

ENVIRONMENTAL REVIEW CHECKLIST

NOTE: The environmental review checklist is also available in the *Uniform Application for Montana Public Facility Projects, Thirteenth Edition*. The applicant can use either form, but must include a completed checklist with MCEP application materials and all other environmental documents identified in Appendix D of this document.

NAME OF PROJECT:	Arlee Lake County Wastewater Sewer District
PROPOSED ACTION:	The proposed action involves a phased approach and includes replacement of the District's manhole rims with locking manhole rims, rehabilitation of the existing gravity collection mains, installation of new permanent generators with automatic transfer switches and updated controls at the two existing lift stations, and dredging of the existing wastewater treatment lagoons.
LOCATION:	Arlee, Montana

Key Letter:

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PHYSICAL ENVIRONMENT

Key	1	Soil Suitability, Topographic and/or Geologic Constraints (e.g., soil slump, steep slopes, subsidence, seismic activity)
		<i>Response and source of information:</i>
N		The project is not expected to impact soils, topography, or site geology. According to the NRCS Web Soil Survey, the District is dominated by silty and sandy loams. According to well logs provided by the Montana Ground Water Information Center (GWIC), soils consist of silt and soil at the surface, underlain by gravel, sand and clay. Purple and green rock was encountered at depths lower than 40 feet. Soils in the vicinity of the lagoons are silty clay loam and gravelly loams.
		USGS Topographic Map, NRCS Web Soil Survey, Montana GWIC
Key	2	Hazardous Facilities (e.g., power lines, hazardous waste sites, acceptable distance from explosive and flammable hazards including chemical/petrochemical storage tanks, underground fuel storage tanks, and related facilities such as natural gas storage facilities & propane storage tanks)
		<i>Response and source of information:</i>
N		A total 150 of Leaky Underground Storage Tank (LUST) sites have been identified in Lake County. Five of the LUST sites are located within Arlee; all five of these LUST sites have been classified as "Resolved" by the DEQ.
		There are no Superfund sites, RCRA sites, Brownfields sites, or Air Non-Attainment Areas in Arlee, Montana according to the United States Environmental Protection Agency (US EPA) Cleanups in My Community Map website.
		Montana DEQ, US EPA

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Key	3	Effects of Project on Surrounding Air Quality or Any Kind of Effects of Existing Air Quality on Project (e.g., dust, odors, emissions)
N		<i>Response and source of information:</i>
		Effects to air quality will be temporary during construction activities; no long-term effects are anticipated.
		Project Engineer
Key	4	Groundwater Resources & Aquifers (e.g., quantity, quality, distribution, depth to groundwater, sole source aquifers)
B		<i>Response and source of information:</i>
		Updating and maintaining the Arlee Lake County Water Sewer District's existing infrastructure will ensure the health of the local groundwater and surrounding soils.
		Project Engineer
Key	5	Surface Water/Water Quality, Quantity & Distribution (e.g., streams, lakes, storm runoff, irrigation systems, canals)
B		<i>Response and source of information:</i>
		The main surface water present near Arlee is the Jocko River, several tributary creeks, and the community lagoons. The tributaries are identified as both intermittent and perennial according to the Montana State Library's hydrography Geographic Information System (GIS) layer. Any raw wastewater flowing to surface or ground water poses a public health risk. Maintaining the lift stations will provide a reliable facility that will not fail and discharge wastewater to surface water.
		Project Engineer
Key	6	Floodplains & Floodplain Management (Identify any floodplains within one mile of the boundary of the project.)
N		<i>Response and source of information:</i>
		The Federal Emergency Management Association (FEMA) has designated areas near Arlee as Zone A flood areas. This means there is a 1% chance of annual flooding and 26% chance of flooding over 30 years. These areas are surrounding Jocko River and are within a mile of the town of Arlee, but far from the treatment lagoons. Floodplain permitting is not anticipated for the recommended projects.
		FEMA, Army Corps of Engineers, Project Engineer
Key	7	Wetlands Protection (Identify any wetlands within one mile of the boundary of the project.)
N,P		<i>Response and source of information:</i>
		According to the National Wetlands Inventory developed by the US Fish and Wildlife Service, there are wetlands near Arlee, Montana. Freshwater Emergent Wetland, Forested/Shrub Wetland, and Riverine wetlands are indicated near Jocko River.
		Lift station improvements are not expected to impact the wetlands. Any disturbances to the wetlands caused by the collection system repairs will be temporary and special precautions will be required during construction to minimize the area of disturbance and to restore the wetlands back to existing grades and condition. If necessary and after a review of the construction limits, an aquatic resource delineation will be performed to delineate the wetlands and other aquatic features, and necessary wetlands.
		US Fish and Wildlife Service, Army Corps of Engineers

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Key	8	Agricultural Lands, Production, & Farmland Protection (e.g., grazing, forestry, cropland, prime or unique agricultural lands) (Identify any prime or important farm ground or forest lands within one mile of the boundary of the project.)
N		<i>Response and source of information:</i> According to the NRCS Web Soil Survey, the Arlee Lake County Water Sewer District farmland is of local importance and not prime farmland. The area around the wastewater treatment lagoons is mostly considered not prime farmland, farmland of local importance, and prime farmland if irrigated. The proposed project will take place in already disturbed land; farmland will not be impacted. NRCS Web Soil Survey, Project Engineer
Key	9	Vegetation & Wildlife Species & Habitats, including Fish and Sage Grouse (e.g., terrestrial, avian and aquatic life and habitats)
N		<i>Response and source of information:</i> The US Fish and Wildlife Service identified species of animals that reside in each Montana county and the status of those species. For Lake County, the US Fish and Wildlife Service has listed the Canada Lynx, Grizzly Bear, North American Wolverine, Yellow-billed Cuckoo, Bull Trout, Monarch Butterfly, Spalding's Catchfly, Whitebark Pine as threatened species. Of these, this County is considered critical habit for the Bull Trout and Canada Lynx. Due to the minimal area to be impacted by the project, wildlife and vegetation are not expected to be impacted. The project is not expected to impact non-endangered vegetation & wildlife species & habitats. Fish are not expected to be impacted, as no surface waters will be impacted by the proposed project. US Fish and Wildlife Service, Montana National Heritage Program
Key	10	Unique, Endangered, Fragile, or Limited Environmental Resources, Including Endangered Species (e.g., plants, fish, sage grouse or wildlife)
N		<i>Response and source of information:</i> The US Fish and Wildlife Service identified species of animals that reside in the county and the status of those species. For Lake County, the US Fish and Wildlife Service has listed the Canada Lynx, Grizzly Bear, North American Wolverine, Yellow-billed Cuckoo, Bull Trout, Monarch Butterfly, Spalding's Catchfly, Whitebark Pine as threatened species. Of these, this County is considered critical habit for the Bull Trout and Canada Lynx. Due to the minimal area to be impacted by the project, wildlife and vegetation are not expected to be impacted. According to the Montana Sage Grouse Habitat Conservation Program Website, the District is not in a Sage Grouse Executive Order area. US Fish and Wildlife Service, Montana Sage Grouse Habitation Conservation Program.
Key	11	Unique Natural Features (e.g., geologic features)
N		<i>Response and source of information:</i> No unique natural features will be impacted by the proposed project. Project Engineer

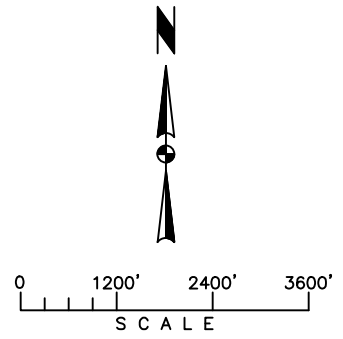
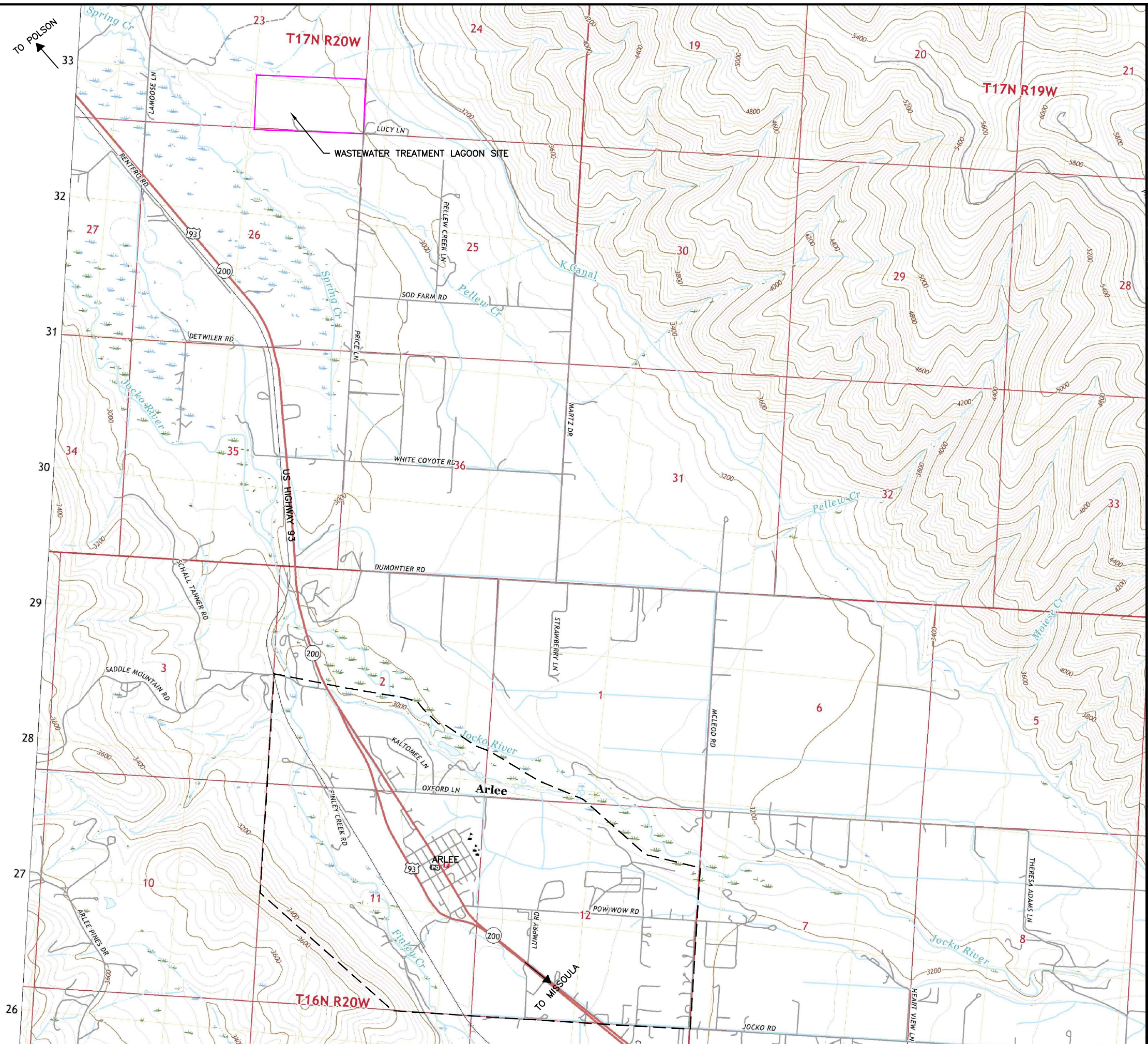
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Key	12	Access to, and Quality of, Recreational & Wilderness Activities, Public Lands and Waterways, and Public Open Space
N		<i>Response and source of information:</i>
		The proposed project will not affect access to or quality of recreational and wilderness activities, public lands and waterways, or public open space.
		Project Engineer
HUMAN ENVIRONMENT		
Key	1	Visual Quality – Coherence, Diversity, Compatibility of Use and Scale, Aesthetics
N		<i>Response and source of information:</i>
		Visual quality will not be impacted by the proposed project.
		Project Engineer
Key	2	Nuisances (e.g., glare, fumes)
N		<i>Response and source of information:</i>
		During construction activities, temporary increases in noise, debris, and dust are expected. Restricted work hours and dust control measures will be used to mitigate these short-term impacts. After construction is complete, no long-term nuisances are expected.
		Project Engineer
Key	3	Noise -- suitable separation between noise sensitive activities (such as residential areas) and major noise sources (aircraft, highways & railroads)
N		<i>Response and source of information:</i>
		A temporary increase in noise is expected during construction activities. Once project construction is complete, no long-term noise is expected.
		Project Engineer
Key	4	Historic Properties, Cultural, and Archaeological Resources
N		<i>Response and source of information:</i>
		The proposed project will occur exclusively within previously disturbed areas. No impacts to historic properties, cultural, or archeological resources are anticipated. If such resources are encountered, work will be halted until appropriate actions can be taken.
		Project Engineer
Key	5	Changes in Demographic (population) Characteristics (e.g., quantity, distribution, density)
N		<i>Response and source of information:</i>
		The project will be designed to handle the projected population served by Arlee Lake County Water and Sewer District for a 20-year design life.
		Project Engineer

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Key	6	General Housing Conditions - Quality, Quantity, Affordability
B		<i>Response and source of information:</i>
		The proposed improvements will benefit users of the Water and Sewer District. Grant and low interest loans are being pursued in order to minimize the impact to user rates to the greatest extent possible. Once completed, the project will benefit all members of the District.
		Project Engineer
Key	7	Displacement or Relocation of Businesses or Residents
N		<i>Response and source of information:</i>
		The project will not result in displacement or relocation of businesses or residents.
		Project Engineer
Key	8	Public Health and Safety
B		<i>Response and source of information:</i>
		The proposed project will improve health and safety. Improvements to the District's wastewater system will increase the reliability of the system.
		Project Engineer
Key	9	Lead Based Paint and/or Asbestos
N		<i>Response and source of information:</i>
		Prior to demolition of any painted surfaces, a lead-in-paint inspection will be conducted, and any lead-based or lead-containing paints will be handled according to all federal, state, and local regulations.
		Prior to damaging any existing building materials, an asbestos inspection may be required and would be conducted by a Montana-accredited asbestos inspector. Any asbestos-containing materials will be abated and disposed of according to all federal, state, and local regulations.
		Project Engineer
Key	10	Local Employment & Income Patterns - Quantity and Distribution of Employment, Economic Impact
N		<i>Response and source of information:</i>
		Local employment and income patterns will not be directly impacted by this project.
		Project Engineer
Key	11	Local & State Tax Base & Revenues
N		<i>Response and source of information:</i>
		Every effort is being made to minimize impacts to the existing user rates. Should a low interest loan be required to fund this project, an increase to the user rates would be required to pay for the loan. The project will not otherwise impact local and state tax base or revenues.
		Project Engineer
Key	12	Educational Facilities - Schools, Colleges, Universities
B		<i>Response and source of information:</i>
		No college or university is currently serviced by the District. The Arlee School District has a K-12 public school that will benefit from a more reliable wastewater system.
		Project Engineer

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Key	13	Commercial and Industrial Facilities - Production & Activity, Growth or Decline.
N		<i>Response and source of information:</i>
		The District currently serves several commercial or industrial users. The project will provide a more reliable wastewater system which will minimize sewer-related outages to commercial and industrial facilities.
		Project Engineer
Key	14	Health Care – Medical Services
N		<i>Response and source of information:</i>
		The District serves one tribal health clinic. The project will provide a more reliable wastewater system which will minimize sewer-related outages to medical services.
		Project Engineer
Key	15	Social Services – Governmental Services (e.g., demand on)
N		<i>Response and source of information:</i>
		Social services will not be impacted by the proposed project.
		Project Engineer
Key	16	Social Structures & Mores (Standards of Social Conduct/Social Conventions)
N		<i>Response and source of information:</i>
		The project will have no impact to social structures or mores.
		Project Engineer
Key	17	Land Use Compatibility (e.g., growth, land use change, development activity, adjacent land uses and potential conflicts)
P		<i>Response and source of information:</i>
		All improvements will occur in existing District or Lake County right-of-way. A right-of-way review will be performed to ensure the District has right-of-way over the lift station and collection system improvements in the project.
		Project Engineer
Key	18	Energy Resources - Consumption and Conservation
N		<i>Response and source of information:</i>
		Lift station improvements will result in more efficient energy and associated costs for the District.
		Project Engineer
Key	19	Solid Waste Management
N		<i>Response and source of information:</i>
		Solid waste management will not be impacted by the project.
		Project Engineer

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Key	20	Wastewater Treatment - Sewage System
B		<i>Response and source of information:</i>
		The proposed project will not impact wastewater treatment. Will better classify the treatment lagoons and improve the effluent pumping system.
		Project Engineer
Key	21	Storm Water – Surface Drainage
N		<i>Response and source of information:</i>
		Storm water will not be impacted by the proposed project.
		Project Engineer
Key	22	Community Water Supply
N		<i>Response and source of information:</i>
		The community water supply will not be impacted by the proposed project.
		Project Engineer
Key	23	Public Safety – Police
N		<i>Response and source of information:</i>
		Public safety will not be impacted by the project.
		Project Engineer
Key	24	Fire Protection – Hazards
N		<i>Response and source of information:</i>
		Fire protection will not be impacted by the project.
		Project Engineer
Key	25	Emergency Medical Services
N		<i>Response and source of information:</i>
		Emergency medical services will not be affected by this project, as the District only serves a small medical clinic.
		Project Engineer
Key	26	Parks, Playgrounds, & Open Space
N		<i>Response and source of information:</i>
		Parks, playgrounds, and open spaces will not be affected by this project.
		Project Engineer
Key	27	Cultural Facilities, Cultural Uniqueness & Diversity
		<i>Response and source of information:</i>
		The proposed project will occur exclusively within previously disturbed areas. No impacts cultural resources are anticipated. If such resources are encountered, work will be halted until appropriate actions can be taken.
		Project Engineer

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Key	28	Transportation Networks and Traffic Flow Conflicts (e.g., rail; auto including local traffic; airport runway clear zones - avoidance of incompatible land use in airport runway clear zones)
N		<i>Response and source of information:</i>
		Transportation networks including railroad traffic and air traffic will not be impacted by the proposed project.
		Project Engineer
Key	29	Consistency with Local Ordinances, Resolutions, or Plans (e.g., conformance with local comprehensive plans, zoning, or capital improvement plans)
N		<i>Response and source of information:</i>
		The proposed project is consistent with local ordinances, resolutions, and plans.
		Project Engineer
Key	30	Is There a Regulatory Action on Private Property Rights as a Result of this Project? (consider options that reduce, minimize, or eliminate the regulation of private property rights.)
N		<i>Response and source of information:</i>
		There will not be regulatory action on private property rights.
		Project Engineer



LEGEND

- DISTRICT BOUNDARY
- ALCWSD PROPERTY

NOT FOR CONSTRUCTION

REV	DATE	REVISION



DRAWN BY: MWC
 DESIGNED BY:
 QUALITY CHECK:
 DATE: 02.07.2024
 JOB NO. 24-007
 FIELDBOOK

ARLEE WASTEWATER PRELIMINARY ENGINEERING REPORT
 ARLEE, MONTANA

DISTRICT VICINITY AND TOPOGRAPHIC MAP



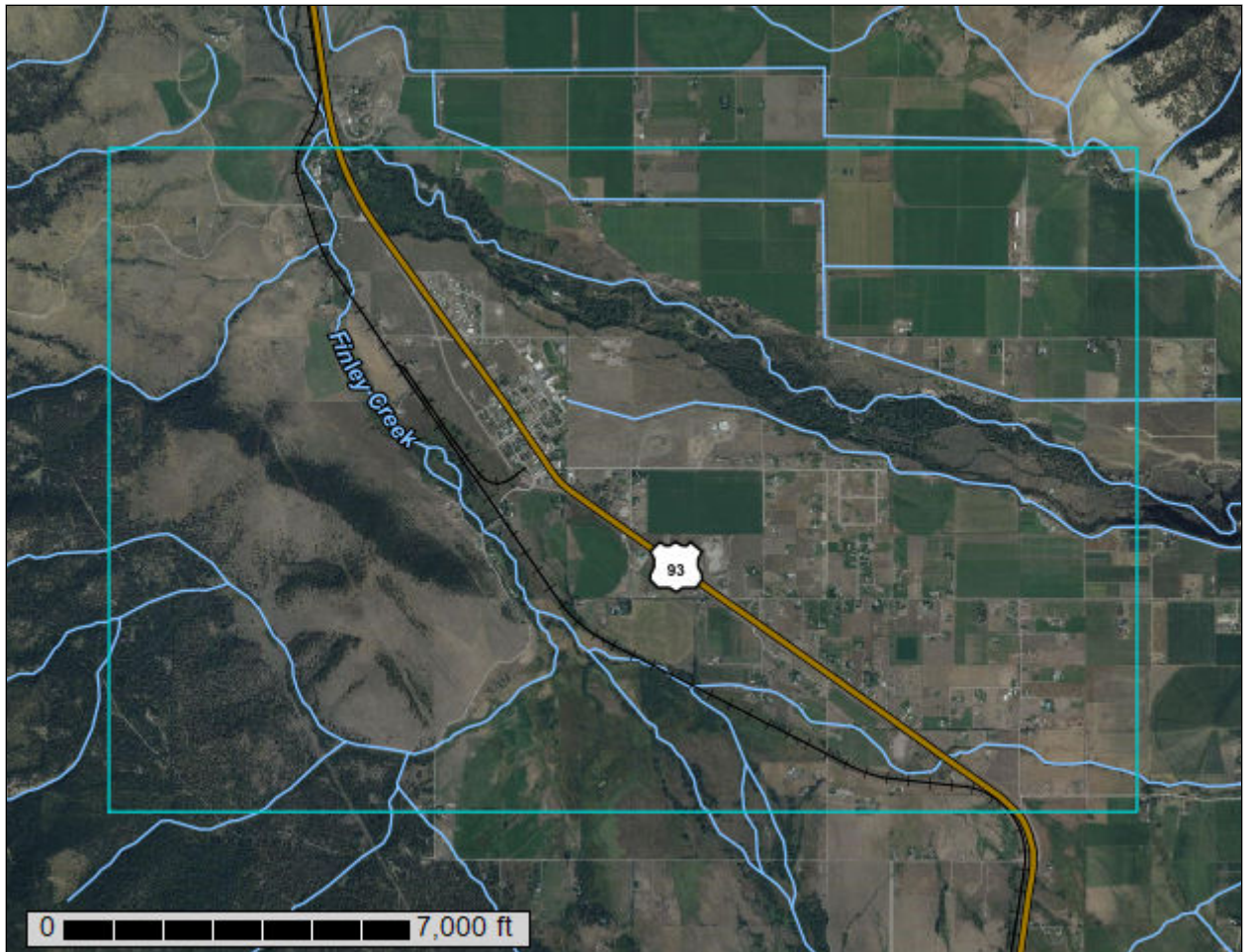
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product 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
participants

Custom Soil Resource Report for Lake County Area, Montana



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is 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 (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

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scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

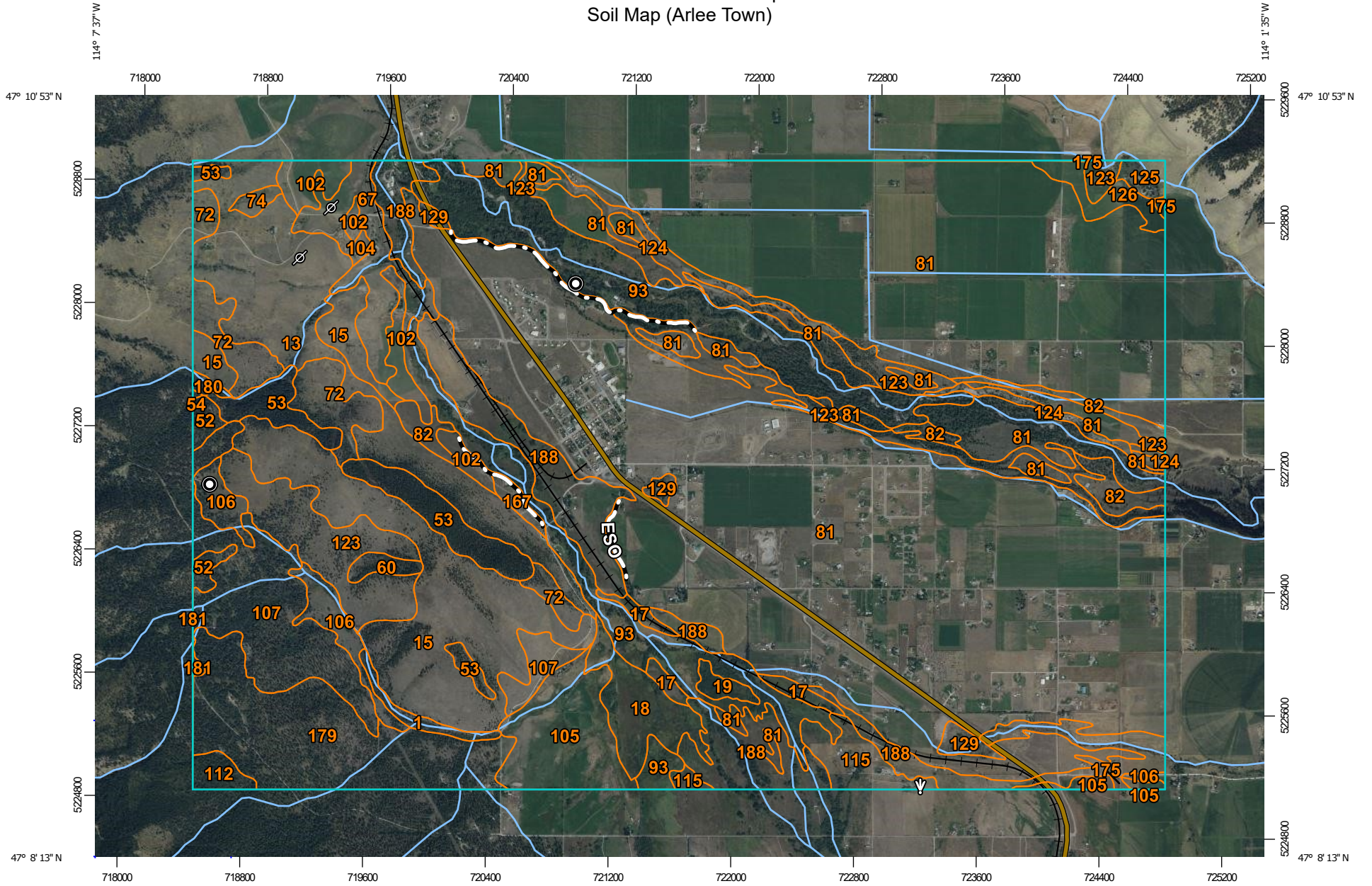
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identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

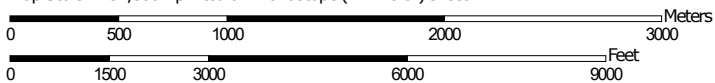
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map (Arlee Town)



Map Scale: 1:34,800 if printed on A landscape (11" x 8.5") sheet.




Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84




MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)




















Soils







 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features






-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features


Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Lake County Area, Montana
 Survey Area Data: Version 25, Aug 28, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 30, 2021—Oct 13, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend (Arlee Town)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
1	Aeric Haplaquepts, 1 to 3 percent slopes	17.6	0.3%
13	Bigarm, cool-Hogsby-Rock outcrop complex, 30 to 60 percent slopes	303.1	4.7%
15	Bigarm-Hogsby-Rock outcrop complex, 30 to 60 percent slopes	379.9	5.9%
17	Bohnly silt loam, 0 to 2 percent slopes	27.9	0.4%
18	Bolack silt loam, 0 to 2 percent slopes	78.6	1.2%
19	Borohemists, 0 to 1 percent slopes	13.3	0.2%
52	Finleypoint gravelly loam, 15 to 30 percent slopes	22.2	0.3%
53	Finleypoint gravelly loam, 30 to 60 percent slopes	114.3	1.8%
54	Finleypoint gravelly loam, dry, 15 to 30 percent slopes	0.5	0.0%
60	Flott gravelly loam, 30 to 60 percent slopes	14.1	0.2%
67	Gird-Vincom silt loams, 8 to 15 percent slopes	102.1	1.6%
72	Hogsby-Rock outcrop complex, 15 to 45 percent slopes	118.6	1.8%
74	Holloway gravelly silt loam, 30 to 60 percent slopes	9.1	0.1%
81	Jocko gravelly loam, 0 to 4 percent slopes	3,115.4	48.5%
82	Jocko gravelly loam, 4 to 15 percent slopes	67.5	1.1%
93	Lamoose loam, 0 to 2 percent slopes	433.3	6.7%
102	McCollum fine sandy loam, 2 to 4 percent slopes	69.5	1.1%
104	McCollum fine sandy loam, gravelly substratum, 0 to 2 percent slopes	4.7	0.1%
105	McDonald cobbly silty clay loam, 2 to 4 percent slopes	139.4	2.2%
106	McDonald cobbly silty clay loam, 4 to 8 percent slopes	64.3	1.0%
107	McDonald cobbly silty clay loam, 8 to 15 percent slopes	220.7	3.4%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
112	Mitten very gravelly silt loam, 30 to 60 percent slopes	18.8	0.3%
115	Moiese loam, 0 to 2 percent slopes	56.1	0.9%
123	Niarada gravelly loam, cool, 15 to 30 percent slopes	258.3	4.0%
124	Niarada gravelly loam, cool, 30 to 60 percent slopes	60.8	0.9%
125	Niarada-Kerl complex, 8 to 15 percent slopes	15.3	0.2%
126	Ninepipe silt loam, 0 to 2 percent slopes	31.2	0.5%
129	Pits, gravel	24.4	0.4%
167	Truscreek-Polson silt loams, 2 to 4 percent slopes	11.6	0.2%
175	Walstead gravelly loam, 2 to 4 percent slopes	3.4	0.1%
179	Wildgen gravelly loam, 8 to 30 percent slopes	271.4	4.2%
180	Wildgen very gravelly loam, 30 to 60 percent slopes	5.4	0.1%
181	Wildgen-Finleypoint gravelly loams, 15 to 30 percent slopes	2.2	0.0%
188	Xerofluvents, 0 to 2 percent slopes	344.9	5.4%
Totals for Area of Interest		6,420.5	100.0%

Map Unit Descriptions (Arlee Town)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a

Custom Soil Resource Report

particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

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Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Lake County Area, Montana

1—Aeric Haplaquepts, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 4vvr
Elevation: 2,890 to 5,500 feet
Mean annual precipitation: 18 to 45 inches
Mean annual air temperature: 37 to 45 degrees F
Frost-free period: 70 to 105 days
Farmland classification: Not prime farmland

Map Unit Composition

Aeric haplaquepts and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Aeric Haplaquepts

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Depth to water table: About 6 to 18 inches
Frequency of flooding: Frequent
Frequency of ponding: None

Interpretive groups

Land capability classification (irrigated): None specified
Ecological site: R043AP802MT - Bottomland Group
Hydric soil rating: Yes

Minor Components

Eaglewing

Percent of map unit: 7 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Mollman

Percent of map unit: 6 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Borohemists

Percent of map unit: 2 percent
Landform: Depressions

Custom Soil Resource Report

Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R043AP807MT - Subirrigated Grassland Group, R044AP806MT -
Subirrigated Grassland Group
Hydric soil rating: Yes

13—Bigarm, cool-Hogsby-Rock outcrop complex, 30 to 60 percent slopes

Map Unit Setting

National map unit symbol: 4vwy
Elevation: 2,600 to 6,000 feet
Mean annual precipitation: 14 to 19 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 120 days
Farmland classification: Not prime farmland

Map Unit Composition

Bigarm and similar soils: 55 percent
Hogsby and similar soils: 20 percent
Rock outcrop: 15 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bigarm

Setting

Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Colluvium derived from argillite and/or colluvium derived from quartzite

Typical profile

A - 0 to 10 inches: gravelly loam
Bw - 10 to 24 inches: very gravelly loam
BC - 24 to 39 inches: very gravelly sandy loam
C - 39 to 60 inches: very gravelly sandy loam

Properties and qualities

Slope: 30 to 60 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.4 inches)

Custom Soil Resource Report

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: R043AP810MT - Upland Grassland Group
Hydric soil rating: No

Description of Hogsby

Setting

Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Colluvium

Typical profile

A1 - 0 to 5 inches: stony loam
A2 - 5 to 18 inches: extremely channery loam
R - 18 to 60 inches: bedrock

Properties and qualities

Slope: 30 to 60 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 1.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: R043AP805MT - Shallow Grassland Group
Hydric soil rating: No

Description of Rock Outcrop

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Minor Components

Niarada, 2

Percent of map unit: 10 percent
Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB032MT - Loamy (Lo) LRU 44A-B
Hydric soil rating: No

15—Bigarm-Hogsby-Rock outcrop complex, 30 to 60 percent slopes

Map Unit Setting

National map unit symbol: 575l
Elevation: 2,620 to 5,490 feet
Mean annual precipitation: 14 to 19 inches
Mean annual air temperature: 39 to 46 degrees F
Frost-free period: 70 to 100 days
Farmland classification: Not prime farmland

Map Unit Composition

Bigarm and similar soils: 40 percent
Hogsby and similar soils: 25 percent
Rock outcrop: 20 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bigarm

Setting

Landform: Hills
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Colluvium derived from argillite and/or quartzite

Typical profile

A1 - 0 to 5 inches: cobbly loam
A2 - 5 to 17 inches: very cobbly loam
Bw - 17 to 38 inches: very cobbly sandy loam
C - 38 to 60 inches: very cobbly loamy sand

Properties and qualities

Slope: 30 to 60 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: R043AA038MT - Droughty Steep (Drstp) LRU 43A-A

Custom Soil Resource Report

Hydric soil rating: No

Description of Hogsby

Setting

Landform: Hills

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Colluvium over residuum weathered from argillite and/or quartzite

Typical profile

A - 0 to 9 inches: cobbly loam

Bw - 9 to 12 inches: very cobbly loam

C - 12 to 17 inches: extremely channery loam

R - 17 to 60 inches: bedrock

Properties and qualities

Slope: 30 to 60 percent

Depth to restrictive feature: 10 to 20 inches to lithic bedrock

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high
(0.01 to 0.57 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: D

Ecological site: R043AA138MT - Shallow Droughty (Swdr) LRU 43A-A

Hydric soil rating: No

Description of Rock Outcrop

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydric soil rating: Unranked

Minor Components

Rubble land

Percent of map unit: 5 percent

Hydric soil rating: Unranked

Bigarm, greater slopes

Percent of map unit: 5 percent

Landform: Hills

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: R043AA038MT - Droughty Steep (Drstp) LRU 43A-A

Hydric soil rating: No

Finleypoint

Percent of map unit: 5 percent

Custom Soil Resource Report

Landform: Hills

Down-slope shape: Linear

Across-slope shape: Linear

Other vegetative classification: Douglas-fir/snowberry-pinegrass phase (PK312),
Douglas-fir/ninebark-ninebark phase (PK261)

Hydric soil rating: No

17—Bohnly silt loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 4vys

Elevation: 2,500 to 3,800 feet

Mean annual precipitation: 14 to 30 inches

Mean annual air temperature: 39 to 45 degrees F

Frost-free period: 70 to 130 days

Farmland classification: Not prime farmland

Map Unit Composition

Bohnly and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bohnly

Setting

Landform: Flood plains

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Silty alluvium

Typical profile

A - 0 to 8 inches: silt loam

Bw - 8 to 36 inches: silt loam

Cg1 - 36 to 46 inches: silt loam

Cg2 - 46 to 49 inches: silt loam

Cg3 - 49 to 52 inches: fine sand

Cg4 - 52 to 56 inches: silt loam

Cg5 - 56 to 60 inches: fine sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Poorly drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)

Depth to water table: About 6 to 24 inches

Frequency of flooding: Occasional

Frequency of ponding: None

Custom Soil Resource Report

Available water supply, 0 to 60 inches: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): 5w
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: R044AP801MT - Bottomland Group
Hydric soil rating: Yes

Minor Components

Colake

Percent of map unit: 8 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AP806MT - Subirrigated Grassland Group
Hydric soil rating: No

Borohemists and similar soils

Percent of map unit: 2 percent
Landform: Channels
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R043AP807MT - Subirrigated Grassland Group, R044AP806MT - Subirrigated Grassland Group
Hydric soil rating: Yes

18—Bolack silt loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 4vz7
Elevation: 2,500 to 3,800 feet
Mean annual precipitation: 13 to 30 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 70 to 130 days
Farmland classification: Farmland of local importance

Map Unit Composition

Bolack and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bolack

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Clayey alluvium

Custom Soil Resource Report

Typical profile

A - 0 to 10 inches: silt loam
Bg1 - 10 to 14 inches: silty clay loam
Bg2 - 14 to 44 inches: clay
Cg - 44 to 60 inches: gravelly clay

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 12 to 36 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 9.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: D
Ecological site: R044AP801MT - Bottomland Group
Hydric soil rating: Yes

Minor Components

Very gravelly subsoil layers

Percent of map unit: 5 percent
Hydric soil rating: No

Very stony surface layers

Percent of map unit: 5 percent
Hydric soil rating: No

Bohnlly

Percent of map unit: 2 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AP806MT - Subirrigated Grassland Group
Hydric soil rating: Yes

Borohemists and similar soils

Percent of map unit: 2 percent
Landform: Channels
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R043AP807MT - Subirrigated Grassland Group, R044AP806MT - Subirrigated Grassland Group
Hydric soil rating: Yes

Sandy, wet soils

Percent of map unit: 1 percent
Landform: Channels
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

19—Borochemists, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 4vzt
Elevation: 2,670 to 5,000 feet
Mean annual precipitation: 15 to 19 inches
Mean annual air temperature: 37 to 45 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Borochemists and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Borochemists

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Depth to water table: About 0 to 12 inches
Frequency of flooding: Frequent
Frequency of ponding: None

Interpretive groups

Land capability classification (irrigated): None specified
Ecological site: R044AP801MT - Bottomland Group
Hydric soil rating: Yes

Minor Components

Somewhat poorly drained soils

Percent of map unit: 10 percent
Hydric soil rating: No

52—Finleypoint gravelly loam, 15 to 30 percent slopes

Map Unit Setting

National map unit symbol: 4w48

Custom Soil Resource Report

Elevation: 2,600 to 5,500 feet
Mean annual precipitation: 14 to 25 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 70 to 120 days
Farmland classification: Not prime farmland

Map Unit Composition

Finleypoint and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Finleypoint

Setting

Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Glacial till

Typical profile

O_i - 0 to 1 inches: mucky peat
A - 1 to 11 inches: gravelly loam
E - 11 to 23 inches: very gravelly loam
E/Bw - 23 to 35 inches: very gravelly loam
C - 35 to 60 inches: very gravelly loam

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (K_{sat}): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: F043AP909MT - Upland Cool Woodland Group
Hydric soil rating: No

Minor Components

Bigarm

Percent of map unit: 5 percent
Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB032MT - Loamy (Lo) LRU 44A-B
Hydric soil rating: No

Wildgen

Percent of map unit: 5 percent
Landform: Mountains

Custom Soil Resource Report

Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Finleypoint, dry

Percent of map unit: 5 percent
Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

53—Finleypoint gravelly loam, 30 to 60 percent slopes

Map Unit Setting

National map unit symbol: 4w49
Elevation: 2,600 to 6,000 feet
Mean annual precipitation: 14 to 25 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 70 to 120 days
Farmland classification: Not prime farmland

Map Unit Composition

Finleypoint and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Finleypoint

Setting

Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Glacial till

Typical profile

O_i - 0 to 1 inches: mucky peat
A - 1 to 11 inches: gravelly loam
E - 11 to 23 inches: very gravelly loam
E/Bw - 23 to 35 inches: very gravelly loam
C - 35 to 60 inches: very gravelly loam

Properties and qualities

Slope: 30 to 60 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (K_{sat}): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: F043AP911MT - Upland Warm Woodland Group
Hydric soil rating: No

Minor Components

Bigarm

Percent of map unit: 5 percent
Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB032MT - Loamy (Lo) LRU 44A-B
Hydric soil rating: No

Finleypoint, dry

Percent of map unit: 5 percent
Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Hogsby

Percent of map unit: 2 percent
Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AP805MT - Shallow Grassland Group
Hydric soil rating: No

Wildgen

Percent of map unit: 2 percent
Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Rock outcrop

Percent of map unit: 1 percent
Hydric soil rating: No

54—Finleypoint gravelly loam, dry, 15 to 30 percent slopes

Map Unit Setting

National map unit symbol: 4w4b
Elevation: 2,600 to 5,500 feet
Mean annual precipitation: 14 to 25 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 70 to 120 days

Custom Soil Resource Report

Farmland classification: Not prime farmland

Map Unit Composition

Finleypoint and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Finleypoint

Setting

Landform: Mountains

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Glacial till

Typical profile

O_i - 0 to 1 inches: mucky peat

A - 1 to 11 inches: gravelly loam

E - 11 to 23 inches: very gravelly loam

E/Bw - 23 to 35 inches: very gravelly loam

C - 35 to 60 inches: very gravelly loam

Properties and qualities

Slope: 15 to 30 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (K_{sat}): Moderately high to high
(0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): 6e

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: B

Ecological site: F043AP911MT - Upland Warm Woodland Group

Hydric soil rating: No

Minor Components

Bigarm

Percent of map unit: 10 percent

Landform: Mountains

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: R044AB032MT - Loamy (Lo) LRU 44A-B

Hydric soil rating: No

Wildgen

Percent of map unit: 5 percent

Landform: Mountains

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

60—Flott gravelly loam, 30 to 60 percent slopes

Map Unit Setting

National map unit symbol: 4w4l
Elevation: 2,900 to 4,600 feet
Mean annual precipitation: 18 to 25 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 105 days
Farmland classification: Not prime farmland

Map Unit Composition

Flott and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Flott

Setting

Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Glacial till

Typical profile

O_i - 0 to 2 inches: mucky peat
A - 2 to 12 inches: gravelly loam
E - 12 to 25 inches: very gravelly loam
E/Bw - 25 to 46 inches: very gravelly loam
Bk - 46 to 60 inches: very gravelly loam

Properties and qualities

Slope: 30 to 60 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (K_{sat}): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: F043AP911MT - Upland Warm Woodland Group
Hydric soil rating: No

Minor Components

Kingspoint

Percent of map unit: 8 percent
Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Rock outcrop

Percent of map unit: 2 percent
Hydric soil rating: No

67—Gird-Vincom silt loams, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 4w5d
Elevation: 2,400 to 3,500 feet
Mean annual precipitation: 10 to 19 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 105 to 130 days
Farmland classification: Farmland of local importance

Map Unit Composition

Gird and similar soils: 50 percent
Vincom and similar soils: 40 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gird

Setting

Landform: Lake plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Glaciolacustrine deposits

Typical profile

Ap - 0 to 10 inches: silt loam
Bw - 10 to 17 inches: silt loam
Bk - 17 to 60 inches: silt loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None

Custom Soil Resource Report

Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Description of Vincom

Setting

Landform: Lake plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Lacustrine deposits

Typical profile

A - 0 to 5 inches: silt loam
Bk - 5 to 22 inches: silt loam
C1 - 22 to 31 inches: silt loam
C2 - 31 to 41 inches: silty clay loam
C3 - 41 to 50 inches: silt loam
C4 - 50 to 60 inches: silty clay loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 8 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 20.0
Available water supply, 0 to 60 inches: High (about 9.2 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Minor Components

Truscreek

Percent of map unit: 3 percent
Landform: Lake plains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Selow

Percent of map unit: 3 percent
Landform: Lake plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AA001MT - Clayey (Cy) LRU 44A-A
Hydric soil rating: No

Kerrdam

Percent of map unit: 2 percent
Landform: Lake plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AA032MT - Loamy (Lo) LRU 44A-A
Hydric soil rating: No

Dryfork

Percent of map unit: 2 percent
Landform: Lake plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AA032MT - Loamy (Lo) LRU 44A-A
Hydric soil rating: No

72—Hogsby-Rock outcrop complex, 15 to 45 percent slopes

Map Unit Setting

National map unit symbol: 4w68
Elevation: 2,600 to 6,000 feet
Mean annual precipitation: 15 to 25 inches
Mean annual air temperature: 41 to 46 degrees F
Frost-free period: 75 to 100 days
Farmland classification: Not prime farmland

Map Unit Composition

Hogsby and similar soils: 60 percent
Rock outcrop: 25 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hogsby

Setting

Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Colluvium

Custom Soil Resource Report

Typical profile

A1 - 0 to 5 inches: stony loam
A2 - 5 to 18 inches: extremely channery loam
R - 18 to 60 inches: bedrock

Properties and qualities

Slope: 15 to 45 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 1.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: R043AP805MT - Shallow Grassland Group
Hydric soil rating: No

Description of Rock Outcrop

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Minor Components

Bigarm

Percent of map unit: 5 percent
Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB032MT - Loamy (Lo) LRU 44A-B
Hydric soil rating: No

Finleypoint

Percent of map unit: 5 percent
Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Rubble land

Percent of map unit: 5 percent
Hydric soil rating: No

74—Holloway gravelly silt loam, 30 to 60 percent slopes

Map Unit Setting

National map unit symbol: 4w6f
Elevation: 3,300 to 8,000 feet
Mean annual precipitation: 25 to 80 inches
Mean annual air temperature: 34 to 45 degrees F
Frost-free period: 20 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Holloway and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Holloway

Setting

Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Volcanic ash over colluvium

Typical profile

Oi - 0 to 2 inches: mucky peat
Bw - 2 to 12 inches: gravelly ashy silt loam
2E - 12 to 28 inches: extremely gravelly fine sandy loam
2E and Bt - 28 to 60 inches: extremely gravelly fine sandy loam

Properties and qualities

Slope: 30 to 60 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: F043AP910MT - Upland Cool Moist Woodland Group
Hydric soil rating: No

Minor Components

Mitten

Percent of map unit: 4 percent
Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Waldbillig

Percent of map unit: 4 percent
Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Tevis

Percent of map unit: 3 percent
Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Soils 10 to 40 inches to rock

Percent of map unit: 2 percent
Hydric soil rating: No

Rock outcrop

Percent of map unit: 2 percent
Hydric soil rating: No

81—Jocko gravelly loam, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: 4w70
Elevation: 2,500 to 3,900 feet
Mean annual precipitation: 14 to 22 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 120 days
Farmland classification: Farmland of local importance

Map Unit Composition

Jocko and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Jocko

Setting

Landform: Outwash plains
Down-slope shape: Linear

Custom Soil Resource Report

Across-slope shape: Linear

Parent material: Outwash

Typical profile

A - 0 to 13 inches: gravelly loam

Bw1 - 13 to 19 inches: very gravelly loam

Bw2 - 19 to 25 inches: very gravelly loamy sand

Bk - 25 to 60 inches: extremely gravelly coarse sand

Properties and qualities

Slope: 0 to 4 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat excessively drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 15 percent

Available water supply, 0 to 60 inches: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): 4s

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: B

Ecological site: R044AP808MT - Upland Grassland Group

Hydric soil rating: No

Minor Components

Jocko, very gravelly loam

Percent of map unit: 5 percent

Landform: Outwash plains

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: R044AB134MT - Shallow To Gravel (Swgr) LRU 44A-B

Hydric soil rating: No

Lamoose

Percent of map unit: 5 percent

Landform: Outwash plains

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

Walstead

Percent of map unit: 5 percent

Landform: Outwash plains

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

82—Jocko gravelly loam, 4 to 15 percent slopes

Map Unit Setting

National map unit symbol: 4w71
Elevation: 2,400 to 3,600 feet
Mean annual precipitation: 14 to 19 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 130 days
Farmland classification: Farmland of local importance

Map Unit Composition

Jocko and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Jocko

Setting

Landform: Outwash plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Outwash

Typical profile

A - 0 to 13 inches: gravelly loam
Bw1 - 13 to 19 inches: very gravelly loam
Bw2 - 19 to 25 inches: very gravelly loamy sand
Bk - 25 to 60 inches: extremely gravelly coarse sand

Properties and qualities

Slope: 4 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Minor Components

Kerl

Percent of map unit: 6 percent
Landform: Outwash plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB032MT - Loamy (Lo) LRU 44A-B
Hydric soil rating: No

Mccollum

Percent of map unit: 6 percent
Landform: Outwash plains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Jocko, stony loam

Percent of map unit: 3 percent
Landform: Outwash plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB134MT - Shallow To Gravel (Swgr) LRU 44A-B
Hydric soil rating: No

93—Lamoose loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 4w8f
Elevation: 2,500 to 3,500 feet
Mean annual precipitation: 14 to 19 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 90 to 120 days
Farmland classification: Not prime farmland

Map Unit Composition

Lamoose and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lamoose

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

Ap - 0 to 7 inches: loam

Custom Soil Resource Report

Bg - 7 to 19 inches: gravelly loam
2C - 19 to 60 inches: very gravelly loamy sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: R044AP801MT - Bottomland Group
Hydric soil rating: Yes

Minor Components

Areas that frequently flood

Percent of map unit: 5 percent
Hydric soil rating: No

Jocko

Percent of map unit: 5 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB134MT - Shallow To Gravel (Swgr) LRU 44A-B
Hydric soil rating: No

Areas that rarely flood

Percent of map unit: 5 percent
Hydric soil rating: No

102—McCollum fine sandy loam, 2 to 4 percent slopes

Map Unit Setting

National map unit symbol: 4vvx
Elevation: 1,300 to 4,600 feet
Mean annual precipitation: 14 to 20 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 105 to 130 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Mccollum and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mccollum

Setting

Landform: Stream terraces, alluvial fans

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium

Typical profile

Ap - 0 to 7 inches: fine sandy loam

Bw1 - 7 to 29 inches: fine sandy loam

Bw2 - 29 to 60 inches: fine sandy loam

Properties and qualities

Slope: 2 to 4 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Moderate (about 8.1 inches)

Interpretive groups

Land capability classification (irrigated): 4e

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: A

Ecological site: R044AP808MT - Upland Grassland Group

Hydric soil rating: No

Minor Components

Gird

Percent of map unit: 10 percent

Landform: Stream terraces, alluvial fans

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

Sacheen

Percent of map unit: 5 percent

Landform: Stream terraces, alluvial fans

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

104—McCullum fine sandy loam, gravelly substratum, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 4vvz
Elevation: 1,300 to 4,600 feet
Mean annual precipitation: 14 to 20 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 130 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Mccollum and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mccollum

Setting

Landform: Stream terraces, alluvial fans
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

Ap - 0 to 7 inches: fine sandy loam
Bw1 - 7 to 29 inches: fine sandy loam
Bw2 - 29 to 42 inches: fine sandy loam
2C - 42 to 60 inches: very gravelly sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.7 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Minor Components

Jocko

Percent of map unit: 10 percent

Landform: Alluvial fans, stream terraces

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: R044AB134MT - Shallow To Gravel (Swgr) LRU 44A-B

Hydric soil rating: No

Sacheen

Percent of map unit: 5 percent

Landform: Alluvial fans, stream terraces

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: R044AB110MT - Sandy (Sy) LRU 44A-B

Hydric soil rating: No

105—McDonald cobbly silty clay loam, 2 to 4 percent slopes

Map Unit Setting

National map unit symbol: 4vw0

Elevation: 2,900 to 5,000 feet

Mean annual precipitation: 15 to 22 inches

Mean annual air temperature: 37 to 45 degrees F

Frost-free period: 70 to 125 days

Farmland classification: Farmland of local importance

Map Unit Composition

Mcdonald and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of McDonald

Setting

Landform: Moraines

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Glacial till

Typical profile

A - 0 to 10 inches: cobbly silty clay loam

E - 10 to 18 inches: gravelly loam

Bt - 18 to 40 inches: gravelly clay

Bk - 40 to 60 inches: gravelly clay loam

Properties and qualities

Slope: 2 to 4 percent

Depth to restrictive feature: More than 80 inches

Custom Soil Resource Report

Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 11 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Minor Components

Connah

Percent of map unit: 4 percent
Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Mcdonald, stony loam

Percent of map unit: 3 percent
Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Potholes in kicking horse area

Percent of map unit: 3 percent
Hydric soil rating: No

Walstead

Percent of map unit: 3 percent
Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Somewhat poorly drained soils

Percent of map unit: 2 percent
Landform: Channels
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

106—McDonald cobbly silty clay loam, 4 to 8 percent slopes

Map Unit Setting

National map unit symbol: 4vw1
Elevation: 2,900 to 5,000 feet
Mean annual precipitation: 15 to 22 inches
Mean annual air temperature: 37 to 45 degrees F
Frost-free period: 70 to 125 days
Farmland classification: Farmland of local importance

Map Unit Composition

Mcdonald and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mcdonald

Setting

Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Glacial till

Typical profile

A - 0 to 10 inches: cobbly silty clay loam
E - 10 to 18 inches: gravelly loam
Bt - 18 to 40 inches: gravelly clay
Bk - 40 to 60 inches: gravelly clay loam

Properties and qualities

Slope: 4 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 11 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Minor Components

Connah

Percent of map unit: 4 percent
Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Mcdonald, stony loam

Percent of map unit: 3 percent
Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Walstead

Percent of map unit: 3 percent
Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Potholes in kicking horse area

Percent of map unit: 3 percent
Hydric soil rating: No

Somewhat poorly drained soils

Percent of map unit: 2 percent
Landform: Channels
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

107—McDonald cobbly silty clay loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 4vw2
Elevation: 2,900 to 3,900 feet
Mean annual precipitation: 16 to 22 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 125 days
Farmland classification: Farmland of local importance

Map Unit Composition

Mcdonald and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mcdonald

Setting

Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Glacial till

Typical profile

A - 0 to 10 inches: cobbly silty clay loam
E - 10 to 18 inches: gravelly loam
Bt - 18 to 40 inches: gravelly clay
Bk - 40 to 60 inches: gravelly clay loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 11 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Minor Components

Connah

Percent of map unit: 5 percent
Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Walstead

Percent of map unit: 4 percent
Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Mcdonald, stony loam

Percent of map unit: 3 percent
Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Slopes more than 15 percent

Percent of map unit: 3 percent

Ecological site: R044AB032MT - Loamy (Lo) LRU 44A-B

Hydric soil rating: No

112—Mitten very gravelly silt loam, 30 to 60 percent slopes

Map Unit Setting

National map unit symbol: 4vw8

Elevation: 3,000 to 6,000 feet

Mean annual precipitation: 17 to 45 inches

Mean annual air temperature: 37 to 45 degrees F

Frost-free period: 70 to 100 days

Farmland classification: Not prime farmland

Map Unit Composition

Mitten and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mitten

Setting

Landform: Mountains

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Volcanic ash over colluvium derived from quartzite and/or colluvium derived from argillite

Typical profile

Oi - 0 to 3 inches: mucky peat

Bw - 3 to 15 inches: very gravelly ashy silt loam

2E and Bw - 15 to 39 inches: very gravelly sandy loam

2BC - 39 to 60 inches: very gravelly sandy loam

Properties and qualities

Slope: 30 to 60 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat excessively drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: B

Custom Soil Resource Report

Ecological site: F043AP911MT - Upland Warm Woodland Group
Hydric soil rating: No

Minor Components

Tevis

Percent of map unit: 5 percent
Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Rock outcrop

Percent of map unit: 3 percent
Hydric soil rating: No

Winkler

Percent of map unit: 3 percent
Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Courville

Percent of map unit: 2 percent
Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Mitten, shallow to bedrock

Percent of map unit: 2 percent
Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

115—Moiese loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 4vwc
Elevation: 2,400 to 3,500 feet
Mean annual precipitation: 12 to 18 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 105 to 130 days
Farmland classification: Farmland of local importance

Map Unit Composition

Moiese and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Moiese

Setting

Landform: Stream terraces, outwash plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

Ap - 0 to 8 inches: loam
AB - 8 to 13 inches: very gravelly loam
Bw - 13 to 18 inches: very gravelly sandy loam
2Bk - 18 to 60 inches: very gravelly loamy sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Minor Components

Mccollum

Percent of map unit: 6 percent
Landform: Outwash plains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Moiese

Percent of map unit: 6 percent
Landform: Stream terraces, outwash plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044BA134MT - Shallow to Gravel (SwGr) LRU 01 Subset A
Hydric soil rating: No

Slopes of 2 to 8 percent

Percent of map unit: 3 percent
Ecological site: R044BA134MT - Shallow to Gravel (SwGr) LRU 01 Subset A
Hydric soil rating: No

123—Niarada gravelly loam, cool, 15 to 30 percent slopes

Map Unit Setting

National map unit symbol: 4vwq
Elevation: 2,500 to 6,000 feet
Mean annual precipitation: 14 to 19 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 120 days
Farmland classification: Not prime farmland

Map Unit Composition

Niarada and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Niarada

Setting

Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Glacial till

Typical profile

Ap - 0 to 7 inches: gravelly loam
A - 7 to 14 inches: very gravelly loam
Bw - 14 to 18 inches: very gravelly loam
Bk - 18 to 60 inches: very gravelly loam

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: R043AP810MT - Upland Grassland Group
Hydric soil rating: No

Minor Components

Hogsby

Percent of map unit: 5 percent
Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AP805MT - Shallow Grassland Group
Hydric soil rating: No

Jocko

Percent of map unit: 5 percent
Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB134MT - Shallow To Gravel (Swgr) LRU 44A-B
Hydric soil rating: No

Niarada, stony loam

Percent of map unit: 3 percent
Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB032MT - Loamy (Lo) LRU 44A-B
Hydric soil rating: No

Rock outcrop

Percent of map unit: 2 percent
Hydric soil rating: No

124—Niarada gravelly loam, cool, 30 to 60 percent slopes

Map Unit Setting

National map unit symbol: 4vwr
Elevation: 2,700 to 6,000 feet
Mean annual precipitation: 14 to 22 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 120 days
Farmland classification: Not prime farmland

Map Unit Composition

Niarada and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Niarada

Setting

Landform: Moraines
Down-slope shape: Linear

Custom Soil Resource Report

Across-slope shape: Linear

Parent material: Glacial till

Typical profile

Ap - 0 to 7 inches: gravelly loam

A - 7 to 14 inches: very gravelly loam

Bw - 14 to 18 inches: very gravelly loam

Bk - 18 to 60 inches: very gravelly loam

Properties and qualities

Slope: 30 to 60 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 35 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: B

Ecological site: R043AP810MT - Upland Grassland Group

Hydric soil rating: No

Minor Components

Hogsby

Percent of map unit: 5 percent

Landform: Moraines

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: R044AP805MT - Shallow Grassland Group

Hydric soil rating: No

Flott

Percent of map unit: 5 percent

Landform: Moraines

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

Walstead

Percent of map unit: 3 percent

Landform: Moraines

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

Rock outcrop

Percent of map unit: 2 percent

Hydric soil rating: No

125—Niarada-Kerl complex, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 4vws
Elevation: 2,600 to 4,900 feet
Mean annual precipitation: 14 to 19 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 135 days
Farmland classification: Farmland of local importance

Map Unit Composition

Niarada and similar soils: 50 percent
Kerl and similar soils: 40 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Niarada

Setting

Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Glacial till

Typical profile

Ap - 0 to 7 inches: gravelly loam
Bw - 7 to 14 inches: very gravelly loam
Bk - 14 to 60 inches: very gravelly loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Description of Kerl

Setting

Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Glacial till

Typical profile

A - 0 to 7 inches: silt loam
Bw - 7 to 20 inches: gravelly loam
Bk - 20 to 60 inches: gravelly loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 11.0 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Minor Components

Ninepipe

Percent of map unit: 4 percent
Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Niarada, stony loam

Percent of map unit: 3 percent
Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB032MT - Loamy (Lo) LRU 44A-B
Hydric soil rating: No

Polson

Percent of map unit: 3 percent
Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

126—Ninepipe silt loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 4vwt
Elevation: 2,500 to 4,300 feet
Mean annual precipitation: 14 to 19 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 100 to 135 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Ninepipe and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ninepipe

Setting

Landform: Drainageways, alluvial fans, stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

Ap - 0 to 10 inches: silt loam
Bw1 - 10 to 28 inches: silt loam
Bw2 - 28 to 41 inches: silty clay loam
C - 41 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: About 48 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.6 inches)

Interpretive groups

Land capability classification (irrigated): 2c
Land capability classification (nonirrigated): 3c
Hydrologic Soil Group: B
Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Minor Components

Belton

Percent of map unit: 10 percent
Landform: Alluvial fans, stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Bohnly

Percent of map unit: 5 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AP806MT - Subirrigated Grassland Group
Hydric soil rating: Yes

129—Pits, gravel

Map Unit Setting

National map unit symbol: 4vwx
Elevation: 2,700 to 3,500 feet
Mean annual precipitation: 12 to 14 inches
Mean annual air temperature: 43 to 45 degrees F
Frost-free period: 105 to 120 days
Farmland classification: Not prime farmland

Map Unit Composition

Pits: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Minor Components

Areas supporting vegetation

Percent of map unit: 10 percent
Ecological site: R044BA134MT - Shallow to Gravel (SwGr) LRU 01 Subset A
Hydric soil rating: No

167—Truscreek-Polson silt loams, 2 to 4 percent slopes

Map Unit Setting

National map unit symbol: 4vyp
Elevation: 2,400 to 3,500 feet
Mean annual precipitation: 14 to 19 inches

Custom Soil Resource Report

Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 105 to 135 days
Farmland classification: Farmland of local importance

Map Unit Composition

Truscreek and similar soils: 60 percent
Polson and similar soils: 25 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Truscreek

Setting

Landform: Alluvial fans, stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Glaciofluvial deposits

Typical profile

Ap1 - 0 to 8 inches: silt loam
Ap2 - 8 to 12 inches: silt loam
Bw - 12 to 24 inches: silt loam
Bk - 24 to 32 inches: silt loam
C - 32 to 60 inches: silt loam

Properties and qualities

Slope: 2 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 20 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Description of Polson

Setting

Landform: Stream terraces, alluvial fans
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Glaciofluvial deposits

Typical profile

Ap - 0 to 10 inches: silt loam
Btn - 10 to 18 inches: silt loam
Bkn - 18 to 60 inches: silt loam

Custom Soil Resource Report

Properties and qualities

Slope: 2 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 30.0
Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: C
Ecological site: R044AP803MT - Saline-Sodic Grassland Group
Hydric soil rating: No

Minor Components

Belton

Percent of map unit: 10 percent
Landform: Alluvial fans, stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Gird

Percent of map unit: 5 percent
Landform: Stream terraces, alluvial fans
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

175—Walstead gravelly loam, 2 to 4 percent slopes

Map Unit Setting

National map unit symbol: 4vz0
Elevation: 2,900 to 5,000 feet
Mean annual precipitation: 16 to 25 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 70 to 125 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Walstead and similar soils: 85 percent

Custom Soil Resource Report

*Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Walstead

Setting

*Landform: Alluvial fans
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium*

Typical profile

*A - 0 to 8 inches: gravelly loam
AB - 8 to 15 inches: gravelly loam
Bw - 15 to 36 inches: very gravelly loam
Bk - 36 to 60 inches: very gravelly sandy loam*

Properties and qualities

*Slope: 2 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.3 inches)*

Interpretive groups

*Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: R043AP810MT - Upland Grassland Group
Hydric soil rating: No*

Minor Components

Finleypoint

*Percent of map unit: 5 percent
Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No*

Flott

*Percent of map unit: 5 percent
Landform: Alluvial fans
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No*

Mcdonald

*Percent of map unit: 5 percent
Landform: Alluvial fans
Down-slope shape: Linear
Across-slope shape: Linear*

Hydric soil rating: No

179—Wildgen gravelly loam, 8 to 30 percent slopes

Map Unit Setting

National map unit symbol: 4vz6
Elevation: 3,000 to 6,500 feet
Mean annual precipitation: 17 to 45 inches
Mean annual air temperature: 37 to 45 degrees F
Frost-free period: 70 to 105 days
Farmland classification: Not prime farmland

Map Unit Composition

Wildgen and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wildgen

Setting

Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Glacial till

Typical profile

Oi - 0 to 1 inches: mucky peat
A - 1 to 7 inches: gravelly loam
E - 7 to 18 inches: very gravelly loam
E and Bt - 18 to 60 inches: very gravelly loam

Properties and qualities

Slope: 8 to 30 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.9 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: F043AP911MT - Upland Warm Woodland Group
Hydric soil rating: No

Minor Components

Trapps

Percent of map unit: 5 percent
Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Sharrott

Percent of map unit: 5 percent
Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Courville, dry

Percent of map unit: 5 percent
Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

180—Wildgen very gravelly loam, 30 to 60 percent slopes

Map Unit Setting

National map unit symbol: 4vz8
Elevation: 2,900 to 6,000 feet
Mean annual precipitation: 16 to 45 inches
Mean annual air temperature: 37 to 45 degrees F
Frost-free period: 70 to 105 days
Farmland classification: Not prime farmland

Map Unit Composition

Wildgen and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wildgen

Setting

Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Glacial till

Typical profile

O_i - 0 to 1 inches: mucky peat
A - 1 to 8 inches: very gravelly loam
E - 8 to 16 inches: very gravelly loam

Custom Soil Resource Report

E and Bt - 16 to 60 inches: very gravelly loam

Properties and qualities

Slope: 30 to 60 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

*Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)*

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: B

Ecological site: F043AP911MT - Upland Warm Woodland Group

Hydric soil rating: No

Minor Components

Finleypoint, dry

Percent of map unit: 4 percent

Landform: Mountains

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

Sharrott

Percent of map unit: 4 percent

Landform: Mountains

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

Courville, dry

Percent of map unit: 4 percent

Landform: Mountains

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

Winkler

Percent of map unit: 3 percent

Landform: Mountains

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

181—Wildgen-Finleypoint gravelly loams, 15 to 30 percent slopes

Map Unit Setting

National map unit symbol: 4vzf
Elevation: 2,900 to 6,500 feet
Mean annual precipitation: 16 to 25 inches
Mean annual air temperature: 37 to 45 degrees F
Frost-free period: 70 to 105 days
Farmland classification: Not prime farmland

Map Unit Composition

Wildgen and similar soils: 50 percent
Finleypoint and similar soils: 40 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wildgen

Setting

Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Glacial till

Typical profile

Oi - 0 to 1 inches: mucky peat
A - 1 to 7 inches: gravelly loam
E - 7 to 18 inches: very gravelly loam
E and Bt - 18 to 60 inches: very gravelly loam

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: F043AP909MT - Upland Cool Woodland Group
Hydric soil rating: No

Description of Finleypoint

Setting

Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Glacial till

Typical profile

O_i - 0 to 1 inches: mucky peat
A - 1 to 11 inches: gravelly loam
E - 11 to 23 inches: very gravelly loam
E/Bw - 23 to 35 inches: very gravelly loam
C - 35 to 60 inches: very gravelly loam

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (K_{sat}): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: F043AP909MT - Upland Cool Woodland Group
Hydric soil rating: No

Minor Components

Kingspoint

Percent of map unit: 5 percent
Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Trapps

Percent of map unit: 5 percent
Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

188—Xerofluvents, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 4vzq
Elevation: 2,500 to 3,440 feet
Mean annual precipitation: 13 to 18 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 105 to 120 days
Farmland classification: Not prime farmland

Map Unit Composition

Xerofluvents and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Xerofluvents

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Depth to water table: More than 80 inches
Frequency of flooding: Frequent
Frequency of ponding: None

Interpretive groups

Land capability classification (irrigated): None specified
Ecological site: R044AP801MT - Bottomland Group
Hydric soil rating: No

Minor Components

Poorly drained soils

Percent of map unit: 10 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AP806MT - Subirrigated Grassland Group
Hydric soil rating: Yes

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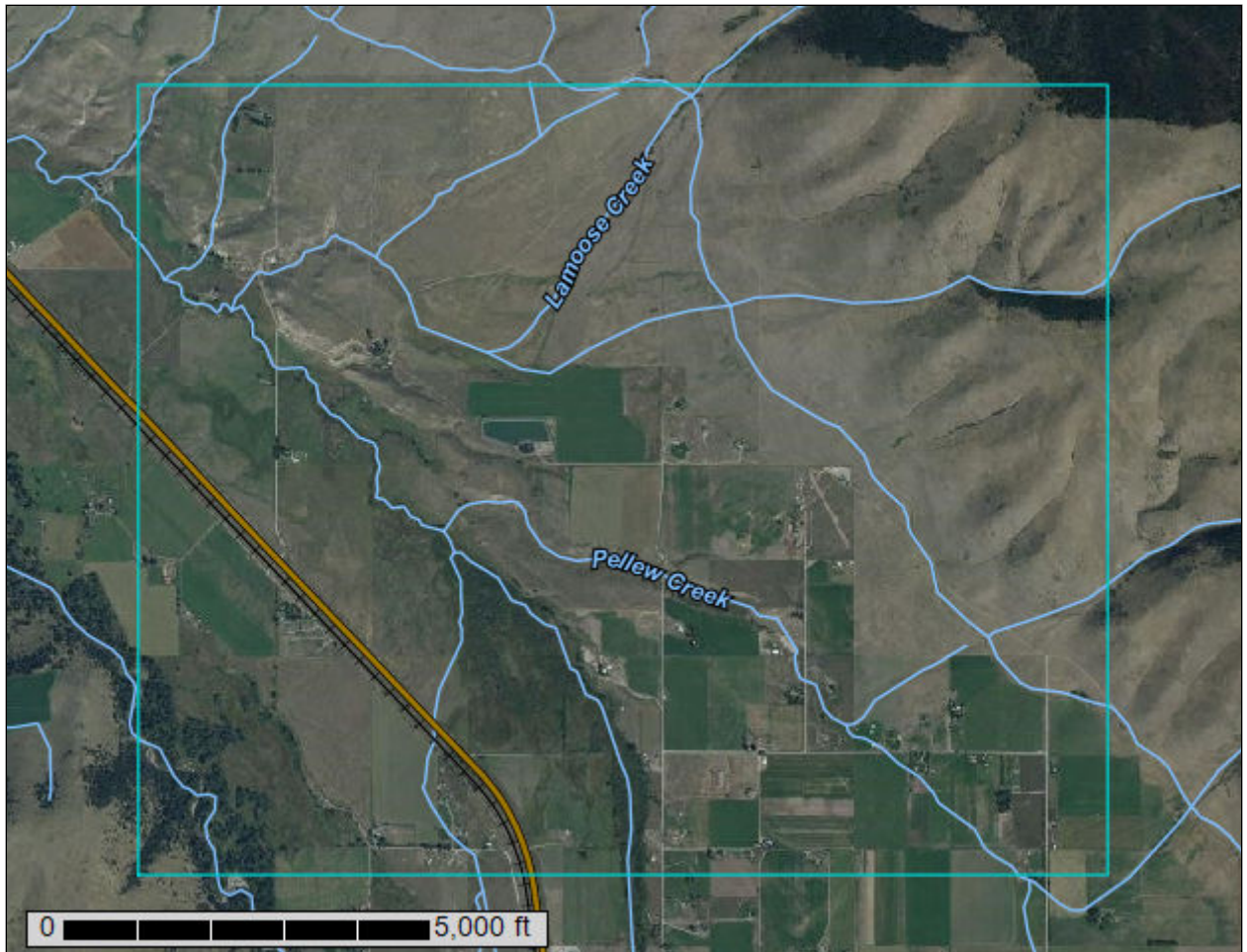
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

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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
participants

Custom Soil Resource Report for Lake County Area, Montana



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is 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 (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

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scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

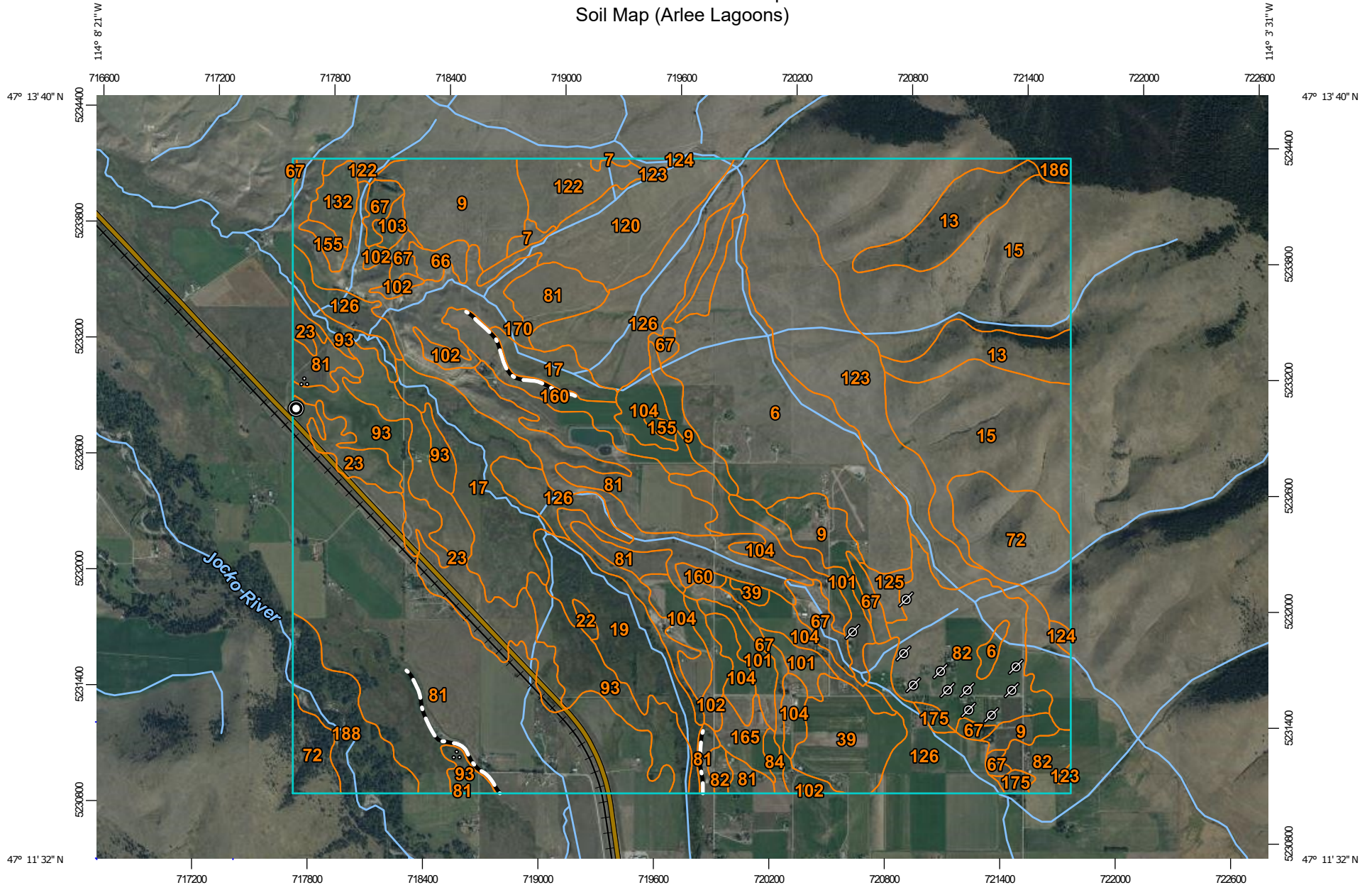
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identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

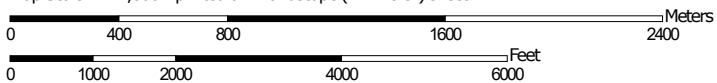
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

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Soil Map (Areee Lagoons)




Map Scale: 1:27,800 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features






-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features


Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Lake County Area, Montana
 Survey Area Data: Version 25, Aug 28, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 30, 2021—Oct 11, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend (Arlee Lagoons)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
6	Belton silt loam, 8 to 15 percent slopes	226.6	6.9%
7	Belton silt loam, 15 to 35 percent slopes	6.2	0.2%
9	Belton-Kerl silt loams, 4 to 8 percent slopes	130.0	3.9%
13	Bigarm, cool-Hogsby-Rock outcrop complex, 30 to 60 percent slopes	94.0	2.9%
15	Bigarm-Hogsby-Rock outcrop complex, 30 to 60 percent slopes	387.7	11.8%
17	Bohnly silt loam, 0 to 2 percent slopes	117.7	3.6%
19	Borohemists, 0 to 1 percent slopes	77.6	2.4%
22	Colake silt loam, 0 to 1 percent slopes	3.4	0.1%
23	Colake silt loam, drained, 0 to 1 percent slopes	116.7	3.5%
39	Dryfork silt loam, 0 to 4 percent slopes	60.7	1.8%
66	Gird-Vincom silt loams, 4 to 8 percent slopes	11.2	0.3%
67	Gird-Vincom silt loams, 8 to 15 percent slopes	72.2	2.2%
72	Hogsby-Rock outcrop complex, 15 to 45 percent slopes	95.8	2.9%
81	Jocko gravelly loam, 0 to 4 percent slopes	515.6	15.6%
82	Jocko gravelly loam, 4 to 15 percent slopes	141.0	4.3%
84	Kerl loam, 2 to 4 percent slopes	5.3	0.2%
93	Lamoose loam, 0 to 2 percent slopes	134.8	4.1%
101	McCollum fine sandy loam, 0 to 2 percent slopes	53.6	1.6%
102	McCollum fine sandy loam, 2 to 4 percent slopes	28.4	0.9%
103	McCollum fine sandy loam, 4 to 8 percent slopes	6.7	0.2%
104	McCollum fine sandy loam, gravelly substratum, 0 to 2 percent slopes	118.5	3.6%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
120	Niarada gravelly loam, 0 to 4 percent slopes	87.1	2.6%
122	Niarada gravelly loam, 8 to 15 percent slopes	42.3	1.3%
123	Niarada gravelly loam, cool, 15 to 30 percent slopes	211.5	6.4%
124	Niarada gravelly loam, cool, 30 to 60 percent slopes	3.1	0.1%
125	Niarada-Kerl complex, 8 to 15 percent slopes	9.7	0.3%
126	Ninepipe silt loam, 0 to 2 percent slopes	187.4	5.7%
132	Polson-Vincom silt loams, 4 to 8 percent slopes	17.4	0.5%
155	Sacheen loamy fine sand, 0 to 8 percent slopes	9.9	0.3%
160	Selow silty clay loam, 0 to 2 percent slopes	45.3	1.4%
165	Truscreek silt loam, 0 to 2 percent slopes	16.3	0.5%
170	Vincom silt loam, 15 to 60 percent slopes	189.5	5.7%
175	Walstead gravelly loam, 2 to 4 percent slopes	8.3	0.3%
186	Winkler very gravelly loam, cool, 30 to 60 percent slopes	5.2	0.2%
188	Xerofluvents, 0 to 2 percent slopes	60.0	1.8%
Totals for Area of Interest		3,296.9	100.0%

Map Unit Descriptions (Arlee Lagoons)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

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Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion

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of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Lake County Area, Montana

6—Belton silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 4w4k
Elevation: 2,500 to 3,600 feet
Mean annual precipitation: 10 to 22 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 105 to 135 days
Farmland classification: Farmland of local importance

Map Unit Composition

Belton and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Belton

Setting

Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Glaciolacustrine deposits

Typical profile

Ap - 0 to 8 inches: silt loam
Bt/E - 8 to 10 inches: silty clay loam
Btn - 10 to 19 inches: silty clay
Bkn - 19 to 29 inches: silty clay
C - 29 to 60 inches: silty clay loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 40.0
Available water supply, 0 to 60 inches: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Minor Components

Kerl

Percent of map unit: 5 percent
Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB032MT - Loamy (Lo) LRU 44A-B
Hydric soil rating: No

Round butte

Percent of map unit: 5 percent
Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AA001MT - Clayey (Cy) LRU 44A-A
Hydric soil rating: No

Post

Percent of map unit: 5 percent
Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB032MT - Loamy (Lo) LRU 44A-B
Hydric soil rating: No

7—Belton silt loam, 15 to 35 percent slopes

Map Unit Setting

National map unit symbol: 4w5q
Elevation: 2,500 to 3,600 feet
Mean annual precipitation: 10 to 22 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 105 to 135 days
Farmland classification: Not prime farmland

Map Unit Composition

Belton and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Belton

Setting

Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Glaciolacustrine deposits

Custom Soil Resource Report

Typical profile

Ap - 0 to 8 inches: silt loam
Bt/E - 8 to 10 inches: silty clay loam
Btn - 10 to 19 inches: silty clay
Bkn - 19 to 29 inches: silty clay
C - 29 to 60 inches: silty clay loam

Properties and qualities

Slope: 15 to 35 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 40.0
Available water supply, 0 to 60 inches: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Minor Components

Kerl

Percent of map unit: 5 percent
Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB032MT - Loamy (Lo) LRU 44A-B
Hydric soil rating: No

Post

Percent of map unit: 5 percent
Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB032MT - Loamy (Lo) LRU 44A-B
Hydric soil rating: No

Round butte

Percent of map unit: 5 percent
Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AA001MT - Clayey (Cy) LRU 44A-A
Hydric soil rating: No

9—Belton-Kerl silt loams, 4 to 8 percent slopes

Map Unit Setting

National map unit symbol: 4w85
Elevation: 2,500 to 4,900 feet
Mean annual precipitation: 10 to 19 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 135 days
Farmland classification: Farmland of local importance

Map Unit Composition

Belton and similar soils: 45 percent
Kerl and similar soils: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Belton

Setting

Landform: Till plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Glaciolacustrine deposits

Typical profile

Ap - 0 to 9 inches: silt loam
Btn - 9 to 13 inches: silty clay
Bkn - 13 to 29 inches: silty clay
C - 29 to 60 inches: silty clay loam

Properties and qualities

Slope: 4 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 40.0
Available water supply, 0 to 60 inches: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Description of Kerl

Setting

Landform: Till plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Glaciolacustrine deposits

Typical profile

A - 0 to 7 inches: silt loam
Bw - 7 to 20 inches: gravelly loam
Bk - 20 to 60 inches: gravelly loam

Properties and qualities

Slope: 4 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 11.0 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Minor Components

Ninepipe

Percent of map unit: 5 percent
Landform: Till plains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Polson

Percent of map unit: 5 percent
Landform: Till plains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Round butte, moist

Percent of map unit: 3 percent
Landform: Till plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AA001MT - Clayey (Cy) LRU 44A-A
Hydric soil rating: No

Niarada

Percent of map unit: 2 percent
Landform: Till plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB032MT - Loamy (Lo) LRU 44A-B
Hydric soil rating: No

13—Bigarm, cool-Hogsby-Rock outcrop complex, 30 to 60 percent slopes

Map Unit Setting

National map unit symbol: 4vwy
Elevation: 2,600 to 6,000 feet
Mean annual precipitation: 14 to 19 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 120 days
Farmland classification: Not prime farmland

Map Unit Composition

Bigarm and similar soils: 55 percent
Hogsby and similar soils: 20 percent
Rock outcrop: 15 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bigarm

Setting

Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Colluvium derived from argillite and/or colluvium derived from quartzite

Typical profile

A - 0 to 10 inches: gravelly loam
Bw - 10 to 24 inches: very gravelly loam
BC - 24 to 39 inches: very gravelly sandy loam
C - 39 to 60 inches: very gravelly sandy loam

Properties and qualities

Slope: 30 to 60 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches

Custom Soil Resource Report

Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: R043AP810MT - Upland Grassland Group
Hydric soil rating: No

Description of Hogsby

Setting

Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Colluvium

Typical profile

A1 - 0 to 5 inches: stony loam
A2 - 5 to 18 inches: extremely channery loam
R - 18 to 60 inches: bedrock

Properties and qualities

Slope: 30 to 60 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 1.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: R043AP805MT - Shallow Grassland Group
Hydric soil rating: No

Description of Rock Outcrop

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Minor Components

Niarada, 2

Percent of map unit: 10 percent
Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB032MT - Loamy (Lo) LRU 44A-B
Hydric soil rating: No

15—Bigarm-Hogsby-Rock outcrop complex, 30 to 60 percent slopes

Map Unit Setting

National map unit symbol: 575l
Elevation: 2,620 to 5,490 feet
Mean annual precipitation: 14 to 19 inches
Mean annual air temperature: 39 to 46 degrees F
Frost-free period: 70 to 100 days
Farmland classification: Not prime farmland

Map Unit Composition

Bigarm and similar soils: 40 percent
Hogsby and similar soils: 25 percent
Rock outcrop: 20 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bigarm

Setting

Landform: Hills
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Colluvium derived from argillite and/or quartzite

Typical profile

A1 - 0 to 5 inches: cobbly loam
A2 - 5 to 17 inches: very cobbly loam
Bw - 17 to 38 inches: very cobbly sandy loam
C - 38 to 60 inches: very cobbly loamy sand

Properties and qualities

Slope: 30 to 60 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: R043AA038MT - Droughty Steep (Drstp) LRU 43A-A

Custom Soil Resource Report

Hydric soil rating: No

Description of Hogsby

Setting

Landform: Hills

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Colluvium over residuum weathered from argillite and/or quartzite

Typical profile

A - 0 to 9 inches: cobbly loam

Bw - 9 to 12 inches: very cobbly loam

C - 12 to 17 inches: extremely channery loam

R - 17 to 60 inches: bedrock

Properties and qualities

Slope: 30 to 60 percent

Depth to restrictive feature: 10 to 20 inches to lithic bedrock

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high
(0.01 to 0.57 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: D

Ecological site: R043AA138MT - Shallow Droughty (Swdr) LRU 43A-A

Hydric soil rating: No

Description of Rock Outcrop

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydric soil rating: Unranked

Minor Components

Rubble land

Percent of map unit: 5 percent

Hydric soil rating: Unranked

Bigarm, greater slopes

Percent of map unit: 5 percent

Landform: Hills

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: R043AA038MT - Droughty Steep (Drstp) LRU 43A-A

Hydric soil rating: No

Finleypoint

Percent of map unit: 5 percent

Custom Soil Resource Report

Landform: Hills

Down-slope shape: Linear

Across-slope shape: Linear

Other vegetative classification: Douglas-fir/snowberry-pinegrass phase (PK312),
Douglas-fir/ninebark-ninebark phase (PK261)

Hydric soil rating: No

17—Bohnly silt loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 4vys

Elevation: 2,500 to 3,800 feet

Mean annual precipitation: 14 to 30 inches

Mean annual air temperature: 39 to 45 degrees F

Frost-free period: 70 to 130 days

Farmland classification: Not prime farmland

Map Unit Composition

Bohnly and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bohnly

Setting

Landform: Flood plains

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Silty alluvium

Typical profile

A - 0 to 8 inches: silt loam

Bw - 8 to 36 inches: silt loam

Cg1 - 36 to 46 inches: silt loam

Cg2 - 46 to 49 inches: silt loam

Cg3 - 49 to 52 inches: fine sand

Cg4 - 52 to 56 inches: silt loam

Cg5 - 56 to 60 inches: fine sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Poorly drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)

Depth to water table: About 6 to 24 inches

Frequency of flooding: Occasional

Frequency of ponding: None

Custom Soil Resource Report

Available water supply, 0 to 60 inches: High (about 10.4 inches)

Interpretive groups

*Land capability classification (irrigated): 5w
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: R044AP801MT - Bottomland Group
Hydric soil rating: Yes*

Minor Components

Colake

*Percent of map unit: 8 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AP806MT - Subirrigated Grassland Group
Hydric soil rating: No*

Borochemists and similar soils

*Percent of map unit: 2 percent
Landform: Channels
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R043AP807MT - Subirrigated Grassland Group, R044AP806MT -
Subirrigated Grassland Group
Hydric soil rating: Yes*

19—Borochemists, 0 to 1 percent slopes

Map Unit Setting

*National map unit symbol: 4vzt
Elevation: 2,670 to 5,000 feet
Mean annual precipitation: 15 to 19 inches
Mean annual air temperature: 37 to 45 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland*

Map Unit Composition

*Borochemists and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Borochemists

Setting

*Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear*

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Depth to water table: About 0 to 12 inches
Frequency of flooding: Frequent
Frequency of ponding: None

Interpretive groups

Land capability classification (irrigated): None specified
Ecological site: R044AP801MT - Bottomland Group
Hydric soil rating: Yes

Minor Components

Somewhat poorly drained soils

Percent of map unit: 10 percent
Hydric soil rating: No

22—Colake silt loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 4w06
Elevation: 2,500 to 3,600 feet
Mean annual precipitation: 12 to 19 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 100 to 130 days
Farmland classification: Not prime farmland

Map Unit Composition

Colake and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Colake

Setting

Landform: Till plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Calcareous alluvium

Typical profile

A - 0 to 10 inches: silt loam
Bkg - 10 to 19 inches: silt loam
Cg - 19 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)

Depth to water table: About 12 to 24 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 40 percent

Available water supply, 0 to 60 inches: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: B/D

Ecological site: R043AP807MT - Subirrigated Grassland Group

Hydric soil rating: Yes

Minor Components

Bohnly

Percent of map unit: 8 percent

Landform: Depressions

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: R044AP806MT - Subirrigated Grassland Group

Hydric soil rating: Yes

Somewhat poorly drained soils

Percent of map unit: 7 percent

Ecological site: R044AP803MT - Saline-Sodic Grassland Group

Hydric soil rating: No

23—Colake silt loam, drained, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 4w07

Elevation: 2,400 to 3,600 feet

Mean annual precipitation: 14 to 19 inches

Mean annual air temperature: 39 to 45 degrees F

Frost-free period: 90 to 130 days

Farmland classification: Prime farmland if irrigated

Map Unit Composition

Colake and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Colake

Setting

Landform: Till plains

Down-slope shape: Linear

Across-slope shape: Linear

Custom Soil Resource Report

Parent material: Calcareous alluvium

Typical profile

A - 0 to 10 inches: silt loam
Bkg - 10 to 19 inches: silt loam
Cg - 19 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: About 24 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Available water supply, 0 to 60 inches: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: R044AP806MT - Subirrigated Grassland Group
Hydric soil rating: No

Minor Components

Jocko

Percent of map unit: 5 percent
Landform: Till plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB134MT - Shallow To Gravel (Swgr) LRU 44A-B
Hydric soil rating: No

Colake, undrained

Percent of map unit: 5 percent
Landform: Till plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AP806MT - Subirrigated Grassland Group
Hydric soil rating: Yes

Mccollum

Percent of map unit: 5 percent
Landform: Till plains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

39—Dryfork silt loam, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: 4w1n
Elevation: 2,500 to 3,100 feet
Mean annual precipitation: 10 to 14 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 105 to 120 days
Farmland classification: Farmland of local importance

Map Unit Composition

Dryfork and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dryfork

Setting

Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian deposits

Typical profile

A - 0 to 10 inches: silt loam
Bw - 10 to 16 inches: silt loam
Bk - 16 to 31 inches: silt loam
C - 31 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 40.0
Available water supply, 0 to 60 inches: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: B
Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Minor Components

Kerrdam

Percent of map unit: 4 percent
Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AA032MT - Loamy (Lo) LRU 44A-A
Hydric soil rating: No

Selow

Percent of map unit: 3 percent
Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AA001MT - Clayey (Cy) LRU 44A-A
Hydric soil rating: No

Irvine

Percent of map unit: 3 percent
Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

66—Gird-Vincom silt loams, 4 to 8 percent slopes

Map Unit Setting

National map unit symbol: 4w59
Elevation: 2,400 to 3,500 feet
Mean annual precipitation: 10 to 19 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 105 to 130 days
Farmland classification: Farmland of local importance

Map Unit Composition

Gird and similar soils: 55 percent
Vincom and similar soils: 35 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gird

Setting

Landform: Lake plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Glaciolacustrine deposits

Custom Soil Resource Report

Typical profile

Ap - 0 to 10 inches: silt loam
Bw - 10 to 17 inches: silt loam
Bk - 17 to 60 inches: silt loam

Properties and qualities

Slope: 4 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Description of Vincom

Setting

Landform: Lake plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Lacustrine deposits

Typical profile

A - 0 to 5 inches: silt loam
Bk - 5 to 22 inches: silt loam
C1 - 22 to 31 inches: silt loam
C2 - 31 to 41 inches: silty clay loam
C3 - 41 to 50 inches: silt loam
C4 - 50 to 60 inches: silty clay loam

Properties and qualities

Slope: 4 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 8 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 20.0
Available water supply, 0 to 60 inches: High (about 9.2 inches)

Interpretive groups

Land capability classification (irrigated): 4e

Custom Soil Resource Report

Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Minor Components

Truscreek

Percent of map unit: 4 percent
Landform: Lake plains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Selow

Percent of map unit: 3 percent
Landform: Lake plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AA001MT - Clayey (Cy) LRU 44A-A
Hydric soil rating: No

Dryfork

Percent of map unit: 3 percent
Landform: Lake plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AA032MT - Loamy (Lo) LRU 44A-A
Hydric soil rating: No

67—Gird-Vincom silt loams, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 4w5d
Elevation: 2,400 to 3,500 feet
Mean annual precipitation: 10 to 19 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 105 to 130 days
Farmland classification: Farmland of local importance

Map Unit Composition

Gird and similar soils: 50 percent
Vincom and similar soils: 40 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gird

Setting

Landform: Lake plains

Custom Soil Resource Report

Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Glaciolacustrine deposits

Typical profile

Ap - 0 to 10 inches: silt loam
Bw - 10 to 17 inches: silt loam
Bk - 17 to 60 inches: silt loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Description of Vincom

Setting

Landform: Lake plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Lacustrine deposits

Typical profile

A - 0 to 5 inches: silt loam
Bk - 5 to 22 inches: silt loam
C1 - 22 to 31 inches: silt loam
C2 - 31 to 41 inches: silty clay loam
C3 - 41 to 50 inches: silt loam
C4 - 50 to 60 inches: silty clay loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 8 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 20.0

Custom Soil Resource Report

Available water supply, 0 to 60 inches: High (about 9.2 inches)

Interpretive groups

Land capability classification (irrigated): 4e

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: C

Ecological site: R044AP808MT - Upland Grassland Group

Hydric soil rating: No

Minor Components

Truscreek

Percent of map unit: 3 percent

Landform: Lake plains

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

Selow

Percent of map unit: 3 percent

Landform: Lake plains

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: R044AA001MT - Clayey (Cy) LRU 44A-A

Hydric soil rating: No

Kerrdam

Percent of map unit: 2 percent

Landform: Lake plains

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: R044AA032MT - Loamy (Lo) LRU 44A-A

Hydric soil rating: No

Dryfork

Percent of map unit: 2 percent

Landform: Lake plains

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: R044AA032MT - Loamy (Lo) LRU 44A-A

Hydric soil rating: No

72—Hogsby-Rock outcrop complex, 15 to 45 percent slopes

Map Unit Setting

National map unit symbol: 4w68

Elevation: 2,600 to 6,000 feet

Mean annual precipitation: 15 to 25 inches

Mean annual air temperature: 41 to 46 degrees F

Frost-free period: 75 to 100 days

Custom Soil Resource Report

Farmland classification: Not prime farmland

Map Unit Composition

Hogsby and similar soils: 60 percent

Rock outcrop: 25 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hogsby

Setting

Landform: Mountains

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Colluvium

Typical profile

A1 - 0 to 5 inches: stony loam

A2 - 5 to 18 inches: extremely channery loam

R - 18 to 60 inches: bedrock

Properties and qualities

Slope: 15 to 45 percent

Depth to restrictive feature: 10 to 20 inches to lithic bedrock

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Very low (about 1.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: D

Ecological site: R043AP805MT - Shallow Grassland Group

Hydric soil rating: No

Description of Rock Outcrop

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydric soil rating: No

Minor Components

Bigarm

Percent of map unit: 5 percent

Landform: Mountains

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: R044AB032MT - Loamy (Lo) LRU 44A-B

Hydric soil rating: No

Finleypoint

Percent of map unit: 5 percent

Custom Soil Resource Report

Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Rubble land

Percent of map unit: 5 percent
Hydric soil rating: No

81—Jocko gravelly loam, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: 4w70
Elevation: 2,500 to 3,900 feet
Mean annual precipitation: 14 to 22 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 120 days
Farmland classification: Farmland of local importance

Map Unit Composition

Jocko and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Jocko

Setting

Landform: Outwash plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Outwash

Typical profile

A - 0 to 13 inches: gravelly loam
Bw1 - 13 to 19 inches: very gravelly loam
Bw2 - 19 to 25 inches: very gravelly loamy sand
Bk - 25 to 60 inches: extremely gravelly coarse sand

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Minor Components

Jocko, very gravelly loam

Percent of map unit: 5 percent
Landform: Outwash plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB134MT - Shallow To Gravel (Swgr) LRU 44A-B
Hydric soil rating: No

Lamoose

Percent of map unit: 5 percent
Landform: Outwash plains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Walstead

Percent of map unit: 5 percent
Landform: Outwash plains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

82—Jocko gravelly loam, 4 to 15 percent slopes

Map Unit Setting

National map unit symbol: 4w71
Elevation: 2,400 to 3,600 feet
Mean annual precipitation: 14 to 19 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 130 days
Farmland classification: Farmland of local importance

Map Unit Composition

Jocko and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Jocko

Setting

Landform: Outwash plains

Custom Soil Resource Report

Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Outwash

Typical profile

A - 0 to 13 inches: gravelly loam
Bw1 - 13 to 19 inches: very gravelly loam
Bw2 - 19 to 25 inches: very gravelly loamy sand
Bk - 25 to 60 inches: extremely gravelly coarse sand

Properties and qualities

Slope: 4 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Minor Components

Kerl

Percent of map unit: 6 percent
Landform: Outwash plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB032MT - Loamy (Lo) LRU 44A-B
Hydric soil rating: No

Mccollum

Percent of map unit: 6 percent
Landform: Outwash plains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Jocko, stony loam

Percent of map unit: 3 percent
Landform: Outwash plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB134MT - Shallow To Gravel (Swgr) LRU 44A-B
Hydric soil rating: No

84—Kerl loam, 2 to 4 percent slopes

Map Unit Setting

National map unit symbol: 4w7d
Elevation: 2,400 to 4,900 feet
Mean annual precipitation: 14 to 19 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 135 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Kerl and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kerl

Setting

Landform: Stream terraces, alluvial fans
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Glaciofluvial deposits

Typical profile

A - 0 to 7 inches: silt loam
Bw - 7 to 20 inches: gravelly loam
Bk - 20 to 60 inches: gravelly loam

Properties and qualities

Slope: 2 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 11.0 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Minor Components

Gird

Percent of map unit: 4 percent
Landform: Stream terraces, alluvial fans
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Belton

Percent of map unit: 4 percent
Landform: Stream terraces, alluvial fans
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Polson

Percent of map unit: 4 percent
Landform: Stream terraces, alluvial fans
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Niarada

Percent of map unit: 3 percent
Landform: Alluvial fans, stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB032MT - Loamy (Lo) LRU 44A-B
Hydric soil rating: No

93—Lamoose loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 4w8f
Elevation: 2,500 to 3,500 feet
Mean annual precipitation: 14 to 19 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 90 to 120 days
Farmland classification: Not prime farmland

Map Unit Composition

Lamoose and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lamoose

Setting

Landform: Flood plains

Custom Soil Resource Report

Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

Ap - 0 to 7 inches: loam
Bg - 7 to 19 inches: gravelly loam
2C - 19 to 60 inches: very gravelly loamy sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: R044AP801MT - Bottomland Group
Hydric soil rating: Yes

Minor Components

Areas that frequently flood

Percent of map unit: 5 percent
Hydric soil rating: No

Jocko

Percent of map unit: 5 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB134MT - Shallow To Gravel (Swgr) LRU 44A-B
Hydric soil rating: No

Areas that rarely flood

Percent of map unit: 5 percent
Hydric soil rating: No

101—McCollum fine sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 4vww
Elevation: 2,300 to 3,400 feet

Custom Soil Resource Report

Mean annual precipitation: 14 to 24 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 105 to 130 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Mccollum and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mccollum

Setting

Landform: Stream terraces, alluvial fans
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

Ap - 0 to 7 inches: fine sandy loam
Bw1 - 7 to 29 inches: fine sandy loam
Bw2 - 29 to 60 inches: fine sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.1 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Minor Components

Selon

Percent of map unit: 10 percent
Landform: Stream terraces, alluvial fans
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

102—McCollum fine sandy loam, 2 to 4 percent slopes

Map Unit Setting

National map unit symbol: 4vvx
Elevation: 1,300 to 4,600 feet
Mean annual precipitation: 14 to 20 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 105 to 130 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Mccollum and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mccollum

Setting

Landform: Stream terraces, alluvial fans
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

Ap - 0 to 7 inches: fine sandy loam
Bw1 - 7 to 29 inches: fine sandy loam
Bw2 - 29 to 60 inches: fine sandy loam

Properties and qualities

Slope: 2 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.1 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Minor Components

Gird

Percent of map unit: 10 percent
Landform: Stream terraces, alluvial fans
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Sacheen

Percent of map unit: 5 percent
Landform: Stream terraces, alluvial fans
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

103—McCollum fine sandy loam, 4 to 8 percent slopes

Map Unit Setting

National map unit symbol: 4vvy
Elevation: 2,400 to 3,500 feet
Mean annual precipitation: 14 to 19 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 105 to 130 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Mccollum and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mccollum

Setting

Landform: Stream terraces, alluvial fans
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

Ap - 0 to 7 inches: fine sandy loam
Bw1 - 7 to 29 inches: fine sandy loam
Bw2 - 29 to 60 inches: fine sandy loam

Properties and qualities

Slope: 4 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)

Custom Soil Resource Report

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.1 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Minor Components

Gird

Percent of map unit: 10 percent
Landform: Stream terraces, alluvial fans
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

104—McCollum fine sandy loam, gravelly substratum, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 4vvz
Elevation: 1,300 to 4,600 feet
Mean annual precipitation: 14 to 20 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 130 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Mccollum and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mccollum

Setting

Landform: Stream terraces, alluvial fans
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

Ap - 0 to 7 inches: fine sandy loam
Bw1 - 7 to 29 inches: fine sandy loam
Bw2 - 29 to 42 inches: fine sandy loam
2C - 42 to 60 inches: very gravelly sandy loam

Custom Soil Resource Report

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.7 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Minor Components

Jocko

Percent of map unit: 10 percent
Landform: Alluvial fans, stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB134MT - Shallow To Gravel (Swgr) LRU 44A-B
Hydric soil rating: No

Sacheen

Percent of map unit: 5 percent
Landform: Alluvial fans, stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB110MT - Sandy (Sy) LRU 44A-B
Hydric soil rating: No

120—Niarada gravelly loam, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: 4vwl
Elevation: 2,500 to 4,900 feet
Mean annual precipitation: 14 to 19 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 90 to 130 days
Farmland classification: Farmland of local importance

Map Unit Composition

Niarada and similar soils: 85 percent
Minor components: 15 percent

Custom Soil Resource Report

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Niarada

Setting

Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

Ap - 0 to 7 inches: gravelly loam
Bw - 7 to 14 inches: very gravelly loam
Bk - 14 to 60 inches: very gravelly loam

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: R043AP810MT - Upland Grassland Group
Hydric soil rating: No

Minor Components

Niarada, stony loam

Percent of map unit: 5 percent
Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB032MT - Loamy (Lo) LRU 44A-B
Hydric soil rating: No

Jocko

Percent of map unit: 5 percent
Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB134MT - Shallow To Gravel (Swgr) LRU 44A-B
Hydric soil rating: No

Kerl

Percent of map unit: 5 percent
Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear

Custom Soil Resource Report

Ecological site: R044AB032MT - Loamy (Lo) LRU 44A-B
Hydric soil rating: No

122—Niarada gravelly loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 4vwp
Elevation: 2,400 to 4,900 feet
Mean annual precipitation: 14 to 19 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 130 days
Farmland classification: Farmland of local importance

Map Unit Composition

Niarada and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Niarada

Setting

Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Glacial till

Typical profile

Ap - 0 to 7 inches: gravelly loam
Bw - 7 to 14 inches: very gravelly loam
Bk - 14 to 60 inches: very gravelly loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: R043AP810MT - Upland Grassland Group
Hydric soil rating: No

Minor Components

Niarada, stony loam

Percent of map unit: 5 percent
Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB032MT - Loamy (Lo) LRU 44A-B
Hydric soil rating: No

Mccollum

Percent of map unit: 5 percent
Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Jocko

Percent of map unit: 5 percent
Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB134MT - Shallow To Gravel (Swgr) LRU 44A-B
Hydric soil rating: No

123—Niarada gravelly loam, cool, 15 to 30 percent slopes

Map Unit Setting

National map unit symbol: 4vwq
Elevation: 2,500 to 6,000 feet
Mean annual precipitation: 14 to 19 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 120 days
Farmland classification: Not prime farmland

Map Unit Composition

Niarada and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Niarada

Setting

Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Glacial till

Typical profile

Ap - 0 to 7 inches: gravelly loam

Custom Soil Resource Report

A - 7 to 14 inches: very gravelly loam
Bw - 14 to 18 inches: very gravelly loam
Bk - 18 to 60 inches: very gravelly loam

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: R043AP810MT - Upland Grassland Group
Hydric soil rating: No

Minor Components

Hogsby

Percent of map unit: 5 percent
Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AP805MT - Shallow Grassland Group
Hydric soil rating: No

Jocko

Percent of map unit: 5 percent
Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB134MT - Shallow To Gravel (Swgr) LRU 44A-B
Hydric soil rating: No

Niarada, stony loam

Percent of map unit: 3 percent
Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB032MT - Loamy (Lo) LRU 44A-B
Hydric soil rating: No

Rock outcrop

Percent of map unit: 2 percent
Hydric soil rating: No

124—Niarada gravelly loam, cool, 30 to 60 percent slopes

Map Unit Setting

National map unit symbol: 4vwr
Elevation: 2,700 to 6,000 feet
Mean annual precipitation: 14 to 22 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 120 days
Farmland classification: Not prime farmland

Map Unit Composition

Niarada and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Niarada

Setting

Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Glacial till

Typical profile

Ap - 0 to 7 inches: gravelly loam
A - 7 to 14 inches: very gravelly loam
Bw - 14 to 18 inches: very gravelly loam
Bk - 18 to 60 inches: very gravelly loam

Properties and qualities

Slope: 30 to 60 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: R043AP810MT - Upland Grassland Group
Hydric soil rating: No

Minor Components

Hogsby

Percent of map unit: 5 percent
Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AP805MT - Shallow Grassland Group
Hydric soil rating: No

Flott

Percent of map unit: 5 percent
Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Walstead

Percent of map unit: 3 percent
Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Rock outcrop

Percent of map unit: 2 percent
Hydric soil rating: No

125—Niarada-Kerl complex, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 4vws
Elevation: 2,600 to 4,900 feet
Mean annual precipitation: 14 to 19 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 135 days
Farmland classification: Farmland of local importance

Map Unit Composition

Niarada and similar soils: 50 percent
Kerl and similar soils: 40 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Niarada

Setting

Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear

Custom Soil Resource Report

Parent material: Glacial till

Typical profile

Ap - 0 to 7 inches: gravelly loam
Bw - 7 to 14 inches: very gravelly loam
Bk - 14 to 60 inches: very gravelly loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Description of Kerl

Setting

Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Glacial till

Typical profile

A - 0 to 7 inches: silt loam
Bw - 7 to 20 inches: gravelly loam
Bk - 20 to 60 inches: gravelly loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 11.0 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: R044AP808MT - Upland Grassland Group

Custom Soil Resource Report

Hydric soil rating: No

Minor Components

Ninepipe

Percent of map unit: 4 percent

Landform: Moraines

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

Niarada, stony loam

Percent of map unit: 3 percent

Landform: Stream terraces

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: R044AB032MT - Loamy (Lo) LRU 44A-B

Hydric soil rating: No

Polson

Percent of map unit: 3 percent

Landform: Moraines

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

126—Ninepipe silt loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 4vwt

Elevation: 2,500 to 4,300 feet

Mean annual precipitation: 14 to 19 inches

Mean annual air temperature: 39 to 45 degrees F

Frost-free period: 100 to 135 days

Farmland classification: Prime farmland if irrigated

Map Unit Composition

Ninepipe and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ninepipe

Setting

Landform: Drainageways, alluvial fans, stream terraces

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium

Custom Soil Resource Report

Typical profile

Ap - 0 to 10 inches: silt loam
Bw1 - 10 to 28 inches: silt loam
Bw2 - 28 to 41 inches: silty clay loam
C - 41 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: About 48 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.6 inches)

Interpretive groups

Land capability classification (irrigated): 2c
Land capability classification (nonirrigated): 3c
Hydrologic Soil Group: B
Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Minor Components

Belton

Percent of map unit: 10 percent
Landform: Alluvial fans, stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Bohnly

Percent of map unit: 5 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AP806MT - Subirrigated Grassland Group
Hydric soil rating: Yes

132—Polson-Vincom silt loams, 4 to 8 percent slopes

Map Unit Setting

National map unit symbol: 4vx2
Elevation: 2,400 to 4,300 feet
Mean annual precipitation: 10 to 19 inches
Mean annual air temperature: 39 to 45 degrees F

Custom Soil Resource Report

Frost-free period: 105 to 135 days

Farmland classification: Farmland of local importance

Map Unit Composition

Polson and similar soils: 70 percent

Vincom and similar soils: 15 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Polson

Setting

Landform: Stream terraces, alluvial fans

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Glaciolacustrine deposits

Typical profile

Ap - 0 to 10 inches: silt loam

Btn - 10 to 18 inches: silt loam

Bkn - 18 to 60 inches: silt loam

Properties and qualities

Slope: 4 to 8 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 15 percent

Maximum salinity: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)

Sodium adsorption ratio, maximum: 30.0

Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C

Ecological site: R043AP810MT - Upland Grassland Group

Hydric soil rating: No

Description of Vincom

Setting

Landform: Alluvial fans, stream terraces

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Glaciolacustrine deposits

Typical profile

A - 0 to 5 inches: silt loam

Bk - 5 to 22 inches: silt loam

C1 - 22 to 31 inches: silt loam

C2 - 31 to 41 inches: silty clay loam

C3 - 41 to 50 inches: silt loam

Custom Soil Resource Report

C4 - 50 to 60 inches: silty clay loam

Properties and qualities

Slope: 4 to 8 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 8 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum: 20.0

Available water supply, 0 to 60 inches: High (about 9.2 inches)

Interpretive groups

Land capability classification (irrigated): 4e

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: C

Ecological site: R043AP810MT - Upland Grassland Group

Hydric soil rating: No

Minor Components

Gird

Percent of map unit: 5 percent

Landform: Stream terraces, alluvial fans

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

Ninepipe

Percent of map unit: 5 percent

Landform: Alluvial fans, stream terraces

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

Truscreek

Percent of map unit: 5 percent

Landform: Alluvial fans, stream terraces

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

155—Sacheen loamy fine sand, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 4vy7

Custom Soil Resource Report

Elevation: 1,300 to 4,600 feet
Mean annual precipitation: 14 to 20 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 105 to 130 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Sacheen and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sacheen

Setting

Landform: Dunes
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian deposits

Typical profile

O_i - 0 to 1 inches: mucky peat
A - 1 to 5 inches: loamy fine sand
C - 5 to 60 inches: loamy fine sand

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (K_{sat}): Moderately high to high
(1.42 to 7.09 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Minor Components

Mccollum

Percent of map unit: 10 percent
Landform: Dunes
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

160—Selow silty clay loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 4vyf
Elevation: 2,400 to 3,300 feet
Mean annual precipitation: 10 to 18 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 105 to 135 days
Farmland classification: Farmland of local importance

Map Unit Composition

Selow and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Selow

Setting

Landform: Lake plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Glaciolacustrine deposits

Typical profile

Ap - 0 to 9 inches: silty clay loam
Btn - 9 to 15 inches: silty clay loam
Bkn - 15 to 20 inches: silty clay loam
2C1 - 20 to 28 inches: silt loam
2C2 - 28 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to slightly saline (1.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 40.0
Available water supply, 0 to 60 inches: High (about 9.4 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: D
Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Minor Components

Mccollum

Percent of map unit: 7 percent
Landform: Lake plains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Polson

Percent of map unit: 6 percent
Landform: Lake plains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Selow, gravelly substratum

Percent of map unit: 2 percent
Landform: Lake plains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

165—Truscreek silt loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 4vym
Elevation: 2,400 to 3,500 feet
Mean annual precipitation: 14 to 19 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 105 to 135 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Truscreek and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Truscreek

Setting

Landform: Alluvial fans, stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Glaciofluvial deposits

Typical profile

Ap1 - 0 to 8 inches: silt loam
Ap2 - 8 to 12 inches: silt loam
Bw - 12 to 24 inches: silt loam

Custom Soil Resource Report

Bk - 24 to 32 inches: silt loam

C - 32 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

*Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)*

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 20 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): 2e

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: B

Ecological site: R044AP808MT - Upland Grassland Group

Hydric soil rating: No

Minor Components

Belton

Percent of map unit: 5 percent

Landform: Stream terraces, alluvial fans

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

Gird

Percent of map unit: 5 percent

Landform: Stream terraces, alluvial fans

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

Polson

Percent of map unit: 5 percent

Landform: Stream terraces, alluvial fans

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

170—Vincom silt loam, 15 to 60 percent slopes

Map Unit Setting

National map unit symbol: 4vyt

Elevation: 2,000 to 3,300 feet

Custom Soil Resource Report

Mean annual precipitation: 10 to 19 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 100 to 135 days
Farmland classification: Not prime farmland

Map Unit Composition

Vincom and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Vincom

Setting

Landform: Lake plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Lacustrine deposits

Typical profile

A - 0 to 5 inches: silt loam
Bk - 5 to 22 inches: silt loam
C1 - 22 to 31 inches: silt loam
C2 - 31 to 41 inches: silty clay loam
C3 - 41 to 50 inches: silt loam
C4 - 50 to 60 inches: silty clay loam

Properties and qualities

Slope: 15 to 60 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 8 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 20.0
Available water supply, 0 to 60 inches: High (about 9.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: R044AA162MT - Thin Loamy (Tlo) LRU 44A-A
Hydric soil rating: No

Minor Components

Truscreek

Percent of map unit: 3 percent
Landform: Lake plains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Polson

Percent of map unit: 3 percent
Landform: Lake plains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Lonepine

Percent of map unit: 3 percent
Landform: Lake plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AA032MT - Loamy (Lo) LRU 44A-A
Hydric soil rating: No

Badland, lake sediment outcrop

Percent of map unit: 2 percent
Hydric soil rating: No

Irvine

Percent of map unit: 2 percent
Landform: Lake plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AA161MT - Thin Clayey (Tcy) LRU 44A-A
Hydric soil rating: No

Vincom, gravelly loam

Percent of map unit: 2 percent
Landform: Lake plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AA032MT - Loamy (Lo) LRU 44A-A
Hydric soil rating: No

175—Walstead gravelly loam, 2 to 4 percent slopes

Map Unit Setting

National map unit symbol: 4vz0
Elevation: 2,900 to 5,000 feet
Mean annual precipitation: 16 to 25 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 70 to 125 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Walstead and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Walstead

Setting

Landform: Alluvial fans
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

A - 0 to 8 inches: gravelly loam
AB - 8 to 15 inches: gravelly loam
Bw - 15 to 36 inches: very gravelly loam
Bk - 36 to 60 inches: very gravelly sandy loam

Properties and qualities

Slope: 2 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: R043AP810MT - Upland Grassland Group
Hydric soil rating: No

Minor Components

Finleypoint

Percent of map unit: 5 percent
Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Flott

Percent of map unit: 5 percent
Landform: Alluvial fans
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Mcdonald

Percent of map unit: 5 percent
Landform: Alluvial fans
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

186—Winkler very gravelly loam, cool, 30 to 60 percent slopes

Map Unit Setting

National map unit symbol: 4vzn
Elevation: 2,900 to 5,600 feet
Mean annual precipitation: 16 to 30 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 70 to 105 days
Farmland classification: Not prime farmland

Map Unit Composition

Winkler and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Winkler

Setting

Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Colluvium

Typical profile

Oi - 0 to 1 inches: mucky peat
A - 1 to 5 inches: very gravelly loam
E - 5 to 25 inches: very gravelly sandy loam
E and Bt - 25 to 60 inches: extremely gravelly sandy loam

Properties and qualities

Slope: 30 to 60 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(1.42 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: F043AP911MT - Upland Warm Woodland Group
Hydric soil rating: No

Minor Components

Finleypoint

Percent of map unit: 5 percent
Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Sharrott

Percent of map unit: 4 percent
Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Wildgen

Percent of map unit: 3 percent
Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Rock outcrop

Percent of map unit: 3 percent
Hydric soil rating: No

188—Xerofluvents, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 4vzq
Elevation: 2,500 to 3,440 feet
Mean annual precipitation: 13 to 18 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 105 to 120 days
Farmland classification: Not prime farmland

Map Unit Composition

Xerofluvents and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Xerofluvents

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Depth to water table: More than 80 inches
Frequency of flooding: Frequent
Frequency of ponding: None

Custom Soil Resource Report

Interpretive groups

Land capability classification (irrigated): None specified

Ecological site: R044AP801MT - Bottomland Group

Hydric soil rating: No

Minor Components

Poorly drained soils

Percent of map unit: 10 percent

Landform: Flood plains

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: R044AP806MT - Subirrigated Grassland Group

Hydric soil rating: Yes

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- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>

Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

MONTANA WELL LOG REPORT

Form No. 603 R2-99

Well ID# _____

16N 20W 2 CC

This log reports the activities of a licensed Montana well driller and serves as the official record of work done within the borehole and casing and describes the amount of water encountered. **This form is to be completed by the driller and filed with DNRC within 60 days of completion of the work.** **Acquiring Water Rights is the well owner's responsibility and is not accomplished by the filing of this report.**

Well log information is stored in the Groundwater Information Center at the Montana Bureau of Mines and Geology (Butte) and water right information is stored in the Water Rights Bureau records (Helena).

For fields that are not applicable, enter NA. Optional fields have a grayed background. Record additional information in the REMARKS section.

1. WELL OWNER:

Name Scott Schall

Mailing address Box 172

Urlee, MT 59821

2. WELL LOCATION:

List ¼ from smallest to largest

¼ SW ¼ SE ¼ Section 2

Township ___ N/S Range ___ E/W County Lake

Lot ___, Tract/Blk ___ Subdivision Name _____

Well Address _____

GPS Yes No

Latitude _____ Longitude _____

Error as reported by GPS locator (± feet) _____

Horizontal datum NAD27 WGS84

3. PROPOSED USE:

Domestic Stock Irrigation
 Public water supply Monitoring Well Other: _____

4. TYPE OF WORK:

New well Deepen existing well Abandon existing well
Method: Cable Rotary Other: _____

5. WELL CONSTRUCTION DETAILS:

Borehole:

Dia. 6 in. from 0 ft. to 220 ft.
Dia. _____ in. from _____ ft. to _____ ft.
Dia. _____ in. from _____ ft. to _____ ft.

Casing:

Steel: Wall thickness .250 Threaded Welded
Dia. 6 3/8 in. from 192 ft. to 40 ft.
Dia. _____ in. from _____ ft. to _____ ft.

Plastic: Pressure Rating _____ lbs. Threaded Welded
Dia. 4 in. from 20 ft. to 220 ft.

Perforations/Slotted Pipe:

Type of perforator used _____
Size of perforations/slots _____ in. by _____ in.
____ no. of perforations/slots from _____ ft. to _____ ft.
____ no. of perforations/slots from _____ ft. to _____ ft.

Screens:

Yes No
Material _____
Dia. _____ Slot size _____ from _____ ft. to _____ ft.
Dia. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel Packed:

Yes No
Size of gravel _____
Gravel placed from _____ ft. to _____ ft.

Packer:

Yes No
Type _____ Depth(s) _____

Grout:

Material used Special Per. Poly 36-21-654
Depth from _____ ft. to _____ ft. OR Continuous feed

6. WELL TEST DATA:

A well test is required for all wells. (See details on well log report cover.)

Static water level 48 ft. below top of casing OR
 Closed-in artesian pressure _____ psi.
How was test flow measured:
____ bucket/stopwatch, weir, flume, flowmeter, etc.

Yellowstone Controlled Groundwater Area - Water Temperature _____ °F

AQUIFER TEST DATA FORM ATTACHED

Test - 1 hour minimum

Drawdown is the amount water level is lowered below static level. All depth measurements shall be from the top of the well casing. Time of recovery is hours/minutes since pumping stopped.

Air test*
30 gpm with drill stem set at 220 ft. for 1 hours
Time of recovery 30 hrs/min. Recovery water level 48 ft.

OR Bailer test*

____ gpm with _____ ft. of drawdown after _____ hours
Time of recovery _____ hrs/min. Recovery water level _____ ft.

OR Pump test*

Depth pump set for test _____ ft.
____ gpm pump rate with _____ ft. of drawdown after _____ hrs pumping
Time of recovery _____ hrs/min. Recovery water level _____ ft.

OR Flowing Artesian*

____ gpm for _____ hours
Flow controlled by _____

*During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.

7. WELL LOG:

PL

Depth, Feet		Material:
From	To	color/rock and type/descriptor (example: blue/shale/hard, or brown/gravel/water, or brown/sand/heaving)
0	5	Dirt
5	20	Gravel
20	40	Clay & Sand
40	160	Purple Rock
160	170	Green Rock
170	220	Purple Rock

ADDITIONAL SHEETS ATTACHED

8. DATE WELL COMPLETED: 7-12-00

9. REMARKS: _____

10. DRILLER/CONTRACTOR'S CERTIFICATION:

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

MARTIN DRILLING

Name, firm, or corporation (print) _____ P.O. Box 873
Address _____ Seeley Lake, MT 59868
Signature Martin D. Miller (406) 677-2746
Date 11-22-00 License no. 289

MBMG ID#
191835



RECEIVED
OCT 2 1975
MONTANA Bureau of
State Land Resources

STATE OF MONTANA
Department of Natural Resources and Conservation

WH
PIN 034331
CA
GOLDENROD

WELL LOG REPORT

This form be filed by the water well driller on any water well completed on and after July 1, 1975 within sixty (60) days after completion of the well.

1. WELL OWNER: Name Harold E. King Address Box 322, Arlee, MT.

2. WELL LOCATION: County Lake; $\frac{1}{4}$, $\frac{1}{4}$, $\frac{1}{4}$, Sec. 2, Twp. 16 N-S, Rg. 20 E-W

3. PROPOSED USE: Domestic Stock Municipal Industrial Lawn and Garden
 Irrigation Other (if other, specify)

4. METHOD DRILLED: Cable Bored
 Forward Rotary Reverse Rotary
 Jetted Other (if other, specify)

8. WELL LOG:		Formation
Depth (ft.)		
From	To	
0	3	Top soil
3	7	Sand + Gravel Boulders Mixed
7	19	Argillite Rock formation fractured zone

5. WELL CONSTRUCTION:
Diameter of hole 6 inches. Depth 19 ft.
Casing: Steel Plastic Concrete
 Threaded Welded Other (if other, specify)
Pipe Weight: Dia.: From: To:
19 lb/ft. 0 inches 0 feet 19 feet
 lb/ft. inches feet feet
 lb/ft. inches feet feet
Was perforated pipe used? Yes No
Length of pipe perforated 12 feet
Was casing left open end? Yes No
Was a well screen installed? Yes No
Material Dia. inches
(stainless steel, bronze, etc.)
Perforation type: slots holes
Size 5" set from 12 feet to 19 feet
Size set from feet to feet
Size set from feet to feet
Was a packer or seal used? Yes No
If so, what material
Well type: Straight screen Graveled
Was the well grouted? Yes No
To what depth? 12 feet
Material used in grouting Natural
Well head completion: Pitless adapter
12" above grade Other
(If other, specify)
Was the well disinfected? Yes No

(Use separate sheet if necessary)
9. DATE STARTED: 3-3-75
10. DATE COMPLETED: 3-5-75
11. WAS WELL PLUGGED OR ABANDONED? Yes No
If so, how

6. WATER LEVEL:
Static water level 3 ft. below land surface
If flowing: closed-in pressure psi
GPM flow through inch pipe
Controlled by: Valve Reducers
 Other, specify

12. DRILLER'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge.
Pines Drilling 62
Driller's or Firm Name License No.
Box 81, Pinedale, MT
Address
Chris W. ... 3-5-75
Signed by Date

7. WELL TEST DATA: Pump Bailer Other
(If other, specify)
Pumping level below land surface:
14 ft. after 1/2 hrs. pumping 5 gpm
17 ft. after 2 hrs. pumping 3 gpm

Wallace

16N20W02D0A C

LAKE

Form No. 603 (R 2-89)

WELL LOG REPORT

File No. 6046

State law requires that the Bureau's copy be filed by the water well driller within 60 days after completion of the well.

762 C090134

646200

1. WELL OWNER Name Jim Crepeau

2. CURRENT MAILING ADDRESS Box 103755, Arlee, MT 59821

3. WELL LOCATION SW NE SE Section 2 Township 16 N/S Range 20 E/W County LAKE

4. PROPOSED USE: Domestic [x] Stock [] Irrigation [] Other [] specify

5. TYPE OF WORK: New well [x] Method: Dug [] Bored [] Deepened [] Cable [] Driven [x] Reconditioned [] Rotary [x] Jetted []

6. DIMENSIONS: Diameter of Hole Dia. in. from ft. to ft.

7. CONSTRUCTION DETAILS: Casing: Steel Dia. 6" from +2 ft. to 100 ft. Type A538 Wall Thickness .250

8. WELL HEAD COMPLETION: Pitless Adapter [] Yes [x] No

9. PUMP (if installed) Manufacturer's name Type Model No. HP.

10. WELL TEST DATA The information requested in this section is required for all wells. All depth measurements shall be from the top of the well casing.

f) Duration of test: Pumping time 1 hrs. g) Recovery time 1 hrs. h) Recovery water level 72 ft. at 1 hrs. after pumping stopped.

Wells intended to yield 100 gpm or more shall be tested for a period of 8 hours or more. The test shall follow the development of the well, and shall be conducted continuously at a constant discharge at least as great as the intended appropriation.

11. WAS WELL PLUGGED OR ABANDONED? Yes [] No [x] If yes, how?

12. WELL LOG Table with columns: Depth (ft.) From, To, Formation. Rows: 0-2 soil, 2-18 silt, sand, gravel, boulders, 18-36 sand, clay, 36-70 sand, gravel, 70-100 sand, gravel.

ATTACH ADDITIONAL SHEETS IF NECESSARY

13. DATE COMPLETED 4/6/94

14. DRILLER/CONTRACTOR'S CERTIFICATION This well was drilled under my jurisdiction and this report is true to the best of my knowledge. Jerose's Drilling Co., Inc. P.O. Box 4845, Missoula, MT 59806

PTC Project Manager Report April 3, 2024

Release Code	Facility Site Name	Facility Code	Legacy FID	Address	City
193	POLSON CONOCO	23015	24-06862	1st St E & US Hwy 93	Polson
194	HARBOUR PHARMACY	22965	24-05316	305 Main St	Polson
195	CHERRY VALLEY SCHOOL	22909	24-02867	107 8th Ave W	Polson
198	BEACON TIRE CENTER INC	22920	24-03406	49523 US Hwy 93	Polson
287	ST JOSEPH CONVALESCENT CENTER	22998	24-06496	14th Ave W & 1st St W	Polson
369	MOIESE MERCANTILE	22995	24-06382	64620 MT Hwy 212	Charlo
370	TOWN PUMP INC POLSON	23066	24-08717	50667 US Hwy 93	Polson
413	JOES JIFFY STOP	23038	24-07562	51356 US Hwy 93	Pablo
427	OLD UNION 76 STATION	22901	24-02625	4th Ave W & Main St	Polson
435	PACK RIVER LUMBER CO	22893	24-01831	51657 US Hwy 93	Polson
482	ARNIES GAS AND TIRE CENTER INC	22970	24-05517	63145 US Hwy 93	Ronan
487	PIER 93	22988	24-05957	49433 US Hwy 93	Polson
578	FINLEY POINT STORE	23003	24-06701	35427 MT Hwy 35	Polson
616	FORMER DUMONTIER OIL CO	22855	24-00530	27060 US Hwy 93 N	Ravalli
635	NEWGARD OIL CO INC	22945	24-04559	610 Main St	Polson
650	U OF M FLATHEAD LAKE BIOLOGICAL STATION	22853	24-00507	32125 Bio Station Ln	Polson
744	ALVIN W WOLFE	23124	24-10349	34598 Courville Trl	Polson
770	FORMER SALISH INN	23253	24-12393	110 Main St	Polson
798	TOLLEFSONS GARAGE	22861	24-00652	25-23 3rd Ave E	Pablo
806	OLGA JOHNSON	23117	24-10221	4th Ave E & 8th St E	Polson
823	CITY OF POLSON UST	23000	24-06558	112 1st Ave E	Polson
863	JEANNE NORMANDEAU	23189	24-11273	208 6th Ave E	Polson
873	MOUNTAIN WEST CO OP RONAN	22944	24-04530	63932 US Hwy 93	Ronan
927	DWAYNE and DAPHNE HOFSCHULTE	23263	24-12516	6th Ave SW & Round Butte Rd W	Ronan
1099	BIGFOOT DISCOUNT ALPHA DIST	23273	24-12641	1st St E & 2nd Ave E	Polson
1114	US POST OFFICE RONAN	23090	24-09908	222 Adams St SW	Ronan
1138	POLSON MIDDLE SCHOOL	22908	24-02866	111 4th Ave E	Polson
1178	BLUE BELL ANTIQUES	22902	24-02693	MT Hwy 200	Ravalli
1180	DYNO MART	22981	24-05768	62945 Hwy 93 N	Ronan
1189	RONAN CIT SHOP	23246	24-12053	119 2nd Ave SW	Ronan
1355	JOCKO VALLEY MEDICAL CENTER	22922	24-03553	US Hwy 93	Arlee
1395	MDOT SWAN LAKE SITE	23068	24-08739	24526 Highway 83	Swan Lake
1415	PAUL TAYLOR	23282	24-12802	US Hwy 93	Big Arm
1490	D A HERN	22997	24-06425	RR 1 Box 52	Polson
1536	RUEBEN HOVERSLAND RANCH	22921	24-03410	42616 Addy Ln	Ronan
1585	SAFEGWAY POLSON	23314	24-13105	104 2nd Ave E	Polson
1691	MAC MONT WAREHOUSE	23317	24-13137	801 5th St E	Polson
1740	JOHN LEE #1740	31134	2407153	189 Pierce Ln	Saint Ignatius
1761	PHILIP NORMAN	23338	24-13443	161 Westshore Dr	Polson
1799	MARY A PERSON	23107	24-10114	105 4th Ave W	Polson
1803	CENEX SUPPLY and MARKETING BULK PLANT	23047	24-07909	1407 US Hwy 93 S	Ronan
1905	LAKE COUNTY LANDFILL #1905	31043	2404690	Kerr Dam Rd	Polson
1931	RICHARD WALSH	23327	24-13294	34789 Compass Ln	Polson
1951	LASHER RESIDENCE	23316	24-13126	MT Hwy 35 MP 21	Polson

2020	MDOT RAVALLI MAINTENCE	23073	24-09296	Address Unavailable (DEQ_GEO_LOC_INFO : 37618)	Ravalli
2037	TOWN PUMP INC POLSON	23066	24-08717	50667 US Hwy 93	Polson
2089	GEORGE STONEHOCKER	23021	24-07167	48548 Haegg Ln	Ronan
2093	FRANK K MUTCH	23334	24-13391	11 3rd Ave W	Polson
2106	CHARLO SCHOOL DIST 7 J	22907	24-02789	405 2nd Ave E	Charlo
2131	POLSON OPTICAL BUILDING PARTNERSHIP	23331	24-13352	49487 US Hwy 93	Polson
2147	PABLO PIT #2147	31111	2403136	4 Miles S of Polson	Polson
2172	FORMER CONSOLIDATED DAIRIES OF RONAN	23335	24-13400	1317 Hwy 93 S	Ronan
2183	GEORGES BP UST	23035	24-07532	1018 US Hwy 93 S	Ronan
2189	NEWGARD OIL CO INC	22945	24-04559	610 Main St	Polson
2246	MAYNARD STEPHENS	22884	24-01564	133 Franklin St SW	Ronan
2283	RONAN TELEPHONE CO #2283	31095	2409648	Round Butte Rd	Ronan
2320	UNITED METHODIST CHURCH RONAN	22892	24-01794	512 Buchanan St SW	Ronan
2448	FORMER CONSOLIDATED DAIRIES OF RONAN	23335	24-13400	1317 Hwy 93 S	Ronan
2462	FORMER SALISH INN	23253	24-12393	110 Main St	Polson
2482	STARVIN MARVINS	23346	24-13581	US Hwy 93 & N Main Ave	Saint Ignatius
2495	DEAN E STIPE	22950	24-04681	Address Unavailable (DEQ_GEO_LOC_INFO : 37495)	Charlo
2497	STANDING ARROW TRADING POST INC	22928	24-03906	77070 US Hwy 93	Elmo
2519	LEE LODGE	22951	24-04691	515 Bayshore Dr	Polson
2531	GARY OR NORMA GRANLEY	22903	24-02705	207 Main St SW	Ronan
2546	DON AADSEN FORD INC	23028	24-07355	1718 US Hwy 93	Ronan
2571	GOODE SHIP FAMILY RESTAURANT	22896	24-02369	211 Main St	Polson
2672	MT DEPT OF STATE LANDS RURAL LOCATION	22917	24-03179	MT Hwy 83	Swan Lake
2680	DON AADSEN FORD INC PARTS and SERVICE	23348	24-13662	5 3rd Ave NW	Ronan
2682	EAGLES TRUSTEES	23349	24-13667	417 Main St	Polson
2684	MOUNTAIN VIEW CENEX	23153	24-10647	240 Mountain View Dr	Saint Ignatius
2720	PORT POLSON INN	23144	24-10501	49825 US Hwy 93	Polson
2828	MELVIN NELSON SAINT IGNATIUS	23343	24-13499	201 N Main St	Saint Ignatius
2852	SWAN RIVER FOREST CAMP	22878	24-01479	MT Hwy 83	Swan Lake
2917	KATHY KORF and DAN JURY	23333	24-13354	9 2nd Ave E	Polson
2983	EXXON 93	23014	24-06861	107 2nd Ave E	Polson
3096	BN RAVALLI MICROWAVE	23083	24-09556	Address Unavailable (DEQ_GEO_LOC_INFO : 37628)	Ravalli
3103	STUARTS SERVICE CENTER INC MAIN ST	23257	24-12446	153 N Main St	Saint Ignatius
3117	DON AADSEN FORD INC PARTS and SERVICE	23348	24-13662	5 3rd Ave NW	Ronan
3152	LAKE COUNTY REFUSE SHOP	23175	24-11060	54825 US Hwy 93	Polson
3165	OLD LAKE HOTEL PROPERTY	30483	56-13796	107 1st Ave E	Polson
3178	RONAN AUTO BODY SALES and SERVICE INC	22883	24-01551	703 US Hwy 93	Ronan
3190	BJORK DISTRIBUTING INC 7TH AVE E	23339	24-13447	500 7th Ave E	Polson
3193	MDOT ELMO MAINTENCE	23070	24-08741	MT Hwy 28 & US Hwy 93	Elmo

3196	PLUM CREEK MANUFACTURING CO	22924	24-03719	121 Light Rd	Pablo
3198	MDOT POLSON SITE	23069	24-08740	US Hwy 93	Polson
3201	RONAN SHOP	23064	24-08549	1010 Main St SW	Ronan
3249	PACIFIC PRIDE POLSON	23328	24-13301	204 Division St	Polson
3347	FARM BUREAU INSURANCE CHECKERS BEAUTY	30525	56-13843	13 3rd Ave E	Polson
3359	POLSON AIRPORT	23194	24-11325	470 Regatta Rd	Polson
3485	US POST OFFICE SAINT IGNATIUS	30571	56-13898	116 1st Ave N	Saint Ignatius
3549	SWAN LAKE SCHOOL DIST 73	22967	24-05441	71414 MT Hwy 83	Swan Lake
3550	CITY OF RONAN 2ND AVE SW	30583	56-13913	2nd Ave SW & Main St SW	Ronan
3562	ST LUKES HOSPITAL FMR CRAWFORD RESIDENCE #3562	31169	2408307	520 Adams St SW	Ronan
3582	MISSION MOUNTAIN ENTERPRISES	23149	24-10595	330 Main St SW	Ronan
3614	FLATHEAD COURIER	22859	24-00604	213 Main St	Polson
3813	DENNIS NAFFZINGER #3813	17120	2404012	111 Cleveland St SW	Ronan
3830	LINDBURG DRUG	23225	24-11810	128 Main St SW	Ronan
3831	POLSON READY MIX CONCRETE INC	22873	24-01210	37463 N Commerce Ln	Polson
3833	FORMER CENEX COOP #3833	17123	2408823	405 Main St SW	Ronan
3852	RIVERSIDE PARK PUMP STATION	30589	56-13919	US Hwy 93	Polson
3882	TOP 40 VIDEO	30625	56-13958	108 1st St E	Polson
3935	KICKING HORSE JOB CORPS CENTER	23130	24-10386	33091 Mollmann Pass Trl	Ronan
3988	MDOT SWAN LAKE SITE	23068	24-08739	24526 Highway 83	Swan Lake
4065	DOROTHY MEYERHOFER RESIDENCE #4065	17160	2412618	30983 Station Creek Way	Polson
4072	COUNTY SHOP RONAN	22978	24-05664	Round Butte Rd	Ronan
4102	POLSON BAY GROCERY 425	22983	24-05770	50451 US Hwy 93	Polson
4122	FORMER DUMONTIER OIL CO	22855	24-00530	27060 US Hwy 93 N	Ravalli
4149	RANCH PROPERTY #4149	17178	2404184	39603 S Valley Creek Rd	Arlee
4196	CENEX SUPPLY and MARKETING BULK PLANT	23047	24-07909	1407 US Hwy 93 S	Ronan
4197	CECILIA BLUES RESIDENCE #4197	17071	2405430	5th St & 1st Ave W	Charlo
4244	DENNIS TALBOT #4244	17147	2409720	Missoula Ave & 2nd St	Elmo
4305	WHEELER RESIDENCE	17198	2404566	75899 US Hwy 93	Saint Ignatius
4356	GORDON GRANLEY	23290	24-12921	229 Main St SW	Ronan
4375	CHRISTENSEN RESIDENCE	30791	56-14158	170 Skistad Ln	Big Arm
4391	GINA HINES RESIDENCE	17213	9995001	33736 Finley Point Rd	Polson
4418	FORMER PACK LUMBER	17220	9995008	7th St E & Division St	Polson
4421	CAROLE REUM	17222	9995011	209 Round Butte Rd W	Ronan
4422	UNOCAL BULK FACILITY	30466	56-13778	203 Division St	Polson
4432	RENTER SISTER RUTH	23205	24-11479	312 Buchanan St SW	Ronan
4441	BJORK DISTRIBUTING INC 1ST STREET EAST	23079	24-09481	801 1st St E	Polson
4456	BIG ARM GENERAL STORE	23250	24-12285	314 5th St	Big Arm
4457	DALE GILLESPIE	17230	9995020	1500 Hillcrest Dr	Polson
4461	BIG ARM MARINA	23009	24-06856	509 A St	Big Arm
4488	ALLARDS STAGE STOP LLC	22982	24-05769	77579 US Hwy 93 N	Saint Ignatius
4489	SAINT IGNATIUS SCHOOL	22927	24-03762	4th & Blaine St	Saint Ignatius
4498	RIVERSIDE BAR AND GRILL	23353	24-13755	52 Old US Hwy 93	Arlee
4542	FORMER AMOCO	30841	60-15070	700 Blk 2nd St E	Polson
4590	BIGFORK READY MIX	23337	24-13438	Old US Hwy 93 S	Pablo

4594	JOHNS FUEL FARM AND ENERGY	23032	24-07437	14 Cleveland St SE	Ronan
4675	MOON CREEK COUNTRY STORE	23012	24-06859	US Hwy 93 N	Pablo
4808	CITY OF POLSON ROW	17313	9995109	106 4th Ave E	Polson
4820	COLEMAN RESIDENCE	17317	9995113	40067 Morris Rd	Charlo
4852	RONAN SPORT AND WESTERN	17328	9995124	63298 US Hwy 93	Ronan
4878	MDT PROJECT	17333	9995129	1st & Main St SW	Ronan
4930	PROFESSIONAL BUILDING	17343	9995137	316 1st St E	Polson
4968	PHILIPS RESIDENCE	17354	9995148	32084 Jocko Canyon Rd	Arlee
5046	TONY HOYT RESIDENCE	17365	9995160	30978 Two Crows Ln	Arlee
5225	TOWN PUMP INC RONAN	23067	24-08718	63459 US Hwy 93	Ronan
5430	EXXON 93	23014	24-06861	107 2nd Ave E	Polson
5439	TOWN PUMP INC POLSON	23066	24-08717	50667 US Hwy 93	Polson
6263	Lakeview Cemetery	32445		2000 Hillcrest Dr	Polson
6285	KICKING HORSE JOB CORPS CENTER	23130	24-10386	33091 Mollmann Pass Trl	Ronan
6289	Ernest Foust Farm	32465		: 51989 Dairy Lane	Charlo
6301	DYNO MART	22981	24-05768	62945 Hwy 93 N	Ronan
6304	Skates Residence	32475		38440 US Highway 93	Big Arm
6494	MDOT SWAN LAKE SITE	23068	24-08739	24526 Highway 83	Swan Lake
6500	MOUNTAIN VIEW CENEX	23153	24-10647	240 Mountain View Dr	Saint Ignatius
6505	COULTER AUTOMOTIVE INC	22947	24-04615	104 Main St	Charlo
6611	32558 Tarrs Lane Residence	32529		32558 Tarrs Lane	Polson
6651	TOWN PUMP INC RONAN	23067	24-08718	63459 US Hwy 93	Ronan

County	Confirmed Date	Resolved Date	Status
Lake	12/8/1989		Confirmed
Lake	12/8/1989	4/9/1991	Resolved
Lake	2/1/1990	11/20/1990	Resolved
Lake	12/12/1989		Confirmed
Lake	6/27/1990	8/24/1990	Resolved
Lake	8/24/1990		Confirmed
Lake	8/31/1990	1/4/2012	Resolved
Lake	10/9/1990	6/7/1995	Resolved
Lake	11/28/1990	1/7/2014	Resolved
Lake	10/30/1990	12/12/1990	Resolved
Lake	11/9/1990		Confirmed
Lake	11/9/1990		Confirmed
Lake	5/11/1988	7/24/1989	Resolved
Lake	10/23/1990	3/25/1991	Resolved
Lake	1/19/1988		Confirmed
Lake	3/14/1991	11/12/1992	Resolved
Lake	5/23/1991	10/24/1991	Resolved
Lake	6/11/1991	6/18/2014	Resolved
Lake	6/28/1991	12/7/1992	Resolved
Lake	7/3/1991	7/24/1991	Resolved
Lake	12/18/1987	7/19/1991	Resolved
Lake	8/7/1991	2/29/1992	Resolved
Lake	9/3/1991		Confirmed
Lake	9/5/1991	11/5/1993	Resolved
Lake	2/18/1992	7/19/2013	Resolved
Lake	2/26/1992	3/12/1992	Resolved
Lake	4/6/1992	5/18/1992	Resolved
Lake	4/28/1992	11/29/1995	Resolved
Lake	4/29/1992	11/23/1992	Resolved
Lake	4/28/1992	9/12/2006	Resolved
Lake	8/18/1992	11/15/1996	Resolved
Lake	7/21/1992	9/28/1992	Resolved
Lake	9/29/1992	12/18/1992	Resolved
Lake	11/24/1992	1/24/1994	Resolved
Lake	12/23/1992	6/29/1993	Resolved
Lake	3/10/1993		Confirmed
Lake	5/20/1993	7/27/2010	Resolved
Lake	7/15/1993	11/29/2000	Resolved
Lake	5/17/1994	5/18/1994	Resolved
Lake	11/9/1993	11/30/1993	Resolved
Lake	6/12/1992	8/24/1993	Resolved
Lake	8/17/1993	12/22/1994	Resolved
Lake	11/2/1993	2/1/1994	Resolved
Lake	11/5/1993	12/7/1994	Resolved

Lake	12/2/1993	6/22/1994	Resolved
Lake	12/13/1993	1/4/2012	Resolved
Lake	2/3/1994	3/3/1994	Resolved
Lake	1/26/1994	5/14/1999	Resolved
Lake	1/11/1994	3/10/1994	Resolved
Lake	3/15/1994		Confirmed
Lake	3/2/1994	4/21/2007	Resolved
Lake	4/11/1994	5/5/1994	Resolved
Lake	4/25/1994		Confirmed
Lake	5/4/1994	3/13/1995	Resolved
Lake	7/5/1994	7/21/1994	Resolved
Lake	7/11/1994	1/7/2011	Resolved
Lake	8/25/1994	1/26/1995	Resolved
Lake	11/4/1994	5/9/1996	Resolved
Lake	10/21/1992	9/9/2014	Resolved
Lake	11/1/1994	8/26/2010	Resolved
Lake	12/23/1994	4/24/1995	Resolved
Lake	12/29/1994		Confirmed
Lake	11/25/1992	2/9/1998	Resolved
Lake	3/2/1995	3/28/1995	Resolved
Lake	3/24/1995		Confirmed
Lake	1/10/1990	10/9/1996	Resolved
Lake	8/23/1995	8/21/1998	Resolved
Lake	8/16/1995	8/16/2010	Resolved
Lake	8/8/1995	9/19/1995	Resolved
Lake	6/27/1995	5/4/2015	Resolved
Lake	9/12/1995	5/2/1996	Resolved
Lake	11/13/1995	6/4/2009	Resolved
Lake	12/22/1995	5/15/1996	Resolved
Lake	6/12/1996	6/26/1996	Resolved
Lake	8/2/1996	8/20/1998	Resolved
Lake	11/26/1996	4/2/1997	Resolved
Lake	6/17/1996	1/24/1997	Resolved
Lake	2/25/1997	10/18/2010	Resolved
Lake	5/13/1997	12/9/2010	Resolved
Lake	6/2/1997	11/7/1997	Resolved
Lake	6/17/1997	11/20/1997	Resolved
Lake	6/24/1997	5/14/2015	Resolved
Lake	7/2/1997	8/26/2004	Resolved

Lake	7/10/1997	11/8/1999	Resolved
Lake	7/15/1997	4/16/2002	Resolved
Lake	7/23/1997	8/23/2012	Resolved
Lake	10/8/1997		Confirmed
Lake	1/30/1998		Confirmed
Lake	1/27/1998	9/27/2004	Resolved
Lake	8/6/1998	12/1/2006	Resolved
Lake	8/31/1998	7/13/2010	Resolved
Lake	8/26/1998	10/25/2010	Resolved
Lake	10/23/1998	1/26/1999	Resolved
Lake	11/13/1998	9/21/1999	Resolved
Lake	11/30/1998	5/20/2009	Resolved
Lake	9/7/1999	7/1/2009	Resolved
Lake	10/27/1999	10/8/2010	Resolved
Lake	10/22/1999	11/3/2004	Resolved
Lake	8/25/1999		Confirmed
Lake	11/23/1999	8/1/2003	Resolved
Lake	8/2/1999	4/7/2000	Resolved
Lake	4/15/1995	6/1/2015	Resolved
Lake	9/8/2000	2/11/2002	Resolved
Lake	10/3/2001	5/7/2009	Resolved
Lake	9/5/2001	7/1/2011	Resolved
Lake	5/2/2002	4/20/2010	Resolved
Lake	6/7/2002	1/6/2003	Resolved
Lake	12/19/2002	5/7/2007	Resolved
Lake	9/8/1998	6/10/2010	Resolved
Lake	2/15/1999	9/23/2008	Resolved
Lake	4/6/2001	1/7/2011	Resolved
Lake	11/10/2003	5/5/2004	Resolved
Lake	7/7/2004	10/18/2010	Resolved
Lake	10/25/2004	12/1/2006	Resolved
Lake	2/7/2005	8/9/2011	Resolved
Lake	1/4/2005	1/29/2009	Resolved
Lake	6/12/2005	4/27/2012	Resolved
Lake	8/18/1998		Confirmed
Lake	3/31/2005	4/22/2013	Resolved
Lake	5/7/2002	8/14/2008	Resolved
Lake	11/17/2005		Confirmed
Lake	12/6/2005	1/26/2011	Resolved
Lake	12/8/2004	5/21/2010	Resolved
Lake	12/8/2005	4/17/2008	Resolved
Lake	3/13/2006	5/20/2009	Resolved
Lake	7/7/2006	5/20/2009	Resolved
Lake	1/30/2006		Confirmed
Lake	5/4/2007	10/18/2010	Resolved

Lake	8/22/2007		Confirmed
Lake	3/13/2008	9/16/2010	Resolved
Lake	11/5/2010	6/6/2017	Resolved
Lake	2/16/2011	4/30/2018	Resolved
Lake	10/25/2010		Confirmed
Lake	4/4/2011		Confirmed
Lake	3/23/2009	10/15/2019	Resolved
Lake	11/5/2013	4/2/2014	Resolved
Lake	10/8/2014	6/6/2017	Resolved
Lake	4/21/2017	9/8/2017	Resolved
Lake	6/8/2020	7/2/2021	Resolved
Lake	7/29/2020	9/22/2020	Resolved
Lake	9/21/2020		Confirmed
Lake	4/29/2021		Confirmed
Lake	5/20/2021	3/17/2023	Resolved
Lake	7/13/2021		Confirmed
Lake	7/16/2021	8/2/2022	Resolved
Lake	6/16/2022		Confirmed
Lake	8/27/2022		Confirmed
Lake	10/24/2022		Confirmed
Lake	6/15/2023		Confirmed
Lake	1/8/2024		Confirmed

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Colorado

Site Name	City	County	NPL Status
Air Force Plant PJKS	Littleton	Jefferson	Federal Facility Final NPL
ASARCO, Inc. Globe Plant	Denver	Adams	Removed from Proposed NPL
Bonita Peak Mining District	—	San Juan	Final NPL
Broderick Wood Products	Denver	Adams	Final NPL
California Gulch	Leadville	Lake	Final NPL
Captain Jack Mill	Ward	Boulder	Final NPL



Site Name	City	County	NPL Status
Central City/Clear Creek	Idaho Springs	Clear Creek	Final NPL
Chemical Sales Co.	Denver	Denver	Final NPL
Colorado Smelter	Pueblo	Pueblo	Final NPL
Denver Radium	Denver	Denver	Final NPL
Eagle Mine	Minturn/Redcliff	Eagle	Final NPL
Lincoln Park	Cañon City	Fremont	Final NPL
Lowry Landfill	Aurora	Arapahoe	Final NPL
Marshall Landfill	Boulder	Boulder	Final NPL
Nelson Tunnel/Commodore Waste Rock	Creede	Mineral	Final NPL
Rocky Flats Plant (USDOE)	Golden	Jefferson	Federal Facility Final NPL
Rocky Mountain Arsenal	Commerce City	Adams	Federal Facility Final NPL
Sand Creek Industrial	Commerce City	Adams	Deleted NPL
Smelertown	Salida	Chaffee	Proposed NPL
Smuggler Mountain	Aspen	Pitkin	Deleted NPL
Standard Mine	Ruby Mining District	Gunnison	Final NPL

Site Name	City	County	NPL Status
Summitville Mine	Del Norte	Rio Grande	Final NPL
Uravan Uranium Project (Union Carbide)	Uravan	Montrose	Final NPL
Vasquez Blvd. & I-70	Denver	Denver	Final NPL
Woodbury Chemical	Commerce City	Adams	Deleted NPL

Montana

Site Name	City	County	NPL Status
ACM Smelter and Refinery	Black Eagle	Cascade	Final NPL
Anaconda Aluminum Co Columbia Falls Reduction Plant	Columbia Falls	Flathead	Final NPL
Anaconda Co. Smelter	Anaconda	Deer Lodge	Final NPL
Barker Hughesville Mining District	Monarch	Cascade/Judith Basin	Final NPL
Basin Mining Area	Basin	Jefferson	Final NPL
Billings PCE Site	Billings	Yellowstone	Final NPL
Burlington Northern Livingston Shop Complex	Livingston	Park	Removed from Proposed NPL

Site Name	City	County	NPL Status
Burlington Northern (Somers Plant)	Somers	Flathead	Removed from Proposed NPL
Carpenter Snow Creek Mining District	Neihart	Cascade	Final NPL
East Helena Site	East Helena	Lewis and Clark	Final NPL
Flat Creek IMM	Superior	Mineral	Final NPL
Idaho Pole Co.	Bozeman	Gallatin	Final NPL
Libby Asbestos	Libby	Lincoln	Final NPL
Libby Ground Water Contamination	Libby	Lincoln	Final NPL
Lockwood Solvent	Billings	Yellowstone	Final NPL
Milltown Reservoir Sediments	Milltown	Missoula	Final NPL
Montana Pole and Treating	Butte	Silver Bow	Final NPL
Mouat Industries	Columbus	Sillwater	Final NPL
Silver Bow Creek/Butte Area	Butte	Silver Bow/Deer Lodge	Final NPL
Smurfit-Stone Mill	Missoula	Missoula	Proposed NPL
Upper Tenmile Creek	Helena	Lewis and Clark	Final NPL

North Dakota

Site Name	City	County	NPL Status
Arsenic Trioxide	Lidgerwood/Wyndmere/Richland	Richland/Sargent	Deleted NPL
Minot Landfill	Minot	Ward	Deleted NPL

South Dakota

Site Name	City	County	NPL Status
Ellsworth Air Force Base	Ellsworth Air Force Base	Meade/Pennington	Federal Facility Final NPL
Gilt Edge Mine	Lead	Lawrence	Final NPL
Whitewood Creek	Whitewood	Lawrence	Deleted NPL
Williams Pipeline	Sioux Falls	Minnehaha	Deleted NPL

Utah

Site Name	City	County	NPL Status
700 South 1600 East PCE Plume	Salt Lake City	Salt Lake	Final NPL
Bountiful/Woods Cross PCE Plume	Bountiful	Davis	Final NPL
Davenport and Flagstaff Smelters	Sandy	Salt Lake	Deleted NPL

Site Name	City	County	NPL Status
Eureka Mills	Eureka	Juab	Deleted NPL
Five Points PCE Plume	Woods Cross	Davis	Final NPL
Hill Air Force Base	Hill Air Force Base	Davis/Weber	Federal Facility Final NPL
Intermountain Waste Oil Refinery	Bountiful	Davis	Deleted NPL
International Smelting and Refining	Tooele	Tooele	Deleted NPL
Jacobs Smelter	Stockton	Tooele	Final NPL
Kennecott North Zone/Tailings	Magna	Salt Lake	Proposed NPL
Kennecott South Zone/Bingham	Copperton	Salt Lake	Non-NPL, Superfund Alternative Approach
Midvale Slag	Midvale	Salt Lake	Deleted NPL
Monticello Mill Tailings (USDOE)	Monticello	San Juan	Federal Facility Final NPL
Monticello Radioactively Contam. Prop.	Monticello	San Juan	Federal Facility Deleted NPL
Murray Smelter	Murray City	Salt Lake	Proposed NPL
Ogden Defense Depot (DLA)	Ogden	Weber	Federal Facility Final NPL

Site Name	City	County	NPL Status
Petrochem/Ekotek	Salt Lake City	Salt Lake	Deleted NPL
Portland Cement	Salt Lake City	Salt Lake	Final NPL
Richardson Flat Tailings	Park City	Summit	Proposed NPL
Rose Park Sludge Pit	Salt Lake City	Salt Lake	Deleted NPL
Sharon Steel	Midvale	Salt Lake	Deleted NPL
Tooele Army Depot (North Area)	Tooele	Tooele	Federal Facility Final NPL
US Magnesium	SW shore of Great Salt Lake	Tooele	Final NPL
Utah Power & Light	Salt Lake City	Salt Lake	Final NPL
Wasatch Chemical	Salt Lake City	Salt Lake	Final NPL

Wyoming

Site Name	City	County	NPL Status
Baxter/Union Pacific Tie Treating	Laramie	Albany	Deleted NPL
F.E. Warren Air Force Base	Cheyenne	Laramie	Final NPL
Mystery Bridge Rd/U.S. Highway 20	Evansville	Natrona	Deleted NPL

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LAST UPDATED ON OCTOBER 18, 2021

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) Report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS Report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study Report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study Report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study Report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 11N. The **horizontal datum** was NAD 83, GRS 1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

NGS Information Services
 NOAA, NNGS12
 National Geodetic Survey
 SSMC-3, #9202
 1315 East-West Highway
 Silver Spring, Maryland 20910-3282
 (301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov>.

Base map information shown on this FIRM was derived from NAIP Orthophotography produced with a one meter ground resolution from photography dated 2005.

This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables for multiple streams in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels, community map repository addresses, and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

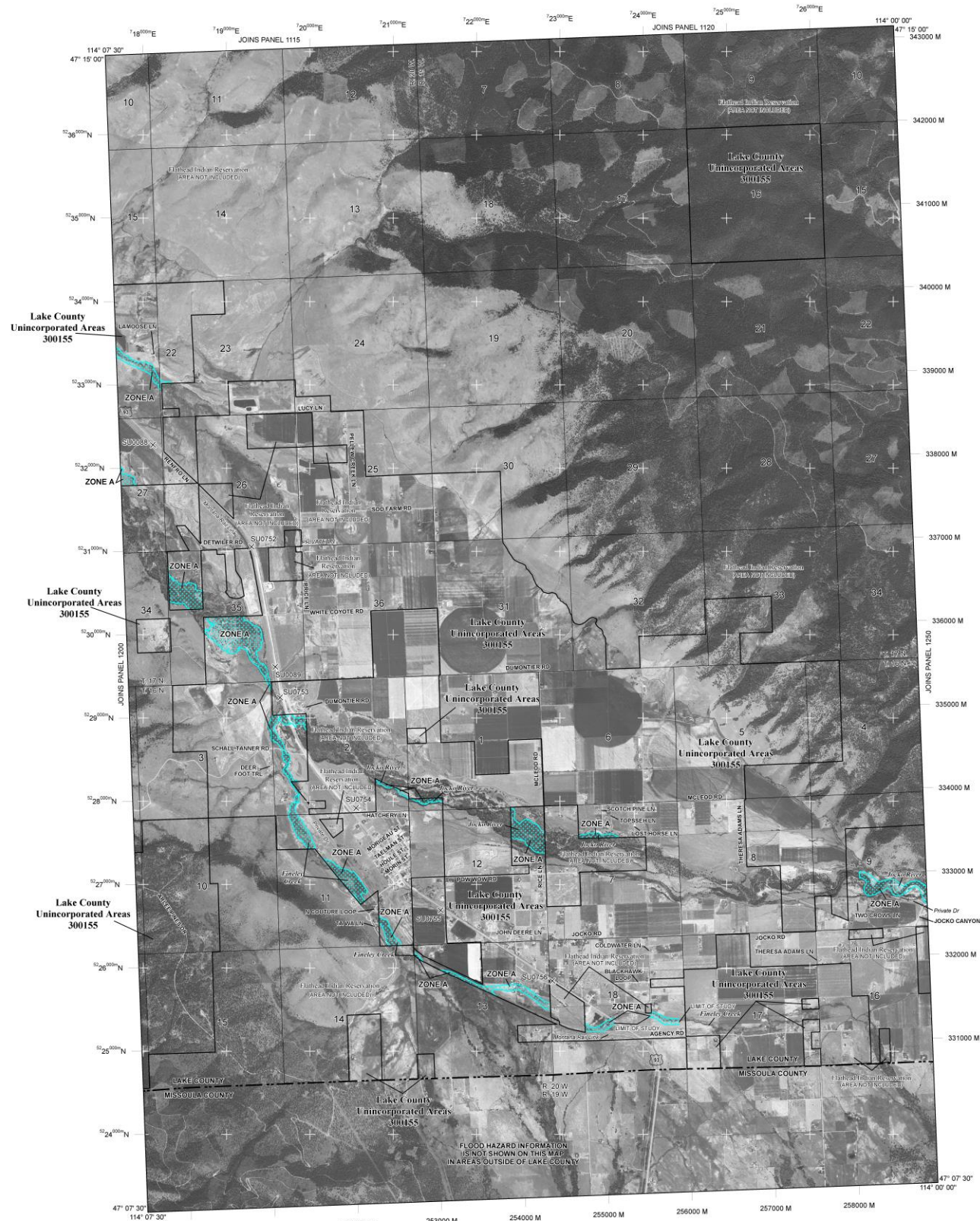
For information on available products associated with this FIRM visit the **Map Service Center (MSC)** website at <http://msc.fema.gov>. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.

If you have **questions about this map**, how to order products, or the National Flood Insurance Program in general, please call the **FEMA Map Information Exchange (FMIX)** at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov/business/infp>.

Lake County Vertical Datum Offset Table

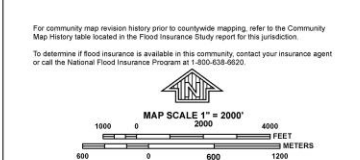
Flooding Source	Vertical Datum Offset (ft)	Flooding Source	Vertical Datum Offset (ft)
Lower Swan River	3.7	Flathead Lake	3.6
Upper Swan River	3.7		

Example: To convert Lower Swan River elevations to NAVD 88, 3.7 feet were added to the NGVD 29 elevations.



LEGEND

- SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD**
 The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zone A, AE, AH, AO, AR, AR9, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.
- ZONE A** No Base Flood Elevations determined.
 - ZONE AE** Base Flood Elevations determined.
 - ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
 - ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined; For areas of alluvial fan flooding, velocities also determined.
 - ZONE AR** Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decreed. Zone AR indicates that the former flood control system is being retained to provide protection from the 1% annual chance or greater flood.
 - ZONE AR9** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
 - ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
 - ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.
- FLOODWAY AREAS IN ZONE AE**
 The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
- OTHER FLOOD AREAS**
- ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile, and areas protected by levees from 1% annual chance flood.
 - OTHER AREAS**
 - ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
 - ZONE D** Areas in which flood hazards are undetermined, but possible.
- COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS**
OTHERWISE PROTECTED AREAS (OPAs)
- CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.
- 1% Annual Chance Floodplain Boundary
 - 0.2% Annual Chance Floodplain Boundary
 - Floodway boundary
 - Zone boundary
 - Zone D boundary
 - CBRS and OPA boundary
 - Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.
 - Base Flood Elevation line and value; elevation in feet* (EL 98')
 - Base Flood Elevation value where uniform within zone; elevation in feet*
- *Referenced to the North American Vertical Datum of 1988
- Cross section line
 - Transit line
 - 45° 02' 08" 93° 02' 12" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere
 - 4899000 M 1000-meter ticks; Montana State Plane Zone
 - 51995 Zone 2500; Lambert Conformal Conic projection
 - 1000-meter Universal Transverse Mercator grid values, zone 11N
 - BM1111 N Bench mark (see explanation in Notes to Users section of this FIRM panel)
 - M1.5 River Mile
- MAP REPOSITORIES**
 Refer to Map Repositories list on Map Index
- EFFECTIVE DATE OF COUNTY WIDE FLOOD INSURANCE RATE MAP**
 December 19, 1987
- EFFECTIVE DATES OF REVISIONS TO THIS PANEL**
 February 6, 2013 - to change Special Flood Hazard Areas. To add Base Flood Elevations, to reflect updated topographic information, to update corporate limits and to update road and road names.



NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 1225C

FIRM
FLOOD INSURANCE RATE MAP
LAKE COUNTY, MONTANA AND INCORPORATED AREAS

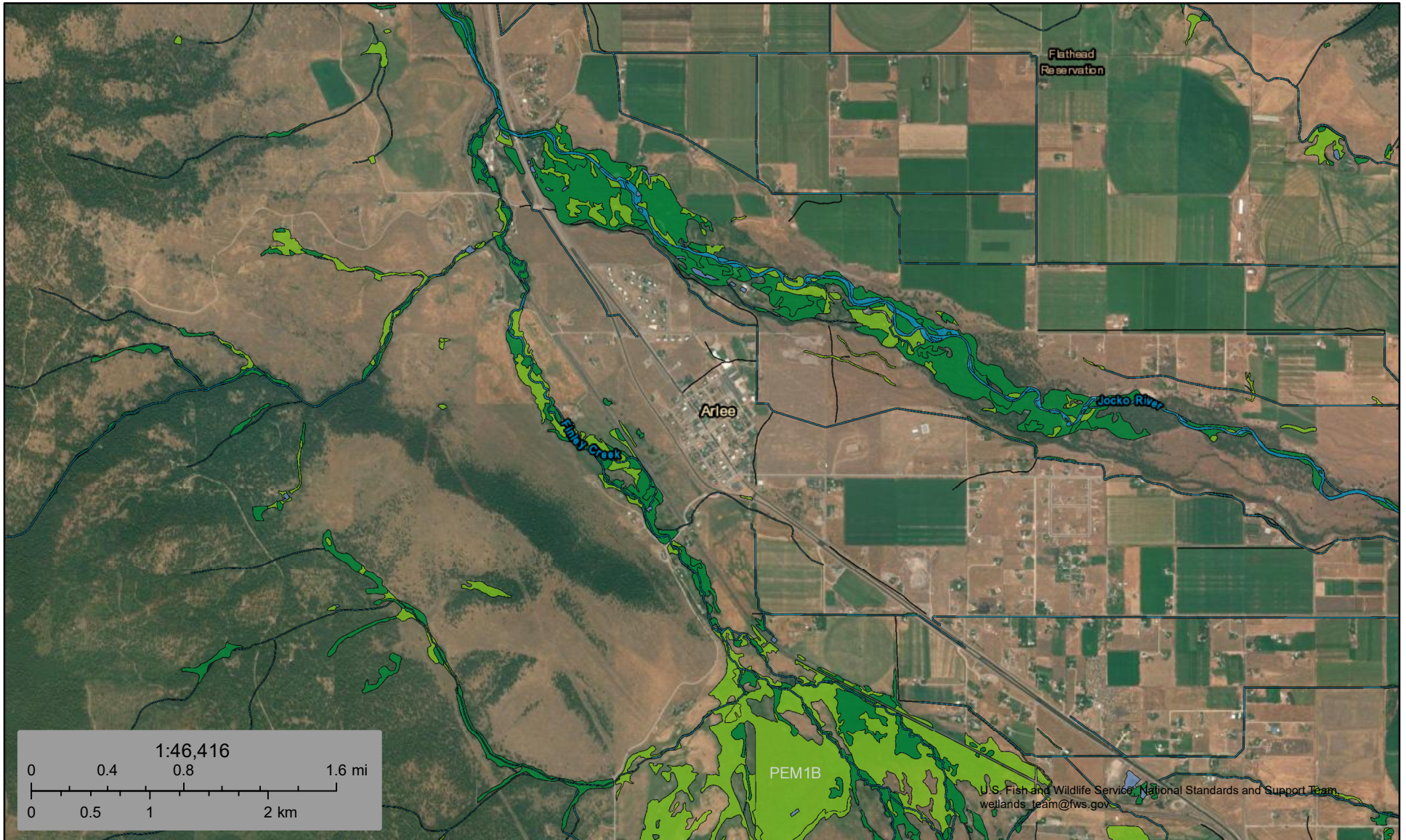
PANEL 1225 OF 1275
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:
 COMMUNITY NUMBER PANEL SUFFIX
 LAKE COUNTY 300155 1225 C

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.







MAP NUMBER 30047C1225C
MAP REVISED FEBRUARY 6, 2013

Federal Emergency Management Agency

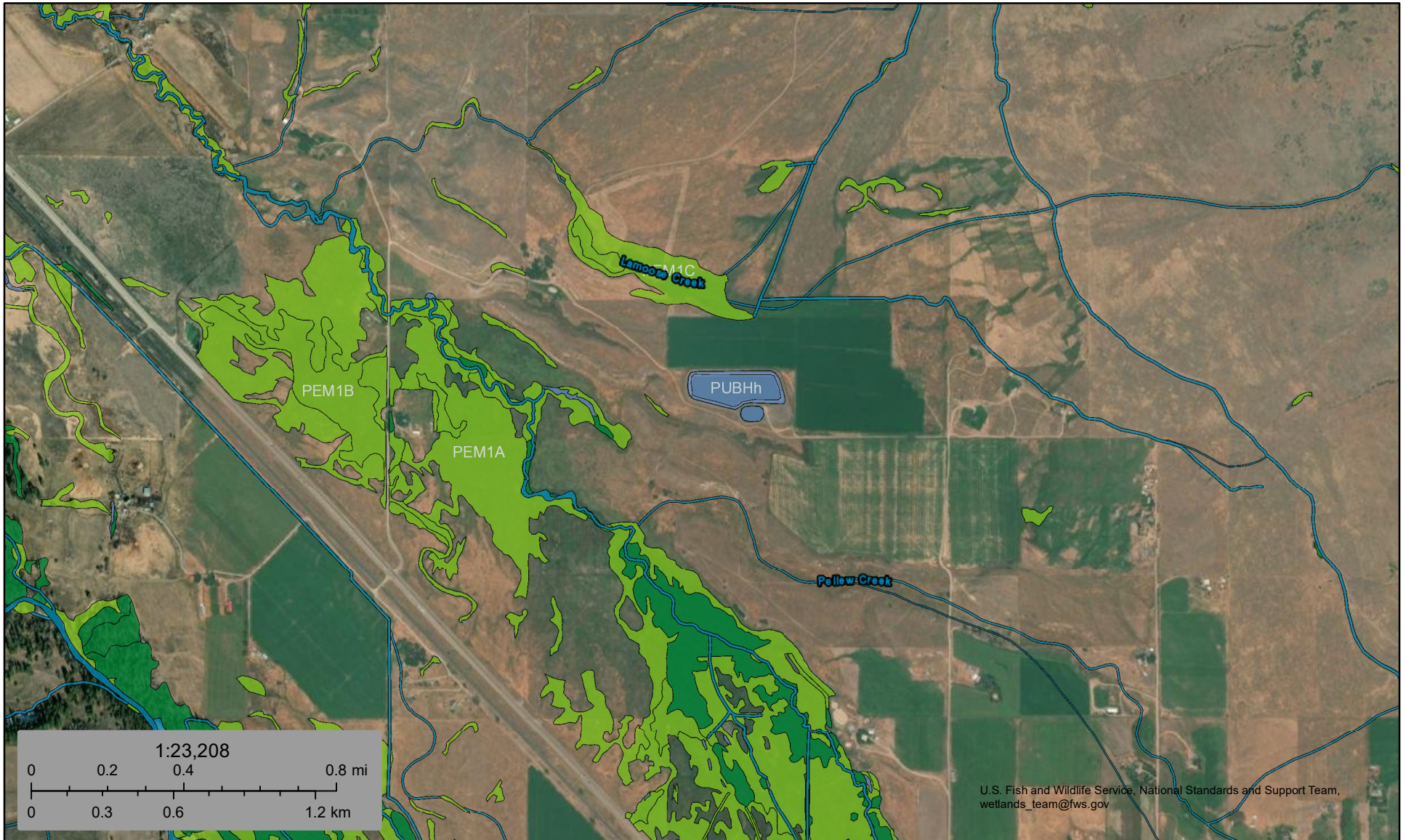


January 15, 2024

Wetlands

- | | | | | | |
|---|--------------------------------|---|-----------------------------------|---|----------|
|  | Estuarine and Marine Deepwater |  | Freshwater Emergent Wetland |  | Lake |
|  | Estuarine and Marine Wetland |  | Freshwater Forested/Shrub Wetland |  | Other |
| | |  | Freshwater Pond |  | Riverine |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.



January 15, 2024

Wetlands

- | | | | | | |
|--|--------------------------------|--|-----------------------------------|--|----------|
| | Estuarine and Marine Deepwater | | Freshwater Emergent Wetland | | Lake |
| | Estuarine and Marine Wetland | | Freshwater Forested/Shrub Wetland | | Other |
| | | | Freshwater Pond | | Riverine |

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IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Lake , Missoula , and Sanders counties, Montana



Local office

Montana Ecological Services Field Office

☎ (406) 449-5225

📅 (406) 449-5339

585 Shephard Way, Suite 1
Helena, MT 59601-6287

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

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1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. [NOAA Fisheries](https://www.noaa.gov/), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Canada Lynx <i>Lynx canadensis</i> There is final critical habitat for this species. Your location overlaps the critical habitat. https://ecos.fws.gov/ecp/species/3652	Threatened
Grizzly Bear <i>Ursus arctos horribilis</i> There is proposed critical habitat for this species. https://ecos.fws.gov/ecp/species/7642	Threatened
North American Wolverine <i>Gulo gulo luscus</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/5123	Threatened

Birds

NAME	STATUS
Yellow-billed Cuckoo <i>Coccyzus americanus</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Fishes

NAME	STATUS
Bull Trout <i>Salvelinus confluentus</i> There is final critical habitat for this species. Your location overlaps the critical habitat. https://ecos.fws.gov/ecp/species/8212	Threatened

Insects

NAME	STATUS
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<p>Monarch Butterfly <i>Danaus plexippus</i></p> <p>Wherever found</p> <p>No critical habitat has been designated for this species.</p> <p>https://ecos.fws.gov/ecp/species/9743</p>	Candidate
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Flowering Plants

NAME	STATUS
<p>Spalding's Catchfly <i>Silene spaldingii</i></p> <p>Wherever found</p> <p>There is proposed critical habitat for this species.</p> <p>https://ecos.fws.gov/ecp/species/3681</p>	Threatened

Conifers and Cycads

NAME	STATUS
<p>Whitebark Pine <i>Pinus albicaulis</i></p> <p>Wherever found</p> <p>No critical habitat has been designated for this species.</p> <p>https://ecos.fws.gov/ecp/species/1748</p>	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

This location overlaps the critical habitat for the following species:

NAME	TYPE
<p>Bull Trout <i>Salvelinus confluentus</i></p> <p>https://ecos.fws.gov/ecp/species/8212#crithab</p>	Final
<p>Canada Lynx <i>Lynx canadensis</i></p> <p>https://ecos.fws.gov/ecp/species/3652#crithab</p>	Final

Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act¹ and the Migratory Bird Treaty Act².

