	---	---	---	---	---	---	---	---	---

Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Barley		Grass hay		Oats		Pasture		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Tons	Tons	Bu	Bu	AUM	AUM	Bu	Bu
134:												
Deekay	3e	---	---	---	1.20	---	---	---	0.80	---	---	---
Oldwolf	4e	---	---	---	1.00	---	---	---	0.70	---	---	---
135:												
Deekay	4e	---	---	---	---	---	---	---	---	---	---	---
Oldwolf	4e	---	---	---	---	---	---	---	---	---	---	---
136:												
Deekay	3e	---	---	---	1.20	---	---	---	0.80	---	---	---
Ziggy	4e	---	---	---	1.10	---	---	---	0.70	---	---	---
137:												
Echeta	4e	---	---	---	0.80	---	---	---	0.70	---	---	---
138:												
Echeta	4e	---	---	---	---	---	---	---	---	---	---	---
Cromack	4e	---	---	---	---	---	---	---	---	---	---	---
139:												
Embry	4e	---	---	---	---	---	---	---	---	---	---	---
Orpha	6e	---	---	---	---	---	---	---	---	---	---	---
140:												
Embry	4e	---	---	---	---	---	---	---	---	---	---	---
Taluce	7e	---	---	---	---	---	---	---	---	---	---	---
141:												
Emigha	4e	---	---	---	---	---	---	---	---	---	---	---
142:												
Emigha, sodic	6s	---	---	---	---	---	---	---	---	---	---	---
Arvada, thick surface	4s	---	---	---	---	---	---	---	---	---	---	---
143:												
Felix, ponded	4s	---	---	---	---	---	---	---	---	---	---	---

Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Barley		Grass hay		Oats		Pasture		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Tons	Tons	Bu	Bu	AUM	AUM	Bu	Bu
144:												
Forkwood	3e	---	---	---	0.90	---	---	---	0.80	---	---	---
145:												
Forkwood	4e	---	---	---	0.90	---	---	---	0.80	---	---	---
Cambria	4e	---	---	---	0.80	---	---	---	0.70	---	---	---
146:												
Forkwood	4e	---	---	---	0.90	---	---	---	0.80	---	---	---
Cushman	4e	---	---	---	0.80	---	---	---	0.60	---	---	---
147:												
Forkwood	4e	---	---	---	---	---	---	---	---	---	---	---
Cushman	4e	---	---	---	---	---	---	---	---	---	---	---
148:												
Forkwood	3e	---	---	---	0.90	---	---	---	0.80	---	---	---
Ulm	3e	---	---	---	0.90	---	---	---	0.70	---	---	---
149:												
Forkwood	4e	---	---	---	---	---	---	---	---	---	---	---
Ulm	4e	---	---	---	---	---	---	---	---	---	---	---
150:												
Gateson	6e	---	---	---	---	---	---	---	---	---	---	---
Taluce	7e	---	---	---	---	---	---	---	---	---	---	---
Turnercrest	6e	---	---	---	---	---	---	---	---	---	---	---
151:												
Haverdad	4e	---	---	---	---	---	---	---	---	---	---	---
152:												
Haverdad	4e	---	---	---	---	---	---	---	---	---	---	---
Clarkelen	4e	---	---	---	---	---	---	---	---	---	---	---

Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Barley		Grass hay		Oats		Pasture		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Tons	Tons	Bu	Bu	AUM	AUM	Bu	Bu
153:												
Haverdad	4e	---	---	---	---	---	---	---	---	---	---	---
Kishona	4e	---	---	---	---	---	---	---	---	---	---	---
154:												
Heldt	4s	---	---	---	---	---	---	---	---	---	---	---
155:												
Heldt, saline	4s	---	---	---	---	---	---	---	---	---	---	---
Bidman, saline	4s	---	---	---	---	---	---	---	---	---	---	---
156:												
Hiland	4e	---	---	---	0.80	---	---	---	0.70	---	---	---
157:												
Hiland	4e	---	---	---	0.80	---	---	---	0.70	---	---	---
Bowbac	4e	---	---	---	0.80	---	---	---	0.60	---	---	---
158:												
Hiland	4e	---	---	---	---	---	---	---	---	---	---	---
Bowbac	4e	---	---	---	---	---	---	---	---	---	---	---
159:												
Hiland	4e	---	---	---	0.80	---	---	---	0.70	---	---	---
Vonalee	4e	---	---	---	0.80	---	---	---	0.70	---	---	---
160:												
Hiland	4e	---	---	---	---	---	---	---	---	---	---	---
Vonalee	4e	---	---	---	---	---	---	---	---	---	---	---
161:												
Hilight	7e	---	---	---	---	---	---	---	---	---	---	---
Taluce, cool	7e	---	---	---	---	---	---	---	---	---	---	---
Wags	6e	---	---	---	---	---	---	---	---	---	---	---

Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Barley		Grass hay		Oats		Pasture		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Tons	Tons	Bu	Bu	AUM	AUM	Bu	Bu
162:												
Lismas	7e	---	---	---	---	---	---	---	---	---	---	---
Mittenbutte, cool-	7e	---	---	---	---	---	---	---	---	---	---	---
Sabatka	6e	---	---	---	---	---	---	---	---	---	---	---
163:												
Hilight	7e	---	---	---	---	---	---	---	---	---	---	---
Wags	6e	---	---	---	---	---	---	---	---	---	---	---
Badland	8s	---	---	---	---	---	---	---	---	---	---	---
164:												
Lismas	7e	---	---	---	---	---	---	---	---	---	---	---
Sabatka	6e	---	---	---	---	---	---	---	---	---	---	---
Badland	8s	---	---	---	---	---	---	---	---	---	---	---
165:												
Jayem	4e	---	---	---	---	---	---	---	---	---	---	---
166:												
Jaywest	3e	---	35.00	---	1.30	---	40.00	---	0.80	---	31.00	---
167:												
Jaywest	3e	---	35.00	---	1.30	---	40.00	---	0.80	---	31.00	---
Moorhead	3e	---	35.00	---	1.30	---	40.00	---	0.80	---	31.00	---
168:												
Jaywest	3e	---	---	---	1.30	---	---	---	0.80	---	---	---
Spottedhorse	4e	---	---	---	1.10	---	---	---	0.70	---	---	---
169:												
Julesburg	3e	---	---	---	0.90	---	---	---	0.80	---	---	---

Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Barley		Grass hay		Oats		Pasture		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Tons	Tons	Bu	Bu	AUM	AUM	Bu	Bu
170:												
Keeline	4e	---	---	---	---	---	---	---	---	---	---	---
Tullock	6e	---	---	---	---	---	---	---	---	---	---	---
171:												
Keeline	4e	---	---	---	---	---	---	---	---	---	---	---
Tullock	6e	---	---	---	---	---	---	---	---	---	---	---
Niobrara, dry	7e	---	---	---	---	---	---	---	---	---	---	---
172:												
Keyner	4s	---	---	---	---	---	---	---	---	---	---	---
173:												
Lawver	4e	---	---	---	---	---	---	---	---	---	---	---
Teckla	4e	---	---	---	---	---	---	---	---	---	---	---
Wibaux	7s	---	---	---	---	---	---	---	---	---	---	---
174:												
Brislawn	4e	---	---	---	---	---	---	---	---	---	---	---
Rockybutte	4e	---	---	---	---	---	---	---	---	---	---	---
Ironbutte	7s	---	---	---	---	---	---	---	---	---	---	---
175:												
Lawver	4e	---	---	---	---	---	---	---	---	---	---	---
Wibaux	7s	---	---	---	---	---	---	---	---	---	---	---
176:												
Leiter	4e	---	---	---	---	---	---	---	---	---	---	---
Cromack	4e	---	---	---	---	---	---	---	---	---	---	---
177:												
Maysdorf	4e	---	---	---	0.80	---	---	---	0.70	---	---	---

Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Barley		Grass hay		Oats		Pasture		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Tons	Tons	Bu	Bu	AUM	AUM	Bu	Bu
178:												
Maysdorf	4e	---	---	---	---	---	---	---	---	---	---	---
179:												
Maysdorf	4e	---	---	---	---	---	---	---	---	---	---	---
Pugsley	4e	---	---	---	---	---	---	---	---	---	---	---
180:												
Maysdorf	4e	---	---	---	---	---	---	---	---	---	---	---
Pugsley	4e	---	---	---	---	---	---	---	---	---	---	---
181:												
Moorhead	3e	---	35.00	---	1.30	---	40.00	---	0.80	---	31.00	---
182:												
Moorhead	3e	---	35.00	---	1.30	---	40.00	---	0.80	---	31.00	---
183:												
Moorhead	3e	---	---	---	1.30	---	---	---	0.80	---	---	---
Leiter	4e	---	---	---	1.00	---	---	---	0.70	---	---	---
184:												
Moorhead	4e	---	---	---	---	---	---	---	---	---	---	---
Leiter	4e	---	---	---	---	---	---	---	---	---	---	---
185:												
Moskee	3e	---	35.00	---	1.10	---	34.00	---	0.80	---	32.00	---
186:												
Moskee	4e	---	---	---	---	---	---	---	---	---	---	---
187:												
Nuncho	3e	---	32.00	---	1.10	---	37.00	---	0.80	---	30.00	---
188:												
Orpha	6e	---	---	---	---	---	---	---	---	---	---	---
Tullock	6e	---	---	---	---	---	---	---	---	---	---	---

Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Barley		Grass hay		Oats		Pasture		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Tons	Tons	Bu	Bu	AUM	AUM	Bu	Bu
189:												
Oshoto	3e	---	---	---	1.20	---	---	---	0.80	---	---	---
Moorhead	3e	---	---	---	1.30	---	---	---	0.80	---	---	---
190:												
Parmleed	4e	---	---	---	---	---	---	---	---	---	---	---
Renohill	4e	---	---	---	---	---	---	---	---	---	---	---
191:												
Pits	---	---	---	---	---	---	---	---	---	---	---	---
Dumps	---	---	---	---	---	---	---	---	---	---	---	---
192:												
Platmak	3e	---	32.00	---	1.10	---	37.00	---	0.80	---	30.00	---
193:												
Pugsley	4e	---	---	---	---	---	---	---	---	---	---	---
Decolney	4e	---	---	---	---	---	---	---	---	---	---	---
194:												
Pugsley	4e	---	---	---	---	---	---	---	---	---	---	---
Decolney	4e	---	---	---	---	---	---	---	---	---	---	---
195:												
Rauzi	3e	---	---	---	1.20	---	---	---	0.80	---	---	---
196:												
Rauzi	3e	---	---	---	1.20	---	---	---	0.80	---	---	---
197:												
Rauzi	4e	---	---	---	---	---	---	---	---	---	---	---
Elwop	4e	---	---	---	---	---	---	---	---	---	---	---
198:												
Recluse	3e	---	35.00	---	1.10	---	38.00	---	0.80	---	32.00	---

Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Barley		Grass hay		Oats		Pasture		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Tons	Tons	Bu	Bu	AUM	AUM	Bu	Bu
199:												
Renohill	4e	---	---	---	---	---	---	---	---	---	---	---
Savageton	4e	---	---	---	---	---	---	---	---	---	---	---
200:												
Renohill	4e	---	---	---	---	---	---	---	---	---	---	---
Savageton	4e	---	---	---	---	---	---	---	---	---	---	---
201:												
Renohill	4e	---	---	---	---	---	---	---	---	---	---	---
Shingle	7e	---	---	---	---	---	---	---	---	---	---	---
Worf	7e	---	---	---	---	---	---	---	---	---	---	---
202:												
Renohill	4e	---	---	---	---	---	---	---	---	---	---	---
Worfka	7e	---	---	---	---	---	---	---	---	---	---	---
203:												
Rockypoint	4e	---	---	---	---	---	---	---	---	---	---	---
Iwait	4e	---	---	---	---	---	---	---	---	---	---	---
204:												
Samday	7e	---	---	---	---	---	---	---	---	---	---	---
Samday, cool	7e	---	---	---	---	---	---	---	---	---	---	---
Shingle	7e	---	---	---	---	---	---	---	---	---	---	---
205:												
Samday	7e	---	---	---	---	---	---	---	---	---	---	---
Savageton	4e	---	---	---	---	---	---	---	---	---	---	---
206:												
Samday	6e	---	---	---	---	---	---	---	---	---	---	---
Shingle	6e	---	---	---	---	---	---	---	---	---	---	---
Badland	8s	---	---	---	---	---	---	---	---	---	---	---

Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Barley		Grass hay		Oats		Pasture		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Tons	Tons	Bu	Bu	AUM	AUM	Bu	Bu
207:												
Cromack	4e	---	---	---	---	---	---	---	---	---	---	---
Fairburn	7e	---	---	---	---	---	---	---	---	---	---	---
Ucross	4e	---	---	---	---	---	---	---	---	---	---	---
208:												
Savageton	4e	---	---	---	---	---	---	---	---	---	---	---
Silhouette	4e	---	---	---	---	---	---	---	---	---	---	---
209:												
Savageton	4e	---	---	---	---	---	---	---	---	---	---	---
Silhouette	4e	---	---	---	---	---	---	---	---	---	---	---
210:												
Shingle	7e	---	---	---	---	---	---	---	---	---	---	---
Taluce	7e	---	---	---	---	---	---	---	---	---	---	---
211:												
Shingle	7e	---	---	---	---	---	---	---	---	---	---	---
Worf	7e	---	---	---	---	---	---	---	---	---	---	---
212:												
Teckla	4e	---	---	---	---	---	---	---	---	---	---	---
213:												
Terro	6e	---	---	---	---	---	---	---	---	---	---	---
Taluce	7e	---	---	---	---	---	---	---	---	---	---	---
214:												
Theedle	4e	---	---	---	---	---	---	---	---	---	---	---
Kishona	4e	---	---	---	---	---	---	---	---	---	---	---
215:												
Theedle	6e	---	---	---	---	---	---	---	---	---	---	---
Kishona	4e	---	---	---	---	---	---	---	---	---	---	---

Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Barley		Grass hay		Oats		Pasture		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Tons	Tons	Bu	Bu	AUM	AUM	Bu	Bu
216:												
Theedle	6e	---	---	---	---	---	---	---	---	---	---	---
Kishona	4e	---	---	---	---	---	---	---	---	---	---	---
Shingle	7e	---	---	---	---	---	---	---	---	---	---	---
217:												
Theedle	6e	---	---	---	---	---	---	---	---	---	---	---
Shingle	7e	---	---	---	---	---	---	---	---	---	---	---
218:												
Theedle	4e	---	---	---	---	---	---	---	---	---	---	---
Turnercrest	6e	---	---	---	---	---	---	---	---	---	---	---
Kishona	4e	---	---	---	---	---	---	---	---	---	---	---
219:												
Torriarents	6e	---	---	---	---	---	---	---	---	---	---	---
Torriorthents	6e	---	---	---	---	---	---	---	---	---	---	---
220:												
Pitchdraw	6e	---	---	---	---	---	---	---	---	---	---	---
Ashollow	4e	---	---	---	---	---	---	---	---	---	---	---
Niobrara	7e	---	---	---	---	---	---	---	---	---	---	---
221:												
Turnercrest	6e	---	---	---	---	---	---	---	---	---	---	---
Keeline	4e	---	---	---	---	---	---	---	---	---	---	---
Taluce	7e	---	---	---	---	---	---	---	---	---	---	---
222:												
Turnercrest	6e	---	---	---	---	---	---	---	---	---	---	---
Wibaux, thin solum	7s	---	---	---	---	---	---	---	---	---	---	---
Taluce	7e	---	---	---	---	---	---	---	---	---	---	---

Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Barley		Grass hay		Oats		Pasture		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Tons	Tons	Bu	Bu	AUM	AUM	Bu	Bu
223:												
Ucross	4e	---	---	---	0.80	---	---	---	0.60	---	---	---
224:												
Ucross	4e	---	---	---	0.80	---	---	---	0.60	---	---	---
Iwait	4e	---	---	---	1.10	---	---	---	0.70	---	---	---
225:												
Ucross	4e	---	---	---	---	---	---	---	---	---	---	---
Iwait	4e	---	---	---	---	---	---	---	---	---	---	---
Fairburn	7e	---	---	---	---	---	---	---	---	---	---	---
226:												
Ulm	4e	---	---	---	0.90	---	---	---	0.70	---	---	---
227:												
Ulm	4e	---	---	---	0.90	---	---	---	0.70	---	---	---
228:												
Ulm	3e	---	---	---	---	---	---	---	---	---	---	---
Renohill	4e	---	---	---	---	---	---	---	---	---	---	---
229:												
Ulm	4e	---	---	---	---	---	---	---	---	---	---	---
Renohill	4e	---	---	---	---	---	---	---	---	---	---	---
230:												
Urban land	---	---	---	---	---	---	---	---	---	---	---	---
Deekay	3e	---	---	---	---	---	---	---	---	---	---	---
Moorhead	3e	---	---	---	---	---	---	---	---	---	---	---
231:												
Urban land	---	---	---	---	---	---	---	---	---	---	---	---
Leiter	4e	---	---	---	---	---	---	---	---	---	---	---
Moorhead	4e	---	---	---	---	---	---	---	---	---	---	---

Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Barley		Grass hay		Oats		Pasture		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Tons	Tons	Bu	Bu	AUM	AUM	Bu	Bu
232:												
Urban land	---	---	---	---	---	---	---	---	---	---	---	---
Pitchdraw	6e	---	---	---	---	---	---	---	---	---	---	---
Ashollow	4e	---	---	---	---	---	---	---	---	---	---	---
233:												
Ustic Torriorthents	7e	---	---	---	---	---	---	---	---	---	---	---
234:												
Ustic Torriorthents	7e	---	---	---	---	---	---	---	---	---	---	---
Badland	8s	---	---	---	---	---	---	---	---	---	---	---
235:												
Vonalee	4e	---	---	---	0.80	---	---	---	0.70	---	---	---
236:												
Vonalee	4e	---	---	---	---	---	---	---	---	---	---	---
Terro	6e	---	---	---	---	---	---	---	---	---	---	---
237:												
Vonalf	3e	---	---	---	1.20	---	---	---	0.80	---	---	---
238:												
Vonalf	4e	---	---	---	---	---	---	---	---	---	---	---
Xema	4e	---	---	---	---	---	---	---	---	---	---	---
239:												
Ironbutte	7s	---	---	---	---	---	---	---	---	---	---	---
Fairburn	7e	---	---	---	---	---	---	---	---	---	---	---
Mittenbutte	7e	---	---	---	---	---	---	---	---	---	---	---
240:												
Wibaux	7s	---	---	---	---	---	---	---	---	---	---	---
Wibaux, thin solum-	7s	---	---	---	---	---	---	---	---	---	---	---

Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Barley		Grass hay		Oats		Pasture		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Tons	Tons	Bu	Bu	AUM	AUM	Bu	Bu
241:												
Ironbutte	7s	---	---	---	---	---	---	---	---	---	---	---
Ironbutte, thin solum	7s	---	---	---	---	---	---	---	---	---	---	---
242:												
Ironbutte	7s	---	---	---	---	---	---	---	---	---	---	---
Deekay	4e	---	---	---	---	---	---	---	---	---	---	---
Moorhead	4e	---	---	---	---	---	---	---	---	---	---	---
243:												
Wibaux, thick solum	6s	---	---	---	---	---	---	---	---	---	---	---
Wibaux	7s	---	---	---	---	---	---	---	---	---	---	---
244:												
Muleherder	6s	---	---	---	---	---	---	---	---	---	---	---
Ironbutte	7s	---	---	---	---	---	---	---	---	---	---	---
245:												
Wibaux	7s	---	---	---	---	---	---	---	---	---	---	---
Shingle	7e	---	---	---	---	---	---	---	---	---	---	---
Badland	---	---	---	---	---	---	---	---	---	---	---	---
246:												
Wyarno	4e	---	---	---	---	---	---	---	---	---	---	---
Ulm	4e	---	---	---	---	---	---	---	---	---	---	---
247:												
Wyotite	4e	---	---	---	---	---	---	---	---	---	---	---
Ulm	4e	---	---	---	---	---	---	---	---	---	---	---
248:												
Ziggy	4e	---	---	---	1.10	---	---	---	0.70	---	---	---
Iwait	4e	---	---	---	1.10	---	---	---	0.70	---	---	---

Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Barley		Grass hay		Oats		Pasture		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Tons	Tons	Bu	Bu	AUM	AUM	Bu	Bu
249:												
Ziggy	4e	---	---	---	---	---	---	---	---	---	---	---
Iwait	4e	---	---	---	---	---	---	---	---	---	---	---
250:												
Ziggy	4e	---	---	---	---	---	---	---	---	---	---	---
Ucross	4e	---	---	---	---	---	---	---	---	---	---	---
Oldwolf	4e	---	---	---	---	---	---	---	---	---	---	---

Rangeland Productivity and Characteristic Plant Communities

(Only the soils that support rangeland vegetation suitable for grazing are rated.)

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
100:						
Aridic Ustorthents, saline	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5
101:						
Arvada, thick surface-	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					Cusick's bluegrass	10
					big sagebrush	10
102:						
Arvada, thick surface-	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					Cusick's bluegrass	10
					big sagebrush	10
Arvada	Saline Upland (10-14np)	650	500	250	gardner saltbush	50
					inland saltgrass	15
					Indian ricegrass	10
					alkali sacaton	10
					bottlebrush squirreltail	10
					greasewood	10
					western wheatgrass	10
Slickspots	---	---	---	---	---	---
103:						
Arwite	Sandy (15-17np)	2,400	2,000	1,600	needleandthread	25
					prairie sandreed	25
					Indian ricegrass	10
					little bluestem	10
					silver sagebrush	5
					threadleaf sedge	5
					western wheatgrass	5
104:						
Arwite	Sandy (15-17np)	2,400	2,000	1,600	needleandthread	25
					prairie sandreed	25
					Indian ricegrass	10
					little bluestem	10
					silver sagebrush	5
					threadleaf sedge	5
					western wheatgrass	5

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
105:						
Arwite	Sandy (15-17np)	2,400	2,000	1,600	needleandthread	25
					prairie sandreed	25
					Indian ricegrass	10
					little bluestem	10
					silver sagebrush	5
					threadleaf sedge	5
					western wheatgrass	5
Elwop	Sandy (15-17np)	2,400	2,000	1,600	needleandthread	25
					prairie sandreed	25
					Indian ricegrass	10
					little bluestem	10
					silver sagebrush	5
					threadleaf sedge	5
					western wheatgrass	5
106:						
Arwite	Sandy (15-17np)	2,400	2,000	1,600	needleandthread	25
					prairie sandreed	25
					Indian ricegrass	10
					little bluestem	10
					silver sagebrush	5
					threadleaf sedge	5
					western wheatgrass	5
Elwop	Sandy (15-17np)	2,400	2,000	1,600	needleandthread	25
					prairie sandreed	25
					Indian ricegrass	10
					little bluestem	10
					silver sagebrush	5
					threadleaf sedge	5
					western wheatgrass	5
107:						
Arwite	Sandy (15-17np)	2,400	2,000	1,600	needleandthread	25
					prairie sandreed	25
					Indian ricegrass	10
					little bluestem	10
					silver sagebrush	5
					threadleaf sedge	5
					western wheatgrass	5
Vonalf	Sandy (15-17np)	2,400	2,000	1,600	needleandthread	25
					prairie sandreed	25
					Indian ricegrass	10
					little bluestem	10
					silver sagebrush	5
					threadleaf sedge	5
					western wheatgrass	5
108:						
Arwite	Sandy (15-17np)	2,400	2,000	1,600	needleandthread	25
					prairie sandreed	25
					Indian ricegrass	10
					little bluestem	10
					silver sagebrush	5
					threadleaf sedge	5
					western wheatgrass	5

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
108:(cont.)						
Vonalf	Sandy (15-17np)	2,400	2,000	1,600	needleandthread	25
					prairie sandreed	25
					Indian ricegrass	10
					little bluestem	10
					silver sagebrush	5
					threadleaf sedge	5
					western wheatgrass	5
109:						
Bidman	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
110:						
Bidman, loamy substratum	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
111:						
Bidman	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
Parmleed	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
112:						
Bidman	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
Parmleed	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
113:						
Bidman	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
113:(cont.)						
Ulm	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
114:						
Bowbac	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	15
					little bluestem	10
					threadleaf sedge	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5
Taluce	Shallow Sandy (10-14np)	1,300	1,000	600	needleandthread	25
					prairie sandreed	20
					blue grama	10
					bluebunch wheatgrass	10
					little bluestem	10
					ponderosa pine	5
					threadleaf sedge	5
Badland	---	---	---	---	---	---
115:						
Bowbac	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	15
					little bluestem	10
					threadleaf sedge	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5
Worf	Shallow Sandy (10-14np)	1,300	1,000	600	needleandthread	25
					prairie sandreed	20
					bluebunch wheatgrass	10
					little bluestem	10
					blue grama	5
					threadleaf sedge	5
116:						
Cambria	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
Kishona	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
116:(cont.)						
Zigweid	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
117:						
Cambria	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
Kishona	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
Zigweid	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
118:						
Clarkelen	Lowland (10-14np)	3,000	2,300	1,600	green needlegrass	25
					cottonwood	10
					needleandthread	10
					slender wheatgrass	10
					western wheatgrass	10
					Sandberg bluegrass	5
					snowberry	5
Draknab	Lowland (10-14np)	3,000	2,300	1,600	green needlegrass	25
					cottonwood	10
					needleandthread	10
					slender wheatgrass	10
					western wheatgrass	10
					Sandberg bluegrass	5
					snowberry	5
119:						
Clarkelen	Lowland (10-14np)	3,000	2,300	1,600	green needlegrass	25
					cottonwood	10
					needleandthread	10
					slender wheatgrass	10
					western wheatgrass	10
					Sandberg bluegrass	5
					snowberry	5

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
119:(cont.)						
Embry	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	15
					little bluestem	10
					silver sagebrush	10
					threadleaf sedge	10
					western wheatgrass	10
					blue grama	5
120:						
Clarkelen	Lowland (10-14np)	3,000	2,300	1,600	green needlegrass	25
					cottonwood	10
					needleandthread	10
					slender wheatgrass	10
					western wheatgrass	10
					Sandberg bluegrass	5
					snowberry	5
Keeline	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	15
					little bluestem	10
					threadleaf sedge	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5
121:						
Cushman	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
Cambria	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
122:						
Cushman	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
Cambria	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
123:						
Cushman	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
Renohill	Clayey (10-14np)	1,400	1,000	600	green needlegrass	40
					western wheatgrass	40
					Cusick's bluegrass	10
					big sagebrush	10
					blue grama	10
124:						
Cushman	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
Shingle	Shallow Loamy (10-14np)	1,200	900	450	bluebunch wheatgrass	50
					western wheatgrass	15
					blue grama	10
					little bluestem	10
					needleandthread	10
					threadleaf sedge	10
					big sagebrush	5
					green needlegrass	5
125:						
Cushman	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
Terro	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	15
					little bluestem	10
					threadleaf sedge	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5
126:						
Cushman	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
126:(cont.)						
Theedle	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
127:						
Cushman	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
Theedle	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
128:						
Cushman	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
Worf	Shallow Loamy (10-14np)	1,200	900	450	bluebunch wheatgrass	50
					western wheatgrass	15
					blue grama	10
					little bluestem	10
					needleandthread	10
					threadleaf sedge	10
					big sagebrush	5
					green needlegrass	5
129:						
Decolney	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	15
					little bluestem	10
					threadleaf sedge	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5
Hiland	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	15
					little bluestem	10
					threadleaf sedge	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
130:						
Decolney	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	15
					little bluestem	10
					threadleaf sedge	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5
Hiland	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	15
					little bluestem	10
					threadleaf sedge	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5
131:						
Deekay	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5
132:						
Deekay	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5
Moorhead	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5
133:						
Deekay	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5
Moorhead	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
134:						
Deekay	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5
Oldwolf	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5
135:						
Deekay	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5
Oldwolf	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5
136:						
Deekay	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5
Ziggy	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5
137:						
Echeta	Clayey (15-17np)	2,300	1,900	1,500	green needlegrass	40
					western wheatgrass	30
					big bluestem	10
					big sagebrush	10
					blue grama	5
					sideoats grama	5

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
138:						
Echeta	Clayey (15-17np)	2,300	1,900	1,500	green needlegrass	40
					western wheatgrass	30
					big bluestem	10
					big sagebrush	10
					blue grama	5
					sideoats grama	5
Cromack	Clayey (15-17np)	2,300	1,900	1,500	green needlegrass	40
					western wheatgrass	30
					big bluestem	10
					big sagebrush	10
					blue grama	5
					sideoats grama	5
139:						
Embry	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	10
					little bluestem	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5
					threadleaf sedge	5
Orpha	Sands (10-14np)	1,700	1,400	900	prairie sandreed	50
					sand bluestem	25
					needleandthread	15
					Indian ricegrass	10
					silver sagebrush	5
					threadleaf sedge	5
140:						
Embry	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	10
					little bluestem	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5
					threadleaf sedge	5
Taluce	Shallow Sandy (10-14np)	1,300	1,000	600	needleandthread	25
					prairie sandreed	20
					bluebunch wheatgrass	10
					little bluestem	10
					blue grama	5
					ponderosa pine	5
					threadleaf sedge	5
141:						
Emigha	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
142:						
Emigha, sodic	Saline Upland (10-14np)	650	500	250	gardner saltbush	50
					inland saltgrass	15
					Indian ricegrass	10
					alkali sacaton	10
					bottlebrush squirreltail	10
					greasewood	10
					western wheatgrass	10
Arvada, thick surface-	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
143:						
Felix, ponded	Clayey Overflow (10-14np)	2,200	1,800	1,200	basin wildrye	50
					green needlegrass	20
					western wheatgrass	15
					Canada wildrye	10
					Cusick's bluegrass	5
					Sandberg bluegrass	5
144:						
Forkwood	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
145:						
Forkwood	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
Cambria	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
146:						
Forkwood	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
Cushman	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
147:						
Forkwood	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
Cushman	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
148:						
Forkwood	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
Ulm	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
149:						
Forkwood	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
Ulm	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
150:						
Gateson	Ponderosa Pine (10-17np)	500	425	300	ponderosa pine	50
					rocky mountain juniper	10
					needleandthread	5
					prairie junegrass	5
					prairie sandreed	5
					western wheatgrass	5
Taluce	Shallow Sandy (10-14np)	1,300	1,000	600	needleandthread	25
					prairie sandreed	20
					bluebunch wheatgrass	10
					little bluestem	10
					blue grama	5
					ponderosa pine	5
					threadleaf sedge	5

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
150:(cont.)						
Turnercrest	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	10
					little bluestem	10
					western wheatgrass	10
					blue grama	5
					ponderosa pine	5
					silver sagebrush	5
151:						
Haverdad	Lowland (10-14np)	3,000	2,300	1,600	green needlegrass	25
					cottonwood	10
					needleandthread	10
					slender wheatgrass	10
					western wheatgrass	10
					Sandberg bluegrass	5
					silver sagebrush	5
					snowberry	5
152:						
Haverdad	Lowland (10-14np)	3,000	2,300	1,600	green needlegrass	25
					cottonwood	10
					needleandthread	10
					slender wheatgrass	10
					western wheatgrass	10
					Sandberg bluegrass	5
					snowberry	5
Clarkelen	Lowland (10-14np)	3,000	2,300	1,600	green needlegrass	25
					cottonwood	10
					needleandthread	10
					slender wheatgrass	10
					western wheatgrass	10
					Sandberg bluegrass	5
					snowberry	5
153:						
Haverdad	Lowland (10-14np)	3,000	2,300	1,600	green needlegrass	25
					cottonwood	10
					needleandthread	10
					slender wheatgrass	10
					western wheatgrass	10
					Sandberg bluegrass	5
					snowberry	5
Kishona	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
154:						
Heldt	Clayey (10-14np)	1,400	1,000	600	green needlegrass	40
					western wheatgrass	40
					big sagebrush	10
					blue grama	10
					skyline bluegrass	10

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
155:						
Heldt, saline	Saline Upland (10-14np)	650	500	250	gardner saltbush	50
					inland saltgrass	15
					Indian ricegrass	10
					alkali sacaton	10
					bottlebrush squirreltail	10
					greasewood	10
					western wheatgrass	10
Bidman, saline	Saline Lowland (10-14np)	2,200	1,700	1,400	alkali sacaton	25
					greasewood	20
					western wheatgrass	15
					Nuttall's alkaligrass	10
					bottlebrush squirreltail	10
					inland saltgrass	10
					Sandberg bluegrass	5
156:						
Hiland	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	10
					little bluestem	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5
					threadleaf sedge	5
157:						
Hiland	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	10
					little bluestem	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5
					threadleaf sedge	5
Bowbac	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	10
					little bluestem	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5
					threadleaf sedge	5
158:						
Hiland	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	10
					little bluestem	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5
					threadleaf sedge	5

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
158:(cont.)						
Bowbac	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	10
					little bluestem	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5
					threadleaf sedge	5
159:						
Hiland	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	10
					little bluestem	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5
					threadleaf sedge	5
Vonalee	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	10
					little bluestem	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5
					threadleaf sedge	5
160:						
Hiland	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	10
					little bluestem	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5
					threadleaf sedge	5
Vonalee	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	10
					little bluestem	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5
					threadleaf sedge	5
161:						
Hilight	Shallow Clayey (10-14np)	1,000	750	450	green needlegrass	40
					western wheatgrass	40
					bluebunch wheatgrass	15
					big sagebrush	5
					blue grama	5

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
161:(cont.)						
Taluce, cool	Shallow Sandy (10-14np)	1,300	1,000	600	needleandthread	25
					prairie sandreed	20
					bluebunch wheatgrass	10
					little bluestem	10
					blue grama	5
					ponderosa pine	5
					threadleaf sedge	5
Wags	Dense Clay (10-14np)	1,000	750	450	western wheatgrass	50
					green needlegrass	30
					Sandberg bluegrass	5
					big sagebrush	5
					birdfoot sagebrush	5
162:						
Lismas	Shallow Clayey (10-14np)	1,000	750	450	green needlegrass	40
					western wheatgrass	40
					bluebunch wheatgrass	15
					big sagebrush	5
					blue grama	5
Mittenbutte, cool	Shallow Sandy (10-14np)	1,300	1,000	600	needleandthread	25
					prairie sandreed	20
					bluebunch wheatgrass	10
					little bluestem	10
					blue grama	5
					threadleaf sedge	5
Sabatka	Dense Clay (15-17np)	1,000	750	450	western wheatgrass	50
					green needlegrass	30
					Sandberg bluegrass	5
					big sagebrush	5
					birdfoot sagebrush	5
163:						
Hilight	Shallow Clayey (10-14np)	1,000	750	450	green needlegrass	40
					western wheatgrass	40
					bluebunch wheatgrass	15
					big sagebrush	5
					blue grama	5
Wags	Dense Clay (10-14np)	1,000	750	450	western wheatgrass	50
					green needlegrass	30
					Sandberg bluegrass	5
					big sagebrush	5
					birdfoot sagebrush	5
Badland	---	---	---	---	---	---
164:						
Lismas	Shallow Clayey (10-14np)	1,000	750	450	green needlegrass	40
					western wheatgrass	40
					bluebunch wheatgrass	15
					big sagebrush	5
					blue grama	5

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
164:(cont.)						
Sabatka	Dense Clay (10-14np)	1,000	750	450	western wheatgrass	50
					green needlegrass	30
					Sandberg bluegrass	5
					big sagebrush	5
					birdfoot sagebrush	5
Badland	---	---	---	---	---	---
165:						
Jayem	Sandy (15-17np)	2,400	2,000	1,600	needleandthread	25
					prairie sandreed	25
					Indian ricegrass	10
					little bluestem	10
					silver sagebrush	5
					threadleaf sedge	5
					western wheatgrass	5
166:						
Jaywest	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5
167:						
Jaywest	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5
Moorhead	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5
168:						
Jaywest	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5
Spottedhorse	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
169:						
Julesburg	Sandy (15-17np)	2,400	2,000	1,600	needleandthread	25
					prairie sandreed	25
					Indian ricegrass	10
					little bluestem	10
					silver sagebrush	5
					threadleaf sedge	5
					western wheatgrass	5
170:						
Keeline	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	10
					little bluestem	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5
					threadleaf sedge	5
Tullock	Sands (10-14np)	1,700	1,400	900	prairie sandreed	50
					sand bluestem	25
					needleandthread	15
					Indian ricegrass	10
					silver sagebrush	5
					threadleaf sedge	5
171:						
Keeline	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	10
					little bluestem	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5
					threadleaf sedge	5
Tullock	Sands (10-14np)	1,700	1,400	900	prairie sandreed	50
					sand bluestem	25
					needleandthread	15
					Indian ricegrass	10
					silver sagebrush	5
					threadleaf sedge	5
Niobrara, dry	Shallow Sandy (10-14np)	1,300	1,000	600	needleandthread	25
					prairie sandreed	20
					bluebunch wheatgrass	10
					little bluestem	10
					blue grama	5
					threadleaf sedge	5
172:						
Keyner	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
173:						
Lawver	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
Teckla	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
Wibaux	Shallow Loamy (10-14np)	1,200	900	450	bluebunch wheatgrass	50
					western wheatgrass	15
					blue grama	10
					little bluestem	10
					needleandthread	10
					threadleaf sedge	10
					big sagebrush	5
					green needlegrass	5
174:						
Brislawn	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5
Rockybutte	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5
Ironbutte	Shallow Loamy (15-17np)	1,600	1,300	1,000	bluebunch wheatgrass	25
					western wheatgrass	25
					blue grama	10
					green needlegrass	10
					little bluestem	10
					needleandthread	10
					big sagebrush	5
175:						
Lawver	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
175:(cont.)						
Wibaux	Shallow Loamy (10-14np)	1,200	900	450	bluebunch wheatgrass	50
					western wheatgrass	15
					blue grama	10
					little bluestem	10
					needleandthread	10
					threadleaf sedge	10
					big sagebrush	5
					green needlegrass	5
176:						
Leiter	Clayey (15-17np)	2,300	1,900	1,500	green needlegrass	40
					western wheatgrass	30
					big bluestem	10
					big sagebrush	10
					blue grama	5
					sideoats grama	5
Cromack	Clayey (15-17np)	2,300	1,900	1,500	green needlegrass	40
					western wheatgrass	30
					big bluestem	10
					big sagebrush	10
					blue grama	5
					sideoats grama	5
177:						
Maysdorf	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	10
					little bluestem	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5
					threadleaf sedge	5
178:						
Maysdorf	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
179:						
Maysdorf	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	10
					little bluestem	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5
					threadleaf sedge	5
Pugsley	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	10
					little bluestem	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5
					threadleaf sedge	5

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
180:						
Maysdorf	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	10
					little bluestem	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5
					threadleaf sedge	5
Pugsley	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	10
					little bluestem	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5
					threadleaf sedge	5
181:						
Moorhead	Clayey (15-17np)	2,300	1,900	1,500	green needlegrass	40
					western wheatgrass	30
					big bluestem	10
					big sagebrush	10
					blue grama	5
					sideoats grama	5
182:						
Moorhead	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5
183:						
Moorhead	Clayey (15-17np)	2,300	1,900	1,500	green needlegrass	40
					western wheatgrass	30
					big bluestem	10
					big sagebrush	10
					blue grama	5
					sideoats grama	5
Leiter	Clayey (15-17np)	2,300	1,900	1,500	green needlegrass	40
					western wheatgrass	30
					big bluestem	10
					big sagebrush	10
					blue grama	5
					sideoats grama	5
184:						
Moorhead	Clayey (15-17np)	2,300	1,900	1,500	green needlegrass	40
					western wheatgrass	30
					big bluestem	10
					big sagebrush	10
					blue grama	5
					sideoats grama	5

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
184:(cont.)						
Leiter	Clayey (15-17np)	2,300	1,900	1,500	green needlegrass	40
					western wheatgrass	30
					big bluestem	10
					big sagebrush	10
					blue grama	5
					sideoats grama	5
185:						
Moskee	Sandy (15-17np)	2,400	2,000	1,600	needleandthread	25
					prairie sandreed	25
					Indian ricegrass	10
					little bluestem	10
					silver sagebrush	5
					threadleaf sedge	5
					western wheatgrass	5
186:						
Moskee	Sandy (15-17np)	2,400	2,000	1,600	needleandthread	25
					prairie sandreed	25
					Indian ricegrass	10
					little bluestem	10
					silver sagebrush	5
					threadleaf sedge	5
					western wheatgrass	5
187:						
Nuncho	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5
188:						
Orpha	Sands (10-14np)	1,700	1,400	900	prairie sandreed	50
					sand bluestem	25
					needleandthread	15
					Indian ricegrass	10
					silver sagebrush	5
					threadleaf sedge	5
Tullock	Sands (10-14np)	1,700	1,400	900	prairie sandreed	50
					sand bluestem	25
					needleandthread	15
					Indian ricegrass	10
					silver sagebrush	5
					threadleaf sedge	5
189:						
Oshoto	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
189:(cont.)						
Moorhead	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5
190:						
Parmleed	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
Renohill	Clayey (10-14np)	1,400	1,000	600	green needlegrass	35
					western wheatgrass	35
					blue grama	10
					Cusick's bluegrass	5
					big sagebrush	5
191:						
Pits	---	---	---	---	---	---
Dumps	---	---	---	---	---	---
192:						
Platmak	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5
193:						
Pugsley	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	10
					little bluestem	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5
					threadleaf sedge	5
Decolney	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	10
					little bluestem	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5
					threadleaf sedge	5

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
194:						
Pugsley	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	10
					little bluestem	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5
					threadleaf sedge	5
Decolney	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	10
					little bluestem	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5
					threadleaf sedge	5
195:						
Rauzi	Sandy (15-17np)	2,400	2,000	1,600	needleandthread	25
					prairie sandreed	25
					Indian ricegrass	10
					little bluestem	10
					silver sagebrush	5
					threadleaf sedge	5
					western wheatgrass	5
196:						
Rauzi	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5
197:						
Rauzi	Sandy (15-17np)	2,400	2,000	1,600	needleandthread	25
					prairie sandreed	25
					Indian ricegrass	10
					little bluestem	10
					silver sagebrush	5
					threadleaf sedge	5
					western wheatgrass	5
Elwop	Sandy (15-17np)	2,400	2,000	1,600	needleandthread	25
					prairie sandreed	25
					Indian ricegrass	10
					little bluestem	10
					silver sagebrush	5
					threadleaf sedge	5
					western wheatgrass	5

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
198:						
Recluse	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5
199:						
Renohill	Clayey (10-14np)	1,400	1,000	600	green needlegrass	40
					western wheatgrass	40
					big sagebrush	10
					blue grama	10
					skyline bluegrass	10
Savageton	Clayey (10-14np)	1,400	1,000	600	green needlegrass	40
					western wheatgrass	40
					big sagebrush	10
					blue grama	10
					skyline bluegrass	10
200:						
Renohill	Clayey (10-14np)	1,400	1,000	600	green needlegrass	40
					western wheatgrass	40
					big sagebrush	10
					blue grama	10
					skyline bluegrass	10
Savageton	Clayey (10-14np)	1,400	1,000	600	green needlegrass	40
					western wheatgrass	40
					big sagebrush	10
					blue grama	10
					skyline bluegrass	10
201:						
Renohill	Clayey (10-14np)	1,400	1,000	600	green needlegrass	40
					western wheatgrass	40
					big sagebrush	10
					blue grama	10
					skyline bluegrass	10
Shingle	Shallow Loamy (10-14np)	1,200	900	450	western wheatgrass	25
					bluebunch wheatgrass	15
					blue grama	10
					little bluestem	10
					needleandthread	10
					threadleaf sedge	10
					big sagebrush	5
					green needlegrass	5
Worf	Shallow Loamy (10-14np)	1,200	900	450	bluebunch wheatgrass	15
					western wheatgrass	15
					blue grama	10
					little bluestem	10
					needleandthread	10
					threadleaf sedge	10
					big sagebrush	5
					green needlegrass	5

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
202:						
Renohill	Clayey (10-14np)	1,400	1,000	600	green needlegrass	40
					western wheatgrass	40
					big sagebrush	10
					blue grama	10
					skyline bluegrass	10
Worfka	Shallow Clayey (10-14np)	1,000	750	450	green needlegrass	40
					western wheatgrass	40
					bluebunch wheatgrass	15
					big sagebrush	5
					blue grama	5
203:						
Rockypoint	Lowland (15-17np)	3,500	3,000	2,500	green needlegrass	15
					bearded wheatgrass	10
					cottonwood	10
					slender wheatgrass	10
					western wheatgrass	10
					Sandberg bluegrass	5
					needleandthread	5
					silver sagebrush	5
Iwait	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5
204:						
Samday	Shallow Clayey (10-14np)	1,000	750	450	green needlegrass	40
					western wheatgrass	40
					bluebunch wheatgrass	15
					big sagebrush	5
					blue grama	5
Samday, cool	Very Shallow (10-14np)	500	350	250	bluebunch wheatgrass	50
					Cusick's bluegrass	10
					Rocky Mountain juniper	10
					little bluestem	10
					needleandthread	10
					western wheatgrass	10
Shingle	Shallow Loamy (10-14np)	1,200	900	450	western wheatgrass	25
					bluebunch wheatgrass	15
					blue grama	10
					little bluestem	10
					needleandthread	10
					threadleaf sedge	10
					big sagebrush	5
					green needlegrass	5
205:						
Samday	Shallow Clayey (10-14np)	1,000	750	450	green needlegrass	40
					western wheatgrass	40
					bluebunch wheatgrass	15
					big sagebrush	5
					blue grama	5

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
205:(cont.)						
Savageton	Clayey (10-14np)	1,400	1,000	600	green needlegrass	40
					western wheatgrass	40
					Cusick's bluegrass	10
					big sagebrush	10
					blue grama	10
206:						
Samday	Shallow Clayey (10-14np)	1,000	750	450	green needlegrass	40
					western wheatgrass	40
					bluebunch wheatgrass	15
					big sagebrush	5
					blue grama	5
Shingle	Shallow Loamy (10-14np)	1,200	900	450	bluebunch wheatgrass	50
					western wheatgrass	15
					blue grama	10
					little bluestem	10
					needleandthread	10
					threadleaf sedge	10
					big sagebrush	5
					green needlegrass	5
Badland	---	---	---	---	---	---
207:						
Cromack	Clayey (15-17np)	2,300	1,900	1,500	green needlegrass	40
					western wheatgrass	30
					big sagebrush	15
					big bluestem	10
					blue grama	5
					sideoats grama	5
Fairburn	Shallow Loamy (15-17np)	1,600	1,300	1,000	bluebunch wheatgrass	25
					western wheatgrass	20
					green needlegrass	10
					needleandthread	10
					big sagebrush	5
					blue grama	5
					little bluestem	5
Ucross	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5
208:						
Savageton	Clayey (10-14np)	1,400	1,000	600	green needlegrass	40
					western wheatgrass	40
					Cusick's bluegrass	10
					big sagebrush	10
					blue grama	10
Silhouette	Clayey (10-14np)	1,400	1,000	600	green needlegrass	40
					western wheatgrass	40
					Cusick's bluegrass	10
					big sagebrush	10
					blue grama	10

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
209:						
Savageton	Clayey (10-14np)	1,400	1,000	600	green needlegrass	40
					western wheatgrass	40
					Cusick's bluegrass	10
					big sagebrush	10
					blue grama	10
Silhouette	Clayey (10-14np)	1,400	1,000	600	green needlegrass	40
					western wheatgrass	40
					Cusick's bluegrass	10
					big sagebrush	10
					blue grama	10
210:						
Shingle	Shallow Loamy (10-14np)	1,200	900	450	bluebunch wheatgrass	50
					western wheatgrass	15
					blue grama	10
					little bluestem	10
					needleandthread	10
					threadleaf sedge	10
					big sagebrush	5
					green needlegrass	5
Taluce	Shallow Sandy (10-14np)	1,300	1,000	600	needleandthread	25
					prairie sandreed	20
					bluebunch wheatgrass	10
					little bluestem	10
					blue grama	5
					threadleaf sedge	5
211:						
Shingle	Shallow Loamy (10-14np)	1,200	900	450	bluebunch wheatgrass	50
					western wheatgrass	15
					blue grama	10
					little bluestem	10
					needleandthread	10
					threadleaf sedge	10
					big sagebrush	5
					green needlegrass	5
Worf	Shallow Loamy (10-14np)	1,200	900	450	bluebunch wheatgrass	50
					western wheatgrass	15
					blue grama	10
					little bluestem	10
					needleandthread	10
					threadleaf sedge	10
					big sagebrush	5
					green needlegrass	5
212:						
Teckla	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
213:						
Terro	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	10
					little bluestem	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5
					threadleaf sedge	5
Taluce	Shallow Sandy (10-14np)	1,300	1,000	600	needleandthread	25
					prairie sandreed	20
					bluebunch wheatgrass	10
					little bluestem	10
					blue grama	5
					threadleaf sedge	5
214:						
Theedle	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
Kishona	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
215:						
Theedle	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
Kishona	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
216:						
Theedle	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
Kishona	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
216:(cont.)						
Shingle	Shallow Loamy (10-14np)	1,200	900	450	bluebunch wheatgrass	50
					western wheatgrass	15
					blue grama	10
					little bluestem	10
					needleandthread	10
					threadleaf sedge	10
					big sagebrush	5
					green needlegrass	5
217:						
Theedle	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
Shingle	Shallow Loamy (10-14np)	1,200	900	450	bluebunch wheatgrass	50
					western wheatgrass	15
					blue grama	10
					little bluestem	10
					needleandthread	10
					threadleaf sedge	10
					big sagebrush	5
					green needlegrass	5
218:						
Theedle	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
Turnercrest	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	10
					little bluestem	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5
					threadleaf sedge	5
Kishona	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
219:						
Torriarents	---	---	---	---	---	---
Torriorthents	---	---	---	---	---	---

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
220:						
Pitchdraw	Sandy (15-17np)	2,400	2,000	1,600	needleandthread	25
					prairie sandreed	25
					Indian ricegrass	10
					little bluestem	10
					silver sagebrush	5
					threadleaf sedge	5
					western wheatgrass	5
Ashollow	Sandy (15-17np)	2,400	2,000	1,600	needleandthread	25
					prairie sandreed	25
					Indian ricegrass	10
					little bluestem	10
					silver sagebrush	5
					threadleaf sedge	5
					western wheatgrass	5
Niobrara	Shallow Sandy (15-17np)	1,600	1,300	1,000	needleandthread	25
					prairie sandreed	20
					bluebunch wheatgrass	10
					little bluestem	10
					Indian ricegrass	5
					western wheatgrass	5
221:						
Turnercrest	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					little bluestem	10
					western wheatgrass	10
					silver sagebrush	5
					threadleaf sedge	5
Keeline	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					little bluestem	10
					western wheatgrass	10
					silver sagebrush	5
					threadleaf sedge	5
Taluce	Shallow Sandy (10-14np)	1,300	1,000	600	needleandthread	25
					prairie sandreed	25
					bluebunch wheatgrass	10
					little bluestem	10
					blue grama	5
					threadleaf sedge	5
222:						
Turnercrest	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	10
					little bluestem	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5
					threadleaf sedge	5

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
222:(cont.)						
Wibaux, thin solum----	Very Shallow (10-14np)	500	350	250	bluebunch wheatgrass-------	50
					Cusick's bluegrass---------	10
					little bluestem-----------	10
					needleandthread-----------	10
					western wheatgrass---------	10
					ponderosa pine------------	5
					skunkbush sumac-----------	5
Taluce----------	Shallow Sandy (10-14np)	1,300	1,000	600	needleandthread-----------	25
					prairie sandreed----------	20
					bluebunch wheatgrass-------	10
					little bluestem-----------	10
					blue grama----------------	5
					threadleaf sedge----------	5
223:						
Ucross----------	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass----------	25
					western wheatgrass---------	25
					needleandthread-----------	20
					big bluestem--------------	10
					big sagebrush-------------	10
					blue grama----------------	10
					Sandberg bluegrass---------	5
224:						
Ucross----------	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass----------	25
					western wheatgrass---------	25
					needleandthread-----------	20
					big bluestem--------------	10
					big sagebrush-------------	10
					blue grama----------------	10
					Sandberg bluegrass---------	5
Iwait----------	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass----------	25
					western wheatgrass---------	25
					needleandthread-----------	20
					big bluestem--------------	10
					big sagebrush-------------	10
					blue grama----------------	10
					Sandberg bluegrass---------	5
225:						
Ucross----------	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass----------	25
					western wheatgrass---------	25
					needleandthread-----------	20
					big bluestem--------------	10
					big sagebrush-------------	10
					blue grama----------------	10
					Sandberg bluegrass---------	5
Iwait----------	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass----------	25
					western wheatgrass---------	25
					needleandthread-----------	20
					big bluestem--------------	10
					big sagebrush-------------	10
					blue grama----------------	10
					Sandberg bluegrass---------	5

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
225:(cont.)						
Fairburn	Shallow Loamy (15-17np)	1,600	1,300	1,000	bluebunch wheatgrass	25
					western wheatgrass	20
					green needlegrass	10
					needleandthread	10
					big sagebrush	5
					blue grama	5
					little bluestem	5
226:						
Ulm	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
227:						
Ulm	Clayey (10-14np)	1,400	1,000	600	green needlegrass	40
					western wheatgrass	40
					big sagebrush	10
					blue grama	10
					skyline bluegrass	10
228:						
Ulm	Clayey (10-14np)	1,400	1,000	600	green needlegrass	40
					western wheatgrass	40
					Cusick's bluegrass	10
					big sagebrush	10
					blue grama	10
Renohill	Clayey (10-14np)	1,400	1,000	600	green needlegrass	40
					western wheatgrass	40
					Cusick's bluegrass	10
					big sagebrush	10
					blue grama	10
229:						
Ulm	Clayey (10-14np)	1,400	1,000	600	green needlegrass	40
					western wheatgrass	40
					Cusick's bluegrass	10
					big sagebrush	10
					blue grama	10
Renohill	Clayey (10-14np)	1,400	1,000	600	green needlegrass	40
					western wheatgrass	40
					Cusick's bluegrass	10
					big sagebrush	10
					blue grama	10
230:						
Urban land	---	---	---	---	---	---
Deekay	---	---	---	---	---	---
Moorhead	---	---	---	---	---	---
231:						
Urban land	---	---	---	---	---	---
Leiter	---	---	---	---	---	---

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
231:(cont.)						
Moorhead	---	---	---	---	---	---
232:						
Urban land	---	---	---	---	---	---
Pitchdraw	---	---	---	---	---	---
Ashollow	---	---	---	---	---	---
233:						
Ustic Torriorthents	---	---	---	---	---	---
234:						
Ustic Torriorthents	---	---	---	---	---	---
Badland	---	---	---	---	---	---
235:						
Vonalee	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	10
					little bluestem	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5
					threadleaf sedge	5
236:						
Vonalee	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	10
					little bluestem	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5
					threadleaf sedge	5
Terro	Sandy (10-14np)	1,600	1,300	750	needleandthread	25
					prairie sandreed	20
					Indian ricegrass	10
					little bluestem	10
					western wheatgrass	10
					blue grama	5
					silver sagebrush	5
					threadleaf sedge	5
237:						
Vonalf	Sandy (15-17np)	2,400	2,000	1,600	needleandthread	25
					prairie sandreed	25
					Indian ricegrass	10
					little bluestem	10
					silver sagebrush	5
					threadleaf sedge	5
					western wheatgrass	5

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
238:						
Vonalf	Sandy (15-17np)	2,400	2,000	1,600	needleandthread	25
					prairie sandreed	25
					Indian ricegrass	10
					little bluestem	10
					silver sagebrush	5
					threadleaf sedge	5
					western wheatgrass	5
Xema	Sandy (15-17np)	2,400	2,000	1,600	needleandthread	25
					prairie sandreed	25
					Indian ricegrass	10
					little bluestem	10
					silver sagebrush	5
					threadleaf sedge	5
					western wheatgrass	5
239:						
Ironbutte	Shallow Loamy (15-17np)	1,600	1,300	1,000	bluebunch wheatgrass	25
					western wheatgrass	25
					blue grama	10
					green needlegrass	10
					little bluestem	10
					needleandthread	10
					big sagebrush	5
Fairburn	Shallow Loamy (15-17np)	1,600	1,300	1,000	bluebunch wheatgrass	25
					western wheatgrass	20
					green needlegrass	10
					needleandthread	10
					blue grama	5
					little bluestem	5
Mittenbutte	Shallow Sandy (15-17np)	1,600	1,300	1,000	needleandthread	25
					prairie sandreed	20
					bluebunch wheatgrass	10
					little bluestem	10
					Indian ricegrass	5
					western wheatgrass	5
240:						
Wibaux	Shallow Loamy (10-14np)	1,200	900	450	bluebunch wheatgrass	50
					western wheatgrass	15
					blue grama	10
					little bluestem	10
					needleandthread	10
					threadleaf sedge	10
					big sagebrush	5
					green needlegrass	5
Wibaux, thin solum	Very Shallow (10-14np)	500	350	250	bluebunch wheatgrass	50
					Cusick's bluegrass	10
					little bluestem	10
					needleandthread	10
					western wheatgrass	10
					ponderosa pine	5
					skunkbush sumac	5

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
241:						
Ironbutte	Shallow Loamy (15-17np)	1,600	1,300	1,000	bluebunch wheatgrass	25
					western wheatgrass	25
					blue grama	10
					green needlegrass	10
					little bluestem	10
					needleandthread	10
					big sagebrush	5
Ironbutte, thin solum-	Very Shallow (15-17np)	500	350	250	bluebunch wheatgrass	25
					western wheatgrass	25
					blue grama	10
					green needlegrass	10
					little bluestem	10
					needleandthread	10
					big sagebrush	5
242:						
Ironbutte	Shallow Loamy (15-17np)	1,600	1,300	1,000	bluebunch wheatgrass	25
					western wheatgrass	25
					blue grama	10
					green needlegrass	10
					little bluestem	10
					needleandthread	10
					big sagebrush	5
Deekay	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5
Moorhead	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5
243:						
Wibaux, thick solum---	Sandy (10-14np)	1,300	1,000	600	needleandthread	25
					prairie sandreed	25
					bluebunch wheatgrass	10
					little bluestem	10
					blue grama	5
					threadleaf sedge	5
Wibaux	Shallow Sandy (10-14np)	1,300	1,000	600	bluebunch wheatgrass	40
					western wheatgrass	15
					needleandthread	10
					big sagebrush	5
					blue grama	5
					green needlegrass	5
					little bluestem	5
					threadleaf sedge	5

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
244:						
Muleherder	Loamy (15-17np)	1,600	1,300	1,000	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5
Ironbutte	Shallow Loamy (15-17np)	1,600	1,300	1,000	bluebunch wheatgrass	25
					western wheatgrass	25
					blue grama	10
					green needlegrass	10
					little bluestem	10
					needleandthread	10
					big sagebrush	5
245:						
Wibaux	Shallow Loamy (10-14np)	1,200	900	450	bluebunch wheatgrass	40
					western wheatgrass	15
					needleandthread	10
					big sagebrush	5
					blue grama	5
					green needlegrass	5
					little bluestem	5
					threadleaf sedge	5
Shingle	Shallow Loamy (10-14np)	1,200	900	450	bluebunch wheatgrass	50
					western wheatgrass	15
					blue grama	10
					little bluestem	10
					needleandthread	10
					threadleaf sedge	10
					big sagebrush	5
					green needlegrass	5
Badland	---	---	---	---	---	---
246:						
Wyarno	Clayey (10-14np)	1,400	1,000	600	green needlegrass	40
					western wheatgrass	40
					Cusick's bluegrass	10
					big sagebrush	10
					blue grama	10
Ulm	Clayey (10-14np)	1,400	1,000	600	green needlegrass	40
					western wheatgrass	40
					Cusick's bluegrass	10
					big sagebrush	10
					blue grama	10
247:						
Wyotite	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					green needlegrass	15
					blue grama	10
					Cusick's bluegrass	5
					big sagebrush	5

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
247:(cont.)						
Ulm	Loamy (10-14np)	1,500	1,200	700	needleandthread	25
					western wheatgrass	25
					blue grama	15
					green needlegrass	15
					big sagebrush	10
					Cusick's bluegrass	5
248:						
Ziggy	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5
Iwait	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5
249:						
Ziggy	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5
Iwait	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5
250:						
Ziggy	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5
Ucross	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5

Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
250:(cont.)						
Oldwolf	Loamy (15-17np)	2,300	1,900	1,500	green needlegrass	25
					western wheatgrass	25
					needleandthread	20
					big bluestem	10
					big sagebrush	10
					blue grama	10
					Sandberg bluegrass	5

Wildlife Habitat

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

In the table "Wildlife Habitat," the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated good, fair, poor, or very poor. A rating of good indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of fair indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of poor indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of very poor indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of grain and seed crops are corn, wheat, oats, and barley.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flooding, and slope. Soil temperature and soil moisture also are considerations. Examples of grasses and legumes are fescue, wheatgrass, bromegrass, clover, and alfalfa.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of wild herbaceous plants are bluestem, wheatgrass, and grama.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are ash, poplar, and boxelder. Examples of fruit-producing shrubs that are suitable for planting on soils rated good are Russian-olive and crabapple.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine, cedar, and juniper.

Shrubs are bushy woody plants that produce fruit, buds, twigs, bark, and foliage. Soil properties and features that affect the growth of shrubs are depth of the root zone, available water capacity, salinity, and soil moisture. Examples of shrubs are

mountainmahogany, bitterbrush, snowberry, and big sagebrush.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are rushes, sedges, and reeds.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, and ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. Wildlife attracted to these areas include sage grouse, meadowlark, field sparrow, cottontail, and red fox.

Habitat for woodland wildlife consists of areas of deciduous and/or coniferous plants and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, porcupine, woodpeckers, squirrels, raccoon, and deer.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, shore birds, muskrat, and beaver.

Habitat for rangeland wildlife consists of areas of shrubs and wild herbaceous plants. Wildlife attracted to rangeland include antelope, deer, sage grouse, meadowlark, and lark bunting.

Wildlife Habitat

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "good," "fair," and "poor." Dashes (--) indicate the map unit component was not rated.) The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation.

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
100:												
Aridic Ustorthents, saline	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
101:												
Arvada, thick surface-	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
102:												
Arvada, thick surface-	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Arvada	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Slickspots	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
103:												
Arwite	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
104:												
Arwite	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
105:												
Arwite	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Elwop	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
106:												
Arwite	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Elwop	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
107:												
Arwite	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Vonalf	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
108:												
Arwite	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Vonalf	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair

Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
109:												
Bidman	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
110:												
Bidman, loamy substratum	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
111:												
Bidman	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Parmleed	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
112:												
Bidman	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Parmleed	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
113:												
Bidman	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Ulm	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
114:												
Bowbac	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Taluce	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Badland	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
115:												
Bowbac	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Worf	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
116:												
Cambria	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Kishona	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Zigweid	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
117:												
Cambria	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair

Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
117:(cont.)												
Kishona	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Zigweid	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
118:												
Clarkelen	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Draknab	Fair	Fair	Fair	Very poor	Poor	Poor	Very poor	Very poor	Fair	Fair	Very poor	Fair
119:												
Clarkelen	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Embry	Poor	Fair	Fair	Very poor	Poor	Poor	Very poor	Very poor	Fair	Fair	Very poor	Fair
120:												
Clarkelen	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Keeline	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
121:												
Cushman	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Cambria	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
122:												
Cushman	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Cambria	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
123:												
Cushman	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Renohill	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
124:												
Cushman	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Shingle	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
125:												
Cushman	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair

Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
125:(cont.)												
Terro	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
126:												
Cushman	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Theedle	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
127:												
Cushman	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Theedle	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
128:												
Cushman	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Worf	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
129:												
Decolney	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Hiland	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
130:												
Decolney	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Hiland	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
131:												
Deekay	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
132:												
Deekay	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Moorhead	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
133:												
Deekay	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Moorhead	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
134:												
Deekay	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair

Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
134:(cont.)												
Oldwolf	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
135:												
Deekay	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Oldwolf	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
136:												
Deekay	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Ziggy	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
137:												
Echeta	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
138:												
Echeta	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Cromack	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
139:												
Embry	Poor	Fair	Fair	Very poor	Poor	Poor	Very poor	Very poor	Fair	Fair	Very poor	Fair
Orpha	Poor	Poor	Poor	Very poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor	Fair
140:												
Embry	Poor	Fair	Fair	Very poor	Poor	Poor	Very poor	Very poor	Fair	Fair	Very poor	Fair
Taluce	Poor	Fair	Fair	Very poor	Poor	Poor	Very poor	Very poor	Fair	Fair	Very poor	Fair
141:												
Emigha	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
142:												
Emigha, sodic	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Arvada, thick surface-	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
143:												
Felix, ponded	Poor	Fair	Very poor	Very poor	Very poor	Very poor	Poor	Poor	Poor	Poor	Poor	Poor
144:												
Forkwood	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair

Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
145:												
Forkwood	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Cambria	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
146:												
Forkwood	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Cushman	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
147:												
Forkwood	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Cushman	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
148:												
Forkwood	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Ulm	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
149:												
Forkwood	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Ulm	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
150:												
Gateson	Very poor	Poor	Poor	Poor	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor	Fair
Taluce	Very poor	Poor	Poor	Poor	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor	Fair
Turnercrest	Very poor	Poor	Poor	Poor	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor	Fair
151:												
Haverdad	Fair	Fair	Fair	Very poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
152:												
Haverdad	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Clarkelen	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
153:												
Haverdad	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair

Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
153:(cont.)												
Kishona	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
154:												
Heldt	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
155:												
Heldt, saline	Very poor	Poor	Poor	Very poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor	Poor
Bidman, saline	Very poor	Poor	Poor	Very poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor	Poor
156:												
Hiland	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
157:												
Hiland	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Bowbac	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
158:												
Hiland	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Bowbac	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
159:												
Hiland	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Vonalee	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
160:												
Hiland	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Vonalee	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
161:												
Hilight	Very poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Taluce, cool	Very poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Wags	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
162:												
Lismas	Very poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair

Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
162:(cont.)												
Mittenbutte, cool	Very poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Sabatka	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
163:												
Hilight	Very poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Wags	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Badland	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
164:												
Lismas	Very poor	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Sabatka	Poor	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Badland	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
165:												
Jayem	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
166:												
Jaywest	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
167:												
Jaywest	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Moorhead	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
168:												
Jaywest	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Spottedhorse	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
169:												
Julesburg	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
170:												
Keeline	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Tullock	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair

Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
171:												
Keeline	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Tullock	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Niobrara, dry	Very poor	Poor	Poor	Very poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor	Poor
172:												
Keyner	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
173:												
Lawver	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Teckla	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Wibaux	Very poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
174:												
Brislawn	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Rockybutte	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Ironbutte	Very poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
175:												
Lawver	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Wibaux	Very poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
176:												
Leiter	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Cromack	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
177:												
Maysdorf	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
178:												
Maysdorf	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
179:												
Maysdorf	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair

Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
179:(cont.)												
Pugsley	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
180:												
Maysdorf	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Pugsley	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
181:												
Moorhead	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
182:												
Moorhead	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
183:												
Moorhead	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Leiter	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
184:												
Moorhead	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Leiter	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
185:												
Moskee	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
186:												
Moskee	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
187:												
Nuncho	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
188:												
Orpha	Poor	Poor	Poor	Very poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor	Poor
Tullock	Poor	Poor	Poor	Very poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor	Poor
189:												
Oshoto	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Moorhead	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair

Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
190:												
Parmleed	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Renohill	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
191:												
Pits	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
Dumps	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
192:												
Platmak	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
193:												
Pugsley	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Decolney	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
194:												
Pugsley	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Decolney	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
195:												
Rauzi	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
196:												
Rauzi	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
197:												
Rauzi	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Elwop	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
198:												
Recluse	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
199:												
Renohill	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Savageton	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
200:												
Renohill	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair

Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
200:(cont.)												
Savageton	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
201:												
Renohill	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Shingle	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Worf	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
202:												
Renohill	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Worfka	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
203:												
Rockypoint	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Iwait	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
204:												
Samday	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Samday, cool	Very poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Shingle	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
205:												
Samday	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Savageton	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
206:												
Samday	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Shingle	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Badland	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
207:												
Cromack	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair

Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
207: (cont.)												
Fairburn	Poor	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Ucross	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
208:												
Savageton	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Silhouette	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
209:												
Savageton	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Silhouette	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
210:												
Shingle	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Taluce	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
211:												
Shingle	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Worf	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
212:												
Teckla	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
213:												
Terro	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Taluce	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
214:												
Theedle	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Kishona	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
215:												
Theedle	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Kishona	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair

Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
216:												
Theedle	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Kishona	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Shingle	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
217:												
Theedle	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Shingle	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
218:												
Theedle	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Turnercrest	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Kishona	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
219:												
Torriarents	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Torriorthents	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
220:												
Pitchdraw	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Ashollow	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Niobrara	Poor	Poor	Poor	Very poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor	Poor
221:												
Turnercrest	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Keeline	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Taluce	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
222:												
Turnercrest	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Wibaux, thin solum	Very poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair

Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
222:(cont.)												
Taluce	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
223:												
Ucross	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
224:												
Ucross	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Iwait	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
225:												
Ucross	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Iwait	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Fairburn	Poor	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
226:												
Ulm	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
227:												
Ulm	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
228:												
Ulm	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Renohill	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
229:												
Ulm	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Renohill	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
230:												
Urban land	---	---	---	---	---	---	---	---	---	---	---	---
Deekay	Poor	Fair	Poor	Poor	Fair	Fair	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
Moorhead	Poor	Fair	Poor	Poor	Fair	Fair	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
231:												
Urban land	---	---	---	---	---	---	---	---	---	---	---	---

Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
231:(cont.)												
Leiter	Very poor	Fair	Very poor	Poor	Fair	Fair	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
Moorhead	Very poor	Fair	Very poor	Poor	Fair	Fair	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
232:												
Urban land	---	---	---	---	---	---	---	---	---	---	---	---
Pitchdraw	Very poor	Fair	Very poor	Poor	Fair	Fair	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
Ashollow	Very poor	Fair	Very poor	Poor	Fair	Fair	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
233:												
Ustic Torriorthents	Very poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
234:												
Ustic Torriorthents	Very poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Badland	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
235:												
Vonalee	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
236:												
Vonalee	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Terro	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
237:												
Vonalf	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
238:												
Vonalf	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Xema	Poor	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
239:												
Ironbutte	Poor	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Fairburn	Poor	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Mittenbutte	Poor	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair

Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
240:												
Wibaux	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Wibaux, thin solum	Very poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
241:												
Ironbutte	Poor	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Ironbutte, thin solum	Very poor	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
242:												
Ironbutte	Poor	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Deekay	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Moorhead	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
243:												
Wibaux, thick solum	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Wibaux	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
244:												
Muleherder	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Ironbutte	Poor	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
245:												
Wibaux	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Shingle	Poor	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Badland	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
246:												
Wyarno	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Ulm	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
247:												
Wyotite	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair

Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
247:(cont.)												
Ulm	Fair	Fair	Fair	Very poor	Poor	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
248:												
Ziggy	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Iwait	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
249:												
Ziggy	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Iwait	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
250:												
Ziggy	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Ucross	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair
Oldwolf	Fair	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Fair

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the estimated data and test data in the "Soil Properties" section.

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil within a depth of 5 or 6 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about grain-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 or 6 feet of the surface, soil wetness, depth to a seasonal high water table, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

The table, "Building Site Development," shows the degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for basements, graves, utility lines, open ditches, or other purposes. The ratings are based on soil properties, site features, and observed performance of the soils. The ease of digging, filling, and compacting is affected by the depth to bedrock, a cemented pan, or a very firm dense layer; stone content; soil texture; and slope. The time of the year that excavations can be made is affected by the depth to a seasonal high water table and the susceptibility of the soil to flooding. The resistance of the excavation walls or banks to sloughing or caving is affected by soil texture and depth to the water table.

Dwellings and *small commercial buildings* are structures built on shallow foundations on undisturbed soil. The load limit is the same as that for single-family dwellings no higher than three stories. Ratings are made for small commercial buildings without basements, for dwellings with basements, and for dwellings without basements. The ratings are based on soil properties, site features, and observed performance of the soils. A high water table, flooding, shrinking and swelling, and organic layers can cause the movement of footings. A high water table, depth to bedrock or to a cemented pan, large stones, slope, and flooding affect the ease of excavation and construction. Landscaping and grading that require cuts and fills of more than 5 or 6 feet are not considered.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or stabilized soil material; and a flexible or rigid surface. Cuts and fills are generally limited to less than 6 feet. The ratings are based on soil properties, site features, and observed performance of the soils. Depth to bedrock or to a cemented pan, a high water table, flooding, large stones, and slope affect the ease of excavating and grading. Soil strength (as inferred from the engineering classification of the soil), shrink-swell potential, frost action potential, and depth to a high water table affect the traffic-supporting capacity.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. The ratings are based on soil properties, site features, and observed performance of the soils. Soil reaction, a high water table, depth to bedrock or to a cemented pan, the available water capacity in the upper 40 inches, and the content of salts, sodium, and sulfidic materials affect plant growth. Flooding, wetness, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer affect trafficability after vegetation is established.

Sanitary Facilities

The table, "Sanitary Facilities," shows the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required.

The table also shows the suitability of the soils for use as *daily cover for landfill.* A rating of *good* indicates that soil properties and site features are favorable for the use and good performance and low maintenance can be expected; *fair* indicates that soil properties and site features are moderately favorable for the use and one or more soil properties or site features make the soil less desirable than the soils rated good; and *poor* indicates that one or more soil properties or site features are unfavorable for the use and overcoming the unfavorable properties requires special design, extra maintenance, or costly alteration.

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches is evaluated. The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, a high water table, depth to bedrock or to a cemented pan, and flooding affect absorption of the effluent. Large stones and bedrock or a cemented pan interfere with installation.

Unsatisfactory performance of septic tank absorption fields, including excessively slow absorption of effluent, surfacing of effluent, and hillside seepage, can affect public health. Ground water can be polluted if highly permeable sand and gravel or fractured bedrock is less than 4 feet below the base of the absorption field, if slope is excessive, or if the water table is near the surface. There must be unsaturated soil material beneath the absorption field to filter the effluent effectively. Many local ordinances require that this material be of a certain thickness.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Lagoons generally are designed to hold the sewage within a depth of 2 to 5 feet. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water.

The table gives ratings for the natural soil that makes up the lagoon floor. The surface layer and, generally, 1 or 2 feet of soil material below the surface layer are excavated to provide material for the embankments. The ratings are based on soil properties, site features, and observed performance of the soils. Considered in the ratings are slope, permeability, a high water table, depth to bedrock or to a cemented pan, flooding, large stones, and content of organic matter.

Excessive seepage resulting from rapid permeability in the soil or a water table that is high enough to raise the level of sewage in the lagoon causes a lagoon to function unsatisfactorily. Pollution results if seepage is excessive or if floodwater overtops the lagoon. A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor.

Sanitary landfills are areas where solid waste is disposed of by burying it in soil. There are two types of landfill—trench and area. In a trench landfill, the waste is placed in a trench. It is spread, compacted, and covered daily with a thin layer of soil excavated at the site. In an area landfill, the waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site.

Both types of landfill must be able to bear heavy vehicular traffic. Both types involve a risk of ground-water pollution. Ease of excavation and revegetation should be considered.

The ratings in the table are based on soil properties, site features, and observed performance of the soils. Permeability, depth to bedrock or to a cemented pan, a high water table, slope, and flooding affect both types of landfill. Texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium affect trench landfills. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, a limitation rated slight or moderate may not be valid. Onsite investigation is needed.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste.

Soil texture, wetness, coarse fragments, and slope affect the ease of removing and spreading the material during wet and dry periods. Loamy or silty soils that are free of large stones or excess gravel are the best cover for a landfill. Clayey soils are sticky or cloddy and are difficult to spread; sandy soils are subject to wind erosion.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. The surface layer generally has the best workability, more organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

Construction Materials

The table, "Construction Materials," gives information about the soils as a source of roadfill, sand, gravel, and topsoil. The soils are rated *good, fair,* or *poor* as a source of roadfill and topsoil. They are rated as a *probable* or *improbable* source of sand and gravel. The ratings are based on soil properties and site features that affect the removal of the soil and its use as construction material. Normal compaction, minor processing, and other standard construction practices are assumed. Each soil is evaluated to a depth of 5 or 6 feet.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the soil material below the surface layer to a depth of 5 or 6 feet. It is assumed that soil layers will be mixed during excavating and spreading. Many soils have layers of contrasting suitability within their profile. The table showing engineering index properties provides detailed information about each soil layer. This information can help to determine the suitability of each layer for use as roadfill. The performance of soil after it is stabilized with lime or cement is not considered in the ratings.

The ratings are based on soil properties, site features, and observed performance of the soils. The thickness of suitable material is a major

consideration. The ease of excavation is affected by large stones, a high water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the engineering classification of the soil) and shrink-swell potential.

Soils rated *good* contain significant amounts of sand or gravel or both. They have at least 5 feet of suitable material, a low shrink-swell potential, few cobbles and stones, and slopes of 15 percent or less. Depth to the water table is more than 3 feet. Soils rated *fair* are more than 35 percent silt- and clay-sized particles and have a plasticity index of less than 10. They have a moderate shrink-swell potential, slopes of 15 to 25 percent, or many stones. Depth to the water table is 1 to 3 feet. Soils rated *poor* have a plasticity index of more than 10, a high shrink-swell potential, many stones, or slopes of more than 25 percent. They are wet and have a water table at a depth of less than 1 foot. They may have layers of suitable material, but the material is less than 3 feet thick.

Sand and *gravel* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. Only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material.

The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the engineering classification of the soil), the thickness of suitable material, and the content of rock fragments. Kinds of rock, acidity, and stratification are given in the soil series descriptions. Gradation of grain sizes is given in the table on engineering index properties.

A soil rated as a probable source has a layer of clean sand or gravel or a layer of sand or gravel that is up to 12 percent silty fines. This material must be at least 3 feet thick and less than 50 percent, by weight, large stones. All other soils are rated as an improbable source. Coarse fragments of soft bedrock, such as shale and siltstone, are not considered to be sand and gravel.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area.

Plant growth is affected by toxic material and by such properties as soil reaction, available water capacity, and fertility. The ease of excavating, loading, and spreading is affected by rock fragments, slope, a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, a water table, rock fragments, bedrock, and toxic material.

Soils rated *good* have friable, loamy material to a depth of at least 40 inches. They are free of stones and cobbles, have little or no gravel, and have slopes of less than 8 percent. They are low in content of soluble salts, are naturally fertile or respond well to fertilizer, and are not so wet that excavation is difficult.

Soils rated *fair* are sandy soils, loamy soils that have a relatively high content of clay, soils that have only 20 to 40 inches of suitable material, soils that have an appreciable amount of gravel, stones, or soluble salts, or soils that have slopes of 8 to 15 percent. The soils are not so wet that excavation is difficult.

Soils rated *poor* are very sandy or clayey, have less than 20 inches of suitable material, have a large amount of gravel, stones, or soluble salts, have slopes of more than 15 percent, or have a seasonal high water table at or near the surface.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Water Management

The table, "Water Management," gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed excavated ponds. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and are easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increase in construction costs, and possibly increased maintenance are required.

This table also gives for each soil the restrictive features that affect drainage, irrigation, terraces and diversions, and grassed waterways.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low

seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock, to a cemented pan, or to other layers that affect the rate of water movement; permeability; depth to a high water table or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; subsidence of organic layers; and the potential for frost action. Excavating and grading and the stability of ditchbanks are affected by depth to bedrock or to a cemented pan, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances in the root zone, such as salts, sodium, and sulfur. Availability of drainage outlets is not considered in the ratings.

Irrigation is the controlled application of water to supplement rainfall and support plant growth. The design and management of an irrigation system are affected by depth to the water table, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope. The construction of a system is affected by large stones and depth to bedrock or to a cemented pan. The performance of a system is affected by the depth of the root zone, the amount of salts or sodium, and soil reaction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock or to a cemented pan affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of wind erosion or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock or to a cemented pan affect the construction of grassed waterways. A hazard of wind erosion, low available water capacity, restricted rooting depth, toxic substances such as salts and sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Building Site Development

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation.)

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
100:						
Aridic Ustorthents, saline	Moderate: too clayey	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Moderate: droughty
101:						
Arvada, thick surface-	Moderate: too clayey	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell	Severe: low strength shrink-swell	Severe: excess sodium
102:						
Arvada, thick surface-	Moderate: too clayey	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell	Severe: low strength shrink-swell	Severe: excess sodium
Arvada	Moderate: too clayey	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell	Severe: low strength shrink-swell	Severe: excess sodium
Slickspots	---	---	---	---	---	---
103:						
Arwite	Slight	Slight	Slight	Slight	Moderate: frost action	Slight
104:						
Arwite	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: frost action slope	Moderate: slope
105:						
Arwite	Slight	Slight	Slight	Slight	Moderate: frost action	Slight
Elwop	Moderate: depth to rock	Moderate: shrink-swell	Moderate: shrink-swell depth to rock	Moderate: shrink-swell	Moderate: frost action shrink-swell	Moderate: depth to rock
106:						
Arwite	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: frost action slope	Moderate: slope
Elwop	Moderate: slope depth to rock	Moderate: slope	Moderate: slope depth to rock	Severe: slope	Moderate: frost action slope	Moderate: slope depth to rock
107:						
Arwite	Slight	Slight	Slight	Slight	Moderate: frost action	Slight
Vonalf	Slight	Slight	Slight	Slight	Moderate: frost action	Slight
108:						
Arwite	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: frost action slope	Moderate: slope

Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
108:(cont.)						
Vonalf	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: frost action slope	Moderate: slope
109:						
Bidman	Moderate: too clayey	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
110:						
Bidman, loamy substratum	Moderate: too clayey	Severe: shrink-swell	Moderate: shrink-swell	Severe: shrink-swell	Severe: low strength shrink-swell	Slight
111:						
Bidman	Moderate: too clayey	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
Parmleed	Moderate: too clayey depth to rock	Moderate: shrink-swell	Moderate: shrink-swell depth to rock	Moderate: shrink-swell	Severe: low strength	Moderate: depth to rock
112:						
Bidman	Moderate: slope too clayey	Moderate: shrink-swell slope	Moderate: shrink-swell slope	Severe: slope	Severe: low strength	Moderate: slope
Parmleed	Moderate: slope too clayey depth to rock	Moderate: shrink-swell slope	Moderate: shrink-swell slope depth to rock	Severe: slope	Severe: low strength	Moderate: slope depth to rock
113:						
Bidman	Moderate: too clayey	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell	Severe: low strength shrink-swell	Slight
Ulm	Moderate: too clayey	Severe: shrink-swell	Moderate: shrink-swell	Severe: shrink-swell	Severe: low strength shrink-swell	Slight
114:						
Bowbac	Moderate: slope depth to rock	Moderate: slope	Moderate: slope depth to rock	Severe: slope	Moderate: slope	Moderate: slope depth to rock
Taluce	Severe: depth to rock	Moderate: slope depth to rock	Severe: depth to rock	Severe: slope	Moderate: slope depth to rock	Severe: depth to rock
Badland	Severe: depth to rock	Moderate: depth to rock	Severe: depth to rock	Moderate: depth to rock	Moderate: depth to rock	Severe: depth to rock droughty
115:						
Bowbac	Moderate: slope depth to rock	Moderate: slope	Moderate: slope depth to rock	Severe: slope	Moderate: slope	Moderate: slope depth to rock

Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
115:(cont.)						
Worf	Severe: depth to rock	Moderate: shrink-swell slope depth to rock	Severe: depth to rock	Severe: slope	Moderate: low strength shrink-swell depth to rock	Severe: depth to rock
116:						
Cambria	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: low strength shrink-swell	Slight
Kishona	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
Zigweid	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
117:						
Cambria	Moderate: slope	Moderate: shrink-swell slope	Moderate: shrink-swell slope	Severe: slope	Moderate: low strength shrink-swell slope	Moderate: slope
Kishona	Moderate: slope	Moderate: shrink-swell slope	Moderate: shrink-swell slope	Severe: slope	Severe: low strength	Moderate: slope
Zigweid	Moderate: slope	Moderate: shrink-swell slope	Moderate: shrink-swell slope	Severe: slope	Severe: low strength	Moderate: slope
118:						
Clarkelen	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding
Draknab	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding droughty
119:						
Clarkelen	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding
Embry	Slight	Slight	Slight	Slight	Slight	Slight
120:						
Clarkelen	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding
Keeline	Slight	Slight	Slight	Slight	Slight	Slight
121:						
Cushman	Moderate: depth to rock	Moderate: shrink-swell	Moderate: shrink-swell depth to rock	Moderate: shrink-swell	Severe: low strength	Moderate: depth to rock
Cambria	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: low strength shrink-swell	Slight

Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
122:						
Cushman	Moderate: slope depth to rock	Moderate: shrink-swell slope	Moderate: shrink-swell slope depth to rock	Severe: slope	Severe: low strength	Moderate: slope depth to rock
Cambria	Moderate: slope	Moderate: shrink-swell slope	Moderate: shrink-swell slope	Severe: slope	Moderate: low strength shrink-swell slope	Moderate: slope
123:						
Cushman	Moderate: slope depth to rock	Moderate: shrink-swell slope	Moderate: shrink-swell slope depth to rock	Severe: slope	Severe: low strength	Moderate: slope depth to rock
Renohill	Moderate: slope depth to rock	Moderate: shrink-swell slope	Moderate: shrink-swell slope depth to rock	Severe: slope	Severe: low strength	Moderate: slope depth to rock
124:						
Cushman	Moderate: slope depth to rock	Moderate: shrink-swell slope	Moderate: shrink-swell slope depth to rock	Severe: slope	Severe: low strength	Moderate: slope depth to rock
Shingle	Severe: depth to rock	Moderate: shrink-swell slope depth to rock	Severe: depth to rock	Severe: slope	Severe: low strength	Severe: depth to rock
125:						
Cushman	Moderate: slope depth to rock	Moderate: shrink-swell slope	Moderate: shrink-swell slope depth to rock	Severe: slope	Severe: low strength	Moderate: slope depth to rock
Terro	Severe: cutbanks cave	Moderate: slope	Moderate: slope depth to rock	Severe: slope	Moderate: slope	Moderate: slope depth to rock droughty
126:						
Cushman	Moderate: depth to rock	Moderate: shrink-swell	Moderate: shrink-swell depth to rock	Moderate: shrink-swell	Severe: low strength	Moderate: depth to rock
Theedle	Moderate: depth to rock	Moderate: shrink-swell	Moderate: shrink-swell depth to rock	Moderate: shrink-swell	Severe: low strength	Moderate: depth to rock
127:						
Cushman	Moderate: slope depth to rock	Moderate: shrink-swell slope	Moderate: shrink-swell slope depth to rock	Severe: slope	Severe: low strength	Moderate: slope depth to rock

Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
127:(cont.)						
Theedle	Moderate: slope depth to rock	Moderate: shrink-swell slope	Moderate: shrink-swell slope depth to rock	Severe: slope	Severe: low strength	Moderate: slope depth to rock
128:						
Cushman	Moderate: slope depth to rock	Moderate: shrink-swell slope	Moderate: shrink-swell slope depth to rock	Severe: slope	Severe: low strength	Moderate: slope depth to rock
Worf	Severe: depth to rock	Moderate: shrink-swell slope depth to rock	Severe: depth to rock	Severe: slope	Moderate: low strength shrink-swell depth to rock	Severe: depth to rock
129:						
Decolney	Slight	Slight	Slight	Slight	Slight	Slight
Hiland	Slight	Slight	Slight	Slight	Slight	Slight
130:						
Decolney	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: slope
Hiland	Moderate: slope	Moderate: shrink-swell slope	Moderate: slope	Severe: slope	Moderate: shrink-swell slope	Moderate: slope
131:						
Deekay	Slight	Slight	Slight	Slight	Moderate: frost action low strength	Slight
132:						
Deekay	Slight	Moderate: shrink-swell	Slight	Moderate: shrink-swell	Severe: low strength	Slight
Moorhead	Moderate: too clayey	Severe: shrink-swell	Moderate: shrink-swell	Severe: shrink-swell	Severe: low strength shrink-swell	Slight
133:						
Deekay	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: frost action low strength slope	Moderate: slope
Moorhead	Moderate: slope too clayey	Moderate: shrink-swell slope	Moderate: shrink-swell slope	Severe: slope	Severe: low strength	Moderate: slope
134:						
Deekay	Slight	Slight	Slight	Slight	Moderate: frost action low strength	Slight
Oldwolf	Moderate: depth to rock	Slight	Moderate: depth to rock	Slight	Moderate: frost action low strength	Moderate: depth to rock

Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
135:						
Deekay	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: frost action low strength slope	Moderate: slope
Oldwolf	Moderate: slope depth to rock	Moderate: slope	Moderate: slope depth to rock	Severe: slope	Moderate: frost action low strength slope	Moderate: slope depth to rock
136:						
Deekay	Slight	Slight	Slight	Slight	Moderate: frost action low strength	Slight
Ziggy	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
137:						
Echeta	Moderate: too clayey	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell	Severe: low strength shrink-swell	Slight
138:						
Echeta	Moderate: slope too clayey	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell slope	Severe: low strength shrink-swell	Moderate: slope
Cromack	Moderate: slope too clayey depth to rock	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell slope	Severe: low strength shrink-swell	Moderate: slope depth to rock
139:						
Embry	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: slope
Orpha	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: slope droughty
140:						
Embry	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: slope
Taluce	Severe: depth to rock	Moderate: slope depth to rock	Severe: depth to rock	Severe: slope	Moderate: slope depth to rock	Severe: depth to rock
141:						
Emigha	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
142:						
Emigha, sodic	Moderate: too clayey	Severe: flooding	Severe: flooding	Severe: flooding	Severe: low strength	Slight
Arvada, thick surface-	Moderate: too clayey	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell	Severe: low strength shrink-swell	Severe: excess sodium

Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
143:						
Felix, ponded	Severe: ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: low strength shrink-swell ponding	Severe: too clayey ponding
144:						
Forkwood	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
145:						
Forkwood	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
Cambria	Slight	Moderate: shrink-swell	Slight	Moderate: shrink-swell	Moderate: low strength shrink-swell	Slight
146:						
Forkwood	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
Cushman	Moderate: depth to rock	Moderate: shrink-swell	Moderate: shrink-swell depth to rock	Moderate: shrink-swell	Severe: low strength	Moderate: depth to rock
147:						
Forkwood	Moderate: slope	Moderate: shrink-swell slope	Moderate: shrink-swell slope	Severe: slope	Severe: low strength	Moderate: slope
Cushman	Moderate: slope depth to rock	Moderate: shrink-swell slope	Moderate: shrink-swell slope depth to rock	Severe: slope	Severe: low strength	Moderate: slope depth to rock
148:						
Forkwood	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
Ulm	Moderate: too clayey	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
149:						
Forkwood	Moderate: slope	Moderate: shrink-swell slope	Moderate: shrink-swell slope	Severe: slope	Severe: low strength	Moderate: slope
Ulm	Moderate: slope	Moderate: shrink-swell slope	Moderate: shrink-swell slope	Severe: slope	Severe: low strength	Moderate: slope
150:						
Gateson	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Taluce	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: slope	Severe: slope depth to rock
Turnercrest	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope

Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
151:						
Haverdad	Moderate: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding
152:						
Haverdad	Moderate: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding
Clarkelen	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding
153:						
Haverdad	Moderate: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding low strength	Moderate: flooding
Kishona	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
154:						
Heldt	Moderate: too clayey	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell	Severe: low strength shrink-swell	Slight
155:						
Heldt, saline	Moderate: too clayey	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell	Severe: low strength shrink-swell	Slight
Bidman, saline	Moderate: too clayey	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell	Severe: low strength shrink-swell	Slight
156:						
Hiland	Slight	Slight	Slight	Slight	Slight	Slight
157:						
Hiland	Slight	Slight	Slight	Slight	Slight	Slight
Bowbac	Moderate: depth to rock	Moderate: shrink-swell	Moderate: shrink-swell depth to rock	Moderate: shrink-swell	Moderate: low strength shrink-swell	Moderate: depth to rock
158:						
Hiland	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: slope
Bowbac	Moderate: slope depth to rock	Moderate: slope	Moderate: slope depth to rock	Severe: slope	Moderate: slope	Moderate: slope depth to rock
159:						
Hiland	Slight	Slight	Slight	Slight	Slight	Slight
Vonalee	Slight	Slight	Slight	Slight	Slight	Slight
160:						
Hiland	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: slope
Vonalee	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: slope

Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
161:						
Hilight	Severe: slope, depth to rock	Severe: shrink-swell, slope	Severe: shrink-swell, slope, depth to rock	Severe: shrink-swell, slope	Severe: low strength, shrink-swell, slope	Severe: slope, depth to rock
Taluce, cool	Severe: slope, depth to rock	Severe: slope	Severe: slope, depth to rock	Severe: slope	Severe: slope	Severe: slope, depth to rock
Wags	Severe: slope	Severe: shrink-swell, slope	Severe: shrink-swell, slope	Severe: shrink-swell, slope	Severe: low strength, shrink-swell, slope	Severe: slope, too clayey
162:						
Lismas	Severe: slope, depth to rock	Severe: shrink-swell, slope	Severe: shrink-swell, slope, depth to rock	Severe: shrink-swell, slope	Severe: low strength, shrink-swell, slope	Severe: slope, depth to rock
Mittenbutte, cool	Severe: slope, depth to rock	Severe: slope	Severe: slope, depth to rock	Severe: slope	Severe: slope	Severe: slope, depth to rock
Sabatka	Severe: slope	Severe: shrink-swell, slope	Severe: shrink-swell, slope	Severe: shrink-swell, slope	Severe: low strength, shrink-swell, slope	Severe: slope, too clayey
163:						
Hilight	Severe: slope, depth to rock	Severe: shrink-swell, slope	Severe: shrink-swell, slope, depth to rock	Severe: shrink-swell, slope	Severe: low strength, shrink-swell, slope	Severe: slope, too clayey, depth to rock
Wags	Severe: slope	Severe: shrink-swell, slope	Severe: shrink-swell, slope	Severe: shrink-swell, slope	Severe: low strength, shrink-swell, slope	Severe: slope
Badland	Severe: depth to rock	Moderate: depth to rock	Severe: depth to rock	Moderate: depth to rock	Moderate: depth to rock	Severe: depth to rock, droughty
164:						
Lismas	Severe: slope, depth to rock	Severe: shrink-swell, slope	Severe: shrink-swell, slope, depth to rock	Severe: shrink-swell, slope	Severe: low strength, shrink-swell, slope	Severe: slope, too clayey, depth to rock
Sabatka	Severe: slope	Severe: shrink-swell, slope	Severe: shrink-swell, slope	Severe: shrink-swell, slope	Severe: low strength, shrink-swell, slope	Severe: slope
Badland	Severe: depth to rock	Moderate: depth to rock	Severe: depth to rock	Moderate: depth to rock	Moderate: depth to rock	Severe: depth to rock, droughty

Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
165:						
Jayem	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: slope
166:						
Jaywest	Moderate: too clayey	Severe: shrink-swell	Moderate: shrink-swell	Severe: shrink-swell	Severe: low strength shrink-swell	Slight
167:						
Jaywest	Moderate: too clayey	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
Moorhead	Moderate: too clayey	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
168:						
Jaywest	Moderate: too clayey	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
Spottedhorse	Moderate: too clayey depth to rock	Moderate: shrink-swell	Moderate: shrink-swell depth to rock	Moderate: shrink-swell	Severe: low strength	Moderate: depth to rock
169:						
Julesburg	Slight	Slight	Slight	Slight	Slight	Slight
170:						
Keeline	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: slope droughty
Tullock	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
171:						
Keeline	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: slope
Tullock	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Niobrara, dry	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: slope	Severe: slope depth to rock
172:						
Keyner	Slight	Slight	Slight	Slight	Slight	Severe: excess sodium
173:						
Lawver	Moderate: too clayey	Moderate: shrink-swell	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Slight
Teckla	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Slight
Wibaux	Severe: large stones	Severe: large stones	Severe: large stones	Severe: large stones	Severe: large stones	Severe: small stones droughty

Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
174:						
Brislawn	Moderate: too clayey	Moderate: shrink-swell	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Slight
Rockybutte	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Slight
Ironbutte	Severe: large stones	Severe: large stones	Severe: large stones	Severe: large stones	Severe: large stones	Severe: small stones droughty
175:						
Lawver	Moderate: slope too clayey	Moderate: shrink-swell slope	Moderate: slope	Severe: slope	Moderate: shrink-swell slope	Moderate: slope
Wibaux	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: slope droughty
176:						
Leiter	Moderate: too clayey depth to rock	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell	Severe: low strength shrink-swell	Moderate: depth to rock
Cromack	Moderate: too clayey depth to rock	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell	Severe: low strength shrink-swell	Moderate: depth to rock
177:						
Maysdorf	Slight	Moderate: shrink-swell	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Slight
178:						
Maysdorf	Slight	Moderate: shrink-swell	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Slight
179:						
Maysdorf	Slight	Slight	Slight	Slight	Slight	Slight
Pugsley	Severe: cutbanks cave	Slight	Moderate: depth to rock	Slight	Slight	Moderate: depth to rock
180:						
Maysdorf	Moderate: slope	Moderate: shrink-swell slope	Moderate: slope	Severe: slope	Moderate: shrink-swell slope	Moderate: slope
Pugsley	Severe: cutbanks cave	Moderate: shrink-swell slope	Moderate: shrink-swell slope depth to rock	Severe: slope	Moderate: shrink-swell slope	Moderate: slope depth to rock
181:						
Moorhead	Moderate: too clayey	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
182:						
Moorhead	Moderate: too clayey	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight

Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
183:						
Moorhead	Moderate: too clayey	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
Leiter	Moderate: too clayey depth to rock	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell	Severe: low strength shrink-swell	Moderate: depth to rock
184:						
Moorhead	Moderate: slope too clayey	Moderate: shrink-swell slope	Moderate: shrink-swell slope	Severe: slope	Severe: low strength	Moderate: slope
Leiter	Moderate: slope too clayey depth to rock	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell slope	Severe: low strength shrink-swell	Moderate: slope depth to rock
185:						
Moskee	Slight	Moderate: shrink-swell	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Slight
186:						
Moskee	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: slope
187:						
Nuncho	Moderate: too clayey	Severe: shrink-swell	Moderate: shrink-swell	Severe: shrink-swell	Severe: low strength shrink-swell	Slight
188:						
Orpha	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Tullock	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
189:						
Oshoto	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
Moorhead	Moderate: too clayey	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
190:						
Parmleed	Moderate: slope too clayey depth to rock	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell slope	Severe: low strength shrink-swell	Moderate: slope depth to rock
Renohill	Moderate: slope depth to rock	Moderate: shrink-swell slope	Moderate: shrink-swell slope depth to rock	Severe: slope	Severe: low strength	Moderate: slope depth to rock
191:						
Pits	---	---	---	---	---	---
Dumps	---	---	---	---	---	---

Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
192:						
Platmak	Moderate: too clayey	Severe: shrink-swell	Moderate: shrink-swell	Severe: shrink-swell	Severe: low strength shrink-swell	Slight
193:						
Pugsley	Severe: cutbanks cave	Slight	Moderate: depth to rock	Slight	Slight	Moderate: depth to rock
Decolney	Slight	Slight	Slight	Slight	Slight	Slight
194:						
Pugsley	Severe: cutbanks cave	Moderate: slope	Moderate: slope depth to rock	Severe: slope	Moderate: slope	Moderate: slope depth to rock
Decolney	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: slope
195:						
Rauzi	Slight	Moderate: shrink-swell	Slight	Moderate: shrink-swell	Moderate: frost action shrink-swell	Slight
196:						
Rauzi	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: frost action shrink-swell	Slight
197:						
Rauzi	Slight	Moderate: shrink-swell	Slight	Moderate: shrink-swell slope	Moderate: frost action shrink-swell	Slight
Elwop	Moderate: depth to rock	Slight	Moderate: depth to rock	Moderate: slope	Moderate: frost action	Moderate: depth to rock
198:						
Recluse	Slight	Slight	Slight	Slight	Moderate: low strength	Slight
199:						
Renohill	Moderate: too clayey depth to rock	Moderate: shrink-swell	Moderate: shrink-swell depth to rock	Moderate: shrink-swell	Severe: low strength	Moderate: depth to rock
Savageton	Moderate: too clayey depth to rock	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell	Severe: low strength shrink-swell	Moderate: depth to rock
200:						
Renohill	Moderate: slope too clayey depth to rock	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell slope	Severe: low strength shrink-swell	Moderate: slope depth to rock
Savageton	Moderate: slope too clayey depth to rock	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell slope	Severe: low strength shrink-swell	Moderate: slope depth to rock

Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
201:						
Renohill	Moderate: depth to rock	Moderate: shrink-swell	Moderate: shrink-swell depth to rock	Moderate: shrink-swell slope	Severe: low strength	Moderate: depth to rock
Shingle	Severe: depth to rock	Moderate: shrink-swell slope depth to rock	Severe: depth to rock	Severe: slope	Severe: low strength	Severe: depth to rock
Worf	Severe: depth to rock	Moderate: shrink-swell slope depth to rock	Severe: depth to rock	Severe: slope	Moderate: low strength shrink-swell depth to rock	Severe: depth to rock
202:						
Renohill	Moderate: slope depth to rock	Moderate: shrink-swell slope	Moderate: shrink-swell slope depth to rock	Severe: slope	Severe: low strength	Moderate: slope depth to rock
Worfka	Severe: depth to rock	Moderate: shrink-swell slope depth to rock	Severe: depth to rock	Severe: slope	Severe: low strength	Severe: depth to rock
203:						
Rockypoint	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding
Iwait	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
204:						
Samday	Severe: slope depth to rock	Severe: shrink-swell slope	Severe: shrink-swell slope depth to rock	Severe: shrink-swell slope	Severe: low strength shrink-swell slope	Severe: slope depth to rock
Samday, cool	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: slope	Severe: slope depth to rock
Shingle	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: low strength slope	Severe: slope depth to rock
205:						
Samday	Severe: depth to rock	Severe: shrink-swell	Severe: shrink-swell depth to rock	Severe: shrink-swell slope	Severe: low strength shrink-swell	Severe: depth to rock
Savageton	Moderate: slope too clayey depth to rock	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell slope	Severe: low strength shrink-swell	Moderate: slope depth to rock
206:						
Samday	Severe: slope depth to rock	Severe: shrink-swell slope	Severe: shrink-swell slope depth to rock	Severe: shrink-swell slope	Severe: low strength shrink-swell slope	Severe: slope too clayey depth to rock

Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
206:(cont.)						
Shingle	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: low strength slope	Severe: slope depth to rock
Badland	Severe: depth to rock	Moderate: depth to rock	Severe: depth to rock	Moderate: depth to rock	Moderate: depth to rock	Severe: depth to rock droughty
207:						
Cromack	Moderate: slope too clayey depth to rock	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell slope	Severe: low strength shrink-swell	Moderate: slope depth to rock
Fairburn	Severe: depth to rock	Moderate: shrink-swell slope depth to rock	Severe: depth to rock	Severe: slope	Severe: low strength	Severe: depth to rock
Ucross	Moderate: slope depth to rock	Moderate: shrink-swell slope	Moderate: shrink-swell slope depth to rock	Severe: slope	Moderate: low strength shrink-swell slope	Moderate: slope depth to rock
208:						
Savageton	Moderate: too clayey depth to rock	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell	Severe: low strength shrink-swell	Moderate: depth to rock
Silhouette	Moderate: too clayey	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell	Severe: low strength shrink-swell	Slight
209:						
Savageton	Moderate: slope too clayey depth to rock	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell slope	Severe: low strength shrink-swell	Moderate: slope depth to rock
Silhouette	Moderate: slope too clayey	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell slope	Severe: low strength shrink-swell	Moderate: slope
210:						
Shingle	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: low strength slope	Severe: slope depth to rock
Taluce	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: slope	Severe: slope depth to rock
211:						
Shingle	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: low strength slope	Severe: slope depth to rock
Worf	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: slope	Severe: slope depth to rock

Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
212:						
Teckla	Severe: cutbanks cave	Moderate: shrink-swell	Slight	Moderate: shrink-swell slope	Moderate: shrink-swell	Slight
213:						
Terro	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Taluce	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: slope	Severe: slope depth to rock
214:						
Theedle	Moderate: depth to rock	Moderate: shrink-swell	Moderate: shrink-swell depth to rock	Moderate: shrink-swell	Severe: low strength	Moderate: depth to rock
Kishona	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
215:						
Theedle	Moderate: slope depth to rock	Moderate: shrink-swell slope	Moderate: shrink-swell slope depth to rock	Severe: slope	Severe: low strength	Moderate: slope depth to rock
Kishona	Moderate: slope	Moderate: shrink-swell slope	Moderate: shrink-swell slope	Severe: slope	Severe: low strength	Moderate: slope
216:						
Theedle	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: low strength slope	Severe: slope
Kishona	Moderate: slope	Moderate: shrink-swell slope	Moderate: shrink-swell slope	Severe: slope	Severe: low strength	Moderate: slope
Shingle	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: low strength slope	Severe: slope depth to rock
217:						
Theedle	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: low strength slope	Severe: slope
Shingle	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: low strength slope	Severe: slope depth to rock
218:						
Theedle	Moderate: slope depth to rock	Moderate: shrink-swell slope	Moderate: shrink-swell slope depth to rock	Severe: slope	Severe: low strength	Moderate: slope depth to rock

Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
218:(cont.)						
Turnercrest	Severe: cutbanks cave	Moderate: slope	Moderate: slope depth to rock	Severe: slope	Moderate: slope	Moderate: slope depth to rock
Kishona	Moderate: slope	Moderate: shrink-swell slope	Moderate: shrink-swell slope	Severe: slope	Severe: low strength	Moderate: slope
219:						
Torriarents	Moderate: slope	Moderate: shrink-swell slope	Moderate: shrink-swell slope	Severe: slope	Moderate: low strength shrink-swell slope	Moderate: slope
Torriorthents	Moderate: slope	Moderate: shrink-swell slope	Moderate: shrink-swell slope	Severe: slope	Moderate: low strength shrink-swell slope	Moderate: slope
220:						
Pitchdraw	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Ashollow	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: slope
Niobrara	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: slope	Severe: slope depth to rock
221:						
Turnercrest	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Keeline	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: slope
Taluce	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: slope	Severe: slope depth to rock
222:						
Turnercrest	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Wibaux, thin solum	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: slope small stones droughty
Taluce	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: slope	Severe: slope depth to rock
223:						
Ucross	Moderate: depth to rock	Moderate: shrink-swell	Moderate: shrink-swell depth to rock	Moderate: shrink-swell slope	Moderate: frost action low strength shrink-swell	Moderate: depth to rock

Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
224:						
Ucross	Moderate: depth to rock	Moderate: shrink-swell	Moderate: shrink-swell depth to rock	Moderate: shrink-swell	Moderate: frost action low strength shrink-swell	Moderate: depth to rock
Iwait	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
225:						
Ucross	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Iwait	Moderate: slope	Moderate: shrink-swell slope	Moderate: shrink-swell slope	Severe: slope	Severe: low strength	Moderate: slope
Fairburn	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: low strength slope	Severe: slope depth to rock
226:						
Ulm	Moderate: too clayey	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
227:						
Ulm	Moderate: too clayey	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
228:						
Ulm	Moderate: too clayey	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
Renohill	Moderate: depth to rock	Moderate: shrink-swell	Moderate: shrink-swell depth to rock	Moderate: shrink-swell	Severe: low strength	Moderate: depth to rock
229:						
Ulm	Moderate: slope too clayey	Moderate: shrink-swell slope	Moderate: shrink-swell slope	Severe: slope	Severe: low strength	Moderate: slope
Renohill	Moderate: slope too clayey depth to rock	Moderate: shrink-swell slope	Moderate: shrink-swell slope depth to rock	Severe: slope	Severe: low strength	Moderate: slope depth to rock
230:						
Urban land	---	---	---	---	---	---
Deekay	Slight	Slight	Slight	Slight	Moderate: frost action low strength	Slight
Moorhead	Moderate: too clayey	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
231:						
Urban land	---	---	---	---	---	---

Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
231:(cont.)						
Leiter	Moderate: too clayey depth to rock	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell	Severe: low strength shrink-swell	Moderate: depth to rock
Moorhead	Moderate: too clayey	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Severe: low strength	Slight
232:						
Urban land	---	---	---	---	---	---
Pitchdraw	Moderate: slope depth to rock	Moderate: slope	Moderate: slope depth to rock	Severe: slope	Moderate: slope	Moderate: slope depth to rock
Ashollow	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: slope
233:						
Ustic Torriorthents	---	---	---	---	---	---
234:						
Ustic Torriorthents	---	---	---	---	---	---
Badland	Severe: depth to rock	Moderate: depth to rock	Severe: depth to rock	Moderate: depth to rock	Moderate: depth to rock	Severe: depth to rock droughty
235:						
Vonalee	Slight	Slight	Slight	Moderate: slope	Slight	Slight
236:						
Vonalee	Slight	Slight	Slight	Moderate: slope	Slight	Slight
Terro	Severe: cutbanks cave	Slight	Moderate: depth to rock	Moderate: slope	Slight	Moderate: depth to rock droughty
237:						
Vonalf	Slight	Slight	Slight	Slight	Moderate: frost action	Slight
238:						
Vonalf	Slight	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
Xema	Moderate: depth to rock	Slight	Moderate: depth to rock	Moderate: slope	Moderate: frost action	Moderate: depth to rock
239:						
Ironbutte	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: slope droughty
Fairburn	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: low strength slope	Severe: slope depth to rock

Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
239:(cont.)						
Mittenbutte	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: slope	Severe: slope depth to rock
240:						
Wibaux	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: slope droughty
Wibaux, thin solum	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: slope small stones droughty
241:						
Ironbutte	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: slope droughty
Ironbutte, thin solum-	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: slope small stones droughty
242:						
Ironbutte	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: slope small stones droughty
Deekay	Moderate: slope	Moderate: shrink-swell slope	Moderate: slope	Severe: slope	Severe: low strength	Moderate: slope
Moorhead	Moderate: slope too clayey	Moderate: shrink-swell slope	Moderate: shrink-swell slope	Severe: slope	Severe: low strength	Moderate: slope
243:						
Wibaux, thick solum	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Wibaux	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: slope droughty
244:						
Muleherder	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Ironbutte	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: slope droughty
245:						
Wibaux	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: slope droughty

Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
245:(cont.)						
Shingle	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: low strength slope	Severe: slope depth to rock
Badland	---	---	---	---	---	---
246:						
Wyarno	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
Ulm	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
247:						
Wyotite	Slight	Moderate: shrink-swell	Slight	Moderate: shrink-swell	Moderate: low strength shrink-swell	Slight
Ulm	Moderate: too clayey	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
248:						
Ziggy	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
Iwait	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
249:						
Ziggy	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
Iwait	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
250:						
Ziggy	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
Ucross	Moderate: depth to rock	Moderate: shrink-swell	Moderate: shrink-swell depth to rock	Moderate: shrink-swell slope	Severe: low strength	Moderate: depth to rock
Oldwolf	Moderate: depth to rock	Slight	Moderate: depth to rock	Moderate: slope	Moderate: frost action low strength	Moderate: depth to rock

Sanitary Facilities

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Dashes (--) indicate the map unit component was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation.)

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
100:					
Aridic Ustorthents, saline	Moderate: percs slowly	Moderate: seepage slope	Slight	Slight	Good
101:					
Arvada, thick surface	Severe: percs slowly	Moderate: slope	Slight	Slight	Poor: hard to pack
102:					
Arvada, thick surface	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
Arvada	Severe: percs slowly	Moderate: slope	Slight	Slight	Poor: hard to pack
Slickspots	---	---	---	---	---
103:					
Arwite	Slight	Severe: seepage	Slight	Slight	Good
104:					
Arwite	Moderate: slope	Severe: seepage slope	Moderate: slope	Moderate: slope	Fair: slope
105:					
Arwite	Slight	Severe: seepage	Slight	Slight	Good
Elwop	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Poor: depth to rock
106:					
Arwite	Moderate: slope	Severe: seepage slope	Moderate: slope	Moderate: slope	Fair: slope
Elwop	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock
107:					
Arwite	Slight	Severe: seepage	Slight	Slight	Good
Vonalf	Slight	Severe: seepage	Slight	Slight	Good
108:					
Arwite	Moderate: slope	Severe: seepage slope	Moderate: slope	Moderate: slope	Fair: slope

Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
108:(cont.)					
Vonalf	Moderate: slope	Severe: seepage slope	Moderate: slope	Moderate: slope	Fair: slope
109:					
Bidman	Severe: percs slowly	Moderate: seepage slope	Slight	Slight	Good
110:					
Bidman, loamy substratum	Severe: percs slowly	Moderate: seepage slope	Slight	Slight	Good
111:					
Bidman	Severe: percs slowly	Moderate: seepage slope	Slight	Slight	Good
Parmleed	Severe: percs slowly depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Poor: depth to rock
112:					
Bidman	Severe: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
Parmleed	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock
113:					
Bidman	Severe: percs slowly	Moderate: seepage slope	Slight	Slight	Poor: hard to pack
Ulm	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
114:					
Bowbac	Severe: depth to rock	Severe: seepage slope depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock
Taluce	Severe: depth to rock	Severe: seepage slope depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock
Badland	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Poor: depth to rock
115:					
Bowbac	Severe: depth to rock	Severe: seepage slope depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock

Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
115:(cont.)					
Worf	Severe: depth to rock	Severe: slope, depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock
116:					
Cambria	Moderate: percs slowly	Moderate: seepage, slope	Slight	Slight	Good
Kishona	Moderate: percs slowly	Moderate: seepage, slope	Slight	Slight	Good
Zigweid	Moderate: percs slowly	Moderate: seepage, slope	Slight	Slight	Good
117:					
Cambria	Moderate: percs slowly, slope	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
Kishona	Moderate: percs slowly, slope	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
Zigweid	Moderate: percs slowly, slope	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
118:					
Clarkelen	Severe: flooding	Severe: flooding, seepage	Severe: flooding	Severe: flooding	Fair: too sandy
Draknab	Severe: flooding, poor filter	Severe: flooding, seepage	Severe: flooding, too sandy	Severe: flooding	Poor: seepage, too sandy
119:					
Clarkelen	Severe: flooding	Severe: flooding, seepage	Severe: flooding	Severe: flooding	Fair: too sandy
Embry	Slight	Severe: seepage	Slight	Slight	Good
120:					
Clarkelen	Severe: flooding	Severe: flooding, seepage	Severe: flooding	Severe: flooding	Fair: too sandy
Keeline	Slight	Severe: seepage	Slight	Slight	Good
121:					
Cushman	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Poor: depth to rock

Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
121:(cont.)					
Cambria	Moderate: percs slowly	Moderate: seepage slope	Slight	Slight	Good
122:					
Cushman	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock
Cambria	Moderate: percs slowly slope	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
123:					
Cushman	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock
Renohill	Severe: percs slowly depth to rock	Severe: slope depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock
124:					
Cushman	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock
Shingle	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock
125:					
Cushman	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock
Terro	Severe: poor filter depth to rock	Severe: seepage slope depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock
126:					
Cushman	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Poor: depth to rock
Theedle	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Poor: depth to rock
127:					
Cushman	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock
Theedle	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock
128:					
Cushman	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock

Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
128:(cont.)					
Worf	Severe: depth to rock	Severe: slope, depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock
129:					
Decolney	Slight	Severe: seepage	Slight	Slight	Good
Hiland	Slight	Severe: seepage	Slight	Slight	Good
130:					
Decolney	Moderate: slope	Severe: seepage, slope	Moderate: slope	Moderate: slope	Fair: slope
Hiland	Moderate: percs slowly, slope	Severe: seepage, slope	Moderate: slope	Moderate: slope	Fair: slope
131:					
Deekay	Moderate: percs slowly	Moderate: seepage, slope	Slight	Slight	Good
132:					
Deekay	Moderate: percs slowly	Moderate: seepage, slope	Slight	Slight	Good
Moorhead	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
133:					
Deekay	Moderate: percs slowly, slope	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
Moorhead	Severe: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
134:					
Deekay	Moderate: percs slowly	Moderate: seepage, slope	Slight	Slight	Good
Oldwolf	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Poor: depth to rock
135:					
Deekay	Moderate: percs slowly, slope	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
Oldwolf	Severe: depth to rock	Severe: slope, depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock

Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
136:					
Deekay	Moderate: percs slowly	Moderate: seepage slope	Slight	Slight	Good
Ziggy	Moderate: percs slowly	Moderate: seepage slope	Slight	Slight	Good
137:					
Echeta	Severe: percs slowly	Moderate: slope	Slight	Slight	Poor: hard to pack
138:					
Echeta	Severe: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Poor: hard to pack
Cromack	Severe: percs slowly depth to rock	Severe: slope depth to rock	Severe: depth to rock	Moderate: slope	Poor: hard to pack depth to rock
139:					
Embry	Moderate: slope	Severe: seepage slope	Moderate: slope	Moderate: slope	Fair: slope
Orpha	Severe: poor filter	Severe: seepage slope	Severe: too sandy	Moderate: slope	Poor: seepage too sandy
140:					
Embry	Moderate: slope	Severe: seepage slope	Moderate: slope	Moderate: slope	Fair: slope
Taluce	Severe: depth to rock	Severe: seepage slope depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock
141:					
Emigha	Moderate: percs slowly	Moderate: seepage	Slight	Slight	Good
142:					
Emigha, sodic	Severe: percs slowly	Moderate: slope	Moderate: flooding	Moderate: flooding	Good
Arvada, thick surface	Severe: percs slowly	Moderate: slope	Slight	Slight	Poor: hard to pack
143:					
Felix, ponded	Severe: percs slowly ponding	Severe: ponding	Severe: ponding	Severe: ponding	Poor: hard to pack ponding
144:					
Forkwood	Moderate: percs slowly	Moderate: seepage slope	Slight	Slight	Good

Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
145:					
Forkwood	Moderate: percs slowly	Moderate: seepage slope	Slight	Slight	Good
Cambria	Moderate: percs slowly	Moderate: seepage slope	Slight	Slight	Good
146:					
Forkwood	Moderate: percs slowly	Moderate: seepage slope	Slight	Slight	Good
Cushman	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Poor: depth to rock
147:					
Forkwood	Moderate: percs slowly slope	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
Cushman	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock
148:					
Forkwood	Moderate: percs slowly	Moderate: seepage slope	Slight	Slight	Good
Ulm	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
149:					
Forkwood	Moderate: percs slowly slope	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
Ulm	Severe: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
150:					
Gateson	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Poor: slope depth to rock
Taluce	Severe: slope depth to rock	Severe: seepage slope depth to rock	Severe: slope depth to rock	Severe: slope	Poor: slope depth to rock
Turnercrest	Severe: slope depth to rock	Severe: seepage slope depth to rock	Severe: slope depth to rock	Severe: slope	Poor: slope depth to rock
151:					
Haverdad	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Good

Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
152:					
Haverdad	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Good
Clarkelen	Severe: flooding	Severe: flooding seepage	Severe: flooding	Severe: flooding	Fair: too sandy
153:					
Haverdad	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Good
Kishona	Moderate: percs slowly	Moderate: seepage slope	Slight	Slight	Good
154:					
Heldt	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
155:					
Heldt, saline	Severe: percs slowly	Slight	Slight	Slight	Poor: hard to pack
Bidman, saline	Severe: percs slowly	Slight	Slight	Slight	Good
156:					
Hiland	Slight	Severe: seepage	Slight	Slight	Good
157:					
Hiland	Slight	Severe: seepage	Slight	Slight	Good
Bowbac	Severe: depth to rock	Severe: seepage depth to rock	Severe: depth to rock	Slight	Poor: depth to rock
158:					
Hiland	Moderate: slope	Severe: seepage slope	Moderate: slope	Moderate: slope	Fair: slope
Bowbac	Severe: depth to rock	Severe: seepage slope depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock
159:					
Hiland	Slight	Severe: seepage	Slight	Slight	Good
Vonalee	Slight	Severe: seepage	Slight	Slight	Good
160:					
Hiland	Moderate: slope	Severe: seepage slope	Moderate: slope	Moderate: slope	Fair: slope

Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
160:(cont.)					
Vonalee	Moderate: slope	Severe: seepage slope	Moderate: slope	Moderate: slope	Fair: slope
161:					
Hilight	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope	Poor: hard to pack slope depth to rock
Taluce, cool	Severe: slope depth to rock	Severe: seepage slope depth to rock	Severe: slope depth to rock	Severe: slope	Poor: slope depth to rock
Wags	Severe: percs slowly slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope	Poor: hard to pack slope depth to rock
162:					
Lismas	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope	Poor: hard to pack slope depth to rock
Mittenbutte, cool	Severe: slope depth to rock	Severe: seepage slope depth to rock	Severe: slope depth to rock	Severe: slope	Poor: slope depth to rock
Sabatka	Severe: percs slowly slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope	Poor: hard to pack slope depth to rock
163:					
Hilight	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope	Poor: hard to pack slope depth to rock
Wags	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope	Poor: hard to pack slope depth to rock
Badland	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Poor: depth to rock
164:					
Lismas	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope	Poor: hard to pack slope depth to rock
Sabatka	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope	Poor: hard to pack slope depth to rock

Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
164:(cont.)					
Badland	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Poor: depth to rock
165:					
Jayem	Moderate: slope	Severe: seepage slope	Moderate: slope	Moderate: slope	Fair: slope
166:					
Jaywest	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
167:					
Jaywest	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
Moorhead	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
168:					
Jaywest	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
Spottedhorse	Severe: percs slowly depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Poor: depth to rock
169:					
Julesburg	Slight	Severe: seepage	Slight	Slight	Good
170:					
Keeline	Moderate: slope	Severe: seepage slope	Moderate: slope	Moderate: slope	Fair: slope
Tullock	Severe: slope poor filter depth to rock	Severe: seepage slope depth to rock	Severe: slope too sandy depth to rock	Severe: slope	Poor: seepage too sandy depth to rock
171:					
Keeline	Moderate: slope	Severe: seepage slope	Moderate: slope	Moderate: slope	Fair: slope
Tullock	Severe: slope depth to rock	Severe: seepage slope depth to rock	Severe: slope too sandy depth to rock	Severe: slope	Poor: seepage too sandy depth to rock
Niobrara, dry	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope too sandy depth to rock	Severe: slope	Poor: seepage too sandy depth to rock
172:					
Keyner	Severe: percs slowly	Moderate: slope	Slight	Slight	Good

Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
173:					
Lawver	Severe: percs slowly poor filter	Severe: seepage	Slight	Slight	Poor: seepage small stones
Teckla	Moderate: percs slowly	Severe: seepage	Slight	Slight	Poor: small stones
Wibaux	Severe: large stones poor filter	Severe: large stones seepage	Severe: large stones	Slight	Poor: seepage small stones
174:					
Brislawn	Severe: percs slowly poor filter	Severe: seepage	Slight	Slight	Poor: seepage small stones
Rockybutte	Moderate: percs slowly	Severe: seepage	Slight	Slight	Poor: small stones
Ironbutte	Severe: large stones poor filter	Severe: large stones seepage	Severe: large stones	Slight	Poor: seepage small stones
175:					
Lawver	Severe: percs slowly poor filter	Severe: seepage slope	Moderate: slope	Moderate: slope	Poor: seepage small stones
Wibaux	Severe: large stones slope poor filter	Severe: large stones seepage slope	Severe: large stones slope	Severe: slope	Poor: seepage slope small stones
176:					
Leiter	Severe: percs slowly depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Poor: depth to rock
Cromack	Severe: percs slowly depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Poor: hard to pack depth to rock
177:					
Maysdorf	Moderate: percs slowly	Severe: seepage	Slight	Slight	Good
178:					
Maysdorf	Moderate: percs slowly	Severe: seepage	Slight	Slight	Good
179:					
Maysdorf	Slight	Severe: seepage	Slight	Slight	Good
Pugsley	Severe: depth to rock	Severe: seepage depth to rock	Severe: depth to rock	Slight	Poor: depth to rock

Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
180:					
Maysdorf	Moderate: percs slowly slope	Severe: seepage slope	Moderate: slope	Moderate: slope	Fair: slope
Pugsley	Severe: poor filter depth to rock	Severe: seepage slope depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock
181:					
Moorhead	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
182:					
Moorhead	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
183:					
Moorhead	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
Leiter	Severe: percs slowly depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Poor: depth to rock
184:					
Moorhead	Severe: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
Leiter	Severe: percs slowly depth to rock	Severe: slope depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock
185:					
Moskee	Moderate: percs slowly	Severe: seepage	Slight	Slight	Good
186:					
Moskee	Moderate: percs slowly slope	Severe: seepage slope	Moderate: slope	Moderate: slope	Fair: slope
187:					
Nuncho	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
188:					
Orpha	Severe: slope poor filter	Severe: seepage slope	Severe: slope too sandy	Severe: slope	Poor: seepage slope too sandy
Tullock	Severe: slope poor filter depth to rock	Severe: seepage slope depth to rock	Severe: slope too sandy depth to rock	Severe: slope	Poor: seepage too sandy depth to rock
189:					
Oshoto	Moderate: percs slowly	Moderate: seepage slope	Slight	Slight	Good

Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
189:(cont.)					
Moorhead	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
190:					
Parmleed	Severe: percs slowly depth to rock	Severe: slope depth to rock	Severe: depth to rock	Moderate: slope	Poor: hard to pack depth to rock
Renohill	Severe: percs slowly depth to rock	Severe: slope depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock
191:					
Pits	---	---	---	---	---
Dumps	---	---	---	---	---
192:					
Platmak	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
193:					
Pugsley	Severe: poor filter depth to rock	Severe: seepage depth to rock	Severe: depth to rock	Slight	Poor: depth to rock
Decolney	Slight	Severe: seepage	Slight	Slight	Good
194:					
Pugsley	Severe: poor filter depth to rock	Severe: seepage slope depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock
Decolney	Moderate: slope	Severe: seepage slope	Moderate: slope	Moderate: slope	Fair: slope
195:					
Rauzi	Moderate: percs slowly	Severe: seepage	Slight	Slight	Good
196:					
Rauzi	Moderate: percs slowly	Severe: seepage	Slight	Slight	Good
197:					
Rauzi	Moderate: percs slowly	Severe: seepage	Slight	Slight	Good
Elwop	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Poor: depth to rock
198:					
Recluse	Moderate: percs slowly	Moderate: seepage slope	Slight	Slight	Good

Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
199:					
Renohill	Severe: percs slowly, depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Poor: depth to rock
Savageton	Severe: percs slowly, depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Poor: hard to pack, depth to rock
200:					
Renohill	Severe: percs slowly, depth to rock	Severe: slope, depth to rock	Severe: depth to rock	Moderate: slope	Poor: hard to pack, depth to rock
Savageton	Severe: percs slowly, depth to rock	Severe: slope, depth to rock	Severe: depth to rock	Moderate: slope	Poor: hard to pack, depth to rock
201:					
Renohill	Severe: percs slowly, depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Poor: depth to rock
Shingle	Severe: depth to rock	Severe: slope, depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock
Worf	Severe: depth to rock	Severe: slope, depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock
202:					
Renohill	Severe: percs slowly, depth to rock	Severe: slope, depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock
Worfka	Severe: depth to rock	Severe: slope, depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock
203:					
Rockypoint	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Fair: too sandy
Iwait	Moderate: percs slowly	Moderate: seepage, slope	Slight	Slight	Good
204:					
Samday	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope	Poor: hard to pack, slope, depth to rock
Samday, cool	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope	Poor: slope, depth to rock
Shingle	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope	Poor: slope, depth to rock

Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
205:					
Samday	Severe: depth to rock	Severe: slope, depth to rock	Severe: depth to rock	Moderate: slope	Poor: hard to pack, depth to rock
Savageton	Severe: percs slowly, depth to rock	Severe: slope, depth to rock	Severe: depth to rock	Moderate: slope	Poor: hard to pack, depth to rock
206:					
Samday	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope	Poor: hard to pack, slope, depth to rock
Shingle	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope	Poor: slope, depth to rock
Badland	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Poor: depth to rock
207:					
Cromack	Severe: percs slowly, depth to rock	Severe: slope, depth to rock	Severe: depth to rock	Moderate: slope	Poor: hard to pack, depth to rock
Fairburn	Severe: depth to rock	Severe: slope, depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock
Ucross	Severe: depth to rock	Severe: slope, depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock
208:					
Savageton	Severe: percs slowly, depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Poor: hard to pack, depth to rock
Silhouette	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
209:					
Savageton	Severe: percs slowly, depth to rock	Severe: slope, depth to rock	Severe: depth to rock	Moderate: slope	Poor: hard to pack, depth to rock
Silhouette	Severe: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
210:					
Shingle	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope	Poor: slope, depth to rock
Taluce	Severe: slope, depth to rock	Severe: seepage, slope, depth to rock	Severe: slope, depth to rock	Severe: slope	Poor: slope, depth to rock

Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
211:					
Shingle	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope	Poor: slope, depth to rock
Worf	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope	Poor: slope, depth to rock
212:					
Teckla	Moderate: percs slowly	Severe: seepage	Moderate: too sandy	Slight	Poor: seepage, small stones
213:					
Terro	Severe: slope, poor filter, depth to rock	Severe: seepage, slope, depth to rock	Severe: slope, depth to rock	Severe: slope	Poor: slope, depth to rock
Taluce	Severe: slope, depth to rock	Severe: seepage, slope, depth to rock	Severe: slope, depth to rock	Severe: slope	Poor: slope, depth to rock
214:					
Theedle	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Poor: depth to rock
Kishona	Moderate: percs slowly	Moderate: seepage, slope	Slight	Slight	Good
215:					
Theedle	Severe: depth to rock	Severe: slope, depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock
Kishona	Moderate: percs slowly, slope	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
216:					
Theedle	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope	Poor: slope, depth to rock
Kishona	Moderate: percs slowly, slope	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
Shingle	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope	Poor: slope, depth to rock
217:					
Theedle	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope	Poor: slope, depth to rock

Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
217:(cont.)					
Shingle	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope	Poor: slope depth to rock
218:					
Theedle	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock
Turnercrest	Severe: poor filter depth to rock	Severe: seepage slope depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock
Kishona	Moderate: percs slowly slope	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
219:					
Torriarents	Moderate: slope	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope small stones
Torriorthents	Moderate: slope	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope small stones
220:					
Pitchdraw	Severe: slope poor filter depth to rock	Severe: seepage slope depth to rock	Severe: slope depth to rock	Severe: slope	Poor: slope depth to rock
Ashollow	Moderate: slope	Severe: seepage slope	Moderate: slope	Moderate: slope	Fair: slope
Niobrara	Severe: slope depth to rock	Severe: seepage slope depth to rock	Severe: slope too sandy depth to rock	Severe: slope	Poor: seepage too sandy depth to rock
221:					
Turnercrest	Severe: slope depth to rock	Severe: seepage slope depth to rock	Severe: slope depth to rock	Severe: slope	Poor: slope depth to rock
Keeline	Moderate: slope	Severe: seepage slope	Moderate: slope	Moderate: slope	Fair: slope
Taluce	Severe: slope depth to rock	Severe: seepage slope depth to rock	Severe: slope depth to rock	Severe: slope	Poor: slope depth to rock

Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
222:					
Turnercrest	Severe: slope, depth to rock	Severe: seepage, slope, depth to rock	Severe: slope, depth to rock	Severe: slope	Poor: slope, depth to rock
Wibaux, thin solum	Severe: large stones, slope, poor filter	Severe: large stones, seepage, slope	Severe: large stones, slope	Severe: slope	Poor: seepage, slope, small stones
Taluce	Severe: slope, depth to rock	Severe: seepage, slope, depth to rock	Severe: slope, depth to rock	Severe: slope	Poor: slope, depth to rock
223:					
Ucross	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Poor: depth to rock
224:					
Ucross	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Poor: depth to rock
Iwait	Moderate: percs slowly	Moderate: seepage, slope	Slight	Slight	Good
225:					
Ucross	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope	Poor: slope, depth to rock
Iwait	Moderate: percs slowly, slope	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
Fairburn	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope	Poor: slope, depth to rock
226:					
Ulm	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
227:					
Ulm	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
228:					
Ulm	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
Renohill	Severe: percs slowly, depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Poor: depth to rock
229:					
Ulm	Severe: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope

Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
229:(cont.)					
Renohill	Severe: percs slowly depth to rock	Severe: slope depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock
230:					
Urban land	---	---	---	---	---
Deekay	Moderate: percs slowly	Moderate: seepage slope	Slight	Slight	Good
Moorhead	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
231:					
Urban land	---	---	---	---	---
Leiter	Severe: percs slowly depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Poor: depth to rock
Moorhead	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
232:					
Urban land	---	---	---	---	---
Pitchdraw	Severe: depth to rock	Severe: seepage slope depth to rock	Severe: depth to rock	Moderate: slope	Poor: depth to rock
Ashollow	Moderate: slope	Severe: seepage slope	Moderate: slope	Moderate: slope	Fair: slope
233:					
Ustic Torriorthents	---	---	---	---	---
234:					
Ustic Torriorthents	---	---	---	---	---
Badland	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Poor: depth to rock
235:					
Vonalee	Slight	Severe: seepage	Slight	Slight	Good
236:					
Vonalee	Slight	Severe: seepage	Slight	Slight	Good
Terro	Severe: poor filter depth to rock	Severe: seepage depth to rock	Severe: depth to rock	Slight	Poor: depth to rock
237:					
Vonalf	Slight	Severe: seepage	Slight	Slight	Good

Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
238:					
Vonalf	Slight	Severe: seepage	Slight	Slight	Good
Xema	Severe: depth to rock	Severe: seepage, depth to rock	Severe: depth to rock	Slight	Poor: depth to rock
239:					
Ironbutte	Severe: large stones, slope, poor filter	Severe: large stones, seepage, slope	Severe: large stones, slope	Severe: slope	Poor: seepage, slope, small stones
Fairburn	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope	Poor: slope, depth to rock
Mittenbutte	Severe: slope, depth to rock	Severe: seepage, slope, depth to rock	Severe: slope, depth to rock	Severe: slope	Poor: slope, depth to rock
240:					
Wibaux	Severe: large stones, slope, poor filter	Severe: large stones, seepage, slope	Severe: large stones, slope	Severe: slope	Poor: seepage, slope, small stones
Wibaux, thin solum	Severe: large stones, slope, poor filter	Severe: large stones, seepage, slope	Severe: large stones, slope	Severe: slope	Poor: seepage, slope, small stones
241:					
Ironbutte	Severe: large stones, slope, poor filter	Severe: large stones, seepage, slope	Severe: large stones, slope	Severe: slope	Poor: seepage, slope, small stones
Ironbutte, thin solum	Severe: large stones, slope, poor filter	Severe: large stones, seepage, slope	Severe: large stones, slope	Severe: slope	Poor: seepage, slope, small stones
242:					
Ironbutte	Severe: large stones, slope, poor filter	Severe: large stones, seepage, slope	Severe: large stones, slope	Severe: slope	Poor: seepage, slope, small stones
Deekay	Moderate: percs slowly, slope	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
Moorhead	Severe: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope

Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
243:					
Wibaux, thick solum	Severe: slope, poor filter	Severe: seepage, slope	Severe: large stones, slope	Severe: slope	Poor: seepage, slope, small stones
Wibaux	Severe: large stones, slope, poor filter	Severe: seepage, slope	Severe: large stones, slope	Severe: slope	Poor: seepage, slope, small stones
244:					
Muleherder	Severe: slope, poor filter	Severe: seepage, slope	Severe: large stones, slope	Severe: slope	Poor: seepage, slope, small stones
Ironbutte	Severe: large stones, slope, poor filter	Severe: large stones, seepage, slope	Severe: large stones, slope	Severe: slope	Poor: seepage, slope, small stones
245:					
Wibaux	Severe: large stones, slope, poor filter	Severe: large stones, seepage, slope	Severe: large stones, slope	Severe: slope	Poor: seepage, slope, small stones
Shingle	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope	Poor: slope, depth to rock
Badland	---	---	---	---	---
246:					
Wyarno	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
Ulm	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
247:					
Wyotite	Moderate: percs slowly	Moderate: seepage, slope	Slight	Slight	Good
Ulm	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
248:					
Ziggy	Moderate: percs slowly	Moderate: seepage, slope	Slight	Slight	Good
Iwait	Moderate: percs slowly	Moderate: seepage, slope	Slight	Slight	Good
249:					
Ziggy	Moderate: percs slowly	Moderate: seepage, slope	Slight	Slight	Good

Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
249:(cont.)					
Iwait	Moderate: percs slowly	Moderate: seepage slope	Slight	Slight	Good
250:					
Ziggy	Moderate: percs slowly	Moderate: seepage slope	Slight	Slight	Good
Ucross	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Slight	Poor: depth to rock
Oldwolf	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Slight	Poor: depth to rock

Construction Materials

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "good," "fair," or other terms. Dashes (--) indicate the map unit component was not rated.) The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation.

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
100: Aridic Ustorthents, saline	Fair: low strength shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: excess salt too clayey
101: Arvada, thick surface	Poor: low strength shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: excess sodium excess salt too clayey
102: Arvada, thick surface	Poor: low strength shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: excess sodium excess salt too clayey
Arvada	Poor: low strength shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: excess sodium excess salt too clayey
Slickspots	---	---	---	---
103: Arwite	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones
104: Arwite	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope small stones too clayey
105: Arwite	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
Elwop	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: thin layer too clayey depth to rock
106: Arwite	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope small stones too clayey
Elwop	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: thin layer too clayey depth to rock

Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
107:				
Arwite	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
Vonalf	Good	Improbable: excess fines	Improbable: excess fines	Good
108:				
Arwite	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope too clayey
Vonalf	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope
109:				
Bidman	Fair: low strength shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: thin layer
110:				
Bidman, loamy substratum	Fair: shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
111:				
Bidman	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
Parmleed	Poor: low strength depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
112:				
Bidman	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
Parmleed	Poor: low strength depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
113:				
Bidman	Fair: low strength shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
Ulm	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
114:				
Bowbac	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: small stones thin layer depth to rock
Taluce	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
Badland	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock

Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
115:				
Bowbac	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: small stones thin layer depth to rock
Worf	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
116:				
Cambria	Fair: low strength shrink-swell	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
Kishona	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
Zigweid	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
117:				
Cambria	Fair: low strength shrink-swell	Improbable: excess fines	Improbable: excess fines	Fair: slope small stones too clayey
Kishona	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: slope small stones too clayey
Zigweid	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: slope small stones too clayey
118:				
Clarkelen	Good	Improbable: excess fines	Improbable: excess fines	Fair: too sandy
Draknab	Good	Probable	Improbable: too sandy	Fair: small stones thin layer too sandy
119:				
Clarkelen	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones too sandy
Embry	Good	Improbable: excess fines	Improbable: excess fines	Good
120:				
Clarkelen	Good	Improbable: excess fines	Improbable: excess fines	Fair: too sandy
Keeline	Good	Improbable: excess fines	Improbable: excess fines	Good

Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
121:				
Cushman	Poor: low strength, depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: thin layer, too clayey, depth to rock
Cambria	Fair: low strength, shrink-swell	Improbable: excess fines	Improbable: excess fines	Fair: small stones, too clayey
122:				
Cushman	Poor: low strength, depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: thin layer, too clayey, depth to rock
Cambria	Fair: low strength, shrink-swell	Improbable: excess fines	Improbable: excess fines	Fair: slope, small stones, too clayey
123:				
Cushman	Poor: low strength, depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: thin layer, too clayey, depth to rock
Renohill	Poor: low strength, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
124:				
Cushman	Poor: low strength, depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: thin layer, too clayey, depth to rock
Shingle	Poor: low strength, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
125:				
Cushman	Poor: low strength, depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: thin layer, too clayey, depth to rock
Terro	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: small stones, too sandy, depth to rock
126:				
Cushman	Poor: low strength, depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: thin layer, too clayey, depth to rock
Theedle	Poor: low strength, depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: small stones, too clayey, depth to rock

Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
127:				
Cushman	Poor: low strength, depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: thin layer, too clayey, depth to rock
Theedle	Poor: low strength, depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: small stones, too clayey, depth to rock
128:				
Cushman	Poor: low strength, depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: thin layer, too clayey, depth to rock
Worf	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
129:				
Decolney	Good	Improbable: excess fines	Improbable: excess fines	Good
Hiland	Good	Improbable: excess fines	Improbable: excess fines	Good
130:				
Decolney	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope
Hiland	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope, too clayey
131:				
Deekay	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Fair: small stones, too clayey
132:				
Deekay	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Fair: small stones, too clayey
Moorhead	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
133:				
Deekay	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Fair: slope, small stones, too clayey
Moorhead	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
134:				
Deekay	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Fair: small stones, too clayey

Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
134:(cont.)				
Oldwolf	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey depth to rock
135:				
Deekay	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Fair: slope small stones too clayey
Oldwolf	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey depth to rock
136:				
Deekay	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
Ziggy	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
137:				
Echeta	Poor: low strength shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
138:				
Echeta	Poor: low strength shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
Cromack	Poor: low strength shrink-swell depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
139:				
Embry	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope
Orpha	Good	Probable	Improbable: too sandy	Poor: too sandy
140:				
Embry	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope
Taluce	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
141:				
Emigha	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
142:				
Emigha, sodic	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey

Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
142:(cont.)				
Arvada, thick surface	Poor: low strength, shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: excess sodium, excess salt, too clayey
143:				
Felix, ponded	Poor: low strength, shrink-swell, wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, wetness
144:				
Forkwood	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
145:				
Forkwood	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
Cambria	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones, too clayey
146:				
Forkwood	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
Cushman	Poor: low strength, depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: thin layer, too clayey, depth to rock
147:				
Forkwood	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: slope, too clayey
Cushman	Poor: low strength, depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: thin layer, too clayey, depth to rock
148:				
Forkwood	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
Ulm	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: thin layer
149:				
Forkwood	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: slope, too clayey
Ulm	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: thin layer
150:				
Gateson	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope

Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
150:(cont.)				
Taluce	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope, depth to rock
Turnercrest	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope
151:				
Haverdad	Fair: low strength, shrink-swell	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
152:				
Haverdad	Fair: low strength, shrink-swell	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
Clarkelen	Good	Improbable: excess fines	Improbable: excess fines	Fair: too sandy
153:				
Haverdad	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
Kishona	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: small stones, too clayey
154:				
Heldt	Poor: low strength, shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
155:				
Heldt, saline	Poor: low strength, shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: excess salt, too clayey
Bidman, saline	Poor: low strength, shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: excess salt, too clayey
156:				
Hiland	Good	Improbable: excess fines	Improbable: excess fines	Good
157:				
Hiland	Good	Improbable: excess fines	Improbable: excess fines	Good
Bowbac	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: small stones, too clayey, depth to rock
158:				
Hiland	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope

Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
158:(cont.)				
Bowbac	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: small stones thin layer depth to rock
159:				
Hiland	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
Vonalee	Good	Improbable: excess fines	Improbable: excess fines	Good
160:				
Hiland	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope too clayey
Vonalee	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope
161:				
Hilight	Poor: low strength shrink-swell depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope too clayey depth to rock
Taluce, cool	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope depth to rock
Wags	Poor: low strength shrink-swell depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope too clayey
162:				
Lismas	Poor: low strength shrink-swell depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope too clayey depth to rock
Mittenbutte, cool	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope depth to rock
Sabatka	Poor: low strength shrink-swell depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope too clayey
163:				
Hilight	Poor: low strength shrink-swell depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope too clayey depth to rock
Wags	Poor: low strength shrink-swell depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope too clayey

Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
163:(cont.)				
Badland	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
164:				
Lismas	Poor: low strength, shrink-swell, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope, too clayey, depth to rock
Sabatka	Poor: low strength, shrink-swell, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope, too clayey
Badland	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
165:				
Jayem	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope
166:				
Jaywest	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
167:				
Jaywest	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
Moorhead	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
168:				
Jaywest	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
Spottedhorse	Poor: low strength, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: thin layer
169:				
Julesburg	Good	Improbable: excess fines	Improbable: excess fines	Good
170:				
Keeline	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope
Tullock	Poor: depth to rock	Improbable: thin layer	Improbable: too sandy	Poor: slope, too sandy
171:				
Keeline	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope
Tullock	Poor: depth to rock	Improbable: thin layer	Improbable: too sandy	Poor: slope, too sandy

Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
171:(cont.)				
Niobrara, dry	Poor: depth to rock	Improbable: thin layer	Improbable: too sandy	Poor: slope, too sandy, depth to rock
172:				
Keyner	Good	Improbable: excess fines	Improbable: excess fines	Poor: excess sodium, excess salt
173:				
Lawver	Good	Probable	Probable	Poor: area reclaim, small stones, too clayey
Teckla	Good	Probable	Probable	Poor: area reclaim, small stones
Wibaux	Poor: large stones	Improbable: large stones, small stones	Improbable: large stones	Poor: area reclaim, small stones
174:				
Brislawn	Good	Probable	Probable	Poor: area reclaim, small stones, too clayey
Rockybutte	Good	Probable	Probable	Poor: area reclaim, small stones
Ironbutte	Poor: large stones	Improbable: large stones, small stones	Improbable: large stones	Poor: area reclaim, small stones
175:				
Lawver	Good	Probable	Probable	Poor: area reclaim, small stones, too clayey
Wibaux	Poor: large stones	Improbable: large stones, small stones	Improbable: large stones	Poor: area reclaim, slope, small stones
176:				
Leiter	Poor: low strength, shrink-swell, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
Cromack	Poor: low strength, shrink-swell, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: too clayey

Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
177:				
Maysdorf	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
178:				
Maysdorf	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
179:				
Maysdorf	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
Pugsley	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey depth to rock
180:				
Maysdorf	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope small stones too clayey
Pugsley	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey depth to rock
181:				
Moorhead	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
182:				
Moorhead	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
183:				
Moorhead	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
Leiter	Poor: low strength shrink-swell depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
184:				
Moorhead	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
Leiter	Poor: low strength shrink-swell depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
185:				
Moskee	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey

Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
186:				
Moskee	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope
187:				
Nuncho	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
188:				
Orpha	Fair: slope	Probable	Improbable: too sandy	Poor: slope too sandy
Tullock	Poor: depth to rock	Improbable: thin layer	Improbable: too sandy	Poor: slope too sandy
189:				
Oshoto	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
Moorhead	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
190:				
Parmleed	Poor: low strength shrink-swell depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
Renohill	Poor: low strength depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
191:				
Pits	---	---	---	---
Dumps	---	---	---	---
192:				
Platmak	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
193:				
Pugsley	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: small stones too sandy depth to rock
Decolney	Good	Improbable: excess fines	Improbable: excess fines	Good
194:				
Pugsley	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: small stones too sandy depth to rock
Decolney	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope

Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
195:				
Rauzi	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
196:				
Rauzi	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
197:				
Rauzi	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
Elwop	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: thin layer too clayey depth to rock
198:				
Recluse	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
199:				
Renohill	Poor: low strength depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
Savageton	Poor: low strength shrink-swell depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
200:				
Renohill	Poor: low strength shrink-swell depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
Savageton	Poor: low strength shrink-swell depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
201:				
Renohill	Poor: low strength depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
Shingle	Poor: low strength depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
Worf	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
202:				
Renohill	Poor: low strength depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
Worfka	Poor: low strength depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: too clayey depth to rock

Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
203:				
Rockypoint	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
Iwait	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
204:				
Samday	Poor: low strength shrink-swell depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope too clayey depth to rock
Samday, cool	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope too clayey depth to rock
Shingle	Poor: low strength depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope depth to rock
205:				
Samday	Poor: low strength shrink-swell depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: too clayey depth to rock
Savageton	Poor: low strength shrink-swell depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
206:				
Samday	Poor: low strength shrink-swell depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope too clayey depth to rock
Shingle	Poor: low strength slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope depth to rock
Badland	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
207:				
Cromack	Poor: low strength shrink-swell depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
Fairburn	Poor: low strength depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
Ucross	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey depth to rock

Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
208:				
Savageton	Poor: low strength, shrink-swell, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
Silhouette	Poor: low strength, shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
209:				
Savageton	Poor: low strength, shrink-swell, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
Silhouette	Poor: low strength, shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
210:				
Shingle	Poor: low strength, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope, depth to rock
Taluce	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope, depth to rock
211:				
Shingle	Poor: low strength, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope, depth to rock
Worf	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope, depth to rock
212:				
Teckla	Good	Probable	Probable	Poor: area reclaim, small stones
213:				
Terro	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope
Taluce	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope, depth to rock
214:				
Theedle	Poor: low strength, depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: small stones, too clayey, depth to rock
Kishona	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: small stones, too clayey

Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
215:				
Theedle	Poor: low strength, depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: small stones, too clayey, depth to rock
Kishona	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: slope, small stones, too clayey
216:				
Theedle	Poor: low strength, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope
Kishona	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: slope, small stones, too clayey
Shingle	Poor: low strength, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope, depth to rock
217:				
Theedle	Poor: low strength, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope
Shingle	Poor: low strength, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope, depth to rock
218:				
Theedle	Poor: low strength, depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: small stones, too clayey, depth to rock
Turnercrest	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: small stones, thin layer, depth to rock
Kishona	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: slope, small stones, too clayey
219:				
Torriarents	Fair: low strength, shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: small stones
Torriorthents	Fair: low strength, shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: small stones
220:				
Pitchdraw	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope

Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
220:(cont.)				
Ashollow	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope
Niobrara	Poor: depth to rock	Improbable: thin layer	Improbable: too sandy	Poor: slope, too sandy, depth to rock
221:				
Turnercrest	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope
Keeline	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope
Taluce	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope, depth to rock
222:				
Turnercrest	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope
Wibaux, thin solum	Poor: large stones	Improbable: large stones, small stones	Improbable: large stones	Poor: area reclaim, slope, small stones
Taluce	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope, depth to rock
223:				
Ucross	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: small stones, too clayey, depth to rock
224:				
Ucross	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: small stones, too clayey, depth to rock
Iwait	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: small stones, too clayey
225:				
Ucross	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope
Iwait	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: slope, small stones, too clayey
Fairburn	Poor: low strength, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope, depth to rock

Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
226:				
Ulm	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: thin layer
227:				
Ulm	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: thin layer
228:				
Ulm	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: thin layer
Renohill	Poor: low strength, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: thin layer
229:				
Ulm	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
Renohill	Poor: low strength, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
230:				
Urban land	---	---	---	---
Deekay	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Fair: small stones, too clayey
Moorhead	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
231:				
Urban land	---	---	---	---
Leiter	Poor: low strength, shrink-swell, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
Moorhead	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
232:				
Urban land	---	---	---	---
Pitchdraw	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: small stones, thin layer, depth to rock
Ashollow	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope
233:				
Ustic Torriorthents	---	---	---	---
234:				
Ustic Torriorthents	---	---	---	---

Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
234:(cont.)				
Badland	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
235:				
Vonalee	Good	Improbable: excess fines	Improbable: excess fines	Good
236:				
Vonalee	Good	Improbable: excess fines	Improbable: excess fines	Good
Terro	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: small stones too sandy depth to rock
237:				
Vonalf	Good	Improbable: excess fines	Improbable: excess fines	Good
238:				
Vonalf	Good	Improbable: excess fines	Improbable: excess fines	Good
Xema	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: thin layer depth to rock
239:				
Ironbutte	Poor: large stones	Improbable: large stones small stones	Improbable: large stones	Poor: area reclaim slope small stones
Fairburn	Poor: low strength depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope depth to rock
Mittenbutte	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope depth to rock
240:				
Wibaux	Poor: large stones	Improbable: large stones small stones	Improbable: large stones	Poor: area reclaim slope small stones
Wibaux, thin solum	Poor: large stones	Improbable: large stones small stones	Improbable: large stones	Poor: area reclaim slope small stones
241:				
Ironbutte	Poor: large stones	Improbable: large stones small stones	Improbable: large stones	Poor: area reclaim slope small stones

Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
241:(cont.)				
Ironbutte, thin solum	Poor: large stones	Improbable: large stones small stones	Improbable: large stones	Poor: area reclaim slope small stones
242:				
Ironbutte	Poor: large stones	Improbable: large stones small stones	Improbable: large stones	Poor: area reclaim slope small stones
Deekay	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Fair: slope small stones too clayey
Moorhead	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
243:				
Wibaux, thick solum	Fair: slope	Improbable: small stones	Probable	Poor: area reclaim slope small stones
Wibaux	Poor: large stones	Improbable: large stones small stones	Improbable: large stones	Poor: area reclaim slope small stones
244:				
Muleherder	Fair: slope	Improbable: small stones	Probable	Poor: area reclaim slope small stones
Ironbutte	Poor: large stones	Improbable: large stones small stones	Improbable: large stones	Poor: area reclaim slope small stones
245:				
Wibaux	Poor: large stones slope	Improbable: large stones small stones	Improbable: large stones	Poor: area reclaim slope small stones
Shingle	Poor: low strength slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope depth to rock
Badland	---	---	---	---
246:				
Wyarno	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: thin layer
Ulm	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: thin layer

Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
247:				
Wyotite	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
Ulm	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: thin layer
248:				
Ziggy	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
Iwait	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
249:				
Ziggy	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
Iwait	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
250:				
Ziggy	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
Ucross	Poor: low strength depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey depth to rock
Oldwolf	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: thin layer too clayey depth to rock

Water Management

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Dashes (--) indicate that the map unit component was not evaluated.) The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation.

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
100:							
Aridic Ustorthents, saline	Moderate: seepage	Moderate: excess salt	Severe: no water	Limitation: deep to water	Limitation: excess salt droughty	Limitation: erodes easily	Limitation: erodes easily too arid droughty
101:							
Arvada, thick surface	Moderate: slope	Severe: excess sodium	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope soil blowing	Limitation: erodes easily percs slowly soil blowing	Limitation: erodes easily excess sodium too arid
102:							
Arvada, thick surface	Moderate: slope	Severe: excess sodium	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope soil blowing	Limitation: erodes easily percs slowly soil blowing	Limitation: erodes easily excess sodium too arid
Arvada	Moderate: slope	Severe: excess sodium	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope soil blowing	Limitation: erodes easily percs slowly soil blowing	Limitation: erodes easily excess sodium too arid
Slickspots	---	---	---	---	---	---	---
103:							
Arwite	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: soil blowing	Limitation: too arid
104:							
Arwite	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: slope soil blowing	Limitation: slope too arid
105:							
Arwite	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: soil blowing	Limitation: too arid

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
105:(cont.)							
Elwop	Moderate: seepage slope depth to rock	Moderate: piping thin layer	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing depth to rock	Limitation: soil blowing depth to rock	Limitation: too arid depth to rock
106:							
Arwite	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: slope soil blowing	Limitation: slope too arid
Elwop	Severe: slope	Moderate: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing depth to rock	Limitation: slope soil blowing depth to rock	Limitation: slope too arid depth to rock
107:							
Arwite	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: soil blowing	Limitation: too arid
Vonalf	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: soil blowing	Limitation: too arid
108:							
Arwite	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: slope soil blowing	Limitation: slope too arid
Vonalf	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: slope soil blowing	Limitation: slope too arid
109:							
Bidman	Moderate: seepage slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope	Limitation: erodes easily	Limitation: erodes easily percs slowly too arid
110:							
Bidman, loamy substratum	Moderate: seepage slope	Moderate: thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope	Limitation: erodes easily	Limitation: erodes easily percs slowly too arid

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
111:							
Bidman	Moderate: seepage slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope	Limitation: erodes easily	Limitation: erodes easily percs slowly too arid
Parmleed	Moderate: slope depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope depth to rock	Limitation: erodes easily depth to rock	Limitation: erodes easily too arid depth to rock
112:							
Bidman	Severe: slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope	Limitation: erodes easily slope	Limitation: erodes easily slope too arid
Parmleed	Severe: slope	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope too arid
113:							
Bidman	Moderate: seepage slope	Moderate: hard to pack	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly too arid
Ulm	Moderate: slope	Slight	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope	Limitation: erodes easily	Limitation: erodes easily percs slowly too arid
114:							
Bowbac	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing depth to rock	Limitation: slope soil blowing depth to rock	Limitation: slope too arid depth to rock
Taluce	Severe: slope depth to rock	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing depth to rock	Limitation: slope soil blowing depth to rock	Limitation: slope too arid depth to rock

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
114:(cont.)							
Badland	Severe: depth to rock	Slight	Severe: no water	Limitation: deep to water	Limitation: depth to rock droughty	Limitation: depth to rock	Limitation: depth to rock droughty
115:							
Bowbac	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing depth to rock	Limitation: slope soil blowing depth to rock	Limitation: slope too arid depth to rock
Worf	Severe: slope depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope too arid
116:							
Cambria	Moderate: seepage slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily too arid
Kishona	Moderate: seepage slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily too arid
Zigweid	Moderate: seepage slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily too arid
117:							
Cambria	Severe: slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily slope	Limitation: erodes easily slope too arid
Kishona	Severe: slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily slope	Limitation: erodes easily slope too arid
Zigweid	Severe: slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily slope	Limitation: erodes easily slope too arid

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
118:							
Clarkelen	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: flooding soil blowing	Limitation: soil blowing	Limitation: too arid
Draknab	Severe: seepage	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: flooding soil blowing droughty	Limitation: too sandy soil blowing	Limitation: too arid droughty
119:							
Clarkelen	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: flooding soil blowing	Limitation: too sandy soil blowing	Limitation: too arid
Embry	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: soil blowing	Limitation: soil blowing	Limitation: too arid
120:							
Clarkelen	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: flooding soil blowing	Limitation: soil blowing	Limitation: too arid
Keeline	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: soil blowing	Limitation: too arid
121:							
Cushman	Moderate: seepage slope depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: erodes easily depth to rock	Limitation: erodes easily too arid depth to rock
Cambria	Moderate: seepage slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily too arid
122:							
Cushman	Severe: slope	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope too arid

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
122:(cont.)							
Cambria	Severe: slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily slope	Limitation: erodes easily slope too arid
123:							
Cushman	Severe: slope	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope too arid
Renohill	Severe: slope	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope too arid
124:							
Cushman	Severe: slope	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope too arid
Shingle	Severe: slope depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope too arid
125:							
Cushman	Severe: slope	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope too arid
Terro	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing droughty	Limitation: slope too sandy depth to rock	Limitation: slope too arid droughty
126:							
Cushman	Moderate: seepage slope depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: erodes easily depth to rock	Limitation: erodes easily too arid depth to rock

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
126:(cont.)							
Theedle	Moderate: seepage slope depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: erodes easily depth to rock	Limitation: erodes easily too arid depth to rock
127:							
Cushman	Severe: slope	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope too arid
Theedle	Severe: slope	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope too arid
128:							
Cushman	Severe: slope	Moderate: piping thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope too arid
Worf	Severe: slope depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope too arid
129:							
Decolney	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: soil blowing	Limitation: too arid
Hiland	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: soil blowing	Limitation: too arid
130:							
Decolney	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: slope soil blowing	Limitation: slope too arid
Hiland	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: slope soil blowing	Limitation: slope too arid

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
131:							
Deekay	Moderate: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily too arid
132:							
Deekay	Moderate: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily too arid
Moorhead	Moderate: slope	Slight	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope	Limitation: erodes easily	Limitation: erodes easily percs slowly too arid
133:							
Deekay	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily slope	Limitation: erodes easily slope too arid
Moorhead	Severe: slope	Slight	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope	Limitation: erodes easily slope	Limitation: erodes easily slope too arid
134:							
Deekay	Moderate: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily too arid
Oldwolf	Moderate: seepage slope depth to rock	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: erodes easily depth to rock	Limitation: erodes easily too arid depth to rock
135:							
Deekay	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily slope	Limitation: erodes easily slope too arid

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
135:(cont.)							
Oldwolf	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope too arid
136:							
Deekay	Moderate: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily too arid
Ziggy	Moderate: seepage slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily too arid
137:							
Echeta	Moderate: slope	Moderate: hard to pack	Severe: no water	Limitation: deep to water	Limitation: erodes easily percs slowly slope	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly too arid
138:							
Echeta	Severe: slope	Moderate: hard to pack	Severe: no water	Limitation: deep to water	Limitation: erodes easily percs slowly slope	Limitation: erodes easily percs slowly slope	Limitation: erodes easily slope too arid
Cromack	Severe: slope	Moderate: hard to pack thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope too arid
139:							
Embry	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: slope soil blowing	Limitation: slope too arid
Orpha	Severe: seepage slope	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy soil blowing	Limitation: slope too arid droughty

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
140:							
Embry	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: slope soil blowing	Limitation: slope too arid
Taluce	Severe: slope depth to rock	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing depth to rock	Limitation: slope soil blowing depth to rock	Limitation: slope too arid depth to rock
141:							
Emigha	Moderate: seepage	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily excess salt	Limitation: erodes easily	Limitation: erodes easily too arid
142:							
Emigha, sodic	Slight	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily excess salt	Limitation: erodes easily	Limitation: erodes easily too arid
Arvada, thick surface	Slight	Severe: excess sodium	Severe: no water	Limitation: deep to water	Limitation: excess sodium excess salt percs slowly	Limitation: erodes easily percs slowly	Limitation: erodes easily excess sodium too arid
143:							
Felix, ponded	Slight	Severe: hard to pack ponding	Severe: no water	Limitation: percs slowly ponding	Limitation: percs slowly slow intake ponding	Limitation: erodes easily percs slowly ponding	Limitation: erodes easily wetness too arid
144:							
Forkwood	Moderate: seepage slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily too arid
145:							
Forkwood	Moderate: seepage slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily too arid
Cambria	Moderate: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily too arid

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
146:							
Forkwood	Moderate: seepage slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily too arid
Cushman	Moderate: seepage slope depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: erodes easily depth to rock	Limitation: erodes easily too arid depth to rock
147:							
Forkwood	Severe: slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily slope	Limitation: erodes easily slope too arid
Cushman	Severe: slope	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope too arid
148:							
Forkwood	Moderate: seepage slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily too arid
Ulm	Moderate: slope	Slight	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope	Limitation: erodes easily	Limitation: erodes easily percs slowly too arid
149:							
Forkwood	Severe: slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily slope	Limitation: erodes easily slope too arid
Ulm	Severe: slope	Slight	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope	Limitation: erodes easily slope	Limitation: erodes easily slope too arid

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
150:							
Gateson	Severe: slope	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: fast intake slope soil blowing	Limitation: slope soil blowing depth to rock	Limitation: slope depth to rock
Taluce	Severe: slope depth to rock	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing depth to rock	Limitation: slope soil blowing depth to rock	Limitation: slope too arid depth to rock
Turnercrest	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope soil blowing	Limitation: slope soil blowing depth to rock	Limitation: slope too arid depth to rock
151:							
Haverdad	Moderate: seepage	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: flooding	Favorable	Limitation: too arid
152:							
Haverdad	Moderate: seepage	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: flooding	Favorable	Limitation: too arid
Clarkelen	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: flooding soil blowing	Limitation: soil blowing	Limitation: too arid
153:							
Haverdad	Moderate: seepage	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily flooding	Limitation: erodes easily	Limitation: erodes easily too arid
Kishona	Moderate: seepage slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope	Limitation: erodes easily	Limitation: erodes easily too arid
154:							
Heldt	Moderate: slope	Slight	Severe: no water	Limitation: deep to water	Limitation: erodes easily percs slowly slope	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly too arid

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
155:							
Heldt, saline----------	Slight	Moderate: excess salt hard to pack	Severe: no water	Limitation: deep to water	Limitation: erodes easily excess salt percs slowly	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly too arid
Bidman, saline---------	Slight	Moderate: excess salt	Severe: no water	Limitation: deep to water	Limitation: excess salt percs slowly	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly too arid
156:							
Hiland----------	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: soil blowing	Limitation: too arid
157:							
Hiland----------	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: soil blowing	Limitation: too arid
Bowbac----------	Severe: seepage	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing depth to rock	Limitation: soil blowing depth to rock	Limitation: too arid depth to rock
158:							
Hiland----------	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: slope soil blowing	Limitation: slope too arid
Bowbac----------	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing depth to rock	Limitation: slope soil blowing depth to rock	Limitation: slope too arid depth to rock
159:							
Hiland----------	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: soil blowing	Limitation: too arid
Vonalee----------	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: soil blowing	Limitation: too arid

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
160:							
Hiland	Severe: seepage, slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope, soil blowing	Limitation: slope, soil blowing	Limitation: slope, too arid
Vonalee	Severe: seepage, slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope, soil blowing	Limitation: slope, soil blowing	Limitation: slope, too arid
161:							
Hilight	Severe: slope, depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly, slope, depth to rock	Limitation: erodes easily, slope, depth to rock	Limitation: erodes easily, slope, too arid
Taluce, cool	Severe: slope, depth to rock	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope, soil blowing, depth to rock	Limitation: slope, soil blowing, depth to rock	Limitation: slope, too arid, depth to rock
Wags	Severe: slope	Moderate: hard to pack, thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly, slope, slow intake	Limitation: erodes easily, slope, depth to rock	Limitation: erodes easily, slope, too arid
162:							
Lismas	Severe: slope, depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly, slope, depth to rock	Limitation: erodes easily, slope, depth to rock	Limitation: erodes easily, slope, too arid
Mittenbutte, cool	Severe: slope, depth to rock	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope, soil blowing, depth to rock	Limitation: slope, soil blowing, depth to rock	Limitation: slope, too arid, depth to rock
Sabatka	Severe: slope	Moderate: hard to pack, thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly, slope, slow intake	Limitation: erodes easily, slope, depth to rock	Limitation: erodes easily, slope, too arid

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
163:							
Hilight	Severe: slope, depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly, slope, slow intake	Limitation: erodes easily, slope, depth to rock	Limitation: erodes easily, slope, too arid
Wags	Severe: slope	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly, slope, depth to rock	Limitation: erodes easily, slope, depth to rock	Limitation: erodes easily, slope, too arid
Badland	Severe: depth to rock	Slight	Severe: no water	Limitation: deep to water	Limitation: depth to rock, droughty	Limitation: depth to rock	Limitation: depth to rock, droughty
164:							
Lismas	Severe: slope, depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly, slope, slow intake	Limitation: erodes easily, slope, depth to rock	Limitation: erodes easily, slope, too arid
Sabatka	Severe: slope	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly, slope, depth to rock	Limitation: erodes easily, slope, depth to rock	Limitation: erodes easily, slope, too arid
Badland	Severe: depth to rock	Slight	Severe: no water	Limitation: deep to water	Limitation: depth to rock, droughty	Limitation: depth to rock	Limitation: depth to rock, droughty
165:							
Jayem	Severe: seepage, slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope, soil blowing	Limitation: slope, soil blowing	Limitation: slope, too arid
166:							
Jaywest	Moderate: slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: percs slowly, slope	Limitation: erodes easily	Limitation: erodes easily, percs slowly, too arid

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
167:							
Jaywest	Moderate: slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope	Limitation: erodes easily	Limitation: erodes easily percs slowly too arid
Moorhead	Moderate: slope	Slight	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope	Limitation: erodes easily	Limitation: erodes easily percs slowly too arid
168:							
Jaywest	Moderate: slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope	Limitation: erodes easily	Limitation: erodes easily percs slowly too arid
Spottedhorse	Moderate: slope depth to rock	Moderate: thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope depth to rock	Limitation: erodes easily depth to rock	Limitation: erodes easily too arid depth to rock
169:							
Julesburg	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: soil blowing	Limitation: too arid
170:							
Keeline	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope soil blowing	Limitation: slope too arid droughty
Tullock	Severe: seepage slope	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy depth to rock	Limitation: slope too arid droughty
171:							
Keeline	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: slope soil blowing	Limitation: slope too arid

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
171:(cont.)							
Tullock	Severe: seepage slope	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy depth to rock	Limitation: slope too arid droughty
Niobrara, dry	Severe: slope depth to rock	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy depth to rock	Limitation: slope too arid droughty
172:							
Keyner	Moderate: slope	Severe: excess sodium piping	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope soil blowing	Limitation: erodes easily percs slowly soil blowing	Limitation: erodes easily excess sodium too arid
173:							
Lawver	Severe: seepage	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope	Limitation: erodes easily	Limitation: erodes easily percs slowly too arid
Teckla	Severe: seepage	Moderate: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: erodes easily soil blowing	Limitation: erodes easily too arid
Wibaux	Severe: seepage	Severe: large stones seepage	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones	Limitation: large stones too arid droughty
174:							
Brislawn	Severe: seepage	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope	Limitation: erodes easily	Limitation: erodes easily percs slowly too arid
Rockybutte	Severe: seepage	Moderate: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily too arid

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
174:(cont.)							
Ironbutte	Severe: seepage	Severe: large stones seepage	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones	Limitation: large stones too arid droughty
175:							
Lawver	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope	Limitation: erodes easily slope	Limitation: erodes easily slope too arid
Wibaux	Severe: seepage slope	Severe: large stones seepage	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope	Limitation: large stones slope too arid
176:							
Leiter	Moderate: slope depth to rock	Moderate: thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope depth to rock	Limitation: erodes easily depth to rock	Limitation: erodes easily too arid depth to rock
Cromack	Moderate: slope depth to rock	Moderate: hard to pack thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope depth to rock	Limitation: erodes easily percs slowly depth to rock	Limitation: erodes easily too arid depth to rock
177:							
Maysdorf	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: erodes easily soil blowing	Limitation: erodes easily too arid
178:							
Maysdorf	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily too arid

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
179:							
Maysdorf	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: erodes easily soil blowing	Limitation: erodes easily too arid
Pugsley	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing depth to rock	Limitation: too sandy soil blowing depth to rock	Limitation: too arid depth to rock
180:							
Maysdorf	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: erodes easily slope soil blowing	Limitation: erodes easily slope too arid
Pugsley	Severe: seepage slope	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing depth to rock	Limitation: slope soil blowing depth to rock	Limitation: slope too arid depth to rock
181:							
Moorhead	Moderate: slope	Slight	Severe: no water	Limitation: deep to water	Limitation: erodes easily percs slowly slope	Limitation: erodes easily	Limitation: erodes easily percs slowly too arid
182:							
Moorhead	Moderate: slope	Slight	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope	Limitation: erodes easily	Limitation: erodes easily percs slowly too arid
183:							
Moorhead	Moderate: slope	Slight	Severe: no water	Limitation: deep to water	Limitation: erodes easily percs slowly slope	Limitation: erodes easily	Limitation: erodes easily percs slowly too arid
Leiter	Moderate: slope depth to rock	Moderate: thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope depth to rock	Limitation: erodes easily depth to rock	Limitation: erodes easily too arid depth to rock

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
184:							
Moorhead	Severe: slope	Slight	Severe: no water	Limitation: deep to water	Limitation: erodes easily percs slowly slope	Limitation: erodes easily slope	Limitation: erodes easily slope too arid
Leiter	Severe: slope	Moderate: thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope too arid
185:							
Moskee	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: soil blowing	Limitation: too arid
186:							
Moskee	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: slope soil blowing	Limitation: slope too arid
187:							
Nuncho	Moderate: slope	Slight	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope	Limitation: erodes easily	Limitation: erodes easily percs slowly too arid
188:							
Orpha	Severe: seepage slope	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy soil blowing	Limitation: slope too arid droughty
Tullock	Severe: seepage slope	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy depth to rock	Limitation: slope too arid droughty

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
189:							
Oshoto	Moderate: seepage slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope	Limitation: erodes easily	Limitation: erodes easily too arid
Moorhead	Moderate: slope	Slight	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope	Limitation: erodes easily	Limitation: erodes easily percs slowly too arid
190:							
Parmleed	Severe: slope	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope too arid
Renohill	Severe: slope	Moderate: thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope too arid
191:							
Pits	---	---	---	---	---	---	---
Dumps	---	---	---	---	---	---	---
192:							
Platmak	Moderate: slope	Slight	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope	Limitation: erodes easily	Limitation: erodes easily percs slowly too arid
193:							
Pugsley	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing depth to rock	Limitation: too sandy soil blowing depth to rock	Limitation: too arid depth to rock
Decolney	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: soil blowing	Limitation: too arid

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
194:							
Pugsley	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing depth to rock	Limitation: slope too sandy depth to rock	Limitation: slope too arid depth to rock
Decolney	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: slope soil blowing	Limitation: slope too arid
195:							
Rauzi	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: soil blowing	Limitation: too arid
196:							
Rauzi	Severe: seepage	Moderate: piping thin layer	Severe: no water	Limitation: deep to water	Limitation: slope	Favorable	Limitation: too arid
197:							
Rauzi	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: soil blowing	Limitation: too arid
Elwop	Moderate: seepage slope depth to rock	Moderate: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing depth to rock	Limitation: soil blowing depth to rock	Limitation: too arid depth to rock
198:							
Recluse	Moderate: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily too arid
199:							
Renohill	Moderate: slope depth to rock	Moderate: thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope depth to rock	Limitation: erodes easily depth to rock	Limitation: erodes easily too arid depth to rock

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
199:(cont.)							
Savageton	Moderate: slope, depth to rock	Moderate: hard to pack, thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly, slope, depth to rock	Limitation: erodes easily, percs slowly, depth to rock	Limitation: erodes easily, too arid, depth to rock
200:							
Renohill	Severe: slope	Moderate: hard to pack, thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly, slope, depth to rock	Limitation: erodes easily, slope, depth to rock	Limitation: erodes easily, slope, too arid
Savageton	Severe: slope	Moderate: hard to pack, thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly, slope, depth to rock	Limitation: erodes easily, slope, depth to rock	Limitation: erodes easily, slope, too arid
201:							
Renohill	Moderate: slope, depth to rock	Moderate: thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly, slope, depth to rock	Limitation: erodes easily, depth to rock	Limitation: erodes easily, too arid, depth to rock
Shingle	Severe: slope, depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope, depth to rock	Limitation: erodes easily, slope, depth to rock	Limitation: erodes easily, slope, too arid
Worf	Severe: slope, depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope, depth to rock	Limitation: erodes easily, slope, depth to rock	Limitation: erodes easily, slope, too arid
202:							
Renohill	Severe: slope	Moderate: thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly, slope, depth to rock	Limitation: erodes easily, slope, depth to rock	Limitation: erodes easily, slope, too arid

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
202:(cont.)							
Worfka	Severe: slope, depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly, slope, depth to rock	Limitation: erodes easily, slope, depth to rock	Limitation: erodes easily, slope, too arid
203:							
Rockypoint	Moderate: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily, flooding	Limitation: erodes easily, too sandy	Limitation: erodes easily, too arid
Iwait	Moderate: seepage, slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily, too arid
204:							
Samday	Severe: slope, depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly, slope, depth to rock	Limitation: erodes easily, slope, depth to rock	Limitation: erodes easily, slope, too arid
Samday, cool	Severe: slope, depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly, slope, depth to rock	Limitation: erodes easily, slope, depth to rock	Limitation: erodes easily, slope, too arid
Shingle	Severe: slope, depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: erodes easily, slope, depth to rock	Limitation: erodes easily, slope, depth to rock	Limitation: erodes easily, slope, too arid
205:							
Samday	Severe: slope, depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly, slope, depth to rock	Limitation: erodes easily, slope, depth to rock	Limitation: erodes easily, slope, too arid
Savageton	Severe: slope	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly, slope, depth to rock	Limitation: erodes easily, slope, depth to rock	Limitation: erodes easily, slope, too arid

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
206:							
Samday	Severe: slope, depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly, slope, slow intake	Limitation: erodes easily, slope, depth to rock	Limitation: erodes easily, slope, too arid
Shingle	Severe: slope, depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope, depth to rock	Limitation: erodes easily, slope, depth to rock	Limitation: erodes easily, slope, too arid
Badland	Severe: depth to rock	Slight	Severe: no water	Limitation: deep to water	Limitation: depth to rock, droughty	Limitation: depth to rock	Limitation: depth to rock, droughty
207:							
Cromack	Severe: slope	Moderate: hard to pack, thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly, slope, depth to rock	Limitation: erodes easily, slope, depth to rock	Limitation: erodes easily, slope, too arid
Fairburn	Severe: slope, depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope, depth to rock	Limitation: erodes easily, slope, depth to rock	Limitation: erodes easily, slope, too arid
Ucross	Severe: slope	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope, depth to rock	Limitation: erodes easily, slope, depth to rock	Limitation: erodes easily, slope, too arid
208:							
Savageton	Moderate: slope, depth to rock	Moderate: hard to pack, thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly, slope, depth to rock	Limitation: erodes easily, percs slowly, depth to rock	Limitation: erodes easily, too arid, depth to rock
Silhouette	Moderate: slope	Slight	Severe: no water	Limitation: deep to water	Limitation: erodes easily, slope	Limitation: erodes easily	Limitation: erodes easily, too arid

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
209:							
Savageton	Severe: slope	Moderate: hard to pack thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope too arid
Silhouette	Severe: slope	Slight	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope	Limitation: erodes easily slope	Limitation: erodes easily slope too arid
210:							
Shingle	Severe: slope depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope too arid
Taluce	Severe: slope depth to rock	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing depth to rock	Limitation: slope soil blowing depth to rock	Limitation: slope too arid depth to rock
211:							
Shingle	Severe: slope depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope too arid
Worf	Severe: slope depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope too arid
212:							
Teckla	Severe: seepage	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: erodes easily too sandy soil blowing	Limitation: erodes easily too arid
213:							
Terro	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing droughty	Limitation: slope too sandy depth to rock	Limitation: slope too arid droughty

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
213:(cont.)							
Taluce	Severe: slope, depth to rock	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope, soil blowing, depth to rock	Limitation: slope, soil blowing, depth to rock	Limitation: slope, too arid, depth to rock
214:							
Theedle	Moderate: seepage, slope, depth to rock	Moderate: piping, thin layer	Severe: no water	Limitation: deep to water	Limitation: slope, depth to rock	Limitation: erodes easily, depth to rock	Limitation: erodes easily, too arid, depth to rock
Kishona	Moderate: seepage, slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily, too arid
215:							
Theedle	Severe: slope	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope, depth to rock	Limitation: erodes easily, slope, depth to rock	Limitation: erodes easily, slope, too arid
Kishona	Severe: slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily, slope	Limitation: erodes easily, slope, too arid
216:							
Theedle	Severe: slope	Moderate: piping, thin layer	Severe: no water	Limitation: deep to water	Limitation: slope, depth to rock	Limitation: erodes easily, slope, depth to rock	Limitation: erodes easily, slope, too arid
Kishona	Severe: slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily, slope	Limitation: erodes easily, slope, too arid
Shingle	Severe: slope, depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope, depth to rock	Limitation: erodes easily, slope, depth to rock	Limitation: erodes easily, slope, too arid

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
217:							
Theedle	Severe: slope	Moderate: piping thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope too arid
Shingle	Severe: slope depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope too arid
218:							
Theedle	Severe: slope	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope too arid
Turnercrest	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing depth to rock	Limitation: slope soil blowing depth to rock	Limitation: slope too arid depth to rock
Kishona	Severe: slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily slope	Limitation: erodes easily slope too arid
219:							
Torriarents	Severe: slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope	Limitation: erodes easily slope	Limitation: erodes easily slope too arid
Torriorthents	Severe: slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope	Limitation: erodes easily slope	Limitation: erodes easily slope too arid
220:							
Pitchdraw	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing depth to rock	Limitation: slope soil blowing depth to rock	Limitation: slope too arid depth to rock

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
220:(cont.)							
Ashollow	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: slope soil blowing	Limitation: slope too arid
Niobrara	Severe: slope depth to rock	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy depth to rock	Limitation: slope too arid droughty
221:							
Turnercrest	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing depth to rock	Limitation: slope soil blowing depth to rock	Limitation: slope too arid depth to rock
Keeline	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: slope soil blowing	Limitation: slope too arid
Taluce	Severe: slope depth to rock	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing depth to rock	Limitation: slope soil blowing depth to rock	Limitation: slope too arid depth to rock
222:							
Turnercrest	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope soil blowing	Limitation: slope soil blowing depth to rock	Limitation: slope too arid depth to rock
Wibaux, thin solum	Severe: seepage slope	Severe: large stones seepage	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope	Limitation: large stones slope too arid
Taluce	Severe: slope depth to rock	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing depth to rock	Limitation: slope soil blowing depth to rock	Limitation: slope too arid depth to rock

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
223:							
Ucross	Moderate: seepage slope depth to rock	Moderate: piping thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: erodes easily depth to rock	Limitation: erodes easily too arid depth to rock
224:							
Ucross	Moderate: seepage slope depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: erodes easily depth to rock	Limitation: erodes easily too arid depth to rock
Iwait	Moderate: seepage slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily too arid
225:							
Ucross	Severe: slope	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope too arid
Iwait	Severe: slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily slope	Limitation: erodes easily slope too arid
Fairburn	Severe: slope depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope too arid
226:							
Ulm	Moderate: slope	Slight	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope	Limitation: erodes easily	Limitation: erodes easily percs slowly too arid
227:							
Ulm	Moderate: slope	Slight	Severe: no water	Limitation: deep to water	Limitation: erodes easily percs slowly slope	Limitation: erodes easily	Limitation: erodes easily percs slowly too arid

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
228:							
Ulm	Moderate: slope	Slight	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope	Limitation: erodes easily	Limitation: erodes easily percs slowly too arid
Renohill	Moderate: slope depth to rock	Moderate: thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope depth to rock	Limitation: erodes easily depth to rock	Limitation: erodes easily too arid depth to rock
229:							
Ulm	Severe: slope	Slight	Severe: no water	Limitation: deep to water	Limitation: erodes easily percs slowly slope	Limitation: erodes easily slope	Limitation: erodes easily slope too arid
Renohill	Severe: slope	Moderate: thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope too arid
230:							
Urban land	---	---	---	---	---	---	---
Deekay	Moderate: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily too arid
Moorhead	Moderate: slope	Slight	Severe: no water	Limitation: deep to water	Limitation: erodes easily percs slowly slope	Limitation: erodes easily	Limitation: erodes easily percs slowly too arid
231:							
Urban land	---	---	---	---	---	---	---
Leiter	Moderate: slope depth to rock	Moderate: thin layer	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope depth to rock	Limitation: erodes easily depth to rock	Limitation: erodes easily too arid depth to rock

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
231: (cont.)							
Moorhead	Moderate: slope	Slight	Severe: no water	Limitation: deep to water	Limitation: erodes easily percs slowly slope	Limitation: erodes easily	Limitation: erodes easily percs slowly too arid
232:							
Urban land	---	---	---	---	---	---	---
Pitchdraw	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing depth to rock	Limitation: slope soil blowing depth to rock	Limitation: slope too arid depth to rock
Ashollow	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: slope soil blowing	Limitation: slope too arid
233:							
Ustic Torriorthents	---	---	---	---	---	---	---
234:							
Ustic Torriorthents	---	---	---	---	---	---	---
Badland	Severe: depth to rock	Slight	Severe: no water	Limitation: deep to water	Limitation: depth to rock droughty	Limitation: depth to rock	Limitation: depth to rock droughty
235:							
Vonalee	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: soil blowing	Limitation: too arid
236:							
Vonalee	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: soil blowing	Limitation: too arid

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
236:(cont.)							
Terro	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing droughty	Limitation: too sandy soil blowing depth to rock	Limitation: too arid depth to rock droughty
237:							
Vonalf	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: soil blowing	Limitation: too arid
238:							
Vonalf	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: soil blowing	Limitation: too arid
Xema	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing depth to rock	Limitation: soil blowing depth to rock	Limitation: too arid depth to rock
239:							
Ironbutte	Severe: seepage slope	Severe: large stones seepage	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope	Limitation: large stones slope too arid
Fairburn	Severe: slope depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope too arid
Mittenbutte	Severe: slope depth to rock	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing depth to rock	Limitation: slope soil blowing depth to rock	Limitation: slope too arid depth to rock
240:							
Wibaux	Severe: seepage slope	Severe: large stones seepage	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope	Limitation: large stones slope too arid

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
240:(cont.)							
Wibaux, thin solum-----	Severe: seepage slope	Severe: large stones seepage	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope	Limitation: large stones slope too arid
241:							
Ironbutte----------	Severe: seepage slope	Severe: large stones seepage	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope	Limitation: large stones slope too arid
Ironbutte, thin solum--	Severe: seepage slope	Severe: large stones seepage	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope	Limitation: large stones slope too arid
242:							
Ironbutte----------	Severe: seepage slope	Severe: large stones seepage	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope	Limitation: large stones slope too arid
Deekay----------	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily slope	Limitation: erodes easily slope too arid
Moorhead----------	Severe: slope	Slight	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope	Limitation: erodes easily slope	Limitation: erodes easily slope too arid
243:							
Wibaux, thick solum----	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope droughty	Limitation: large stones slope	Limitation: large stones slope too arid
Wibaux----------	Severe: seepage slope	Severe: large stones seepage	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope	Limitation: large stones slope too arid

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
244:							
Muleherder	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope droughty	Limitation: large stones slope	Limitation: large stones slope too arid
Ironbutte	Severe: seepage slope	Severe: large stones seepage	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope	Limitation: large stones slope too arid
245:							
Wibaux	Severe: seepage slope	Severe: large stones seepage	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope	Limitation: large stones slope too arid
Shingle	Severe: slope depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope too arid
Badland	---	---	---	---	---	---	---
246:							
Wyarno	Moderate: slope	Slight	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope	Limitation: erodes easily	Limitation: erodes easily percs slowly too arid
Ulm	Moderate: slope	Slight	Severe: no water	Limitation: deep to water	Limitation: erodes easily percs slowly slope	Limitation: erodes easily	Limitation: erodes easily percs slowly too arid
247:							
Wyotite	Moderate: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope	Limitation: erodes easily	Limitation: erodes easily too arid
Ulm	Moderate: slope	Slight	Severe: no water	Limitation: deep to water	Limitation: erodes easily percs slowly slope	Limitation: erodes easily	Limitation: erodes easily percs slowly too arid

Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
248:							
Ziggy	Moderate: seepage slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily too arid
Iwait	Moderate: seepage slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily too arid
249:							
Ziggy	Moderate: seepage slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily too arid
Iwait	Moderate: seepage slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily too arid
250:							
Ziggy	Moderate: seepage slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily too arid
Ucross	Moderate: seepage slope depth to rock	Moderate: piping thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: erodes easily depth to rock	Limitation: erodes easily too arid depth to rock
Oldwolf	Moderate: seepage slope depth to rock	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: erodes easily depth to rock	Limitation: erodes easily too arid depth to rock

Soil Properties

Data relating to soil properties are collected during the course of the soil survey. The data and the estimates of soil and water features, listed in tables, are explained on the following pages.

Soil properties are determined by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties shown in the tables include the range of grain-size distribution and Atterberg limits, the engineering classification, and the physical and chemical properties of the major layers of each soil. Pertinent soil and water features also are given.

Engineering Index Properties

The table, "Engineering Index Properties," gives estimates of the engineering classification and of the range of index properties for the major layers of each soil in the survey area. Most soils have layers of contrasting properties within the upper 5 or 6 feet.

Depth to the upper and lower boundaries of each layer is indicated. The range in depth and information on other properties of each layer are given for each soil series under the heading "Soil Series and Their Morphology."

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is as much as about 15 percent, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 1993) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 1986).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest. The AASHTO classification for soils tested, with group index numbers in parentheses, is given in the table.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by

converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of grain-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is omitted in the table.

Physical and Chemical Properties

The tables, "Physical Properties of the Soils" and "Chemical Properties of the Soils," show estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In the "Physical Properties of the Soils" table, the estimated clay content of each major soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The amount and kind of clay greatly affect the fertility and physical condition of the soil. They determine the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3-bar moisture tension. Weight is determined after the soil is dried at 105 degrees C. The estimated moist bulk density of each major soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. A bulk density of more than 1.6 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability refers to the ability of a soil to transmit water or air. The estimates indicate the rate of downward movement of water when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each major soil layer. The capacity varies, depending on soil properties that affect retention of water and depth of the root zone. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Shrink-swell potential is the potential for volume change in a soil with a loss or gain in moisture. Volume change occurs mainly because of the interaction of clay minerals with water and varies with the amount and type of clay minerals in the soil. The size of the load on the soil and the magnitude of the change in soil moisture content influence the amount of swelling of soils in place. Laboratory measurements of swelling of undisturbed clods were made for many soils. For others, swelling was estimated on the basis of the kind and amount of clay minerals in the soil and on the basis of measurements of similar soils.

If the shrink-swell potential is rated moderate to very high, shrinking and swelling can cause damage to buildings, roads, and other structures. Special design is often needed.

Shrink-swell potential classes are based on the change in length of an unconfined clod as moisture content is increased from air-dry to field capacity. The

classes are *low*, a change of less than 3 percent; *moderate*, 3 to 6 percent; *high*, more than 6 percent; and *very high*, greater than 9 percent.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. The estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained or increased by returning crop residue to the soil. Organic matter affects the available water capacity, infiltration rate, and tilth. It is a source of nitrogen and other nutrients for crops.

Erosion factor Kw indicates the susceptibility of a soil to sheet and rill erosion by water. Factor Kw is one of six factors used in the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter (up to 4 percent) and on soil structure and permeability. Values of Kw range from 0.02 to 0.64. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their resistance to wind erosion in cultivated areas. The groups indicate the susceptibility of soil to wind erosion. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are as follows:

1. Coarse sands, sands, fine sands, and very fine sands.
2. Loamy coarse sands, loamy sands, loamy fine sands, loamy very fine sands, ash material, and sapric soil material.
3. Coarse sandy loams, sandy loams, fine sandy loams, and very fine sandy loams.

4L. Calcareous loams, silt loams, clay loams, and silty clay loams.

4. Clays, silty clays, noncalcareous clay loams, and silty clay loams that are more than 35 percent clay.
5. Noncalcareous loams and silt loams that are less than 20 percent clay and sandy clay loams, sandy clays, and hemic soil material.
6. Noncalcareous loams and silt loams that are more than 20 percent clay and noncalcareous clay loams that are less than 35 percent clay.
7. Silts, noncalcareous silty clay loams that are less than 35 percent clay, and fibric soil material.
8. Soils that are not subject to wind erosion because of coarse fragments on the surface or because of surface wetness.

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

In the "Chemical Properties of the Soils" table *cation-exchange capacity* is the total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. Soils having a high cation-exchange capacity can retain cations. The ability to retain cations helps to prevent the pollution of ground water.

Soil reaction is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil. Incorporating nitrogen fertilizer into calcareous soils helps to prevent nitrite accumulation and ammonium-N volatilization.

Gypsum is expressed as a percent, by weight, of hydrated calcium sulfates in the fraction of the soil less than 20 millimeters in size. Gypsum is partially soluble in water and can be dissolved and removed by water. Soils that have a high content of gypsum may collapse if the gypsum is removed by percolating water.

Salinity is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of nonirrigated soils. The salinity of irrigated soils is affected by the quality of the irrigation water and by the frequency of water application. Hence, the salinity of soils in individual fields can differ greatly from the value given in the table. Salinity affects the suitability of a soil for crop production, the stability of soil if used as construction material, and the potential of the soil to corrode metal and concrete.

Sodium adsorption ratio (SAR) is a measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration. Soils that have SAR values of 13 or more may be characterized by an increased dispersion of organic matter and clay particles, reduced permeability and aeration, and a general degradation of soil structure.

Soil Features

The table, "Soil Features," gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinkage or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. The table shows the expected initial subsidence, which usually is a result of drainage, and total subsidence, which results from a combination of factors.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate,* or *high,* is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low, moderate,* or *high.* It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Water Features

The table," Water Features," gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist

mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

The *months* in the table indicate the portion of the year in which the feature is most likely to be a concern.

The table indicates, by month, depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation.

The table indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development. Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Hydric Soils

In this section, hydric soils are defined and described and the hydric soils in the survey area are listed.

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for each of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of

ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 1995). These criteria are used to identify a phase of a soil series that normally is associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (USDA, 1999) and "Keys to Soil Taxonomy" (USDA, 1998) and in the "Soil Survey Manual" (USDA, 1993).

If soils are wet enough for a long enough period to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils in this survey area are specified in "Field Indicators of Hydric Soils in the United States" (USDA-NRCS, 1996).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

The following map unit meets the definition of hydric soils and, in addition, has at least one of the hydric soil indicators. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; USDA-NRCS, 1996).

143—Felix clay, ponded, 0 to 2 percent slopes

Map units that are made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The other map units in this survey area, in general, do not meet the definition of hydric soils because they do not have one of the hydric soil indicators. A portion of these map units, however, may include hydric soils. Onsite investigation is recommended to determine whether hydric soils occur and the location of the included hydric soils.

Engineering Index Properties

(The symbol < means less than; > means greater than. Dashes (--) indicate that an assignment has not been made.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
100:												
Aridic Ustorthents, saline	0-2	Loam	CL	A-6	0	0	100	100	80-100	65-85	30-35	10-15
	2-6	Clay loam	CL	A-6, A-7	0	0	100	100	85-100	70-85	40-55	20-35
	6-46	Stratified loam to clay loam	CL	A-6	0	0	100	90-100	75-95	55-80	30-55	15-35
	46-60	Stratified fine sandy loam to clay loam	CL, SC	A-6	0	0	100	85-100	65-90	45-75	30-40	10-20
101:												
Arvada, thick surface	0-7	Very fine sandy loam	CL-ML, SC-SM	A-4	0	0	100	100	75-85	40-55	15-25	5-10
	7-15	Silty clay loam, clay loam	CL, CL	A-7	0	0	100	95-100	85-95	70-90	45-55	20-35
	15-26	Silty clay, clay loam, clay	CH, CL	A-7	0	0	95-100	95-100	85-95	70-90	45-65	20-40
	26-60	Clay loam, silty clay loam, clay	CH, CL	A-7	0	0	95-100	90-100	75-95	65-90	45-65	20-40
102:												
Arvada, thick surface	0-7	Very fine sandy loam	CL-ML, SC-SM	A-4	0	0	100	100	75-85	40-55	15-25	5-10
	7-15	Silty clay loam, clay loam	CL, CH	A-7	0	0	100	95-100	85-95	70-90	45-55	20-35
	15-26	Silty clay, clay loam, clay	CH, CL	A-7	0	0	95-100	95-100	85-95	70-90	45-65	20-40
	26-60	Clay, clay loam, silty clay loam	CH, CL	A-7	0	0	95-100	90-100	75-95	65-90	45-65	20-40

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
102:(cont.)												
Arvada	0-2	Fine sandy loam	SM	A-4	0	0	100	95-100	80-90	35-50	20-30	NP-5
	2-9	Clay, silty clay loam, clay loam	CL, CH	A-7	0	0	100	95-100	90-95	70-90	45-60	20-40
	9-15	Clay, silty clay loam, clay loam	CL, CH	A-7	0	0	95-100	95-100	90-95	70-90	45-60	20-40
	15-60	Silty clay loam, clay loam, clay	CL, CH	A-6, A-7	0	0	95-100	95-100	85-90	65-85	40-60	20-40
Slickspots	---	---	---	---	---	---	---	---	---	---	---	---
103:												
Arwite	0-5	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	5-32	Sandy clay loam	CL, SC	A-6	0	0	100	100	85-100	45-60	30-40	10-20
	32-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
104:												
Arwite	0-5	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	5-32	Sandy clay loam	CL, SC	A-6	0	0	100	100	85-100	45-60	30-40	10-20
	32-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
105:												
Arwite	0-5	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	5-32	Sandy clay loam	CL, SC	A-6	0	0	100	100	85-100	45-60	30-40	10-20
	32-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
Elwop	0-4	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	4-24	Sandy clay loam	CL, SC	A-6	0	0	100	100	85-100	45-60	30-40	10-20
	24-35	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
	35-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
106:												
Arwite	0-5	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	5-32	Sandy clay loam	CL, SC	A-6	0	0	100	100	85-100	45-60	30-40	10-20
	32-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
Elwop	0-4	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	4-24	Sandy clay loam	CL, SC	A-6	0	0	100	100	85-100	45-60	30-40	10-20
	24-35	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
	35-60	Bedrock			---	---	---	---	---	---	---	---
107:												
Arwite	0-5	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	5-32	Sandy clay loam	CL, SC	A-6	0	0	100	100	85-100	45-60	30-40	10-20
	32-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
Vonalf	0-6	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	6-34	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	34-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
108:												
Arwite	0-5	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	5-32	Sandy clay loam	CL, SC	A-6	0	0	100	100	85-100	45-60	30-40	10-20
	32-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
Vonalf	0-6	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	6-34	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	34-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
109:												
Bidman	0-2	Loam	CL, CL-ML	A-4, A-6	0	0	100	100	85-100	55-75	25-35	5-15
	2-28	Clay, clay loam	CH, CL	A-7	0	0	100	100	85-100	60-85	45-65	20-40
	28-60	Clay loam, loam	CL	A-6	0	0	100	95-100	75-95	60-80	30-55	15-35
110:												
Bidman, loamy substratum	0-4	Loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	85-95	60-80	25-35	5-15
	4-25	Clay, clay loam	CH, CL	A-7	0	0	95-100	90-100	80-95	65-85	45-65	20-40
	25-52	Clay loam	CL, CH	A-6	0	0	95-100	90-100	80-95	65-85	40-55	20-35
	52-60	Sandy clay loam, sandy loam	SC, CL	A-4	0	0	95-100	90-100	80-95	35-55	30-40	10-20
111:												
Bidman	0-2	Loam	CL, CL-ML	A-4, A-6	0	0	100	100	85-100	55-75	25-35	5-15
	2-28	Clay, clay loam	CH, CL	A-7	0	0	100	100	85-100	60-85	45-65	20-40
	28-60	Clay loam, loam	CL	A-6, A-7	0	0	100	95-100	80-100	60-80	30-55	15-35
Parmleed	0-3	Loam	CL-ML	A-4	0	0	100	90-100	80-95	50-70	20-30	5-10
	3-21	Clay, clay loam	CH, CL	A-7	0	0	100	90-100	85-95	65-85	45-65	20-40
	21-27	Clay loam, loam	CL	A-6, A-7	0	0	100	90-100	80-95	60-80	35-55	15-35
	27-60	Bedrock			---	---	---	---	---	---	---	---
112:												
Bidman	0-2	Loam	CL, CL-ML	A-4, A-6	0	0	100	100	85-100	55-75	25-35	5-15
	2-28	Clay, clay loam	CH, CL	A-7	0	0	100	100	85-100	60-85	45-65	20-40
	28-48	Clay loam, loam	CL	A-6, A-7	0	0	100	95-100	80-100	60-80	30-55	15-35
Parmleed	0-3	Loam	CL-ML	A-4	0	0	100	90-100	80-95	50-70	20-30	5-10
	3-21	Clay, clay loam	CH, CL	A-7	0	0	100	90-100	85-95	65-85	45-65	20-40
	21-27	Clay loam, loam	CL	A-6, A-7	0	0	100	90-100	80-95	60-80	35-55	15-35
	27-60	Bedrock			---	---	---	---	---	---	---	---
113:												
Bidman	0-7	Loam	CL, CL-ML	A-4, A-6	0	0	100	100	85-100	55-75	25-35	5-15
	7-36	Clay loam, clay	CH, CL	A-7	0	0	100	100	85-100	60-85	45-65	20-40
	36-60	Clay loam, loam	CL	A-6	0	0	100	95-100	80-100	55-75	35-55	15-35
Ulm	0-4	Loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	80-100	60-80	25-35	5-15
	4-30	Clay loam, clay	CH, CL	A-7	0	0	95-100	90-100	80-95	65-85	40-60	20-40
	30-60	Clay loam, loam	CL	A-6, A-7	0	0	95-100	90-100	80-95	60-80	35-55	15-35

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
114:												
Bowbac	0-3	Sandy loam	SC-SM	A-4	0	0	95-100	90-100	65-75	35-50	20-25	5-10
	3-31	Sandy clay loam	CL, SC	A-6	0	0	95-100	90-100	75-85	45-60	30-45	15-25
	31-39	Sandy loam, fine sandy loam	SC-SM	A-2, A-4	0	0	95-100	90-100	70-80	30-45	15-25	5-10
	39-60	Bedrock			0	0	---	---	---	---	---	---
Taluce	0-2	Sandy loam	SC-SM	A-2, A-4	0	0	95-100	95-100	70-80	30-45	20-25	5-10
	2-14	Sandy loam, fine sandy loam	SC-SM	A-4	0	0	95-100	85-100	65-75	35-50	15-25	5-10
	14-60	Bedrock			---	---	---	---	---	---	---	---
Badland	0-60	Bedrock			---	---	---	---	---	---	---	---
115:												
Bowbac	0-3	Fine sandy loam	SC-SM	A-4	0	0	95-100	90-100	65-75	35-50	20-25	5-10
	3-31	Sandy clay loam	CL, SC	A-6	0	0	95-100	90-100	75-85	45-60	30-45	15-25
	31-39	Sandy loam, fine sandy loam	SC-SM	A-2, A-4	0	0	95-100	90-100	70-80	30-45	15-25	5-10
	39-60	Bedrock			---	---	---	---	---	---	---	---
Worf	0-1	Fine sandy loam	SC-SM, SM	A-4	0	0	100	90-100	70-85	35-50	20-30	NP-10
	1-12	Sandy clay loam	CL	A-6	0	0	95-100	80-100	75-95	60-80	35-40	15-20
	12-18	Sandy clay loam	CL	A-6	0	0	95-100	80-100	75-95	60-80	25-35	10-15
	18-60	Bedrock			---	---	---	---	---	---	---	---
116:												
Cambria	0-2	Loam	CL	A-6	0	0	100	95-100	80-90	60-80	30-35	10-15
	2-10	Clay loam, loam	CL	A-6	0	0	100	95-100	80-90	60-80	35-40	15-20
	10-60	Loam, clay loam	CL	A-6	0	0	95-100	90-100	75-90	60-80	30-35	10-15
Kishona	0-2	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	85-100	70-90	60-80	25-35	5-15
	2-60	Loam, clay loam	CL	A-6	0	0	95-100	85-100	70-90	65-85	30-40	10-20
Zigweid	0-2	Loam	CL	A-6	0	0	100	100	85-95	65-85	30-35	10-15
	2-13	Clay loam, loam	CL	A-6	0	0	100	90-100	80-90	60-80	30-40	10-20
	13-60	Clay loam, loam	CL	A-6	0	0	95-100	90-100	80-90	60-80	30-40	10-20

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
117:												
Cambria	0-3	Loam	CL	A-6	0	0	100	95-100	80-90	60-80	30-35	10-15
	3-12	Clay loam, loam	CL	A-6	0	0	100	95-100	80-90	60-80	35-40	15-20
	12-60	Clay loam, loam	CL	A-6	0	0	95-100	90-100	75-90	60-80	30-35	10-15
Kishona	0-2	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	85-100	70-90	60-80	25-35	5-15
	2-60	Loam, clay loam	CL	A-6	0	0	95-100	85-100	70-90	65-85	30-40	10-20
Zigweid	0-2	Loam	CL	A-6	0	0	100	100	85-95	65-85	30-35	10-15
	2-13	Clay loam, loam	CL	A-6	0	0	100	90-100	80-90	60-80	30-40	10-20
	13-60	Clay loam, loam	CL	A-6	0	0	95-100	90-100	80-90	60-80	30-40	10-20
118:												
Clarkelen	0-3	Very fine sandy loam	SC-SM	A-2, A-4	0	0	100	95-100	85-95	30-45	15-25	5-10
	3-60	Stratified loamy fine sand to loam	SC-SM	A-2, A-4	0	0	95-100	95-100	75-90	30-50	15-25	5-10
Draknab	0-4	Sandy loam	SC-SM	A-2, A-4	0	0	100	100	65-80	25-40	15-25	5-10
	4-28	Stratified loamy sand to fine sandy loam	SM	A-2	0	0	95-100	90-100	55-70	15-30	0-20	NP-5
	28-60	Stratified sand to sandy loam	SM, SP-SM	A-1, A-2	0	0	95-100	90-100	45-60	10-25	0-15	NP-5
119:												
Clarkelen	0-3	Fine sandy loam	SC-SM	A-2, A-4	0	0	100	95-100	85-95	30-45	15-25	5-10
	3-60	Stratified loamy fine sand to loam	SC-SM	A-2, A-4	0	0	95-100	95-100	75-90	30-50	15-25	5-10
Embry	0-3	Fine sandy loam	SM	A-2, A-4	0	0	100	95-100	70-80	25-40	0-25	NP-5
	3-60	Sandy loam, fine sandy loam	SC-SM	A-2, A-4	0	0	100	95-100	65-75	25-40	15-25	5-10
120:												
Clarkelen	0-3	Very fine sandy loam	SC-SM	A-2, A-4	0	0	100	95-100	85-95	30-45	15-25	5-10
	3-60	Stratified loamy fine sand to loam	SC-SM	A-2, A-4	0	0	95-100	95-100	75-90	30-50	15-25	5-10

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
120:(cont.)												
Keeline	0-4	Sandy loam	SM, SC-SM	A-2, A-4	0	0	100	100	75-90	30-45	0-25	NP-10
	4-60	Sandy loam, fine sandy loam	SM, SC-SM	A-2, A-4	0	0	100	100	75-90	25-45	15-25	NP-10
121:												
Cushman	0-2	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	75-90	50-70	25-35	5-15
	2-19	Clay loam, loam	CL	A-6	0	0	95-100	95-100	80-95	65-85	30-40	10-20
	19-31	Loam, clay loam	CL	A-6	0	0	95-100	95-100	80-95	65-85	30-40	10-20
	31-60	Bedrock			---	---	---	---	---	---	---	---
Cambria	0-2	Loam	CL	A-6	0	0	100	95-100	80-90	60-80	30-35	10-15
	2-12	Clay loam, loam	CL	A-6	0	0	100	95-100	80-90	60-80	35-40	15-20
	12-60	Loam, clay loam	CL	A-6	0	0	95-100	90-100	75-90	60-80	30-35	10-15
122:												
Cushman	0-2	Loam	CL	A-6, A-4	0	0	100	100	85-100	60-75	25-35	5-15
	2-23	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-40	10-25
	23-30	Loam, clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-25
	30-60	Bedrock			---	---	---	---	---	---	---	---
Cambria	0-2	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	2-12	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-40	15-25
	12-60	Loam, clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-35	10-20
123:												
Cushman	0-3	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	75-90	50-70	25-35	5-15
	3-13	Clay loam, loam	CL	A-6	0	0	95-100	95-100	80-95	65-85	30-40	10-20
	13-25	Loam, clay loam	CL	A-6	0	0	95-100	95-100	80-95	65-85	30-40	10-20
	25-60	Bedrock			---	---	---	---	---	---	---	---
Renohill	0-2	Loam	CL	A-6	0	0	100	95-100	85-100	60-80	30-35	10-15
	2-14	Clay, clay loam	CH, CL	A-7	0	0	100	90-100	80-95	65-85	45-65	20-40
	14-26	Clay loam	CL	A-6, A-7	0	0	100	85-100	80-95	60-85	40-55	20-35
	26-60	Bedrock			---	---	---	---	---	---	---	---
124:												
Cushman	0-3	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	75-90	50-70	25-35	5-15
	3-13	Clay loam, loam	CL	A-6	0	0	95-100	95-100	80-95	65-85	30-40	10-20
	13-25	Loam, clay loam	CL	A-6	0	0	95-100	95-100	80-95	65-85	30-40	10-20
	25-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
124:(cont.)												
Shingle	0-1	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	70-90	60-80	25-35	5-15
	1-12	Loam, clay loam	CL	A-6	0	0	95-100	85-100	70-90	55-80	30-40	10-20
	12-60	Bedrock			---	---	---	---	---	---	---	---
125:												
Cushman	0-3	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	75-90	50-70	25-35	5-15
	3-13	Clay loam, loam	CL	A-6	0	0	95-100	95-100	80-95	65-85	30-40	10-20
	13-25	Loam, clay loam	CL	A-6	0	0	95-100	95-100	80-95	65-85	30-40	10-20
	25-60	Bedrock			---	---	---	---	---	---	---	---
Terro	0-3	Sandy loam	SC-SM	A-2, A-4	0	0	100	95-100	65-75	30-50	20-25	5-10
	3-16	Sandy loam	SC-SM	A-2, A-4	0	0	95-100	90-100	55-75	25-45	20-25	5-10
	16-23	Sandy loam, fine sandy loam	SC-SM	A-2, A-4	0	0	95-100	90-100	55-75	25-45	15-25	5-10
	23-60	Bedrock			---	---	---	---	---	---	---	---
126:												
Cushman	0-2	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	75-90	50-70	25-35	5-15
	2-23	Clay loam, loam	CL	A-6	0	0	95-100	95-100	80-95	65-85	30-40	10-20
	23-30	Loam, clay loam	CL	A-6	0	0	95-100	95-100	80-95	65-85	30-40	10-20
	30-60	Bedrock			---	---	---	---	---	---	---	---
Theedle	0-2	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	70-90	55-75	25-35	5-15
	2-28	Clay loam, loam	CL	A-6	0	0	90-100	85-100	75-90	60-80	30-40	10-20
	28-60	Bedrock			---	---	---	---	---	---	---	---
127:												
Cushman	0-3	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	75-90	50-70	25-35	5-15
	3-13	Clay loam, loam	CL	A-6	0	0	95-100	95-100	80-95	65-85	25-35	10-20
	13-25	Loam, clay loam	CL	A-6	0	0	95-100	95-100	80-95	65-85	25-35	10-20
	25-60	Bedrock			---	---	---	---	---	---	---	---
Theedle	0-2	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	70-90	55-75	25-35	5-15
	2-28	Clay loam, loam	CL	A-6	0	0	90-100	85-100	75-90	60-80	30-40	10-20
	28-60	Bedrock			---	---	---	---	---	---	---	---
128:												
Cushman	0-5	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	75-90	50-70	25-35	5-15
	5-25	Loam, clay loam	CL	A-6	0	0	95-100	95-100	80-95	65-85	30-40	10-20
	25-35	Clay loam, loam	CL	A-6	0	0	95-100	95-100	80-95	65-85	30-40	10-20
	35-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
128: (cont.)												
Worf	0-2	Loam	CL, CL-ML	A-4, A-6	0	0	100	90-100	80-90	50-70	25-35	5-15
	2-10	Loam, clay loam	CL	A-6	0	0	95-100	80-100	75-95	60-80	35-40	15-20
	10-18	Loam, clay loam	CL	A-6	0	0	95-100	80-100	75-95	60-80	25-35	10-15
	18-60	Bedrock			---	---	---	---	---	---	---	---
129:												
Decolney	0-3	Fine sandy loam	SC-SM	A-4	0	0	100	100	65-80	35-50	20-25	5-10
	3-22	Sandy clay loam	CL, SC	A-6	0	0	100	100	80-90	45-60	30-40	10-20
	22-43	Sandy loam, fine sandy loam	SC-SM	A-4	0	0	100	95-100	70-85	35-50	20-25	5-10
	43-60	Sandy loam, fine sandy loam	SC-SM	A-4	0	0	100	95-100	70-85	40-55	20-25	5-10
Hiland	0-4	Fine sandy loam	SC-SM, SM	A-2, A-4	0	0	100	100	70-90	30-50	20-30	5-10
	4-15	Sandy clay loam	CL, SC	A-6	0	0	100	100	75-95	40-60	30-40	10-20
	15-60	Sandy loam, fine sandy loam	SC-SM, SM	A-2, A-4	0	0	100	95-100	65-85	25-45	20-30	5-10
130:												
Decolney	0-3	Fine sandy loam	SC-SM	A-4	0	0	100	100	65-80	35-50	20-25	5-10
	3-22	Sandy clay loam	CL, SC	A-6	0	0	100	100	80-90	45-60	30-40	10-20
	22-43	Sandy loam, fine sandy loam	SC-SM	A-4	0	0	100	95-100	70-85	35-50	20-25	5-10
	43-60	Sandy loam, fine sandy loam	SC-SM	A-4	0	0	100	95-100	70-85	40-55	20-25	5-10
Hiland	0-3	Fine sandy loam	SC-SM, SM	A-2, A-4	0	0	100	100	70-90	30-50	20-30	5-10
	3-32	Sandy clay loam	CL, SC	A-6	0	0	100	100	75-95	40-60	30-40	10-20
	32-60	Sandy loam, fine sandy loam	SC-SM, SM	A-2, A-4	0	0	100	95-100	65-85	25-45	20-30	5-10
131:												
Deekay	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-24	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-45	10-25
	24-60	Loam, clay loam	CL	A-6	0	0	100	95-100	80-100	60-75	30-45	10-25

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
132:												
Deekay	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-24	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-45	10-25
	24-60	Loam, clay loam	CL	A-6	0	0	100	95-100	80-100	60-75	30-45	10-25
Moorhead	0-5	Loam	CL	A-6	0	0	100	100	85-100	60-80	30-35	10-15
	5-35	Clay, clay loam	CH, CL	A-7	0	0	100	100	85-100	65-85	45-65	20-40
	35-60	Clay loam, clay	CL	A-6	0	0	100	90-100	85-95	60-80	40-60	20-35
133:												
Deekay	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-24	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-45	10-25
	24-60	Loam, clay loam	CL	A-6	0	0	100	95-100	80-100	60-75	30-45	10-25
Moorhead	0-5	Loam	CL	A-6	0	0	100	100	85-100	60-80	30-35	10-15
	5-35	Clay, clay loam	CH, CL	A-7	0	0	100	100	85-100	65-85	45-65	20-40
	35-60	Clay loam, clay	CL	A-6	0	0	100	90-100	85-95	60-80	40-60	20-35
134:												
Deekay	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-24	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-45	10-25
	24-60	Loam, clay loam	CL	A-6	0	0	100	95-100	80-100	60-75	30-45	10-25
Oldwolf	0-3	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	3-21	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-45	10-25
	21-32	Loam, clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-45	10-25
	32-60	Bedrock			---	---	---	---	---	---	---	---
135:												
Deekay	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-24	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-45	10-25
	24-60	Loam, clay loam	CL	A-6	0	0	100	95-100	80-100	60-75	30-45	10-25
Oldwolf	0-3	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	3-21	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-45	10-25
	21-32	Loam, clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-45	10-25
	32-60	Bedrock			---	---	---	---	---	---	---	---
136:												
Deekay	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-24	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-45	10-25
	24-60	Loam, clay loam	CL	A-6	0	0	100	95-100	80-100	60-75	30-45	10-25

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
136:(cont.)												
Ziggy	0-5	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	5-14	Loam, clay loam	CL	A-6	0	0	100	100	90-100	65-80	30-45	10-25
	14-60	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-45	10-25
137:												
Echeta	0-3	Clay loam	CL	A-6, A-7	0	0	100	100	90-100	70-85	35-55	20-35
	3-15	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	15-60	Clay, clay loam	CH, CL	A-7	0	0	100	95-100	85-100	75-90	35-65	20-40
138:												
Echeta	0-3	Clay loam	CL	A-6, A-7	0	0	100	100	90-100	70-85	35-55	20-35
	3-15	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	15-60	Clay, clay loam	CH, CL	A-7	0	0	100	95-100	85-100	75-90	35-65	20-40
Cromack	0-6	Clay loam	CL	A-6, A-7	0	0	100	100	90-100	70-85	35-55	20-35
	6-14	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	14-29	Clay, clay loam	CH, CL	A-7	0	0	100	95-100	85-100	75-90	35-65	20-40
	29-60	Bedrock			---	---	---	---	---	---	---	---
139:												
Embry	0-4	Fine sandy loam	SM	A-2, A-4	0	0	100	95-100	70-80	25-40	0-25	NP-5
	4-60	Sandy loam, fine sandy loam	SC-SM	A-2, A-4	0	0	100	95-100	65-75	25-40	15-25	5-10
Orpha	0-4	Fine sand	SM	A-2	0	0	100	95-100	70-80	15-25	0-15	NP-5
	4-60	Fine sand	SM, SP-SM	A-2	0	0	100	95-100	60-80	10-30	0-15	NP-5
140:												
Embry	0-6	Sandy loam	SM	A-2, A-4	0	0	100	95-100	60-70	25-40	0-25	NP-5
	6-60	Sandy loam, fine sandy loam	SC-SM	A-2, A-4	0	0	100	95-100	65-75	25-40	15-25	5-10
Taluce	0-4	Sandy loam	SC-SM	A-2, A-4	0	0	95-100	95-100	70-80	30-45	20-25	5-10
	4-16	Sandy loam, fine sandy loam	SC-SM	A-2, A-4	0	0	95-100	85-100	70-80	30-45	15-25	5-10
	16-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
141:												
Emigha	0-1	Loam	CL	A-6	0	0	100	100	90-100	75-90	30-35	10-15
	1-19	Silty clay loam, clay loam	CL	A-6	0	0	100	100	95-100	80-95	35-40	15-20
	19-60	Stratified loam to silty clay loam	CL	A-6	0	0	100	95-100	95-100	80-95	30-40	10-20
142:												
Emigha, sodic	0-3	Silty clay loam	CL	A-6	0	0	100	100	95-100	85-95	35-40	15-20
	3-14	Silty clay loam, clay loam	CL	A-6	0	0	100	100	90-100	85-95	35-40	15-20
	14-60	Stratified silt loam to silty clay	CL	A-6	0	0	100	100	85-95	70-90	30-40	10-20
Arvada, thick surface	0-3	Loam	CL, CL-ML	A-4, A-6	0	0	100	100	85-100	55-70	25-35	5-15
	3-12	Silty clay loam, clay loam	CL, CH	A-7	0	0	100	95-100	85-95	70-90	45-55	20-35
	12-30	Silty clay, clay loam	CH, CL	A-7	0	0	95-100	95-100	85-95	70-90	45-65	20-40
	30-46	Silty clay loam, clay loam, clay loam	CH, CL	A-7	0	0	95-100	90-100	75-95	65-90	45-65	20-40
	46-60	Silty clay loam, clay loam, clay loam	CL, CH	A-7	0	0	95-100	90-100	75-95	65-90	45-60	20-40
143:												
Felix, ponded	0-5	Clay	CH	A-7	0	0	100	100	100	90-100	70-90	45-60
	5-30	Clay	CH	A-7	0	0	100	100	100	90-100	75-90	50-65
	30-50	Clay	CH	A-7	0	0	100	100	100	90-100	75-90	50-60
	50-60	Clay	CH	A-7	0	0	100	100	100	90-100	65-85	40-55
144:												
Forkwood	0-2	Loam	CL	A-4, A-6	0	0	100	100	85-100	60-75	25-35	5-15
	2-23	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-40	10-25
	23-60	Loam, clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-25

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
145:												
Forkwood--------	0-3	Loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	80-90	60-80	25-35	5-15
	3-14	Clay loam, loam	CL	A-6	0	0	100	95-100	85-95	60-80	30-40	10-20
	14-60	Loam, clay loam	CL	A-6	0	0	100	95-100	85-95	60-80	30-40	10-20
Cambria---------	0-2	Loam	CL	A-6	0	0	100	95-100	80-90	60-80	30-35	10-15
	2-12	Clay loam, loam	CL	A-6	0	0	100	95-100	80-90	60-80	35-40	15-20
	12-60	Loam, clay loam	CL	A-6	0	0	95-100	90-100	75-90	60-80	30-35	10-15
146:												
Forkwood--------	0-2	Loam	CL, CL-ML	A-4, A-6	0	0	100	100	85-100	60-75	25-35	5-15
	2-23	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-40	10-25
	23-60	Loam, clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-25
Cushman---------	0-2	Loam	CL	A-4, A-6	0	0	100	100	85-100	60-75	25-35	5-15
	2-23	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-40	10-25
	23-30	Loam, clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-25
	30-60	Bedrock			---	---	---	---	---	---	---	---
147:												
Forkwood--------	0-2	Loam	CL	A-6, A-6	0	0	100	100	85-100	60-75	25-35	5-15
	2-23	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-40	10-25
	23-60	Loam, clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-25
Cushman---------	0-2	Loam	CL	A-4, A-6	0	0	100	100	85-100	60-75	25-35	5-15
	2-23	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-40	10-25
	23-30	Loam, clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-25
	30-60	Bedrock			---	---	---	---	---	---	---	---
148:												
Forkwood--------	0-2	Loam	CL	A-4, A-6	0	0	100	100	85-100	60-75	25-35	5-15
	2-23	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-40	10-25
	23-60	Loam, clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-25
Ulm---------	0-2	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	2-22	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	25-40
	22-60	Clay loam, loam	CL	A-6	0	0	100	95-100	85-100	75-90	35-55	20-40
149:												
Forkwood--------	0-2	Loam	CL	A-4, A-6	0	0	100	100	85-100	60-75	25-35	5-15
	2-23	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-40	10-25
	23-60	Loam, clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-25

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
149:(cont.)												
Ulm	0-2	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	2-22	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	25-40
	22-60	Clay loam, loam	CL	A-6	0	0	100	95-100	85-100	75-90	35-55	15-35
150:												
Gateson	0-2	Slightly decomposed plant material			---	---	---	---	---	---	---	---
	2-6	Loamy fine sand	SM	A-2	0	0	95-100	90-100	60-85	25-35	0-15	NP-5
	6-11	Stratified loamy fine sand to sandy clay loam	SC-SM	A-2, A-4	0	0	95-100	90-100	60-85	25-45	20-35	5-15
	11-30	Sandy clay loam	CL, SC	A-6	0	0	90-100	85-100	60-80	45-60	30-40	10-20
	30-60	Bedrock			---	---	---	---	---	---	---	---
Taluce	0-3	Sandy loam	SC-SM	A-2, A-4	0	0	95-100	95-100	70-80	30-45	20-25	5-10
	3-16	Sandy loam, fine sandy loam	SC-SM	A-2, A-4	0	0	95-100	85-100	70-80	30-45	15-25	5-10
	16-60	Bedrock			---	---	---	---	---	---	---	---
Turnercrest	0-4	Loamy fine sand	SM, SP-SM	A-2	0	0	95-100	85-100	75-90	10-25	0-15	NP-5
	4-32	Sandy loam, fine sandy loam	SM	A-2, A-4	0	0	95-100	85-100	65-80	30-50	20-25	NP-5
	32-60	Bedrock			---	---	---	---	---	---	---	---
151:												
Haverdad	0-4	Loam	CL	A-4, A-6	0	0	100	100	85-100	60-75	25-35	5-15
	4-60	Stratified fine sandy loam to loam	CL	A-6	0	0	100	95-100	90-100	60-80	25-40	10-25
152:												
Haverdad	0-3	Loam	CL, CL-ML	A-4, A-6	0	0	100	100	80-90	60-75	25-35	5-15
	3-60	Stratified fine sandy loam to clay loam	CL	A-6	0	0	100	100	75-95	55-70	30-40	10-20

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
152:(cont.)												
Clarkelen-------	0-4	Fine sandy loam	SC-SM	A-2, A-4	0	0	100	95-100	85-95	30-45	15-25	5-10
	4-60	Stratified loamy fine sand to loam	SC-SM	A-2, A-4	0	0	95-100	95-100	75-90	30-50	15-25	5-10
153:												
Haverdad--------	0-7	Clay loam	CL	A-6	0	0	100	100	90-95	65-80	35-40	15-20
	7-60	Stratified very fine sandy loam to clay loam	CL	A-6	0	0	100	100	75-95	60-75	30-40	10-20
Kishona---------	0-3	Clay loam	CL	A-6	0	0	95-100	90-100	75-95	65-80	35-40	15-20
	3-60	Clay loam, loam	CL	A-6	0	0	95-100	85-100	70-90	65-85	30-40	10-20
154:												
Heldt-----------	0-3	Clay loam	CL	A-7	0	0	95-100	95-100	90-100	70-85	35-55	20-35
	3-25	Clay, silty clay	CH	A-7	0	0	95-100	95-100	85-100	80-95	55-65	35-40
	25-60	Silty clay, clay, clay loam	CH, CL	A-7	0	0	95-100	95-100	90-100	80-95	45-60	25-40
155:												
Heldt, saline---	0-2	Clay loam	CL	A-6	0	0	100	100	90-100	75-90	35-55	20-35
	2-22	Clay	CH, CL	A-7	0	0	100	100	90-100	85-95	45-65	25-40
	22-60	Clay, clay loam	CH, CL	A-7	0	0	100	95-100	85-100	80-95	45-65	25-40
Bidman, saline--	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-13	Clay	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	13-60	Clay loam, clay	CL	A-6, A-7	0	0	100	95-100	85-100	75-90	35-60	20-35
156:												
Hiland----------	0-3	Fine sandy loam	SC-SM	A-2, A-4	0	0	100	100	70-90	30-50	20-30	5-10
	3-19	Sandy clay loam	CL, SC	A-6	0	0	100	100	75-95	40-60	30-40	10-20
	19-60	Sandy loam, fine sandy loam	SC-SM	A-2, A-4	0	0	100	95-100	65-85	25-45	20-30	5-10

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
157:												
Hiland----------	0-4	Fine sandy loam	SC-SM	A-2, A-4	0	0	100	100	70-90	30-50	20-30	5-10
	4-24	Sandy clay loam	CL, SC	A-6	0	0	100	100	75-95	40-60	30-40	10-20
	24-60	Sandy loam, fine sandy loam	SC-SM	A-2, A-4	0	0	100	95-100	65-85	25-45	20-30	5-10
Bowbac----------	0-3	Fine sandy loam	SC-SM	A-4	0	0	95-100	90-100	65-75	35-50	20-25	5-10
	3-31	Sandy clay loam	CL, SC	A-6	0	0	95-100	90-100	75-85	45-60	30-45	15-25
	31-39	Sandy loam, fine sandy loam	SC-SM	A-2, A-4	0	0	95-100	90-100	70-80	30-45	15-25	5-10
	39-60	Bedrock			0	0	---	---	---	---	---	---
158:												
Hiland----------	0-4	Fine sandy loam	SC-SM	A-2, A-4	0	0	100	100	70-90	30-50	20-30	5-10
	4-24	Sandy clay loam	CL, SC	A-6	0	0	100	100	75-95	40-60	30-40	10-20
	24-60	Sandy loam, fine sandy loam	SC-SM	A-2, A-4	0	0	100	95-100	65-85	25-45	20-30	5-10
Bowbac----------	0-3	Fine sandy loam	SC-SM	A-4	0	0	95-100	90-100	65-75	35-50	20-25	5-10
	3-31	Sandy clay loam	CL, SC	A-6	0	0	95-100	90-100	75-85	45-60	30-45	15-25
	31-39	Sandy loam, fine sandy loam	SC-SM	A-2, A-4	0	0	95-100	90-100	70-80	30-45	15-25	5-10
	39-60	Bedrock			0	0	---	---	---	---	---	---
159:												
Hiland----------	0-3	Fine sandy loam	SC-SM	A-2, A-4	0	0	100	100	70-90	30-50	20-30	5-10
	3-23	Sandy clay loam	CL, SC	A-6	0	0	100	100	75-95	40-60	30-40	10-20
	23-60	Fine sandy loam, sandy loam	SC-SM	A-2, A-4	0	0	100	95-100	65-85	25-45	20-30	5-10
Vonalee----------	0-5	Fine sandy loam	SC-SM	A-2, A-4	0	0	100	100	70-80	30-45	20-25	5-10
	5-16	Sandy loam, fine sandy loam	SC-SM	A-2, A-4	0	0	100	100	70-80	30-45	20-25	5-10
	16-60	Sandy loam, fine sandy loam	SC-SM	A-2, A-4	0	0	100	95-100	70-80	25-45	15-25	5-10

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
160:												
Hiland----------	0-3	Fine sandy loam	SC-SM	A-2, A-4	0	0	100	100	70-90	30-50	20-30	5-10
	3-23	Sandy clay loam	CL, SC	A-6	0	0	100	100	75-95	40-60	30-40	10-20
	23-60	Fine sandy loam, sandy loam	SC-SM	A-2, A-4	0	0	100	95-100	65-85	25-45	20-30	5-10
Vonalee---------	0-5	Fine sandy loam	SC-SM	A-2, A-4	0	0	100	100	70-80	30-45	20-25	5-10
	5-24	Sandy loam, fine sandy loam	SC-SM	A-2, A-4	0	0	100	100	70-80	30-45	20-25	5-10
	24-60	Sandy loam, fine sandy loam	SC-SM	A-2, A-4	0	0	100	95-100	70-80	25-45	15-25	5-10
161:												
Hilight---------	0-2	Clay loam	CL	A-7	0	0	95-100	95-100	85-100	65-85	40-55	20-35
	2-14	Clay, silty clay	CH	A-7	0	0	95-100	90-100	85-100	70-90	55-70	35-45
	14-60	Bedrock			---	---	---	---	---	---	---	---
Taluce, cool----	0-4	Sandy loam	SC-SM	A-2, A-4	0	0	95-100	95-100	70-80	30-45	20-25	5-10
	4-18	Sandy loam, fine sandy loam	SC-SM	A-2, A-4	0	0	95-100	85-100	70-80	30-45	15-25	5-10
	18-60	Bedrock			---	---	---	---	---	---	---	---
Wags----------	0-4	Clay	CH, CL	A-7	0	0	90-100	75-95	70-90	60-85	45-55	20-30
	4-34	Clay, silty clay	CH	A-7	0	0	100	85-100	80-100	75-95	55-75	35-50
	34-60	Bedrock			---	---	---	---	---	---	---	---
162:												
Lismas----------	0-3	Clay loam	CL	A-7	0	0	100	100	90-100	70-85	35-55	20-35
	3-16	Clay	CH	A-7	0	0	100	90-100	85-100	75-90	55-75	35-50
	16-60	Bedrock			---	---	---	---	---	---	---	---
Mittenbutte, cool----------	0-4	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	4-18	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	90-100	75-90	35-50	15-25	5-10
	18-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
162:(cont.)												
Sabatka	0-3	Clay loam	CL	A-6, A-7	0	0	100	100	90-100	70-85	35-55	20-35
	3-19	Clay, clay loam	CH	A-7	0	0	100	100	90-100	80-95	45-65	25-40
	19-30	Clay, clay loam	CH	A-7	0	0	100	95-100	85-100	75-90	35-60	20-40
	30-60	Bedrock			---	---	---	---	---	---	---	---
163:												
Hilight	0-2	Clay	CH	A-7	0	0	95-100	90-100	85-100	70-90	55-70	35-45
	2-12	Clay, silty clay	CH	A-7	0	0	95-100	90-100	85-100	70-90	55-70	35-45
	12-60	Bedrock			---	---	---	---	---	---	---	---
Wags	0-1	Channery clay loam	CL, SC, GC	A-6, A-7	0	0	70-95	50-75	45-70	40-65	40-55	20-35
	1-23	Silty clay, clay	CH	A-7	0	0	100	85-100	80-100	75-95	55-75	35-50
	23-60	Bedrock			---	---	---	---	---	---	---	---
Badland	0-60	Bedrock			---	---	---	---	---	---	---	---
164:												
Lismas	0-3	Clay loam	CL	A-7	0	0	100	100	90-100	70-85	35-55	20-35
	3-16	Clay	CH	A-7	0	0	100	90-100	85-100	75-90	55-75	35-50
	16-60	Bedrock			---	---	---	---	---	---	---	---
Sabatka	0-3	Clay loam	CL	A-6, A-7	0	0	100	100	90-100	70-85	35-55	20-35
	3-19	Clay, clay loam	CH	A-7	0	0	100	100	90-100	80-95	45-65	25-40
	19-30	Clay, clay loam	CH	A-7	0	0	100	95-100	85-100	75-90	35-60	20-40
	30-60	Bedrock			---	---	---	---	---	---	---	---
Badland	0-60	Bedrock			---	---	---	---	---	---	---	---
165:												
Jayem	0-17	Fine sandy loam	SC-SM	A-2, A-4	0	0	100	100	55-70	20-40	20-25	5-10
	17-31	Fine sandy loam, sandy loam	SC-SM	A-2, A-4	0	0	100	100	65-75	30-45	20-25	5-10
	31-60	Fine sandy loam, sandy loam	SC-SM	A-2, A-4	0	0	100	100	60-75	25-40	0-25	5-10

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
166:												
Jaywest	0-7	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	7-36	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	36-60	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	35-55	15-35
167:												
Jaywest	0-7	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	7-36	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	36-60	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	35-55	15-35
Moorhead	0-5	Loam	CL	A-6	0	0	100	100	85-100	60-80	30-35	10-15
	5-35	Clay, clay loam	CH, CL	A-7	0	0	100	100	85-100	65-85	45-65	20-40
	35-60	Clay loam, clay	CL	A-6	0	0	100	90-100	85-95	60-80	40-60	20-35
168:												
Jaywest	0-7	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	7-36	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	36-60	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	35-55	15-35
Spottedhorse	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-27	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	27-35	Clay loam, clay	CL	A-6, A-7	0	0	100	95-100	85-100	75-90	35-60	20-40
	35-60	Bedrock			---	---	---	---	---	---	---	---
169:												
Julesburg	0-10	Fine sandy loam	SC-SM	A-2, A-4	0	0	100	100	65-80	30-45	20-25	5-10
	10-32	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	100	70-85	35-50	20-25	5-10
	32-60	Fine sandy loam, sandy loam	SC-SM	A-2, A-4	0	0	100	100	65-80	30-45	15-25	5-10
170:												
Keeline	0-6	Loamy sand	SM	A-2	0	0	100	100	70-95	20-35	0-10	NP-5
	6-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
Tullock	0-4	Loamy sand	SM	A-4	0	0	100	100	70-95	35-50	0-0	NP
	4-28	Loamy sand, loamy fine sand, sand	SM	A-2	0	0	100	95-100	40-55	20-35	0-15	NP-5
	28-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
171:												
Keeline---------	0-4	Sandy loam	SM, SC-SM	A-2, A-4	0	0	100	100	75-90	30-45	0-25	NP-10
	4-60	Sandy loam, fine sandy loam	SM, SC-SM	A-2, A-4	0	0	100	100	75-90	25-45	15-25	NP-10
Tullock---------	0-4	Loamy sand	SP-SM, SM	A-2	0	0	100	100	55-65	10-25	0-0	NP
	4-22	Loamy sand, sand, loamy fine sand	SP-SM, SM	A-2	0	0	100	100	55-65	10-25	0-15	NP-5
	22-60	Bedrock			---	---	---	---	---	---	---	---
Niobrara, dry---	0-3	Loamy sand	SP-SM, SM	A-2	0	0	100	100	65-80	10-25	0-15	NP-5
	3-12	Sand, loamy sand	SP-SM, SM	A-2	0	0	100	85-100	60-75	10-20	0-15	NP-5
	12-60	Bedrock			---	---	---	---	---	---	---	---
172:												
Keyner----------	0-4	Fine sandy loam	SM	A-4	0	0	100	100	85-90	35-50	20-30	NP-5
	4-12	Clay loam, sandy clay loam	CL, SC	A-6	0	0	100	100	90-95	45-60	30-40	10-20
	12-20	Sandy clay loam, clay loam	CL, SC	A-6	0	0	100	95-100	85-95	45-60	30-40	10-20
	20-26	Sandy clay loam, clay loam	CL, SC	A-6	0	0	100	95-100	85-95	45-60	30-40	10-20
	26-60	Sandy clay loam, fine sandy loam, sandy loam	SC, SC-SM	A-4, A-6	0	0	100	95-100	70-85	35-50	20-30	5-15

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
173:												
Lawver----------	0-4	Loam	CL, CL-ML	A-4	0	0	100	90-100	85-95	60-80	25-30	5-10
	4-20	Clay loam, clay	CH, CL	A-7	0	0	90-100	75-90	70-85	55-70	45-65	20-40
	20-27	Channery clay loam, channery clay	CL, SC, CH	A-7	0	0-5	80-95	60-90	55-85	45-75	45-60	20-40
	27-38	Very channery clay loam, very channery loam	CL, SC, GC	A-2, A-6	0	0-15	45-80	35-70	30-60	25-55	35-40	15-20
	38-60	Extremely channery sandy loam	GM, GP-GM, GC-GM	A-1	0-15	15-30	35-50	25-40	20-30	5-20	0-25	NP-5
Teckla----------	0-10	Very fine sandy loam	SC-SM, SM, CL-ML, ML	A-4	0	0	90-100	90-100	75-95	45-65	20-30	NP-10
	10-23	Sandy clay loam, clay loam	CL, SC	A-6	0	0	90-100	90-100	70-95	40-75	30-40	10-20
	23-31	Channery loam, channery clay loam	CL, SC	A-6	0	0	65-85	50-75	40-70	30-55	30-40	10-20
	31-45	Very channery loam, very channery sandy loam	GC, GC-GM, SC, SC-SM	A-1, A-2	0	0-5	30-60	25-55	10-40	5-35	20-35	5-15
	45-60	Very channery sandy loam, extremely channery sandy loam	GM, GP-GM, GC-GM	A-1	0-5	0-15	25-55	10-50	5-30	5-20	0-25	NP-5
Wibaux----------	0-3	Very channery loam	GC-GM, GC	A-1, A-2	0	0-5	45-60	35-50	30-45	20-35	25-35	5-15
	3-13	Very channery loam, extremely channery loam	GC	A-1, A-2	0-5	0-25	30-55	20-45	15-35	10-30	25-35	5-15
	13-60	Fragmental material	GP	A-1	5-15	60-70	0-10	0-10	0-5	0-5	0-0	NP

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
174:												
Brislawn	0-6	Loam	CL	A-4, A-6	0	0	100	100	85-100	60-75	25-35	5-15
	6-21	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	21-31	Channery clay loam, channery clay	CH, SC, GC	A-6, A-7	0	0	70-85	65-80	55-70	45-60	35-60	20-35
	31-37	Very channery clay loam, very channery loam	GC	A-2	0-5	5-15	45-60	35-50	30-45	20-35	30-45	10-25
	37-60	Fragmental material	GP	A-1	5-15	60-70	0-10	0-10	0-5	0-5	---	---
Rockybutte	0-5	Loam	CL	A-4, A-6	0	0	100	100	85-100	60-75	25-35	5-15
	5-23	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-45	10-25
	23-38	Extremely channery loam, very channery loam	GC	A-2	0-5	5-15	40-55	20-40	15-30	10-25	30-40	10-20
	38-60	Fragmental material	GP	A-1	5-15	60-70	0-10	0-10	0-5	0-5	---	---
Ironbutte	0-4	Channery loam	GC-GM, GC, SC	A-4	0	0-5	65-80	60-75	40-60	35-50	25-35	5-15
	4-12	Very channery loam, extremely channery loam	GC-GM, GC	A-2, A-1	0-5	0-25	30-45	25-40	10-30	5-25	20-35	5-15
	12-60	Fragmental material	GP	A-1	5-15	60-70	0-10	0-10	0-5	0-5	0-0	NP
175:												
Lawver	0-4	Loam	CL, CL-ML	A-4	0	0	100	90-100	85-95	60-80	25-30	5-10
	4-20	Clay loam, clay	CH, CL	A-7	0	0	90-100	75-90	70-85	55-70	45-65	20-40
	20-27	Channery clay loam, channery clay	CL, SC, CH	A-7	0	0-5	80-95	60-90	55-85	45-75	45-60	20-40
	27-38	Very channery clay loam, very channery loam	CL, SC, GC	A-2, A-6	0	0-15	45-80	35-70	30-60	25-55	35-40	15-20
	38-60	Extremely channery sandy loam	GP, GP-GM GC-GM	A-1	0-15	15-30	35-50	25-40	20-30	5-20	0-25	NP-5

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
175:(cont.)												
Wibaux----------	0-3	Very channery loam	GC-GM, GC	A-1, A-2	0	0-5	45-60	35-50	30-45	20-35	25-35	5-15
	3-13	Very channery loam, extremely channery loam	GC	A-1, A-2	0-5	0-25	30-55	20-45	15-35	10-30	25-35	5-15
	13-60	Fragmental material	GP	A-1	5-15	60-70	0-10	0-10	0-5	0-5	0-0	NP
176:												
Leiter----------	0-3	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-45	15-25
	3-22	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	45-65	25-40
	22-33	Clay loam, clay	CL	A-6	0	0	100	95-100	85-100	75-90	35-60	20-40
	33-60	Bedrock			---	---	---	---	---	---	---	---
Cromack---------	0-6	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-55	20-35
	6-14	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	14-29	Clay, clay loam	CH, CL	A-7	0	0	100	95-100	85-100	75-90	35-65	20-40
	29-60	Bedrock			---	---	---	---	---	---	---	---
177:												
Maysdorf--------	0-3	Fine sandy loam	SC-SM	A-2, A-4	0	0	100	95-100	60-75	30-50	20-30	5-10
	3-33	Sandy clay loam	CL, SC	A-6	0	0	95-100	90-100	65-80	40-60	30-40	10-20
	33-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	95-100	90-100	60-75	35-50	20-30	5-10
178:												
Maysdorf--------	0-5	Sandy clay loam	CL, SC	A-6	0	0	100	95-100	65-80	40-60	30-35	10-15
	5-26	Sandy clay loam	CL, SC	A-6	0	0	95-100	90-100	65-80	40-60	30-40	10-20
	26-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	95-100	90-100	60-75	35-50	20-30	5-10
179:												
Maysdorf--------	0-5	Sandy loam	SC-SM	A-2, A-4	0	0	100	95-100	60-75	30-50	20-30	5-10
	5-20	Sandy clay loam	CL, SC	A-6	0	0	95-100	90-100	65-80	40-60	30-40	10-20
	20-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	95-100	90-100	60-75	35-50	20-30	5-10

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
179:(cont.)												
Pugsley---------	0-4	Sandy loam	SC-SM	A-2, A-4	0	0	90-100	90-100	60-75	25-40	20-25	5-10
	4-15	Sandy clay loam	CL, SC	A-6	0	0	90-100	90-100	80-90	45-60	30-40	10-20
	15-23	Fine sandy loam, sandy loam	SC-SM	A-2	0	0	90-100	90-100	65-75	20-35	15-25	5-10
	23-60	Bedrock			---	---	---	---	---	---	---	---
180:												
Maysdorf--------	0-5	Sandy loam	SC-SM	A-2, A-4	0	0	100	95-100	60-75	30-50	20-30	5-10
	5-20	Sandy clay loam	CL, SC	A-6	0	0	95-100	90-100	65-80	40-60	30-40	10-20
	20-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	95-100	90-100	60-75	35-50	20-30	5-10
Pugsley---------	0-4	Sandy loam	SC-SM	A-2, A-4	0	0	90-100	90-100	60-75	25-40	20-25	5-10
	4-15	Sandy clay loam	CL, SC	A-6	0	0	90-100	90-100	80-90	45-60	30-40	10-20
	15-23	Fine sandy loam, sandy loam	SC-SM	A-2	0	0	90-100	90-100	65-75	20-35	15-25	5-10
	23-60	Bedrock			---	---	---	---	---	---	---	---
181:												
Moorhead--------	0-4	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-45	15-25
	4-24	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	24-60	Clay loam, clay	CL	A-6	0	0	100	95-100	85-100	75-90	35-60	20-40
182:												
Moorhead--------	0-3	Loam	CL	A-6	0	0	100	100	60-75	60-75	30-35	10-15
	3-25	Clay loam, clay	CH, CL	A-7, A-6	0	0	100	100	90-100	80-95	45-60	25-40
	25-60	Clay loam, clay	CL	A-6	0	0	100	95-100	85-100	75-90	35-60	20-35
183:												
Moorhead--------	0-4	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-45	15-25
	4-24	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	24-60	Clay loam, clay	CL	A-6	0	0	100	95-100	85-100	75-90	35-60	20-40
Leiter----------	0-3	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-45	15-25
	3-22	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	45-65	25-40
	22-33	Clay loam, clay	CL	A-6	0	0	100	95-100	85-100	75-90	35-60	20-40
	33-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
184:												
Moorhead	0-4	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-45	15-25
	4-24	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	24-60	Clay loam, clay	CL	A-6	0	0	100	95-100	85-100	75-90	35-60	20-40
Leiter	0-3	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-45	15-25
	3-22	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	45-65	25-40
	22-33	Clay loam, clay	CL	A-6	0	0	100	95-100	85-100	75-90	35-45	15-40
	33-60	Bedrock			---	---	---	---	---	---	---	---
185:												
Moskee	0-9	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	9-32	Sandy clay loam	SC, CL	A-6	0	0	100	100	85-100	45-60	30-40	10-20
	32-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
186:												
Moskee	0-4	Fine sandy loam	SC-SM	A-2, A-4	0	0	100	100	75-85	30-45	20-25	5-10
	4-16	Sandy clay loam	CL, SC	A-6	0	0	100	100	75-85	40-60	30-40	10-20
	16-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	70-80	35-50	20-30	5-10
187:												
Nuncho	0-12	Loam	CL	A-6	0	0	100	100	85-100	60-75	30-35	10-15
	12-30	Clay, clay loam	CL, CH	A-7	0	0	100	100	90-100	80-95	40-60	20-40
	30-60	Clay loam	CL	A-6	0	0	100	95-100	85-100	75-90	35-60	20-35
188:												
Orpha	0-4	Loamy sand	SM	A-2	0	0	100	95-100	50-70	20-30	0-15	NP-5
	4-60	Loamy sand, fine sand	SP-SM, SM	A-2	0	0	100	95-100	60-80	10-30	0-15	NP-5
Tullock	0-8	Loamy sand	SP-SM, SM	A-2	0	0	100	100	55-65	10-25	0-0	NP
	8-30	Loamy sand, fine sand, sand	SP-SM, SM	A-2	0	0	100	100	65-75	10-25	0-15	NP-5
	30-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
189:												
Oshoto	0-7	Silt loam	CL	A-6	0	0	95-100	95-100	85-100	70-90	25-35	10-15
	7-32	Silty clay loam, clay loam	CL	A-6	0	0	95-100	95-100	90-100	85-95	35-45	15-25
	32-60	Silt loam, silty clay loam	CL	A-6	0	0	95-100	95-100	90-100	85-95	30-40	10-20
Moorhead	0-5	Loam	CL	A-6	0	0	100	100	85-100	60-80	30-35	10-15
	5-35	Clay, clay loam	CH, CL	A-7	0	0	100	100	85-100	65-85	45-65	20-40
	35-60	Clay loam, clay	CL	A-6	0	0	100	90-100	85-95	60-80	40-60	20-35
190:												
Parmleed	0-3	Loam	CL-ML, CL	A-4	0	0	100	90-100	80-95	50-70	20-30	5-10
	3-21	Clay, clay loam	CH, CL	A-7	0	0	100	90-100	85-95	65-85	45-65	20-40
	21-27	Clay loam, loam	CL	A-6, A-7	0	0	100	90-100	80-95	60-80	35-55	15-35
	27-60	Bedrock			---	---	---	---	---	---	---	---
Renohill	0-4	Clay loam	CL	A-6	0	0	100	95-100	85-100	65-85	35-40	15-20
	4-24	Clay, clay loam	CH, CL	A-7	0	0	100	90-100	85-100	65-85	45-65	20-40
	24-35	Clay loam	CL	A-6, A-7	0	0	100	85-100	80-95	60-85	40-55	20-35
	35-60	Bedrock			---	---	---	---	---	---	---	---
191:												
Pits	---	---	---	---	---	---	---	---	---	---	---	---
Dumps	---	---	---	---	---	---	---	---	---	---	---	---
192:												
Platmak	0-4	Loam	CL	A-4, A-6	0	0	100	100	85-100	60-75	25-35	5-15
	4-27	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	27-60	Clay loam	CL	A-6, A-7	0	0	100	95-100	85-100	75-90	35-60	20-35
193:												
Pugsley	0-3	Sandy loam	SC-SM	A-2, A-4	0	0	90-100	90-100	60-75	25-40	20-25	5-10
	3-13	Sandy clay loam	CL, SC	A-6	0	0	90-100	90-100	80-90	45-60	30-40	10-20
	13-25	Sandy loam, loamy sand, fine sandy loam	SC-SM	A-2	0	0	90-100	90-100	65-75	20-35	15-25	5-10
	25-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
193:(cont.)												
Decolney--------	0-3	Sandy loam	SC-SM	A-4	0	0	100	100	65-80	35-50	20-25	5-10
	3-22	Sandy clay loam	CL, SC	A-6	0	0	100	100	80-90	45-60	30-40	10-20
	22-43	Sandy loam, fine sandy loam	SC-SM	A-4	0	0	100	95-100	70-85	35-50	20-25	5-10
	43-60	Sandy loam, fine sandy loam	SC-SM	A-4	0	0	100	95-100	70-85	35-50	20-25	5-10
194:												
Pugsley---------	0-3	Sandy loam	SC-SM	A-2, A-4	0	0	90-100	90-100	60-75	25-40	20-25	5-10
	3-13	Sandy clay loam	CL, SC	A-6	0	0	90-100	90-100	80-90	45-60	30-40	10-20
	13-25	Sandy loam, loamy sand, fine sandy loam	SC-SM	A-2	0	0	90-100	90-100	65-75	20-35	15-25	5-10
	25-60	Bedrock			---	---	---	---	---	---	---	---
Decolney--------	0-3	Sandy loam	SC-SM	A-4	0	0	100	100	65-80	35-50	20-25	5-10
	3-22	Sandy clay loam	CL, SC	A-6	0	0	100	100	80-90	45-60	30-40	10-20
	22-43	Sandy loam, fine sandy loam	SC-SM	A-4	0	0	100	95-100	70-85	35-50	20-25	5-10
	43-60	Sandy loam, fine sandy loam	SC-SM	A-4	0	0	100	95-100	70-85	35-50	20-25	5-10
195:												
Rauzi-----------	0-3	Fine sandy loam	SC-SM	A-2, A-4	0	0	100	100	75-90	30-50	20-30	5-10
	3-30	Sandy clay loam	CL, SC	A-6	0	0	100	100	80-90	35-55	30-40	10-20
	30-60	Sandy loam, fine sandy loam	SC-SM	A-2, A-4	0	0	100	95-100	70-85	30-50	20-30	5-10
196:												
Rauzi-----------	0-6	Sandy clay loam	SC	A-6	0	0	100	100	80-90	35-50	30-35	10-15
	6-30	Sandy clay loam	CL, SC	A-6	0	0	100	100	80-90	35-55	30-40	10-20
	30-60	Sandy loam, fine sandy loam	SC-SM	A-2, A-4	0	0	100	95-100	70-85	30-50	20-30	5-10

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
197:												
Rauzi	0-3	Fine sandy loam	SC-SM	A-2, A-4	0	0	100	100	75-90	30-50	20-30	5-10
	3-30	Sandy clay loam	CL, SC	A-6	0	0	100	100	80-90	35-55	30-40	10-20
	30-60	Sandy loam, fine sandy loam	SC-SM	A-2, A-4	0	0	100	95-100	70-85	30-50	20-30	5-10
Elwop	0-4	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	4-24	Sandy clay loam	CL, SC	A-6	0	0	100	100	85-100	45-60	30-40	10-20
	24-35	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
	35-60	Bedrock			---	---	---	---	---	---	---	---
198:												
Recluse	0-5	Loam	CL	A-4, A-6	0	0	100	100	85-100	60-75	25-35	5-15
	5-23	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	35-45	15-25
	23-60	Loam, clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	25-35	10-20
199:												
Renohill	0-3	Clay loam	CL	A-6	0	0	100	95-100	85-100	65-85	35-40	15-20
	3-24	Clay, clay loam	CH, CL	A-7	0	0	100	90-100	85-100	65-85	45-65	20-40
	24-36	Clay loam	CL, CH	A-6, A-7	0	0	100	85-100	80-95	60-85	40-55	20-35
	36-60	Bedrock			---	---	---	---	---	---	---	---
Savageton	0-4	Clay loam	CL, CH	A-7	0	0	100	95-100	85-100	65-85	45-55	20-35
	4-22	Clay, clay loam	CH, CL	A-7	0	0	100	95-100	85-100	70-90	45-65	20-40
	22-36	Clay loam, clay	CH, CL	A-7	0	0	100	90-100	80-100	70-90	45-55	20-40
	36-60	Bedrock			---	---	---	---	---	---	---	---
200:												
Renohill	0-3	Clay loam	CL	A-6	0	0	100	95-100	85-100	65-85	35-40	15-20
	3-24	Clay, clay loam	CH, CL	A-7	0	0	100	90-100	85-100	65-85	45-65	20-40
	24-36	Clay loam	CL, CH	A-7, A-6	0	0	100	85-100	80-95	60-85	40-55	20-35
	36-60	Bedrock			---	---	---	---	---	---	---	---
Savageton	0-4	Clay loam	CL, CH	A-7	0	0	100	95-100	85-100	65-85	45-55	20-35
	4-22	Clay, clay loam	CH, CL	A-7	0	0	100	95-100	85-100	70-90	45-65	20-40
	22-36	Clay loam, clay	CH, CL	A-7	0	0	100	90-100	80-100	70-90	45-65	20-40
	36-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
201:												
Renohill--------	0-4	Clay loam	CL	A-6	0	0	100	95-100	85-100	65-85	35-40	15-20
	4-20	Clay, clay loam	CH, CL	A-7	0	0	100	90-100	85-100	65-85	45-65	20-40
	20-30	Clay loam	CL, CH	A-6, A-7	0	0	100	85-100	80-95	60-85	40-55	20-35
	30-60	Bedrock			---	---	---	---	---	---	---	---
Shingle---------	0-1	Loam	CL-ML, CL	A-4, A-6	0	0	95-100	90-100	70-90	60-80	25-35	5-15
	1-12	Loam, clay loam	CL	A-6	0	0	95-100	85-100	70-90	55-80	30-40	10-20
	12-60	Bedrock			---	---	---	---	---	---	---	---
Worf------------	0-1	Loam	CL-ML, CL	A-4, A-6	0	0	100	90-100	80-90	50-70	25-35	5-15
	1-10	Clay loam, loam	CL	A-6	0	0	95-100	80-100	75-95	60-80	35-40	15-20
	10-14	Clay loam, loam	CL	A-6	0	0	95-100	80-100	75-95	60-80	25-35	10-15
	14-60	Bedrock			---	---	---	---	---	---	---	---
202:												
Renohill--------	0-4	Clay loam	CL	A-6	0	0	100	95-100	85-100	65-85	35-40	15-20
	4-20	Clay, clay loam	CH, CL	A-7	0	0	100	90-100	85-100	65-85	45-65	20-40
	20-30	Clay loam	CL, CH	A-6, A-7	0	0	100	85-100	80-95	60-85	40-55	20-35
	30-60	Bedrock			---	---	---	---	---	---	---	---
Worfka----------	0-2	Clay loam	CL	A-6	0	0	100	95-100	85-95	60-80	35-40	15-20
	2-13	Clay, clay loam	CH, CL	A-7	0	0	100	95-100	85-95	65-85	45-65	20-40
	13-19	Clay loam	CL, CH	A-6, A-7	0	0	95-100	90-100	80-95	60-80	35-55	15-35
	19-60	Bedrock			---	---	---	---	---	---	---	---
203:												
Rockypoint------	0-3	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	3-60	Stratified fine sandy loam to loam	CL	A-6	0	0	100	95-100	80-95	60-75	25-40	10-20
Iwait-----------	0-2	Loam	CL-ML, CL	A-4, A-6	0	0	100	90-100	85-95	55-75	25-35	5-15
	2-60	Clay loam, loam	CL	A-6	0	0	100	90-100	85-95	60-80	30-40	10-20
204:												
Samday----------	0-2	Clay loam	CL	A-6, A-7	0	0	100	100	90-100	70-85	35-55	20-35
	2-16	Clay, clay loam	CH, CL	A-7	0	0	100	90-100	85-100	75-90	45-65	25-40
	16-60	Bedrock			---	---	---	---	---	---	---	---
Samday, cool----	0-1	Clay loam	CL	A-6, A-7	0	0	100	100	90-100	70-85	35-55	20-35
	1-10	Clay, clay loam	CH, CL	A-7	0	0	100	90-100	85-100	75-90	45-65	25-40
	10-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
204:(cont.)												
Shingle	0-3	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-45	15-25
	3-16	Clay loam, loam	CL	A-6	0	0	100	90-100	85-100	75-90	30-45	10-25
	16-60	Bedrock			---	---	---	---	---	---	---	---
205:												
Samday	0-2	Clay loam	CL	A-6, A-7	0	0	100	100	90-100	70-85	35-55	20-35
	2-16	Clay, clay loam	CH, CL	A-7	0	0	100	90-100	85-100	75-90	45-65	25-40
	16-60	Bedrock			---	---	---	---	---	---	---	---
Savageton	0-5	Clay loam	CL, CH	A-7	0	0	100	95-100	85-100	65-85	45-55	20-35
	5-15	Clay, clay loam	CH, CL	A-7	0	0	100	95-100	85-100	70-90	45-65	20-40
	15-28	Clay, clay loam	CH, CL	A-7	0	0	100	90-100	80-100	70-90	45-65	20-40
	28-60	Bedrock			---	---	---	---	---	---	---	---
206:												
Samday	0-2	Clay loam	CL	A-6, A-7	0	0	100	100	90-100	70-85	35-55	20-35
	2-16	Clay, clay loam	CH, CL	A-7	0	0	100	90-100	85-100	75-90	45-65	25-40
	16-60	Bedrock			---	---	---	---	---	---	---	---
Shingle	0-2	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	2-12	Loam, clay loam	CL	A-6	0	0	100	90-100	75-90	60-75	30-40	10-20
	12-60	Bedrock			---	---	---	---	---	---	---	---
Badland	0-60	Bedrock			---	---	---	---	---	---	---	---
207:												
Cromack	0-6	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-55	20-35
	6-14	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	14-29	Clay, clay loam	CH, CL	A-7	0	0	100	95-100	85-100	75-90	35-65	20-40
	29-60	Bedrock			---	---	---	---	---	---	---	---
Fairburn	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-15	Loam, clay loam	CL	A-6	0	0	100	90-100	75-90	60-75	30-40	10-20
	15-60	Bedrock			---	---	---	---	---	---	---	---
Ucross	0-5	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	5-31	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-20
	31-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
208:												
Savageton-------	0-4	Clay loam	CL, CH	A-7	0	0	100	95-100	85-100	65-85	45-55	20-35
	4-12	Clay, clay loam	CH, CL	A-7	0	0	100	95-100	85-100	70-90	45-65	20-40
	12-38	Clay, clay loam	CH, CL	A-7	0	0	100	90-100	80-100	70-90	45-65	20-40
	38-60	Bedrock			---	---	---	---	---	---	---	---
Silhouette------	0-2	Clay loam	CL	A-6, A-7	0	0	100	100	85-100	65-85	40-55	20-35
	2-28	Clay loam, clay	CL, CH	A-7	0	0	100	95-100	90-100	70-90	45-60	20-40
	28-60	Silty clay loam, clay loam, clay	CL, CH	A-7	0	0	100	95-100	90-100	80-95	45-60	20-40
209:												
Savageton-------	0-3	Clay loam	CL, CH	A-7	0	0	100	95-100	85-100	65-85	45-55	20-35
	3-19	Clay, clay loam	CH, CL	A-7	0	0	100	95-100	85-100	70-90	45-65	20-40
	19-36	Clay, clay loam	CH, CL	A-7	0	0	100	90-100	80-100	70-90	45-65	20-40
	36-60	Bedrock			---	---	---	---	---	---	---	---
Silhouette------	0-3	Clay loam	CL	A-6, A-7	0	0	100	100	85-100	65-85	40-55	20-35
	3-15	Clay loam, clay	CL, CH	A-7	0	0	100	95-100	90-100	70-90	45-60	20-40
	15-60	Clay loam, silty clay loam, clay	CL, CH	A-7	0	0	100	95-100	90-100	80-95	45-60	20-40
210:												
Shingle---------	0-2	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	2-12	Loam, clay loam	CL	A-6	0	0	100	90-100	75-90	60-75	30-40	10-20
	12-60	Bedrock			---	---	---	---	---	---	---	---
Taluce----------	0-2	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	2-18	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	90-100	70-85	35-50	15-25	5-10
	18-60	Bedrock			---	---	---	---	---	---	---	---
211:												
Shingle---------	0-1	Loam	CL-ML, CL	A-4, A-6	0	0	95-100	90-100	70-90	60-80	25-35	5-15
	1-12	Loam, clay loam	CL	A-6	0	0	95-100	85-100	70-90	55-80	30-40	10-20
	12-60	Bedrock			---	---	---	---	---	---	---	---
Worf------------	0-1	Loam	CL-ML, CL	A-4, A-6	0	0	100	90-100	80-90	50-70	25-35	5-15
	1-10	Clay loam, loam	CL	A-6	0	0	95-100	80-100	75-95	60-80	35-40	15-20
	10-14	Clay loam, loam	CL	A-6	0	0	95-100	80-100	75-95	60-80	25-35	10-15
	14-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
212:												
Teckla	0-10	Very fine sandy loam	SC-SM, CL-ML	A-4	0	0	90-100	90-100	75-95	45-65	20-30	5-10
	10-23	Sandy clay loam, clay loam	CL, SC	A-6	0	0	90-100	90-100	70-95	40-75	30-40	10-20
	23-31	Channery loam, channery clay loam	CL, SC	A-6	0	0	65-85	50-75	40-70	30-55	30-40	10-20
	31-45	Very channery loam, very channery sandy loam	GC, GC-GM, SC, SC-SM	A-1, A-2	0	0-5	30-60	25-55	10-40	5-35	20-35	5-15
	45-60	Very channery sandy loam, extremely channery sandy loam	GC-GM, GP-GM	A-1	0-5	0-15	25-55	10-50	5-30	5-20	0-25	NP-5
213:												
Terro	0-3	Sandy loam	SC-SM	A-2, A-4	0	0	100	95-100	65-75	30-50	20-25	5-10
	3-19	Sandy loam, fine sandy loam	SC-SM	A-2, A-4	0	0	95-100	90-100	55-75	25-45	20-25	5-10
	19-38	Sandy loam, fine sandy loam	SC-SM	A-2, A-4	0	0	95-100	90-100	55-70	20-45	15-25	5-10
	38-60	Bedrock			---	---	---	---	---	---	---	---
Taluce	0-2	Sandy loam	SC-SM	A-2, A-4	0	0	95-100	85-100	70-80	30-45	20-25	5-10
	2-14	Sandy loam, fine sandy loam	SC-SM	A-4	0	0	95-100	85-100	65-75	35-50	15-25	5-10
	14-60	Bedrock			---	---	---	---	---	---	---	---
214:												
Theedle	0-4	Loam	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	70-90	55-75	25-35	5-15
	4-36	Clay loam, loam	CL	A-6	0	0	90-100	85-100	75-90	60-80	30-40	10-20
	36-60	Bedrock			---	---	---	---	---	---	---	---
Kishona	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-60	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-25

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
215:												
Theedle	0-4	Loam	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	70-90	55-75	25-35	5-15
	4-36	Clay loam, loam	CL	A-6	0	0	90-100	85-100	75-90	60-80	30-40	10-20
	36-60	Bedrock			---	---	---	---	---	---	---	---
Kishona	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-60	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-25
216:												
Theedle	0-2	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	2-28	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-25
	28-60	Bedrock			---	---	---	---	---	---	---	---
Kishona	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-60	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-25
Shingle	0-2	Loam	CL	A-4, A-6	0	0	100	100	85-100	60-75	25-35	5-15
	2-12	Loam, clay loam	CL	A-6	0	0	100	90-100	75-90	60-75	30-40	10-20
	12-60	Bedrock			---	---	---	---	---	---	---	---
217:												
Theedle	0-2	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	2-28	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-25
	28-60	Bedrock			---	---	---	---	---	---	---	---
Shingle	0-2	Loam	CL	A-4, A-6	0	0	100	100	85-100	60-75	25-35	5-15
	2-12	Loam, clay loam	CL	A-6	0	0	100	90-100	75-90	60-75	30-40	10-20
	12-60	Bedrock			---	---	---	---	---	---	---	---
218:												
Theedle	0-3	Loam	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	70-90	55-75	25-35	5-15
	3-35	Loam, clay loam	CL	A-6	0	0	90-100	85-100	75-90	60-80	30-40	10-20
	35-60	Bedrock			---	---	---	---	---	---	---	---
Turnercrest	0-2	Fine sandy loam	SC-SM	A-2, A-4	0	0	100	100	70-80	30-45	15-25	5-10
	2-34	Fine sandy loam, sandy loam	SC-SM	A-2, A-4	0	0	95-100	90-100	70-85	30-50	20-25	5-10
	34-60	Bedrock			---	---	---	---	---	---	---	---
Kishona	0-4	Loam	CL-ML, CL	A-4, A-6	0	0	95-100	85-100	70-90	60-80	25-35	5-15
	4-60	Clay loam, loam	CL	A-6	0	0	95-100	85-100	70-90	65-85	30-40	10-20

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
219:												
Torriarents-----	0-4	Variable	CL	A-6	0	0	95-100	90-100	75-95	65-85	30-55	10-35
	4-60	Variable	CL	A-6	0	0	95-100	90-100	75-95	65-85	30-55	10-35
Torriorthents---	0-5	Variable	CL	A-6	0	0	95-100	90-100	75-95	65-85	30-55	10-35
	5-60	Variable.	CL	A-6	0	0	95-100	90-100	75-95	65-85	30-55	10-35
220:												
Pitchdraw-------	0-4	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	15-25	5-10
	4-31	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	20-25	5-10
	31-60	Bedrock			---	---	---	---	---	---	---	---
Ashollow--------	0-5	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	15-25	5-10
	5-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
Niobrara--------	0-3	Loamy sand	SM	A-4	0	0	100	100	70-95	35-50	0-15	NP-5
	3-12	Sand, loamy sand	SM	A-2	0	0	100	95-100	55-70	25-40	0-15	NP-5
	12-60	Bedrock			---	---	---	---	---	---	---	---
221:												
Turnercrest-----	0-2	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	15-25	5-10
	2-32	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
	32-60	Bedrock			---	---	---	---	---	---	---	---
Keeline---------	0-4	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	15-25	5-10
	4-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	30-50	15-25	5-10
Taluce----------	0-2	Fine sandy loam	SM	A-4	0	0	100	100	70-85	40-55	15-25	NP-10
	2-14	Fine sandy loam, sandy loam	SM	A-4	0	0	100	95-100	65-85	35-50	15-25	NP-10
	14-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
222:												
Turnercrest-----	0-3	Loamy sand	SP-SM, SM	A-2	0	0	100	100	70-80	10-25	0-15	NP-5
	3-22	Sandy loam, fine sandy loam	SM	A-2, A-4	0	0	95-100	90-100	70-85	30-50	15-25	NP-5
	22-60	Bedrock			---	---	---	---	---	---	---	---
Wibaux, thin solum----------	0-3	Very channery loam	GC-GM, GC	A-1, A-2	0	0-5	45-60	35-50	30-45	20-35	25-35	5-15
	3-9	Extremely channery loam, very channery loam	GC	A-1, A-2	0-5	0-25	30-55	20-45	15-35	10-30	25-35	5-15
	9-60	Fragmental material	GP	A-1	5-15	60-70	0-10	0-10	0-5	0-5	0-0	NP
Taluce----------	0-2	Sandy loam	SC-SM	A-2, A-4	0	0	95-100	85-100	70-80	30-45	20-25	5-10
	2-14	Sandy loam, fine sandy loam	SC-SM	A-4	0	0	95-100	85-100	65-75	35-50	15-25	5-10
	14-60	Bedrock			---	---	---	---	---	---	---	---
223:												
Ucross----------	0-5	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	5-31	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-20
	31-60	Bedrock			---	---	---	---	---	---	---	---
224:												
Ucross----------	0-5	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	5-31	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-20
	31-60	Bedrock			---	---	---	---	---	---	---	---
Iwait----------	0-6	Loam	CL	A-4, A-6	0	0	100	100	85-100	60-75	25-35	5-15
	6-60	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	15-25
225:												
Ucross----------	0-5	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	5-31	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-20
	31-60	Bedrock			---	---	---	---	---	---	---	---
Iwait----------	0-6	Loam	CL	A-4, A-6	0	0	100	100	85-100	60-75	25-35	5-15
	6-60	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	15-25

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
225: (cont.)												
Fairburn	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-15	Loam, clay loam	CL	A-6	0	0	100	90-100	75-90	60-75	30-40	10-20
	15-60	Bedrock			---	---	---	---	---	---	---	---
226:												
Ulm	0-2	Loam	CL-ML, CL	A-4, A-6	0	0	100	95-100	80-100	60-80	25-35	5-15
	2-25	Clay loam, clay	CH, CL	A-7	0	0	95-100	90-100	80-95	65-85	45-65	20-40
	25-60	Clay loam, loam	CL	A-6, A-7	0	0	95-100	90-100	80-95	60-80	35-55	15-35
227:												
Ulm	0-4	Clay loam	CL	A-6	0	0	100	95-100	80-100	60-85	35-40	15-20
	4-25	Clay, clay loam	CH, CL	A-7	0	0	95-100	90-100	80-95	65-85	45-65	20-40
	25-60	Clay loam, loam	CL	A-6, A-7	0	0	95-100	90-100	80-95	60-80	35-55	15-35
228:												
Ulm	0-4	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-45	15-25
	4-25	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	45-65	25-40
	25-60	Clay loam, clay	CL, CH	A-6, A-7	0	0	100	95-100	85-100	75-90	35-60	20-40
Renohill	0-4	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-45	15-25
	4-24	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	45-65	25-40
	24-35	Clay loam, clay	CL, CH	A-6, A-7	0	0	100	95-100	85-100	75-90	40-60	20-40
	35-60	Bedrock			---	---	---	---	---	---	---	---
229:												
Ulm	0-4	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-45	15-25
	4-25	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	45-65	25-40
	25-60	Clay loam, clay	CL, CH	A-6, A-7	0	0	100	95-100	85-100	75-90	35-60	20-40
Renohill	0-4	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-45	15-25
	4-24	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	45-65	25-40
	24-35	Clay loam, clay	CL, CH	A-6, A-7	0	0	100	95-100	85-100	75-90	35-60	15-35
	35-60	Bedrock			---	---	---	---	---	---	---	---
230:												
Urban land	---	---	---	---	---	---	---	---	---	---	---	---
Deekay	0-4	Loam	CL	A-4, A-6	0	0	100	100	85-100	60-75	25-35	5-15
	4-23	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	35-45	15-25
	23-60	Loam, clay loam	CL	A-6	0	0	100	95-100	80-100	60-75	25-35	10-20
Moorhead	0-6	Clay loam	CL	A-6	0	0	100	100	85-100	60-80	35-40	15-20
	6-24	Clay, clay loam	CH, CL	A-7	0	0	100	100	85-100	65-85	45-65	20-40
	24-60	Clay loam, clay	CL	A-6	0	0	100	90-100	85-95	60-80	35-60	20-35

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
231:												
Urban land------	---	---	---	---	---	---	---	---	---	---	---	---
Leiter----------	0-3	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-45	15-25
	3-22	Clay, clay loam	CH, CL	A-7	0	0	100	100	80-95	80-95	45-65	25-40
	22-33	Clay loam, clay	CL, CH	A-6, A-7	0	0	100	95-100	75-90	75-90	35-60	20-40
	33-60	Bedrock			---	---	---	---	---	---	---	---
Moorhead--------	0-4	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-45	15-25
	4-24	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	45-65	25-40
	24-60	Clay loam, clay	CL, CH	A-6, A-7	0	0	100	95-100	85-100	75-90	40-60	20-40
232:												
Urban land------	---	---	---	---	---	---	---	---	---	---	---	---
Pitchdraw-------	0-4	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	15-25	5-10
	4-31	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	20-25	5-10
	31-60	Bedrock			---	---	---	---	---	---	---	---
Ashollow--------	0-5	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	15-25	5-10
	5-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
233:												
Ustic Torriorthents--	0-4	Loam, clay loam, fine sandy loam	CL	A-4, A-6	0	0	100	95-100	80-95	60-75	25-35	5-20
	4-35	Clay loam, loam, fine sandy loam	CL	A-4, A-6	0	0	100	95-100	80-95	60-75	25-35	5-20
	35-60	Bedrock			---	---	---	---	---	---	---	---
234:												
Ustic Torriorthents--	0-4	Loam, clay loam, fine sandy loam	CL	A-4, A-6	0	0	100	95-100	80-95	60-75	25-35	5-20
	4-35	Clay loam, loam, fine sandy loam	CL	A-4, A-6	0	0	100	95-100	80-95	60-75	25-35	5-20
	35-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
234:(cont.)												
Badland	0-60	Bedrock			---	---	---	---	---	---	---	---
235:												
Vonalee	0-3	Fine sandy loam	SC-SM	A-2, A-4	0	0	100	100	70-80	30-45	20-25	5-10
	3-24	Fine sandy loam, sandy loam	SC-SM	A-2, A-4	0	0	100	100	70-80	30-45	20-25	5-10
	24-60	Fine sandy loam, sandy loam	SC-SM	A-2, A-4	0	0	100	95-100	70-80	25-45	15-25	5-10
236:												
Vonalee	0-3	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	3-24	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	24-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
Terro	0-3	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	3-16	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	16-30	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	90-100	70-90	35-50	15-25	5-10
	30-60	Bedrock			---	---	---	---	---	---	---	---
237:												
Vonalf	0-6	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	6-34	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	34-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
238:												
Vonalf----------	0-6	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	6-34	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	34-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
Xema----------	0-4	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	4-22	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	22-31	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	90-100	70-90	35-50	15-25	5-10
	31-60	Bedrock			---	---	---	---	---	---	---	---
239:												
Ironbutte-------	0-4	Channery loam	GC-GM, GC, SC	A-4	0	0-5	65-80	60-75	40-60	35-50	25-35	5-15
	4-12	Very channery loam, extremely channery loam	GC-GM, GC	A-2, A-1	0-5	0-25	30-45	25-40	10-30	5-25	20-35	5-15
	12-60	Fragmental material	GP	A-1	5-15	60-70	0-10	0-10	0-5	0-5	0-0	NP
Fairburn--------	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-15	Loam, clay loam	CL	A-6	0	0	100	90-100	75-90	60-75	30-40	10-20
	15-60	Bedrock			---	---	---	---	---	---	---	---
Mittenbutte-----	0-3	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	3-16	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	90-100	75-90	35-50	15-25	5-10
	16-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
240:												
Wibaux----------	0-3	Channery fine sandy loam	GC-GM, GC, SC-SM, SC	A-2, A-4	0	0-5	60-80	50-70	40-60	20-40	20-30	5-10
	3-16	Very channery loam, extremely channery loam	GC	A-1, A-2	0-5	0-25	30-55	20-45	15-35	5-25	25-35	5-15
	16-60	Fragmental material	GP	A-1	5-15	60-70	0-10	0-10	0-5	0-5	0-0	NP
Wibaux, thin solum----------	0-3	Very channery loam	GC-GM, GC	A-1, A-2	0	0-5	45-60	35-50	30-45	20-35	25-35	5-15
	3-9	Extremely channery loam, very channery loam	GC	A-1, A-2	0-5	0-25	30-55	20-45	15-35	10-30	25-35	5-15
	9-60	Fragmental material	GP	A-1	5-15	60-70	0-10	0-10	0-5	0-5	0-0	NP
241:												
Ironbutte-------	0-4	Channery loam	GC-GM, GC, SC	A-4	0	0-5	65-80	60-75	40-60	35-50	25-35	5-15
	4-12	Very channery loam, extremely channery loam	GC-GM, GC	A-2, A-1	0-5	0-25	30-45	25-40	10-30	5-25	20-35	5-15
	12-60	Fragmental material	GP	A-1	5-15	60-70	0-10	0-10	0-5	0-5	0-0	NP
Ironbutte, thin solum----------	0-2	Channery loam	GC-GM, GC, SC	A-4	0	0-5	65-80	60-75	40-60	35-50	25-35	5-15
	2-10	Very channery loam, extremely channery loam	GC-GM, GC	A-2, A-1	0-5	0-25	30-45	25-40	10-30	5-25	20-35	5-15
	10-60	Fragmental material	GP	A-1	5-15	60-70	0-10	0-10	0-5	0-5	0-0	NP

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
242:												
Ironbutte-------	0-4	Channery loam	GC-GM, GC, SC	A-4	0	0-5	65-80	60-75	40-60	35-50	25-35	5-15
	4-12	Very channery loam, extremely channery loam	GC-GM, GC	A-2, A-1	0-5	0-25	30-45	25-40	10-30	5-25	20-35	5-15
	12-60	Fragmental material	GP	A-1	5-15	60-70	0-10	0-10	0-5	0-5	0-0	NP
Deekay----------	0-4	Loam	CL	A-4, A-6	0	0	100	100	85-100	60-75	25-35	5-15
	4-23	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	35-45	15-25
	23-60	Loam, clay loam	CL	A-6	0	0	100	95-100	80-100	60-75	25-35	10-20
Moorhead--------	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-80	30-35	10-15
	4-26	Clay, clay loam	CH, CL	A-7	0	0	100	100	85-100	65-85	45-65	20-40
	26-60	Clay loam, clay	CL, CH	A-6, A-7	0	0	100	90-100	85-95	60-80	40-60	20-35
243:												
Wibaux, thick solum----------	0-5	Channery fine sandy loam	GC-GM, SC-SM, SC	A-2, A-4	0	0	65-85	50-75	40-60	30-45	20-35	5-15
	5-23	Very channery fine sandy loam, very channery loam, very channery loamy fine sand	GC-GM, GC	A-1, A-2	0-5	0-10	50-70	30-55	25-50	15-40	20-35	5-15
	23-60	Fragmental material	GP	A-1	5-15	60-70	0-10	0-10	0-5	0-5	0-0	NP
Wibaux----------	0-3	Channery fine sandy loam	GM, SM, SC-SM	A-1, A-2, A-4	0	0-5	60-80	50-70	40-60	20-40	15-25	NP-10
	3-16	Extremely channery sandy clay loam, very channery sandy clay loam	GC	A-2	0-5	0-25	30-55	20-45	15-35	5-25	30-35	10-15
	16-60	Fragmental material	GP	A-1	5-15	60-70	0-10	0-10	0-5	0-5	0-0	NP

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
244:												
Muleherder------	0-2	Channery loam	GC-GM, CL	A-4	0	0	70-85	65-80	50-65	45-60	25-35	5-15
	2-16	Channery loam, very channery loam	GC-GM, SC-SM	A-4	0-5	0-10	65-80	60-75	35-50	30-45	20-35	5-10
	16-33	Extremely channery fine sandy loam, very channery fine sandy loam	GC-GM	A-2	0-5	5-15	35-50	20-35	10-25	5-25	15-30	5-10
	33-60	Fragmental material	GP	A-1	5-15	60-70	0-10	0-10	0-5	0-5	0-0	NP
Ironbutte-------	0-4	Channery loam	GC-GM, GC, SC	A-4	0	0-5	65-80	60-75	40-60	35-50	25-35	5-15
	4-12	Very channery loam, extremely channery loam	GC-GM, GC	A-2, A-1	0-5	0-25	30-45	25-40	10-30	5-25	20-35	5-15
	12-60	Fragmental material	GP	A-1	5-15	60-70	0-10	0-10	0-5	0-5	0-0	NP
245:												
Wibaux----------	0-4	Channery loam	GC, GC-GM, SC-SM, SC	A-2, A-4, A-6	0	0-5	60-80	50-70	40-60	25-45	25-35	5-15
	4-12	Very channery loam, extremely channery loam	GC	A-1, A-2	0-5	0-25	30-55	20-45	15-35	10-30	25-35	5-15
	12-60	Fragmental material	GP	A-1	5-15	60-70	0-10	0-10	0-5	0-5	0-0	NP
Shingle---------	0-1	Loam	CL-ML, CL	A-4, A-6	0	0	95-100	90-100	70-90	60-80	25-35	5-15
	1-12	Loam, clay loam	CL	A-6	0	0	95-100	85-100	70-90	55-80	30-40	10-20
	12-60	Bedrock			---	---	---	---	---	---	---	---
Badland---------	0-60	Bedrock			---	---	---	---	---	---	---	---
246:												
Wyarno----------	0-3	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-40	15-20
	3-12	Clay, clay loam	CH, CL	A-7	0	0	100	95-100	85-95	65-85	45-65	20-40
	12-60	Clay loam	CL, CH	A-6, A-7	0	0	100	95-100	85-95	65-85	40-55	20-35

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
246:(cont.)												
Ulm	0-4	Clay loam	CL	A-6	0	0	100	95-100	80-100	60-85	35-40	15-20
	4-25	Clay loam, clay	CH, CL	A-7	0	0	95-100	90-100	80-95	65-85	45-65	20-40
	25-60	Clay loam, loam	CL	A-6, A-7	0	0	95-100	90-100	80-95	60-80	35-55	15-35
247:												
Wyotite	0-2	Loam	CL-ML, CL	A-4, A-6	0	0	100	100	85-100	65-85	25-35	5-15
	2-38	Silty clay loam, clay loam	CL	A-6	0	0	100	100	90-100	75-90	35-40	15-20
	38-60	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	95-100	85-100	70-90	25-35	5-15
Ulm	0-6	Loam	CL	A-6	0	0	100	100	85-100	70-90	30-35	10-15
	6-23	Silty clay, silty clay loam	CH, CL	A-7	0	0	100	100	95-100	85-95	45-65	20-40
	23-60	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	80-90	35-55	20-35
248:												
Ziggy	0-5	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	5-14	Loam, clay loam	CL	A-6	0	0	100	100	90-100	65-80	30-45	10-25
	14-60	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-45	10-25
Iwait	0-6	Loam	CL	A-4, A-6	0	0	100	100	85-100	60-75	25-35	5-15
	6-60	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	15-25
249:												
Ziggy	0-5	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	5-14	Loam, clay loam	CL	A-6	0	0	100	100	90-100	65-80	30-45	10-25
	14-60	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-45	10-25
Iwait	0-6	Loam	CL	A-4, A-6	0	0	100	100	85-100	60-75	25-35	5-15
	6-60	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	15-25
250:												
Ziggy	0-5	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	5-14	Loam, clay loam	CL	A-6	0	0	100	100	90-100	65-80	30-45	10-25
	14-60	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-45	10-25

Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
250:(cont.)												
Ucross----------	0-5	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	5-31	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-20
	31-60	Bedrock			---	---	---	---	---	---	---	---
Oldwolf---------	0-3	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	3-21	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-45	10-25
	21-32	Loam, clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-45	10-25
	32-60	Bedrock			---	---	---	---	---	---	---	---

Physical Properties of the Soils

(The symbol < means less than; > means greater than. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Dashes (--) indicate that data were not available or were not estimated.)

Map symbol and soil name	Depth	Clay	Moist bulk density	Perm	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
100:												
Aridic Ustorthents, saline	0-2	20-27	1.25-1.35	0.6-2	0.16-0.18	3.0-5.9	1.0-3.0	.32	.32	5	5	56
	2-6	30-40	1.20-1.30	0.2-0.6	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	6-46	25-40	1.25-1.40	0.6-2	0.06-0.09	3.0-5.9	0.5-1.0	.32	.32			
	46-60	20-35	1.30-1.45	0.6-2	0.07-0.10	3.0-5.9	0.0-0.5	.32	.32			
101:												
Arvada, thick surface	0-7	8-18	1.25-1.35	2-6	0.14-0.16	0.0-2.9	1.0-2.0	.28	.28	2	3	86
	7-15	35-40	1.25-1.35	0.2-0.6	0.16-0.18	6.0-8.9	1.0-2.0	.37	.37			
	15-26	35-50	1.20-1.35	0.06-0.2	0.08-0.10	6.0-8.9	0.5-1.0	.43	.43			
	26-60	35-50	1.20-1.35	0.06-0.2	0.08-0.10	6.0-8.9	0.5-1.0	.43	.43			
102:												
Arvada, thick surface	0-7	8-18	1.25-1.35	2-6	0.14-0.16	0.0-2.9	1.0-2.0	.28	.28	2	3	86
	7-15	35-40	1.25-1.35	0.2-0.6	0.16-0.18	6.0-8.9	1.0-2.0	.37	.37			
	15-26	35-50	1.20-1.35	0.06-0.2	0.08-0.10	6.0-8.9	0.5-1.0	.43	.43			
	26-60	35-50	1.20-1.35	0.06-0.2	0.08-0.10	6.0-8.9	0.5-1.0	.43	.43			
Arvada	0-2	12-20	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.28	.28	2	3	86
	2-9	35-45	1.20-1.30	0.06-0.2	0.15-0.20	3.0-5.9	0.5-1.0	.37	.37			
	9-15	35-45	1.20-1.30	0.06-0.2	0.09-0.14	6.0-8.9	0.5-1.0	.37	.37			
	15-60	30-45	1.20-1.30	0.2-0.6	0.09-0.14	6.0-8.9	0.5-1.0	.37	.37			
Slickspots	---	---	---	---	---	---	---	---	---	-	---	---
103:												
Arwite	0-5	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.24	.24	5	3	86
	5-32	20-35	1.30-1.40	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	32-60	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
104:												
Arwite	0-5	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.24	.24	5	3	86
	5-32	20-35	1.30-1.40	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	32-60	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
105:												
Arwite	0-5	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.24	.24	5	3	86
	5-32	20-35	1.30-1.40	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	32-60	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
Elwop	0-4	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.24	.24	3	3	86
	4-24	20-35	1.30-1.40	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	24-35	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
	35-60	---	---	0.2-0.6	---	---	---	---	---			
106:												
Arwite	0-5	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.24	.24	5	3	86
	5-32	20-35	1.30-1.40	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	32-60	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
Elwop	0-4	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.24	.24	3	3	86
	4-24	20-35	1.30-1.40	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	24-35	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
	35-60	---	---	0.2-0.6	---	---	---	---	---			

Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Perm	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
107:												
Arwite	0-5	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.24	.24	5	3	86
	5-32	20-35	1.30-1.40	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	32-60	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
Vonalf	0-6	10-15	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.24	.24	5	3	86
	6-34	10-18	1.30-1.40	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.28	.28			
	34-60	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
108:												
Arwite	0-5	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.24	.24	5	3	86
	5-32	20-35	1.30-1.40	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	32-60	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
Vonalf	0-6	10-18	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.24	.24	5	3	86
	6-34	10-18	1.30-1.40	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.28	.28			
	34-60	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
109:												
Bidman	0-2	15-27	1.25-1.35	0.2-0.6	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	2-28	35-50	1.30-1.40	0.06-0.2	0.15-0.19	6.0-8.9	0.5-2.0	.37	.37			
	28-60	25-40	1.25-1.40	0.2-0.6	0.16-0.19	3.0-5.9	0.0-0.5	.37	.37			
110:												
Bidman, loamy substratum	0-4	15-25	1.20-1.30	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	4-25	35-50	1.20-1.35	0.06-0.2	0.16-0.20	6.0-8.9	0.5-1.0	.37	.37			
	25-52	30-40	1.20-1.30	0.2-0.6	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	52-60	15-30	1.25-1.40	0.6-2	0.11-0.15	3.0-5.9	0.0-0.5	.32	.32			
111:												
Bidman	0-2	15-25	1.25-1.35	0.2-0.6	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	2-28	35-50	1.30-1.40	0.06-0.2	0.15-0.19	6.0-8.9	0.5-2.0	.37	.37			
	28-60	25-40	1.25-1.40	0.2-0.6	0.16-0.19	3.0-5.9	0.0-0.5	.37	.37			
Parmleed	0-3	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	3	5	56
	3-21	35-50	1.20-1.30	0.06-0.2	0.16-0.19	6.0-8.9	0.5-1.0	.37	.37			
	21-27	25-40	1.25-1.40	0.2-0.6	0.16-0.19	3.0-5.9	0.0-0.5	.43	.43			
	27-60	---	---	---	---	---	---	---	---			
112:												
Bidman	0-2	15-25	1.25-1.35	0.2-0.6	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	2-28	35-50	1.30-1.40	0.06-0.2	0.15-0.19	6.0-8.9	0.5-2.0	.37	.37			
	28-48	25-40	1.25-1.40	0.2-0.6	0.16-0.19	3.0-5.9	0.0-0.5	.37	.37			
Parmleed	0-3	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	3	5	56
	3-21	35-50	1.20-1.30	0.06-0.2	0.16-0.19	6.0-8.9	0.5-1.0	.37	.37			
	21-27	25-40	1.25-1.40	0.2-0.6	0.16-0.19	3.0-5.9	0.0-0.5	.43	.43			
	27-60	---	---	---	---	---	---	---	---			
113:												
Bidman	0-7	15-25	1.25-1.35	0.2-0.6	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	7-36	35-50	1.30-1.40	0.06-0.2	0.15-0.19	6.0-8.9	0.5-2.0	.37	.37			
	36-60	25-40	1.25-1.40	0.2-0.6	0.16-0.19	3.0-5.9	0.0-0.5	.37	.37			
Ulm	0-4	15-25	1.20-1.30	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	4-30	30-45	1.20-1.35	0.06-0.2	0.16-0.20	6.0-8.9	0.5-1.0	.37	.37			
	30-60	25-40	1.25-1.35	0.2-0.6	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			

Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Perm	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
114:												
Bowbac	0-3	10-18	1.35-1.45	2-6	0.11-0.13	0.0-2.9	1.0-2.0	.24	.24	3	3	86
	3-31	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	31-39	8-18	1.30-1.40	2-6	0.11-0.13	0.0-2.9	0.0-0.5	.24	.24			
	39-60	---	---	---	---	---	---	---	---			
Taluce	0-2	10-18	1.25-1.35	2-6	0.12-0.15	0.0-2.9	0.5-1.0	.24	.24	2	3	86
	2-14	8-18	1.35-1.45	2-6	0.12-0.15	0.0-2.9	0.0-0.5	.28	.28			
	14-60	---	---	---	---	---	---	---	---			
Badland	0-60	---	---	0.2-0.6	---	---	---	---	---	1	8	0
115:												
Bowbac	0-3	10-18	1.35-1.45	2-6	0.11-0.13	0.0-2.9	1.0-2.0	.24	.24	3	3	86
	3-31	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	31-39	8-18	1.30-1.40	2-6	0.11-0.13	0.0-2.9	0.0-0.5	.28	.28			
	39-60	---	---	---	---	---	---	---	---			
Worf	0-1	10-18	1.25-1.35	2-6	0.11-0.13	0.0-2.9	1.0-2.0	.24	.24	2	3	86
	1-12	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.37	.37			
	12-18	18-30	1.40-1.50	0.6-2	0.14-0.16	3.0-5.9	0.0-0.5	.37	.37			
	18-60	---	---	---	---	---	---	---	---			
116:												
Cambria	0-2	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	2-10	25-35	1.25-1.35	0.6-2	0.17-0.20	3.0-5.9	0.5-1.0	.37	.37			
	10-60	20-30	1.25-1.35	0.6-2	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
Kishona	0-2	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.28	.28	5	5	56
	2-60	20-35	1.25-1.35	0.6-2	0.16-0.19	3.0-5.9	0.0-0.5	.37	.37			
Zigweid	0-2	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	2-13	20-35	1.25-1.35	0.6-2	0.17-0.19	3.0-5.9	0.5-1.0	.37	.37			
	13-60	20-35	1.25-1.35	0.6-2	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
117:												
Cambria	0-3	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	3-12	25-35	1.25-1.35	0.6-2	0.17-0.20	3.0-5.9	0.5-1.0	.37	.37			
	12-60	20-30	1.25-1.35	0.6-2	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
Kishona	0-2	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.28	.28	5	5	56
	2-60	20-35	1.25-1.35	0.6-2	0.16-0.19	3.0-5.9	0.0-0.5	.37	.37			
Zigweid	0-2	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	2-13	20-35	1.25-1.35	0.6-2	0.17-0.19	3.0-5.9	0.5-1.0	.37	.37			
	13-60	20-35	1.25-1.35	0.6-2	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
118:												
Clarkelen	0-3	7-16	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	3-60	8-18	1.30-1.40	2-6	0.11-0.15	0.0-2.9	0.5-1.0	.28	.28			
Draknab	0-4	7-15	1.40-1.50	2-6	0.11-0.13	0.0-2.9	1.0-2.0	.20	.20	5	3	86
	4-28	3-10	1.40-1.55	6-20	0.08-0.10	0.0-2.9	0.5-1.0	.17	.17			
	28-60	1-8	1.40-1.55	6-20	0.06-0.09	0.0-2.9	0.0-0.5	.17	.17			
119:												
Clarkelen	0-3	7-16	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	3-60	8-18	1.30-1.40	2-6	0.11-0.15	0.0-2.9	0.5-1.0	.28	.28			
Embry	0-3	6-15	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.28	.28	5	3	86
	3-60	8-16	1.35-1.45	2-6	0.12-0.14	0.0-2.9	0.5-1.0	.28	.28			

Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Perm	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
120:												
Clarkelen	0-3	7-16	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	3-60	8-18	1.30-1.40	2-6	0.11-0.15	0.0-2.9	0.5-1.0	.28	.28			
Keeline	0-4	6-16	1.25-1.35	2-6	0.10-0.14	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	4-60	7-16	1.35-1.45	2-6	0.10-0.14	0.0-2.9	0.0-0.5	.28	.28			
121:												
Cushman	0-2	15-25	1.25-1.35	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	3	5	56
	2-19	20-35	1.25-1.40	0.6-2	0.17-0.19	3.0-5.9	0.5-1.0	.37	.37			
	19-31	20-35	1.25-1.40	0.6-2	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
	31-60	---	---	---	---	---	---	---	---			
Cambria	0-2	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	2-12	25-35	1.25-1.35	0.6-2	0.17-0.20	3.0-5.9	0.5-1.0	.37	.37			
	12-60	20-30	1.25-1.35	0.6-2	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
122:												
Cushman	0-2	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	3	5	56
	2-23	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	23-30	20-35	1.40-1.50	0.6-2	0.16-0.18	3.0-5.9	0.0-0.5	.37	.37			
	30-60	---	---	0.001-0.06	---	---	---	---	---			
Cambria	0-2	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	2-12	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.32	.32			
	12-60	20-30	1.35-1.45	0.6-2	0.16-0.18	3.0-5.9	0.0-0.5	.32	.32			
123:												
Cushman	0-3	15-25	1.25-1.35	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	3	5	56
	3-13	20-35	1.25-1.40	0.6-2	0.17-0.19	3.0-5.9	0.5-1.0	.37	.37			
	13-25	20-35	1.25-1.40	0.6-2	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
	25-60	---	---	---	---	---	---	---	---			
Renohill	0-2	20-27	1.20-1.30	0.6-2	0.16-0.18	3.0-5.9	1.0-2.0	.32	.32	3	5	56
	2-14	35-50	1.20-1.35	0.06-0.2	0.16-0.19	6.0-8.9	0.5-1.0	.37	.37			
	14-26	30-40	1.30-1.40	0.2-0.6	0.16-0.19	3.0-5.9	0.0-0.5	.37	.37			
	26-60	---	---	---	---	---	---	---	---			
124:												
Cushman	0-3	15-25	1.25-1.35	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	3	5	56
	3-13	20-35	1.25-1.40	0.6-2	0.17-0.19	3.0-5.9	0.5-1.0	.37	.37			
	13-25	20-35	1.25-1.40	0.6-2	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
	25-60	---	---	---	---	---	---	---	---			
Shingle	0-1	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	2	5	56
	1-12	20-35	1.25-1.40	0.6-2	0.16-0.20	3.0-5.9	0.0-0.5	.37	.37			
	12-60	---	---	---	---	---	---	---	---			
125:												
Cushman	0-3	15-25	1.25-1.35	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	3	5	56
	3-13	20-35	1.25-1.40	0.6-2	0.17-0.19	3.0-5.9	0.5-1.0	.37	.37			
	13-25	20-35	1.25-1.40	0.6-2	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
	25-60	---	---	---	---	---	---	---	---			
Terro	0-3	10-18	1.25-1.35	2-6	0.11-0.13	0.0-2.9	1.0-2.0	.24	.24	3	3	86
	3-16	10-18	1.35-1.45	2-6	0.11-0.13	0.0-2.9	0.5-1.0	.28	.28			
	16-23	8-18	1.35-1.45	2-6	0.11-0.13	0.0-2.9	0.0-0.5	.24	.24			
	23-60	---	---	---	---	---	---	---	---			

Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Perm	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
126:												
Cushman	0-2	15-25	1.25-1.35	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	3	5	56
	2-23	20-35	1.25-1.40	0.6-2	0.17-0.19	3.0-5.9	0.5-1.0	.37	.37			
	23-30	20-35	1.25-1.40	0.6-2	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
	30-60	---	---	---	---	---	---	---	---			
Theedle	0-2	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	3	4L	86
	2-28	20-35	1.25-1.35	0.6-2	0.16-0.20	3.0-5.9	0.5-1.0	.37	.37			
	28-60	---	---	---	---	---	---	---	---			
127:												
Cushman	0-3	15-25	1.25-1.35	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	3	5	56
	3-13	20-35	1.25-1.40	0.6-2	0.17-0.19	3.0-5.9	0.5-1.0	.37	.37			
	13-25	20-35	1.25-1.40	0.6-2	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
	25-60	---	---	---	---	---	---	---	---			
Theedle	0-2	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	3	4L	86
	2-28	20-35	1.25-1.35	0.6-2	0.16-0.20	3.0-5.9	0.5-1.0	.37	.37			
	28-60	---	---	---	---	---	---	---	---			
128:												
Cushman	0-5	15-25	1.25-1.35	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	3	5	56
	5-25	20-35	1.25-1.40	0.6-2	0.17-0.19	3.0-5.9	0.5-1.0	.37	.37			
	25-35	20-35	1.25-1.40	0.6-2	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
	35-60	---	---	---	---	---	---	---	---			
Worf	0-2	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	2	5	56
	2-10	20-35	1.25-1.35	0.6-2	0.15-0.19	3.0-5.9	0.5-1.0	.37	.37			
	10-18	18-30	1.40-1.50	0.6-2	0.14-0.18	3.0-5.9	0.0-0.5	.37	.37			
	18-60	---	---	---	---	---	---	---	---			
129:												
Decolney	0-3	10-18	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.28	.28	5	3	86
	3-22	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	22-43	10-18	1.30-1.45	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			
	43-60	10-18	1.30-1.45	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			
Hiland	0-4	10-18	1.25-1.35	2-6	0.11-0.14	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	4-15	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	15-60	10-18	1.35-1.45	2-6	0.11-0.13	0.0-2.9	0.0-0.5	.24	.24			
130:												
Decolney	0-3	10-18	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.28	.28	5	3	86
	3-22	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	22-43	10-18	1.30-1.45	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			
	43-60	10-18	1.30-1.45	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			
Hiland	0-3	10-18	1.25-1.35	2-6	0.11-0.14	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	3-32	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	32-60	10-18	1.35-1.45	2-6	0.11-0.13	0.0-2.9	0.0-0.5	.24	.24			
131:												
Deekay	0-4	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	4-24	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	24-60	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
132:												
Deekay	0-4	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	4-24	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	24-60	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			

Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Perm	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
132:(cont.)												
Moorhead	0-5	20-27	1.25-1.35	0.6-2	0.16-0.18	3.0-5.9	1.0-3.0	.32	.32	5	6	48
	5-35	35-50	1.20-1.30	0.06-0.2	0.15-0.19	6.0-8.9	0.5-1.0	.37	.37			
	35-60	30-42	1.20-1.35	0.2-0.6	0.15-0.19	3.0-5.9	0.0-1.0	.43	.43			
133:												
Deekay	0-4	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	4-24	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	24-60	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
Moorhead	0-5	20-27	1.25-1.35	0.6-2	0.16-0.18	3.0-5.9	1.0-3.0	.32	.32	5	6	48
	5-35	35-50	1.20-1.30	0.06-0.2	0.15-0.19	6.0-8.9	0.5-1.0	.37	.37			
	35-60	30-42	1.20-1.35	0.2-0.6	0.15-0.19	3.0-5.9	0.0-1.0	.43	.43			
134:												
Deekay	0-4	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	4-24	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	24-60	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
Oldwolf	0-3	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	3	5	56
	3-21	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	21-32	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	32-60	---	---	0.001-0.06	---	---	---	---	---			
135:												
Deekay	0-4	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	4-24	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	24-60	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
Oldwolf	0-3	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	3	5	56
	3-21	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	21-32	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	32-60	---	---	0.001-0.06	---	---	---	---	---			
136:												
Deekay	0-4	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	4-24	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	24-60	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
Ziggy	0-5	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	5-14	20-35	1.25-1.35	0.6-2	0.16-0.18	0.0-2.9	0.5-1.0	.37	.37			
	14-60	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
137:												
Echeta	0-3	30-40	1.15-1.25	0.2-0.6	0.19-0.21	3.0-5.9	1.0-3.0	.32	.32	5	4L	86
	3-15	35-50	1.15-1.25	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	15-60	30-50	1.30-1.40	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
138:												
Echeta	0-3	30-40	1.15-1.25	0.2-0.6	0.19-0.21	3.0-5.9	1.0-3.0	.32	.32	5	4L	86
	3-15	35-50	1.15-1.25	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	15-60	30-50	1.30-1.40	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
Cromack	0-6	30-40	1.15-1.25	0.2-0.6	0.18-0.20	3.0-5.9	1.0-3.0	.32	.32	3	4L	86
	6-14	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	14-29	30-50	1.30-1.40	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
	29-60	---	---	0.001-0.06	---	---	---	---	---			
139:												
Embry	0-4	6-15	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.28	.28	5	3	86
	4-60	8-16	1.35-1.45	2-6	0.12-0.14	0.0-2.9	0.5-1.0	.28	.28			

Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Perm	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
139:(cont.)												
Orpha	0-4	3-8	1.35-1.45	20-20	0.05-0.07	0.0-2.9	1.0-2.0	.15	.15	5	1	220
	4-60	3-8	1.45-1.55	20-20	0.05-0.08	0.0-2.9	0.1-0.5	.20	.20			
140:												
Embry	0-6	6-15	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	6-60	8-16	1.35-1.45	2-6	0.12-0.14	0.0-2.9	0.5-1.0	.28	.28			
Taluce	0-4	10-18	1.25-1.35	2-6	0.11-0.13	0.0-2.9	0.5-1.0	.24	.24	2	3	86
	4-16	8-18	1.35-1.50	2-6	0.11-0.13	0.0-2.9	0.0-1.0	.28	.28			
	16-60	---	---	---	---	---	---	---	---			
141:												
Emigha	0-1	15-27	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.37	.37	5	4L	86
	1-19	28-35	1.15-1.30	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.43	.43			
	19-60	20-35	1.20-1.35	0.6-2	0.14-0.19	3.0-5.9	0.0-0.5	.43	.43			
142:												
Emigha, sodic	0-3	28-35	1.05-1.15	0.6-2	0.17-0.19	3.0-5.9	1.0-2.0	.43	.43	5	7	38
	3-14	28-35	1.10-1.20	0.6-2	0.17-0.19	3.0-5.9	0.5-1.0	.49	.49			
	14-60	25-35	1.15-1.25	0.2-0.6	0.10-0.13	3.0-5.9	0.0-0.5	.43	.43			
Arvada, thick surface	0-3	18-27	1.25-1.35	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	2	5	56
	3-12	35-40	1.25-1.35	0.2-0.6	0.16-0.18	6.0-8.9	1.0-2.0	.37	.37			
	12-30	35-50	1.20-1.35	0.06-0.2	0.08-0.10	6.0-8.9	0.5-1.0	.43	.43			
	30-46	35-50	1.20-1.35	0.06-0.2	0.08-0.10	6.0-8.9	0.5-1.0	.43	.43			
	46-60	35-45	1.20-1.35	0.06-0.2	0.08-0.10	6.0-8.9	0.5-1.0	.43	.43			
143:												
Felix, ponded	0-5	55-75	1.15-1.25	0.001-0.06	0.13-0.15	9.0-11.9	1.0-3.0	.20	.20	5	4	86
	5-30	60-80	1.15-1.25	0.001-0.06	0.13-0.15	9.0-11.9	0.5-1.0	.20	.20			
	30-50	60-75	1.20-1.30	0.001-0.06	0.13-0.15	9.0-11.9	0.0-0.5	.20	.20			
	50-60	50-70	1.20-1.30	0.001-0.06	0.14-0.16	9.0-11.9	0.0-0.5	.20	.20			
144:												
Forkwood	0-2	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	2-23	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	23-60	20-35	1.40-1.50	0.6-2	0.16-0.18	3.0-5.9	0.0-0.5	.37	.37			
145:												
Forkwood	0-3	15-25	1.25-1.35	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	3-14	20-35	1.25-1.40	0.6-2	0.17-0.20	3.0-5.9	0.5-1.0	.37	.37			
	14-60	20-30	1.25-1.40	0.6-2	0.17-0.20	3.0-5.9	0.0-0.5	.37	.37			
Cambria	0-2	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	2-12	25-35	1.25-1.35	0.6-2	0.17-0.20	3.0-5.9	0.5-1.0	.37	.37			
	12-60	20-30	1.25-1.35	0.6-2	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
146:												
Forkwood	0-2	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	2-23	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	23-60	20-35	1.40-1.50	0.6-2	0.16-0.18	3.0-5.9	0.0-0.5	.37	.37			
Cushman	0-2	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	3	5	56
	2-23	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	23-30	20-35	1.40-1.50	0.6-2	0.16-0.18	3.0-5.9	0.0-0.5	.37	.37			
	30-60	---	---	0.001-0.06	---	---	---	---	---			

Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Perm	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
147:												
Forkwood	0-2	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	2-23	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	23-60	20-35	1.40-1.50	0.6-2	0.16-0.18	3.0-5.9	0.0-0.5	.37	.37			
Cushman	0-2	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	3	5	56
	2-23	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	23-30	20-35	1.40-1.50	0.6-2	0.16-0.18	3.0-5.9	0.0-0.5	.37	.37			
	30-60	---	---	0.001-0.06	---	---	---	---	---			
148:												
Forkwood	0-2	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	2-23	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	23-60	20-35	1.40-1.50	0.6-2	0.16-0.18	3.0-5.9	0.0-0.5	.37	.37			
Ulm	0-2	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	2-22	35-50	1.15-1.25	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	22-60	25-40	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
149:												
Forkwood	0-2	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	2-23	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	23-60	20-35	1.40-1.50	0.6-2	0.16-0.18	3.0-5.9	0.0-0.5	.37	.37			
Ulm	0-2	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	2-22	35-50	1.15-1.25	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	22-60	25-40	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
150:												
Gateson	0-2	---	---	---	---	---	---	---	---	3	2	134
	2-6	2-8	1.40-1.50	2-6	0.07-0.09	0.0-2.9	0.5-1.0	.24	.24			
	6-11	5-25	1.40-1.50	2-6	0.07-0.09	0.0-2.9	0.5-1.0	.24	.24			
	11-30	20-30	1.35-1.45	0.6-2	0.14-0.16	3.0-5.9	0.0-0.5	.32	.32			
	30-60	---	---	---	---	---	---	---	---			
Taluce	0-3	10-18	1.25-1.35	2-6	0.11-0.13	0.0-2.9	0.5-1.0	.24	.24	2	3	86
	3-16	8-18	1.35-1.50	2-6	0.11-0.13	0.0-2.9	0.0-1.0	.28	.28			
	16-60	---	---	---	---	---	---	---	---			
Turnercrest	0-4	4-8	1.35-1.45	6-20	0.08-0.10	0.0-2.9	0.5-1.0	.15	.15	3	2	134
	4-32	10-18	1.35-1.50	2-6	0.11-0.14	0.0-2.9	0.0-0.5	.28	.28			
	32-60	---	---	---	---	---	---	---	---			
151:												
Haverdad	0-4	15-25	1.15-1.25	0.6-2	0.14-0.16	0.0-2.9	1.0-2.0	.32	.32	5	4L	86
	4-60	15-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.0-0.5	.37	.37			
152:												
Haverdad	0-3	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	4L	86
	3-60	20-35	1.25-1.40	0.6-2	0.17-0.20	3.0-5.9	0.0-0.5	.32	.32			
Clarkelen	0-4	7-16	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	4-60	8-18	1.30-1.40	2-6	0.11-0.15	0.0-2.9	0.5-1.0	.28	.28			
153:												
Haverdad	0-7	28-35	1.10-1.20	0.6-2	0.19-0.21	3.0-5.9	1.0-2.0	.37	.37	5	4L	86
	7-60	20-35	1.25-1.40	0.6-2	0.15-0.20	3.0-5.9	0.0-0.5	.37	.37			
Kishona	0-3	28-35	1.20-1.30	0.6-2	0.17-0.19	3.0-5.9	1.0-2.0	.37	.37	5	4	86
	3-60	20-35	1.25-1.35	0.6-2	0.16-0.19	3.0-5.9	0.0-0.5	.37	.37			

Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Perm	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
154:												
Heldt	0-3	30-40	1.15-1.25	0.2-0.6	0.17-0.19	3.0-5.9	1.0-2.0	.37	.37	5	4L	86
	3-25	40-50	1.15-1.30	0.06-0.2	0.14-0.17	6.0-8.9	0.5-1.0	.49	.49			
	25-60	35-45	1.20-1.30	0.06-0.2	0.14-0.18	6.0-8.9	0.0-0.5	.49	.49			
155:												
Heldt, saline	0-2	30-40	1.15-1.25	0.2-0.6	0.15-0.17	3.0-5.9	1.0-2.0	.37	.37	5	4L	86
	2-22	35-50	1.15-1.25	0.06-0.2	0.11-0.13	6.0-8.9	0.5-1.0	.37	.37			
	22-60	35-45	1.40-1.50	0.06-0.2	0.11-0.13	6.0-8.9	0.0-0.5	.37	.37			
Bidman, saline	0-4	15-25	1.15-1.25	0.6-2	0.15-0.17	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	4-13	35-50	1.20-1.30	0.06-0.2	0.12-0.14	6.0-8.9	0.5-1.0	.37	.37			
	13-60	30-45	1.40-1.50	0.2-0.6	0.13-0.15	3.0-5.9	0.0-0.5	.37	.37			
156:												
Hiland	0-3	10-18	1.25-1.35	2-6	0.11-0.14	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	3-19	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	19-60	10-18	1.35-1.45	2-6	0.11-0.13	0.0-2.9	0.0-0.5	.24	.24			
157:												
Hiland	0-4	10-18	1.25-1.35	2-6	0.11-0.14	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	4-24	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	24-60	10-18	1.35-1.45	2-6	0.11-0.13	0.0-2.9	0.0-0.5	.24	.24			
Bowbac	0-3	10-18	1.35-1.45	2-6	0.11-0.13	0.0-2.9	1.0-2.0	.24	.24	3	3	86
	3-31	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	31-39	8-18	1.30-1.40	2-6	0.11-0.14	0.0-2.9	0.0-0.5	.32	.32			
	39-60	---	---	---	---	---	---	---	---			
158:												
Hiland	0-4	10-18	1.25-1.35	2-6	0.11-0.14	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	4-24	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	24-60	10-18	1.35-1.45	2-6	0.11-0.13	0.0-2.9	0.0-0.5	.24	.24			
Bowbac	0-3	10-18	1.35-1.45	2-6	0.11-0.13	0.0-2.9	1.0-2.0	.24	.24	3	3	86
	3-31	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	31-39	8-18	1.30-1.40	2-6	0.11-0.13	0.0-2.9	0.0-0.5	.32	.32			
	39-60	---	---	---	---	---	---	---	---			
159:												
Hiland	0-3	10-18	1.25-1.35	2-6	0.11-0.15	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	3-23	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	23-60	10-18	1.35-1.45	2-6	0.11-0.15	0.0-2.9	0.0-0.5	.24	.24			
Vonalee	0-5	10-18	1.35-1.45	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	5-16	10-18	1.35-1.45	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.28	.28			
	16-60	8-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.32	.32			
160:												
Hiland	0-3	10-18	1.25-1.35	2-6	0.11-0.15	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	3-23	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	23-60	10-18	1.35-1.45	2-6	0.11-0.15	0.0-2.9	0.0-0.5	.24	.24			
Vonalee	0-5	10-18	1.35-1.45	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	5-24	10-18	1.35-1.45	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.28	.28			
	24-60	8-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.32	.32			
161:												
Hilight	0-2	30-40	1.10-1.20	0.2-0.6	0.17-0.19	6.0-8.9	1.0-2.0	.37	.37	2	4	86
	2-14	40-55	1.15-1.30	0.06-0.2	0.14-0.16	9.0-11.9	0.5-1.0	.43	.43			
	14-60	---	---	---	---	---	---	---	---			

Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Perm	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
161:(cont.)												
Taluce, cool	0-4	10-18	1.25-1.35	2-6	0.11-0.13	0.0-2.9	0.5-1.0	.24	.24	2	3	86
	4-18	8-18	1.35-1.50	2-6	0.11-0.13	0.0-2.9	0.0-1.0	.28	.28			
	18-60	---	---	---	---	---	---	---	---			
Wags	0-4	30-40	1.20-1.30	0.2-0.6	0.17-0.19	3.0-5.9	0.5-2.0	.37	.37	3	4	86
	4-34	40-60	1.10-1.20	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.43	.43			
	34-60	---	---	---	---	---	---	---	---			
162:												
Lismas	0-3	30-40	1.15-1.25	0.06-0.2	0.18-0.20	6.0-8.9	1.0-3.0	.37	.37	2	4	86
	3-16	40-60	1.30-1.40	0.001-0.06	0.14-0.16	9.0-11.9	0.0-0.5	.37	.37			
	16-60	---	---	0.001-0.06	---	---	---	---	---			
Mittenbutte, cool	0-4	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.28	.28	2	3	86
	4-18	8-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
	18-60	---	---	0.2-0.6	---	---	---	---	---			
Sabatka	0-3	30-40	1.15-1.25	0.06-0.2	0.19-0.21	6.0-8.9	1.0-2.0	.37	.37	3	4	86
	3-19	35-55	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	19-30	30-50	1.40-1.50	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
	30-60	---	---	0.001-0.06	---	---	---	---	---			
163:												
Hilight	0-2	40-55	1.05-1.15	0.06-0.2	0.13-0.15	6.0-8.9	1.0-2.0	.37	.37	2	4	86
	2-12	40-55	1.15-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.43	.43			
	12-60	---	---	---	---	---	---	---	---			
Wags	0-1	30-40	1.20-1.30	0.2-0.6	0.13-0.16	3.0-5.9	0.5-2.0	.20	.32	3	8	0
	1-23	40-60	1.10-1.20	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.43	.43			
	23-60	---	---	---	---	---	---	---	---			
Badland	0-60	---	---	0.001-0.06	---	---	---	---	---	1	8	0
164:												
Lismas	0-3	30-40	1.15-1.25	0.06-0.2	0.18-0.20	6.0-8.9	1.0-3.0	.37	.37	2	4	86
	3-16	40-60	1.30-1.40	0.001-0.06	0.14-0.16	9.0-11.9	0.0-0.5	.37	.37			
	16-60	---	---	0.001-0.06	---	---	---	---	---			
Sabatka	0-3	30-40	1.15-1.25	0.06-0.2	0.19-0.21	6.0-8.9	1.0-2.0	.37	.37	3	8	0
	3-19	35-55	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	19-30	30-50	1.40-1.50	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
	30-60	---	---	0.001-0.06	---	---	---	---	---			
Badland	0-60	---	---	0.001-0.06	---	---	---	---	---	1	8	0
165:												
Jayem	0-17	10-18	1.25-1.35	2-6	0.11-0.13	0.0-2.9	2.0-3.0	.24	.24	5	3	86
	17-31	10-18	1.35-1.45	2-6	0.12-0.14	0.0-2.9	0.5-1.0	.24	.24			
	31-60	8-18	1.35-1.45	2-6	0.12-0.14	0.0-2.9	0.0-0.5	.28	.28			
166:												
Jaywest	0-7	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	7-36	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	36-60	25-40	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
167:												
Jaywest	0-7	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	7-36	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	36-60	25-40	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			

Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Perm	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
167:(cont.)												
Moorhead	0-5	20-27	1.25-1.35	0.6-2	0.16-0.18	3.0-5.9	1.0-3.0	.32	.32	5	6	48
	5-35	35-50	1.20-1.30	0.06-0.2	0.15-0.19	6.0-8.9	0.5-1.0	.37	.37			
	35-60	30-42	1.20-1.35	0.2-0.6	0.15-0.19	3.0-5.9	0.0-1.0	.43	.43			
168:												
Jaywest	0-7	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	7-36	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	36-60	25-40	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
Spottedhorse	0-4	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	3	5	56
	4-27	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.0-1.0	.37	.37			
	27-35	30-45	1.40-1.50	0.2-0.6	0.19-0.21	6.0-8.9	0.0-0.5	.37	.37			
	35-60	---	---	0.001-0.06	---	---	---	---	---			
169:												
Julesburg	0-10	10-18	1.25-1.35	2-6	0.12-0.14	0.0-2.9	2.0-3.0	.24	.24	5	3	86
	10-32	10-18	1.35-1.45	2-6	0.12-0.14	0.0-2.9	0.5-1.0	.28	.28			
	32-60	8-15	1.35-1.45	2-6	0.12-0.14	0.0-2.9	0.0-0.5	.28	.28			
170:												
Keeline	0-6	2-8	1.35-1.45	6-20	0.06-0.08	0.0-2.9	1.0-2.0	.15	.15	5	2	134
	6-60	7-16	1.40-1.50	2-6	0.11-0.13	0.0-2.9	0.0-0.5	.28	.28			
Tullock	0-4	2-6	1.35-1.45	6-20	0.06-0.08	0.0-2.9	1.0-2.0	.15	.15	3	2	134
	4-28	2-8	1.45-1.55	6-20	0.06-0.08	0.0-2.9	0.0-0.5	.15	.15			
	28-60	---	---	0.2-0.6	---	---	---	---	---			
171:												
Keeline	0-4	6-16	1.25-1.35	2-6	0.10-0.14	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	4-60	7-16	1.35-1.45	2-6	0.10-0.14	0.0-2.9	0.0-0.5	.28	.28			
Tullock	0-4	2-6	1.35-1.45	6-20	0.06-0.08	0.0-2.9	1.0-2.0	.15	.15	3	2	134
	4-22	2-8	1.45-1.60	6-20	0.05-0.08	0.0-2.9	0.0-0.5	.15	.15			
	22-60	---	---	---	---	---	---	---	---			
Niobrara, dry	0-3	2-8	1.35-1.45	6-20	0.06-0.08	0.0-2.9	0.5-1.0	.15	.15	2	2	134
	3-12	2-8	1.45-1.60	6-20	0.05-0.07	0.0-2.9	0.0-0.5	.15	.15			
	12-60	---	---	---	---	---	---	---	---			
172:												
Keyner	0-4	10-20	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	2	3	86
	4-12	20-35	1.30-1.40	0.2-0.6	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	12-20	20-35	1.30-1.40	0.06-0.2	0.11-0.13	3.0-5.9	0.0-0.5	.37	.37			
	20-26	20-35	1.30-1.40	0.06-0.2	0.11-0.13	3.0-5.9	0.0-0.5	.37	.37			
	26-60	15-30	1.30-1.40	0.06-0.2	0.11-0.13	3.0-5.9	0.0-0.5	.37	.37			
173:												
Lawver	0-4	10-25	1.20-1.30	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.28	.32	3	5	56
	4-20	35-50	1.20-1.35	0.06-0.2	0.15-0.19	6.0-8.9	0.5-1.0	.28	.37			
	20-27	35-45	1.25-1.40	0.2-0.6	0.15-0.19	6.0-8.9	0.5-1.0	.17	.37			
	27-38	20-35	1.15-1.30	0.6-2	0.12-0.16	3.0-5.9	0.0-0.5	.10	.32			
	38-60	6-15	1.20-1.30	6-20	0.08-0.12	0.0-2.9	0.0-0.5	.05	.28			
Teckla	0-10	10-20	1.25-1.35	2-6	0.15-0.17	0.0-2.9	1.0-2.0	.20	.28	4	3	86
	10-23	20-35	1.25-1.35	0.6-2	0.15-0.19	3.0-5.9	0.5-1.0	.28	.37			
	23-31	20-35	1.20-1.30	0.6-2	0.12-0.16	3.0-5.9	0.5-1.0	.17	.32			
	31-45	10-25	1.15-1.25	2-6	0.06-0.10	0.0-2.9	0.0-1.0	.10	.28			
	45-60	5-15	1.10-1.25	6-20	0.03-0.05	0.0-2.9	0.0-1.0	.05	.28			

Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Perm	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
173:(cont.)												
Wibaux	0-3	15-25	1.10-1.20	2-6	0.09-0.11	0.0-2.9	1.0-2.0	.10	.32	2	8	0
	3-13	10-25	1.10-1.25	2-6	0.05-0.10	0.0-2.9	0.0-0.5	.10	.32			
	13-60	0-2	---	20-20	0.01-0.02	0.0-2.9	0.0-0.0	.02	.02			
174:												
Brislawn	0-6	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	3	5	56
	6-21	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	21-31	30-45	1.25-1.35	0.2-0.6	0.15-0.17	6.0-8.9	0.5-1.0	.24	.37			
	31-37	20-35	1.40-1.50	0.6-2	0.12-0.14	3.0-5.9	0.0-0.5	.15	.37			
	37-60	0-2	---	20-20	0.00-0.02	0.0-2.9	---	.02	.02			
Rockybutte	0-5	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	3	5	56
	5-23	20-35	1.25-1.35	0.2-0.6	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	23-38	20-35	1.40-1.50	2-6	0.05-0.07	0.0-2.9	0.0-0.5	.05	.32			
	38-60	0-2	---	20-20	0.00-0.02	0.0-2.9	0.0-0.0	---	---			
Ironbutte	0-4	15-25	1.15-1.25	0.6-2	0.12-0.14	0.0-2.9	1.0-3.0	.20	.32	2	8	0
	4-12	10-25	1.25-1.35	2-6	0.06-0.08	0.0-2.9	0.5-1.0	.10	.37			
	12-60	0-2	---	20-20	0.00-0.02	0.0-2.9	0.0-0.5	.02	.02			
175:												
Lawver	0-4	10-25	1.20-1.30	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.28	.32	3	5	56
	4-20	35-50	1.20-1.35	0.06-0.2	0.15-0.19	6.0-8.9	0.5-1.0	.28	.37			
	20-27	35-45	1.25-1.40	0.2-0.6	0.15-0.19	6.0-8.9	0.5-1.0	.17	.37			
	27-38	20-35	1.15-1.30	0.6-2	0.12-0.16	3.0-5.9	0.0-0.5	.10	.32			
	38-60	6-15	1.20-1.30	6-20	0.08-0.12	0.0-2.9	0.0-0.5	.05	.28			
Wibaux	0-3	15-25	1.10-1.20	2-6	0.09-0.11	0.0-2.9	1.0-2.0	.10	.32	2	8	0
	3-13	10-25	1.10-1.25	2-6	0.05-0.10	0.0-2.9	0.0-0.5	.10	.32			
	13-60	0-2	---	20-20	0.01-0.02	0.0-2.9	0.0-0.0	.02	.02			
176:												
Leiter	0-3	28-35	1.15-1.25	0.2-0.6	0.19-0.21	3.0-5.9	1.0-3.0	.37	.37	3	6	48
	3-22	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	22-33	30-45	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	33-60	---	---	0.001-0.06	---	---	---	---	---			
Cromack	0-6	30-40	1.15-1.25	0.2-0.6	0.18-0.20	3.0-5.9	1.0-3.0	.32	.32	3	4L	86
	6-14	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	14-29	30-50	1.30-1.40	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
	29-60	---	---	0.001-0.06	---	---	---	---	---			
177:												
Maysdorf	0-3	10-18	1.25-1.35	2-6	0.11-0.14	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	3-33	20-35	1.30-1.40	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.37	.37			
	33-60	10-18	1.30-1.45	2-6	0.11-0.15	0.0-2.9	0.0-0.5	.32	.32			
178:												
Maysdorf	0-5	20-25	1.15-1.25	0.6-2	0.14-0.16	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	5-26	20-35	1.30-1.40	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.37	.37			
	26-60	10-18	1.30-1.45	2-6	0.11-0.15	0.0-2.9	0.0-0.5	.32	.32			
179:												
Maysdorf	0-5	10-18	1.25-1.35	2-6	0.11-0.14	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	5-20	20-35	1.30-1.40	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.37	.37			
	20-60	10-18	1.30-1.45	2-6	0.11-0.15	0.0-2.9	0.0-0.5	.32	.32			

Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Perm	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
179:(cont.)												
Pugsley	0-4	10-18	1.25-1.35	2-6	0.11-0.13	0.0-2.9	1.0-2.0	.24	.24	3	3	86
	4-15	20-30	1.25-1.40	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	15-23	8-18	1.40-1.55	6-20	0.11-0.13	0.0-2.9	0.0-0.5	.28	.28			
	23-60	---	---	---	---	---	---	---	---			
180:												
Maysdorf	0-5	10-18	1.25-1.35	2-6	0.11-0.14	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	5-20	20-35	1.30-1.40	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.37	.37			
	20-60	10-18	1.30-1.45	2-6	0.11-0.15	0.0-2.9	0.0-0.5	.32	.32			
Pugsley	0-4	10-18	1.25-1.35	2-6	0.11-0.13	0.0-2.9	1.0-2.0	.24	.24	3	3	86
	4-15	20-30	1.25-1.40	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	15-23	8-18	1.40-1.55	6-20	0.11-0.13	0.0-2.9	0.0-0.5	.28	.28			
	23-60	---	---	---	---	---	---	---	---			
181:												
Moorhead	0-4	28-35	1.15-1.25	0.2-0.6	0.19-0.21	3.0-5.9	1.0-3.0	.37	.37	5	6	48
	4-24	35-50	1.15-1.25	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	24-60	30-45	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
182:												
Moorhead	0-3	20-27	1.15-1.25	0.6-2	0.16-0.18	3.0-5.9	1.0-3.0	.32	.32	5	5	56
	3-25	35-45	1.25-1.35	0.2-0.6	0.18-0.20	6.0-8.9	0.5-1.0	.37	.37			
	25-60	30-42	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
183:												
Moorhead	0-4	28-35	1.15-1.25	0.2-0.6	0.19-0.21	3.0-5.9	1.0-3.0	.37	.37	5	6	48
	4-24	35-50	1.15-1.25	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	24-60	30-45	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
Leiter	0-3	28-35	1.15-1.25	0.2-0.6	0.19-0.21	3.0-5.9	1.0-3.0	.37	.37	3	6	48
	3-22	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	22-33	30-45	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	33-60	---	---	0.001-0.06	---	---	---	---	---			
184:												
Moorhead	0-4	28-35	1.15-1.25	0.2-0.6	0.19-0.21	3.0-5.9	1.0-3.0	.37	.37	5	6	48
	4-24	35-50	1.15-1.25	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	24-60	30-45	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
Leiter	0-3	28-35	1.15-1.25	0.2-0.6	0.19-0.21	3.0-5.9	1.0-3.0	.37	.37	3	6	48
	3-22	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	22-33	30-45	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	33-60	---	---	0.001-0.06	---	---	---	---	---			
185:												
Moskee	0-9	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	2.0-4.0	.24	.24	5	3	86
	9-32	20-35	1.30-1.40	0.6-2	0.14-0.16	3.0-5.9	1.0-2.0	.32	.32			
	32-60	10-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
186:												
Moskee	0-4	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	2.0-4.0	.24	.24	5	3	86
	4-16	20-35	1.25-1.40	0.6-2	0.14-0.16	3.0-5.9	1.0-2.0	.28	.28			
	16-60	10-18	1.30-1.45	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.32	.32			
187:												
Nuncho	0-12	20-27	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	2.0-4.0	.32	.32	5	5	56
	12-30	35-45	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	1.0-2.0	.37	.37			
	30-60	28-40	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			

Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Perm	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
188:												
Orpha	0-4	5-9	1.35-1.45	20-20	0.06-0.08	0.0-2.9	1.0-2.0	.17	.17	5	2	134
	4-60	5-9	1.45-1.55	20-20	0.05-0.08	0.0-2.9	0.1-0.5	.20	.20			
Tullock	0-8	2-6	1.35-1.45	6-20	0.06-0.08	0.0-2.9	1.0-2.0	.15	.15	3	2	134
	8-30	2-8	1.45-1.55	6-20	0.06-0.09	0.0-2.9	0.0-0.5	.17	.17			
	30-60	---	---	---	---	---	---	---	---			
189:												
Oshoto	0-7	15-25	1.10-1.25	0.6-2	0.18-0.20	0.0-2.9	1.0-3.0	.37	.37	5	5	56
	7-32	28-35	1.15-1.30	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.43	.43			
	32-60	20-35	1.15-1.30	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.43	.43			
Moorhead	0-5	20-27	1.25-1.35	0.6-2	0.16-0.18	3.0-5.9	1.0-3.0	.32	.32	5	6	48
	5-35	35-50	1.20-1.30	0.06-0.2	0.15-0.19	6.0-8.9	0.5-1.0	.37	.37			
	35-60	30-42	1.20-1.35	0.2-0.6	0.15-0.19	3.0-5.9	0.0-1.0	.43	.43			
190:												
Parmleed	0-3	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	3	5	56
	3-21	35-50	1.20-1.30	0.06-0.2	0.16-0.19	6.0-8.9	0.5-1.0	.37	.37			
	21-27	25-40	1.25-1.40	0.2-0.6	0.16-0.19	3.0-5.9	0.0-0.5	.43	.43			
	27-60	---	---	---	---	---	---	---	---			
Renohill	0-4	28-35	1.15-1.25	0.2-0.6	0.18-0.20	3.0-5.9	1.0-2.0	.32	.32	3	6	48
	4-24	35-50	1.20-1.35	0.06-0.2	0.16-0.19	6.0-8.9	0.5-2.0	.37	.37			
	24-35	30-40	1.30-1.40	0.2-0.6	0.16-0.19	3.0-5.9	0.0-0.5	.37	.37			
	35-60	---	---	---	---	---	---	---	---			
191:												
Pits	---	---	---	---	---	---	---	---	---	-	---	---
Dumps	---	---	---	---	---	---	---	---	---	-	---	---
192:												
Platmak	0-4	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	2.0-4.0	.32	.32	5	5	56
	4-27	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	1.0-2.0	.37	.37			
	27-60	30-40	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
193:												
Pugsley	0-3	10-18	1.25-1.35	2-6	0.11-0.13	0.0-2.9	1.0-2.0	.24	.24	3	3	86
	3-13	20-30	1.25-1.40	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	13-25	8-18	1.40-1.55	6-20	0.11-0.13	0.0-2.9	0.0-0.5	.28	.28			
	25-60	---	---	---	---	---	---	---	---			
Decolney	0-3	10-18	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.28	.28	5	3	86
	3-22	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	22-43	10-18	1.30-1.45	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			
	43-60	10-18	1.30-1.45	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			
194:												
Pugsley	0-3	10-18	1.25-1.35	2-6	0.11-0.13	0.0-2.9	1.0-2.0	.24	.24	3	3	86
	3-13	20-30	1.25-1.40	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	13-25	8-18	1.40-1.55	6-20	0.11-0.13	0.0-2.9	0.0-0.5	.28	.28			
	25-60	---	---	---	---	---	---	---	---			
Decolney	0-3	10-18	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.28	.28	5	3	86
	3-22	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	22-43	10-18	1.30-1.45	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			
	43-60	10-18	1.30-1.45	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			

Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Perm	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
195:												
Rauzi	0-3	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.24	.24	5	3	86
	3-30	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	30-60	10-25	1.35-1.45	2-6	0.11-0.15	0.0-2.9	0.0-0.5	.24	.24			
196:												
Rauzi	0-6	20-25	1.25-1.35	0.6-2	0.14-0.16	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	6-30	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	30-60	10-18	1.35-1.45	2-6	0.11-0.15	0.0-2.9	0.0-0.5	.24	.24			
197:												
Rauzi	0-3	10-20	1.25-1.35	2-6	0.12-0.15	0.0-2.9	1.0-3.0	.24	.24	5	3	86
	3-30	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	30-60	10-25	1.35-1.45	2-6	0.11-0.15	0.0-2.9	0.0-0.5	.24	.24			
Elwop	0-4	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.24	.24	3	3	86
	4-24	20-35	1.30-1.40	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	24-35	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
	35-60	---	---	---	---	---	---	---	---			
198:												
Recluse	0-5	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	2.0-4.0	.32	32	5	5	56
	5-23	25-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	1.0-2.0	.37	37			
	23-60	15-30	1.40-1.50	0.6-2	0.16-0.19	0.0-2.9	0.0-0.5	.37	.37			
199:												
Renohill	0-3	28-35	1.15-1.25	0.2-0.6	0.18-0.20	3.0-5.9	1.0-2.0	.32	.32	3	6	48
	3-24	35-50	1.20-1.35	0.06-0.2	0.16-0.19	6.0-8.9	0.5-2.0	.37	.37			
	24-36	30-40	1.30-1.40	0.2-0.6	0.16-0.19	3.0-5.9	0.0-0.5	.37	.37			
	36-60	---	---	---	---	---	---	---	---			
Savageton	0-4	35-40	1.15-1.25	0.2-0.6	0.18-0.20	6.0-8.9	1.0-2.0	.32	.32	3	4L	86
	4-22	35-50	1.20-1.35	0.06-0.2	0.15-0.19	6.0-8.9	0.5-1.0	.37	.37			
	22-36	35-50	1.20-1.35	0.06-0.2	0.15-0.19	6.0-8.9	0.5-1.0	.37	.37			
	36-60	---	---	---	---	---	---	---	---			
200:												
Renohill	0-3	28-35	1.15-1.25	0.2-0.6	0.18-0.20	3.0-5.9	1.0-2.0	.32	.32	3	6	48
	3-24	35-50	1.20-1.35	0.06-0.2	0.16-0.19	6.0-8.9	0.5-2.0	.37	.37			
	24-36	30-40	1.30-1.40	0.2-0.6	0.16-0.19	3.0-5.9	0.0-0.5	.37	.37			
	36-60	---	---	---	---	---	---	---	---			
Savageton	0-4	35-40	1.15-1.25	0.2-0.6	0.18-0.20	6.0-8.9	1.0-2.0	.32	.32	3	4L	86
	4-22	35-50	1.20-1.35	0.06-0.2	0.15-0.19	6.0-8.9	0.5-1.0	.37	.37			
	22-36	35-50	1.20-1.35	0.06-0.2	0.15-0.19	6.0-8.9	0.5-1.0	.37	.37			
	36-60	---	---	---	---	---	---	---	---			
201:												
Renohill	0-4	28-35	1.15-1.25	0.2-0.6	0.18-0.20	3.0-5.9	1.0-2.0	.32	.32	3	6	48
	4-20	35-50	1.20-1.35	0.06-0.2	0.16-0.19	6.0-8.9	0.5-2.0	.37	.37			
	20-30	30-40	1.30-1.40	0.2-0.6	0.16-0.19	3.0-5.9	0.0-0.5	.37	.37			
	30-60	---	---	---	---	---	---	---	---			
Shingle	0-1	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	2	5	56
	1-12	20-35	1.25-1.40	0.6-2	0.16-0.20	3.0-5.9	0.0-0.5	.37	.37			
	12-60	---	---	---	---	---	---	---	---			
Worf	0-1	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	2	5	56
	1-10	20-35	1.25-1.35	0.6-2	0.15-0.19	3.0-5.9	0.5-1.0	.37	.37			
	10-14	18-30	1.40-1.50	0.6-2	0.14-0.18	3.0-5.9	0.0-0.5	.37	.37			
	14-60	---	---	---	---	---	---	---	---			

Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Perm	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
202:												
Renohill	0-4	28-35	1.15-1.25	0.2-0.6	0.18-0.20	3.0-5.9	1.0-2.0	.32	.32	3	6	48
	4-20	35-50	1.20-1.35	0.06-0.2	0.16-0.19	6.0-8.9	0.5-2.0	.37	.37			
	20-30	30-40	1.30-1.40	0.2-0.6	0.16-0.19	3.0-5.9	0.0-0.5	.37	.37			
	30-60	---	---	---	---	---	---	---	---			
Worfka	0-2	28-35	1.25-1.35	0.6-2	0.18-0.20	3.0-5.9	1.0-2.0	.37	.37	2	6	48
	2-13	35-50	1.25-1.35	0.06-0.2	0.15-0.19	6.0-8.9	0.5-1.0	.43	.43			
	13-19	28-40	1.30-1.40	0.6-2	0.16-0.18	3.0-5.9	0.0-0.5	.37	.37			
	19-60	---	---	---	---	---	---	---	---			
203:												
Rockypoint	0-3	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	4L	86
	3-60	15-35	1.40-1.50	0.6-2	0.16-0.18	3.0-5.9	0.0-0.5	.37	.37			
Iwait	0-2	15-25	1.30-1.40	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	4L	86
	2-60	20-35	1.25-1.40	0.6-2	0.16-0.20	3.0-5.9	0.0-1.0	.37	.37			
204:												
Samday	0-2	30-40	1.20-1.30	0.2-0.6	0.18-0.20	3.0-5.9	1.0-2.0	.32	.32	2	4L	86
	2-16	35-50	1.30-1.40	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
	16-60	---	---	0.001-0.06	---	---	---	---	---			
Samday, cool	0-1	30-40	1.20-1.30	0.2-0.6	0.18-0.20	3.0-5.9	1.0-2.0	.32	.32	2	4L	86
	1-10	35-50	1.30-1.40	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
	10-60	---	---	0.001-0.06	---	---	---	---	---			
Shingle	0-3	28-35	1.15-1.25	0.6-2	0.19-0.21	3.0-5.9	1.0-2.0	.32	.32	2	6	48
	3-16	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	16-60	---	---	0.001-0.06	---	---	---	---	---			
205:												
Samday	0-2	30-40	1.20-1.30	0.2-0.6	0.18-0.20	3.0-5.9	1.0-2.0	.32	.32	2	4L	86
	2-16	35-50	1.30-1.40	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
	16-60	---	---	---	---	---	---	---	---			
Savageton	0-5	35-40	1.15-1.25	0.2-0.6	0.18-0.20	3.0-5.9	1.0-2.0	.32	.32	3	4L	86
	5-15	35-50	1.20-1.35	0.06-0.2	0.15-0.19	6.0-8.9	0.5-1.0	.37	.37			
	15-28	35-50	1.20-1.35	0.06-0.2	0.15-0.19	6.0-8.9	0.5-1.0	.37	.37			
	28-60	---	---	---	---	---	---	---	---			
206:												
Samday	0-2	30-40	1.20-1.30	0.2-0.6	0.18-0.20	3.0-5.9	1.0-2.0	.32	.32	2	6	48
	2-16	35-50	1.30-1.40	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
	16-60	---	---	0.001-0.06	---	---	---	---	---			
Shingle	0-2	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	2	5	56
	2-12	20-35	1.40-1.50	0.6-2	0.16-0.18	3.0-5.9	0.0-0.5	.32	.32			
	12-60	---	---	0.001-0.06	---	---	---	---	---			
Badland	0-60	---	---	0.001-0.06	---	---	---	---	---	1	8	0
207:												
Cromack	0-6	30-40	1.15-1.25	0.2-0.6	0.18-0.20	3.0-5.9	1.0-3.0	.32	.32	3	4L	86
	6-14	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	14-29	30-50	1.30-1.40	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
	29-60	---	---	0.001-0.06	---	---	---	---	---			
Fairburn	0-4	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	2	4L	86
	4-15	20-35	1.40-1.50	0.6-2	0.16-0.18	3.0-5.9	0.0-0.5	.37	.37			
	15-60	---	---	0.001-0.06	---	---	---	---	---			

Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Perm	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
207:(cont.)												
Ucross	0-5	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	3	4L	86
	5-31	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	31-60	---	---	0.001-0.06	---	---	---	---	---			
208:												
Savageton	0-4	35-40	1.15-1.25	0.2-0.6	0.18-0.20	6.0-8.9	1.0-2.0	.32	.32	3	4L	86
	4-12	35-50	1.20-1.35	0.06-0.2	0.15-0.19	6.0-8.9	0.5-1.0	.37	.37			
	12-38	35-50	1.20-1.35	0.06-0.2	0.15-0.19	6.0-8.9	0.5-1.0	.37	.37			
	38-60	---	---	---	---	---	---	---	---			
Silhouette	0-2	30-40	1.15-1.25	0.2-0.6	0.16-0.19	3.0-5.9	1.0-2.0	.37	.37	5	4L	86
	2-28	35-45	1.20-1.30	0.2-0.6	0.16-0.19	6.0-8.9	0.5-1.0	.43	.43			
	28-60	35-45	1.30-1.40	0.2-0.6	0.16-0.19	6.0-8.9	0.0-0.5	.49	.49			
209:												
Savageton	0-3	35-40	1.15-1.25	0.2-0.6	0.18-0.20	6.0-8.9	1.0-2.0	.32	.32	3	4L	86
	3-19	35-50	1.20-1.35	0.06-0.2	0.15-0.19	6.0-8.9	0.5-1.0	.37	.37			
	19-36	35-50	1.20-1.35	0.06-0.2	0.15-0.19	6.0-8.9	0.5-1.0	.37	.37			
	36-60	---	---	---	---	---	---	---	---			
Silhouette	0-3	30-40	1.15-1.25	0.2-0.6	0.16-0.19	3.0-5.9	1.0-2.0	.37	.37	5	4L	86
	3-15	35-45	1.20-1.30	0.2-0.6	0.16-0.19	6.0-8.9	0.5-1.0	.43	.43			
	15-60	35-45	1.30-1.40	0.2-0.6	0.16-0.19	6.0-8.9	0.0-0.5	.49	.49			
210:												
Shingle	0-2	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	2	5	56
	2-12	20-35	1.40-1.50	0.6-2	0.16-0.18	3.0-5.9	0.0-0.5	.37	.37			
	12-60	---	---	0.001-0.06	---	---	---	---	---			
Taluce	0-2	10-18	1.25-1.35	6-20	0.13-0.15	0.0-2.9	0.5-1.0	.28	.28	2	3	86
	2-18	8-18	1.45-1.55	6-20	0.13-0.15	0.0-2.9	0.0-0.5	.32	.32			
	18-60	---	---	0.2-0.6	---	---	---	---	---			
211:												
Shingle	0-1	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	2	5	56
	1-12	20-35	1.25-1.40	0.6-2	0.16-0.20	3.0-5.9	0.0-0.5	.37	.37			
	12-60	---	---	---	---	---	---	---	---			
Worf	0-1	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	2	5	56
	1-10	20-35	1.25-1.35	0.6-2	0.15-0.19	3.0-5.9	0.5-1.0	.37	.37			
	10-14	18-30	1.40-1.50	0.6-2	0.14-0.18	3.0-5.9	0.0-0.5	.37	.37			
	14-60	---	---	---	---	---	---	---	---			
212:												
Teckla	0-10	10-20	1.25-1.35	2-6	0.15-0.17	0.0-2.9	1.0-2.0	.20	.28	4	3	86
	10-23	20-35	1.25-1.35	0.6-2	0.15-0.19	3.0-5.9	0.5-1.0	.28	.37			
	23-31	20-35	1.20-1.30	0.6-2	0.12-0.16	3.0-5.9	0.5-1.0	.17	.32			
	31-45	10-25	1.15-1.25	2-6	0.06-0.10	0.0-2.9	0.0-1.0	.10	.28			
	45-60	5-15	1.10-1.25	6-20	0.03-0.05	0.0-2.9	0.0-1.0	.05	.28			
213:												
Terro	0-3	10-18	1.25-1.35	2-6	0.11-0.13	0.0-2.9	1.0-2.0	.24	.24	3	3	86
	3-19	10-18	1.35-1.45	2-6	0.11-0.13	0.0-2.9	0.5-1.0	.28	.28			
	19-38	8-18	1.40-1.55	2-6	0.11-0.13	0.0-2.9	0.0-0.5	.24	.24			
	38-60	---	---	---	---	---	---	---	---			
Taluce	0-2	10-18	1.25-1.35	6-20	0.12-0.15	0.0-2.9	0.5-1.0	.28	.28	2	3	86
	2-14	8-18	1.35-1.45	6-20	0.12-0.14	0.0-2.9	0.0-0.5	.32	.32			
	14-60	---	---	---	---	---	---	---	---			

Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Perm	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
214:												
Theedle	0-4	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	3	4L	86
	4-36	20-35	1.25-1.35	0.6-2	0.16-0.20	3.0-5.9	0.5-1.0	.37	.37			
	36-60	---	---	---	---	---	---	---	---			
Kishona	0-4	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	4L	86
	4-60	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
215:												
Theedle	0-4	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	3	4L	86
	4-36	20-35	1.25-1.35	0.6-2	0.16-0.20	3.0-5.9	0.5-1.0	.37	.37			
	36-60	---	---	0.001-0.06	---	---	---	---	---			
Kishona	0-4	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	4L	86
	4-60	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
216:												
Theedle	0-2	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	3	4L	86
	2-28	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	28-60	---	---	0.001-0.06	---	---	---	---	---			
Kishona	0-4	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	4L	86
	4-60	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
Shingle	0-2	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	2	5	56
	2-12	20-35	1.40-1.50	0.6-2	0.16-0.18	3.0-5.9	0.0-0.5	.37	.37			
	12-60	---	---	0.001-0.06	---	---	---	---	---			
217:												
Theedle	0-2	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	3	4L	86
	2-28	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	28-60	---	---	0.001-0.06	---	---	---	---	---			
Shingle	0-2	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	2	5	56
	2-12	20-35	1.40-1.50	0.6-2	0.16-0.18	3.0-5.9	0.0-0.5	.37	.37			
	12-60	---	---	0.001-0.06	---	---	---	---	---			
218:												
Theedle	0-3	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	3	4L	86
	3-35	20-35	1.25-1.35	0.6-2	0.16-0.20	3.0-5.9	0.5-1.0	.37	.37			
	35-60	---	---	---	---	---	---	---	---			
Turnercrest	0-2	8-15	1.30-1.40	2-6	0.11-0.13	0.0-2.9	1.0-2.0	.20	.20	3	3	86
	2-34	10-18	1.35-1.50	2-6	0.12-0.14	0.0-2.9	0.0-0.5	.28	.28			
	34-60	---	---	---	---	---	---	---	---			
Kishona	0-4	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.28	.28	5	5	56
	4-60	20-35	1.25-1.35	0.6-2	0.16-0.19	3.0-5.9	0.0-0.5	.37	.37			
219:												
Torriarents	0-4	20-40	1.25-1.35	0.2-0.6	0.15-0.19	3.0-5.9	0.0-1.0	.37	.37	5	4L	86
	4-60	20-40	1.40-1.50	0.2-0.6	0.15-0.19	3.0-5.9	0.0-0.5	.43	.43			
Torriorthents	0-5	20-40	1.25-1.35	0.2-0.6	0.15-0.19	3.0-5.9	0.0-1.0	.37	.37	5	4L	86
	5-60	20-40	1.40-1.50	0.2-0.6	0.15-0.19	3.0-5.9	0.0-0.5	.43	.43			
220:												
Pitchdraw	0-4	8-15	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	3	3	86
	4-31	10-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			
	31-60	---	---	0.2-0.6	---	---	---	---	---			

Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Perm	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
220:(cont.)												
Ashollow	0-5	8-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.24	.24	5	3	86
	5-60	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			
Niobrara	0-3	2-8	1.35-1.45	6-20	0.06-0.08	0.0-2.9	0.5-1.0	.20	.20	2	2	134
	3-12	2-8	1.45-1.55	6-20	0.04-0.06	0.0-2.9	0.0-0.5	.20	.20			
	12-60	---	---	0.2-0.6	---	---	---	---	---			
221:												
Turnercrest	0-2	8-18	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	3	3	86
	2-32	8-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			
	32-60	---	---	0.2-0.6	---	---	---	---	---			
Keeline	0-4	8-18	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	4-60	8-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			
Taluce	0-2	8-18	1.25-1.35	6-20	0.13-0.15	0.0-2.9	1.0-2.0	.28	.28	2	3	86
	2-14	10-18	1.25-1.35	6-20	0.13-0.15	0.0-2.9	0.0-1.0	.32	.32			
	14-60	---	---	0.2-0.6	---	---	---	---	---			
222:												
Turnercrest	0-3	4-8	1.45-1.55	6-20	0.06-0.08	0.0-2.9	1.0-2.0	.15	.15	3	2	134
	3-22	10-18	1.35-1.50	2-6	0.12-0.14	0.0-2.9	0.0-0.5	.28	.28			
	22-60	---	---	---	---	---	---	---	---			
Wibaux, thin solum	0-3	15-25	1.10-1.20	2-6	0.09-0.11	0.0-2.9	1.0-2.0	.15	.32	1	8	0
	3-9	15-25	1.10-1.25	2-6	0.05-0.10	0.0-2.9	0.0-0.5	.05	.32			
	9-60	0-2	---	20-20	0.01-0.02	0.0-2.9	0.0-0.0	.02	.02			
Taluce	0-2	10-18	1.25-1.35	6-20	0.12-0.15	0.0-2.9	0.5-1.0	.28	.28	2	3	86
	2-14	8-18	1.35-1.45	6-20	0.12-0.14	0.0-2.9	0.0-0.5	.32	.32			
	14-60	---	---	---	---	---	---	---	---			
223:												
Ucross	0-5	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	3	4L	86
	5-31	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	31-60	---	---	0.001-0.06	---	---	---	---	---			
224:												
Ucross	0-5	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	3	4L	86
	5-31	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	31-60	---	---	0.001-0.06	---	---	---	---	---			
Iwait	0-6	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	4L	86
	6-60	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
225:												
Ucross	0-5	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	3	4L	86
	5-31	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	31-60	---	---	0.001-0.06	---	---	---	---	---			
Iwait	0-6	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	4L	86
	6-60	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
Fairburn	0-4	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	2	4L	86
	4-15	20-35	1.40-1.50	0.6-2	0.16-0.18	3.0-5.9	0.0-0.5	.37	.37			
	15-60	---	---	0.001-0.06	---	---	---	---	---			

Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Perm	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
226:												
Ulm	0-2	15-25	1.20-1.30	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	2-25	35-50	1.20-1.35	0.06-0.2	0.16-0.20	6.0-8.9	0.5-1.0	.37	.37			
	25-60	25-40	1.25-1.35	0.2-0.6	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
227:												
Ulm	0-4	28-35	1.15-1.25	0.2-0.6	0.18-0.20	3.0-5.9	1.0-2.0	.37	.37	5	6	48
	4-25	35-50	1.20-1.35	0.06-0.2	0.16-0.20	6.0-8.9	0.5-1.0	.37	.37			
	25-60	25-40	1.25-1.35	0.2-0.6	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
228:												
Ulm	0-4	28-35	1.15-1.25	0.2-0.6	0.19-0.21	3.0-5.9	1.0-2.0	.32	.32	5	6	48
	4-25	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	25-60	30-45	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
Renohill	0-4	28-35	1.15-1.25	0.2-0.6	0.19-0.21	3.0-5.9	1.0-2.0	.37	.37	3	6	48
	4-24	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	24-35	30-45	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	35-60	---	---	0.001-0.06	---	---	---	---	---			
229:												
Ulm	0-4	28-35	1.15-1.25	0.2-0.6	0.19-0.21	3.0-5.9	1.0-2.0	.37	.37	5	6	48
	4-25	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	25-60	30-45	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
Renohill	0-4	28-35	1.15-1.25	0.2-0.6	0.19-0.21	3.0-5.9	1.0-2.0	.37	.37	3	6	48
	4-24	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	24-35	28-45	1.30-1.40	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	35-60	---	---	0.001-0.06	---	---	---	---	---			
230:												
Urban land	---	---	---	---	---	---	---	---	---	-	---	---
Deekay	0-4	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	4-23	25-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	23-60	20-30	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
Moorhead	0-6	28-35	1.20-1.30	0.2-0.6	0.18-0.20	3.0-5.9	1.0-3.0	.37	.37	5	6	48
	6-24	35-50	1.20-1.30	0.06-0.2	0.15-0.19	6.0-8.9	0.5-1.0	.37	.37			
	24-60	30-42	1.20-1.35	0.2-0.6	0.15-0.19	3.0-5.9	0.0-0.5	.43	.43			
231:												
Urban land	---	---	---	---	---	---	---	---	---	-	---	---
Leiter	0-3	28-35	1.15-1.25	0.2-0.6	0.19-0.21	3.0-5.9	1.0-3.0	.37	.37	3	6	48
	3-22	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	22-33	28-45	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	33-60	---	---	---	---	---	---	---	---			
Moorhead	0-4	28-35	1.15-1.25	0.2-0.6	0.19-0.21	3.0-5.9	1.0-3.0	.37	.37	5	6	48
	4-24	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	24-60	30-45	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
232:												
Urban land	---	---	---	---	---	---	---	---	---	-	---	---
Pitchdraw	0-4	8-15	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	3	3	86
	4-31	10-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			
	31-60	---	---	---	---	---	---	---	---			

Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Perm	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
232:(cont.)												
Ashollow	0-5	8-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.24	.24	5	3	86
	5-60	6-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			
233:												
Ustic Torriorthents	0-4	15-30	1.25-1.35	0.6-2	0.16-0.18	0.0-2.9	0.5-1.0	.32	.32	3	4L	86
	4-35	15-30	1.25-1.35	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.32	.32			
	35-60	---	---	0.001-0.06	---	---	---	---	---			
234:												
Ustic Torriorthents	0-4	15-30	1.25-1.35	0.6-2	0.16-0.18	0.0-2.9	0.5-1.0	.32	.32	3	4L	86
	4-35	15-30	1.25-1.35	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.32	.32			
	35-60	---	---	0.001-0.06	---	---	---	---	---			
Badland	0-60	---	---	0.001-0.06	---	---	---	---	---	1	8	0
235:												
Vonalee	0-3	10-18	1.35-1.45	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	3-24	10-18	1.35-1.45	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.28	.28			
	24-60	8-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.32	.32			
236:												
Vonalee	0-3	10-18	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	3-24	10-18	1.30-1.40	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.28	.28			
	24-60	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
Terro	0-3	10-18	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	3	3	86
	3-16	10-18	1.30-1.40	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.28	.28			
	16-30	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
	30-60	---	---	0.2-0.6	---	---	---	---	---			
237:												
Vonalf	0-6	10-18	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.24	.24	5	3	86
	6-34	10-18	1.30-1.40	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.28	.28			
	34-60	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
238:												
Vonalf	0-6	10-18	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.24	.24	5	3	86
	6-34	10-18	1.30-1.40	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.28	.28			
	34-60	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
Xema	0-4	10-18	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	3	3	86
	4-22	10-18	1.30-1.40	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.28	.28			
	22-31	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
	31-60	---	---	0.2-0.6	---	---	---	---	---			
239:												
Ironbutte	0-4	15-25	1.15-1.25	0.6-2	0.12-0.14	0.0-2.9	1.0-3.0	.20	.32	2	8	0
	4-12	10-25	1.25-1.35	2-6	0.06-0.08	0.0-2.9	0.5-1.0	.10	.37			
	12-60	0-2	---	20-20	0.00-0.02	0.0-2.9	0.0-0.5	.02	.02			
Fairburn	0-4	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	2	4L	86
	4-15	20-35	1.40-1.50	0.6-2	0.16-0.18	3.0-5.9	0.0-0.5	.37	.37			
	15-60	---	---	0.001-0.06	---	---	---	---	---			
Mittenbutte	0-3	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.28	.28	2	3	86
	3-16	8-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
	16-60	---	---	0.2-0.6	---	---	---	---	---			

Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Perm	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
240:												
Wibaux	0-3	10-20	1.10-1.20	2-6	0.09-0.11	0.0-2.9	1.0-2.0	.15	.28	2	8	0
	3-16	15-25	1.10-1.25	2-6	0.05-0.10	0.0-2.9	0.0-0.5	.05	.32			
	16-60	0-2	---	20-20	0.01-0.02	0.0-2.9	0.0-0.0	.02	.02			
Wibaux, thin solum	0-3	15-25	1.10-1.20	2-6	0.09-0.11	0.0-2.9	1.0-2.0	.15	.32	1	8	0
	3-9	15-25	1.10-1.25	2-6	0.05-0.10	0.0-2.9	0.0-0.5	.05	.32			
	9-60	0-2	---	20-20	0.01-0.02	0.0-2.9	0.0-0.0	.02	.02			
241:												
Ironbutte	0-4	15-25	1.15-1.25	0.6-2	0.12-0.14	0.0-2.9	1.0-3.0	.20	.32	2	8	0
	4-12	10-25	1.25-1.35	2-6	0.06-0.08	0.0-2.9	0.5-1.0	.10	.37			
	12-60	0-2	---	20-20	0.00-0.02	0.0-2.9	0.0-0.5	.02	.02			
Ironbutte, thin solum	0-2	15-25	1.15-1.25	0.6-2	0.12-0.14	0.0-2.9	1.0-3.0	.20	.32	1	8	0
	2-10	10-25	1.25-1.35	2-6	0.06-0.08	0.0-2.9	0.5-1.0	.10	.37			
	10-60	0-2	---	20-20	0.00-0.02	0.0-2.9	0.0-0.5	.02	.02			
242:												
Ironbutte	0-4	15-25	1.15-1.25	0.6-2	0.12-0.14	0.0-2.9	1.0-3.0	.20	.32	2	8	0
	4-12	10-25	1.25-1.35	2-6	0.06-0.08	0.0-2.9	0.5-1.0	.10	.37			
	12-60	0-2	---	20-20	0.00-0.02	0.0-2.9	0.0-0.5	.02	.02			
Deekay	0-4	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	4-23	25-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	23-60	20-30	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
Moorhead	0-4	20-27	1.25-1.35	0.6-2	0.16-0.18	3.0-5.9	1.0-3.0	.32	.32	5	6	48
	4-26	35-50	1.20-1.30	0.06-0.2	0.15-0.19	6.0-8.9	0.5-1.0	.37	.37			
	26-60	30-42	1.20-1.35	0.2-0.6	0.15-0.19	3.0-5.9	0.0-0.5	.43	.43			
243:												
Wibaux, thick solum	0-5	10-25	1.15-1.30	2-6	0.10-0.14	0.0-2.9	1.0-2.0	.20	.32	3	8	0
	5-23	10-25	1.15-1.30	6-20	0.05-0.08	0.0-2.9	0.0-0.5	.10	.32			
	23-60	0-2	---	20-20	0.01-0.02	0.0-2.9	0.0-0.0	.02	.02			
Wibaux	0-3	10-20	1.15-1.25	2-6	0.09-0.11	0.0-2.9	1.0-2.0	.15	.32	2	8	0
	3-16	20-30	1.10-1.25	2-6	0.05-0.10	0.0-2.9	0.0-0.5	.05	.32			
	16-60	0-2	---	20-20	0.01-0.02	0.0-2.9	0.0-0.0	.02	.02			
244:												
Muleherder	0-2	15-25	1.15-1.25	0.6-2	0.14-0.16	0.0-2.9	1.0-2.0	.20	.32	3	8	0
	2-16	10-25	1.25-1.35	0.6-2	0.12-0.14	0.0-2.9	0.5-1.0	.20	.32			
	16-33	8-20	1.45-1.55	6-20	0.05-0.07	0.0-2.9	0.0-0.5	.05	.28			
	33-60	0-2	---	20-20	0.00-0.02	0.0-2.9	0.0-0.0	.02	.02			
Ironbutte	0-4	15-25	1.15-1.25	0.6-2	0.12-0.14	0.0-2.9	1.0-3.0	.20	.32	2	8	0
	4-12	10-25	1.25-1.35	2-6	0.06-0.08	0.0-2.9	0.5-1.0	.10	.37			
	12-60	0-2	---	20-20	0.00-0.02	0.0-2.9	0.0-0.5	.02	.02			
245:												
Wibaux	0-4	15-25	1.10-1.20	0.6-2	0.11-0.14	0.0-2.9	1.0-3.0	.17	.32	2	8	0
	4-12	15-25	1.10-1.25	2-6	0.05-0.10	0.0-2.9	0.0-0.5	.05	.32			
	12-60	0-2	---	20-20	0.01-0.02	0.0-2.9	0.0-0.0	.02	.02			
Shingle	0-1	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	2	5	56
	1-12	20-35	1.25-1.40	0.6-2	0.16-0.20	3.0-5.9	0.0-0.5	.37	.37			
	12-60	---	---	---	---	---	---	---	---			
Badland	0-60	---	---	0.001-0.06	---	---	---	---	---	1	8	0

Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Perm	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
246:												
Wyarno	0-3	28-35	1.25-1.35	0.6-2	0.18-0.20	3.0-5.9	1.0-2.0	.32	.32	5	6	48
	3-12	35-50	1.20-1.35	0.06-0.2	0.16-0.19	6.0-8.9	0.5-1.0	.37	.37			
	12-60	30-40	1.25-1.35	0.2-0.6	0.16-0.18	3.0-5.9	0.0-0.5	.43	.43			
Ulm	0-4	28-35	1.15-1.25	0.2-0.6	0.18-0.20	3.0-5.9	1.0-2.0	.37	.37	5	6	48
	4-25	35-50	1.20-1.35	0.06-0.2	0.16-0.20	6.0-8.9	0.5-1.0	.37	.37			
	25-60	25-40	1.25-1.35	0.2-0.6	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
247:												
Wyotite	0-2	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.37	.37	5	5	56
	2-38	28-35	1.20-1.30	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.43	.43			
	38-60	15-35	1.25-1.35	0.6-2	0.15-0.17	3.0-5.9	0.0-0.5	.43	.43			
Ulm	0-6	20-27	1.20-1.30	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.37	.37	5	5	56
	6-23	35-50	1.20-1.30	0.06-0.2	0.16-0.20	6.0-8.9	0.5-1.0	.43	.43			
	23-60	28-40	1.20-1.30	0.2-0.6	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
248:												
Ziggy	0-5	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	5-14	20-35	1.25-1.35	0.6-2	0.16-0.18	0.0-2.9	0.5-1.0	.37	.37			
	14-60	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
Iwait	0-6	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	4L	86
	6-60	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
249:												
Ziggy	0-5	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	5-14	20-35	1.25-1.35	0.6-2	0.16-0.18	0.0-2.9	0.5-1.0	.37	.37			
	14-60	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
Iwait	0-6	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	4L	86
	6-60	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
250:												
Ziggy	0-5	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	5-14	20-35	1.25-1.35	0.6-2	0.16-0.18	0.0-2.9	0.5-1.0	.37	.37			
	14-60	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
Ucross	0-5	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	3	4L	86
	5-31	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	31-60	---	---	0.001-0.06	---	---	---	---	---			
Oldwolf	0-3	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	3	5	56
	3-21	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	21-32	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	32-60	---	---	0.001-0.06	---	---	---	---	---			

Chemical Properties of the Soils

(Dashes (--) indicate that data were not available or were not estimated.)

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100 g	pH	Pct	Pct	mmhos/cm	
100:								
Aridic Ustorthents, saline	0-2	20-27	14-18	6.6-7.8	0-1	0	0.0-2.0	0-5
	2-6	30-40	16-21	7.4-8.4	2-5	0	2.0-4.0	1-10
	6-46	25-40	13-18	7.4-8.4	2-10	1-2	8.0-16.0	1-13
	46-60	20-35	10-17	7.4-8.4	2-10	0-2	8.0-16.0	1-13
101:								
Arvada, thick surface	0-7	8-18	7-13	6.6-7.8	0	0	0	0
	7-15	35-40	20-22	7.4-8.4	0	0	0.0-2.0	3-10
	15-26	35-50	19-26	8.5-9.0	0-5	0-1	4.0-12.0	13-30
	26-60	35-50	19-26	8.5-9.0	6-12	1-2	8.0-16.0	13-30
102:								
Arvada, thick surface	0-7	8-18	7-13	6.6-7.8	0	0	0	0
	7-15	35-40	20-22	7.4-8.4	0	0	0.0-2.0	3-10
	15-26	35-50	19-26	8.5-9.0	0-5	0-1	4.0-12.0	13-30
	26-60	35-50	19-26	8.5-9.0	6-12	1-2	8.0-16.0	13-30
Arvada	0-2	12-20	9-13	7.4-8.4	0	0	0.0-2.0	0
	2-9	35-45	18-23	8.5-9.6	0	0	2.0-4.0	13-30
	9-15	35-45	18-23	7.9-9.6	3-10	0-1	4.0-12.0	13-30
	15-60	30-45	16-23	7.9-9.6	6-12	1-2	8.0-16.0	10-25
Slickspots	---	---	---	---	---	---	---	---
103:								
Arwite	0-5	10-18	7-16	6.6-7.8	0	0	0	0
	5-32	20-35	11-19	6.6-8.4	0	0	0	0
	32-60	8-18	4-10	7.4-8.4	1-5	0	0.0-2.0	0
104:								
Arwite	0-5	10-18	7-16	6.6-7.8	0	0	0	0
	5-32	20-35	11-19	6.6-8.4	0	0	0	0
	32-60	8-18	4-10	7.4-8.4	1-5	0	0.0-2.0	0
105:								
Arwite	0-5	10-18	7-16	6.6-7.8	0	0	0	0
	5-32	20-35	11-19	6.6-8.4	0	0	0	0
	32-60	8-18	4-10	7.4-8.4	1-5	0	0.0-2.0	0
Elwop	0-4	10-18	7-16	6.6-7.3	0	0	0	0
	4-24	20-35	11-19	6.6-7.8	0	0	0	0
	24-35	8-18	4-10	7.9-8.4	1-5	0	0.0-2.0	0
	35-60	---	---	---	---	---	---	---
106:								
Arwite	0-5	10-18	7-16	6.6-7.8	0	0	0	0
	5-32	20-35	11-19	6.6-8.4	0	0	0	0
	32-60	8-18	4-10	7.4-8.4	1-5	0	0.0-2.0	0
Elwop	0-4	10-18	7-16	6.6-7.3	0	0	0	0
	4-24	20-35	11-19	6.6-7.8	0	0	0	0
	24-35	8-18	4-10	7.9-8.4	1-5	0	0.0-2.0	0
	35-60	---	---	---	---	---	---	---

Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100 g	pH	Pct	Pct	mmhos/cm	
107:								
Arwite	0-5	10-18	7-16	6.6-7.8	0	0	0	0
	5-32	20-35	11-19	6.6-8.4	0	0	0	0
	32-60	8-18	4-10	7.4-8.4	1-5	0	0.0-2.0	0
Vonalf	0-6	10-15	5-13	6.6-7.8	0	0	0	0
	6-34	10-18	6-11	6.6-7.8	0	0	0	0
	34-60	8-18	4-10	7.4-8.4	1-5	0	0.0-2.0	0
108:								
Arwite	0-5	10-18	7-16	6.6-7.8	0	0	0	0
	5-32	20-35	11-19	6.6-8.4	0	0	0	0
	32-60	8-18	4-10	7.4-8.4	1-5	0	0.0-2.0	0
Vonalf	0-6	10-18	5-13	6.6-7.8	0	0	0	0
	6-34	10-18	6-11	6.6-7.8	0	0	0	0
	34-60	8-18	4-10	7.4-8.4	1-5	0	0.0-2.0	0
109:								
Bidman	0-2	15-27	12-18	6.1-7.3	0	0	0	0
	2-28	35-50	21-27	6.6-7.8	0	0	0	0
	28-60	25-40	14-18	7.9-8.4	5-15	0	0.0-2.0	0
110:								
Bidman, loamy substratum	0-4	15-25	14-18	6.6-7.3	0	0	0	0
	4-25	35-50	20-27	6.6-7.8	0	0	0	0
	25-52	30-40	15-20	7.9-8.4	5-15	0	0.0-2.0	0
	52-60	15-30	5-10	7.9-8.4	5-15	0	0.0-2.0	0
111:								
Bidman	0-2	15-25	12-18	6.1-7.3	0	0	0	0
	2-28	35-50	21-27	6.6-7.8	0	0	0	0
	28-60	25-40	14-18	7.9-8.4	5-15	0	0.0-2.0	0
Parmleed	0-3	15-25	12-15	6.6-7.3	0	0	0	0
	3-21	35-50	20-26	6.6-8.4	0	0	0	0
	21-27	25-40	10-20	7.9-8.4	5-15	0-1	0.0-2.0	0-5
	27-60	---	---	---	---	---	---	---
112:								
Bidman	0-2	15-25	12-18	6.1-7.3	0	0	0	0
	2-28	35-50	21-27	6.6-7.8	0	0	0	0
	28-48	25-40	14-18	7.9-8.4	5-15	0	0.0-2.0	0
Parmleed	0-3	15-25	12-15	6.6-7.3	0	0	0	0
	3-21	35-50	20-26	6.6-8.4	0	0	0	0
	21-27	25-40	10-20	7.9-8.4	5-15	0-1	0.0-2.0	0-5
	27-60	---	---	---	---	---	---	---
113:								
Bidman	0-7	15-25	12-18	6.1-7.3	0	0	0	0
	7-36	35-50	21-27	6.6-7.8	0	0	0	0
	36-60	25-40	14-18	7.9-8.4	5-15	0	0.0-2.0	0
Ulm	0-4	15-25	13-18	6.6-7.3	0	0	0	0
	4-30	30-45	20-27	6.6-8.4	0	0	0	0
	30-60	25-40	14-18	7.9-8.4	5-15	0-1	0.0-2.0	0-5

Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100 g	pH	Pct	Pct	mmhos/cm	
114:								
Bowbac	0-3	10-18	8-12	6.6-7.3	0	0	0	0
	3-31	20-35	12-20	6.6-7.8	0	0	0	0
	31-39	8-18	4-12	7.9-8.4	1-5	0	0.0-2.0	0
	39-60	---	---	---	---	---	---	---
Taluce	0-2	10-18	6-9	6.1-7.3	0	0	0	0
	2-14	8-18	3-8	6.1-7.3	0	0	0	0
	14-60	---	---	---	---	---	---	---
Badland	0-60	---	---	---	---	---	---	---
115:								
Bowbac	0-3	10-18	8-12	6.6-7.3	0	0	0	0
	3-31	20-35	12-20	6.6-7.8	0	0	0	0
	31-39	8-18	4-12	7.9-8.4	1-5	0	0.0-2.0	0
	39-60	---	---	---	---	---	---	---
Worf	0-1	10-18	10-14	6.6-7.8	0	0	0	0
	1-12	20-35	14-19	6.6-7.8	0	0	0	0
	12-18	18-30	10-15	7.9-8.4	5-10	0	0.0-2.0	0
	18-60	---	---	---	---	---	---	---
116:								
Cambria	0-2	15-25	14-18	6.6-7.3	0	0	0	0
	2-10	25-35	15-20	6.6-7.8	0	0	0	0
	10-60	20-30	11-16	7.9-8.4	5-15	0	0.0-2.0	0-5
Kishona	0-2	15-25	9-16	7.4-8.4	0-1	0	0	0
	2-60	20-35	10-17	7.9-8.4	5-15	0	0.0-2.0	0-5
Zigweid	0-2	15-25	12-18	7.4-7.8	0-1	0	0	0
	2-13	20-35	12-20	7.9-8.4	0-10	0	0	0
	13-60	20-35	12-20	7.9-8.4	5-15	0	0.0-2.0	0-5
117:								
Cambria	0-3	15-25	14-18	6.6-7.3	0	0	0	0
	3-12	25-35	15-20	6.6-8.4	0	0	0	0
	12-60	20-30	11-16	7.9-8.4	5-15	0	0.0-2.0	0-5
Kishona	0-2	15-25	9-16	7.4-8.4	0-1	0	0	0
	2-60	20-35	10-17	7.9-8.4	5-15	0	0.0-2.0	0-5
Zigweid	0-2	15-25	12-18	7.4-7.8	0-1	0	0	0
	2-13	20-35	12-20	7.9-8.4	0-10	0	0	0
	13-60	20-35	12-20	7.9-8.4	5-15	0	0.0-2.0	0-5
118:								
Clarkelen	0-3	7-16	7-12	7.4-8.4	0-3	0	0	0
	3-60	8-18	6-11	7.9-8.4	1-5	0	0.0-2.0	0
Draknab	0-4	7-15	7-11	6.6-7.8	0	0	0	0
	4-28	3-10	3-6	7.4-8.4	0-1	0	0	0
	28-60	1-8	1-4	7.4-8.4	0-1	0	0.0-2.0	0
119:								
Clarkelen	0-3	7-16	7-12	6.1-7.8	0	0	0	0
	3-60	8-18	6-11	6.1-7.8	0	0	0.0-2.0	0
Embry	0-3	6-15	6-10	6.6-7.3	0	0	0	0
	3-60	8-16	5-9	6.6-7.8	0	0	0	0

Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100 g	pH	Pct	Pct	mmhos/cm	
120:								
Clarkelen	0-3	7-16	7-12	7.4-8.4	0-3	0	0	0
	3-60	8-18	6-11	7.9-8.4	1-5	0	0.0-2.0	0
Keeline	0-4	6-16	6-11	7.4-8.4	0-5	0	0	0
	4-60	7-16	5-9	7.9-8.4	1-5	0	0.0-2.0	0
121:								
Cushman	0-2	15-25	12-17	6.6-7.8	0	0	0	0
	2-19	20-35	12-20	6.6-8.4	0	0	0	0
	19-31	20-35	11-19	7.9-8.4	5-15	0	0.0-2.0	0-5
	31-60	---	---	---	---	---	---	---
Cambria	0-2	15-25	14-18	6.6-7.3	0	0	0	0
	2-12	25-35	15-20	6.6-8.4	0	0	0	0
	12-60	20-30	11-16	7.9-8.4	5-15	0	0.0-2.0	0-5
122:								
Cushman	0-2	15-25	7-13	6.6-7.8	0	0	0	0
	2-23	20-35	13-19	7.4-8.4	0	0	0	0
	23-30	20-35	10-16	7.9-8.4	5-15	0	0.0-2.0	0-5
	30-60	---	---	---	---	---	---	---
Cambria	0-2	15-25	7-13	6.6-7.3	0	0	0	0
	2-12	20-35	13-19	6.6-7.8	0	0	0	0
	12-60	20-30	10-16	7.9-8.4	5-15	0	0.0-2.0	0-5
123:								
Cushman	0-3	15-25	12-17	6.6-7.8	0	0	0	0
	3-13	20-35	12-20	7.4-8.4	0	0	0	0
	13-25	20-35	11-19	7.9-8.4	5-15	0	0.0-2.0	0-5
	25-60	---	---	---	---	---	---	---
Renohill	0-2	20-27	13-16	6.6-7.3	0	0	0	0
	2-14	35-50	17-25	7.4-8.4	0	0	0	0
	14-26	30-40	15-20	7.9-8.4	5-15	0-1	0.0-2.0	0-5
	26-60	---	---	---	---	---	---	---
124:								
Cushman	0-3	15-25	12-17	6.6-7.8	0	0	0	0
	3-13	20-35	12-20	7.4-8.4	0	0	0	0
	13-25	20-35	11-19	7.9-8.4	5-15	0	0.0-2.0	0-5
	25-60	---	---	---	---	---	---	---
Shingle	0-1	15-25	11-19	7.4-8.4	0-3	0	0	0
	1-12	20-35	10-17	7.9-8.4	5-10	0	0.0-2.0	0-5
	12-60	---	---	---	---	---	---	---
125:								
Cushman	0-3	15-25	12-17	6.6-7.8	0	0	0	0
	3-13	20-35	12-20	7.4-8.4	0	0	0	0
	13-25	20-35	11-19	7.9-8.4	5-15	0	0.0-2.0	0-5
	25-60	---	---	---	---	---	---	---
Terro	0-3	10-18	6-9	6.6-7.8	0	0	0	0
	3-16	10-18	6-10	6.6-7.8	0	0	0	0
	16-23	8-18	6-10	7.4-8.4	1-5	0	0.0-2.0	0
	23-60	---	---	---	---	---	---	---

Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100 g	pH	Pct	Pct	mmhos/cm	
126:								
Cushman	0-2	15-25	12-17	6.6-7.8	0	0	0	0
	2-23	20-35	12-20	6.6-8.4	0	0	0	0
	23-30	20-35	11-19	7.9-8.4	5-15	0	0.0-2.0	0-5
	30-60	---	---	---	---	---	---	---
Theedle	0-2	15-25	11-18	6.6-8.4	0-5	0	0	0
	2-28	20-35	10-16	7.4-8.4	5-15	0	0.0-2.0	0-5
	28-60	---	---	---	---	---	---	---
127:								
Cushman	0-3	15-25	12-17	6.6-7.8	0	0	0	0
	3-13	20-35	12-20	6.6-8.4	0	0	0	0
	13-25	20-35	11-19	7.9-8.4	5-15	0	0.0-2.0	0-5
	25-60	---	---	---	---	---	---	---
Theedle	0-2	15-25	11-18	6.6-8.4	0-5	0	0	0
	2-28	20-35	10-16	7.4-8.4	5-15	0	0.0-2.0	0-5
	28-60	---	---	---	---	---	---	---
128:								
Cushman	0-5	15-25	12-17	6.6-7.8	0	0	0	0
	5-25	20-35	12-20	6.6-8.4	0	0	0	0
	25-35	20-35	11-19	7.9-8.4	5-15	0	0.0-2.0	0-5
	35-60	---	---	---	---	---	---	---
Worf	0-2	15-25	11-16	6.6-7.8	0	0	0	0
	2-10	20-35	14-19	6.6-7.8	0	0	0	0
	10-18	18-30	10-15	7.9-8.4	5-10	0	0.0-2.0	0-5
	18-60	---	---	---	---	---	---	---
129:								
Decolney	0-3	10-18	10-14	6.6-7.3	0	0	0	0
	3-22	20-35	12-16	6.6-7.8	0	0	0	0
	22-43	10-18	8-14	7.4-7.9	0	0	0	0
	43-60	10-18	6-12	7.9-8.4	1-5	0	0.0-2.0	0
Hiland	0-4	10-18	9-13	6.6-7.3	0	0	0	0
	4-15	20-35	12-19	6.6-8.4	0	0	0	0
	15-60	10-18	5-9	7.9-8.4	1-5	0	0.0-2.0	0
130:								
Decolney	0-3	10-18	10-14	6.6-7.3	0	0	0	0
	3-22	20-35	12-16	6.6-7.8	0	0	0	0
	22-43	10-18	8-14	7.4-7.9	0	0	0	0
	43-60	10-18	6-12	7.9-8.4	1-5	0	0.0-2.0	0
Hiland	0-3	10-18	9-13	6.6-7.3	0	0	0	0
	3-32	20-35	12-19	6.6-8.4	0	0	0	0
	32-60	10-18	5-9	7.9-8.4	1-5	0	0.0-2.0	0
131:								
Deskay	0-4	15-25	9-19	6.6-7.3	0	0	0	0
	4-24	20-35	13-20	6.6-8.4	0	0	0	0
	24-60	20-35	7-16	7.9-8.4	5-15	0	0.0-2.0	0-5
132:								
Deskay	0-4	15-25	9-19	6.6-7.3	0	0	0	0
	4-24	20-35	13-20	6.6-8.4	0	0	0	0
	24-60	20-35	7-16	7.9-8.4	5-15	0	0.0-2.0	0-5

Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100 g	pH	Pct	Pct	mmhos/cm	
132:(cont.)								
Moorhead	0-5	20-27	15-18	6.6-7.3	0	0	0	0
	5-35	35-50	20-27	6.6-8.4	0	0	0	0
	35-60	30-42	16-22	7.9-8.4	5-15	0-1	0.0-2.0	0-5
133:								
Deekay	0-4	15-25	9-19	6.6-7.3	0	0	0	0
	4-24	20-35	13-20	6.6-8.4	0	0	0	0
	24-60	20-35	7-16	7.9-8.4	5-15	0	0.0-2.0	0-5
Moorhead	0-5	20-27	15-18	6.6-7.3	0	0	0	0
	5-35	35-50	20-27	6.6-8.4	0	0	0	0
	35-60	30-42	16-22	7.9-8.4	5-15	0-1	0.0-2.0	0-5
134:								
Deekay	0-4	15-25	9-19	6.6-7.3	0	0	0	0
	4-24	20-35	13-20	6.6-8.4	0	0	0	0
	24-60	20-35	7-16	7.9-8.4	5-15	0	0.0-2.0	0-5
Oldwolf	0-3	15-25	9-19	6.6-7.3	0	0	0	0
	3-21	20-35	13-20	6.6-8.4	0	0	0	0
	21-32	20-35	7-16	7.9-8.4	5-15	0	0.0-2.0	0-5
	32-60	---	---	---	---	---	---	---
135:								
Deekay	0-4	15-25	9-19	6.6-7.3	0	0	0	0
	4-24	20-35	13-20	6.6-8.4	0	0	0	0
	24-60	20-35	7-16	7.9-8.4	5-15	0	0.0-2.0	0-5
Oldwolf	0-3	15-25	9-19	6.6-7.3	0	0	0	0
	3-21	20-35	13-20	6.6-8.4	0	0	0	0
	21-32	20-35	7-16	7.9-8.4	5-15	0	0.0-2.0	0-5
	32-60	---	---	---	---	---	---	---
136:								
Deekay	0-4	15-25	9-19	6.6-7.3	0	0	0	0
	4-24	20-35	13-20	6.6-8.4	0	0	0	0
	24-60	20-35	7-16	7.9-8.4	5-15	0	0.0-2.0	0-5
Ziggy	0-5	15-25	9-19	6.6-7.8	0-1	0	0	0
	5-14	20-35	11-20	7.4-8.4	0-10	0	0	0
	14-60	20-35	10-18	7.9-8.4	5-15	0	0.0-2.0	0-5
137:								
Echeta	0-3	30-40	17-26	6.6-7.8	0	0	0	0
	3-15	35-50	18-27	7.4-8.4	0-10	0	0	0
	15-60	30-50	15-26	7.9-8.4	5-15	0-1	0.0-2.0	0-5
138:								
Echeta	0-3	30-40	17-26	6.6-7.8	0	0	0	0
	3-15	35-50	18-27	7.4-8.4	0-10	0	0	0
	15-60	30-50	15-26	7.9-8.4	5-15	0-1	0.0-2.0	0-5
Cromack	0-6	30-40	17-26	6.6-8.4	0-3	0	0	0
	6-14	35-50	18-27	7.4-8.4	0-10	0	0	0
	14-29	30-50	15-26	7.9-8.4	5-15	0-1	0.0-2.0	0-5
	29-60	---	---	---	---	---	---	---

Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100 g	pH	Pct	Pct	mmhos/cm	
139:								
Embry	0-4	6-15	6-10	6.6-7.3	0	0	0	0
	4-60	8-16	5-9	6.6-7.8	0	0	0	0
Orpha	0-4	3-8	4-8	6.6-7.8	0	0	0	0
	4-60	3-8	2-5	6.6-7.8	0	0	0	0
140:								
Embry	0-6	6-15	6-10	6.6-7.3	0	0	0	0
	6-60	8-16	5-9	6.6-7.8	0	0	0	0
Taluce	0-4	10-18	6-9	6.1-7.3	0	0	0	0
	4-16	8-18	3-8	6.1-7.3	0	0	0	0
	16-60	---	---	---	---	---	---	---
141:								
Emigha	0-1	15-27	14-18	7.4-7.8	0-5	0	0	0
	1-19	28-35	16-20	7.9-9.0	2-8	0	2.0-4.0	1-13
	19-60	20-35	10-18	7.9-9.0	5-10	0-2	4.0-8.0	1-13
142:								
Emigha, sodic	0-3	28-35	16-20	7.4-7.8	0-3	0	2.0-4.0	2-10
	3-14	28-35	15-19	8.4-9.6	2-8	0	8.0-16.0	13-30
	14-60	25-35	13-18	7.9-9.0	2-8	0-2	8.0-16.0	13-25
Arvada, thick surface	0-3	18-27	12-16	6.6-7.8	0	0	0	0
	3-12	35-40	20-22	7.4-8.4	0	0	0.0-2.0	3-10
	12-30	35-50	19-26	8.5-9.0	0-5	1-2	4.0-12.0	13-30
	30-46	35-50	19-26	8.5-9.0	6-12	1-2	8.0-16.0	13-30
	46-60	35-45	18-23	7.9-9.0	6-12	1-2	8.0-16.0	10-25
143:								
Felix, ponded	0-5	55-75	40-58	6.1-7.3	0	0	0	0
	5-30	60-80	43-58	6.6-7.8	0-2	0	0	0-5
	30-50	60-75	42-53	7.4-8.4	0-2	0	2.0-4.0	0-5
	50-60	50-70	35-50	7.4-8.4	0-5	0-2	2.0-4.0	0-5
144:								
Forkwood	0-2	15-25	9-16	6.6-7.8	0	0	0	0
	2-23	20-35	11-19	6.6-8.4	0	0	0	0
	23-60	20-35	8-16	7.9-8.4	5-15	0	0.0-2.0	0-5
145:								
Forkwood	0-3	15-25	12-17	6.6-7.3	0	0	0	0
	3-14	20-35	14-20	6.6-8.4	0	0	0	0
	14-60	20-30	10-15	7.9-8.4	5-15	0	0.0-2.0	0-5
Cambria	0-2	15-25	14-18	6.6-7.3	0	0	0	0
	2-12	25-35	15-20	6.6-8.4	0	0	0	0
	12-60	20-30	11-16	7.9-8.4	5-15	0	0.0-2.0	0-5
146:								
Forkwood	0-2	15-25	9-16	6.6-7.8	0	0	0	0
	2-23	20-35	11-19	6.6-8.4	0	0	0	0
	23-60	20-35	8-16	7.9-8.4	5-15	0	0.0-2.0	0-5
Cushman	0-2	15-25	7-13	6.6-7.8	0	0	0	0
	2-23	20-35	13-19	7.4-8.4	0	0	0	0
	23-30	20-35	10-16	7.9-8.4	5-15	0	0.0-2.0	0-5
	30-60	---	---	---	---	---	---	---

Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100 g	pH	Pct	Pct	mmhos/cm	
147:								
Forkwood	0-2	15-25	9-16	6.6-7.8	0	0	0	0
	2-23	20-35	11-19	6.6-8.4	0	0	0	0
	23-60	20-35	8-16	7.9-8.4	5-15	0	0.0-2.0	0-5
Cushman	0-2	15-25	7-13	6.6-7.8	0	0	0	0
	2-23	20-35	13-19	7.4-8.4	0	0	0	0
	23-30	20-35	10-16	7.9-8.4	5-15	0	0.0-2.0	0-5
	30-60	---	---	---	---	---	---	---
148:								
Forkwood	0-2	15-25	9-16	6.6-7.8	0	0	0	0
	2-23	20-35	11-19	6.6-8.4	0	0	0	0
	23-60	20-35	8-16	7.9-8.4	5-15	0	0.0-2.0	0-5
Ulm	0-2	15-25	9-16	6.6-7.3	0	0	0	0
	2-22	35-50	19-27	6.6-8.4	0	0	0	0
	22-60	25-40	15-23	7.9-8.4	5-15	0-1	0.0-2.0	0-5
149:								
Forkwood	0-2	15-25	9-16	6.6-7.8	0	0	0	0
	2-23	20-35	11-19	6.6-8.4	0	0	0	0
	23-60	20-35	8-16	7.9-8.4	5-15	0	0.0-2.0	0-5
Ulm	0-2	15-25	9-16	6.6-7.3	0	0	0	0
	2-22	35-50	19-27	6.6-8.4	0	0	0	0
	22-60	25-40	15-23	7.9-8.4	5-15	0-1	0.0-2.0	0-5
150:								
Gateson	0-2	---	---	---	---	---	---	---
	2-6	2-8	3-5	6.1-7.3	0	0	0	0
	6-11	5-25	3-5	6.1-7.3	0	0	0	0
	11-30	20-30	14-17	6.6-7.8	0	0	0	0
	30-60	---	---	---	---	---	---	---
Taluce	0-3	10-18	6-9	6.1-7.3	0	0	0	0
	3-16	8-18	3-8	6.1-7.3	0	0	0	0
	16-60	---	---	---	---	---	---	---
Turnercrest	0-4	4-8	2-4	6.1-7.3	0	0	0	0
	4-32	10-18	4-9	6.1-7.3	0	0	0	0
	32-60	---	---	---	---	---	---	---
151:								
Haverdad, loam	0-4	15-25	12-16	6.6-8.4	0-5	0	0.0-1.0	0
	4-60	15-35	12-16	7.4-9.0	1-10	0	0.0-5.0	0-5
152:								
Haverdad	0-3	15-25	12-16	7.4-8.4	0-5	0	0.0-2.0	0
	3-60	20-35	12-18	7.4-8.4	3-8	0	2.0-4.0	0-5
Clarkelen	0-4	7-16	7-12	7.4-8.4	0-3	0	0	0
	4-60	8-18	6-11	7.9-8.4	1-5	0	0.0-2.0	0
153:								
Haverdad	0-7	28-35	16-20	7.4-8.4	0-5	0	0.0-2.0	0
	7-60	20-35	12-19	7.4-8.4	3-8	0	2.0-4.0	0-5
Kishona	0-3	28-35	16-21	7.4-8.4	0-1	0	0	0
	3-60	20-35	10-17	7.9-8.4	5-15	0	2.0-4.0	0-5

Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100 g	pH	Pct	Pct	mmhos/cm	
154:								
Heldt	0-3	30-40	20-23	7.4-8.4	0-5	0	0	0
	3-25	40-50	21-26	7.9-9.0	1-5	0	2.0-4.0	1-5
	25-60	35-45	18-23	7.9-9.0	5-10	0-2	2.0-4.0	1-5
155:								
Heldt, saline	0-2	30-40	17-24	7.4-8.4	0-5	0	0.0-2.0	0-5
	2-22	35-50	19-27	7.9-9.0	5-10	0-1	8.0-16.0	2-13
	22-60	35-45	19-27	7.9-9.0	5-10	0-1	8.0-16.0	2-13
Bidman, saline	0-4	15-25	9-17	6.6-7.8	0	0	0.0-2.0	0
	4-13	35-50	19-27	7.4-8.4	0	0-1	4.0-8.0	2-10
	13-60	30-45	15-24	7.9-9.0	5-10	0-1	8.0-16.0	2-13
156:								
Hiland	0-3	10-18	9-13	6.6-7.3	0	0	0	0
	3-19	20-35	12-19	6.6-8.4	0	0	0	0
	19-60	10-18	5-9	7.9-8.4	1-5	0	0.0-2.0	0
157:								
Hiland	0-4	10-18	9-13	6.6-7.3	0	0	0	0
	4-24	20-35	12-19	6.6-8.4	0	0	0	0
	24-60	10-18	5-9	7.9-8.4	1-5	0	0.0-2.0	0
Bowbac	0-3	10-18	8-12	6.6-7.3	0	0	0	0
	3-31	20-35	12-20	6.6-7.8	0	0	0	0
	31-39	8-18	4-12	7.9-8.4	1-5	0	0.0-2.0	0
	39-60	---	---	---	---	---	---	---
158:								
Hiland	0-4	10-18	9-13	6.6-7.3	0	0	0	0
	4-24	20-35	12-19	6.6-8.4	0	0	0	0
	24-60	10-18	5-9	7.9-8.4	1-5	0	0.0-2.0	0
Bowbac	0-3	10-18	8-12	6.6-7.3	0	0	0	0
	3-31	20-35	12-20	6.6-7.8	0	0	0	0
	31-39	8-18	4-12	7.9-8.4	1-5	0	0.0-2.0	0
	39-60	---	---	---	---	---	---	---
159:								
Hiland	0-3	10-18	9-13	6.6-7.3	0	0	0	0
	3-23	20-35	12-19	6.6-8.4	0	0	0	0
	23-60	10-18	5-9	7.9-8.4	1-5	0	0.0-2.0	0
Vonalee	0-5	10-18	7-10	6.6-7.8	0	0	0	0
	5-16	10-18	7-11	6.6-7.8	0	0	0	0
	16-60	8-18	2-6	7.4-8.4	1-5	0	0.0-2.0	0
160:								
Hiland	0-3	10-18	9-13	6.6-7.3	0	0	0	0
	3-23	20-35	12-19	6.6-8.4	0	0	0	0
	23-60	10-18	5-9	7.9-8.4	1-5	0	0.0-2.0	0
Vonalee	0-5	10-18	7-10	6.6-7.8	0	0	0	0
	5-24	10-18	7-11	6.6-7.8	0	0	0	0
	24-60	8-18	2-6	7.4-8.4	1-5	0	0.0-2.0	0
161:								
Hilight	0-2	30-40	20-23	6.6-7.8	0	0	0	0
	2-14	40-55	20-27	6.1-7.8	0	0-1	0	0
	14-60	---	---	---	---	---	---	---

Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100 g	pH	Pct	Pct	mmhos/cm	
161:(cont.)								
Taluce, cool	0-4	10-18	6-9	6.1-7.3	0	0	0	0
	4-18	8-18	3-8	6.1-7.3	0	0	0	0
	18-60	---	---	---	---	---	---	---
Wags	0-4	30-40	22-27	6.6-7.8	0	0	0	0
	4-34	40-60	21-31	6.1-7.8	0	0-2	0	0
	34-60	---	---	---	---	---	---	---
162:								
Lismas	0-3	30-40	19-32	6.1-7.8	0	0	0	0
	3-16	40-60	29-41	6.1-7.8	0	0-2	0.0-2.0	0-5
	16-60	---	---	---	---	---	---	---
Mittenbutte, cool	0-4	10-18	7-13	6.1-7.3	0	0	0	0
	4-18	8-18	5-10	6.6-7.8	0	0	0	0
	18-60	---	---	---	---	---	---	---
Sabatka	0-3	30-40	22-32	6.6-7.8	0	0	0	0
	3-19	35-55	29-44	6.6-7.8	0	0	0	0
	19-30	30-50	29-44	6.1-7.8	0	0-2	0	0-5
	30-60	---	---	---	---	---	---	---
163:								
Hilight	0-2	40-55	22-29	6.1-7.8	0	0	0	0
	2-12	40-55	20-27	6.1-7.8	0	0-1	0	0
	12-60	---	---	---	---	---	---	---
Wags	0-1	30-40	17-22	6.6-7.8	0	0	0	0
	1-23	40-60	21-31	6.1-7.8	0	0-2	0	0
	23-60	---	---	---	---	---	---	---
Badland	0-60	---	---	---	---	---	---	---
164:								
Lismas	0-3	30-40	19-32	6.1-7.8	0	0	0	0
	3-16	40-60	29-41	6.1-7.8	0	0-2	0.0-2.0	0-5
	16-60	---	---	---	---	---	---	---
Sabatka	0-3	30-40	22-32	6.6-7.8	0	0	0	0
	3-19	35-55	29-44	6.6-7.8	0	0	0	0
	19-30	30-50	29-44	6.1-7.8	0	0-2	0	0-5
	30-60	---	---	---	---	---	---	---
Badland	0-60	---	---	---	---	---	---	---
165:								
Jayem	0-17	10-18	8-15	6.6-7.3	0	0	0	0
	17-31	10-18	4-9	6.6-7.3	0	0	0	0
	31-60	8-18	3-9	6.6-7.8	0	0	0	0
166:								
Jaywest	0-7	15-25	9-19	6.1-7.3	0	0	0	0
	7-36	35-50	18-27	6.6-8.4	0	0	0	0
	36-60	25-40	15-23	7.9-8.4	5-15	0-1	0.0-2.0	0-5
167:								
Jaywest	0-7	15-25	9-19	6.1-7.3	0	0	0	0
	7-36	35-50	18-27	6.6-8.4	0	0	0	0
	36-60	25-40	15-23	7.9-8.4	5-15	0-1	0.0-2.0	0-5

Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100 g	pH	Pct	Pct	mmhos/cm	
167:(cont.)								
Moorhead	0-5	20-27	15-18	6.6-7.3	0	0	0	0
	5-35	35-50	20-27	6.6-8.4	0	0	0	0
	35-60	30-42	16-22	7.9-8.4	5-15	0-1	0.0-2.0	0-5
168:								
Jaywest	0-7	15-25	9-19	6.1-7.3	0	0	0	0
	7-36	35-50	18-27	6.6-8.4	0	0	0	0
	36-60	25-40	15-23	7.9-8.4	5-15	0-1	0.0-2.0	0-5
Spottedhorse	0-4	15-25	9-19	6.1-7.8	0	0	0	0
	4-27	35-50	18-27	6.6-8.4	0	0	0	0
	27-35	30-45	15-23	7.9-8.4	5-15	0	0.0-2.0	0-5
	35-60	---	---	---	---	---	---	---
169:								
Julesburg	0-10	10-18	9-13	6.6-7.3	0	0	0	0
	10-32	10-18	7-12	6.6-7.8	0	0	0	0
	32-60	8-15	3-7	6.6-7.8	0	0	0	0
170:								
Keeline	0-6	2-8	4-7	7.4-8.4	0-5	0	0	0
	6-60	7-16	5-9	7.9-8.4	1-5	0	0.0-2.0	0
Tullock	0-4	2-6	4-7	6.6-7.8	0-2	0	0	0
	4-28	2-8	1-4	7.4-8.4	1-5	0	0.0-2.0	0
	28-60	---	---	---	---	---	---	---
171:								
Keeline	0-4	6-16	6-11	7.4-8.4	0-5	0	0	0
	4-60	7-16	5-9	7.9-8.4	1-5	0	0.0-2.0	0
Tullock	0-4	2-6	4-7	6.6-7.8	0-2	0	0	0
	4-22	2-8	1-4	7.4-8.4	1-5	0	0.0-2.0	0
	22-60	---	---	---	---	---	---	---
Niobrara, dry	0-3	2-8	2-5	6.1-7.3	0-1	0	0	0
	3-12	2-8	1-4	6.6-7.3	0	0	0	0
	12-60	---	---	---	---	---	---	---
172:								
Keyner	0-4	10-20	8-13	7.4-7.8	0	0	0.0-2.0	0-5
	4-12	20-35	12-19	7.9-8.4	0	0	0.0-2.0	2-10
	12-20	20-35	10-17	8.5-9.6	0-2	0-1	8.0-16.0	10-20
	20-26	20-35	10-17	8.5-9.6	5-10	0-1	8.0-16.0	15-30
	26-60	15-30	6-12	8.5-9.6	5-15	0-1	8.0-16.0	15-30
173:								
Lawver	0-4	10-25	12-15	6.6-7.8	0	0	0	0
	4-20	35-50	18-26	6.6-7.8	0	0	0	0
	20-27	35-45	19-24	7.4-8.4	5-10	0	0	0
	27-38	20-35	13-18	7.9-8.4	5-10	0	0	0-5
	38-60	6-15	4-7	6.1-7.8	0-3	0	0	0
Teckla	0-10	10-20	9-13	6.6-7.3	0	0	0	0
	10-23	20-35	12-19	6.6-7.8	0	0	0	0
	23-31	20-35	12-19	6.6-7.8	0	0	0	0
	31-45	10-25	7-12	7.9-9.0	5-15	0	0	0-5
	45-60	5-15	3-6	6.6-8.4	0-5	0	0	0-5

Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100 g	pH	Pct	Pct	mmhos/cm	
173:(cont.)								
Wibaux	0-3	15-25	11-16	6.6-7.8	0	0	0	0
	3-13	10-25	9-14	6.6-7.8	0	0	0	0
	13-60	0-2	0-0	---	0-1	0	0	0
174:								
Brislawn	0-6	15-25	9-19	6.1-7.3	0	0	0	0
	6-21	35-50	18-27	6.6-7.8	0	0	0	0
	21-31	30-45	16-25	7.4-8.4	0-5	0	0.0-2.0	0
	31-37	20-35	10-19	7.9-8.4	5-15	0	0.0-2.0	0-5
	37-60	0-2	---	---	0-5	---	---	---
Rockybutte	0-5	15-25	9-19	6.6-7.8	0	0	0	0
	5-23	20-35	11-20	6.6-7.8	0	0	0	0
	23-38	20-35	10-19	7.4-8.4	5-15	0	0.0-2.0	0-5
	38-60	0-2	---	---	---	---	---	---
Ironbutte	0-4	15-25	9-19	6.6-7.8	0	0	0	0
	4-12	10-25	5-14	6.6-8.4	0-3	0	0	0
	12-60	0-2	0-0	---	0-1	0	0	0
175:								
Lawver	0-4	10-25	12-15	6.6-7.8	0	0	0	0
	4-20	35-50	18-26	6.6-7.8	0	0	0	0
	20-27	35-45	19-24	7.4-8.4	5-10	0	0	0
	27-38	20-35	13-18	7.9-8.4	5-10	0	0	0-5
	38-60	6-15	4-7	6.1-7.8	0-3	0	0	0
Wibaux	0-3	15-25	11-16	6.6-7.8	0	0	0	0
	3-13	10-25	9-14	6.6-7.8	0	0	0	0
	13-60	0-2	0-0	---	0-1	0	0	0
176:								
Leiter	0-3	28-35	16-24	6.6-7.8	0	0	0	0
	3-22	35-50	26-37	6.6-8.4	0	0	0	0
	22-33	30-45	14-32	7.9-8.4	5-15	0-1	0.0-2.0	0-5
	33-60	---	---	---	---	---	---	---
Cromack	0-6	30-40	17-26	6.6-8.4	0-3	0	0	0
	6-14	35-50	18-27	7.4-8.4	0-10	0	0	0
	14-29	30-50	15-26	7.9-8.4	5-15	0-1	0.0-2.0	0-5
	29-60	---	---	---	---	---	---	---
177:								
Maysdorf	0-3	10-18	10-14	6.6-7.3	0	0	0	0
	3-33	20-35	12-18	6.6-7.8	0	0	0	0
	33-60	10-18	8-12	7.9-8.4	5-10	0	0.0-2.0	0
178:								
Maysdorf	0-5	20-25	14-17	6.6-7.3	0	0	0	0
	5-26	20-35	12-18	6.6-7.8	0	0	0	0
	26-60	10-18	8-12	7.9-8.4	5-10	0	0.0-2.0	0
179:								
Maysdorf	0-5	10-18	10-14	6.6-7.3	0	0	0	0
	5-20	20-35	12-18	6.6-7.8	0	0	0	0
	20-60	10-18	8-12	7.9-8.4	5-10	0	0.0-2.0	0

Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100 g	pH	Pct	Pct	mmhos/cm	
179:(cont.)								
Pugsley	0-4	10-18	7-11	6.6-7.3	0	0	0	0
	4-15	20-30	12-19	6.6-7.8	0	0	0	0
	15-23	8-18	4-10	7.4-7.8	0-2	0	0.0-2.0	0
	23-60	---	---	---	---	---	---	---
180:								
Maysdorf	0-5	10-18	10-14	6.6-7.3	0	0	0	0
	5-20	20-35	12-18	6.6-7.8	0	0	0	0
	20-60	10-18	8-12	7.9-8.4	5-10	0	0.0-2.0	0
Pugsley	0-4	10-18	7-11	6.6-7.3	0	0	0	0
	4-15	20-30	12-19	6.6-7.8	0	0	0	0
	15-23	8-18	4-10	7.4-7.8	0-2	0	0.0-2.0	0
	23-60	---	---	---	---	---	---	---
181:								
Moorhead	0-4	28-35	16-24	6.6-7.3	0	0	0	0
	4-24	35-50	26-37	6.6-8.4	0	0	0	0
	24-60	30-45	14-32	7.9-8.4	5-15	0-1	0.0-2.0	0-5
182:								
Moorhead	0-3	20-27	15-18	6.6-7.3	0	0	0	0
	3-25	35-45	20-27	6.6-8.4	0	0	0	0
	25-60	30-42	16-22	7.9-8.4	5-15	0-1	0.0-2.0	0-5
183:								
Moorhead	0-4	28-35	16-24	6.6-7.3	0	0	0	0
	4-24	35-50	26-37	6.6-8.4	0	0	0	0
	24-60	30-45	14-32	7.9-8.4	5-15	0-1	0.0-2.0	0-5
Leiter	0-3	28-35	16-24	6.6-7.8	0	0	0	0
	3-22	35-50	26-37	6.6-8.4	0	0	0	0
	22-33	30-45	14-32	7.9-8.4	5-15	0-1	0.0-2.0	0-5
	33-60	---	---	---	---	---	---	---
184:								
Moorhead	0-4	28-35	16-24	6.6-7.3	0	0	0	0
	4-24	35-50	26-37	6.6-8.4	0	0	0	0
	24-60	30-45	14-32	7.9-8.4	5-15	0-1	0.0-2.0	0-5
Leiter	0-3	28-35	16-24	6.6-7.8	0	0	0	0
	3-22	35-50	26-37	6.6-8.4	0	0	0	0
	22-33	30-45	14-32	7.9-8.4	5-15	0-1	0.0-2.0	0-5
	33-60	---	---	---	---	---	---	---
185:								
Moskee	0-9	10-18	7-16	6.6-7.3	0	0	0	0
	9-32	20-35	11-19	6.6-8.4	0	0	0	0
	32-60	10-18	4-10	7.9-8.4	1-5	0	0.0-2.0	0
186:								
Moskee	0-4	10-18	11-15	6.6-7.3	0	0	0	0
	4-16	20-35	14-22	6.6-8.4	0	0	0	0
	16-60	10-18	5-13	7.9-8.4	1-5	0	0.0-2.0	0
187:								
Nuncho	0-12	20-27	17-20	6.6-7.3	0	0	0	0
	12-30	35-45	22-27	6.6-7.8	0	0	0	0
	30-60	28-40	15-20	7.9-8.4	5-15	0	0.0-2.0	0-5

Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100 g	pH	Pct	Pct	mmhos/cm	
188:								
Orpha	0-4	5-9	5-9	6.6-7.8	0	0	0	0
	4-60	5-9	2-5	6.6-7.8	0	0	0	0
Tullock	0-8	2-6	4-7	6.6-7.8	0-2	0	0	0
	8-30	2-8	1-4	7.4-8.4	1-5	0	0.0-2.0	0
	30-60	---	---	---	---	---	---	---
189:								
Oshoto	0-7	15-25	12-20	6.6-7.8	0	0	0	0
	7-32	28-35	15-20	6.6-8.4	0	0	0	0
	32-60	20-35	15-20	7.4-8.4	5-15	0	0.0-2.0	0-5
Moorhead	0-5	20-27	15-18	6.6-7.3	0	0	0	0
	5-35	35-50	20-27	6.6-8.4	0	0	0	0
	35-60	30-42	16-22	7.9-8.4	5-15	0-1	0.0-2.0	0-5
190:								
Parmleed	0-3	15-25	12-15	6.6-7.3	0	0	0	0
	3-21	35-50	20-26	6.6-8.4	0	0	0	0
	21-27	25-40	10-20	7.9-8.4	5-15	0-1	0.0-2.0	0-5
	27-60	---	---	---	---	---	---	---
Renohill	0-4	28-35	16-20	6.6-7.3	0	0	0	0
	4-24	35-50	19-27	7.4-8.4	0	0	0	0
	24-35	30-40	15-20	7.9-8.4	5-15	0-1	0.0-2.0	0-5
	35-60	---	---	---	---	---	---	---
191:								
Pits	---	---	---	---	---	---	---	---
Dumps	---	---	---	---	---	---	---	---
192:								
Platmak	0-4	15-25	9-19	6.6-7.3	0	0	0	0
	4-27	35-50	18-27	6.6-8.4	0	0	0	0
	27-60	30-40	15-23	7.9-8.4	5-15	0-1	0.0-2.0	0-5
193:								
Pugsley	0-3	10-18	7-11	6.6-7.3	0	0	0	0
	3-13	20-30	12-19	6.6-7.8	0	0	0	0
	13-25	8-18	4-10	7.4-7.8	0-2	0	0.0-2.0	0
	25-60	---	---	---	---	---	---	---
Decolney	0-3	10-18	10-14	6.6-7.3	0	0	0	0
	3-22	20-35	12-16	6.6-7.8	0	0	0	0
	22-43	10-18	8-14	7.4-7.9	0	0	0	0
	43-60	10-18	6-12	7.9-8.4	1-5	0	0.0-2.0	0
194:								
Pugsley	0-3	10-18	7-11	6.6-7.3	0	0	0	0
	3-13	20-30	12-19	6.6-7.8	0	0	0	0
	13-25	8-18	4-10	7.4-7.8	0-2	0	0.0-2.0	0
	25-60	---	---	---	---	---	---	---
Decolney	0-3	10-18	10-14	6.6-7.3	0	0	0	0
	3-22	20-35	12-16	6.6-7.8	0	0	0	0
	22-43	10-18	8-14	7.4-7.9	0	0	0	0
	43-60	10-18	6-12	7.9-8.4	1-5	0	0.0-2.0	0

Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100 g	pH	Pct	Pct	mmhos/cm	
195:								
Rauzi	0-3	10-18	10-14	6.6-7.3	0	0	0	0
	3-30	20-35	12-20	6.6-7.8	0	0	0	0
	30-60	10-25	6-12	7.4-7.8	0-2	0	0.0-2.0	0
196:								
Rauzi	0-6	20-25	14-16	6.6-7.3	0	0	0	0
	6-30	20-35	12-20	6.6-7.8	0	0	0	0
	30-60	10-18	6-12	7.9-8.4	0-2	0	0.0-2.0	0
197:								
Rauzi	0-3	10-20	10-14	6.6-7.3	0	0	0	0
	3-30	20-35	12-20	6.6-7.8	0	0	0	0
	30-60	10-25	6-12	7.4-7.8	0-2	0	0.0-2.0	0
Elwop	0-4	10-18	7-16	6.6-7.3	0	0	0	0
	4-24	20-35	11-19	6.6-7.8	0	0	0	0
	24-35	8-18	4-10	7.9-8.4	1-5	0	0.0-2.0	0
	35-60	---	---	---	---	---	---	---
198:								
Recluse	0-5	15-25	9-19	6.6-7.3	0	0	0	0
	5-23	25-35	13-20	6.6-8.4	0	0	0	0
	23-60	15-30	7-16	7.9-8.4	5-15	0	0.0-2.0	0-5
199:								
Renohill	0-3	28-35	16-20	6.6-7.3	0	0	0	0
	3-24	35-50	19-27	7.4-8.4	0	0	0	0
	24-36	30-40	15-20	7.9-8.4	5-15	0-1	0.0-2.0	0-5
	36-60	---	---	---	---	---	---	---
Savageton	0-4	35-40	21-23	7.4-8.4	0	0	0	0
	4-22	35-50	19-27	7.9-8.4	1-8	0	0	0
	22-36	35-50	19-27	7.9-8.4	5-15	0-1	0.0-2.0	0-5
	36-60	---	---	---	---	---	---	---
200:								
Renohill	0-3	28-35	16-20	6.6-7.3	0	0	0	0
	3-24	35-50	19-27	7.4-8.4	0	0	0	0
	24-36	30-40	15-20	7.9-8.4	5-15	0-1	0.0-2.0	0-5
	36-60	---	---	---	---	---	---	---
Savageton	0-4	35-40	21-23	7.4-8.4	0	0	0	0
	4-22	35-50	19-27	7.9-8.4	1-8	0	0	0
	22-36	35-50	19-27	7.9-8.4	5-15	0-1	0.0-2.0	0-5
	36-60	---	---	---	---	---	---	---
201:								
Renohill	0-4	28-35	16-20	6.6-7.3	0	0	0	0
	4-20	35-50	19-27	7.4-8.4	0	0	0	0
	20-30	30-40	15-20	7.9-8.4	5-15	0-1	0.0-2.0	0-5
	30-60	---	---	---	---	---	---	---
Shingle	0-1	15-25	11-19	7.4-8.4	0-5	0	0	0
	1-12	20-35	10-17	7.9-8.4	5-10	0	0.0-2.0	0-5
	12-60	---	---	---	---	---	---	---
Worf	0-1	15-25	11-16	6.6-7.8	0	0	0	0
	1-10	20-35	14-19	6.6-7.8	0	0	0	0
	10-14	18-30	10-15	7.9-8.4	5-10	0	0.0-2.0	0-5
	14-60	---	---	---	---	---	---	---

Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100 g	pH	Pct	Pct	mmhos/cm	
202:								
Renohill	0-4	28-35	16-20	6.6-7.3	0	0	0	0
	4-20	35-50	19-27	7.4-8.4	0	0	0	0
	20-30	30-40	15-20	7.9-8.4	5-15	0-1	0.0-2.0	0-5
	30-60	---	---	---	---	---	---	---
Worfka	0-2	28-35	18-21	6.6-7.8	0	0	0	0
	2-13	35-50	20-26	7.4-8.4	0	0	0	0
	13-19	28-40	12-17	7.9-8.4	5-15	0-1	0.0-2.0	0-5
	19-60	---	---	---	---	---	---	---
203:								
Rockypoint	0-3	15-25	14-18	6.6-7.8	0-5	0	0.0-2.0	0
	3-60	15-35	12-19	7.4-8.4	1-10	0-1	4.0-8.0	0-5
Iwait	0-2	15-25	13-18	6.6-8.4	0-5	0	0	0
	2-60	20-35	11-18	7.9-8.4	5-15	0	2.0-4.0	0-5
204:								
Samday	0-2	30-40	17-23	6.6-8.4	0-5	0	0.0-2.0	0
	2-16	35-50	18-26	7.4-8.4	5-10	0-1	2.0-4.0	0-5
	16-60	---	---	---	---	---	---	---
Samday, cool	0-1	30-40	17-23	6.6-8.4	0-5	0	0.0-2.0	0
	1-10	35-50	18-26	7.4-8.4	5-10	0-1	2.0-4.0	0-5
	10-60	---	---	---	---	---	---	---
Shingle	0-3	28-35	16-23	6.6-8.4	0-1	0	0	0
	3-16	20-35	10-17	7.9-8.4	5-10	0	0.0-2.0	0-5
	16-60	---	---	---	---	---	---	---
205:								
Samday	0-2	30-40	17-23	6.6-8.4	0-5	0	0.0-2.0	0
	2-16	35-50	18-26	7.4-8.4	5-10	0-1	2.0-4.0	0-5
	16-60	---	---	---	---	---	---	---
Savageton	0-5	35-40	21-23	7.4-8.4	0	0	0	0
	5-15	35-50	19-27	7.9-8.4	1-8	0	0	0
	15-28	35-50	19-27	7.9-8.4	5-15	0-1	0.0-2.0	0-5
	28-60	---	---	---	---	---	---	---
206:								
Samday	0-2	30-40	17-23	6.6-8.4	0-5	0	0.0-2.0	0
	2-16	35-50	18-26	7.4-8.4	5-10	0-1	2.0-4.0	0-5
	16-60	---	---	---	---	---	---	---
Shingle	0-2	15-25	9-16	6.6-8.4	0-5	0	0	0
	2-12	20-35	10-18	7.9-8.4	5-10	0	0.0-2.0	0-5
	12-60	---	---	---	---	---	---	---
Badland	0-60	---	---	---	---	---	---	---
207:								
Cromack	0-6	30-40	17-26	6.6-8.4	0-3	0	0	0
	6-14	35-50	18-27	7.4-8.4	0-10	0	0	0
	14-29	30-50	15-26	7.9-8.4	5-15	0-1	0.0-2.0	0-5
	29-60	---	---	---	---	---	---	---
Fairburn	0-4	15-25	9-19	6.6-8.4	0-5	0	0	0
	4-15	20-35	11-19	7.4-8.4	5-15	0	0.0-2.0	0-5
	15-60	---	---	---	---	---	---	---

Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100 g	pH	Pct	Pct	mmhos/cm	
207:(cont.)								
Ucross	0-5	15-25	14-18	6.6-8.4	0-5	0	0	0
	5-31	20-35	12-18	7.4-8.4	5-15	0	0.0-2.0	0-5
	31-60	---	---	---	---	---	---	---
208:								
Savageton	0-4	35-40	21-23	7.4-8.4	0	0	0	0
	4-12	35-50	19-27	7.9-8.4	1-8	0	0	0
	12-38	35-50	19-27	7.9-8.4	5-15	0-1	0.0-2.0	0-5
	38-60	---	---	---	---	---	---	---
Silhouette	0-2	30-40	19-22	7.4-7.8	0-5	0	0	0
	2-28	35-45	18-23	7.4-8.4	1-5	0	0	0
	28-60	35-45	18-23	7.9-8.4	3-10	0	0.0-2.0	0-5
209:								
Savageton	0-3	35-40	21-23	7.4-8.4	0	0	0	0
	3-19	35-50	19-27	7.9-8.4	1-8	0	0	0
	19-36	35-50	19-27	7.9-8.4	5-15	0-1	0.0-2.0	0-5
	36-60	---	---	---	---	---	---	---
Silhouette	0-3	30-40	19-22	7.4-7.8	0-5	0	0	0
	3-15	35-45	18-23	7.4-8.4	1-5	0	0	0
	15-60	35-45	18-23	7.9-8.4	3-10	0-1	0.0-4.0	0-5
210:								
Shingle	0-2	15-25	9-16	6.6-8.4	0-5	0	0	0
	2-12	20-35	10-18	7.9-8.4	5-10	0	0.0-2.0	0-5
	12-60	---	---	---	---	---	---	---
Taluce	0-2	10-18	7-13	6.6-8.4	0-3	0	0	0
	2-18	8-18	5-10	7.9-8.4	1-5	0	0.0-2.0	0
	18-60	---	---	---	---	---	---	---
211:								
Shingle	0-1	15-25	11-19	7.4-8.4	0-5	0	0	0
	1-12	20-35	10-17	7.9-8.4	5-10	0	0.0-2.0	0-5
	12-60	---	---	---	---	---	---	---
Worf	0-1	15-25	11-16	6.6-7.8	0	0	0	0
	1-10	20-35	14-19	6.6-7.8	0	0	0	0
	10-14	18-30	10-15	7.9-8.4	5-10	0	0.0-2.0	0-5
	14-60	---	---	---	---	---	---	---
212:								
Teckla	0-10	10-20	9-13	6.6-7.3	0	0	0	0
	10-23	20-35	12-19	6.6-7.8	0	0	0	0
	23-31	20-35	12-19	6.6-7.8	0	0	0	0
	31-45	10-25	7-12	7.9-9.0	5-15	0	0	2-10
	45-60	5-15	3-6	6.6-8.4	0-5	0	0	2-10
213:								
Terro	0-3	10-18	6-9	6.6-7.8	0	0	0	0
	3-19	10-18	6-10	6.6-7.8	0	0	0	0
	19-38	8-18	3-6	7.4-8.4	1-5	0	0.0-2.0	0
	38-60	---	---	---	---	---	---	---
Taluce	0-2	10-18	5-11	7.4-8.4	0-5	0	0	0
	2-14	8-18	5-9	7.9-8.4	1-5	0	0.0-2.0	0
	14-60	---	---	---	---	---	---	---

Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100 g	pH	Pct	Pct	mmhos/cm	
214:								
Theedle	0-4	15-25	11-18	6.6-8.4	0-5	0	0	0
	4-36	20-35	10-16	7.4-8.4	5-15	0	0.0-2.0	0-5
	36-60	---	---	---	---	---	---	---
Kishona	0-4	15-25	9-16	6.6-8.4	0-5	0	0	0
	4-60	20-35	10-17	7.9-8.4	5-15	0	0.0-2.0	0-5
215:								
Theedle	0-4	15-25	11-18	6.6-8.4	0-5	0	0	0
	4-36	20-35	10-16	7.4-8.4	5-15	0	0.0-2.0	0-5
	36-60	---	---	---	---	---	---	---
Kishona	0-4	15-25	9-16	6.6-8.4	0-5	0	0	0
	4-60	20-35	10-17	7.9-8.4	5-15	0	0.0-2.0	0-5
216:								
Theedle	0-2	15-25	11-18	6.6-8.4	0-5	0	0	0
	2-28	20-35	10-16	7.4-8.4	5-15	0	0.0-2.0	0-5
	28-60	---	---	---	---	---	---	---
Kishona	0-4	15-25	9-16	6.6-8.4	0-5	0	0	0
	4-60	20-35	10-17	7.9-8.4	5-15	0	0.0-2.0	0-5
Shingle	0-2	15-25	9-16	6.6-8.4	0-5	0	0	0
	2-12	20-35	10-18	7.9-8.4	5-10	0	0.0-2.0	0-5
	12-60	---	---	---	---	---	---	---
217:								
Theedle	0-2	15-25	11-18	6.6-8.4	0-5	0	0	0
	2-28	20-35	10-16	7.4-8.4	5-15	0	0.0-2.0	0-5
	28-60	---	---	---	---	---	---	---
Shingle	0-2	15-25	9-16	6.6-8.4	0-5	0	0	0
	2-12	20-35	10-18	7.9-8.4	5-10	0	0.0-2.0	0-5
	12-60	---	---	---	---	---	---	---
218:								
Theedle	0-3	15-25	11-18	6.6-8.4	0-5	0	0	0
	3-35	20-35	10-16	7.4-8.4	5-15	0	0.0-2.0	0-5
	35-60	---	---	---	---	---	---	---
Turnercrest	0-2	8-15	7-11	7.4-8.4	0-4	0	0	0
	2-34	10-18	7-11	7.9-8.4	1-5	0	0.0-2.0	0
	34-60	---	---	---	---	---	---	---
Kishona	0-4	15-25	9-16	7.4-8.4	0-1	0	0	0
	4-60	20-35	10-17	7.9-8.4	5-15	0	0.0-2.0	0-5
219:								
Torriarents	0-4	20-40	11-21	6.6-8.4	1-5	0-1	0.0-2.0	0-5
	4-60	20-40	10-20	6.6-8.4	1-10	0-1	2.0-4.0	0-5
Torriorthents	0-5	20-40	11-21	6.6-8.4	1-5	0-1	0.0-2.0	0-5
	5-60	20-40	10-20	6.6-8.4	1-10	0-1	2.0-4.0	0-5
220:								
Pitchdraw	0-4	8-15	6-12	7.4-7.8	0-4	0	0	0
	4-31	10-18	5-9	7.9-8.4	1-5	0	0	0
	31-60	---	---	---	---	---	---	---

Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100 g	pH	Pct	Pct	mmhos/cm	
220:(cont.)								
Ashollow	0-5	8-18	6-15	7.4-8.4	0-2	0	0	0
	5-60	8-18	3-10	7.4-8.4	1-5	0	0.0-2.0	0
Niobrara	0-3	2-8	2-5	6.6-7.8	0-1	0	0	0
	3-12	2-8	1-4	6.6-7.8	0	0	0	0
	12-60	---	---	---	---	---	---	---
221:								
Turnercrest	0-2	8-18	7-11	6.6-8.4	0-3	0	0	0
	2-32	8-18	7-11	7.4-8.4	1-5	0	0.0-2.0	0
	32-60	---	---	---	---	---	---	---
Keeline	0-4	8-18	6-11	6.6-8.4	0-1	0	0	0
	4-60	8-18	5-9	7.9-8.4	1-5	0	0.0-2.0	0
Taluce	0-2	8-18	5-11	6.6-8.4	0-3	0	0.0-2.0	0
	2-14	10-18	5-9	7.4-9.0	1-5	0	0.0-2.0	0
	14-60	---	---	---	---	---	---	---
222:								
Turnercrest	0-3	4-8	5-7	7.4-8.4	0-4	0	0	0
	3-22	10-18	7-11	7.9-8.4	1-5	0	0.0-2.0	0
	22-60	---	---	---	---	---	---	---
Wibaux, thin solum	0-3	15-25	11-16	6.6-7.8	0	0	0	0
	3-9	15-25	9-14	6.6-7.8	0	0	0	0
	9-60	0-2	0-0	---	0-1	0	0	0
Taluce	0-2	10-18	5-11	7.4-8.4	0-5	0	0	0
	2-14	8-18	5-9	7.9-8.4	1-5	0	0.0-2.0	0
	14-60	---	---	---	---	---	---	---
223:								
Ucross	0-5	15-25	14-18	6.6-8.4	0-5	0	0	0
	5-31	20-35	12-18	7.4-8.4	5-15	0	0.0-2.0	0-5
	31-60	---	---	---	---	---	---	---
224:								
Ucross	0-5	15-25	14-18	6.6-8.4	0-5	0	0	0
	5-31	20-35	12-18	7.4-8.4	5-15	0	0.0-2.0	0-5
	31-60	---	---	---	---	---	---	---
Iwait	0-6	15-25	9-19	6.6-8.4	0-5	0	0	0
	6-60	20-35	10-18	7.9-8.4	5-15	0	0.0-2.0	0-5
225:								
Ucross	0-5	15-25	14-18	6.6-8.4	0-5	0	0	0
	5-31	20-35	12-18	7.4-8.4	5-15	0	0.0-2.0	0-5
	31-60	---	---	---	---	---	---	---
Iwait	0-6	15-25	9-19	6.6-8.4	0-5	0	0	0
	6-60	20-35	10-18	7.9-8.4	5-15	0	0.0-2.0	0-5
Fairburn	0-4	15-25	9-19	6.6-8.4	0-5	0	0	0
	4-15	20-35	11-19	7.4-8.4	5-15	0	0.0-2.0	0-5
	15-60	---	---	---	---	---	---	---

Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100 g	pH	Pct	Pct	mmhos/cm	
226:								
Ulm	0-2	15-25	13-18	6.6-7.3	0	0	0	0
	2-25	35-50	20-27	6.6-8.4	0	0	0	0
	25-60	25-40	14-18	7.9-8.4	5-15	0-1	0.0-2.0	0-5
227:								
Ulm	0-4	28-35	18-22	6.6-7.3	0	0	0	0
	4-25	35-50	20-27	6.6-8.4	0	0	0	0
	25-60	25-40	14-18	7.9-8.4	5-15	0-1	0.0-2.0	0-5
228:								
Ulm	0-4	28-35	16-24	6.6-7.3	0	0	0	0
	4-25	35-50	26-37	6.6-8.4	0	0	0	0
	25-60	30-45	14-32	7.9-8.4	5-15	0-1	0.0-2.0	0-5
Renohill	0-4	28-35	16-24	6.6-7.8	0	0	0	0
	4-24	35-50	26-37	6.6-8.4	0	0	0	0
	24-35	30-45	14-32	7.9-8.4	5-15	0-1	0.0-2.0	0-5
	35-60	---	---	---	---	---	---	---
229:								
Ulm	0-4	28-35	16-24	6.6-7.3	0	0	0	0
	4-25	35-50	26-37	6.6-8.4	0	0	0	0
	25-60	30-45	14-32	7.9-8.4	5-15	0-1	0.0-2.0	0-5
Renohill	0-4	28-35	16-24	6.6-7.8	0	0	0	0
	4-24	35-50	26-37	6.6-8.4	0	0	0	0
	24-35	28-45	14-32	7.9-8.4	5-15	0-1	0.0-2.0	0-5
	35-60	---	---	---	---	---	---	---
230:								
Urban land	---	---	---	---	---	---	---	---
Deekay	0-4	15-25	9-19	6.6-7.3	0	0	0	0
	4-23	25-35	13-20	6.6-8.4	0	0	0	0
	23-60	20-30	7-16	7.9-8.4	5-15	0	0.0-2.0	0-5
Moorhead	0-6	28-35	18-22	6.6-7.3	0	0	0	0
	6-24	35-50	20-27	6.6-8.4	0	0	0	0
	24-60	30-42	16-22	7.9-8.4	5-15	0-1	0.0-2.0	0-5
231:								
Urban land	---	---	---	---	---	---	---	---
Leiter	0-3	28-35	16-24	6.6-7.8	0	0	0	0
	3-22	35-50	26-37	6.6-8.4	0	0	0	0
	22-33	28-45	14-32	7.9-8.4	5-15	0-1	0.0-2.0	0-5
	33-60	---	---	---	---	---	---	---
Moorhead	0-4	28-35	16-24	6.6-7.8	0	0	0	0
	4-24	35-50	26-37	6.6-8.4	0	0	0	0
	24-60	30-45	14-32	7.9-8.4	5-15	0-1	0.0-2.0	0-5
232:								
Urban land	---	---	---	---	---	---	---	---
Pitchdraw	0-4	8-15	6-12	7.4-7.8	0-4	0	0	0
	4-31	10-18	5-9	7.9-8.4	1-5	0	0	0
	31-60	---	---	---	---	---	---	---

Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100 g	pH	Pct	Pct	mmhos/cm	
232:(cont.)								
Ashollow	0-5	8-18	6-15	7.4-8.4	0-2	0	0	0
	5-60	6-18	3-10	7.4-8.4	1-4	0	0.0-2.0	0
233:								
Ustic Torriorthents	0-4	15-30	9-19	6.6-8.4	0-10	0	0.0-2.0	0-5
	4-35	15-30	9-19	6.6-8.4	1-10	0	0.0-2.0	0-5
	35-60	---	---	---	---	---	---	---
234:								
Ustic Torriorthents	0-4	15-30	9-19	6.6-8.4	0-10	0	0.0-2.0	0-5
	4-35	15-30	9-19	6.6-8.4	1-10	0	0.0-2.0	0-5
	35-60	---	---	---	---	---	---	---
Badland	0-60	---	---	---	---	---	---	---
235:								
Vonalee	0-3	10-18	7-10	6.6-7.8	0	0	0	0
	3-24	10-18	7-11	6.6-7.8	0	0	0	0
	24-60	8-18	2-6	7.9-8.4	1-5	0	0.0-2.0	0
236:								
Vonalee	0-3	10-18	5-13	6.6-7.8	0	0	0	0
	3-24	10-18	6-11	6.6-7.8	0	0	0	0
	24-60	8-18	4-10	7.4-8.4	1-5	0	0.0-2.0	0
Terro	0-3	10-18	5-13	6.6-7.8	0	0	0	0
	3-16	10-18	6-11	6.6-7.8	0	0	0	0
	16-30	8-18	4-10	7.4-8.4	1-5	0	0.0-2.0	0
	30-60	---	---	---	---	---	---	---
237:								
Vonalf	0-6	10-18	5-13	6.6-7.8	0	0	0	0
	6-34	10-18	6-11	6.6-7.8	0	0	0	0
	34-60	8-18	4-10	7.4-8.4	1-5	0	0.0-2.0	0
238:								
Vonalf	0-6	10-18	5-13	6.6-7.8	0	0	0	0
	6-34	10-18	6-11	6.6-7.8	0	0	0	0
	34-60	8-18	4-10	7.4-8.4	1-5	0	0.0-2.0	0
Xema	0-4	10-18	5-13	6.6-7.8	0	0	0	0
	4-22	10-18	6-11	6.6-7.8	0	0	0	0
	22-31	8-18	4-10	7.9-8.4	1-5	0	0.0-2.0	0
	31-60	---	---	---	---	---	---	---
239:								
Ironbutte	0-4	15-25	9-19	6.6-7.8	0	0	0	0
	4-12	10-25	5-14	6.6-8.4	0-3	0	0	0
	12-60	0-2	0-0	---	0-1	0	0	0
Fairburn	0-4	15-25	9-19	6.6-8.4	0-5	0	0	0
	4-15	20-35	11-19	7.4-8.4	5-15	0	0.0-2.0	0-5
	15-60	---	---	---	---	---	---	---
Mittenbutte	0-3	10-18	7-13	6.6-8.4	0-3	0	0	0
	3-16	8-18	5-10	7.9-8.4	1-5	0	0.0-2.0	0
	16-60	---	---	---	---	---	---	---

Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100 g	pH	Pct	Pct	mmhos/cm	
240:								
Wibaux	0-3	10-20	11-16	6.6-7.8	0	0	0	0
	3-16	15-25	9-14	6.6-7.8	0	0	0	0
	16-60	0-2	0-0	---	0-1	0	0	0
Wibaux, thin solum	0-3	15-25	11-16	6.6-7.8	0	0	0	0
	3-9	15-25	9-14	6.6-7.8	0	0	0	0
	9-60	0-2	---	---	0-1	0	0	0
241:								
Ironbutte	0-4	15-25	9-19	6.6-7.8	0	0	0	0
	4-12	10-25	5-14	6.6-8.4	0-3	0	0	0
	12-60	0-2	0-0	---	0-1	0	0	0
Ironbutte, thin solum	0-2	15-25	9-19	6.6-7.8	0	0	0	0
	2-10	10-25	5-14	6.6-8.4	0-3	0	0	0
	10-60	0-2	0-0	---	0-1	0	0	0
242:								
Ironbutte	0-4	15-25	9-19	6.6-7.8	0	0	0	0
	4-12	10-25	5-14	6.6-8.4	0-3	0	0	0
	12-60	0-2	0-0	---	0-1	0	0	0
Deekay	0-4	15-25	9-19	6.6-7.3	0	0	0	0
	4-23	25-35	13-20	6.6-8.4	0	0	0	0
	23-60	20-30	7-16	7.9-8.4	5-15	0	0.0-2.0	0-5
Moorhead	0-4	20-27	15-18	6.6-7.3	0	0	0	0
	4-26	35-50	20-27	6.6-8.4	0	0	0	0
	26-60	30-42	16-22	7.9-8.4	5-15	0	0.0-2.0	0-5
243:								
Wibaux, thick solum	0-5	10-25	8-13	6.6-7.8	0	0	0	0
	5-23	10-25	6-11	7.9-8.4	0-5	0	0	0-5
	23-60	0-2	0-0	---	0-5	0	0	0
Wibaux	0-3	10-20	9-14	6.6-7.8	0	0	0	0
	3-16	20-30	12-17	6.6-7.8	0	0	0	0
	16-60	0-2	0-0	---	0-1	0	0	0
244:								
Muleherder	0-2	15-25	7-17	6.6-7.8	0	0	0	0
	2-16	10-25	6-15	6.6-8.4	0-5	0	0	0
	16-33	8-20	4-12	6.6-8.4	0-10	0	0.0-2.0	0-3
	33-60	0-2	0-0	---	0-5	0	0.0-2.0	0-3
Ironbutte	0-4	15-25	9-19	6.6-7.8	0	0	0	0
	4-12	10-25	5-14	6.6-8.4	0-3	0	0	0
	12-60	0-2	0-0	---	0-1	0	0	0
245:								
Wibaux	0-4	15-25	11-16	6.6-7.8	0	0	0	0
	4-12	15-25	9-14	6.6-7.8	0	0	0	0
	12-60	0-2	0-0	---	0-1	0	0	0
Shingle	0-1	15-25	11-19	7.4-8.4	0-5	0	0	0
	1-12	20-35	10-17	7.9-8.4	5-10	0	0.0-2.0	0-5
	12-60	---	---	---	---	---	---	---
Badland	0-60	---	---	---	---	---	---	---

Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100 g	pH	Pct	Pct	mmhos/cm	
246:								
Wyarno	0-3	28-35	18-21	6.6-7.3	0	0	0	0
	3-12	35-50	20-26	7.4-8.4	0	0	0	0
	12-60	30-40	14-20	7.9-8.4	5-15	0-1	0.0-2.0	0-5
Ulm	0-4	28-35	18-22	6.6-7.3	0	0	0	0
	4-25	35-50	20-27	6.6-8.4	0	0	0	0
	25-60	25-40	14-18	7.9-8.4	5-15	0-1	0.0-2.0	0-5
247:								
Wyotite	0-2	15-25	12-16	6.1-7.3	0	0	0	0
	2-38	28-35	15-19	6.1-8.4	0	0	0	0
	38-60	15-35	9-13	7.9-8.4	5-10	0	0.0-2.0	0-5
Ulm	0-6	20-27	14-18	6.6-7.3	0	0	0	0
	6-23	35-50	20-27	6.6-8.4	0	0	0	0
	23-60	28-40	14-18	7.9-8.4	5-15	0-1	0.0-2.0	0-5
248:								
Ziggy	0-5	15-25	9-19	6.6-7.8	0-1	0	0	0
	5-14	20-35	11-20	7.4-8.4	0-10	0	0	0
	14-60	20-35	10-18	7.9-8.4	5-15	0	0.0-2.0	0-5
Iwait	0-6	15-25	9-19	6.6-8.4	0-5	0	0	0
	6-60	20-35	10-18	7.9-8.4	5-15	0	0.0-2.0	0-5
249:								
Ziggy	0-5	15-25	9-19	6.6-7.8	0-1	0	0	0
	5-14	20-35	11-20	7.4-8.4	0-10	0	0	0
	14-60	20-35	10-18	7.9-8.4	5-15	0	0.0-2.0	0-5
Iwait	0-6	15-25	9-19	6.6-8.4	0-5	0	0	0
	6-60	20-35	10-18	7.9-8.4	5-15	0	0.0-2.0	0-5
250:								
Ziggy	0-5	15-25	9-19	6.6-7.8	0-1	0	0	0
	5-14	20-35	11-20	7.4-8.4	0-10	0	0	0
	14-60	20-35	10-18	7.9-8.4	5-15	0	0.0-2.0	0-5
Ucross	0-5	15-25	14-18	6.6-8.4	0-5	0	0	0
	5-31	20-35	12-18	7.4-8.4	5-15	0	0.0-2.0	0-5
	31-60	---	---	---	---	---	---	---
Oldwolf	0-3	15-25	9-19	6.6-7.3	0	0	0	0
	3-21	20-35	13-20	6.6-8.4	0	0	0	0
	21-32	20-35	7-16	7.9-8.4	5-15	0	0.0-2.0	0-5
	32-60	---	---	---	---	---	---	---

Soil Features

(Dashes (--) indicate that an assignment has not been made.)

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	In		In	In			
100:									
Aridic Ustorthents, saline	---	---	---	---	0	---	Low	High	High
101:									
Arvada, thick surface	Natric	15-26	---	Noncemented	0	---	Low	High	High
102:									
Arvada, thick surface	Natric	15-26	---	Noncemented	0	---	Low	High	High
Arvada	Natric	15-26	---	Noncemented	0	---	Low	High	High
Slickspots	---	---	---	---	---	---	Low	High	High
103:									
Arwite	---	---	---	---	0	---	Moderate	High	Low
104:									
Arwite	---	---	---	---	0	---	Moderate	High	Low
105:									
Arwite	---	---	---	---	0	---	Moderate	High	Low
Elwop	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
106:									
Arwite	---	---	---	---	0	---	Moderate	High	Low
Elwop	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
107:									
Arwite	---	---	---	---	0	---	Moderate	High	Low
Vonalf	---	---	---	---	0	---	Moderate	High	Low
108:									
Arwite	---	---	---	---	0	---	Moderate	High	Low
Vonalf	---	---	---	---	0	---	Moderate	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	In		In	In			
109:									
Bidman	---	---	---	---	0	---	Low	High	Low
110:									
Bidman, loamy substratum	---	---	---	---	0	---	Low	High	Low
111:									
Bidman	---	---	---	---	0	---	Low	High	Low
Parmleed	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
112:									
Bidman	---	---	---	---	0	---	Low	High	Low
Parmleed	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
113:									
Bidman	---	---	---	---	0	---	Low	High	Low
Ulm	---	---	---	---	0	---	Low	High	Low
114:									
Bowbac	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
Taluce	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
Badland	Bedrock (paralithic)	0-0	---	Extremely weakly cemented	---	---	---	---	---
115:									
Bowbac	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
Worf	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	In		In	In			
116:									
Cambria	---	---	---	---	0	---	Low	High	Low
Kishona	---	---	---	---	0	---	Low	High	Low
Zigweid	---	---	---	---	0	---	Low	High	Low
117:									
Cambria	---	---	---	---	0	---	Low	High	Low
Kishona	---	---	---	---	0	---	Low	High	Low
Zigweid	---	---	---	---	0	---	Low	High	Low
118:									
Clarkelen	---	---	---	---	0	---	Low	High	Low
Draknab	---	---	---	---	0	---	Low	High	Low
119:									
Clarkelen	---	---	---	---	0	---	Low	Moderate	Low
Embry	---	---	---	---	0	---	Low	High	Low
120:									
Clarkelen	---	---	---	---	0	---	Low	High	Low
Keeline	---	---	---	---	0	---	Low	High	Low
121:									
Cushman	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
Cambria	---	---	---	---	0	---	Low	High	Low
122:									
Cushman	Bedrock (paralithic)	---	---	Extremely weakly cemented	0	---	Moderate	High	Low
Cambria	---	---	---	---	0	---	Moderate	High	Low
123:									
Cushman	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	In		In	In			
123:(cont.)									
Renohill	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
124:									
Cushman	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
Shingle	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
125:									
Cushman	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
Terro	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	Moderate	Low
126:									
Cushman	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
Theedle	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
127:									
Cushman	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
Theedle	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
128:									
Cushman	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
Worf	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
129:									
Decolney	---	---	---	---	0	---	Low	High	Low
Hiland	---	---	---	---	0	---	Low	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	In		In	In			
130:									
Decolney	---	---	---	---	0	---	Low	High	Low
Hiland	---	---	---	---	0	---	Low	High	Low
131:									
Deekay	---	---	---	---	0	---	Moderate	High	Low
132:									
Deekay	---	---	---	---	0	---	Moderate	High	Low
Moorhead	---	---	---	---	0	---	Low	High	Low
133:									
Deekay	---	---	---	---	0	---	Moderate	High	Low
Moorhead	---	---	---	---	0	---	Low	High	Low
134:									
Deekay	---	---	---	---	0	---	Moderate	High	Low
Oldwolf	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
135:									
Deekay	---	---	---	---	0	---	Moderate	High	Low
Oldwolf	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
136:									
Deekay	---	---	---	---	0	---	Moderate	High	Low
Ziggy	---	---	---	---	0	---	Moderate	High	Low
137:									
Echeta	---	---	---	---	0	---	Low	High	Low
138:									
Echeta	---	---	---	---	0	---	Low	High	Low
Cromack	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	In		In	In			
139:									
Embry	---	---	---	---	0	---	Low	High	Low
Orpha	---	---	---	---	0	---	Low	Moderate	Low
140:									
Embry	---	---	---	---	0	---	Low	High	Low
Taluce	Bedrock (paralithic)	10-20	---	---	0	---	Low	High	Low
141:									
Emigha	---	---	---	---	0	---	Low	High	Low
142:									
Emigha, sodic	---	---	---	---	0	---	Low	High	High
Arvada, thick surface	Natric	12-30	---	Noncemented	0	---	Low	High	High
143:									
Felix, ponded	---	---	---	---	0	---	Moderate	High	Moderate
144:									
Forkwood	---	---	---	---	0	---	Moderate	High	Low
145:									
Forkwood	---	---	---	---	0	---	Low	High	Low
Cambria	---	---	---	---	0	---	Low	High	Low
146:									
Forkwood	---	---	---	---	0	---	Low	High	Low
Cushman	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
147:									
Forkwood	---	---	---	---	0	---	Moderate	High	Low
Cushman	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	In		In	In			
148:									
Forkwood	---	---	---	---	0	---	Moderate	High	Low
Ulm	---	---	---	---	0	---	Low	High	Low
149:									
Forkwood	---	---	---	---	0	---	Low	High	Low
Ulm	---	---	---	---	0	---	Low	High	Low
150:									
Gateson	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	Moderate	Low
Taluce	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
Turnercrest	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
151:									
Haverdad	---	---	---	---	0	---	Moderate	High	Low
152:									
Haverdad	---	---	---	---	0	---	Low	High	Low
Clarkelen	---	---	---	---	0	---	Low	High	Low
153:									
Haverdad	---	---	---	---	0	---	Low	High	Low
Kishona	---	---	---	---	0	---	Low	High	Low
154:									
Heldt	---	---	---	---	0	---	Low	High	Low
155:									
Heldt, saline	---	---	---	---	0	---	Low	High	High
Bidman, saline	---	---	---	---	0	---	Low	High	High
156:									
Hiland	---	---	---	---	0	---	Low	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	In		In	In			
157:									
Hiland	---	---	---	---	0	---	Low	High	Low
Bowbac	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
158:									
Hiland	---	---	---	---	0	---	Low	High	Low
Bowbac	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
159:									
Hiland	---	---	---	---	0	---	Low	High	Low
Vonalee	---	---	---	---	0	---	Low	High	Low
160:									
Hiland	---	---	---	---	0	---	Low	High	Low
Vonalee	---	---	---	---	0	---	Low	High	Low
161:									
Hilight	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
Taluce, cool	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
Wags	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Moderate
162:									
Lismas	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	High
Mittenbutte, cool	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low
Sabatka	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	High

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	In		In	In			
163:									
Hilight	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
Wags	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Moderate
Badland	Bedrock (paralithic)	0-0	---	Extremely weakly cemented	---	---	---	---	---
164:									
Lismas	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	High
Sabatka	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	High
Badland	Bedrock (paralithic)	0-0	---	Extremely weakly cemented	---	---	---	---	---
165:									
Jayem	---	---	---	---	0	---	Low	High	Low
166:									
Jaywest	---	---	---	---	0	---	Low	High	Low
167:									
Jaywest	---	---	---	---	0	---	Low	High	Low
Moorhead	---	---	---	---	0	---	Low	High	Low
168:									
Jaywest	---	---	---	---	0	---	Low	High	Low
Spottedhorse	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
169:									
Julesburg	---	---	---	---	0	---	Low	High	Low
170:									
Keeline	---	---	---	---	0	---	Moderate	High	Low
Tullock	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	In		In	In			
171:									
Keeline	---	---	---	---	0	---	Low	High	Low
Tullock	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	Moderate	Low
Niobrara, dry	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	Moderate	Low
172:									
Keyner	Natric	12-26	---	Noncemented	0	---	Low	High	High
173:									
Lawver	Strongly contrasting textural stratification	20-40	---	Noncemented	0	---	Low	High	Low
Teckla	Strongly contrasting textural stratification	20-40	---	Noncemented	0	---	Low	High	Low
Wibaux	Strongly contrasting textural stratification	10-20	---	Noncemented	0	---	Low	Moderate	Low
174:									
Brislawn	Strongly contrasting textural stratification	20-40	---	Noncemented	0	---	Low	High	Low
Rockybutte	Strongly contrasting textural stratification	20-40	---	Noncemented	0	---	Moderate	High	Low
Ironbutte	Strongly contrasting textural stratification	10-20	---	Noncemented	0	---	Low	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	In		In	In			
175:									
Lawver	Strongly contrasting textural stratification	20-40	---	Noncemented	0	---	Low	High	Low
Wibaux	Strongly contrasting textural stratification	10-20	---	Noncemented	0	---	Low	Moderate	Low
176:									
Leiter	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
Cromack	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
177:									
Maysdorf	---	---	---	---	0	---	Low	High	Low
178:									
Maysdorf	---	---	---	---	0	---	Low	High	Low
179:									
Maysdorf	---	---	---	---	0	---	Low	High	Low
Pugsley	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
180:									
Maysdorf	---	---	---	---	0	---	Low	High	Low
Pugsley	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
181:									
Moorhead	---	---	---	---	0	---	Low	High	Low
182:									
Moorhead	---	---	---	---	0	---	Low	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	In		In	In			
183:									
Moorhead	---	---	---	---	0	---	Low	High	Low
Leiter	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
184:									
Moorhead	---	---	---	---	0	---	Low	High	Low
Leiter	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
185:									
Moskee	---	---	---	---	0	---	Moderate	High	Low
186:									
Moskee	---	---	---	---	0	---	Low	High	Low
187:									
Nuncho	---	---	---	---	0	---	Low	High	Low
188:									
Orpha	---	---	---	---	0	---	Low	Moderate	Low
Tullock	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	Moderate	Low
189:									
Oshoto	---	---	---	---	0	---	Moderate	High	Low
Moorhead	---	---	---	---	0	---	Moderate	High	Low
190:									
Parmleed	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
Renohill	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
191:									
Pits	---	---	---	---	---	---	---	---	---
Dumps	---	---	---	---	---	---	---	---	---

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	In		In	In			
192:									
Platmak	---	---	---	---	0	---	Low	High	Low
193:									
Pugsley	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
Decolney	---	---	---	---	0	---	Low	High	Low
194:									
Pugsley	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
Decolney	---	---	---	---	0	---	Low	High	Low
195:									
Rauzi	---	---	---	---	0	---	Moderate	High	Low
196:									
Rauzi	---	---	---	---	0	---	Moderate	High	Low
197:									
Rauzi	---	---	---	---	0	---	Moderate	High	Low
Elwop	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
198:									
Recluse	---	---	---	---	0	---	Moderate	High	Low
199:									
Renohill	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
Savageton	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
200:									
Renohill	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
Savageton	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	In		In	In			
201:									
Renohill	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
Shingle	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
Worf	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
202:									
Renohill	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
Worfka	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
203:									
Rockypoint	---	---	---	---	0	---	Moderate	High	Low
Iwait	---	---	---	---	0	---	Moderate	High	Low
204:									
Samday	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
Samday, cool	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
Shingle	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low
205:									
Samday	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
Savageton	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
206:									
Samday	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
Shingle	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	In		In	In			
206: (cont.)									
Badland	Bedrock (paralithic)	0-0	---	Extremely weakly cemented	---	---	---	---	---
207:									
Cromack	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
Fairburn	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low
Ucross	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
208:									
Savageton	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
Silhouette	---	---	---	---	0	---	Low	High	Low
209:									
Savageton	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
Silhouette	---	---	---	---	0	---	Low	High	Low
210:									
Shingle	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low
Taluce	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low
211:									
Shingle	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
Worf	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
212:									
Teckla	Strongly contrasting textural stratification	20-40	---	Noncemented	0	---	Low	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	In		In	In			
213:									
Terro	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	Moderate	Low
Taluce	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
214:									
Theedle	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
Kishona	---	---	---	---	0	---	Moderate	High	Low
215:									
Theedle	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
Kishona	---	---	---	---	0	---	Moderate	High	Low
216:									
Theedle	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
Kishona	---	---	---	---	0	---	Moderate	High	Low
Shingle	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low
217:									
Theedle	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
Shingle	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low
218:									
Theedle	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
Turnercrest	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
Kishona	---	---	---	---	0	---	Low	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	In		In	In			
219:									
Torriarents	---	---	---	---	0	---	Moderate	High	Low
Torriorthents	---	---	---	---	0	---	Moderate	High	Low
220:									
Pitchdraw	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
Ashollow	---	---	---	---	0	---	Moderate	High	Low
Niobrara	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
221:									
Turnercrest	Bedrock (paralithic)	---	20-40	Noncemented	0	---	Moderate	High	Low
Keeline	---	---	---	---	0	---	Moderate	High	Low
Taluce	Bedrock (paralithic)	---	40-50	---	0	---	Low	High	Low
222:									
Turnercrest	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
Wibaux, thin solum	Strongly contrasting textural stratification	6-10	---	Noncemented	0	---	Low	Moderate	Low
Taluce	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
223:									
Ucross	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
224:									
Ucross	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
Iwait	---	---	---	---	0	---	Moderate	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	In		In	In			
225:									
Ucross	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
Iwait	---	---	---	---	0	---	Moderate	High	Low
Fairburn	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low
226:									
Ulm	---	---	---	---	0	---	Low	High	Low
227:									
Ulm	---	---	---	---	0	---	Low	High	Low
228:									
Ulm	---	---	---	---	0	---	Low	High	Low
Renohill	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
229:									
Ulm	---	---	---	---	0	---	Low	High	Low
Renohill	Bedrock (paralithic)	---	---	Extremely weakly cemented	0	---	Low	High	Low
230:									
Urban land	---	---	---	---	---	---	---	---	---
Deekay	---	---	---	---	0	---	Moderate	High	Low
Moorhead	---	---	---	---	0	---	Moderate	High	Low
231:									
Urban land	---	---	---	---	---	---	---	---	---
Leiter	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
Moorhead	---	---	---	---	0	---	Low	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	In		In	In			
232:									
Urban land	---	---	---	---	---	---	---	---	---
Pitchdraw	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
Ashollow	---	---	---	---	0	---	Moderate	High	Low
233:									
Ustic Torriorthents	Bedrock (paralithic)	20-60	---	Extremely weakly cemented	0	---	Moderate	High	Low
234:									
Ustic Torriorthents	Bedrock (paralithic)	20-60	---	Extremely weakly cemented	0	---	Moderate	High	Low
Badland	Bedrock (paralithic)	0-0	---	Extremely weakly cemented	---	---	---	---	---
235:									
Vonalee	---	---	---	---	0	---	Low	High	Low
236:									
Vonalee	---	---	---	---	0	---	Moderate	High	Low
Terro	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
237:									
Vonalf	---	---	---	---	0	---	Moderate	High	Low
238:									
Vonalf	---	---	---	---	0	---	Moderate	High	Low
Xema	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
239:									
Ironbutte	Strongly contrasting textural stratification	10-20	---	Noncemented	0	---	Low	High	Low
Fairburn	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	In		In	In			
239:(cont.)									
Mittenbutte	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low
240:									
Wibaux	Strongly contrasting textural stratification	---	---	Noncemented	0	---	Low	Moderate	Low
Wibaux, thin solum	Strongly contrasting textural stratification	6-10	---	Noncemented	0	---	Low	Moderate	Low
241:									
Ironbutte	Strongly contrasting textural stratification	10-20	---	Noncemented	0	---	Low	High	Low
Ironbutte, thin solum	Strongly contrasting textural stratification	6-10	---	Noncemented	0	---	Low	High	Low
242:									
Ironbutte	Strongly contrasting textural stratification	10-20	---	Noncemented	0	---	Low	High	Low
Deekay	---	---	---	---	0	---	Moderate	High	Low
Moorhead	---	---	---	---	0	---	Moderate	High	Low
243:									
Wibaux, thick solum	Strongly contrasting textural stratification	20-40	---	Noncemented	0	---	Low	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	In		In	In			
Wibaux	Strongly contrasting textural stratification	10-20	---	Noncemented	0	---	Low	Moderate	Low
244:									
Muleherder	Strongly contrasting textural stratification	20-40	---	Noncemented	0	---	Low	High	Low
Ironbutte	Strongly contrasting textural stratification	10-20	---	Noncemented	0	---	Low	High	Low
245:									
Wibaux	Strongly contrasting textural stratification	10-20	---	Noncemented	0	---	Low	Moderate	Low
Shingle	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
Badland	Bedrock (paralithic)	0-0	---	Extremely weakly cemented	---	---	---	---	---
246:									
Wyarno	---	---	---	---	0	---	Low	High	Low
Ulm	---	---	---	---	0	---	Low	High	Low
247:									
Wyotite	---	---	---	---	0	---	Low	High	Low
Ulm	---	---	---	---	0	---	Low	High	Low
248:									
Ziggy	---	---	---	---	0	---	Moderate	High	Low
Iwait	---	---	---	---	0	---	Moderate	High	Low
249:									
Ziggy	---	---	---	---	0	---	Moderate	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	In		In	In			
249:(cont.)									
Iwait	---	---	---	---	0	---	Moderate	High	Low
250:									
Ziggy	---	---	---	---	0	---	Moderate	High	Low
Ucross	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
Oldwolf	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low

Water Features

(Dashes (--) indicate that an assignment has not been made. Depths of layers are in feet.)

Map symbol and soil name	Hydrologic group	Month	Water Table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
100:									
Aridic Ustorthents, saline	B	All months	---	---	---	---	---	---	---
101:									
Arvada, thick surface-----	D	All months	---	---	---	---	---	---	---
102:									
Arvada, thick surface-----	D	All months	---	---	---	---	---	---	---
Arvada----------	D	All months	---	---	---	---	---	---	---
103:									
Arwite----------	B	All months	---	---	---	---	---	---	---
104:									
Arwite----------	B	All months	---	---	---	---	---	---	---
105:									
Arwite----------	B	All months	---	---	---	---	---	---	---
Elwop----------	C	All months	---	---	---	---	---	---	---
106:									
Arwite----------	B	All months	---	---	---	---	---	---	---
Elwop----------	C	All months	---	---	---	---	---	---	---
107:									
Arwite----------	B	All months	---	---	---	---	---	---	---
Vonalf----------	B	All months	---	---	---	---	---	---	---
108:									
Arwite----------	B	All months	---	---	---	---	---	---	---
Vonalf----------	B	All months	---	---	---	---	---	---	---
109:									
Bidman----------	C	All months	---	---	---	---	---	---	---
110:									
Bidman, loamy substratum--	C	All months	---	---	---	---	---	---	---

Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water Table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
111:									
Bidman	C	All months	---	---	---	---	---	---	---
Parmleed	C	All months	---	---	---	---	---	---	---
112:									
Bidman	C	All months	---	---	---	---	---	---	---
Parmleed	C	All months	---	---	---	---	---	---	---
113:									
Bidman	C	All months	---	---	---	---	---	---	---
Ulm	C	All months	---	---	---	---	---	---	---
114:									
Bowbac	C	All months	---	---	---	---	---	---	---
Taluce	D	All months	---	---	---	---	---	---	---
Badland	D	All months	---	---	---	---	---	---	---
115:									
Bowbac	C	All months	---	---	---	---	---	---	---
Worf	D	All months	---	---	---	---	---	---	---
116:									
Cambria	B	All months	---	---	---	---	---	---	---
Kishona	B	All months	---	---	---	---	---	---	---
Zigweid	B	All months	---	---	---	---	---	---	---
117:									
Cambria	B	All months	---	---	---	---	---	---	---
Kishona	B	All months	---	---	---	---	---	---	---
Zigweid	B	All months	---	---	---	---	---	---	---

Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water Table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
118:									
Clarkelen	B								
		April	---	---	---	---	None	Very brief	Occasional
		May	---	---	---	---	None	Very brief	Occasional
		June	---	---	---	---	None	Very brief	Occasional
		July	---	---	---	---	None	Very brief	Rare
Draknab	A								
		April	---	---	---	---	None	Very brief	Occasional
		May	---	---	---	---	None	Very brief	Occasional
		June	---	---	---	---	None	Very brief	Occasional
		July	---	---	---	---	None	Very brief	Rare
119:									
Clarkelen	B								
		April	---	---	---	---	None	Very brief	Occasional
		May	---	---	---	---	None	Very brief	Occasional
		June	---	---	---	---	None	Very brief	Occasional
		July	---	---	---	---	None	Very brief	Rare
Embry	B								
		All months	---	---	---	---	---	---	---
120:									
Clarkelen	B								
		April	---	---	---	---	None	Very brief	Occasional
		May	---	---	---	---	None	Very brief	Occasional
		June	---	---	---	---	None	Very brief	Occasional
		July	---	---	---	---	None	Very brief	Rare
Keeline	B								
		All months	---	---	---	---	---	---	---
121:									
Cushman	C								
		All months	---	---	---	---	---	---	---
Cambria	B								
		All months	---	---	---	---	---	---	---
122:									
Cushman	C								
		All months	---	---	---	---	---	---	---
Cambria	B								
		All months	---	---	---	---	---	---	---
123:									
Cushman	C								
		All months	---	---	---	---	---	---	---
Renohill	C								
		All months	---	---	---	---	---	---	---
124:									
Cushman	C								
		All months	---	---	---	---	---	---	---
Shingle	D								
		All months	---	---	---	---	---	---	---

Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water Table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
125:									
Cushman	C	All months	---	---	---	---	---	---	---
Terro	C	All months	---	---	---	---	---	---	---
126:									
Cushman	C	All months	---	---	---	---	---	---	---
Theedle	C	All months	---	---	---	---	---	---	---
127:									
Cushman	C	All months	---	---	---	---	---	---	---
Theedle	C	All months	---	---	---	---	---	---	---
128:									
Cushman	C	All months	---	---	---	---	---	---	---
Worf	D	All months	---	---	---	---	---	---	---
129:									
Decolney	B	All months	---	---	---	---	---	---	---
Hiland	B	All months	---	---	---	---	---	---	---
130:									
Decolney	B	All months	---	---	---	---	---	---	---
Hiland	B	All months	---	---	---	---	---	---	---
131:									
Deekay	B	All months	---	---	---	---	---	---	---
132:									
Deekay	B	All months	---	---	---	---	---	---	---
Moorhead	C	All months	---	---	---	---	---	---	---
133:									
Deekay	B	All months	---	---	---	---	---	---	---
Moorhead	C	All months	---	---	---	---	---	---	---

Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water Table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
134:									
Deekay	B								
		All months	---	---	---	---	---	---	---
Oldwolf	C								
		All months	---	---	---	---	---	---	---
135:									
Deekay	B								
		All months	---	---	---	---	---	---	---
Oldwolf	C								
		All months	---	---	---	---	---	---	---
136:									
Deekay	B								
		All months	---	---	---	---	---	---	---
Ziggy	B								
		All months	---	---	---	---	---	---	---
137:									
Echeta	C								
		All months	---	---	---	---	---	---	---
138:									
Echeta	C								
		All months	---	---	---	---	---	---	---
Cromack	C								
		All months	---	---	---	---	---	---	---
139:									
Embry	B								
		All months	---	---	---	---	---	---	---
Orpha	A								
		All months	---	---	---	---	---	---	---
140:									
Embry	B								
		All months	---	---	---	---	---	---	---
Taluce	D								
		All months	---	---	---	---	---	---	---
141:									
Emigha	B								
		All months	---	---	---	---	---	---	---
142:									
Emigha, sodic	C								
		April	---	---	---	---	None	Very brief	Rare
		May	---	---	---	---	None	Very brief	Rare
		June	---	---	---	---	None	Very brief	Rare
		July	---	---	---	---	None	Very brief	Rare
Arvada, thick surface	D								
		All months	---	---	---	---	---	---	---

Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water Table: Upper limit	Water Table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
143:									
Felix, ponded	D								
		March	0.0	1.5-1.5	0.0-1.0	Long	Occasional	---	---
		April	0.0	1.5-1.5	0.0-1.0	Very long	Occasional	---	---
		May	0.0	1.5-1.5	0.0-1.0	Very long	Occasional	---	---
		June	0.0	1.5-1.5	0.0-1.0	Long	Occasional	---	---
144:									
Forkwood	B								
		All months	---	---	---	---	---	---	---
145:									
Forkwood	B								
		All months	---	---	---	---	---	---	---
Cambria	B								
		All months	---	---	---	---	---	---	---
146:									
Forkwood	B								
		All months	---	---	---	---	---	---	---
Cushman	C								
		All months	---	---	---	---	---	---	---
147:									
Forkwood	B								
		All months	---	---	---	---	---	---	---
Cushman	C								
		All months	---	---	---	---	---	---	---
148:									
Forkwood	B								
		All months	---	---	---	---	---	---	---
Ulm	D								
		All months	---	---	---	---	---	---	---
149:									
Forkwood	B								
		All months	---	---	---	---	---	---	---
Ulm	C								
		All months	---	---	---	---	---	---	---
150:									
Gateson	C								
		All months	---	---	---	---	---	---	---
Taluce	D								
		All months	---	---	---	---	---	---	---
Turnercrest	C								
		All months	---	---	---	---	---	---	---
151:									
Haverdad	B								
		April	---	---	---	---	None	Very brief	Occasional
		May	---	---	---	---	None	Very brief	Occasional
		June	---	---	---	---	None	Very brief	Occasional

Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water Table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
152:									
Haverdad	B								
		April	---	---	---	---	None	Very brief	Occasional
		May	---	---	---	---	None	Very brief	Occasional
		June	---	---	---	---	None	Very brief	Occasional
		July	---	---	---	---	None	Very brief	Rare
Clarkelen	B								
		April	---	---	---	---	None	Very brief	Occasional
		May	---	---	---	---	None	Very brief	Occasional
		June	---	---	---	---	None	Very brief	Occasional
		July	---	---	---	---	None	Very brief	Rare
153:									
Haverdad	B								
		April	---	---	---	---	None	Very brief	Occasional
		May	---	---	---	---	None	Very brief	Occasional
		June	---	---	---	---	None	Very brief	Occasional
		July	---	---	---	---	None	Very brief	Rare
Kishona	B								
		All months	---	---	---	---	---	---	---
154:									
Heldt	C								
		All months	---	---	---	---	---	---	---
155:									
Heldt, saline	C								
		March	---	---	---	---	None	Long	Occasional
		April	---	---	---	---	None	Very long	Frequent
		May	---	---	---	---	None	Very long	Frequent
		June	---	---	---	---	None	Long	Occasional
		July	---	---	---	---	None	Brief	Rare
Bidman, saline	C								
		March	---	---	---	---	None	Long	Occasional
		April	---	---	---	---	None	Very long	Frequent
		May	---	---	---	---	None	Very long	Frequent
		June	---	---	---	---	None	Long	Occasional
		July	---	---	---	---	None	Brief	Rare
156:									
Hiland	B								
		All months	---	---	---	---	---	---	---
157:									
Hiland	B								
		All months	---	---	---	---	---	---	---
Bowbac	C								
		All months	---	---	---	---	---	---	---
158:									
Hiland	B								
		All months	---	---	---	---	---	---	---
Bowbac	C								
		All months	---	---	---	---	---	---	---

Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water Table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
159:									
Hiland	B	All months	---	---	---	---	---	---	---
Vonalee	B	All months	---	---	---	---	---	---	---
160:									
Hiland	B	All months	---	---	---	---	---	---	---
Vonalee	B	All months	---	---	---	---	---	---	---
161:									
Hilight	D	All months	---	---	---	---	---	---	---
Taluce, cool	D	All months	---	---	---	---	---	---	---
Wags	D	All months	---	---	---	---	---	---	---
162:									
Lismas	D	All months	---	---	---	---	---	---	---
Mittenbutte, cool	D	All months	---	---	---	---	---	---	---
Sabatka	D	All months	---	---	---	---	---	---	---
163:									
Hilight	D	All months	---	---	---	---	---	---	---
Wags	D	All months	---	---	---	---	---	---	---
Badland	D	All months	---	---	---	---	---	---	---
164:									
Lismas	D	All months	---	---	---	---	---	---	---
Sabatka	D	All months	---	---	---	---	---	---	---
Badland	D	All months	---	---	---	---	---	---	---
165:									
Jayem	B	All months	---	---	---	---	---	---	---
166:									
Jaywest	C	All months	---	---	---	---	---	---	---

Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water Table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
167:									
Jaywest	C	All months	---	---	---	---	---	---	---
Moorhead	C	All months	---	---	---	---	---	---	---
168:									
Jaywest	C	All months	---	---	---	---	---	---	---
Spottedhorse	C	All months	---	---	---	---	---	---	---
169:									
Julesburg	B	All months	---	---	---	---	---	---	---
170:									
Keeline	B	All months	---	---	---	---	---	---	---
Tullock	C	All months	---	---	---	---	---	---	---
171:									
Keeline	B	All months	---	---	---	---	---	---	---
Tullock	C	All months	---	---	---	---	---	---	---
Niobrara, dry	D	All months	---	---	---	---	---	---	---
172:									
Keyner	D	All months	---	---	---	---	---	---	---
173:									
Lawver	B	All months	---	---	---	---	---	---	---
Teckla	B	All months	---	---	---	---	---	---	---
Wibaux	B	All months	---	---	---	---	---	---	---
174:									
Brislawn	B	All months	---	---	---	---	---	---	---
Rockybutte	B	All months	---	---	---	---	---	---	---
Ironbutte	B	All months	---	---	---	---	---	---	---

Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water Table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
175:									
Lawver	B	All months	---	---	---	---	---	---	---
Wibaux	B	All months	---	---	---	---	---	---	---
176:									
Leiter	C	All months	---	---	---	---	---	---	---
Cromack	C	All months	---	---	---	---	---	---	---
177:									
Maysdorf	B	All months	---	---	---	---	---	---	---
178:									
Maysdorf	B	All months	---	---	---	---	---	---	---
179:									
Maysdorf	B	All months	---	---	---	---	---	---	---
Pugsley	C	All months	---	---	---	---	---	---	---
180:									
Maysdorf	B	All months	---	---	---	---	---	---	---
Pugsley	C	All months	---	---	---	---	---	---	---
181:									
Moorhead	C	All months	---	---	---	---	---	---	---
182:									
Moorhead	C	All months	---	---	---	---	---	---	---
183:									
Moorhead	C	All months	---	---	---	---	---	---	---
Leiter	C	All months	---	---	---	---	---	---	---
184:									
Moorhead	C	All months	---	---	---	---	---	---	---
Leiter	C	All months	---	---	---	---	---	---	---
185:									
Moskee	B	All months	---	---	---	---	---	---	---

Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water Table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
186:									
Moskee	B	All months	---	---	---	---	---	---	---
187:									
Nuncho	C	All months	---	---	---	---	---	---	---
188:									
Orpha	A	All months	---	---	---	---	---	---	---
Tullock	C	All months	---	---	---	---	---	---	---
189:									
Oshoto	C	All months	---	---	---	---	---	---	---
Moorhead	C	All months	---	---	---	---	---	---	---
190:									
Parmleed	C	All months	---	---	---	---	---	---	---
Renohill	C	All months	---	---	---	---	---	---	---
192:									
Platmak	C	All months	---	---	---	---	---	---	---
193:									
Pugsley	C	All months	---	---	---	---	---	---	---
Decolney	B	All months	---	---	---	---	---	---	---
194:									
Pugsley	C	All months	---	---	---	---	---	---	---
Decolney	B	All months	---	---	---	---	---	---	---
195:									
Rauzi	B	All months	---	---	---	---	---	---	---
196:									
Rauzi	B	All months	---	---	---	---	---	---	---
197:									
Rauzi	B	All months	---	---	---	---	---	---	---
Elwop	C	All months	---	---	---	---	---	---	---

Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water Table: Upper limit	Water Table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
198:									
Recluse	B								
		All months	---	---	---	---	---	---	---
199:									
Renohill	C								
		All months	---	---	---	---	---	---	---
Savageton	C								
		All months	---	---	---	---	---	---	---
200:									
Renohill	C								
		All months	---	---	---	---	---	---	---
Savageton	C								
		All months	---	---	---	---	---	---	---
201:									
Renohill	C								
		All months	---	---	---	---	---	---	---
Shingle	D								
		All months	---	---	---	---	---	---	---
Worf	D								
		All months	---	---	---	---	---	---	---
202:									
Renohill	C								
		All months	---	---	---	---	---	---	---
Worfka	D								
		All months	---	---	---	---	---	---	---
203:									
Rockypoint	B								
		April	---	---	---	---	None	Very brief	Occasional
		May	---	---	---	---	None	Very brief	Occasional
		June	---	---	---	---	None	Very brief	Occasional
		July	---	---	---	---	None	Very brief	Rare
Iwait	B								
		All months	---	---	---	---	---	---	---
204:									
Samday	D								
		All months	---	---	---	---	---	---	---
Samday, cool	D								
		All months	---	---	---	---	---	---	---
Shingle	D								
		All months	---	---	---	---	---	---	---
205:									
Samday	D								
		All months	---	---	---	---	---	---	---
Savageton	C								
		All months	---	---	---	---	---	---	---

Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water Table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
206:									
Samday	D	All months	---	---	---	---	---	---	---
Shingle	D	All months	---	---	---	---	---	---	---
Badland	D	All months	---	---	---	---	---	---	---
207:									
Cromack	C	All months	---	---	---	---	---	---	---
Fairburn	D	All months	---	---	---	---	---	---	---
Ucross	C	All months	---	---	---	---	---	---	---
208:									
Savageton	C	All months	---	---	---	---	---	---	---
Silhouette	C	All months	---	---	---	---	---	---	---
209:									
Savageton	C	All months	---	---	---	---	---	---	---
Silhouette	C	All months	---	---	---	---	---	---	---
210:									
Shingle	D	All months	---	---	---	---	---	---	---
Taluce	D	All months	---	---	---	---	---	---	---
211:									
Shingle	D	All months	---	---	---	---	---	---	---
Worf	D	All months	---	---	---	---	---	---	---
212:									
Teckla	B	All months	---	---	---	---	---	---	---
213:									
Terro	C	All months	---	---	---	---	---	---	---
Taluce	D	All months	---	---	---	---	---	---	---

Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water Table: Upper limit	Water Table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
214:									
Theedle	C	All months	---	---	---	---	---	---	---
Kishona	B	All months	---	---	---	---	---	---	---
215:									
Theedle	C	All months	---	---	---	---	---	---	---
Kishona	B	All months	---	---	---	---	---	---	---
216:									
Theedle	C	All months	---	---	---	---	---	---	---
Kishona	B	All months	---	---	---	---	---	---	---
Shingle	D	All months	---	---	---	---	---	---	---
217:									
Theedle	C	All months	---	---	---	---	---	---	---
Shingle	D	All months	---	---	---	---	---	---	---
218:									
Theedle	C	All months	---	---	---	---	---	---	---
Turnercrest	C	All months	---	---	---	---	---	---	---
Kishona	B	All months	---	---	---	---	---	---	---
219:									
Torriarents	C	All months	---	---	---	---	---	---	---
Torriorthents	C	All months	---	---	---	---	---	---	---
220:									
Pitchdraw	B	All months	---	---	---	---	---	---	---
Ashollow	B	All months	---	---	---	---	---	---	---
Niobrara	D	All months	---	---	---	---	---	---	---
221:									
Turnercrest	C	All months	---	---	---	---	---	---	---

Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water Table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
221:(cont.)									
Keeline	B	All months	---	---	---	---	---	---	---
Taluce	D	All months	---	---	---	---	---	---	---
222:									
Turnercrest	C	All months	---	---	---	---	---	---	---
Wibaux, thin solum	B	All months	---	---	---	---	---	---	---
Taluce	D	All months	---	---	---	---	---	---	---
223:									
Ucross	C	All months	---	---	---	---	---	---	---
224:									
Ucross	C	All months	---	---	---	---	---	---	---
Iwait	B	All months	---	---	---	---	---	---	---
225:									
Ucross	C	All months	---	---	---	---	---	---	---
Iwait	B	All months	---	---	---	---	---	---	---
Fairburn	D	All months	---	---	---	---	---	---	---
226:									
Ulm	C	All months	---	---	---	---	---	---	---
227:									
Ulm	C	All months	---	---	---	---	---	---	---
228:									
Ulm	C	All months	---	---	---	---	---	---	---
Renohill	C	All months	---	---	---	---	---	---	---
229:									
Ulm	C	All months	---	---	---	---	---	---	---
Renohill	C	All months	---	---	---	---	---	---	---

Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water Table: Upper limit	Water Table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
230:									
Deekay	B	All months	---	---	---	---	---	---	---
Moorhead	C	All months	---	---	---	---	---	---	---
231:									
Leiter	C	All months	---	---	---	---	---	---	---
Moorhead	C	All months	---	---	---	---	---	---	---
232:									
Pitchdraw	B	All months	---	---	---	---	---	---	---
Ashollow	B	All months	---	---	---	---	---	---	---
233:									
Ustic Torriorthents	C	All months	---	---	---	---	---	---	---
234:									
Ustic Torriorthents	C	All months	---	---	---	---	---	---	---
Badland	D	All months	---	---	---	---	---	---	---
235:									
Vonalee	B	All months	---	---	---	---	---	---	---
236:									
Vonalee	B	All months	---	---	---	---	---	---	---
Terro	C	All months	---	---	---	---	---	---	---
237:									
Vonalf	B	All months	---	---	---	---	---	---	---
238:									
Vonalf	B	All months	---	---	---	---	---	---	---
Xema	C	All months	---	---	---	---	---	---	---
239:									
Ironbutte	B	All months	---	---	---	---	---	---	---
Fairburn	D	All months	---	---	---	---	---	---	---

Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water Table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
239:(cont.)									
Mittenbutte	D	All months	---	---	---	---	---	---	---
240:									
Wibaux	B	All months	---	---	---	---	---	---	---
Wibaux, thin solum	B	All months	---	---	---	---	---	---	---
241:									
Ironbutte	B	All months	---	---	---	---	---	---	---
Ironbutte, thin solum	B	All months	---	---	---	---	---	---	---
242:									
Ironbutte	B	All months	---	---	---	---	---	---	---
Deekay	B	All months	---	---	---	---	---	---	---
Moorhead	C	All months	---	---	---	---	---	---	---
243:									
Wibaux, thick solum	B	All months	---	---	---	---	---	---	---
Wibaux	B	All months	---	---	---	---	---	---	---
244:									
Muleherder	B	All months	---	---	---	---	---	---	---
Ironbutte	B	All months	---	---	---	---	---	---	---
245:									
Wibaux	B	All months	---	---	---	---	---	---	---
Shingle	D	All months	---	---	---	---	---	---	---
246:									
Wyarno	C	All months	---	---	---	---	---	---	---
Ulm	C	All months	---	---	---	---	---	---	---
247:									
Wyotite	B	All months	---	---	---	---	---	---	---

Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water Table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
247:(cont.)									
Ulm	C	All months	---	---	---	---	---	---	---
248:									
Ziggy	B	All months	---	---	---	---	---	---	---
Iwait	B	All months	---	---	---	---	---	---	---
249:									
Ziggy	B	All months	---	---	---	---	---	---	---
Iwait	B	All months	---	---	---	---	---	---	---
250:									
Ziggy	B	All months	---	---	---	---	---	---	---
Ucross	C	All months	---	---	---	---	---	---	---
Oldwolf	C	All months	---	---	---	---	---	---	---

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Glossary

ABC soil. A soil having an A, a B, and a C horizon.

AC soil. A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alkali (sodic) soil. A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Alluvial fan. The fanlike deposit of a stream where it issues from a gorge upon a plain or of a tributary stream near or at its junction with its main stream.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Alpha,alpha-dipyridyl. A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Area reclaim (in tables). An area difficult to reclaim after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Argillic horizon. A genetically developed horizon of significant clay accumulation, situated below the surface layer in a soil profile. It is that part of the subsoil referred to as the Bt and, in some profiles, the Btk horizon.

Aspect. The direction in which a slope faces.

Association, soil. A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Authigenic. The accumulation of salts in a soil horizon which are derived primarily from the parent material and which formed in place.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3.5
Low	3.5 to 5.0
Moderate	5.0 to 7.5
High	more than 7.5

Backslope. The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

Badland. Steep or very steep, commonly nonstony, barren land dissected by many intermittent drainage channels. Badland is most common in semiarid and arid regions where streams are entrenched in soft geologic material. Local relief generally ranges from 25 to 500 feet. Runoff potential is very high, and geologic erosion is active.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Base slope. A geomorphic component of hills consisting of the concave to linear (perpendicular to the contour) slope that, regardless of the lateral shape, forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).

Bedding planes. Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.

Bedding system. A drainage system made by plowing, grading, or otherwise shaping the surface of a flat field. It consists of a series of low ridges separated by shallow, parallel dead furrows.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bedrock-controlled topography. A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Blowout. A shallow depression from which all or most of the soil material has been removed by the wind. A blowout has a flat or irregular floor formed by a resistant layer or by an accumulation of pebbles or cobbles. In some blowouts the water table is exposed.

Bottom land. The normal flood plain of a stream, subject to flooding.

Breaks. The steep and very steep broken land at the border of an upland summit that is dissected by ravines.

Brush management. Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.

Butte. An isolated small mountain or hill with steep or precipitous sides and a top variously flat, rounded, or pointed that may be a residual mass isolated by erosion or an exposed volcanic neck.

Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

Cambic horizon. A structural horizon below the surface layer which does not have the clay accumulation necessary for an argillic horizon. It is that part of the subsoil referred to as the Bw horizon.

Canopy. The leafy crown of trees or shrubs. (See Crown.)

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Channery soil material. Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

Chemical treatment. Control of unwanted vegetation through the use of chemicals.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Claypan. A slowly permeable soil horizon that contains much more clay than the horizons above it. A claypan is commonly hard when dry and plastic or stiff when wet.

Climax plant community. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Colluvium. Soil material or rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Compressible (in tables). Excessive decrease in volume of soft soil under load.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 inches.

Corrosion. Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Cretaceous age. The period of the Cenozoic Era of geologic time from approximately 100 million to 65 million years ago.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Decreasers. The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Dense layer (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Depth to rock (in tables). Bedrock is too near the surface for the specified use.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained.* These classes are defined in the "Soil Survey Manual."

Drainage, surface. Runoff, or surface flow of water, from an area.

Draw. A small stream valley that generally is more open and has broader bottom land than a ravine or gulch.

Duff. A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

Dune. A mound, ridge, or hill of loose, windblown granular material (generally sand), either bare or covered with vegetation.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Eolian soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Synonym: scarp.

Excess fines (in tables). Excess silt and clay in the soil. The soil does not provide a source of gravel or sand for construction purposes.

Excess lime (in tables). Excess carbonates in the soil that restrict the growth of some plants.

Excess salts (in tables). Excess water-soluble salts in the soil that restrict the growth of most plants.

Excess sodium (in tables). Excess exchangeable sodium in the soil. The resulting poor physical properties restrict the growth of plants.

Fallow. Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

Fan remnant. A relict alluvial fan, no longer a site of active deposition, incised by younger and lower alluvial surfaces.

Fast intake (in tables). The rapid movement of water into the soil.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field*

capacity, normal moisture capacity, or *capillary capacity.*

Fill slope. A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

Fine textured soil. Sandy clay, silty clay, or clay.

Flagstone. A thin fragment of sandstone, slate or shale 6 to 15 inches (15 to 38 centimeters) long.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Footslope. The position that forms the inner, gently inclined surface at the base of a hillslope. In profile, footslopes are commonly concave. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forb. Any herbaceous plant not a grass or a sedge.

Fragile (in tables). A soil that is easily damaged by use or disturbance.

Frost action (in tables). Freezing and thawing of soil moisture. Frost action can damage roads, buildings and other structures, and plant roots.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Head slope. A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill. A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive

characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Increasers. Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasers commonly are the shorter plants and the less palatable to livestock.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Interfluve. An elevated area between two drainageways that sheds water to those drainageways.

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Invaders. On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

Knoll. A small, low, rounded hill rising above adjacent landforms.

Lamellae. Bands or layers containing translocated clay, which occur at irregular intervals in a soil profile. Coarser material typically occurs between bands. Lamellae constitute an argillic horizon when their cumulative thickness exceeds six inches.

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

Lignite. Soft, dark brown to black coal which occurs as a powdery material or as fine flakes in some soils and parent materials.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loess. Fine grained material, dominantly of silt-sized particles, deposited by wind.

Low strength. The soil is not strong enough to support loads.

Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium

carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Mesa. A broad, nearly flat topped and commonly isolated upland mass characterized by summit widths that are more than the heights of bounding erosional scarps.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Mollic epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent.* The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Natric horizon. A special kind of argillic horizon that contains enough exchangeable sodium to have an adverse effect on the physical condition of the subsoil.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.

Nose slope. A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent.

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan.*

Parent material. The unconsolidated organic and mineral material in which soil forms.

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedisediment. A thin layer of alluvial material that mantles an erosion surface and has been transported to its present position from higher lying areas of the erosion surface.

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The movement of water through the soil.

Percs slowly (in tables). The slow movement of

water through the soil adversely affects the specified use.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as "saturated hydraulic conductivity," which is defined in the "Soil Survey Manual." In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as "permeability." Terms describing permeability, measured in inches per hour, are as follows:

Extremely slow	0.0 to 0.01 inch
Very slow	0.01 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Playa. The generally dry and nearly level lake plain that occupies the lowest parts of closed depressional areas, such as those on intermontane basin floors. Temporary or seasonal ponding occurs primarily in response to precipitation and runoff.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poor filter (in tables). Because of rapid or very rapid permeability, the soil may not adequately filter effluent from a waste disposal system.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Poor outlets (in tables). Refers to areas where surface or subsurface drainage outlets are difficult or expensive to install.

Porcelanite. A hard rock-like material of relatively low specific gravity, formed by the baking and fusing of shale and sandstone adjacent to (commonly overlying) burned-out coal seams. A material which is more resistant to weathering than surrounding Tertiary formations, porcelanite typically forms rounded, rolling to steep hills and conical peaks that occur throughout the eastern half of the survey area. It is resistant to erosion.

Potential native plant community. See Climax plant community.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Range condition. The present composition of the plant community on a range site in relation to the potential natural plant community for that site. Range condition is expressed as excellent, good, fair, or poor on the basis of how much the present plant community has departed from the potential.

Rangeland. Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing. It includes natural grasslands, savannas, many wetlands, some deserts,

tundras, and areas that support certain forb and shrub communities.

Range site. An area of rangeland where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. A range site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other range sites in kind or proportion of species or total production.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Redoximorphic concentrations. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha, alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Ridge. A long, narrow elevation of land surface, usually sharp crested with steep sides and forming an extended upland between valleys.

Rill. A steep-sided channel resulting from accelerated erosion. A rill generally is a few inches deep and not wide enough to be an obstacle to farm machinery.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Rooting depth (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Saline soil. A soil containing soluble salts in an amount that impairs growth of plants. A saline soil does not contain excess exchangeable sodium.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Seepage (in tables). The movement of water through the soil. Seepage adversely affects the specified use.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock formed by the hardening of a clay deposit.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shoulder. The position that forms the uppermost inclined surface near the top of a hillslope. It is a transition from backslope to summit. The surface is dominantly convex in profile and erosional in origin.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Side slope. A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. Sedimentary rock made up of dominantly silt-sized particles.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Slickensides. Polished and grooved surfaces produced by one mass sliding past another. In soils, slickensides may occur at the bases of slip surfaces on the steeper slopes; on faces of blocks, prisms, and columns; and in swelling clayey soils, where there is marked change in moisture content.

Slickspot. A small area of soil having a puddled, crusted, or smooth surface and an excess of exchangeable sodium. The soil generally is silty or clayey, is slippery when wet, and is low in productivity.

Slippage (in tables). Soil mass susceptible to movement downslope when loaded, excavated, or wet.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, classes for simple slopes are as follows:

Nearly level	0 to 3 percent
Gently sloping	3 to 6 percent
Moderately sloping	6 to 15 percent
Moderately steep	15 to 30 percent
Steep	30 to 60 percent
Very steep	60 percent and higher

Slope (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

Slow intake (in tables). The slow movement of water into the soil.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Small stones (in tables). Rock fragments less than 3 inches (7.6 centimeters) in diameter. Small stones adversely affect the specified use of the soil.

Sodic (alkali) soil. A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5

Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular. Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summer fallow. The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

Summit. The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Syncline. A geologic unit of folded strata that are concave upward.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Tertiary age. The period of the Cenozoic Era of geologic time from approximately 65 million to 2 million years ago.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay.* The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The position that forms the gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Too arid (in tables). The soil is dry most of the time, and vegetation is difficult to establish.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Toxicity (in tables). Excessive amount of toxic substances, such as sodium or sulfur, that severely hinder establishment of vegetation or severely restrict plant growth.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Underlying material. That part of a soil profile below the surface layer when no subsoil is present. Technically, the C horizon in an A-C soil profile.

Unstable fill (in tables). Risk of caving or sloughing on banks of fill material.

Upland. Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Windthrow. The uprooting and tipping over of trees by the wind.

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