United States
Department of
Agriculture

Natural
Resources
Conservation
Service

In cooperation with
United States Department
of the Interior, Bureau of
Land Management, and
Montana Agricultural
Experiment Station

Soil Survey of Prairie County, Montana
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 general soil map units, 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.

On the **general soil map**, which is the color map preceding the detailed soil maps, the survey area is 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 general 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** in Part I of this survey for a general description of the soils in your area.

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

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 **Index to Map Units** in Part I of this survey, which lists the map units by symbol and name and shows the page where each map unit is described.

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

A **State Soil Geographic Date Base (STATSGO)** is available for this survey area. This data base consists of a soils map at a scale of 1 to 250,000 and descriptions of groups of associated soils. It replaces the general soil map published in older soil surveys. The map and the data base can be used for multicounty planning, and map output can be tailored for a specific use. More information about the State Soil Geographic Data Base for this survey area, or for any portion of Montana, is available at the local office of the Natural Resources Conservation Service.

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 1984. Soil names and descriptions were approved in 1986. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1986. This survey was made cooperatively by the Natural Resources Conservation Service; the United States Department of the Interior, Bureau of Land Management; and the Montana Agricultural Experiment Station. It is part of the technical assistance furnished to the Prairie County Conservation District.

Financial assistance was provided by the Old West Regional Commission in cooperation with the Montana Department of State Lands; the Montana Association of Conservation Districts; the United States Department of the Interior, Bureau of Land Management; and the Board of Commissioners for Prairie County.

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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Detailed Soil Map Unit Legend

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Soil Survey of Prairie County, Montana

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 and woodland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; 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.

Interpretive ratings help engineers, planners, and others understand how soil properties influence important nonagricultural uses, such as building site development and construction materials. The ratings indicate the most restrictive soil features affecting the suitability of the soils for these uses.

Soils are rated in their natural state. No unusual modification of the soil site or material is made other than that which is considered normal practice for the rated use. Even though soils may have limitations, it is important to remember that engineers and others can modify soil features or can design or adjust the plans for a structure to compensate for most of the limitations. Most of these practices, however, are costly. The final decision in selecting a site for a particular use generally involves weighing the costs of site preparation and maintenance.

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 survey area are shown in the tables "Classification of the Soils" and "Acreage and Proportionate Extent of the Soils," which are at the end of this section.

CLASSIFICATION OF THE SOILS

(An asterisk in the first column indicates that the soil is 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
Abor	Fine, montmorillonitic, frigid Udorthentic Chromusterts
Aeric Fluvaquents	Aeric Fluvaquents
Alona	Fine-silty, mixed Borollic Camborthids
Bigsheep	Loamy-skeletal, mixed Entic Haploborolls
Blackhall	Loamy, mixed (calcareous), frigid, shallow Ustic Torriorthents
Blanchard	Mixed, frigid Typic Ustipsamments
Borollic Camborthids	Borollic Camborthids
Busby	Coarse-loamy, mixed Borollic Camborthids
Cabba	Loamy, mixed (calcareous), frigid, shallow Typic Ustorthents
Cabbart	Loamy, mixed (calcareous), frigid, shallow Ustic Torriorthents
Cambert	Fine-silty, mixed, frigid Typic Ustochrepts
Cambeth	Fine-silty, mixed Borollic Camborthids
Cherry	Fine-silty, mixed, frigid Typic Ustochrepts
Chinook	Coarse-loamy, mixed Aridic Haploborolls
*Creed	Fine, montmorillonitic Borollic Natrargids
Dast	Coarse-loamy, mixed, frigid Typic Ustochrepts
Degrand	Fine-loamy over sandy or sandy-skeletal, mixed Aridic Argiborolls
Delpoint	Fine-loamy, mixed Borollic Camborthids
Ethridge	Fine, montmorillonitic Aridic Argiborolls
Evanston	Fine-loamy, mixed Aridic Argiborolls
Farnuf	Fine-loamy, mixed Typic Argiborolls
Floweree	Fine-silty, mixed Aridic Haploborolls
Gerdrum	Fine, montmorillonitic Borollic Natrargids
Glendive	Coarse-loamy, mixed (calcareous), frigid Ustic Torrifluvents
Golva	Fine-silty, mixed Typic Haploborolls
Hanly	Sandy, mixed, frigid Ustic Torrifluvents
Harlem	Fine, montmorillonitic (calcareous), frigid Ustic Torrifluvents
Havre	Fine-loamy, mixed (calcareous), frigid Ustic Torrifluvents
Hedstrom	Fine-loamy over sandy or sandy-skeletal, mixed Typic Argiborolls
Ismay	Fine-silty, mixed (calcareous), frigid Ustic Torrifluvents
Kirby	Loamy-skeletal over fragmental, mixed (calcareous), frigid Ustic Torriorthents
Kobar	Fine, montmorillonitic Borollic Camborthids
Kremlin	Fine-loamy, mixed Aridic Haploborolls
Lihen	Sandy, mixed Entic Haploborolls
Lisk	Coarse-loamy, mixed, frigid Typic Ustochrepts
Lonna	Fine-silty, mixed Borollic Camborthids
Macar	Fine-loamy, mixed, frigid Typic Ustochrepts
Marias	Fine, montmorillonitic, frigid Udorthentic Chromusterts
Marvan	Fine, montmorillonitic, frigid Udorthentic Chromusterts
Neldore	Clayey, montmorillonitic, nonacid, frigid, shallow Ustic Torriorthents
Nesda	Sandy-skeletal, mixed Fluventic Haploborolls
Parshall	Coarse-loamy, mixed Pachic Haploborolls
Peerless	Fine-loamy, mixed Typic Haploborolls
Pinelli	Fine, montmorillonitic Borollic Haplargids
Rivra	Sandy-skeletal, mixed, frigid Ustic Torrifluvents
Ryell	Coarse-loamy over sandy or sandy-skeletal, mixed (calcareous), frigid Ustic Torrifluvents
Shambo	Fine-loamy, mixed Typic Haploborolls
Spinekop	Fine-loamy, mixed Borollic Camborthids
Subwell	Loamy-skeletal, mixed Typic Haploborolls
Tally	Coarse-loamy, mixed Typic Haploborolls
Tinsley	Sandy-skeletal, mixed, frigid Typic Ustorthents
*Twilight	Coarse-loamy, mixed Borollic Camborthids
Typic Ustifluvents	Typic Ustifluvents
Ustic Torrifluvents	Ustic Torrifluvents
Ustic Torriorthents	Ustic Torriorthents
Vanda	Fine, montmorillonitic (calcareous), frigid Ustic Torriorthents
Vanstel	Fine-silty, mixed Borollic Haplargids
Wabek	Sandy-skeletal, mixed Entic Haploborolls

CLASSIFICATION OF THE SOILS--Continued

Soil name	Family or higher taxonomic class
Weingart	Fine, montmorillonitic Borollic Natrargids
Yamac	Fine-loamy, mixed Borollic Camborthids
Yawdim	Clayey, montmorillonitic (calcareous), frigid, shallow Ustic Torriorthents
Yetull	Mixed, frigid Ustic Torripsamments
Zatoville	Fine, montmorillonitic, frigid Cambic Gypsiorthids

ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

Map symbol	Soil name	Acres	Percent
1	Abor-Cabbart-Delpoint complex, 8 to 25 percent slopes	12,550	1.1
2	Abor-Delpoint-Kobar complex, 4 to 15 percent slopes	4,370	0.4
3	Abor-Weingart-Neldore complex, 2 to 15 percent slopes	3,310	0.3
4	Aeric Fluvaquents-Cherry, calcareous, complex, 0 to 8 percent slopes	3,000	0.3
5	Alona silt loam, 0 to 4 percent slopes	3,540	0.3
6	Alona-Cambeth, calcareous-Gerdrum complex, 2 to 8 percent slopes	2,400	0.2
7	Badland	31,250	2.8
8	Blackhall-Busby-Rock outcrop complex, 8 to 45 percent slopes	2,810	0.3
9	Blackhall-Delpoint-Rock outcrop complex, 15 to 50 percent slopes	3,260	0.3
10	Blanchard-Dast complex, 4 to 15 percent slopes	1,060	0.1
11	Borollic Camborthids-Ustic Torrifluvents complex, 0 to 8 percent slopes	13,300	1.2
12	Busby fine sandy loam, 0 to 2 percent slopes	2,680	0.2
13	Busby fine sandy loam, 2 to 8 percent slopes	2,140	0.2
14	Busby loam, 0 to 2 percent slopes	770	0.1
15	Busby-Blackhall-Twilight fine sandy loams, 8 to 25 percent slopes	4,520	0.4
16	Busby-Twilight-Blackhall fine sandy loams, 4 to 15 percent slopes	3,030	0.3
17	Busby-Yetull complex, 0 to 8 percent slopes	1,250	0.1
18	Busby-Yetull-Rock outcrop complex, 8 to 25 percent slopes	1,040	0.1
19	Cabba-Cambert, calcareous-Rock outcrop complex, 8 to 70 percent slopes	15,480	1.4
20	Cabbart-Rock outcrop-Yawdim complex, 15 to 70 percent slopes	49,680	4.5
21	Cambert, calcareous-Bigsheep-Golva complex, 8 to 45 percent slopes	11,540	1.0
22	Cambert, calcareous-Cabba-Cherry, calcareous, complex, 8 to 25 percent slopes	36,220	3.3
23	Cambert, calcareous-Cabba-Dast complex, 4 to 15 percent slopes	6,050	0.5
24	Cambeth, calcareous-Bigsheep, bedrock substratum, complex, 8 to 45 percent slopes	2,140	0.2
25	Cambeth, calcareous-Cabbart-Kirby complex, 8 to 45 percent slopes	15,440	1.4
26	Cambeth, calcareous-Cabbart-Lonna silt loams, 15 to 35 percent slopes	20,770	1.9
27	Cambeth, calcareous-Cabbart-Yawdim complex, 4 to 25 percent slopes	24,100	2.2
28	Cherry silt loam, calcareous, 0 to 2 percent slopes	3,750	0.3
29	Cherry silt loam, calcareous, 2 to 8 percent slopes	12,870	1.2
30	Cherry-Cambert silt loams, calcareous, 2 to 8 percent slopes	23,070	2.1
31	Cherry, calcareous-Cambert, calcareous-Cabba silt loams, 4 to 15 percent slopes	34,320	3.1
32	Cherry, calcareous-Lisk-Cabba complex, 8 to 25 percent slopes	1,270	0.1
33	Cherry, calcareous-Typic Ustifluvents complex, 0 to 8 percent slopes	7,550	0.7
34	Chinook fine sandy loam, 2 to 8 percent slopes	4,830	0.4
35	Chinook-Kremlin complex, 2 to 6 percent slopes	3,950	0.4
36	Chinook-Tinsley complex, 4 to 25 percent slopes	2,810	0.3
37	Chinook-Twilight fine sandy loams, 2 to 8 percent slopes	5,410	0.5
38	Chinook-Twilight-Blackhall fine sandy loams, 8 to 15 percent slopes	5,460	0.5
39	Creed-Gerdrum complex, 2 to 8 percent slopes	2,610	0.2
40	Dast-Lisk fine sandy loams, 4 to 15 percent slopes	1,490	0.1
41	Degrand fine sandy loam, 0 to 4 percent slopes	9,610	0.9
42	Degrand loam, 0 to 4 percent slopes	26,660	2.4
43	Delpoint-Busby-Blackhall complex, 4 to 15 percent slopes	5,580	0.5
44	Delpoint-Cabbart loams, 4 to 15 percent slopes	2,020	0.2
45	Delpoint-Cabbart-Yawdim complex, 4 to 25 percent slopes	9,330	0.8
46	Delpoint-Cabbart-Yawdim complex, 25 to 70 percent slopes	14,360	1.3
47	Delpoint-Yamac-Cabbart loams, 8 to 25 percent slopes	14,740	1.3
48	Ethridge silty clay loam, 0 to 2 percent slopes	1,600	0.1
49	Ethridge silty clay loam, 2 to 8 percent slopes	1,180	0.1
50	Evanston loam, 0 to 2 percent slopes	800	0.1
51	Evanston loam, 2 to 6 percent slopes	1,360	0.1
52	Evanston-Delpoint loams, 2 to 8 percent slopes	1,190	0.1
53	Farnuf loam, 2 to 6 percent slopes	1,150	0.1
54	Floweree silt loam, 0 to 2 percent slopes	2,730	0.2
55	Floweree silt loam, 2 to 6 percent slopes	3,060	0.3
56	Floweree silt loam, calcareous, 0 to 2 percent slopes	5,610	0.5
57	Floweree silt loam, calcareous, 2 to 8 percent slopes	15,020	1.3
58	Floweree-Cambeth silt loams, 0 to 4 percent slopes	1,420	0.1
59	Gerdrum-Creed complex, 0 to 2 percent slopes	1,700	0.2
60	Gerdrum-Creed complex, 2 to 8 percent slopes	4,980	0.4
61	Gerdrum-Creed complex, 4 to 15 percent slopes, gullied	2,520	0.2

ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS--Continued

Map symbol	Soil name	Acres	Percent
62	Glendive fine sandy loam, 0 to 2 percent slopes	4,650	0.4
63	Glendive loam, 0 to 2 percent slopes	1,430	0.1
64	Golva silt loam, 0 to 4 percent slopes	5,480	0.5
65	Golva silt loam, 4 to 8 percent slopes	3,560	0.3
66	Golva-Cambert silt loams, 2 to 8 percent slopes	4,950	0.4
67	Hanly-Glendive complex, 0 to 2 percent slopes	1,810	0.2
68	Havre loam, 0 to 2 percent slopes	4,730	0.4
69	Havre silty clay loam, 0 to 2 percent slopes	1,500	0.1
70	Havre-Harlem complex, 0 to 2 percent slopes	970	0.1
71	Hedstrom loam, 2 to 8 percent slopes	2,030	0.2
72	Ismay silty clay loam, 0 to 2 percent slopes	3,480	0.3
73	Kobar silty clay loam, 0 to 2 percent slopes	1,910	0.2
74	Kobar silty clay loam, 2 to 8 percent slopes	3,030	0.3
75	Kobar-Gerdrum silty clay loams, 2 to 8 percent slopes	1,410	0.1
76	Kremlin loam, 0 to 2 percent slopes	6,420	0.6
77	Kremlin loam, 2 to 8 percent slopes	12,130	1.1
78	Kremlin-Busby complex, 0 to 2 percent slopes	1,420	0.1
79	Kremlin-Tinsley-Degrand complex, 4 to 15 percent slopes	680	0.1
80	Lihen loamy sand, 4 to 15 percent slopes	4,400	0.4
81	Lihen-Parshall-Yetull complex, 4 to 15 percent slopes	5,350	0.5
82	Lihen-Tinsley complex, 8 to 35 percent slopes	2,620	0.2
83	Lihen-Yetull complex, 8 to 35 percent slopes	16,740	1.5
84	Lonna silt loam, 0 to 2 percent slopes	14,900	1.3
85	Lonna silt loam, 2 to 8 percent slopes	51,580	4.6
86	Lonna silt loam, 2 to 15 percent slopes, gullied	2,250	0.2
87	Lonna silty clay loam, 0 to 2 percent slopes	3,960	0.4
88	Lonna silty clay loam, 2 to 8 percent slopes	2,310	0.2
89	Lonna-Cambeth, calcareous, silt loams, 2 to 8 percent slopes	46,480	4.2
90	Lonna-Cambeth, calcareous-Cabbart silt loams, 4 to 12 percent slopes	93,780	8.4
91	Lonna-Cambeth, calcareous-Cabbart silt loams, 12 to 25 percent slopes	76,700	6.9
92	Macar loam, 2 to 8 percent slopes	540	*
93	Marias silty clay, 0 to 2 percent slopes	1,160	0.1
94	Marvan silty clay, 0 to 2 percent slopes	1,630	0.1
95	Marvan silty clay, 2 to 8 percent slopes	1,020	0.1
96	Marvan-Vanda silty clays, 0 to 4 percent slopes	1,980	0.2
97	Neldore-Rock outcrop complex, 4 to 25 percent slopes	3,930	0.4
98	Neldore-Rock outcrop-Abor complex, 15 to 50 percent slopes	27,220	2.4
99	Neldore-Weingart-Kirby complex, 4 to 25 percent slopes	1,040	0.1
100	Nesda gravelly sandy loam, 0 to 2 percent slopes	1,540	0.1
101	Parshall fine sandy loam, 2 to 6 percent slopes	4,770	0.4
102	Peerless loam, 0 to 4 percent slopes	3,120	0.3
103	Pinelli loam, 0 to 2 percent slopes	800	0.1
104	Pinelli loam, 2 to 8 percent slopes	2,520	0.2
105	Pinelli-Weingart-Gerdrum complex, 0 to 6 percent slopes	1,380	0.1
106	Riverwash	640	0.1
107	Rivra complex, 0 to 2 percent slopes	2,320	0.2
108	Rock outcrop	1,050	0.1
109	Rock outcrop-Cabbart-Kirby complex, 25 to 70 percent slopes	3,520	0.3
110	Ryell fine sandy loam, 0 to 2 percent slopes, occasionally flooded	1,140	0.1
111	Ryell very fine sandy loam, 0 to 2 percent slopes, rarely flooded	790	0.1
112	Ryell loam, 0 to 2 percent slopes, occasionally flooded	1,350	0.1
113	Shambo loam, 4 to 8 percent slopes	1,220	0.1
114	Shambo loam, 0 to 4 percent slopes	1,910	0.2
115	Spinekop silty clay loam, 0 to 2 percent slopes	2,880	0.3
116	Subwell-Bigsheep complex, 4 to 15 percent slopes	8,910	0.8
117	Subwell-Cambert, calcareous-Bigsheep, bedrock substratum, complex, 2 to 8 percent slopes	4,500	0.4
118	Subwell-Peerless loams, 0 to 4 percent slopes	14,680	1.3
119	Tally fine sandy loam, 2 to 8 percent slopes	310	*
120	Tally-Hedstrom fine sandy loams, 2 to 8 percent slopes	1,790	0.2
121	Tally-Wabek-Hedstrom complex, 4 to 25 percent slopes	4,410	0.4

* See footnote at end of table.

ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS--Continued

Map symbol	Soil name	Acres	Percent
122	Tinsley-Delpoint-Cabbart complex, 8 to 45 percent slopes	5,820	0.5
123	Ustic Torrifluvents, 0 to 4 percent slopes, occasionally flooded	1,320	0.1
124	Ustic Torriorthents, shallow-Borollic Natrargids complex, 2 to 25 percent slopes, gullied	3,420	0.3
125	Ustic Torriorthents, saline-Rock outcrop complex, 8 to 35 percent slopes	3,620	0.3
126	Ustic Torriorthents-Ustic Torrifluvents-Rock outcrop complex, 0 to 35 percent slopes	20,680	1.9
127	Vanstel silt loam, 0 to 2 percent slopes	1,370	0.1
128	Vanstel silt loam, 2 to 8 percent slopes	1,540	0.1
129	Wabek gravelly sandy loam, 4 to 45 percent slopes	1,830	0.2
130	Wabek-Cambert, calcareous, complex, 8 to 45 percent slopes	11,380	1.0
131	Yamac loam, 0 to 2 percent slopes	3,600	0.3
132	Yamac loam, 2 to 8 percent slopes	9,620	0.9
133	Yamac-Busby complex, 2 to 8 percent slopes	2,840	0.3
134	Yamac-Busby complex, 8 to 15 percent slopes	2,150	0.2
135	Yamac-Busby-Blackhall complex, 8 to 25 percent slopes	18,230	1.6
136	Yamac-Delpoint loams, 2 to 8 percent slopes	4,490	0.4
137	Yamac-Delpoint-Cabbart complex, 4 to 15 percent slopes	9,380	0.8
138	Yamac-Gerdrum complex, 2 to 8 percent slopes	3,910	0.4
139	Yawdim-Cambeth, calcareous, complex, 2 to 8 percent slopes	740	0.1
140	Yetull-Busby complex, 0 to 2 percent slopes	1,190	0.1
141	Zatoville silty clay loam, loamy substratum, 0 to 2 percent slopes	1,230	0.1
W	Water	5,500	0.5
	Total	1,114,300	100.0

* Less than 0.05 percent.

Agronomy

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

Cropland in Prairie County

About 10 percent of Prairie County is used for crops. About 100,000 acres is used as nonirrigated cropland, and about 13,000 acres, mainly along the Yellowstone River, is used as irrigated cropland.

Nonirrigated Cropland

Winter wheat is the principal nonirrigated crop in Prairie County, but spring wheat, barley, legume hay, grass-legume hay, and grass hay are also important. The main management concerns are conserving moisture, controlling soil blowing, controlling water erosion, maintaining soil fertility, and controlling weeds.

Conserving moisture generally involves trapping snow, reducing evaporation, limiting runoff, increasing infiltration, and controlling weeds. Other effective means of conserving moisture include contour farming, stripcropping, use of field windbreaks, tall grass barriers, timely tillage, and crop residue management systems, such as mulch tillage and no-till farming.

Because the climate is dry in most of the county, crop-fallow systems are commonly used. A summer fallow tillage system can control weeds and conserve soil moisture only if carefully managed. A flexible cropping system can be used instead of an alternate crop fallow system. In a flexible cropping system, the decision about whether or not to plant a crop is based mainly on the water available to the plants at seeding time plus the probable average precipitation during the growing season. Stripcropping is a practical approach to a crop-fallow system. It also reduces the hazard of soil blowing.

Measures that help to control soil blowing and water erosion include stripcropping, field windbreaks, tall grass barriers, contour farming, no-till farming, mulch tillage, a timely system of tillage, and the construction of terraces, diversions, and grassed waterways. A combination of several measures is generally used.

Measures that help to maintain fertility include commercial fertilizer, barnyard manure, and green manure crops. Controlling erosion also helps to maintain fertility. Crops on all of the nonirrigated soils in the county respond well to applications of nitrogen and phosphorus fertilizer. Alfalfa responds well to applications of phosphorus fertilizer. Corn, grass hay, and small grain respond well to applications of fertilizers containing nitrogen and phosphorus.

Irrigated Cropland

Alfalfa hay and corn are the principal irrigated crops in Prairie County, but irrigated spring wheat, barley, and sugar beets are also important. The main management concerns are poor water management, uneven fields, seepage from water conveyance systems, and soil blowing. The maintenance of soil fertility is also a management concern.

Proper management of irrigation water includes properly timing the application of water and controlling the length of the run, border width, field slope, and application rate. Most of the soils in the county require leveling for the effective distribution of water by gravity irrigation systems.

Water leaking from irrigation ditches salinizes a significant acreage of soils. Ditch lining and pipelines help to eliminate the salinization.

Salinity is a management concern on some of the irrigated soils in the county. Maintaining tolerable levels of soluble salt in the root zone depends on leaching and subsequent drainage to remove excess salts and water.

The hazard of soil blowing can be reduced by utilizing standing crop residue, stubble mulch tillage, and minimum tillage and by keeping the soil rough and cloddy when it is not protected by vegetation.

Planners of management systems for individual fields or farms should consider obtaining specific information from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Cropland Limitations and Hazards

The management concerns affecting the use of the detailed soil map units in the survey area for crops are shown in the table "Main Cropland Limitations and Hazards." The main concerns in managing nonirrigated cropland are conserving moisture, controlling soil blowing and water erosion, and maintaining soil fertility.

Conserving moisture primarily involves reducing the evaporation and runoff rates and increasing the water infiltration rate. Applying conservation tillage and conservation cropping systems, farming on the contour, stripcropping, establishing field windbreaks, and leaving crop residue on the surface conserve moisture.

Generally, a combination of several practices is needed to control *soil blowing* and *water erosion*. Conservation tillage, stripcropping, field windbreaks, tall grass barriers, contour farming, conservation cropping systems, crop residue management, diversions, and grassed waterways help to prevent excessive soil loss.

Measures that are effective in maintaining *soil fertility* include applying fertilizer, both organic and inorganic, including manure; incorporating crop residue or green manure crops into the soil; and using proper crop rotations. Controlling erosion helps to prevent the loss of organic matter and plant nutrients and thus helps to maintain productivity, although the level of fertility can be reduced even in areas where erosion is controlled. All soils used for nonirrigated crops respond well to applications of fertilizer.

Some limitations and hazards cannot be easily overcome. These are *channels, flooding, depth to rock, ponding, gullies,* and *lack of timely precipitation*.

Additional limitations and hazards are as follows:

Areas of rock outcrop and slick spots.—Farming around these areas may be feasible. Subsoiling or deep ripping soft sedimentary beds increases the effective rooting depth and the rate of water infiltration.

Excessive permeability.—This limitation causes deep leaching of nutrients and pesticides. The capacity of the soil to retain moisture for plant use is poor.

Potential for ground-water pollution.—This is a hazard in soils that have excessive permeability, hard bedrock, or a water table within the profile.

Lime content, limited available water capacity, poor tilth, restricted permeability, and *surface crusting.*—These limitations can be overcome by incorporating green manure crops, manure, or crop residue into the soil; applying a system of conservation tillage; and using conservation cropping systems. Also, crops may respond well to additions of phosphate fertilizer in areas where the soils have a high content of lime.

Short frost-free season.—If the growing season is less than 90 days, short-season crops or grasses should be grown.

Surface coarse fragments.—This limitation causes rapid wear of tillage equipment. It cannot be easily overcome.

Slope.—Where the slope is more than 8 percent, water erosion and soil blowing may be accelerated unless conservation farming practices are applied.

Surface stones.—Stones or boulders on the surface can hinder normal tillage unless they are removed.

Salt and sodium content.—In areas where this is a limitation, only salt- and sodium-tolerant crops should be grown.

On irrigated soils the main management concerns are *efficient water use, nutrient management, control of erosion, pest and weed control,* and *timely planting and harvesting* for a successful crop. An irrigation system that provides optimum control and distribution of water at minimum cost is needed. Overirrigation wastes water, leaches plant nutrients, and causes erosion. Also, it can create drainage problems, raise the water table, and increase the salinity of the soil.

Following is an explanation of the criteria used to determine the limitations or hazards.

Areas of rock outcrop.—Rock outcrop is a named component of the map unit.

Areas of rubble land.—Rubble land is a named component of the map unit.

Areas of slick spots.—Slick spots are a named component of the map unit.

Channeled.—The word "channeled" is included in the name of the map unit.

Depth to rock.—Bedrock is within a depth of 40 inches.

Erosion by water.—The surface K factor multiplied by the upper slope limit is more than 2 (same as prime farmland criteria).

Excessive permeability.—The upper limit of the permeability range is 6 inches or more within the soil profile.

Flooding.—The component of the map unit is occasionally flooded or frequently flooded.

Gullied.—The word "gullied" is included in the name of the map unit.

Lack of timely precipitation.—The component of the map unit has a Xeric moisture regime. The amount of annual precipitation is no more than 14 inches.

Lime content.—The component is assigned to wind erodibility group 4L or has more than 5 percent lime in the upper 10 inches.

Limited available water capacity.—The available water capacity calculated to a depth of 60 inches or to a root-limiting layer is 5 inches or less.

Ponding.—Ponding duration is assigned to the component of the map unit.

Potential for ground-water pollution.—The soil has a water table within a depth of 4 feet or hard bedrock within the profile, or permeability is more than 6 inches per hour.

Poor tilth.—The component of the map unit has more than 35 percent clay in the surface layer.

Restricted permeability.—Permeability is 0.06 inches per hour or less.

Salt content.—The component of the map unit has electrical conductivity of more than 4 in the surface layer or more than 8 within a depth of 30 inches.

Short frost-free season.—The map unit has a growing season of less than 90 frost-free days.

Slope.—The upper slope range of the component of the map unit is more than 8 percent.

Sodium content.—The sodium adsorption ratio of the component of the map unit is more than 13 within a depth of 30 inches.

Soil blowing.—The wind erodibility index multiplied by the selected high C factor for the survey area and then divided by the T factor is more than 8 for the component of the map unit.

Surface rock fragments.—The terms describing the texture of the surface layer include any rock fragment modifier except for gravelly or channery, and "surface stones" is not already indicated as a limitation.

Surface crusting.—The sodium adsorption ratio in the surface layer is 5 or more for any texture and 4 or more if the texture is silt, silt loam, loam, or very fine sandy loam.

Surface stones.—The terms describing the texture of the surface layer include any stony or bouldery modifier, or the soil is a stony or bouldery phase.

Water table.—The component of the map unit has a water table within a depth of 60 inches.

Crop Yield Estimates

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." 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 each map unit 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 are also 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. Yields for dryland crops are based on a crop-fallow system.

For yields of irrigated crops, it is assumed that the irrigation system is adapted to the soils and to the crops grown, that good-quality irrigation water is uniformly applied as needed, and that tillage is kept to a minimum.

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.

Pasture and Hayland Interpretations

Soils are assigned to pasture and hayland groups according to their suitability for the production of forage. The soils in each group are similar enough to be suited to the same species of grasses or legumes, have similar limitations and hazards, require similar management, and have similar productivity levels and other responses to management.

Under good management, proper grazing is essential for the production of high-quality forage, stand survival, and erosion control. Proper grazing helps plants to maintain sufficient and generally vigorous top growth during the growing season. Brush control is essential in many areas, and weed control generally is needed. Rotation grazing and renovation also are important management practices.

Yield estimates are often provided in animal unit months (AUM), or the amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about forage yields

other than those shown in the table "Land Capability and Yields per Acre of Crops."

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 take into account 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" *(5)*, soils generally are grouped at three levels—capability class, subclass, and unit. These levels indicate the degree and kinds of limitations affecting mechanized farming systems that produce the more commonly grown field crops, such as corn, small grain, cotton, hay, and field-grown vegetables. Only class and subclass are used in this survey.

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

If properly managed, soils in classes 1, 2, 3, and 4 are suitable for the mechanized production of commonly grown field crops and for pasture and woodland. The degree of the soil limitations affecting the production of cultivated crops increases progressively from class 1 to class 4. The limitations can affect levels of production and the risk of permanent soil deterioration caused by erosion and other factors.

Soils in classes 5, 6, and 7 are generally not suited to the mechanized production of commonly grown field crops without special management, but they are suitable for plants that provide a permanent cover, such as grasses and trees. The severity of the soil limitations affecting crops increases progressively from class 5 to class 7.

Areas in class 8 are generally not suitable for crops, pasture, or woodland without a level of management that is impractical. These areas may have potential for other uses, such as recreational facilities and wildlife habitat.

Capability subclasses identify the dominant kind of limitation in the class. They are designated by adding a 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 a 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.

There are no subclasses in class 1 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 mainly to pasture, rangeland, woodland, wildlife habitat, or recreation.

The capability classification of each map unit is given in the table "Land Capability and Yields per Acre of Crops" at the end of this section.

Prime Farmland and Other Important Farmland

In this section, prime farmland and other important farmland are defined. The soils in the survey area that are considered prime farmland are listed in the table "Prime Farmland" at the end of this section.

Prime Farmland

Prime farmland is of major importance in meeting the Nation's short- and long-range needs for food and fiber. The acreage of high-quality farmland is limited, and the U.S. Department of Agriculture recognizes that government at local, State, and Federal levels, as well as individuals, must encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland soils, as defined by the U.S. Department of Agriculture, are soils that are best suited to food, feed, forage, fiber, and oilseed crops. Such soils have properties that favor the economic production of sustained high yields of crops. The soils need only to be treated and managed by acceptable farming methods. An adequate moisture supply and a sufficiently long growing season are required. Prime farmland soils produce the highest yields with minimal expenditure of energy and economic resources, and farming these soils results in the least damage to the environment.

Prime farmland soils may presently be used as cropland, pasture, or woodland or for other purposes. They either are used for food and fiber or are available for these uses. Urban or built-up land, public land, and water areas cannot be considered prime farmland.

Urban or built-up land is any contiguous unit of land 10 acres or more in size that is used for such purposes as housing, industrial, and commercial sites, sites for institutions or public buildings, small parks, golf courses, cemeteries, railroad yards, airports, sanitary landfills, sewage treatment plants, and water-control structures. Public land is land not available for farming in National forests, National parks, military reservations, and State parks.

Prime farmland soils commonly receive an adequate and dependable supply of moisture from precipitation or irrigation. The temperature and growing season are favorable, and the level of acidity or alkalinity and the content of salts and sodium are acceptable. The soils have few, if any, rocks and are permeable to water and air. They are not excessively erodible or saturated with water for long periods, and they are not frequently flooded during the growing season or are protected from flooding. Slopes range mainly from 0 to 6 percent.

Soils that have a high water table, are subject to flooding, or are droughty may qualify as prime farmland where these limitations are overcome by drainage measures, flood control, or irrigation. Onsite evaluation is necessary to determine the effectiveness of corrective measures. More information about the criteria for prime farmland can be obtained at the local office of the Natural Resources Conservation Service.

A recent trend in land use has been the conversion of prime farmland to urban and industrial uses. The loss of prime farmland to other uses puts pressure on lands that are less productive than prime farmland.

About 7,500 acres of soils in Prairie County are presently irrigated and meet all of the requirements for prime farmland. These soils are along the Yellowstone River. They are used mainly for irrigated alfalfa, corn, sugar beets, and small grain. If irrigated, another 27,460 acres of soils would meet the requirements for prime farmland. Many of these soils are in the Yellowstone and Powder River Valleys and on upland terraces adjacent to these rivers. Some of these soils are also in side stream valleys that have little or no water available for irrigation.

The map units in the survey area that meet the requirements for prime farmland are listed in the table "Prime Farmland." On the soils included in the table, measures that overcome limitations are needed. The need for these measures is indicated in parentheses after the map unit name. The location of each map unit is shown on the detailed soil maps at the back of this publication. The soil qualities that affect use and management are described in the section "Soil Series and Detailed Soil Map Units." This list does not constitute a recommendation for a particular land use.

Unique Farmland

Unique farmland is land other than prime farmland that is used for the production of specific high-value food and fiber crops. It has the special combination of soil qualities, location, growing season, and moisture supply needed for the economic production of sustained high yields of a specific high-quality crop when treated and managed by acceptable farming methods. Examples of such crops are citrus, tree nuts, olives, cranberries, and vegetables.

Unique farmland is used for a specific high-value food or fiber crop; has an adequate supply of available moisture for the specific crop because of stored moisture, precipitation, or irrigation; and has a combination of soil qualities, growing season, temperature, humidity, air drainage, elevation, aspect, and other factors, such as nearness to markets, that favors the production of a specific food or fiber crop.

Lists of unique farmland are developed as needed in cooperation with conservation districts and others.

Additional Farmland of Statewide Importance

Some areas other than areas of prime and unique farmland are of statewide importance in the production of food, feed, fiber, forage, and oilseed crops. The criteria used in defining and delineating these areas are determined by the appropriate State agency or agencies. Generally, additional farmland of statewide importance includes areas that nearly meet the criteria for prime farmland and that economically produce high yields of crops when treated and managed by acceptable farming methods. Some areas can produce as high a yield as areas of prime farmland if conditions are favorable. In some states additional farmland of statewide importance may include tracts of land that have been designated for agriculture by State law.

A list of this land has not been maintained for Montana and thus is not presently available.

Additional Farmland of Local Importance

This land consists of areas that are of local importance in the production of food, feed, fiber, forage, and oilseed crops and are not identified as having national or statewide importance. Where appropriate, this land is identified by local agencies. It may include tracts of land that have been designated for agriculture by local ordinance.

Lists of this land are developed as needed in cooperation with conservation districts and others.

Erosion Factors

Soil erodibility (K) and soil-loss tolerance (T) factors are used in an equation that predicts the amount of soil

lost through water erosion in areas of cropland. The procedure for predicting soil loss is useful in guiding the selection of soil and water conservation practices.

Soil Erodibility (K) Factor

The soil erodibility (K) factor indicates the susceptibility of a soil to sheet and rill erosion by water. The soil properties that influence erodibility are those that affect the infiltration rate, the movement of water through the soil, and the water storage capacity of the soil and those that allow the soil to resist dispersion, splashing, abrasion, and the transporting forces of rainfall and runoff. The most important soil properties are the content of silt plus very fine sand, the content of sand coarser than very fine sand, the content of organic matter, soil structure, and permeability.

Fragment-Free Soil Erodibility (Kf) Factor

This is one of the factors used in the revised Universal Soil Loss Equation. It shows the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Soil-Loss Tolerance (T) Factor

The soil-loss tolerance (T) factor is an estimate of the maximum annual rate of soil erosion that can occur over a sustained period without affecting crop productivity. The rate is expressed in tons of soil loss per acre per year. Ratings of 1 to 5 are used, depending on soil properties and prior erosion. The criteria used in assigning a T factor to a soil include maintenance of an adequate rooting depth for crop production, potential reduction of crop yields, maintenance of water-control structures affected by sedimentation, prevention of gullying, and the value of nutrients lost through erosion.

Wind Erodibility Groups

Wind erodibility is directly related to the percentage of dry, nonerodible surface soil aggregates larger than 0.84 millimeter in diameter. From this percentage, the wind erodibility index (I) factor is determined. This factor is an expression of the stability of the soil aggregates, or the extent to which they are broken down by tillage and the abrasion caused by windblown soil particles. Soils are assigned to wind erodibility groups (WEG) having similar percentages of dry soil aggregates larger than 0.84 millimeter.

Additional information about wind erodibility groups and K, Kf, T, and I factors can be obtained from local offices of the Natural Resources Conservation Service or the Cooperative Extension Service.

Windbreaks and Environmental Plantings

Windbreaks protect livestock, buildings, and yards from wind and snow. They also protect fruit trees and gardens, and they 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.

Windbreaks are often planted on land that did not originally support trees. Knowledge of how trees perform on such land can be gained only by observing and recording the performance of trees that have been planted and have survived. Many popular windbreak species are not indigenous to the areas in which they are planted.

Each tree or shrub species has certain climatic and physiographic limits. Within these parameters, a tree or shrub may grow well or grow poorly, depending on the characteristics of the soil. Each tree or shrub has definable potential heights in a given physiographic area and under a given climate. Accurate definitions of potential heights are necessary when a windbreak is planned and designed.

Windbreak Suitability Groups

Windbreak suitability groups consist of soils in which the kinds and degrees of the hazards and limitations that affect the survival and growth of trees and shrubs in windbreaks are about the same. These groups are listed for each soil in the survey area in the table "Windbreak Suitability Groups" at the end of this section. They are described in the following paragraphs.

Group 1 consists of soils that have no soil-related hazards or limitations or only slight hazards or limitations if they are used for windbreaks. Slopes are less than 15 percent.

Group 2M consists of soils that have a moderate available water capacity (5 to 10 inches) because of texture, depth, or both. The soils are well drained and are not affected by salinity. A layer of concentrated lime, if it occurs, is below a depth of 24 inches. Slopes are less than 15 percent.

Group 2L consists of soils that have a layer of

concentrated lime (more than 15 percent calcium carbonate equivalent) at a depth of about 15 to 24 inches. The available water capacity is at least 5 inches. The soils are well drained and are not affected by salinity or alkalinity (the electrical conductivity is less than 4 millimhos per centimeter). Slopes are less than 15 percent.

Group 2W consists of soils that have an available water capacity of 5 inches or more. If the soils have a layer of concentrated lime, the layer is below a depth of 15 inches. The depth to a permanent water table is 30 to 60 inches. The soils are not affected by salinity. Slopes are less than 15 percent.

Group 2S consists of soils that are moderately affected by salinity (the electrical conductivity is 4 to 12 millimhos per centimeter). The available water capacity is at least 5 inches. A layer of concentrated lime, if it occurs, is at a depth of 15 inches or more. The water table is at a depth of 30 inches or more. Slopes are less than 15 percent.

Group 3M consists of soils that have an available water capacity of 2 to 5 inches because of texture, depth, or both. A layer of concentrated lime, if it occurs, is at a depth of 15 inches or more. The soils are well drained and are not affected by salinity (the electrical conductivity is less than 4 millimhos per centimeter).

Group 3L consists of soils that have a layer of concentrated lime (more than 15 percent calcium carbonate equivalent) at a depth of less than 15 inches. A permanent water table is at a depth of more than 30 inches. The available water capacity is more than 5 inches. The soils are not affected by salinity (the electrical conductivity is less than 4 millimhos per centimeter). Slopes are less than 15 percent.

Group 3W consists of soils that have an available water capacity of 2 inches or more. If the soils have a layer of concentrated lime, the layer is below a depth of 15 inches. The depth to a permanent water table is 30 inches or less. It is more than 10 inches during all or most of the growing season. The soils are not affected by salinity. Slopes are less than 15 percent.

Group 3S consists of soils that are severely affected by salinity or alkalinity (the electrical conductivity is 12 to 16 millimhos per centimeter). The available water capacity is 5 inches or more. A layer of concentrated lime, if it occurs, is at a depth of more than 15 inches. A permanent water table is at a depth of 30 inches or more. Slopes are less than 15 percent.

Group 4 consists of soils that have slopes of more than 15 percent, except for those in areas where the length of the slopes is 100 feet or less, and the less sloping soils that have very severe limitations, including soils that have a very low available water capacity (2 inches or less); very shallow, stony, or gravelly soils; strongly saline and alkali soils, in which the electrical conductivity is more than 16 millimhos per centimeter; and soils that have a pH of more than 9.0. Rock outcrop also is in this group.

The table "Windbreak Suitability Group Species List" shows the height that locally grown trees and shrubs are expected to reach in 20 years on soils in each windbreak suitability group. The estimates in this table are based on measurements and observation of established plantings that have been given adequate care. They can be used as a guide in planning windbreaks and screens. Additional information on planning windbreaks and screens and planting and caring for trees and shrubs can be obtained from local offices of the Natural Resources Conservation Service or the Cooperative Extension Service or from a nursery.

MAIN CROPLAND LIMITATIONS AND HAZARDS

(See text for a description of the limitations and hazards listed in this table)

Soil name and map symbol	Cropland limitations or hazards
1:	
Abor	Depth to rock Erosion by water Limited available water capacity Poor tilth Restricted permeability Slope Soil blowing
Cabbart	Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing
Delpoint	Depth to rock Erosion by water Slope Soil blowing
2:	
Abor	Depth to rock Erosion by water Limited available water capacity Poor tilth Restricted permeability Slope Soil blowing
Delpoint	Depth to rock Erosion by water Limited available water capacity Slope Soil blowing
Kobar	Erosion by water Poor tilth Restricted permeability
3:	
Abor	Depth to rock Erosion by water Limited available water capacity Poor tilth Restricted permeability Soil blowing
Weingart	Depth to rock Erosion by water Limited available water capacity Poor tilth Restricted permeability Salt content Sodium content Soil blowing

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
3:	
Neldore	Depth to rock Erosion by water Limited available water capacity Poor tilth Restricted permeability Slope Soil blowing
4:	
Aeric Fluvaquents	Onsite investigation required
Cherry	Erosion by water Lime content Soil blowing
5:	
Alona	Lime content Salt content Sodium content Surface crusting
6:	
Alona	Lime content Salt content Sodium content Surface crusting
Cambeth	Depth to rock Erosion by water Lime content Limited available water capacity Soil blowing
Gerdrum	Erosion by water Poor tilth Restricted permeability Salt content Sodium content
7:	
Badland	Nonsoil material
8:	
Blackhall	Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing
Busby	Areas of rock outcrop Erosion by water Excessive permeability Potential for ground-water pollution Slope Soil blowing
Rock outcrop	Nonsoil material

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
9:	
Blackhall	Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing
Delpoint	Areas of rock outcrop Depth to rock Erosion by water Limited available water capacity Slope Soil blowing
Rock outcrop	Nonsoil material
10:	
Blanchard	Erosion by water Excessive permeability Limited available water capacity Potential for ground-water pollution Slope Soil blowing
Dast	Depth to rock Erosion by water Limited available water capacity Slope Soil blowing
11:	
Borollic Camborthids	Onsite investigation required
Ustic Torrifluvents	Onsite investigation required
12:	
Busby	Excessive permeability Potential for ground-water pollution Soil blowing
13:	
Busby	Soil blowing
14:	
Busby	Soil blowing
15:	
Busby	Erosion by water Excessive permeability Potential for ground-water pollution Slope Soil blowing
Blackhall	Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
15:	
Twilight	Depth to rock Erosion by water Limited available water capacity Slope Soil blowing
16:	
Busby	Erosion by water Excessive permeability Potential for ground-water pollution Slope Soil blowing
Twilight	Depth to rock Erosion by water Limited available water capacity Slope Soil blowing
Blackhall	Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing
17:	
Busby	Excessive permeability Potential for ground-water pollution Soil blowing
Yetull	Excessive permeability Limited available water capacity Potential for ground-water pollution Soil blowing
18:	
Busby	Areas of rock outcrop Erosion by water Excessive permeability Potential for ground-water pollution Slope Soil blowing
Yetull	Areas of rock outcrop Erosion by water Excessive permeability Limited available water capacity Potential for ground-water pollution Slope Soil blowing
Rock outcrop	Nonsoil material
19:	
Cabba	Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
19:	
Cambert	Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing
Rock outcrop	Nonsoil material
20:	
Cabbart	Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing
Rock outcrop	Nonsoil material
Yawdim	Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Poor tilth Restricted permeability Slope Soil blowing
21:	
Cambert	Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing
Bigsheep	Erosion by water Lime content Slope Soil blowing Surface rock fragments
Golva	Erosion by water Slope
22:	
Cambert	Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing
Cabba	Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
22:	
Cherry	Erosion by water Lime content Slope Soil blowing
23:	
Cambert	Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing
Cabba	Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing
Dast	Depth to rock Erosion by water Limited available water capacity Slope Soil blowing
24:	
Cambeth	Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing
Bigsheep	Erosion by water Lime content Limited available water capacity Slope Soil blowing Surface rock fragments
25:	
Cambeth	Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing
Cabbart	Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
25:	
Kirby	Erosion by water Excessive permeability Lime content Limited available water capacity Potential for ground-water pollution Slope Soil blowing
26:	
Cambeth	Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing
Cabbart	Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing
Lonna	Erosion by water Lime content Slope Soil blowing
27:	
Cambeth	Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing
Cabbart	Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing
Yawdim	Depth to rock Erosion by water Lime content Limited available water capacity Poor tilth Restricted permeability Slope Soil blowing
28:	
Cherry	Lime content Soil blowing
29:	
Cherry	Erosion by water Lime content Soil blowing

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
30:	
Cherry	Erosion by water Lime content Soil blowing
Cambert	Depth to rock Erosion by water Lime content Limited available water capacity Soil blowing
31:	
Cherry	Erosion by water Lime content Slope Soil blowing
Cambert	Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing
Cabba	Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing
32:	
Cherry	Erosion by water Lime content Slope Soil blowing
Lisk	Erosion by water Slope Soil blowing
Cabba	Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing
33:	
Cherry	Erosion by water Lime content Soil blowing
Typic Ustifluvents	Onsite investigation required
34:	
Chinook	Soil blowing
35:	
Chinook	Soil blowing
Kremlin	Erosion by water

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
36:	
Chinook	Erosion by water Slope Soil blowing
Tinsley	Erosion by water Excessive permeability Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface rock fragments
37:	
Chinook	Soil blowing
Twilight	Depth to rock Limited available water capacity Soil blowing
38:	
Chinook	Erosion by water Slope Soil blowing
Twilight	Depth to rock Erosion by water Limited available water capacity Slope Soil blowing
Blackhall	Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing
39:	
Creed	Erosion by water Restricted permeability Sodium content
Gerdrum	Erosion by water Lime content Poor tilth Restricted permeability Salt content Sodium content
40:	
Dast	Depth to rock Erosion by water Limited available water capacity Slope Soil blowing
Lisk	Erosion by water Slope Soil blowing

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
41:	
Degrand	Excessive permeability Potential for ground-water pollution Soil blowing
42:	
Degrand	Excessive permeability Potential for ground-water pollution Soil blowing
43:	
Delpoint	Depth to rock Erosion by water Limited available water capacity Slope Soil blowing
Busby	Erosion by water Slope Soil blowing
Blackhall	Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing
44:	
Delpoint	Depth to rock Erosion by water Slope Soil blowing
Cabbart	Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing
45:	
Delpoint	Depth to rock Erosion by water Limited available water capacity Slope Soil blowing
Cabbart	Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing
Yawdim	Depth to rock Erosion by water Lime content Limited available water capacity Poor tilth Restricted permeability Slope Soil blowing

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
46:	
Delpoint	Depth to rock Erosion by water Limited available water capacity Slope Soil blowing
Cabbart	Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing
Yawdim	Depth to rock Erosion by water Lime content Limited available water capacity Poor tilth Restricted permeability Slope Soil blowing
47:	
Delpoint	Depth to rock Erosion by water Limited available water capacity Slope Soil blowing
Yamac	Erosion by water Slope
Cabbart	Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing
48:	
Ethridge	Restricted permeability
49:	
Ethridge	Erosion by water Restricted permeability
50:	
Evanston	None
51:	
Evanston	Erosion by water
52:	
Evanston	Erosion by water
Delpoint	Depth to rock Erosion by water Limited available water capacity Soil blowing
53:	
Farnuf	None

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
54:	
Floweree	None
55:	
Floweree	Erosion by water
56:	
Floweree	Lime content Soil blowing
57:	
Floweree	Lime content Soil blowing
58:	
Floweree	None
Cambeth	Depth to rock Lime content Soil blowing
59:	
Gerdrum	Poor tilth Restricted permeability Salt content Sodium content
Creed	Restricted permeability Sodium content
60:	
Gerdrum	Erosion by water Poor tilth Restricted permeability Salt content Sodium content
Creed	Erosion by water Restricted permeability Sodium content
61:	
Gerdrum	Erosion by water Gullied Poor tilth Restricted permeability Salt content Slope Sodium content
Creed	Erosion by water Gullied Restricted permeability Slope Sodium content
62:	
Glendive	Flooding Soil blowing

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
63:	
Glendive	Flooding Lime content Soil blowing
64:	
Golva	None
65:	
Golva	Erosion by water
66:	
Golva	Erosion by water
Cambert	Depth to rock Erosion by water Lime content Limited available water capacity Soil blowing
67:	
Hanly	Excessive permeability Flooding Potential for ground-water pollution Soil blowing
Glendive	Flooding Soil blowing
68:	
Havre	Flooding Soil blowing
69:	
Havre	Flooding
70:	
Havre	Flooding
Harlem	Flooding Poor tilth Restricted permeability Soil blowing
71:	
Hedstrom	Erosion by water Excessive permeability Potential for ground-water pollution Soil blowing
72:	
Ismay	Flooding Lime content Poor tilth Salt content Sodium content Soil blowing Surface crusting Water table
73:	
Kobar	Poor tilth Restricted permeability

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
74:	
Kobar	Erosion by water Poor tilth Restricted permeability
75:	
Kobar	Erosion by water Poor tilth Restricted permeability
Gerdrum	Erosion by water Poor tilth Restricted permeability Salt content Sodium content
76:	
Kremlin	None
77:	
Kremlin	Erosion by water
78:	
Kremlin	None
Busby	Excessive permeability Potential for ground-water pollution Soil blowing
79:	
Kremlin	Erosion by water Slope
Tinsley	Erosion by water Excessive permeability Limited available water capacity Potential for ground-water pollution Slope Soil blowing
Degrand	Erosion by water Excessive permeability Potential for ground-water pollution Soil blowing
80:	
Lihen	Erosion by water Excessive permeability Potential for ground-water pollution Slope Soil blowing
81:	
Lihen	Erosion by water Excessive permeability Potential for ground-water pollution Slope Soil blowing
Parshall	Erosion by water Slope Soil blowing

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
81:	
Yetull	Excessive permeability Limited available water capacity Potential for ground-water pollution Slope Soil blowing
82:	
Lihen	Erosion by water Excessive permeability Potential for ground-water pollution Slope Soil blowing
Tinsley	Erosion by water Excessive permeability Limited available water capacity Potential for ground-water pollution Slope Soil blowing
83:	
Lihen	Erosion by water Excessive permeability Potential for ground-water pollution Slope Soil blowing
Yetull	Excessive permeability Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface rock fragments
84:	
Lonna	Lime content Soil blowing
85:	
Lonna	Erosion by water Lime content Soil blowing
86:	
Lonna	Erosion by water Gullied Lime content Slope Soil blowing
87:	
Lonna	Lime content Soil blowing
88:	
Lonna	Erosion by water Lime content Soil blowing

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
89:	
Lonna	Erosion by water Lime content Soil blowing
Cambeth	Depth to rock Erosion by water Lime content Limited available water capacity Soil blowing
90:	
Lonna	Erosion by water Lime content Slope Soil blowing
Cambeth	Depth to rock Erosion by water Lime content Slope Soil blowing
Cabbart	Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing
91:	
Lonna	Erosion by water Lime content Slope Soil blowing
Cambeth	Depth to rock Erosion by water Lime content Slope Soil blowing
Cabbart	Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing
92:	
Macar	Erosion by water
93:	
Marias	Lime content Poor tilth Restricted permeability Soil blowing

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
94:	
Marvan	Lime content Poor tilth Restricted permeability Salt content Sodium content Soil blowing
95:	
Marvan	Erosion by water Lime content Poor tilth Restricted permeability Soil blowing
96:	
Marvan	Lime content Poor tilth Restricted permeability Salt content Sodium content Soil blowing
Vanda	Poor tilth Restricted permeability Salt content Sodium content Soil blowing Surface crusting
97:	
Neldore	Areas of rock outcrop Depth to rock Erosion by water Limited available water capacity Poor tilth Restricted permeability Slope Soil blowing
Rock outcrop	Nonsoil material
98:	
Neldore	Areas of rock outcrop Depth to rock Erosion by water Limited available water capacity Poor tilth Restricted permeability Slope Soil blowing
Rock outcrop	Nonsoil material
Abor	Areas of rock outcrop Depth to rock Erosion by water Limited available water capacity Poor tilth Restricted permeability Slope Soil blowing

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
99:	
Neldore	Depth to rock Erosion by water Limited available water capacity Poor tilth Restricted permeability Slope Soil blowing
Weingart	Depth to rock Erosion by water Limited available water capacity Poor tilth Restricted permeability Salt content Sodium content Soil blowing
Kirby	Erosion by water Excessive permeability Lime content Limited available water capacity Potential for ground-water pollution Slope Soil blowing
100:	
Nesda	Excessive permeability Flooding Limited available water capacity Potential for ground-water pollution Soil blowing
101:	
Parshall	Soil blowing
102:	
Peerless	Soil blowing
103:	
Pinelli	None
104:	
Pinelli	Erosion by water
105:	
Pinelli	Erosion by water
Weingart	Depth to rock Erosion by water Limited available water capacity Poor tilth Restricted permeability Salt content Sodium content Soil blowing
Gerdrum	Erosion by water Poor tilth Restricted permeability Salt content Sodium content

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
106:	
Riverwash	Nonsoil material
107:	
Rivra loam	Excessive permeability Flooding Limited available water capacity Potential for ground-water pollution Soil blowing Water table
Rivra gravelly sandy loam	Excessive permeability Flooding Limited available water capacity Potential for ground-water pollution Soil blowing Water table
108:	
Rock outcrop	Nonsoil material
109:	
Rock outcrop	Nonsoil material
Cabbart	Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing
Kirby	Areas of rock outcrop Erosion by water Excessive permeability Lime content Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface rock fragments
110:	
Ryell	Excessive permeability Flooding Limited available water capacity Potential for ground-water pollution Soil blowing
111:	
Ryell	Excessive permeability Limited available water capacity Potential for ground-water pollution Soil blowing
112:	
Ryell	Excessive permeability Flooding Potential for ground-water pollution Soil blowing
113:	
Shambo	Erosion by water

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
114:	
Shambo	None
115:	
Spinekop	Poor tilth
116:	
Subwell	Erosion by water Soil blowing
Bigsheep	Lime content Slope Soil blowing Surface rock fragments
117:	
Subwell	Erosion by water Soil blowing
Cambert	Depth to rock Erosion by water Lime content Soil blowing
Bigsheep	Lime content Limited available water capacity Soil blowing Surface rock fragments
118:	
Subwell	Soil blowing
Peerless	Soil blowing
119:	
Tally	Excessive permeability Potential for ground-water pollution Soil blowing
120:	
Tally	Excessive permeability Potential for ground-water pollution Soil blowing
Hedstrom	Excessive permeability Potential for ground-water pollution Soil blowing
121:	
Tally	Erosion by water Slope Soil blowing
Wabek	Erosion by water Excessive permeability Limited available water capacity Potential for ground-water pollution Slope Soil blowing
Hedstrom	Excessive permeability Potential for ground-water pollution Soil blowing

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
122:	
Tinsley	Erosion by water Excessive permeability Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface rock fragments
Delpoint	Depth to rock Erosion by water Slope Soil blowing
Cabbart	Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing
123:	
Ustic Torrifluvents	Onsite investigation required
124:	
Ustic Torriorthents	Onsite investigation required
Borollic Natargids	Onsite investigation required
125:	
Ustic Torriorthents	Onsite investigation required
Rock outcrop	Onsite investigation required
126:	
Ustic Torriorthents	Onsite investigation required
Ustic Torrifluvents	Onsite investigation required
Rock outcrop	Onsite investigation required
127:	
Vanstel	None
128:	
Vanstel	Erosion by water
129:	
Wabek	Erosion by water Excessive permeability Lime content Limited available water capacity Potential for ground-water pollution Slope Soil blowing

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
130:	
Wabek	Erosion by water Excessive permeability Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface rock fragments
Cambert	Depth to rock Erosion by water Lime content Slope Soil blowing
131:	
Yamac	None
132:	
Yamac	Erosion by water
133:	
Yamac	Erosion by water
Busby	Excessive permeability Potential for ground-water pollution Soil blowing
134:	
Yamac	Erosion by water Slope
Busby	Erosion by water Excessive permeability Potential for ground-water pollution Slope Soil blowing
135:	
Yamac	Erosion by water Slope
Busby	Erosion by water Excessive permeability Potential for ground-water pollution Slope Soil blowing
Blackhall	Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing
136:	
Yamac	Erosion by water
Delpoint	Depth to rock Erosion by water Soil blowing

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
137:	
Yamac	Erosion by water Slope
Delpoint	Depth to rock Erosion by water Slope Soil blowing
Cabbart	Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing
138:	
Yamac	Erosion by water
Gerdrum	Erosion by water Poor tilth Restricted permeability Salt content Sodium content
139:	
Yawdim	Depth to rock Erosion by water Lime content Limited available water capacity Poor tilth Restricted permeability Soil blowing
Cambeth	Depth to rock Erosion by water Lime content Soil blowing
140:	
Yetull	Excessive permeability Limited available water capacity Potential for ground-water pollution Soil blowing
Busby	Excessive permeability Potential for ground-water pollution Soil blowing
141:	
Zatoville	Poor tilth Restricted permeability Salt content Sodium content Soil blowing Water table
W:	
Water	Nonsoil material

LAND CAPABILITY AND YIELDS PER ACRE OF CROPS

(Yields in the 'N' columns are for nonirrigated soils; those in the 'I' columns are for irrigated soils. 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. The listing of a crop yield does not endorse the use of a soil for that crop)

Map symbol and soil name	Land capability		Spring wheat		Winter wheat		Barley		Alfalfa hay		Corn silage		Sugar beets	
	N	I	N	I	N	I	N	I	N	I	N	I	N	I
			Bu		Bu		Bu		Tons		Tons		Tons	
1:														
Abor	6E	---	17.0	---	19.0	---	31.0	---	---	---	---	---	---	---
Cabbart	7E	---	7.0	---	7.0	---	15.0	---	---	---	---	---	---	---
Delpoint	6E	---	22.0	---	24.0	---	37.0	---	---	---	---	---	---	---
2:														
Abor	4E	---	17.0	---	19.0	---	31.0	---	---	---	---	---	---	---
Delpoint	4E	---	22.0	---	24.0	---	37.0	---	---	---	---	---	---	---
Kobar	3E	---	35.0	---	39.0	---	57.0	---	---	---	---	---	---	---
3:														
Abor	4E	---	24.0	---	26.0	---	40.0	---	---	---	---	---	---	---
Weingart	6E	---	---	---	---	---	---	---	---	---	---	---	---	---
Neldore	6E	---	10.0	---	11.0	---	20.0	---	---	---	---	---	---	---
4:														
Aeric Fluvaquents.														
Cherry	4E	---	42.0	---	47.0	---	68.0	---	---	---	---	---	---	---
5:														
Alona	6S	---	27.0	---	31.0	---	46.0	---	---	---	---	---	---	---
6:														
Alona	6S	---	30.0	---	33.0	---	49.0	---	---	---	---	---	---	---
Cambeth	4E	---	23.0	---	26.0	---	39.0	---	---	---	---	---	---	---
Gerdrum	6E	---	18.0	---	21.0	---	32.0	---	---	---	---	---	---	---
7:														
Badland.														
8:														
Blackhall	7E	---	---	---	---	---	---	---	---	---	---	---	---	---
Busby	6E	---	28.0	---	31.0	---	46.0	---	---	---	---	---	---	---
Rock outcrop.														
9:														
Blackhall	7E	---	---	---	---	---	---	---	---	---	---	---	---	---
Delpoint	7E	---	---	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop.														

LAND CAPABILITY AND YIELDS PER ACRE OF CROPS--Continued

Map symbol and soil name	Land capability		Spring wheat		Winter wheat		Barley		Alfalfa hay		Corn silage		Sugar beets	
	N	I	N	I	N	I	N	I	N	I	N	I	N	I
			Bu		Bu		Bu		Tons		Tons		Tons	
10:														
Blanchard	6E	---	23.0	---	25.0	---	39.0	---	---	---	---	---	---	---
Dast	4E	---	31.0	---	34.0	---	52.0	---	---	---	---	---	---	---
11:														
Borollic Camborthids.														
Ustic Torrifluvents.														
12:														
Busby	4E	4E	30.0	72.0	34.0	---	50.0	94.0	---	6.2	---	20.0	---	23.0
13:														
Busby	4E	---	30.0	---	34.0	---	50.0	---	---	---	---	---	---	---
14:														
Busby	3E	2E	32.0	74.0	36.0	---	53.0	94.0	---	6.2	---	20.0	---	23.0
15:														
Busby	4E	---	30.0	---	34.0	---	50.0	---	---	---	---	---	---	---
Blackhall	7E	---	9.0	---	10.0	---	18.0	---	---	---	---	---	---	---
Twilight	6E	---	20.0	---	22.0	---	34.0	---	---	---	---	---	---	---
16:														
Busby	4E	---	30.0	---	34.0	---	50.0	---	---	---	---	---	---	---
Twilight	4E	---	28.0	---	31.0	---	46.0	---	---	---	---	---	---	---
Blackhall	6E	---	10.0	---	11.0	---	20.0	---	---	---	---	---	---	---
17:														
Busby	4E	---	30.0	---	34.0	---	50.0	---	---	---	---	---	---	---
Yetull	6E	---	16.0	---	17.0	---	28.0	---	---	---	---	---	---	---
18:														
Busby	6E	---	28.0	---	31.0	---	46.0	---	---	---	---	---	---	---
Yetull	6E	---	16.0	---	17.0	---	28.0	---	---	---	---	---	---	---
Rock outcrop.														
19:														
Cabba	7E	---	---	---	---	---	---	---	---	---	---	---	---	---
Cambert	6E	---	16.0	---	18.0	---	29.0	---	---	---	---	---	---	---
Rock outcrop.														
20:														
Cabbart	7E	---	---	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop.														
Yawdim	7E	---	---	---	---	---	---	---	---	---	---	---	---	---

LAND CAPABILITY AND YIELDS PER ACRE OF CROPS--Continued

Map symbol and soil name	Land capability		Spring wheat		Winter wheat		Barley		Alfalfa hay		Corn silage		Sugar beets	
	N	I	N	I	N	I	N	I	N	I	N	I	N	I
			Bu		Bu		Bu		Tons		Tons		Tons	
21:														
Cambert	6E	---	22.0	---	25.0	---	38.0	---	---	---	---	---	---	---
Bigsheep	7E	---	---	---	---	---	---	---	---	---	---	---	---	---
Golva	4E	---	43.0	---	48.0	---	70.0	---	---	---	---	---	---	---
22:														
Cambert	6E	---	24.0	---	27.0	---	41.0	---	---	---	---	---	---	---
Cabba	7E	---	13.0	---	14.0	---	24.0	---	---	---	---	---	---	---
Cherry	4E	---	39.0	---	44.0	---	64.0	---	---	---	---	---	---	---
23:														
Cambert	4E	---	26.0	---	28.0	---	44.0	---	---	---	---	---	---	---
Cabba	6E	---	17.0	---	18.0	---	31.0	---	---	---	---	---	---	---
Dast	4E	---	31.0	---	34.0	---	52.0	---	---	---	---	---	---	---
24:														
Cambeth	6E	---	17.0	---	19.0	---	31.0	---	---	---	---	---	---	---
Bigsheep	7E	---	---	---	---	---	---	---	---	---	---	---	---	---
25:														
Cambeth	6E	---	16.0	---	18.0	---	29.0	---	---	---	---	---	---	---
Cabbart	7E	---	---	---	---	---	---	---	---	---	---	---	---	---
Kirby	7E	---	---	---	---	---	---	---	---	---	---	---	---	---
26:														
Cambeth	6E	---	---	---	---	---	---	---	---	---	---	---	---	---
Cabbart	7E	---	---	---	---	---	---	---	---	---	---	---	---	---
Lonna	6E	---	---	---	---	---	---	---	---	---	---	---	---	---
27:														
Cambeth	4E	---	23.0	---	26.0	---	39.0	---	---	---	---	---	---	---
Cabbart	7E	---	9.0	---	10.0	---	18.0	---	---	---	---	---	---	---
Yawdim	6E	---	11.0	---	12.0	---	21.0	---	---	---	---	---	---	---
28:														
Cherry	4E	---	42.0	---	47.0	---	68.0	---	---	---	---	---	---	---
29:														
Cherry	4E	---	42.0	---	47.0	---	68.0	---	---	---	---	---	---	---
30:														
Cherry	4E	---	42.0	---	47.0	---	68.0	---	---	---	---	---	---	---
Cambert	4E	---	31.0	---	35.0	---	52.0	---	---	---	---	---	---	---
31:														
Cherry	4E	---	39.0	---	44.0	---	64.0	---	---	---	---	---	---	---

LAND CAPABILITY AND YIELDS PER ACRE OF CROPS--Continued

Map symbol and soil name	Land capability		Spring wheat		Winter wheat		Barley		Alfalfa hay		Corn silage		Sugar beets	
	N	I	N	I	N	I	N	I	N	I	N	I	N	I
			Bu		Bu		Bu		Tons		Tons		Tons	
31:														
Cambert	4E	---	29.0	---	32.0	---	49.0	---	---	---	---	---	---	---
Cabba	6E	---	17.0	---	18.0	---	31.0	---	---	---	---	---	---	---
32:														
Cherry	4E	---	39.0	---	44.0	---	64.0	---	---	---	---	---	---	---
Lisk	6E	---	31.0	---	35.0	---	52.0	---	---	---	---	---	---	---
Cabba	7E	---	12.0	---	13.0	---	24.0	---	---	---	---	---	---	---
33:														
Cherry	4E	---	42.0	---	47.0	---	68.0	---	---	---	---	---	---	---
Typic Ustifluvents.														
34:														
Chinook	4E	---	30.0	---	34.0	---	50.0	---	---	---	---	---	---	---
35:														
Chinook	4E	---	30.0	---	34.0	---	50.0	---	---	---	---	---	---	---
Kremlin	3E	---	38.0	---	43.0	---	61.0	---	---	---	---	---	---	---
36:														
Chinook	4E	---	30.0	---	33.0	---	49.0	---	---	---	---	---	---	---
Tinsley	6E	---	6.0	---	6.0	---	14.0	---	---	---	---	---	---	---
37:														
Chinook	4E	---	30.0	---	34.0	---	50.0	---	---	---	---	---	---	---
Twilight	4E	---	23.0	---	26.0	---	39.0	---	---	---	---	---	---	---
38:														
Chinook	4E	---	30.0	---	33.0	---	49.0	---	---	---	---	---	---	---
Twilight	4E	---	24.0	---	28.0	---	41.0	---	---	---	---	---	---	---
Blackhall	6E	---	11.0	---	12.0	---	22.0	---	---	---	---	---	---	---
39:														
Creed	4E	---	19.0	---	21.0	---	33.0	---	---	---	---	---	---	---
Gerdrum	6E	---	18.0	---	20.0	---	32.0	---	---	---	---	---	---	---
40:														
Dast	4E	---	32.0	---	36.0	---	55.0	---	---	---	---	---	---	---
Lisk	4E	---	35.0	---	39.0	---	58.0	---	---	---	---	---	---	---
41:														
Degrand	4E	---	26.0	---	29.0	---	43.0	---	---	---	---	---	---	---
42:														
Degrand	3E	2E	28.0	62.0	32.0	---	47.0	---	---	5.0	---	17.0	---	19.5
43:														
Delpoint	4E	---	22.0	---	24.0	---	37.0	---	---	---	---	---	---	---

LAND CAPABILITY AND YIELDS PER ACRE OF CROPS--Continued

Map symbol and soil name	Land capability		Spring wheat		Winter wheat		Barley		Alfalfa hay		Corn silage		Sugar beets	
	N	I	N	I	N	I	N	I	N	I	N	I	N	I
			Bu		Bu		Bu		Tons		Tons		Tons	
43:														
Busby	4E	---	30.0	---	34.0	---	50.0	---	---	---	---	---	---	---
Blackhall	6E	---	14.0	---	16.0	---	26.0	---	---	---	---	---	---	---
44:														
Delpoint	4E	---	29.0	---	32.0	---	48.0	---	---	---	---	---	---	---
Cabbart	6E	---	14.0	---	16.0	---	26.0	---	---	---	---	---	---	---
45:														
Delpoint	6E	---	18.0	---	20.0	---	32.0	---	---	---	---	---	---	---
Cabbart	7E	---	9.0	---	10.0	---	18.0	---	---	---	---	---	---	---
Yawdim	7E	---	4.0	---	4.0	---	11.0	---	---	---	---	---	---	---
46:														
Delpoint	7E	---	---	---	---	---	---	---	---	---	---	---	---	---
Cabbart	7E	---	---	---	---	---	---	---	---	---	---	---	---	---
Yawdim	7E	---	---	---	---	---	---	---	---	---	---	---	---	---
47:														
Delpoint	6E	---	16.0	---	17.0	---	28.0	---	---	---	---	---	---	---
Yamac	4E	---	32.0	---	37.0	---	53.0	---	---	---	---	---	---	---
Cabbart	7E	---	7.0	---	7.0	---	15.0	---	---	---	---	---	---	---
48:														
Ethridge	3E	3E	36.0	74.0	41.0	---	58.0	94.0	---	5.0	---	19.0	---	24.0
49:														
Ethridge	3E	3E	35.0	60.0	40.0	---	57.0	80.0	---	4.0	---	16.0	---	---
50:														
Evanston	3E	2E	36.0	74.0	41.0	---	59.0	94.0	---	6.0	---	19.0	---	24.0
51:														
Evanston	3E	---	37.0	---	42.0	---	60.0	---	---	---	---	---	---	---
52:														
Evanston	3E	---	36.0	---	41.0	---	59.0	---	---	---	---	---	---	---
Delpoint	3E	---	24.0	---	27.0	---	41.0	---	---	---	---	---	---	---
53:														
Farnuf	3E	---	42.0	---	47.0	---	68.0	---	---	---	---	---	---	---
54:														
Floweree	3E	2E	37.0	---	42.0	---	60.0	94.0	---	6.0	---	---	---	---
55:														
Floweree	3E	---	38.0	---	43.0	---	61.0	---	---	---	---	---	---	---
56:														
Floweree	4E	---	35.0	---	39.0	---	57.0	---	---	---	---	---	---	---

LAND CAPABILITY AND YIELDS PER ACRE OF CROPS--Continued

Map symbol and soil name	Land capability		Spring wheat		Winter wheat		Barley		Alfalfa hay		Corn silage		Sugar beets	
	N	I	N	I	N	I	N	I	N	I	N	I	N	I
			Bu		Bu		Bu		Tons		Tons		Tons	
57:														
Floweree	4E	---	35.0	---	39.0	---	57.0	---	---	---	---	---	---	---
58:														
Floweree	3E	---	38.0	---	43.0	---	61.0	---	---	---	---	---	---	---
Cambeth	3E	---	32.0	---	36.0	---	53.0	---	---	---	---	---	---	---
59:														
Gerdrum	6S	---	18.0	---	21.0	---	32.0	---	---	---	---	---	---	---
Creed	4S	---	19.0	---	22.0	---	34.0	---	---	---	---	---	---	---
60:														
Gerdrum	6E	---	17.0	---	19.0	---	31.0	---	---	---	---	---	---	---
Creed	4E	---	19.0	---	21.0	---	33.0	---	---	---	---	---	---	---
61:														
Gerdrum	6E	---	13.0	---	14.0	---	24.0	---	---	---	---	---	---	---
Creed	6E	---	14.0	---	15.0	---	25.0	---	---	---	---	---	---	---
62:														
Glendive	4W	4W	31.0	72.0	35.0	---	51.0	90.0	---	6.2	---	20.0	---	23.0
63:														
Glendive	3W	2W	25.0	72.0	29.0	8.0	43.0	90.0	---	6.2	---	20.0	---	23.0
64:														
Golva	3E	---	45.0	---	51.0	---	74.0	---	---	---	---	---	---	---
65:														
Golva	3E	---	45.0	---	51.0	---	74.0	---	---	---	---	---	---	---
66:														
Golva	3E	---	45.0	---	51.0	---	74.0	---	---	---	---	---	---	---
Cambert	3E	---	33.0	49.0	39.0	---	57.0	---	---	---	---	---	---	---
67:														
Hanly	4W	4W	22.0	36.0	25.0	36.0	38.0	45.0	---	3.0	---	10.0	---	16.0
Glendive	4W	4W	34.0	60.0	39.0	---	56.0	70.0	---	6.2	---	20.0	---	23.0
68:														
Havre	3W	2W	35.0	72.0	40.0	---	57.0	90.0	---	6.2	---	20.0	---	23.0
69:														
Havre	3W	2W	34.0	72.0	39.0	---	56.0	90.0	---	6.0	---	20.0	---	23.0
70:														
Havre	3W	---	34.0	---	39.0	---	56.0	---	---	---	---	---	---	---
Harlem	4W	---	34.0	---	39.0	---	56.0	---	---	---	---	---	---	---
71:														
Hedstrom	3E	---	35.0	---	40.0	---	58.0	---	---	---	---	---	---	---
72:														
Ismay	6W	---	---	---	---	---	---	---	---	---	---	---	---	---

LAND CAPABILITY AND YIELDS PER ACRE OF CROPS--Continued

Map symbol and soil name	Land capability		Spring wheat		Winter wheat		Barley		Alfalfa hay		Corn silage		Sugar beets	
	N	I	N	I	N	I	N	I	N	I	N	I	N	I
			Bu		Bu		Bu		Tons		Tons		Tons	
73:														
Kobar	3E	3E	35.0	74.0	39.0	---	57.0	94.0	---	5.0	---	19.0	---	---
74:														
Kobar	3E	---	35.0	---	39.0	---	57.0	---	---	---	---	---	---	---
75:														
Kobar	3E	---	35.0	---	40.0	---	57.0	---	0.8	---	---	---	---	---
Gerdrum	6E	---	18.0	---	20.0	---	32.0	---	---	---	---	---	---	---
76:														
Kremlin	3E	2E	38.0	74.0	43.0	---	62.0	94.0	---	6.0	---	19.0	---	24.0
77:														
Kremlin	3E	---	38.0	---	43.0	---	62.0	---	---	---	---	---	---	---
78:														
Kremlin	3E	2E	38.0	75.0	43.0	---	62.0	90.0	---	6.0	---	---	---	---
Busby	4E	4E	30.0	68.0	34.0	---	50.0	80.0	---	5.5	---	20.0	---	24.0
79:														
Kremlin	4E	---	36.0	---	41.0	---	58.0	---	---	---	---	---	---	---
Tinsley	6E	---	9.0	---	10.0	---	19.0	---	---	---	---	---	---	---
Degrand	3E	---	26.0	---	30.0	---	44.0	---	---	---	---	---	---	---
80:														
Lihen	6E	---	20.0	---	23.0	---	35.0	---	---	---	---	---	---	---
81:														
Lihen	6E	---	22.0	---	24.0	---	37.0	---	---	---	---	---	---	---
Parshall	4E	---	35.0	---	39.0	---	57.0	---	---	---	---	---	---	---
Yetull	6E	---	15.0	---	17.0	---	27.0	---	---	---	---	---	---	---
82:														
Lihen	6E	---	9.0	---	10.0	---	18.0	---	---	---	---	---	---	---
Tinsley	6E	---	---	---	---	---	---	---	---	---	---	---	---	---
83:														
Lihen	6E	---	10.0	---	11.0	---	20.0	---	---	---	---	---	---	---
Yetull	6E	---	3.0	---	3.0	---	9.0	---	---	---	---	---	---	---
84:														
Lonna	4E	4E	36.0	74.0	41.0	---	59.0	90.0	---	6.0	---	19.0	---	24.0
85:														
Lonna	4E	---	36.0	---	41.0	---	59.0	---	---	---	---	---	---	---
86:														
Lonna	6E	---	34.0	---	38.0	---	55.0	---	---	---	---	---	---	---
87:														
Lonna	4E	4E	36.0	74.0	41.0	---	58.0	90.0	---	6.0	---	19.0	---	24.0

LAND CAPABILITY AND YIELDS PER ACRE OF CROPS--Continued

Map symbol and soil name	Land capability		Spring wheat		Winter wheat		Barley		Alfalfa hay		Corn silage		Sugar beets	
	N	I	N	I	N	I	N	I	N	I	N	I	N	I
			Bu		Bu		Bu		Tons		Tons		Tons	
88:														
Lonna	4E	---	36.0	---	41.0	---	58.0	---	---	---	---	---	---	---
89:														
Lonna	4E	---	36.0	---	41.0	---	59.0	---	---	---	---	---	---	---
Cambeth	4E	---	23.0	---	26.0	---	39.0	---	---	---	---	---	---	---
90:														
Lonna	4E	---	34.0	---	38.0	---	55.0	---	---	---	---	---	---	---
Cambeth	4E	---	24.0	---	26.0	---	40.0	---	---	---	---	---	---	---
Cabbart	6E	---	9.0	---	10.0	---	19.0	---	---	---	---	---	---	---
91:														
Lonna	4E	---	34.0	---	38.0	---	55.0	---	---	---	---	---	---	---
Cambeth	6E	---	20.0	---	22.0	---	34.0	---	---	---	---	---	---	---
Cabbart	7E	---	7.0	---	7.0	---	15.0	---	---	---	---	---	---	---
92:														
Macar	3E	---	42.0	---	47.0	---	68.0	---	---	---	---	---	---	---
93:														
Marias	4E	4E	31.0	72.0	36.0	---	52.0	90.0	---	5.0	---	18.0	---	24.0
94:														
Marvan	4E	4E	26.0	40.0	30.0	---	44.0	55.0	---	4.0	---	---	---	---
95:														
Marvan	4E	---	27.0	---	30.0	---	45.0	---	---	---	---	---	---	---
96:														
Marvan	4E	---	26.0	---	30.0	---	44.0	---	---	---	---	---	---	---
Vanda	7S	---	---	---	---	---	---	---	---	---	---	---	---	---
97:														
Neldore	7E	---	7.0	---	8.0	---	15.0	---	---	---	---	---	---	---
Rock outcrop.														
98:														
Neldore	7E	---	---	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop.														
Abor	7E	---	---	---	---	---	---	---	---	---	---	---	---	---
99:														
Neldore	7E	---	5.0	---	5.0	---	13.0	---	---	---	---	---	---	---
Weingart	6E	---	17.0	---	19.0	---	30.0	---	---	---	---	---	---	---
Kirby	7E	---	2.0	---	2.0	---	8.0	---	---	---	---	---	---	---
100:														
Nesda	6W	---	24.0	---	26.0	---	40.0	---	---	---	---	---	---	---

LAND CAPABILITY AND YIELDS PER ACRE OF CROPS--Continued

Map symbol and soil name	Land capability		Spring wheat		Winter wheat		Barley		Alfalfa hay		Corn silage		Sugar beets	
	N	I	N	I	N	I	N	I	N	I	N	I	N	I
			Bu		Bu		Bu		Tons		Tons		Tons	
101: Parshall	4E	4E	34.0	---	38.0	19.0	55.0	80.0	---	5.4	---	19.0	---	24.0
102: Peerless	3E	---	37.0	---	41.0	---	60.0	---	---	---	---	---	---	---
103: Pinelli	3E	2E	36.0	70.0	41.0	---	58.0	82.0	---	5.8	---	---	---	---
104: Pinelli	3E	3E	36.0	70.0	41.0	---	58.0	82.0	---	5.8	---	---	---	---
105: Pinelli	3E	---	36.0	---	41.0	---	58.0	---	---	---	---	---	---	---
Weingart	6E	---	19.0	---	21.0	---	33.0	---	---	---	---	---	---	---
Gerdrum	6E	---	17.0	---	19.0	---	31.0	---	---	---	---	---	---	---
106: Riverwash.														
107: Rivra loam	6W	---	---	---	---	---	---	---	---	---	---	---	---	---
Rivra gravelly sandy loam	6W	---	---	---	---	---	---	---	---	---	---	---	---	---
108: Rock outcrop.														
109: Rock outcrop.														
Cabbart	7E	---	---	---	---	---	---	---	---	---	---	---	---	---
Kirby	7E	---	---	---	---	---	---	---	---	---	---	---	---	---
110: Ryell	4W	4W	24.0	20.0	28.0	20.0	41.0	20.0	---	20.0	---	20.0	---	20.0
111: Ryell	4E	4E	23.0	52.0	26.0	---	39.0	70.0	---	4.5	---	20.0	---	20.0
112: Ryell	3W	---	26.0	---	30.0	---	44.0	---	---	---	---	---	---	---
113: Shambo	3E	---	45.0	---	51.0	---	74.0	---	---	---	---	---	---	---
114: Shambo	3E	---	45.0	---	51.0	---	74.0	---	---	---	---	---	---	---
115: Spinekop	3E	2E	34.0	74.0	39.0	---	56.0	94.0	---	5.0	---	17.0	---	23.0
116: Subwell	3E	---	28.0	---	32.0	---	48.0	---	---	---	---	---	---	---
Bigsheep	4E	---	26.0	---	29.0	---	45.0	---	---	---	---	---	---	---

LAND CAPABILITY AND YIELDS PER ACRE OF CROPS--Continued

Map symbol and soil name	Land capability		Spring wheat		Winter wheat		Barley		Alfalfa hay		Corn silage		Sugar beets	
	N	I	N	I	N	I	N	I	N	I	N	I	N	I
			Bu		Bu		Bu		Tons		Tons		Tons	
117:														
Subwell	3E	---	28.0	---	32.0	---	48.0	---	---	---	---	---	---	---
Cambert	4E	---	36.0	---	41.0	---	60.0	---	---	---	---	---	---	---
Bigsheep	4E	---	25.0	---	28.0	---	43.0	---	---	---	---	---	---	---
118:														
Subwell	3E	---	29.0	---	33.0	---	50.0	---	---	---	---	---	---	---
Peerless	3E	---	36.0	---	41.0	---	60.0	---	---	---	---	---	---	---
119:														
Tally	4E	---	36.0	---	40.0	---	59.0	---	---	---	---	---	---	---
120:														
Tally	4E	---	33.0	---	37.0	---	56.0	---	---	---	---	---	---	---
Hedstrom	4E	---	30.0	---	33.0	---	50.0	---	---	---	---	---	---	---
121:														
Tally	4E	---	37.0	---	41.0	---	60.0	---	---	---	---	---	---	---
Wabek	6E	---	15.0	---	17.0	---	28.0	---	---	---	---	---	---	---
Hedstrom	4E	---	35.0	---	39.0	---	58.0	---	---	---	---	---	---	---
122:														
Tinsley	7E	---	---	---	---	---	---	---	---	---	---	---	---	---
Delpoint	7E	---	---	---	---	---	---	---	---	---	---	---	---	---
Cabbart	7E	---	---	---	---	---	---	---	---	---	---	---	---	---
123:														
Ustic Torrifluvents.														
124:														
Ustic Torriorthents.														
Borollic Natargids.														
125:														
Ustic Torriorthents.														
Rock outcrop.														
126:														
Ustic Torriorthents.														
Ustic Torrifluvents.														
Rock outcrop.														

LAND CAPABILITY AND YIELDS PER ACRE OF CROPS--Continued

Map symbol and soil name	Land capability		Spring wheat		Winter wheat		Barley		Alfalfa hay		Corn silage		Sugar beets	
	N	I	N	I	N	I	N	I	N	I	N	I	N	I
			Bu		Bu		Bu		Tons		Tons		Tons	
127:														
Vanstel	3E	2E	34.0	74.0	38.0	---	55.0	94.0	---	---	---	---	---	---
128:														
Vanstel	3E	---	34.0	---	38.0	---	55.0	---	---	---	---	---	---	---
129:														
Wabek	7E	---	---	---	---	---	---	---	---	---	---	---	---	---
130:														
Wabek	7E	---	---	---	---	---	---	---	---	---	---	---	---	---
Cambert	6E	---	---	---	---	---	---	---	---	---	---	---	---	---
131:														
Yamac	3E	2E	35.0	74.0	39.0	---	57.0	94.0	---	6.0	---	19.0	---	24.0
132:														
Yamac	3E	---	35.0	---	39.0	---	57.0	---	---	---	---	---	---	---
133:														
Yamac	3E	---	35.0	---	39.0	---	57.0	---	---	---	---	---	---	---
Busby	4E	---	30.0	---	34.0	---	50.0	---	---	---	---	---	---	---
134:														
Yamac	4E	---	32.0	---	37.0	---	53.0	---	---	---	---	---	---	---
Busby	4E	---	30.0	---	34.0	---	50.0	---	---	---	---	---	---	---
135:														
Yamac	4E	---	32.0	---	37.0	---	53.0	---	---	---	---	---	---	---
Busby	6E	---	28.0	---	31.0	---	46.0	---	---	---	---	---	---	---
Blackhall	7E	---	9.0	---	10.0	---	18.0	---	---	---	---	---	---	---
136:														
Yamac	3E	---	35.0	---	39.0	---	57.0	---	---	---	---	---	---	---
Delpoint	3E	---	29.0	---	32.0	---	48.0	---	---	---	---	---	---	---
137:														
Yamac	4E	---	32.0	---	37.0	---	53.0	---	---	---	---	---	---	---
Delpoint	4E	---	26.0	---	30.0	---	44.0	---	---	---	---	---	---	---
Cabbart	6E	---	14.0	---	15.0	---	25.0	---	---	---	---	---	---	---
138:														
Yamac	3E	---	35.0	---	39.0	---	57.0	---	---	---	---	---	---	---
Gerdrum	6E	---	18.0	---	20.0	---	32.0	---	---	---	---	---	---	---
139:														
Yawdim	6E	---	16.0	---	17.0	---	28.0	---	---	---	---	---	---	---
Cambeth	4E	---	27.0	---	30.0	---	45.0	---	---	---	---	---	---	---
140:														
Yetull	6E	4E	16.0	---	18.0	---	29.0	---	---	5.0	---	---	---	---

LAND CAPABILITY AND YIELDS PER ACRE OF CROPS--Continued

Map symbol and soil name	Land capability		Spring wheat		Winter wheat		Barley		Alfalfa hay		Corn silage		Sugar beets	
	N	I	N	I	N	I	N	I	N	I	N	I	N	I
			Bu		Bu		Bu		Tons		Tons		Tons	
140:														
Busby	4E	4E	30.0	---	34.0	---	50.0	---	---	6.2	---	---	---	---
141:														
Zatoville	6S	---	---	---	---	---	---	---	---	---	---	---	---	---
W:														
Water.														

PRIME FARMLAND

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name)

Map symbol	Soil name
14	Busby loam, 0 to 2 percent slopes (where irrigated)
48	Ethridge silty clay loam, 0 to 2 percent slopes (where irrigated)
50	Evanston loam, 0 to 2 percent slopes (where irrigated)
51	Evanston loam, 2 to 6 percent slopes (where irrigated)
53	Farnuf loam, 2 to 6 percent slopes (where irrigated)
54	Floweree silt loam, 0 to 2 percent slopes (where irrigated)
55	Floweree silt loam, 2 to 6 percent slopes (where irrigated)
63	Glendive loam, 0 to 2 percent slopes (where irrigated)
68	Havre loam, 0 to 2 percent slopes (where irrigated)
69	Havre silty clay loam, 0 to 2 percent slopes (where irrigated)
73	Kobar silty clay loam, 0 to 2 percent slopes (where irrigated)
76	Kremlin loam, 0 to 2 percent slopes (where irrigated)
103	Pinelli loam, 0 to 2 percent slopes (where irrigated)
113	Shambo loam, 0 to 4 percent slopes (where irrigated)
115	Spinekop silty clay loam, 0 to 2 percent slopes (where irrigated)
127	Vanstel silt loam, 0 to 2 percent slopes (where irrigated)
131	Yamac loam, 0 to 2 percent slopes (where irrigated)

WINDBREAK SUITABILITY GROUPS

(Suitable shrubs and trees with their mature heights are listed in the adjoining "Windbreaks and Environmental Plantings" table. Absence of an entry indicates that a windbreak suitability group is not assigned)

Soil name and map symbol	Windbreak suitability group
1:	
Abor	4
Cabbart	4
Delpoint	4
2:	
Abor	3M
Delpoint	2M
Kobar	1
3:	
Abor	3M
Weingart	3M
Neldore	4
4:	
Aeric Fluvaquents	4
Cherry	1
5:	
Alona	2S
6:	
Alona	2S
Cambeth	2M
Gerdrum	3S
7:	
Badland	4
8:	
Blackhall	4
Busby	4
Rock outcrop	4
9:	
Blackhall	4
Delpoint	4
Rock outcrop	4
10:	
Blanchard	2M
Dast	3M
11:	
Borollic Camborthids	4
Ustic Torrifluvents	4
12:	
Busby	2M
13:	
Busby	2M
14:	
Busby	2M

WINDBREAK SUITABILITY GROUPS--Continued

Soil name and map symbol	Windbreak suitability group
15:	
Busby	2M
Blackhall	4
Twilight	4
16:	
Busby	2M
Twilight	3M
Blackhall	4
17:	
Busby	2M
Yetull	3M
18:	
Busby	4
Yetull	4
Rock outcrop	4
19:	
Cabba	4
Cambert	4
Rock outcrop	4
20:	
Cabbart	4
Rock outcrop	4
Yawdim	4
21:	
Cambert	4
Bigsheep	4
Golva	1
22:	
Cambert	4
Cabba	4
Cherry	1
23:	
Cambert	2M
Cabba	3M
Dast	3M
24:	
Cambeth	4
Bigsheep	4
25:	
Cambeth	4
Cabbart	4
Kirby	4
26:	
Cambeth	4
Cabbart	4
Lonna	4
27:	
Cambeth	2M
Cabbart	4
Yawdim	3M

WINDBREAK SUITABILITY GROUPS--Continued

Soil name and map symbol	Windbreak suitability group
28:	
Cherry	1
29:	
Cherry	1
30:	
Cherry	1
Cambert	2M
31:	
Cherry	1
Cambert	2M
Cabba	3M
32:	
Cherry	1
Lisk	4
Cabba	4
33:	
Cherry	1
Typic Ustifluvents	4
34:	
Chinook	2M
35:	
Chinook	2M
Kremlin	1
36:	
Chinook	2M
Tinsley	4
37:	
Chinook	2M
Twilight	3M
38:	
Chinook	2M
Twilight	3M
Blackhall	4
39:	
Creed	2S
Gerdrum	3S
40:	
Dast	3M
Lisk	2M
41:	
Degrand	2M
42:	
Degrand	2M
43:	
Delpoint	2M
Busby	3M
Blackhall	4

WINDBREAK SUITABILITY GROUPS--Continued

Soil name and map symbol	Windbreak suitability group
44:	
Delpoint	2M
Cabbart	3M
45:	
Delpoint	4
Cabbart	4
Yawdim	4
46:	
Delpoint	4
Cabbart	4
Yawdim	4
47:	
Delpoint	4
Yamac	1
Cabbart	4
48:	
Ethridge	1
49:	
Ethridge	1
50:	
Evanston	1
51:	
Evanston	1
52:	
Evanston	1
Delpoint	2M
53:	
Farnuf	1
54:	
Floweree	1
55:	
Floweree	1
56:	
Floweree	1
57:	
Floweree	1
58:	
Floweree	1
Cambeth	2M
59:	
Gerdrum	3S
Creed	2S
60:	
Gerdrum	3S
Creed	2S

WINDBREAK SUITABILITY GROUPS--Continued

Soil name and map symbol	Windbreak suitability group
61:	
Gerdrum	4
Creed	4
62:	
Glendive	2M
63:	
Glendive	2M
64:	
Golva	1
65:	
Golva	1
66:	
Golva	1
Cambert	2M
67:	
Hanly	3M
Glendive	2M
68:	
Havre	1
69:	
Havre	1
70:	
Havre	1
Harlem	1
71:	
Hedstrom	2M
72:	
Ismay	3S
73:	
Kobar	1
74:	
Kobar	1
75:	
Kobar	1
Gerdrum	3S
76:	
Kremlin	1
77:	
Kremlin	1
78:	
Kremlin	1
Busby	2M

WINDBREAK SUITABILITY GROUPS--Continued

Soil name and map symbol	Windbreak suitability group
79:	
Kremlin	1
Tinsley	3M
Degrand	2M
80:	
Lihen	3M
81:	
Lihen	3M
Parshall	2M
Yetull	3M
82:	
Lihen	4
Tinsley	4
83:	
Lihen	4
Yetull	4
84:	
Lonna	1
85:	
Lonna	1
86:	
Lonna	4
87:	
Lonna	1
88:	
Lonna	1
89:	
Lonna	1
Cambeth	2M
90:	
Lonna	1
Cambeth	2M
Cabbart	3M
91:	
Lonna	1
Cambeth	4
Cabbart	4
92:	
Macar	1
93:	
Marias	2S
94:	
Marvan	3S
95:	
Marvan	3S

WINDBREAK SUITABILITY GROUPS--Continued

Soil name and map symbol	Windbreak suitability group
96:	
Marvan	3S
Vanda	4
97:	
Neldore	4
Rock outcrop	4
98:	
Neldore	4
Rock outcrop	4
Abor	4
99:	
Neldore	4
Weingart	3S
Kirby	4
100:	
Nesda	4
101:	
Parshall	2M
102:	
Peerless	2M
103:	
Pinelli	1
104:	
Pinelli	1
105:	
Pinelli	1
Weingart	3S
Gerdrum	3S
106:	
Riverwash	4
107:	
Rivra loam	4
Rivra gravelly sandy loam	4
108:	
Rock outcrop	4
109:	
Rock outcrop	4
Cabbart	4
Kirby	4
110:	
Ryell	3M
111:	
Ryell	3M
112:	
Ryell	3M

WINDBREAK SUITABILITY GROUPS--Continued

Soil name and map symbol	Windbreak suitability group
113:	
Shambo	1
114:	
Shambo	1
115:	
Spinekop	1
116:	
Subwell	2M
Bigsheep	2M
117:	
Subwell	2M
Cambert	2M
Bigsheep	3M
118:	
Subwell	2M
Peerless	2M
119:	
Tally	2M
120:	
Tally	2M
Hedstrom	2M
121:	
Tally	2M
Wabek	4
Hedstrom	2M
122:	
Tinsley	4
Delpoint	4
Cabbart	4
123:	
Ustic Torrifluvents	4
124:	
Ustic Torriorthents	4
Borollic Natargids	4
125:	
Ustic Torriorthents	4
Rock outcrop	4
126:	
Ustic Torriorthents	4
Ustic Torrifluvents	4
Rock outcrop	4
127:	
Vanstel	1
128:	
Vanstel	1

WINDBREAK SUITABILITY GROUPS--Continued

Soil name and map symbol	Windbreak suitability group
129:	
Wabek	4
130:	
Wabek	4
Cambert	4
131:	
Yamac	1
132:	
Yamac	1
133:	
Yamac	1
Busby	2M
134:	
Yamac	1
Busby	2M
135:	
Yamac	1
Busby	4
Blackhall	4
136:	
Yamac	1
Delpoint	2M
137:	
Yamac	1
Delpoint	2M
Cabbart	3M
138:	
Yamac	1
Gerdrum	3S
139:	
Yawdim	4
Cambeth	2M
140:	
Yetull	3M
Busby	2M
141:	
Zatoville	3S
W:	
Water	4

WINDBREAK SUITABILITY GROUP SPECIES LIST

(The symbol < means less than; > means more than. Absence of an entry indicates that trees generally do not grow to the indicated height. Soils in windbreak suitability group 4 are not generally suited for windbreak development)

Windbreak suitability group	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
1	Western sandcherry, Nanking cherry	Siberian peashrub, green ash, Rocky Mountain juniper, Tatarian honeysuckle, Siberian crabapple, ponderosa pine, blue spruce, lilac	Russian-olive, Siberian elm	---	---
2M	Western sandcherry, skunkbush sumac	Siberian peashrub, Russian-olive, Rocky Mountain juniper, ponderosa pine	Siberian elm	---	---
2S	Skunkbush sumac	Siberian peashrub, Rocky Mountain juniper, ponderosa pine, common chokecherry, silver buffaloberry	Russian-olive, Siberian elm	---	---
3M	Western sandcherry, Nanking cherry	Siberian peashrub, green ash, Rocky Mountain juniper, Siberian crabapple, ponderosa pine, blue spruce, common chokecherry, lilac	Russian-olive, Siberian elm	---	---
3S	Skunkbush sumac	Siberian peashrub, Rocky Mountain juniper, ponderosa pine, common chokecherry, silver buffaloberry	Russian-olive, Siberian elm	---	---

Range

Range makes up more than 900,000 acres in Prairie County, or about 82 percent of the land area. The areas of range provide forage for about 40,200 head of cattle and 5,600 head of sheep *(8)*. The sale of livestock is the largest source of cash income derived from agricultural products in the county. Most livestock enterprises are cow-calf operations, but some yearling operations and several feedlots are also in the county.

Most grazing is on native range. The range is used primarily for grazing by domestic livestock; however, it also is used as wildlife habitat, recreational areas, or watershed and has esthetic value.

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

Range is defined as land on which the native vegetation (the climax plant community, or the natural potential plant community) is predominantly grasses, grasslike plants, forbs, and shrubs suitable for grazing and browsing. Range includes natural grasslands, savannas, many wetlands, some deserts, tundra, and certain shrub and forb communities. Range receives no regular or frequent cultural treatment. The composition and production of the plant community are determined by soil, climate, topography, overstory canopy, and grazing management.

Grazed forest land is defined as land on which the understory includes, as an integral part of the forest plant community, plants that can be grazed without significant impairment of other forest values.

Native pasture is defined as land on which the potential (climax) vegetation is forest but which is used and managed primarily for the production of native forage plants. Native pasture includes cutover forest land and forest land that has been cleared and is managed for native or naturalized forage plants.

The table "Rangeland Productivity and Characteristic Plant Communities" at the end of this section shows, for each listed soil, the range site; the total annual production of vegetation in favorable, normal, and unfavorable years; the characteristic vegetation; and the average percentage of each species. Only those soils that are used as rangeland or are suited to use as rangeland are listed. Explanation of the column headings in this table follows.

Range site is a distinctive kind of rangeland that produces a characteristic natural plant community that differs from natural plant communities on other range sites in kind, amount, and proportion of range plants.

Many different range sites are in the survey area. Over time, the combination of plants best suited to a particular soil and climate has become established. If the soil is not excessively disturbed, this group of plants is the natural plant community for the site. Natural plant communities are not static but vary slightly from year to year and place to place.

The relationship between soils and vegetation was ascertained during this survey; thus, range sites generally can be determined directly from the soil map (figs. 4 and 5). 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. The "Field Office Technical Guide," which is available at local offices of the Natural Resources Conservation Service, can provide specific information about range sites.

Total production is the amount of vegetation that can be expected to grow annually on well managed range 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 fruit 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

Figure 4.—An area of Lonna silt loam, 2 to 8 percent slopes, is in a Silty range site in the foreground. An area of Rock outcrop-Cabbart-Kirby complex, 25 to 70 percent slopes, is in the background. The Cabbart soil is in a Shallow range site, and the Kirby soil is in a Very Shallow range site.

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 consists of the grasses, forbs, and shrubs that make up most of the potential natural plant community on each soil. The plants are listed by common name. Under *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 Condition

Range condition is based on a comparison of the present plant community with the potential natural plant community on a particular range site. The more closely the existing community resembles the natural community, the better the range condition.

Abnormal disturbances that change the natural plant community include repeated overuse by livestock, excessive burning, erosion, and plowing. Grazing animals select the most palatable plants. These plants will eventually die if they are continually grazed. A very severe disturbance can completely destroy the natural community. Under these conditions, the less desirable plants, such as annuals and weedlike plants, can invade. If the plant community has not deteriorated significantly, it eventually can return to dominantly natural plants if proper grazing management is applied.

Four range condition classes are used to show the degree of deterioration of the natural plant community.

An area of rangeland is in *excellent condition* if more than 75 percent of the present plant community is the same as the natural plant community. It is in *good*

condition if the natural plants make up 51 to 75 percent of the present plant community, in *fair condition* if those plants make up 26 to 50 percent, and in *poor condition* if they make up less than 25 percent.

Knowledge of the range site and condition is necessary as a basis for planning and applying the management needed to maintain or improve the desired plant community for selected uses. Such information is needed to determine management objectives, proper grazing systems and stocking rates, suitable wildlife management practices, the potential for recreational uses, and the condition of watersheds.

Rangeland Management

Rangeland 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.

About 70 percent of the rangeland in the survey area is in good or excellent range condition. Desirable plants make up more than half of the present plant community in these areas.

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, reduction of less desirable 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.

Grazing management is the most important part of

Figure 5.—An area of Lonna-Cambeth, calcareous, silt loams, 2 to 8 percent slopes, is in a Silty range site in the foreground. An area of Cabbart-Rock outcrop-Yawdim complex, 15 to 70 percent slopes, is in the background. The Cabbart soil is in a Shallow range site, and the Yawdim soil is in a Shallow Clay range site.

any rangeland management program. Proper grazing use, timely deferment of grazing, and planned rotation grazing systems are key practices. Research and the experience of ranchers have shown that if no more than one-half of the current year's growth is grazed, a plant community in good or excellent condition can be maintained and one in fair condition can be improved. The remaining one-half enables plants to make and store food for regrowth and root development. As a result, the desirable plants remain healthy and are not replaced by less desirable grasses and weeds. Also, the plant cover protects the soil from water erosion and soil blowing, improves tilth, increases the rate of water infiltration, and helps to control runoff.

Certain practices commonly are needed to obtain a uniform distribution of grazing. These include developing livestock watering facilities, fencing, properly locating salt and mineral supplements, constructing livestock trails in steeply sloping areas, and riding or herding.

Various kinds of grazing systems can be used in range management. No single grazing system is best under all conditions. The grazing system should increase the quantity and improve the quality of the range vegetation, should meet the needs of the individual operator, and should be designed according to the topography, the type of grazing animals, and the resource management objectives.

Special improvement practices are needed in areas where management practices do not achieve the desired results or where recovery is too slow under forage management alone. These include range seeding, brush management, water spreading, prescribed burning, and mechanical treatment.

Some soils are suited to mechanical treatment for range improvement. On other soils, however, only proper grazing management can improve the range. Many soils in capability classes 1 through 4 are suited to such practices as seeding, mechanical brush and weed control, and water spreading. Those in capability classes 7 and 8, however, are not suitable. Many soils in capability classes 1 through 4 are suited to tillage for seedbed preparation before native or introduced forage plant species are seeded. Soils in capability class 6 may be suited to limited surface disturbance, such as scarification, for the purpose of seeding and as a means of increasing the rate of water infiltration for seed germination.

Where feasible, mechanical renovation practices, such as shallow chiseling, can speed recovery of the desired plants. These practices open up the surface and thus allow the absorption of more moisture and production of the more desirable plants. Mechanical renovation, brush management, and timely deferment of grazing allow recovery of the desired plants.

Seeding may be needed in areas where the less desirable plants are dominant. A clean, firm seedbed should be prepared, suitable species should be selected for seeding, and rest periods should be long enough to allow the new plants to become established.

Special improvement practices can be effective only if the management system helps to keep the desirable plants healthy.

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES

(Only the soils that support rangeland vegetation suitable for grazing are listed. Ppt means precipitation)

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
1:					
Abor	Thin clayey, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,400	Western wheatgrass	20
		Normal	1,100	Green needlegrass	20
		Unfavorable	850	Little bluestem	15
				Bluebunch wheatgrass	10
				Sideoats grama	10
				Big sagebrush	5
				Prairie junegrass	5
				Plains muhly	5
				Blue grama	5
Cabbart	Shallow, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,200	Bluebunch wheatgrass	20
		Normal	900	Little bluestem	15
		Unfavorable	600	Plains muhly	10
				Sideoats grama	10
				Creeping juniper	5
				Needleandthread	5
				Prairie junegrass	5
				Blue grama	5
				Skunkbush sumac	5
				Western wheatgrass	5
Delpoint	Thin silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,400	Western wheatgrass	20
		Normal	1,100	Little bluestem	20
		Unfavorable	850	Bluebunch wheatgrass	15
				Sideoats grama	10
				Blue grama	5
				Needleandthread	5
				Threadleaf sedge	5
				Plains muhly	5
				Fringed sagewort	5
2:					
Abor	Clayey, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Green needlegrass	25
		Normal	1,300	Western wheatgrass	20
		Unfavorable	900	Thickspike wheatgrass	15
				Big sagebrush	5
				Blue grama	5
				Nuttall saltbush	5
				Winterfat	5
				Plains muhly	5
				Plains pricklypear	5
				Sandberg bluegrass	5
Delpoint	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
2:					
Kobar	Clayey, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Green needlegrass	25
		Normal	1,300	Western wheatgrass	20
		Unfavorable	900	Thickspike wheatgrass	15
				Big sagebrush	5
				Blue grama	5
				Nuttall saltbush	5
				Winterfat	5
				Plains muhly	5
				Plains pricklypear	5
				Sandberg bluegrass	5
3:					
Abor	Clayey, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Green needlegrass	25
		Normal	1,300	Western wheatgrass	20
		Unfavorable	900	Thickspike wheatgrass	15
				Big sagebrush	5
				Blue grama	5
				Nuttall saltbush	5
				Winterfat	5
				Plains muhly	5
				Plains pricklypear	5
				Sandberg bluegrass	5
Weingart	Dense clay, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,000	Western wheatgrass	20
		Normal	700	Thickspike wheatgrass	20
		Unfavorable	550	Big sagebrush	5
				Montana wheatgrass	5
				Nuttall saltbush	5
				Sandberg bluegrass	5
				Blue grama	5
				Winterfat	5
				Plains pricklypear	5
Neldore	Shallow clay, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,100	Western wheatgrass	25
		Normal	800	Green needlegrass	20
		Unfavorable	600	Plains muhly	10
				Bluebunch wheatgrass	10
				Big sagebrush	5
				Winterfat	5
				Blue grama	5
				Sandberg bluegrass	5
4:					
Aeric Fluvaquents	Subirrigated, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	5,000	Switchgrass	20
		Normal	4,000	Prairie cordgrass	20
		Unfavorable	3,000	Nebraska sedge	10
				Northern reedgrass	10
				Slender wheatgrass	10
				Tufted hairgrass	5
				Sedge	5
				Cinquefoil	5
Cherry	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
5:					
Alona	Silty, saline, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,400	Western wheatgrass	35
		Normal	900	Green needlegrass	20
		Unfavorable	500	Inland saltgrass	15
				Needleandthread	10
				Alkali sacaton	10
				Blue grama	5
				Nuttall saltbush	5
6:					
Alona	Silty, saline, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,400	Western wheatgrass	35
		Normal	900	Green needlegrass	20
		Unfavorable	500	Inland saltgrass	15
				Needleandthread	10
				Alkali sacaton	10
				Blue grama	5
				Nuttall saltbush	5
Cambeth	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
Gerdrum	Clay pan, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,100	Western wheatgrass	30
		Normal	800	Green needlegrass	15
		Unfavorable	500	Montana wheatgrass	5
				Nuttall saltbush	5
				Big sagebrush	5
				Blue grama	5
				Winterfat	5
				Needleandthread	5
8:					
Blackhall	Shallow, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,200	Bluebunch wheatgrass	20
		Normal	900	Little bluestem	15
		Unfavorable	600	Sideoats grama	10
				Plains muhly	10
				Creeping juniper	5
				Yucca	5
				Prairie junegrass	5
				Prairie sandreed	5
				Blue grama	5
				Needleandthread	5
Busby	Thin sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,400	Little bluestem	25
		Normal	1,200	Prairie sandreed	25
		Unfavorable	950	Needleandthread	15
				Big bluestem	10
				Sun sedge	5
				Sand dropseed	5
				Green sagewort	5
Rock outcrop.					

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
9:					
Blackhall	Shallow, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,200	Bluebunch wheatgrass	20
		Normal	900	Little bluestem	15
		Unfavorable	600	Sideoats grama	10
				Plains muhly	10
				Creeping juniper	5
				Yucca	5
				Prairie junegrass	5
				Prairie sandreed	5
				Blue grama	5
				Needleandthread	5
Delpoint	Thin silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,400	Western wheatgrass	20
		Normal	1,100	Little bluestem	20
		Unfavorable	850	Bluebunch wheatgrass	15
				Sideoats grama	10
				Blue grama	5
				Needleandthread	5
				Threadleaf sedge	5
				Plains muhly	5
				Fringed sagewort	5
Rock outcrop.					
10:					
Blanchard	Sands, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,200	Little bluestem	25
		Normal	1,800	Prairie sandreed	20
		Unfavorable	1,400	Sand bluestem	20
				Indian ricegrass	5
				Green sagewort	5
				Threadleaf sedge	5
				Yucca	5
				Needleandthread	5
Dast	Sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,100	Prairie sandreed	30
		Normal	1,600	Little bluestem	20
		Unfavorable	1,200	Needleandthread	15
				Green sagewort	5
				Yucca	5
				Threadleaf sedge	5
				Blue grama	5
12:					
Busby	Sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,100	Prairie sandreed	30
		Normal	1,600	Little bluestem	20
		Unfavorable	1,200	Needleandthread	15
				Green sagewort	5
				Yucca	5
				Threadleaf sedge	5
				Blue grama	5
13:					
Busby	Sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,100	Prairie sandreed	30
		Normal	1,600	Little bluestem	20
		Unfavorable	1,200	Needleandthread	15
				Green sagewort	5
				Yucca	5
				Threadleaf sedge	5
				Blue grama	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
14:					
Busby	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
15:					
Busby	Sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,100	Prairie sandreed	30
		Normal	1,600	Little bluestem	20
		Unfavorable	1,200	Needleandthread	15
				Green sagewort	5
				Yucca	5
				Threadleaf sedge	5
				Blue grama	5
Blackhall	Shallow, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,200	Bluebunch wheatgrass	20
		Normal	900	Little bluestem	15
		Unfavorable	600	Sideoats grama	10
				Plains muhly	10
				Creeping juniper	5
				Yucca	5
				Prairie junegrass	5
				Prairie sandreed	5
				Blue grama	5
				Needleandthread	5
Twilight	Thin sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,400	Little bluestem	25
		Normal	1,200	Prairie sandreed	25
		Unfavorable	950	Needleandthread	15
				Big bluestem	10
				Sun sedge	5
				Sand dropseed	5
				Green sagewort	5
16:					
Busby	Sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,100	Prairie sandreed	30
		Normal	1,600	Little bluestem	20
		Unfavorable	1,200	Needleandthread	15
				Green sagewort	5
				Yucca	5
				Threadleaf sedge	5
				Blue grama	5
Twilight	Sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,100	Prairie sandreed	30
		Normal	1,600	Little bluestem	20
		Unfavorable	1,200	Needleandthread	15
				Green sagewort	5
				Yucca	5
				Threadleaf sedge	5
				Blue grama	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
16:					
Blackhall	Shallow, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,200	Bluebunch wheatgrass	20
		Normal	900	Little bluestem	15
		Unfavorable	600	Plains muhly	10
				Sideoats grama	10
				Creeping juniper	5
				Needleandthread	5
				Prairie junegrass	5
				Blue grama	5
				Skunkbush sumac	5
				Western wheatgrass	5
17:					
Busby	Sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,100	Prairie sandreed	30
		Normal	1,600	Little bluestem	20
		Unfavorable	1,200	Needleandthread	15
				Green sagewort	5
				Yucca	5
				Threadleaf sedge	5
				Blue grama	5
Yetull	Sands, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,200	Little bluestem	25
		Normal	1,800	Prairie sandreed	20
		Unfavorable	1,400	Sand bluestem	20
				Indian ricegrass	5
				Green sagewort	5
				Threadleaf sedge	5
				Yucca	5
				Needleandthread	5
18:					
Busby	Thin sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,400	Little bluestem	25
		Normal	1,200	Prairie sandreed	25
		Unfavorable	950	Needleandthread	15
				Big bluestem	10
				Sun sedge	5
				Sand dropseed	5
				Green sagewort	5
Yetull	Sands, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,200	Little bluestem	25
		Normal	1,800	Prairie sandreed	20
		Unfavorable	1,400	Sand bluestem	20
				Indian ricegrass	5
				Green sagewort	5
				Threadleaf sedge	5
				Yucca	5
				Needleandthread	5
Rock outcrop.					
19:					
Cabba	Shallow, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,200	Bluebunch wheatgrass	20
		Normal	900	Little bluestem	15
		Unfavorable	600	Plains muhly	10
				Sideoats grama	10
				Creeping juniper	5
				Needleandthread	5
				Prairie junegrass	5
				Blue grama	5
				Skunkbush sumac	5
				Western wheatgrass	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
19:					
Cambert	Thin silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,400	Western wheatgrass	20
		Normal	1,100	Little bluestem	20
		Unfavorable	850	Bluebunch wheatgrass	15
				Sideoats grama	10
				Blue grama	5
				Needleandthread	5
				Threadleaf sedge	5
				Plains muhly	5
				Fringed sagewort	5
Rock outcrop.					
20:					
Cabbart	Shallow, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,200	Bluebunch wheatgrass	20
		Normal	900	Little bluestem	15
		Unfavorable	600	Plains muhly	10
				Sideoats grama	10
				Creeping juniper	5
				Needleandthread	5
				Prairie junegrass	5
				Blue grama	5
				Skunkbush sumac	5
				Western wheatgrass	5
Rock outcrop.					
Yawdim	Shallow clay, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,100	Western wheatgrass	25
		Normal	800	Green needlegrass	20
		Unfavorable	600	Plains muhly	10
				Bluebunch wheatgrass	10
				Big sagebrush	5
				Winterfat	5
				Blue grama	5
				Sandberg bluegrass	5
21:					
Cambert	Thin silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,400	Western wheatgrass	20
		Normal	1,100	Little bluestem	20
		Unfavorable	850	Bluebunch wheatgrass	15
				Sideoats grama	10
				Blue grama	5
				Needleandthread	5
				Threadleaf sedge	5
				Plains muhly	5
				Fringed sagewort	5
Bigsheep	Gravel, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	700	Bluebunch wheatgrass	25
		Normal	550	Little bluestem	20
		Unfavorable	400	Needleandthread	10
				Plains muhly	10
				Yucca	5
				Blue grama	5
				Fringed sagewort	5
				Threadleaf sedge	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
21:					
Golva	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
22:					
Cambert	Thin silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,400	Western wheatgrass	20
		Normal	1,100	Little bluestem	20
		Unfavorable	850	Bluebunch wheatgrass	15
				Sideoats grama	10
				Blue grama	5
				Needleandthread	5
				Threadleaf sedge	5
				Plains muhly	5
				Fringed sagewort	5
Cabba	Shallow, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,200	Bluebunch wheatgrass	20
		Normal	900	Little bluestem	15
		Unfavorable	600	Plains muhly	10
				Sideoats grama	10
				Creeping juniper	5
				Needleandthread	5
				Prairie junegrass	5
				Blue grama	5
				Skunkbush sumac	5
				Western wheatgrass	5
Cherry	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
23:					
Cambert	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
Cabba	Shallow, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,200	Bluebunch wheatgrass	20
		Normal	900	Little bluestem	15
		Unfavorable	600	Plains muhly	10
				Sideoats grama	10
				Creeping juniper	5
				Needleandthread	5
				Prairie junegrass	5
				Blue grama	5
				Skunkbush sumac	5
				Western wheatgrass	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
23:					
Dast	Sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,100	Prairie sandreed	30
		Normal	1,600	Little bluestem	20
		Unfavorable	1,200	Needleandthread	15
				Green sagewort	5
				Yucca	5
				Threadleaf sedge	5
				Blue grama	5
24:					
Cambeth	Thin silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,400	Western wheatgrass	20
		Normal	1,100	Little bluestem	20
		Unfavorable	850	Bluebunch wheatgrass	15
				Sideoats grama	10
				Blue grama	5
				Needleandthread	5
				Threadleaf sedge	5
				Plains muhly	5
				Fringed sagewort	5
Bigsheep	Gravel, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	700	Bluebunch wheatgrass	25
		Normal	550	Little bluestem	20
		Unfavorable	400	Needleandthread	10
				Plains muhly	10
				Yucca	5
				Blue grama	5
				Fringed sagewort	5
				Threadleaf sedge	5
25:					
Cambeth	Thin silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,400	Western wheatgrass	20
		Normal	1,100	Little bluestem	20
		Unfavorable	850	Bluebunch wheatgrass	15
				Sideoats grama	10
				Blue grama	5
				Needleandthread	5
				Threadleaf sedge	5
				Plains muhly	5
				Fringed sagewort	5
Cabbart	Shallow, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,200	Bluebunch wheatgrass	20
		Normal	900	Little bluestem	15
		Unfavorable	600	Plains muhly	10
				Sideoats grama	10
				Creeping juniper	5
				Needleandthread	5
				Prairie junegrass	5
				Blue grama	5
				Skunkbush sumac	5
				Western wheatgrass	5
Kirby	Very shallow, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	700	Bluebunch wheatgrass	30
		Normal	550	Little bluestem	20
		Unfavorable	400	Sideoats grama	10
				Plains muhly	10
				Creeping juniper	5
				Needleandthread	5
				Blue grama	5
				Skunkbush sumac	5
				Rosa	5
				Fringed sagewort	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
26:					
Cambeth	Thin silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,400	Western wheatgrass	20
		Normal	1,100	Little bluestem	20
		Unfavorable	850	Bluebunch wheatgrass	15
				Sideoats grama	10
				Blue grama	5
				Needleandthread	5
				Threadleaf sedge	5
				Plains muhly	5
				Fringed sagewort	5
Cabbart	Shallow, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,200	Bluebunch wheatgrass	20
		Normal	900	Little bluestem	15
		Unfavorable	600	Plains muhly	10
				Sideoats grama	10
				Creeping juniper	5
				Needleandthread	5
				Prairie junegrass	5
				Blue grama	5
				Skunkbush sumac	5
				Western wheatgrass	5
Lonna	Thin silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,400	Western wheatgrass	20
		Normal	1,100	Little bluestem	20
		Unfavorable	850	Bluebunch wheatgrass	15
				Sideoats grama	10
				Blue grama	5
				Needleandthread	5
				Threadleaf sedge	5
				Plains muhly	5
				Fringed sagewort	5
27:					
Cambeth	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
Cabbart	Shallow, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,200	Bluebunch wheatgrass	20
		Normal	900	Little bluestem	15
		Unfavorable	600	Plains muhly	10
				Sideoats grama	10
				Creeping juniper	5
				Needleandthread	5
				Prairie junegrass	5
				Blue grama	5
				Skunkbush sumac	5
				Western wheatgrass	5
Yawdim	Shallow clay, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,100	Western wheatgrass	25
		Normal	800	Green needlegrass	20
		Unfavorable	600	Plains muhly	10
				Bluebunch wheatgrass	10
				Big sagebrush	5
				Winterfat	5
				Blue grama	5
				Sandberg bluegrass	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
28:					
Cherry	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
29:					
Cherry	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
30:					
Cherry	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
Cambert	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
31:					
Cherry	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
Cambert	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
31:					
Cabba	Shallow, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,200	Bluebunch wheatgrass	20
		Normal	900	Little bluestem	15
		Unfavorable	600	Plains muhly	10
				Sideoats grama	10
				Creeping juniper	5
				Needleandthread	5
				Prairie junegrass	5
				Blue grama	5
				Skunkbush sumac	5
				Western wheatgrass	5
32:					
Cherry	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
Lisk	Thin sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,400	Little bluestem	25
		Normal	1,200	Prairie sandreed	25
		Unfavorable	950	Needleandthread	15
				Big bluestem	10
				Sun sedge	5
				Sand dropseed	5
				Green sagewort	5
Cabba	Shallow, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,200	Bluebunch wheatgrass	20
		Normal	900	Little bluestem	15
		Unfavorable	600	Plains muhly	10
				Sideoats grama	10
				Creeping juniper	5
				Needleandthread	5
				Prairie junegrass	5
				Blue grama	5
				Skunkbush sumac	5
				Western wheatgrass	5
33:					
Cherry	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
Typic Ustifluvents	Overflow, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	3,000	Big bluestem	35
		Normal	2,500	Western wheatgrass	15
		Unfavorable	2,000	Canada wildrye	10
				Green needlegrass	10
				Switchgrass	5
				Common snowberry	5
				Little bluestem	5
				Needleandthread	5
				Silver sagebrush	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
34:					
Chinook	Sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,100	Prairie sandreed	30
		Normal	1,600	Little bluestem	20
		Unfavorable	1,200	Needleandthread	15
				Green sagewort	5
				Yucca	5
				Threadleaf sedge	5
				Blue grama	5
35:					
Chinook	Sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,100	Prairie sandreed	30
		Normal	1,600	Little bluestem	20
		Unfavorable	1,200	Needleandthread	15
				Green sagewort	5
				Yucca	5
				Threadleaf sedge	5
				Blue grama	5
Kremlin	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
36:					
Chinook	Sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,100	Prairie sandreed	30
		Normal	1,600	Little bluestem	20
		Unfavorable	1,200	Needleandthread	15
				Green sagewort	5
				Yucca	5
				Threadleaf sedge	5
				Blue grama	5
Tinsley	Gravel, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	700	Bluebunch wheatgrass	25
		Normal	550	Little bluestem	20
		Unfavorable	400	Needleandthread	10
				Plains muhly	10
				Yucca	5
				Blue grama	5
				Fringed sagewort	5
				Threadleaf sedge	5
37:					
Chinook	Sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,100	Prairie sandreed	30
		Normal	1,600	Little bluestem	20
		Unfavorable	1,200	Needleandthread	15
				Green sagewort	5
				Yucca	5
				Threadleaf sedge	5
				Blue grama	5
Twilight	Sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,100	Prairie sandreed	30
		Normal	1,600	Little bluestem	20
		Unfavorable	1,200	Needleandthread	15
				Green sagewort	5
				Yucca	5
				Threadleaf sedge	5
				Blue grama	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
38:					
Chinook	Sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,100	Prairie sandreed	30
		Normal	1,600	Little bluestem	20
		Unfavorable	1,200	Needleandthread	15
				Green sagewort	5
				Yucca	5
				Threadleaf sedge	5
				Blue grama	5
Twilight	Sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,100	Prairie sandreed	30
		Normal	1,600	Little bluestem	20
		Unfavorable	1,200	Needleandthread	15
				Green sagewort	5
				Yucca	5
				Threadleaf sedge	5
				Blue grama	5
Blackhall	Shallow, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,200	Bluebunch wheatgrass	20
		Normal	900	Little bluestem	15
		Unfavorable	600	Plains muhly	10
				Sideoats grama	10
				Creeping juniper	5
				Needleandthread	5
				Prairie junegrass	5
				Blue grama	5
				Skunkbush sumac	5
				Western wheatgrass	5
39:					
Creed	Clay pan, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,100	Western wheatgrass	30
		Normal	800	Green needlegrass	15
		Unfavorable	500	Montana wheatgrass	5
				Nuttall saltbush	5
				Big sagebrush	5
				Blue grama	5
				Winterfat	5
				Needleandthread	5
Gerdrum	Clay pan, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,100	Western wheatgrass	30
		Normal	800	Green needlegrass	15
		Unfavorable	500	Montana wheatgrass	5
				Nuttall saltbush	5
				Big sagebrush	5
				Blue grama	5
				Winterfat	5
				Needleandthread	5
40:					
Dast	Sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,100	Prairie sandreed	30
		Normal	1,600	Little bluestem	20
		Unfavorable	1,200	Needleandthread	15
				Green sagewort	5
				Yucca	5
				Threadleaf sedge	5
				Blue grama	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
40:					
Lisk	Sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,100	Prairie sandreed	30
		Normal	1,600	Little bluestem	20
		Unfavorable	1,200	Needleandthread	15
				Green sagewort	5
				Yucca	5
				Threadleaf sedge	5
				Blue grama	5
41:					
Degrand	Sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,100	Prairie sandreed	30
		Normal	1,600	Little bluestem	20
		Unfavorable	1,200	Needleandthread	15
				Green sagewort	5
				Yucca	5
				Threadleaf sedge	5
				Blue grama	5
42:					
Degrand	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
43:					
Delpoint	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
Busby	Sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,100	Prairie sandreed	30
		Normal	1,600	Little bluestem	20
		Unfavorable	1,200	Needleandthread	15
				Green sagewort	5
				Yucca	5
				Threadleaf sedge	5
				Blue grama	5
Blackhall	Shallow, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,200	Bluebunch wheatgrass	20
		Normal	900	Little bluestem	15
		Unfavorable	600	Sideoats grama	10
				Plains muhly	10
				Creeping juniper	5
				Yucl	5
				Prairie junegrass	5
				Prairie sandreed	5
				Blue grama	5
				Needleandthread	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
44:					
Delpoint	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
Cabbart	Shallow, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,200	Bluebunch wheatgrass	20
		Normal	900	Little bluestem	15
		Unfavorable	600	Plains muhly	10
				Sideoats grama	10
				Creeping juniper	5
				Needleandthread	5
				Prairie junegrass	5
				Blue grama	5
				Skunkbush sumac	5
				Western wheatgrass	5
45:					
Delpoint	Thin silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,400	Western wheatgrass	20
		Normal	1,100	Little bluestem	20
		Unfavorable	850	Bluebunch wheatgrass	15
				Sideoats grama	10
				Blue grama	5
				Needleandthread	5
				Threadleaf sedge	5
				Plains muhly	5
				Fringed sagewort	5
Cabbart	Shallow, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,200	Bluebunch wheatgrass	20
		Normal	900	Little bluestem	15
		Unfavorable	600	Plains muhly	10
				Sideoats grama	10
				Creeping juniper	5
				Needleandthread	5
				Prairie junegrass	5
				Blue grama	5
				Skunkbush sumac	5
				Western wheatgrass	5
Yawdim	Shallow clay, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,100	Western wheatgrass	25
		Normal	800	Green needlegrass	20
		Unfavorable	600	Plains muhly	10
				Bluebunch wheatgrass	10
				Big sagebrush	5
				Winterfat	5
				Blue grama	5
				Sandberg bluegrass	5
46:					
Delpoint	Thin silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,400	Western wheatgrass	20
		Normal	1,100	Little bluestem	20
		Unfavorable	850	Bluebunch wheatgrass	15
				Sideoats grama	10
				Blue grama	5
				Needleandthread	5
				Threadleaf sedge	5
				Plains muhly	5
				Fringed sagewort	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
46:					
Cabbart	Shallow, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,200	Bluebunch wheatgrass	20
		Normal	900	Little bluestem	15
		Unfavorable	600	Plains muhly	10
				Sideoats grama	10
				Creeping juniper	5
				Needleandthread	5
				Prairie junegrass	5
				Blue grama	5
				Skunkbush sumac	5
				Western wheatgrass	5
Yawdim	Shallow clay, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,100	Western wheatgrass	25
		Normal	800	Green needlegrass	20
		Unfavorable	600	Plains muhly	10
				Bluebunch wheatgrass	10
				Big sagebrush	5
				Winterfat	5
				Blue grama	5
				Sandberg bluegrass	5
47:					
Delpoint	Thin silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,400	Western wheatgrass	20
		Normal	1,100	Little bluestem	20
		Unfavorable	850	Bluebunch wheatgrass	15
				Sideoats grama	10
				Blue grama	5
				Needleandthread	5
				Threadleaf sedge	5
				Plains muhly	5
				Fringed sagewort	5
Yamac	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
Cabbart	Shallow, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,200	Bluebunch wheatgrass	20
		Normal	900	Little bluestem	15
		Unfavorable	600	Plains muhly	10
				Sideoats grama	10
				Creeping juniper	5
				Needleandthread	5
				Prairie junegrass	5
				Blue grama	5
				Skunkbush sumac	5
				Western wheatgrass	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
48:					
Ethridge	Clayey, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Green needlegrass	25
		Normal	1,300	Western wheatgrass	20
		Unfavorable	900	Thickspike wheatgrass	15
				Big sagebrush	5
				Blue grama	5
				Nuttall saltbush	5
				Winterfat	5
				Plains muhly	5
				Plains pricklypear	5
				Sandberg bluegrass	5
49:					
Ethridge	Clayey, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Green needlegrass	25
		Normal	1,300	Western wheatgrass	20
		Unfavorable	900	Thickspike wheatgrass	15
				Big sagebrush	5
				Blue grama	5
				Nuttall saltbush	5
				Winterfat	5
				Plains muhly	5
				Plains pricklypear	5
				Sandberg bluegrass	5
50:					
Evanston	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
51:					
Evanston	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
52:					
Evanston	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
Delpoint	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
53:					
Farnuf	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
54:					
Floweree	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
55:					
Floweree	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
56:					
Floweree	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
57:					
Floweree	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
58:					
Floweree	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
58:					
Cambeth	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
59:					
Gerdrum	Clay pan, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,100	Western wheatgrass	30
		Normal	800	Green needlegrass	15
		Unfavorable	500	Montana wheatgrass	5
				Nuttall saltbush	5
				Big sagebrush	5
				Blue grama	5
				Winterfat	5
				Needleandthread	5
Creed	Clay pan, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,100	Western wheatgrass	30
		Normal	800	Green needlegrass	15
		Unfavorable	500	Montana wheatgrass	5
				Nuttall saltbush	5
				Big sagebrush	5
				Blue grama	5
				Winterfat	5
				Needleandthread	5
60:					
Gerdrum	Clay pan, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,100	Western wheatgrass	30
		Normal	800	Green needlegrass	15
		Unfavorable	500	Montana wheatgrass	5
				Nuttall saltbush	5
				Big sagebrush	5
				Blue grama	5
				Winterfat	5
				Needleandthread	5
Creed	Clay pan, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,100	Western wheatgrass	30
		Normal	800	Green needlegrass	15
		Unfavorable	500	Montana wheatgrass	5
				Nuttall saltbush	5
				Big sagebrush	5
				Blue grama	5
				Winterfat	5
				Needleandthread	5
61:					
Gerdrum	Clay pan, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,100	Western wheatgrass	30
		Normal	800	Green needlegrass	15
		Unfavorable	500	Montana wheatgrass	5
				Nuttall saltbush	5
				Big sagebrush	5
				Blue grama	5
				Winterfat	5
				Needleandthread	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
61:					
Creed	Clay pan, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,100	Western wheatgrass	30
		Normal	800	Green needlegrass	15
		Unfavorable	500	Montana wheatgrass	5
				Nuttall saltbush	5
				Big sagebrush	5
				Blue grama	5
				Winterfat	5
				Needleandthread	5
62:					
Glendive	Sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,100	Prairie sandreed	30
		Normal	1,600	Little bluestem	20
		Unfavorable	1,200	Needleandthread	15
				Western wheatgrass	5
				Common snowberry	5
				Blue grama	5
				Silver sagebrush	5
63:					
Glendive	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
64:					
Golva	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
65:					
Golva	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
66:					
Golva	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
66:					
Cambert	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
67:					
Hanly	Sands, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,200	Little bluestem	25
		Normal	1,800	Prairie sandreed	20
		Unfavorable	1,400	Sand bluestem	20
				Indian ricegrass	5
				Green sagewort	5
				Threadleaf sedge	5
				Yucca	5
				Needleandthread	5
Glendive	Sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,100	Prairie sandreed	30
		Normal	1,600	Little bluestem	20
		Unfavorable	1,200	Needleandthread	15
				Western wheatgrass	5
				Common snowberry	5
				Blue grama	5
				Silver sagebrush	5
68:					
Havre	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
69:					
Havre	Clayey, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Green needlegrass	25
		Normal	1,300	Western wheatgrass	20
		Unfavorable	900	Thickspike wheatgrass	15
				Big sagebrush	5
				Blue grama	5
				Nuttall saltbush	5
				Winterfat	5
				Plains muhly	5
				Plains pricklypear	5
				Sandberg bluegrass	5
70:					
Havre	Overflow, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	3,000	Big bluestem	35
		Normal	2,500	Western wheatgrass	15
		Unfavorable	2,000	Canada wildrye	10
				Green needlegrass	10
				Switchgrass	5
				Common snowberry	5
				Little bluestem	5
				Needleandthread	5
				Silver sagebrush	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
70:					
Harlem	Overflow, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	3,000	Big bluestem	35
		Normal	2,500	Western wheatgrass	15
		Unfavorable	2,000	Canada wildrye	10
				Green needlegrass	10
				Switchgrass	5
				Common snowberry	5
				Little bluestem	5
				Needleandthread	5
				Silver sagebrush	5
71:					
Hedstrom	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
72:					
Ismay	Saline lowland, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	3,500	Western wheatgrass	20
		Normal	2,700	Greasewood	15
		Unfavorable	2,000	Alkali cordgrass	15
				Alkali sacaton	15
				Inland saltgrass	10
				Nuttall alkaligrass	5
				Bottlebrush squirreltail	5
				Alkali bluegrass	5
73:					
Kobar	Clayey, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Green needlegrass	25
		Normal	1,300	Western wheatgrass	20
		Unfavorable	900	Thickspike wheatgrass	15
				Big sagebrush	5
				Blue grama	5
				Nuttall saltbush	5
				Winterfat	5
				Plains muhly	5
				Plains pricklypear	5
				Sandberg bluegrass	5
74:					
Kobar	Clayey, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Green needlegrass	25
		Normal	1,300	Western wheatgrass	20
		Unfavorable	900	Thickspike wheatgrass	15
				Big sagebrush	5
				Blue grama	5
				Nuttall saltbush	5
				Winterfat	5
				Plains muhly	5
				Plains pricklypear	5
				Sandberg bluegrass	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
75:					
Kobar	Clayey, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Green needlegrass	25
		Normal	1,300	Western wheatgrass	20
		Unfavorable	900	Thickspike wheatgrass	15
				Big sagebrush	5
				Blue grama	5
				Nuttall saltbush	5
				Winterfat	5
				Plains muhly	5
				Plains pricklypear	5
				Sandberg bluegrass	5
Gerdrum	Clay pan, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,100	Western wheatgrass	30
		Normal	800	Green needlegrass	15
		Unfavorable	500	Montana wheatgrass	5
				Nuttall saltbush	5
				Big sagebrush	5
				Blue grama	5
				Winterfat	5
				Needleandthread	5
76:					
Kremlin	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
77:					
Kremlin	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
78:					
Kremlin	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
Busby	Sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,100	Prairie sandreed	30
		Normal	1,600	Little bluestem	20
		Unfavorable	1,200	Needleandthread	15
				Green sagewort	5
				Yucca	5
				Threadleaf sedge	5
				Blue grama	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
79:					
Kremlin	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
Tinsley	Gravel, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	700	Bluebunch wheatgrass	25
		Normal	550	Little bluestem	20
		Unfavorable	400	Needleandthread	10
				Plains muhly	10
				Yucca	5
				Blue grama	5
				Fringed sagewort	5
				Threadleaf sedge	5
Degrand	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
80:					
Lihen	Sands, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,200	Little bluestem	25
		Normal	1,800	Prairie sandreed	20
		Unfavorable	1,400	Sand bluestem	20
				Indian ricegrass	5
				Green sagewort	5
				Threadleaf sedge	5
				Yucca	5
				Needleandthread	5
81:					
Lihen	Sands, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,200	Little bluestem	25
		Normal	1,800	Prairie sandreed	20
		Unfavorable	1,400	Sand bluestem	20
				Indian ricegrass	5
				Green sagewort	5
				Threadleaf sedge	5
				Yucca	5
				Needleandthread	5
Parshall	Sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,100	Prairie sandreed	30
		Normal	1,600	Little bluestem	20
		Unfavorable	1,200	Needleandthread	15
				Green sagewort	5
				Yucca	5
				Threadleaf sedge	5
				Blue grama	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
81:					
Yetull	Gravel, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	700	Bluebunch wheatgrass	25
		Normal	550	Little bluestem	20
		Unfavorable	400	Needleandthread	10
				Plains muhly	10
				Yucca	5
				Blue grama	5
				Fringed sagewort	5
				Threadleaf sedge	5
82:					
Lihen	Thin sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,400	Little bluestem	25
		Normal	1,200	Prairie sandreed	25
		Unfavorable	950	Needleandthread	15
				Big bluestem	10
				Sun sedge	5
				Sand dropseed	5
				Green sagewort	5
Tinsley	Gravel, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	700	Bluebunch wheatgrass	25
		Normal	550	Little bluestem	20
		Unfavorable	400	Needleandthread	10
				Plains muhly	10
				Yucca	5
				Blue grama	5
				Fringed sagewort	5
				Threadleaf sedge	5
83:					
Lihen	Thin sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,400	Little bluestem	25
		Normal	1,200	Prairie sandreed	25
		Unfavorable	950	Needleandthread	15
				Big bluestem	10
				Sun sedge	5
				Sand dropseed	5
				Green sagewort	5
Yetull	Gravel, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	700	Bluebunch wheatgrass	25
		Normal	550	Little bluestem	20
		Unfavorable	400	Needleandthread	10
				Plains muhly	10
				Yucca	5
				Blue grama	5
				Fringed sagewort	5
				Threadleaf sedge	5
84:					
Lonna	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
85:					
Lonna	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
86:					
Lonna	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
87:					
Lonna	Clayey, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Green needlegrass	25
		Normal	1,300	Western wheatgrass	20
		Unfavorable	900	Thickspike wheatgrass	15
				Big sagebrush	5
				Blue grama	5
				Nuttall saltbush	5
				Winterfat	5
				Plains muhly	5
				Plains pricklypear	5
				Sandberg bluegrass	5
88:					
Lonna	Clayey, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Green needlegrass	25
		Normal	1,300	Western wheatgrass	20
		Unfavorable	900	Thickspike wheatgrass	15
				Big sagebrush	5
				Blue grama	5
				Nuttall saltbush	5
				Winterfat	5
				Plains muhly	5
				Plains pricklypear	5
				Sandberg bluegrass	5
89:					
Lonna	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
Cambeth	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
90:					
Lonna	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
Cambeth	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
Cabbart	Shallow, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,200	Bluebunch wheatgrass	20
		Normal	900	Little bluestem	15
		Unfavorable	600	Plains muhly	10
				Sideoats grama	10
				Creeping juniper	5
				Needleandthread	5
				Prairie junegrass	5
				Blue grama	5
				Skunkbush sumac	5
				Western wheatgrass	5
91:					
Lonna	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
Cambeth	Thin silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,400	Western wheatgrass	20
		Normal	1,100	Little bluestem	20
		Unfavorable	850	Bluebunch wheatgrass	15
				Sideoats grama	10
				Blue grama	5
				Needleandthread	5
				Threadleaf sedge	5
				Plains muhly	5
				Fringed sagewort	5
Cabbart	Shallow, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,200	Bluebunch wheatgrass	20
		Normal	900	Little bluestem	15
		Unfavorable	600	Plains muhly	10
				Sideoats grama	10
				Creeping juniper	5
				Needleandthread	5
				Prairie junegrass	5
				Blue grama	5
				Skunkbush sumac	5
				Western wheatgrass	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
92:					
Macar	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
93:					
Marias	Clayey, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Green needlegrass	25
		Normal	1,300	Western wheatgrass	20
		Unfavorable	900	Thickspike wheatgrass	15
				Big sagebrush	5
				Blue grama	5
				Nuttall saltbush	5
				Winterfat	5
				Plains muhly	5
				Plains pricklypear	5
				Sandberg bluegrass	5
94:					
Marvan	Clayey, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Green needlegrass	25
		Normal	1,300	Western wheatgrass	20
		Unfavorable	900	Thickspike wheatgrass	15
				Big sagebrush	5
				Blue grama	5
				Nuttall saltbush	5
				Winterfat	5
				Plains muhly	5
				Plains pricklypear	5
				Sandberg bluegrass	5
95:					
Marvan	Clayey, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Green needlegrass	25
		Normal	1,300	Western wheatgrass	20
		Unfavorable	900	Thickspike wheatgrass	15
				Big sagebrush	5
				Blue grama	5
				Nuttall saltbush	5
				Winterfat	5
				Plains muhly	5
				Plains pricklypear	5
				Sandberg bluegrass	5
96:					
Marvan	Clayey, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Green needlegrass	25
		Normal	1,300	Western wheatgrass	20
		Unfavorable	900	Thickspike wheatgrass	15
				Big sagebrush	5
				Blue grama	5
				Nuttall saltbush	5
				Winterfat	5
				Plains muhly	5
				Plains pricklypear	5
				Sandberg bluegrass	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
96:					
Vanda	Dense clay, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,000	Western wheatgrass	20
		Normal	700	Thickspike wheatgrass	20
		Unfavorable	550	Big sagebrush	5
				Montana wheatgrass	5
				Nuttall saltbush	5
				Sandberg bluegrass	5
				Blue grama	5
				Winterfat	5
				Plains pricklypear	5
97:					
Neldore	Shallow clay, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,100	Western wheatgrass	25
		Normal	800	Green needlegrass	20
		Unfavorable	600	Plains muhly	10
				Bluebunch wheatgrass	10
				Big sagebrush	5
				Winterfat	5
				Blue grama	5
				Sandberg bluegrass	5
Rock outcrop.					
98:					
Neldore	Shallow clay, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,100	Western wheatgrass	25
		Normal	800	Green needlegrass	20
		Unfavorable	600	Plains muhly	10
				Bluebunch wheatgrass	10
				Big sagebrush	5
				Winterfat	5
				Blue grama	5
				Sandberg bluegrass	5
Rock outcrop.					
Abor	Thin clayey, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,400	Western wheatgrass	20
		Normal	1,100	Green needlegrass	20
		Unfavorable	850	Little bluestem	15
				Bluebunch wheatgrass	10
				Sideoats grama	10
				Big sagebrush	5
				Prairie junegrass	5
				Plains muhly	5
				Blue grama	5
99:					
Neldore	Shallow clay, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,100	Western wheatgrass	25
		Normal	800	Green needlegrass	20
		Unfavorable	600	Plains muhly	10
				Bluebunch wheatgrass	10
				Big sagebrush	5
				Winterfat	5
				Blue grama	5
				Sandberg bluegrass	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
99:					
Weingart	Dense clay, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,000	Western wheatgrass	20
		Normal	700	Thickspike wheatgrass	20
		Unfavorable	550	Big sagebrush	5
				Montana wheatgrass	5
				Nuttall saltbush	5
				Sandberg bluegrass	5
				Blue grama	5
				Winterfat	5
				Plains pricklypear	5
Kirby	Very shallow, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	700	Bluebunch wheatgrass	30
		Normal	550	Little bluestem	20
		Unfavorable	400	Sideoats grama	10
				Plains muhly	10
				Creeping juniper	5
				Needleandthread	5
				Blue grama	5
				Skunkbush sumac	5
				Rosa	5
				Fringed sagewort	5
100:					
Nesda	Gravel, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	700	Bluebunch wheatgrass	25
		Normal	550	Little bluestem	20
		Unfavorable	400	Needleandthread	10
				Plains muhly	10
				Yucca	5
				Blue grama	5
				Fringed sagewort	5
				Threadleaf sedge	5
101:					
Parshall	Sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,100	Prairie sandreed	30
		Normal	1,600	Little bluestem	20
		Unfavorable	1,200	Needleandthread	15
				Green sagewort	5
				Yucca	5
				Threadleaf sedge	5
				Blue grama	5
102:					
Peerless	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
103:					
Pinelli	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
104:					
Pinelli	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
105:					
Pinelli	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
Weingart	Dense clay, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,000	Western wheatgrass	20
		Normal	700	Thickspike wheatgrass	20
		Unfavorable	550	Big sagebrush	5
				Montana wheatgrass	5
				Nuttall saltbush	5
				Sandberg bluegrass	5
				Blue grama	5
				Winterfat	5
				Plains pricklypear	5
Gerdrum	Clay pan, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,100	Western wheatgrass	30
		Normal	800	Green needlegrass	15
		Unfavorable	500	Montana wheatgrass	5
				Nuttall saltbush	5
				Big sagebrush	5
				Blue grama	5
				Winterfat	5
				Needleandthread	5
107:					
Rivra loam	Shallow to gravel, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,200	Bluebunch wheatgrass	20
		Normal	1,000	Western wheatgrass	15
		Unfavorable	800	Needleandthread	15
				Plains muhly	10
				Fringed sagewort	5
				Threadleaf sedge	5
				Blue grama	5
Rivra gravelly sandy loam	Gravel, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	700	Bluebunch wheatgrass	25
		Normal	550	Little bluestem	20
		Unfavorable	400	Needleandthread	10
				Plains muhly	10
				Yucca	5
				Blue grama	5
				Fringed sagewort	5
				Threadleaf sedge	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
110:					
Ryell	Sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,100	Prairie sandreed	30
		Normal	1,600	Little bluestem	20
		Unfavorable	1,200	Needleandthread	15
				Green sagewort	5
				Yucca	5
				Threadleaf sedge	5
				Blue grama	5
111:					
Ryell	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
112:					
Ryell	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
113:					
Shambo	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
114:					
Shambo	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
115:					
Spinekop	Clayey, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Green needlegrass	25
		Normal	1,300	Western wheatgrass	20
		Unfavorable	900	Thickspike wheatgrass	15
				Big sagebrush	5
				Blue grama	5
				Nuttall saltbush	5
				Winterfat	5
				Plains muhly	5
				Plains pricklypear	5
				Sandberg bluegrass	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
116:					
Subwell	Shallow to Gravel, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,200	Bluebunch wheatgrass	20
		Normal	1,000	Western wheatgrass	15
		Unfavorable	800	Needleandthread	15
				Plains muhly	10
				Fringed sagewort	5
				Threadleaf sedge	5
				Blue grama	5
Bigsheep	Gravel, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	700	Bluebunch wheatgrass	25
		Normal	550	Little bluestem	20
		Unfavorable	400	Needleandthread	10
				Plains muhly	10
				Yucca	5
				Blue grama	5
				Fringed sagewort	5
				Threadleaf sedge	5
117:					
Subwell	Shallow to Gravel, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,200	Bluebunch wheatgrass	20
		Normal	1,000	Western wheatgrass	15
		Unfavorable	800	Needleandthread	15
				Plains muhly	10
				Fringed sagewort	5
				Threadleaf sedge	5
				Blue grama	5
Cambert	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
Bigsheep	Gravel, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	700	Bluebunch wheatgrass	25
		Normal	550	Little bluestem	20
		Unfavorable	400	Needleandthread	10
				Plains muhly	10
				Yucca	5
				Blue grama	5
				Fringed sagewort	5
				Threadleaf sedge	5
118:					
Subwell	Shallow to Gravel, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,200	Bluebunch wheatgrass	20
		Normal	1,000	Western wheatgrass	15
		Unfavorable	800	Needleandthread	15
				Plains muhly	10
				Fringed sagewort	5
				Threadleaf sedge	5
				Blue grama	5
Peerless	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
119:					
Tally	Sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,100	Prairie sandreed	30
		Normal	1,600	Little bluestem	20
		Unfavorable	1,200	Needleandthread	15
				Green sagewort	5
				Yucca	5
				Threadleaf sedge	5
				Blue grama	5
120:					
Tally	Sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,100	Prairie sandreed	30
		Normal	1,600	Little bluestem	20
		Unfavorable	1,200	Needleandthread	15
				Green sagewort	5
				Yucca	5
				Threadleaf sedge	5
				Blue grama	5
Hedstrom	Sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,100	Prairie sandreed	30
		Normal	1,600	Little bluestem	20
		Unfavorable	1,200	Needleandthread	15
				Green sagewort	5
				Yucca	5
				Threadleaf sedge	5
				Blue grama	5
121:					
Tally	Sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,100	Prairie sandreed	30
		Normal	1,600	Little bluestem	20
		Unfavorable	1,200	Needleandthread	15
				Green sagewort	5
				Yucca	5
				Threadleaf sedge	5
				Blue grama	5
Wabek	Gravel, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	700	Bluebunch wheatgrass	25
		Normal	550	Little bluestem	20
		Unfavorable	400	Needleandthread	10
				Plains muhly	10
				Yucca	5
				Blue grama	5
				Fringed sagewort	5
				Threadleaf sedge	5
Hedstrom	Sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,100	Prairie sandreed	30
		Normal	1,600	Little bluestem	20
		Unfavorable	1,200	Needleandthread	15
				Green sagewort	5
				Yucca	5
				Threadleaf sedge	5
				Blue grama	5
122:					
Tinsley	Gravel, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	700	Bluebunch wheatgrass	25
		Normal	550	Little bluestem	20
		Unfavorable	400	Needleandthread	10
				Plains muhly	10
				Yucca	5
				Blue grama	5
				Fringed sagewort	5
				Threadleaf sedge	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
122:					
Delpoint	Thin silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,400	Western wheatgrass	20
		Normal	1,100	Little bluestem	20
		Unfavorable	850	Bluebunch wheatgrass	15
				Sideoats grama	10
				Blue grama	5
				Needleandthread	5
				Threadleaf sedge	5
				Plains muhly	5
				Fringed sagewort	5
Cabbart	Shallow, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,200	Bluebunch wheatgrass	20
		Normal	900	Little bluestem	15
		Unfavorable	600	Plains muhly	10
				Sideoats grama	10
				Creeping juniper	5
				Needleandthread	5
				Prairie junegrass	5
				Blue grama	5
				Skunkbush sumac	5
				Western wheatgrass	5
123:					
Ustic Torrifluvents	Overflow, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	3,000	Big bluestem	35
		Normal	2,500	Western wheatgrass	15
		Unfavorable	2,000	Canada wildrye	10
				Green needlegrass	10
				Switchgrass	5
				Common snowberry	5
				Little bluestem	5
				Needleandthread	5
				Silver sagebrush	5
125:					
Ustic Torriorthents	Saline upland, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	600	Alkali sacaton	30
		Normal	350	Inland saltgrass	15
		Unfavorable	100	Nuttall saltbush	15
				Greasewood	10
				Alkali bluegrass	5
				Sandberg bluegrass	5
				Bottlebrush squirreltail	5
Rock outcrop.					
127:					
Vanstel	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
128:					
Vanstel	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
129:					
Wabek	Gravel, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	700	Bluebunch wheatgrass	25
		Normal	550	Little bluestem	20
		Unfavorable	400	Needleandthread	10
				Plains muhly	10
				Yucca	5
				Blue grama	5
				Fringed sagewort	5
				Threadleaf sedge	5
130:					
Wabek	Gravel, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	700	Bluebunch wheatgrass	25
		Normal	550	Little bluestem	20
		Unfavorable	400	Needleandthread	10
				Plains muhly	10
				Yucca	5
				Blue grama	5
				Fringed sagewort	5
				Threadleaf sedge	5
Cambert	Thin silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,400	Western wheatgrass	20
		Normal	1,100	Little bluestem	20
		Unfavorable	850	Bluebunch wheatgrass	15
				Sideoats grama	10
				Blue grama	5
				Needleandthread	5
				Threadleaf sedge	5
				Plains muhly	5
				Fringed sagewort	5
131:					
Yamac	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
132:					
Yamac	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
133:					
Yamac	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
Busby	Sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,100	Prairie sandreed	30
		Normal	1,600	Little bluestem	20
		Unfavorable	1,200	Needleandthread	15
				Green sagewort	5
				Yucca	5
				Threadleaf sedge	5
				Blue grama	5
134:					
Yamac	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
Busby	Sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,100	Prairie sandreed	30
		Normal	1,600	Little bluestem	20
		Unfavorable	1,200	Needleandthread	15
				Green sagewort	5
				Yucca	5
				Threadleaf sedge	5
				Blue grama	5
135:					
Yamac	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
Busby	Thin sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,400	Little bluestem	25
		Normal	1,200	Prairie sandreed	25
		Unfavorable	950	Needleandthread	15
				Big bluestem	10
				Sun sedge	5
				Sand dropseed	5
				Green sagewort	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
135:					
Blackhall	Shallow, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,200	Bluebunch wheatgrass	20
		Normal	900	Little bluestem	15
		Unfavorable	600	Sideoats grama	10
				Plains muhly	10
				Creeping juniper	5
				Yucca	5
				Prairie junegrass	5
				Prairie sandreed	5
				Blue grama	5
				Needleandthread	5
136:					
Yamac	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
Delpoint	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
137:					
Yamac	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
Delpoint	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
Cabbart	Shallow, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,200	Bluebunch wheatgrass	20
		Normal	900	Little bluestem	15
		Unfavorable	600	Plains muhly	10
				Sideoats grama	10
				Creeping juniper	5
				Needleandthread	5
				Prairie junegrass	5
				Blue grama	5
				Skunkbush sumac	5
				Western wheatgrass	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
138:					
Yamac	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
Gerdrum	Clay pan, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,100	Western wheatgrass	30
		Normal	800	Green needlegrass	15
		Unfavorable	500	Montana wheatgrass	5
				Nuttall saltbush	5
				Big sagebrush	5
				Blue grama	5
				Winterfat	5
				Needleandthread	5
139:					
Yawdim	Shallow clay, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,100	Western wheatgrass	25
		Normal	800	Green needlegrass	20
		Unfavorable	600	Plains muhly	10
				Bluebunch wheatgrass	10
				Big sagebrush	5
				Winterfat	5
				Blue grama	5
				Sandberg bluegrass	5
Cambeth	Silty, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	1,800	Western wheatgrass	20
		Normal	1,400	Bluebunch wheatgrass	20
		Unfavorable	1,050	Green needlegrass	15
				Needleandthread	10
				Silver sagebrush	5
				Blue grama	5
				Winterfat	5
				Fringed sagewort	5
140:					
Yetull	Sands, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,200	Little bluestem	25
		Normal	1,800	Prairie sandreed	20
		Unfavorable	1,400	Sand bluestem	20
				Indian ricegrass	5
				Green sagewort	5
				Threadleaf sedge	5
				Yucca	5
				Needleandthread	5
Busby	Sandy, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	2,100	Prairie sandreed	30
		Normal	1,600	Little bluestem	20
		Unfavorable	1,200	Needleandthread	15
				Green sagewort	5
				Yucca	5
				Threadleaf sedge	5
				Blue grama	5

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
141:					
Zatoville	Saline lowland, 10- to 14-inch Ppt zone, sedimentary plains, East	Favorable	3,500	Western wheatgrass	20
		Normal	2,700	Greasewood	15
		Unfavorable	2,000	Alkali cordgrass	15
				Alkali sacaton	15
				Inland saltgrass	10
				Nuttall alkaligrass	5
				Bottlebrush squirreltail	5
				Alkali bluegrass	5

Recreation

The soils of the survey area are rated in the table "Recreational Development" according to limitations that affect their suitability for recreation. The ratings are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, the ability of the soil to support vegetation, access to water, potential water impoundment sites, and either access to public sewer lines or the capacity of the soil to absorb septic tank effluent. Soils subject to flooding are limited, in varying degrees, for recreational uses by the duration of flooding and the season when it occurs. Onsite assessment of the height, duration, intensity, and frequency of flooding is essential in planning recreational facilities.

Camp areas are tracts of land used intensively as sites for tents, trailers, and campers and for outdoor activities that accompany such sites. These areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The soils are rated on the basis of soil properties that influence the ease of developing camp areas and performance of the areas after development. Also considered are the soil properties that influence trafficability and promote the growth of vegetation after heavy use.

Picnic areas are natural or landscaped tracts of land that are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The soils are rated on the basis of soil properties that influence the cost of shaping the site, trafficability, and the growth of vegetation after development. The surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry.

Playgrounds are areas used intensively for baseball, football, or similar activities. These areas require a nearly level soil that is free of stones and that can withstand heavy foot traffic and maintain an adequate cover of vegetation. The soils are rated on the basis of soil properties that influence the cost of shaping the site, trafficability, and the growth of vegetation. Slope and stoniness are the main concerns in developing playgrounds. The surface of the playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry.

Paths and trails are areas used for hiking and horseback riding. The areas should require little or no cutting and filling during site preparation. The soils are rated on the basis of soil properties that influence trafficability and erodibility. Paths and trails should remain firm under foot traffic and not be dusty when dry.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. The best soils for use as golf fairways are firm when wet, are not dusty when dry, and are not subject to prolonged flooding during the period of use. They have moderate slopes and no stones or boulders on the surface. The suitability of the soil for tees or greens is not considered in rating the soils.

The interpretive ratings in this table help engineers, planners, and others to understand how soil properties influence recreational uses. Ratings for proposed uses are given in terms of limitations. Only the most restrictive features are listed. Other features may limit a specific recreational use.

The degree of soil limitation is expressed as slight, moderate, or severe.

Slight means that soil properties are favorable for the rated use. The limitations are minor and can be easily overcome. Good performance and low maintenance are expected.

Moderate means that soil properties are moderately favorable for the rated use. The limitations can be overcome or modified by special planning, design, or maintenance. During some part of the year, the expected performance may be less desirable than that of soils rated *slight*.

Severe means that soil properties are unfavorable for the rated use. Examples of limitations are slope,

bedrock near the surface, flooding, and a seasonal high water table. These limitations generally require major soil reclamation, special design, or intensive maintenance. Overcoming the limitations generally is difficult and costly.

The information in the table "Recreational Development" can be supplemented by other information in this survey, for example, interpretations for dwellings without basements and for local roads and streets in the table "Building Site Development" and interpretations for septic tank absorption fields in the table "Sanitary Facilities."

RECREATIONAL DEVELOPMENT

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
1:					
Abor	Severe: slope	Severe: slope	Severe: slope	Severe: erodes easily	Severe: slope, too clayey
Cabbart	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: erodes easily	Severe: slope, depth to rock
Delpoint	Severe: slope	Severe: slope	Severe: slope	Severe: erodes easily	Severe: slope
2:					
Abor	Moderate: slope, percs slowly, too clayey	Moderate: slope, too clayey, percs slowly	Severe: slope	Severe: erodes easily	Severe: too clayey
Delpoint	Moderate: slope, dusty	Moderate: slope, dusty	Severe: slope	Severe: erodes easily	Moderate: droughty, slope, depth to rock
Kobar	Slight	Slight	Severe: slope	Slight	Slight
3:					
Abor	Moderate: percs slowly	Moderate: percs slowly	Moderate: slope, small stones, depth to rock	Slight	Moderate: droughty, depth to rock
Weingart	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Slight	Severe: excess sodium
Neldore	Severe: depth to rock	Severe: depth to rock	Severe: slope, depth to rock	Moderate: too clayey	Severe: droughty, depth to rock, too clayey
4:					
Aeric Fluvaquents.					
Cherry	Slight	Slight	Moderate: slope	Slight	Slight
5:					
Alona	Moderate: dusty	Moderate: dusty	Moderate: slope, dusty	Moderate: dusty	Slight
6:					
Alona	Moderate: dusty	Moderate: dusty	Moderate: slope, dusty	Moderate: dusty	Slight

RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
6:					
Cambeth	Moderate: dusty	Moderate: dusty	Moderate: slope, depth to rock, dusty	Moderate: dusty	Moderate: droughty, depth to rock
Gerdrum	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Slight	Severe: excess sodium
7:					
Badland.					
8:					
Blackhall	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope	Severe: droughty, slope, depth to rock
Busby	Severe: slope	Severe: slope	Severe: slope	Moderate: slope	Severe: slope
Rock outcrop.					
9:					
Blackhall	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope	Severe: slope, depth to rock
Delpoint	Severe: slope	Severe: slope	Severe: slope	Severe: slope, erodes easily	Severe: slope
Rock outcrop.					
10:					
Blanchard	Moderate: slope, too sandy	Moderate: slope, too sandy	Severe: slope	Moderate: too sandy	Moderate: droughty, slope
Dast	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: droughty, slope, depth to rock
11:					
Borollic Camborthids.					
Ustic Torrifluvents.					
12:					
Busby	Slight	Slight	Slight	Slight	Slight
13:					
Busby	Slight	Slight	Moderate: slope	Slight	Slight
14:					
Busby	Moderate: dusty	Moderate: dusty	Moderate: dusty	Moderate: dusty	Slight

RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
15:					
Busby	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope
Blackhall	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Moderate: slope	Severe: slope, depth to rock
Twilight	Severe: slope	Severe: slope	Severe: slope	Moderate: slope	Severe: slope
16:					
Busby	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope
Twilight	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope, depth to rock
Blackhall	Severe: depth to rock	Severe: depth to rock	Severe: slope, depth to rock	Slight	Severe: droughty, depth to rock
17:					
Busby	Slight	Slight	Moderate: slope	Slight	Slight
Yetull	Moderate: too sandy	Moderate: too sandy	Moderate: slope, too sandy	Moderate: too sandy	Moderate: droughty
18:					
Busby	Severe: slope	Severe: slope	Severe: slope	Moderate: slope	Severe: slope
Yetull	Moderate: slope, too sandy	Moderate: slope, too sandy	Severe: slope	Moderate: too sandy	Moderate: droughty, slope
Rock outcrop.					
19:					
Cabba	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, erodes easily	Severe: slope, depth to rock
Cambert	Severe: slope	Severe: slope	Severe: slope	Severe: erodes easily	Severe: slope
Rock outcrop.					
20:					
Cabbart	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, erodes easily	Severe: droughty, slope, depth to rock
Rock outcrop.					
Yawdim	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, erodes easily	Severe: slope, depth to rock

RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
21:					
Cambert	Severe: slope	Severe: slope	Severe: slope	Severe: erodes easily	Severe: slope
Bigsheep	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: small stones, slope
Golva	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope
22:					
Cambert	Severe: slope	Severe: slope	Severe: slope	Severe: erodes easily	Severe: slope
Cabba	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: erodes easily	Severe: slope, depth to rock
Cherry	Moderate: slope	Moderate: slope	Severe: slope	Severe: erodes easily	Moderate: slope
23:					
Cambert	Moderate: slope	Moderate: slope	Severe: slope	Severe: erodes easily	Moderate: droughty, slope, depth to rock
Cabba	Severe: depth to rock	Severe: depth to rock	Severe: slope, depth to rock	Severe: erodes easily	Severe: depth to rock
Dast	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: droughty, slope, depth to rock
24:					
Cambeth	Severe: slope	Severe: slope	Severe: slope	Severe: erodes easily	Severe: slope
Bigsheep	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: slope	Severe: small stones, slope
25:					
Cambeth	Severe: slope	Severe: slope	Severe: slope	Severe: erodes easily	Severe: slope
Cabbart	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, erodes easily	Severe: slope, depth to rock
Kirby	Severe: slope	Severe: slope	Severe: slope, small stones	Severe: slope	Severe: droughty, slope
26:					
Cambeth	Severe: slope	Severe: slope	Severe: slope	Severe: erodes easily	Severe: slope
Cabbart	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, erodes easily	Severe: slope, depth to rock

RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
26:					
Lonna	Severe: slope	Severe: slope	Severe: slope	Severe: erodes easily	Severe: slope
27:					
Cambeth	Moderate: slope, dusty	Moderate: slope, dusty	Severe: slope	Severe: erodes easily	Moderate: slope, depth to rock
Cabbart	Severe: depth to rock	Severe: depth to rock	Severe: slope, depth to rock	Severe: erodes easily	Severe: depth to rock
Yawdim	Severe: depth to rock	Severe: depth to rock	Severe: slope, depth to rock	Severe: erodes easily	Severe: depth to rock
28:					
Cherry	Slight	Slight	Slight	Slight	Slight
29:					
Cherry	Slight	Slight	Moderate: slope	Slight	Slight
30:					
Cherry	Slight	Slight	Moderate: slope	Slight	Slight
Cambert	Slight	Slight	Moderate: slope, depth to rock	Slight	Moderate: depth to rock
31:					
Cherry	Moderate: slope	Moderate: slope	Severe: slope	Severe: erodes easily	Moderate: slope
Cambert	Moderate: slope	Moderate: slope	Severe: slope	Severe: erodes easily	Moderate: slope, depth to rock
Cabba	Severe: depth to rock	Severe: depth to rock	Severe: slope, depth to rock	Severe: erodes easily	Severe: depth to rock
32:					
Cherry	Moderate: slope	Moderate: slope	Severe: slope	Severe: erodes easily	Moderate: slope
Lisk	Severe: slope	Severe: slope	Severe: slope	Moderate: slope	Severe: slope
Cabba	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: erodes easily	Severe: slope, depth to rock
33:					
Cherry	Slight	Slight	Moderate: slope	Slight	Slight
Typic Ustifluvents.					

RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
34:					
Chinook	Slight	Slight	Moderate: slope, small stones	Slight	Slight
35:					
Chinook	Slight	Slight	Moderate: slope, small stones	Slight	Slight
Kremlin	Moderate: dusty	Moderate: dusty	Moderate: slope, dusty	Moderate: dusty	Slight
36:					
Chinook	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope
Tinsley	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: small stones	Severe: small stones, droughty, slope
37:					
Chinook	Slight	Slight	Moderate: slope, small stones	Slight	Slight
Twilight	Slight	Slight	Moderate: slope, depth to rock	Slight	Moderate: droughty, depth to rock
38:					
Chinook	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope
Twilight	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: droughty, slope, depth to rock
Blackhall	Severe: depth to rock	Severe: depth to rock	Severe: slope, depth to rock	Slight	Severe: droughty, depth to rock
39:					
Creed	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Moderate: dusty	Severe: excess sodium
Gerdrum	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Slight	Severe: excess sodium
40:					
Dast	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope, depth to rock
Lisk	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope
41:					
Degrand	Slight	Slight	Moderate: slope, small stones	Slight	Slight

RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
42:					
Degrand	Moderate: dusty	Moderate: dusty	Moderate: slope, small stones, dusty	Moderate: dusty	Slight
43:					
Delpoint	Moderate: slope, dusty	Moderate: slope, dusty	Severe: slope	Severe: erodes easily	Moderate: droughty, slope, depth to rock
Busby	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope
Blackhall	Severe: depth to rock	Severe: depth to rock	Severe: slope, depth to rock	Slight	Severe: depth to rock
44:					
Delpoint	Moderate: slope, dusty	Moderate: slope, dusty	Severe: slope	Severe: erodes easily	Moderate: slope, depth to rock
Cabbart	Severe: depth to rock	Severe: depth to rock	Severe: slope, depth to rock	Severe: erodes easily	Severe: depth to rock
45:					
Delpoint	Moderate: slope, dusty	Moderate: slope, dusty	Severe: slope	Severe: erodes easily	Moderate: droughty, slope, depth to rock
Cabbart	Severe: depth to rock	Severe: depth to rock	Severe: slope, depth to rock	Severe: erodes easily	Severe: depth to rock
Yawdim	Severe: depth to rock	Severe: depth to rock	Severe: slope, depth to rock	Severe: erodes easily	Severe: droughty, depth to rock
46:					
Delpoint	Severe: slope	Severe: slope	Severe: slope	Severe: slope, erodes easily	Severe: slope
Cabbart	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, erodes easily	Severe: droughty, slope, depth to rock
Yawdim	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, erodes easily	Severe: slope, depth to rock
47:					
Delpoint	Severe: slope	Severe: slope	Severe: slope	Severe: erodes easily	Severe: slope
Yamac	Moderate: slope, dusty	Moderate: slope, dusty	Severe: slope	Severe: erodes easily	Moderate: slope

RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
47:					
Cabbart	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: erodes easily	Severe: slope, depth to rock
48:					
Ethridge	Slight	Slight	Slight	Slight	Slight
49:					
Ethridge	Slight	Slight	Moderate: slope	Slight	Slight
50:					
Evanston	Moderate: dusty	Moderate: dusty	Moderate: dusty	Moderate: dusty	Slight
51:					
Evanston	Moderate: dusty	Moderate: dusty	Moderate: slope, dusty	Moderate: dusty	Slight
52:					
Evanston	Moderate: dusty	Moderate: dusty	Moderate: slope, dusty	Moderate: dusty	Slight
Delpoint	Moderate: dusty	Moderate: dusty	Moderate: slope, depth to rock, dusty	Moderate: dusty	Moderate: droughty, depth to rock
53:					
Farnuf	Slight	Slight	Moderate: slope, small stones	Slight	Slight
54:					
Floweree	Moderate: dusty	Moderate: dusty	Moderate: dusty	Moderate: dusty	Slight
55:					
Floweree	Moderate: dusty	Moderate: dusty	Moderate: slope, dusty	Moderate: dusty	Slight
56:					
Floweree	Moderate: dusty	Moderate: dusty	Moderate: dusty	Moderate: dusty	Slight
57:					
Floweree	Moderate: dusty	Moderate: dusty	Moderate: dusty	Moderate: dusty	Slight
58:					
Floweree	Moderate: dusty	Moderate: dusty	Moderate: slope, dusty	Moderate: dusty	Slight
Cambeth	Moderate: dusty	Moderate: dusty	Moderate: slope, depth to rock, dusty	Moderate: dusty	Moderate: depth to rock

RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
59:					
Gerdrum	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Slight	Severe: excess sodium
Creed	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Moderate: dusty	Severe: excess sodium
60:					
Gerdrum	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Slight	Severe: excess sodium
Creed	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Moderate: dusty	Severe: excess sodium
61:					
Gerdrum	Severe: excess sodium	Severe: excess sodium	Severe: slope, excess sodium	Severe: erodes easily	Severe: excess sodium
Creed	Severe: excess sodium	Severe: excess sodium	Severe: slope, excess sodium	Severe: erodes easily	Severe: excess sodium
62:					
Glendive	Severe: flooding	Slight	Moderate: flooding	Slight	Moderate: flooding
63:					
Glendive	Severe: flooding	Moderate: dusty	Moderate: flooding, dusty	Moderate: dusty	Moderate: flooding
64:					
Golva	Slight	Slight	Moderate: slope	Slight	Slight
65:					
Golva	Slight	Slight	Severe: slope	Slight	Slight
66:					
Golva	Slight	Slight	Moderate: slope	Slight	Slight
Cambert	Slight	Slight	Moderate: slope, depth to rock	Slight	Moderate: depth to rock
67:					
Hanly	Severe: flooding	Slight	Moderate: flooding	Slight	Moderate: droughty, flooding
Glendive	Severe: flooding	Slight	Moderate: flooding	Slight	Moderate: flooding
68:					
Havre	Severe: flooding	Moderate: dusty	Moderate: flooding, dusty	Moderate: dusty	Moderate: flooding
69:					
Havre	Severe: flooding	Slight	Moderate: flooding	Slight	Moderate: flooding

RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
70:					
Havre	Severe: flooding	Moderate: flooding	Severe: flooding	Moderate: flooding	Severe: flooding
Harlem	Severe: flooding	Moderate: flooding, too clayey	Severe: flooding	Moderate: too clayey, flooding	Severe: flooding, too clayey
71:					
Hedstrom	Slight	Slight	Moderate: slope, small stones	Slight	Slight
72:					
Ismay	Severe: flooding	Moderate: excess salt	Moderate: flooding, excess salt	Slight	Moderate: excess salt, flooding
73:					
Kobar	Slight	Slight	Slight	Slight	Slight
74:					
Kobar	Slight	Slight	Moderate: slope	Slight	Slight
75:					
Kobar	Slight	Slight	Moderate: slope	Slight	Slight
Gerdrum	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Slight	Severe: excess sodium
76:					
Kremlin	Moderate: dusty	Moderate: dusty	Moderate: dusty	Moderate: dusty	Slight
77:					
Kremlin	Moderate: dusty	Moderate: dusty	Moderate: slope, dusty	Moderate: dusty	Slight
78:					
Kremlin	Moderate: dusty	Moderate: dusty	Moderate: dusty	Moderate: dusty	Slight
Busby	Slight	Slight	Slight	Slight	Slight
79:					
Kremlin	Moderate: slope, dusty	Moderate: slope, dusty	Severe: slope	Severe: erodes easily	Moderate: slope
Tinsley	Moderate: slope, small stones	Moderate: slope, small stones	Severe: slope, small stones	Slight	Severe: droughty
Degrand	Moderate: dusty	Moderate: dusty	Severe: slope	Moderate: dusty	Slight
80:					
Lihen	Moderate: slope, too sandy	Moderate: slope, too sandy	Severe: slope	Moderate: too sandy	Moderate: droughty, slope

RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
81:					
Lihen	Moderate: slope, too sandy	Moderate: slope, too sandy	Severe: slope	Moderate: too sandy	Moderate: droughty, slope
Parshall	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope
Yetull	Moderate: slope, small stones, too sandy	Moderate: slope, too sandy, small stones	Severe: slope, small stones	Moderate: too sandy	Moderate: small stones, large stones, droughty
82:					
Lihen	Severe: slope	Severe: slope	Severe: slope	Moderate: too sandy, slope	Severe: slope
Tinsley	Severe: slope	Severe: slope	Severe: slope, small stones	Moderate: slope	Severe: droughty, slope
83:					
Lihen	Severe: slope	Severe: slope	Severe: slope	Moderate: too sandy, slope	Severe: slope
Yetull	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: small stones	Severe: small stones, droughty, slope
84:					
Lonna	Moderate: dusty	Moderate: dusty	Moderate: dusty	Moderate: dusty	Slight
85:					
Lonna	Moderate: dusty	Moderate: dusty	Moderate: slope, dusty	Moderate: dusty	Slight
86:					
Lonna	Moderate: slope, dusty	Moderate: slope, dusty	Severe: slope	Severe: erodes easily	Moderate: slope
87:					
Lonna	Slight	Slight	Slight	Slight	Slight
88:					
Lonna	Slight	Slight	Moderate: slope	Slight	Slight
89:					
Lonna	Moderate: dusty	Moderate: dusty	Moderate: slope, dusty	Moderate: dusty	Slight
Cambeth	Moderate: dusty	Moderate: dusty	Moderate: slope, depth to rock, dusty	Moderate: dusty	Moderate: droughty, depth to rock

RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
90:					
Lonna	Moderate: slope, dusty	Moderate: slope, dusty	Severe: slope	Severe: erodes easily	Moderate: slope
Cambeth	Moderate: slope, dusty	Moderate: slope, dusty	Severe: slope	Severe: erodes easily	Moderate: slope, depth to rock
Cabbart	Severe: depth to rock	Severe: depth to rock	Severe: slope, depth to rock	Severe: erodes easily	Severe: droughty, depth to rock
91:					
Lonna	Moderate: slope, dusty	Moderate: slope, dusty	Severe: slope	Severe: erodes easily	Moderate: slope
Cambeth	Severe: slope	Severe: slope	Severe: slope	Severe: erodes easily	Severe: slope
Cabbart	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: erodes easily	Severe: slope, depth to rock
92:					
Macar	Slight	Slight	Moderate: slope	Slight	Slight
93:					
Marias	Moderate: percs slowly, too clayey	Moderate: too clayey, percs slowly	Moderate: too clayey, percs slowly	Moderate: too clayey	Severe: too clayey
94:					
Marvan	Moderate: percs slowly, too clayey	Moderate: too clayey, percs slowly	Moderate: too clayey, percs slowly	Moderate: too clayey	Severe: too clayey
95:					
Marvan	Moderate: percs slowly, too clayey	Moderate: too clayey, percs slowly	Moderate: slope, too clayey, percs slowly	Moderate: too clayey	Severe: too clayey
96:					
Marvan	Moderate: percs slowly, too clayey	Moderate: too clayey, percs slowly	Moderate: slope, too clayey, percs slowly	Moderate: too clayey	Severe: too clayey
Vanda	Moderate: percs slowly, too clayey, excess salt	Moderate: too clayey, excess salt, percs slowly	Moderate: slope, too clayey, percs slowly	Moderate: too clayey	Severe: too clayey
97:					
Neldore	Severe: depth to rock	Severe: depth to rock	Severe: slope, depth to rock	Moderate: too clayey	Severe: depth to rock, too clayey
Rock outcrop.					

RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
98:					
Neldore	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope	Severe: droughty, slope, depth to rock
Rock outcrop.					
Abor	Severe: slope	Severe: slope	Severe: slope	Severe: slope, erodes easily	Severe: slope, too clayey
99:					
Neldore	Severe: depth to rock	Severe: depth to rock	Severe: slope, depth to rock	Moderate: too clayey	Severe: droughty, depth to rock, too clayey
Weingart	Severe: excess sodium	Severe: excess sodium	Severe: slope, excess sodium	Slight	Severe: excess sodium
Kirby	Moderate: slope, small stones, dusty	Moderate: slope, small stones, dusty	Severe: slope, small stones	Moderate: dusty	Severe: droughty
100:					
Nesda	Severe: flooding	Moderate: flooding, small stones	Severe: small stones, flooding	Moderate: flooding	Severe: flooding
101:					
Parshall	Slight	Slight	Moderate: slope	Slight	Slight
102:					
Peerless	Slight	Slight	Moderate: slope, small stones	Slight	Slight
103:					
Pinelli	Moderate: dusty	Moderate: dusty	Moderate: small stones, dusty	Moderate: dusty	Slight
104:					
Pinelli	Moderate: dusty	Moderate: dusty	Moderate: slope, small stones, dusty	Moderate: dusty	Slight
105:					
Pinelli	Moderate: dusty	Moderate: dusty	Moderate: slope, small stones, dusty	Moderate: dusty	Slight
Weingart	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Slight	Severe: excess sodium
Gerdrum	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Slight	Severe: excess sodium

RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
106: Riverwash.					
107: Rivra loam	Severe: flooding, wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness, droughty
Rivra gravelly sandy loam	Severe: flooding, wetness	Severe: wetness	Severe: small stones, wetness, flooding	Severe: wetness	Severe: wetness, droughty, flooding
108: Rock outcrop.					
109: Rock outcrop.					
Cabbart	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, erodes easily	Severe: slope, depth to rock
Kirby	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: small stones, droughty, slope
110: Ryell	Severe: flooding	Slight	Moderate: flooding	Slight	Moderate: droughty, flooding
111: Ryell	Severe: flooding	Moderate: dusty	Moderate: dusty	Moderate: dusty	Moderate: droughty
112: Ryell	Severe: flooding	Moderate: dusty	Moderate: flooding, dusty	Moderate: dusty	Moderate: flooding
113: Shambo	Slight	Slight	Severe: slope	Slight	Slight
114: Shambo	Slight	Slight	Moderate: slope	Slight	Slight
115: Spinekop	Slight	Slight	Slight	Slight	Slight
116: Subwell	Slight	Slight	Severe: slope	Slight	Moderate: droughty
Bigsheep	Severe: small stones	Severe: small stones	Severe: slope, small stones	Severe: small stones	Severe: small stones

RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
117:					
Subwell	Slight	Slight	Moderate: slope, small stones	Slight	Moderate: droughty
Cambert	Slight	Slight	Moderate: slope, depth to rock	Slight	Moderate: depth to rock
Bigsheep	Severe: small stones	Severe: small stones	Severe: small stones	Slight	Severe: small stones
118:					
Subwell	Slight	Slight	Moderate: slope, small stones	Slight	Moderate: droughty
Peerless	Slight	Slight	Moderate: slope, small stones	Slight	Slight
119:					
Tally	Slight	Slight	Moderate: slope, small stones	Slight	Slight
120:					
Tally	Slight	Slight	Moderate: slope, small stones	Slight	Slight
Hedstrom	Slight	Slight	Moderate: slope, small stones	Slight	Moderate: droughty
121:					
Tally	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope
Wabek	Moderate: slope, small stones	Moderate: slope, small stones	Severe: slope, small stones	Slight	Severe: droughty
Hedstrom	Slight	Slight	Severe: slope	Slight	Slight
122:					
Tinsley	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: small stones, droughty, slope
Delpoint	Severe: slope	Severe: slope	Severe: slope	Severe: slope, erodes easily	Severe: slope
Cabbart	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, erodes easily	Severe: slope, depth to rock
123:					
Ustic Torrifluvents.					

RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
124: Ustic Torriorthents. Borollic Natargids.					
125: Ustic Torriorthents. Rock outcrop.					
126: Ustic Torriorthents. Ustic Torrifluvents. Rock outcrop.					
127: Vanstel	Moderate: dusty	Moderate: dusty	Moderate: dusty	Moderate: dusty	Slight
128: Vanstel	Moderate: dusty	Moderate: dusty	Moderate: slope, dusty	Moderate: dusty	Slight
129: Wabek	Severe: slope	Severe: slope	Severe: slope, small stones	Moderate: slope	Severe: droughty, slope
130: Wabek	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: small stones, droughty, slope
Cambert	Severe: slope	Severe: slope	Severe: slope	Severe: erodes easily	Severe: slope
131: Yamac	Moderate: dusty	Moderate: dusty	Moderate: small stones, dusty	Moderate: dusty	Slight
132: Yamac	Moderate: dusty	Moderate: dusty	Moderate: slope, small stones, dusty	Moderate: dusty	Slight
133: Yamac	Moderate: dusty	Moderate: dusty	Moderate: slope, small stones, dusty	Moderate: dusty	Slight
Busby	Slight	Slight	Moderate: slope	Slight	Slight

RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
134:					
Yamac	Moderate: slope, dusty	Moderate: slope, dusty	Severe: slope	Severe: erodes easily	Moderate: slope
Busby	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope
135:					
Yamac	Moderate: slope, dusty	Moderate: slope, dusty	Severe: slope	Severe: erodes easily	Moderate: slope
Busby	Severe: slope	Severe: slope	Severe: slope	Moderate: slope	Severe: slope
Blackhall	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Moderate: slope	Severe: slope, depth to rock
136:					
Yamac	Moderate: dusty	Moderate: dusty	Moderate: slope, small stones, dusty	Moderate: dusty	Slight
Delpoint	Moderate: dusty	Moderate: dusty	Moderate: slope, depth to rock, dusty	Moderate: dusty	Moderate: depth to rock
137:					
Yamac	Moderate: slope, dusty	Moderate: slope, dusty	Severe: slope	Severe: erodes easily	Moderate: slope
Delpoint	Moderate: slope, dusty	Moderate: slope, dusty	Severe: slope	Severe: erodes easily	Moderate: slope, depth to rock
Cabbart	Severe: depth to rock	Severe: depth to rock	Severe: slope, depth to rock	Severe: erodes easily	Severe: depth to rock
138:					
Yamac	Moderate: dusty	Moderate: dusty	Moderate: slope, small stones, dusty	Moderate: dusty	Slight
Gerdrum	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Slight	Severe: excess sodium
139:					
Yawdim	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Severe: depth to rock
Cambeth	Moderate: dusty	Moderate: dusty	Moderate: slope, depth to rock, dusty	Moderate: dusty	Moderate: depth to rock

RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
140:					
Yetull	Moderate: too sandy	Moderate: too sandy	Moderate: too sandy	Moderate: too sandy	Moderate: droughty
Busby	Slight	Slight	Slight	Slight	Slight
141:					
Zatoville	Slight	Slight	Slight	Slight	Slight

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. If food, cover, or water is missing, inadequate, or inaccessible, wildlife will be scarce or will not inhabit the area.

If the soils have potential for habitat development, wildlife habitat can be created or improved by planting appropriate vegetation, properly managing the existing plant cover, and fostering the natural establishment of desirable plants.

Elements of Wildlife Habitat

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

Grain and seed crops are domestic grains and seed-producing herbaceous plants used by wildlife. Examples are wheat, rye, oats, and barley.

Grasses and legumes are domestic perennial grasses and herbaceous legumes planted for wildlife food and cover. Examples are fescue, bromegrass, timothy, orchardgrass, clover, alfalfa, trefoil, reed canarygrass, and crownvetch.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds, that provide food and cover for wildlife. Examples are bluestem, indiangrass, blueberry, goldenrod, lambsquarters, dandelions, blackberry, ragweed, wheatgrass, fescue, and nightshade.

The major soil properties affecting the growth of grain and forage crops and wild herbaceous plants are depth of the root zone, texture of the surface layer, the amount of water available to plants, wetness, salinity or sodicity, and flooding. The length of the growing season also is important.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage that wildlife eat. Examples are oak, poplar, boxelder, birch, maple, green ash, willow, and American elm. Examples of fruit-producing shrubs that are suitable for planting on soils that have good potential for these plants are hawthorn, honeysuckle, American plum, redosier dogwood, chokecherry, serviceberry, silver buffaloberry, and crabapple.

Coniferous plants are cone-bearing trees, shrubs, and ground cover that provide habitat or supply food in the form of browse, seed, or fruitlike cones. Examples are pine, spruce, hemlock, fir, yew, cedar, larch, and juniper.

The major soil properties affecting the growth of hardwood and coniferous trees and shrubs are depth of the root zone, the amount of water available to plants, and wetness.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Wetland plants produce food or cover for wetland wildlife. Examples of these plants are smartweed, wild millet, rushes, sedges, bulrushes, wild rice, arrowhead, waterplantain, pickerelweed, and cattail.

The major soil properties affecting wetland plants are texture of the surface layer, wetness, acidity or alkalinity, and slope.

Shallow water areas have an average depth of less than 5 feet. They are useful as habitat for some wildlife species. They are naturally wet areas or are created by dams, levees, or water-control structures in marshes or streams. Examples are muskrat marshes, waterfowl feeding areas, wildlife watering developments, beaver ponds, and other wildlife ponds.

The major soil properties affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability.

Kinds of Wildlife Habitat

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, and shrubs. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. The wildlife attracted to these areas include Hungarian partridge, pheasant, sharp-tailed grouse, sage grouse, meadowlark, field sparrow, killdeer, cottontail rabbit, and red fox.

Habitat for woodland wildlife consists of areas of hardwoods or conifers or a mixture of these and associated grasses, legumes, and wild herbaceous plants. The wildlife attracted to this habitat include wild

turkey, ruffed grouse, thrushes, woodpeckers, owls, tree squirrels, porcupine, raccoon, deer, elk, and black bear.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas that support water-tolerant plants. The wildlife attracted to this habitat include ducks, geese, herons, bitterns, rails, kingfishers, muskrat, otter, mink, and beaver.

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

Wildlife in Prairie County

Areas of habitat that are important for the wildlife in Prairie County include small narrow valleys and heads of small drainageways associated with hilly to very steep uplands. These areas commonly support a variety of shrubs and small trees, such as chokecherry, buffaloberry, snowberry, green ash, and boxelder, that are important both as forage and as cover for wildlife.

Irrigated and dryland farming has made possible the successful introduction of the ring-necked pheasant into the county, particularly in the bottom land along the Yellowstone and Powder Rivers. Different kinds of farming provide a variable land use pattern that includes small grain, irrigated crops, annual weeds, and brushy cover.

Land management practices that are beneficial to pheasant include the proper use of grazing land, the protection of woody cover from burning or eradication, and the retention of stubble and waste grain during winter by eliminating fall tillage. Woody plantings can be grown as shelterbelts and hedgerows or on cropland for the control of erosion. They are beneficial to pheasants and other nongame birds.

Sharp-tailed grouse are found in Prairie County throughout much of the prairie uplands, where grain fields, brushy cover, and an abundance of fruit-bearing shrubs, such as chokecherry, plum, rose, snowberry, skunkbush sumac, and buffaloberry, provide excellent habitat. Sharp-tailed grouse are somewhat adapted to modern farming. During winter they readily feed on grain in stubble, stacks, and cattle feedlots. During dry periods in July or August, they may gather in large shelterbelts where water and shade are available.

Populations of sharp-tailed grouse vary greatly between the dry sagebrush country and the more moist upland prairies. When populations are high, the breeding grouse extend their range well into marginal islands of native grassland, usually along drainageways surrounded by small grain. When populations are low, they are more restricted to the upper limits of drainageways, where stands of trees and shrubs intermix with grasslands.

The gray partridge, or Hungarian partridge, is an introduced bird from Europe. It is associated with cropland and grassland areas in the county. Hungarian partridges, like sharp-tailed grouse, exhibit fluctuations in populations that apparently result from changes in available habitat, weather changes, and disease.

Land management practices that are beneficial to sharp-tailed grouse and gray partridges include the proper use of grazing land, which ensures that sufficient vegetation remains for nesting, roosting, and the rearing of young, and the protection of woody vegetation in draws and along fence rows, which provides both food and shelter. The establishment of properly designed shelterbelts benefits the sharp-tailed grouse, especially during severe winter weather.

Sharp-tailed grouse and Hungarian partridges are in upland areas throughout the county. Areas that have grain fields, shelterbelts, windbreaks, brushy draws, and a mixture of trees, shrubs, and grasslands provide suitable habitat for these prairie species.

Sage grouse are found on sagebrush-covered rangeland throughout much of the county. The optimum habitat for sage grouse is characterized by communities of big sagebrush and silver sagebrush with a variety of forbs and grasses.

Merriam's turkeys, an introduced species, have been transplanted to several locations. Small, isolated populations are along the major drainageways in the southern and eastern parts of the county.

Pronghorn antelope are in the prairie areas, along with domestic livestock. The potential for maintaining pronghorn herds is dependent on the proper management of rangeland. The competition for food between livestock and pronghorns generally is not a serious problem on well managed range. Pronghorns utilize forbs and browse species that cattle only eat if they are forced to do so because of overgrazing or snow cover.

Both white-tailed and mule deer are found throughout the county. White-tailed deer most generally inhabit the lowlands along the Yellowstone and Powder Rivers and their tributaries. They also inhabit uplands in the northern part of the county. Mule deer are in many of the upland areas in brushy areas on bottom land and in areas of broken rangeland north and south of the Yellowstone River.

An introduced herd of bighorn sheep is in the extreme southwest corner of the county, west of the Powder River.

The Yellowstone and Powder Rivers and marshes, ponds, and reservoirs throughout the county provide

habitat for an abundance of waterfowl during spring and fall migrations. Ducks and a variety of shore and marsh birds use these bodies of water for resting, nesting, and the rearing of young. The Yellowstone River and its islands serve as important nesting and rearing areas for Canada geese. Beaver, mink, muskrat, and raccoon are found throughout the principal watercourses. Cottontail rabbits, jackrabbits, badger, ground squirrels, coyotes, foxes, and a variety of small mammals are found throughout Prairie County.

Populations of game and nongame species can be enhanced by applying conservation practices that improve habitat, such as the development of odd or irregularly shaped areas in or near farm land, protection from fire or grazing, and the establishment of woody vegetation that provides winter shelter. Wildlife can also be enhanced through the increased application of common conservation practices, including proper use of grazing land, planned grazing systems, stripcropping, minimum tillage, field windbreaks, and the construction of ponds.

Field offices of the Natural Resources Conservation Service maintain habitat management guides for a variety of wildlife species. Information about planning and establishing food and shelter for wildlife is available at these offices.

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 generally are 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, and 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, 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 generally are 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, potential for frost action, 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 the kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. It also shows the suitability of the soils for use as a daily cover for landfill.

Soil properties are important in selecting sites for sanitary facilities and in identifying limiting soil properties and site features to be considered in planning, design, and installation. Soil limitation ratings of *slight, moderate,* or *severe* are given for septic tank absorption fields, sewage lagoons, and trench and area sanitary landfills. Soil suitability ratings of *good, fair,* and *poor* are given for daily cover for landfill.

A rating of *slight* or *good* indicates that the soils have no limitations or that the limitations can be easily overcome. Good performance and low maintenance can be expected. A rating of *moderate* or *fair* indicates that the limitations should be recognized but generally can be overcome by good management or special design. A rating of *severe* or *poor* indicates that overcoming the limitations is difficult or impractical. Increased maintenance may be required.

Septic tank absorption fields are areas in which subsurface systems of tile or perforated pipe distribute effluent from a septic tank into the natural soil. The centerline of the tile is assumed to be at a depth of 24 inches. Only the part of the soil between depths of 24 and 60 inches is considered in making the ratings. The soil properties and site features considered are those that affect the absorption of the effluent, those that affect the construction and maintenance of the system, and those that may affect public health.

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, relatively impervious soil material. Aerobic lagoons generally are designed to hold the sewage within a depth of 2 to 5 feet. Relatively impervious soil material for the lagoon floor and sides is desirable to

minimize seepage and contamination of local ground water.

The table "Sanitary Facilities" 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.

Trench sanitary landfill is an area where solid waste is disposed of by placing refuse in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil that is excavated from the trench. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. Soil properties that influence the risk of pollution, the ease of excavation, trafficability, and revegetation are the major considerations in rating the soils.

Area sanitary landfill is an area where solid waste is disposed of by placing refuse in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil that is imported from a source away from the site. A final cover of soil at least 2 feet thick is placed over the completed landfill. Soil properties that influence trafficability, revegetation, and the risk of pollution are the main considerations in rating the soils for area sanitary landfills.

Both types of landfill must be able to bear heavy vehicular traffic. Both types involve a risk of groundwater pollution. The ratings in the table "Sanitary Facilities" 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. The suitability of a soil for use as cover is based on properties that affect workability and the ease of digging, moving, and spreading the material over the refuse daily during both wet and dry periods.

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 soil blowing.

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 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.

Waste Management

Soil properties are important when organic waste is applied as fertilizer and wastewater is applied in irrigated areas. They also are important when the soil is used as a medium for the treatment and disposal of organic waste and wastewater. Unfavorable soil properties can result in environmental damage.

The use of organic waste and wastewater as production resources results in energy and resource conservation and minimizes the problems associated with waste disposal. If disposal is the goal, applying a maximum amount of the organic waste or the wastewater to a minimal area holds costs to a minimum and environmental damage is the main hazard. If reuse is the goal, a minimum amount should be applied to a maximum area and environmental damage is unlikely.

Interpretations developed for waste management may include ratings for manure- and food-processing waste, municipal sewage sludge, use of wastewater for irrigation, and treatment of wastewater by slow rate, overland flow, and rapid infiltration processes.

Specific information regarding waste management is available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

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.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In the table "Construction Materials," 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 one or more of the following characteristics: a plasticity index of more than 10, a high shrink-swell potential, many stones, slopes of more than 25 percent, or 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. In the table "Construction Materials," only the probability of finding material in suitable quantity in or below the soil 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 generally is 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 generally are 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 the table "Water Management," 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 more 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, or 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 soil blowing 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 soil blowing, low available water capacity, restricted rooting depth, toxic substances such as salts or sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

BUILDING SITE DEVELOPMENT

(The information in this report 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
1:						
Abor	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: low strength, slope	Severe: slope, too clayey
Cabbart	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: slope, depth to rock
Delpoint	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
2:						
Abor	Severe: cutbanks cave	Moderate: slope	Moderate: depth to rock, slope	Severe: slope	Severe: low strength	Severe: too clayey
Delpoint	Moderate: depth to rock, slope	Moderate: slope	Moderate: depth to rock, slope	Severe: slope	Moderate: low strength, slope, frost action	Moderate: droughty, slope, depth to rock
Kobar	Moderate: too clayey	Slight	Slight	Moderate: slope	Severe: low strength	Slight
3:						
Abor	Severe: cutbanks cave	Slight	Moderate: depth to rock	Moderate: slope	Severe: low strength	Moderate: droughty, depth to rock
Weingart	Moderate: depth to rock, too clayey	Slight	Moderate: depth to rock	Moderate: slope	Severe: low strength	Severe: excess sodium
Neldore	Severe: depth to rock	Moderate: slope, depth to rock	Severe: depth to rock	Severe: slope	Severe: low strength	Severe: droughty, depth to rock, too clayey
4:						
Aeric Fluvaquents.						
Cherry	Slight	Slight	Slight	Moderate: slope	Severe: low strength	Slight
5:						
Alona	Slight	Slight	Slight	Slight	Severe: low strength	Slight
6:						
Alona	Slight	Slight	Slight	Slight	Severe: low strength	Slight
Cambeth	Moderate: depth to rock	Slight	Moderate: depth to rock	Moderate: slope	Severe: low strength	Moderate: droughty, depth to rock
Gerdrum	Moderate: too clayey	Slight	Slight	Moderate: slope	Severe: low strength	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
7: Badland.						
8: Blackhall	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: droughty, slope, depth to rock
Busby	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Rock outcrop.						
9: Blackhall	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: slope, depth to rock
Delpoint	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Rock outcrop.						
10: Blanchard	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: droughty, slope
Dast	Moderate: depth to rock, slope	Moderate: slope	Moderate: depth to rock, slope	Severe: slope	Moderate: slope, frost action	Moderate: droughty, slope, depth to rock
11: Borollic Camborthids.						
Ustic Torrifluvents.						
12: Busby	Severe: cutbanks cave	Slight	Slight	Slight	Moderate: frost action	Slight
13: Busby	Slight	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
14: Busby	Slight	Slight	Slight	Slight	Moderate: frost action	Slight
15: Busby	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Moderate: slope
Blackhall	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	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
15:						
Twilight	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
16:						
Busby	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Moderate: slope
Twilight	Moderate: depth to rock, slope	Moderate: slope	Moderate: depth to rock, slope	Severe: slope	Moderate: slope, frost action	Moderate: slope, depth to rock
Blackhall	Severe: depth to rock	Moderate: slope, depth to rock	Severe: depth to rock	Severe: slope	Moderate: depth to rock, slope, frost action	Severe: droughty, depth to rock
17:						
Busby	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
Yetull	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: droughty
18:						
Busby	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Yetull	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: droughty, slope
Rock outcrop.						
19:						
Cabba	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: slope, depth to rock
Cambert	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Rock outcrop.						
20:						
Cabbart	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: droughty, slope, depth to rock
Rock outcrop.						
Yawdim	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: low strength, slope	Severe: slope, depth to rock
21:						
Cambert	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
21:						
Bigsheep	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: small stones, slope
Golva	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: low strength, slope, frost action	Moderate: slope
22:						
Cambert	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Cabba	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: slope, depth to rock
Cherry	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Severe: low strength	Moderate: slope
23:						
Cambert	Moderate: depth to rock, slope	Moderate: slope	Moderate: depth to rock, slope	Severe: slope	Moderate: low strength, slope, frost action	Moderate: droughty, slope, depth to rock
Cabba	Severe: depth to rock	Moderate: slope, depth to rock	Severe: depth to rock	Severe: slope	Moderate: depth to rock, low strength, slope	Severe: depth to rock
Dast	Moderate: depth to rock, slope	Moderate: slope	Moderate: depth to rock, slope	Severe: slope	Moderate: slope, frost action	Moderate: droughty, slope, depth to rock
24:						
Cambeth	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: low strength, slope	Severe: slope
Bigsheep	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: small stones, slope
25:						
Cambeth	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: low strength, slope	Severe: slope
Cabbart	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: slope, depth to rock
Kirby	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: droughty, slope
26:						
Cambeth	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: low strength, 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
26:						
Cabbart	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: slope, depth to rock
Lonna	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: low strength, slope	Severe: slope
27:						
Cambeth	Moderate: depth to rock, slope	Moderate: slope	Moderate: depth to rock, slope	Severe: slope	Severe: low strength	Moderate: slope, depth to rock
Cabbart	Severe: depth to rock	Moderate: slope, depth to rock	Severe: depth to rock	Severe: slope	Moderate: depth to rock, low strength, slope	Severe: depth to rock
Yawdim	Severe: depth to rock	Moderate: slope, depth to rock	Severe: depth to rock	Severe: slope	Severe: low strength	Severe: depth to rock
28:						
Cherry	Slight	Slight	Slight	Slight	Severe: low strength	Slight
29:						
Cherry	Slight	Slight	Slight	Moderate: slope	Severe: low strength	Slight
30:						
Cherry	Slight	Slight	Slight	Moderate: slope	Severe: low strength	Slight
Cambert	Moderate: depth to rock	Slight	Moderate: depth to rock	Moderate: slope	Moderate: low strength, frost action	Moderate: depth to rock
31:						
Cherry	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Severe: low strength	Moderate: slope
Cambert	Moderate: depth to rock, slope	Moderate: slope	Moderate: depth to rock, slope	Severe: slope	Moderate: low strength, slope, frost action	Moderate: slope, depth to rock
Cabba	Severe: depth to rock	Moderate: slope, depth to rock	Severe: depth to rock	Severe: slope	Moderate: depth to rock, low strength, slope	Severe: depth to rock
32:						
Cherry	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Severe: low strength	Moderate: slope
Lisk	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Cabba	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	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
33:						
Cherry	Slight	Slight	Slight	Moderate: slope	Severe: low strength	Slight
Typic Ustifluvents.						
34:						
Chinook	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
35:						
Chinook	Slight	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
Kremlin	Slight	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
36:						
Chinook	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Moderate: slope
Tinsley	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: small stones, droughty, slope
37:						
Chinook	Slight	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
Twilight	Moderate: depth to rock	Slight	Moderate: depth to rock	Moderate: slope	Moderate: frost action	Moderate: droughty, depth to rock
38:						
Chinook	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Moderate: slope
Twilight	Moderate: depth to rock, slope	Moderate: slope	Moderate: depth to rock, slope	Severe: slope	Moderate: slope, frost action	Moderate: droughty, slope, depth to rock
Blackhall	Severe: depth to rock	Moderate: slope, depth to rock	Severe: depth to rock	Severe: slope	Moderate: depth to rock, slope, frost action	Severe: droughty, depth to rock
39:						
Creed	Moderate: too clayey	Slight	Slight	Moderate: slope	Severe: low strength	Severe: excess sodium
Gerdrum	Moderate: too clayey	Slight	Slight	Moderate: slope	Severe: low strength	Severe: excess sodium
40:						
Dast	Moderate: depth to rock, slope	Moderate: slope	Moderate: depth to rock, slope	Severe: slope	Moderate: slope, frost action	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
40:						
Lisk	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Moderate: slope
41:						
Degrand	Severe: cutbanks cave	Slight	Slight	Slight	Moderate: frost action	Slight
42:						
Degrand	Severe: cutbanks cave	Slight	Slight	Slight	Moderate: frost action	Slight
43:						
Delpoint	Moderate: depth to rock, slope	Moderate: slope	Moderate: depth to rock, slope	Severe: slope	Moderate: low strength, slope, frost action	Moderate: droughty, slope, depth to rock
Busby	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Moderate: slope
Blackhall	Severe: depth to rock	Moderate: slope, depth to rock	Severe: depth to rock	Severe: slope	Moderate: depth to rock, slope, frost action	Severe: depth to rock
44:						
Delpoint	Moderate: depth to rock, slope	Moderate: slope	Moderate: depth to rock, slope	Severe: slope	Moderate: low strength, slope, frost action	Moderate: slope, depth to rock
Cabbart	Severe: depth to rock	Moderate: slope, depth to rock	Severe: depth to rock	Severe: slope	Moderate: depth to rock, low strength, slope	Severe: depth to rock
45:						
Delpoint	Moderate: depth to rock, slope	Moderate: slope	Moderate: depth to rock, slope	Severe: slope	Moderate: low strength, slope, frost action	Moderate: droughty, slope, depth to rock
Cabbart	Severe: depth to rock	Moderate: slope, depth to rock	Severe: depth to rock	Severe: slope	Moderate: depth to rock, low strength, slope	Severe: depth to rock
Yawdim	Severe: depth to rock	Moderate: slope, depth to rock	Severe: depth to rock	Severe: slope	Severe: low strength	Severe: droughty, depth to rock
46:						
Delpoint	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Cabbart	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: droughty, 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
46:						
Yawdim	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: low strength, slope	Severe: slope, depth to rock
47:						
Delpoint	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Yamac	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Moderate: slope
Cabbart	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: slope, depth to rock
48:						
Ethridge	Moderate: too clayey	Slight	Slight	Slight	Severe: low strength	Slight
49:						
Ethridge	Slight	Slight	Slight	Moderate: slope	Severe: low strength	Slight
50:						
Evanston	Slight	Slight	Slight	Slight	Moderate: low strength, frost action	Slight
51:						
Evanston	Slight	Slight	Slight	Moderate: slope	Moderate: low strength, frost action	Slight
52:						
Evanston	Slight	Slight	Slight	Moderate: slope	Moderate: low strength, frost action	Slight
Delpoint	Moderate: depth to rock	Slight	Moderate: depth to rock	Moderate: slope	Moderate: low strength, frost action	Moderate: droughty, depth to rock
53:						
Farnuf	Slight	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
54:						
Floweree	Slight	Slight	Slight	Slight	Severe: low strength	Slight
55:						
Floweree	Slight	Slight	Slight	Moderate: slope	Severe: low strength	Slight
56:						
Floweree	Slight	Slight	Slight	Slight	Severe: low strength	Slight
57:						
Floweree	Slight	Slight	Slight	Slight	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
58:						
Floweree	Slight	Slight	Slight	Slight	Severe: low strength	Slight
Cambeth	Moderate: depth to rock	Slight	Moderate: depth to rock	Slight	Severe: low strength	Moderate: depth to rock
59:						
Gerdrum	Moderate: too clayey	Slight	Slight	Slight	Severe: low strength	Severe: excess sodium
Creed	Moderate: too clayey	Slight	Slight	Slight	Severe: low strength	Severe: excess sodium
60:						
Gerdrum	Moderate: too clayey	Slight	Slight	Moderate: slope	Severe: low strength	Severe: excess sodium
Creed	Moderate: too clayey	Slight	Slight	Moderate: slope	Severe: low strength	Severe: excess sodium
61:						
Gerdrum	Moderate: too clayey, slope	Moderate: slope	Moderate: slope	Severe: slope	Severe: low strength	Severe: excess sodium
Creed	Moderate: too clayey, slope	Moderate: slope	Moderate: slope	Severe: slope	Severe: low strength	Severe: excess sodium
62:						
Glendive	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding
63:						
Glendive	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding
64:						
Golva	Slight	Slight	Slight	Slight	Moderate: low strength, frost action	Slight
65:						
Golva	Slight	Slight	Slight	Moderate: slope	Moderate: low strength, frost action	Slight
66:						
Golva	Slight	Slight	Slight	Moderate: slope	Moderate: low strength, frost action	Slight
Cambert	Moderate: depth to rock	Slight	Moderate: depth to rock	Moderate: slope	Moderate: low strength, frost action	Moderate: depth to rock
67:						
Hanly	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: droughty, flooding

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
67:						
Glendive	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding
68:						
Havre	Moderate: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding
69:						
Havre	Moderate: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding
70:						
Havre	Moderate: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding
Harlem	Moderate: too clayey, flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: low strength, flooding	Severe: flooding, too clayey
71:						
Hedstrom	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
72:						
Ismay	Moderate: wetness, flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: excess salt, flooding
73:						
Kobar	Moderate: too clayey	Slight	Slight	Slight	Severe: low strength	Slight
74:						
Kobar	Moderate: too clayey	Slight	Slight	Moderate: slope	Severe: low strength	Slight
75:						
Kobar	Moderate: too clayey	Slight	Slight	Moderate: slope	Severe: low strength	Slight
Gerdrum	Moderate: too clayey	Slight	Slight	Moderate: slope	Severe: low strength	Severe: excess sodium
76:						
Kremlin	Slight	Slight	Slight	Slight	Moderate: frost action	Slight
77:						
Kremlin	Slight	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
78:						
Kremlin	Slight	Slight	Slight	Slight	Moderate: frost action	Slight
Busby	Severe: cutbanks cave	Slight	Slight	Slight	Moderate: frost action	Slight
79:						
Kremlin	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	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
79:						
Tinsley	Severe: cutbanks cave	Moderate: slope, large stones	Moderate: slope, large stones	Severe: slope	Moderate: slope, large stones	Severe: droughty
Degrand	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
80:						
Lihen	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: droughty, slope
81:						
Lihen	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: droughty, slope
Parshall	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Moderate: slope
Yetull	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: small stones, large stones, droughty
82:						
Lihen	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Tinsley	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: droughty, slope
83:						
Lihen	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Yetull	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: small stones, droughty, slope
84:						
Lonna	Slight	Slight	Slight	Slight	Severe: low strength	Slight
85:						
Lonna	Slight	Slight	Slight	Moderate: slope	Severe: low strength	Slight
86:						
Lonna	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Severe: low strength	Moderate: slope
87:						
Lonna	Slight	Slight	Slight	Slight	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
88:						
Lonna	Slight	Slight	Slight	Moderate: slope	Severe: low strength	Slight
89:						
Lonna	Slight	Slight	Slight	Moderate: slope	Severe: low strength	Slight
Cambeth	Moderate: depth to rock	Slight	Moderate: depth to rock	Moderate: slope	Severe: low strength	Moderate: droughty, depth to rock
90:						
Lonna	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Severe: low strength	Moderate: slope
Cambeth	Moderate: depth to rock, slope	Moderate: slope	Moderate: depth to rock, slope	Severe: slope	Severe: low strength	Moderate: slope, depth to rock
Cabbart	Severe: depth to rock	Moderate: slope, depth to rock	Severe: depth to rock	Severe: slope	Moderate: depth to rock, low strength, slope	Severe: droughty, depth to rock
91:						
Lonna	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Severe: low strength	Moderate: slope
Cambeth	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: low strength, slope	Severe: slope
Cabbart	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: slope, depth to rock
92:						
Macar	Slight	Slight	Slight	Moderate: slope	Moderate: low strength, frost action	Slight
93:						
Marias	Severe: cutbanks cave	Slight	Slight	Slight	Severe: low strength	Severe: too clayey
94:						
Marvan	Severe: cutbanks cave	Slight	Slight	Slight	Severe: low strength	Severe: too clayey
95:						
Marvan	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Severe: low strength	Severe: too clayey
96:						
Marvan	Severe: cutbanks cave	Slight	Slight	Slight	Severe: low strength	Severe: too clayey
Vanda	Moderate: too clayey	Slight	Slight	Slight	Severe: low strength	Severe: too clayey

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
97:						
Neldore	Severe: depth to rock	Moderate: slope, depth to rock	Severe: depth to rock	Severe: slope	Severe: low strength	Severe: depth to rock, too clayey
Rock outcrop.						
98:						
Neldore	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: low strength, slope	Severe: droughty, slope, depth to rock
Rock outcrop.						
Abor	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: low strength, slope	Severe: slope, too clayey
99:						
Neldore	Severe: depth to rock	Moderate: slope, depth to rock	Severe: depth to rock	Severe: slope	Severe: low strength	Severe: droughty, depth to rock, too clayey
Weingart	Moderate: depth to rock, too clayey	Slight	Moderate: depth to rock	Moderate: slope	Severe: low strength	Severe: excess sodium
Kirby	Moderate: large stones, slope	Moderate: slope, large stones	Moderate: slope, large stones	Severe: slope	Moderate: slope, large stones	Severe: droughty
100:						
Nesda	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding
101:						
Parshall	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
102:						
Peerless	Slight	Slight	Slight	Slight	Moderate: frost action	Slight
103:						
Pinelli	Slight	Slight	Slight	Slight	Moderate: low strength	Slight
104:						
Pinelli	Slight	Slight	Slight	Moderate: slope	Moderate: low strength	Slight
105:						
Pinelli	Slight	Slight	Slight	Slight	Moderate: low strength	Slight
Weingart	Moderate: depth to rock, too clayey	Slight	Moderate: depth to rock	Slight	Severe: low strength	Severe: excess sodium
Gerdrum	Moderate: too clayey	Slight	Slight	Slight	Severe: low strength	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
106: Riverwash.						
107: Rivra loam	Severe: cutbanks cave, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: wetness, flooding	Severe: wetness, droughty
Rivra gravelly sandy loam	Severe: cutbanks cave, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: wetness, flooding	Severe: wetness, droughty, flooding
108: Rock outcrop.						
109: Rock outcrop.						
Cabbart	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: slope, depth to rock
Kirby	Severe: large stones, slope	Severe: slope, large stones	Severe: slope, large stones	Severe: slope, large stones	Severe: slope, large stones	Severe: small stones, droughty, slope
110: Ryell	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: droughty, flooding
111: Ryell	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding, frost action	Moderate: droughty
112: Ryell	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding
113: Shambo	Slight	Slight	Slight	Moderate: slope	Moderate: low strength, frost action	Slight
114: Shambo	Slight	Slight	Slight	Slight	Moderate: low strength, frost action	Slight
115: Spinekop	Slight	Slight	Slight	Slight	Moderate: frost action	Slight
116: Subwell	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: droughty
Bigsheep	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Severe: small stones

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
117:						
Subwell	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: droughty
Cambert	Moderate: depth to rock	Slight	Moderate: depth to rock	Moderate: slope	Moderate: low strength, frost action	Moderate: depth to rock
Bigsheep	Slight	Slight	Slight	Moderate: slope	Moderate: frost action	Severe: small stones
118:						
Subwell	Severe: cutbanks cave	Slight	Slight	Slight	Moderate: frost action	Moderate: droughty
Peerless	Slight	Slight	Slight	Slight	Moderate: frost action	Slight
119:						
Tally	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
120:						
Tally	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
Hedstrom	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: droughty
121:						
Tally	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Moderate: slope
Wabek	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Severe: droughty
Hedstrom	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
122:						
Tinsley	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: small stones, droughty, slope
Delpoint	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Cabbart	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: slope, depth to rock
123:						
Ustic Torrifluvents.						
124:						
Ustic Torriorthents.						
Borollic Natargids.						

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
125:						
Ustic Torriorthents.						
Rock outcrop.						
126:						
Ustic Torriorthents.						
Ustic Torrifluvents.						
Rock outcrop.						
127:						
Vanstel	Slight	Slight	Slight	Slight	Severe: low strength	Slight
128:						
Vanstel	Slight	Slight	Slight	Moderate: slope	Severe: low strength	Slight
129:						
Wabek	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: droughty, slope
130:						
Wabek	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: small stones, droughty, slope
Cambert	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
131:						
Yamac	Slight	Slight	Slight	Slight	Moderate: frost action	Slight
132:						
Yamac	Slight	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
133:						
Yamac	Slight	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
Busby	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
134:						
Yamac	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Moderate: slope
Busby	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	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
135:						
Yamac	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Moderate: slope
Busby	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Blackhall	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: slope, depth to rock
136:						
Yamac	Slight	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
Delpoint	Moderate: depth to rock	Slight	Moderate: depth to rock	Moderate: slope	Moderate: low strength, frost action	Moderate: depth to rock
137:						
Yamac	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Moderate: slope
Delpoint	Moderate: depth to rock, slope	Moderate: slope	Moderate: depth to rock, slope	Severe: slope	Moderate: low strength, slope, frost action	Moderate: slope, depth to rock
Cabbart	Severe: depth to rock	Moderate: slope, depth to rock	Severe: depth to rock	Severe: slope	Moderate: depth to rock, low strength, slope	Severe: depth to rock
138:						
Yamac	Slight	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
Gerdrum	Moderate: too clayey	Slight	Slight	Moderate: slope	Severe: low strength	Severe: excess sodium
139:						
Yawdim	Severe: depth to rock	Moderate: depth to rock	Severe: depth to rock	Moderate: slope, depth to rock	Severe: low strength	Severe: depth to rock
Cambeth	Moderate: depth to rock	Slight	Moderate: depth to rock	Moderate: slope	Severe: low strength	Moderate: depth to rock
140:						
Yetull	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: droughty
Busby	Severe: cutbanks cave	Slight	Slight	Slight	Moderate: frost action	Slight
141:						
Zatoville	Moderate: too clayey, wetness	Slight	Moderate: wetness	Slight	Severe: low strength	Slight

SANITARY FACILITIES

(The information in this report 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
1:					
Abor	Severe: depth to rock, percs slowly, slope	Severe: depth to rock, slope	Severe: depth to rock, slope, too clayey	Severe: depth to rock, slope	Poor: depth to rock, too clayey, hard to pack
Cabbart	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Delpoint	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
2:					
Abor	Severe: depth to rock, percs slowly	Severe: depth to rock, slope	Severe: depth to rock, too clayey	Severe: depth to rock	Poor: depth to rock, too clayey, hard to pack
Delpoint	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock
Kobar	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
3:					
Abor	Severe: depth to rock, percs slowly	Severe: depth to rock	Severe: depth to rock, too clayey	Severe: depth to rock	Poor: depth to rock, too clayey, hard to pack
Weingart	Severe: depth to rock, percs slowly	Severe: depth to rock	Severe: depth to rock	Slight	Poor: depth to rock, hard to pack
Neldore	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock, hard to pack
4: Aeric Fluvaquents.					
Cherry	Severe: percs slowly	Moderate: slope	Moderate: too clayey	Slight	Fair: too clayey
5:					
Alona	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
6:					
Alona	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
Cambeth	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
6:					
Gerdrum	Severe: percs slowly	Moderate: slope	Slight	Slight	Poor: hard to pack
7:					
Badland.					
8:					
Blackhall	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Busby	Severe: slope	Severe: seepage, slope	Severe: slope	Severe: slope	Poor: slope
Rock outcrop.					
9:					
Blackhall	Severe: depth to rock, slope	Severe: seepage, depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Delpoint	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Rock outcrop.					
10:					
Blanchard	Severe: poor filter	Severe: seepage, slope	Severe: seepage, too sandy	Severe: seepage	Poor: too sandy
Dast	Severe: depth to rock	Severe: seepage, depth to rock, slope	Severe: depth to rock, seepage	Severe: depth to rock, seepage	Poor: depth to rock
11:					
Borollic Camborthids.					
Ustic Torrifluvents.					
12:					
Busby	Slight	Severe: seepage	Slight	Slight	Good
13:					
Busby	Slight	Severe: seepage	Slight	Slight	Good
14:					
Busby	Slight	Severe: seepage	Slight	Slight	Good
15:					
Busby	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
15:					
Blackhall	Severe: depth to rock, slope	Severe: seepage, depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Twilight	Severe: depth to rock, slope	Severe: seepage, depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
16:					
Busby	Moderate: slope	Severe: seepage, slope	Moderate: slope	Moderate: slope	Fair: slope
Twilight	Severe: depth to rock	Severe: seepage, depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock
Blackhall	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock
17:					
Busby	Slight	Severe: seepage	Slight	Slight	Good
Yetull	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy
18:					
Busby	Severe: slope	Severe: seepage, slope	Severe: slope	Severe: slope	Poor: slope
Yetull	Severe: poor filter	Severe: seepage, slope	Severe: too sandy	Moderate: slope	Poor: seepage, too sandy
Rock outcrop.					
19:					
Cabba	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Poor: depth to rock, slope
Cambert	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Poor: depth to rock, slope
Rock outcrop.					
20:					
Cabbart	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Rock outcrop.					

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
20:					
Yawdim	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, hard to pack, slope
21:					
Cambert	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Poor: depth to rock, slope
Bigsheep	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: seepage, small stones, slope
Golva	Moderate: percs slowly, slope	Severe: slope	Moderate: slope, too clayey	Moderate: slope	Fair: too clayey, slope
22:					
Cambert	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Poor: depth to rock, slope
Cabba	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Poor: depth to rock, slope
Cherry	Severe: percs slowly	Severe: slope	Moderate: slope, too clayey	Moderate: slope	Fair: too clayey, slope
23:					
Cambert	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Severe: depth to rock	Poor: depth to rock
Cabba	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Severe: depth to rock	Poor: depth to rock
Dast	Severe: depth to rock	Severe: seepage, depth to rock, slope	Severe: depth to rock, seepage	Severe: depth to rock, seepage	Poor: depth to rock
24:					
Cambeth	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Bigsheep	Severe: slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Poor: small stones, slope
25:					
Cambeth	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, 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
25:					
Cabbart	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Kirby	Severe: poor filter, slope	Severe: seepage, slope, large stones	Severe: slope, large stones	Severe: slope	Poor: seepage, small stones, slope
26:					
Cambeth	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Cabbart	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Lonna	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: slope
27:					
Cambeth	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock
Cabbart	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock
Yawdim	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock, hard to pack
28:					
Cherry	Severe: percs slowly	Slight	Moderate: too clayey	Slight	Fair: too clayey
29:					
Cherry	Severe: percs slowly	Moderate: slope	Moderate: too clayey	Slight	Fair: too clayey
30:					
Cherry	Severe: percs slowly	Moderate: slope	Moderate: too clayey	Slight	Fair: too clayey
Cambert	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Poor: depth to rock
31:					
Cherry	Severe: percs slowly	Severe: slope	Moderate: slope, too clayey	Moderate: slope	Fair: too clayey, slope
Cambert	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Severe: depth to rock	Poor: depth to rock
Cabba	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Severe: depth to rock	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
32:					
Cherry	Severe: percs slowly	Severe: slope	Moderate: slope, too clayey	Moderate: slope	Fair: too clayey, slope
Lisk	Severe: slope	Severe: seepage, slope	Severe: seepage, slope	Severe: seepage, slope	Poor: slope
Cabba	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Poor: depth to rock, slope
33:					
Cherry	Severe: percs slowly	Moderate: slope	Moderate: too clayey	Slight	Fair: too clayey
Typic Ustifluvents.					
34:					
Chinook	Slight	Severe: seepage	Slight	Slight	Good
35:					
Chinook	Slight	Severe: seepage	Slight	Slight	Good
Kremlin	Moderate: percs slowly	Moderate: seepage, slope	Slight	Slight	Good
36:					
Chinook	Moderate: slope	Severe: seepage, slope	Moderate: slope	Moderate: slope	Fair: slope
Tinsley	Severe: poor filter, slope	Severe: seepage, slope	Severe: seepage, slope, too sandy	Severe: seepage, slope	Poor: seepage, too sandy, small stones
37:					
Chinook	Slight	Severe: seepage	Slight	Slight	Good
Twilight	Severe: depth to rock	Severe: seepage, depth to rock	Severe: depth to rock	Slight	Poor: depth to rock
38:					
Chinook	Moderate: slope	Severe: seepage, slope	Moderate: slope	Moderate: slope	Fair: slope
Twilight	Severe: depth to rock	Severe: seepage, depth to rock, slope	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
38:					
Blackhall	Severe: depth to rock	Severe: seepage, depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock
39:					
Creed	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
Gerdrum	Severe: percs slowly	Moderate: slope	Slight	Slight	Poor: hard to pack
40:					
Dast	Severe: depth to rock	Severe: seepage, depth to rock, slope	Severe: depth to rock, seepage	Severe: depth to rock, seepage	Poor: depth to rock
Lisk	Moderate: slope	Severe: seepage, slope	Severe: seepage	Severe: seepage	Fair: slope
41:					
Degrand	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy
42:					
Degrand	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy
43:					
Delpoint	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock
Busby	Moderate: slope	Severe: seepage, slope	Moderate: slope	Moderate: slope	Fair: slope
Blackhall	Severe: depth to rock	Severe: seepage, depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock
44:					
Delpoint	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock
Cabbart	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock
45:					
Delpoint	Severe: depth to rock	Severe: depth to rock, slope	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
45:					
Cabbart	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock
Yawdim	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock, hard to pack
46:					
Delpoint	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Cabbart	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Yawdim	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, hard to pack, slope
47:					
Delpoint	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Yamac	Moderate: percs slowly, slope	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
Cabbart	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
48:					
Ethridge	Severe: percs slowly	Slight	Slight	Slight	Good
49:					
Ethridge	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
50:					
Evanston	Moderate: percs slowly	Moderate: seepage	Slight	Slight	Good
51:					
Evanston	Moderate: percs slowly	Moderate: seepage, slope	Slight	Slight	Good
52:					
Evanston	Moderate: percs slowly	Moderate: seepage, slope	Slight	Slight	Good
Delpoint	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
53:					
Farnuf	Moderate: percs slowly	Moderate: seepage, slope	Moderate: too clayey	Slight	Fair: too clayey
54:					
Floweree	Severe: percs slowly	Slight	Slight	Slight	Good
55:					
Floweree	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
56:					
Floweree	Severe: percs slowly	Slight	Slight	Slight	Good
57:					
Floweree	Severe: percs slowly	Slight	Slight	Slight	Good
58:					
Floweree	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
Cambeth	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Poor: depth to rock
59:					
Gerdrum	Severe: percs slowly	Slight	Slight	Slight	Poor: hard to pack
Creed	Severe: percs slowly	Slight	Slight	Slight	Good
60:					
Gerdrum	Severe: percs slowly	Moderate: slope	Slight	Slight	Poor: hard to pack
Creed	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
61:					
Gerdrum	Severe: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Poor: hard to pack
Creed	Severe: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
62:					
Glendive	Severe: flooding	Severe: seepage, flooding	Severe: flooding	Severe: flooding	Fair: too sandy
63:					
Glendive	Severe: flooding	Severe: seepage, flooding	Severe: flooding	Severe: flooding	Fair: too sandy
64:					
Golva	Moderate: percs slowly	Moderate: seepage, slope	Moderate: too clayey	Slight	Fair: too clayey

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
65:					
Golva	Moderate: percs slowly	Moderate: seepage, slope	Moderate: too clayey	Slight	Fair: too clayey
66:					
Golva	Moderate: percs slowly	Moderate: seepage, slope	Moderate: too clayey	Slight	Fair: too clayey
Cambert	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Poor: depth to rock
67:					
Hanly	Severe: flooding, poor filter	Severe: seepage, flooding	Severe: flooding, too sandy	Severe: flooding	Poor: seepage, too sandy
Glendive	Severe: flooding	Severe: seepage, flooding	Severe: flooding	Severe: flooding	Good
68:					
Havre	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Good
69:					
Havre	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Good
70:					
Havre	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Good
Harlem	Severe: flooding, percs slowly	Severe: flooding	Severe: flooding	Severe: flooding	Poor: hard to pack
71:					
Hedstrom	Severe: poor filter	Severe: seepage	Severe: seepage, too sandy	Severe: seepage	Poor: too sandy
72:					
Ismay	Severe: flooding, wetness, percs slowly	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Fair: wetness
73:					
Kobar	Severe: percs slowly	Slight	Slight	Slight	Good
74:					
Kobar	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
75:					
Kobar	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
Gerdrum	Severe: percs slowly	Moderate: slope	Slight	Slight	Poor: hard to pack

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
76:					
Kremlin	Moderate: percs slowly	Moderate: seepage	Slight	Slight	Good
77:					
Kremlin	Moderate: percs slowly	Moderate: seepage, slope	Slight	Slight	Good
78:					
Kremlin	Moderate: percs slowly	Moderate: seepage	Slight	Slight	Good
Busby	Slight	Severe: seepage	Slight	Slight	Good
79:					
Kremlin	Moderate: percs slowly, slope	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
Tinsley	Severe: poor filter	Severe: seepage, slope	Severe: seepage, too sandy, large stones	Severe: seepage	Poor: seepage, too sandy, small stones
Degrand	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy
80:					
Lihen	Severe: poor filter	Severe: seepage, slope	Severe: seepage, too sandy	Severe: seepage	Poor: too sandy
81:					
Lihen	Severe: poor filter	Severe: seepage, slope	Severe: seepage, too sandy	Severe: seepage	Poor: too sandy
Parshall	Moderate: slope	Severe: seepage, slope	Severe: seepage	Severe: seepage	Fair: too sandy, slope
Yetull	Severe: poor filter	Severe: seepage, slope	Severe: too sandy	Moderate: slope	Poor: seepage, too sandy
82:					
Lihen	Severe: poor filter, slope	Severe: seepage, slope	Severe: seepage, slope, too sandy	Severe: seepage, slope	Poor: too sandy, slope
Tinsley	Severe: poor filter, slope	Severe: seepage, slope	Severe: seepage, slope, too sandy	Severe: seepage, slope	Poor: seepage, too sandy, small stones

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
83:					
Lihen	Severe: poor filter, slope	Severe: seepage, slope	Severe: seepage, slope, too sandy	Severe: seepage, slope	Poor: too sandy, slope
Yetull	Severe: poor filter, slope	Severe: seepage, slope	Severe: slope, too sandy	Severe: slope	Poor: seepage, too sandy, slope
84:					
Lonna	Moderate: percs slowly	Moderate: seepage	Slight	Slight	Good
85:					
Lonna	Moderate: percs slowly	Moderate: seepage, slope	Slight	Slight	Good
86:					
Lonna	Moderate: percs slowly, slope	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
87:					
Lonna	Moderate: percs slowly	Moderate: seepage	Slight	Slight	Good
88:					
Lonna	Moderate: percs slowly	Moderate: seepage, slope	Slight	Slight	Good
89:					
Lonna	Moderate: percs slowly	Moderate: seepage, slope	Slight	Slight	Good
Cambeth	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Poor: depth to rock
90:					
Lonna	Moderate: percs slowly, slope	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
Cambeth	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock
Cabbart	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock
91:					
Lonna	Moderate: percs slowly, slope	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
Cambeth	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, 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
91:					
Cabbart	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
92:					
Macar	Moderate: percs slowly	Moderate: seepage, slope	Moderate: too clayey	Slight	Fair: too clayey
93:					
Marias	Severe: percs slowly	Slight	Severe: too clayey	Slight	Poor: too clayey, hard to pack
94:					
Marvan	Severe: percs slowly	Slight	Severe: too clayey	Slight	Poor: too clayey, hard to pack
95:					
Marvan	Severe: percs slowly	Moderate: slope	Severe: too clayey	Slight	Poor: too clayey, hard to pack
96:					
Marvan	Severe: percs slowly	Moderate: slope	Severe: too clayey	Slight	Poor: too clayey, hard to pack
Vanda	Severe: percs slowly	Moderate: slope	Slight	Slight	Poor: hard to pack
97:					
Neldore	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock, hard to pack
Rock outcrop.					
98:					
Neldore	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, hard to pack, slope
Rock outcrop.					
Abor	Severe: depth to rock, percs slowly, slope	Severe: depth to rock, slope	Severe: depth to rock, slope, too clayey	Severe: depth to rock, slope	Poor: depth to rock, too clayey, hard to pack
99:					
Neldore	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock, hard to pack
Weingart	Severe: depth to rock, percs slowly	Severe: depth to rock	Severe: depth to rock	Slight	Poor: depth to rock, hard to pack

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
99:					
Kirby	Severe: poor filter	Severe: seepage, slope, large stones	Severe: large stones	Moderate: slope	Poor: seepage, small stones
100:					
Nesda	Severe: flooding, poor filter	Severe: seepage, flooding	Severe: flooding, seepage, too sandy	Severe: flooding, seepage	Poor: seepage, too sandy, small stones
101:					
Parshall	Slight	Severe: seepage	Severe: seepage	Severe: seepage	Fair: too sandy
102:					
Peerless	Moderate: percs slowly	Moderate: seepage, slope	Slight	Slight	Poor: small stones
103:					
Pinelli	Severe: percs slowly	Slight	Slight	Slight	Good
104:					
Pinelli	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
105:					
Pinelli	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
Weingart	Severe: depth to rock, percs slowly	Severe: depth to rock	Severe: depth to rock	Slight	Poor: depth to rock, hard to pack
Gerdrum	Severe: percs slowly	Moderate: slope	Slight	Slight	Poor: hard to pack
106:					
Riverwash.					
107:					
Rivra loam	Severe: flooding, wetness, poor filter	Severe: seepage, flooding, wetness	Severe: flooding, wetness, too sandy	Severe: flooding, wetness	Poor: seepage, too sandy, small stones
Rivra gravelly sandy loam	Severe: flooding, wetness, poor filter	Severe: seepage, flooding, wetness	Severe: flooding, wetness, too sandy	Severe: flooding, wetness	Poor: seepage, too sandy, small stones
108:					
Rock outcrop.					
109:					
Rock outcrop.					
Cabbart	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, 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
109:					
Kirby	Severe: poor filter, slope, large stones	Severe: seepage, slope, large stones	Severe: slope, large stones	Severe: slope	Poor: seepage, small stones, slope
110:					
Ryell	Severe: flooding, poor filter	Severe: seepage, flooding	Severe: flooding, too sandy	Severe: flooding	Poor: seepage, too sandy, small stones
111:					
Ryell	Severe: poor filter	Severe: seepage	Severe: too sandy	Moderate: flooding	Poor: seepage, too sandy, small stones
112:					
Ryell	Severe: flooding, poor filter	Severe: seepage, flooding	Severe: flooding, too sandy	Severe: flooding	Poor: seepage, too sandy, small stones
113:					
Shambo	Moderate: percs slowly	Moderate: seepage, slope	Moderate: too clayey	Slight	Fair: too clayey
114:					
Shambo	Moderate: percs slowly	Moderate: seepage, slope	Moderate: too clayey	Slight	Fair: too clayey
115:					
Spinekop	Severe: percs slowly	Slight	Slight	Slight	Good
116:					
Subwell	Slight	Severe: seepage	Severe: seepage	Severe: seepage	Poor: seepage, small stones
Bigsheep	Moderate: percs slowly, slope	Severe: slope	Moderate: slope	Moderate: slope	Poor: seepage, small stones
117:					
Subwell	Slight	Severe: seepage	Severe: seepage	Severe: seepage	Poor: seepage, small stones
Cambert	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Poor: depth to rock
Bigsheep	Moderate: depth to rock, percs slowly	Moderate: seepage, depth to rock, slope	Severe: depth to rock	Moderate: depth to rock	Poor: small stones

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
118:					
Subwell	Moderate: percs slowly	Severe: seepage	Severe: seepage	Severe: seepage	Poor: seepage, small stones
Peerless	Moderate: percs slowly	Moderate: seepage, slope	Slight	Slight	Poor: small stones
119:					
Tally	Severe: poor filter	Severe: seepage	Severe: seepage, too sandy	Severe: seepage	Poor: too sandy
120:					
Tally	Severe: poor filter	Severe: seepage	Severe: seepage, too sandy	Severe: seepage	Poor: too sandy
Hedstrom	Severe: poor filter	Severe: seepage	Severe: seepage, too sandy	Severe: seepage	Poor: too sandy
121:					
Tally	Moderate: slope	Severe: seepage, slope	Severe: seepage	Severe: seepage	Fair: too sandy, slope
Wabek	Severe: poor filter	Severe: seepage, slope	Severe: seepage, too sandy	Severe: seepage	Poor: seepage, too sandy, small stones
Hedstrom	Severe: poor filter	Severe: seepage	Severe: seepage, too sandy	Severe: seepage	Poor: too sandy
122:					
Tinsley	Severe: poor filter, slope	Severe: seepage, slope, large stones	Severe: seepage, slope, too sandy	Severe: seepage, slope	Poor: seepage, too sandy, small stones
Delpoint	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Cabbart	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
123: Ustic Torrifluvents.					
124: Ustic Torriorthents.					
Borollic Natargids.					

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
125: Ustic Torriorthents.					
Rock outcrop.					
126: Ustic Torriorthents.					
Ustic Torrifluvents.					
Rock outcrop.					
127: Vanstel	Moderate: percs slowly	Moderate: seepage	Slight	Slight	Good
128: Vanstel	Moderate: percs slowly	Moderate: seepage, slope	Slight	Slight	Good
129: Wabek	Severe: poor filter, slope	Severe: seepage, slope	Severe: seepage, slope, too sandy	Severe: seepage, slope	Poor: seepage, too sandy, small stones
130: Wabek	Severe: poor filter, slope	Severe: seepage, slope	Severe: seepage, slope, too sandy	Severe: seepage, slope	Poor: seepage, too sandy, small stones
Cambert	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Poor: depth to rock, slope
131: Yamac	Moderate: percs slowly	Moderate: seepage	Slight	Slight	Good
132: Yamac	Moderate: percs slowly	Moderate: seepage, slope	Slight	Slight	Good
133: Yamac	Moderate: percs slowly	Moderate: seepage, slope	Slight	Slight	Good
Busby	Slight	Severe: seepage	Slight	Slight	Good
134: Yamac	Moderate: percs slowly, slope	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
134:					
Busby	Moderate: slope	Severe: seepage, slope	Moderate: slope	Moderate: slope	Fair: slope
135:					
Yamac	Moderate: percs slowly, slope	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
Busby	Severe: slope	Severe: seepage, slope	Severe: slope	Severe: slope	Poor: slope
Blackhall	Severe: depth to rock, slope	Severe: seepage, depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
136:					
Yamac	Moderate: percs slowly	Moderate: seepage, slope	Slight	Slight	Good
Delpoint	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Poor: depth to rock
137:					
Yamac	Moderate: percs slowly, slope	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
Delpoint	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock
Cabbart	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock
138:					
Yamac	Moderate: percs slowly	Moderate: seepage, slope	Slight	Slight	Good
Gerdrum	Severe: percs slowly	Moderate: slope	Slight	Slight	Poor: hard to pack
139:					
Yawdim	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Poor: depth to rock, hard to pack
Cambeth	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Poor: depth to rock
140:					
Yetull	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy
Busby	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
141: Zatoville	Severe: wetness, percs slowly	Slight	Severe: wetness	Severe: wetness	Fair: wetness

CONSTRUCTION MATERIALS

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
1:				
Abor	Poor: depth to rock, low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, slope
Cabbart	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, slope
Delpoint	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope
2:				
Abor	Poor: depth to rock, low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
Delpoint	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: depth to rock, too clayey, small stones
Kobar	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
3:				
Abor	Poor: depth to rock, low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
Weingart	Poor: depth to rock, low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt, excess sodium
Neldore	Poor: depth to rock, low strength	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey
4: Aeric Fluvaquents.				
Cherry	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
5:				
Alona	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: excess salt
6:				
Alona	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: excess salt
Cambeth	Poor: depth to rock, low strength	Improbable: excess fines	Improbable: excess fines	Fair: depth to rock, too clayey, thin layer

CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
6:				
Gerdrum	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess sodium
7:				
Badland.				
8:				
Blackhall	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, slope
Busby	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
Rock outcrop.				
9:				
Blackhall	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, slope
Delpoint	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
Rock outcrop.				
10:				
Blanchard	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy
Dast	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: depth to rock, small stones, thin layer
11:				
Borollic Camborthids.				
Ustic Torrifluvents.				
12:				
Busby	Good	Improbable: excess fines	Improbable: excess fines	Good
13:				
Busby	Good	Improbable: excess fines	Improbable: excess fines	Good
14:				
Busby	Good	Improbable: excess fines	Improbable: excess fines	Good
15:				
Busby	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope
Blackhall	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, slope

CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
15:				
Twilight	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope
16:				
Busby	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope
Twilight	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: depth to rock, thin layer, slope
Blackhall	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
17:				
Busby	Good	Improbable: excess fines	Improbable: excess fines	Good
Yetull	Good	Probable	Improbable: too sandy	Poor: too sandy
18:				
Busby	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
Yetull	Good	Probable	Improbable: too sandy	Poor: too sandy
Rock outcrop.				
19:				
Cabba	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, slope
Cambert	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope
Rock outcrop.				
20:				
Cabbart	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, slope
Rock outcrop.				
Yawdim	Poor: depth to rock, low strength, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, slope
21:				
Cambert	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope
Bigsheep	Poor: slope	Probable	Probable	Poor: small stones, area reclaim, slope

CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
21:				
Golva	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, slope
22:				
Cambert	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope
Cabba	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, slope
Cherry	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, slope
23:				
Cambert	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: depth to rock, too clayey, thin layer
Cabba	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
Dast	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: depth to rock, small stones, thin layer
24:				
Cambeth	Poor: depth to rock, low strength	Improbable: excess fines	Improbable: excess fines	Poor: slope
Bigsheep	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
25:				
Cambeth	Poor: depth to rock, low strength	Improbable: excess fines	Improbable: excess fines	Poor: slope
Cabbart	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, slope
Kirby	Poor: slope	Improbable: small stones, large stones	Improbable: large stones	Poor: small stones, area reclaim, slope
26:				
Cambeth	Poor: depth to rock, low strength	Improbable: excess fines	Improbable: excess fines	Poor: slope
Cabbart	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, slope

CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
26:				
Lonna	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: slope
27:				
Cambeth	Poor: depth to rock, low strength	Improbable: excess fines	Improbable: excess fines	Fair: depth to rock, too clayey, thin layer
Cabbart	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
Yawdim	Poor: depth to rock, low strength	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey
28:				
Cherry	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
29:				
Cherry	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
30:				
Cherry	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
Cambert	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: depth to rock, too clayey, thin layer
31:				
Cherry	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, slope
Cambert	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: depth to rock, too clayey, thin layer
Cabba	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
32:				
Cherry	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, slope
Lisk	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
Cabba	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, slope
33:				
Cherry	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
Typic Ustifluvents.				

CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
34:				
Chinook	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones
35:				
Chinook	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones
Kremlin	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, small stones
36:				
Chinook	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones, slope
Tinsley	Fair: large stones, slope	Probable	Probable	Poor: too sandy, small stones, area reclaim
37:				
Chinook	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones
Twilight	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: depth to rock, thin layer
38:				
Chinook	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones, slope
Twilight	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: depth to rock, thin layer, slope
Blackhall	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
39:				
Creed	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess sodium
Gerdrum	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt, excess sodium
40:				
Dast	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: depth to rock, small stones, thin layer
Lisk	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope
41:				
Degrand	Good	Probable	Probable	Poor: small stones

CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
42:				
Degrand	Good	Probable	Probable	Poor: small stones
43:				
Delpoint	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: depth to rock, too clayey, small stones
Busby	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope
Blackhall	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
44:				
Delpoint	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: depth to rock, too clayey, small stones
Cabbart	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
45:				
Delpoint	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: depth to rock, too clayey, small stones
Cabbart	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
Yawdim	Poor: depth to rock, low strength	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey
46:				
Delpoint	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
Cabbart	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, slope
Yawdim	Poor: depth to rock, low strength, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, slope
47:				
Delpoint	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope
Yamac	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, small stones, slope
Cabbart	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, slope

CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
48: Ethridge	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
49: Ethridge	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: thin layer
50: Evanston	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, large stones
51: Evanston	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, large stones
52: Evanston	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, large stones
Delpoint	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: depth to rock, too clayey, small stones
53: Farnuf	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, small stones, area reclaim
54: Floweree	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
55: Floweree	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
56: Floweree	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
57: Floweree	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
58: Floweree	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
Cambeth	Poor: depth to rock, low strength	Improbable: excess fines	Improbable: excess fines	Fair: depth to rock, too clayey, thin layer
59: Gerdrum	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess sodium

CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
59:				
Creed	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess sodium
60:				
Gerdrum	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt, excess sodium
Creed	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess sodium
61:				
Gerdrum	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt, excess sodium
Creed	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess sodium
62:				
Glendive	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones
63:				
Glendive	Good	Improbable: excess fines	Improbable: excess fines	Fair: too sandy, small stones, excess salt
64:				
Golva	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
65:				
Golva	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
66:				
Golva	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
Cambert	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: depth to rock, too clayey, thin layer
67:				
Hanly	Good	Probable	Improbable: too sandy	Poor: too sandy
Glendive	Good	Improbable: excess fines	Improbable: excess fines	Good
68:				
Havre	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey

CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
69:				
Havre	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
70:				
Havre	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
Harlem	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
71:				
Hedstrom	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, small stones, thin layer
72:				
Ismay	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Poor: excess salt
73:				
Kobar	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
74:				
Kobar	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
75:				
Kobar	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
Gerdrum	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt, excess sodium
76:				
Kremlin	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, small stones
77:				
Kremlin	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, small stones
78:				
Kremlin	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, small stones
Busby	Good	Improbable: excess fines	Improbable: excess fines	Good
79:				
Kremlin	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, small stones, slope

CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
79:				
Tinsley	Fair: large stones	Probable	Probable	Poor: too sandy, small stones, area reclaim
Degrand	Good	Probable	Probable	Poor: small stones
80:				
Lihen	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy
81:				
Lihen	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy
Parshall	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones, slope
Yetull	Good	Probable	Improbable: too sandy	Poor: too sandy
82:				
Lihen	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: too sandy, slope
Tinsley	Fair: large stones, slope	Probable	Probable	Poor: too sandy, small stones, area reclaim
83:				
Lihen	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: too sandy, slope
Yetull	Fair: slope	Probable	Improbable: too sandy	Poor: too sandy, small stones, slope
84:				
Lonna	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, excess salt
85:				
Lonna	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, excess salt
86:				
Lonna	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, excess salt, slope
87:				
Lonna	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, excess salt

CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
88:				
Lonna	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, excess salt
89:				
Lonna	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, excess salt
Cambeth	Poor: depth to rock, low strength	Improbable: excess fines	Improbable: excess fines	Fair: depth to rock, too clayey, thin layer
90:				
Lonna	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, excess salt, slope
Cambeth	Poor: depth to rock, low strength	Improbable: excess fines	Improbable: excess fines	Fair: depth to rock, too clayey, thin layer
Cabbart	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
91:				
Lonna	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, excess salt, slope
Cambeth	Poor: depth to rock, low strength	Improbable: excess fines	Improbable: excess fines	Poor: slope
Cabbart	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, slope
92:				
Macar	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
93:				
Marias	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
94:				
Marvan	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
95:				
Marvan	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
96:				
Marvan	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey

CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
96:				
Vanda	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt
97:				
Neldore	Poor: depth to rock, low strength	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey
Rock outcrop.				
98:				
Neldore	Poor: depth to rock, low strength, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, slope
Rock outcrop.				
Abor	Poor: depth to rock, low strength, slope	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, slope
99:				
Neldore	Poor: depth to rock, low strength	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey
Weingart	Poor: depth to rock, low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt, excess sodium
Kirby	Fair: large stones	Improbable: small stones, large stones	Improbable: large stones	Poor: small stones, area reclaim
100:				
Nesda	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
101:				
Parshall	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones
102:				
Peerless	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
103:				
Pinelli	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Poor: thin layer
104:				
Pinelli	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Poor: thin layer
105:				
Pinelli	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Poor: thin layer

CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
105:				
Weingart	Poor: depth to rock, low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt, excess sodium
Gerdrum	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt, excess sodium
106:				
Riverwash.				
107:				
Rivra loam	Poor: wetness	Probable	Probable	Poor: too sandy, small stones, area reclaim
Rivra gravelly sandy loam	Poor: wetness	Probable	Probable	Poor: too sandy, small stones, area reclaim
108:				
Rock outcrop.				
109:				
Rock outcrop.				
Cabbart	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, slope
Kirby	Poor: large stones, slope	Improbable: small stones, large stones	Improbable: large stones	Poor: small stones, area reclaim, slope
110:				
Ryell	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
111:				
Ryell	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
112:				
Ryell	Good	Probable	Probable	Poor: small stones, area reclaim
113:				
Shambo	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
114:				
Shambo	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey

CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
115:				
Spinekop	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
116:				
Subwell	Good	Probable	Probable	Poor: small stones, area reclaim
Bigsheep	Good	Probable	Probable	Poor: small stones, area reclaim
117:				
Subwell	Good	Probable	Probable	Poor: small stones, area reclaim
Cambert	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: depth to rock, too clayey, thin layer
Bigsheep	Fair: depth to rock, thin layer	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
118:				
Subwell	Good	Probable	Probable	Poor: small stones, area reclaim
Peerless	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
119:				
Tally	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones, thin layer
120:				
Tally	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy
Hedstrom	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy
121:				
Tally	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones, slope
Wabek	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
Hedstrom	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, small stones, thin layer

CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
122:				
Tinsley	Poor: slope	Probable	Probable	Poor: too sandy, small stones, area reclaim
Delpoint	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
Cabbart	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, slope
123:				
Ustic Torrifluvents.				
124:				
Ustic Torriorthents.				
Borollic Natargids.				
125:				
Ustic Torriorthents.				
Rock outcrop.				
126:				
Ustic Torriorthents.				
Ustic Torrifluvents.				
Rock outcrop.				
127:				
Vanstel	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
128:				
Vanstel	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
129:				
Wabek	Fair: slope	Probable	Probable	Poor: too sandy, small stones, area reclaim
130:				
Wabek	Poor: slope	Probable	Probable	Poor: too sandy, small stones, area reclaim
Cambert	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope

CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
131:				
Yamac	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, small stones
132:				
Yamac	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, small stones
133:				
Yamac	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, small stones
Busby	Good	Improbable: excess fines	Improbable: excess fines	Good
134:				
Yamac	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, small stones, slope
Busby	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope
135:				
Yamac	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, small stones, slope
Busby	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
Blackhall	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, slope
136:				
Yamac	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, small stones
Delpoint	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: depth to rock, too clayey, small stones
137:				
Yamac	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, small stones, slope
Delpoint	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: depth to rock, too clayey, small stones
Cabbart	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
138:				
Yamac	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, small stones
Gerdrum	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt, excess sodium
139:				
Yawdim	Poor: depth to rock, low strength	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey
Cambeth	Poor: depth to rock, low strength	Improbable: excess fines	Improbable: excess fines	Fair: depth to rock, too clayey, thin layer
140:				
Yetull	Good	Probable	Improbable: too sandy	Poor: too sandy
Busby	Good	Improbable: excess fines	Improbable: excess fines	Good
141:				
Zatoville	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: excess salt

WATER MANAGEMENT

(The information in this report 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
1:							
Abor	Severe: slope	Severe: hard to pack	Severe: no water	Deep to water	Slope, slow intake, percs slowly	Slope, depth to rock, erodes easily	Slope, erodes easily, depth to rock
Cabbart	Severe: depth to rock, slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock, erodes easily	Too arid, slope, erodes easily
Delpoint	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, depth to rock, erodes easily	Slope, depth to rock, erodes easily	Too arid, slope, erodes easily
2:							
Abor	Severe: slope	Severe: hard to pack	Severe: no water	Deep to water	Slope, droughty, slow intake	Slope, depth to rock, erodes easily	Slope, erodes easily, droughty
Delpoint	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock, erodes easily	Too arid, slope, erodes easily
Kobar	Moderate: slope	Slight	Severe: no water	Deep to water	Slope, percs slowly, erodes easily	Erodes easily, percs slowly	Too arid, erodes easily, percs slowly
3:							
Abor	Moderate: depth to rock, slope	Severe: hard to pack	Severe: no water	Deep to water	Slope, droughty, percs slowly	Depth to rock, erodes easily, percs slowly	Erodes easily, droughty, depth to rock
Weingart	Moderate: depth to rock, slope	Severe: excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Depth to rock, erodes easily, percs slowly	Too arid, excess sodium, erodes easily
Neldore	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, slow intake	Slope, depth to rock, percs slowly	Too arid, slope, droughty
4: Aeric Fluvaquents.							
Cherry	Moderate: slope	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily	Erodes easily	Erodes easily

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
5:							
Alona	Slight	Severe: piping	Severe: no water	Deep to water	Erodes easily, excess salt	Erodes easily	Too arid, erodes easily
6:							
Alona	Moderate: slope	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily, excess salt	Erodes easily	Too arid, erodes easily
Cambeth	Moderate: seepage, depth to rock, slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, depth to rock	Depth to rock, erodes easily	Too arid, erodes easily, droughty
Gerdrum	Moderate: slope	Severe: excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily, percs slowly	Too arid, excess sodium, erodes easily
7:							
Badland.							
8:							
Blackhall	Severe: depth to rock, slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, soil blowing	Slope, depth to rock, soil blowing	Too arid, slope, droughty
Busby	Severe: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, soil blowing	Slope, soil blowing	Too arid, slope
Rock outcrop.							
9:							
Blackhall	Severe: depth to rock, slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, soil blowing	Slope, depth to rock, soil blowing	Too arid, slope, droughty
Delpoint	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock, erodes easily	Too arid, slope, erodes easily
Rock outcrop.							
10:							
Blanchard	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, too sandy, soil blowing	Slope, 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
10:							
Dast	Severe: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, soil blowing	Slope, depth to rock, soil blowing	Slope, droughty, depth to rock
11:							
Borollic Camborthids.							
Ustic Torrifluvents.							
12:							
Busby	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Soil blowing	Soil blowing	Too arid
13:							
Busby	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Slope, soil blowing	Soil blowing	Too arid
14:							
Busby	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Erodes easily	Erodes easily	Too arid, erodes easily
15:							
Busby	Severe: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, soil blowing	Slope, soil blowing	Too arid, slope
Blackhall	Severe: depth to rock, slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, soil blowing	Slope, depth to rock, soil blowing	Too arid, slope, droughty
Twilight	Severe: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, soil blowing	Slope, depth to rock, soil blowing	Too arid, slope, droughty
16:							
Busby	Severe: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, soil blowing	Slope, soil blowing	Too arid, slope
Twilight	Severe: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, soil blowing, depth to rock	Slope, depth to rock, soil blowing	Too arid, slope, depth to rock
Blackhall	Severe: depth to rock, slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, soil blowing	Slope, depth to rock, soil blowing	Too arid, slope, 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
17:							
Busby	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Slope, soil blowing	Soil blowing	Too arid
Yetull	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Too sandy, soil blowing	Too arid, droughty
18:							
Busby	Severe: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, soil blowing	Slope, soil blowing	Too arid, slope
Yetull	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, too sandy, soil blowing	Too arid, slope, droughty
Rock outcrop.							
19:							
Cabba	Severe: depth to rock, slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock, erodes easily	Slope, erodes easily, droughty
Cambert	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, depth to rock, erodes easily	Slope, depth to rock, erodes easily	Slope, erodes easily, depth to rock
Rock outcrop.							
20:							
Cabbart	Severe: depth to rock, slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock, erodes easily	Too arid, slope, erodes easily
Rock outcrop.							
Yawdim	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, depth to rock, erodes easily	Too arid, slope, erodes easily
21:							
Cambert	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, depth to rock, erodes easily	Slope, depth to rock, erodes easily	Slope, erodes easily, 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
21:							
Bigsheep--------	Severe: slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, rooting depth	Slope, erodes easily	Slope, erodes easily, droughty
Golva----------	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope	Slope	Slope
22:							
Cambert---------	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, depth to rock, erodes easily	Slope, depth to rock, erodes easily	Slope, erodes easily, depth to rock
Cabba----------	Severe: depth to rock, slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock, erodes easily	Slope, erodes easily, droughty
Cherry----------	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily	Slope, erodes easily	Slope, erodes easily
23:							
Cambert---------	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock, erodes easily	Slope, erodes easily, droughty
Cabba----------	Severe: depth to rock, slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock, erodes easily	Slope, erodes easily, droughty
Dast----------	Severe: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, soil blowing	Slope, depth to rock, soil blowing	Slope, droughty, depth to rock
24:							
Cambeth---------	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, depth to rock, erodes easily	Slope, depth to rock, erodes easily	Too arid, slope, erodes easily
Bigsheep--------	Severe: slope	Moderate: thin layer	Severe: no water	Deep to water	Slope, droughty, rooting depth	Slope	Slope, droughty, rooting depth
25:							
Cambeth---------	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock, erodes easily	Too arid, slope, erodes easily

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
25:							
Cabbart	Severe: depth to rock, slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock, erodes easily	Too arid, slope, erodes easily
Kirby	Severe: seepage, slope	Severe: seepage, large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones	Too arid, large stones, slope
26:							
Cambeth	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock, erodes easily	Too arid, slope, erodes easily
Cabbart	Severe: depth to rock, slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock, erodes easily	Too arid, slope, erodes easily
Lonna	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily, excess salt	Slope, erodes easily	Too arid, slope, erodes easily
27:							
Cambeth	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, depth to rock, erodes easily	Slope, depth to rock, erodes easily	Too arid, slope, erodes easily
Cabbart	Severe: depth to rock, slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock, erodes easily	Too arid, slope, erodes easily
Yawdim	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, depth to rock, erodes easily	Too arid, slope, erodes easily
28:							
Cherry	Slight	Severe: piping	Severe: no water	Deep to water	Erodes easily	Erodes easily	Erodes easily
29:							
Cherry	Moderate: slope	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily	Erodes easily	Erodes easily
30:							
Cherry	Moderate: slope	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily	Erodes easily	Erodes easily

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
30:							
Cambert	Moderate: seepage, depth to rock, slope	Severe: piping	Severe: no water	Deep to water	Slope, depth to rock, erodes easily	Depth to rock, erodes easily	Erodes easily, depth to rock
31:							
Cherry	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily	Slope, erodes easily	Slope, erodes easily
Cambert	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, depth to rock, erodes easily	Slope, depth to rock, erodes easily	Slope, erodes easily, depth to rock
Cabba	Severe: depth to rock, slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock, erodes easily	Slope, erodes easily, droughty
32:							
Cherry	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily	Slope, erodes easily	Slope, erodes easily
Lisk	Severe: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, soil blowing	Slope, soil blowing	Slope
Cabba	Severe: depth to rock, slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock, erodes easily	Slope, erodes easily, droughty
33:							
Cherry	Moderate: slope	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily	Erodes easily	Erodes easily
Typic Ustifluvents.							
34:							
Chinook	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Slope, soil blowing	Soil blowing	Too arid
35:							
Chinook	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Slope, soil blowing	Soil blowing	Too arid
Kremlin	Moderate: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily	Erodes easily	Too arid, erodes easily

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
36:							
Chinook	Severe: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, soil blowing	Slope, soil blowing	Too arid, slope
Tinsley	Severe: seepage, slope	Severe: seepage, large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, too sandy	Large stones, slope, droughty
37:							
Chinook	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Slope, soil blowing	Soil blowing	Too arid
Twilight	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Slope, droughty, soil blowing	Depth to rock, soil blowing	Too arid, droughty, depth to rock
38:							
Chinook	Severe: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, soil blowing	Slope, soil blowing	Too arid, slope
Twilight	Severe: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, soil blowing	Slope, depth to rock, soil blowing	Too arid, slope, droughty
Blackhall	Severe: depth to rock, slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, soil blowing	Slope, depth to rock, soil blowing	Too arid, slope, droughty
39:							
Creed	Moderate: slope	Severe: excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily, percs slowly	Too arid, excess sodium, erodes easily
Gerdrum	Moderate: slope	Severe: excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily, percs slowly	Too arid, excess sodium, erodes easily
40:							
Dast	Severe: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, soil blowing, depth to rock	Slope, depth to rock, soil blowing	Slope, depth to rock
Lisk	Severe: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, soil blowing	Slope, soil blowing	Slope

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
41:							
Degrand	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Soil blowing	Too sandy, soil blowing	Too arid
42:							
Degrand	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Erodes easily	Erodes easily, too sandy	Too arid, erodes easily
43:							
Delpoint	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock, erodes easily	Too arid, slope, erodes easily
Busby	Severe: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, soil blowing	Slope, soil blowing	Too arid, slope
Blackhall	Severe: depth to rock, slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, soil blowing	Slope, depth to rock, soil blowing	Too arid, slope, droughty
44:							
Delpoint	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, depth to rock, erodes easily	Slope, depth to rock, erodes easily	Too arid, slope, erodes easily
Cabbart	Severe: depth to rock, slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock, erodes easily	Too arid, slope, erodes easily
45:							
Delpoint	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock, erodes easily	Too arid, slope, erodes easily
Cabbart	Severe: depth to rock, slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock, erodes easily	Too arid, slope, erodes easily
Yawdim	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, depth to rock, erodes easily	Too arid, slope, erodes easily

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
46:							
Delpoint	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock, erodes easily	Too arid, slope, erodes easily
Cabbart	Severe: depth to rock, slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock, erodes easily	Too arid, slope, erodes easily
Yawdim	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, depth to rock, erodes easily	Too arid, slope, erodes easily
47:							
Delpoint	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock, erodes easily	Too arid, slope, erodes easily
Yamac	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily	Slope, erodes easily	Too arid, slope, erodes easily
Cabbart	Severe: depth to rock, slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock, erodes easily	Too arid, slope, erodes easily
48:							
Ethridge	Slight	Moderate: piping	Severe: no water	Deep to water	Percs slowly, erodes easily	Erodes easily, percs slowly	Too arid, erodes easily, percs slowly
49:							
Ethridge	Moderate: slope	Moderate: piping	Severe: no water	Deep to water	Slope, percs slowly, erodes easily	Erodes easily, percs slowly	Too arid, erodes easily, percs slowly
50:							
Evanston	Moderate: seepage	Moderate: piping	Severe: no water	Deep to water	Erodes easily	Erodes easily	Too arid, erodes easily
51:							
Evanston	Moderate: seepage, slope	Moderate: piping	Severe: no water	Deep to water	Slope, erodes easily	Erodes easily	Too arid, erodes easily

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
52:							
Evanston--------	Moderate: seepage, slope	Moderate: piping	Severe: no water	Deep to water	Slope, erodes easily	Erodes easily	Too arid, erodes easily
Delpoint--------	Moderate: seepage, depth to rock, slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, depth to rock	Depth to rock, erodes easily	Too arid, erodes easily, droughty
53:							
Farnuf----------	Moderate: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope	Favorable	Favorable
54:							
Floweree--------	Slight	Severe: piping	Severe: no water	Deep to water	Erodes easily	Erodes easily	Too arid, erodes easily
55:							
Floweree--------	Moderate: slope	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily	Erodes easily	Too arid, erodes easily
56:							
Floweree--------	Slight	Severe: piping	Severe: no water	Deep to water	Erodes easily	Erodes easily	Too arid, erodes easily
57:							
Floweree--------	Slight	Severe: piping	Severe: no water	Deep to water	Erodes easily	Erodes easily	Too arid, erodes easily
58:							
Floweree--------	Slight	Severe: piping	Severe: no water	Deep to water	Erodes easily	Erodes easily	Too arid, erodes easily
Cambeth---------	Moderate: seepage, depth to rock	Severe: piping	Severe: no water	Deep to water	Depth to rock, erodes easily	Depth to rock, erodes easily	Too arid, erodes easily, depth to rock
59:							
Gerdrum---------	Slight	Severe: excess sodium	Severe: no water	Deep to water	Droughty, percs slowly, erodes easily	Erodes easily, percs slowly	Too arid, excess sodium, erodes easily
Creed-----------	Slight	Severe: excess sodium	Severe: no water	Deep to water	Droughty, percs slowly, erodes easily	Erodes easily, percs slowly	Too arid, excess sodium, erodes easily

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
60:							
Gerdrum	Moderate: slope	Severe: excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily, percs slowly	Too arid, excess sodium, erodes easily
Creed	Moderate: slope	Severe: excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily, percs slowly	Too arid, excess sodium, erodes easily
61:							
Gerdrum	Severe: slope	Severe: excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, erodes easily, percs slowly	Too arid, slope, excess sodium
Creed	Severe: slope	Severe: excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, erodes easily, percs slowly	Too arid, slope, excess sodium
62:							
Glendive	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Soil blowing, flooding, excess salt	Soil blowing	Too arid
63:							
Glendive	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Erodes easily, flooding, excess salt	Erodes easily	Too arid, erodes easily
64:							
Golva	Moderate: seepage	Severe: piping	Severe: no water	Deep to water	Favorable	Favorable	Favorable
65:							
Golva	Moderate: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope	Favorable	Favorable
66:							
Golva	Moderate: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope	Favorable	Favorable
Cambert	Moderate: seepage, depth to rock, slope	Severe: piping	Severe: no water	Deep to water	Slope, depth to rock, erodes easily	Depth to rock, erodes easily	Erodes easily, 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
67:							
Hanly	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Droughty, fast intake, soil blowing	Too sandy, soil blowing	Too arid, droughty
Glendive	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Soil blowing, flooding	Soil blowing	Too arid
68:							
Havre	Moderate: seepage	Severe: piping	Severe: no water	Deep to water	Erodes easily, flooding	Erodes easily	Too arid, erodes easily
69:							
Havre	Moderate: seepage	Severe: piping	Severe: no water	Deep to water	Flooding	Favorable	Too arid
70:							
Havre	Moderate: seepage	Severe: piping	Severe: no water	Deep to water	Erodes easily, flooding	Erodes easily	Too arid, erodes easily
Harlem	Slight	Moderate: hard to pack	Severe: no water	Deep to water	Slow intake, percs slowly, erodes easily	Erodes easily, percs slowly	Too arid, erodes easily, percs slowly
71:							
Hedstrom	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Slope, erodes easily	Erodes easily, too sandy	Erodes easily
72:							
Ismay	Slight	Severe: piping	Severe: slow refill	Deep to water	Erodes easily, flooding, excess salt	Erodes easily	Too arid, excess salt, erodes easily
73:							
Kobar	Slight	Slight	Severe: no water	Deep to water	Percs slowly, erodes easily	Erodes easily, percs slowly	Too arid, erodes easily, percs slowly
74:							
Kobar	Moderate: slope	Slight	Severe: no water	Deep to water	Slope, percs slowly, erodes easily	Erodes easily, percs slowly	Too arid, erodes easily, percs slowly
75:							
Kobar	Moderate: slope	Slight	Severe: no water	Deep to water	Slope, percs slowly, erodes easily	Erodes easily, percs slowly	Too arid, erodes easily, percs slowly

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
75:							
Gerdrum	Moderate: slope	Severe: excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily, percs slowly	Too arid, excess sodium, erodes easily
76:							
Kremlin	Moderate: seepage	Severe: piping	Severe: no water	Deep to water	Erodes easily	Erodes easily	Too arid, erodes easily
77:							
Kremlin	Moderate: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily	Erodes easily	Too arid, erodes easily
78:							
Kremlin	Moderate: seepage	Severe: piping	Severe: no water	Deep to water	Erodes easily	Erodes easily	Too arid, erodes easily
Busby	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Soil blowing	Soil blowing	Too arid
79:							
Kremlin	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily	Slope, erodes easily	Too arid, slope, erodes easily
Tinsley	Severe: seepage, slope	Severe: seepage, large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, too sandy	Large stones, slope, droughty
Degrand	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Slope, erodes easily	Erodes easily, too sandy	Too arid, erodes easily
80:							
Lihen	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, too sandy, soil blowing	Slope, droughty
81:							
Lihen	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, too sandy, soil blowing	Slope, droughty
Parshall	Severe: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, soil blowing	Slope, too sandy, soil blowing	Slope

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
81:							
Yetull	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, too sandy, soil blowing	Too arid, slope, droughty
82:							
Lihen	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, too sandy, soil blowing	Slope, droughty
Tinsley	Severe: seepage, slope	Severe: seepage, large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, too sandy	Large stones, slope, droughty
83:							
Lihen	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, too sandy, soil blowing	Slope, droughty
Yetull	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, too sandy, soil blowing	Too arid, slope, droughty
84:							
Lonna	Moderate: seepage	Severe: piping	Severe: no water	Deep to water	Erodes easily, excess salt	Erodes easily	Too arid, erodes easily
85:							
Lonna	Moderate: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily, excess salt	Erodes easily	Too arid, erodes easily
86:							
Lonna	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily, excess salt	Slope, erodes easily	Too arid, slope, erodes easily
87:							
Lonna	Moderate: seepage	Severe: piping	Severe: no water	Deep to water	Excess salt	Erodes easily	Too arid, erodes easily
88:							
Lonna	Moderate: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, excess salt	Erodes easily	Too arid, erodes easily

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
89:							
Lonna	Moderate: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily, excess salt	Erodes easily	Too arid, erodes easily
Cambeth	Moderate: seepage, depth to rock, slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, depth to rock	Depth to rock, erodes easily	Too arid, erodes easily, droughty
90:							
Lonna	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily, excess salt	Slope, erodes easily	Too arid, slope, erodes easily
Cambeth	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, depth to rock, erodes easily	Slope, depth to rock, erodes easily	Too arid, slope, erodes easily
Cabbart	Severe: depth to rock, slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock, erodes easily	Too arid, slope, erodes easily
91:							
Lonna	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily, excess salt	Slope, erodes easily	Too arid, slope, erodes easily
Cambeth	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, depth to rock, erodes easily	Slope, depth to rock, erodes easily	Too arid, slope, erodes easily
Cabbart	Severe: depth to rock, slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock, erodes easily	Too arid, slope, erodes easily
92:							
Macar	Moderate: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily	Erodes easily	Erodes easily
93:							
Marias	Slight	Severe: hard to pack	Severe: no water	Deep to water	Slow intake, percs slowly, erodes easily	Erodes easily, percs slowly	Erodes easily, percs slowly

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
94:							
Marvan----------	Slight	Severe: hard to pack	Severe: no water	Deep to water	Slow intake, percs slowly, erodes easily	Erodes easily, percs slowly	Erodes easily, percs slowly
95:							
Marvan----------	Moderate: slope	Severe: hard to pack	Severe: no water	Deep to water	Slope, slow intake, percs slowly	Erodes easily, percs slowly	Erodes easily, percs slowly
96:							
Marvan----------	Slight	Severe: hard to pack	Severe: no water	Deep to water	Slow intake, percs slowly, erodes easily	Erodes easily, percs slowly	Erodes easily, percs slowly
Vanda-----------	Slight	Severe: hard to pack	Severe: no water	Deep to water	Droughty, slow intake, percs slowly	Erodes easily, percs slowly	Too arid, excess salt, erodes easily
97:							
Neldore---------	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, slow intake	Slope, depth to rock, percs slowly	Too arid, slope, droughty
Rock outcrop.							
98:							
Neldore---------	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, slow intake	Slope, depth to rock, percs slowly	Too arid, slope, droughty
Rock outcrop.							
Abor------------	Severe: slope	Severe: hard to pack	Severe: no water	Deep to water	Slope, droughty, slow intake	Slope, depth to rock, erodes easily	Slope, erodes easily, droughty
99:							
Neldore---------	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, slow intake	Slope, depth to rock, percs slowly	Too arid, slope, droughty
Weingart--------	Moderate: depth to rock, slope	Severe: excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Depth to rock, erodes easily, percs slowly	Too arid, excess sodium, erodes easily

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
99: Kirby	Severe: seepage, slope	Severe: seepage, large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones	Too arid, large stones, slope
100: Nesda	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Droughty, rooting depth, flooding	Large stones, too sandy	Large stones, droughty, rooting depth
101: Parshall	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Slope, soil blowing	Too sandy, soil blowing	Favorable
102: Peerless	Moderate: seepage	Severe: seepage	Severe: no water	Deep to water	Favorable	Erodes easily	Erodes easily
103: Pinelli	Slight	Severe: piping	Severe: no water	Deep to water	Erodes easily	Erodes easily	Too arid, erodes easily
104: Pinelli	Moderate: slope	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily	Erodes easily	Too arid, erodes easily
105: Pinelli	Moderate: slope	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily	Erodes easily	Too arid, erodes easily
Weingart	Moderate: depth to rock, slope	Severe: excess sodium	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Depth to rock, erodes easily, percs slowly	Too arid, excess sodium, erodes easily
Gerdrum	Moderate: slope	Severe: excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily, percs slowly	Too arid, excess sodium, erodes easily
106: Riverwash.							
107: Rivra loam	Severe: seepage	Severe: seepage, wetness	Severe: cutbanks cave	Flooding, large stones, cutbanks cave	Wetness, droughty, erodes easily	Large stones, erodes easily, wetness	Too arid, large stones, wetness

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
107: Rivra gravelly sandy loam-----	Severe: seepage	Severe: seepage, wetness	Severe: cutbanks cave	Flooding, large stones, cutbanks cave	Large stones, wetness, droughty	Large stones, wetness, too sandy	Too arid, large stones, wetness
108: Rock outcrop.							
109: Rock outcrop.							
Cabbart---------	Severe: depth to rock, slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock, erodes easily	Too arid, slope, erodes easily
Kirby-----------	Severe: seepage, slope	Severe: seepage, large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones	Too arid, large stones, slope
110: Ryell-----------	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Droughty, soil blowing, flooding	Erodes easily, too sandy, soil blowing	Too arid, erodes easily, droughty
111: Ryell-----------	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Droughty, soil blowing, rooting depth	Erodes easily, too sandy, soil blowing	Too arid, erodes easily, droughty
112: Ryell-----------	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Erodes easily, flooding	Erodes easily, too sandy	Too arid, erodes easily
113: Shambo----------	Moderate: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope	Erodes easily	Erodes easily
114: Shambo----------	Moderate: seepage	Severe: piping	Severe: no water	Deep to water	Favorable	Erodes easily	Erodes easily
115: Spinekop--------	Slight	Severe: piping	Severe: no water	Deep to water	Favorable	Erodes easily	Too arid, erodes easily

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
116:							
Subwell	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, rooting depth	Too sandy	Droughty, rooting depth
Bigsheep	Severe: slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, rooting depth	Slope, erodes easily	Slope, erodes easily, droughty
117:							
Subwell	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, rooting depth	Too sandy	Droughty, rooting depth
Cambert	Moderate: seepage, depth to rock, slope	Severe: piping	Severe: no water	Deep to water	Slope, depth to rock, erodes easily	Depth to rock, erodes easily	Erodes easily, depth to rock
Bigsheep	Moderate: seepage, depth to rock, slope	Moderate: thin layer	Severe: no water	Deep to water	Slope, droughty, rooting depth	Favorable	Droughty, rooting depth
118:							
Subwell	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Droughty, rooting depth	Too sandy	Droughty, rooting depth
Peerless	Moderate: seepage	Severe: seepage	Severe: no water	Deep to water	Favorable	Erodes easily	Erodes easily
119:							
Tally	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Slope, soil blowing	Too sandy, soil blowing	Favorable
120:							
Tally	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Slope, soil blowing	Too sandy, soil blowing	Favorable
Hedstrom	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, soil blowing	Too sandy, soil blowing	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
121:							
Tally	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, soil blowing	Slope, soil blowing	Slope
Wabek	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, soil blowing	Slope, too sandy, soil blowing	Slope, droughty
Hedstrom	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Slope, soil blowing	Too sandy, soil blowing	Favorable
122:							
Tinsley	Severe: seepage, slope	Severe: seepage, large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, too sandy	Large stones, slope, droughty
Delpoint	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, depth to rock, erodes easily	Slope, depth to rock, erodes easily	Too arid, slope, erodes easily
Cabbart	Severe: depth to rock, slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock, erodes easily	Too arid, slope, erodes easily
123: Ustic Torrifluvents.							
124: Ustic Torriorthents.							
Borollic Natargids.							
125: Ustic Torriorthents.							
Rock outcrop.							
126: Ustic Torriorthents.							

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: Ustic Torrifluvents.							
Rock outcrop.							
127: Vanstel	Moderate: seepage	Severe: piping	Severe: no water	Deep to water	Erodes easily	Erodes easily	Too arid, erodes easily
128: Vanstel	Moderate: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily	Erodes easily	Too arid, erodes easily
129: Wabek	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, soil blowing	Slope, too sandy, soil blowing	Slope, droughty
130: Wabek	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, soil blowing	Slope, too sandy, soil blowing	Slope, droughty
Cambert	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, depth to rock, erodes easily	Slope, depth to rock, erodes easily	Slope, erodes easily, depth to rock
131: Yamac	Moderate: seepage	Severe: piping	Severe: no water	Deep to water	Erodes easily	Erodes easily	Too arid, erodes easily
132: Yamac	Moderate: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily	Erodes easily	Too arid, erodes easily
133: Yamac	Moderate: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily	Erodes easily	Too arid, erodes easily
Busby	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Slope, soil blowing	Soil blowing	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
134:							
Yamac	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily	Slope, erodes easily	Too arid, slope, erodes easily
Busby	Severe: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, soil blowing	Slope, soil blowing	Too arid, slope
135:							
Yamac	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily	Slope, erodes easily	Too arid, slope, erodes easily
Busby	Severe: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, soil blowing	Slope, soil blowing	Too arid, slope
Blackhall	Severe: depth to rock, slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, soil blowing	Slope, depth to rock, soil blowing	Too arid, slope, droughty
136:							
Yamac	Moderate: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily	Erodes easily	Too arid, erodes easily
Delpoint	Moderate: seepage, depth to rock, slope	Severe: piping	Severe: no water	Deep to water	Slope, depth to rock, erodes easily	Depth to rock, erodes easily	Too arid, erodes easily, depth to rock
137:							
Yamac	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily	Slope, erodes easily	Too arid, slope, erodes easily
Delpoint	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, depth to rock, erodes easily	Slope, depth to rock, erodes easily	Too arid, slope, erodes easily
Cabbart	Severe: depth to rock, slope	Severe: piping	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock, erodes easily	Too arid, slope, erodes easily

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
138:							
Yamac	Moderate: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily	Erodes easily	Too arid, erodes easily
Gerdrum	Moderate: slope	Severe: excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily, percs slowly	Too arid, excess sodium, erodes easily
139:							
Yawdim	Severe: depth to rock	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, percs slowly	Depth to rock, erodes easily, percs slowly	Too arid, erodes easily, droughty
Cambeth	Moderate: seepage, depth to rock, slope	Severe: piping	Severe: no water	Deep to water	Slope, depth to rock, erodes easily	Depth to rock, erodes easily	Too arid, erodes easily, depth to rock
140:							
Yetull	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Droughty, fast intake, soil blowing	Too sandy, soil blowing	Too arid, droughty
Busby	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Soil blowing	Soil blowing	Too arid
141:							
Zatoville	Slight	Moderate: piping, wetness, excess salt	Severe: slow refill	Deep to water	Percs slowly, erodes easily, excess salt	Erodes easily, percs slowly	Too arid, erodes easily, percs slowly

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. Samples are taken from some typical profiles and tested in the laboratory to determine grain-size distribution, plasticity, and compaction characteristics.

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 in the series descriptions in Part I of this survey.

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 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 system adopted by the American Association of State Highway and Transportation Officials *(1)* and the Unified soil classification system *(2)*.

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, SP-SM.

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.

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.

The following paragraphs describe the columns in the table "Physical Properties of the Soils."

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 in the series descriptions in Part I of this survey.

Clay as a soil separate, or component, consists of mineral soil particles that are less than 0.002 millimeter in diameter. 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 earth-moving 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 ⅓-bar moisture tension. Weight is determined after drying the soil at 105 degrees C. In the table "Physical Properties of the Soils," 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 the retention of water and the 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 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; and *high*, more than 6 percent. *Very high*, more than 9 percent, is sometimes used.

Organic matter is the plant and animal residue in the

soil at various stages of decomposition. In the table "Physical Properties of Soils," 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 K indicates the susceptibility of a soil to sheet and rill erosion. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) to predict the average rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, very fine sand, sand, and organic matter (up to 4 percent) and on soil structure and permeability. The estimates are modified by the presence of rock fragments. Values of K range from 0.02 to 0.69. The higher the value, the more susceptible the soil is to sheet and rill erosion.

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 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 soil blowing in cultivated areas. The groups indicate the susceptibility of soil to soil blowing. Soils are grouped according to the following distinctions:

1. Coarse sands, sands, fine sands, and very fine sands. These soils generally are not suitable for crops. They are extremely erodible, and vegetation is difficult to establish.
2. Loamy coarse sands, loamy sands, loamy fine sands, loamy very fine sands, and sapric soil material. These soils are very highly erodible. Crops can be grown if intensive measures to control soil blowing are used.
3. Coarse sandy loams, sandy loams, fine sandy loams, and very fine sandy loams. These soils are highly erodible. Crops can be grown if intensive measures to control soil blowing are used.

4L. Calcareous loams, silt loams, clay loams, and silty clay loams that have more than 5 percent finely divided calcium carbonate. These soils are highly erodible. Crops can be grown if intensive measures to control soil blowing are used.

4. Clays, silty clays, noncalcareous clay loams, and silty clay loams that are more than 35 percent clay. These soils are moderately erodible. Crops can be grown if measures to control soil blowing are used.
5. Noncalcareous loams and silt loams that are less than 20 percent clay and sandy clay loams, sandy clays, and hemic soil material. These soils have less than 5 percent finely divided calcium carbonate. They are moderately erodible. Crops can be grown if measures to control soil blowing are used.
6. Noncalcareous loams and silt loams that are more than 20 percent clay and noncalcareous clay loams that are less than 35 percent clay. These soils have less than 5 percent finely divided calcium carbonate. They are moderately erodible. Crops can be grown if ordinary measures to control soil blowing are used.
7. Silts, noncalcareous silty clay loams that are less than 35 percent clay, and fibric soil material. These soils have less than 5 percent finely divided calcium carbonate. They are very slightly erodible. Crops can be grown if ordinary measures to control soil blowing are used.
8. Soils that are not subject to soil blowing because of coarse fragments on the surface or because of surface wetness.

The following paragraphs describe the columns in the table "Chemical Properties of the Soils."

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 soil. 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 given as the percent, by weight, of hydrated calcium sulfates in the soil. Gypsum is partially soluble in water and can be dissolved and removed by water. Soils that have a high content of gypsum (more

than 10 percent) 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 the soil if used as construction material, and the potential of the soil to corrode metal and concrete.

Sodium adsorption ratio is the measure of sodium relative to calcium and magnesium in the water extract from saturated soil paste. Soils having a sodium adsorption ratio 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.

Water Features

The table "Water Features" gives estimates of several important water features used in land use planning that involves engineering considerations. These features are described in the following paragraphs.

Hydrologic soil groups are groups of soils that, when saturated, have the same runoff potential under similar storm and ground cover conditions. The soil properties that affect the runoff potential are those that influence the minimum rate of infiltration in a bare soil after prolonged wetting and when the soil is not frozen. These properties include the depth to a seasonal high water table, the intake rate, permeability after prolonged wetting, and the depth to a very slowly permeable layer. The influences of ground cover and slope are treated independently and are not taken into account in hydrologic soil groups.

In the definitions of the hydrologic soil groups, the infiltration rate is the rate at which water enters the soil at the surface and is controlled by surface conditions. The transmission rate is the rate at which water moves through the soil and is controlled by properties of the soil layers.

The four hydrologic soil groups are:

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

Flooding, the temporary covering of the soil surface by flowing water, is caused by overflow from streams or by runoff from adjacent slopes. Shallow water standing or flowing for short periods after rainfall or snowmelt is not considered flooding. Standing water in marshes and swamps or in closed depressions is considered to be ponding.

The table "Water Features" gives the frequency and duration of flooding and the time of year when flooding is most likely to occur. Frequency, duration, and probable dates of occurrence are estimated. Frequency generally is expressed as none, rare, occasional, or frequent. *None* means flooding is not probable; *rare* that it is unlikely but is possible under unusual weather conditions (the chance of flooding is nearly 0 percent 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); and *frequent* that it occurs often under normal weather conditions (the chance of flooding is more than 50 percent in any year).

Duration is expressed as *very brief* (less than 2 days), *brief* (2 to 7 days), *long* (7 to 30 days), and *very long* (more than 30 days). The time of year that flooding is most likely to occur is expressed in months. About two-thirds to three-fourths of all flooding occurs during the stated period.

The information on flooding 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 level 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.

High water table (seasonal) is a zone of saturation at the highest average depth during the wettest season. It is at least 6 inches thick, persists in the soil for more than a few weeks, and is within 6 feet of the surface. Indicated in the table "Water Features" are the depth to the seasonal high water table, the kind of water table, and the months of the year when the water table usually is highest.

An *apparent* water table is indicated by the level at which water stands in a freshly dug, unlined borehole after adequate time is allowed for adjustments in the surrounding soil.

A *perched* water table is one that is above an unsaturated zone in the soil. The basis for determining that a water table is perched may be general knowledge of the area. The water table is proven to be perched if the water level in a borehole is observed to fall when the borehole is extended.

Two numbers in the column showing depth to the water table indicate the normal range in depth to a saturated zone. Depth is given to the nearest half foot. The first numeral in the range indicates the highest water level. "More than 6.0" indicates that the water table is below a depth of 6 feet or that it is within a depth of 6 feet for less than a month.

Soil Features

The table "Soil Features" gives estimates of several important soil features used in land use planning that involves engineering considerations. These features are described in the following paragraphs.

Depth to bedrock is given if bedrock is within a depth of 60 inches. The depth is based on many soil borings and on observations during soil mapping. The rock either soft or hard. If the rock is soft or fractured, excavations can be made with trenching machines, backhoes, or small rippers. If the rock is hard or massive, blasting or special equipment generally is needed for excavation.

Potential 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 mainly to pavements and other rigid structures.

A *low* potential for frost action indicates that the soil is rarely susceptible to the formation of ice lenses; a *moderate* potential indicates that the soil is susceptible to formation of ice lenses, resulting in frost heave and the subsequent loss of soil strength; and a *high* potential indicates that the soil is highly susceptible to formation of ice lenses, resulting in frost heave and the subsequent loss of soil strength.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that dissolves 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 in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than steel 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 is also expressed as *low, moderate,* or *high.* It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

ENGINEERING INDEX PROPERTIES

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	
1:												
Abor	0-11	Silty clay	CL, CH	A-7	0	0	95-100	90-100	80-100	75-95	40-60	20-35
	11-32	Silty clay, clay, silty clay loam	CL, CH	A-6, A-7	0	0	80-100	75-100	65-100	60-95	35-65	20-45
	32-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Cabbart	0-4	Loam	CL-ML	A-4	0	0	90-100	85-100	65-85	55-75	25-30	5-10
	4-14	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	90-100	85-100	60-90	55-85	25-35	5-15
	14-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Delpoint	0-3	Loam	CL-ML	A-4	0	0	95-100	90-100	75-90	55-75	20-30	5-10
	3-15	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-95	65-85	20-40	5-20
	15-32	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-95	65-85	20-40	5-20
	32-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
2:												
Abor	0-11	Silty clay	CL, CH	A-7	0	0	95-100	90-100	80-100	75-95	40-60	20-35
	11-25	Silty clay, clay, silty clay loam	CL, CH	A-6, A-7	0	0	80-100	75-100	65-100	60-95	35-65	20-45
	25-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Delpoint	0-3	Loam	CL-ML	A-4	0	0	95-100	90-100	75-90	55-75	20-30	5-10
	3-14	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-95	65-85	20-40	5-20
	14-26	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-95	65-85	20-40	5-20
	26-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Kobar	0-16	Silty clay loam	CL	A-7, A-6	0	0	95-100	90-100	85-100	80-95	30-45	10-20
	16-35	Silty clay loam, silty clay, clay	CL	A-7, A-6	0	0	95-100	90-100	85-100	75-95	35-50	15-25
	35-60	Silty clay loam, silty clay, clay	CL	A-7, A-6	0	0	95-100	90-100	85-100	75-95	35-50	15-25
3:												
Abor	0-11	Silty clay loam	CL	A-6, A-7	0	0	80-100	75-100	65-100	60-90	35-45	15-25
	11-26	Silty clay, clay, silty clay loam	CL, CH	A-6, A-7	0	0	80-100	75-100	65-100	60-95	35-65	20-45
	26-60	Unweathered 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	
3:												
Weingart	0-3	Clay loam	CL	A-6, A-7	0	0	90-100	90-100	65-90	60-85	30-45	10-25
	3-11	Clay, silty clay	CL, CH	A-7	0	0	90-100	90-100	80-100	75-95	40-65	20-40
	11-35	Clay, silty clay, clay loam	CL, CH	A-6, A-7	0	0	90-100	90-100	75-100	70-90	35-60	15-35
	35-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Neldore	0-3	Clay	CL, CH	A-7	0	0-10	95-100	90-100	75-100	70-95	40-55	20-30
	3-9	Clay, silty clay	CL, CH	A-7	0	0	90-100	85-100	70-95	65-90	40-60	20-40
	9-15	Clay, silty clay	CL, CH	A-7	0	0-5	85-100	80-100	65-95	60-90	40-60	20-40
	15-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
4: Aeric Fluvaquents.												
Cherry	0-4	Silt loam	CL-ML	A-4	0	0	100	100	85-95	65-85	25-30	5-10
	4-18	Silt loam, silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-40	5-15
	18-60	Silt loam, silty clay loam, clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	90-100	75-95	25-40	5-15
5:												
Alona	0-3	Silt loam	CL-ML, ML	A-4	0	0	100	100	90-100	70-90	25-35	5-10
	3-11	Silty clay loam, silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-40	5-15
	11-16	Silty clay loam, silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-40	5-15
	16-60	Silty clay loam, loam, silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	75-95	25-40	5-15
6:												
Alona	0-5	Silt loam	CL-ML, ML	A-4	0	0	100	100	90-100	70-90	25-35	5-10
	5-16	Silty clay loam, silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-40	5-15
	16-20	Silty clay loam, silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-40	5-15
	20-60	Silty clay loam, loam, silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	75-95	25-40	5-15
Cambeth	0-5	Silt loam	CL-ML, ML	A-4	0	0	100	100	90-100	70-90	25-35	5-10
	5-11	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	75-95	25-40	5-20
	11-25	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	75-95	25-40	5-20
	25-60	Unweathered 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	
6:												
Gerdrum	0-7	Silty clay loam	CL	A-6	0	0	80-100	75-100	65-95	60-90	25-40	10-20
	7-24	Clay, silty clay, silty clay loam	CL, CH	A-7	0	0	90-100	90-100	85-100	75-95	40-60	20-40
	24-60	Clay loam, sandy clay loam, clay	CL, SC, CH	A-6, A-7	0	0	90-100	90-100	80-95	45-75	35-55	15-35
7:												
Badland.												
8:												
Blackhall	0-4	Fine sandy loam	SM, ML	A-4	0	0-5	90-100	85-100	60-85	35-55	15-25	NP-5
	4-12	Fine sandy loam, sandy loam, very fine sandy loam	SM	A-4	0	0-5	90-100	85-100	60-80	35-50	15-25	NP-5
	12-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Busby	0-4	Fine sandy loam	SM	A-4	0	0	100	100	60-85	35-50	20-25	NP-5
	4-21	Fine sandy loam, sandy loam, loam	SM, ML	A-4	0	0	100	100	60-90	35-75	20-25	NP-5
	21-45	Fine sandy loam, sandy loam	SM	A-4	0	0	100	100	60-85	35-50	20-25	NP-5
	45-60	Loamy fine sand, loamy sand, fine sandy loam	SM	A-2, A-4	0	0	100	100	60-85	20-50	15-25	NP-5
Rock outcrop.												
9:												
Blackhall	0-5	Very fine sandy loam	ML, SM	A-4	0	0-5	90-100	85-100	70-95	45-65	15-25	NP-5
	5-18	Fine sandy loam, sandy loam, very fine sandy loam	SM	A-4	0	0-5	90-100	85-100	60-80	35-50	15-25	NP-5
	18-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Delpoint	0-4	Loam	CL-ML	A-4	0	0	95-100	90-100	75-90	55-75	20-30	5-10
	4-12	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-95	65-85	20-40	5-20
	12-24	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-95	65-85	20-40	5-20
	24-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												
10:												
Blanchard	0-8	Loamy fine sand	SM	A-2	0	0	100	100	65-80	20-35	---	NP
	8-60	Fine sand, loamy sand, loamy fine sand	SM	A-2	0	0	100	100	60-85	15-35	---	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	
10:												
Dast	0-21	Fine sandy loam	SM, ML	A-4, A-2	0	0	80-100	75-100	65-90	30-55	15-25	NP-5
	21-35	Fine sandy loam, sandy loam, loam	SM, ML	A-4, A-2	0	0	80-100	75-100	55-85	30-55	15-25	NP-5
	35-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
11:												
Borollic Camborthids.												
Ustic Torrifluvents.												
12:												
Busby	0-3	Fine sandy loam	SM	A-4	0	0	100	100	60-85	35-50	20-25	NP-5
	3-20	Fine sandy loam, sandy loam, loam	SM, ML	A-4	0	0	100	100	60-90	35-75	20-25	NP-5
	20-42	Fine sandy loam, sandy loam	SM	A-4	0	0	100	100	60-85	35-50	20-25	NP-5
	42-60	Loamy fine sand, loamy sand, fine sandy loam	SM	A-2, A-4	0	0	100	100	60-85	20-50	15-25	NP-5
13:												
Busby	0-5	Fine sandy loam	SM	A-4	0	0	100	100	60-85	35-50	20-25	NP-5
	5-13	Fine sandy loam, sandy loam, loam	SM, ML	A-4	0	0	100	100	60-90	35-75	20-25	NP-5
	13-60	Fine sandy loam, sandy loam	SM	A-4	0	0	100	100	60-85	35-50	20-25	NP-5
14:												
Busby	0-10	Loam	CL-ML	A-4	0	0	100	100	85-95	60-75	25-30	5-10
	10-16	Fine sandy loam, sandy loam, loam	SM, ML	A-4	0	0	100	100	60-90	35-75	20-25	NP-5
	16-60	Fine sandy loam, sandy loam	SM	A-4	0	0	100	100	60-85	35-50	20-25	NP-5
15:												
Busby	0-3	Fine sandy loam	SM	A-4	0	0	100	100	60-85	35-50	20-25	NP-5
	3-17	Fine sandy loam, sandy loam, loam	SM, ML	A-4	0	0	100	100	60-90	35-75	20-25	NP-5
	17-42	Fine sandy loam, sandy loam	SM	A-4	0	0	100	100	60-85	35-50	20-25	NP-5
	42-60	Loamy fine sand, loamy sand, fine sandy loam	SM	A-2, A-4	0	0	100	100	60-85	20-50	15-25	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	
15:												
Blackhall	0-4	Fine sandy loam	SM, ML	A-4	0	0-5	90-100	85-100	60-85	35-55	15-25	NP-5
	4-17	Fine sandy loam, sandy loam, very fine sandy loam	SM	A-4	0	0-5	90-100	85-100	60-80	35-50	15-25	NP-5
	17-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Twilight	0-3	Fine sandy loam	SM	A-4	0	0	100	100	60-90	35-50	20-30	NP-5
	3-13	Fine sandy loam, sandy loam	SM	A-4	0	0	100	100	60-90	35-50	20-30	NP-5
	13-27	Fine sandy loam, sandy loam	SM	A-4	0	0	100	100	60-90	35-50	20-30	NP-5
	27-60	Weathered bedrock	---	---	0	0	0	0	0	0	---	NP
16:												
Busby	0-3	Fine sandy loam	SM	A-4	0	0	100	100	60-85	35-50	20-25	NP-5
	3-17	Fine sandy loam, sandy loam, loam	SM, ML	A-4	0	0	100	100	60-90	35-75	20-25	NP-5
	17-42	Fine sandy loam, sandy loam	SM	A-4	0	0	100	100	60-85	35-50	20-25	NP-5
	42-60	Loamy fine sand, loamy sand, fine sandy loam	SM	A-2, A-4	0	0	100	100	60-85	20-50	15-25	NP-5
Twilight	0-4	Fine sandy loam	SM	A-4	0	0	100	100	60-90	35-50	20-30	NP-5
	4-12	Fine sandy loam, sandy loam	SM	A-4	0	0	100	100	60-90	35-50	20-30	NP-5
	12-36	Fine sandy loam, sandy loam	SM	A-4	0	0	100	100	60-90	35-50	20-30	NP-5
	36-60	Weathered bedrock	---	---	---	---	---	---	---	---	---	NP
Blackhall	0-4	Fine sandy loam	SM, ML	A-4	0	0-5	90-100	85-100	60-85	35-55	15-25	NP-5
	4-12	Fine sandy loam, sandy loam, very fine sandy loam	SM	A-4	0	0-5	90-100	85-100	60-80	35-50	15-25	NP-5
	12-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
17:												
Busby	0-4	Fine sandy loam	SM	A-4	0	0	100	100	60-85	35-50	20-25	NP-5
	4-21	Fine sandy loam, sandy loam, loam	SM, ML	A-4	0	0	100	100	60-90	35-75	20-25	NP-5
	21-45	Fine sandy loam, sandy loam	SM	A-4	0	0	100	100	60-85	35-50	20-25	NP-5
	45-60	Loamy fine sand, loamy sand, fine sandy loam	SM	A-2, A-4	0	0	100	100	60-85	20-50	15-25	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	
17:												
Yetull	0-8	Loamy fine sand	SM	A-2	0	0-5	95-100	95-100	50-75	10-30	---	NP
	8-60	Loamy coarse sand, sand, loamy sand	SM, SP-SM	A-1, A-3, A-2	0	0-5	95-100	95-100	45-70	5-30	---	NP
18:												
Busby	0-4	Fine sandy loam	SM	A-4	0	0	100	100	60-85	35-50	20-25	NP-5
	4-21	Fine sandy loam, sandy loam, loam	SM, ML	A-4	0	0	100	100	60-90	35-75	20-25	NP-5
	21-45	Fine sandy loam, sandy loam	SM	A-4	0	0	100	100	60-85	35-50	20-25	NP-5
	45-60	Loamy fine sand, loamy sand, fine sandy loam	SM	A-2, A-4	0	0	100	100	60-85	20-50	15-25	NP-5
Yetull	0-5	Loamy fine sand	SM	A-2	0	0-5	95-100	95-100	50-75	10-30	---	NP
	5-60	Loamy coarse sand, sand, loamy sand	SM, SP-SM	A-1, A-3, A-2	0	0-5	95-100	95-100	45-70	5-30	---	NP
Rock outcrop.												
19:												
Cabba	0-5	Loam	ML, CL-ML	A-4	0	0-5	90-100	85-100	70-90	60-80	20-30	NP-10
	5-16	Clay loam, silty clay loam, loam	CL, CL-ML	A-6, A-4	0	0-5	95-100	90-100	85-100	80-95	25-35	5-15
	16-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Cambert	0-4	Silt loam	CL-ML	A-4	0	0	100	100	90-100	70-90	20-30	5-10
	4-15	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-35	5-15
	15-25	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-35	5-15
	25-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												
20:												
Cabbart	0-4	Loam	CL-ML	A-4	0	0	90-100	85-100	65-85	55-75	25-30	5-10
	4-11	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	90-100	85-100	60-90	55-85	25-35	5-15
	11-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												

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	
20:												
Yawdim	0-3	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	80-90	30-45	10-20
	3-14	Silty clay loam, clay loam, clay	CL, CH	A-7	0	0	100	100	90-100	70-95	40-60	15-35
	14-60	Weathered bedrock	---	---	---	---	---	---	---	---	---	NP
21:												
Cambert	0-4	Silt loam	CL-ML	A-4	0	0	100	100	90-100	70-90	20-30	5-10
	4-15	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-35	5-15
	15-25	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-35	5-15
	25-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Bigsheep	0-9	Very gravelly loam	GM-GC	A-2, A-4	0	0-10	40-60	30-50	25-45	15-40	20-30	5-10
	9-24	Very gravelly sandy loam, very gravelly sandy clay loam, very gravelly loam	GM-GC	A-2	0	0-10	40-55	30-50	25-45	20-30	20-30	5-10
	24-33	Silt loam, loam	CL-ML	A-4	0	0	100	90-100	80-100	70-90	20-30	5-10
	33-60	Very gravelly loam, very gravelly sandy clay loam, extremely gravelly sandy loam	GM, GM-GC, GP-GM	A-2, A-1	0	0-10	25-60	15-50	10-40	5-30	15-30	NP-10
Golva	0-11	Silt loam	CL-ML	A-4	0	0	100	100	95-100	70-90	25-30	5-10
	11-30	Clay loam, silt loam, silty clay loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	75-90	25-40	5-15
	30-60	Loam, silt loam, clay loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	75-90	25-40	5-15
22:												
Cambert	0-5	Silt loam	CL-ML	A-4	0	0	100	100	90-100	70-90	20-30	5-10
	5-13	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-35	5-15
	13-27	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-35	5-15
	27-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Cabba	0-4	Loam	ML, CL-ML	A-4	0	0-5	90-100	85-100	70-90	60-80	20-30	NP-10
	4-17	Clay loam, silty clay loam, loam	CL, CL-ML	A-6, A-4	0	0-5	95-100	90-100	85-100	80-95	25-35	5-15
	17-60	Unweathered 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	
22:												
Cherry	0-3	Silt loam	CL-ML	A-4	0	0	100	100	85-95	65-85	25-30	5-10
	3-16	Silt loam, silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-40	5-15
	16-60	Silt loam, silty clay loam, clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	90-100	75-95	25-40	5-15
23:												
Cambert	0-5	Loam	CL-ML	A-4	0	0	100	100	85-95	60-70	20-30	5-10
	5-13	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-35	5-15
	13-24	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-35	5-15
	24-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Cabba	0-4	Silt loam	ML, CL-ML	A-4	0	0-5	90-100	85-100	70-90	60-80	20-30	NP-10
	4-16	Clay loam, silty clay loam, loam	CL, CL-ML	A-6, A-4	0	0-5	95-100	90-100	85-100	80-95	25-35	5-15
	16-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Dast	0-21	Fine sandy loam	SM, ML	A-4, A-2	0	0	80-100	75-100	65-90	30-55	15-25	NP-5
	21-35	Fine sandy loam, sandy loam, loam	SM, ML	A-4, A-2	0	0	80-100	75-100	55-85	30-55	15-25	NP-5
	35-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
24:												
Cambeth	0-5	Silt loam	CL-ML, ML	A-4	0	0	100	100	90-100	70-90	25-35	5-10
	5-14	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	75-95	25-40	5-20
	14-27	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	75-95	25-40	5-20
	27-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Bigsheep	0-5	Very gravelly loam	GM-GC	A-2, A-4	0	0-10	40-50	35-45	25-45	15-40	20-30	5-10
	5-45	Very gravelly sandy loam, very gravelly sandy clay loam, very gravelly loam	GM-GC	A-2	0	0-10	40-65	30-55	25-50	20-30	20-30	5-10
	45-60	Weathered bedrock	---	---	---	---	---	---	---	---	---	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	
25:												
Cambeth	0-5	Silt loam	CL-ML, ML	A-4	0	0	100	100	90-100	70-90	25-35	5-10
	5-13	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	75-95	25-40	5-20
	13-25	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	75-95	25-40	5-20
	25-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Cabbart	0-4	Loam	CL-ML	A-4	0	0	90-100	85-100	65-85	55-75	25-30	5-10
	4-14	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	90-100	85-100	60-90	55-85	25-35	5-15
	14-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Kirby	0-6	Channery loam	SM, SC-SM, GM, CL-ML	A-4	0	0-10	65-85	55-75	45-65	40-60	15-25	NP-10
	6-12	Extremely channery loam, extremely channery sandy loam, very channery loam	GP-GM, GM, GM-GC	A-2, A-1	0	10-30	20-60	10-50	5-40	5-35	15-25	NP-10
	12-60	Fragmental material	GP	A-1	0	40-60	5-15	0-10	0-5	0-5	---	NP
26:												
Cambeth	0-5	Silt loam	CL-ML, ML	A-4	0	0	100	100	90-100	70-90	25-35	5-10
	5-11	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	75-95	25-40	5-20
	11-25	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	75-95	25-40	5-20
	25-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Cabbart	0-4	Silt loam	CL-ML	A-4	0	0	90-100	85-100	65-85	55-75	25-30	5-10
	4-14	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	90-100	85-100	60-90	55-85	25-35	5-15
	14-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Lonna	0-4	Silt loam	CL-ML	A-4	0	0	100	100	90-100	75-90	25-30	5-10
	4-11	Silt loam, silty clay loam	CL-ML, CL	A-6, A-4	0	0	100	100	95-100	75-95	25-40	5-15
	11-60	Silt loam, silty clay loam	CL-ML, CL	A-6, A-4	0	0	100	100	95-100	75-95	25-40	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	
27:												
Cambeth	0-5	Silt loam	CL-ML, ML	A-4	0	0	100	100	90-100	70-90	25-35	5-10
	5-15	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	75-95	25-40	5-20
	15-28	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	75-95	25-40	5-20
	28-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Cabbart	0-4	Silt loam	CL-ML	A-4	0	0	90-100	85-100	65-85	55-75	25-30	5-10
	4-17	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	90-100	85-100	60-90	55-85	25-35	5-15
	17-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Yawdim	0-4	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	80-90	30-45	10-20
	4-14	Silty clay loam, clay loam, clay loam	CL, CH	A-7	0	0	100	100	90-100	70-95	40-60	15-35
	14-60	Weathered bedrock	---	---	---	---	---	---	---	---	---	NP
28:												
Cherry	0-4	Silt loam	CL-ML	A-4	0	0	100	100	85-95	65-85	25-30	5-10
	4-19	Silt loam, silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-40	5-15
	19-60	Silt loam, silty clay loam, clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	90-100	75-95	25-40	5-15
29:												
Cherry	0-4	Silt loam	CL-ML	A-4	0	0	100	100	85-95	65-85	25-30	5-10
	4-19	Silt loam, silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-40	5-15
	19-60	Silt loam, silty clay loam, clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	90-100	75-95	25-40	5-15
30:												
Cherry	0-5	Silt loam	CL-ML	A-4	0	0	100	100	85-95	65-85	25-30	5-10
	5-18	Silt loam, silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-40	5-15
	18-60	Silt loam, silty clay loam, clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	90-100	75-95	25-40	5-15
Cambert	0-5	Silt loam	CL-ML	A-4	0	0	100	100	90-100	70-90	20-30	5-10
	5-13	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-35	5-15
	13-27	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-35	5-15
	27-60	Unweathered 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	
31:												
Cherry	0-5	Silt loam	CL-ML	A-4	0	0	100	100	85-95	65-85	25-30	5-10
	5-18	Silt loam, silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-40	5-15
	18-60	Silt loam, silty clay loam, clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	90-100	75-95	25-40	5-15
Cambert	0-5	Silt loam	CL-ML	A-4	0	0	100	100	90-100	70-90	20-30	5-10
	5-13	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-35	5-15
	13-27	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-35	5-15
	27-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Cabba	0-4	Silt loam	ML, CL-ML	A-4	0	0-5	90-100	85-100	70-90	60-80	20-30	NP-10
	4-16	Clay loam, silty clay loam, loam	CL, CL-ML	A-6, A-4	0	0-5	95-100	90-100	85-100	80-95	25-35	5-15
	16-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
32:												
Cherry	0-5	Silt loam	CL-ML	A-4	0	0	100	100	85-95	65-85	25-30	5-10
	5-18	Silt loam, silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-40	5-15
	18-60	Silt loam, silty clay loam, clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	90-100	75-95	25-40	5-15
Lisk	0-5	Fine sandy loam	ML, SM	A-4	0	0	100	100	75-90	45-60	20-30	NP-5
	5-14	Sandy loam, fine sandy loam	ML, SM	A-4	0	0	100	100	60-85	35-60	20-30	NP-5
	14-45	Sandy loam, fine sandy loam	ML, SM	A-4, A-2	0	0	100	100	55-80	30-55	20-30	NP-5
	45-60	Loamy sand, loamy fine sand	SM	A-1, A-2	0	0	100	100	45-80	15-30	---	NP
Cabba	0-5	Loam	ML, CL-ML	A-4	0	0-5	90-100	85-100	70-90	60-80	20-30	NP-10
	5-16	Clay loam, silty clay loam, loam	CL, CL-ML	A-6, A-4	0	0-5	95-100	90-100	85-100	80-95	25-35	5-15
	16-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
33:												
Cherry	0-4	Silt loam	CL-ML	A-4	0	0	100	100	85-95	65-85	25-30	5-10
	4-16	Silt loam, silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-40	5-15
	16-60	Silt loam, silty clay loam, clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	90-100	75-95	25-40	5-15
Typic Ustifluvents.												

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	
34:												
Chinook	0-14	Fine sandy loam	SM	A-4, A-2	0	0	80-100	75-100	65-85	30-50	15-25	NP-5
	14-48	Fine sandy loam, sandy loam	SM	A-4, A-2	0	0	80-100	75-100	55-85	30-50	15-25	NP-5
	48-60	Fine sandy loam, loamy fine sand, sandy loam	SM	A-4, A-2	0	0	80-100	75-100	60-80	25-45	15-25	NP-5
35:												
Chinook	0-15	Fine sandy loam	SM	A-4, A-2	0	0	80-100	75-100	65-85	30-50	15-25	NP-5
	15-60	Fine sandy loam, sandy loam	SM	A-4, A-2	0	0	80-100	75-100	55-85	30-50	15-25	NP-5
Kremlin	0-3	Loam	CL-ML	A-4	0	0	95-100	90-100	75-95	50-75	25-30	5-10
	3-15	Loam, silt loam, clay loam	CL-ML, CL	A-4, A-6	0	0	95-100	90-100	75-95	55-80	25-35	5-15
	15-37	Loam, silt loam, clay loam	CL-ML, CL	A-4, A-6	0	0	95-100	90-100	75-95	55-80	25-35	5-15
	37-60	Stratified sandy loam to silt loam	ML, CL-ML	A-4	0	0	90-100	85-100	70-90	50-75	20-30	NP-10
36:												
Chinook	0-13	Fine sandy loam	SM	A-4, A-2	0	0	80-100	75-100	65-85	30-50	15-25	NP-5
	13-60	Fine sandy loam, sandy loam	SM	A-4, A-2	0	0	80-100	75-100	55-85	30-50	15-25	NP-5
Tinsley	0-5	Very gravelly sandy loam	GM	A-1, A-2	0	0-15	40-65	30-50	20-45	15-35	15-20	NP-5
	5-60	Very gravelly sand, very cobbly loamy sand, extremely gravelly sand	GM, SM, SP-SM, GP-GM	A-1	0	10-40	40-70	25-55	10-35	5-15	---	NP
37:												
Chinook	0-14	Fine sandy loam	SM	A-4, A-2	0	0	80-100	75-100	65-85	30-50	15-25	NP-5
	14-60	Fine sandy loam, sandy loam	SM	A-4, A-2	0	0	80-100	75-100	55-85	30-50	15-25	NP-5
Twilight	0-3	Fine sandy loam	SM	A-4	0	0	100	100	60-90	35-50	20-30	NP-5
	3-11	Fine sandy loam, sandy loam	SM	A-4	0	0	100	100	60-90	35-50	20-30	NP-5
	11-29	Fine sandy loam, sandy loam	SM	A-4	0	0	100	100	60-90	35-50	20-30	NP-5
	29-60	Weathered bedrock	---	---	0	0	0	0	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	
38:												
Chinook	0-13	Fine sandy loam	SM	A-4, A-2	0	0	80-100	75-100	65-85	30-50	15-25	NP-5
	13-41	Fine sandy loam, sandy loam	SM	A-4, A-2	0	0	80-100	75-100	55-85	30-50	15-25	NP-5
	41-60	Fine sandy loam, loamy fine sand, sandy loam	SM	A-4, A-2	0	0	80-100	75-100	60-80	25-45	15-25	NP-5
Twilight	0-3	Fine sandy loam	SM	A-4	0	0	100	100	60-90	35-50	20-30	NP-5
	3-11	Fine sandy loam, sandy loam	SM	A-4	0	0	100	100	60-90	35-50	20-30	NP-5
	11-31	Fine sandy loam, sandy loam	SM	A-4	0	0	100	100	60-90	35-50	20-30	NP-5
	31-60	Weathered bedrock	---	---	---	---	---	---	---	---	---	NP
Blackhall	0-3	Fine sandy loam	SM, ML	A-4	0	0-5	90-100	85-100	60-85	35-55	15-25	NP-5
	3-14	Fine sandy loam, sandy loam, very fine sandy loam	SM	A-4	0	0-5	90-100	85-100	60-80	35-50	15-25	NP-5
	14-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
39:												
Creed	0-5	Loam	CL-ML, SC-SM	A-4	0	0	90-100	75-100	65-95	45-75	20-30	5-10
	5-18	Silty clay, clay, silty clay loam	CL, CH	A-6, A-7	0	0	90-100	75-100	70-100	60-95	35-60	15-35
	18-60	Silty clay loam, clay loam, clay	CL, SC	A-6, A-7	0	0	90-100	75-100	60-100	35-90	30-50	15-25
Gerdrum	0-7	Silty clay loam	CL	A-6	0	0	80-100	75-100	65-95	60-90	25-40	10-20
	7-20	Clay, silty clay, silty clay loam	CL, CH	A-7	0	0	90-100	90-100	85-100	75-95	40-60	20-40
	20-60	Clay loam, sandy clay loam, clay loam	CL, SC, CH	A-6, A-7	0	0	90-100	90-100	80-95	45-75	35-55	15-35
40:												
Dast	0-22	Fine sandy loam	SM, ML	A-4, A-2	0	0	80-100	75-100	65-90	30-55	15-25	NP-5
	22-37	Fine sandy loam, sandy loam, loam	SM, ML	A-4, A-2	0	0	80-100	75-100	55-85	30-55	15-25	NP-5
	37-60	Unweathered 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	
40:												
Lisk	0-5	Fine sandy loam	ML, SM	A-4	0	0	100	100	75-90	45-60	20-30	NP-5
	5-20	Sandy loam, fine sandy loam	ML, SM	A-4	0	0	100	100	60-85	35-60	20-30	NP-5
	20-45	Sandy loam, fine sandy loam	ML, SM	A-4, A-2	0	0	100	100	55-80	30-55	20-30	NP-5
	45-60	Loamy sand, loamy fine sand	SM	A-1, A-2	0	0	100	100	45-80	15-30	---	NP
41:												
Degrand	0-5	Fine sandy loam	SM	A-2, A-4	0	0-5	85-100	80-100	50-80	25-50	20-30	NP-5
	5-21	Sandy clay loam, clay loam	CL, SC, CL-ML, SC-SM	A-6, A-4	0	0-5	85-100	80-100	50-90	35-80	25-40	5-15
	21-29	Clay loam, loam, sandy loam	ML, SM	A-4	0	0-5	85-100	80-100	55-85	40-70	20-35	NP-10
	29-60	Sand, gravelly sand, loamy sand	SP, SP-SM, SM	A-1, A-3, A-2	0	0-5	65-100	55-100	25-70	0-15	---	NP
42:												
Degrand	0-4	Loam	ML, SM	A-4	0	0-5	85-100	80-100	60-85	40-60	25-35	NP-10
	4-15	Sandy clay loam, clay loam	CL, SC, CL-ML, SC-SM	A-6, A-4	0	0-5	85-100	80-100	50-90	35-80	25-40	5-15
	15-32	Clay loam, loam, sandy loam	ML, SM	A-4	0	0-5	85-100	80-100	55-85	40-70	20-35	NP-10
	32-60	Sand, gravelly sand, loamy sand	SP, SP-SM, SM	A-1, A-3, A-2	0	0-5	65-100	55-100	25-70	0-15	---	NP
43:												
Delpoint	0-3	Loam	CL-ML	A-4	0	0	95-100	90-100	75-90	55-75	20-30	5-10
	3-14	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-95	65-85	20-40	5-20
	14-26	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-95	65-85	20-40	5-20
	26-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Busby	0-5	Fine sandy loam	SM	A-4	0	0	100	100	60-85	35-50	20-25	NP-5
	5-13	Fine sandy loam, sandy loam, loam	SM, ML	A-4	0	0	100	100	60-90	35-75	20-25	NP-5
	13-60	Fine sandy loam, sandy loam	SM	A-4	0	0	100	100	60-85	35-50	20-25	NP-5
Blackhall	0-5	Fine sandy loam	SM, ML	A-4	0	0-5	90-100	85-100	60-85	35-55	15-25	NP-5
	5-18	Fine sandy loam, sandy loam, loam, very fine sandy loam	SM	A-4	0	0-5	90-100	85-100	60-80	35-50	15-25	NP-5
	18-60	Unweathered 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	
44:												
Delpoint	0-3	Loam	CL-ML	A-4	0	0	95-100	90-100	75-90	55-75	20-30	5-10
	3-14	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-95	65-85	20-40	5-20
	14-35	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-95	65-85	20-40	5-20
	35-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Cabbart	0-4	Loam	CL-ML	A-4	0	0	90-100	85-100	65-85	55-75	25-30	5-10
	4-18	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	90-100	85-100	60-90	55-85	25-35	5-15
	18-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
45:												
Delpoint	0-5	Loam	CL-ML	A-4	0	0	95-100	90-100	75-90	55-75	20-30	5-10
	5-14	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-95	65-85	20-40	5-20
	14-27	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-95	65-85	20-40	5-20
	27-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Cabbart	0-4	Silt loam	CL-ML	A-4	0	0	90-100	85-100	65-85	55-75	25-30	5-10
	4-17	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	90-100	85-100	60-90	55-85	25-35	5-15
	17-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Yawdim	0-4	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	80-90	30-45	10-20
	4-11	Silty clay loam, clay loam, clay loam	CL, CH	A-7	0	0	100	100	90-100	70-95	40-60	15-35
	11-60	Weathered bedrock	---	---	---	---	---	---	---	---	---	NP
46:												
Delpoint	0-3	Loam	CL-ML	A-4	0	0	95-100	90-100	75-90	55-75	20-30	5-10
	3-19	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-95	65-85	20-40	5-20
	19-28	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-95	65-85	20-40	5-20
	28-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Cabbart	0-4	Loam	CL-ML	A-4	0	0	90-100	85-100	65-85	55-75	25-30	5-10
	4-11	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	90-100	85-100	60-90	55-85	25-35	5-15
	11-60	Unweathered 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	
46:												
Yawdim	0-3	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	80-90	30-45	10-20
	3-14	Silty clay loam, clay loam, clay	CL, CH	A-7	0	0	100	100	90-100	70-95	40-60	15-35
	14-60	Weathered bedrock	---	---	---	---	---	---	---	---	---	NP
47:												
Delpoint	0-4	Loam	CL-ML	A-4	0	0	95-100	90-100	75-90	55-75	20-30	5-10
	4-11	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-95	65-85	20-40	5-20
	11-24	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-95	65-85	20-40	5-20
	24-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Yamac	0-4	Loam	CL-ML	A-4	0	0-5	85-100	80-100	60-85	55-75	25-30	5-10
	4-16	Loam, clay loam, silt loam	CL, CL-ML	A-4, A-6	0	0-5	85-100	80-100	65-90	60-80	25-35	5-15
	16-60	Loam, clay loam, silt loam	CL, CL-ML	A-4, A-6	0	0-5	85-100	80-100	60-85	55-75	25-35	5-15
Cabbart	0-4	Loam	CL-ML	A-4	0	0	90-100	85-100	65-85	55-75	25-30	5-10
	4-14	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	90-100	85-100	60-90	55-85	25-35	5-15
	14-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
48:												
Ethridge	0-5	Silty clay loam	CL	A-6, A-7	0	0	100	95-100	90-100	85-95	25-45	10-20
	5-24	Silty clay, silty clay loam, clay loam	CL	A-7	0	0	100	95-100	95-100	90-95	40-50	20-30
	24-60	Silty clay loam, clay loam, silt loam	CL	A-6, A-7	0	0	100	95-100	90-100	85-95	30-50	10-25
49:												
Ethridge	0-6	Silty clay loam	CL	A-6, A-7	0	0	100	95-100	90-100	85-95	25-45	10-20
	6-18	Silty clay, silty clay loam, clay loam	CL	A-7	0	0	100	95-100	95-100	90-95	40-50	20-30
	18-60	Silty clay loam, clay loam, silt loam	CL	A-6, A-7	0	0	100	95-100	90-100	85-95	30-50	10-25
50:												
Evanston	0-7	Loam	CL, CL-ML	A-4, A-6	0	0-5	95-100	95-100	85-90	65-70	25-35	5-15
	7-15	Clay loam, loam, silty clay loam	CL	A-6	0	0-5	95-100	95-100	85-100	65-85	25-35	10-15
	15-60	Loam, clay loam, fine sandy loam	CL	A-6	0	0-5	95-100	95-100	70-90	50-75	25-35	10-15

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	
51:												
Evanston	0-6	Loam	CL, CL-ML	A-4, A-6	0	0-5	95-100	95-100	85-90	65-70	25-35	5-15
	6-13	Clay loam, loam, silty clay loam	CL	A-6	0	0-5	95-100	95-100	85-100	65-85	25-35	10-15
	13-60	Loam, clay loam, fine sandy loam	CL	A-6	0	0-5	95-100	95-100	70-90	50-75	25-35	10-15
52:												
Evanston	0-6	Loam	CL, CL-ML	A-4, A-6	0	0-5	95-100	95-100	85-90	65-70	25-35	5-15
	6-13	Clay loam, loam, silty clay loam	CL	A-6	0	0-5	95-100	95-100	85-100	65-85	25-35	10-15
	13-60	Loam, clay loam, fine sandy loam	CL	A-6	0	0-5	95-100	95-100	70-90	50-75	25-35	10-15
Delpoint	0-3	Loam	CL-ML	A-4	0	0	95-100	90-100	75-90	55-75	20-30	5-10
	3-14	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-95	65-85	20-40	5-20
	14-26	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-95	65-85	20-40	5-20
	26-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
53:												
Farnuf	0-5	Loam	ML, CL-ML	A-4	0	0	80-100	75-100	60-100	55-80	20-30	NP-10
	5-11	Clay loam, loam, silty clay loam	CL	A-6	0	0	80-100	75-100	65-95	50-90	25-40	10-20
	11-40	Loam, clay loam, silt loam	CL, CL-ML	A-6, A-4	0	0	80-100	75-100	65-95	50-80	25-35	5-15
	40-60	Stratified gravelly sandy loam to silty clay loam	CL, SC, CL-ML, SC-SM	A-6, A-4	0	0-15	75-90	65-85	50-80	45-60	20-30	5-15
54:												
Floweree	0-4	Silt loam	ML	A-4	0	0	100	100	90-100	70-90	20-35	NP-10
	4-12	Silty clay loam, silt loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	85-95	25-40	5-15
	12-60	Silty clay loam, silt loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	85-95	25-40	5-15
55:												
Floweree	0-6	Silt loam	ML	A-4	0	0	100	100	90-100	70-90	20-35	NP-10
	6-13	Silty clay loam, silt loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	85-95	25-40	5-15
	13-60	Silty clay loam, silt loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	85-95	25-40	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	
56:												
Floweree	0-5	Silt loam	ML	A-4	0	0	100	100	90-100	70-90	20-35	NP-10
	5-11	Silty clay loam, silt loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	85-95	25-40	5-15
	11-60	Silty clay loam, silt loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	85-95	25-40	5-15
57:												
Floweree	0-4	Silt loam	ML	A-4	0	0	100	100	90-100	70-90	20-35	NP-10
	4-12	Silty clay loam, silt loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	85-95	25-40	5-15
	12-60	Silty clay loam, silt loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	85-95	25-40	5-15
58:												
Floweree	0-7	Silt loam	ML	A-4	0	0	100	100	90-100	70-90	20-35	NP-10
	7-11	Silty clay loam, silt loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	85-95	25-40	5-15
	11-60	Silty clay loam, silt loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	85-95	25-40	5-15
Cambeth	0-5	Silt loam	CL-ML, ML	A-4	0	0	100	100	90-100	70-90	25-35	5-10
	5-15	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	75-95	25-40	5-20
	15-33	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	75-95	25-40	5-20
	33-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
59:												
Gerdrum	0-7	Silty clay loam	CL	A-6	0	0	80-100	75-100	65-95	60-90	25-40	10-20
	7-24	Clay, silty clay, silty clay loam	CL, CH	A-7	0	0	90-100	90-100	85-100	75-95	40-60	20-40
	24-60	Clay loam, sandy clay loam, clay	CL, SC, CH	A-6, A-7	0	0	90-100	90-100	80-95	45-75	35-55	15-35
Creed	0-6	Loam	CL-ML, SC-SM	A-4	0	0	90-100	75-100	65-95	45-75	20-30	5-10
	6-21	Silty clay, clay, silty clay loam	CL, CH	A-6, A-7	0	0	90-100	75-100	70-100	60-95	35-60	15-35
	21-60	Silty clay loam, clay loam, clay loam	CL, SC	A-6, A-7	0	0	90-100	75-100	60-100	35-90	30-50	15-25
60:												
Gerdrum	0-7	Silty clay loam	CL	A-6	0	0	80-100	75-100	65-95	60-90	25-40	10-20
	7-17	Clay, silty clay, silty clay loam	CL, CH	A-7	0	0	90-100	90-100	85-100	75-95	40-60	20-40
	17-60	Clay loam, sandy clay loam, clay	CL, SC, CH	A-6, A-7	0	0	90-100	90-100	80-95	45-75	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	
60:												
Creed	0-6	Loam	CL-ML, SC-SM	A-4	0	0	90-100	75-100	65-95	45-75	20-30	5-10
	6-18	Silty clay, clay, silty clay loam	CL, CH	A-6, A-7	0	0	90-100	75-100	70-100	60-95	35-60	15-35
	18-60	Silty clay loam, clay loam, clay	CL, SC	A-6, A-7	0	0	90-100	75-100	60-100	35-90	30-50	15-25
61:												
Gerdrum	0-7	Silty clay loam	CL	A-6	0	0	80-100	75-100	65-95	60-90	25-40	10-20
	7-15	Clay, silty clay, silty clay loam	CL, CH	A-7	0	0	90-100	90-100	85-100	75-95	40-60	20-40
	15-60	Clay loam, sandy clay loam, clay	CL, SC, CH	A-6, A-7	0	0	90-100	90-100	80-95	45-75	35-55	15-35
Creed	0-4	Loam	CL-ML, SC-SM	A-4	0	0	90-100	75-100	65-95	45-75	20-30	5-10
	4-19	Silty clay, clay, silty clay loam	CL, CH	A-6, A-7	0	0	90-100	75-100	70-100	60-95	35-60	15-35
	19-60	Silty clay loam, clay loam, clay	CL, SC	A-6, A-7	0	0	90-100	75-100	60-100	35-90	30-50	15-25
62:												
Glendive	0-6	Fine sandy loam	SM, ML, SC-SM, CL-ML	A-4, A-2	0	0	100	100	65-85	30-55	20-30	NP-10
	6-26	Loam, silt loam, sandy loam	ML, CL-ML, SM, SC-SM	A-4	0	0	100	100	65-95	40-70	15-30	NP-10
	26-60	Stratified loamy fine sand to silt loam	SM, SC-SM	A-2, A-4	0	0	95-100	75-100	60-80	25-50	15-25	NP-10
63:												
Glendive	0-3	Loam	ML	A-4	0	0	100	100	75-95	65-90	25-35	NP-10
	3-6	Loam, silt loam, sandy loam	ML, CL-ML, SM, SC-SM	A-4	0	0	100	100	65-95	40-70	15-30	NP-10
	6-60	Stratified loamy fine sand to silt loam	SM, SC-SM	A-2, A-4	0	0	95-100	75-100	60-80	25-50	15-25	NP-10
64:												
Golva	0-11	Silt loam	CL-ML	A-4	0	0	100	100	95-100	70-90	25-30	5-10
	11-30	Clay loam, silt loam, silty clay loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	75-90	25-40	5-15
	30-60	Loam, silt loam, clay loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	75-90	25-40	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	
65:												
Golva	0-14	Silt loam	CL-ML	A-4	0	0	100	100	95-100	70-90	25-30	5-10
	14-32	Clay loam, silt loam, silty clay loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	75-90	25-40	5-15
	32-60	Loam, silt loam, clay loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	75-90	25-40	5-15
66:												
Golva	0-14	Silt loam	CL-ML	A-4	0	0	100	100	95-100	70-90	25-30	5-10
	14-32	Clay loam, silt loam, silty clay loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	75-90	25-40	5-15
	32-60	Loam, silt loam, clay loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	75-90	25-40	5-15
Cambert	0-5	Silt loam	CL-ML	A-4	0	0	100	100	90-100	70-90	20-30	5-10
	5-13	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-35	5-15
	13-27	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-35	5-15
	27-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
67:												
Hanly	0-8	Loamy fine sand	SM	A-2	0	0	100	100	50-75	15-30	---	NP
	8-60	Stratified fine sandy loam to sand	SM, SP-SM	A-2, A-3	0	0	100	100	50-85	5-25	---	NP
Glendive	0-7	Fine sandy loam	SM, ML, SC-SM, CL-ML	A-4, A-2	0	0	100	100	65-85	30-55	20-30	NP-10
	7-45	Loam, silt loam, sandy loam	ML, CL-ML, SM, SC-SM	A-4	0	0	100	100	65-95	40-70	15-30	NP-10
	45-60	Stratified loamy fine sand to silt loam	SM, SC-SM	A-2, A-4	0	0	95-100	75-100	60-80	25-50	15-25	NP-10
68:												
Havre	0-10	Loam	ML, CL-ML	A-4	0	0	100	100	80-95	60-75	20-30	NP-10
	10-60	Stratified fine sandy loam to clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	80-95	50-70	20-35	5-15
69:												
Havre	0-9	Silty clay loam	CL	A-6	0	0	100	100	85-100	75-95	25-40	10-20
	9-60	Stratified fine sandy loam to clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	80-95	50-70	20-35	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	
70:												
Havre	0-10	Silty clay loam	CL	A-6	0	0	100	100	85-100	75-95	25-40	10-20
	10-60	Stratified fine sandy loam to clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	80-95	50-70	20-35	5-15
Harlem	0-8	Silty clay	CH, CL	A-7	0	0	100	100	90-100	75-95	40-65	20-40
	8-60	Stratified clay to silt loam	CL, CH	A-7	0	0	100	100	95-100	85-95	40-65	20-40
71:												
Hedstrom	0-7	Loam	CL-ML	A-4	0	0	90-100	85-100	70-95	50-75	25-30	5-10
	7-22	Sandy clay loam, clay loam	CL-ML, CL	A-4, A-6	0	0	90-100	85-100	70-85	50-65	25-35	5-15
	22-31	Sandy clay loam, loam	CL-ML, CL	A-4, A-6	0	0	90-100	85-100	70-90	50-65	25-35	5-15
	31-60	Fine sand, sand, loamy fine sand	SM	A-2	0	0	80-100	75-100	50-80	15-35	---	NP
72:												
Ismay	0-8	Silty clay loam	CL	A-6	0	0	100	100	95-100	85-95	30-40	10-20
	8-17	Silty clay loam, silt loam, loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	80-95	25-35	5-15
	17-25	Stratified silty clay loam to very fine sandy loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	80-95	25-35	5-15
	25-50	Stratified clay loam to very fine sandy loam	CL, CL-ML	A-6, A-4	0	0	100	100	90-100	75-90	25-35	5-15
	50-60	Stratified clay loam to very fine sandy loam	CL, CL-ML	A-6, A-4	0	0	100	100	85-100	60-80	25-35	5-15
73:												
Kobar	0-14	Silty clay loam	CL	A-7, A-6	0	0	95-100	90-100	85-100	80-95	30-45	10-20
	14-30	Silty clay loam, silty clay, clay	CL	A-7, A-6	0	0	95-100	90-100	85-100	75-95	35-50	15-25
	30-60	Silty clay loam, silty clay, clay	CL	A-7, A-6	0	0	95-100	90-100	85-100	75-95	35-50	15-25
74:												
Kobar	0-16	Silty clay loam	CL	A-7, A-6	0	0	95-100	90-100	85-100	80-95	30-45	10-20
	16-35	Silty clay loam, silty clay, clay	CL	A-7, A-6	0	0	95-100	90-100	85-100	75-95	35-50	15-25
	35-60	Silty clay loam, silty clay, clay	CL	A-7, A-6	0	0	95-100	90-100	85-100	75-95	35-50	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	
75:												
Kobar	0-17	Silty clay loam	CL	A-7, A-6	0	0	95-100	90-100	85-100	80-95	30-45	10-20
	17-37	Silty clay loam, silty clay, clay	CL	A-7, A-6	0	0	95-100	90-100	85-100	75-95	35-50	15-25
	37-60	Silty clay loam, silty clay, clay	CL	A-7, A-6	0	0	95-100	90-100	85-100	75-95	35-50	15-25
Gerdrum	0-7	Silty clay loam	CL	A-6	0	0	80-100	75-100	65-95	60-90	25-40	10-20
	7-18	Clay, silty clay, silty clay loam	CL, CH	A-7	0	0	90-100	90-100	85-100	75-95	40-60	20-40
	18-60	Clay loam, sandy clay loam, clay	CL, SC, CH	A-6, A-7	0	0	90-100	90-100	80-95	45-75	35-55	15-35
76:												
Kremlin	0-7	Loam	CL-ML	A-4	0	0	95-100	90-100	75-95	50-75	25-30	5-10
	7-15	Loam, silt loam, clay loam	CL-ML, CL	A-4, A-6	0	0	95-100	90-100	75-95	55-80	25-35	5-15
	15-50	Loam, silt loam, clay loam	CL-ML, CL	A-4, A-6	0	0	95-100	90-100	75-95	55-80	25-35	5-15
	50-60	Stratified sandy loam to silt loam	ML, CL-ML	A-4	0	0	90-100	85-100	70-90	50-75	20-30	NP-10
77:												
Kremlin	0-4	Loam	CL-ML	A-4	0	0	95-100	90-100	75-95	50-75	25-30	5-10
	4-11	Loam, silt loam, clay loam	CL-ML, CL	A-4, A-6	0	0	95-100	90-100	75-95	55-80	25-35	5-15
	11-60	Loam, silt loam, clay loam	CL-ML, CL	A-4, A-6	0	0	95-100	90-100	75-95	55-80	25-35	5-15
78:												
Kremlin	0-10	Loam	CL-ML	A-4	0	0	95-100	90-100	75-95	50-75	25-30	5-10
	10-16	Loam, silt loam, clay loam	CL-ML, CL	A-4, A-6	0	0	95-100	90-100	75-95	55-80	25-35	5-15
	16-40	Loam, silt loam, clay loam	CL-ML, CL	A-4, A-6	0	0	95-100	90-100	75-95	55-80	25-35	5-15
	40-60	Stratified sandy loam to silt loam	ML, CL-ML	A-4	0	0	90-100	85-100	70-90	50-75	20-30	NP-10
Busby	0-3	Fine sandy loam	SM	A-4	0	0	100	100	60-85	35-50	20-25	NP-5
	3-20	Fine sandy loam, sandy loam, loam	SM, ML	A-4	0	0	100	100	60-90	35-75	20-25	NP-5
	20-42	Fine sandy loam, sandy loam	SM	A-4	0	0	100	100	60-85	35-50	20-25	NP-5
	42-60	Loamy fine sand, loamy sand, fine sandy loam	SM	A-2, A-4	0	0	100	100	60-85	20-50	15-25	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	
79:												
Kremlin	0-3	Loam	CL-ML	A-4	0	0	95-100	90-100	75-95	50-75	25-30	5-10
	3-12	Loam, silt loam, clay loam	CL-ML, CL	A-4, A-6	0	0	95-100	90-100	75-95	55-80	25-35	5-15
	12-60	Loam, silt loam, clay loam	CL-ML, CL	A-4, A-6	0	0	95-100	90-100	75-95	55-80	25-35	5-15
Tinsley	0-6	Gravelly sandy loam	SM	A-2, A-1	0	0-10	70-90	55-75	35-55	15-35	15-20	NP-5
	6-60	Very gravelly sand, very cobbly loamy sand, extremely gravelly sand	GM, SM, SP-SM, GP-GM	A-1	0	10-40	40-70	25-55	10-35	5-15	---	NP
Degrand	0-5	Loam	ML, SM	A-4	0	0-5	85-100	80-100	60-85	40-60	25-35	NP-10
	5-14	Sandy clay loam, clay loam	CL, SC, CL-ML, SC-SM	A-6, A-4	0	0-5	85-100	80-100	50-90	35-80	25-40	5-15
	14-28	Clay loam, loam, sandy loam	ML, SM	A-4	0	0-5	85-100	80-100	55-85	40-70	20-35	NP-10
	28-60	Sand, gravelly sand, loamy sand	SP, SP-SM, SM	A-1, A-3, A-2	0	0-5	65-100	55-100	25-70	0-15	---	NP
80:												
Lihen	0-12	Loamy sand	SM	A-2, A-1	0	0	100	85-100	45-75	15-30	---	NP
	12-60	Loamy fine sand, loamy sand, sand	SM	A-2, A-1	0	0	100	85-100	45-75	15-35	---	NP
81:												
Lihen	0-15	Loamy sand	SM	A-2, A-1	0	0	100	85-100	45-75	15-30	---	NP
	15-60	Loamy fine sand, loamy sand, sand	SM	A-2, A-1	0	0	100	85-100	45-75	15-35	---	NP
Parshall	0-7	Fine sandy loam	SM, SC-SM	A-4	0	0	100	100	65-80	35-50	20-30	NP-10
	7-32	Fine sandy loam, sandy loam	SC-SM, SM	A-4, A-2	0	0	90-100	85-100	55-80	30-50	20-30	NP-10
	32-60	Fine sandy loam, sandy loam, loamy sand	SM, SC-SM	A-2, A-4	0	0	90-100	85-100	50-75	20-40	15-25	NP-10
Yetull	0-7	Gravelly loamy sand	SM	A-1, A-2	0	0-10	60-80	55-75	30-60	15-30	---	NP
	7-60	Sand, loamy sand, coarse sand	SM, SP-SM	A-1, A-2, A-3	0	0-10	95-100	95-100	40-65	5-30	---	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	
82:												
Lihen	0-13	Loamy sand	SM	A-2, A-1	0	0	100	85-100	45-75	15-30	---	NP
	13-60	Loamy fine sand, loamy sand, sand	SM	A-2, A-1	0	0	100	85-100	45-75	15-35	---	NP
Tinsley	0-4	Gravelly sandy loam	SM	A-2, A-1	0	0-10	70-90	55-75	35-55	15-35	15-20	NP-5
	4-60	Very gravelly sand, very cobbly loamy sand, extremely gravelly sand	GM, SM, SP-SM, GP-GM	A-1	0	10-40	40-70	25-55	10-35	5-15	---	NP
83:												
Lihen	0-18	Loamy sand	SM	A-2, A-1	0	0	100	85-100	45-75	15-30	---	NP
	18-60	Loamy fine sand, loamy sand, sand	SM	A-2, A-1	0	0	100	85-100	45-75	15-35	---	NP
Yetull	0-10	Very gravelly loamy sand	GM	A-1, A-2	0	0-10	35-55	30-50	20-45	10-30	---	NP
	10-60	Sand, loamy sand, coarse sand	SM, SP-SM	A-1, A-2, A-3	0	0-10	95-100	95-100	40-65	5-30	---	NP
84:												
Lonna	0-4	Silt loam	CL-ML	A-4	0	0	100	100	90-100	75-90	25-30	5-10
	4-12	Silt loam, silty clay loam	CL-ML, CL	A-6, A-4	0	0	100	100	95-100	75-95	25-40	5-15
	12-60	Silt loam, silty clay loam	CL-ML, CL	A-6, A-4	0	0	100	100	95-100	75-95	25-40	5-15
85:												
Lonna	0-7	Silt loam	CL-ML	A-4	0	0	100	100	90-100	75-90	25-30	5-10
	7-12	Silt loam, silty clay loam	CL-ML, CL	A-6, A-4	0	0	100	100	95-100	75-95	25-40	5-15
	12-60	Silt loam, silty clay loam	CL-ML, CL	A-6, A-4	0	0	100	100	95-100	75-95	25-40	5-15
86:												
Lonna	0-4	Silt loam	CL-ML	A-4	0	0	100	100	90-100	75-90	25-30	5-10
	4-12	Silt loam, silty clay loam	CL-ML, CL	A-6, A-4	0	0	100	100	95-100	75-95	25-40	5-15
	12-60	Silt loam, silty clay loam	CL-ML, CL	A-6, A-4	0	0	100	100	95-100	75-95	25-40	5-15
87:												
Lonna	0-4	Silty clay loam	CL	A-6	0	0	100	100	95-100	85-95	30-35	10-15
	4-11	Silt loam, silty clay loam	CL-ML, CL	A-6, A-4	0	0	100	100	95-100	75-95	25-40	5-15
	11-60	Silt loam, silty clay loam	CL-ML, CL	A-6, A-4	0	0	100	100	95-100	75-95	25-40	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	
88:												
Lonna	0-3	Silty clay loam	CL	A-6	0	0	100	100	95-100	85-95	30-35	10-15
	3-11	Silt loam, silty clay loam	CL-ML, CL	A-6, A-4	0	0	100	100	95-100	75-95	25-40	5-15
	11-60	Silt loam, silty clay loam	CL-ML, CL	A-6, A-4	0	0	100	100	95-100	75-95	25-40	5-15
89:												
Lonna	0-5	Silt loam	CL-ML	A-4	0	0	100	100	90-100	75-90	25-30	5-10
	5-14	Silt loam, silty clay loam	CL-ML, CL	A-6, A-4	0	0	100	100	95-100	75-95	25-40	5-15
	14-60	Silt loam, silty clay loam	CL-ML, CL	A-6, A-4	0	0	100	100	95-100	75-95	25-40	5-15
Cambeth	0-5	Silt loam	CL-ML, ML	A-4	0	0	100	100	90-100	70-90	25-35	5-10
	5-11	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	75-95	25-40	5-20
	11-25	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	75-95	25-40	5-20
	25-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
90:												
Lonna	0-5	Silt loam	CL-ML	A-4	0	0	100	100	90-100	75-90	25-30	5-10
	5-11	Silt loam, silty clay loam	CL-ML, CL	A-6, A-4	0	0	100	100	95-100	75-95	25-40	5-15
	11-60	Silt loam, silty clay loam	CL-ML, CL	A-6, A-4	0	0	100	100	95-100	75-95	25-40	5-15
Cambeth	0-5	Silt loam	CL-ML, ML	A-4	0	0	100	100	90-100	70-90	25-35	5-10
	5-11	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	75-95	25-40	5-20
	11-29	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	75-95	25-40	5-20
	29-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Cabbart	0-3	Silt loam	CL-ML	A-4	0	0	90-100	85-100	65-85	55-75	25-30	5-10
	3-12	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	90-100	85-100	60-90	55-85	25-35	5-15
	12-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
91:												
Lonna	0-4	Silt loam	CL-ML	A-4	0	0	100	100	90-100	75-90	25-30	5-10
	4-11	Silt loam, silty clay loam	CL-ML, CL	A-6, A-4	0	0	100	100	95-100	75-95	25-40	5-15
	11-60	Silt loam, silty clay loam	CL-ML, CL	A-6, A-4	0	0	100	100	95-100	75-95	25-40	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	
91:												
Cambeth	0-3	Silt loam	CL-ML, ML	A-4	0	0	100	100	90-100	70-90	25-35	5-10
	3-11	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	75-95	25-40	5-20
	11-30	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	75-95	25-40	5-20
	30-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Cabbart	0-4	Silt loam	CL-ML	A-4	0	0	90-100	85-100	65-85	55-75	25-30	5-10
	4-14	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	90-100	85-100	60-90	55-85	25-35	5-15
	14-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
92:												
Macar	0-4	Loam	CL-ML	A-4	0	0	100	100	75-95	55-70	25-30	5-10
	4-19	Clay loam, loam, silty clay loam	CL-ML, CL	A-6, A-4	0	0	100	100	75-95	60-85	25-40	5-15
	19-60	Clay loam, loam, silty clay loam	CL-ML, CL	A-6, A-4	0	0	100	100	75-95	60-85	25-40	5-15
93:												
Marias	0-8	Silty clay	CL, CH	A-7	0	0	100	100	95-100	90-95	40-60	20-40
	8-34	Clay, silty clay	CL, CH	A-7	0	0	100	100	90-100	75-95	40-70	25-50
	34-60	Clay, silty clay	CL, CH	A-7	0	0	100	100	90-100	75-95	40-70	25-50
94:												
Marvan	0-3	Silty clay	CL, CH	A-7	0	0	100	100	95-100	85-100	40-65	20-45
	3-30	Clay, silty clay	CL, CH	A-7	0	0	100	100	90-100	75-100	45-70	25-50
	30-60	Clay, silty clay	CL, CH	A-7	0	0	100	100	90-100	75-100	45-70	25-50
95:												
Marvan	0-5	Silty clay	CL, CH	A-7	0	0	100	100	95-100	85-100	40-65	20-45
	5-31	Clay, silty clay	CL, CH	A-7	0	0	100	100	90-100	75-100	45-70	25-50
	31-60	Clay, silty clay	CL, CH	A-7	0	0	100	100	90-100	75-100	45-70	25-50
96:												
Marvan	0-3	Silty clay	CL, CH	A-7	0	0	100	100	95-100	85-100	40-65	20-45
	3-27	Clay, silty clay	CL, CH	A-7	0	0	100	100	90-100	75-100	45-70	25-50
	27-60	Clay, silty clay	CL, CH	A-7	0	0	100	100	90-100	75-100	45-70	25-50
Vanda	0-5	Silty clay	CL, CH	A-7	0	0	100	100	95-100	75-95	40-65	20-45
	5-60	Clay, silty clay, silty clay loam	CL, CH	A-7, A-6	0	0	100	100	95-100	80-95	35-65	15-45

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	
97:												
Neldore	0-3	Silty clay	CL, CH	A-7	0	0-10	95-100	90-100	75-100	70-95	40-55	20-30
	3-12	Clay, silty clay	CL, CH	A-7	0	0	90-100	85-100	70-95	65-90	40-60	20-40
	12-18	Clay, silty clay	CL, CH	A-7	0	0-5	85-100	80-100	65-95	60-90	40-60	20-40
	18-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												
98:												
Neldore	0-3	Clay	CL, CH	A-7	0	0-10	95-100	90-100	75-100	70-95	40-55	20-30
	3-16	Clay, silty clay	CL, CH	A-7	0	0-5	85-100	80-100	65-95	60-90	40-60	20-40
	16-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												
Abor	0-11	Silty clay	CL, CH	A-7	0	0	95-100	90-100	80-100	75-95	40-60	20-35
	11-28	Silty clay, clay, silty clay loam	CL, CH	A-6, A-7	0	0	80-100	75-100	65-100	60-95	35-65	20-45
	28-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
99:												
Neldore	0-3	Silty clay	CL, CH	A-7	0	0-10	95-100	90-100	75-100	70-95	40-55	20-30
	3-15	Clay, silty clay	CL, CH	A-7	0	0-5	85-100	80-100	65-95	60-90	40-60	20-40
	15-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Weingart	0-3	Clay loam	CL	A-6, A-7	0	0	90-100	90-100	65-90	60-85	30-45	10-25
	3-17	Clay, silty clay	CL, CH	A-7	0	0	90-100	90-100	80-100	75-95	40-65	20-40
	17-35	Clay, silty clay, clay loam	CL, CH	A-6, A-7	0	0	90-100	90-100	75-100	70-90	35-60	15-35
	35-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Kirby	0-4	Channery loam	SM, SC-SM, GM, CL-ML	A-4	0	0-10	65-85	55-75	45-65	40-60	15-25	NP-10
	4-11	Extremely channery loam, extremely channery sandy loam, very channery loam	GP-GM, GM, GM-GC	A-2, A-1	0	10-30	20-60	10-50	5-40	5-35	15-25	NP-10
	11-60	Fragmental material	GP	A-1	0	40-60	5-15	0-10	0-5	0-5	---	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	
100:												
Nesda	0-14	Gravelly sandy loam	ML, SM, GM	A-2, A-4	0	0-5	60-80	55-75	45-65	30-55	15-25	NP-5
	14-60	Very gravelly sand, very gravelly loamy sand, extremely gravelly sand	GP, GM, GP-GM, SP-SM	A-1	0	0-25	25-60	15-50	5-35	0-15	---	NP
101:												
Parshall	0-5	Fine sandy loam	SM, SC-SM	A-4	0	0	100	100	65-80	35-50	20-30	NP-10
	5-24	Fine sandy loam, sandy loam	SC-SM, SM	A-4, A-2	0	0	90-100	85-100	55-80	30-50	20-30	NP-10
	24-60	Fine sandy loam, sandy loam, loamy sand	SM, SC-SM	A-2, A-4	0	0	90-100	85-100	50-75	20-40	15-25	NP-10
102:												
Peerless	0-5	Loam	CL-ML	A-4	0	0	90-100	85-100	70-95	50-75	25-30	5-10
	5-20	Loam, clay loam	CL-ML, CL	A-4, A-6	0	0	80-100	75-100	65-95	55-80	25-35	5-15
	20-27	Loam, gravelly loam	CL-ML, SC-SM	A-4	0	0-10	75-100	70-95	60-90	45-70	25-30	5-10
	27-37	Very gravelly sandy clay loam, very gravelly loam	GM-GC	A-2	0	0-10	40-60	30-50	25-45	15-35	25-30	5-10
	37-60	Very gravelly sandy loam, very gravelly sandy clay loam, very gravelly loam	GM-GC, GM	A-2, A-1	0	0-10	40-60	30-50	20-40	10-30	20-30	NP-10
103:												
Pinelli	0-4	Loam	CL-ML	A-4	0	0	75-100	75-100	65-90	50-75	25-30	5-10
	4-18	Clay loam, silty clay loam, clay	CL, CH	A-7	0	0	75-100	75-100	65-90	55-85	45-55	25-35
	18-60	Clay loam, loam, silty clay loam	CL, CL-ML	A-6, A-4	0	0	75-100	75-100	65-90	55-85	25-35	5-15
104:												
Pinelli	0-7	Loam	CL-ML	A-4	0	0	75-100	75-100	65-90	50-75	25-30	5-10
	7-18	Clay loam, silty clay loam, clay	CL, CH	A-7	0	0	75-100	75-100	65-90	55-85	45-55	25-35
	18-60	Clay loam, loam, silty clay loam	CL, CL-ML	A-6, A-4	0	0	75-100	75-100	65-90	55-85	25-35	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	
105:												
Pinelli	0-5	Loam	CL-ML	A-4	0	0	75-100	75-100	65-90	50-75	25-30	5-10
	5-18	Clay loam, silty clay loam, clay	CL, CH	A-7	0	0	75-100	75-100	65-90	55-85	45-55	25-35
	18-60	Clay loam, loam, silty clay loam	CL, CL-ML	A-6, A-4	0	0	75-100	75-100	65-90	55-85	25-35	5-15
Weingart	0-7	Clay loam	CL	A-6, A-7	0	0	90-100	90-100	65-90	60-85	30-45	10-25
	7-16	Clay, silty clay	CL, CH	A-7	0	0	90-100	90-100	80-100	75-95	40-65	20-40
	16-38	Clay, silty clay, clay loam	CL, CH	A-6, A-7	0	0	90-100	90-100	75-100	70-90	35-60	15-35
	38-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Gerdrum	0-7	Clay loam	CL	A-6	0	0	80-100	75-100	65-95	60-90	25-40	10-20
	7-16	Clay, silty clay, silty clay loam	CL, CH	A-7	0	0	90-100	90-100	85-100	75-95	40-60	20-40
	16-60	Clay loam, sandy clay loam, clay	CL, SC, CH	A-6, A-7	0	0	90-100	90-100	80-95	45-75	35-55	15-35
106:												
Riverwash.												
107:												
Rivra loam	0-8	Loam	ML, CL-ML, SM, SC-SM	A-4	0	0-5	85-100	80-100	55-90	45-70	20-30	NP-10
	8-60	Extremely gravelly loamy coarse sand, extremely gravelly sand, very gravelly sand	GP-GM, GP	A-1	0	15-30	25-55	15-45	5-25	0-10	---	NP
Rivra gravelly sandy loam	0-9	Gravelly sandy loam	SM	A-1, A-2	0	0-15	65-80	60-75	40-60	20-35	20-25	NP-5
	9-60	Very gravelly loamy coarse sand, extremely gravelly sand, very gravelly sand	GP, GP-GM	A-1	0	15-30	25-55	15-45	5-25	0-10	---	NP
108:												
Rock outcrop.												
109:												
Rock outcrop.												

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:												
Cabbart	0-3	Loam	CL-ML	A-4	0	0	90-100	85-100	65-85	55-75	25-30	5-10
	3-13	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	90-100	85-100	60-90	55-85	25-35	5-15
	13-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Kirby	0-3	Very channery loam	GM, GM-GC	A-2, A-1, A-4	0	0-15	40-60	30-50	25-45	20-40	15-25	NP-10
	3-10	Extremely channery loam, extremely channery sandy loam, very channery loam	GP-GM, GM, GM-GC	A-2, A-1	0	10-30	20-60	10-50	5-40	5-35	15-25	NP-10
	10-60	Fragmental material	GP	A-1	0	40-60	5-15	0-10	0-5	0-5	---	NP
110:												
Ryell	0-9	Fine sandy loam	ML, SM	A-4	0	0	100	95-100	70-90	40-60	20-25	NP-5
	9-24	Stratified very fine sandy loam to silt loam	ML	A-4	0	0	100	95-100	85-95	60-80	20-25	NP-5
	24-60	Extremely gravelly loamy sand, very gravelly sand, extremely gravelly sand	GP-GM, GP	A-1	0	0-5	30-50	20-45	10-30	0-10	---	NP
111:												
Ryell	0-8	Very fine sandy loam	SM, ML	A-4	0	0	100	100	70-85	40-55	---	NP
	8-22	Stratified very fine sandy loam to silt loam	ML	A-4	0	0	100	95-100	85-95	60-85	25-35	NP-5
	22-60	Extremely gravelly loamy sand, very gravelly sand, extremely gravelly sand	GP-GM, GP	A-1	0	0-5	30-45	20-35	10-25	0-10	---	NP
112:												
Ryell	0-9	Loam	CL-ML	A-4	0	0	100	95-100	75-95	60-80	25-30	5-10
	9-25	Stratified very fine sandy loam to silt loam	ML	A-4	0	0	100	95-100	85-95	60-80	20-25	NP-5
	25-60	Extremely gravelly loamy sand, very gravelly sand, extremely gravelly sand	GP-GM, GP	A-1	0	0-5	30-50	20-45	10-30	0-10	---	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	
113:												
Shambo	0-4	Loam	CL-ML	A-4	0	0	100	100	85-100	65-90	25-30	5-10
	4-11	Loam, silt loam, clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	85-100	65-90	25-35	5-15
	11-60	Loam, clay loam, silty clay loam	CL-ML, CL	A-6, A-4	0	0	100	100	90-100	65-95	25-35	5-15
114:												
Shambo	0-5	Loam	CL-ML	A-4	0	0	100	100	85-100	65-90	25-30	5-10
	5-13	Loam, silt loam, clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	85-100	65-90	25-35	5-15
	13-60	Loam, clay loam, silty clay loam	CL-ML, CL	A-6, A-4	0	0	100	100	90-100	65-95	25-35	5-15
115:												
Spinekop	0-11	Silty clay loam	CL	A-6	0	0	100	100	95-100	85-95	30-40	10-20
	11-15	Silty clay loam	CL	A-6	0	0	100	100	95-100	85-95	30-35	10-15
	15-19	Loam, clay loam	CL-ML	A-4	0	0	100	100	85-95	65-75	25-30	5-10
	19-60	Stratified fine sandy loam to silty clay loam	CL-ML	A-4	0	0	100	100	80-90	60-75	25-30	5-10
116:												
Subwell	0-4	Loam	CL-ML	A-4	0	0	90-100	85-100	65-85	60-80	25-30	5-10
	4-15	Loam, gravelly loam	CL-ML, SC-SM	A-4	0	0	75-95	70-95	60-90	40-70	25-30	5-10
	15-20	Very gravelly sandy loam, very gravelly loam	GM-GC, GM	A-1, A-2	0	0-10	40-60	30-50	25-45	15-35	20-30	NP-10
	20-60	Very gravelly sandy loam, very gravelly loamy sand	GM, GP-GM	A-1	0	0-10	40-55	30-50	15-30	5-15	20-25	NP-5
Bigsheep	0-9	Very gravelly loam	GM-GC	A-2, A-4	0	0-10	40-60	30-50	25-45	15-40	20-30	5-10
	9-18	Very gravelly sandy loam, very gravelly sandy clay loam, very gravelly loam	GM-GC	A-2	0	0-10	40-55	30-50	25-45	20-30	20-30	5-10
	18-26	Silt loam, loam	CL-ML	A-4	0	0	100	90-100	80-100	70-90	20-30	5-10
	26-60	Very gravelly loam, very gravelly sandy clay loam, extremely gravelly sandy loam	GM, GM-GC, GP-GM	A-2, A-1	0	0-10	25-60	15-50	10-40	5-30	15-30	NP-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	
117:												
Subwell	0-6	Loam	CL-ML	A-4	0	0	90-100	85-100	65-85	60-80	25-30	5-10
	6-14	Loam, gravelly loam	CL-ML, SC-SM	A-4	0	0	75-95	70-95	60-90	40-70	25-30	5-10
	14-24	Very gravelly sandy loam, very gravelly loam	GM-GC, GM	A-1, A-2	0	0-10	40-60	30-50	25-45	15-35	20-30	NP-10
	24-60	Very gravelly sandy loam, very gravelly loamy sand	GM, GP-GM	A-1	0	0-10	40-55	30-50	15-30	5-15	20-25	NP-5
Cambert	0-5	Silt loam	CL-ML	A-4	0	0	100	100	90-100	70-90	20-30	5-10
	5-12	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-35	5-15
	12-32	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-35	5-15
	32-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Bigsheep	0-10	Very gravelly loam	GM-GC	A-2, A-4	0	0-10	40-50	35-45	25-45	15-40	20-30	5-10
	10-50	Very gravelly sandy loam, very gravelly sandy clay loam, very gravelly loam	GM-GC	A-2	0	0-10	40-65	30-55	25-50	20-30	20-30	5-10
	50-60	Weathered bedrock	---	---	---	---	---	---	---	---	---	NP
118:												
Subwell	0-3	Loam	CL-ML	A-4	0	0	90-100	85-100	65-85	60-80	25-30	5-10
	3-16	Loam, gravelly loam	CL-ML, SC-SM	A-4	0	0	75-95	70-95	60-90	40-70	25-30	5-10
	16-28	Very gravelly sandy loam, very gravelly loam	GM-GC, GM	A-1, A-2	0	0-10	40-60	30-50	25-45	15-35	20-30	NP-10
	28-60	Very gravelly sandy loam, very gravelly loamy sand	GM, GP-GM	A-1	0	0-10	40-55	30-50	15-30	5-15	20-25	NP-5
Peerless	0-6	Loam	CL-ML	A-4	0	0	90-100	85-100	70-95	50-75	25-30	5-10
	6-16	Loam, clay loam	CL-ML, CL	A-4, A-6	0	0	80-100	75-100	65-95	55-80	25-35	5-15
	16-28	Loam, gravelly loam	CL-ML, SC-SM	A-4	0	0-10	75-100	70-95	60-90	45-70	25-30	5-10
	28-39	Very gravelly sandy clay loam, very gravelly loam	GM-GC	A-2	0	0-10	40-60	30-50	25-45	15-35	25-30	5-10
	39-60	Very gravelly sandy loam, very gravelly sandy clay loam, very gravelly loam	GM-GC, GM	A-2, A-1	0	0-10	40-60	30-50	20-40	10-30	20-30	NP-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	
119:												
Tally	0-7	Fine sandy loam	SM, ML, SC-SM, CL-ML	A-4, A-2	0	0	90-100	80-100	60-100	30-55	20-30	NP-10
	7-24	Fine sandy loam, sandy loam	SM, SC-SM	A-4, A-2	0	0	90-100	80-100	60-100	25-50	15-25	NP-10
	24-39	Sandy loam, fine sandy loam, loamy fine sand	SM	A-4, A-2	0	0	90-100	80-100	60-100	15-50	15-25	NP-5
	39-60	Loamy fine sand, fine sand, sandy loam	SM	A-2	0	0	90-100	80-100	60-85	15-35	---	NP
120:												
Tally	0-7	Fine sandy loam	SM, ML, SC-SM, CL-ML	A-4, A-2	0	0	90-100	80-100	60-100	30-55	20-30	NP-10
	7-18	Fine sandy loam, sandy loam	SM, SC-SM	A-4, A-2	0	0	90-100	80-100	60-100	25-50	15-25	NP-10
	18-28	Sandy loam, fine sandy loam, loamy fine sand	SM	A-4, A-2	0	0	90-100	80-100	60-100	15-50	15-25	NP-5
	28-60	Loamy fine sand, fine sand, sandy loam	SM	A-2	0	0	90-100	80-100	60-85	15-35	---	NP
Hedstrom	0-5	Fine sandy loam	CL-ML, SC-SM	A-4	0	0	90-100	85-100	60-85	35-60	20-25	5-10
	5-15	Sandy clay loam, clay loam	CL-ML, CL	A-4, A-6	0	0	90-100	85-100	70-85	50-65	25-35	5-15
	15-24	Sandy clay loam, loam	CL-ML, CL	A-4, A-6	0	0	90-100	85-100	70-90	50-65	25-35	5-15
	24-60	Fine sand, sand, loamy fine sand	SM	A-2	0	0	80-100	75-100	50-80	15-35	---	NP
121:												
Tally	0-6	Fine sandy loam	SM, ML, SC-SM, CL-ML	A-4, A-2	0	0	90-100	80-100	60-100	30-55	20-30	NP-10
	6-30	Fine sandy loam, sandy loam	SM, SC-SM	A-4, A-2	0	0	90-100	80-100	60-100	25-50	15-25	NP-10
	30-60	Sandy loam, fine sandy loam, loamy fine sand	SM	A-4, A-2	0	0	90-100	80-100	60-100	15-50	15-25	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	
121:												
Wabek	0-4	Gravelly sandy loam	ML, CL-ML, GM, SM	A-2, A-4, A-1	0	0-5	60-85	55-75	30-70	15-60	20-30	NP-10
	4-11	Gravelly sandy loam, gravelly loam, very gravelly sandy loam	GM, SM	A-2, A-4, A-1	0	0-5	40-65	40-60	25-55	15-40	---	NP
	11-60	Extremely gravelly sand, very gravelly loamy sand, very gravelly sand	SP, GP, GP-GM, SP-SM	A-1	0	0-5	30-60	20-50	10-35	0-10	---	NP
Hedstrom	0-6	Fine sandy loam	CL-ML, SC-SM	A-4	0	0	90-100	85-100	60-85	35-60	20-25	5-10
	6-22	Sandy clay loam, clay loam	CL-ML, CL	A-4, A-6	0	0	90-100	85-100	70-85	50-65	25-35	5-15
	22-34	Sandy clay loam, loam	CL-ML, CL	A-4, A-6	0	0	90-100	85-100	70-90	50-65	25-35	5-15
	34-60	Fine sand, sand, loamy fine sand	SM	A-2	0	0	80-100	75-100	50-80	15-35	---	NP
122:												
Tinsley	0-3	Very gravelly sandy loam	GM	A-1, A-2	0	0-15	40-65	30-50	20-45	15-35	15-20	NP-5
	3-60	Very gravelly sand, very cobbly loamy sand, extremely gravelly sand	GM, SM, SP-SM, GP-GM	A-1	0	10-40	40-70	25-55	10-35	5-15	---	NP
Delpoint	0-3	Loam	CL-ML	A-4	0	0	95-100	90-100	75-90	55-75	20-30	5-10
	3-11	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-95	65-85	20-40	5-20
	11-32	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-95	65-85	20-40	5-20
	32-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Cabbart	0-3	Loam	CL-ML	A-4	0	0	90-100	85-100	65-85	55-75	25-30	5-10
	3-13	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	90-100	85-100	60-90	55-85	25-35	5-15
	13-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
123:												
Ustic Torrifluvents.												
124:												
Ustic Torriorthents.												

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:												
Borollic Natargids.												
125:												
Ustic Torriorthents.												
Rock outcrop.												
126:												
Ustic Torriorthents.												
Ustic Torrifluvents.												
Rock outcrop.												
127:												
Vanstel	0-4	Silt loam	CL-ML	A-4	0	0	100	100	95-100	75-85	20-30	5-10
	4-13	Loam, clay loam, silty clay loam	CL	A-6	0	0	100	100	95-100	85-95	30-35	10-15
	13-60	Loam, silt loam, clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-95	25-35	5-15
128:												
Vanstel	0-4	Silt loam	CL-ML	A-4	0	0	100	100	95-100	75-85	20-30	5-10
	4-13	Loam, clay loam, silty clay loam	CL	A-6	0	0	100	100	95-100	85-95	30-35	10-15
	13-60	Loam, silt loam, clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-95	25-35	5-15
129:												
Wabek	0-4	Gravelly sandy loam	ML, CL-ML, GM, SM	A-2, A-4, A-1	0	0-5	60-85	55-75	30-70	15-60	20-30	NP-10
	4-60	Extremely gravelly sand, very gravelly loamy sand, very gravelly sand	SP, GP, GP-GM, SP-SM	A-1	0	0-5	30-60	20-50	10-35	0-10	---	NP
130:												
Wabek	0-3	Very gravelly sandy loam	GM, GP-GM	A-1, A-2	0	0-5	40-60	30-55	20-40	10-30	---	NP
	3-11	Gravelly sandy loam, gravelly loam, very gravelly sandy loam	GM, SM	A-2, A-4, A-1	0	0-5	40-65	40-60	25-55	15-40	---	NP
	11-60	Extremely gravelly sand, very gravelly loamy sand, very gravelly sand	SP, GP, GP-GM, SP-SM	A-1	0	0-5	30-60	20-50	10-35	0-10	---	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	
130:												
Cambert	0-4	Loam	CL-ML	A-4	0	0	100	100	85-95	60-70	20-30	5-10
	4-12	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-35	5-15
	12-30	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-35	5-15
	30-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
131:												
Yamac	0-4	Loam	CL-ML	A-4	0	0-5	85-100	80-100	60-85	55-75	25-30	5-10
	4-14	Loam, clay loam, silt loam	CL, CL-ML	A-4, A-6	0	0-5	85-100	80-100	65-90	60-80	25-35	5-15
	14-60	Loam, clay loam, silt loam	CL, CL-ML	A-4, A-6	0	0-5	85-100	80-100	60-85	55-75	25-35	5-15
132:												
Yamac	0-5	Loam	CL-ML	A-4	0	0-5	85-100	80-100	60-85	55-75	25-30	5-10
	5-17	Loam, clay loam, silt loam	CL, CL-ML	A-4, A-6	0	0-5	85-100	80-100	65-90	60-80	25-35	5-15
	17-60	Loam, clay loam, silt loam	CL, CL-ML	A-4, A-6	0	0-5	85-100	80-100	60-85	55-75	25-35	5-15
133:												
Yamac	0-6	Loam	CL-ML	A-4	0	0-5	85-100	80-100	60-85	55-75	25-30	5-10
	6-18	Loam, clay loam, silt loam	CL, CL-ML	A-4, A-6	0	0-5	85-100	80-100	65-90	60-80	25-35	5-15
	18-60	Loam, clay loam, silt loam	CL, CL-ML	A-4, A-6	0	0-5	85-100	80-100	60-85	55-75	25-35	5-15
Busby	0-4	Fine sandy loam	SM	A-4	0	0	100	100	60-85	35-50	20-25	NP-5
	4-21	Fine sandy loam, sandy loam, loam	SM, ML	A-4	0	0	100	100	60-90	35-75	20-25	NP-5
	21-45	Fine sandy loam, sandy loam	SM	A-4	0	0	100	100	60-85	35-50	20-25	NP-5
	45-60	Loamy fine sand, loamy sand, fine sandy loam	SM	A-2, A-4	0	0	100	100	60-85	20-50	15-25	NP-5
134:												
Yamac	0-3	Loam	CL-ML	A-4	0	0-5	85-100	80-100	60-85	55-75	25-30	5-10
	3-14	Loam, clay loam, silt loam	CL, CL-ML	A-4, A-6	0	0-5	85-100	80-100	65-90	60-80	25-35	5-15
	14-60	Loam, clay loam, silt loam	CL, CL-ML	A-4, A-6	0	0-5	85-100	80-100	60-85	55-75	25-35	5-15
Busby	0-4	Fine sandy loam	SM	A-4	0	0	100	100	60-85	35-50	20-25	NP-5
	4-21	Fine sandy loam, sandy loam, loam	SM, ML	A-4	0	0	100	100	60-90	35-75	20-25	NP-5
	21-45	Fine sandy loam, sandy loam	SM	A-4	0	0	100	100	60-85	35-50	20-25	NP-5
	45-60	Loamy fine sand, loamy sand, fine sandy loam	SM	A-2, A-4	0	0	100	100	60-85	20-50	15-25	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	
135:												
Yamac	0-5	Loam	CL-ML	A-4	0	0-5	85-100	80-100	60-85	55-75	25-30	5-10
	5-14	Loam, clay loam, silt loam	CL, CL-ML	A-4, A-6	0	0-5	85-100	80-100	65-90	60-80	25-35	5-15
	14-60	Loam, clay loam, silt loam	CL, CL-ML	A-4, A-6	0	0-5	85-100	80-100	60-85	55-75	25-35	5-15
Busby	0-3	Fine sandy loam	SM	A-4	0	0	100	100	60-85	35-50	20-25	NP-5
	3-11	Fine sandy loam, sandy loam, loam	SM, ML	A-4	0	0	100	100	60-90	35-75	20-25	NP-5
	11-42	Fine sandy loam, sandy loam	SM	A-4	0	0	100	100	60-85	35-50	20-25	NP-5
	42-60	Loamy fine sand, loamy fine sand, fine sandy loam	SM	A-2, A-4	0	0	100	100	60-85	20-50	15-25	NP-5
Blackhall	0-4	Fine sandy loam	SM, ML	A-4	0	0-5	90-100	85-100	60-85	35-55	15-25	NP-5
	4-17	Fine sandy loam, sandy loam, very fine sandy loam	SM	A-4	0	0-5	90-100	85-100	60-80	35-50	15-25	NP-5
	17-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
136:												
Yamac	0-5	Loam	CL-ML	A-4	0	0-5	85-100	80-100	60-85	55-75	25-30	5-10
	5-15	Loam, clay loam, silt loam	CL, CL-ML	A-4, A-6	0	0-5	85-100	80-100	65-90	60-80	25-35	5-15
	15-60	Loam, clay loam, silt loam	CL, CL-ML	A-4, A-6	0	0-5	85-100	80-100	60-85	55-75	25-35	5-15
Delpoint	0-3	Loam	CL-ML	A-4	0	0	95-100	90-100	75-90	55-75	20-30	5-10
	3-15	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-95	65-85	20-40	5-20
	15-32	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-95	65-85	20-40	5-20
	32-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
137:												
Yamac	0-5	Loam	CL-ML	A-4	0	0-5	85-100	80-100	60-85	55-75	25-30	5-10
	5-16	Loam, clay loam, silt loam	CL, CL-ML	A-4, A-6	0	0-5	85-100	80-100	65-90	60-80	25-35	5-15
	16-60	Loam, clay loam, silt loam	CL, CL-ML	A-4, A-6	0	0-5	85-100	80-100	60-85	55-75	25-35	5-15
Delpoint	0-4	Loam	CL-ML	A-4	0	0	95-100	90-100	75-90	55-75	20-30	5-10
	4-15	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-95	65-85	20-40	5-20
	15-32	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-95	65-85	20-40	5-20
	32-60	Unweathered 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	
137:												
Cabbart	0-4	Silt loam	CL-ML	A-4	0	0	90-100	85-100	65-85	55-75	25-30	5-10
	4-17	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	90-100	85-100	60-90	55-85	25-35	5-15
	17-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
138:												
Yamac	0-5	Loam	CL-ML	A-4	0	0-5	85-100	80-100	60-85	55-75	25-30	5-10
	5-17	Loam, clay loam, silt loam	CL, CL-ML	A-4, A-6	0	0-5	85-100	80-100	65-90	60-80	25-35	5-15
	17-60	Loam, clay loam, silt loam	CL, CL-ML	A-4, A-6	0	0-5	85-100	80-100	60-85	55-75	25-35	5-15
Gerdrum	0-7	Silty clay loam	CL	A-6	0	0	80-100	75-100	65-95	60-90	25-40	10-20
	7-18	Clay, silty clay, silty clay loam	CL, CH	A-7	0	0	90-100	90-100	85-100	75-95	40-60	20-40
	18-60	Clay loam, sandy clay loam, clay loam	CL, SC, CH	A-6, A-7	0	0	90-100	90-100	80-95	45-75	35-55	15-35
139:												
Yawdim	0-4	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	80-90	30-45	10-20
	4-14	Silty clay loam, clay loam, clay loam	CL, CH	A-7	0	0	100	100	90-100	70-95	40-60	15-35
	14-60	Weathered bedrock	---	---	---	---	---	---	---	---	---	NP
Cambeth	0-3	Silt loam	CL-ML, ML	A-4	0	0	100	100	90-100	70-90	25-35	5-10
	3-11	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	75-95	25-40	5-20
	11-30	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	75-95	25-40	5-20
	30-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
140:												
Yetull	0-10	Loamy fine sand	SM	A-2	0	0-5	95-100	95-100	50-75	10-30	---	NP
	10-60	Loamy coarse sand, sand, loamy sand	SM, SP-SM	A-1, A-3, A-2	0	0-5	95-100	95-100	45-70	5-30	---	NP
Busby	0-3	Fine sandy loam	SM	A-4	0	0	100	100	60-85	35-50	20-25	NP-5
	3-20	Fine sandy loam, sandy loam, loam	SM, ML	A-4	0	0	100	100	60-90	35-75	20-25	NP-5
	20-42	Fine sandy loam, sandy loam	SM	A-4	0	0	100	100	60-85	35-50	20-25	NP-5
	42-60	Loamy fine sand, loamy sand, fine sandy loam	SM	A-2, A-4	0	0	100	100	60-85	20-50	15-25	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	
141:												
Zatoville	0-6	Silty clay loam	CL	A-6	0	0	100	100	95-100	85-95	25-35	10-15
	6-15	Silty clay loam, silty clay, clay loam	CL	A-6, A-7	0	0	100	100	90-100	75-95	30-45	10-25
	15-25	Silty clay loam, silty clay, clay loam	CL	A-7, A-6	0	0	100	100	90-100	75-95	35-50	15-25
	25-60	Silty clay loam, loam, clay loam	CL	A-6	0	0	100	100	90-100	70-90	30-40	10-20

PHYSICAL PROPERTIES OF THE SOILS

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" apply only to the surface layer)

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group
								K	Kf	T	
	In	Pct	g/cc	In/hr	In/in		Pct				
1:											
Abor	0-11	40-55	1.20-1.40	0.20-0.60	0.14-0.18	High	1.0-2.0	0.37	0.37	3	4
	11-32	35-60	1.30-1.55	0.00-0.06	0.14-0.16	High	0.5-1.0	0.37	---	---	---
	32-60	---	---	---	---	---	---	---	---	---	---
Cabbart	0-4	18-27	1.20-1.40	0.60-2.00	0.17-0.21	Low	1.0-2.0	0.37	0.37	2	4L
	4-14	18-35	1.30-1.50	0.60-2.00	0.15-0.19	Moderate	0.5-1.0	0.37	---	---	---
	14-60	---	---	---	---	---	---	---	---	---	---
Delpoint	0-3	20-27	1.15-1.35	0.60-2.00	0.16-0.20	Low	1.0-3.0	0.37	0.37	3	6
	3-15	18-35	1.30-1.50	0.60-2.00	0.14-0.18	Low	0.5-1.0	0.37	---	---	---
	15-32	18-35	1.30-1.55	0.60-2.00	0.14-0.18	Moderate	0.0-0.5	0.37	---	---	---
	32-60	---	---	---	---	---	---	---	---	---	---
2:											
Abor	0-11	40-55	1.20-1.40	0.20-0.60	0.14-0.18	High	1.0-2.0	0.37	0.37	3	4
	11-25	35-60	1.30-1.55	0.00-0.06	0.14-0.16	High	0.5-1.0	0.37	---	---	---
	25-60	---	---	---	---	---	---	---	---	---	---
Delpoint	0-3	20-27	1.15-1.35	0.60-2.00	0.16-0.20	Low	1.0-3.0	0.37	0.37	3	6
	3-14	18-35	1.30-1.50	0.60-2.00	0.14-0.18	Low	0.5-1.0	0.37	---	---	---
	14-26	18-35	1.30-1.55	0.60-2.00	0.14-0.18	Moderate	0.0-0.5	0.37	---	---	---
	26-60	---	---	---	---	---	---	---	---	---	---
Kobar	0-16	27-40	1.20-1.40	0.20-0.60	0.16-0.20	Moderate	1.0-2.0	0.37	0.37	5	7
	16-35	35-45	1.30-1.50	0.06-0.20	0.14-0.18	High	0.5-1.0	0.37	---	---	---
	35-60	35-45	1.30-1.55	0.06-0.20	0.14-0.18	High	0.5-1.0	0.37	---	---	---
3:											
Abor	0-11	35-40	1.20-1.40	0.20-0.60	0.16-0.20	Moderate	1.0-2.0	0.43	0.43	3	4
	11-26	35-60	1.30-1.55	0.00-0.06	0.14-0.16	High	0.5-1.0	0.37	---	---	---
	26-60	---	---	---	---	---	---	---	---	---	---
Weingart	0-3	27-40	1.20-1.40	0.06-0.20	0.16-0.19	Moderate	1.0-2.0	0.43	0.43	2	6
	3-11	40-60	1.30-1.55	0.00-0.06	0.12-0.15	High	0.5-1.0	0.37	---	---	---
	11-35	35-55	1.30-1.55	0.00-0.06	0.09-0.11	High	0.0-0.5	0.37	---	---	---
	35-60	---	---	---	---	---	---	---	---	---	---
Neldore	0-3	40-50	1.20-1.40	0.06-0.20	0.14-0.18	High	1.0-3.0	0.32	0.32	2	4
	3-9	40-60	1.30-1.50	0.06-0.20	0.12-0.16	High	0.5-1.0	0.32	---	---	---
	9-15	40-60	1.30-1.50	0.06-0.20	0.12-0.16	High	0.0-0.5	0.32	---	---	---
	15-60	---	---	---	---	---	---	---	---	---	---
4: Aeric Fluvaquents.											
Cherry	0-4	18-27	1.10-1.30	0.60-2.00	0.17-0.21	Low	0.5-2.0	0.43	0.43	5	4L
	4-18	18-35	1.20-1.45	0.20-0.60	0.16-0.20	Moderate	0.5-1.0	0.32	---	---	---
	18-60	18-35	1.30-1.50	0.20-0.60	0.15-0.19	Moderate	0.0-0.5	0.32	---	---	---
5:											
Alona	0-3	18-27	1.10-1.25	0.60-2.00	0.18-0.22	Low	1.0-3.0	0.37	0.37	5	6
	3-11	18-27	1.25-1.45	0.20-0.60	0.16-0.20	Moderate	0.5-1.0	0.37	---	---	---
	11-16	18-35	1.25-1.45	0.20-0.60	0.11-0.14	Moderate	0.0-0.5	0.37	---	---	---
	16-60	18-35	1.25-1.50	0.20-0.60	0.08-0.11	Moderate	0.0-0.5	0.43	---	---	---

PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group
								K	Kf	T	
	In	Pct	g/cc	In/hr	In/in		Pct				
6:											
Alona	0-5	18-27	1.10-1.25	0.60-2.00	0.18-0.22	Low	1.0-3.0	0.37	0.37	5	6
	5-16	18-27	1.25-1.45	0.20-0.60	0.16-0.20	Moderate	0.5-1.0	0.37	---	---	---
	16-20	18-35	1.25-1.45	0.20-0.60	0.11-0.14	Moderate	0.0-0.5	0.37	---	---	---
	20-60	18-35	1.25-1.50	0.20-0.60	0.08-0.11	Moderate	0.0-0.5	0.43	---	---	---
Cambeth	0-5	18-27	1.10-1.30	0.60-2.00	0.18-0.22	Low	1.0-2.0	0.37	0.37	3	4L
	5-11	18-35	1.25-1.45	0.60-2.00	0.16-0.20	Moderate	0.5-1.0	0.32	---	---	---
	11-25	18-35	1.30-1.50	0.60-2.00	0.15-0.19	Moderate	0.0-0.5	0.32	---	---	---
	25-60	---	---	---	---	---	---	---	---	---	---
Gerdrum	0-7	27-40	1.20-1.40	0.20-0.60	0.14-0.18	Moderate	1.0-3.0	0.43	0.43	2	6
	7-24	35-55	1.30-1.55	0.00-0.06	0.10-0.13	High	0.5-1.0	0.37	---	---	---
	24-60	30-50	1.30-1.55	0.00-0.06	0.08-0.10	High	0.0-0.5	0.43	---	---	---
7:											
Badland.											
8:											
Blackhall	0-4	5-15	1.20-1.40	2.00-6.00	0.13-0.16	Low	1.0-2.0	0.20	0.20	2	3
	4-12	5-15	1.30-1.55	2.00-6.00	0.13-0.16	Low	0.5-1.0	0.20	---	---	---
	12-60	---	---	---	---	---	---	---	---	---	---
Busby	0-4	10-18	1.30-1.50	2.00-6.00	0.12-0.16	Low	1.0-2.0	0.20	0.20	4	3
	4-21	10-18	1.40-1.60	2.00-6.00	0.12-0.16	Low	0.5-1.0	0.32	---	---	---
	21-45	10-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.0-0.5	0.20	---	---	---
	45-60	3-18	1.50-1.70	6.00-20.00	0.08-0.10	Low	0.0-0.5	0.20	---	---	---
Rock outcrop.											
9:											
Blackhall	0-5	5-15	1.15-1.35	2.00-6.00	0.15-0.18	Low	1.0-2.0	0.32	0.32	2	3
	5-18	5-15	1.30-1.55	2.00-6.00	0.13-0.16	Low	0.5-1.0	0.20	---	---	---
	18-60	---	---	---	---	---	---	---	---	---	---
Delpoint	0-4	20-27	1.15-1.35	0.60-2.00	0.16-0.20	Low	1.0-3.0	0.37	0.37	3	6
	4-12	18-35	1.30-1.50	0.60-2.00	0.14-0.18	Low	0.5-1.0	0.37	---	---	---
	12-24	18-35	1.30-1.55	0.60-2.00	0.14-0.18	Moderate	0.0-0.5	0.37	---	---	---
	24-60	---	---	---	---	---	---	---	---	---	---
Rock outcrop.											
10:											
Blanchard	0-8	0-5	1.40-1.60	6.00-20.00	0.07-0.08	Low	0.5-1.0	0.20	0.20	5	2
	8-60	0-5	1.50-1.70	6.00-20.00	0.06-0.07	Low	0.0-0.5	0.17	---	---	---
Dast	0-21	2-18	1.30-1.50	2.00-6.00	0.12-0.15	Low	1.0-2.0	0.20	0.20	3	3
	21-35	2-18	1.40-1.60	2.00-6.00	0.11-0.14	Low	0.5-1.0	0.20	---	---	---
	35-60	---	---	---	---	---	---	---	---	---	---
11:											
Borollic Camborthids.											
Ustic Torrifluvents.											
12:											
Busby	0-3	10-18	1.30-1.50	2.00-6.00	0.12-0.16	Low	1.0-2.0	0.20	0.20	4	3
	3-20	10-18	1.40-1.60	2.00-6.00	0.12-0.16	Low	0.5-1.0	0.32	---	---	---
	20-42	10-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.0-0.5	0.20	---	---	---
	42-60	3-18	1.50-1.70	6.00-20.00	0.08-0.10	Low	0.0-0.5	0.20	---	---	---

PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group
								K	Kf	T	
	In	Pct	g/cc	In/hr	In/in		Pct				
13:											
Busby	0-5	10-18	1.30-1.50	2.00-6.00	0.12-0.16	Low	1.0-2.0	0.20	0.20	5	3
	5-13	10-18	1.40-1.60	2.00-6.00	0.12-0.16	Low	0.5-1.0	0.32	---	---	---
	13-60	10-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.0-0.5	0.20	---	---	---
14:											
Busby	0-10	15-25	1.20-1.40	0.60-2.00	0.16-0.20	Low	1.0-2.0	0.37	0.37	5	5
	10-16	10-18	1.40-1.60	2.00-6.00	0.12-0.16	Low	0.5-1.0	0.32	---	---	---
	16-60	10-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.0-0.5	0.20	---	---	---
15:											
Busby	0-3	10-18	1.30-1.50	2.00-6.00	0.12-0.16	Low	1.0-2.0	0.20	0.20	4	3
	3-17	10-18	1.40-1.60	2.00-6.00	0.12-0.16	Low	0.5-1.0	0.32	---	---	---
	17-42	10-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.0-0.5	0.20	---	---	---
	42-60	3-18	1.50-1.70	6.00-20.00	0.08-0.10	Low	0.0-0.5	0.20	---	---	---
Blackhall	0-4	5-15	1.20-1.40	2.00-6.00	0.13-0.16	Low	1.0-2.0	0.20	0.20	2	3
	4-17	5-15	1.30-1.55	2.00-6.00	0.13-0.16	Low	0.5-1.0	0.20	---	---	---
	17-60	---	---	---	---	---	---	---	---	---	---
Twilight	0-3	5-18	1.15-1.40	2.00-6.00	0.13-0.16	Low	1.0-3.0	0.20	0.20	3	3
	3-13	5-18	1.25-1.50	2.00-6.00	0.13-0.16	Low	0.5-1.0	0.20	---	---	---
	13-27	5-18	1.25-1.50	2.00-6.00	0.12-0.15	Low	0.0-0.5	0.20	---	---	---
	27-60	---	---	---	---	---	---	---	---	---	---
16:											
Busby	0-3	10-18	1.30-1.50	2.00-6.00	0.12-0.16	Low	1.0-2.0	0.20	0.20	4	3
	3-17	10-18	1.40-1.60	2.00-6.00	0.12-0.16	Low	0.5-1.0	0.32	---	---	---
	17-42	10-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.0-0.5	0.20	---	---	---
	42-60	3-18	1.50-1.70	6.00-20.00	0.08-0.10	Low	0.0-0.5	0.20	---	---	---
Twilight	0-4	5-18	1.15-1.40	2.00-6.00	0.13-0.16	Low	1.0-3.0	0.20	0.20	3	3
	4-12	5-18	1.25-1.50	2.00-6.00	0.13-0.16	Low	0.5-1.0	0.20	---	---	---
	12-36	5-18	1.25-1.50	2.00-6.00	0.12-0.15	Low	0.0-0.5	0.20	---	---	---
	36-60	---	---	---	---	---	---	---	---	---	---
Blackhall	0-4	5-15	1.20-1.40	2.00-6.00	0.13-0.16	Low	1.0-2.0	0.20	0.20	2	3
	4-12	5-15	1.30-1.55	2.00-6.00	0.13-0.16	Low	0.5-1.0	0.20	---	---	---
	12-60	---	---	---	---	---	---	---	---	---	---
17:											
Busby	0-4	10-18	1.30-1.50	2.00-6.00	0.12-0.16	Low	1.0-2.0	0.20	0.20	4	3
	4-21	10-18	1.40-1.60	2.00-6.00	0.12-0.16	Low	0.5-1.0	0.32	---	---	---
	21-45	10-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.0-0.5	0.20	---	---	---
	45-60	3-18	1.50-1.70	6.00-20.00	0.08-0.10	Low	0.0-0.5	0.20	---	---	---
Yetull	0-8	0-10	1.35-1.55	6.00-20.00	0.05-0.08	Low	1.0-2.0	0.17	0.17	5	2
	8-60	0-10	1.45-1.65	6.00-20.00	0.05-0.07	Low	0.0-0.5	0.17	---	---	---
18:											
Busby	0-4	10-18	1.30-1.50	2.00-6.00	0.12-0.16	Low	1.0-2.0	0.20	0.20	4	3
	4-21	10-18	1.40-1.60	2.00-6.00	0.12-0.16	Low	0.5-1.0	0.32	---	---	---
	21-45	10-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.0-0.5	0.20	---	---	---
	45-60	3-18	1.50-1.70	6.00-20.00	0.08-0.10	Low	0.0-0.5	0.20	---	---	---
Yetull	0-5	0-10	1.35-1.55	6.00-20.00	0.05-0.08	Low	1.0-2.0	0.17	0.17	5	2
	5-60	0-10	1.45-1.65	6.00-20.00	0.05-0.07	Low	0.0-0.5	0.17	---	---	---
Rock outcrop.											

PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group
								K	Kf	T	
	In	Pct	g/cc	In/hr	In/in		Pct				
19:											
Cabba	0-5	10-27	1.20-1.40	0.60-2.00	0.16-0.20	Low	1.0-3.0	0.37	0.37	2	4L
	5-16	20-35	1.30-1.50	0.60-2.00	0.14-0.18	Moderate	0.5-1.0	0.37	---	---	---
	16-60	---	---	---	---	---	---	---	---	---	---
Cambert	0-4	18-25	1.10-1.30	0.60-2.00	0.18-0.22	Low	1.0-3.0	0.37	0.37	3	4L
	4-15	18-35	1.20-1.45	0.60-2.00	0.16-0.20	Moderate	1.0-2.0	0.37	---	---	---
	15-25	18-35	1.20-1.45	0.60-2.00	0.16-0.20	Moderate	0.5-1.0	0.37	---	---	---
	25-60	---	---	---	---	---	---	---	---	---	---
Rock outcrop.											
20:											
Cabbart	0-4	18-27	1.20-1.40	0.60-2.00	0.17-0.21	Low	1.0-2.0	0.37	0.37	2	4L
	4-11	18-35	1.30-1.50	0.60-2.00	0.15-0.19	Moderate	0.5-1.0	0.37	---	---	---
	11-60	---	---	---	---	---	---	---	---	---	---
Rock outcrop.											
Yawdim	0-3	27-40	1.10-1.30	0.20-0.60	0.17-0.20	Moderate	0.5-1.0	0.43	0.43	2	4
	3-14	35-50	1.20-1.40	0.06-0.20	0.15-0.18	High	0.0-0.5	0.32	---	---	---
	14-60	---	---	---	---	---	---	---	---	---	---
21:											
Cambert	0-4	18-25	1.10-1.30	0.60-2.00	0.18-0.22	Low	1.0-3.0	0.37	0.37	3	4L
	4-15	18-35	1.20-1.45	0.60-2.00	0.16-0.20	Moderate	1.0-2.0	0.37	---	---	---
	15-25	18-35	1.20-1.45	0.60-2.00	0.16-0.20	Moderate	0.5-1.0	0.37	---	---	---
	25-60	---	---	---	---	---	---	---	---	---	---
Bigsheep	0-9	18-27	1.30-1.50	0.60-2.00	0.08-0.10	Low	2.0-4.0	0.05	0.37	5	6
	9-24	18-27	1.55-1.75	0.60-2.00	0.07-0.08	Low	1.0-2.0	0.15	---	---	---
	24-33	18-27	1.25-1.50	0.60-2.00	0.17-0.20	Low	0.5-1.0	0.37	---	---	---
	33-60	10-27	1.60-1.80	0.60-2.00	0.06-0.07	Low	0.0-0.5	0.10	---	---	---
Golva	0-11	18-27	1.10-1.25	0.60-2.00	0.18-0.22	Low	2.0-4.0	0.32	0.32	5	6
	11-30	22-35	1.20-1.35	0.60-2.00	0.16-0.20	Moderate	1.0-3.0	0.32	---	---	---
	30-60	22-35	1.20-1.35	0.60-2.00	0.16-0.20	Moderate	0.0-1.0	0.32	---	---	---
22:											
Cambert	0-5	18-25	1.10-1.30	0.60-2.00	0.18-0.22	Low	1.0-3.0	0.37	0.37	3	4L
	5-13	18-35	1.20-1.45	0.60-2.00	0.16-0.20	Moderate	1.0-2.0	0.37	---	---	---
	13-27	18-35	1.20-1.45	0.60-2.00	0.16-0.20	Moderate	0.5-1.0	0.37	---	---	---
	27-60	---	---	---	---	---	---	---	---	---	---
Cabba	0-4	10-27	1.20-1.40	0.60-2.00	0.16-0.20	Low	1.0-3.0	0.37	0.37	2	4L
	4-17	20-35	1.30-1.50	0.60-2.00	0.14-0.18	Moderate	0.5-1.0	0.37	---	---	---
	17-60	---	---	---	---	---	---	---	---	---	---
Cherry	0-3	18-27	1.10-1.30	0.60-2.00	0.17-0.21	Low	0.5-2.0	0.43	0.43	5	4L
	3-16	18-35	1.20-1.45	0.20-0.60	0.16-0.20	Moderate	0.5-1.0	0.32	---	---	---
	16-60	18-35	1.30-1.50	0.20-0.60	0.15-0.19	Moderate	0.0-0.5	0.32	---	---	---
23:											
Cambert	0-5	18-25	1.15-1.35	0.60-2.00	0.16-0.20	Low	1.0-3.0	0.37	0.37	3	4L
	5-13	18-35	1.20-1.45	0.60-2.00	0.16-0.20	Moderate	1.0-2.0	0.37	---	---	---
	13-24	18-35	1.20-1.45	0.60-2.00	0.16-0.20	Moderate	0.5-1.0	0.37	---	---	---
	24-60	---	---	---	---	---	---	---	---	---	---
Cabba	0-4	10-27	1.20-1.40	0.60-2.00	0.16-0.20	Low	1.0-3.0	0.37	0.37	2	4L
	4-16	20-35	1.30-1.50	0.60-2.00	0.14-0.18	Moderate	0.5-1.0	0.37	---	---	---
	16-60	---	---	---	---	---	---	---	---	---	---

PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group
								K	Kf	T	
	In	Pct	g/cc	In/hr	In/in		Pct				
23:											
Dast	0-21	2-18	1.30-1.50	2.00-6.00	0.12-0.15	Low	1.0-2.0	0.20	0.20	3	3
	21-35	2-18	1.40-1.60	2.00-6.00	0.11-0.14	Low	0.5-1.0	0.20	---	---	---
	35-60	---	---	---	---	---	---	---	---	---	---
24:											
Cambeth	0-5	18-27	1.10-1.30	0.60-2.00	0.18-0.22	Low	1.0-2.0	0.37	0.37	3	4L
	5-14	18-35	1.25-1.45	0.60-2.00	0.16-0.20	Moderate	0.5-1.0	0.32	---	---	---
	14-27	18-35	1.30-1.50	0.60-2.00	0.15-0.19	Moderate	0.0-0.5	0.32	---	---	---
	27-60	---	---	---	---	---	---	---	---	---	---
Bigsheep	0-5	18-27	1.30-1.50	0.60-2.00	0.08-0.10	Low	2.0-4.0	0.05	0.37	4	6
	5-45	18-27	1.55-1.75	0.60-2.00	0.07-0.08	Low	1.0-2.0	0.15	---	---	---
	45-60	---	---	---	---	---	---	---	---	---	---
25:											
Cambeth	0-5	18-27	1.10-1.30	0.60-2.00	0.18-0.22	Low	1.0-2.0	0.37	0.37	3	4L
	5-13	18-35	1.25-1.45	0.60-2.00	0.16-0.20	Moderate	0.5-1.0	0.32	---	---	---
	13-25	18-35	1.30-1.50	0.60-2.00	0.15-0.19	Moderate	0.0-0.5	0.32	---	---	---
	25-60	---	---	---	---	---	---	---	---	---	---
Cabbart	0-4	18-27	1.20-1.40	0.60-2.00	0.17-0.21	Low	1.0-2.0	0.37	0.37	2	4L
	4-14	18-35	1.30-1.50	0.60-2.00	0.15-0.19	Moderate	0.5-1.0	0.37	---	---	---
	14-60	---	---	---	---	---	---	---	---	---	---
Kirby	0-6	10-22	1.30-1.50	2.00-6.00	0.11-0.14	Low	1.0-2.0	0.17	0.37	2	5
	6-12	8-22	1.45-1.65	6.00-20.00	0.05-0.06	Low	0.5-1.0	0.05	---	---	---
	12-60	0-1	1.60-1.80	6.00-20.00	0.00-0.01	Low	---	0.02	---	---	---
26:											
Cambeth	0-5	18-27	1.10-1.30	0.60-2.00	0.18-0.22	Low	1.0-2.0	0.37	0.37	3	4L
	5-11	18-35	1.25-1.45	0.60-2.00	0.16-0.20	Moderate	0.5-1.0	0.32	---	---	---
	11-25	18-35	1.30-1.50	0.60-2.00	0.15-0.19	Moderate	0.0-0.5	0.32	---	---	---
	25-60	---	---	---	---	---	---	---	---	---	---
Cabbart	0-4	18-27	1.20-1.40	0.60-2.00	0.17-0.21	Low	1.0-2.0	0.37	0.37	2	4L
	4-14	18-35	1.30-1.50	0.60-2.00	0.15-0.19	Moderate	0.5-1.0	0.37	---	---	---
	14-60	---	---	---	---	---	---	---	---	---	---
Lonna	0-4	18-27	1.10-1.30	0.60-2.00	0.16-0.20	Low	1.0-3.0	0.37	0.37	5	4L
	4-11	18-35	1.25-1.45	0.60-2.00	0.16-0.20	Moderate	0.5-1.0	0.37	---	---	---
	11-60	18-35	1.25-1.50	0.60-2.00	0.14-0.18	Moderate	0.5-1.0	0.37	---	---	---
27:											
Cambeth	0-5	18-27	1.10-1.30	0.60-2.00	0.18-0.22	Low	1.0-2.0	0.37	0.37	3	4L
	5-15	18-35	1.25-1.45	0.60-2.00	0.16-0.20	Moderate	0.5-1.0	0.32	---	---	---
	15-28	18-35	1.30-1.50	0.60-2.00	0.15-0.19	Moderate	0.0-0.5	0.32	---	---	---
	28-60	---	---	---	---	---	---	---	---	---	---
Cabbart	0-4	18-27	1.20-1.40	0.60-2.00	0.17-0.21	Low	1.0-2.0	0.37	0.37	2	4L
	4-17	18-35	1.30-1.50	0.60-2.00	0.15-0.19	Moderate	0.5-1.0	0.37	---	---	---
	17-60	---	---	---	---	---	---	---	---	---	---
Yawdim	0-4	27-40	1.10-1.30	0.20-0.60	0.17-0.20	Moderate	0.5-1.0	0.43	0.43	2	4
	4-14	35-50	1.20-1.40	0.06-0.20	0.15-0.18	High	0.0-0.5	0.32	---	---	---
	14-60	---	---	---	---	---	---	---	---	---	---
28:											
Cherry	0-4	18-27	1.10-1.30	0.60-2.00	0.17-0.21	Low	0.5-2.0	0.43	0.43	5	4L
	4-19	18-35	1.20-1.45	0.20-0.60	0.16-0.20	Moderate	0.5-1.0	0.32	---	---	---
	19-60	18-35	1.30-1.50	0.20-0.60	0.15-0.19	Moderate	0.0-0.5	0.32	---	---	---

PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group
								K	Kf	T	
	In	Pct	g/cc	In/hr	In/in		Pct				
29:											
Cherry----------	0-4	18-27	1.10-1.30	0.60-2.00	0.17-0.21	Low	0.5-2.0	0.43	0.43	5	4L
	4-19	18-35	1.20-1.45	0.20-0.60	0.16-0.20	Moderate	0.5-1.0	0.32	---	---	---
	19-60	18-35	1.30-1.50	0.20-0.60	0.15-0.19	Moderate	0.0-0.5	0.32	---	---	---
30:											
Cherry----------	0-5	18-27	1.10-1.30	0.60-2.00	0.17-0.21	Low	0.5-2.0	0.43	0.43	5	4L
	5-18	18-35	1.20-1.45	0.20-0.60	0.16-0.20	Moderate	0.5-1.0	0.32	---	---	---
	18-60	18-35	1.30-1.50	0.20-0.60	0.15-0.19	Moderate	0.0-0.5	0.32	---	---	---
Cambert---------	0-5	18-25	1.10-1.30	0.60-2.00	0.18-0.22	Low	1.0-3.0	0.37	0.37	3	4L
	5-13	18-35	1.20-1.45	0.60-2.00	0.16-0.20	Moderate	1.0-2.0	0.37	---	---	---
	13-27	18-35	1.20-1.45	0.60-2.00	0.16-0.20	Moderate	0.5-1.0	0.37	---	---	---
	27-60	---	---	---	---	---	---	---	---	---	---
31:											
Cherry----------	0-5	18-27	1.10-1.30	0.60-2.00	0.17-0.21	Low	0.5-2.0	0.43	0.43	5	4L
	5-18	18-35	1.20-1.45	0.20-0.60	0.16-0.20	Moderate	0.5-1.0	0.32	---	---	---
	18-60	18-35	1.30-1.50	0.20-0.60	0.15-0.19	Moderate	0.0-0.5	0.32	---	---	---
Cambert---------	0-5	18-25	1.10-1.30	0.60-2.00	0.18-0.22	Low	1.0-3.0	0.37	0.37	3	4L
	5-13	18-35	1.20-1.45	0.60-2.00	0.16-0.20	Moderate	1.0-2.0	0.37	---	---	---
	13-27	18-35	1.20-1.45	0.60-2.00	0.16-0.20	Moderate	0.5-1.0	0.37	---	---	---
	27-60	---	---	---	---	---	---	---	---	---	---
Cabba-----------	0-4	10-27	1.20-1.40	0.60-2.00	0.16-0.20	Low	1.0-3.0	0.37	0.37	2	4L
	4-16	20-35	1.30-1.50	0.60-2.00	0.14-0.18	Moderate	0.5-1.0	0.37	---	---	---
	16-60	---	---	---	---	---	---	---	---	---	---
32:											
Cherry----------	0-5	18-27	1.10-1.30	0.60-2.00	0.17-0.21	Low	0.5-2.0	0.43	0.43	5	4L
	5-18	18-35	1.20-1.45	0.20-0.60	0.16-0.20	Moderate	0.5-1.0	0.32	---	---	---
	18-60	18-35	1.30-1.50	0.20-0.60	0.15-0.19	Moderate	0.0-0.5	0.32	---	---	---
Lisk------------	0-5	5-18	1.20-1.40	2.00-6.00	0.12-0.16	Low	1.0-3.0	0.20	0.20	5	3
	5-14	5-18	1.35-1.55	2.00-6.00	0.11-0.15	Low	1.0-2.0	0.20	---	---	---
	14-45	5-18	1.35-1.60	2.00-6.00	0.10-0.14	Low	0.5-1.0	0.20	---	---	---
	45-60	0-10	1.40-1.60	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.17	---	---	---
Cabba-----------	0-5	10-27	1.20-1.40	0.60-2.00	0.16-0.20	Low	1.0-3.0	0.37	0.37	2	4L
	5-16	20-35	1.30-1.50	0.60-2.00	0.14-0.18	Moderate	0.5-1.0	0.37	---	---	---
	16-60	---	---	---	---	---	---	---	---	---	---
33:											
Cherry----------	0-4	18-27	1.10-1.30	0.60-2.00	0.17-0.21	Low	0.5-2.0	0.43	0.43	5	4L
	4-16	18-35	1.20-1.45	0.20-0.60	0.16-0.20	Moderate	0.5-1.0	0.32	---	---	---
	16-60	18-35	1.30-1.50	0.20-0.60	0.15-0.19	Moderate	0.0-0.5	0.32	---	---	---
Typic Ustifluvents.											
34:											
Chinook---------	0-14	5-18	1.25-1.45	2.00-6.00	0.13-0.16	Low	1.0-2.0	0.20	0.20	5	3
	14-48	5-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.0-1.0	0.20	---	---	---
	48-60	5-15	1.40-1.60	2.00-6.00	0.11-0.12	Low	0.0-1.0	0.20	---	---	---
35:											
Chinook---------	0-15	5-18	1.25-1.45	2.00-6.00	0.13-0.16	Low	1.0-2.0	0.20	0.20	5	3
	15-60	5-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.0-1.0	0.20	---	---	---

PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group
								K	Kf	T	
	In	Pct	g/cc	In/hr	In/in		Pct				
35:											
Kremlin	0-3	18-27	1.15-1.35	0.60-2.00	0.16-0.20	Low	1.0-3.0	0.37	0.37	5	6
	3-15	18-30	1.25-1.45	0.60-2.00	0.16-0.20	Moderate	1.0-2.0	0.37	---	---	---
	15-37	18-30	1.30-1.50	0.60-2.00	0.16-0.20	Moderate	0.5-1.0	0.37	---	---	---
	37-60	18-25	1.30-1.55	0.60-2.00	0.14-0.18	Low	0.0-0.5	0.37	---	---	---
36:											
Chinook	0-13	5-18	1.25-1.45	2.00-6.00	0.13-0.16	Low	1.0-2.0	0.20	0.20	5	3
	13-60	5-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.0-1.0	0.20	---	---	---
Tinsley	0-5	5-15	1.20-1.45	2.00-6.00	0.07-0.09	Low	0.7-2.0	0.10	0.20	5	3
	5-60	0-10	1.45-1.65	6.00-20.00	0.01-0.02	Low	0.0-0.5	0.05	---	---	---
37:											
Chinook	0-14	5-18	1.25-1.45	2.00-6.00	0.13-0.16	Low	1.0-2.0	0.20	0.20	5	3
	14-60	5-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.0-1.0	0.20	---	---	---
Twilight	0-3	5-18	1.15-1.40	2.00-6.00	0.13-0.16	Low	1.0-3.0	0.20	0.20	3	3
	3-11	5-18	1.25-1.50	2.00-6.00	0.13-0.16	Low	0.5-1.0	0.20	---	---	---
	11-29	5-18	1.25-1.50	2.00-6.00	0.12-0.15	Low	0.0-0.5	0.20	---	---	---
	29-60	---	---	---	---	---	---	---	---	---	---
38:											
Chinook	0-13	5-18	1.25-1.45	2.00-6.00	0.13-0.16	Low	1.0-2.0	0.20	0.20	5	3
	13-41	5-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.0-1.0	0.20	---	---	---
	41-60	5-15	1.40-1.60	2.00-6.00	0.11-0.12	Low	0.0-1.0	0.20	---	---	---
Twilight	0-3	5-18	1.15-1.40	2.00-6.00	0.13-0.16	Low	1.0-3.0	0.20	0.20	3	3
	3-11	5-18	1.25-1.50	2.00-6.00	0.13-0.16	Low	0.5-1.0	0.20	---	---	---
	11-31	5-18	1.25-1.50	2.00-6.00	0.12-0.15	Low	0.0-0.5	0.20	---	---	---
	31-60	---	---	---	---	---	---	---	---	---	---
Blackhall	0-3	5-15	1.20-1.40	2.00-6.00	0.13-0.16	Low	1.0-2.0	0.20	0.20	2	3
	3-14	5-15	1.30-1.55	2.00-6.00	0.13-0.16	Low	0.5-1.0	0.20	---	---	---
	14-60	---	---	---	---	---	---	---	---	---	---
39:											
Creed	0-5	20-27	1.15-1.40	0.60-2.00	0.14-0.18	Low	1.0-3.0	0.43	0.43	2	6
	5-18	35-55	1.30-1.55	0.06-0.20	0.10-0.14	High	1.0-2.0	0.32	---	---	---
	18-60	27-45	1.30-1.55	0.06-0.20	0.08-0.12	Moderate	0.0-0.5	0.37	---	---	---
Gerdrum	0-7	27-40	1.20-1.40	0.20-0.60	0.14-0.18	Moderate	1.0-3.0	0.43	0.43	2	6
	7-20	35-55	1.30-1.55	0.00-0.06	0.10-0.13	High	0.5-1.0	0.37	---	---	---
	20-60	30-50	1.30-1.55	0.00-0.06	0.08-0.10	High	0.0-0.5	0.43	---	---	---
40:											
Dast	0-22	2-18	1.30-1.50	2.00-6.00	0.12-0.15	Low	1.0-2.0	0.20	0.20	3	3
	22-37	2-18	1.40-1.60	2.00-6.00	0.11-0.14	Low	0.5-1.0	0.20	---	---	---
	37-60	---	---	---	---	---	---	---	---	---	---
Lisk	0-5	5-18	1.20-1.40	2.00-6.00	0.12-0.16	Low	1.0-3.0	0.20	0.20	5	3
	5-20	5-18	1.35-1.55	2.00-6.00	0.11-0.15	Low	1.0-2.0	0.20	---	---	---
	20-45	5-18	1.35-1.60	2.00-6.00	0.10-0.14	Low	0.5-1.0	0.20	---	---	---
	45-60	0-10	1.40-1.60	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.17	---	---	---
41:											
Degrand	0-5	10-20	1.25-1.45	2.00-6.00	0.13-0.16	Low	2.0-3.0	0.24	0.24	3	3
	5-21	20-35	1.40-1.60	0.60-2.00	0.13-0.16	Moderate	1.0-2.0	0.32	---	---	---
	21-29	15-30	1.35-1.60	0.60-2.00	0.13-0.16	Low	0.5-1.0	0.32	---	---	---
	29-60	0-5	1.50-1.70	6.00-20.00	0.03-0.04	Low	0.0-0.5	0.10	---	---	---

PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group
								K	Kf	T	
	In	Pct	g/cc	In/hr	In/in		Pct				
42:											
Degrand	0-4	10-27	1.15-1.35	0.60-2.00	0.16-0.20	Low	2.0-3.0	0.37	0.37	3	5
	4-15	20-35	1.40-1.60	0.60-2.00	0.13-0.16	Moderate	1.0-2.0	0.32	---	---	---
	15-32	15-30	1.35-1.60	0.60-2.00	0.13-0.16	Low	0.5-1.0	0.32	---	---	---
	32-60	0-5	1.50-1.70	6.00-20.00	0.03-0.04	Low	0.0-0.5	0.10	---	---	---
43:											
Delpoint	0-3	20-27	1.15-1.35	0.60-2.00	0.16-0.20	Low	1.0-3.0	0.37	0.37	3	6
	3-14	18-35	1.30-1.50	0.60-2.00	0.14-0.18	Low	0.5-1.0	0.37	---	---	---
	14-26	18-35	1.30-1.55	0.60-2.00	0.14-0.18	Moderate	0.0-0.5	0.37	---	---	---
	26-60	---	---	---	---	---	---	---	---	---	---
Busby	0-5	10-18	1.30-1.50	2.00-6.00	0.12-0.16	Low	1.0-2.0	0.20	0.20	5	3
	5-13	10-18	1.40-1.60	2.00-6.00	0.12-0.16	Low	0.5-1.0	0.32	---	---	---
	13-60	10-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.0-0.5	0.20	---	---	---
Blackhall	0-5	5-15	1.20-1.40	2.00-6.00	0.13-0.16	Low	1.0-2.0	0.20	0.20	2	3
	5-18	5-15	1.30-1.55	2.00-6.00	0.13-0.16	Low	0.5-1.0	0.20	---	---	---
	18-60	---	---	---	---	---	---	---	---	---	---
44:											
Delpoint	0-3	20-27	1.15-1.35	0.60-2.00	0.16-0.20	Low	1.0-3.0	0.37	0.37	3	6
	3-14	18-35	1.30-1.50	0.60-2.00	0.14-0.18	Low	0.5-1.0	0.37	---	---	---
	14-35	18-35	1.30-1.55	0.60-2.00	0.14-0.18	Moderate	0.0-0.5	0.37	---	---	---
	35-60	---	---	---	---	---	---	---	---	---	---
Cabbart	0-4	18-27	1.20-1.40	0.60-2.00	0.17-0.21	Low	1.0-2.0	0.37	0.37	2	4L
	4-18	18-35	1.30-1.50	0.60-2.00	0.15-0.19	Moderate	0.5-1.0	0.37	---	---	---
	18-60	---	---	---	---	---	---	---	---	---	---
45:											
Delpoint	0-5	20-27	1.15-1.35	0.60-2.00	0.16-0.20	Low	1.0-3.0	0.37	0.37	3	6
	5-14	18-35	1.30-1.50	0.60-2.00	0.14-0.18	Low	0.5-1.0	0.37	---	---	---
	14-27	18-35	1.30-1.55	0.60-2.00	0.14-0.18	Moderate	0.0-0.5	0.37	---	---	---
	27-60	---	---	---	---	---	---	---	---	---	---
Cabbart	0-4	18-27	1.20-1.40	0.60-2.00	0.17-0.21	Low	1.0-2.0	0.37	0.37	2	4L
	4-17	18-35	1.30-1.50	0.60-2.00	0.15-0.19	Moderate	0.5-1.0	0.37	---	---	---
	17-60	---	---	---	---	---	---	---	---	---	---
Yawdim	0-4	27-40	1.10-1.30	0.20-0.60	0.17-0.20	Moderate	0.5-1.0	0.43	0.43	2	4
	4-11	35-50	1.20-1.40	0.06-0.20	0.15-0.18	High	0.0-0.5	0.32	---	---	---
	11-60	---	---	---	---	---	---	---	---	---	---
46:											
Delpoint	0-3	20-27	1.15-1.35	0.60-2.00	0.16-0.20	Low	1.0-3.0	0.37	0.37	3	6
	3-19	18-35	1.30-1.50	0.60-2.00	0.14-0.18	Low	0.5-1.0	0.37	---	---	---
	19-28	18-35	1.30-1.55	0.60-2.00	0.14-0.18	Moderate	0.0-0.5	0.37	---	---	---
	28-60	---	---	---	---	---	---	---	---	---	---
Cabbart	0-4	18-27	1.20-1.40	0.60-2.00	0.17-0.21	Low	1.0-2.0	0.37	0.37	2	4L
	4-11	18-35	1.30-1.50	0.60-2.00	0.15-0.19	Moderate	0.5-1.0	0.37	---	---	---
	11-60	---	---	---	---	---	---	---	---	---	---
Yawdim	0-3	27-40	1.10-1.30	0.20-0.60	0.17-0.20	Moderate	0.5-1.0	0.43	0.43	2	4
	3-14	35-50	1.20-1.40	0.06-0.20	0.15-0.18	High	0.0-0.5	0.32	---	---	---
	14-60	---	---	---	---	---	---	---	---	---	---

PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group
								K	Kf	T	
	In	Pct	g/cc	In/hr	In/in		Pct				
47:											
Delpoint	0-4	20-27	1.15-1.35	0.60-2.00	0.16-0.20	Low	1.0-3.0	0.37	0.37	3	6
	4-11	18-35	1.30-1.50	0.60-2.00	0.14-0.18	Low	0.5-1.0	0.37	---	---	---
	11-24	18-35	1.30-1.55	0.60-2.00	0.14-0.18	Moderate	0.0-0.5	0.37	---	---	---
	24-60	---	---	---	---	---	---	---	---	---	---
Yamac	0-4	18-27	1.20-1.40	0.60-2.00	0.16-0.20	Low	1.0-2.0	0.37	0.37	5	6
	4-16	18-30	1.25-1.45	0.60-2.00	0.14-0.18	Moderate	0.5-1.0	0.37	---	---	---
	16-60	18-30	1.30-1.50	0.60-2.00	0.14-0.18	Moderate	0.0-0.5	0.37	---	---	---
Cabbart	0-4	18-27	1.20-1.40	0.60-2.00	0.17-0.21	Low	1.0-2.0	0.37	0.37	2	4L
	4-14	18-35	1.30-1.50	0.60-2.00	0.15-0.19	Moderate	0.5-1.0	0.37	---	---	---
	14-60	---	---	---	---	---	---	---	---	---	---
48:											
Ethridge	0-5	27-35	1.15-1.35	0.20-0.60	0.16-0.20	Moderate	1.0-3.0	0.37	0.37	5	7
	5-24	35-45	1.30-1.50	0.06-0.20	0.15-0.19	High	1.0-2.0	0.32	---	---	---
	24-60	25-40	1.30-1.50	0.06-0.20	0.14-0.18	Moderate	0.0-0.5	0.37	---	---	---
49:											
Ethridge	0-6	27-35	1.15-1.35	0.20-0.60	0.16-0.20	Moderate	1.0-3.0	0.37	0.37	5	7
	6-18	35-45	1.30-1.50	0.06-0.20	0.15-0.19	High	1.0-2.0	0.32	---	---	---
	18-60	25-40	1.30-1.50	0.06-0.20	0.14-0.18	Moderate	0.0-0.5	0.37	---	---	---
50:											
Evanston	0-7	20-27	1.20-1.40	0.60-2.00	0.16-0.20	Low	1.0-3.0	0.37	0.37	5	6
	7-15	20-35	1.30-1.50	0.60-2.00	0.14-0.18	Moderate	0.0-0.5	0.37	---	---	---
	15-60	15-30	1.35-1.55	0.60-2.00	0.16-0.18	Moderate	0.0-0.5	0.37	---	---	---
51:											
Evanston	0-6	20-27	1.20-1.40	0.60-2.00	0.16-0.20	Low	1.0-3.0	0.37	0.37	5	6
	6-13	20-35	1.30-1.50	0.60-2.00	0.14-0.18	Moderate	0.0-0.5	0.37	---	---	---
	13-60	15-30	1.35-1.55	0.60-2.00	0.16-0.18	Moderate	0.0-0.5	0.37	---	---	---
52:											
Evanston	0-6	20-27	1.20-1.40	0.60-2.00	0.16-0.20	Low	1.0-3.0	0.37	0.37	5	6
	6-13	20-35	1.30-1.50	0.60-2.00	0.14-0.18	Moderate	0.0-0.5	0.37	---	---	---
	13-60	15-30	1.35-1.55	0.60-2.00	0.16-0.18	Moderate	0.0-0.5	0.37	---	---	---
Delpoint	0-3	20-27	1.15-1.35	0.60-2.00	0.16-0.20	Low	1.0-3.0	0.37	0.37	3	6
	3-14	18-35	1.30-1.50	0.60-2.00	0.14-0.18	Low	0.5-1.0	0.37	---	---	---
	14-26	18-35	1.30-1.55	0.60-2.00	0.14-0.18	Moderate	0.0-0.5	0.37	---	---	---
	26-60	---	---	---	---	---	---	---	---	---	---
53:											
Farnuf	0-5	15-27	1.15-1.35	0.60-2.00	0.16-0.20	Low	2.0-4.0	0.32	0.32	5	6
	5-11	25-35	1.25-1.45	0.60-2.00	0.14-0.18	Moderate	1.0-3.0	0.32	---	---	---
	11-40	20-30	1.30-1.50	0.60-2.00	0.14-0.18	Moderate	0.5-1.0	0.32	---	---	---
	40-60	15-30	1.30-1.50	0.60-2.00	0.12-0.16	Low	0.0-0.5	0.20	---	---	---
54:											
Floweree	0-4	18-27	1.10-1.30	0.60-2.00	0.18-0.22	Low	1.0-2.0	0.37	0.37	5	6
	4-12	20-35	1.20-1.45	0.20-0.60	0.16-0.20	Moderate	0.5-1.0	0.32	---	---	---
	12-60	20-35	1.20-1.45	0.20-0.60	0.15-0.19	Moderate	0.5-1.0	0.32	---	---	---
55:											
Floweree	0-6	18-27	1.10-1.30	0.60-2.00	0.18-0.22	Low	1.0-2.0	0.37	0.37	5	6
	6-13	20-35	1.20-1.45	0.20-0.60	0.16-0.20	Moderate	0.5-1.0	0.32	---	---	---
	13-60	20-35	1.20-1.45	0.20-0.60	0.15-0.19	Moderate	0.5-1.0	0.32	---	---	---

PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group
								K	Kf	T	
	In	Pct	g/cc	In/hr	In/in		Pct				
56:											
Floweree	0-5	18-27	1.10-1.30	0.60-2.00	0.18-0.22	Low	1.0-2.0	0.37	0.37	5	4L
	5-11	20-35	1.20-1.45	0.20-0.60	0.16-0.20	Moderate	0.5-1.0	0.32	---	---	---
	11-60	20-35	1.20-1.45	0.20-0.60	0.15-0.19	Moderate	0.0-0.5	0.32	---	---	---
57:											
Floweree	0-4	18-27	1.10-1.30	0.60-2.00	0.18-0.22	Low	1.0-2.0	0.37	0.37	5	4L
	4-12	20-35	1.20-1.45	0.20-0.60	0.16-0.20	Moderate	0.5-1.0	0.32	---	---	---
	12-60	20-35	1.20-1.45	0.20-0.60	0.15-0.19	Moderate	0.0-0.5	0.32	---	---	---
58:											
Floweree	0-7	18-27	1.10-1.30	0.60-2.00	0.18-0.22	Low	1.0-2.0	0.37	0.37	5	6
	7-11	20-35	1.20-1.45	0.20-0.60	0.16-0.20	Moderate	0.5-1.0	0.32	---	---	---
	11-60	20-35	1.20-1.45	0.20-0.60	0.15-0.19	Moderate	0.5-1.0	0.32	---	---	---
Cambeth	0-5	18-27	1.10-1.25	0.60-2.00	0.18-0.22	Low	1.0-2.0	0.37	0.37	3	6
	5-15	18-35	1.25-1.45	0.60-2.00	0.16-0.20	Moderate	0.5-1.0	0.32	---	---	---
	15-33	18-35	1.30-1.50	0.60-2.00	0.15-0.19	Moderate	0.0-0.5	0.32	---	---	---
	33-60	---	---	---	---	---	---	---	---	---	---
59:											
Gerdrum	0-7	27-40	1.20-1.40	0.20-0.60	0.14-0.18	Moderate	1.0-3.0	0.43	0.43	2	6
	7-24	35-55	1.30-1.55	0.00-0.06	0.10-0.13	High	0.5-1.0	0.37	---	---	---
	24-60	30-50	1.30-1.55	0.00-0.06	0.08-0.10	High	0.0-0.5	0.43	---	---	---
Creed	0-6	20-27	1.15-1.40	0.60-2.00	0.14-0.18	Low	1.0-3.0	0.43	0.43	2	6
	6-21	35-55	1.30-1.55	0.06-0.20	0.10-0.14	High	1.0-2.0	0.32	---	---	---
	21-60	27-45	1.30-1.55	0.06-0.20	0.08-0.12	Moderate	0.0-0.5	0.37	---	---	---
60:											
Gerdrum	0-7	27-40	1.20-1.40	0.20-0.60	0.14-0.18	Moderate	1.0-3.0	0.43	0.43	2	6
	7-17	35-55	1.30-1.55	0.00-0.06	0.10-0.13	High	0.5-1.0	0.37	---	---	---
	17-60	30-50	1.30-1.55	0.00-0.06	0.08-0.10	High	0.0-0.5	0.43	---	---	---
Creed	0-6	20-27	1.15-1.40	0.60-2.00	0.14-0.18	Low	1.0-3.0	0.43	0.43	2	6
	6-18	35-55	1.30-1.55	0.06-0.20	0.10-0.14	High	1.0-2.0	0.32	---	---	---
	18-60	27-45	1.30-1.55	0.06-0.20	0.08-0.12	Moderate	0.0-0.5	0.37	---	---	---
61:											
Gerdrum	0-7	27-40	1.20-1.40	0.20-0.60	0.14-0.18	Moderate	1.0-3.0	0.43	0.43	2	6
	7-15	35-55	1.30-1.55	0.00-0.06	0.10-0.13	High	0.5-1.0	0.37	---	---	---
	15-60	30-50	1.30-1.55	0.00-0.06	0.08-0.10	High	0.0-0.5	0.43	---	---	---
Creed	0-4	20-27	1.15-1.40	0.60-2.00	0.14-0.18	Low	1.0-3.0	0.43	0.43	2	6
	4-19	35-55	1.30-1.55	0.06-0.20	0.10-0.14	High	1.0-2.0	0.32	---	---	---
	19-60	27-45	1.30-1.55	0.06-0.20	0.08-0.12	Moderate	0.0-0.5	0.37	---	---	---
62:											
Glendive	0-6	5-15	1.40-1.60	2.00-6.00	0.10-0.13	Low	0.5-2.0	0.24	0.24	5	3
	6-26	5-18	1.35-1.60	2.00-6.00	0.15-0.19	Low	0.5-1.0	0.32	---	---	---
	26-60	5-18	1.35-1.60	2.00-6.00	0.10-0.13	Low	0.5-1.0	0.20	---	---	---
63:											
Glendive	0-3	10-20	1.20-1.40	0.60-2.00	0.18-0.22	Low	0.5-2.0	0.43	0.43	5	4L
	3-6	5-18	1.35-1.60	2.00-6.00	0.15-0.19	Low	0.5-1.0	0.32	---	---	---
	6-60	5-18	1.35-1.60	2.00-6.00	0.10-0.13	Low	0.5-1.0	0.20	---	---	---
64:											
Golva	0-11	18-27	1.10-1.25	0.60-2.00	0.18-0.22	Low	2.0-4.0	0.32	0.32	5	6
	11-30	22-35	1.20-1.35	0.60-2.00	0.16-0.20	Moderate	1.0-3.0	0.32	---	---	---
	30-60	22-35	1.20-1.35	0.60-2.00	0.16-0.20	Moderate	0.0-1.0	0.32	---	---	---

PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group
								K	Kf	T	
	In	Pct	g/cc	In/hr	In/in		Pct				
65:											
Golva	0-14	18-27	1.10-1.25	0.60-2.00	0.18-0.22	Low	2.0-4.0	0.32	0.32	5	6
	14-32	22-35	1.20-1.35	0.60-2.00	0.16-0.20	Moderate	1.0-3.0	0.32	---	---	---
	32-60	22-35	1.20-1.35	0.60-2.00	0.16-0.20	Moderate	0.0-1.0	0.32	---	---	---
66:											
Golva	0-14	18-27	1.10-1.25	0.60-2.00	0.18-0.22	Low	2.0-4.0	0.32	0.32	5	6
	14-32	22-35	1.20-1.35	0.60-2.00	0.16-0.20	Moderate	1.0-3.0	0.32	---	---	---
	32-60	22-35	1.20-1.35	0.60-2.00	0.16-0.20	Moderate	0.0-1.0	0.32	---	---	---
Cambert	0-5	18-25	1.10-1.25	0.60-2.00	0.18-0.22	Low	1.0-3.0	0.37	0.37	3	6
	5-13	18-35	1.20-1.45	0.60-2.00	0.16-0.20	Moderate	0.5-1.0	0.37	---	---	---
	13-27	18-35	1.20-1.45	0.60-2.00	0.16-0.20	Moderate	0.0-0.5	0.37	---	---	---
	27-60	---	---	---	---	---	---	---	---	---	---
67:											
Hanly	0-8	5-10	1.30-1.50	6.00-20.00	0.08-0.10	Low	0.5-1.0	0.20	0.20	5	2
	8-60	5-10	1.45-1.65	6.00-20.00	0.08-0.11	Low	0.5-1.0	0.17	---	---	---
Glendive	0-7	5-15	1.40-1.60	2.00-6.00	0.10-0.13	Low	0.5-2.0	0.24	0.24	5	3
	7-45	5-18	1.35-1.60	2.00-6.00	0.15-0.19	Low	0.5-1.0	0.32	---	---	---
	45-60	5-18	1.35-1.60	2.00-6.00	0.10-0.13	Low	0.5-1.0	0.20	---	---	---
68:											
Havre	0-10	10-22	1.15-1.35	0.60-2.00	0.16-0.20	Low	0.5-2.0	0.43	0.43	5	5
	10-60	18-30	1.30-1.55	0.60-2.00	0.14-0.18	Low	0.5-1.0	0.28	---	---	---
69:											
Havre	0-9	27-35	1.20-1.40	0.20-0.60	0.14-0.18	Moderate	0.5-2.0	0.32	0.32	5	6
	9-60	18-30	1.30-1.55	0.60-2.00	0.14-0.18	Low	0.5-1.0	0.28	---	---	---
70:											
Havre	0-10	27-35	1.20-1.40	0.20-0.60	0.14-0.18	Moderate	0.5-2.0	0.37	0.37	5	6
	10-60	18-30	1.30-1.55	0.60-2.00	0.14-0.18	Low	0.5-1.0	0.28	---	---	---
Harlem	0-8	40-55	1.25-1.45	0.06-0.20	0.14-0.18	High	0.5-1.0	0.37	0.37	5	4
	8-60	35-55	1.30-1.50	0.06-0.20	0.14-0.18	High	0.5-1.0	0.37	---	---	---
71:											
Hedstrom	0-7	15-27	1.15-1.35	0.60-2.00	0.17-0.20	Low	2.0-3.0	0.37	0.37	3	5
	7-22	20-35	1.35-1.60	0.60-2.00	0.13-0.16	Moderate	1.0-2.0	0.32	---	---	---
	22-31	20-30	1.35-1.60	0.60-2.00	0.13-0.16	Moderate	0.5-1.0	0.32	---	---	---
	31-60	0-5	1.45-1.65	6.00-20.00	0.04-0.05	Low	0.0-0.5	0.17	---	---	---
72:											
Ismay	0-8	27-40	1.20-1.40	0.20-0.60	0.14-0.18	Moderate	0.5-1.0	0.37	0.37	5	4L
	8-17	18-35	1.25-1.45	0.20-0.60	0.11-0.14	Moderate	0.5-1.0	0.32	---	---	---
	17-25	18-35	1.25-1.50	0.20-0.60	0.11-0.14	Moderate	0.5-1.0	0.37	---	---	---
	25-50	18-35	1.25-1.50	0.20-0.60	0.11-0.14	Moderate	0.0-0.5	0.37	---	---	---
	50-60	18-35	1.30-1.55	0.20-0.60	0.11-0.14	Moderate	0.0-0.5	0.37	---	---	---
73:											
Kobar	0-14	27-40	1.20-1.40	0.20-0.60	0.16-0.20	Moderate	1.0-2.0	0.37	0.37	5	7
	14-30	35-45	1.30-1.50	0.06-0.20	0.14-0.18	High	0.5-1.0	0.37	---	---	---
	30-60	35-45	1.30-1.55	0.06-0.20	0.14-0.18	High	0.5-1.0	0.37	---	---	---
74:											
Kobar	0-16	27-40	1.20-1.40	0.20-0.60	0.16-0.20	Moderate	1.0-2.0	0.37	0.37	5	7
	16-35	35-45	1.30-1.50	0.06-0.20	0.14-0.18	High	0.5-1.0	0.37	---	---	---
	35-60	35-45	1.30-1.55	0.06-0.20	0.14-0.18	High	0.5-1.0	0.37	---	---	---

PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group
								K	Kf	T	
	In	Pct	g/cc	In/hr	In/in		Pct				
75:											
Kobar	0-17	27-40	1.20-1.40	0.20-0.60	0.16-0.20	Moderate	1.0-2.0	0.37	0.37	5	7
	17-37	35-45	1.30-1.50	0.06-0.20	0.14-0.18	High	0.5-1.0	0.37	---	---	---
	37-60	35-45	1.30-1.55	0.06-0.20	0.14-0.18	High	0.5-1.0	0.37	---	---	---
Gerdrum	0-7	27-40	1.20-1.40	0.20-0.60	0.14-0.18	Moderate	1.0-3.0	0.43	0.43	2	6
	7-18	35-55	1.30-1.55	0.00-0.06	0.10-0.13	High	0.5-1.0	0.37	---	---	---
	18-60	30-50	1.30-1.55	0.00-0.06	0.08-0.10	High	0.0-0.5	0.43	---	---	---
76:											
Kremlin	0-7	18-27	1.15-1.35	0.60-2.00	0.16-0.20	Low	1.0-3.0	0.37	0.37	5	6
	7-15	18-30	1.25-1.45	0.60-2.00	0.16-0.20	Moderate	1.0-2.0	0.37	---	---	---
	15-50	18-30	1.30-1.50	0.60-2.00	0.16-0.20	Moderate	0.5-1.0	0.37	---	---	---
	50-60	18-25	1.30-1.55	0.60-2.00	0.14-0.18	Low	0.0-0.5	0.37	---	---	---
77:											
Kremlin	0-4	18-27	1.15-1.35	0.60-2.00	0.16-0.20	Low	1.0-3.0	0.37	0.37	5	6
	4-11	18-30	1.25-1.45	0.60-2.00	0.16-0.20	Moderate	1.0-2.0	0.37	---	---	---
	11-60	18-25	1.30-1.50	0.60-2.00	0.16-0.20	Moderate	0.5-1.0	0.37	---	---	---
78:											
Kremlin	0-10	18-27	1.15-1.35	0.60-2.00	0.16-0.20	Low	1.0-3.0	0.37	0.37	5	6
	10-16	18-30	1.25-1.45	0.60-2.00	0.16-0.20	Moderate	1.0-2.0	0.37	---	---	---
	16-40	18-30	1.30-1.50	0.60-2.00	0.16-0.20	Moderate	0.5-1.0	0.37	---	---	---
	40-60	18-25	1.30-1.55	0.60-2.00	0.14-0.18	Low	0.0-0.5	0.37	---	---	---
Busby	0-3	10-18	1.30-1.50	2.00-6.00	0.12-0.16	Low	1.0-2.0	0.20	0.20	4	3
	3-20	10-18	1.40-1.60	2.00-6.00	0.12-0.16	Low	0.5-1.0	0.32	---	---	---
	20-42	10-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.0-0.5	0.20	---	---	---
	42-60	3-18	1.50-1.70	6.00-20.00	0.08-0.10	Low	0.0-0.5	0.20	---	---	---
79:											
Kremlin	0-3	18-27	1.15-1.35	0.60-2.00	0.16-0.20	Low	1.0-3.0	0.37	0.37	5	6
	3-12	18-30	1.25-1.45	0.60-2.00	0.16-0.20	Moderate	1.0-2.0	0.37	---	---	---
	12-60	18-25	1.30-1.50	0.60-2.00	0.16-0.20	Moderate	0.5-1.0	0.37	---	---	---
Tinsley	0-6	5-10	1.30-1.50	2.00-6.00	0.08-0.11	Low	0.7-2.0	0.15	0.20	5	3
	6-60	0-10	1.45-1.65	6.00-20.00	0.01-0.02	Low	0.0-0.5	0.05	---	---	---
Degrand	0-5	10-27	1.15-1.35	0.60-2.00	0.16-0.20	Low	2.0-3.0	0.37	0.37	3	5
	5-14	20-35	1.40-1.60	0.60-2.00	0.13-0.16	Moderate	1.0-2.0	0.32	---	---	---
	14-28	15-30	1.35-1.60	0.60-2.00	0.13-0.16	Low	0.5-1.0	0.32	---	---	---
	28-60	0-5	1.50-1.70	6.00-20.00	0.03-0.04	Low	0.0-0.5	0.10	---	---	---
80:											
Lihen	0-12	5-10	1.35-1.55	6.00-20.00	0.10-0.12	Low	1.0-2.0	0.17	0.17	5	2
	12-60	0-10	1.40-1.65	6.00-20.00	0.07-0.09	Low	0.0-0.5	0.17	---	---	---
81:											
Lihen	0-15	5-10	1.35-1.55	6.00-20.00	0.10-0.12	Low	1.0-2.0	0.17	0.17	5	2
	15-60	0-10	1.40-1.65	6.00-20.00	0.07-0.09	Low	0.0-0.5	0.17	---	---	---
Parshall	0-7	10-18	1.20-1.40	2.00-6.00	0.13-0.17	Low	2.0-4.0	0.17	0.17	5	3
	7-32	10-18	1.25-1.45	2.00-6.00	0.12-0.16	Low	1.0-2.0	0.20	---	---	---
	32-60	5-18	1.40-1.60	2.00-6.00	0.10-0.14	Low	0.5-1.0	0.20	---	---	---
Yetull	0-7	0-10	1.40-1.60	6.00-20.00	0.06-0.08	Low	1.0-2.0	0.10	0.17	5	2
	7-60	0-10	1.45-1.65	6.00-20.00	0.05-0.06	Low	0.0-1.0	0.17	---	---	---
82:											
Lihen	0-13	5-10	1.35-1.55	6.00-20.00	0.10-0.12	Low	1.0-2.0	0.17	0.17	5	2
	13-60	0-10	1.40-1.65	6.00-20.00	0.07-0.09	Low	0.0-0.5	0.17	---	---	---

PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group
								K	Kf	T	
	In	Pct	g/cc	In/hr	In/in		Pct				
82:											
Tinsley	0-4	5-10	1.30-1.50	2.00-6.00	0.08-0.11	Low	0.7-2.0	0.15	0.20	5	3
	4-60	0-10	1.45-1.65	6.00-20.00	0.01-0.02	Low	0.0-0.5	0.05	---	---	---
83:											
Lihen	0-18	5-10	1.35-1.55	6.00-20.00	0.10-0.12	Low	1.0-2.0	0.17	0.17	5	2
	18-60	0-10	1.40-1.65	6.00-20.00	0.07-0.09	Low	0.0-0.5	0.17	---	---	---
Yetull	0-10	0-10	1.50-1.70	6.00-20.00	0.04-0.06	Low	1.0-2.0	0.05	0.17	5	2
	10-60	0-10	1.45-1.65	6.00-20.00	0.05-0.06	Low	0.0-1.0	0.17	---	---	---
84:											
Lonna	0-4	18-27	1.10-1.30	0.60-2.00	0.16-0.20	Low	1.0-3.0	0.37	0.37	5	4L
	4-12	18-35	1.25-1.45	0.60-2.00	0.16-0.20	Moderate	0.5-1.0	0.37	---	---	---
	12-60	18-35	1.25-1.50	0.60-2.00	0.14-0.18	Moderate	0.5-1.0	0.37	---	---	---
85:											
Lonna	0-7	18-27	1.10-1.30	0.60-2.00	0.16-0.20	Low	1.0-3.0	0.37	0.37	5	4L
	7-12	18-35	1.25-1.45	0.60-2.00	0.16-0.20	Moderate	0.5-1.0	0.37	---	---	---
	12-60	18-35	1.25-1.50	0.60-2.00	0.14-0.18	Moderate	0.5-1.0	0.37	---	---	---
86:											
Lonna	0-4	18-27	1.10-1.30	0.60-2.00	0.16-0.20	Low	1.0-3.0	0.37	0.37	5	4L
	4-12	18-35	1.25-1.45	0.60-2.00	0.16-0.20	Moderate	0.5-1.0	0.37	---	---	---
	12-60	18-35	1.25-1.50	0.60-2.00	0.14-0.18	Moderate	0.5-1.0	0.37	---	---	---
87:											
Lonna	0-4	27-35	1.15-1.35	0.60-2.00	0.16-0.20	Moderate	1.0-3.0	0.32	0.32	5	4L
	4-11	18-35	1.25-1.45	0.60-2.00	0.16-0.20	Moderate	0.5-1.0	0.37	---	---	---
	11-60	18-35	1.25-1.50	0.60-2.00	0.14-0.18	Moderate	0.5-1.0	0.37	---	---	---
88:											
Lonna	0-3	27-35	1.15-1.35	0.60-2.00	0.16-0.20	Moderate	1.0-3.0	0.32	0.32	5	4L
	3-11	18-35	1.25-1.45	0.60-2.00	0.16-0.20	Moderate	0.5-1.0	0.37	---	---	---
	11-60	18-35	1.25-1.50	0.60-2.00	0.14-0.18	Moderate	0.5-1.0	0.37	---	---	---
89:											
Lonna	0-5	18-27	1.10-1.30	0.60-2.00	0.16-0.20	Low	1.0-3.0	0.37	0.37	5	4L
	5-14	18-35	1.25-1.45	0.60-2.00	0.16-0.20	Moderate	0.5-1.0	0.37	---	---	---
	14-60	18-35	1.25-1.50	0.60-2.00	0.14-0.18	Moderate	0.5-1.0	0.37	---	---	---
Cambeth	0-5	18-27	1.10-1.30	0.60-2.00	0.18-0.22	Low	1.0-2.0	0.37	0.37	3	4L
	5-11	18-35	1.25-1.45	0.60-2.00	0.16-0.20	Moderate	0.5-1.0	0.32	---	---	---
	11-25	18-35	1.30-1.50	0.60-2.00	0.15-0.19	Moderate	0.0-0.5	0.32	---	---	---
	25-60	---	---	---	---	---	---	---	---	---	---
90:											
Lonna	0-5	18-27	1.10-1.30	0.60-2.00	0.16-0.20	Low	1.0-3.0	0.37	0.37	5	4L
	5-11	18-35	1.25-1.45	0.60-2.00	0.16-0.20	Moderate	0.5-1.0	0.37	---	---	---
	11-60	18-35	1.25-1.50	0.60-2.00	0.14-0.18	Moderate	0.5-1.0	0.37	---	---	---
Cambeth	0-5	18-27	1.10-1.30	0.60-2.00	0.18-0.22	Low	1.0-2.0	0.37	0.37	3	4L
	5-11	18-35	1.25-1.45	0.60-2.00	0.16-0.20	Moderate	0.5-1.0	0.32	---	---	---
	11-29	18-35	1.30-1.50	0.60-2.00	0.15-0.19	Moderate	0.0-0.5	0.32	---	---	---
	29-60	---	---	---	---	---	---	---	---	---	---
Cabbart	0-3	18-27	1.20-1.40	0.60-2.00	0.17-0.21	Low	1.0-2.0	0.37	0.37	2	4L
	3-12	18-35	1.30-1.50	0.60-2.00	0.15-0.19	Moderate	0.5-1.0	0.37	---	---	---
	12-60	---	---	---	---	---	---	---	---	---	---

PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group
								K	Kf	T	
	In	Pct	g/cc	In/hr	In/in		Pct				
91:											
Lonna	0-4	18-27	1.10-1.30	0.60-2.00	0.16-0.20	Low	1.0-3.0	0.37	0.37	5	4L
	4-11	18-35	1.25-1.45	0.60-2.00	0.16-0.20	Moderate	0.5-1.0	0.37	---	---	---
	11-60	18-35	1.25-1.50	0.60-2.00	0.14-0.18	Moderate	0.5-1.0	0.37	---	---	---
Cambeth	0-3	18-27	1.10-1.30	0.60-2.00	0.18-0.22	Low	1.0-2.0	0.37	0.37	3	4L
	3-11	18-35	1.25-1.45	0.60-2.00	0.16-0.20	Moderate	0.5-1.0	0.32	---	---	---
	11-30	18-35	1.30-1.50	0.60-2.00	0.15-0.19	Moderate	0.0-0.5	0.32	---	---	---
	30-60	---	---	---	---	---	---	---	---	---	---
Cabbart	0-4	18-27	1.20-1.40	0.60-2.00	0.17-0.21	Low	1.0-2.0	0.37	0.37	2	4L
	4-14	18-35	1.30-1.50	0.60-2.00	0.15-0.19	Moderate	0.5-1.0	0.37	---	---	---
	14-60	---	---	---	---	---	---	---	---	---	---
92:											
Macar	0-4	18-27	1.20-1.40	0.60-2.00	0.16-0.20	Low	1.0-3.0	0.37	0.37	5	6
	4-19	18-35	1.30-1.50	0.60-2.00	0.14-0.18	Moderate	1.0-2.0	0.32	---	---	---
	19-60	18-35	1.30-1.50	0.60-2.00	0.14-0.18	Moderate	0.5-1.0	0.32	---	---	---
93:											
Marias	0-8	40-60	1.25-1.45	0.06-0.20	0.14-0.18	High	0.5-2.0	0.43	0.43	5	4
	8-34	40-60	1.30-1.50	0.00-0.06	0.12-0.16	High	0.5-1.0	0.37	---	---	---
	34-60	40-60	1.30-1.55	0.00-0.06	0.12-0.16	High	0.0-0.5	0.37	---	---	---
94:											
Marvan	0-3	40-60	1.25-1.45	0.06-0.20	0.14-0.18	High	0.5-2.0	0.43	0.43	5	4
	3-30	45-60	1.30-1.50	0.00-0.06	0.11-0.13	High	0.5-1.0	0.37	---	---	---
	30-60	45-60	1.30-1.50	0.00-0.06	0.09-0.11	High	0.0-0.5	0.37	---	---	---
95:											
Marvan	0-5	40-60	1.25-1.45	0.06-0.20	0.14-0.18	High	0.5-2.0	0.43	0.43	5	4
	5-31	45-60	1.30-1.50	0.00-0.06	0.11-0.13	High	0.5-1.0	0.37	---	---	---
	31-60	45-60	1.30-1.50	0.00-0.06	0.09-0.11	High	0.0-0.5	0.37	---	---	---
96:											
Marvan	0-3	40-60	1.25-1.45	0.06-0.20	0.14-0.18	High	0.5-2.0	0.43	0.43	5	4
	3-27	45-60	1.30-1.50	0.00-0.06	0.11-0.13	High	0.5-1.0	0.37	---	---	---
	27-60	45-60	1.30-1.50	0.00-0.06	0.09-0.11	High	0.0-0.5	0.37	---	---	---
Vanda	0-5	40-60	1.25-1.45	0.00-0.06	0.08-0.12	High	0.5-2.0	0.43	0.43	5	4
	5-60	35-60	1.30-1.50	0.00-0.06	0.08-0.12	High	0.0-0.5	0.37	---	---	---
97:											
Neldore	0-3	40-50	1.20-1.40	0.06-0.20	0.14-0.18	High	1.0-3.0	0.32	0.32	2	4
	3-12	40-60	1.30-1.50	0.06-0.20	0.12-0.16	High	0.5-1.0	0.32	---	---	---
	12-18	40-60	1.30-1.50	0.06-0.20	0.12-0.16	High	0.0-0.5	0.32	---	---	---
	18-60	---	---	---	---	---	---	---	---	---	---
Rock outcrop.											
98:											
Neldore	0-3	40-50	1.20-1.40	0.06-0.20	0.14-0.18	High	1.0-3.0	0.32	0.32	2	4
	3-16	40-60	1.30-1.50	0.06-0.20	0.12-0.16	High	0.0-0.5	0.32	---	---	---
	16-60	---	---	---	---	---	---	---	---	---	---
Rock outcrop.											
Abor	0-11	40-55	1.20-1.40	0.20-0.60	0.14-0.18	High	1.0-2.0	0.37	0.37	3	4
	11-28	35-60	1.30-1.55	0.00-0.06	0.14-0.16	High	0.5-1.0	0.37	---	---	---
	28-60	---	---	---	---	---	---	---	---	---	---

PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group
								K	Kf	T	
	In	Pct	g/cc	In/hr	In/in		Pct				
99:											
Neldore	0-3	40-50	1.20-1.40	0.06-0.20	0.14-0.18	High	1.0-3.0	0.32	0.32	2	4
	3-15	40-60	1.30-1.50	0.06-0.20	0.12-0.16	High	0.0-0.5	0.32	---	---	---
	15-60	---	---	---	---	---	---	---	---	---	---
Weingart	0-3	27-40	1.20-1.40	0.06-0.20	0.16-0.19	Moderate	1.0-2.0	0.43	0.43	2	6
	3-17	40-60	1.30-1.55	0.00-0.06	0.12-0.15	High	0.5-1.0	0.37	---	---	---
	17-35	35-55	1.30-1.55	0.00-0.06	0.09-0.11	High	0.0-0.5	0.37	---	---	---
	35-60	---	---	---	---	---	---	---	---	---	---
Kirby	0-4	10-22	1.30-1.50	2.00-6.00	0.11-0.14	Low	1.0-2.0	0.17	0.37	2	5
	4-11	8-22	1.45-1.65	6.00-20.00	0.05-0.06	Low	0.5-1.0	0.05	---	---	---
	11-60	0-1	1.60-1.80	6.00-20.00	0.00-0.01	Low	---	0.02	---	---	---
100:											
Nesda	0-14	10-20	1.25-1.45	0.60-2.00	0.12-0.16	Low	2.0-4.0	0.10	0.20	2	5
	14-60	0-10	1.55-1.75	6.00-20.00	0.03-0.04	Low	0.5-1.0	0.02	---	---	---
101:											
Parshall	0-5	10-18	1.20-1.40	2.00-6.00	0.13-0.17	Low	2.0-4.0	0.17	0.17	5	3
	5-24	10-18	1.25-1.45	2.00-6.00	0.12-0.16	Low	1.0-2.0	0.20	---	---	---
	24-60	5-18	1.40-1.60	2.00-6.00	0.10-0.14	Low	0.5-1.0	0.20	---	---	---
102:											
Peerless	0-5	15-27	1.15-1.35	0.60-2.00	0.17-0.20	Low	2.0-4.0	0.32	0.32	4	6
	5-20	18-30	1.30-1.50	0.60-2.00	0.16-0.19	Low	1.0-2.0	0.37	---	---	---
	20-27	18-27	1.30-1.55	0.60-2.00	0.12-0.15	Low	0.5-1.0	0.32	---	---	---
	27-37	18-27	1.40-1.65	0.60-2.00	0.07-0.09	Low	0.0-0.5	0.10	---	---	---
	37-60	10-27	1.50-1.70	0.60-2.00	0.06-0.07	Low	0.0-0.5	0.10	---	---	---
103:											
Pinelli	0-4	18-27	1.15-1.25	0.60-2.00	0.16-0.18	Low	1.0-2.0	0.37	0.37	5	6
	4-18	35-50	1.15-1.30	0.20-0.60	0.15-0.17	Moderate	0.5-1.0	0.43	---	---	---
	18-60	18-35	1.20-1.35	0.20-0.60	0.16-0.18	Moderate	0.0-0.5	0.43	---	---	---
104:											
Pinelli	0-7	18-27	1.15-1.25	0.60-2.00	0.16-0.18	Low	1.0-2.0	0.37	0.37	5	6
	7-18	35-50	1.15-1.30	0.20-0.60	0.15-0.17	Moderate	0.5-1.0	0.43	---	---	---
	18-60	18-35	1.20-1.35	0.20-0.60	0.16-0.18	Moderate	0.0-0.5	0.43	---	---	---
105:											
Pinelli	0-5	18-27	1.15-1.25	0.60-2.00	0.16-0.18	Low	1.0-2.0	0.37	0.37	5	6
	5-18	35-50	1.15-1.30	0.20-0.60	0.15-0.17	Moderate	0.5-1.0	0.43	---	---	---
	18-60	18-35	1.20-1.35	0.20-0.60	0.16-0.18	Moderate	0.0-0.5	0.43	0.43		
Weingart	0-7	27-40	1.20-1.40	0.06-0.20	0.16-0.19	Moderate	1.0-2.0	0.43	0.43	2	6
	7-16	40-60	1.30-1.55	0.00-0.06	0.12-0.15	High	0.5-1.0	0.37	0.37		
	16-38	35-55	1.30-1.55	0.00-0.06	0.09-0.11	High	0.0-0.5	0.37	0.37		
	38-60	---	---	---	---	---	---	---	---	---	---
Gerdrum	0-7	27-40	1.20-1.40	0.20-0.60	0.14-0.18	Moderate	1.0-3.0	0.43	0.43	2	6
	7-16	35-55	1.30-1.55	0.00-0.06	0.10-0.13	High	0.5-1.0	0.37	---	---	---
	16-60	30-50	1.30-1.55	0.00-0.06	0.08-0.10	High	0.0-0.5	0.43	---	---	---
106:											
Riverwash.											
107:											
Rivra loam	0-8	10-27	1.25-1.45	0.60-2.00	0.16-0.20	Low	0.5-2.0	0.43	0.43	5	5
	8-60	0-5	1.50-1.70	>20.00	0.02-0.03	Low	0.0-0.5	0.02	---	---	---

PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group
								K	Kf	T	
	In	Pct	g/cc	In/hr	In/in		Pct				
107:											
Rivra gravelly sandy loam	0-9	5-15	1.30-1.50	2.00-6.00	0.10-0.11	Low	0.5-2.0	0.15	0.20	5	3
	9-60	0-5	1.55-1.75	>20.00	0.02-0.03	Low	0.0-0.5	0.02	---	---	---
108:											
Rock outcrop.											
109:											
Rock outcrop.											
Cabbart	0-3	18-27	1.20-1.40	0.60-2.00	0.17-0.21	Low	1.0-2.0	0.37	0.37	2	4L
	3-13	18-35	1.30-1.50	0.60-2.00	0.15-0.19	Moderate	0.5-1.0	0.37	---	---	---
	13-60	---	---	---	---	---	---	---	---	---	---
Kirby	0-3	10-22	1.40-1.60	2.00-6.00	0.07-0.09	Low	1.0-2.0	0.10	0.37	2	5
	3-10	8-22	1.45-1.65	6.00-20.00	0.05-0.06	Low	0.5-1.0	0.05	0.24		
	10-60	0-1	1.60-1.80	6.00-20.00	0.00-0.01	Low	---	0.02	---	---	---
110:											
Ryell	0-9	10-20	1.30-1.50	2.00-6.00	0.13-0.16	Low	0.5-1.0	0.28	0.28	3	3
	9-24	10-18	1.30-1.50	0.60-2.00	0.15-0.19	Low	0.5-1.0	0.37	---	---	---
	24-60	0-10	1.45-1.60	6.00-20.00	0.02-0.03	Low	0.0-0.5	0.05	---	---	---
111:											
Ryell	0-8	10-20	1.30-1.50	2.00-6.00	0.13-0.16	Low	0.5-1.0	0.43	0.43	3	3
	8-22	10-18	1.20-1.40	0.60-2.00	0.15-0.19	Low	0.5-1.0	0.37	---	---	---
	22-60	0-10	1.50-1.75	6.00-20.00	0.02-0.03	Low	0.5-1.0	0.05	---	---	---
112:											
Ryell	0-9	15-27	1.25-1.45	0.60-2.00	0.16-0.20	Low	0.5-1.0	0.43	0.43	3	5
	9-25	10-18	1.30-1.50	0.60-2.00	0.15-0.19	Low	0.5-1.0	0.37	---	---	---
	25-60	0-10	1.45-1.60	6.00-20.00	0.02-0.03	Low	0.0-0.5	0.05	---	---	---
113:											
Shambo	0-4	10-27	1.10-1.30	0.60-2.00	0.18-0.22	Low	2.0-6.0	0.28	0.28	5	6
	4-11	18-35	1.20-1.50	0.60-2.00	0.17-0.19	Moderate	1.0-2.0	0.37	---	---	---
	11-60	18-35	1.20-1.50	0.60-2.00	0.17-0.19	Moderate	0.5-1.0	0.37	---	---	---
114:											
Shambo	0-5	10-27	1.10-1.30	0.60-2.00	0.18-0.22	Low	2.0-6.0	0.28	0.28	5	6
	5-13	18-35	1.20-1.50	0.60-2.00	0.17-0.19	Moderate	1.0-2.0	0.37	---	---	---
	13-60	18-35	1.20-1.50	0.60-2.00	0.17-0.19	Moderate	0.5-1.0	0.37	---	---	---
115:											
Spinekop	0-11	27-40	1.20-1.40	0.20-0.60	0.16-0.20	Moderate	1.0-2.0	0.32	0.32	5	7
	11-15	27-35	1.30-1.50	0.20-0.60	0.16-0.20	Moderate	0.5-1.0	0.32	---	---	---
	15-19	18-35	1.30-1.50	0.20-0.60	0.15-0.18	Low	0.0-0.5	0.37	---	---	---
	19-60	18-30	1.35-1.55	0.20-0.60	0.13-0.16	Low	0.0-0.5	0.37	---	---	---
116:											
Subwell	0-4	18-27	1.15-1.35	0.60-2.00	0.15-0.19	Low	2.0-4.0	0.32	0.32	5	6
	4-15	18-27	1.30-1.50	0.60-2.00	0.14-0.17	Low	1.0-2.0	0.24	---	---	---
	15-20	10-27	1.40-1.65	0.60-2.00	0.06-0.08	Low	0.5-1.0	0.10	---	---	---
	20-60	5-18	1.55-1.80	2.00-6.00	0.05-0.07	Low	0.0-0.5	0.05	---	---	---
Bigsheep	0-9	18-27	1.30-1.50	0.60-2.00	0.08-0.10	Low	2.0-4.0	0.05	0.37	5	6
	9-18	18-27	1.55-1.75	0.60-2.00	0.07-0.08	Low	1.0-2.0	0.15	---	---	---
	18-26	18-27	1.25-1.50	0.60-2.00	0.17-0.20	Low	0.5-1.0	0.37	---	---	---
	26-60	10-27	1.60-1.80	0.60-2.00	0.06-0.07	Low	0.0-0.5	0.10	---	---	---

PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group
								K	Kf	T	
	In	Pct	g/cc	In/hr	In/in		Pct				
117:											
Subwell	0-6	18-27	1.15-1.35	0.60-2.00	0.15-0.19	Low	2.0-4.0	0.32	0.32	5	6
	6-14	18-27	1.30-1.50	0.60-2.00	0.14-0.17	Low	1.0-2.0	0.24	---	---	---
	14-24	10-27	1.40-1.65	0.60-2.00	0.06-0.08	Low	0.5-1.0	0.10	---	---	---
	24-60	5-18	1.55-1.80	2.00-6.00	0.05-0.07	Low	0.0-0.5	0.05	---	---	---
Cambert	0-5	18-25	1.10-1.30	0.60-2.00	0.18-0.22	Low	1.0-3.0	0.37	0.37	3	4L
	5-12	18-35	1.20-1.45	0.60-2.00	0.16-0.20	Moderate	1.0-2.0	0.37	---	---	---
	12-32	18-35	1.20-1.45	0.60-2.00	0.16-0.20	Moderate	0.5-1.0	0.37	---	---	---
	32-60	---	---	---	---	---	---	---	---	---	---
Bigsheep	0-10	18-27	1.30-1.50	0.60-2.00	0.08-0.10	Low	2.0-4.0	0.05	0.37	4	6
	10-50	18-27	1.55-1.75	0.60-2.00	0.07-0.08	Low	1.0-2.0	0.15	---	---	---
	50-60	---	---	---	---	---	---	---	---	---	---
118:											
Subwell	0-3	18-27	1.15-1.35	0.60-2.00	0.15-0.19	Low	2.0-4.0	0.32	0.32	5	6
	3-16	18-27	1.30-1.50	0.60-2.00	0.14-0.17	Low	1.0-2.0	0.24	---	---	---
	16-28	10-27	1.40-1.65	0.60-2.00	0.06-0.08	Low	0.5-1.0	0.10	---	---	---
	28-60	5-18	1.55-1.80	2.00-6.00	0.05-0.07	Low	0.0-0.5	0.05	---	---	---
Peerless	0-6	15-27	1.15-1.35	0.60-2.00	0.17-0.20	Low	2.0-4.0	0.32	0.32	3	6
	6-16	18-30	1.30-1.50	0.60-2.00	0.16-0.19	Low	1.0-2.0	0.37	---	---	---
	16-28	18-27	1.30-1.55	0.60-2.00	0.12-0.15	Low	0.5-1.0	0.32	---	---	---
	28-39	18-27	1.40-1.65	0.60-2.00	0.07-0.09	Low	0.0-0.5	0.10	---	---	---
	39-60	10-27	1.50-1.70	0.60-2.00	0.06-0.07	Low	0.0-0.5	0.10	---	---	---
119:											
Tally	0-7	10-20	1.25-1.45	2.00-6.00	0.14-0.16	Low	1.0-3.0	0.20	0.20	3	3
	7-24	5-18	1.35-1.60	2.00-6.00	0.13-0.15	Low	1.0-2.0	0.20	---	---	---
	24-39	5-18	1.40-1.65	2.00-6.00	0.11-0.13	Low	0.5-1.0	0.20	---	---	---
	39-60	5-10	1.40-1.65	6.00-20.00	0.08-0.10	Low	0.0-0.5	0.17	---	---	---
120:											
Tally	0-7	10-20	1.25-1.45	2.00-6.00	0.14-0.16	Low	1.0-3.0	0.20	0.20	3	3
	7-18	5-18	1.35-1.60	2.00-6.00	0.13-0.15	Low	1.0-2.0	0.20	---	---	---
	18-28	5-18	1.40-1.65	2.00-6.00	0.11-0.13	Low	0.5-1.0	0.20	---	---	---
	28-60	5-10	1.40-1.65	6.00-20.00	0.08-0.10	Low	0.0-0.5	0.17	---	---	---
Hedstrom	0-5	15-20	1.25-1.45	2.00-6.00	0.12-0.15	Low	2.0-3.0	0.24	0.24	3	3
	5-15	20-35	1.35-1.60	0.60-2.00	0.13-0.16	Moderate	1.0-2.0	0.32	---	---	---
	15-24	20-30	1.35-1.60	0.60-2.00	0.13-0.16	Moderate	0.5-1.0	0.32	---	---	---
	24-60	0-5	1.45-1.65	6.00-20.00	0.04-0.05	Low	0.0-0.5	0.17	---	---	---
121:											
Tally	0-6	10-20	1.25-1.45	2.00-6.00	0.14-0.16	Low	1.0-3.0	0.20	0.20	5	3
	6-30	5-18	1.35-1.60	2.00-6.00	0.13-0.15	Low	1.0-2.0	0.20	---	---	---
	30-60	5-18	1.40-1.65	2.00-6.00	0.11-0.13	Low	0.5-1.0	0.20	---	---	---
Wabek	0-4	10-20	1.20-1.40	2.00-6.00	0.09-0.11	Low	1.0-2.0	0.10	0.20	5	3
	4-11	2-10	1.35-1.55	6.00-20.00	0.06-0.08	Low	0.5-1.0	0.15	---	---	---
	11-60	0-3	1.50-1.70	>20.00	0.02-0.03	Low	0.0-0.5	0.02	---	---	---
Hedstrom	0-6	15-20	1.25-1.45	2.00-6.00	0.12-0.15	Low	2.0-3.0	0.24	0.24	3	3
	6-22	20-35	1.35-1.60	0.60-2.00	0.13-0.16	Moderate	1.0-2.0	0.32	---	---	---
	22-34	20-30	1.35-1.60	0.60-2.00	0.13-0.16	Moderate	0.5-1.0	0.32	---	---	---
	34-60	0-5	1.45-1.65	6.00-20.00	0.04-0.05	Low	0.0-0.5	0.17	---	---	---
122:											
Tinsley	0-3	5-15	1.20-1.45	2.00-6.00	0.07-0.09	Low	0.7-2.0	0.10	0.20	5	3
	3-60	0-10	1.45-1.65	6.00-20.00	0.01-0.02	Low	0.0-0.5	0.05	---	---	---

PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group
								K	Kf	T	
	In	Pct	g/cc	In/hr	In/in		Pct				
122:											
Delpoint	0-3	20-27	1.15-1.35	0.60-2.00	0.16-0.20	Low	1.0-3.0	0.37	0.37	3	6
	3-11	18-35	1.30-1.50	0.60-2.00	0.14-0.18	Low	0.5-1.0	0.37	---	---	---
	11-32	18-35	1.30-1.55	0.60-2.00	0.14-0.18	Moderate	0.0-0.5	0.37	---	---	---
	32-60	---	---	---	---	---	---	---	---	---	---
Cabbart	0-3	18-27	1.20-1.40	0.60-2.00	0.17-0.21	Low	1.0-2.0	0.37	0.37	2	4L
	3-13	18-35	1.30-1.50	0.60-2.00	0.15-0.19	Moderate	0.5-1.0	0.37	---	---	---
	13-60	---	---	---	---	---	---	---	---	---	---
123:											
Ustic Torrifluvents.											
124:											
Ustic Torriorthents.											
Borollic Natargids.											
125:											
Ustic Torriorthents.											
Rock outcrop.											
126:											
Ustic Torriorthents.											
Ustic Torrifluvents.											
Rock outcrop.											
127:											
Vanstel	0-4	14-25	1.10-1.30	0.60-2.00	0.16-0.19	Low	1.0-2.0	0.37	0.37	5	6
	4-13	25-35	1.30-1.50	0.60-2.00	0.14-0.17	Moderate	0.5-1.0	0.32	---	---	---
	13-60	18-30	1.25-1.50	0.60-2.00	0.14-0.17	Low	0.0-0.5	0.37	---	---	---
128:											
Vanstel	0-4	14-25	1.10-1.30	0.60-2.00	0.16-0.19	Low	1.0-2.0	0.37	0.37	5	6
	4-13	25-35	1.30-1.50	0.60-2.00	0.14-0.17	Moderate	0.5-1.0	0.32	---	---	---
	13-60	18-30	1.25-1.50	0.60-2.00	0.14-0.17	Low	0.0-0.5	0.37	---	---	---
129:											
Wabek	0-4	10-20	1.20-1.40	2.00-6.00	0.09-0.11	Low	1.0-2.0	0.10	0.20	5	3
	4-60	0-3	1.50-1.70	>20.00	0.02-0.03	Low	0.0-0.5	0.02	---	---	---
130:											
Wabek	0-3	10-18	1.30-1.50	2.00-6.00	0.07-0.09	Low	1.0-2.0	0.05	0.20	5	3
	3-11	2-10	1.35-1.55	6.00-20.00	0.06-0.08	Low	0.5-1.0	0.15	---	---	---
	11-60	0-3	1.50-1.70	>20.00	0.02-0.03	Low	0.0-0.5	0.02	---	---	---
Cambert	0-4	18-25	1.15-1.35	0.60-2.00	0.16-0.20	Low	1.0-3.0	0.37	0.37	3	4L
	4-12	18-35	1.20-1.45	0.60-2.00	0.16-0.20	Moderate	1.0-2.0	0.37	---	---	---
	12-30	18-35	1.20-1.45	0.60-2.00	0.16-0.20	Moderate	0.5-1.0	0.37	---	---	---
	30-60	---	---	---	---	---	---	---	---	---	---

PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group
								K	Kf	T	
	In	Pct	g/cc	In/hr	In/in		Pct				
131:											
Yamac	0-4	18-27	1.20-1.40	0.60-2.00	0.16-0.20	Low	1.0-2.0	0.37	0.37	5	6
	4-14	18-30	1.25-1.45	0.60-2.00	0.14-0.18	Moderate	0.5-1.0	0.37	---	---	---
	14-60	18-30	1.30-1.50	0.60-2.00	0.14-0.18	Moderate	0.0-0.5	0.37	---	---	---
132:											
Yamac	0-5	18-27	1.20-1.40	0.60-2.00	0.16-0.20	Low	1.0-2.0	0.37	0.37	5	6
	5-17	18-30	1.25-1.45	0.60-2.00	0.14-0.18	Moderate	0.5-1.0	0.37	---	---	---
	17-60	18-30	1.30-1.50	0.60-2.00	0.14-0.18	Moderate	0.0-0.5	0.37	---	---	---
133:											
Yamac	0-6	18-27	1.20-1.40	0.60-2.00	0.16-0.20	Low	1.0-2.0	0.37	0.37	5	6
	6-18	18-30	1.25-1.45	0.60-2.00	0.14-0.18	Moderate	0.5-1.0	0.37	---	---	---
	18-60	18-30	1.30-1.50	0.60-2.00	0.14-0.18	Moderate	0.0-0.5	0.37	---	---	---
Busby	0-4	10-18	1.30-1.50	2.00-6.00	0.12-0.16	Low	1.0-2.0	0.20	0.20	4	3
	4-21	10-18	1.40-1.60	2.00-6.00	0.12-0.16	Low	0.5-1.0	0.32	---	---	---
	21-45	10-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.0-0.5	0.20	---	---	---
	45-60	3-18	1.50-1.70	6.00-20.00	0.08-0.10	Low	0.0-0.5	0.20	---	---	---
134:											
Yamac	0-3	18-27	1.20-1.40	0.60-2.00	0.16-0.20	Low	1.0-2.0	0.37	0.37	5	6
	3-14	18-30	1.25-1.45	0.60-2.00	0.14-0.18	Moderate	0.5-1.0	0.37	---	---	---
	14-60	18-30	1.30-1.50	0.60-2.00	0.14-0.18	Moderate	0.0-0.5	0.37	---	---	---
Busby	0-4	10-18	1.30-1.50	2.00-6.00	0.12-0.16	Low	1.0-2.0	0.20	0.20	4	3
	4-21	10-18	1.40-1.60	2.00-6.00	0.12-0.16	Low	0.5-1.0	0.32	---	---	---
	21-45	10-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.0-0.5	0.20	---	---	---
	45-60	3-18	1.50-1.70	6.00-20.00	0.08-0.10	Low	0.0-0.5	0.20	---	---	---
135:											
Yamac	0-5	18-27	1.20-1.40	0.60-2.00	0.16-0.20	Low	1.0-2.0	0.37	0.37	5	6
	5-14	18-30	1.25-1.45	0.60-2.00	0.14-0.18	Moderate	0.5-1.0	0.37	---	---	---
	14-60	18-30	1.30-1.50	0.60-2.00	0.14-0.18	Moderate	0.0-0.5	0.37	---	---	---
Busby	0-3	10-18	1.30-1.50	2.00-6.00	0.12-0.16	Low	1.0-2.0	0.20	0.20	4	3
	3-11	10-18	1.40-1.60	2.00-6.00	0.12-0.16	Low	0.5-1.0	0.32	---	---	---
	11-42	10-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.0-0.5	0.20	---	---	---
	42-60	3-18	1.50-1.70	6.00-20.00	0.08-0.10	Low	0.0-0.5	0.20	---	---	---
Blackhall	0-4	5-15	1.20-1.40	2.00-6.00	0.13-0.16	Low	1.0-2.0	0.20	0.20	2	3
	4-17	5-15	1.30-1.55	2.00-6.00	0.13-0.16	Low	0.5-1.0	0.20	---	---	---
	17-60	---	---	---	---	---	---	---	---	---	---
136:											
Yamac	0-5	18-27	1.20-1.40	0.60-2.00	0.16-0.20	Low	1.0-2.0	0.37	0.37	5	6
	5-15	18-30	1.25-1.45	0.60-2.00	0.14-0.18	Moderate	0.5-1.0	0.37	---	---	---
	15-60	18-30	1.30-1.50	0.60-2.00	0.14-0.18	Moderate	0.0-0.5	0.37	---	---	---
Delpoint	0-3	20-27	1.15-1.35	0.60-2.00	0.16-0.20	Low	1.0-3.0	0.37	0.37	3	6
	3-15	18-35	1.30-1.50	0.60-2.00	0.14-0.18	Low	0.5-1.0	0.37	---	---	---
	15-32	18-35	1.30-1.55	0.60-2.00	0.14-0.18	Moderate	0.0-0.5	0.37	---	---	---
	32-60	---	---	---	---	---	---	---	---	---	---
137:											
Yamac	0-5	18-27	1.20-1.40	0.60-2.00	0.16-0.20	Low	1.0-2.0	0.37	0.37	5	6
	5-16	18-30	1.25-1.45	0.60-2.00	0.14-0.18	Moderate	0.5-1.0	0.37	---	---	---
	16-60	18-30	1.30-1.50	0.60-2.00	0.14-0.18	Moderate	0.0-0.5	0.37	---	---	---

PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group
								K	Kf	T	
	In	Pct	g/cc	In/hr	In/in		Pct				
137:											
Delpoint	0-4	20-27	1.15-1.35	0.60-2.00	0.16-0.20	Low	1.0-3.0	0.37	0.37	3	6
	4-15	18-35	1.30-1.50	0.60-2.00	0.14-0.18	Low	0.5-1.0	0.37	---	---	---
	15-32	18-35	1.30-1.55	0.60-2.00	0.14-0.18	Moderate	0.0-0.5	0.37	---	---	---
	32-60	---	---	---	---	---	---	---	---	---	---
Cabbart	0-4	18-27	1.20-1.40	0.60-2.00	0.17-0.21	Low	1.0-2.0	0.37	0.37	2	4L
	4-17	18-35	1.30-1.50	0.60-2.00	0.15-0.19	Moderate	0.5-1.0	0.37	---	---	---
	17-60	---	---	---	---	---	---	---	---	---	---
138:											
Yamac	0-5	18-27	1.20-1.40	0.60-2.00	0.16-0.20	Low	1.0-2.0	0.37	0.37	5	6
	5-17	18-30	1.25-1.45	0.60-2.00	0.14-0.18	Moderate	0.5-1.0	0.37	---	---	---
	17-60	18-30	1.30-1.50	0.60-2.00	0.14-0.18	Moderate	0.0-0.5	0.37	---	---	---
Gerdrum	0-7	27-40	1.20-1.40	0.20-0.60	0.14-0.18	Moderate	1.0-3.0	0.43	0.43	2	6
	7-18	35-55	1.30-1.55	0.00-0.06	0.10-0.13	High	0.5-1.0	0.37	---	---	---
	18-60	30-50	1.30-1.55	0.00-0.06	0.08-0.10	High	0.0-0.5	0.43	---	---	---
139:											
Yawdim	0-4	27-40	1.10-1.30	0.20-0.60	0.17-0.20	Moderate	0.5-1.0	0.43	0.43	2	4
	4-14	35-50	1.20-1.40	0.06-0.20	0.15-0.18	High	0.0-0.5	0.32	---	---	---
	14-60	---	---	---	---	---	---	---	---	---	---
Cambeth	0-3	18-27	1.10-1.30	0.60-2.00	0.18-0.22	Low	1.0-2.0	0.37	0.37	3	4L
	3-11	18-35	1.25-1.45	0.60-2.00	0.16-0.20	Moderate	0.5-1.0	0.32	---	---	---
	11-30	18-35	1.30-1.50	0.60-2.00	0.15-0.19	Moderate	0.0-0.5	0.32	---	---	---
	30-60	---	---	---	---	---	---	---	---	---	---
140:											
Yetull	0-10	0-10	1.35-1.55	6.00-20.00	0.05-0.08	Low	1.0-2.0	0.17	0.17	5	2
	10-60	0-10	1.45-1.65	6.00-20.00	0.05-0.07	Low	0.0-0.5	0.17	---	---	---
Busby	0-3	10-18	1.30-1.50	2.00-6.00	0.12-0.16	Low	1.0-2.0	0.20	0.20	4	3
	3-20	10-18	1.40-1.60	2.00-6.00	0.12-0.16	Low	0.5-1.0	0.32	---	---	---
	20-42	10-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.0-0.5	0.20	---	---	---
	42-60	3-18	1.50-1.70	6.00-20.00	0.08-0.10	Low	0.0-0.5	0.20	---	---	---
141:											
Zatoville	0-6	27-40	1.15-1.35	0.20-0.60	0.16-0.19	Moderate	1.0-3.0	0.37	0.37	5	4
	6-15	33-45	1.25-1.45	0.06-0.20	0.12-0.15	Moderate	1.0-2.0	0.37	---	---	---
	15-25	35-45	1.30-1.50	0.06-0.20	0.11-0.14	Moderate	0.5-1.0	0.37	---	---	---
	25-60	25-40	1.30-1.50	0.06-0.20	0.11-0.14	Moderate	0.0-0.5	0.37	---	---	---

CHEMICAL PROPERTIES OF THE SOILS

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate equivalent	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
1:								
Abor	0-11	40-55	30.0-40.0	7.4-8.4	1-5	---	0-4	---
	11-32	35-60	25.0-40.0	7.4-9.0	5-15	---	0-4	---
	32-60	---	---	---	---	---	---	---
Cabbart	0-4	18-27	10.0-15.0	7.4-9.0	5-10	---	0-4	---
	4-14	18-35	5.0-10.0	7.4-9.0	15-25	1-5	2-8	1-5
	14-60	---	---	---	---	---	---	---
Delpoint	0-3	20-27	15.0-20.0	6.6-8.4	---	---	0-4	---
	3-15	18-35	15.0-20.0	6.6-8.4	0-5	---	0-4	---
	15-32	18-35	10.0-15.0	7.9-9.0	5-15	---	0-4	---
	32-60	---	---	---	---	---	---	---
2:								
Abor	0-11	40-55	30.0-40.0	7.4-8.4	1-5	---	0-4	---
	11-25	35-60	25.0-40.0	7.4-9.0	5-15	---	0-4	---
	25-60	---	---	---	---	---	---	---
Delpoint	0-3	20-27	15.0-20.0	6.6-8.4	---	---	0-4	---
	3-14	18-35	15.0-20.0	6.6-8.4	0-5	---	0-4	---
	14-26	18-35	10.0-15.0	7.9-9.0	5-15	---	0-4	---
	26-60	---	---	---	---	---	---	---
Kobar	0-16	27-40	25.0-30.0	6.6-8.4	---	---	0-2	1-4
	16-35	35-45	20.0-25.0	7.4-8.4	5-15	---	0-2	5-10
	35-60	35-45	20.0-25.0	7.9-8.4	5-10	1-5	0-4	8-13
3:								
Abor	0-11	35-40	25.0-30.0	7.4-8.4	1-5	---	0-4	---
	11-26	35-60	25.0-40.0	7.4-9.0	5-15	---	0-4	---
	26-60	---	---	---	---	---	---	---
Weingart	0-3	27-40	30.0-35.0	5.6-7.8	---	---	0-2	---
	3-11	40-60	30.0-35.0	6.5-9.6	---	---	2-8	10-30
	11-35	35-55	30.0-35.0	7.8-9.6	5-15	0-5	4-16	13-30
	35-60	---	---	---	---	---	---	---
Neldore	0-3	40-50	30.0-35.0	5.6-7.8	---	---	0-2	---
	3-9	40-60	30.0-35.0	5.6-7.8	---	---	0-4	---
	9-15	40-60	30.0-35.0	5.6-7.8	---	---	0-4	---
	15-60	---	---	---	---	---	---	---
4: Aeric Fluvaquents.								
Cherry	0-4	18-27	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	4-18	18-35	15.0-20.0	7.9-9.0	5-15	---	0-2	---
	18-60	18-35	---	7.9-9.0	---	---	0-4	---
5:								
Alona	0-3	18-27	15.0-20.0	6.6-8.4	---	---	2-4	2-10
	3-11	18-27	10.0-15.0	7.8-9.6	0-10	---	2-8	2-10
	11-16	18-35	10.0-15.0	8.4-9.6	5-10	---	2-16	2-10
	16-60	18-35	10.0-15.0	9.0-9.6	5-15	0-1	8-16	13-40
6:								
Alona	0-5	18-27	15.0-20.0	6.6-8.4	---	---	2-4	2-10
	5-16	18-27	10.0-15.0	7.8-9.6	0-10	---	2-8	2-10
	16-20	18-35	10.0-15.0	8.4-9.6	0-10	---	2-16	2-10
	20-60	18-35	10.0-15.0	9.0-9.6	5-15	0-1	8-16	13-40

CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate equivalent	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
6:								
Cambeth	0-5	18-27	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	5-11	18-35	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	11-25	18-35	10.0-15.0	7.9-9.0	10-20	---	0-4	---
	25-60	---	---	---	---	---	---	---
Gerdrum	0-7	27-40	20.0-25.0	6.6-7.8	---	---	0-2	---
	7-24	35-55	25.0-35.0	7.4-9.0	0-5	---	1-8	10-20
	24-60	30-50	20.0-25.0	7.9-9.0	5-15	1-5	8-16	13-30
7:								
Badland.								
8:								
Blackhall	0-4	5-15	5.0-10.0	7.4-8.4	---	---	---	---
	4-12	5-15	5.0-10.0	7.9-8.4	5-10	---	0-2	---
	12-60	---	---	---	---	---	---	---
Busby	0-4	10-18	10.0-15.0	7.4-8.4	---	---	---	---
	4-21	10-18	10.0-15.0	7.4-8.4	---	---	---	---
	21-45	10-18	5.0-15.0	7.9-8.4	5-15	---	0-2	---
	45-60	3-18	5.0-10.0	7.9-8.4	5-15	---	0-4	---
Rock outcrop.								
9:								
Blackhall	0-5	5-15	5.0-10.0	7.4-8.4	---	---	---	---
	5-18	5-15	5.0-10.0	7.9-8.4	5-10	---	0-2	---
	18-60	---	---	---	---	---	---	---
Delpoint	0-4	20-27	15.0-20.0	6.6-8.4	---	---	0-4	---
	4-12	18-35	15.0-20.0	6.6-8.4	0-5	---	0-4	---
	12-24	18-35	10.0-15.0	7.9-9.0	5-15	---	0-4	---
	24-60	---	---	---	---	---	---	---
Rock outcrop.								
10:								
Blanchard	0-8	0-5	1.0-5.0	5.6-7.8	---	---	---	---
	8-60	0-5	1.0-5.0	6.6-7.8	0-5	---	---	---
Dast	0-21	2-18	10.0-15.0	7.4-8.4	1-5	---	---	---
	21-35	2-18	5.0-10.0	7.4-8.4	5-15	---	---	---
	35-60	---	---	---	---	---	---	---
11:								
Borollic Camborthids.								
Ustic Torrifluvents.								
12:								
Busby	0-3	10-18	10.0-15.0	7.4-8.4	---	---	---	---
	3-20	10-18	10.0-15.0	7.4-8.4	---	---	---	---
	20-42	10-18	5.0-15.0	7.9-8.4	5-15	---	0-2	---
	42-60	3-18	5.0-10.0	7.9-8.4	5-15	---	0-4	---
13:								
Busby	0-5	10-18	10.0-15.0	7.4-8.4	---	---	---	---
	5-13	10-18	10.0-15.0	7.4-8.4	---	---	---	---
	13-60	10-18	5.0-15.0	7.9-8.4	5-15	---	0-2	---

CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate equivalent	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
14:								
Busby	0-10	15-25	15.0-20.0	7.4-8.4	---	---	---	---
	10-16	10-18	10.0-15.0	7.4-8.4	---	---	---	---
	16-60	10-18	5.0-15.0	7.9-8.4	5-15	---	0-2	---
15:								
Busby	0-3	10-18	10.0-15.0	7.4-8.4	---	---	---	---
	3-17	10-18	10.0-15.0	7.4-8.4	---	---	---	---
	17-42	10-18	5.0-15.0	7.9-8.4	5-15	---	0-2	---
	42-60	3-18	5.0-10.0	7.9-8.4	5-15	---	0-4	---
Blackhall	0-4	5-15	5.0-10.0	7.4-8.4	---	---	---	---
	4-17	5-15	5.0-10.0	7.9-8.4	5-10	---	0-2	---
	17-60	---	---	---	---	---	---	---
Twilight	0-3	5-18	10.0-15.0	6.6-7.8	---	---	---	---
	3-13	5-18	5.0-10.0	6.6-7.8	---	---	---	---
	13-27	5-18	5.0-10.0	7.4-8.4	5-10	---	0-4	---
	27-60	---	---	---	---	---	---	---
16:								
Busby	0-3	10-18	10.0-15.0	7.4-8.4	---	---	---	---
	3-17	10-18	10.0-15.0	7.4-8.4	---	---	---	---
	17-42	10-18	5.0-15.0	7.9-8.4	5-15	---	0-2	---
	42-60	3-18	5.0-10.0	7.9-8.4	5-15	---	0-4	---
Twilight	0-4	5-18	10.0-15.0	6.6-7.8	---	---	---	---
	4-12	5-18	5.0-10.0	6.6-7.8	---	---	---	---
	12-36	5-18	5.0-10.0	7.4-8.4	5-10	---	0-4	---
	36-60	---	---	---	---	---	---	---
Blackhall	0-4	5-15	5.0-10.0	7.4-8.4	---	---	---	---
	4-12	5-15	5.0-10.0	7.9-8.4	5-10	---	0-2	---
	12-60	---	---	---	---	---	---	---
17:								
Busby	0-4	10-18	10.0-15.0	7.4-8.4	---	---	---	---
	4-21	10-18	10.0-15.0	7.4-8.4	---	---	---	---
	21-45	10-18	5.0-15.0	7.9-8.4	5-15	---	0-2	---
	45-60	3-18	5.0-10.0	7.9-8.4	5-15	---	0-4	---
Yetull	0-8	0-10	5.0-10.0	6.6-7.8	---	---	---	---
	8-60	0-10	1.0-5.0	7.4-8.4	1-5	---	0-4	---
18:								
Busby	0-4	10-18	10.0-15.0	7.4-8.4	---	---	---	---
	4-21	10-18	10.0-15.0	7.4-8.4	---	---	---	---
	21-45	10-18	5.0-15.0	7.9-8.4	5-15	---	0-2	---
	45-60	3-18	5.0-10.0	7.9-8.4	5-15	---	0-4	---
Yetull	0-5	0-10	5.0-10.0	6.6-7.8	---	---	---	---
	5-60	0-10	1.0-5.0	7.4-8.4	1-5	---	0-4	---
Rock outcrop.								
19:								
Cabba	0-5	10-27	10.0-15.0	7.4-9.0	5-10	---	0-4	---
	5-16	20-35	5.0-10.0	7.4-9.0	5-15	---	2-8	---
	16-60	---	---	---	---	---	---	---

CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate equivalent	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
19:								
Cambert	0-4	18-25	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	4-15	18-35	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	15-25	18-35	10.0-15.0	7.4-9.0	10-30	---	0-4	0-13
	25-60	---	---	---	---	---	---	---
Rock outcrop.								
20:								
Cabbart	0-4	18-27	10.0-15.0	7.4-9.0	5-10	---	0-4	---
	4-11	18-35	5.0-10.0	7.4-9.0	15-25	1-5	2-8	1-5
	11-60	---	---	---	---	---	---	---
Rock outcrop.								
Yawdim	0-3	27-40	20.0-25.0	6.6-7.8	---	---	---	---
	3-14	35-50	20.0-25.0	7.4-8.4	2-10	---	0-2	---
	14-60	---	---	---	---	---	---	---
21:								
Cambert	0-4	18-25	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	4-15	18-35	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	15-25	18-35	10.0-15.0	7.4-9.0	10-30	---	0-4	0-13
	25-60	---	---	---	---	---	---	---
Bigsheep	0-9	18-27	15.0-20.0	6.6-8.4	---	---	---	---
	9-24	18-27	10.0-15.0	7.9-9.0	15-30	---	0-2	---
	24-33	18-27	10.0-15.0	7.9-9.0	8-15	---	0-2	---
	33-60	10-27	5.0-15.0	8.5-9.0	8-15	---	0-2	---
Golva	0-11	18-27	15.0-20.0	6.6-7.8	---	---	---	---
	11-30	22-35	15.0-20.0	7.4-8.4	5-10	---	---	---
	30-60	22-35	10.0-15.0	7.4-8.4	5-10	---	0-2	---
22:								
Cambert	0-5	18-25	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	5-13	18-35	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	13-27	18-35	10.0-15.0	7.4-9.0	10-30	---	0-4	0-13
	27-60	---	---	---	---	---	---	---
Cabba	0-4	10-27	10.0-15.0	7.4-9.0	5-10	---	0-4	---
	4-17	20-35	5.0-10.0	7.4-9.0	5-15	---	2-8	---
	17-60	---	---	---	---	---	---	---
Cherry	0-3	18-27	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	3-16	18-35	15.0-20.0	7.9-9.0	5-15	---	0-2	---
	16-60	18-35	---	7.9-9.0	---	---	0-4	---
23:								
Cambert	0-5	18-25	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	5-13	18-35	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	13-24	18-35	10.0-15.0	7.4-9.0	10-30	---	0-4	0-13
	24-60	---	---	---	---	---	---	---
Cabba	0-4	10-27	10.0-15.0	7.4-9.0	5-10	---	0-4	---
	4-16	20-35	5.0-10.0	7.4-9.0	5-15	---	2-8	---
	16-60	---	---	---	---	---	---	---
Dast	0-21	2-18	10.0-15.0	7.4-8.4	1-5	---	---	---
	21-35	2-18	5.0-10.0	7.4-8.4	5-15	---	---	---
	35-60	---	---	---	---	---	---	---

CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate equivalent	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
24:								
Cambeth	0-5	18-27	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	5-14	18-35	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	14-27	18-35	10.0-15.0	7.9-9.0	10-20	---	0-4	---
	27-60	---	---	---	---	---	---	---
Bigsheep	0-5	18-27	15.0-20.0	6.6-8.4	---	---	---	---
	5-45	18-27	10.0-15.0	7.9-9.0	15-30	---	0-2	---
	45-60	---	---	---	---	---	---	---
25:								
Cambeth	0-5	18-27	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	5-13	18-35	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	13-25	18-35	10.0-15.0	7.9-9.0	10-20	---	0-4	---
	25-60	---	---	---	---	---	---	---
Cabbart	0-4	18-27	10.0-15.0	7.4-9.0	5-10	---	0-4	---
	4-14	18-35	5.0-10.0	7.4-9.0	15-25	1-5	2-8	1-5
	14-60	---	---	---	---	---	---	---
Kirby	0-6	10-22	10.0-15.0	7.4-8.4	1-5	---	0-2	---
	6-12	8-22	5.0-10.0	7.9-8.4	5-15	---	0-2	---
	12-60	0-1	0.0-1.0	7.9-8.4	1-5	---	0-2	---
26:								
Cambeth	0-5	18-27	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	5-11	18-35	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	11-25	18-35	10.0-15.0	7.9-9.0	10-20	---	0-4	---
	25-60	---	---	---	---	---	---	---
Cabbart	0-4	18-27	10.0-15.0	7.4-9.0	5-10	---	0-4	---
	4-14	18-35	5.0-10.0	7.4-9.0	15-25	1-5	2-8	1-5
	14-60	---	---	---	---	---	---	---
Lonna	0-4	18-27	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	4-11	18-35	10.0-15.0	7.4-8.4	5-10	---	0-2	---
	11-60	18-35	10.0-15.0	7.9-9.0	5-15	---	2-8	1-13
27:								
Cambeth	0-5	18-27	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	5-15	18-35	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	15-28	18-35	10.0-15.0	7.9-9.0	10-20	---	0-4	---
	28-60	---	---	---	---	---	---	---
Cabbart	0-4	18-27	10.0-15.0	7.4-9.0	5-10	---	0-4	---
	4-17	18-35	5.0-10.0	7.4-9.0	15-25	1-5	2-8	1-5
	17-60	---	---	---	---	---	---	---
Yawdim	0-4	27-40	20.0-25.0	6.6-7.8	---	---	---	---
	4-14	35-50	20.0-25.0	7.4-8.4	2-10	---	0-2	---
	14-60	---	---	---	---	---	---	---
28:								
Cherry	0-4	18-27	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	4-19	18-35	15.0-20.0	7.9-9.0	5-15	---	0-2	---
	19-60	18-35	---	7.9-9.0	---	---	0-4	---
29:								
Cherry	0-4	18-27	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	4-19	18-35	15.0-20.0	7.9-9.0	5-15	---	0-2	---
	19-60	18-35	---	7.9-9.0	---	---	0-4	---

CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate equivalent	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
30:								
Cherry	0-5	18-27	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	5-18	18-35	15.0-20.0	7.9-9.0	5-15	---	0-2	---
	18-60	18-35	---	7.9-9.0	---	---	0-4	---
Cambert	0-5	18-25	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	5-13	18-35	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	13-27	18-35	10.0-15.0	7.4-9.0	10-30	---	0-4	0-13
	27-60	---	---	---	---	---	---	---
31:								
Cherry	0-5	18-27	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	5-18	18-35	15.0-20.0	7.9-9.0	5-15	---	0-2	---
	18-60	18-35	---	7.9-9.0	---	---	0-4	---
Cambert	0-5	18-25	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	5-13	18-35	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	13-27	18-35	10.0-15.0	7.4-9.0	10-30	---	0-4	0-13
	27-60	---	---	---	---	---	---	---
Cabba	0-4	10-27	10.0-15.0	7.4-9.0	5-10	---	0-4	---
	4-16	20-35	5.0-10.0	7.4-9.0	5-15	---	2-8	---
	16-60	---	---	---	---	---	---	---
32:								
Cherry	0-5	18-27	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	5-18	18-35	15.0-20.0	7.9-9.0	5-15	---	0-2	---
	18-60	18-35	---	7.9-9.0	---	---	0-4	---
Lisk	0-5	5-18	10.0-15.0	7.4-8.4	---	---	0-2	---
	5-14	5-18	10.0-15.0	7.9-8.4	---	---	0-2	---
	14-45	5-18	5.0-10.0	7.9-8.4	5-8	---	0-2	---
	45-60	0-10	0.0-5.0	7.9-8.4	---	---	0-2	---
Cabba	0-5	10-27	10.0-15.0	7.4-9.0	5-10	---	0-4	---
	5-16	20-35	5.0-10.0	7.4-9.0	5-15	---	2-8	---
	16-60	---	---	---	---	---	---	---
33:								
Cherry	0-4	18-27	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	4-16	18-35	15.0-20.0	7.9-9.0	5-15	---	0-2	---
	16-60	18-35	---	7.9-9.0	---	---	0-4	---
Typic Ustifluvents.								
34:								
Chinook	0-14	5-18	10.0-15.0	6.6-8.4	---	---	0-2	---
	14-48	5-18	5.0-10.0	7.4-8.4	5-15	---	0-2	---
	48-60	5-15	5.0-10.0	7.4-8.4	5-15	---	0-2	---
35:								
Chinook	0-15	5-18	10.0-15.0	6.6-8.4	---	---	0-2	---
	15-60	5-18	5.0-10.0	7.4-8.4	5-15	---	0-2	---
Kremlin	0-3	18-27	15.0-20.0	6.1-7.8	---	---	---	---
	3-15	18-30	10.0-15.0	6.6-7.8	---	---	---	---
	15-37	18-30	10.0-15.0	7.4-8.4	5-15	---	0-2	---
	37-60	18-25	5.0-10.0	7.4-8.4	3-12	---	0-4	---

CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate equivalent	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
36:								
Chinook	0-13	5-18	10.0-15.0	6.6-8.4	---	---	0-2	---
	13-60	5-18	5.0-10.0	7.4-8.4	5-15	---	0-2	---
Tinsley	0-5	5-15	5.0-15.0	6.6-7.8	---	---	---	---
	5-60	0-10	1.0-5.0	6.6-8.4	---	---	0-2	---
37:								
Chinook	0-14	5-18	10.0-15.0	6.6-8.4	---	---	0-2	---
	14-60	5-18	5.0-10.0	7.4-8.4	5-15	---	0-2	---
Twilight	0-3	5-18	10.0-15.0	6.6-7.8	---	---	---	---
	3-11	5-18	5.0-10.0	6.6-7.8	---	---	---	---
	11-29	5-18	5.0-10.0	7.4-8.4	5-10	---	0-4	---
	29-60	---	---	---	---	---	---	---
38:								
Chinook	0-13	5-18	10.0-15.0	6.6-8.4	---	---	0-2	---
	13-41	5-18	5.0-10.0	7.4-8.4	5-15	---	0-2	---
	41-60	5-15	5.0-10.0	7.4-8.4	5-15	---	0-2	---
Twilight	0-3	5-18	10.0-15.0	6.6-7.8	---	---	---	---
	3-11	5-18	5.0-10.0	6.6-7.8	---	---	---	---
	11-31	5-18	5.0-10.0	7.4-8.4	5-10	---	0-4	---
	31-60	---	---	---	---	---	---	---
Blackhall	0-3	5-15	5.0-10.0	7.4-8.4	---	---	---	---
	3-14	5-15	5.0-10.0	7.9-8.4	5-10	---	0-2	---
	14-60	---	---	---	---	---	---	---
39:								
Creed	0-5	20-27	15.0-20.0	6.1-8.4	---	---	0-4	---
	5-18	35-55	25.0-35.0	6.6-9.0	---	---	2-4	8-13
	18-60	27-45	20.0-30.0	7.9-9.0	5-15	1-5	4-8	13-20
Gerdrum	0-7	27-40	20.0-25.0	6.6-7.8	---	---	0-2	---
	7-20	35-55	25.0-35.0	7.4-9.0	0-10	---	1-8	10-20
	20-60	30-50	20.0-25.0	7.9-9.0	5-15	1-5	8-16	13-30
40:								
Dast	0-22	2-18	10.0-15.0	7.4-8.4	1-5	---	---	---
	22-37	2-18	5.0-10.0	7.4-8.4	5-15	---	---	---
	37-60	---	---	---	---	---	---	---
Lisk	0-5	5-18	10.0-15.0	7.4-8.4	---	---	0-2	---
	5-20	5-18	10.0-15.0	7.9-8.4	---	---	0-2	---
	20-45	5-18	5.0-10.0	7.9-8.4	5-8	---	0-2	---
	45-60	0-10	0.0-5.0	7.9-8.4	---	---	0-2	---
41:								
Degrand	0-5	10-20	5.0-10.0	6.6-7.8	---	---	---	---
	5-21	20-35	15.0-20.0	6.6-8.4	---	---	---	---
	21-29	15-30	10.0-15.0	7.4-9.0	15-40	---	0-4	---
	29-60	0-5	1.0-5.0	7.9-8.4	8-15	---	0-2	---
42:								
Degrand	0-4	10-27	10.0-15.0	6.6-7.8	---	---	---	---
	4-15	20-35	15.0-20.0	6.6-8.4	---	---	---	---
	15-32	15-30	10.0-15.0	7.4-9.0	15-40	---	0-4	---
	32-60	0-5	1.0-5.0	7.9-8.4	8-15	---	0-2	---

CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate equivalent	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
43:								
Delpoint	0-3	20-27	15.0-20.0	6.6-8.4	---	---	0-4	---
	3-14	18-35	15.0-20.0	6.6-8.4	0-5	---	0-4	---
	14-26	18-35	10.0-15.0	7.9-9.0	5-15	---	0-4	---
	26-60	---	---	---	---	---	---	---
Busby	0-5	10-18	10.0-15.0	7.4-8.4	---	---	---	---
	5-13	10-18	10.0-15.0	7.4-8.4	---	---	---	---
	13-60	10-18	5.0-15.0	7.9-8.4	5-15	---	0-2	---
Blackhall	0-5	5-15	5.0-10.0	7.4-8.4	---	---	---	---
	5-18	5-15	5.0-10.0	7.9-8.4	5-10	---	0-2	---
	18-60	---	---	---	---	---	---	---
44:								
Delpoint	0-3	20-27	15.0-20.0	6.6-8.4	---	---	0-4	---
	3-14	18-35	15.0-20.0	6.6-8.4	0-5	---	0-4	---
	14-35	18-35	10.0-15.0	7.9-9.0	5-15	---	0-4	---
	35-60	---	---	---	---	---	---	---
Cabbart	0-4	18-27	10.0-15.0	7.4-9.0	5-10	---	0-4	---
	4-18	18-35	5.0-10.0	7.4-9.0	15-25	1-5	2-8	1-5
	18-60	---	---	---	---	---	---	---
45:								
Delpoint	0-5	20-27	15.0-20.0	6.6-8.4	---	---	0-4	---
	5-14	18-35	15.0-20.0	6.6-8.4	0-5	---	0-4	---
	14-27	18-35	10.0-15.0	7.9-9.0	5-15	---	0-4	---
	27-60	---	---	---	---	---	---	---
Cabbart	0-4	18-27	10.0-15.0	7.4-9.0	5-10	---	0-4	---
	4-17	18-35	5.0-10.0	7.4-9.0	15-25	1-5	2-8	1-5
	17-60	---	---	---	---	---	---	---
Yawdim	0-4	27-40	20.0-25.0	6.6-7.8	---	---	---	---
	4-11	35-50	20.0-25.0	7.4-8.4	2-10	---	0-2	---
	11-60	---	---	---	---	---	---	---
46:								
Delpoint	0-3	20-27	15.0-20.0	6.6-8.4	---	---	0-4	---
	3-19	18-35	15.0-20.0	6.6-8.4	0-5	---	0-4	---
	19-28	18-35	10.0-15.0	7.9-9.0	5-15	---	0-4	---
	28-60	---	---	---	---	---	---	---
Cabbart	0-4	18-27	10.0-15.0	7.4-9.0	5-10	---	0-4	---
	4-11	18-35	5.0-10.0	7.4-9.0	15-25	1-5	2-8	1-5
	11-60	---	---	---	---	---	---	---
Yawdim	0-3	27-40	20.0-25.0	6.6-7.8	---	---	---	---
	3-14	35-50	20.0-25.0	7.4-8.4	2-10	---	0-2	---
	14-60	---	---	---	---	---	---	---
47:								
Delpoint	0-4	20-27	15.0-20.0	6.6-8.4	---	---	0-4	---
	4-11	18-35	15.0-20.0	6.6-8.4	0-5	---	0-4	---
	11-24	18-35	10.0-15.0	7.9-9.0	5-15	---	0-4	---
	24-60	---	---	---	---	---	---	---
Yamac	0-4	18-27	15.0-20.0	6.6-8.4	---	---	---	---
	4-16	18-30	10.0-15.0	6.6-8.4	---	---	---	---
	16-60	18-30	10.0-15.0	7.9-8.4	5-15	0-1	0-4	1-5

CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate equivalent	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
47:								
Cabbart	0-4	18-27	10.0-15.0	7.4-9.0	5-10	---	0-4	---
	4-14	18-35	5.0-10.0	7.4-9.0	15-25	1-5	2-8	1-5
	14-60	---	---	---	---	---	---	---
48:								
Ethridge	0-5	27-35	20.0-25.0	6.1-7.8	---	---	---	---
	5-24	35-45	25.0-30.0	6.6-8.4	---	---	---	---
	24-60	25-40	20.0-25.0	7.4-9.0	5-15	1-3	2-4	1-5
49:								
Ethridge	0-6	27-35	20.0-25.0	6.1-7.8	---	---	---	---
	6-18	35-45	25.0-30.0	6.6-8.4	---	---	---	---
	18-60	25-40	20.0-25.0	7.4-9.0	5-15	1-3	2-4	1-5
50:								
Evanston	0-7	20-27	15.0-20.0	6.6-7.8	---	---	---	---
	7-15	20-35	20.0-25.0	6.6-7.8	---	---	0-2	---
	15-60	15-30	10.0-15.0	7.9-9.0	5-15	0-2	0-4	---
51:								
Evanston	0-6	20-27	15.0-20.0	6.6-7.8	---	---	---	---
	6-13	20-35	20.0-25.0	6.6-7.8	---	---	0-2	---
	13-60	15-30	10.0-15.0	7.9-9.0	5-15	0-2	0-4	---
52:								
Evanston	0-6	20-27	15.0-20.0	6.6-7.8	---	---	---	---
	6-13	20-35	20.0-25.0	6.6-7.8	---	---	0-2	---
	13-60	15-30	10.0-15.0	7.9-9.0	5-15	0-2	0-4	---
Delpoint	0-3	20-27	15.0-20.0	6.6-8.4	---	---	0-4	---
	3-14	18-35	15.0-20.0	6.6-8.4	0-5	---	0-4	---
	14-26	18-35	10.0-15.0	7.9-9.0	5-15	---	0-4	---
	26-60	---	---	---	---	---	---	---
53:								
Farnuf	0-5	15-27	10.0-15.0	6.1-7.8	---	---	---	---
	5-11	25-35	15.0-20.0	6.1-7.8	---	---	---	---
	11-40	20-30	10.0-15.0	7.4-8.4	5-15	---	0-2	---
	40-60	15-30	10.0-15.0	7.4-9.0	5-10	---	2-8	---
54:								
Floweree	0-4	18-27	15.0-20.0	6.6-8.4	---	---	0-2	---
	4-12	20-35	10.0-15.0	7.4-8.4	1-5	---	0-2	---
	12-60	20-35	10.0-15.0	7.9-9.0	5-15	---	2-4	---
55:								
Floweree	0-6	18-27	15.0-20.0	6.6-8.4	---	---	0-2	---
	6-13	20-35	10.0-15.0	7.4-8.4	1-5	---	0-2	---
	13-60	20-35	10.0-15.0	7.9-9.0	5-15	---	2-4	---
56:								
Floweree	0-5	18-27	15.0-20.0	7.4-8.4	5-10	---	2-4	---
	5-11	20-35	15.0-20.0	7.4-8.4	5-10	---	2-4	---
	11-60	20-35	10.0-15.0	7.9-9.0	5-15	---	2-4	---
57:								
Floweree	0-4	18-27	15.0-20.0	7.4-8.4	5-10	---	2-4	---
	4-12	20-35	15.0-20.0	7.4-8.4	5-10	---	2-4	---
	12-60	20-35	10.0-15.0	7.9-9.0	5-15	---	2-4	---

CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate equivalent	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
58:								
Floweree	0-7	18-27	15.0-20.0	6.6-8.4	---	---	0-2	---
	7-11	20-35	10.0-15.0	7.4-8.4	1-5	---	0-2	---
	11-60	20-35	10.0-15.0	7.9-9.0	5-15	---	2-4	---
Cambeth	0-5	18-27	15.0-20.0	6.6-7.8	---	---	---	---
	5-15	18-35	15.0-20.0	6.6-8.4	0-10	---	0-2	---
	15-33	18-35	10.0-15.0	7.9-9.0	10-20	---	2-4	---
	33-60	---	---	---	---	---	---	---
59:								
Gerdrum	0-7	27-40	20.0-25.0	6.6-7.8	---	---	0-2	---
	7-24	35-55	25.0-35.0	7.4-9.0	0-5	---	1-8	10-20
	24-60	30-50	20.0-25.0	7.9-9.0	5-15	1-5	8-16	13-30
Creed	0-6	20-27	15.0-20.0	6.1-8.4	---	---	0-4	---
	6-21	35-55	25.0-35.0	6.6-9.0	---	---	2-4	8-13
	21-60	27-45	20.0-30.0	7.9-9.0	5-15	1-5	4-8	13-20
60:								
Gerdrum	0-7	27-40	20.0-25.0	6.6-7.8	---	---	0-2	---
	7-17	35-55	25.0-35.0	7.4-9.0	0-5	---	1-8	10-20
	17-60	30-50	20.0-25.0	7.9-9.0	5-15	1-5	8-16	13-30
Creed	0-6	20-27	15.0-20.0	6.1-8.4	---	---	0-4	---
	6-18	35-55	25.0-35.0	6.6-9.0	---	---	2-4	8-13
	18-60	27-45	20.0-30.0	7.9-9.0	5-15	1-5	4-8	13-20
61:								
Gerdrum	0-7	27-40	20.0-25.0	6.6-7.8	---	---	0-2	---
	7-15	35-55	25.0-35.0	7.4-9.0	0-5	---	1-8	10-20
	15-60	30-50	20.0-25.0	7.9-9.0	5-15	1-5	8-16	13-30
Creed	0-4	20-27	15.0-20.0	6.1-8.4	---	---	0-4	---
	4-19	35-55	25.0-35.0	6.6-9.0	---	---	2-4	8-13
	19-60	27-45	20.0-30.0	7.9-9.0	5-15	1-5	4-8	13-20
62:								
Glendive	0-6	5-15	10.0-15.0	6.6-8.4	0-5	---	0-4	---
	6-26	5-18	10.0-15.0	7.4-9.0	0-5	---	0-4	---
	26-60	5-18	10.0-15.0	7.4-9.0	5-10	---	2-8	---
63:								
Glendive	0-3	10-20	10.0-15.0	6.6-8.4	0-5	---	0-4	---
	3-6	5-18	10.0-15.0	7.4-9.0	0-5	---	0-4	---
	6-60	5-18	10.0-15.0	7.4-9.0	5-10	---	2-8	---
64:								
Golva	0-11	18-27	15.0-20.0	6.6-7.8	---	---	---	---
	11-30	22-35	15.0-20.0	7.4-8.4	5-10	---	---	---
	30-60	22-35	10.0-15.0	7.4-8.4	5-10	---	0-2	---
65:								
Golva	0-14	18-27	15.0-20.0	6.6-7.8	---	---	---	---
	14-32	22-35	15.0-20.0	7.4-8.4	5-10	---	---	---
	32-60	22-35	10.0-15.0	7.4-8.4	5-10	---	0-2	---
66:								
Golva	0-14	18-27	15.0-20.0	6.6-7.8	---	---	---	---
	14-32	22-35	15.0-20.0	7.4-8.4	5-10	---	---	---
	32-60	22-35	10.0-15.0	7.4-8.4	5-10	---	0-2	---

CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate equivalent	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
66:								
Cambert	0-5	18-25	15.0-20.0	6.6-8.4	---	---	0-2	---
	5-13	18-35	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	13-27	18-35	10.0-15.0	7.4-9.0	10-30	---	0-4	0-13
	27-60	---	---	---	---	---	---	---
67:								
Hanly	0-8	5-10	5.0-10.0	6.6-7.8	0-5	---	---	---
	8-60	5-10	5.0-10.0	6.6-8.4	0-5	---	---	---
Glendive	0-7	5-15	10.0-15.0	6.6-8.4	0-5	---	0-4	---
	7-45	5-18	10.0-15.0	7.4-9.0	0-5	---	0-4	---
	45-60	5-18	10.0-15.0	7.4-9.0	5-10	---	2-8	---
68:								
Havre	0-10	10-22	15.0-20.0	7.4-8.4	1-5	---	0-2	---
	10-60	18-30	15.0-25.0	7.4-8.4	1-5	---	0-4	---
69:								
Havre	0-9	27-35	20.0-25.0	7.4-8.4	1-5	---	0-2	---
	9-60	18-30	15.0-25.0	7.4-8.4	1-5	---	0-4	---
70:								
Havre	0-10	27-35	20.0-25.0	7.4-8.4	1-5	---	0-2	---
	10-60	18-30	15.0-25.0	7.4-8.4	1-5	---	0-4	---
Harlem	0-8	40-55	30.0-35.0	7.4-8.4	1-5	---	2-4	---
	8-60	35-55	25.0-30.0	7.4-8.4	1-5	---	2-4	---
71:								
Hedstrom	0-7	15-27	10.0-15.0	6.6-7.3	---	---	---	---
	7-22	20-35	15.0-20.0	6.6-7.8	---	---	---	---
	22-31	20-30	10.0-15.0	7.9-9.0	8-15	---	0-4	---
	31-60	0-5	1.0-5.0	7.4-8.4	5-10	---	0-4	---
72:								
Ismay	0-8	27-40	20.0-25.0	7.4-9.0	5-10	---	2-8	5-20
	8-17	18-35	15.0-20.0	7.9-9.0	5-10	---	8-16	13-20
	17-25	18-35	15.0-20.0	7.9-9.0	5-10	---	4-16	13-30
	25-50	18-35	10.0-15.0	7.9-9.0	5-10	---	4-16	10-35
	50-60	18-35	10.0-15.0	7.9-9.0	5-10	---	4-16	5-35
73:								
Kobar	0-14	27-40	25.0-30.0	6.6-8.4	---	---	0-2	1-4
	14-30	35-45	20.0-25.0	7.4-8.4	5-15	---	0-2	5-10
	30-60	35-45	20.0-25.0	7.9-8.4	5-10	1-5	0-4	8-13
74:								
Kobar	0-16	27-40	25.0-30.0	6.6-8.4	---	---	0-2	1-4
	16-35	35-45	20.0-25.0	7.4-8.4	5-15	---	0-2	5-10
	35-60	35-45	20.0-25.0	7.9-8.4	5-10	1-5	0-4	8-13
75:								
Kobar	0-17	27-40	25.0-30.0	6.6-8.4	---	---	0-2	1-4
	17-37	35-45	20.0-25.0	7.4-8.4	5-15	---	0-2	5-10
	37-60	35-45	20.0-25.0	7.9-8.4	5-10	1-5	0-4	8-13
Gerdrum	0-7	27-40	20.0-25.0	6.6-7.8	---	---	0-2	---
	7-18	35-55	25.0-35.0	7.4-9.0	0-5	---	1-8	10-20
	18-60	30-50	20.0-25.0	7.9-9.0	5-15	1-5	8-16	13-30

CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate equivalent	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
76:								
Kremlin	0-7	18-27	15.0-20.0	6.1-7.8	---	---	---	---
	7-15	18-30	10.0-15.0	6.6-7.8	---	---	---	---
	15-50	18-30	10.0-15.0	7.4-8.4	5-15	---	0-2	---
	50-60	18-25	5.0-10.0	7.4-8.4	3-12	---	0-4	---
77:								
Kremlin	0-4	18-27	15.0-20.0	6.1-7.8	---	---	---	---
	4-11	18-30	10.0-15.0	6.6-7.8	---	---	---	---
	11-60	18-25	10.0-15.0	7.4-8.4	5-15	---	0-2	---
78:								
Kremlin	0-10	18-27	15.0-20.0	6.1-7.8	---	---	---	---
	10-16	18-30	10.0-15.0	6.6-7.8	---	---	---	---
	16-40	18-30	10.0-15.0	7.4-8.4	5-15	---	0-2	---
	40-60	18-25	5.0-10.0	7.4-8.4	3-12	---	0-4	---
Busby	0-3	10-18	10.0-15.0	7.4-8.4	---	---	---	---
	3-20	10-18	10.0-15.0	7.4-8.4	---	---	---	---
	20-42	10-18	5.0-15.0	7.9-8.4	5-15	---	0-2	---
	42-60	3-18	5.0-10.0	7.9-8.4	5-15	---	0-4	---
79:								
Kremlin	0-3	18-27	15.0-20.0	6.1-7.8	---	---	---	---
	3-12	18-30	10.0-15.0	6.6-7.8	---	---	---	---
	12-60	18-25	10.0-15.0	7.4-8.4	5-15	---	0-2	---
Tinsley	0-6	5-10	5.0-10.0	6.6-7.8	---	---	---	---
	6-60	0-10	1.0-5.0	6.6-8.4	---	---	0-2	---
Degrand	0-5	10-27	10.0-15.0	6.6-7.8	---	---	---	---
	5-14	20-35	15.0-20.0	6.6-8.4	---	---	---	---
	14-28	15-30	10.0-15.0	7.4-9.0	15-40	---	0-4	---
	28-60	0-5	1.0-5.0	7.9-8.4	8-15	---	0-2	---
80:								
Lihen	0-12	5-10	5.0-10.0	6.1-8.4	---	---	---	---
	12-60	0-10	1.0-5.0	7.4-8.4	2-15	---	0-2	---
81:								
Lihen	0-15	5-10	5.0-10.0	6.1-8.4	---	---	---	---
	15-60	0-10	1.0-5.0	7.4-8.4	2-15	---	0-2	---
Parshall	0-7	10-18	10.0-15.0	6.6-7.3	---	---	0-2	---
	7-32	10-18	10.0-15.0	6.6-7.8	---	---	0-2	---
	32-60	5-18	10.0-15.0	7.4-8.4	---	---	0-2	---
Yetull	0-7	0-10	5.0-10.0	6.6-7.8	---	---	---	---
	7-60	0-10	1.0-5.0	7.4-8.4	1-5	---	0-4	---
82:								
Lihen	0-13	5-10	5.0-10.0	6.1-8.4	---	---	---	---
	13-60	0-10	1.0-5.0	7.4-8.4	2-15	---	0-2	---
Tinsley	0-4	5-10	5.0-10.0	6.6-7.8	---	---	---	---
	4-60	0-10	1.0-5.0	6.6-8.4	---	---	0-2	---
83:								
Lihen	0-18	5-10	5.0-10.0	6.1-8.4	---	---	---	---
	18-60	0-10	1.0-5.0	7.4-8.4	2-15	---	0-2	---

CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate equivalent	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
83:								
Yetull	0-10	0-10	5.0-10.0	6.6-7.8	---	---	---	---
	10-60	0-10	1.0-5.0	7.4-8.4	1-5	---	0-4	---
84:								
Lonna	0-4	18-27	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	4-12	18-35	10.0-15.0	7.4-8.4	5-10	---	0-2	---
	12-60	18-35	10.0-15.0	7.9-9.0	5-15	---	2-8	1-13
85:								
Lonna	0-7	18-27	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	7-12	18-35	10.0-15.0	7.4-8.4	5-10	---	0-2	---
	12-60	18-35	10.0-15.0	7.9-9.0	5-15	---	2-8	1-13
86:								
Lonna	0-4	18-27	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	4-12	18-35	10.0-15.0	7.4-8.4	5-10	---	0-2	---
	12-60	18-35	10.0-15.0	7.9-9.0	5-15	---	2-8	1-13
87:								
Lonna	0-4	27-35	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	4-11	18-35	10.0-15.0	7.4-8.4	5-10	---	0-2	---
	11-60	18-35	10.0-15.0	7.9-9.0	5-15	---	2-8	1-13
88:								
Lonna	0-3	27-35	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	3-11	18-35	10.0-15.0	7.4-8.4	5-10	---	0-2	---
	11-60	18-35	10.0-15.0	7.9-9.0	5-15	---	2-8	1-13
89:								
Lonna	0-5	18-27	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	5-14	18-35	10.0-15.0	7.4-8.4	5-10	---	0-2	---
	14-60	18-35	10.0-15.0	7.9-9.0	5-15	---	2-8	1-13
Cambeth	0-5	18-27	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	5-11	18-35	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	11-25	18-35	10.0-15.0	7.9-9.0	10-20	---	0-4	---
	25-60	---	---	---	---	---	---	---
90:								
Lonna	0-5	18-27	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	5-11	18-35	10.0-15.0	7.4-8.4	5-10	---	0-2	---
	11-60	18-35	10.0-15.0	7.9-9.0	5-15	---	2-8	1-13
Cambeth	0-5	18-27	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	5-11	18-35	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	11-29	18-35	10.0-15.0	7.9-9.0	10-20	---	0-4	---
	29-60	---	---	---	---	---	---	---
Cabbart	0-3	18-27	10.0-15.0	7.4-9.0	5-10	---	0-4	---
	3-12	18-35	5.0-10.0	7.4-9.0	15-25	1-5	2-8	1-5
	12-60	---	---	---	---	---	---	---
91:								
Lonna	0-4	18-27	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	4-11	18-35	10.0-15.0	7.4-8.4	5-10	---	0-2	---
	11-60	18-35	10.0-15.0	7.9-9.0	5-15	---	2-8	1-13
Cambeth	0-3	18-27	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	3-11	18-35	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	11-30	18-35	10.0-15.0	7.9-9.0	10-20	---	0-4	---
	30-60	---	---	---	---	---	---	---

CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate equivalent	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
91:								
Cabbart	0-4	18-27	10.0-15.0	7.4-9.0	5-10	---	0-4	---
	4-14	18-35	5.0-10.0	7.4-9.0	15-25	1-5	2-8	1-5
	14-60	---	---	---	---	---	---	---
92:								
Macar	0-4	18-27	15.0-20.0	6.6-8.4	---	---	0-2	---
	4-19	18-35	15.0-20.0	6.6-8.4	---	---	0-2	---
	19-60	18-35	15.0-20.0	7.4-8.4	8-15	---	0-2	---
93:								
Marias	0-8	40-60	30.0-35.0	7.4-8.4	1-5	---	0-4	1-4
	8-34	40-60	25.0-35.0	7.9-8.4	1-10	---	0-4	1-4
	34-60	40-60	25.0-30.0	7.9-9.0	5-10	1-6	2-8	4-13
94:								
Marvan	0-3	40-60	25.0-30.0	7.4-8.4	1-5	---	0-4	0-4
	3-30	45-60	25.0-30.0	7.9-9.0	1-10	---	2-4	4-13
	30-60	45-60	25.0-30.0	7.9-9.0	5-10	1-5	8-16	13-38
95:								
Marvan	0-5	40-60	25.0-30.0	7.4-8.4	1-5	---	0-4	0-4
	5-31	45-60	25.0-30.0	7.9-9.0	1-10	---	2-4	4-13
	31-60	45-60	25.0-30.0	7.9-9.0	5-10	1-5	8-16	13-38
96:								
Marvan	0-3	40-60	25.0-30.0	7.4-8.4	1-5	---	0-4	0-4
	3-27	45-60	25.0-30.0	7.9-9.0	1-10	---	2-4	4-13
	27-60	45-60	25.0-30.0	7.9-9.0	5-10	1-5	8-16	13-38
Vanda	0-5	40-60	25.0-35.0	7.8-9.6	1-5	---	2-8	20-30
	5-60	35-60	20.0-30.0	7.8-9.6	1-5	---	8-16	13-30
97:								
Neldore	0-3	40-50	30.0-35.0	5.6-7.8	---	---	0-2	---
	3-12	40-60	30.0-35.0	5.6-7.8	---	---	0-4	---
	12-18	40-60	30.0-35.0	5.6-7.8	---	---	0-4	---
	18-60	---	---	---	---	---	---	---
Rock outcrop.								
98:								
Neldore	0-3	40-50	30.0-35.0	5.6-7.8	---	---	0-2	---
	3-16	40-60	30.0-35.0	5.6-7.8	---	---	0-4	---
	16-60	---	---	---	---	---	---	---
Rock outcrop.								
Abor	0-11	40-55	30.0-40.0	7.4-8.4	1-5	---	0-4	---
	11-28	35-60	25.0-40.0	7.4-9.0	5-15	---	0-4	---
	28-60	---	---	---	---	---	---	---
99:								
Neldore	0-3	40-50	30.0-35.0	5.6-7.8	---	---	0-2	---
	3-15	40-60	30.0-35.0	5.6-7.8	---	---	0-4	---
	15-60	---	---	---	---	---	---	---
Weingart	0-3	27-40	30.0-35.0	5.6-7.8	---	---	0-2	---
	3-17	40-60	30.0-35.0	6.5-9.6	---	---	2-8	10-30
	17-35	35-55	30.0-35.0	7.8-9.6	5-15	0-5	4-16	13-30
	35-60	---	---	---	---	---	---	---

CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate equivalent	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
99:								
Kirby	0-4	10-22	10.0-15.0	7.4-8.4	1-5	---	0-2	---
	4-11	8-22	5.0-10.0	7.9-8.4	5-15	---	0-2	---
	11-60	0-1	0.0-1.0	7.9-8.4	1-5	---	0-2	---
100:								
Nesda	0-14	10-20	15.0-20.0	6.6-7.8	1-5	---	---	---
	14-60	0-10	1.0-5.0	7.4-8.4	1-5	---	0-2	---
101:								
Parshall	0-5	10-18	10.0-15.0	6.6-7.3	---	---	0-2	---
	5-24	10-18	10.0-15.0	6.6-7.8	---	---	0-2	---
	24-60	5-18	10.0-15.0	7.4-8.4	---	---	0-2	---
102:								
Peerless	0-5	15-27	15.0-20.0	6.6-7.8	---	---	---	---
	5-20	18-30	15.0-20.0	7.4-8.4	---	---	0-2	---
	20-27	18-27	10.0-15.0	7.9-9.0	20-35	---	0-4	---
	27-37	18-27	10.0-15.0	7.9-9.0	15-20	---	0-4	---
	37-60	10-27	5.0-15.0	7.9-9.0	8-15	---	0-4	---
103:								
Pinelli	0-4	18-27	15.0-20.0	6.6-7.8	---	---	---	---
	4-18	35-50	20.0-25.0	6.6-8.4	---	---	---	---
	18-60	18-35	15.0-20.0	7.9-8.4	4-14	---	0-4	---
104:								
Pinelli	0-7	18-27	15.0-20.0	6.6-7.8	---	---	---	---
	7-18	35-50	20.0-25.0	6.6-8.4	---	---	---	---
	18-60	18-35	15.0-20.0	7.9-8.4	4-14	---	0-4	---
105:								
Pinelli	0-5	18-27	15.0-20.0	6.6-7.8	---	---	---	---
	5-18	35-50	20.0-25.0	6.6-8.4	---	---	---	---
	18-60	18-35	15.0-20.0	7.9-8.4	4-14	---	0-4	---
Weingart	0-7	27-40	30.0-35.0	5.6-7.8	---	---	0-2	---
	7-16	40-60	30.0-35.0	6.5-9.6	---	---	2-8	10-30
	16-38	35-55	30.0-35.0	7.8-9.6	5-15	0-5	4-16	13-30
	38-60	---	---	---	---	---	---	---
Gerdrum	0-7	27-40	20.0-25.0	6.6-7.8	---	---	0-2	---
	7-16	35-55	25.0-35.0	7.4-9.0	0-5	---	1-8	10-20
	16-60	30-50	20.0-25.0	7.9-9.0	5-15	1-5	8-16	13-30
106:								
Riverwash.								
107:								
Rivra loam	0-8	10-27	10.0-15.0	6.6-8.4	---	---	0-2	---
	8-60	0-5	1.0-5.0	7.4-8.4	---	---	0-2	---
Rivra gravelly sandy loam	0-9	5-15	5.0-10.0	6.6-8.4	---	---	---	---
	9-60	0-5	1.0-5.0	7.4-8.4	---	---	0-2	---
108:								
Rock outcrop.								
109:								
Rock outcrop.								

CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate equivalent	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
109:								
Cabbart	0-3	18-27	10.0-15.0	7.4-9.0	5-10	---	0-4	---
	3-13	18-35	5.0-10.0	7.4-9.0	15-25	1-5	2-8	1-5
	13-60	---	---	---	---	---	---	---
Kirby	0-3	10-22	10.0-15.0	7.4-8.4	1-5	---	0-2	---
	3-10	8-22	5.0-10.0	7.9-8.4	5-15	---	0-2	---
	10-60	0-1	0.0-1.0	7.9-8.4	1-5	---	0-2	---
110:								
Ryell	0-9	10-20	10.0-15.0	7.4-8.4	---	---	0-2	---
	9-24	10-18	10.0-15.0	7.4-8.4	2-5	---	0-2	---
	24-60	0-10	1.0-5.0	7.4-8.4	2-10	---	0-2	---
111:								
Ryell	0-8	10-20	10.0-15.0	7.4-8.4	---	---	0-2	---
	8-22	10-18	10.0-15.0	7.4-8.4	2-5	---	0-2	---
	22-60	0-10	1.0-5.0	7.4-8.4	2-10	---	0-4	---
112:								
Ryell	0-9	15-27	15.0-20.0	7.4-8.4	---	---	0-2	---
	9-25	10-18	10.0-15.0	7.4-8.4	2-5	---	0-2	---
	25-60	0-10	1.0-5.0	7.4-8.4	2-10	---	0-2	---
113:								
Shambo	0-4	10-27	15.0-20.0	6.6-7.8	---	---	---	---
	4-11	18-35	10.0-15.0	6.6-8.4	---	---	---	---
	11-60	18-35	10.0-15.0	7.4-8.4	10-15	---	---	1-5
114:								
Shambo	0-5	10-27	15.0-20.0	6.6-7.8	---	---	---	---
	5-13	18-35	10.0-15.0	6.6-8.4	---	---	---	---
	13-60	18-35	10.0-15.0	7.4-8.4	10-15	---	---	1-5
115:								
Spinekop	0-11	27-40	15.0-20.0	7.4-7.8	---	---	0-2	---
	11-15	27-35	15.0-20.0	7.4-7.8	---	---	0-2	---
	15-19	18-35	10.0-15.0	7.9-8.4	5-15	---	0-4	---
	19-60	18-30	10.0-15.0	7.9-8.4	5-10	---	0-4	---
116:								
Subwell	0-4	18-27	15.0-20.0	7.4-7.8	---	---	0-2	---
	4-15	18-27	10.0-15.0	7.4-8.4	---	---	0-2	---
	15-20	10-27	10.0-15.0	7.9-9.0	15-30	---	0-4	---
	20-60	5-18	5.0-10.0	7.9-9.0	8-15	---	0-4	---
Bigsheep	0-9	18-27	15.0-20.0	6.6-8.4	---	---	---	---
	9-18	18-27	10.0-15.0	7.9-9.0	15-30	---	0-2	---
	18-26	18-27	10.0-15.0	7.9-9.0	8-15	---	0-2	---
	26-60	10-27	5.0-15.0	8.5-9.0	8-15	---	0-2	---
117:								
Subwell	0-6	18-27	15.0-20.0	7.4-7.8	---	---	0-2	---
	6-14	18-27	10.0-15.0	7.4-8.4	---	---	0-2	---
	14-24	10-27	10.0-15.0	7.9-9.0	15-30	---	0-4	---
	24-60	5-18	5.0-10.0	7.9-9.0	8-15	---	0-4	---
Cambert	0-5	18-25	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	5-12	18-35	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	12-32	18-35	10.0-15.0	7.4-9.0	10-30	---	0-4	0-13
	32-60	---	---	---	---	---	---	---

CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate equivalent	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
117:								
Bigsheep	0-10	18-27	15.0-20.0	6.6-8.4	---	---	---	---
	10-50	18-27	10.0-15.0	7.9-9.0	15-30	---	0-2	---
	50-60	---	---	---	---	---	---	---
118:								
Subwell	0-3	18-27	15.0-20.0	7.4-7.8	---	---	0-2	---
	3-16	18-27	10.0-15.0	7.4-8.4	---	---	0-2	---
	16-28	10-27	10.0-15.0	7.9-9.0	15-30	---	0-4	---
	28-60	5-18	5.0-10.0	7.9-9.0	8-15	---	0-4	---
Peerless	0-6	15-27	15.0-20.0	6.6-7.8	---	---	---	---
	6-16	18-30	15.0-20.0	7.4-8.4	---	---	0-2	---
	16-28	18-27	10.0-15.0	7.9-9.0	20-35	---	0-4	---
	28-39	18-27	10.0-15.0	7.9-9.0	15-20	---	0-4	---
	39-60	10-27	5.0-15.0	7.9-9.0	8-15	---	0-4	---
119:								
Tally	0-7	10-20	15.0-20.0	6.1-7.8	---	---	---	---
	7-24	5-18	5.0-10.0	6.6-8.4	---	---	---	---
	24-39	5-18	5.0-10.0	7.4-8.4	5-15	---	0-2	---
	39-60	5-10	5.0-10.0	7.4-8.4	5-15	---	0-2	---
120:								
Tally	0-7	10-20	15.0-20.0	6.1-7.8	---	---	---	---
	7-18	5-18	5.0-10.0	6.6-8.4	---	---	---	---
	18-28	5-18	5.0-10.0	7.4-8.4	5-15	---	0-2	---
	28-60	5-10	5.0-10.0	7.4-8.4	5-15	---	0-2	---
Hedstrom	0-5	15-20	10.0-15.0	6.6-7.3	---	---	---	---
	5-15	20-35	15.0-20.0	6.6-7.8	---	---	---	---
	15-24	20-30	10.0-15.0	7.9-9.0	8-15	---	0-4	---
	24-60	0-5	1.0-5.0	7.4-8.4	5-10	---	0-4	---
121:								
Tally	0-6	10-20	15.0-20.0	6.1-7.8	---	---	---	---
	6-30	5-18	5.0-10.0	6.6-8.4	---	---	---	---
	30-60	5-18	5.0-10.0	7.4-8.4	5-15	---	0-2	---
Wabek	0-4	10-20	10.0-15.0	6.6-7.8	---	---	---	---
	4-11	2-10	5.0-10.0	7.4-8.4	2-5	---	---	---
	11-60	0-3	0.0-2.0	7.4-9.0	5-10	---	---	---
Hedstrom	0-6	15-20	10.0-15.0	6.6-7.3	---	---	---	---
	6-22	20-35	15.0-20.0	6.6-7.8	---	---	---	---
	22-34	20-30	10.0-15.0	7.9-9.0	8-15	---	0-4	---
	34-60	0-5	1.0-5.0	7.4-8.4	5-10	---	0-4	---
122:								
Tinsley	0-3	5-15	5.0-15.0	6.6-7.8	---	---	---	---
	3-60	0-10	1.0-5.0	6.6-8.4	---	---	0-2	---
Delpoint	0-3	20-27	15.0-20.0	6.6-8.4	---	---	0-4	---
	3-11	18-35	15.0-20.0	6.6-8.4	0-5	---	0-4	---
	11-32	18-35	10.0-15.0	7.9-9.0	5-15	---	0-4	---
	32-60	---	---	---	---	---	---	---
Cabbart	0-3	18-27	10.0-15.0	7.4-9.0	5-10	---	0-4	---
	3-13	18-35	5.0-10.0	7.4-9.0	15-25	1-5	2-8	1-5
	13-60	---	---	---	---	---	---	---

CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate equivalent	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
123:								
Ustic Torrifluvents.								
124:								
Ustic Torriorthents.								
Borollic Natargids.								
125:								
Ustic Torriorthents.								
Rock outcrop.								
126:								
Ustic Torriorthents.								
Ustic Torrifluvents.								
Rock outcrop.								
127:								
Vanstel	0-4	14-25	10.0-15.0	6.6-7.8	---	---	---	---
	4-13	25-35	15.0-20.0	7.4-7.8	---	---	---	---
	13-60	18-30	10.0-15.0	7.9-8.4	5-15	---	0-4	---
128:								
Vanstel	0-4	14-25	10.0-15.0	6.6-7.8	---	---	---	---
	4-13	25-35	15.0-20.0	7.4-7.8	---	---	---	---
	13-60	18-30	10.0-15.0	7.9-8.4	5-15	---	0-4	---
129:								
Wabek	0-4	10-20	10.0-15.0	6.6-7.8	---	---	---	---
	4-60	0-3	0.0-2.0	7.4-9.0	5-10	---	---	---
130:								
Wabek	0-3	10-18	5.0-10.0	6.6-7.8	---	---	---	---
	3-11	2-10	5.0-10.0	6.6-8.4	2-5	---	---	---
	11-60	0-3	0.0-2.0	7.4-9.0	5-10	---	---	---
Cambert	0-4	18-25	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	4-12	18-35	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	12-30	18-35	10.0-15.0	7.4-9.0	10-30	---	0-4	0-13
	30-60	---	---	---	---	---	---	---
131:								
Yamac	0-4	18-27	15.0-20.0	6.6-8.4	---	---	---	---
	4-14	18-30	10.0-15.0	6.6-8.4	---	---	---	---
	14-60	18-30	10.0-15.0	7.9-8.4	5-15	0-1	0-4	1-5
132:								
Yamac	0-5	18-27	15.0-20.0	6.6-8.4	---	---	---	---
	5-17	18-30	10.0-15.0	6.6-8.4	---	---	---	---
	17-60	18-30	10.0-15.0	7.9-8.4	5-15	0-1	0-4	1-5

CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate equivalent	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
133:								
Yamac	0-6	18-27	15.0-20.0	6.6-8.4	---	---	---	---
	6-18	18-30	10.0-15.0	6.6-8.4	---	---	---	---
	18-60	18-30	10.0-15.0	7.9-8.4	5-15	0-1	0-4	1-5
Busby	0-4	10-18	10.0-15.0	7.4-8.4	---	---	---	---
	4-21	10-18	10.0-15.0	7.4-8.4	---	---	---	---
	21-45	10-18	5.0-15.0	7.9-8.4	5-15	---	0-2	---
	45-60	3-18	5.0-10.0	7.9-8.4	5-15	---	0-4	---
134:								
Yamac	0-3	18-27	15.0-20.0	6.6-8.4	---	---	---	---
	3-14	18-30	10.0-15.0	6.6-8.4	---	---	---	---
	14-60	18-30	10.0-15.0	7.9-8.4	5-15	0-1	0-4	1-5
Busby	0-4	10-18	10.0-15.0	7.4-8.4	---	---	---	---
	4-21	10-18	10.0-15.0	7.4-8.4	---	---	---	---
	21-45	10-18	5.0-15.0	7.9-8.4	5-15	---	0-2	---
	45-60	3-18	5.0-10.0	7.9-8.4	5-15	---	0-4	---
135:								
Yamac	0-5	18-27	15.0-20.0	6.6-8.4	---	---	---	---
	5-14	18-30	10.0-15.0	6.6-8.4	---	---	---	---
	14-60	18-30	10.0-15.0	7.9-8.4	5-15	0-1	0-4	1-5
Busby	0-3	10-18	10.0-15.0	7.4-8.4	---	---	---	---
	3-11	10-18	10.0-15.0	7.4-8.4	---	---	---	---
	11-42	10-18	5.0-15.0	7.9-8.4	5-15	---	0-2	---
	42-60	3-18	5.0-10.0	7.9-8.4	5-15	---	0-4	---
Blackhall	0-4	5-15	5.0-10.0	7.4-8.4	---	---	---	---
	4-17	5-15	5.0-10.0	7.9-8.4	5-10	---	0-2	---
	17-60	---	---	---	---	---	---	---
136:								
Yamac	0-5	18-27	15.0-20.0	6.6-8.4	---	---	---	---
	5-15	18-30	10.0-15.0	6.6-8.4	---	---	---	---
	15-60	18-30	10.0-15.0	7.9-8.4	5-15	0-1	0-4	1-5
Delpoint	0-3	20-27	15.0-20.0	6.6-8.4	---	---	0-4	---
	3-15	18-35	15.0-20.0	6.6-8.4	0-5	---	0-4	---
	15-32	18-35	10.0-15.0	7.9-9.0	5-15	---	0-4	---
	32-60	---	---	---	---	---	---	---
137:								
Yamac	0-5	18-27	15.0-20.0	6.6-8.4	---	---	---	---
	5-16	18-30	10.0-15.0	6.6-8.4	---	---	---	---
	16-60	18-30	10.0-15.0	7.9-8.4	5-15	0-1	0-4	1-5
Delpoint	0-4	20-27	15.0-20.0	6.6-8.4	---	---	0-4	---
	4-15	18-35	15.0-20.0	6.6-8.4	0-5	---	0-4	---
	15-32	18-35	10.0-15.0	7.9-9.0	5-15	---	0-4	---
	32-60	---	---	---	---	---	---	---
Cabbart	0-4	18-27	10.0-15.0	7.4-9.0	5-10	---	0-4	---
	4-17	18-35	5.0-10.0	7.4-9.0	15-25	1-5	2-8	1-5
	17-60	---	---	---	---	---	---	---
138:								
Yamac	0-5	18-27	15.0-20.0	6.6-8.4	---	---	---	---
	5-17	18-30	10.0-15.0	6.6-8.4	---	---	---	---
	17-60	18-30	10.0-15.0	7.9-8.4	5-15	0-1	0-4	1-5

CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate equivalent	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
138:								
Gerdrum	0-7	27-40	20.0-25.0	6.6-7.8	---	---	0-2	---
	7-18	35-55	25.0-35.0	7.4-9.0	0-5	1-5	1-8	10-20
	18-60	30-50	20.0-25.0	7.9-9.0	5-15	---	8-16	13-30
139:								
Yawdim	0-4	27-40	20.0-25.0	6.6-7.8	---	---	---	---
	4-14	35-50	20.0-25.0	7.4-8.4	2-10	---	0-2	---
	14-60	---	---	---	---	---	---	---
Cambeth	0-3	18-27	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	3-11	18-35	15.0-20.0	7.4-8.4	5-10	---	0-2	---
	11-30	18-35	10.0-15.0	7.9-9.0	10-20	---	0-4	---
	30-60	---	---	---	---	---	---	---
140:								
Yetull	0-10	0-10	5.0-10.0	6.6-7.8	---	---	---	---
	10-60	0-10	1.0-5.0	7.4-8.4	1-5	---	0-4	---
Busby	0-3	10-18	10.0-15.0	7.4-8.4	---	---	---	---
	3-20	10-18	10.0-15.0	7.4-8.4	---	---	---	---
	20-42	10-18	5.0-15.0	7.9-8.4	5-15	---	0-2	---
	42-60	3-18	5.0-10.0	7.9-8.4	5-15	---	0-4	---
141:								
Zatoville	0-6	27-40	20.0-25.0	7.4-9.0	---	---	0-4	---
	6-15	33-45	15.0-20.0	7.4-9.0	1-5	---	4-8	---
	15-25	35-45	15.0-20.0	7.9-9.0	5-15	---	4-8	1-13
	25-60	25-40	15.0-20.0	7.9-9.0	5-10	1-20	8-16	8-30

WATER FEATURES

Map symbol and soil name	Hydrologic group	Flooding			High water table and ponding		
		Frequency	Duration	Months	Water table depth	Kind of water table	Months
					Ft		
1:							
Abor	D	None	---	---	>6.0	---	---
Cabbart	D	None	---	---	>6.0	---	---
Delpoint	C	None	---	---	>6.0	---	---
2:							
Abor	D	None	---	---	>6.0	---	---
Delpoint	C	None	---	---	>6.0	---	---
Kobar	C	None	---	---	>6.0	---	---
3:							
Abor	D	None	---	---	>6.0	---	---
Weingart	D	None	---	---	>6.0	---	---
Neldore	D	None	---	---	>6.0	---	---
4:							
Aeric Fluvaquents.							
Cherry	B	None	---	---	>6.0	---	---
5:							
Alona	B	None	---	---	>6.0	---	---
6:							
Alona	B	None	---	---	>6.0	---	---
Cambeth	C	None	---	---	>6.0	---	---
Gerdrum	D	None	---	---	>6.0	---	---
7:							
Badland	---	None	---	---	---	---	---
8:							
Blackhall	C	None	---	---	>6.0	---	---
Busby	B	None	---	---	>6.0	---	---
Rock outcrop.							
9:							
Blackhall	C	None	---	---	>6.0	---	---
Delpoint	C	None	---	---	>6.0	---	---
Rock outcrop.							
10:							
Blanchard	A	None	---	---	>6.0	---	---
Dast	B	None	---	---	>6.0	---	---

WATER FEATURES--Continued

Map symbol and soil name	Hydrologic group	Flooding			High water table and ponding		
		Frequency	Duration	Months	Water table depth	Kind of water table	Months
					Ft		
11:							
Borollic Camborthids	---	None	---	---	---	---	---
Ustic Torrifluvents	---	Frequent	---	---	---	---	---
12:							
Busby	B	None	---	---	>6.0	---	---
13:							
Busby	B	None	---	---	>6.0	---	---
14:							
Busby	B	None	---	---	>6.0	---	---
15:							
Busby	B	None	---	---	>6.0	---	---
Blackhall	C	None	---	---	>6.0	---	---
Twilight	B	None	---	---	>6.0	---	---
16:							
Busby	B	None	---	---	>6.0	---	---
Twilight	B	None	---	---	>6.0	---	---
Blackhall	C	None	---	---	>6.0	---	---
17:							
Busby	B	None	---	---	>6.0	---	---
Yetull	A	None	---	---	>6.0	---	---
18:							
Busby	B	None	---	---	>6.0	---	---
Yetull	A	None	---	---	>6.0	---	---
Rock outcrop.							
19:							
Cabba	D	None	---	---	>6.0	---	---
Cambert	C	None	---	---	>6.0	---	---
Rock outcrop.							
20:							
Cabbart	D	None	---	---	>6.0	---	---
Rock outcrop.							
Yawdim	D	None	---	---	>6.0	---	---
21:							
Cambert	C	None	---	---	>6.0	---	---
Bigsheep	B	None	---	---	>6.0	---	---

WATER FEATURES--Continued

Map symbol and soil name	Hydrologic group	Flooding			High water table and ponding		
		Frequency	Duration	Months	Water table depth	Kind of water table	Months
					Ft		
21:							
Golva	B	None	---	---	>6.0	---	---
22:							
Cambert	C	None	---	---	>6.0	---	---
Cabba	D	None	---	---	>6.0	---	---
Cherry	B	None	---	---	>6.0	---	---
23:							
Cambert	C	None	---	---	>6.0	---	---
Cabba	D	None	---	---	>6.0	---	---
Dast	B	None	---	---	>6.0	---	---
24:							
Cambeth	C	None	---	---	>6.0	---	---
Bigsheep	B	None	---	---	>6.0	---	---
25:							
Cambeth	C	None	---	---	>6.0	---	---
Cabbart	D	None	---	---	>6.0	---	---
Kirby	A	None	---	---	>6.0	---	---
26:							
Cambeth	C	None	---	---	>6.0	---	---
Cabbart	D	None	---	---	>6.0	---	---
Lonna	B	None	---	---	>6.0	---	---
27:							
Cambeth	C	None	---	---	>6.0	---	---
Cabbart	D	None	---	---	>6.0	---	---
Yawdim	D	None	---	---	>6.0	---	---
28:							
Cherry	B	None	---	---	>6.0	---	---
29:							
Cherry	B	None	---	---	>6.0	---	---
30:							
Cherry	B	None	---	---	>6.0	---	---
Cambert	C	None	---	---	>6.0	---	---
31:							
Cherry	B	None	---	---	>6.0	---	---
Cambert	C	None	---	---	>6.0	---	---
Cabba	D	None	---	---	>6.0	---	---

WATER FEATURES--Continued

Map symbol and soil name	Hydrologic group	Flooding			High water table and ponding		
		Frequency	Duration	Months	Water table depth	Kind of water table	Months
					Ft		
32:							
Cherry	B	None	---	---	>6.0	---	---
Lisk	B	None	---	---	>6.0	---	---
Cabba	D	None	---	---	>6.0	---	---
33:							
Cherry	B	None	---	---	>6.0	---	---
Typic Ustifluvents	---	Frequent	---	---	---	---	---
34:							
Chinook	B	None	---	---	>6.0	---	---
35:							
Chinook	B	None	---	---	>6.0	---	---
Kremlin	B	None	---	---	>6.0	---	---
36:							
Chinook	B	None	---	---	>6.0	---	---
Tinsley	A	None	---	---	>6.0	---	---
37:							
Chinook	B	None	---	---	>6.0	---	---
Twilight	B	None	---	---	>6.0	---	---
38:							
Chinook	B	None	---	---	>6.0	---	---
Twilight	B	None	---	---	>6.0	---	---
Blackhall	C	None	---	---	>6.0	---	---
39:							
Creed	C	None	---	---	>6.0	---	---
Gerdrum	D	None	---	---	>6.0	---	---
40:							
Dast	B	None	---	---	>6.0	---	---
Lisk	B	None	---	---	>6.0	---	---
41:							
Degrand	B	None	---	---	>6.0	---	---
42:							
Degrand	B	None	---	---	>6.0	---	---
43:							
Delpoint	C	None	---	---	>6.0	---	---
Busby	B	None	---	---	>6.0	---	---
Blackhall	C	None	---	---	>6.0	---	---

WATER FEATURES--Continued

Map symbol and soil name	Hydrologic group	Flooding			High water table and ponding		
		Frequency	Duration	Months	Water table depth	Kind of water table	Months
					Ft		
44:							
Delpoint	C	None	---	---	>6.0	---	---
Cabbart	D	None	---	---	>6.0	---	---
45:							
Delpoint	C	None	---	---	>6.0	---	---
Cabbart	D	None	---	---	>6.0	---	---
Yawdim	D	None	---	---	>6.0	---	---
46:							
Delpoint	C	None	---	---	>6.0	---	---
Cabbart	D	None	---	---	>6.0	---	---
Yawdim	D	None	---	---	>6.0	---	---
47:							
Delpoint	C	None	---	---	>6.0	---	---
Yamac	B	None	---	---	>6.0	---	---
Cabbart	D	None	---	---	>6.0	---	---
48:							
Ethridge	C	None	---	---	>6.0	---	---
49:							
Ethridge	C	None	---	---	>6.0	---	---
50:							
Evanston	B	None	---	---	>6.0	---	---
51:							
Evanston	B	None	---	---	>6.0	---	---
52:							
Evanston	B	None	---	---	>6.0	---	---
Delpoint	C	None	---	---	>6.0	---	---
53:							
Farnuf	B	None	---	---	>6.0	---	---
54:							
Floweree	B	None	---	---	>6.0	---	---
55:							
Floweree	B	None	---	---	>6.0	---	---
56:							
Floweree	B	None	---	---	>6.0	---	---
57:							
Floweree	B	None	---	---	>6.0	---	---
58:							
Floweree	B	None	---	---	>6.0	---	---

WATER FEATURES--Continued

Map symbol and soil name	Hydrologic group	Flooding			High water table and ponding		
		Frequency	Duration	Months	Water table depth	Kind of water table	Months
					Ft		
58:							
Cambeth	C	None	---	---	>6.0	---	---
59:							
Gerdrum	D	None	---	---	>6.0	---	---
Creed	C	None	---	---	>6.0	---	---
60:							
Gerdrum	D	None	---	---	>6.0	---	---
Creed	C	None	---	---	>6.0	---	---
61:							
Gerdrum	D	None	---	---	>6.0	---	---
Creed	C	None	---	---	>6.0	---	---
62:							
Glendive	B	Occasional	Brief	Apr-Jun	>6.0	---	---
63:							
Glendive	B	Occasional	Brief	Apr-Jun	>6.0	---	---
64:							
Golva	B	None	---	---	>6.0	---	---
65:							
Golva	B	None	---	---	>6.0	---	---
66:							
Golva	B	None	---	---	>6.0	---	---
Cambert	C	None	---	---	>6.0	---	---
67:							
Hanly	A	Occasional	Brief	Mar-Jun	>6.0	---	---
Glendive	B	Occasional	Brief	Apr-Jun	>6.0	---	---
68:							
Havre	B	Occasional	Brief	Apr-Jun	>6.0	---	---
69:							
Havre	B	Occasional	Brief	Apr-Jun	>6.0	---	---
70:							
Havre	B	Frequent	Brief	Apr-Jun	>6.0	---	---
Harlem	C	Frequent	Brief	Apr-Jun	>6.0	---	---
71:							
Hedstrom	B	None	---	---	>6.0	---	---
72:							
Ismay	B	Occasional	Brief	Mar-Jun	3.0-5.0	Apparent	May-Aug
73:							
Kobar	C	None	---	---	>6.0	---	---

WATER FEATURES--Continued

Map symbol and soil name	Hydrologic group	Flooding			High water table and ponding		
		Frequency	Duration	Months	Water table depth	Kind of water table	Months
					Ft		
74:							
Kobar	C	None	---	---	>6.0	---	---
75:							
Kobar	C	None	---	---	>6.0	---	---
Gerdrum	D	None	---	---	>6.0	---	---
76:							
Kremlin	B	None	---	---	>6.0	---	---
77:							
Kremlin	B	None	---	---	>6.0	---	---
78:							
Kremlin	B	None	---	---	>6.0	---	---
Busby	B	None	---	---	>6.0	---	---
79:							
Kremlin	B	None	---	---	>6.0	---	---
Tinsley	A	None	---	---	>6.0	---	---
Degrand	B	None	---	---	>6.0	---	---
80:							
Lihen	A	None	---	---	>6.0	---	---
81:							
Lihen	A	None	---	---	>6.0	---	---
Parshall	B	None	---	---	>6.0	---	---
Yetull	A	None	---	---	>6.0	---	---
82:							
Lihen	A	None	---	---	>6.0	---	---
Tinsley	A	None	---	---	>6.0	---	---
83:							
Lihen	A	None	---	---	>6.0	---	---
Yetull	A	None	---	---	>6.0	---	---
84:							
Lonna	B	None	---	---	>6.0	---	---
85:							
Lonna	B	None	---	---	>6.0	---	---
86:							
Lonna	B	None	---	---	>6.0	---	---
87:							
Lonna	B	None	---	---	>6.0	---	---
88:							
Lonna	B	None	---	---	>6.0	---	---

WATER FEATURES--Continued

Map symbol and soil name	Hydrologic group	Flooding			High water table and ponding		
		Frequency	Duration	Months	Water table depth	Kind of water table	Months
					Ft		
89:							
Lonna	B	None	---	---	>6.0	---	---
Cambeth	C	None	---	---	>6.0	---	---
90:							
Lonna	B	None	---	---	>6.0	---	---
Cambeth	C	None	---	---	>6.0	---	---
Cabbart	D	None	---	---	>6.0	---	---
91:							
Lonna	B	None	---	---	>6.0	---	---
Cambeth	C	None	---	---	>6.0	---	---
Cabbart	D	None	---	---	>6.0	---	---
92:							
Macar	B	None	---	---	>6.0	---	---
93:							
Marias	D	None	---	---	>6.0	---	---
94:							
Marvan	D	None	---	---	>6.0	---	---
95:							
Marvan	D	None	---	---	>6.0	---	---
96:							
Marvan	D	None	---	---	>6.0	---	---
Vanda	D	None	---	---	>6.0	---	---
97:							
Neldore	D	None	---	---	>6.0	---	---
Rock outcrop.							
98:							
Neldore	D	None	---	---	>6.0	---	---
Rock outcrop.							
Abor	D	None	---	---	>6.0	---	---
99:							
Neldore	D	None	---	---	>6.0	---	---
Weingart	D	None	---	---	>6.0	---	---
Kirby	A	None	---	---	>6.0	---	---
100:							
Nesda	B	Frequent	Brief	Apr-Jun	>6.0	---	---
101:							
Parshall	B	None	---	---	>6.0	---	---

WATER FEATURES--Continued

Map symbol and soil name	Hydrologic group	Flooding			High water table and ponding		
		Frequency	Duration	Months	Water table depth	Kind of water table	Months
					Ft		
102:							
Peerless	B	None	---	---	>6.0	---	---
103:							
Pinelli	B	None	---	---	>6.0	---	---
104:							
Pinelli	B	None	---	---	>6.0	---	---
105:							
Pinelli	B	None	---	---	>6.0	---	---
Weingart	D	None	---	---	>6.0	---	---
Gerdrum	D	None	---	---	>6.0	---	---
106:							
Riverwash	---	Frequent	---	---	---	---	---
107:							
Rivra loam	D	Occasional	Brief	Apr-Jun	0.0-3.5	Apparent	Apr-Jul
Rivra gravelly sandy loam	D	Frequent	Brief	Apr-Jun	0.0-3.5	Apparent	Apr-Jul
108:							
Rock outcrop.							
109:							
Rock outcrop.							
Cabbart	D	None	---	---	>6.0	---	---
Kirby	A	None	---	---	>6.0	---	---
110:							
Ryell	B	Occasional	Brief	Apr-Jun	>6.0	---	---
111:							
Ryell	B	Rare	Brief	Jan-Jul	>6.0	---	---
112:							
Ryell	B	Occasional	Brief	Apr-Jun	>6.0	---	---
113:							
Shambo	B	None	---	---	>6.0	---	---
114:							
Shambo	B	None	---	---	>6.0	---	---
115:							
Spinekop	B	None	---	---	>6.0	---	---
116:							
Subwell	B	None	---	---	>6.0	---	---
Bigsheep	B	None	---	---	>6.0	---	---
117:							
Subwell	B	None	---	---	>6.0	---	---

WATER FEATURES--Continued

Map symbol and soil name	Hydrologic group	Flooding			High water table and ponding		
		Frequency	Duration	Months	Water table depth	Kind of water table	Months
					Ft		
117:							
Cambert	C	None	---	---	>6.0	---	---
Bigsheep	B	None	---	---	>6.0	---	---
118:							
Subwell	B	None	---	---	>6.0	---	---
Peerless	B	None	---	---	>6.0	---	---
119:							
Tally	B	None	---	---	>6.0	---	---
120:							
Tally	B	None	---	---	>6.0	---	---
Hedstrom	B	None	---	---	>6.0	---	---
121:							
Tally	B	None	---	---	>6.0	---	---
Wabek	A	None	---	---	>6.0	---	---
Hedstrom	B	None	---	---	>6.0	---	---
122:							
Tinsley	A	None	---	---	>6.0	---	---
Delpoint	C	None	---	---	>6.0	---	---
Cabbart	D	None	---	---	>6.0	---	---
123:							
Ustic Torrifluvents	---	Occasional	---	---	---	---	---
124:							
Ustic Torriorthents	---	None	---	---	---	---	---
Borollic Natargids	---	None	---	---	---	---	---
125:							
Ustic Torriorthents	---	None	---	---	---	---	---
Rock outcrop.							
126:							
Ustic Torriorthents	---	None	---	---	---	---	---
Ustic Torrifluvents	---	Frequent	---	---	---	---	---
Rock outcrop.							
127:							
Vanstel	B	None	---	---	>6.0	---	---

WATER FEATURES--Continued

Map symbol and soil name	Hydrologic group	Flooding			High water table and ponding		
		Frequency	Duration	Months	Water table depth	Kind of water table	Months
					Ft		
128:							
Vanstel	B	None	---	---	>6.0	---	---
129:							
Wabek	A	None	---	---	>6.0	---	---
130:							
Wabek	A	None	---	---	>6.0	---	---
Cambert	C	None	---	---	>6.0	---	---
131:							
Yamac	B	None	---	---	>6.0	---	---
132:							
Yamac	B	None	---	---	>6.0	---	---
133:							
Yamac	B	None	---	---	>6.0	---	---
Busby	B	None	---	---	>6.0	---	---
134:							
Yamac	B	None	---	---	>6.0	---	---
Busby	B	None	---	---	>6.0	---	---
135:							
Yamac	B	None	---	---	>6.0	---	---
Busby	B	None	---	---	>6.0	---	---
Blackhall	C	None	---	---	>6.0	---	---
136:							
Yamac	B	None	---	---	>6.0	---	---
Delpoint	C	None	---	---	>6.0	---	---
137:							
Yamac	B	None	---	---	>6.0	---	---
Delpoint	C	None	---	---	>6.0	---	---
Cabbart	D	None	---	---	>6.0	---	---
138:							
Yamac	B	None	---	---	>6.0	---	---
Gerdrum	D	None	---	---	>6.0	---	---
139:							
Yawdim	D	None	---	---	>6.0	---	---
Cambeth	C	None	---	---	>6.0	---	---
140:							
Yetull	A	None	---	---	>6.0	---	---
Busby	B	None	---	---	>6.0	---	---

WATER FEATURES--Continued

Map symbol and soil name	Hydrologic group	Flooding			High water table and ponding		
		Frequency	Duration	Months	Water table depth	Kind of water table	Months
					Ft		
141: Zatoville-------	C	None	---	---	3.0-5.0	Apparent	May-Nov

SOIL FEATURES

Map symbol and soil name	Bedrock		Potential frost action	Risk of corrosion	
	Depth	Hardness		Uncoated steel	Concrete
	In				
1:					
Abor	20-40	Soft	Low	High	Low
Cabbart	10-20	Soft	Moderate	High	Low
Delpoint	20-40	Soft	Moderate	High	Low
2:					
Abor	20-40	Soft	Low	High	Low
Delpoint	20-40	Soft	Moderate	High	Low
Kobar	>60	---	Low	High	Low
3:					
Abor	20-40	Soft	Low	High	Low
Weingart	20-40	Soft	Low	High	Moderate
Neldore	10-20	Soft	Low	High	Moderate
4:					
Aeric Fluvaquents.					
Cherry	>60	---	Moderate	High	Low
5:					
Alona	>60	---	Moderate	High	High
6:					
Alona	>60	---	Moderate	High	High
Cambeth	20-40	Soft	Moderate	High	Low
Gerdrum	>60	---	Low	High	Moderate
7:					
Badland.					
8:					
Blackhall	10-20	Soft	Moderate	High	Low
Busby	>60	---	Moderate	High	Low
Rock outcrop.					
9:					
Blackhall	10-20	Soft	Moderate	High	Low
Delpoint	20-40	Soft	Moderate	High	Low
Rock outcrop.					
10:					
Blanchard	>60	---	Low	Moderate	Moderate
Dast	20-40	Soft	Moderate	High	Low
11:					
Borollic Camborthids.					

SOIL FEATURES--Continued

Map symbol and soil name	Bedrock		Potential frost action	Risk of corrosion	
	Depth	Hardness		Uncoated steel	Concrete
	In				
11:					
Ustic Torrifluvents.					
12:					
Busby	>60	---	Moderate	High	Low
13:					
Busby	>60	---	Moderate	High	Low
14:					
Busby	>60	---	Moderate	High	Low
15:					
Busby	>60	---	Moderate	High	Low
Blackhall	10-20	Soft	Moderate	High	Low
Twilight	20-40	Soft	Moderate	High	Low
16:					
Busby	>60	---	Moderate	High	Low
Twilight	20-40	Soft	Moderate	High	Low
Blackhall	10-20	Soft	Moderate	High	Low
17:					
Busby	>60	---	Moderate	High	Low
Yetull	>60	---	Low	High	Low
18:					
Busby	>60	---	Moderate	High	Low
Yetull	>60	---	Low	High	Low
Rock outcrop.					
19:					
Cabba	10-20	Soft	Moderate	High	Low
Cambert	20-40	Soft	Moderate	High	Low
Rock outcrop.					
20:					
Cabbart	10-20	Soft	Moderate	High	Low
Rock outcrop.					
Yawdim	10-20	Soft	Low	High	Low
21:					
Cambert	20-40	Soft	Moderate	High	Low
Bigsheep	>60	---	Moderate	High	Low
Golva	>60	---	Moderate	High	Low
22:					
Cambert	20-40	Soft	Moderate	High	Low

SOIL FEATURES--Continued

Map symbol and soil name	Bedrock		Potential frost action	Risk of corrosion	
	Depth	Hardness		Uncoated steel	Concrete
	In				
22:					
Cabba	10-20	Soft	Moderate	High	Low
Cherry	>60	---	Moderate	High	Low
23:					
Cambert	20-40	Soft	Moderate	High	Low
Cabba	10-20	Soft	Moderate	High	Low
Dast	20-40	Soft	Moderate	High	Low
24:					
Cambeth	20-40	Soft	Moderate	High	Low
Bigsheep	40-60	Soft	Moderate	High	Low
25:					
Cambeth	20-40	Soft	Moderate	High	Low
Cabbart	10-20	Soft	Moderate	High	Low
Kirby	>60	---	Low	High	Low
26:					
Cambeth	20-40	Soft	Moderate	High	Low
Cabbart	10-20	Soft	Moderate	High	Low
Lonna	>60	---	Moderate	High	Low
27:					
Cambeth	20-40	Soft	Moderate	High	Low
Cabbart	10-20	Soft	Moderate	High	Low
Yawdim	10-20	Soft	Low	High	Low
28:					
Cherry	>60	---	Moderate	High	Low
29:					
Cherry	>60	---	Moderate	High	Low
30:					
Cherry	>60	---	Moderate	High	Low
Cambert	20-40	Soft	Moderate	High	Low
31:					
Cherry	>60	---	Moderate	High	Low
Cambert	20-40	Soft	Moderate	High	Low
Cabba	10-20	Soft	Moderate	High	Low
32:					
Cherry	>60	---	Moderate	High	Low
Lisk	>60	---	Moderate	High	Low
Cabba	10-20	Soft	Moderate	High	Low

SOIL FEATURES--Continued

Map symbol and soil name	Bedrock		Potential frost action	Risk of corrosion	
	Depth	Hardness		Uncoated steel	Concrete
	In				
33:					
Cherry	>60	---	Moderate	High	Low
Typic Ustifluvents.					
34:					
Chinook	>60	---	Moderate	High	Low
35:					
Chinook	>60	---	Moderate	High	Low
Kremlin	>60	---	Moderate	High	Low
36:					
Chinook	>60	---	Moderate	High	Low
Tinsley	>60	---	Low	High	Low
37:					
Chinook	>60	---	Moderate	High	Low
Twilight	20-40	Soft	Moderate	High	Low
38:					
Chinook	>60	---	Moderate	High	Low
Twilight	20-40	Soft	Moderate	High	Low
Blackhall	10-20	Soft	Moderate	High	Low
39:					
Creed	>60	---	Low	High	Moderate
Gerdrum	>60	---	Low	High	Moderate
40:					
Dast	20-40	Soft	Moderate	High	Low
Lisk	>60	---	Moderate	High	Low
41:					
Degrand	>60	---	Moderate	High	Low
42:					
Degrand	>60	---	Moderate	High	Low
43:					
Delpoint	20-40	Soft	Moderate	High	Low
Busby	>60	---	Moderate	High	Low
Blackhall	10-20	Soft	Moderate	High	Low
44:					
Delpoint	20-40	Soft	Moderate	High	Low
Cabbart	10-20	Soft	Moderate	High	Low
45:					
Delpoint	20-40	Soft	Moderate	High	Low

SOIL FEATURES--Continued

Map symbol and soil name	Bedrock		Potential frost action	Risk of corrosion	
	Depth	Hardness		Uncoated steel	Concrete
	In				
45:					
Cabbart	10-20	Soft	Moderate	High	Low
Yawdim	10-20	Soft	Low	High	Low
46:					
Delpoint	20-40	Soft	Moderate	High	Low
Cabbart	10-20	Soft	Moderate	High	Low
Yawdim	10-20	Soft	Low	High	Low
47:					
Delpoint	20-40	Soft	Moderate	High	Low
Yamac	>60	---	Moderate	High	Low
Cabbart	10-20	Soft	Moderate	High	Low
48:					
Ethridge	>60	---	Low	High	Low
49:					
Ethridge	>60	---	Low	High	Low
50:					
Evanston	>60	---	Moderate	High	Low
51:					
Evanston	>60	---	Moderate	High	Low
52:					
Evanston	>60	---	Moderate	High	Low
Delpoint	20-40	Soft	Moderate	High	Low
53:					
Farnuf	>60	---	Moderate	High	Low
54:					
Floweree	>60	---	Moderate	High	Low
55:					
Floweree	>60	---	Moderate	High	Low
56:					
Floweree	>60	---	Moderate	High	Low
57:					
Floweree	>60	---	Moderate	High	Low
58:					
Floweree	>60	---	Moderate	High	Low
Cambeth	20-40	Soft	Moderate	High	Low
59:					
Gerdrum	>60	---	Low	High	Moderate
Creed	>60	---	Low	High	Moderate

SOIL FEATURES--Continued

Map symbol and soil name	Bedrock		Potential frost action	Risk of corrosion	
	Depth	Hardness		Uncoated steel	Concrete
	In				
60:					
Gerdrum	>60	---	Low	High	Moderate
Creed	>60	---	Low	High	Moderate
61:					
Gerdrum	>60	---	Low	High	Moderate
Creed	>60	---	Low	High	Moderate
62:					
Glendive	>60	---	Moderate	High	Low
63:					
Glendive	>60	---	Moderate	High	Low
64:					
Golva	>60	---	Moderate	High	Low
65:					
Golva	>60	---	Moderate	High	Low
66:					
Golva	>60	---	Moderate	High	Low
Cambert	20-40	Soft	Moderate	High	Low
67:					
Hanly	>60	---	Low	Moderate	Low
Glendive	>60	---	Moderate	High	Low
68:					
Havre	>60	---	Moderate	High	Low
69:					
Havre	>60	---	Moderate	High	Low
70:					
Havre	>60	---	Moderate	High	Low
Harlem	>60	---	Low	High	Low
71:					
Hedstrom	>60	---	Moderate	High	Low
72:					
Ismay	>60	---	Moderate	High	High
73:					
Kobar	>60	---	Low	High	Low
74:					
Kobar	>60	---	Low	High	Low
75:					
Kobar	>60	---	Low	High	Low
Gerdrum	>60	---	Low	High	Moderate
76:					
Kremlin	>60	---	Moderate	High	Low

SOIL FEATURES--Continued

Map symbol and soil name	Bedrock		Potential frost action	Risk of corrosion	
	Depth	Hardness		Uncoated steel	Concrete
	In				
77:					
Kremlin	>60	---	Moderate	High	Low
78:					
Kremlin	>60	---	Moderate	High	Low
Busby	>60	---	Moderate	High	Low
79:					
Kremlin	>60	---	Moderate	High	Low
Tinsley	>60	---	Low	High	Low
Degrand	>60	---	Moderate	High	Low
80:					
Lihen	>60	---	Low	High	Low
81:					
Lihen	>60	---	Low	High	Low
Parshall	>60	---	Moderate	High	Low
Yetull	>60	---	Low	High	Low
82:					
Lihen	>60	---	Low	High	Low
Tinsley	>60	---	Low	High	Low
83:					
Lihen	>60	---	Low	High	Low
Yetull	>60	---	Low	High	Low
84:					
Lonna	>60	---	Moderate	High	Low
85:					
Lonna	>60	---	Moderate	High	Low
86:					
Lonna	>60	---	Moderate	High	Low
87:					
Lonna	>60	---	Moderate	High	Low
88:					
Lonna	>60	---	Moderate	High	Low
89:					
Lonna	>60	---	Moderate	High	Low
Cambeth	20-40	Soft	Moderate	High	Low
90:					
Lonna	>60	---	Moderate	High	Low
Cambeth	20-40	Soft	Moderate	High	Low
Cabbart	10-20	Soft	Moderate	High	Low

SOIL FEATURES--Continued

Map symbol and soil name	Bedrock		Potential frost action	Risk of corrosion	
	Depth	Hardness		Uncoated steel	Concrete
	In				
91:					
Lonna	>60	---	Moderate	High	Low
Cambeth	20-40	Soft	Moderate	High	Low
Cabbart	10-20	Soft	Moderate	High	Low
92:					
Macar	>60	---	Moderate	High	Low
93:					
Marias	>60	---	Low	High	Low
94:					
Marvan	>60	---	Low	High	Moderate
95:					
Marvan	>60	---	Low	High	Moderate
96:					
Marvan	>60	---	Low	High	Moderate
Vanda	>60	---	Low	High	Moderate
97:					
Neldore	10-20	Soft	Low	High	Moderate
Rock outcrop.					
98:					
Neldore	10-20	Soft	Low	High	Moderate
Rock outcrop.					
Abor	20-40	Soft	Low	High	Low
99:					
Neldore	10-20	Soft	Low	High	Moderate
Weingart	20-40	Soft	Low	High	Moderate
Kirby	>60	---	Low	High	Low
100:					
Nesda	>60	---	Low	High	Low
101:					
Parshall	>60	---	Moderate	High	Low
102:					
Peerless	>60	---	Moderate	High	Low
103:					
Pinelli	>60	---	Low	High	Low
104:					
Pinelli	>60	---	Low	High	Low
105:					
Pinelli	>60	---	Low	High	Low
Weingart	20-40	Soft	Low	High	Moderate

SOIL FEATURES--Continued

Map symbol and soil name	Bedrock		Potential frost action	Risk of corrosion	
	Depth	Hardness		Uncoated steel	Concrete
	In				
105:					
Gerdrum	>60	---	Low	High	Moderate
106:					
Riverwash.					
107:					
Rivra loam	>60	---	Low	High	Low
Rivra gravelly sandy loam	>60	---	Low	High	Low
108:					
Rock outcrop.					
109:					
Rock outcrop.					
Cabbart	10-20	Soft	Moderate	High	Low
Kirby	>60	---	Low	High	Low
110:					
Ryell	>60	---	Moderate	High	Low
111:					
Ryell	>60	---	Moderate	High	Low
112:					
Ryell	>60	---	Moderate	High	Low
113:					
Shambo	>60	---	Moderate	High	Low
114:					
Shambo	>60	---	Moderate	High	Low
115:					
Spinekop	>60	---	Moderate	High	Low
116:					
Subwell	>60	---	Moderate	High	Low
Bigsheep	>60	---	Moderate	High	Low
117:					
Subwell	>60	---	Moderate	High	Low
Cambert	20-40	Soft	Moderate	High	Low
Bigsheep	40-60	Soft	Moderate	High	Low
118:					
Subwell	>60	---	Moderate	High	Low
Peerless	>60	---	Moderate	High	Low
119:					
Tally	>60	---	Moderate	High	Low
120:					
Tally	>60	---	Moderate	High	Low

SOIL FEATURES--Continued

Map symbol and soil name	Bedrock		Potential frost action	Risk of corrosion	
	Depth	Hardness		Uncoated steel	Concrete
	In				
120:					
Hedstrom	>60	---	Moderate	High	Low
121:					
Tally	>60	---	Moderate	High	Low
Wabek	>60	---	Low	Moderate	Low
Hedstrom	>60	---	Moderate	High	Low
122:					
Tinsley	>60	---	Low	High	Low
Delpoint	20-40	Soft	Moderate	High	Low
Cabbart	10-20	Soft	Moderate	High	Low
123:					
Ustic Torrifluvents.					
124:					
Ustic Torriorthents.					
Borollic Natargids.					
125:					
Ustic Torriorthents.					
Rock outcrop.					
126:					
Ustic Torriorthents.					
Ustic Torrifluvents.					
Rock outcrop.					
127:					
Vanstel	>60	---	Moderate	High	Low
128:					
Vanstel	>60	---	Moderate	High	Low
129:					
Wabek	>60	---	Low	Moderate	Low
130:					
Wabek	>60	---	Low	Moderate	Low
Cambert	20-40	Soft	Moderate	High	Low
131:					
Yamac	>60	---	Moderate	High	Low
132:					
Yamac	>60	---	Moderate	High	Low

SOIL FEATURES--Continued

Map symbol and soil name	Bedrock		Potential frost action	Risk of corrosion	
	Depth	Hardness		Uncoated steel	Concrete
	In				
133:					
Yamac	>60	---	Moderate	High	Low
Busby	>60	---	Moderate	High	Low
134:					
Yamac	>60	---	Moderate	High	Low
Busby	>60	---	Moderate	High	Low
135:					
Yamac	>60	---	Moderate	High	Low
Busby	>60	---	Moderate	High	Low
Blackhall	10-20	Soft	Moderate	High	Low
136:					
Yamac	>60	---	Moderate	High	Low
Delpoint	20-40	Soft	Moderate	High	Low
137:					
Yamac	>60	---	Moderate	High	Low
Delpoint	20-40	Soft	Moderate	High	Low
Cabbart	10-20	Soft	Moderate	High	Low
138:					
Yamac	>60	---	Moderate	High	Low
Gerdrum	>60	---	Low	High	Moderate
139:					
Yawdim	10-20	Soft	Low	High	Low
Cambeth	20-40	Soft	Moderate	High	Low
140:					
Yetull	>60	---	Low	High	Low
Busby	>60	---	Moderate	High	Low
141:					
Zatoville	>60	---	Moderate	High	High

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Glossary

Ablation till. Loose, permeable till deposited during the final downwasting of glacial ice. Lenses of crudely sorted sand and gravel are common.

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.

Alluvial fan. A body of alluvium, with overflow of water and debris flow deposits, whose surface forms a segment of a cone that radiates downslope from the point where the stream emerges from a narrow valley onto a less sloping surface. Source uplands range in relief and areal extent from mountains to gullied terrains on hill slopes.

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

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.

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.

Argillite. Weakly metamorphosed mudstone or shale.

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.

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 3.75
Low	3.75 to 5.0
Moderate	5.0 to 7.5
High	More than 7.5

Avalanche chute. The track or path formed by an avalanche.

Back slope. The geomorphic component that forms the steepest inclined surface and principal element of many hill slopes. Back slopes in profile are commonly steep and linear and descend to a foot slope. In terms of gradational process, back slopes are erosional forms produced mainly by mass wasting and running water.

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.

Basal area. The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

Basal till. Compact glacial till deposited beneath the ice.

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

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

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

Bedrock-floored plain. An extensive nearly level to gently rolling or moderately sloping area that is underlain by hard bedrock and has a slope of 0 to 8 percent.

Bench terrace. A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material,

and designed to make the soil suitable for tillage and to prevent accelerated erosion.

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.

Board foot. A unit of measure of the wood in lumber, logs, or trees. The amount of wood in a board one foot wide, one foot long, and one inch thick before finishing.

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

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

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

Breast height. An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.

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

Cable yarding. A method of moving felled trees to a nearby central area for transport to a processing facility. Most cable yarding systems involve use of a drum, a pole, and wire cables in an arrangement similar to that of a rod and reel used for fishing. To reduce friction and soil disturbance, a felled tree generally is reeled in while one end is lifted or the entire log is suspended.

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

Caliche. A more or less cemented deposit of calcium carbonate in soils of warm-temperate, subhumid to arid areas. Caliche occurs as soft, thin layers in the soil or as hard, thick beds just beneath the solum, or it is exposed at the surface by erosion.

California bearing ratio (CBR). The load-supporting capacity of a soil as compared to that of standard crushed limestone, expressed as a ratio. First standardized in California. A soil having a CBR of 16 supports 16 percent of the load that would be supported by standard crushed limestone, per unit area, with the same degree of distortion.

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.

Catsteps. Very small, irregular terraces on steep hillsides, especially in pasture, formed by the trampling of cattle or the slippage of saturated soil.

Channeled. Refers to a drainage area in which natural meandering or repeated branching and convergence of a streambed have created deeply incised cuts, either active or abandoned, in alluvial material.

Channery soil. A soil that is, by volume, more than 15 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches along the longest axis. A single piece is called a channer.

Chemical treatment. Control of unwanted vegetation by use of chemicals.

Chiseling. Tillage with an implement having one or more soil-penetrating points that loosen the subsoil and bring clods to the surface. A form of emergency tillage to control soil blowing.

Cirque. A semicircular, concave, bowllike area that has steep faces primarily resulting from erosive activity of a mountain glacier.

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.

Clayey soil. Silty clay, sandy clay, or clay.

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.

Clearcut. A method of forest harvesting that removes the entire stand of trees in one cutting.

Reproduction is achieved artificially or by natural seeding from adjacent stands.

Climax plant community. The plant community on a given site that will be established if present environmental conditions continue to prevail and the site is properly managed.

Closed depression. A low area completely surrounded by higher ground and having no natural outlet.

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.

Cobbly soil material. Material that is 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material is 35 to 60 percent of these rock fragments, and extremely cobbly soil material is more than 60 percent.

Codominant trees. Trees whose crowns form the general level of the forest canopy and that receive full light from above but comparatively little from the sides.

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

Commercial forest. Forest land capable of producing 20 cubic feet or more per acre per year at the culmination of mean annual increment.

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.

Concretions. Grains, pellets, or nodules of various sizes, shapes, and colors consisting of concentrated compounds or cemented soil grains. The composition of most concretions is unlike that of the surrounding soil. Calcium carbonate and iron oxide are common compounds in concretions.

Conglomerate. A coarse grained, clastic rock composed of rounded to subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer material. Conglomerate is the consolidated equivalent of gravel.

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 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. Any tillage and planting system in which a cover of crop residue is maintained on at least 30 percent of the soil surface after planting in order to reduce the hazard of water erosion; in areas where soil blowing is the primary concern, a system that maintains a cover of at least 1,000 pounds of flat residue of small grain or the equivalent during the critical erosion period.

Consistence, soil. The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are:

Loose.—Noncoherent when dry or moist; does not hold together in a mass.

Friable.—When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.

Firm.—When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

Plastic.—Readily deformed by moderate pressure but can be pressed into a lump; will form a "wire" when rolled between thumb and forefinger.

Sticky.—Adheres to other material and tends to stretch somewhat and pull apart rather than to pull free from other material.

Hard.—When dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.

Soft.—When dry, breaks into powder or individual grains under very slight pressure.

Cemented.—Hard; little affected by moistening.

Consolidated sandstone. Sandstone that disperses within a few hours when fragments are placed in water. The fragments are extremely hard or very hard when dry, are not easily crushed, and cannot be textured by the usual field method.

Consolidated shale. Shale that disperses within a few hours when fragments are placed in water. The fragments are extremely hard or very hard when dry and are not easily crushed.

Contour stripcropping (or contour farming). 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 or 80 inches.

Coprogenous earth (sedimentary peat). Fecal material deposited in water by aquatic organisms.

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.

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.

Cross-slope farming. Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

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

Culmination of the mean annual increment (CMAI). The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

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.

Deep soil. A soil that is 40 to 60 inches deep over bedrock or to other material that restricts the penetration of plant roots.

Deferred grazing. Postponing grazing or arresting grazing for a prescribed period.

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

Dip slope. A slope of the land surface, roughly determined by and approximately conforming with the dip of underlying bedded rock.

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

Divided-slope farming. A form of field stripcropping in which crops are grown in a systematic arrangement of two strips, or bands, across the slope to reduce the hazard of water erosion. One strip is in a close-growing crop that provides protection from erosion, and the other strip is in a crop that provides less protection from erosion. This practice is used where slopes are not long enough to permit the use of a full stripcropping pattern.

Dominant trees. Trees whose crowns form the general level of the forest canopy and that receive full light from above and from the sides.

Drainage class (natural). Refers to the frequency and duration of periods of saturation or partial saturation during soil formation, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Seven classes of natural soil drainage are recognized:

Excessively drained.—These soils have very high and high hydraulic conductivity and a low water-holding capacity. They are not suited to crop production unless irrigated.

Somewhat excessively drained.—These soils have high hydraulic conductivity and a low water-holding capacity. Without irrigation, only a narrow range of crops can be grown and yields are low.

Well drained.—These soils have an intermediate water-holding capacity. They retain optimum amounts of moisture, but they are not wet close enough to the surface or long enough during the growing season to adversely affect yields.

Moderately well drained.—These soils are wet close enough to the surface or long enough that planting or harvesting operations or yields of some field crops are adversely affected unless a drainage system is installed. Moderately well drained soils commonly have a layer with low hydraulic conductivity, a wet layer relatively high in the profile, additions of water by seepage, or some combination of these.

Somewhat poorly drained.—These soils are wet close enough to the surface or long enough that planting or harvesting operations or crop growth is markedly restricted unless a drainage system is installed. Somewhat poorly drained soils commonly have a layer with low hydraulic conductivity, a wet layer high in the profile, additions of water through seepage, or a combination of these.

Poorly drained.—These soils commonly are so wet at or near the surface during a considerable part

of the year that field crops cannot be grown under natural conditions. Poorly drained conditions are caused by a saturated zone, a layer with low hydraulic conductivity, seepage, or a combination of these.

Very poorly drained.—These soils are wet to the surface most of the time. The wetness prevents the growth of important crops (except rice) unless a drainage system is installed.

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

Drainageway. An area of ground at a lower elevation than the surrounding ground and in which water collects and is drained to a closed depression or lake or to a drainageway at a lower elevation. A drainageway may or may not have distinctly incised channels at its upper reaches or throughout its course.

Drumlin. A low, smooth, elongated oval hill, mound, or ridge of compact glacial till. The longer axis is parallel to the path of the glacier and commonly has a blunt nose pointing in the direction from which the ice approached.

Duff. A term used to identify 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.

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.

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, for example, fire, that exposes the surface.

Erosion pavement. A layer of gravel or stones that remains on the surface after fine particles are removed by sheet or rill erosion.

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. The term is more often applied to cliffs resulting from differential erosion.

Esker. A long, narrow, sinuous, steep-sided ridge composed of irregularly stratified sand and gravel that were deposited by a subsurface stream flowing between ice walls or through ice tunnels of a retreating glacier and that were left behind when the ice melted. Eskers range from less than a mile to more than 100 miles in length and from 10 to 100 feet in height.

Even aged. Refers to a stand of trees in which only small differences in age occur between the individuals. A range of 20 years is allowed.

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.

Extrusive rock. Igneous rock derived from deep-seated molten matter (magma) emplaced on the earth's surface.

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.

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.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest

bulk density and the highest water content at saturation of all organic soil material.

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.*

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

Firebreak. An area cleared of flammable material to stop or help control creeping or running fires. A firebreak also serves as a line from which to work and to facilitate the movement of fire fighters and equipment. Designated roads also serve as firebreaks.

First bottom. The normal flood plain of a stream, subject to frequent or occasional flooding.

Flaggy soil material. Material that is, by volume, 15 to 35 percent flagstones. Very flaggy soil material is 35 to 60 percent flagstones, and extremely flaggy soil material is more than 60 percent flagstones.

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

Flood plain. A nearly level alluvial plain that borders a stream and is subject to inundation under flood-stage conditions unless protected artificially. It is usually a constructional landform built of sediment deposited during overflow and lateral migration of the stream.

Fluvial. Of or pertaining to rivers; produced by river action, as a fluvial plain.

Foothills. A region of relatively low, rounded hills at the base of a mountain range.

Foot slope. The geomorphic component that forms the inner, gently inclined surface at the base of a hill slope. The surface profile is dominantly concave. In terms of gradational processes, a foot slope is a transition zone between an upslope site of erosion (back slope) and a downslope site of deposition (toe slope).

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

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

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.

Giant ripple mark. The undulating surface sculpture produced in noncoherent granular materials by currents of water and by the agitation of water in wave action during the draining of large glacial lakes, such as Glacial Lake Missoula.

Glacial drift (geology). Pulverized and other rock material transported by glacial ice and then deposited. Also, the sorted and unsorted material deposited by streams flowing from glaciers.

Glacial outwash (geology). Gravel, sand, and silt, commonly stratified, deposited by glacial meltwater.

Glacial till (geology). Unsorted, nonstratified glacial drift consisting of clay, silt, sand, and boulders transported and deposited by glacial ice.

Glaciated uplands. Land areas that were previously covered by continental or alpine glaciers and that are at a higher elevation than the flood plain.

Glaciofluvial deposits (geology). Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur as kames, eskers, deltas, and outwash plains.

Glaciolacustrine deposits. Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are interbedded or laminated.

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

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 is 15 to 50 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 (geology). 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. A gullied map unit is one that has numerous gullies.

Gypsum. A mineral consisting of hydrous calcium sulfate.

Habitat type. An aggregation of all land areas potentially capable of producing similar plant communities at climax.

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

Hardpan. A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

Head out. To form a flower head.

Heavy metal. Inorganic substances that are solid at ordinary temperatures and are not soluble in water. They form oxides and hydroxides that are basic. Examples are copper, iron, cadmium, zinc, manganese, lead, and arsenic.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

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 8 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. 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.

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.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some 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, the number 2 precedes the letter C.

Cr horizon.—Sedimentary beds of consolidated sandstone and semiconsolidated and consolidated shale. Generally, roots can penetrate this horizon only along fracture planes.

R layer.—Hard, consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon but 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-producing characteristics. The chief consideration is the inherent capacity of soil bare of vegetation to permit infiltration. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff. Soils are assigned to four groups. In group A are soils having a high infiltration rate when thoroughly wet and having a low runoff potential. They are mainly deep, well drained, and sandy or gravelly. In group D, at the other extreme, are soils having a very slow infiltration rate and thus a high runoff potential. They have a claypan or clay layer at or near the surface, have a permanent high water table, or are shallow over nearly impervious bedrock or other material. A soil is

assigned to two hydrologic groups if part of the acreage is artificially drained and part is undrained.

Igneous rock. Rock formed by solidification from a molten or partially molten state. Major varieties include plutonic and volcanic rock. Examples are andesite, basalt, and granite.

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 are 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.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	Very low
0.2 to 0.4	Low
0.4 to 0.75	Moderately low
0.75 to 1.25	Moderate
1.25 to 1.75	Moderately high
1.75 to 2.5	High
More than 2.5	Very high

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.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Basin.—Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding.—Water, released at high points, is allowed to flow onto an area without controlled distribution.

Kame. A moundlike hill of glacial drift, composed chiefly of stratified sand and gravel.

Kame terrace. A terracelike ridge consisting of stratified sand and gravel that were deposited by a meltwater stream flowing between a melting glacier and a higher valley wall or lateral moraine and that remained after the disappearance of the ice. It is commonly pitted with kettles and has an irregular ice-contact slope.

Lacustrine deposit (geology). Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Lake plain. A surface marking the floor of an extinct lake, filled in by well sorted, stratified sediments.

Landslide. The rapid downhill movement of a mass of soil and loose rock, generally when wet or saturated. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

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

Lateral moraine. A ridgelike moraine carried on and deposited at the side margin of a valley glacier. It

is composed chiefly of rock fragments derived from the valley walls by glacial abrasion and plucking or by mass wasting.

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

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.

Loamy soil. Coarse sandy loam, sandy loam, fine sandy loam, very fine sandy loam, loam, silt loam, silt, clay loam, sandy clay loam, or silty clay loam.

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

Low-residue crops. Crops such as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

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

Marl. An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal amounts.

Mean annual increment (MAI). The average annual increase in volume of a tree during the entire life of the tree.

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.

Merchantable trees. Trees that are of sufficient size to be economically processed into wood products.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement. Nearly all such rocks are crystalline.

Microhigh. An area that is 2 to 12 inches higher than the adjacent microlow.

Microlow. An area that is 2 to 12 inches lower than the adjacent microhigh.

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.

Miscellaneous water. A sewage lagoon, an industrial waste pit, a fish hatchery, or a similar water area.

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

Moderately deep soil. A soil that is 20 to 40 inches deep over bedrock or to other material that restricts the penetration of plant roots.

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

Moraine. An accumulation of glacial drift in a topographic landform of its own, resulting chiefly from the direct action of glacial ice. Some types are lateral, recessional, and terminal.

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. Mottling generally indicates poor aeration and impeded drainage. 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).

Mountain. A natural elevation of the land surface, rising more than 1,000 feet above surrounding lowlands, commonly of limited summit area and generally having steep sides (slopes greater than 25 percent) and considerable bare-rock surface. A mountain can occur as a single, isolated mass or in a group forming a chain or range. Mountains are primarily formed by deep-seated earth movements or volcanic action and secondarily by differential erosion.

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Mudstone. Sedimentary rock formed by induration of silt and clay in approximately equal amounts.

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.

Neutral soil. A soil having a pH value between 6.6 and 7.3. (See Reaction, soil.)

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.

Observed rooting depth. Depth to which roots have been observed to penetrate.

Organic matter. Plant and animal residue in the soil in various stages of decomposition.

Outwash plain. An extensive area of glaciofluvial material that was deposited by meltwater streams.

Overstory. The trees in a forest that form the upper crown cover.

Oxbow. The horseshoe-shaped channel of a former meander, remaining after the stream formed a cutoff across a narrow meander neck.

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.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

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

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 downward movement of water through the soil.

Percs slowly (in tables). The slow movement of water through the soil, adversely affecting the specified use.

Permeability. The quality of the soil that enables water to move downward through the profile. Permeability is measured as the number of inches per hour that water moves downward through the saturated soil. Terms describing permeability are:

Very slow	Less than 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 thickness.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, 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 flooding 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. The water can be removed only by percolation or evapotranspiration.

Poor filter (in tables). Because of rapid permeability or an impermeable layer near the surface, 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.

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. The application of fire to land under such conditions of weather, soil moisture, and time of day as presumably will result in the intensity of heat and spread required to accomplish specific forest management, wildlife, grazing, or fire hazard reduction purposes.

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.

Quartzite, metamorphic. Rock consisting mainly of quartz that formed through recrystallization of quartz-rich sandstone or chert.

Quartzite, sedimentary. Very hard but

unmetamorphosed sandstone consisting chiefly of quartz grains.

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:

Extremely acid	Below 4.5
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Medium acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Mildly 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

Recessional moraine. A moraine formed during a temporary but significant halt in the retreat of a glacier.

Red beds. Sedimentary strata mainly red in color and composed largely of sandstone and shale.

Regeneration. The new growth of a natural plant community, developing from seed.

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

Relict stream terrace. One of a series of platforms in or adjacent to a stream valley that formed prior to the current stream system.

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.

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

Riser. The relatively short, steeply sloping area below a terrace tread that grades to a lower terrace tread or base level.

Riverwash. Unstable areas of sandy, silty, clayey, or gravelly sediments. These areas are flooded, washed, and reworked by rivers so frequently that they support little or no vegetation.

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.

Rock outcrop. Exposures of bare bedrock other than lava flows and rock-lined pits.

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.

Rubble land. Areas that have more than 90 percent of the surface covered by stones or boulders. Voids contain no soil material and virtually no vegetation other than lichens. The areas commonly are at the base of mountain slopes, but some are on mountain slopes as deposits of cobbles, stones, and boulders left by Pleistocene glaciation or by periglacial phenomena.

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 the growth of plants. A saline soil does not contain excess exchangeable sodium.

Salinity. The electrical conductivity of a saline soil. It is expressed, in millimhos per centimeter, as follows:

Nonsaline	0 to 4
Slightly saline	4 to 8
Moderately saline	8 to 16
Strongly saline	More than 16

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.

Sandy soil. Sand or loamy sand.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Sawlogs. Logs of suitable size and quality for the production of lumber.

Scarification. The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Scribner's log rule. A method of estimating the number of board feet that can be cut from a log of a given diameter and length.

Sedimentary plain. An extensive nearly level to gently rolling or moderately sloping area that is underlain by sedimentary bedrock and that has a slope of 0 to 8 percent.

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.

Sedimentary uplands. Land areas of bedrock formed from water- or wind-deposited sediments. They are higher on the landscape than the flood plain.

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

Semiconsolidated sedimentary beds. Soft geologic sediments that disperse when fragments are placed in water. The fragments are hard or very hard when dry. Determining the texture by the usual field method is difficult.

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 or of the underlying material. 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.

Shallow soil. A soil that is 10 to 20 inches deep over bedrock or to other material that restricts the penetration of plant roots.

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

Shelterwood system. A forest management system requiring the removal of a stand in a series of cuts so that regeneration occurs under a partial canopy. After regeneration, a final cut removes the shelterwood and allows the stand to develop in the open as an even-aged stand. The system is well suited to sites where shelter is needed for regeneration, and it can aid regeneration of the more intolerant tree species in a stand.

Shoulder. The uppermost inclined surface at the top of a hillside. It is the transition zone from the back slope to the summit of a hill or mountain. 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.

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.

Sinkhole. A depression in the landscape where limestone has been dissolved.

Site class. A grouping of site indexes into five to seven production capability levels. Each level can be represented by a site curve.

Site curve (50-year). A set of related curves on a graph that shows the average height of dominant or dominant and codominant trees for the range of ages on soils that differ in productivity. Each level is represented by a curve. The basis of the curves is the height of dominant or dominant and codominant trees that are 50 years old or are 50 years old at breast height.

Site curve (100-year). A set of related curves on a graph that shows the average height of dominant or dominant and codominant trees for a range of ages on soils that differ in productivity. Each level

is represented by a curve. The basis of the curves is the height of dominant or dominant and codominant trees that are 100 years old or are 100 years old at breast height.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant or dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Skid trails. Pathways along which logs are dragged to a common site for loading onto a logging truck.

Slash. The branches, bark, treetops, reject logs, and broken or uprooted trees left on the ground after logging.

Slickens. Accumulations of fine-textured material, such as material separated in placer-mine and ore-mill operations. Slickens from ore mills commonly consist of freshly ground rock that has undergone chemical treatment during the milling process.

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.

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

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 the following slope classes are recognized:

Nearly level	0 to 2 percent
Gently sloping	2 to 4 percent
Moderately sloping	4 to 8 percent
Strongly sloping	8 to 15 percent
Moderately steep	15 to 25 percent
Steep	25 to 45 percent
Very steep	More than 45 percent

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

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.

Sodicity. The degree to which a soil is affected by exchangeable sodium. Sodicity is expressed as a sodium adsorption ratio (SAR) of a saturation extract, or the ratio of Na^{+} to $Ca^{++} + Mg^{++}$. The degrees of sodicity and their respective ratios are:

Slight	Less than 13:1
Moderate	13-30:1
Strong	More than 30:1

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 underlying material. The living roots and plant and animal activities are largely confined to the solum.

Species. A single, distinct kind of plant or animal having certain distinguishing characteristics.

Stone line. A concentration of coarse fragments in a soil. Generally, it is indicative of an old weathered surface. In a cross section, the line may be one fragment or more thick. It generally overlies material that weathered in place and is overlain by recent sediment of variable thickness.

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.

Strath terrace. A surface cut formed by the erosion of

hard or semiconsolidated bedrock and thinly mantled with stream deposits.

Stream channel. The hollow bed where a natural stream of surface water flows or may flow; the deepest or central part of the bed, formed by the main current and covered more or less continuously by water.

Stream terrace. One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel. It originally formed near the level of the stream and is the dissected remnants of an abandoned flood plain, streambed, or valley floor that were produced during a former stage of erosion or deposition.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to soil blowing 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 grain* (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 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 or loosen a layer that is restrictive to roots.

Substratum. The part of the soil below the solum.

Subsurface layer. Technically, the E horizon. Generally refers to a leached horizon lighter in color and lower in content of organic matter than the overlying 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. A general term for the top, or highest level, of an upland feature, such as a hill or mountain. It commonly refers to a higher area that has a gentle slope and is flanked by steeper slopes.

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."

Tailwater. The water directly downstream of a structure.

Talus. Rock fragments of any size or shape, commonly coarse and angular, derived from and lying at the base of a cliff or very steep rock slope. The accumulated mass of such loose, broken rock formed chiefly by falling, rolling, or sliding.

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.

Terminal moraine. A belt of thick glacial drift that generally marks the termination of important glacial advances. It commonly is a massive arcuate ridge or complex of ridges underlain by till and other types of drift.

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 is generally 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.

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). A layer of otherwise suitable soil material that is too thin for the specified use.

Till plain. An extensive nearly level to gently rolling or moderately sloping area that is underlain by or consists of till and that has a slope of 0 to 8 percent.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toe slope. The outermost inclined surface at the base

of a hill. Toe slopes are commonly gentle and linear in profile.

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.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, are in soils in extremely small amounts. They are essential to plant growth.

Trafficability. The degree to which a soil is capable of supporting vehicular traffic across a wide range in soil moisture conditions.

Tread. The relatively flat terrace surface that was cut or built by stream or wave action.

Tuff. A compacted deposit that is 50 percent or more volcanic ash and dust.

Understory. Any plants in a forest community that grow to a height of less than 5 feet.

Upland (geology). Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Valley. An elongated depressional area primarily developed by stream action.

Valley fill. In glaciated regions, material deposited in stream valleys by glacial meltwater. In nonglaciated regions, alluvium deposited by heavily loaded 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.

Varve. A sedimentary layer or a lamina or sequence of laminae deposited in a body of still water within a year. Specifically, a thin pair of graded glaciolacustrine layers seasonally deposited, usually by meltwater streams, in a glacial lake or other body of still water in front of a glacier.

Very deep soil. A soil that is more than 60 inches deep over bedrock or to other material that restricts the penetration of plant roots.

Very shallow soil. A soil that is less than 10 inches deep over bedrock or to other material that restricts the penetration of plant roots.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Waterspreading. Diverting runoff from natural channels by means of a system of dams, dikes, or ditches and spreading it over relatively flat surfaces.

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.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The action of uprooting and tipping over trees by the wind.

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