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FINAL REPORT
for
BLACKS FORK RIVER WATERSHED STUDY, LEVEL I

BASINWIDE

Prepared for:

Wyoming Water Development Commission
6920 Yellowtail Road
Cheyenne, WY 82002

Prepared by:

Anderson Consulting Engineers, Inc.
375 E. Horsetooth Road, Bldg. 5
Fort Collins, CO 80525
(ACE Project No. WYWDC34)

January 2015

ANDERSON CONSULTING ENGINEERS, INC.
Civil • Water Resources • Environmental

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I. INTRODUCTION AND OVERVIEW

1.1 Introduction

In 2012 the Lincoln County Conservation District (LCCD), the Uinta County Conservation District (UCCD), and the Uinta Development Company (UDC) requested funding from the Wyoming Water Development Commission (WWDC) for the completion of a watershed management plan for the Blacks Fork River watershed. The Sweetwater County Conservation District (SWCCD) later joined as a participating project sponsor. The intent of the funding request was to have a comprehensive watershed inventory completed which identified issues related to land use and water resources and to then develop a plan addressing those issues. The WWDC approved funding for the project and Anderson Consulting Engineers, Inc. (ACE) was ultimately contracted in June, 2013 to complete the project.

The project study area is defined as the subbasin of the Upper Green River delineated by the Blacks Fork River Watershed (HUC 14040107) and Muddy Creek (HUC 14040108). In addition, the Henrys Fork / Upper Green-Flaming Gorge watershed (HUC 14040106) and smaller subbasins directly tributary to Flaming Gorge Reservoir were included. Figure 1.1-1 shows the general location of the watershed within the State of Wyoming.

1.2 Project Overview

The term “watershed” may have been best defined by John Wesley Powell, scientist geographer, when he said that a watershed is:

> *"that area of land, a bounded hydrologic system, within which all living things are inextricably linked by their common water course and where, as humans settled, simple logic demanded that they become part of a community."*

The State of Wyoming recognizes the benefits of basin planning efforts on the basis of watershed areas which do not necessarily adhere to political boundaries such as counties or states. The WWDC describes the watershed planning process as follows:

> *“Today, conservation by watershed is an old concept with new horizons. Watersheds have long been recognized in the western United States for their significant natural resources and the interrelationships found contained in land areas connected by stream systems. These relationships were recognized by John Wesley Powell from his early expeditions of the west and resulted in proposed conservation, low density open grazing, irrigation systems and state boundaries based on watershed areas.*

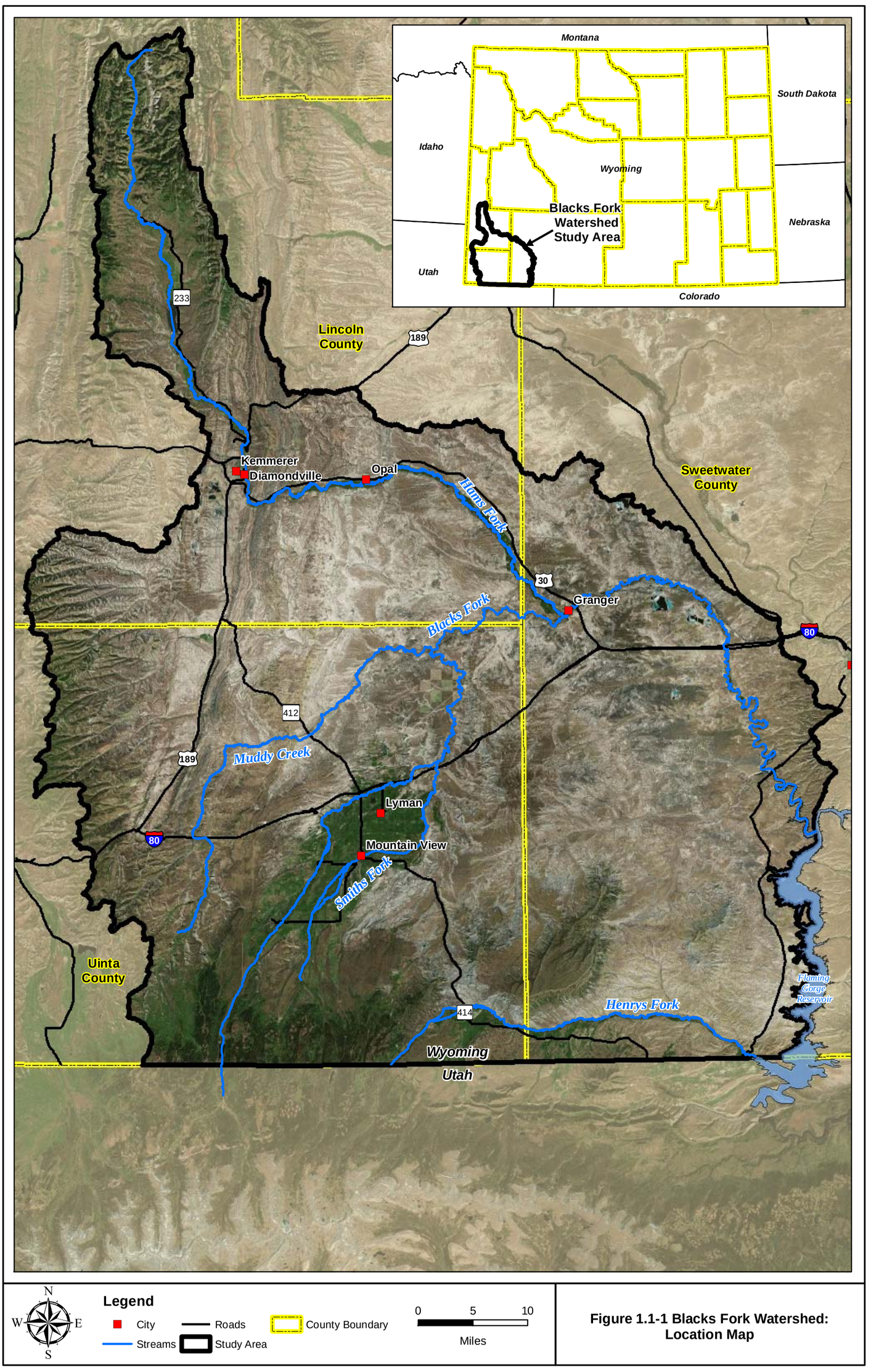


Figure 1.1-1 Blacks Fork Watershed: Location Map

The conservation concept developed over time to coalesce in the early 1930's with the formation of special districts whose boundaries were often based on watersheds. At that time the relationship between stream systems and landscape function was recognized. This relationship was broadened to embrace watershed condition and quality and its response to human influences. This further provided some understanding of the historic land use effect on watershed condition and how management and restoration needs to be based on local landscape characteristics.

Today, these relationships are embraced by the Wyoming Water Development Commission and Office through a watershed study program. On behalf of a local community sponsor, a watershed study can provide a comprehensive evaluation, analysis and description of the resources associated with a watershed and the watershed's water development opportunities. It is best stated that information related to the physical sciences is incorporated into a biological system.

There are three prominent issues that are important considerations in a watershed information review and study. The first is surface water storage. Surface water storage is often of significant interest to a watershed community in order to address seasonal and/or annual shortages of water supply, augment late season stream flow to benefit riparian habitat, fisheries and wildlife, address flood impacts, enhance recreation opportunities, improve water quality and steam channel stability.

Second is the evaluation of irrigation infrastructure and development of information necessary to guide its rehabilitation and conservation. Of interest to local water users are ways to improve water delivery and on-farm irrigation efficiencies often timed to address annual or seasonal shortages of water supply or irrigation water delivery issues.

Third is the enhancement of upland water resources and distribution for livestock and wildlife that allows grazing management adjustments for range resource improvement. Benefits to the watershed, through plant community invigoration, reduction of erosion and stream channel stabilization, can be achieved from water development projects being strategically implemented over the watershed. Other issues and opportunities such as making beneficial use of produced water and removal of high water demand invasive species can also be important.

A watershed study, providing management and rehabilitation plans for water storage, irrigation systems and upland water development, can help empower a community to proactively enhance their watershed. Conservation by watershed can be an effective holistic approach to embracing the natural resource challenges and opportunities facing a community. A watershed study can provide the information to meet those challenges."

The Blacks Fork River Watershed Study is one of several watershed planning studies completed on behalf of the WWDC and the Wyoming Water Development Office (WWDO). Watershed investigations either completed or in the process of being completed include the following:

Prairie Dog Creek Watershed Study
Popo Agie River Watershed Study
Cottonwood Creek / Grass Creek Watershed Study
Sweetwater River Watershed Study
Buffalo Creek Watershed Study
Middle North Platte River Watershed Study
Badwater/Poison Creek Watershed Study
Medicine Bow River Watershed Study
Clear Creek Watershed Study
Kirby Creek Watershed Study
Shell Valley Watershed Study
Thunder Basin Watershed Study
Little Snake River Watershed Study
Upper Green River Watershed Study
Upper North Platte River Watershed Study

As a direct result of these efforts, numerous additional studies have been initiated and multiple projects have been constructed.

1.3 Project Issues and Understanding

The study culminates in the delivery of a Watershed Management and Rehabilitation Plan (the Plan). It is the goal and objective of the sponsors and the WWDC to generate a plan that is not only technically sound, but also one that is practical and economically feasible. The formulated plan also includes development of a database to facilitate the planning process and the evaluation/implementation of watershed improvements. In order to accomplish this task, the project sponsors, the WWDC, and the consultant address several key issues, including the following:

- *Utilization of grazing allotments*
- *Water availability*
- *Channel stability/riparian restoration/enhancement*
- *Irrigation system assessment (to promote rehabilitation of existing facilities and provide opportunities for water conservation that would support an increase in water availability)*
- *Public participation and acceptance (intent is to focus on solutions, not compliance issues)*

1.4 Project Purpose and Objectives

The primary goal of this Level I Study is to combine all existing data with data collected and generated from this study to form a comprehensive Watershed Management and Rehabilitation Plan. The purpose and objectives of the project are itemized below:

- *Facilitate consensus building among the Advisory Committee, the Conservation District, landowners and the Wyoming Water Development Commission.*
- *Facilitate public participation.*

- *Conduct an evaluation and description of the Blacks Fork River watershed, including quantity and quality of surface water resources, and riparian/upland conditions.*
- *Conduct a geomorphic investigation of the primary channels within the watershed and identify potential mitigation measures to improve impaired channel reaches.*
- *Conduct an irrigation system inventory and develop a rehabilitation plan for those ditches expressing an interest to participate.*
- *Conduct an evaluation of water storage needs and opportunities to augment water available for livestock and wildlife.*
- *Develop a watershed management plan which identifies problem areas within the watershed and proposes practical economic solutions.*
- *Identify permits easements and clearances necessary for plan implementation.*
- *Develop cost estimates for improvements.*
- *Complete an economic Analysis and evaluate alternative sources of funding.*

1.5 Project Management and Report Organization

Due to the vast extent of the project study area and the range of conditions found within it, completion of the project was divided into three geographical phases, each with its own report volume containing information pertinent specifically to that region. The Basinwide Summary contains information deemed more appropriate for discussion at the basinwide watershed level as well as a collation of all watershed plan components reported in the individual volumes.

Throughout this report, reference will be made where the reader should refer to Phase I, II, or III for more specific information. Likewise, the Phase I, II, and III reports cross reference back to this Basinwide Summary where appropriate.

Figure 1.5-1 displays the boundaries of the three phases. Table 1.5-1 lists the hydrologic units comprising each.

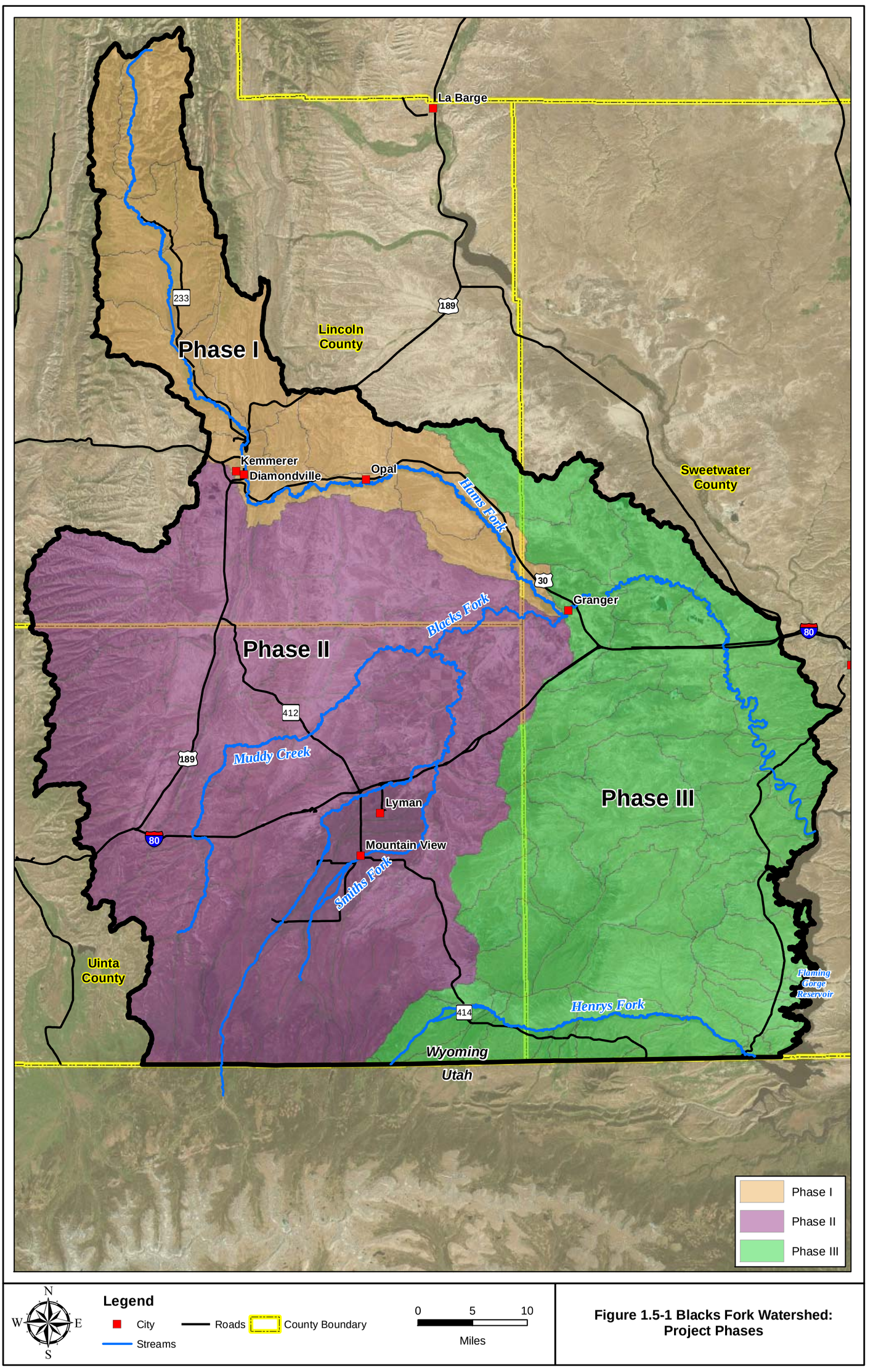


Figure 1.5-1 Blacks Fork Watershed: Project Phases

Table 1.5-1 Blacks Fork River Watershed Investigation, Level 1: Project Phases.

Phase	10th Order HUC	Watershed Name
Phase I:	1404010706	Upper Hams Fork
	1404010707	Lower Hams Fork
Phase II:	1404010803	Albert Creek
	1404010703	Cottonwood Creek
	1404010705	Dry Muddy Creek
	1404010802	Little Muddy Creek
	1404010704	Middle Blacks Fork
	1404010801	Muddy Creek
	1404010702	Smiths Fork
	1404010701	Upper Blacks Fork
Phase III:	1404010710	Big Dry Creek
	1404010708	Lower Blacks Fork
	1404010604	Lower Henrys Fork
	1404010602	Middle Flaming Gorge Reservoir
	1404010709	Sevenmile Gulch
	1404010603	Upper Henrys Fork

II. PROJECT MEETINGS

2.1 Introduction

An integral part of the Blacks Fork Watershed Study was the public outreach and involvement effort. Meetings were orchestrated by Anderson Consulting Engineers (ACE) and typically included informal presentations conducted by ACE staff and the Wyoming Water Development Office (WWDO). The objectives of the meetings were to:

- Discuss the purpose, existing data, and available information for the watershed study
- Obtain input and opinions from residents and landowners about the study area
- Identify concerns and answer questions about the area's water and land resources
- Request participation in the study effort and coordinate inventory activities
- Present initial results and preliminary findings from the watershed study

Ten project meetings were held and included the following:

10/1/2013	Scoping Meeting	UCCD - Lyman
10/2/2013	Scoping Meeting	LCCD - Kemmerer
2/25/2014	Project Open House	UCCD - Lyman
2/26/2014	Project Open House	LCCD - Kemmerer
7/21/2014	Project Update / Status	LCCD - Kemmerer
7/23/2014	Project Update / Status	UCCD - Lyman
12/2014	Draft Results	UCCD - Lyman
2/2/2015	Final Results	UCCD - Lyman

At each of the meetings, ACE representatives were available to discuss the project one on one with landowners/stakeholders and to initiate development of watershed plan alternatives. Presentations summarizing the status of the project and the next steps to be accomplished were also completed. The project GIS was demonstrated when appropriate to keep landowners up to date on the information which would ultimately be incorporated within it. Following each meeting, discussions and question and answer sessions were held.

2.2 Field Trips and "Tailgate Talks"

Field investigations generally occurred in coordination with scheduled meetings for efficiency. Specific field efforts targeted irrigation inventory, upland livestock/wildlife water opportunities, stream channel

conditions, hydrologic investigations (including establishment of temporary stream gages), and storage site investigations.

Individual meetings with landowners were scheduled at landowners' residences and properties where discussions focused on land and water resource concerns and issues specific to the landowner. Usually, the landowner gave a tour of the property to the consultant. During these property visits, initial planning and conceptual project designs were discussed for upland livestock/wildlife and irrigation water improvements. These informal interviews, often held spontaneously while in the field, have become dubbed "tailgate talks" and provide valuable insight into the overall assessment of the watershed.

Throughout the watershed study, local ranchers, irrigators, and residents who invited the study team to visit their properties and discuss issues and concerns demonstrated extensive knowledge and valuable insight about the watershed. Because of the willingness of landowners to share information, insight, and direction, the study team was able to incorporate this knowledge and experience into the study and provide a more effective evaluation of the watershed.

Table 2.1 lists most of the meetings held in conjunction with this project.

Table 2.1 Project Meetings.

Date	Type	Location
10/2013	Scoping Meeting	UCCD - Lyman
10/2013	Scoping Meeting	LCCD - Kemmerer
2/2014	Project Open House	UCCD - Lyman
2/2014	Project Open House	LCCD - Kemmerer
2/2014	Landowner/Stakeholder	Twin Buttes Ditch
2/2014	Landowner/Stakeholder	Circle B Ranch
2/2014	Landowner/Stakeholder	Uinta Development Company
5/2014	Landowner/Stakeholder	Company Ranch
5/2014	Landowner/Stakeholder	Peternel
5/2014	Landowner/Stakeholder	Collins
5/2014	Landowner/Stakeholder	Schulthess
5/2014	Landowner/Stakeholder	Carollo
5/2014	Landowner/Stakeholder	Walker
5/2014	Landowner/Stakeholder	Fraughton
6/2014	Landowner/Stakeholder	Julian
6/2014	Landowner/Stakeholder	Sears
7/2014	Project Update / Status	LCCD - Kemmerer
7/2014	Landowner/Stakeholder	Kofford
7/2014	Landowner/Stakeholder	Haslem
7/2014	Landowner/Stakeholder	Isom
7/2014	Landowner/Stakeholder	Eyre
7/2014	Landowner/Stakeholder	Sibert
7/2014	Landowner/Stakeholder	Hoffman
7/2014	Project Update / Status	UCCD - Lyman
7/2014	Landowner/Stakeholder	Lamborn
7/2014	Landowner/Stakeholder	Weston
7/2014	Landowner/Stakeholder	Sears
9/2014	Project Coordination	Trout Unlimited Office - Green River
9/2014	Landowner/Stakeholder	Lone Tree Ranch
9/2014	Landowner/Stakeholder	Interstate Ditch
9/2014	Landowner/Stakeholder	Potter
9/2014	Landowner/Stakeholder	Anderson
9/2014	Landowner/Stakeholder	Schell
9/2014	Landowner/Stakeholder	Anderson
9/2014	Landowner/Stakeholder	Mecham
9/2014	Landowner/Stakeholder	WSEO Hydrographer - Henrys Fork

III. WATERSHED DESCRIPTION AND INVENTORY

3.1 Introduction and Purpose

A considerable amount of information exists pertaining to the Blacks Fork Study Area and its resources. The data spans a wide variety of disciplines and includes basin hydrology, water quality, land use and ownership, geology and soils, and agricultural practices as typical examples. The primary objective of the watershed inventory phase of this project was to accomplish the following objectives:

1. collect, review, and compile pertinent information regarding the study area;
2. collate the data in a single database; and
3. assess the data to characterize the watershed and facilitate identification of existing issues and development of improvements to the watershed.

Throughout the remainder of this chapter, an overview of existing conditions of natural resources found within the study area are discussed. Included are summaries of numerous individual disciplines: vegetation, soils, wildlife, hydrology, ecologic site descriptions, etc. For each discipline, individual maps delineating the character and extent of that watershed attribute were generated within the project GIS. In conjunction with many of the map figures, summary tables have been prepared which tabulate various attributes of the pertinent watershed characteristic. When the report is finalized, these figures will be inserted within the context of the report where referenced.

3.2 Data Collection and Management

3.2.1 Collection of Existing Information

A significant amount of information and pertinent data were available from existing sources at the time this project was initiated. In an effort to collect and incorporate as much of this information as possible, the following sources were either contacted directly or information and documents procured via websites, libraries, or personal contacts:

- U.S. Bureau of Land Management (BLM)
- U.S. Geological Survey (USGS)
- U.S. Department of Agriculture/Natural Resources Conservation Service (NRCS)
- U.S. Department of Agriculture/Farm Service Agency (FSA)
- U.S. Environmental Protection Agency (EPA)
- U.S. Fish and Wildlife Service (FWS)
- U.S. Department of Interior (DOI)
- Wyoming Water Development Commission (WWDC)
- Wyoming Department of Environmental Quality (WDEQ)
- Wyoming Abandoned Mine Land Program (AML)

- Wyoming Game and Fish Department (WGFD)
- Wyoming State Historic Preservation Office (SHPO)
- Wyoming State Engineer's Office (WSEO)
- Wyoming Oil and Gas Conservation Commission (WOGCC)
- Wyoming State Geological Survey (WSGS)
- Wyoming Geographic Information Science Center (WyGISC)
- Wyoming Natural Diversity Database (WYNDD)
- Trout Unlimited
- Uinta County Assessor's Office
- Lincoln County Assessor's Office
- Sweetwater County Assessor's Office
- Lincoln County Conservation District
- Uinta County Conservation District
- Sweetwater County Conservation District
- Uinta Development Corporation

Please refer to the Phase I, II, and III report volumes for more detailed information pertaining to data collection sources.

3.2.2 Geographic Information System

The results of the data collection efforts were incorporated into a comprehensive Geographic Information System (GIS). A GIS can be thought of as a powerful three- dimensional mapping tool that can be used to evaluate and compare spatial data pertaining to a wide range of topics. Numerous maps can be "stacked" to overlay information; each map, or "theme", incorporates data, or "attributes" pertaining to the theme. For instance, a theme showing the location of irrigation ditches could also include numerical data pertaining to each ditch's irrigated acreage, improvements, problems, etc.

The Blacks Fork watershed GIS was developed with the "clearinghouse" approach in mind. The GIS is intended to incorporate not only the spatial data pertaining to the watershed, but also analytical spreadsheets and documents. Figure 3.2-1 displays this approach graphically. The user can evaluate spatial data with the conventional GIS tools as well as linking to photographs, spreadsheets containing analytical tools and graphical representation of the various data, and the various documents prepared or collected in the course of this investigation.

Spatial data pertaining to the Blacks Fork Study Area was collected from a wide range of sources. Agencies providing information included the State of Wyoming, USDI Bureau of Land Management, United States Geological Survey, Wyoming Game and Fish Department, Uinta, Lincoln and Sweetwater Counties, the USDA Natural Resources Conservation Service, and others. A significant amount of information was also specifically developed during the course of this investigation. Table 3.2-1 presents a list of the individual themes, maps, and aerial photographs which have been incorporated into the

project GIS. All of the map figures presented in this report were prepared within the project GIS and are representative of the information housed within it.

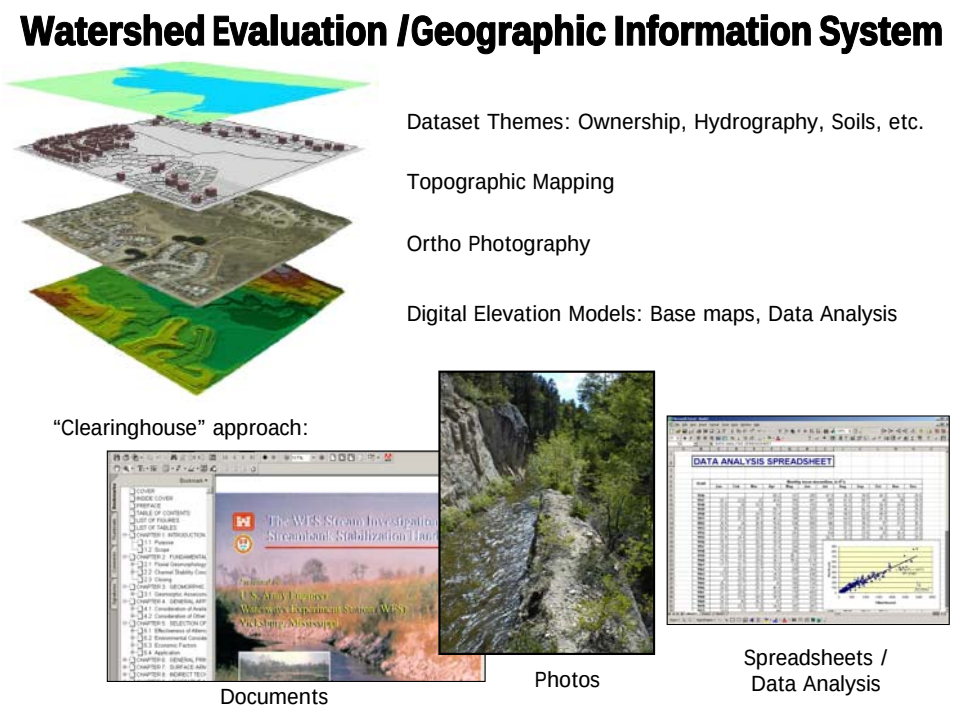


Figure 3.2-1 Example of the Blacks Fork Watershed Study GIS Structure and "Clearinghouse" Capabilities.

The project GIS was used in the generation of a majority of the figures included in this report. It will be available as a resource for future investigations and a tool for watershed stakeholders to use during pursuit of permits, environmental analyses, mapping projects, etc. GIS software (ArcMap 10.x) is required to view and utilize the data to the maximum of its potential. However, free 'shareware' data viewers (ArcGIS Explorer: http://www.esri.com/software/arcgis/explorer) are available which enable the user limited capabilities to view the data. It must be kept in mind when using the shareware versions of the GIS software that certain data layers symbology will vary from what is presented in this report.

The data in the delivered project GIS is stored in an ArcMap 10.2 File Geodatabase. The File Geodatabase format was chosen for a variety of reasons including; optimizing the GIS performance, customizing the data storage structure, and database compactness and portability. The general structure of the geodatabase is pictured in Figure 3.2-2. Contained within the Blacks_Fork.gdb (file geodatabase) is a series of feature datasets categorized by the agency who supplied the data (BLM, AML). Within each feature dataset are feature classes representing the various geographic data supplied by the agency or developed during the project.

Table 3.2-1 Generalized GIS Contents.

Category	Feature Class	Summary/Description	Category	Feature Class	Summary/Description
Watershed Management Plan	Irrigation_Projects	Proposed Irrigation Project Location	Fish and Wildlife	Critical Stream Corridors	Critical stream/river corridors for aquatic species - statewide
	LW_project_locations	Proposed Livestock/Wildlife Upland Project Location		ColoradoRiverCutthroat_2010_Final	Colorado River Cutthroat Range
	Storage_Projects	Proposed Storage Project Locations		FlannelmouthSucker_2010_Final	Flannelmouth Sucker Range
	Storage_Projects_lines	Proposed Storage Projects Lines		BlueheadSucker_2010_Final	Bluehead Sucker Range
	Proposed Project Pts	Detailed Proposed Projects Points		MtnWhitefish_2010_Final	Mountain Whitefish Range
	Proposed Project Lines	Detailed Proposed Projects Lines		RoundtailChub_2010_Final	Roundtail Chub Range
	Uinta Development Projects Area	General area of Uinta Development Corporation range projects		Combhp09	Combined habitat priority areas (both crucial and enhancement) - statewide
	Company Ranch Projects Area	General area of Company Ranch range projects		Aquahp09	Aquatic priority areas (both crucial and enhancement) - statewide
	Watersources_Pts	Existing Watersources Pts		Terrhp09	Terrestrial priority areas (both crucial and enhancement). - statewide
	Watersources Lines	Proposed and Existing pipelines related to range projects		SGcoreareas_v3_062910	Sage Grouse Core Areas (Version 3)
	Watersources_Pts_1_Mile_Buffer	1 mile buffers around viable watersources		SG_Western_US_Range	Sage Grouse Western US Range
Climate	Eco_Site_Precip_Zone	NRCS precipitation zones - statewide		USGS-WY Basin Ecoregional Assesment Data	Series of rasters depicting sage grouse roost site probability occurences and general use abundance statistics provided by USGS
	HPRCC_weather_stations	Meterological Stations		Antelope Habitat Data	Series of datasets showing WGF antelope data (migration barriers, migration routes, parturition areas, crucial range, seasonal range, hunt area/herd units)
	precip_a_wy	Average Annual Precipitation 1971-2000- WY		Elk Habitat Data	Series of datasets showing WGF Elk data (migration barriers, migration routes, parturition areas, crucial range, seasonal range, hunt area/herd units)
	Precip_a_UT	Average Annual Precipitation 1971-2000- UT		Mule Deer Habitat Data	Series of datasets showing WGF Mule Deer data (migration barriers, migration routes, parturition areas, crucial range, seasonal range, hunt area/herd units)
	US Drought Monitor 2014_09_16	USDA dataset showing general drought conditions countrywide		Moose Habitat Data	Series of datasets showing WGF Moose data (migration barriers, migration routes, parturition areas, crucial range, seasonal range, hunt area/herd units)
Communications	am	AM Radio Tower		Mtn_lion_07_hunt_and_management_areas	Mountain Lion Hunt Area / Herd Unit
	fm	FM Radio Tower		black_bear08_hunt_and_management_areas	Black Bear Hunt Area / Herd Unit
	cellular	Cellular Tower		bis08hh	Bison Hunt Area / Herd Unit
	lm_comm	Land Mobile Radio Service Antenna- Commercial		WYNDD _original	Wyoming Natural Diversity Database query for study area
	lm_private	Land Mobile Radio Service Antenna - Private		troutcl	Trout Streams provided by Wyoming Water Development Office
	microwave	Microwave Tower		Faults_500K	Fault Line - statewide
	TV_NTSC	TV (NTSC) Antenna	Geology and Soils	Landslide_WSGS	Landslide Area - statewide
	asr	Antenna Structure Registration Location		ANSS_earthquakes	Advanced National Seismic System earthquake data located within the study area
Fieldwork	Fieldwork_Pts (Various Dates)	Project data collected during fieldwork (various point features collected)		WSGS 100yr Earthquakes 1871-1970	Wyoming State Geological Survey Earthquakes data 1871-1970. Data within study area.
Infrastructure	Wy_Highways	Major Highways in Wyoming - statewide		Soils_250K	NRCS 250K Soils Data - statewide
	WY Roads 100K	Roads 100K scale - statewide		Bridger_Teton_24K_Soils	Bridger Teton National Forest 24K Soils Data
	Railroads	Railroads - statewide		Uinta_24K_soils	Uinta County 24K Soils data
Energy Development	PA_BF	Permanently Abandoned Well Head within the Blacks Fork Watershed Study Area attributed with the well pad revegetation analysis results		Lincoln_24k_soils	Lincoln County 24K Soils data
	WH_Statewide	Oil and Gas Well Heads		Sweetwater_24K_soils	Sweetwater County 24K Soils data
	WTB_GrossFlds	Wyoming Thrust Belt (WTB) Oil/Gas Fields		Surficial_Geology_500K_WYGISC	Surficial Geology 500K scale -statewide
	EPCA1_4basins_gross	Rocky Mtn. Basins Oil/Gas Fields (EPA Source)		Bedrock_Geology_500K_WYGISC	Bedrock Geology 500K scale -statewide
	Pipelines_WY_2007	WSGS dataset showing oil/gas pipelines for state of Wyoming		ESD_BF	Ecological Site Description classifications for study area
	Power Generation	WSGS dataset showing all electric power generating facilities in Wyoming over 1 megawatt		Rosgen_Streams_UTM	Rosgen analysis for selected streams within study area
	wy_transmission	Electric Transmission Corridors			
	WY_WindTurbines_FAA2009	Wyoming wind turbine locations - statewide			

Table 3.2-1 Generalized GIS Contents (continued).

USGS_PFCs_Lotic	Proper Functioning Condition data: flowing water	**Irrigation**	POD	Irrigation Points of Diversion within the state of wyoming
USGS_PFCs_Lentic	Proper Functioning Condition data: still water		Irrigated Lands	Irrigated Lands within the state of wyoming
Watersources_Pts	Existing Watersources-ACE compiled. Includes springs from various source, reservoirs and reservoir analysis data		WLCI Integrated Assessment-HUC6	Wyoming Landscape Conservation Initiative data analysis results by HUC 6 boundaries
Watersources_Pts_1_Mile_Buffer	Existing Watersource 1 Mile Buffer	**Land Cover and Land Class**	CONUS wetlands polygon	Wetland Polygons for the conterminous United States
BLM_Watersources	BLM Provided Water Sources		LANDFIRE EVT	LANDFIRE Existing Vegetation Type Raster
SEO_wells_12_BF	WY State Engineers Office groundwater wells		WY_Landcover	Wyoming GAP landcover analysis
BF_SEO_Permit_50Acre	SEO Reservoir Permit 50 Acre or more		EcoRegions_wy	Wyoming Ecoregions (areas with general similarity in ecosystems)
Allotments_merge_intersect	Bureau of Land Management Grazing Allotments Merged		NLCD_CLIP2.img	National Landcover Database raster
kemmerer_allotments	Kemmerer FO Allotments		WY_BLM_field_office_boundary	Bureau of Land Management Field Office Boundary
rocksprings_allotments	Rock Springs FO Allotments	**Land Management**	Stateownership_Surface	Public/Private Land Ownership
Wasatch_AllotmantBoundaries	Wasatch Rangeland Management Units		Wild Horse Management Areas	Statewide Wild Horse Management Areas
Bridger_Teton_NF_RangeRmuunit	Bridger Teton Rangeland Management Units		Trough_Escape_Ramps_RockSpg	Trough Escape Ramp locations- Rock Springs BLM
CRISP_1_8_14_BF	State Historic Preservation Office: Eligible Sites per PLSS Section		Improvement_RockSpg_line	Range Inprovements Lines- Rock Springs BLM
Historic_Forts	Historic Forts locatin in Wyoming		Improvements_RockSpg	Range Inprovement Points- Rock Springs BLM
Monuments_Markers	Historic Monuments and Markers (WY)		Fences_Study_Area_RockSpg	Fences clipped to study area- Rock Springs BLM
historic_pts_NPS	National Registry of Historic Places (US)		Historic_Improvements_RockSpg	Historic Range Improvements Polygon- Rock Springs BLM
Pioneer_Trails_Clean	Historic Pioneer Trails (WY)		WSAs	Wilderness Study Areas-BLM statewide
Streams_of_Concern	Streams of importance in Blacks Fork Watershed Study Area		State_Conservation09	State Conservation Districts
reservoirs_from_GRB_plan	Reservoirs from Green River Basin Plan		State_improvement09	State Improvement Districts
ACE_Temp_Gage_Locations	Project Temporary Stream Gage		SpecialMgmtAreas	Special Managemnet Areas-Compiled data
USGS_Stream_Gage_2006	USGS Streamgages Locations		Uinta_parcels	Uinta County Private Ownership
WYPDES_8_15_14	WYPDES Outfalls as of 8-15-14	**Land Surface Ownership**	lincoln_parcels	Lincoln County Private Ownership
DEQ_Stream_Class	Wyoming Department of Environmental Quality Surface Water Classifications		Sweetwater_parcels	Sweetwater County Private Ownership
rad_303d_line	EPA 303D Streams		WYOMING_ACTIVE_COAL_PERMIT_BOUNDARIES_AUGUST_2014	Active Coal Mines in state of wyoming WyDEQ Data
rad_303d_point	EPA 303d Point	**Mining**	DII_NonCoal_Points	WYDEQ Division II mining sites - non coal
rad_303d_area	EPA 303d Area		DII_NonCoal_Boundaries	WYDEQ Division II mining site boundaries - non coal
TMDL_Study_area	TMDL Study Area located in Blacks Fork Watershed		mrds_fUS56	USGS Mineral Resource Data System (MRDS) data query - statewide
Study_Area_outline	Blacks Fork Watershed Study Area		Abandoned Mine Lands datasets	Series of statewide datasets depicting known abandoned mine lands in the state of Wyoming.
Phases	Study area phase boundaries		city	Cities within Wyoming
Subregions	Subregions created to aid in landcover and habitat analysis			
Lakes	Lakes in the state of wyoming			
HUC12clip	HUC 12 subwatershed boundaries clipped to study area			
HUC10	HUC 10 watershed boundaries			
HUC_250k	HUC 250K watershed boundaries			
Irrigation_districts	Irrigation districts within the state of wyoming			

Table 3.2-1 Generalized GIS Contents (continued).

Boundaries	counties_wygisc	Wyoming County Boudaries
	qqsection	Publlic Land Survey System (PLSS) Qtr/Qtr sections - statewide
	section	Publlic Land Survey System (PLSS) Sections - statewide
	twnshp	Publlic Land Survey System (PLSS) Township/Range - statewide
	utm	Universal Transverse Mercator Zones - worldwide
	WY_SP_Zones	Wyoming State Plane Coordinate Zones
	Lincoln County NAIP Imagery	2012 True color 1m imagery and 2009 Color Infrared 1m Imagery for Lincoln County.
Background Maps and Aerial Photos	Sweetwater County NAIP Imagery	2012 True color 1m imagery and 2009 Color Infrared 1m Imagery for Sweetwater County.
	Uinta County NAIP Imagery	2012 True color 1m imagery and 2009 Color Infrared 1m Imagery for Uinta County.
	USGS_10M DEM	USGS 10M DEM covering the study area
	Topographic Maps	Countywide 24K USGS topo maps for Lincoln, Uinta and Sweetwater counties.

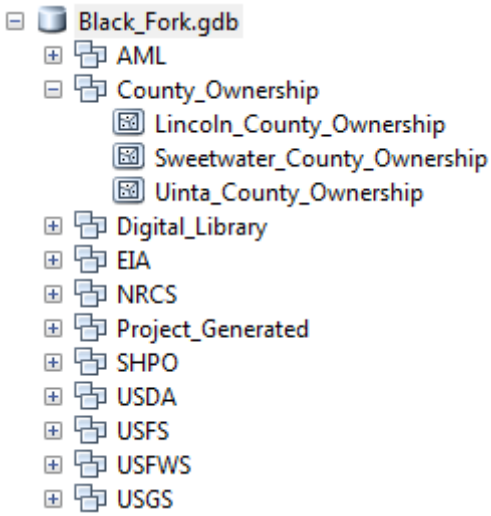


Figure 3.2-2 Blacks Fork Watershed Study Project GIS Geodatabase Structure.

It is also important to note that data presented in the project GIS and within this report are subject to change with time as the agencies creating them continually update their databases. The user is encouraged to obtain the most current data available to meet the needs of future endeavors utilizing the project GIS.

3.2.3 Digital Library

The Digital Library is a collection of documents, plats, maps, figures, spreadsheets, etc., pertaining to the project. Documents reviewed during the completion of this project were scanned and included in the Digital Library to the extent possible. Copyright protected documents were not included in the Library; however documents published by public agencies were included where feasible. The Digital Library consists of a spreadsheet listing the available documents and links to each; it can be searched or sorted depending upon the user's needs. Individual document files can be directly accessed via the Digital Library or directly by "browsing" to the file. Documents included in the Digital Library were obtained from the agencies listed in Table 3.2-2, among others.

Table 3.2-2 Sources of Information Included in the Digital Library.

USDI Bureau of Land Management
United States Army Corps of Engineers
United States Environmental Protection Agency
United States Fish and Wildlife Service
USDI United States Geologic Survey
Wyoming Department of Environmental Quality
Wyoming Department of Game and Fish
University of Wyoming
Wyoming Water Development Commission
Miscellaneous

3.3 Land Uses and Activities

3.3.1 Land Ownership

The total land area within the project study area is approximately 2.5 million acres (3,873.4 square miles). Figure 3.3-1 presents a map indicating the various land ownership categories within the watershed. The study area spans three counties; Uinta, Sweetwater and Lincoln. As indicated in Figure 3.3-2, Uinta comprises the majority of the area (1,591.4 square miles or 41.1 percent). Sweetwater County comprises approximately 1,229.5 square miles (31.7 percent) and Lincoln County comprises the remaining 1,052.5 square miles (27.2 percent).

Land ownership information was obtained from the Bureau of Land Management (BLM) and the assessor's offices of the three counties involved and incorporated into the project GIS. According to this data, approximately 1,835.8 square miles (47.4 percent) of the study area is owned and administered by the Bureau of Land Management (BLM). The second largest land owner category is private individuals with approximately 1678.7 square miles (43.3 percent). The United States Forest Service owns and administers 216.2 square miles (5.6 percent) of land including the national recreation area adjacent to the Flaming Gorge Reservoir. The State of Wyoming (128.5 square miles or 3.3 percent) rounds out the surface ownership within the study area. A pie chart displaying the relative percentage of land ownership within the watershed is presented as Figure 3.3-3.

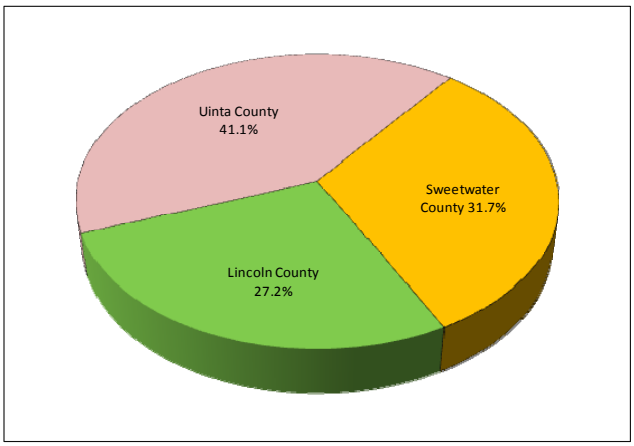


Figure 3.3-2 Distribution of Study Area among Counties.

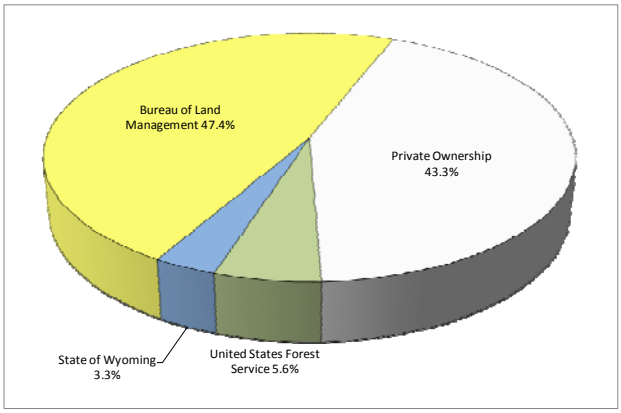


Figure 3.3-3 Distribution of Land Ownership within the Blacks Fork Study Area.

An extensive portion of the study area is referred to as the "checkerboard" as a result of the landownership pattern of federal and private lands. This pattern is a remnant of the Union Pacific Act of 1862 with which Congress granted every other section (one square mile) of land within ten miles of the railroad to the Union Pacific, which tried to sell it to raise capital for railroad construction. The strip along the railroad was later extended to twenty miles. The premise was that land values would increase following railroad construction and that the railroad company could then sell the land at a profit (BLM, 2014 at www.blm.gov).

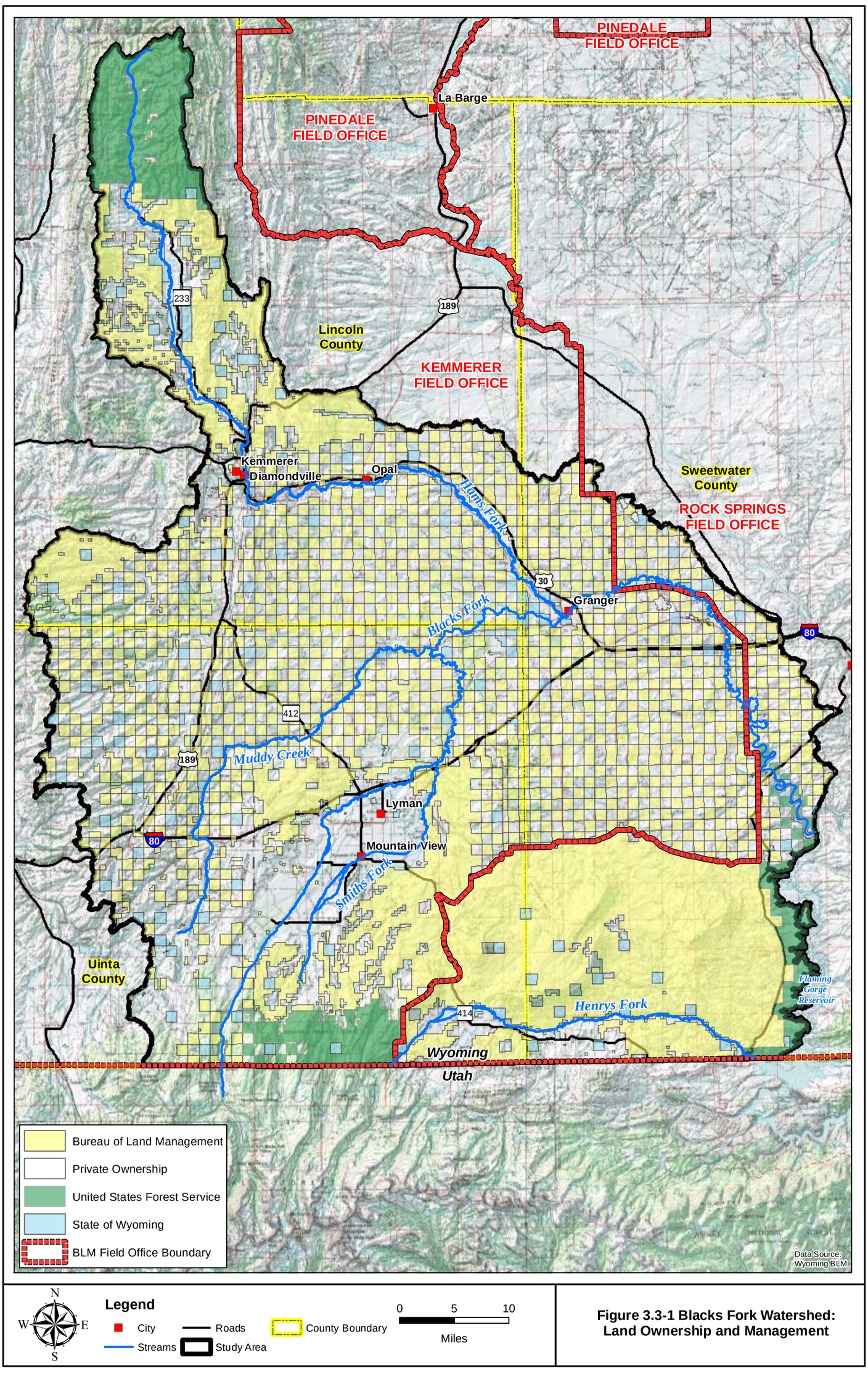


Figure 3.3-1 Blacks Fork Watershed: Land Ownership and Management

Please refer to the Phase I, II, and III report volumes for more detailed mapping and statistics pertaining to land ownership.

Note: The Project GIS includes detailed land ownership information (name, address, etc.) for individual parcels in Uinta, Sweetwater, and Lincoln Counties. The data were obtained directly from the respective county assessor's offices and reflect ownership status as of the dates of their retrieval (Fall of 2013).

3.3.2 Transportation, Energy and Communications Infrastructure

Transportation is generally concentrated around the Interstate 80 corridor with arterials connecting the Lyman, Mountain View and surrounding areas. U.S. Highway 30 runs northerly from I-80 through Granger, Opal and Kemmerer. State highways are located throughout the study area with various other local roads and unimproved trails. Major roads and railroads in the study area are shown on Figure 3.3-4. The project GIS contains mapping of unimproved roads in much greater detail than can be displayed at the scale of this figure.

Power generation and power transmission lines in and near the study area are shown on Figure 3.3-4.

3.3.3 Irrigation

Irrigation activities are limited primarily to the Blacks Fork, Smiths Fork, Henrys Fork, and Hams Fork floodplains as indicated on Figure 3.3-5. Smaller irrigated acreages are located on Muddy Creek and other tributaries; however, these are isolated and less extensive than the irrigated areas on mainstems. Irrigated pastures and grass hay/alfalfa dominate the irrigated lands usage.

Typically, the full growing season in the majority of the study area extends from early-May to late September, with the period from mid-July to the end of September defined as late-season when shortages frequently occur. Water supplies are more abundant in April, May and June because of high volumes of snow melt runoff. During these months, water supplies frequently exceed the demand. However, the supply of irrigation water in the basin is substantially reduced during late July, August, and September as snowmelt slows and ceases.

Based upon evaluation of delineated irrigated acreage provided by the WWDO, there are approximately 102,600 acres within the study area. Review of aerial photography with respect to the permitted headgate locations indicates that the majority of irrigated acres consist of narrow, topographically confined strips of irrigated pasture within riparian corridors.

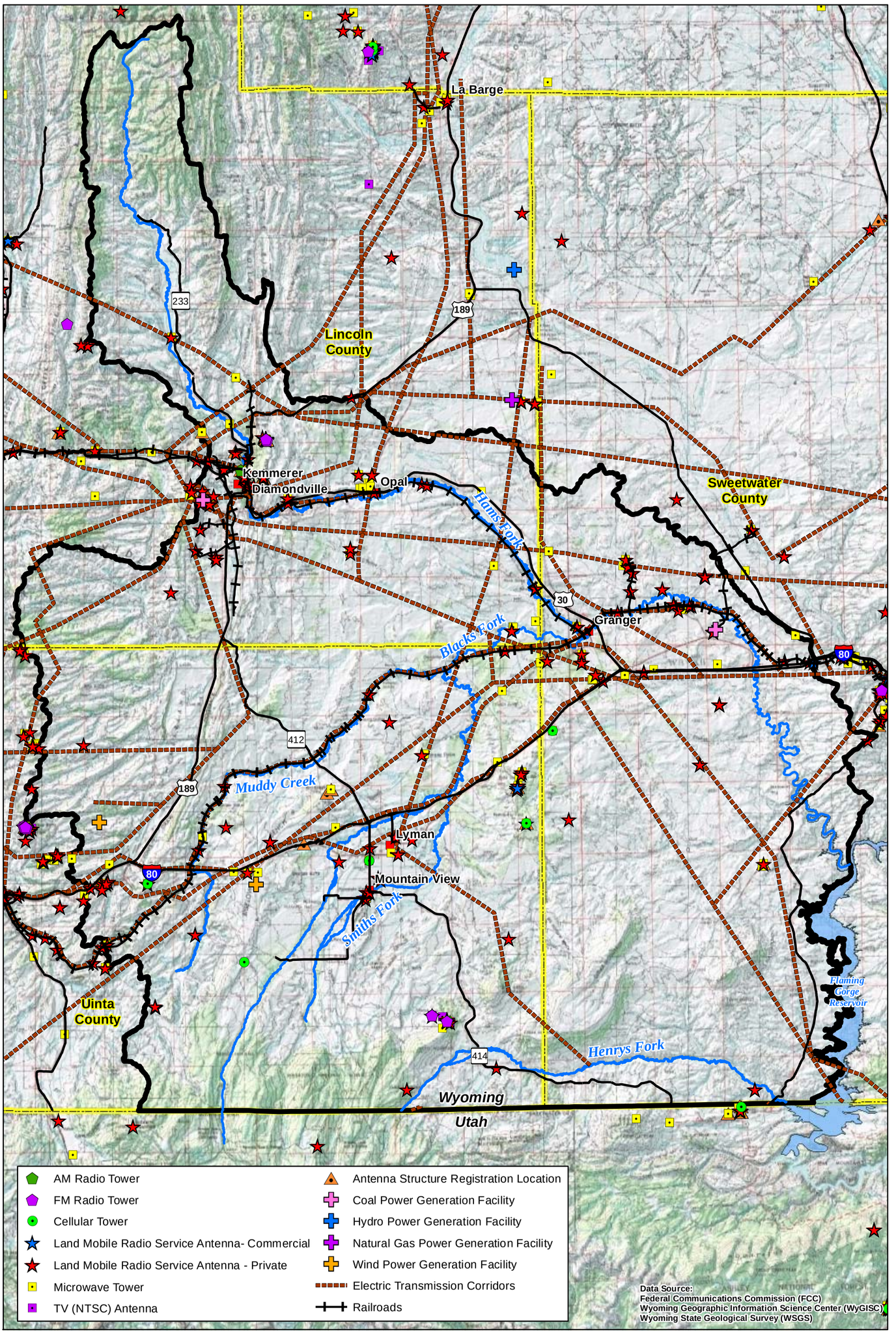


Figure 3.3-4 Blacks Fork Watershed: Communications,Transportation and Power Generation

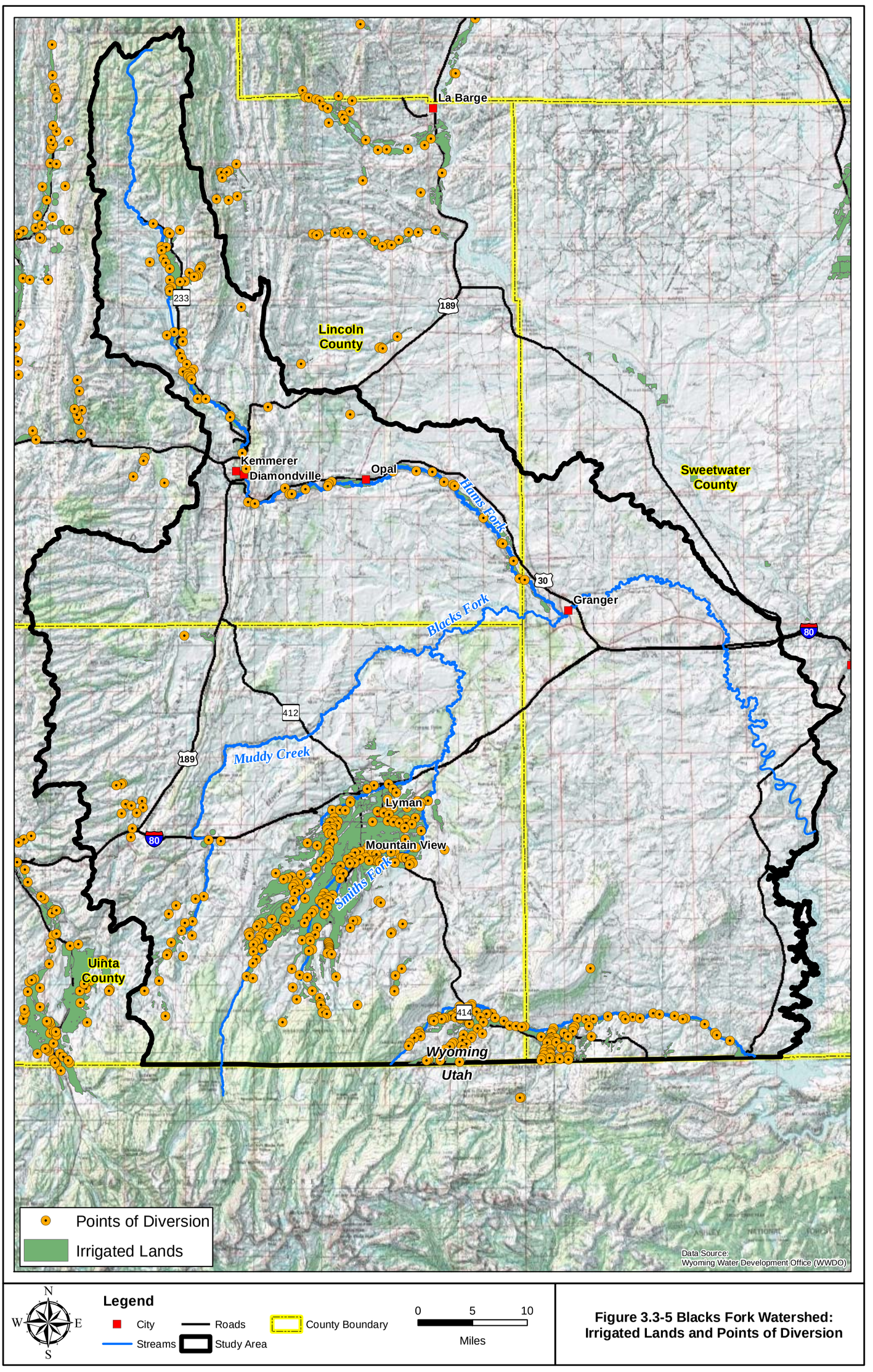


Figure 3.3-5 Blacks Fork Watershed: Irrigated Lands and Points of Diversion

3.3.4 Range Conditions/Grazing Practices

3.3.4.1 Grazing Allotments Administration

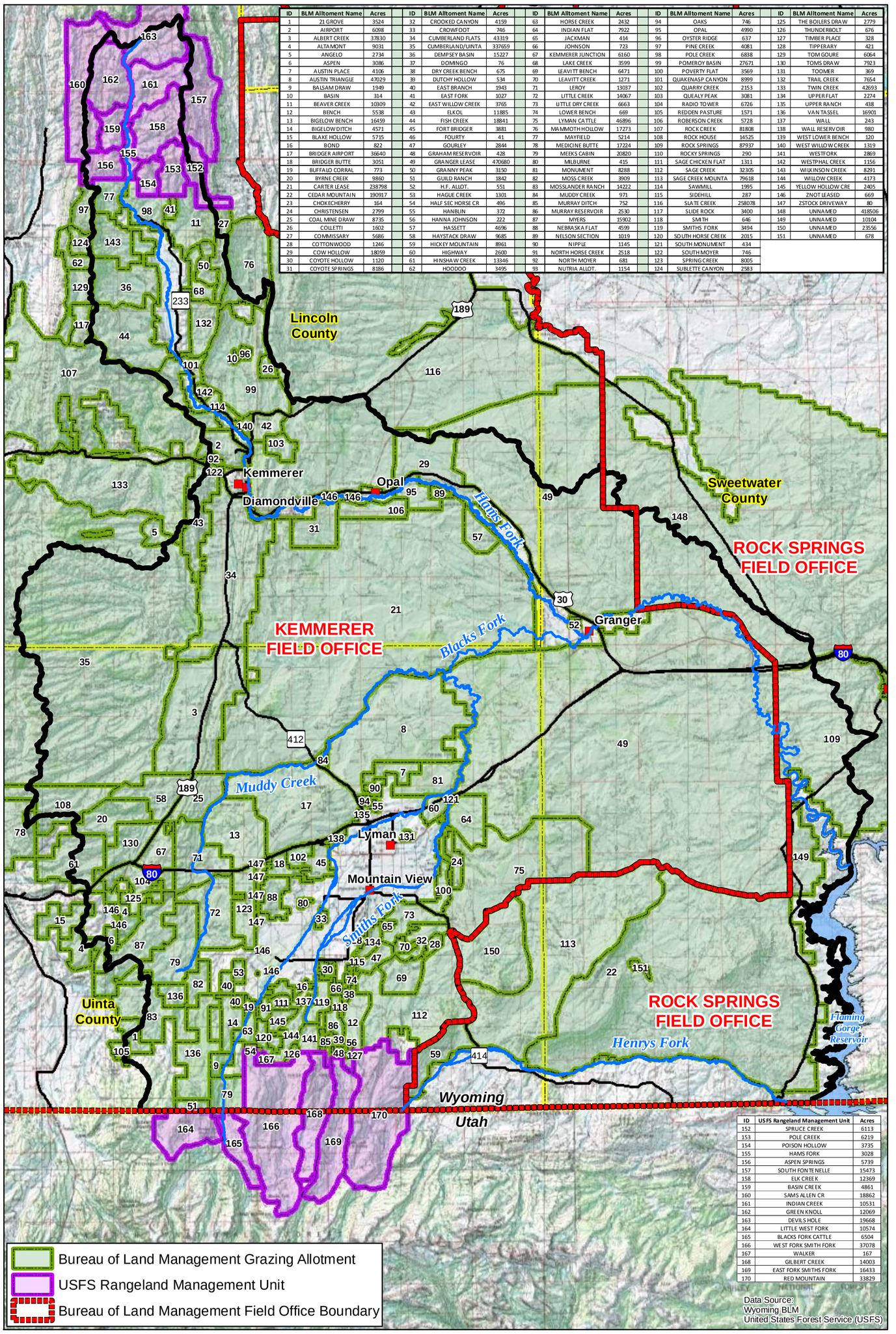
Grazing on federal lands within the Blacks Fork watershed is administered by the United States Forest Service and the Bureau of Land Management. The USFS-administered allotments (sometimes referred to as rangeland management units or RMUs) are located at higher elevations within the Bridger-Teton National Forest on the northern edge of the watershed and the Uinta-Wasatch-Cache National Forest on the southern border of the watershed. There are 19 USFS individual allotments and 151 BLM allotments as indicated in Figure 3.3-6. These allotments consist entirely of federal lands. Note that some of these allotments may be located primarily in adjacent watersheds and "spill" over the watershed divide. ***For more detailed mapping refer to the Phase I, II, and III report volumes.***

The BLM-administered allotments are administered by both the Rock Springs Field Office (Green River Resource Management Plan approved in 1997) and the Kemmerer Field Office (Kemmerer Resource Management Plan approved in 2010). The Rock Springs Field Office is currently revising the existing Green River Resource Management Plan (RMP) and preparing an associated environmental impact statement (EIS). The revision will be known as the Rock Springs RMP. The Rock Springs RMP will replace the Green River RMP and will provide an updated and comprehensive framework for managing and allocating use of public lands and resources administered by the BLM in the Rock Springs Field Office.

Under the umbrella of these plans, management of BLM grazing allotments is managed in accordance with the principles of multiple use and sustained yield embodied in the Federal Land Policy and Management Act (1976) and the Taylor Grazing Act (1934).

More information describing the BLM's grazing management standards and guidelines can be found online (http://www.blm.gov.wy.st.en.programs/grazing.html). The BLM's grazing management guidelines which are pertinent for this watershed study include the following summaries (BLM, 1997).

- Support infiltration, maintain soil moisture, stabilize soils, and sufficient water to maintain system function and soil permeability.
- Restore, maintain, or improve riparian plant communities to sustain adequate residual plant cover for sediment capture and groundwater recharge.
- Implement riparian improvements to maintain or enhance stream channel morphology.
- Develop springs, seeps, reservoirs, wells or other water development projects in a manner protective of watershed ecological and hydrological functions.
- Implement range improvements away from riparian areas to avoid conflicts in achieving or maintaining riparian function.
- Adopt management practices and implement range improvements that protect vegetative cover and thereby maintain, restore, or enhance water quality.



ID	BLM Allotment Name	Acres
1	21 GROVE	3524
2	AIRPORT	6098
3	ALBERT CREEK	37830
4	ALTAMONT	9031
5	ANGELO	2734
6	ASPEN	3086
7	AUSTIN PLACE	4106
8	AUSTIN TRIANGLE	47029
9	BALSAM DRAW	1949
10	BASIN	314
11	BEAVER CREEK	10309
12	BENCH	5538
13	BIGELOW BENCH	16459
14	BIGELOW DITCH	4571
15	BLAKE HOLLOW	5715
16	BOND	822
17	BRIDGER AIRPORT	36640
18	BRIDGER BUTTE	3051
19	BUFFALO CORRAL	773
20	BYRNE CREEK	9860
21	CARTER LEASE	238798
22	CEDAR MOUNTAIN	190917
23	CHOKECHERRY	164
24	CHRISTENSEN	2799
25	COAL MINE DRAW	8735
26	COLLETTI	1602
27	COMMISSARY	5686
28	COTTONWOOD	1246
29	COW HOLLOW	18059
30	COYOTE HOLLOW	1120
31	COYOTE SPRINGS	8186
32	CROOKED CANYON	4159
33	CROWFOOT	746
34	CUMBERLAND FLATS	43319
35	CUMBERLAND/UINTA	337659
36	DEMPSEY BASIN	15227
37	DOMINGO	76
38	DRY CREEK BENCH	675
39	DUTCHY HOLLOW	534
40	EAST BRANCH	1943
41	EAST FORK	1027
42	EAST WILLOW CREEK	3765
43	ELKOL	11885
44	FISH CREEK	18841
45	FORT BRIDGER	3881
46	FOURTY	41
47	GOURLEY	2844
48	GRAHAM RESERVOIR	428
49	GRANGER LEASE	470680
50	GRANNY PEAK	3150
51	GUILD RANCH	1842
52	H.F. ALLOT.	551
53	HAGUE CREEK	1301
54	HALF SEC HORSE CR	496
55	HANBLIN	372
56	HANNA JOHNSON	222
57	HASSETT	4696
58	HAYSTACK DRAW	9685
59	HICKEY MOUNTAIN	8961
60	HIGHWAY	2600
61	HINSHAW CREEK	13346
62	HOODOO	3495
63	HORSE CREEK	2432
64	INDIAN FLAT	7922
65	JACKMAN	414
66	JOHNSON	723
67	KEMMERER JUNCTION	6160
68	LAKE CREEK	3599
69	LEAVITT BENCH	6471
70	LEAVITT CREEK	1271
71	LEROY	13037
72	LITTLE CREEK	14067
73	LITTLE DRY CREEK	6663
74	LOWER BENCH	669
75	LYMAN CATTLE	46896
76	MAMMOTH HOLLOW	17273
77	MAYFIELD	5214
78	MEDICINE BUTTE	17224
79	MEEKS CABIN	20820
80	MILBURNE	415
81	MONUMENT	8288
82	MOSS CREEK	3909
83	MOSSLANDER RANCH	14222
84	MUDDY CREEK	971
85	MURRAY DITCH	752
86	MURRAY RESERVOIR	2530
87	MYERS	15902
88	NEBRASKA FLAT	4599
89	NELSON SECTION	1019
90	NIPPLE	1145
91	NORTH HORSE CREEK	2518
92	NORTH MOYER	681
93	NUTRIA ALLOT.	1154
94	OAKS	746
95	OPAL	4990
96	OYSTER RIDGE	637
97	PINE CREEK	4081
98	POLE CREEK	6838
99	POMEROY BASIN	27671
100	POVERTY FLAT	3569
101	QUAKENASP CANYON	8999
102	QUARRY CREEK	2153
103	QUEALY PEAK	3081
104	RADIO TOWER	6726
105	REDDEN PASTURE	1571
106	ROBERSON CREEK	5728
107	ROCK CREEK	81808
108	ROCK HOUSE	14525
109	ROCK SPRINGS	87937
110	ROCKY SPRINGS	290
111	SAGE CHICKEN FLAT	1311
112	SAGE CREEK	92305
113	SAGE CREEK MOUNTA	79618
114	SAWMILL	1995
115	SIDEHILL	287
116	SLATE CREEK	258078
117	SLIDE ROCK	3400
118	SMITH	646
119	SMITHS FORK	3494
120	SOUTH HORSE CREEK	2015
121	SOUTH MONUMENT	434
122	SOUTH MOYER	746
123	SPRING CREEK	8005
124	SUBLETTE CANYON	2583
125	THE BOILERS DRAW	2779
126	THUNDERBOLT	676
127	TIMBER PLACE	328
128	TIPPERARY	421
129	TOM GOURE	6064
130	TOMS DRAW	7923
131	TOOMER	369
132	TRAIL CREEK	7654
133	TWIN CREEK	42693
134	UPPER FLAT	2274
135	UPPER RANCH	438
136	VAN TASSEL	16901
137	WALL	243
138	WALL RESERVOIR	980
139	WEST LOWER BENCH	120
140	WEST WILLOW CREEK	1319
141	WESTFORK	2869
142	WESTPHAL CREEK	1156
143	WILKINSON CREEK	8291
144	WILLOW CREEK	4173
145	YELLOW HOLLOW CRE	2405
146	ZNOT LEASED	669
147	ZSTOCK DRIVEWAY	80
148	UNNAMED	418506
149	UNNAMED	10104
150	UNNAMED	23556
151	UNNAMED	678

ID	USFS Rangeland Management Unit	Acres
152	SPRUCE CREEK	6113
153	POLE CREEK	6219
154	POISON HOLLOW	3735
155	HAMS FORK	3028
156	ASPEN SPRINGS	5739
157	SOUTH FONTENELLE	15473
158	ELK CREEK	12369
159	BASIN CREEK	4861
160	SAMS ALLEN CR	18862
161	INDIAN CREEK	10531
162	GREEN KNOLL	12069
163	DEVILS HOLE	19668
164	LITTLE WEST FORK	10574
165	BLACKS FORK CATTLE	6504
166	WEST FORK SMITH FORK	37078
167	WALKER	167
168	GILBERT CREEK	14003
169	EAST FORK SMITHS FORK	16433
170	RED MOUNTAIN	33829

Legend

City | Roads | County Boundary | Streams | Study Area

0 5 10 Miles

Figure 3.3-6 Blacks Fork Watershed: BLM Grazing Allotments and USFS Rangeland Management Units

On USFS lands, livestock grazing is permitted and governed through a permit system, Allotment Management Plans (AMPs) and Annual Operating Instructions. General grazing management on Bridger-Teton National Forest lands and the role of the AMP is discussed in the following paragraphs extracted from the Final Environmental Impact Statement (1990) for the Bridger-Teton National Forest:

> *Livestock grazing is managed through allotment management plans. In allotment management planning, an Interdisciplinary Team reviews range conditions on the ground and helps set objectives for the allotment. The rancher is a key participant in the process. One of the main objectives in the allotment management plan is to improve the range conditions.*
>
> *Stocking rates across the forest are about within the capacity of the range. However management will have to change on some allotments if ecological status objectives are expected to be met, especially on the riparian areas. If improved management is not adequate, some reductions in livestock use may be needed. Cancellation of the existing grazing permits due to excessive nonuse may help to alleviate management problems on some allotments.*
>
> *Ranchers on the forest have been very cooperative in working with the Forest Service to improve range conditions on their allotments. As a result some allotments have the potential for increased livestock use.*

(Appendix 3A includes information pertaining to the specific allotments which fall within the project study area)

State Grazing Leases. Most of the state lands within the study area are leased to private landowners for grazing. These leases are typically issued by the Board of Land Commissioners and administered by the Wyoming OSLI. Management practices and improvements on state lands are usually established and implemented by the lessee. Improvements are typically paid for and owned by the lessee. Upon transfer of the state lease, the new lessee reimburses the previous lessee for improvements.

Grazing on Private Lands. Grazing practices on private lands are established by the landowner, often with technical assistance from the local NRCS Field Office or a range consultant. Management practices and improvements on private lands are established and implemented by the landowner or manager. Landowners and operators who voluntarily participate in Farmbill programs may be required to follow NRCS standards and specifications or an approved grazing plan included in a conservation plan schedule of operations developed for the enrolled property or applicable Farmbill program.

3.3.4.2 Existing Water Supply

Numerous upland water supply sources currently exist within the study area, and many range improvement projects have been completed which utilize these existing water sources (springs, wells,

perennial streams, etc.). Typical projects include livestock/wildlife water tanks and/or livestock/wildlife reservoirs, spring developments with pipelines providing water to remote stock tanks, well construction, etc.

Mapping of existing sources was completed to provide valuable information for completion of the watershed management plan:

- Mapping of stock reservoirs, stock tanks/troughs, and guzzlers was initially obtained from the Kemmerer and Rock Springs Field Offices of the BLM (Figure 3.3-7). The Range Improvement Project System (RIPS) database was accessed through the BLM National Operations Center to provide supplemental information for this data in order to more accurately determine project specifications. Note that springs mapping data was also received but not included in the figure, due to not being able to confirm whether the spring is a viable or developable water source without field verification. These data are, however, available within the Project GIS for review, use, and analysis.
- Mapping of wells with a designated stock use was obtained from the Wyoming State Engineers Office (SEO).
- Interviews with landowners including the Uinta Development Corporation (UDC), were conducted during project meetings, and in the field. During these interviews, locations of existing sources were documented and the information incorporated into the project GIS.
- In addition, aerial photography was reviewed within the GIS environment to document all visible features (i.e. stock reservoirs), and give an initial assessment of their condition.

Not all landowners participated in the project; consequently, the mapping is not expected to be an exhaustive accounting of all available sources. Mapping of all stock tanks/troughs within the study area was beyond the scope and feasibility of this study. These features are generally not visible during the review of the aerial photography and at this time, comprehensive mapping of these sources has not been previously completed. However, the information provides a starting point upon which to evaluate the watershed.

The results of this effort indicated the presence of 2,093 stock reservoirs/ponds. Mapping of springs was augmented with digitized locations from USGS topographic mapping. Field inspection of the sites was beyond the scope and budget of this project, however, a reasonable estimate of the viability of the reservoirs was desired. Based field observations and interviews with landowners, it is obvious that many of the reservoirs have either failed or have filled with sediment and are no longer viable sources of livestock and wildlife water.

Using the project GIS, mapping of the reservoir sites was overlain on multiple years of recent high resolution aerial photography (2009, 2010 and 2012). This was done in order to more accurately determine the status of each reservoir over time and reduce error as much as possible due to dry or wet

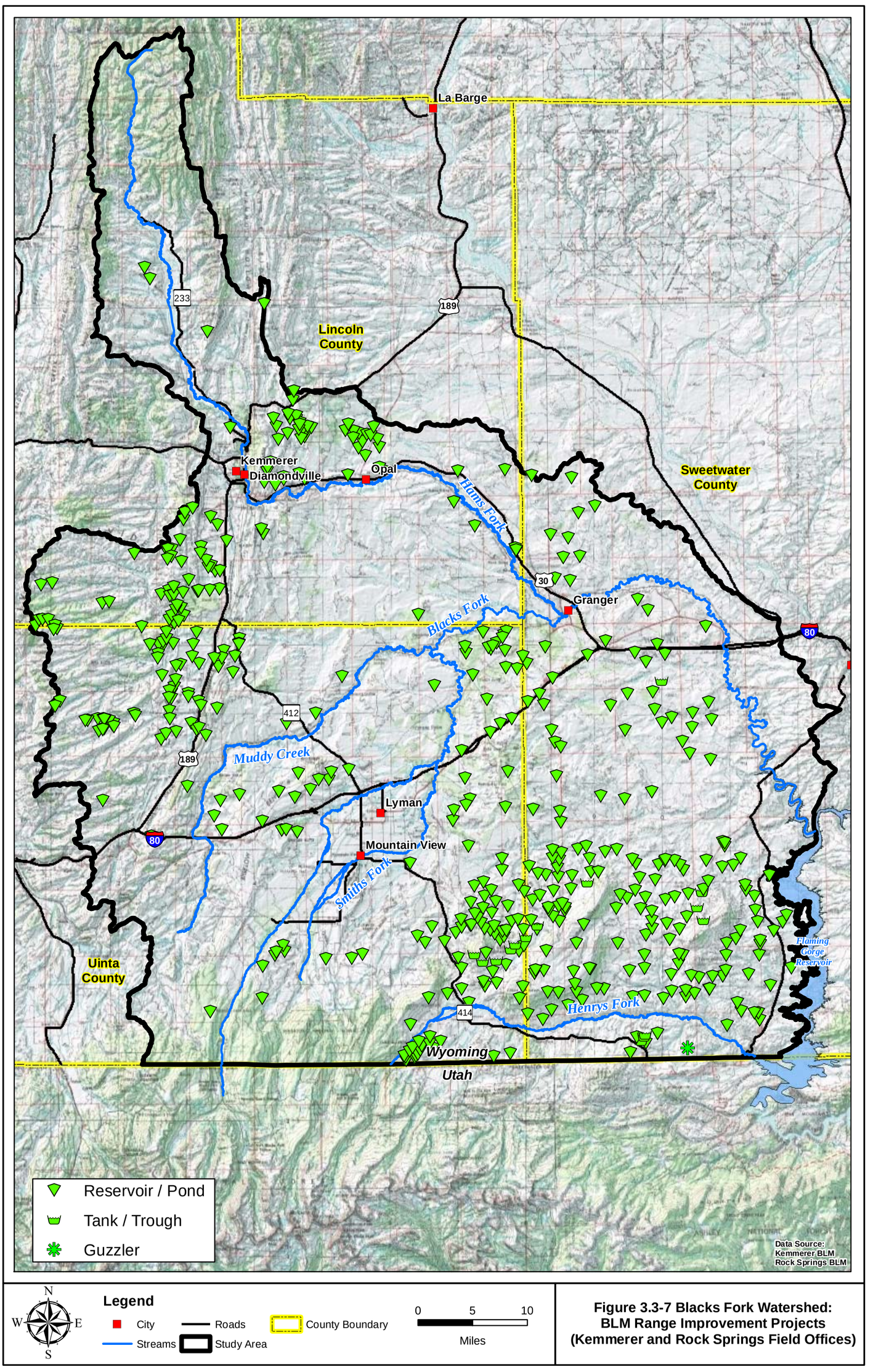


Figure 3.3-7 Blacks Fork Watershed: BLM Range Improvement Projects (Kemmerer and Rock Springs Field Offices)

water years. Reservoirs containing water in multiple years of photography or showed no signs of physical breaches or sedimentation were determined to be functional water sources. Physical breaches were visible on many of the reservoirs resulting in a classification of "non-functional". Likewise, many were visibly filled with sediment and also classified as "non-functional". Others were simply empty and firm conclusions could not be drawn. These sites could have been dry at the time of the photography but remain viable sources following precipitation events and were classified as "potential" water sources. Figure 3.3-8 displays an example of this process.

Figure 3.3-9 displays a map of the study area showing the results of this classification. Based upon this analysis, it appears that a minimum of 1,307 reservoirs remain "functional" water sources and 411 are "potential" water sources. This analysis also indicates that 375 reservoirs are "non-functional" water sources as they are either breached, sediment filled, or in need of site visits to determine their status. Appendix 3B presents the results in a tabular format.

Please refer to the Phase I, II, and III report volumes for more detailed mapping pertaining to existing water sources.

Numerous additional water supply projects have been developed throughout the study area in support of livestock and wildlife. These include construction of wells with designated stock use, guzzlers, pipelines, etc. These generally incorporate some sort of livestock watering facility such as large bottomless concrete stock tanks.

Based upon the reservoir analysis effort, mapping data obtained from the BLM and the SEO office, and landowner input, the existing water sources are displayed in Figure 3.3-10. Note that this figure does NOT include surface water sources such as perennial streams, intermittent streams, or springs because a primary objective of this study is to reduce reliance upon these sources. Because they do not presently appear to provide sources of water to livestock or wildlife, reservoirs which appeared to be either breached, filled with sediment, or otherwise non-functioning, are not included in this figure.

3.3.4.3 Ecological Site Descriptions

The concept of "Ecological Sites" is described by the NRCS as follows:

"A distinctive kind of land with specific soil and physical characteristics that differs from other kinds of land in its ability to produce distinctive kinds and amounts of vegetation, and in its ability to respond similarly to management actions and natural disturbances."

Figure 3.3-8 Evaluation of Stock Reservoirs within the GIS Environment.

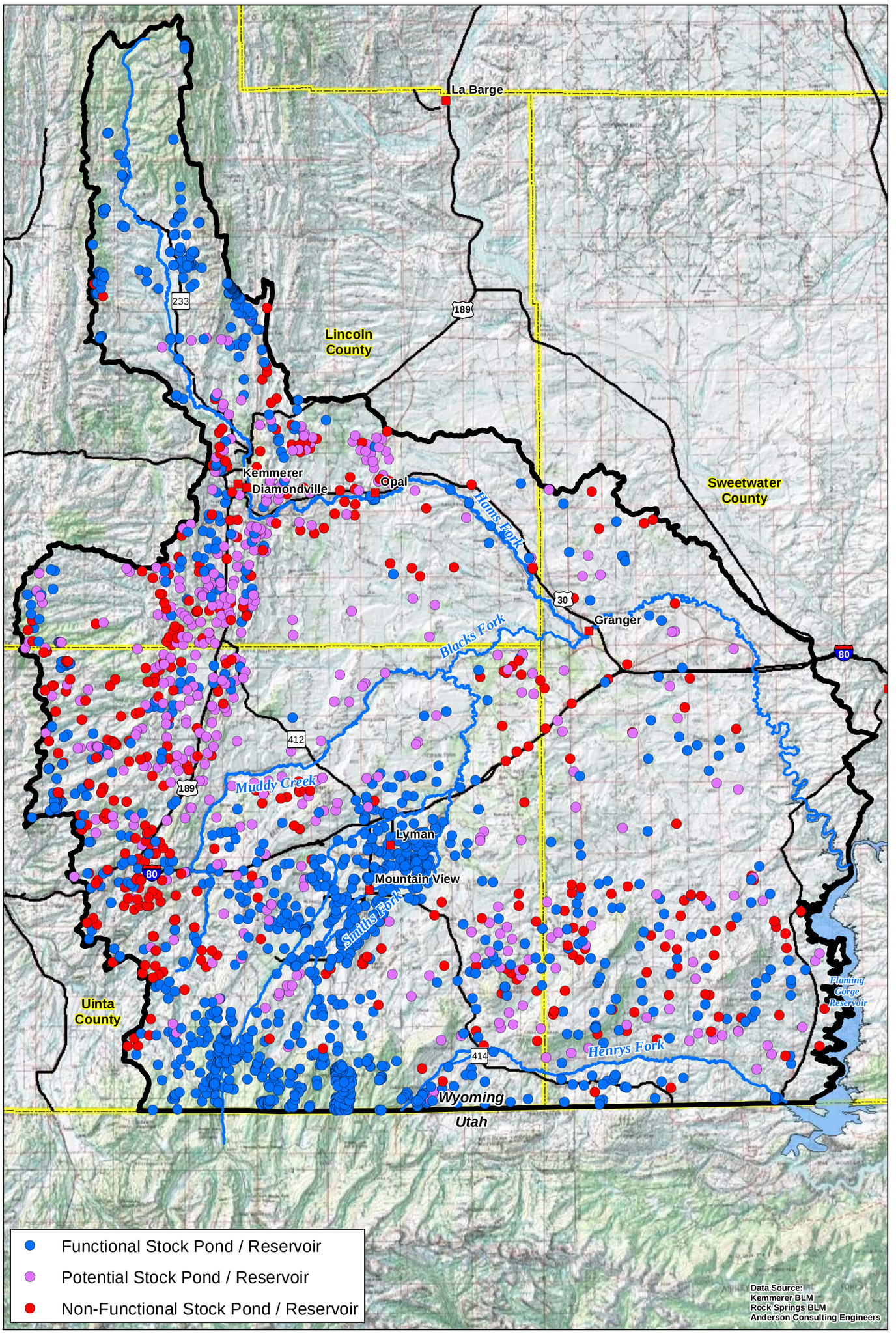


Figure 3.3-9 Blacks Fork Watershed: Stock Reservoir Evaluation

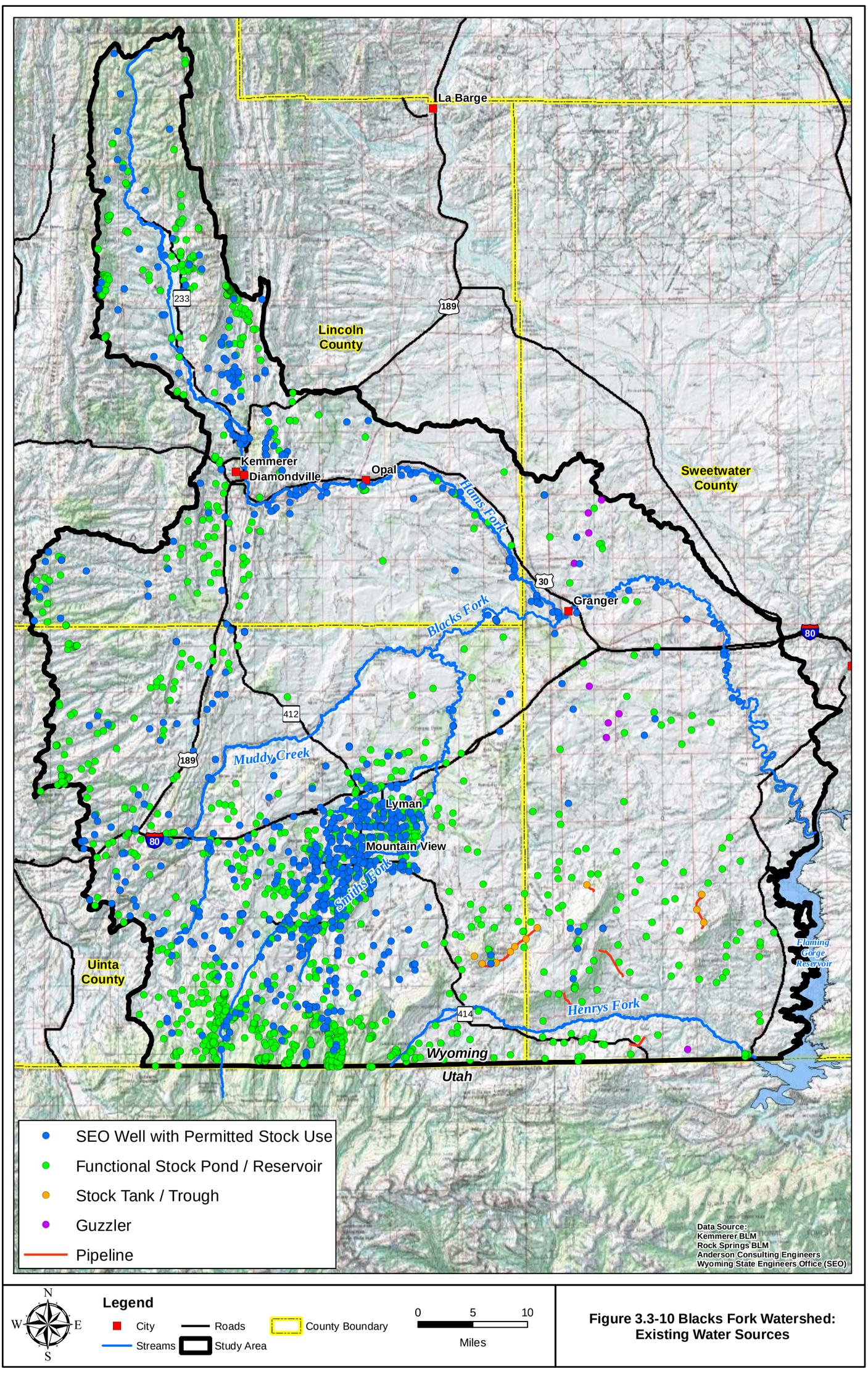


Figure 3.3-10 Blacks Fork Watershed: Existing Water Sources

Ecological sites incorporate environmental factors such as climate, soils, landform, hydrology, vegetation, and natural disturbance regimes that together define the site and its relationships between these factors and how they influence plant community composition [Caudle et al., 2013]. The characteristics differentiating ecological sites and their features are documented as an ecological site description (ESD), which includes the following:

- Data used to define the distinctive properties and characteristics of the sites;
- Biotic and abiotic characteristics that differentiate the site (i.e., climate, physiographic, soil characteristics, plant communities); and
- Ecological dynamics including how changes in climate, disturbance processes and management can affect the site.

An ESD includes interpretations about the land uses that a specific ecological site can support and management alternatives for achieving objectives. ESDs are valuable tools that can be used to help landowners and managers make decisions through evaluating the condition or health of a range or forest site by comparing the current vegetation composition to the type of plants the site is capable of growing. The ecological sites and associated descriptions were developed over many years of data collection and range site monitoring and are dependent on the location of a site within defined precipitation zones and existing soil characteristics.

Ecological Site Descriptions (ESDs) reports are available from the NRCS that describe the following for each Ecological Site:

- **Site Characteristics**: Identifies the site and describes the physiographic, climate, soil, and water features associated with the site.
- **Plant Communities**: Describes the ecological dynamics and the common plant communities comprising the various vegetation states of the site. The disturbances that cause a shift from one state to another are also described.
- **Site Interpretations:** Interpretive information pertinent to the use and management of the site and its related resources.
- **Supporting Information**: Provides information on sources of information and data utilized in developing the site description and the relationship of the site to other ecological sites (NRCS, 2009).

ESDs are available from the NRCS at:
https://esis.sc.egov.usda.gov/Welcome/pgReportLocation.aspx?type=%20ESD

The ESDs can be used to compare what is growing on the rangeland with what each site is capable of growing. By comparing the present vegetative composition to the potential compositions, the relative health of the range resource can be evaluated. Production of each site is closely related to the ecological condition of the site. Ecological Sites are defined based upon their location within defined

Ecological Precipitation Zones and soil characteristics. Figure 3.3-11 displays the ecological precipitation zones found in the Study Area where mapping is available.

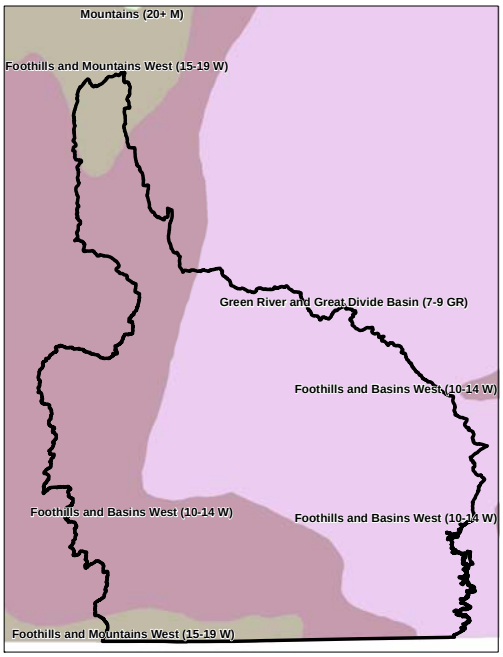


Figure 3.3-11 Ecological Precipitation Zones within the Project Study Area.

Ecological Sites are defined based upon their location within defined Ecological Precipitation Zones and soil characteristics. Using database tools provided by the NRCS, the available soils mapping was evaluated and Ecological Sites defined within the study area. Detailed soils mapping was available for approximately 80% of the study area. ESD's were not able to be produced for the remaining 20% of the watershed due to lack of available soils data (Please refer to Section 3.4.4 for a discussion of soils mapping availability). Also please note that even if there is soils data available there may not be an associated ESD that can be calculated. For example the Badlands soil type, mines, dumps, urbanland, and water are all values in the soil data for which ESD's cannot be calculated. Figure 3.3-12 displays the locations of the major ecological sites where the 1:24,000 mapping was available.

Please refer to the Phase I, II, and III report volumes for more detailed information pertaining to ESD mapping.

Based upon the mapping which is available, at the basinwide scale there are several ecological sites which are predominant. These ecological sites are:

- Saline Upland (SU) 7-9" Green River and Great Divide Basins
- Sandy (Sy) 7-9" Green River and Great Divide Basins
- Shallow Loamy (SwLy) 7-9" Green River and Great Divide Basins

Specific on-site evaluation of local ESD type and condition is required prior to development of site specific management plans.

The following Ecological Site Interpretations associated with these ESDs are extracted from the NRCS descriptions (NRCS, 2008).

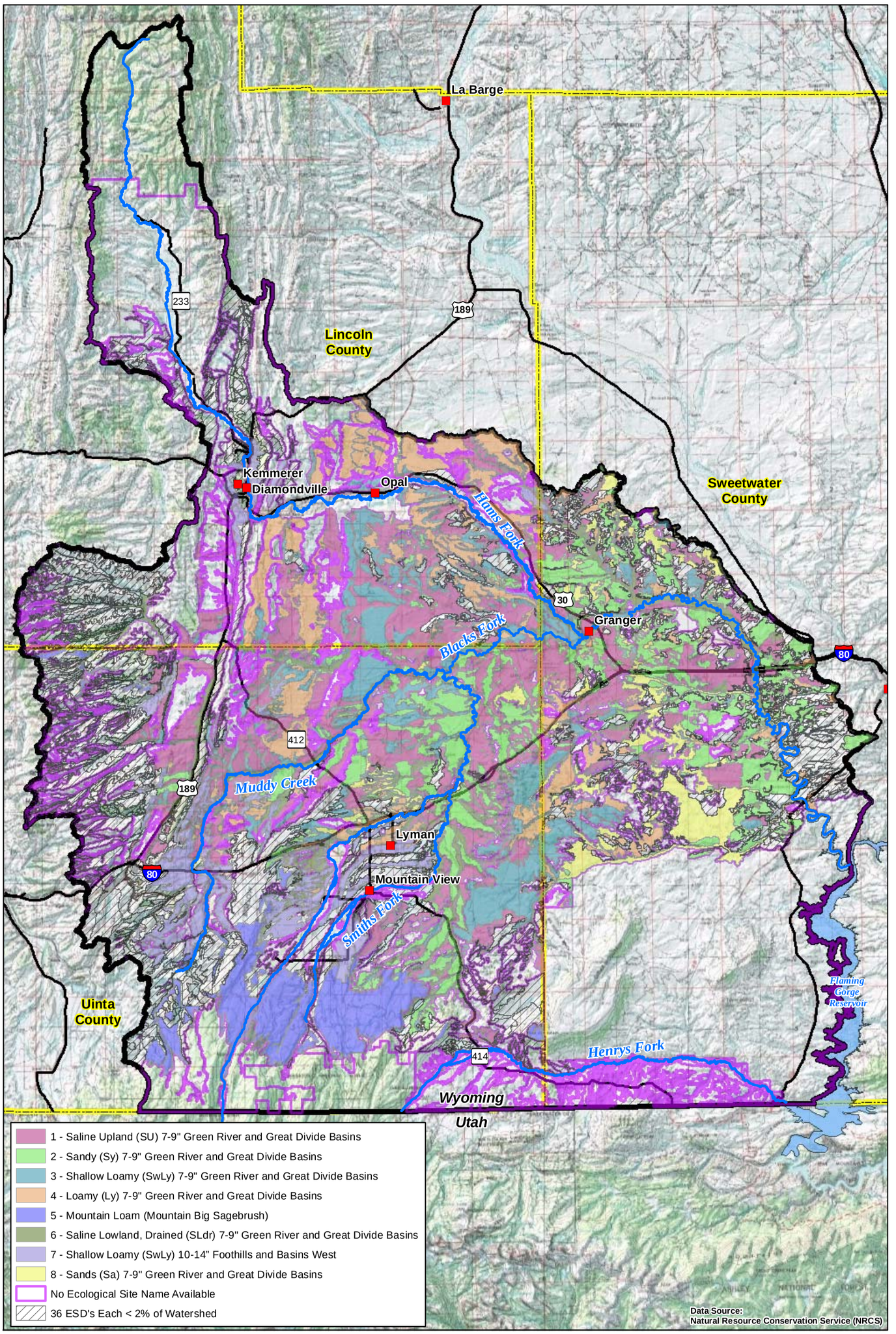


Figure 3.3-12 Blacks Fork Watershed: Predominant Ecological Sites of Management Relevance

Saline Upland (SU) 7-9" Green River and Great Divide Basins

The Historic Climax Plant Community (HCPC) for this Ecological Site is the Gardner's Saltbush/Bunchgrass Plant Community. The predominance of woody plants in this plant community provides winter grazing for mule deer and antelope. Suitable thermal and escape cover may be limited due to the low quantities of tall woody plants. Sagebrush obligate species may frequent the area, but do not prefer this habitat. When found adjacent to sagebrush dominated states, this plant community may provide lek sites for sage grouse. It provides suitable habitat for prairie dog towns, badgers, burrowing owls, and other ground-burrowing animals.

The Gardner's Saltbush/Annual Forb Plant Community: This plant community may be useful for the same wildlife that would use the Historic Climax Plant Community. However, the plant community composition is less diverse, and thus, less apt to meet the seasonal needs of these animals.

The Halogeton Plant Community is also a part of this Ecological Site. This plant community exhibits a low level of plant species diversity. It is not a desirable plant community to select as a wildlife habitat management objective.

The ESD suggests stocking rates for cattle under continuous season-long grazing under normal growing conditions. These are conservative estimates that should be used only as guidelines in the initial stages of the conservation planning process. Often, the current plant composition does not entirely match any particular plant community (as described in this ecological site description). Because of this, a field visit is recommended, in all cases, to document plant composition and production. More precise carrying capacity estimates should eventually be calculated using this information along with animal preference data, particularly when grazers other than cattle are involved. Under more intensive grazing management, improved harvest efficiencies can result in an increased carrying capacity. The following production and stocking notes are presented by the NRCS:

- *Gardner's Saltbush/Bunchgrass (HCPC) 200-600 lb./ac and .1 AUM/ac*
- *Gardner's Saltbush/Annual Forb 100-500 lb./ac and .09 AUM/ac*
- *Halogeton 50-250 lb./ac and .03 AUM/ac*

Note: Values based on continuous, season-long grazing by cattle under average growing conditions.

Grazing by domestic livestock is one of the major income-producing industries in the area. Rangeland in this area may provide yearlong forage for cattle, sheep, or horses. During the dormant period, the forage for livestock use needs to be supplemented with protein because the quality does not meet minimum livestock requirements.

Sandy (Sy) 7-9" Green River and Great Divide Basins

The Historic Climax Plant Community (HCPC) for this Ecological Site is the Needleandthread/Indian Ricegrass Plant Community. Suitable thermal and escape cover for mule deer may be limited due to the low height of woody plants. However, sagebrush, which can approach 15% protein and 40-60% digestibility, provides important winter forage for mule deer and antelope. Year-round habitat is

provided for sage grouse and many other sagebrush obligate species such as the sage sparrow, Brewer's sparrow, sage thrasher, pygmy rabbit, sagebrush vole, horned lizard, and pronghorn antelope. Other birds that would frequent this plant community include horned larks and golden eagles.

The Big Sagebrush/Bunchgrass Plant community may be useful for the same wildlife that would use the Historic Climax Plant Community (HCPC).

The Big Sagebrush/Rhizomatous Wheatgrass Plant Community may be beneficial for the same wildlife that would use the Historic Climax Plant Community. However, the plant community composition is less diverse, and thus, less apt to meet the seasonal needs of these animals.

The Rabbitbrush/Rhizomatous Wheatgrass Plant Community provides limited forage for antelope and mule deer due to low production and lack of sagebrush. They may be used as a foraging site by sage grouse if proximal to woody cover.

The ESD suggests stocking rates for cattle under continuous season-long grazing under normal growing conditions. These are conservative estimates that should be used only as guidelines in the initial stages of the conservation planning process. Often, the current plant composition does not entirely match any particular plant community (as described in this ecological site description). Because of this, a field visit is recommended, in all cases, to document plant composition and production. More precise carrying capacity estimates should eventually be calculated using this information along with animal preference data, particularly when grazers other than cattle are involved. Under more intensive grazing management, improved harvest efficiencies can result in an increased carrying capacity. The following production and stocking notes are presented by the NRCS:

- *Needleandthread/Indian Ricegrass (HCPC) 350-750 lb./ac and .16 AUM/ac*
- *Big Sagebrush/Bunchgrass 200-600 lb./ac and .11 AUM/ac*
- *Big Sagebrush/Rhizomatous Wheatgrass 100-400 lb./ac and .06 AUM/ac*
- *Rabbitbrush/Rhizomatous Wheatgrass 50-350 lb./ac and .04 AUM/ac*

Note: Values based on continuous, season-long grazing by cattle under average growing conditions.

Grazing by domestic livestock is one of the major income-producing industries in the area. Rangeland in this area may provide yearlong forage for cattle, sheep, or horses. During the dormant period, the forage for livestock use needs to be supplemented with protein because the quality does not meet minimum livestock requirements.

Shallow Loamy (SwLy) 7-9" Green River and Great Divide Basins

The Historic Climax Plant Community (HCPC) for this Ecological Site is the Bluebunch/Winterfat Plant Community (HCPC). Suitable thermal and escape cover for most wildlife is limited due to the low height and density of woody plants. However, winterfat provides important winter forage for mule deer and antelope. Open and bare ridges are suitable locations for sage grouse leks. Year-round habitat is provided for sage grouse and many other sagebrush obligate species such as the sage sparrow, Brewer's

sparrow, sage thrasher, pygmy rabbit, sagebrush vole, horned lizard, and pronghorn antelope. Other birds that would frequent this plant community include horned larks and golden eagles.

The Low Sagebrush/Rhizomatous Wheatgrass Plant Community may be beneficial for the same wildlife that would use the Historic Climax Plant Community. However, the plant community composition is less diverse, and thus, less apt to meet the seasonal needs of these animals.

The Low Sagebrush/Cheatgrass Plant Community may be beneficial for the same wildlife that would use the Historic Climax Plant Community. However, the plant community composition is less diverse, and thus, less apt to meet the seasonal needs of these animals.

The ESD suggests stocking rates for cattle under continuous season-long grazing under normal growing conditions. These are conservative estimates that should be used only as guidelines in the initial stages of the conservation planning process. Often, the current plant composition does not entirely match any particular plant community (as described in this ecological site description). Because of this, a field visit is recommended, in all cases, to document plant composition and production. More precise carrying capacity estimates should eventually be calculated using this information along with animal preference data, particularly when grazers other than cattle are involved. Under more intensive grazing management, improved harvest efficiencies can result in an increased carrying capacity. The following production and stocking notes are presented by the NRCS:

- *Bluebunch Wheatgrass/Winterfat (HCPC) 200-450 lb./ac and .11 AUM/ac*
- *Low Sagebrush/Rhizomatous Wheatgrass 100-300 lb./ac and .06 AUM/ac*
- *Low Sagebrush/Cheatgrass 50-200 lb./ac and .03 AUM/ac*

Note: Values based on continuous, season-long grazing by cattle under average growing conditions.

Grazing by domestic livestock is one of the major income-producing industries in the area. Rangeland in this area may provide yearlong forage for cattle, sheep, or horses. During the dormant period, the forage for livestock use needs to be supplemented with protein because the quality does not meet minimum livestock requirements.

3.3.4.4 Range Conditions and Needs

Grazing management and the overall health of the watershed may benefit substantially with well-distributed, reliable water. Despite the relatively ample water supplies within upper portions of the watershed, good grazing systems control both the time (amount of time spent in an area), and the timing (the time of the year) that the livestock / wildlife spend in any given area. Grasses and other plants need to recover from the last livestock / wildlife grazing event before being grazed again because food reserves in the roots must be utilized for new plant growth. If root reserves are not restored, the plants are weakened and may eventually die. Less desirable plants can potentially invade and take over and plant densities decrease. In the absence of well-distributed livestock /wildlife water, areas near water (frequently riparian areas) are potentially grazed heavily while many other areas may be

under-utilized. As stated above, water sources must also be reliable so that each pasture can be used as needed in a grazing rotation.

Due to the fact that plants grow rapidly during the growing season, re-growth is frequently grazed multiple times during each grazing period, resulting in depleted root reserves. Because of this, it is often desirable to combine herds so livestock can spend shorter time periods in one pasture. This requires adequate quantities of water to accommodate larger herds. Within the central and lower portions of the watershed, conditions are dryer and water supplies are extremely limited.

In addition to restoration of more healthy conditions, continuing adjustments in overall range management will contribute to the maintenance, recovery or improvement of a variety of interrelated aspects of watershed function, including but not necessarily limited to:

- Improved infiltration of snowmelt and rainfall;
- Retention of soil moisture;
- Groundwater recharge;
- Sustained release of soil moisture and groundwater as seeps/springs; and
- Stabilization of soils against erosion into streams.

In general, most range improvement practices which improve watershed and livestock values also improve wildlife habitat values. With important and sensitive species found within the watershed, such as sage grouse, care must be taken to ensure that practices are beneficial rather than detrimental to their habitat values. Examples of this include the need for mixed age stands of sagebrush, adequate vegetative residues, wildlife escape ramps from livestock tanks, and provisions for wildlife water.

Alternatives to address the need for additional wildlife/livestock watering sites are presented in Section 4.6. Potential management practices and improvements to address other rangeland/grazing related issues are included in Section 4.7. It is important to consider that to be cost-effective any range improvement practices/facilities that may be implemented must be followed up with a good grazing system. Otherwise, any short term gains will be lost, and often made worse. The key to any good grazing system is often a good, reliable livestock water system; this usually is the most cost-effective practice to initiate the process. The best value for the investment of resources frequently occurs on the more productive land. Land that is too steep or shallow can only show limited returns on investments.

3.3.5 Oil and Gas Production and Resources

There are numerous pipelines within the study area for carbon dioxide, crude oil, water, natural gas, and fuel products as are also shown on Figure 3.3-13. Included in the project study area is the Ruby Pipeline which is a recently completed 42-inch (1,100 mm) natural gas pipeline running from Opal, Wyoming, to Malin, Oregon. (Mapping of the pipeline alignment was not available at the time this

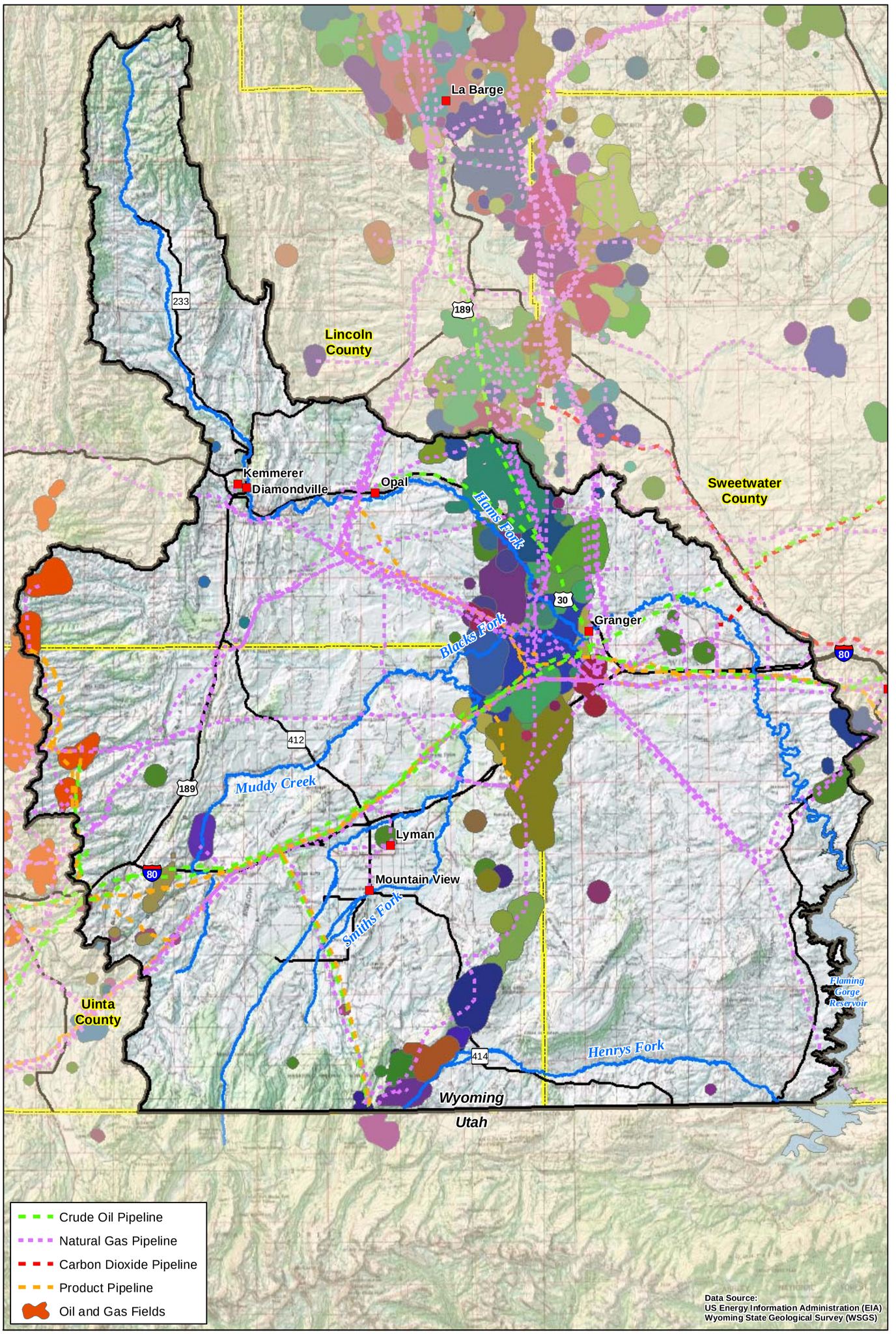


Figure 3.3-13 Blacks Fork Watershed: Pipeline and Oil/Gas Field Locations

report was generated). Mapping of the lines provided by WyGISC is coarse in nature with poor accuracy; presumably for security reasons. Consequently, the lines indicated are approximations of alignment only. This figure also displays the numerous oil fields documented within the study area. Note that at this scale, differentiation and identification of the individual fields is cumbersome. The project GIS facilitates review of the more useful mapping scales.

The locations of all active and permanently abandoned oil and gas wells were obtained from the Wyoming Oil and Gas Conservation Commission (WOGCC) website: http://wogcc.state.wy.us/. Active wells and permanently abandoned wells within the study area are shown on Figure 3.3-14.

In an effort to assist the conservation districts in their ongoing efforts to monitor conditions of existing resources, project team conducted a preliminary screening of reclamation success associated with abandoned oilfield wells. Within the project GIS and using available aerial photography, analysts visually evaluated each site to assess its degree of vegetation establishment. Using locations of all abandoned wells in the study area (WOGCC, 2012), each site was designated one of five vegetation categories. The categories are described as follows:

Vegetated:	Obvious vegetation establishment and a lack of discernible erosional features.
Partially Vegetated:	Mixed establishment of vegetation and / or minor erosional features visible.
No Vegetation:	Distinct lack of established vegetation and / or obvious erosional features.
Redeveloped:	Previously abandoned site has been redeveloped with a new well head.
Unknown:	Well site could not be verified or located.

Figure 3.3-15 displays and example of this process. Note that all references to relative extent in vegetative cover are made in relation to the surrounding native ground. In addition, one must keep in mind that the plant species cannot be determined using this process, only the relative cover. Consequently, a fully vegetated abandoned well pad could be covered with non-desirable weed species and be classified as vegetated under this procedure. Using these visual classifications, each of the abandoned well sites was evaluated. As of January 2014, of a total of 726 abandoned sites, 414 appeared to have obtained a reasonably level of vegetation cover; 199 showed a partial level of cover; 93 appeared to be devoid of vegetation and/or exhibiting visual erosional features and 19 have been redeveloped with another well head. The remaining 1 could not be verified or located. The 93 classified as “No Vegetation” represent the sites that the conservation districts could flag for potential site visits to confirm site-specific conditions. Figure 3.3-16 presents the results of this analysis graphically.

3.3.6 Mining and Mineral Resources

At the time of this report, there were thirty two active mines on record with the WDEQ within the study area (Table 3.3-1). The majority of the active permits were associated with sand and/or gravel operations (20 permits). The other active mining operations in the study area include six trona mines,

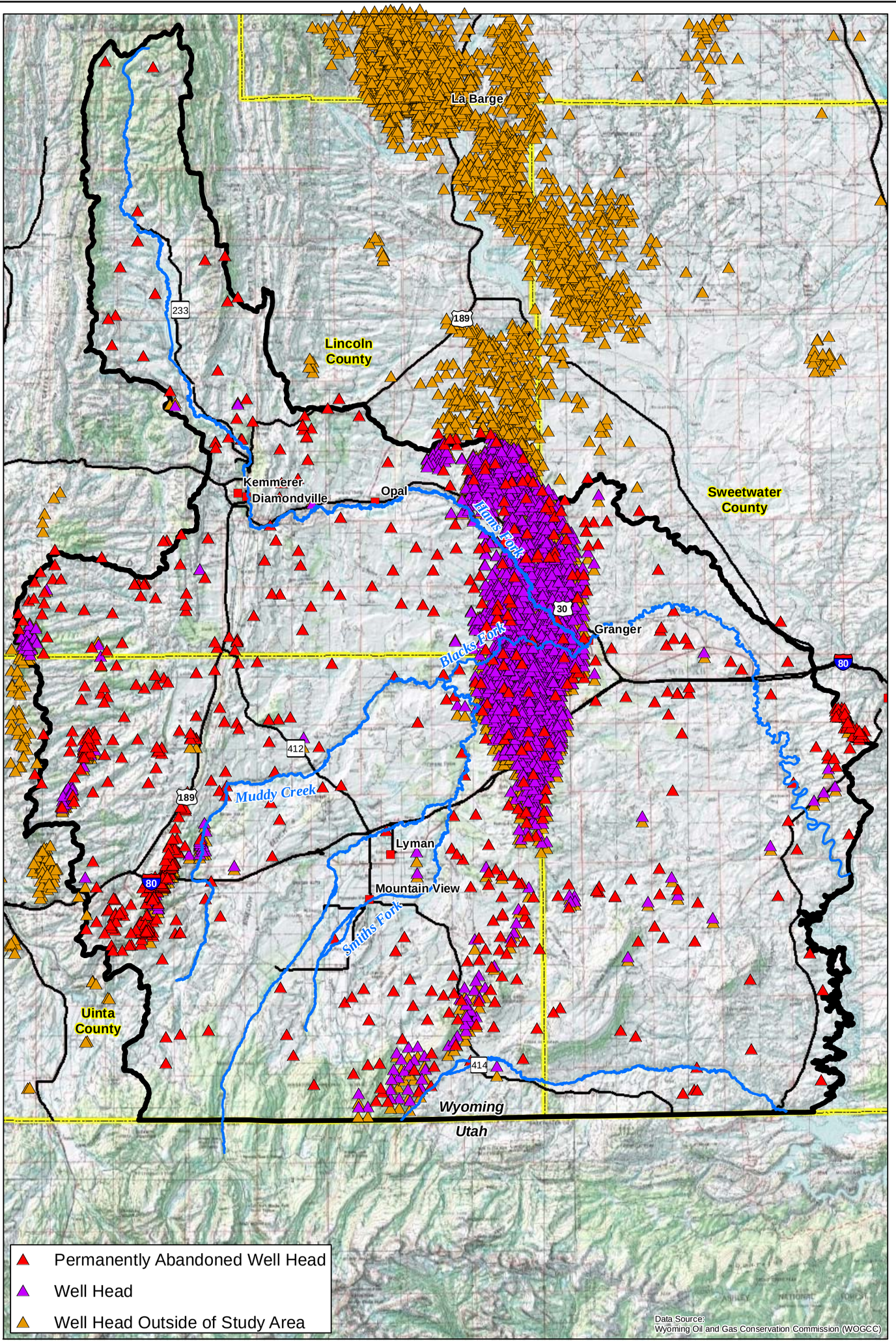


Figure 3.3-14 Blacks Fork Watershed: Oil and Gas Well Heads as of 1/7/14

Figure 3.3-15 Example analysis of abandoned oil/gas well site. The site on the left displays vegetation cover equivalent with its surroundings, while the site on the right displays little, if any, vegetation establishment.

four mines classified as "other" and two coal mines. The two coal mines are the Kemmerer mine and the Haystack mine located western portion of the study area. Figure 3.3-17 displays the locations of these mines.

In addition to current WDEQ records, there are numerous abandoned mine features within the study area; also indicated in Figure 3.3-17. These features are related to the area's historic mining legacy when reclamation standards were either less stringent than today's regulatory environment or non-existent. The Wyoming Department of Environmental Quality, Abandoned Mine Lands Division (AML) mission is to mitigate safety hazards and repair environmental damage from past mining activities, and to assist communities impacted by mining. Many of the sites within the study area are eligible for mitigation through the AML program.

Of the 169 AML sites located within the study area, 88 of them are associated with coal mining activities. These features include a variety of mining-related hazards including open pits, spoil piles, etc. In addition, environmental impacts associated with the historic mines may still exist.

Please refer to the Phase I, II, and III report volumes for more detailed mapping pertaining to mining and mineral resources.

3.3.7 Wildlife

Various sources of data pertaining to wildlife within the project study area has been incorporated into the individual phase reports associated with this investigation.

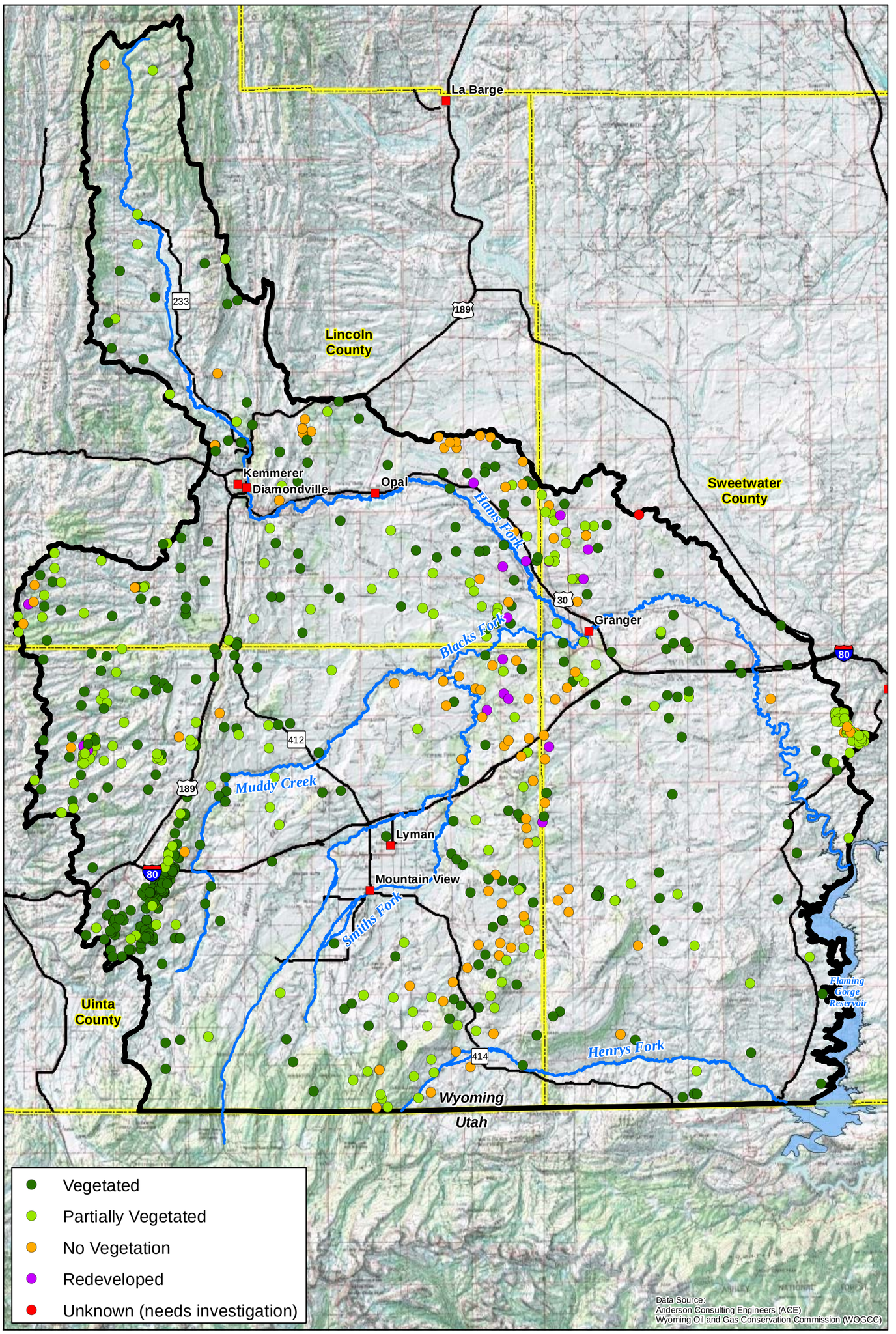


Figure 3.3-16 Blacks Fork Watershed: Permanently Abandoned Oil/Gas Well Pad Status as of 1/7/2014)

Table 3.3-1 Tabulation of Active Mine Permits (WDEQ, 2014).

Permit Number	Company Name	Mine Name	Mine Type	Mineral
PT0379	WESTMORELAND KEMMERER INC	KEMMERER MINE	Permit	Coal
PT0786	HAYSTACK COAL CO	HAYSTACK MINE	Permit	Coal
ET0062	DEBARNARDI BROS INC	DEBARNARDI PIT 2	Limited Mining Operation	Gravel
ET1533	BASIC ENERGY SERV LP	UINTA DEVELOPMENT CO	Limited Mining Operation	Gravel
ET1238	NIX, G T CONST INC	FRAUGHTON	Limited Mining Operation	Gravel
ET1247	READY ROCKS INC	WARD	Limited Mining Operation	Gravel
ET1273	SNYDER SAND & GRAVEL LLC	SNYDER	Limited Mining Operation	Gravel
ET1379	GRAVEL WORKS INC	LUPHER	Limited Mining Operation	Gravel
ET0389	ELLINGFORD BROS INC	DELBERT JAMES	Limited Mining Operation	Gravel
ET1367	FOX, BOB	FOX DEVELOPMENT	Limited Mining Operation	Gravel
ET1435	KEMMERER, CITY OF		Limited Mining Operation	Gravel
ET1439	FLARE CONST INC	DAVISON	Limited Mining Operation	Gravel
ET1483	FOX, ROBERT FOX MATERIALS LLC		Limited Mining Operation	Gravel
SP0759	WIND RIVER MATERIALS LLC	LINCOLN	Small Mine Permit	Gravel
ET1372	READY ROCKS INC	BLUEMEL	Limited Mining Operation	Gravel
ET1568	PALLESEN CONST INC	SLAGOWSKI	Limited Mining Operation	Gravel
ET0022	GRANGER, TOWN OF		Limited Mining Operation	Other
ET0634	FLAMING GORGE CORP		Limited Mining Operation	Other
ET1405	LINDLEY CONST INC	BROADBENT	Limited Mining Operation	Other
SP0686	CUMBERLAND GAP HEARTH STONE ASSN		Small Mine Permit	Other
SP0787	WIND RIVER MATERIALS LLC	SCHULTHESS	Small Mine Permit	Sand & Gravel
SP0651	SEARLE BROS CONST CO	GRANGER	Small Mine Permit	Sand & Gravel
ET1542	SIMS SHEEP CO LLC	SIMS	Limited Mining Operation	Sand & Gravel
SP0575	GRAVEL WORKS INC		Small Mine Permit	Sand & Gravel
ET1457	PROFFIT, CLINT	DAVISON	Limited Mining Operation	Sand & Gravel
SP0635	F M C WY CORP	GRANGER GRAVEL	Small Mine Permit	Sand & Gravel
PT0464	TATA CHEMICALS (SODA ASH) PARTNERS		Permit	Trona
PT0655	F M C WY CORP	LITTLE DRY CREEK FKA BENETRON PROJECT	Permit	Trona
PT0495	SOLVAY SODA ASH JOINT VENTURE		Permit	Trona
PT0454	F M C WY CORP	GRANGER	Permit	Trona
PT0335	F M C WY CORP	WESTVACO	Permit	Trona
PT0554	F M C WY CORP	FMC TRONA SOLUTION	Permit	Trona

The information presented in the Phase I, II and III report volumes include the following:

- The Wyoming Game and Fish Department (WGFD) maps the seasonal ranges by herd unit for each big game species and makes special note of areas listed as crucial habitat and parturition (birthing areas).
- The Wyoming Natural Diversity Database (WYNDD) lists numerous non-game species of concern within the watershed, including amphibians, birds, mammals, mollusks, and reptiles. Included in this database are all species of concern or species of potential concern which have been documented in the study area.
- Areas of known greater sage grouse (*Centrocercus urophasianus*) leks (WGF and WLCI).
- Wild horse "herd management areas" or HMAs administered by the BLM.
- Crucial Priority Areas or Enhancement Priority Areas as defined by the WGFD Strategic Habitat Plan (2009).

Please refer to the Phase I, II, and III report volumes for more detailed information pertaining to wildlife within the study area.

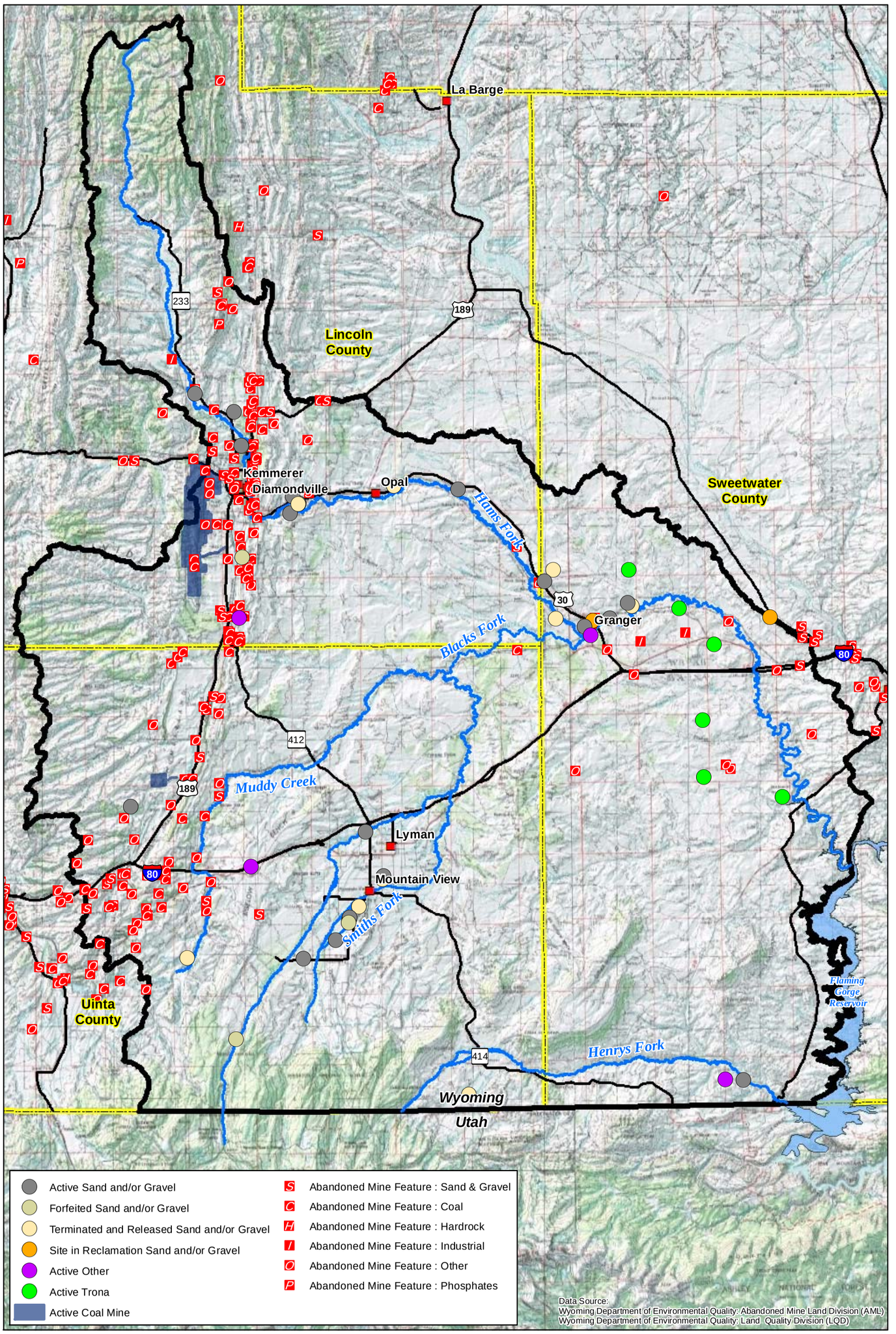


Figure 3.3-17 Blacks Fork Watershed: Current Mine Permits and Abandoned Mine Lands

3.3.8 Cultural Resources

The Wyoming State Historic Preservation Office (SHPO) maintains an in-progress database of inventoried historic sites within the state. A determination of each site's eligibility for inclusion in the National Register of Historic Places (Register) is included in the database. SHPO makes available a spatial data file which generalizes the cultural resource inventory to the section level. This "location fuzzing" of the archaeological data is to protect the sites from unauthorized disturbance. The attributes recorded for each section include: site count, inventory acres, report numbers, and eligible site number. Figure 3.3-18 displays the results of the database retrieval in a graphical format. Each square mile section within the study area has been color coded based upon the number of sites within it determined to be eligible for inclusion on the Register.

The National Register of Historic Places is the nation's official list of cultural resources worthy of preservation. Administered on a federal level by the National Park Service and managed locally by the State Historic Preservation Office, the National Register is part of a program to coordinate and support both public and private efforts to identify, evaluate, and protect historic and archeological resources. The National Register recognizes the accomplishments of those who have contributed to the history and heritage of the United States, the state, and local communities.

In addition, the State of Wyoming Trails Department has created a database of historic forts within the state. Two of these historic forts are located in the Blacks Fork watershed. Fort Bridger (located between present day Lyman and Mountain View) was built in 1842-1843, and was the first fort in the west designed to supply the overland emigration rather than the fur trade. Fort Supply (located south of Mountain View) was the site of a Mormon vegetable farm that supplied produce to the growing population in Salt Lake City. BLM has also mapped the historical trails in Wyoming and 8 of these trails travel through the Blacks Fork watershed. The historic trails crossing the Blacks Fork watershed are: Bryan South Pass Road, California, Cherokee Northern and Southern Routes, Mormon, Oregon, Overland, and Pony-Express. Figure 3.3-19 displays the historic trails, sites listed on the National Registry of Historic Places, and historic monuments and markers within the State of Wyoming.

Listing a property on the National Register of Historic Places is a form of acknowledgment and prestige, which places no restraints on the property. The National Register does not restrict the rights of property owners to use, develop, or sell the property. Although placing a property on the National Register neither stops alterations to a building nor requires owners to provide the public access to the property, it can provide the owner with eligibility for certain financial incentives (NPS, 2009 at http://www.nps.gov/history/nr/).

The Blacks Fork watershed intersects three counties: Lincoln, Uinta, and Sweetwater. The registered historic sites within the study area for each county are listed below. To date, 13 sites within the study area have been included in the Register. The following descriptions of the sites were obtained from the Wyoming State Preservation Office website at: http://wyoshpo.state.wy.us/NationalRegister/.

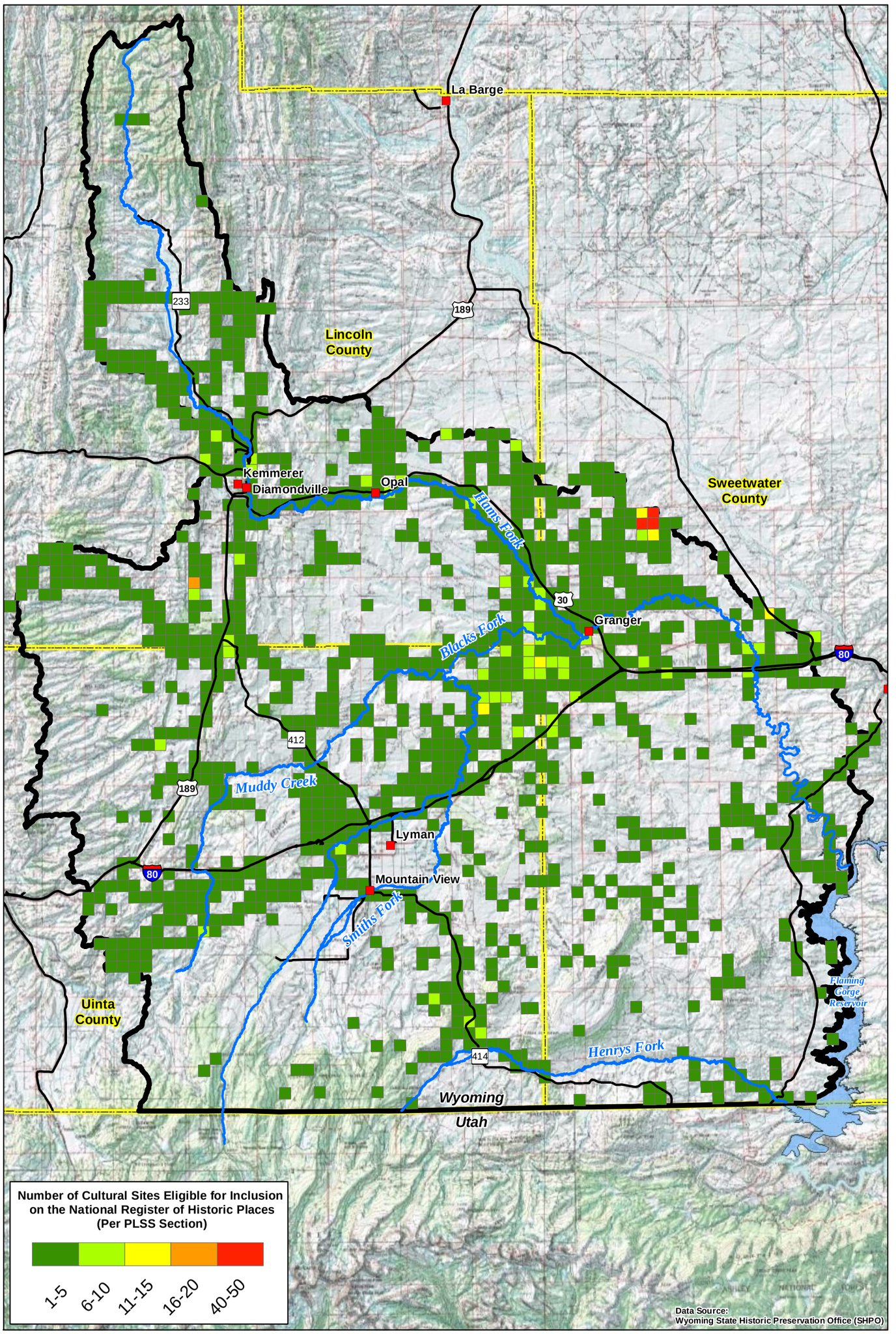


Figure 3.3-18 Blacks Fork Watershed: Cultural Sites as of 1/8/14

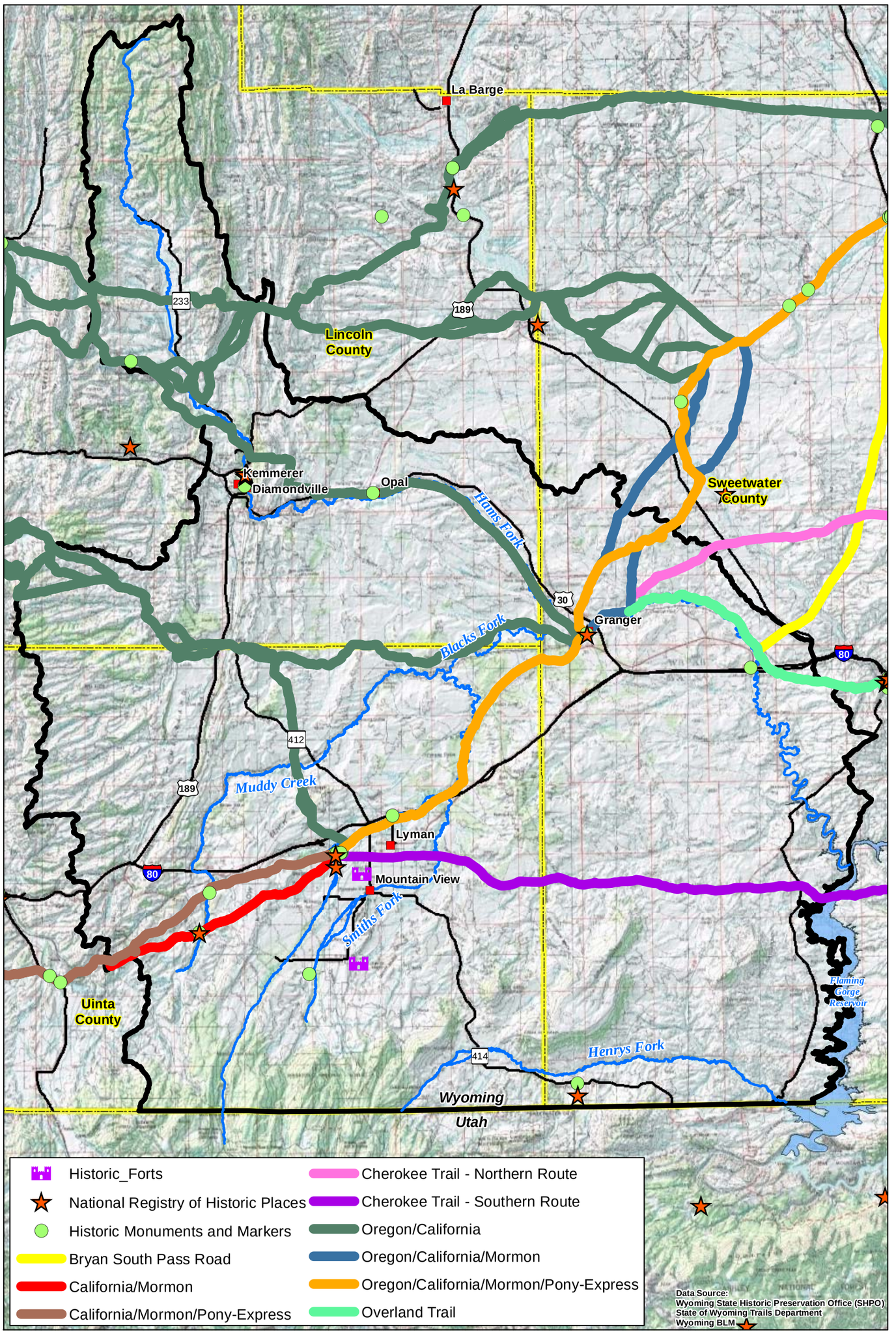


Figure 3.3-19 Blacks Fork Watershed: Historic Monuments and Historic Trails

Lincoln County Historic Sites:

J. C. Penney Historic District National Historic Landmark - *Kemmerer, Wyoming* (Smithsonian Number *48LN218**)*** Certified as a historic location on *Friday, June 02, 1978.* (Figure 3.3-20)

Figure 3.3-20. J.C. Penny Historic District (Source: SHPO, 2014).

The J. C. Penney Historic District is situated near the eastern edge of Kemmerer, Wyoming's business section. James Cash Penney opened his first store, which he named the ''Golden Rule'' in Kemmerer in 1902. By following rigid economies and selling for cash, Penney made substantial profits and eventually established a chain of such stores, which by 1913 were known collectively as the J. C. Penney Company. By 1928, Penney's firm was operating 1,023 stores and doing an annual business of $176,695,989.14. The secret of Penney's rapid success was the fact the he confined his stores to small communities, refrained from expensive locations, had no fancy fixtures and handled only merchandise that created a general demand. Penney's success in turn spawned a host of imitators. Although several buildings and residences associated with Penney and his company are extant in Utah, Missouri, and New York, the Kemmerer structures are more significant not only because they show the humble origins of the Penney Company, but because it was here that Penney formulated the merchandising ideas which enabled him to create the first truly nationwide department store chain.

J. C. Penney House - *Kemmerer, Wyoming (Smithsonian Number 48LN41) Certified as a historic location on Friday, June 18, 1976.* (Figure 3.3-21)

Figure 3.3-21 J. C. Penney House (Source: SHPO, 2014).

The J. C. Penney Home in Kemmerer is a rectangular, barely two story, gable roof, clapboard building. It is thought that it was already in existence when in 1903 or 1904 the Penney family first occupied it. It originally was located toward the back of a long and narrow lot of the original townsite of Kemmerer in the commercial district. In the 1970s when the Town acquired a suitable piece of property as a gift from the Union Pacific Railroad Company, the house was moved to a prominent location on the downtown triangle. The house was Penney's home from about 1904 to 1909, the years when the basic organization of his nation-wide store system was formulated.

Kemmerer Hotel - *Kemmerer, Wyoming (Smithsonian Number 48LN987) Certified as a historic location on Monday, December 02, 1985.* (Figure 3.3-22)

Figure 3.3-22 Kemmerer Hotel (Source: SHPO, 2014).

The Kemmerer Hotel, constructed in 1897-1898, is a three story commercial structure made of native roughcut stone mined at nearby Oakley. The history of the Kemmerer Hotel is tied to the development of coal mining in the southern section of Lincoln County and the development of the town of Kemmerer itself. From its beginnings, the Kemmerer Hotel, located in the heart of the emerging town's commercial district, housed Kemmerer businessmen and government officials. The first town administration met in the hotel on February 28, 1899. Over the years, Kemmerer Coal Company entertained both out-of-town guests and its own employees at the Kemmerer Hotel. Weathering economic booms and busts, including the Kemmerer oil boom of 1916-1920 that never quite materialized, the hotel has prevailed. Livestock and coal production, the foundation of Kemmerer's economy, have provided enough economic stability to sustain Kemmerer's commercial enterprises, including that of the Kemmerer Hotel.

Kemmerer Main Post Office - *Kemmerer, Wyoming (Smithsonian Number 48LN660) Certified as a historic location on Tuesday, May 19, 1987.* (Figure 3.3-23)

Figure 3.3-23 Kemmerer Main Post Office (Source: SHPO, 2014).

This thematic study includes twelve post offices owned and administered by the U.S. Postal Service (USPS) throughout the State of Wyoming. These include the Basin, Greybull, Douglas, Lander, Torrington, Thermopolis, Buffalo, Kemmerer, Powell, Yellowstone, Evanston, and Newcastle Main Post Offices. The buildings represent a continuum of federally constructed post offices allocated to the state between the turn of the century and 1941. The buildings exhibit a variety of styles and sizes but maintain a common demeanor representative of the federal presence. All of the buildings were constructed from standardized plans developed from guidelines provided by the Office of the Supervising Architect in the Treasury Department. Variations in design styles reflect both the transition in the design philosophies of the Supervising Architect and the requirements developed in response to the Depression. These variations in design, as well as functions are also somewhat related to the communities in which they were placed and reflect the economic, political, and governmental context of those communities.

Lincoln County Courthouse *- Kemmerer, Wyoming (Smithsonian Number* 48LN988*) Certified as a historic location on Thursday, November 08, 1984.* (Figure 3.3-24)

Figure 3.3-24 Lincoln County Courthouse (Source: SHPO, 2014).

The Lincoln County Courthouse is one of the architectural landmarks within the town of Kemmerer, Wyoming. Constructed in 1925, the Salt Lake City architectural firm of Headlund and Watkins designed the building. Compared with other historic Wyoming courthouses, Lincoln County's structure is unique because of its distinctive neoclassical facade. The mixture of classical detailing, such as the dome and entablature, with the large brick parapet walls is an unusual combination of architectural elements. The Courthouse embodies the distinctive characteristics of Classic Revival construction as adapted to a small western community's tastes and budget. The building is associated with coal development in southwestern Wyoming and the mineral investments which ignited economic growth in the region leading to the eventual establishment of the county seat in Kemmerer.

Uinta County Historic Sites:

Bridge over Blacks Fork – *Uinta County, Wyoming (Smithsonian Number 48UT1175**)** Certified as a historic location on Friday, February 22, 1985.* (Figure 3.3-25)

Figure 3.3-25 Bridge over Blacks Fork near Fort Bridger, WY (Source: SHPO, 2014).

The forty bridges in this thematic study are the best of their types which were still in use on the state and county road systems in Wyoming when the study was completed in 1982. Selected from a statewide survey of all functional vehicular trusses and arches using a specific evaluation criteria and methodology, most represent superlatives of their generic engineering types (i.e. truss configuration and connection types) while typifying bridge building and transportation trends in the state. All were built in the first three decades of the twentieth century (1905-1935). Although bridges were put up during the earlier periods of overland wagon emigration, they had not begun to proliferate in the state of Wyoming until the early twentieth century with the emergence of the automobile as a principal form of transportation. All the listed bridges display a remarkable homogeneity of construction and operational histories. Generally, county-built trusses were contracted through competitive bidding among several Midwestern bridge erectors and built from standardized designs using prefabricated components. After creation of the Wyoming Highway Department in 1917, the role of the counties in truss bridge construction diminished. The later highway department bridges were

typically designed from standard plans maintained by the department and built by local contractors from components fabricated in the same Midwestern foundries.

One feature that all steel truss bridges shared was their versatility. Quickly erected, they could also be dismantled and moved if necessary. Many county road bridges in Wyoming had begun service as railroad bridges, sold or given to the counties as obsolete structures. Similarly, early highway bridges which had become unsuitable to handle increasing volumes of traffic were sometimes replaced with new trusses, with the older bridges demoted to places along less traveled roads. After World War II, new truss building was rare in Wyoming. Today trusses have been largely superseded by more sophisticated engineering designs and are seldom erected. The remaining highway and roadway truss bridges are remnants of past technologies, whose numbers are continually dwindling through attrition.

Bridger Antelope Trap – *Uinta County, Wyoming (Smithsonian Number 48UT1**)** Certified as a historic location on* Thursday, January 21, 1971. (Figure 3.3-26)

Figure 3.3-26 Bridger Antelope Trap (Source: SHPO, 2014).

Archaeological investigations of the Bridger Antelope Trap was conducted by Dr. George Frison of the University of Wyoming in the late 1960s. At that time it was estimated that the trap was probably in use prior to 1850. The site provides evidence of a unique example of food procurement on the Northwestern Plains. The method used by Native Americans of the Late Prehistoric Period was to drive a herd of antelope into the long entrance or wing of the trap which was constructed of juniper wood, and head them toward the trap proper which was located at the base of a hill. This part of the trap was a circle, an endless path around which the antelope were driven until they were exhausted and dispatched by the hunters. The circle was also formed by juniper wood. The Antelope Trap itself covers approximately twenty-six acres. The arc-shaped wing or entrance to the trap is about one-quarter of a mile in length and extends in a northeast-southwest direction across a smooth valley. The trap proper forms an extension of the wing and is about 700 feet in diameter.

Figure 3.3-27 Fort Bridger (Source: SHPO, 2014).

Fort Bridger – *Fort Bridger, Wyoming (Smithsonian Number 48UT29**)** certified as a historic location on Wednesday, April 16, 1969.* (Figure 3.3-27)

Fort Bridger's history is long and varied spanning every major phase of Western frontier development except the fur trade. Its establishment, early operation and namesake relates to one of the most famous of all the early trappers and explorers: James Bridger. The decline of the fur trade in the Rocky Mountains in the late 1830s forced the mountain men who remained on the frontier to seek new occupations. Jim Bridger established a small trading post in the valley of the Black's Fork of the Green River and formed a partnership with Louis Vasquez. Erected in 1842, the post was open for business early in 1843. Bridger's proposed intention was to establish trade with the friendly Indians in the neighborhood and with the emigrants who passed the fort on their way west. Because of a convenient location on the Overland Route, Fort Bridger became second in importance only to Fort Laramie as a resupply and outfitting point for travelers between the Missouri River and the Pacific Coast.

A dispute over the ownership of the Fort developed in 1853. The Mormons, who had settled the valley of the Salt Lake in 1847, claimed they had purchased the fort for $6,000, paid in gold coin. Bridger denied such a transaction had ever occurred. In the fall of 1853, two parties of Mormons sent out from Salt Lake City came to the vicinity, established Fort Supply and took over Fort Bridger. The two forts were then used to aid converts to the church as they traveled over the trail to Salt Lake City; to establish trade with the other emigrants; and to check the threat of Indian hostilities the Mormons claimed Bridger was promoting. Friction developed between the Mormons and the Federal Government in the late 1850s. President Buchanan dispatched United States troops to the area in 1857 precipitating the so-called ''Mormon War''. Upon the approach of ''Johnston's Army'', the Mormons deserted and burned both Fort Bridger and Fort Supply. Colonel A.S. Johnston, later famous as a Confederate general, immediately took over the sites and declared Fort Bridger to be a military reservation. In 1858 it was officially made a military post and a building program started.

In the 1860s, in addition to military activities, the fort served as a major station for the Pony Express, the Overland Stage Line, and the trans-continental telegraph. Troops from the fort patrolled the trails and frequently provided escort and protection when Indian depredations made travel hazardous. Regular Union troops arriving at Fort Bridger after the Civil War found it in a state of poor repair. A renewed building program started soon afterwards. Though strategically located, Fort Bridger never served as the base for any of the major military expeditions. The post was abandoned in 1878 but reactivated in 1880. Through the 1880s the military erected additional buildings and barracks and made many general improvements. The military permanently abandoned Fort Bridger in 1890.

***Piedmont Charcoal Kilns –** Uinta County, Wyoming (Smithsonian Number 48UT54) Certified as a historic location on Thursday, June 03, 1971.* (Figure 3.3-28)

Figure 3.3-28 Piedmont Charcoal Kilns (Source: SHPO, 2014).

Built for the purpose of processing charcoal to be used in mining smelters, the Piedmont Charcoal Kilns represent a unique type of structure that once was found in abundance on the frontier. The advent of such industries as charcoal production did not begin until the Union Pacific completed laying its tracks through the area in the latter part of 1868. Piedmont was one of the many railroad stations established along the line and served as a terminal for helper engines. It possessed a round house, water tank, telegraph office and a few business establishments. A short distance to the west was another such station called Hilliard. The two station's close proximity to the mines in Utah combined with the ready availability of timber in the nearby Uinta Mountains made them ideal locations for charcoal processing and shipping. At one time over forty kilns were in operation in the general vicinity, and in 1873 it is estimated that over 100,000 bushels of charcoal per month was being produced. Five kilns were constructed adjacent to Piedmont Station around 1869 by Moses Byrne.

For making charcoal, the kilns were filled to the top with wood, a fire started and then they were sealed in such a way that the fire could be regulated. The wood was allowed to slowly smolder for several days. At the end of the necessary time the drafts were closed, the fire was allowed to die out, and the wood was allowed to cool. Most of the charcoal was shipped to the Salt Lake Valley, but small quantities also went to Fort Bridger for use in the blacksmith forges and heating stoves. The price of charcoal reached 27 cents per bushel during the time of peak demand but fell to only 7 cents in the declining years of business. Today, the abandoned Union Pacific grade serves as a county road, Piedmont is a ghost town, and the surviving kilns serve as an impressive reminder of the activities that took place.

Triangulation Point Draw Site – *Uinta County, Wyoming (Smithsonian Number 48UT114/377/ 392/440) Certified as a historic location on Tuesday, September 16, 1986.* (Figure 3.3-29)

Figure 3.3-29 Triangulation Point Draw Site (Source: SHPO, 2014).

The Triangulation Point Draw Site District is a large group of Late Prehistoric occupations reflecting influences from both the eastern Great Basin and the Northwest Plains. Interactions between these regions were important in the development of aboriginal cultural patterns in southwestern Wyoming. The site district is composed of a variety of surface and buried components. Artifacts characteristic of both eastern Great Basin and Northwest Plains cultural traditions have been recovered from sites within the district. The sites are moderately large scatters of chipped stone artifacts, ground stone tools, thermally altered rocks and organic stains. Buried components include intact hearth features, truncated habitation or activity surfaces, and strata which appear to be deflated and reburied surfaces. Diagnostic projectile points include Rose Spring corner notched, Plains side notched, small corner notched similar to a Late Prehistoric form from Mummy Cave, and Late Prehistoric corner notched.

Sweetwater County Historic Sites:

Eldon-Wall Terrace Site – *Sweetwater County, Wyoming (Smithsonian Number 48SW4320) Certified as a historic location on Friday, December 13, 1985.* (Figure 3.3-30)

Figure 3.3-30 Eldon-Wall Terrace Site (Source: SHPO, 2014).

The Eldon-Wall Terrace Site (48SW4320) is a large prehistoric archaeological site located in the Green River Basin of southwestern Wyoming on a low broad terrace of the Black's Fork River. Cultural materials extend for approximately 0.6 kilometers along the terrace. Surface materials consist of clusters of thermally altered rock, some of which are associated with charcoal stains, clusters or concentrations of lithic debitage and tools, and an overall thin scatter of lithic artifacts. The dominant lithic materials are locally available cherts and chalcedonies, including Bridger chert, tiger chert, and Granger green chert. All of the materials occur as pebbles and cobbles in the local lag gravels. A single temporally diagnostic projectile point indicates a Middle Archaic occupation. The activity areas at the site can provide important information regarding intra-site patterning and aspects of lithic technology. The hearth features are likely to contain preserved materials which can reflect past habitats and subsistence patterns and provide radiocarbon dates.

Elinore Pruitt Stewart Homestead – *Near McKinnon, Wyoming (Smithsonian Number 48SW6482) Certified as a historic location on Thursday, April 25, 1985.* (Figure 3.3-31)

Figure 3.3-31 Elinore Pruitt Stewart Homestead (Source: SHPO, 2014).

The Elinore Pruitt Stewart Homestead house is a substantial log structure consisting of an original cabin (circa 1898) and north and south wings/additions (circa 1909). The building is located in the Burntfork Valley in the very southwest corner of Sweetwater County where the line of Sweetwater County and Uinta County meet the Utah state line. The homestead's significance revolves around two points: the long overlooked role of women homesteaders in the American West and the literary merits of Mrs. Stewart's book, Letters of a Woman Homesteader, a warm and lively chronicle of her ranch life in the southwest corner of Wyoming. Elinore Rupert Pruitt, a widowed laundress from Denver, came to Wyoming in the spring of 1909 to work as a housekeeper for Clyde Stewart. Within six weeks of her arrival Mrs. Pruitt filed a homestead entry on property located very close to Mr. Stewart's homestead.

One week after filing her homestead entry Mrs. Pruitt and Mr. Stewart applied for a marriage license. After their marriage, the Stewarts built additions onto Mr. Stewart's existing cabin. The homestead structure, then, was originally constructed by Clyde Stewart and became Mrs. Stewart's as well after her marriage.

Granger Stage Station – *Granger, Wyoming (Smithsonian Number 48SW939) Certified as a historic location on Thursday, February 26, 1970.* (Figure 3.3-32)

Figure 3.3-32 Granger Stage Station (Source: SHPO, 2014).

Also known as the Ham's Fork Station and South Bend Station, the Granger Stage Station is a rectangular building with two foot thick walls constructed of cut native stone and lime-sand mortar. The area surrounding Ham's Fork confluence with Black's Fork of the Green River is rich in history and three major eras of overland travel are represented there. As early as 1824 the fur trappers and traders began traversing the region and continued to frequent the two streams until the decline of the fur trade in the late 1830s. In 1834 the trappers held their annual rendezvous along the banks of Ham's Fork about twenty miles upstream from Black's Fork.

The year 1841 marked the beginning of the great covered wagon exodus from the eastern states to California and Oregon. The Trail, followed by thousands of the emigrants on their way westward, crossed Ham's Fork a few hundred feet above its mouth. As the trail became well established, stage coaches carrying passengers and mail began to utilize it. A stage station came into being near the junction of Ham's Fork and Black's Fork around 1856 and was called Ham's Fork Station. Throughout the 1860s there was considerable activity around Ham's Fork Station. First came the fleeting operation of the Pony Express in 1860 and 1861. During 1862 the Overland Stage operation was changed from the South Pass route to a new line that used the Bridger's Pass and Bitter Creek route. The new Overland Trail rejoined the old original route at Ham's Fork. Ham's Fork Station lost its identity at that time to become known as the South Bend Station. The new designation was derived from the fact that near the Station the Black's Fork makes a sudden bend from its northeasterly course to assume a southeasterly course toward the Green River.

The Union Pacific Railroad construction arrived at Ham's Fork in 1868. The old stage station and the immediate vicinity became overrun with workers when a rail camp was located near the site. A sidetrack, station buildings and a water tank for locomotives were set up and the place was named Granger. Granger then became an active rail station along the line. To commemorate the pioneers that had passed along the way, Clarence E. and Eva Adams deeded the site of the historic stage station and one acre of land to the State of Wyoming in 1930.

3.4 Natural Environment

3.4.1 Climate

The Blacks Fork study area (which does not include that portion of the watershed within the State of Utah) contains topography ranging in elevation from 6,060 msl feet along the southern banks of the Flaming Gorge Reservoir to over 9,920 msl feet near Red Park in the upper reaches of the Hams Fork drainage. The highest point within the complete Blacks Fork watershed is Gilbert Peak (13,442 msl feet) which is located south of the study area in the Uinta Mountains of Utah. Generally, climatic conditions for the study area are classified as an Intermountain Semi-Desert. The climate is typified by dry, windy conditions with limited precipitation and long cold winters.

Figure 3.4-1 displays the isohyetals (lines of equal precipitation) within the study area. This figure clearly shows the relationship between elevation and precipitation amounts. The data used to generate this figure were obtained from the Wyoming Geographic Information Center (WyGISC). These data represent the results of PRISM spatial climate data generated at the Oregon Climate Center, Oregon State University. As indicated in this figure, the mean annual precipitation varies from a minimum of about 7 inches at the lower elevations to over 37 inches at the highest elevations, with over 50 percent of the watershed receiving only 7 to 9 inches of precipitation annually.

Several NOAA Cooperative Weather Stations are located within the project study area as indicated in Figure 3.4-1. Two of these stations were selected as likely to be most representative of the climatic conditions in the study area based upon their locations and their periods of records: Mountain View (Station No. 486555) and Kemmerer 2N (Station No. 485105) . Historic climate data for these two primary stations was obtained through the High Plains Regional Climate Center website (http://www.hprcc.unl.edu/). The recorded temperatures at both stations are typically cool, with average daily temperatures ranging between 6°F and 35°F in midwinter and 44°F to 81°F during midsummer. The annual average total precipitation for the study area is 9.52 inches. Table 3.4-1 presents the average temperature range and average total precipitation while Figure 3.4-2 presents the average climatic conditions recorded by the selected weather stations located within the study area.

Table 3.4-1 Summary of Monthly Climatic Data: Blacks Fork Watershed.

Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mountain View, Wyoming 486555: 4/1/1966 to 3/28/2013													
Average Max. Temperature (F)	32.7	35.1	44.1	53.4	63.7	73.1	80.7	79.4	70.7	57.9	42.2	33.1	55.5
Average Min. Temperature (F)	11.9	12.8	20.2	26.3	34.2	41.6	47.9	46.2	38.1	29.4	18.8	11.7	28.3
Average Total Precipitation (in.)	0.46	0.4	0.55	0.95	1.24	1.06	0.94	0.89	1.01	0.96	0.6	0.56	9.62
Kemmerer 2N (Wtr Trtmt), Wyoming 485105: 1/1/1902 to 3/31/2013													
Average Max. Temperature (F)	29.1	32	39.5	51.2	62.8	72.4	81.3	79.5	69.6	57	40.6	30.9	53.8
Average Min. Temperature (F)	4.3	5.9	13.5	23	32	38.3	44.2	42.2	34	24.9	14.8	6.4	23.6
Average Total Precipitation (in.)	0.7	0.59	0.61	0.79	1.13	1.01	0.73	0.82	0.89	0.75	0.74	0.68	9.43

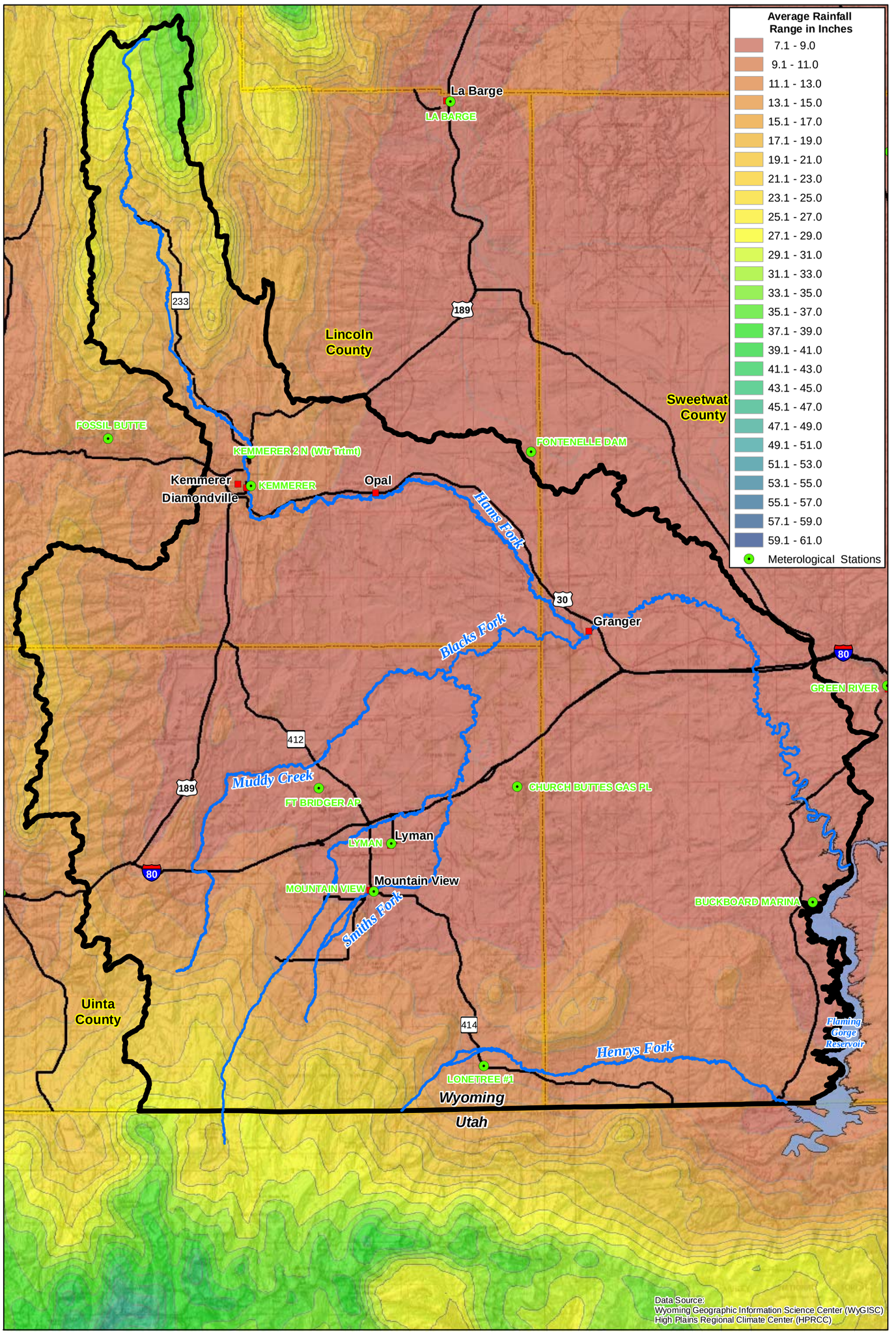
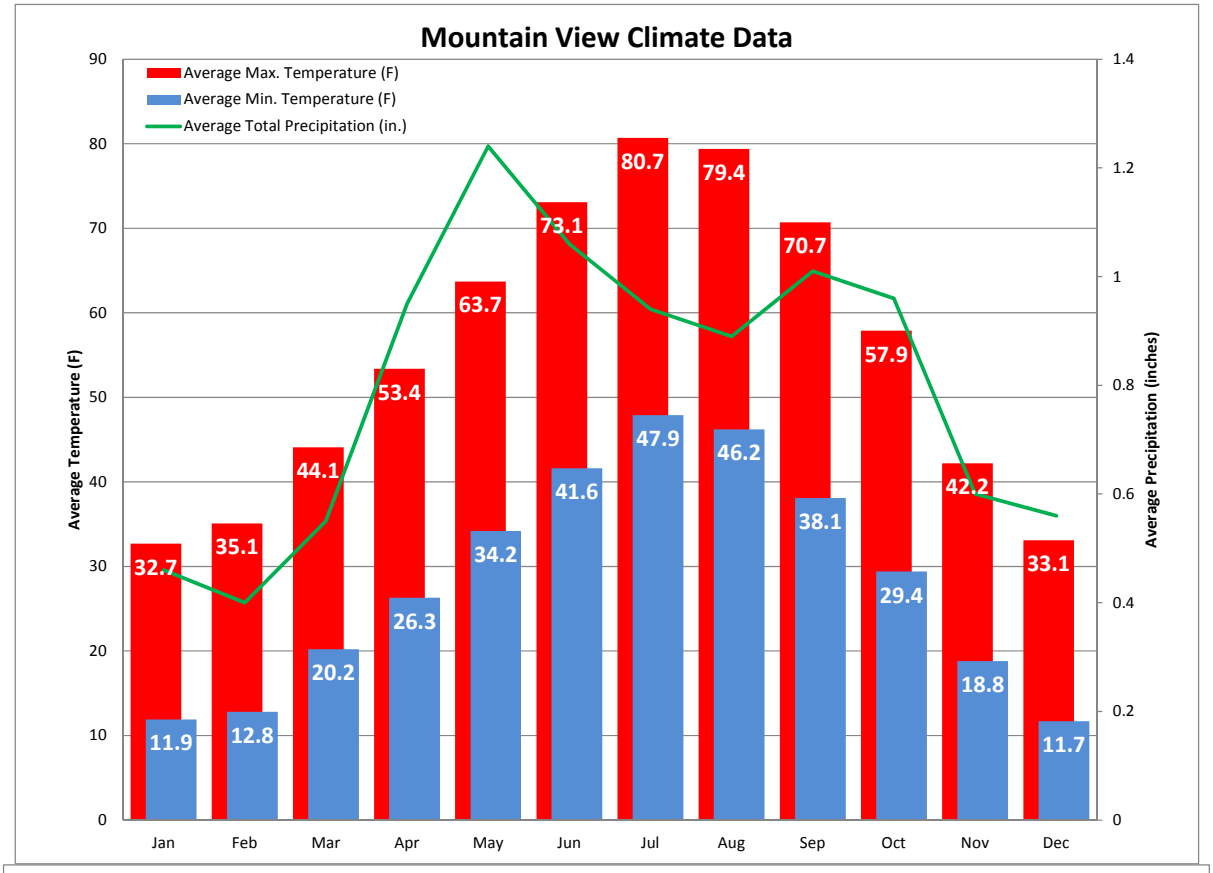


Figure 3.4-1 Blacks Fork Watershed: Meterological Stations and Precipitation Isohyetals



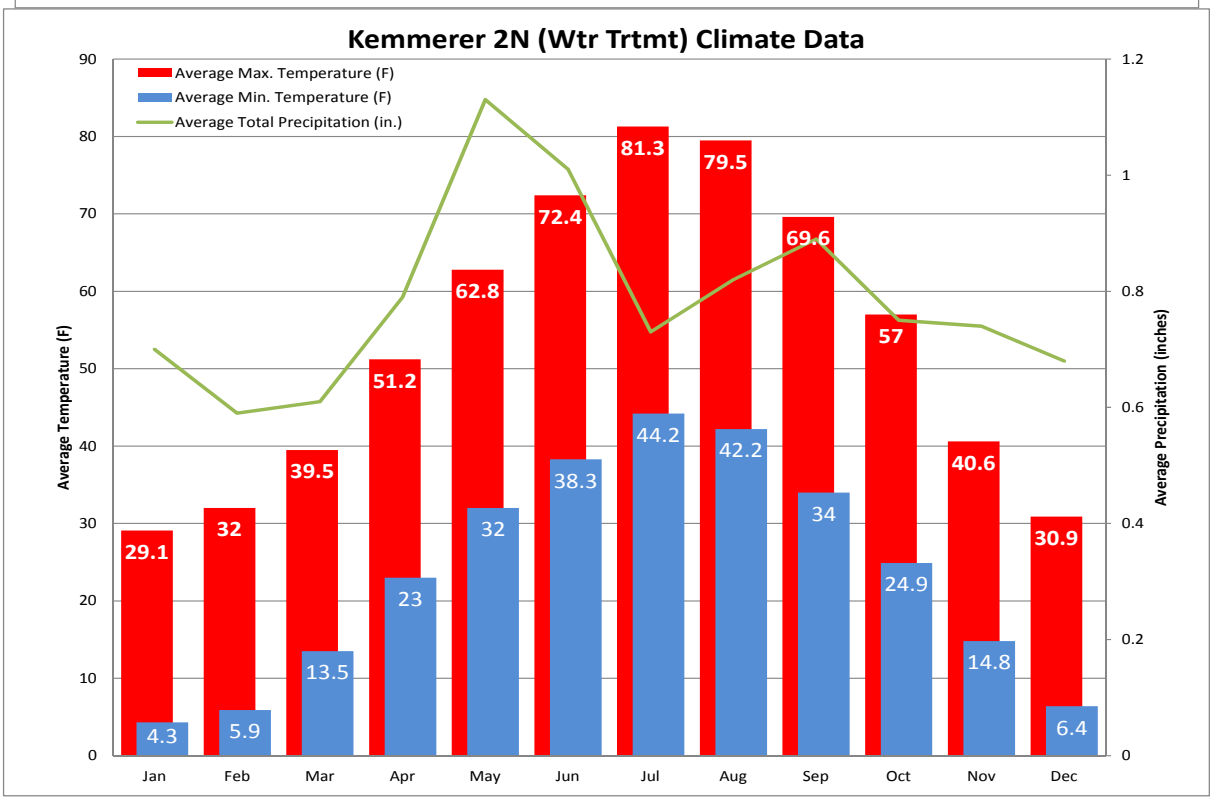


Figure 3.4-2 Mean Monthly Climatic Factors for Blacks Fork Watershed (1902 – 2013).

3.4.2 Vegetation and Land Cover

3.4.2.1 National Land Cover Database (NLCD)

Landcover within the watershed was evaluated using the National Land Cover Database (NLCD). The NLCD is distributed by the Multi-Resolution Land Characteristics Consortium (MRLC) and serves as the definitive Landsat-based, 30-meter resolution, land cover database for the Nation. NLCD provides spatial reference and descriptive data for characteristics of the land surface such as thematic class (for example, urban, agriculture, and forest), percent impervious surface, and percent tree canopy cover. NLCD supports a wide variety of Federal, State, local, and nongovernmental applications that seek to assess ecosystem status and health, understand the spatial patterns of biodiversity, predict effects of climate change, and develop land management policy. NLCD products are created by the Multi-Resolution Land Characteristics (MRLC) Consortium, a partnership of Federal agencies led by the U.S. Geological Survey. (Suggested citation: Homer, C.H., Fry, J.A., and Barnes C.A., 2012, The National Land Cover Database, U.S. Geological Survey Fact Sheet 2012-3020, 4 p.).

Please refer to the Phase I, II, and III report volumes for more detailed information pertaining to NLCD mapping.

3.4.2.2 LANDFIRE and GAP Analysis

Existing vegetative type within the watershed was evaluated using data obtained through the LANDFIRE project (www.landfire.gov). LANDFIRE (Landscape Fire and Resource Management Planning Tools Project) is an interagency vegetation, fire, and fuel characteristics mapping project. It is a shared project between the Department of Interior (DOI) and Forest Service wildland fire management programs. The primary purpose of the LANDFIRE project is to collect the data necessary to develop wildland fire models. The data are generated using remote sensing techniques with on-the-ground truthing. Data products accessed for this project included 30-meter spatial resolution raster data sets describing vegetation type and cover. LANDFIRE vegetation map units are derived from NatureServe's Ecological Systems classification (Comer and others, 2003).

The LANDFIRE data describes numerous attributes pertinent to this study, including:

- Environmental Site
- Potential Biophysical Settings
- Existing Vegetation Type
- Existing Vegetation Height
- Existing Vegetation Cover

The LANDFIRE "existing vegetation type" (EVT) data were analyzed and the distribution of vegetation classes by subregion. Results of this analysis are presented in detail within the Phase I, II, and III report volumes.

While the LANDFIRE data provides valuable insight into watershed conditions, its display is difficult because of the fact the data are represented by a grid with 30 meter spacing. The LANDFIRE data set is included within the project GIS and available for use in subsequent projects and associated efforts. However, for graphical purposes, data obtained through the Wyoming Gap Analysis program are shown on Figure 3.4-3 (http://waterplan.state.wy.us/sdi/GG/GG07AS06.html).

The GAP dataset was produced "with an intended application at the state or ecoregion level - geographic areas from several hundred thousand to millions of hectares in size. The data provide a coarse-filter approach to analyses, meaning that not every occurrence of habitat is mapped; only large, generalized distributions are mapped, based on the USGS 1:100,000 mapping scale in both detail and precision. Therefore, this dataset can be used appropriately for coarse-scale (> 1:100,000) applications, or to provide context for finer-level maps or applications" (University of Wyoming, Spatial Data Visualization Center, 1996).

For more detailed mapping please refer to figures located in the Phase I, II, and III report volumes.

The Wyoming Natural Diversity Database (WYNDD) lists vegetative species of concern or species of potential concern which have been documented within the study area.

The database was queried and the results tabulated individually for Phase I, II and III. The results of this effort are presented in the respective phase report volumes.

Distinct plant communities within the study area are influenced by characteristics such as soil depth, texture, and salt content; climate variables, particularly temperature, total and seasonal distribution of precipitation, and wind; and topographic features, most importantly elevation, aspect, and slope. Plant communities respond to other environmental influences such as wildlife foraging, rodent burrowing, and ant hills. Plants themselves also influence soil chemistry and soil resistance to wind and water erosion. The following plant community overviews were extracted from the Kemmerer BLM Final EIS (2008). This information is included here to explain the diverse and complex nature of the major vegetation communities in the study area.

Forest and Woodland Communities

The conifer forest communities, about 14 percent of the planning area, consist of lodgepole pine, Douglas-fir, spruce-fir, spruce-fir/lodgepole pine mixed aspen, and clear cut areas. Lodgepole pine dominates the canopy in the lodgepole pine forest with subalpine fir and Engelmann spruce mixed with the canopy trees on most sites. This forest community is widely distributed throughout Wyoming with the exception of the Black Hills. Douglas-fir is dominant in both intact Douglas-fir forests and Douglas fir forests influenced by logging. Douglas-fir forests are found along the foothills of most of the major mountain ranges in Wyoming, but are most common and extensive in the northwest. Engelmann spruce and (or) subalpine fir are dominant or codominant in the canopy of the spruce-fir forest, which is an

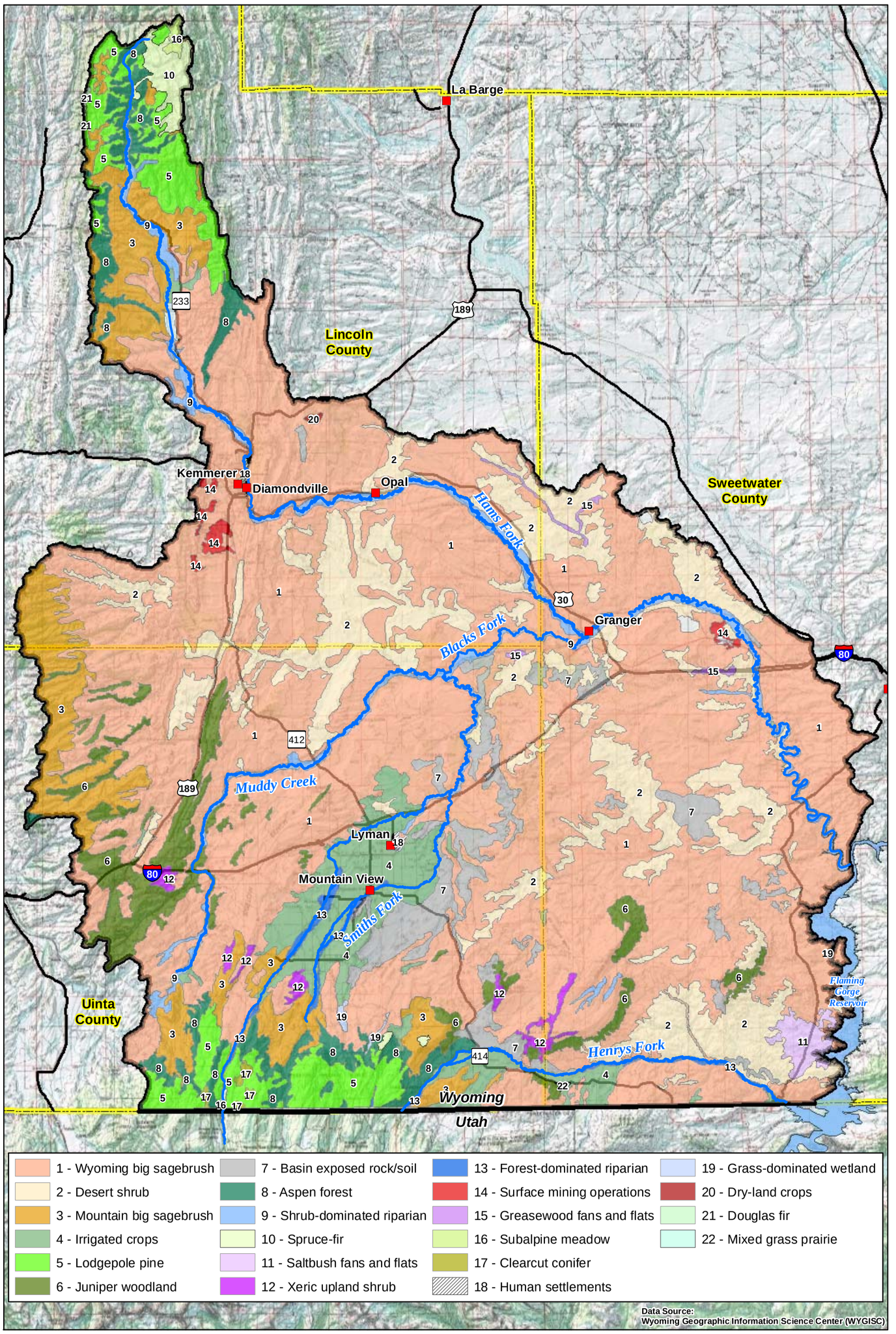


Figure 3.4-3 Blacks Fork Watershed: Wyoming GAP Analysis

important forest type in the mountain ranges of Wyoming, with the exception of the Black Hills. At the lower end of its elevation range, this community occurs in relatively cool, mesic sites, such as north facing slopes and along riparian corridors in canyons. It also mixes with aspen at lower elevation ranges.

Subalpine fir tends to be dominant at lower elevations, with Engelmann spruce gaining importance toward the tree line. Spruce-fir/lodgepole pine mixed aspen forest communities exhibit spruce fir/ lodgepole pine as a major understory and co-dominant component which, with time and lack of fire and other natural disturbances, eventually will succeed aspen and dominate the canopy and become the major species in these stands. These forests occur throughout all the mountains ranges. Clear-cut conifer communities are areas within conifer forests substantially altered by logging. This community comprises clear-cut areas within a matrix of conifer forests and, as such, is a mosaic of standing forest and logged areas with logged areas covering more than 40 percent of the total ground area. The logged areas may be n early succession stages, but classification as a forest requires trees to achieve a 25 percent canopy closure.

In the planning area, conifer forestlands are located in the mountains north of Kemmerer, Wyoming, in the Tunp Range, Sublette Range, and Commissary Ridge areas, and south of Mountain View, Wyoming, on the lower north slope of the Uinta Mountains. Based on GAP vegetation data the conifer forestland within the planning area comprises about 41,965 acres of BLM-administered surface and includes stringers and fringe areas bordering larger contiguous blocks of forest on adjacent USFS administered land. Because of the isolated nature of the forested areas, special management areas (e.g., WSA) and access issues, only 19,008 acres of the forested area are considered available for active forest management. The BLM-administered conifer forestlands delineated for management are approximately comprised of lodgepole pine (51%), Douglas-fir (17%), spruce-fir/lodgepole pine mixed aspen (17%), alpine fir/Engelmann spruce (15%), and less than 1 percent of limber pine. Saw timber-sized trees are found on approximately 56 percent of the forestlands (BLM 2003a). There have been a significant increase in forest insect infestations in the last 4 years due to drought and age class of the current forests.

Aspen woodlands, or aspen forestlands with a major conifer component, include areas where aspen is the dominant tree species. Aspen communities occur in mountain foothills and in high valleys throughout Wyoming wherever the environment is sufficiently mesic. Aspen also occur in riparian zones in foothills. Aspen stands typically exhibit a diversity of understory vegetation, and are utilized by wildlife and livestock. They also serve as natural firebreaks, and often occur as part of an important riparian and wetland component of the forested ecosystem. Aspen stands appear to be declining throughout the interior west, due to advanced age and/or conifer invasion (Bartos and Campbell 1998; Kulakowski et al. 2004; Knight 2001; WSFD 2001). Many of these stands also have declined due to ungulate use and the lack of fire (to control competition and stimulate regeneration). According to a report on forest health published by the Wyoming State Forestry Division, the average age of aspen forests and woodlands in the State of Wyoming is 68 years (WSFD 2001).

Juniper woodlands are found in foothills and rocky outcrops in most of Wyoming in association with big sagebrush, limber pine, and mountain mahogany species. The juniper woodlands include Rocky Mountain juniper and Utah juniper. Juniper encroaches into and dominates sagebrush communities after long periods without fire. In the planning area, aspen is intermixed with the conifer forestlands, and is scattered on mid-elevation ridges and hillsides often in pure stands. The juniper woodlands are located in the hills and escarpments east of Evanston and south of Kemmerer, Wyoming. Based on GAP vegetation data, there are approximately 72,349 acres of combined woodlands (juniper and aspen) or BLM administered surface within the planning area.

Meadows

Meadows occupy approximately 4 percent of the planning area and include subalpine meadow and grass dominated wetland cover types. Subalpine meadows occur in mountain parks within and below the upper treeline and include species such as American bistort, dwarf lewisia, alpine timothy, hairy arnica, slender wheatgrass, spiketrisetum, tufted hairgrass, and oatgrass. Grass-dominated wetlands comprise only a small percentage of the meadow habitat within the planning area and include nonriverine wetlands, such as wet and moist meadow grassland, marsh and swamp wetlands, cattail, bullrush and sedge-dominated wetlands, and inland saltgrass/alkali sacaton-dominated wetlands. Representative species include alkali sacaton, cattail, inland saltgrass, Baltic rush, and alkali cordgrass. Within both meadow cover types, trees or shrubs cannot occupy more than 25 percent of the total vegetative cover.

Sagebrush

Sagebrush communities include areas dominated by Wyoming big sagebrush and mountain big sagebrush and occupy the majority (53 percent) of the planning area. The Wyoming big sagebrush plant community is a shrub steppe type, with Wyoming big sagebrush being the dominant shrub and total shrub cover comprising more than 25 percent of the vegetative cover. This plant community is variable in Wyoming and includes the full range—from dense, homogeneous Wyoming big sagebrush to sparsely vegetated arid areas where Wyoming big sagebrush is the dominant shrub. Often, patches of Wyoming big sagebrush occur with patches of mixed grasses. In these cases, classification of the community as Wyoming big sagebrush steppe occurs if the sagebrush patches occupy more than 50 percent of the total landscape area, and as mixed grass if the grasses occupy more than 50 percent of the total area. Wyoming big sagebrush occurs throughout most of the state, with the exception of the extreme southeast corner. Often, rolling landscapes may feature Wyoming big sagebrush dominating broad slopes, but with sand sagebrush or various cushion plants on wind-swept ridges and knolls and with mountain big sagebrush in hollows.

These landscapes are complex mixtures of several sagebrush-dominated types, but classified as Wyoming big sagebrush when dominated by this vegetation type. The mountain big sagebrush plant community is dominated by mountain big sagebrush, often found with mixed grasses, with a total shrub cover comprising more than 25 percent of the vegetative cover. Sometimes this shrub type occurs as patches of dense sagebrush with patches of mixed grasses. Currently, the sagebrush patches comprise

more than 50 percent of the total landscape area categorized as mountain big sagebrush. This community is widespread in the mountain ranges and higher valleys of Wyoming (BLM 2003a) and is found throughout the state, except east of the Laramie Range. Mountain big sagebrush occupies cooler sites than basin big sagebrush and more mesic sites than Wyoming big sagebrush, often occurs in mountain parks and is intermixed with trees, and is found at the lower margin of the treeline.

Desert shrubs

The desert shrubs community comprises a mixture of shrub species occurring in dry saline habitats. Shrub cover is often dominated by shadscale and saltbush, but can be a mixture of Gardner's saltbush, black greasewood, and (or) desert cushion plants. When ground cover is pure Gardner's saltbush or pure greasewood, it is classified as such, but when these species are mixed and dominance is unclear, it is classified as desert shrub. This plant community also includes some cushion plant communities found in Wyoming basins. Total shrub cover comprises more than 25 percent of the total vegetative cover. Desert shrub usually is found in flats and fans in the central and western basins of Wyoming. Desert shrubs occupy approximately 8 percent of the planning area.

Mountain shrubs

Mountain shrub communities include xeric and mesic shrublands found on mountain slopes and occupy less than 1 percent of the planning area. In the xeric shrub community, the shrub cover is dominated by species of mountain mahogany, with shrub species comprising more than 25 percent of the vegetative cover. These communities usually occur on dry slopes or flats where bedrock is very close to the surface or outcropping. Xeric shrublands often are found along canyon walls around the margins of mountain ranges or on surfaces formed by tilted sedimentary strata. Xeric shrublands also are found throughout Wyoming at mid-elevations in shallow soils. Soil factors are probably the most important factors in controlling the distribution of these shrublands. A variety of shrub-dominated communities grow in relatively mesic sites in Wyoming, often in snow catchments or downslope from catchments or in ravines over a wide range of elevation. Most often, Rocky Mountain maple, bigtooth maple, serviceberry, snowberry, wax currant, and (or) chokecherry are dominant or codominant, but other shrub species can be present. Mountain mahogany species cannot be dominant and mesic shrubs must comprise more than 25 percent of the vegetative cover. Mesic shrublands occur in foothill locations and in mesic microenvironments throughout Wyoming.

Greasewood fans and flats

Areas where greasewood comprises more than 75 percent of the total shrub cover and where shrubs comprise more than 25 percent of the vegetative cover are categorized as greasewood fans and flats. This vegetation type often is found mixed with grasses and generally found along streams at low to medium elevations, although it can occur on fine-textured saline upland areas and on basin fans and flats. Greasewood also occurs in riparian areas where the classification becomes shrub riparian, with the

greasewood community entered as a secondary vegetation type within the polygon. Greasewood fans and flats occupy less than 1 percent of the planning area.

Riparian and Wetland Communities

Forest-dominated communities include riparian zones in which tree species dominate the vegetation of the riparian corridor. In Wyoming, these are usually cottonwood species, but can also be aspen, boxelder, or a variety of conifer species. Trees must occupy more than 25 percent of the vegetative cover within the riparian zone. Forest-dominated riparian communities are found throughout Wyoming, from basins to treeline. In basins, larger drainages often support trees, while smaller drainages generally support shrubs and grasses.

Shrub-dominated riparian communities include riparian zones in which shrubs comprise more than 25 percent of the vegetative cover and in which trees occupy less than 25 percent of the vegetative cover. Shrubs often include willow species, hawthorn, wild plum, birch, alder, tamarisk, and shrubby cinquefoil, but other shrubs (e.g., sagebrush species, and (or) greasewood) may be present. Shrub-dominated communities also include alpine riparian zones dominated by willow species or other shrubs. Shrubdominated riparian communities occur throughout Wyoming.

Grass-dominated wetlands include nonriverine wetlands with vegetation dominated by grasses or forbs. Trees or shrubs cannot occupy more than 25 percent of the vegetative cover. Grass-dominated wetlands are found throughout Wyoming and include communities such as wet and moist meadow grassland, marsh and swamp wetlands, cattail, bullrush- and sedge-dominated wetlands, and inland saltgrass and alkali sacaton-dominated wetlands. Grass-dominated wetlands also include both low and high salinity wetlands. Cattails, rushes, sedges, and prairie cordgrass characterize low-salinity wetlands. High-salinity wetlands include species such as alkali sacaton, alkali cordgrass, saltgrass, seablite, wildrye, and wheatgrass.

3.4.2.3 Targeted Vegetation

Vegetation of particular importance with respect to land use and habitat that were identified by Lincoln County Weed and Pest District, Uinta County Weed and Pest District, Sweetwater County Weed and Pest District and local landowners include:

Designated Noxious Weeds .S. 11-5-102 (a) (xi) and Prohibited Noxious Weeds W.S. 11-12-104.

- Canada thistle (Cirsium arvense L.)
- Common burdock (Arctium minus (Hill) Bernh.)
- Common St. Johnswort (Hypericum perforatum L.)
- Common Tansy (Tanacetum vulgare)
- Dalmatian toadflax (Linaria dalmatica (L.) Mill.)

- Diffuse knapweed (Centaurea diffusa Lam.)
- Dyer's woad (Isatis tinctoria L.)
- Field bindweed (Convolvulus arvensis L.)
- Hoary cress (whitetop) (Cardaria draba & Cardaria pubescens (L.) Desv.)
- Houndstongue (Cynoglossum officinale L.)
- Leafy spurge (Euphorbia esula L.)
- Musk thistle (Carduus nutans L.)
- Ox-eye daisy (Leucanthemum vulgare Lam.)
- Perennial pepperweed (giant whitetop) (Lepidium latifolium L.)
- Perennial sowthistle (Sonchus arvensis L.)
- Plumeless thistle (Carduus acanthoides L.)
- Purple loosestrife (Lythrum salicaria L.)
- Quackgrass (Elymus repens (L.) Gould.)
- Russian knapweed (Acroptilon repens L.)
- Russian olive (Elaeagnus angustifolia L.)
- Saltcedar (Tamarix spp.)
- Scotch thistle (Onopordum acanthium L.)
- Skeletonleaf bursage (Ambrosia tomentosa Nutt.)
- Spotted knapweed (Centaurea stoebe L. ssp. micranthos (Gugler) Hayek)
- Yellow toadflax (Linaria vulgaris (P.) Mill)

Additionally as of February 2014 the Wyoming Weed and Pest Council lists the following weeds as declared weeds by county:

Lincoln County

- Black henbane (Hyoscyamus niger L.)
- Common mullein (Verbascum Thapsus L.)
- Wild oat (Avena fatua L.)
- Poison hemlock (Conium maculatum L.)
- Bull thistle (Cirsium vulgare (Savi) Ten.)
- Western water hemlock (Cicuta douglasii (DC.) J.M. Coult. & Rose)

Uinta County

- Black henbane (Hyoscyamus niger L.)
- Golden pea (Thermopsis rhombifolia)
- Yellow starthistle (Centaurea solstitialis L.)
- Viper’s bugloss (Echium vulgare L.)
- Sulphur cinquefoil (Potentilla)

Sweetwater County

- Black henbane (Hyoscyamus niger L.)
- Common Reed (Phragmites australis)
- Foxtail barley (Hordeum jubatum L.)
- Lady's bedstraw (Galium verum L.)
- Mountain thermopsis (Thermopis montana Nutt.)
- Wild licorice (Glycyrrhiza lepidota Pursh)

The county Weed and Pest Districts actively conduct control measures to reduce the spread and reproduction of weed species.

3.4.2.4 Wetlands

Existing mapping of wetlands within the study area consisted of the National Wetlands Inventory (NWI) created by the US Fish and Wildlife Service (USFWS). The NWI mapping was completed using aerial photographs within the GIS environment and digitizing by analysts, however due to the relatively limited extent of mapped wetlands in relation to the size of the watershed, the data does not lend itself to presentation at the watershed scale. It is generally understood by users of the NWI mapping that the data are suitable for broad scale planning efforts such as this Level I investigation; however, before design and completion of any project potentially affecting wetlands, detailed onsite delineation should be conducted.

In addition to the NWI mapping the LANDFIRE data includes limited determination of wetlands as well. ***Please refer to the Phase I, II, and III report volumes for more detailed information pertaining to wetlands mapping.***

The US Army Corps of Engineers has adopted a 'watershed approach' to wetland classification which includes consideration of the 'hydrogeomorphic character' of the various wetland types. According to the USACE manual (USACE, 1995):

> *"The hydrogeomorphic classification is based on three fundamental factors that influence how wetlands function, including geomorphic setting, water source, and hydrodynamics. Geomorphic setting refers to the landform of a wetland, its geologic evolution, and its topographic position in the landscape. For example, a wetland may occur in a depressional landform or a valley landform and may occur at the top, middle, or bottom of a watershed."*

Seven wetland types have been defined using the classification system adopted by the USACE: Riverine, Slopes, Lacustrine Fringe, Depressional, Tidal Fringe, Mineral Flats, and Organic Flats. Within the study area, the following three types are likely to be encountered: slope wetlands, depressional wetlands, and riverine wetlands. In the paragraphs that follow, extracts from the USACE

(http://el.erdc.usace.army.mil/wetlands/class.html) are presented which describe the nature and function of each.

"Slope Wetlands

Slope wetlands are found in association with the discharge of groundwater to the land surface or sites with saturated overflow with no channel formation. They normally occur on sloping land ranging from slight to steep. The predominant source of water is groundwater or interflow discharging at the land surface. Precipitation is often a secondary contributing source of water. Hydrodynamics are dominated by downslope unidirectional water flow. Slope wetlands can occur in nearly flat landscapes if groundwater discharge is a dominant source to the wetland surface. Slope wetlands lose water primarily by saturated subsurface flows, and by evapotranspiration. Slope wetlands may develop channels, but the channels serve only to convey water away from the slope wetland. Slope wetlands are distinguished from depressional wetlands by the lack of a closed topographic depression and the predominance of the groundwater/interflow water source. Fens are a common example of slope wetlands.

Depressional Wetlands

Depression wetlands occur in topographic depressions (i.e., closed elevation contours) that allow the accumulation of surface water. Depression wetlands may have any combination of inlets and outlets or lack them completely. Potential water sources are precipitation, overland flow, streams, or groundwater/interflow from adjacent uplands. The predominant direction of flow is from the higher elevations toward the center of the depression. The predominant hydrodynamics are vertical fluctuations that range from diurnal to seasonal. Depression wetlands may lose water through evapotranspiration, intermittent or perennial outlets, or recharge to groundwater. Prairie potholes, playa lakes, vernal pools, and cypress domes are common examples of depression wetlands.

Riverine Wetlands

Riverine wetlands occur in floodplains and riparian corridors in association with stream channels. Dominant water sources are overbank flow from the channel or subsurface hydraulic connections between the stream channel and wetlands. Additional sources may be interflow, overland flow from adjacent uplands, tributary inflow, and precipitation. When overbank flow occurs, surface flows down the floodplain may dominate hydrodynamics. In headwaters, riverine wetlands often intergrade with slope wetlands, depressions, poorly drained flats, or uplands as the channel (bed) and bank disappear. Perennial flow is not required. Riverine wetlands lose surface water via the return of floodwater to the channel after flooding and through surface flow to the channel during rainfall events. They lose subsurface water by discharge to the channel, movement to deeper groundwater (for losing streams), and evaporation. Peat may accumulate in off-channel depressions (oxbows) that have become isolated from riverine processes and subjected to long periods of saturation from groundwater sources. Bottomland hardwoods on floodplains are an example of riverine wetlands.

The classification system discussed by the USACE also incorporates consideration of the various 'functions' of the wetland types:

> *"Wetland functions are defined as the normal or characteristic activities that take place in wetland ecosystems or simply the things that wetlands do. Wetlands perform a wide variety of functions in a hierarchy from simple to complex as a result of their physical, chemical, and biological attributes. For example, the reduction of nitrate to gaseous nitrogen is a relatively simple function performed by wetlands when aerobic and anaerobic conditions exist in the presence of denitrifying bacteria. Nitrogen cycling and nutrient cycling represent increasingly more complex wetland functions that involve a greater number of structural components and processes. At the highest level of this hierarchy is the maintenance of ecological integrity, the function that encompasses all of the structural components and processes in a wetland ecosystem."*

Figure 3.4-4 provides a figure extracted from the USACE manual depicting the hierarchy of wetland functions associated with the example cited above regarding the nitrogen cycle. Additional information regarding the wetlands classification scheme is contained in the USACE document included in the digital library delivered with this report and also available at: http://el.erdc.usace.army.mil/elpubs/pdf/wrpde9.pdf.

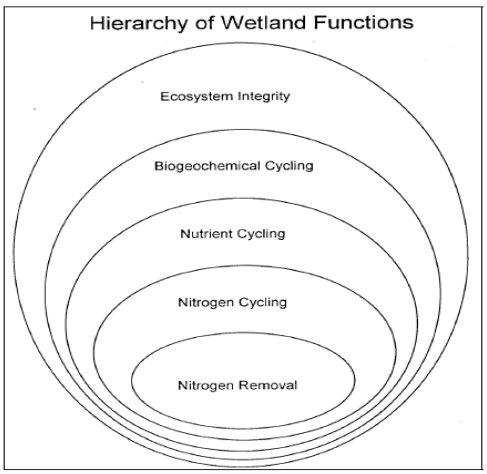


Figure 3.4-4 Hierarchy of Wetland Functions (USACE) 1995).

Delineation of wetlands and classification by function was beyond the scope of this study. However, based upon the project team's familiarity of the basin and the hydrologic regime of the watershed, it can be assumed that the majority of the wetlands in the study area consist primarily of riverine and slope wetlands found along the water courses and associated with springs outside of the riparian zones.

3.4.3 Geology

3.4.3.1 Surficial Geology

The surficial deposits found within the Blacks Fork watershed are presented on Figure 3.4-5. The figure shows the wide distribution of alluvium, eolian mixed, residuum, slope wash and colluvium within the watershed. These sediment types constitute the dominant exposed geology within the watershed. The remaining exposed geology is composed of bedrock, grus, landslide, and terrace deposits.

Each of these deposits will produce soils and vegetation as a function of its physical and chemical composition, slope, slope aspect, local precipitation and other climatic factors, age, etc. which vary widely across the study area.

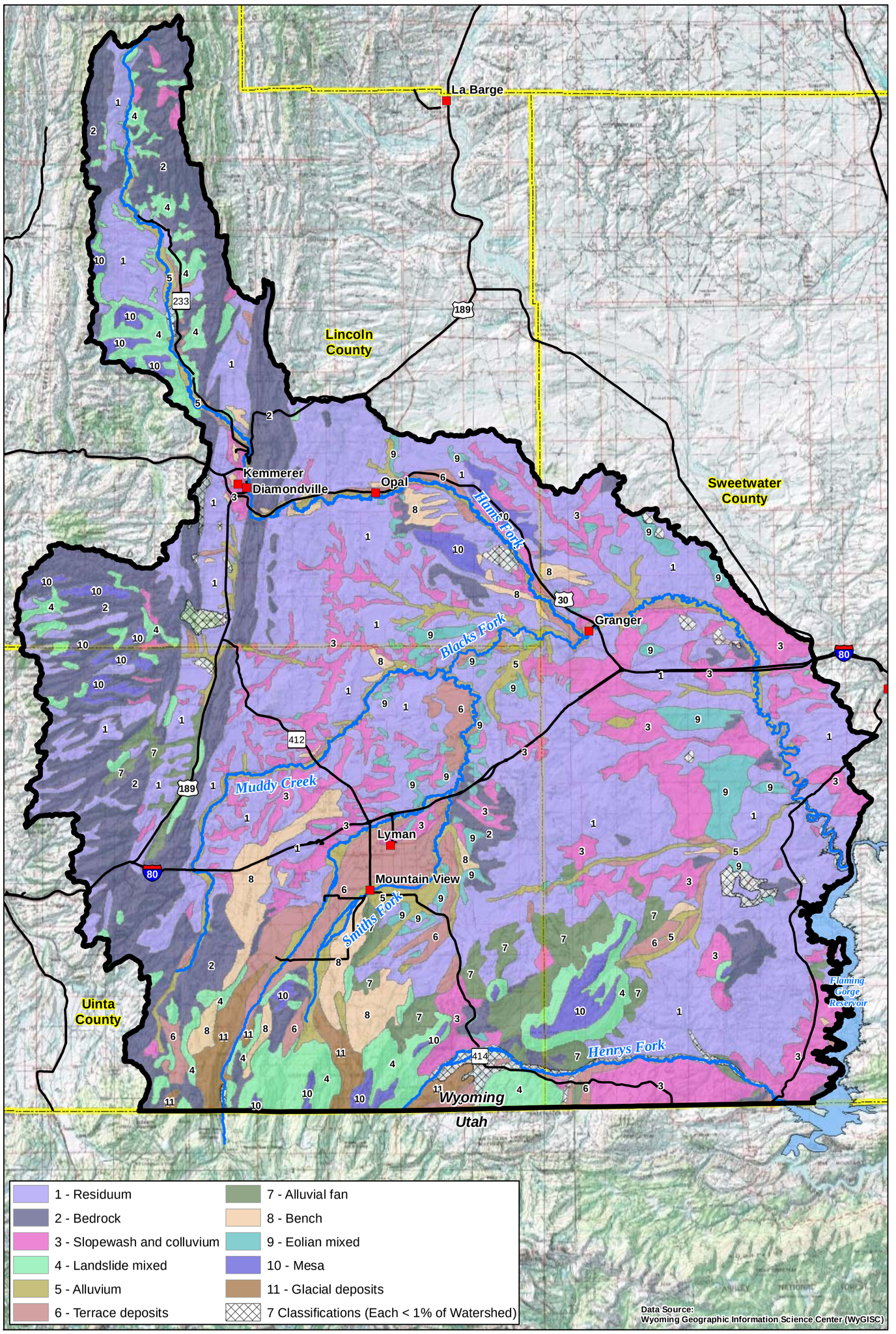


Figure 3.4-5 Blacks Fork Watershed: Surficial Geology

Residuum is an in-situ deposit formed from the weathering of bedrock. Soluble components of the bedrock were transported from the area by fluvial, fluvioglacial, and groundwater processes. The insoluble portions of the rock experienced some mechanical weathering from freeze-thaw and rain-drop impact with little to no transport of the remaining materials. The residuum deposits within the study area are primarily derived from late Paleozoic to Mesozoic rocks. The deposits are relatively young and are therefore thin compared to other quaternary deposits.

Colluvium exists throughout the watershed and has a genetic origin related to mass wasting mechanisms. These sediments were derived from the movement of material down slope under the influence of gravity. The colluvial deposits are composed of material derived from bedrock at higher elevations. Grain sizes range from silt to gravel, and grain shape is predominantly angular to subangular.

Alluvium is found adjacent to surface drainages and is of fluvial origin (produced by the action of a stream or river). The extent of the alluvial deposits varies with the size of the respective fluvial system. Headwater deposits are typically narrower and shallower compared to downstream areas in the watershed. These deposits are actively growing with the fluvial action of existing surface drainages. Fluvial action includes flooding (vertical deposition) and point-bar migration (lateral deposition).

3.4.3.2 Bedrock Units

The geologic formations that underlie the study area range in age from Precambrian to Recent. Figure 3.4-6 provides a generalized geologic map of the study area extracted from the 1:500,000-scale geologic map compilation by Love and Christiansen (1985). Figure 3.4-7 provides a geologic column for the study area, modified from the Ahern (1981) report on the occurrence and characteristics of groundwater in the Green River Basin.

A detailed description of the complexities of the study area's geology is beyond the scope of this level I investigation. A multitude of sources exist which provide site-specific geologic descriptions and mapping. For the purposes of this planning investigation, the general geologic maps and column are presented in order to define the formations present which could potentially affect development of potential watershed improvement projects, reservoir storage, etc. Descriptions of key formations as they relate to groundwater availability and development are discussed in Section 3.5 of this report.

3.4.3.3 Geologic Hazards

Conventional "geologic hazards" are minor in the Blacks Fork Study Area (Figure 3.4-8).

Landslide deposits are included with the mapping of general surficial geology. Landslide activity in the study area is relatively minor in any case, marking local occurrences where slope, permeability, pore pressure, and formation strength have combined to create slope failure. Future landslides are most likely to occur in association with areas of historical slope failure. Thus, while this potential hazard is not restricted to the areas mapped, those areas merit heightened concern.

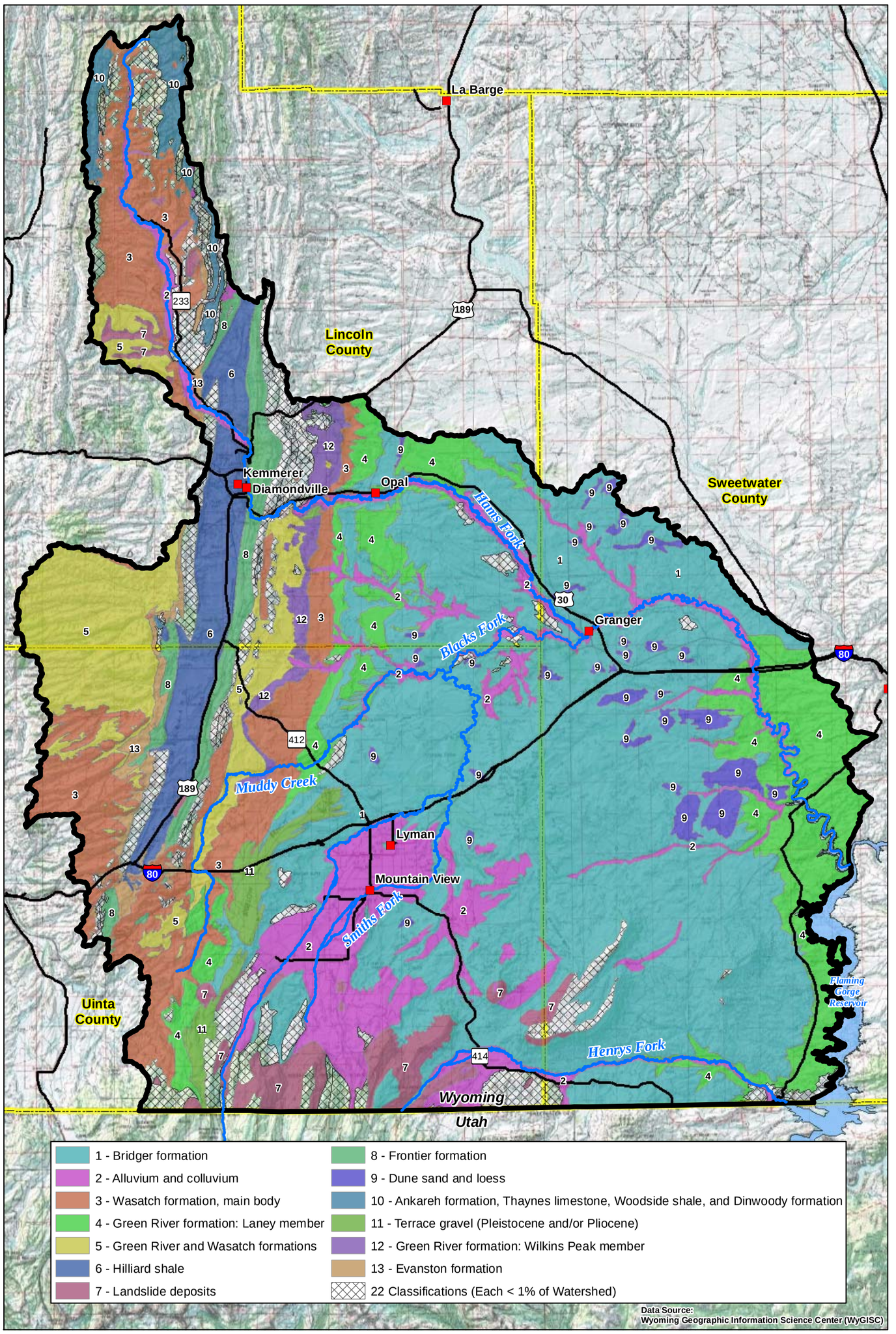


Figure 3.4-6 Blacks Fork Watershed: Bedrock Geology

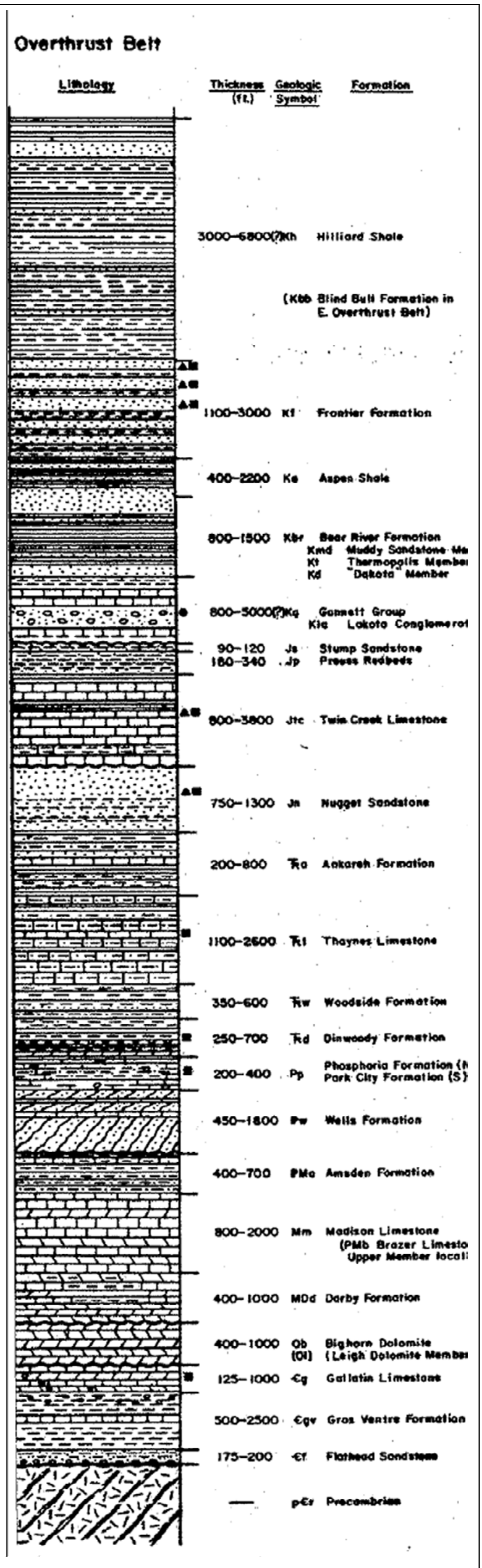


Figure 3.4-7 Generalized Stratigraphic Column Overthrust Belt (Ahern, 1981)

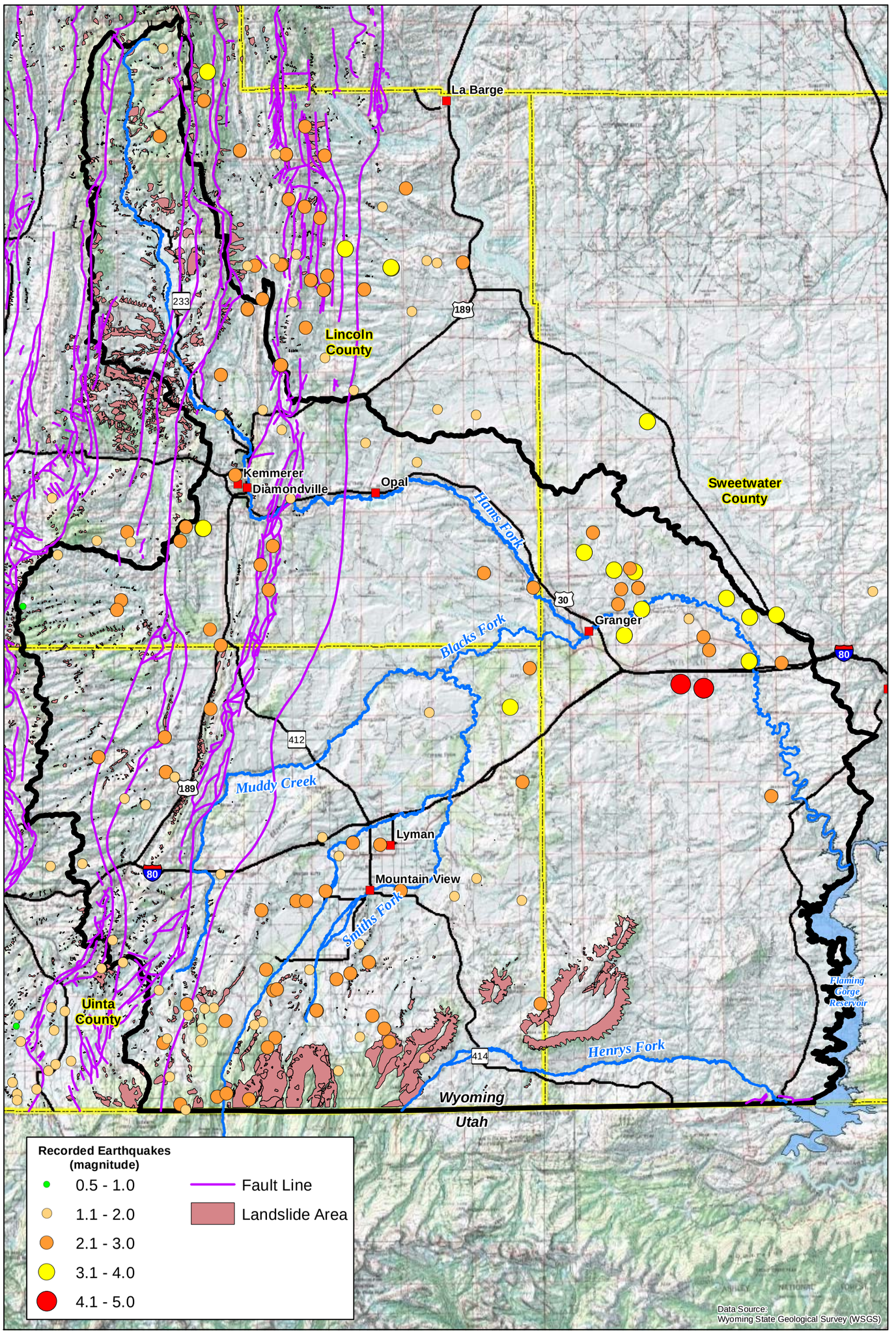


Figure 3.4-8 Blacks Fork Watershed: Geologic Hazards

Using the Wyoming State Geological Surveys website (http://ims.wsgs.uwyo.edu/Earthquakes/), two earthquake databases were searched for significant historical earthquakes within the study area. The Advanced National Seismic System (ANSS) database is a composite catalog of world-wide earthquake events that was created by merging the master earthquake catalogs from contributing ANSS institutions. The ANSS database returned 117 earthquakes located in the study area. The second database searched was the 100 Years of Earthquakes in the Wyoming Region (1871-1970) database. This returned 10 earthquakes within the study area. Of the 127 historical earthquakes recorded within the watershed, 112 (88%) of them were of a magnitude of 1.1 to 3.0 and only 2 earthquakes of magnitude greater than 4.0 have been recorded. Results are mapped on Figure 3.4.8.

As indicated in the figure, there are numerous fault lines located primarily in the western portion of the watershed. The study area falls in zones 1, 2 and 3 according to seismic risk mapping by the Uniform Building Code Seismic Zone Map. The seismic zones are in part defined by the probability of having a certain level of ground shaking (horizontal acceleration) in 50 years. The criteria used for defining boundaries on the Seismic Zone Map were established by the Seismology Committee of the Structural Engineers Association of California (Building Standards, September-October, 1986). The criteria they developed are as follows:

Zone Effective Peak Acceleration, % gravity (g)
4 30% and greater
3 20% to less than 30%
2 10% to less than 20%
1 5% to less than 10%
0 less than 5

A limited extent of the western fringe of the study area lies within Seismic Zone 3. Since effective peak accelerations (90% chance of non-exceedance in 50 years) can range from 20-30%g, and there are significant active faults nearby, it may be reasonable to assume that a maximum peak acceleration of 25%g could be applied to the design of a non-critical facility located in the county if only the UBC were used. Such acceleration, however, is significantly less than would be suggested through newer building codes (Case, et al, 2002).

3.4.4 Soils

Many of the physical and chemical properties of the soils in the study area are strongly influenced by the nature of the parent materials (i.e., the underlying geological material in which soil horizons form). Very young soils are influenced more by parent material than by vegetation. The soils in the watershed area formed from limestone and sandstone on mountainsides and from interbedded sandstone. Soils within the study area vary greatly as would be anticipated given the areal extent of the basin and the variety of parent materials, precipitation, and other soil forming factors. Figure 3.4-9 displays a general soils map of the study area prepared using data mapped at the 1:250,000 level of detail and obtained from the NRCS. This level of detail is valuable for regional planning efforts such as this investigation; however, more detailed mapping is required for site-specific investigations and evaluation of specific projects.

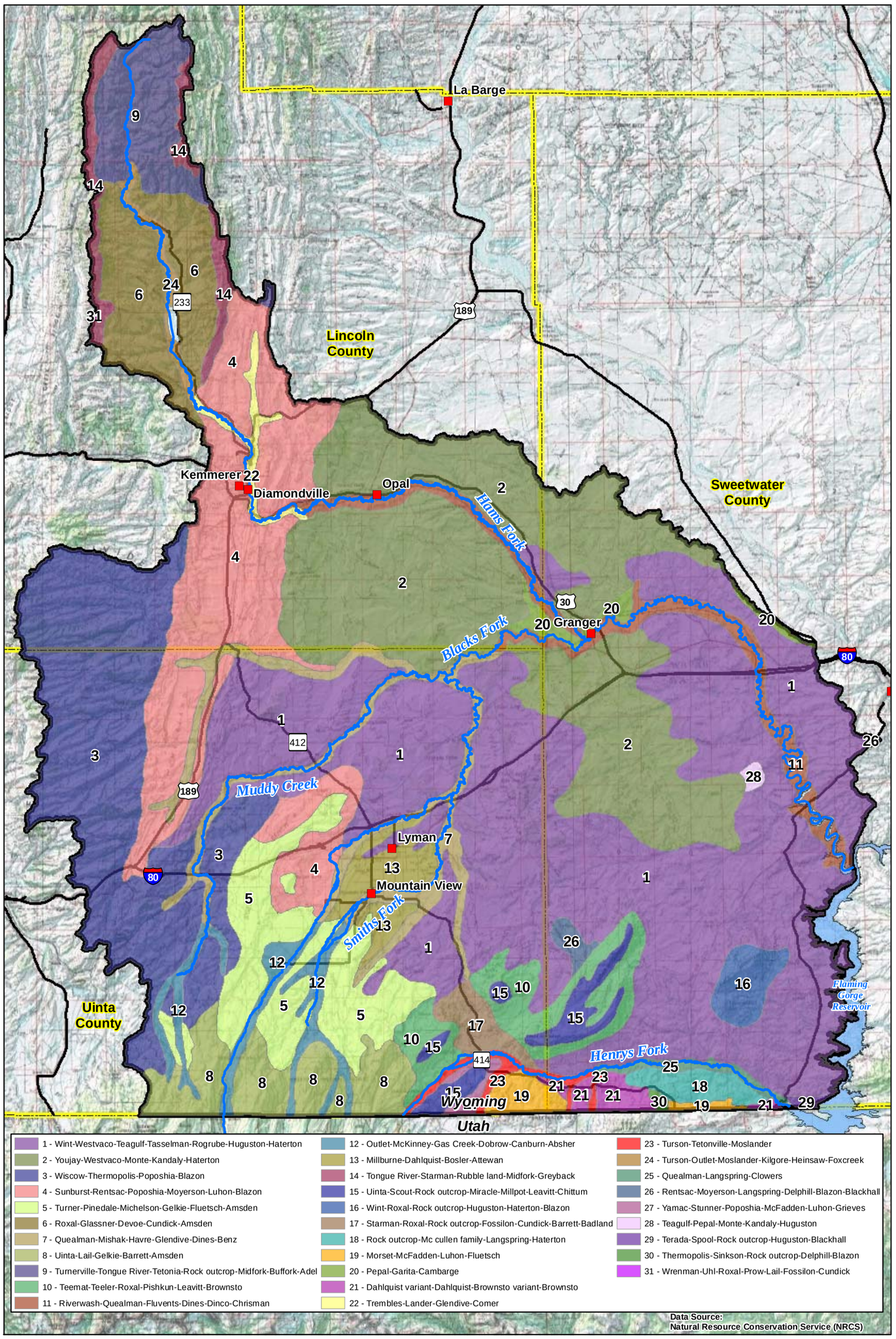


Figure 3.4-9 Blacks Fork Watershed: Soils Mapping at 1:250,000

Within the study area, detailed soils mapping was available for the majority of the study area. The 1:24,000 scale soils mapping is incorporated within the project GIS.

3.5 Watershed Hydrology

3.5.1 Groundwater

Groundwater is simply the underground component of the hydrologic cycle. Water enters the subsurface as rainfall, snowmelt, streamflow, irrigation water, etc. infiltrates, in a process called "recharge". Groundwater moves beneath the surface in response to groundwater gradients, much as surface water flows "downhill". And groundwater leaves the subsurface as "discharge" via springs, wells, baseflow into streams, uptake by deep-rooted vegetation, and evaporation from the ground surface.

3.5.1.1 Springs

Groundwater is naturally discharged by springs and seeps, by evapotranspiration, and by discharge to streams and other aquifers. Springs and seeps occur when the water table intersects the land surface. This commonly is the result of changes in lithology, faults and fractures, and topography. For example, where a sufficiently permeable geologic unit (e.g., uncemented sandstone or conglomerate) crops out in a swale or on a hillside at an elevation below the ambient groundwater table in the bedrock unit at that location, a spring may develop. Similarly, a permeable geologic structure (e.g., an open joint, fracture or fault zone) may intersect the ground surface and serve as a conduit for the discharge of groundwater. Spring flows vary widely due to the nature of the aquifer/structure discharging, the amount of seasonal recharge from snowmelt and rainfall, depletion of storage during periods of drought, and even evaporation and evapotranspiration at the site of the spring. The flows can be concentrated or diffuse, again depending on the nature of the geologic conditions causing the spring (Susong, et al., 1993).

Figure 3.5-1 displays the location of springs mapped by the USGS, BLM and Uinta Development Corporation.

3.5.1.2 Alluvial Aquifers

A large number of existing stock and domestic wells within the study area are shallow wells completed in alluvial aquifers associated with the Blacks Fork, Smiths Fork, Henrys Fork and Hams Fork Rivers. The Quaternary hydrogeologic units study area consist mostly of unconsolidated deposits: alluvial, landslide, eolian, lacustrine, glacial, gravel, and terrace deposits. Many of these Quaternary unconsolidated deposits are less than 50 feet thick, but some units may be more than 100 feet thick locally. The water-saturated portions of the sand, gravelly sand, and gravel beds of these Quaternary deposits yield groundwater to wells.

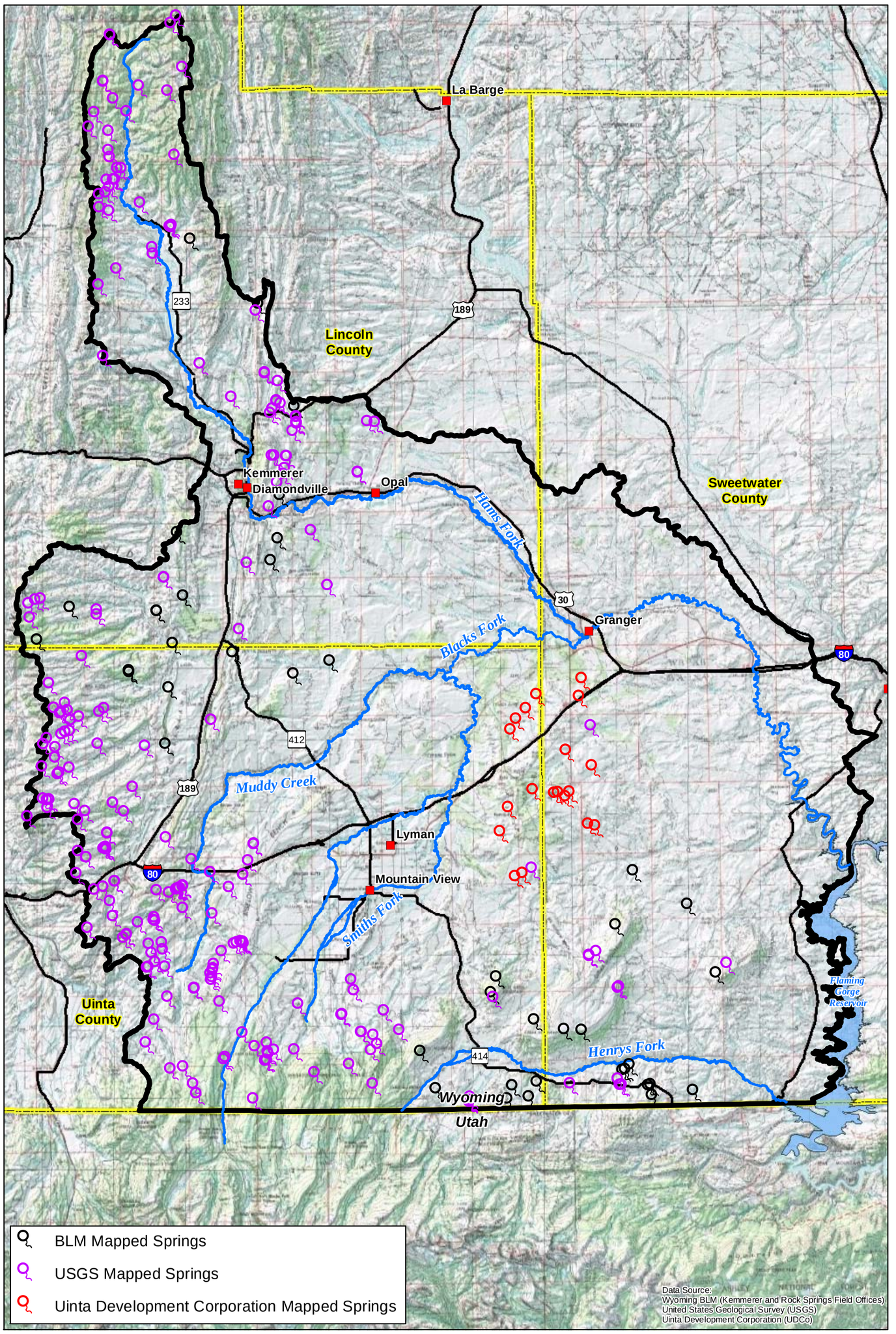


Figure 3.5-1 Blacks Fork Watershed: Mapped Springs

Groundwater in the Quaternary deposits is unconfined. Water table conditions are dependent on seasonal recharge and vary widely throughout the year. Recharge to the deposits occurs by (1) infiltration of precipitation into outcrops, (2) discharge from bedrock units, (3) stream loss, and (4) irrigation. Maximum recharge occurs in March and July.

3.5.1.3 Bedrock Aquifers

Groundwater exists in both unconfined water table conditions (at atmospheric pressure) or under confined conditions where pressures are greater than atmospheric. Table 3.5-1, extracted from Ahern (1981), tabulates the lithology and water yielding characteristics of these and other members of the stratigraphic sequence. Figure 3.5-2, also extracted from Ahern, presents the generalized hydostratigraphic column of the Green River Basin-Overthrust Belt.

A database of permitted well information was obtained from the Wyoming State Engineers Office (WSEO). Within the database are attributes for each well including: permit number, applicant name, well name, location, well depth, depth to water, well yield, and appropriated uses. Figure 3.5-3 displays the locations of the wells. This figure also indicates the general depth of each well.

3.5.2 Surface Water

The USGS has designated watersheds within the United States with numeric identifiers called Hydrologic Unit Codes, or HUCs. According to the USGS, *"The United States is divided and sub-divided into successively smaller hydrologic units which are classified into four levels: regions, sub-regions, accounting units, and cataloging units. The hydrologic units are arranged within each other, from the smallest (cataloging units) to the largest (regions). Each hydrologic unit is identified by a unique hydrologic unit code (HUC) consisting of two to eight digits based on the four levels of classification in the hydrologic unit system."*

The first level of classification divides the Nation into 21 major geographic areas, or regions. These geographic areas typically contain the drainage area of a major river, such as the Missouri region. Eighteen of the regions occupy the land area of the conterminous United States. As regions are subdivided, the HUC identifier is extended. At this time, the smallest subdivision is referred to as the Twelfth order HUC due to the fact that the identifier has 12 digits. The following information is provided as an example of the HUC system as it refers to one of the tributaries: Muddy Creek.

The following information is provided as an example of the HUC system as it refers to one of the Blacks Fork rivers tributaries: Muddy Creek.

Region:	14 Upper Colorado	(Second order HUC)
Subregion:	1404 Great Divide-Upper Green	(Fourth Order HUC)
Accounting Unit:	140401 Upper Green	(Sixth Order HUC)
Cataloging Unit:	14040108 Muddy	(Eighth Order HUC)
Sub-watershed:	1404010801 Muddy Creek	(Tenth Order HUC)
Sub-basin:	140401080109 Big Muddy Creek	(Twelfth Order HUC)

Table 3.5-1 Generalized Stratigraphy, lithology, and water-bearing characteristics of geologic formations in the Green River Basin-Overthrust belt.

Era	Period	Geologic Unit	Thickness (feet)	Lithologic Description	Hydrologic Parameters
Cenozoic	Quaternary	Alluvium	<100 thick	Unconsolidated sand, gravel, silt, and in Green clay. River basin; up to 410 feet thick in Bear River Valley of Overthrust Belt.	Highly permeable, productive water-bearing deposits. Well yields commonly 50 to 500 gpm. Transmissivity generally 5,000 to 30,000 gpd/ft. Total dissolved solids are generally less than 500 mg/l.
	Tertiary	Miocene and Pliocene sediments including Bishop Conglomerate, Browns Park, South Pass, Camp Davis, Salt Lake, and Teewinot formations.	0-6,000	Conglomerate, limestone, sandstone and tuffaceous mudstone.	Poorly consolidated conglomerates are well drained. Yields generally range from 10 to 120 gpm. Maximum reported spring discharge from Salt Lake Formation **is** 8,000 gpm. Three transmissivity calculations range from 1000 to >100,000 gpd/ft. Total dissolved solids generally less than 500 mg/l.
		Fowkes Formation	0-2,600	Basal conglomerate overlain bytuffaceous mudstone, tuffaceous, calcareous sandstone and rhyolitic ash.	Locally yields water to wells and springs in Overthrust belt. One Fowkes spring discharges 125 gpm.
		Bridger Formation	0-2,300	Tuffaceous lacustrine and floodplain deposits, becoming locally conglomeratic near the 'Uinta Mountains	A major aquifer in the southern Green River basin-Overthrust area. Yields from wells and springs commonly range from 2 to 100 gpm. Transmissivities are commonly between 500 and 3,000 gpd/ft.
		Green River Formation	100-2,800	Lacustrine claystone, marlstone, oil shale and saline deposits with discontinuous lenses of fine-grained sandstone in the Laney and Tipton shale members of the upper and lower Green River Formation, respectively. Trona deposits occur in the Wilkins Peak Member of the middle Green River Formation.	A major aquifer in eastern Green River basin. Sandstone lenses in Laney Shale and Tipton Shale members generally yield 3 to 100 gpm to wells and springs. Transmissivities range from 1,000 to 6,500 gpd/ft. Vertical permeability is very low due to great thickness of tight marlstone and shale above and below sands. Total dissolved solids concentrations in Laney Shale usually exceed 1,500 mg/l. Wilkins Peak TDS levels are typically 10,000 to 100,000 mg/l.
		Wasatch Formation	2,500 to 7,200	Silty to sandy claystone, lenticular beds of fine- to medium-grained sandstone becoming conglomeratic to the south and west.to medium-grained sandstone becoming conglomeratic to the south and west.	Major aquifer of Green River basin. Well yields range from 1 to 1,300 gpm, though commonly less than 50 gpm. Transmissivity generally ranges from 200 to 1,000 gpd/ft. Oil field pay zone porosity and permeability range f5om 20 to 25 percent and 0.02 to 18 gpd/ft. , respectively. Total dissolved solids concentrations between 300 and 1,000 mg/1 may be expected.
		Hoback Formation	0-16,000	Interbedded sandstone and calcareous shale with thick lenses of conglomerate. Present in Hoback and Snake River basins.	Hydrologic data are scarce; however thick sandstone and conglomerate lenses provide an excellent potential water source. One well yields 20 gpm with estimated transmissivity of 2,300 gpd/ft.

Table 3.5-1 Generalized Stratigraphy, lithology, and water-bearing characteristics of geologic formations in the Green River Basin-Overthrust belt. (Continued)

Era	Period	Geologic Unit	Thickness (feet)	Lithologic Description	Hydrologic Parameters
		Fort Union Formation	0-6,000	*Fine-* to *medium-grained,* silty *sand-stone* and lignitic mudstone with coal; becomes coarser grained near mountainous areas. Major coal seams occur in the lower Fort Union.	Locally utilized aquifer of Green River basin and southern Overthrust belt. Oil and gas field data indicate pay zone porosities of 9 to 23 percent and sandstone permeability of <.01 to 0.5 gpd/ft.
Cenozoic-Mesozoic	Tertiary-Upper Cretaceous	Evanston Formation	1,350-2,900	Lower member of mudstone, siltstone, claystone, and carbonaceous sandstone; middle member of conglomerate in a matrix of fine to coarse sand; upper member consists of carbonaceous sandy to clayey siltstone interbedded with sandstone and conglomerate.	Conglomerates and conglomeratic sandstones present in the Overthrust belt are capable of yielding moderate to large quantities of water to wells. Yields to two Evanston wells are 3 and 200 gpm. An estimated 1,000 gpm flows from one Evanston spring.
Mesozoic	Upper Cretaceous	Lance Formation	0-50?	Very fine- to fine-grained, lenticular, clayey, calcareous dark shale, coal and lignite.	No water well data for Lance Formation. The unit is probably capable of yielding small quantities of water from fine-grained sands and conglomeratic sandstone at base (Fox Hills Sandstone). Oil field pay zone porosity is 12 to 18 percent.
		Lewis Shale	200-2,000	Calcareous to non-carbonaceous shale with beds of siltstone and very fine-grained sandstone.	Unit is an aquitard where present in the east-ern Green River basin and Rock Springs uplift. Well data are not available.
		Mesaverde Group (includes Blair, Rock Springs, Ericson, and Almond formations near Rock Springs uplift)	1,300-5,200	Tightly cemented, very fine- to fine-grained sandstone and siltstone interbedded with gray shale and a few thin coal seams in the western Green River basin. Near the Rock Springs uplift the Mesaverde Group consists of interbedded fine-grained to conglomeratic sandstone, siltstone, shale, and coal.	Unit is utilized locally, particularly near Rock Springs uplift, for stock and domestic supplies. Sandstones of Ericson Formation (middle to upper Mesaverde Group) are highly permeable and capable of large yields to wells and springs. Reported oil field pay zone porosities range from 9.5 to 24 percent. Permeability estimates are <.01 to 1.1 gpd/ft.^{2}. Reported yields from Mesaverde wells east of the basin boundary, on the Rock Springs uplift, are 100 to 200 gpm.
		Adaville Formation	1,400-5,000	Fine- to medium-grained calcareous sandstone and carbonaceous mudstone with numerous coal beds. Present in Overthrust belt.	Generally considered a minor aquifer of the Overthrust belt area, though no well data or spring yield records exist for the unit.
		Hilliard Shale	3,000-6,800?	Sandy shale with interbedded mudstone and shaley sandstone.	Major regional confining unit of Green River basin and Overthrust belt. Locally yields small quantities to wells from sand lenses. Oil field pay zone porosity is 10 to 21 percent.
		Baxter Shale			

Table 3.5-1 Generalized Stratigraphy, lithology, and water-bearing characteristics of geologic formations in the Green River Basin-Overthrust belt. (Continued)

Era	Period	Geologic Unit	Thickness (feet)	Lithologic Description	Hydrologic Parameters
	Lower Cretaceous	Frontier Formation	1,100-3,000?	Lenticular sandstone, fine to medium- grained; interbedded mudstone, clay-stone, siltstone, minor coal; prolific gas and occasional oil producer.	Aquifer yields 5 to 50 gpm to springs. Porosity of oil field pay zones is 8 to 25%; Transmissivities from drill stem tests generally less than 10 gpd/ft. Variable cementation and lenticularity of beds causes irregular occurrence of high transmissivity zones.
		Aspen Shale	400-2,200	Shale; interbedded fine-grained sandstone and siltstone.	Locally utilized aquifer, maximum spring and well yields 25 to 30 gpm. Oil field pay zone porosity of 15 percent in "fractures." Water yields are mainly from stray sands and fracture zones.
		Bear River Formation	800-1,500	*Fissile* shale with sandstone interbeds in Overthrust belt, fine shaley sand-stone with shale and siltstone inter-beds ("Muddy" sandstone upper) and shale with sandstone, siltstone and bentonite interbeds (Thermopolis Shale -middle, and "Dakota" sandstone-lower) in Great Divide and-Washakie basins just east of Rock Springs uplift.	Minor aquifer with spring yields generally 4 to 15 gpm and similar well yields. Oil field pay zone porosity is 8 to 21 percent. Pump test transmissivities are 300, 2300, 9500 gpd/ft.(specific capacities 0.3, 2.3, and 7.8 gpm/ft.), calculated drill stem test transmissivity generally less than 45 gpd/ft. Porosity and permeability are highest in the "Muddy" and "Dakota" members.
		Gannett Group	800-5,000	Interbedded siltstone, calcareous siltstone, calystone, mudstone, sandstone, conglomerate, limestone. Lower conglomerate unit (Lakota).	Water-bearing units restricted to sandstones and conglomerate in lower part. Lakota porosity ranges from 18 to 21 percent with one transmissivity estimate of 160 gpd/ft. for the Bechler Member. Springs in Lakota and Bechler conglomerate members flow 5 to 75 gpm.
	Upper Jurassic	Stump Sandstone-Preuss Redbeds (Overthrust belt and NW Green River basin) Curtis Formation-Entrada Sandstone (SE Green River basin)	270-460	Interbedded sandstone, siltstone, mudstone and limestone.	Unit is considered a poor aquifer with one well yield of 5 gpm and spring flows of 20 *and* 50 gpm. Transmissivities estimated from 3 drill stem tests are less than 12 gpd/ft.
	Middle Jurassic	Twin Creek Limestone	800-3,800	Upper- limestone and shale Lower- limestone, mainly brecciated, but partly honeycombed, and claystone.	Minor aquifer in Overthrust belt. Spring flows range from 20 to 300 gpm. Transmissivity estimates range from less than 1 to 16 gpd/ft. Permeability is generally less than 0.002 gpd/ft and porosity from one oil field pay zone is 1.7 percent.
	Lower Jurassic	Nugget Sandstone	750-1,300	Sandstone, fine to medium-grained, well-sorted, quartzitic, cross-bedded minor clay and silt in upper part, significant clay and silt in lower part; locally highly calcareous; prolific oil and gas producer.	Major aquifer of Mesozoic system. Springs flow 3 to 300 gpm with four flows of 1,400 to 2,000 gpm. Well yields not available. Transmissivity estimates range from 9 to 37 gpd/ft in the *Green* River basin and 1.9 to 186 gpd/ft in the Overthrust belt. Oil and gas field pay zone porosities range from 10 to 20 percent. Perme-ability is 0.2 to 3 gpd/ft^2, highest in the upper part of the aquifer.
	Triassic	Ankareh Formation	200-800	Shale, interbedded siltstone, fine-grained sandstone, and, locally, lime-stone in the middle part.	Minor regional aquifer, locally confining. One spring flows 200 gpm. No current well production. Transmissivity from one drill stem test is 0.5 gpd/ft.

Table 3.5-1 Generalized Stratigraphy, lithology, and water-bearing characteristics of geologic formations in the Green River Basin-Overthrust belt. (Continued)

Era	Period	Geologic Unit	Thickness (feet)	Lithologic Description	Hydrologic Parameters
		Thaynes Limestone	1,100-2,600	Silty limestone, with siltstone and shale in the upper part.	Generally considered a regional aquifer with spring flows of 5 to 1,800 gpm (4 less than 100 gpm) and one well flowing 150 gpm. Oil field pay zone porosity at one field is less than 5 percent. Transmissivity estimates from 3 oil field drill stem tests are 0.3 to 38 gpd/ft. The unit is most productive where solution openings, bedding plane partings, and fractures exist.
		Woodside Formation	350-600	Anhydritic siltstone and mudstone with some fine-grained sandstone.	Unit acts as regional aquitard. Well and spring data not available.
		Dinwoody Formation	250-700	Siltstone and shale, dolomite and interbedded anhydrite in upper part.	Regional aquitard with local productive zones. One spring flows 150 gpm. Transmissivity estimate from one drill stem test is 8.8 gpd/ ft gpd/ft.
Paleozoic	Permian	Phosphoria Formation	200-400	Phosphatic carbonate, cherty shale and sandstone in N. Overthrust belt and in *NW* Green River basin. Non-phosphatic carbonate with subordinate sandstone in S. Overthrust belt and SE Green River basin.	Unit is minor aquifer, locally confining. One well and one spring yield 200 and 300 gpm, respectively. Transmissivity estimates typically less than 13 gpd/ft. Most productive from fracture zones and interbedded sandstones in the upper part of the formation.
	Pennsylvanian	Tensleep Sandstone	450-1,000	Quartzite, thick'-bedded, calcareous sandstone, and limestone (mainly in upper part) (Overthrust belt). Sand-stone, fine-grained and well-sorted with quartzite and thinly layered siliceous dolomitic limestone (Green River basin and E. Overthrust belt).	Major aquifer of Paleozoic System. Well yields range from 210 to 700 gpm. Spring flows are commonly less than 210 gpm. Transmissivity estimates from 11 drill stem tests are 0.14 to 38 gpd/ft. Good interstitial permeability and excellent secondary permeability where fractured.
	Mississippian	Amsden Formation (Overthrust belt and NW Green River basin) Darwin Sandstone Member (Green River basin)	400-700	Mudstone, siltstone and sandstone, with cherty limestone.	Minor aquifer in Green River basin, but locally confining in Overthrust belt and *NW* Green River basin. One Amsden well yields 8 gpm. Oil field pay zone porosity at 3 fields is 7 to 12 percent. Transmissivity estimates from 4 drill stem tests are less than 1 to 4.8 gpdqt. Permeability is less than 0.02 gpd/ft. (one estimate).
	Mississippian	Madison Limestone	800-2,000	Limestone, thin-bedded to massive, brecciated and partly cherty, and dolomite, thick-bedded to massive. Excellent karst and fracture develop-ment throughout the area.	Major regional aquifer in study area and entire state of Wyoming. Excellent solution and fracture permeability. Maximum well yield of 720 gpm, though most yields are less than 100 gpm. Four springs flow less than 350 gpm, two others flow 4,000 and 40,000 gpm. Trans-missivity is typically less than 15,000 gpd/ft. Specific capacity generally 0.1 to 10 gpm/ft.
	Devonian-Mississippian	Darby Formation	400-1,000	Limestone and dolomite, thin-bedded to massive, and siltstone; shale and sandstone predominate in northern	Major aquifer with permeability dependent upon degree of fracturing and secondary solution, best developed in Overthrust belt. Four Darby springs flow 5 to 1,100 gpm. One well yields more than 5 gpm.

Table 3.5-1 Generalized Stratigraphy, lithology, and water-bearing characteristics of geologic formations in the Green River Basin-Overthrust belt. (Continued)

Era	Period	Geologic Unit	Thickness (feet)	Lithologic Description	Hydrologic Parameters
	Ordovician	Bighorn Dolomite	400-1,000	Fine- to medium-grained massive dolomite and dolomitic limestone.	Highly productive aquifer where fracture, secondary solution and bedding plane perme-ability are well developed. Three Bighorn springs flow 250 to 450 gpm, one flows 3,200 gpm. Porosity from one oil field is 2 percent. Well data are not available.
Cambrian		Gallatin Limestone	125-1,000	Limestone, thin-bedded and dolomitic limestone with minor interbedded conglomerate and thin shale partings.	Well and spring data not available; however, lithology as well as fracture and secondary solution permeability development are indicative of a potentially productive aquifer.
		Gros Ventre Formation	500-2,500	Shale and interbedded conglomerate in the upper part, underlain by lime-stone and a lower hematitic shale unit.	Unit is generally considered a regional aquitard with low vertical permeability due to upper and lower shales. Well data are not available. One spring flows 900 gpm (?).
		Flathead Sandstone	175-200	Quartzite, fine-grained, with coarse-grained sandstone lenses. Minor silty shale beds occur in upper part with some conglomerate in the lower part.	Well and spring data are not available for the unit. Lithology is similar to basal Cambrian in other basins of western Wyoming where Flathead equivalents are highly permeable, productive aquifers.
Precambrian		Precambrian undivided		Gneissic granite with schist, granite and pegmatite.	Locally utilized aquifer near outcrop areas on west side of Wind River and Gros Ventre ranges and east side of Teton Range, where highly weathered permeable zones overlie well fractured bedrock. Optimum productive zones are probably less than 200 feet deep. Well and spring data not available.

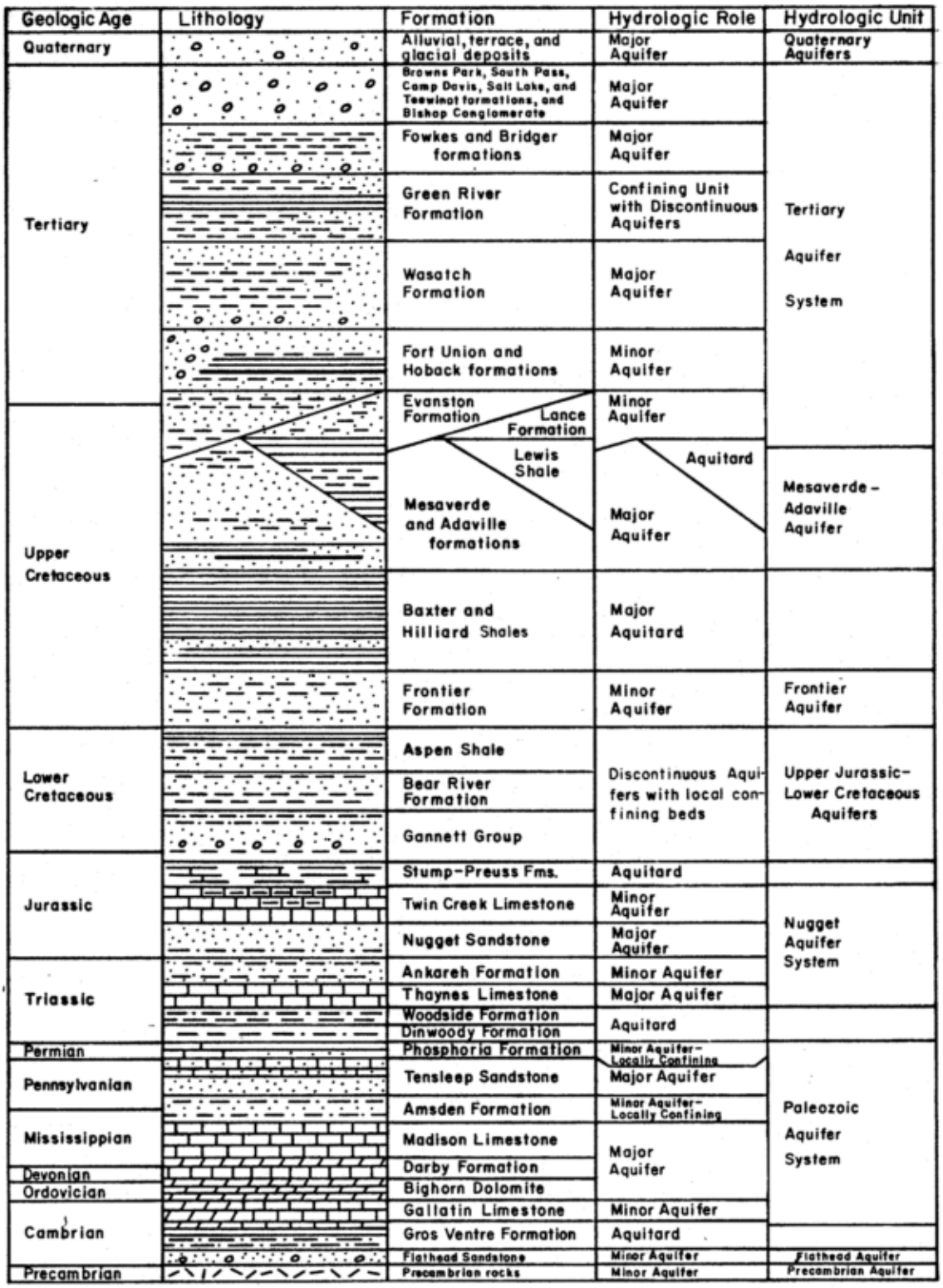


Figure 3.5-2 Generalized hydrostatic column of the Green River Basin-Overthrust Belt (Ahern, et al, 1981).

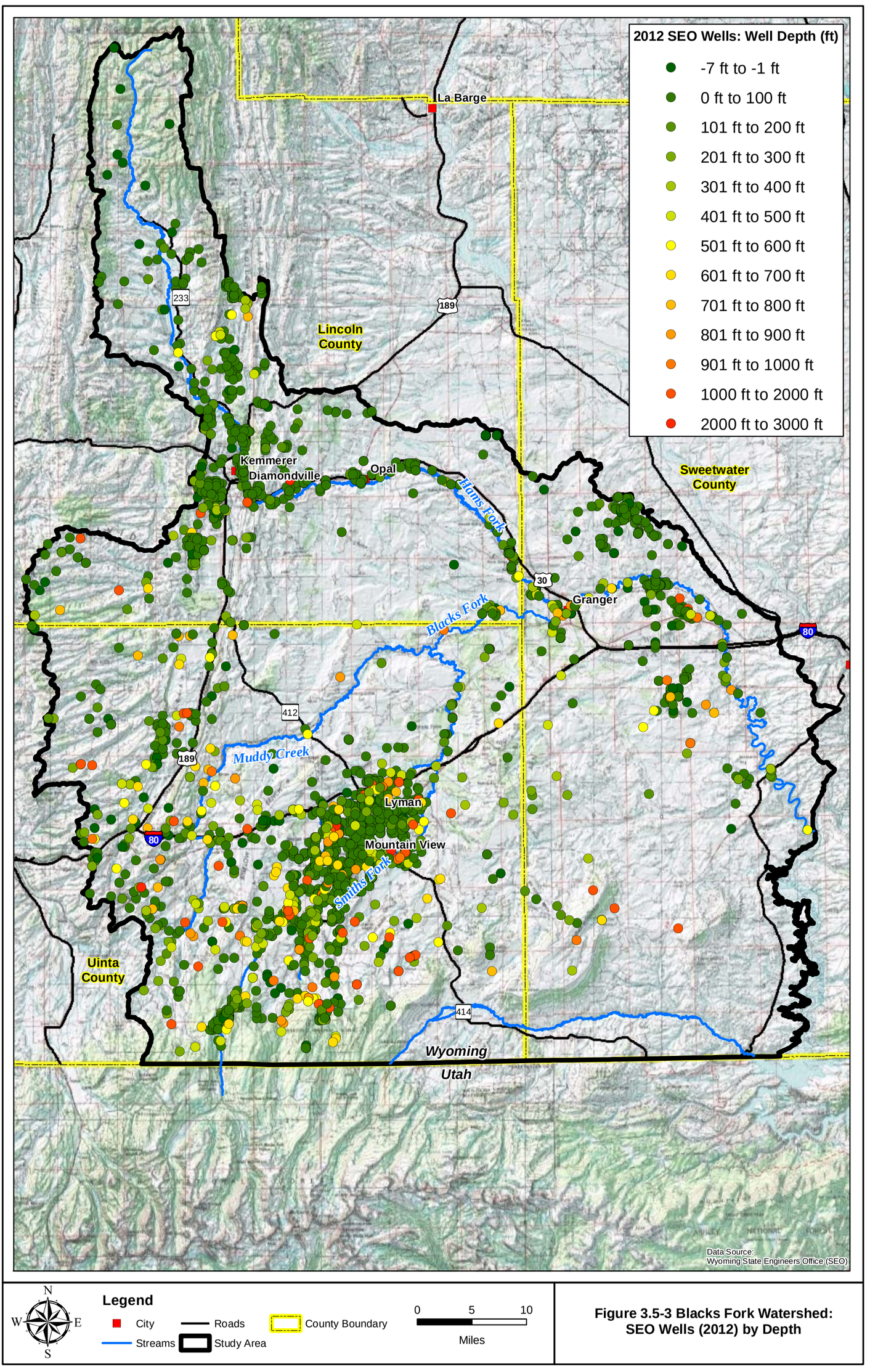


Figure 3.5-3 Blacks Fork Watershed: SEO Wells (2012) by Depth

The Blacks Fork River watershed study area was defined by combining three Cataloging Units or Eighth Order HUCs: Blacks Fork (14040107), Upper Green-Flaming Gorge (14040106), and Muddy (14040108). Table 3.5-2 summarizes the HUC system as it pertains to the study area.

3.5.2.1 USGS Gaging Stations

There are currently four active USGS stream gaging stations within the watershed (Figure 3.5-4). As indicated in Figure 3.5-5, historically, twenty gages have been active with up to ten active at one time (early-1960's). However all but four of the gages have been discontinued by the USGS.

Mean monthly discharges were computed using the available data from the active gages and are presented in Table 3.5-3. The mean annual hydrographs at these gage locations reflect typical snowmelt driven runoff patterns. The bulk of the annual runoff occurs between April and July at all of the gages. The late summer through fall months (August through October) see steep declines in streamflow as the streams return to base flow conditions through the winter. Figure 3.5-6 displays the mean annual hydrograph for the four active gages sited within the study area.

The stream reaches and tributaries in the study area range from perennial to ephemeral. Ephemeral streams are defined as those streams/reaches that flow only in response to direct precipitation events, and where any groundwater inflows are insufficient to sustain streamflow due to losses from evaporation, transpiration, and seepage. The hydrologic behavior of intermittent streams/reaches is transitional between perennial and ephemeral stream hydrology. Ephemeral streams tend to be extremely 'flashy', displaying very rapid rise to peak followed by a rapid recession in streamflow. Annual runoff is typically low.

Using regional methods described by the USGS (Miller, 2003), peak flow characteristics were calculated for each of the 98 subwatersheds (HUC12) within the study area. The methodology used to compute these discharges is based upon regressional analyses of gaged data against basin characteristics for similar watersheds. Because anthropogenic influences can have significant influences upon peak discharge values (irrigation, diversion, reservoirs, etc.), these values are intended to be used for regional planning efforts only. Project-specific estimates would be required before design of future watershed projects (ex. reservoir storage). Appendix 3C presents the results of this effort.

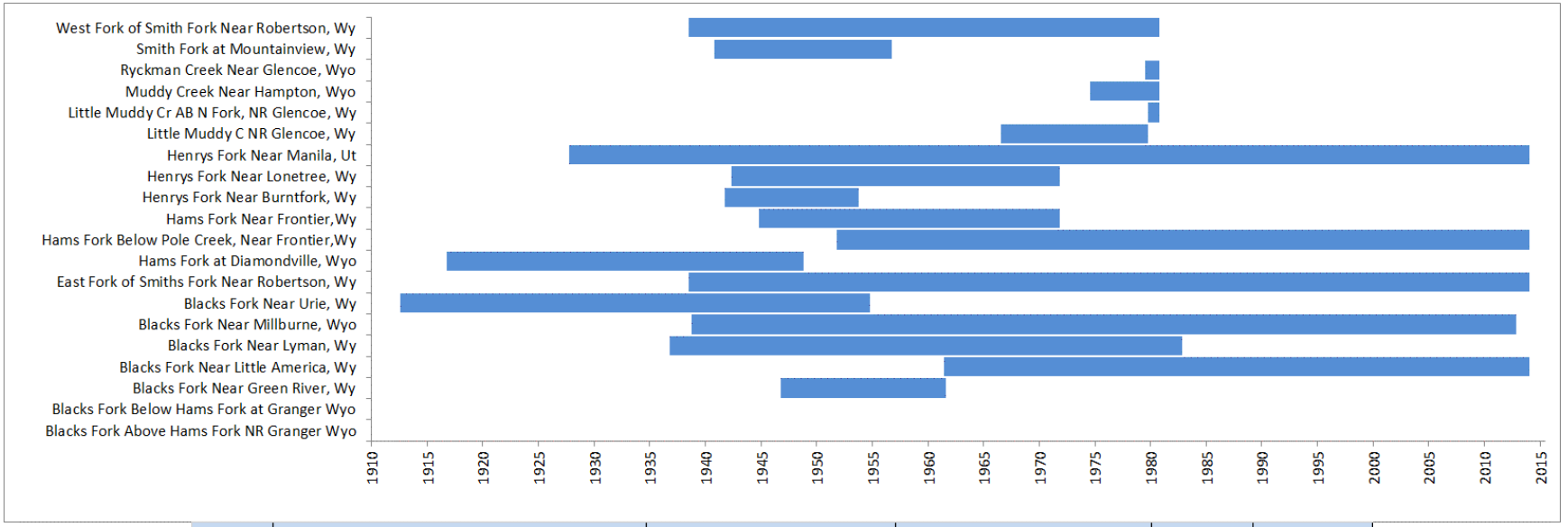
3.5.2.2 Temporary WWDC Gaging Stations

In an effort to gather additional streamflow data on the ungaged stream network, three temporary stream gages were installed as indicated in Figure 3.5-4. These gages were:

1. Muddy Creek
2. North Fork Muddy Creek
3. Little Muddy Creek

Table 3.5-2 Blacks Fork Watershed: Hydrologic Units.

HUC 2 Name / Number	HUC 4 Name / Number	HUC 6 Name / Number	HUC 8 Name / Number	HUC 10		HUC 12		Map ID	Area (sq. mi.)
				Number	Sub-Watershed Name	Number	Sub-Basin Name		
Region 14: Upper Colorado	Subregion 1404: Great Divide - Upper Green	Accounting Unit 140401: Upper Green	Cataloging Unit 14040108: Muddy	1404010801	Muddy Creek	140401080101	West Muddy Creek	1	33.6
						140401080102	East Muddy Creek	2	28.3
						140401080103	Muddy Creek-Little Creek	3	47.2
						140401080104	Muddy Creek-Mussleman Creek	4	50.1
						140401080105	Antelope Creek	5	31.6
						140401080106	Muddy Creek-Lost Draw	6	48.3
						140401080107	Rock Creek-Spring Creek	7	33.1
						140401080108	Muddy Creek-Town of Carter	8	45.4
						140401080109	Big Muddy Creek	9	40.9
				1404010802	Little Muddy Creek	140401080201	Little Muddy Creek-Chicken Creek	10	42.8
						140401080202	Carter Creek	11	30.3
						140401080203	Little Muddy Creek-Bell Creek	12	31.1
						140401080204	Sheep Creek-North Fork Sheep Creek	13	38.3
						140401080205	Ryckman Creek	14	53.8
						140401080206	Little Muddy Creek-Ziller Ranch	15	58.7
						140401080207	Upper North Fork Little Muddy Creek	16	46.6
						140401080208	Lower North Fork Little Muddy Creek	17	35.5
						140401080209	Little Muddy Creek-Mulkay Spring	18	24.5
						140401080210	140401080210	19	25.9
						140401080211	Desertion Point	20	20.2
				1404010803	Albert Creek	140401080301	Upper Albert Creek	21	40.5
						140401080302	Middle Albert Creek	22	48.1
						140401080303	Lower Albert Creek	23	42.3
						140401080304	Clear Creek-Shurtleff Creek	24	58.4
			Cataloging Unit 14040107: Blacks Fork	1404010701	Upper Blacks Fork	140401070103	Blacks Forks-Meeks Cabin Reservoir	25	26.5
						140401070104	Blacks Fork-Sixmile Creek	26	44.7
						140401070105	Blacks Fork-Quarry Creek	27	68.0
						140401070106	Blacks Fork-Rollins Reservoir	28	41.8
				1404010702	Smiths Fork	140401070201	East Fork Smiths Fork	29	8.2
						140401070202	Gilbert Creek	30	10.9
						140401070203	West Fork Smiths Fork	31	21.2
						140401070204	Upper Smiths Fork	32	74.1
						140401070205	Willow Creek-Yellow Hollow Creek	33	32.8
						140401070206	Little Dry Creek-Smiths Fork	34	32.0
						140401070207	Leavitt Creek	35	25.6
						140401070208	Lower Smiths Fork-Blacks Fork	36	29.6
				1404010703	Cottonwood Creek	140401070301	Upper Cottonwood Creek-Blacks Fork	37	29.9
						140401070302	Sage Creek-Reed Reservoir	38	64.1
						140401070303	Lower Cottonwood Creek-Blacks Fork	39	34.3
				1404010704	Middle Blacks Fork	140401070401	Blacks Fork-Jackknife Draw	40	61.9
						140401070402	Austin Reservoir	41	35.5
						140401070403	Blacks Fork-Church Buttes Siding	42	52.6
						140401070404	Porter Hollow	43	54.4
				1404010705	Dry Muddy Creek	140401070501	Dry Muddy Creek-Little Round Mountain Spring	44	48.5
						140401070502	Dry Muddy Creek-Roberson Creek	45	55.3
						140401070503	Dry Muddy Creek-Rocky Crossing	46	42.9
				1404010706	Upper Hams Fork	140401070601	Hams Fork-East Fork Hams Fork	47	74.2
						140401070602	West Fork Hams Fork	48	32.5
						140401070603	Hams Fork-West Beaver Creek	49	42.4
						140401070604	Beaver Creek	50	23.5
						140401070605	Hams Fork-Dempsey Creek	51	67.1
						140401070606	Hams Fork-Fish Creek	52	69.1
						140401070607	Willow Creek-East Branch Willow Creek	53	65.1
				1404010707	Lower Hams Fork	140401070701	Hams Fork-Oakley Draw	54	63.4
						140401070702	Alkali Creek-Hams Fork	55	22.0
						140401070703	Craven Creek	56	53.3
						140401070704	Hams Fork-Cow Hollow Creek	57	61.8
						140401070705	Hams Fork-Zieglers Wash	58	47.2
				1404010708	Lower Blacks Fork	140401070801	Blacks Fork-Town of Granger	59	45.9
						140401070802	Blacks Fork-Eckes Draw	60	64.1
						140401070803	Green River-Greasewood Canyon	61	54.2
						140401070804	Upper Meadow Springs Wash	62	53.9
						140401070805	Lower Meadow Springs Wash	63	51.3
						140401070806	Blacks Fork-140401070806	64	53.2
						140401070807	Chicken Draw	65	62.5
						140401070808	Blacks Fork-Blacks Fork Bridge	66	36.4
						140401070809	Blacks Fork-Flaming Gorge Reservoir	67	33.9
				1404010709	Sevenmile Gulch	140401070901	Upper Sevenmile Gulch	68	61.7
						140401070902	Lower Sevenmile Gulch	69	52.9
				1404010710	Big Dry Creek	140401071001	Dry Creek-Big Hollow Creek	70	38.2
						140401071002	Dry Creek-Balsam Root Reservoir	71	36.7
						140401071003	Big Dry Creek-Shurtliff Spring	72	28.9
						140401071004	Big Dry Creek-Cattail Draw	73	54.7
						140401071005	Big Dry Creek-Tin Cup Draw	74	56.0
						140401071006	Winter Fat Reservoir	75	54.0
						140401071007	Needle Reservoir	76	45.8
						140401071008	Big Dry Creek-Flaming Gorge Reservoir	77	24.3
						140401071009	Upper Little Dry Creek	78	47.1
						140401071010	Lower Little Dry Creek	79	29.6
			Cataloging Unit 14040106: Upper Green - Flaming Gorge	1404010602	Middle Flaming Gorge Reservoir	140401060201	Flaming Gorge Reservoir-Buckboard Reservoir	80	27.5
						140401060203	Buckboard Wash	81	30.5
						140401060204	Flaming Gorge Reservoir-Squaw Hollow	82	31.5
						140401060208	Henrys Fork-Cottonwood Creek	83	12.5
						140401060209	Anvil Wash	84	23.6
						140401060210	Twin Buttes Draw	85	19.8
						140401060211	Flaming Gorge Reservoir-Chokecherry Draw	86	7.4
				1404010603	Upper Henrys Fork	140401060301	Henrys Fork-Dahlgreen Creek	87	0.9
						140401060302	Henrys Fork-Louse Creek	88	33.0
						140401060303	Henrys Fork-Poison Creek	89	17.2
						140401060304	Henrys Fork-Beaver Creek	90	11.4
						140401060305	West Fork Beaver Creek	91	0.1
						140401060307	Henrys Fork-Spring Creek	92	42.9
						140401060308	Burnt Fork	93	2.5
						140401060309	Birch Creek-Upper Henrys Fork	94	3.6
				1404010604	Lower Henrys Fork	140401060401	Henrys Fork-Logan Hollow	95	43.3
						140401060402	Little Dry Creek-Lane Meadow Creek	96	62.7
						140401060403	Flaming Gorge Reservoir-Wildhorse Draw	97	39.4
						140401060404	Henrys Fork-Flaming Gorge Reservoir	98	6.6



Site Number	Site Name	Site Status	Period of Record	Drainage Area (sq. miles)	Gauge Elevation (ft, NGVD29)
9222500	Blacks Fork Above Hams Fork NR Granger Wyo	Inactive	5/1/1896 to 9/30/1897	2170	Unavailable
9224500	Blacks Fork Below Hams Fork at Granger Wyo	Inactive	10/1/1897 to 9/30/1900	2840	Unavailable
9225000	Blacks Fork Near Green River, Wy	Inactive	10/1/1947 to 7/31/1962	3670	6017
9224700	Blacks Fork Near Little America, Wy	Active	6/1/1962 to Current	3100	6128
9222000	Blacks Fork Near Lyman, Wy	Inactive	10/1/1937 to 9/30/1983	821	6380
9218500	Blacks Fork Near Millburne, Wyo	Inactive	10/1/1939 to 9/30/2013	152	8512
9219000	Blacks Fork Near Urie, Wy	Inactive	8/1/1913 to 9/30/1955	261	6545
9220000	East Fork of Smiths Fork Near Robertson, Wy	Active	7/1/1939 to Current	53	8470
9224000	Hams Fork at Diamondville, Wyo	Inactive	10/1/1917 to 9/30/1949	386	6870
9223000	Hams Fork Below Pole Creek, Near Frontier,Wy	Active	10/1/1952 to Current	128	7455
9223500	Hams Fork Near Frontier,Wy	Inactive	10/1/1945 to 9/30/1972	298	6970
[illegible]	[illegible]	Inactive	10/1/1942 to 9/30/1954	242	7130
9226000	Henrys Fork Near Lonetree, Wy	Inactive	4/27/1943 to 9/30/1972	56	8340
9229500	Henrys Fork Near Manila, Ut	Active	10/1/1928 to Current	520	6060
9222300	Little Muddy C NR Glencoe, Wy	Inactive	7/1/1967 to 9/30/1980	416	Unavailable
9222250	Little Muddy Cr AB N Fork, NR Glencoe, Wy	Inactive	10/1/1980 to 10/5/1981	Unavailable	6560
9222400	Muddy Creek Near Hampton, Wyo	Inactive	7/1/1975 to 9/30/1981	963	Unavailable
9222200	Ryckman Creek Near Glencoe, Wyo	Inactive	6/1/1980 to 10/5/1981	53.4	6740
9221500	Smith Fork at Mountainview, Wy	Inactive	10/1/1941 to 9/30/1957	192	6820
9220500	West Fork of Smith Fork Near Robertson, Wy	Inactive	7/1/1939 to 9/30/1981	37.2	8617

Figure 3.5-5 Period of Record for Study Area Stream Gages.

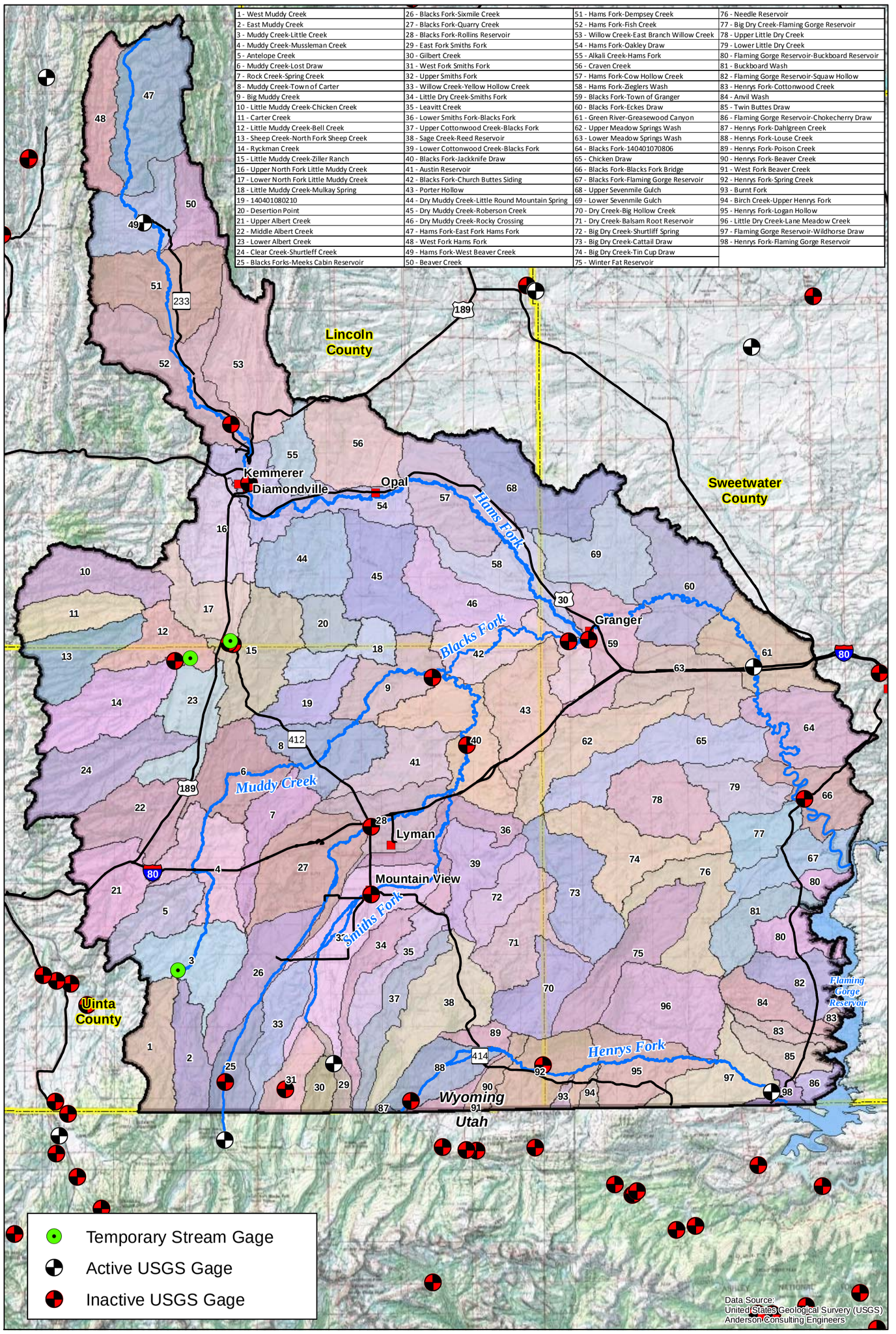
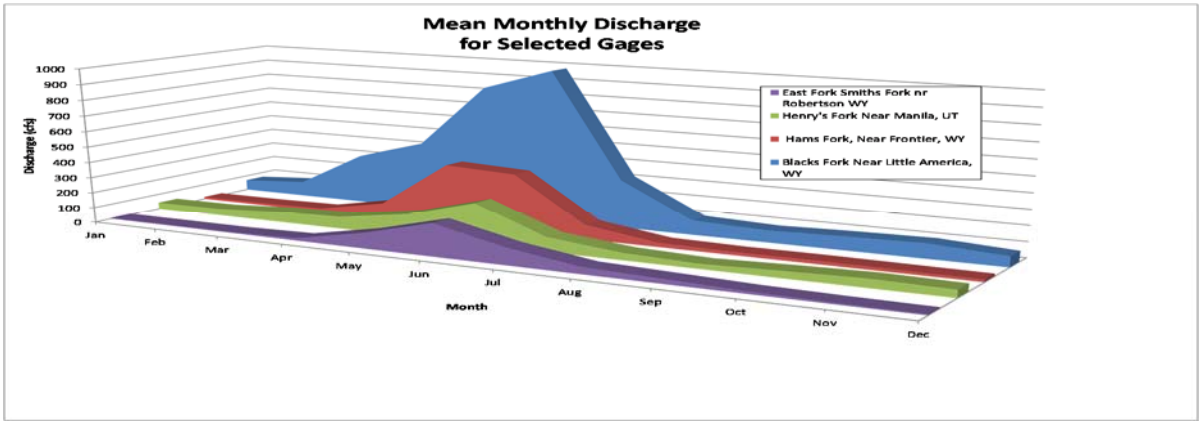


Figure 3.5-4 Blacks Fork Watershed: Hydrologic Units and Stream Gages

Table 3.5-3 Mean Monthly Streamflow for USGS Gages within the Study Area.

Month	Mean Stream Discharge			
	Hams Fork, Near Frontier, WY	Blacks Fork Near Little America, WY	Henry's Fork Near Manila, UT	East Fork Smiths Fork near Robertson,WY
	(cfs)	(cfs)	(cfs)	(cfs)
USGS Gage	09223000	09224700	09229500	9220000
Period of Record	10/1/1952 to 9/30/2013	6/1/1962 to 9/30/2013	10/1/1928 to 9/30/2013	1939-07-01 to 2013-09-30
Jan	14	69	43	6.3
Feb	15	97	46	6.3
Mar	21	320	69	7
Apr	101	440	80	16
May	396	845	144	98
Jun	376	981	261	208
Jul	94	314	93	109
Aug	28	95	47	44
Sep	21	78	32	30
Oct	22	89	45	16
Nov	19	96	55	10
Dec	16	68	48	7.2
Annual	93.6	291.0	80.3	46.5

Figure 3.5-6 Mean Annual Hydrograph at Selected USGS Stream Gages.



Each gage consists of a pressure transducer and data logger protected in a PVC housing fabricated onsite (Figure 3.5-7). The data logger was programmed to collect depth of water data at fifteen minute intervals throughout the investigation period.

Figure 3.5-7 Temporary Stream Gage Installed in Muddy Creek.

Initial rating curves were developed for each gage by completing hydraulic modeling flow conditions at each gage. Stream stage/discharge relationships were used to convert the depth data to stream discharge. Cross section surveys, channel slope, and observations of bed and overbank conditions were made for model input. Stream gaging data measured at each site also provided information with respect to flow depth and velocities for model calibration. The initial rating curve provided a basis upon which to evaluate the depth data recorded by the pressure transducers. During the completion of the study, stream measurements were completed at each gage as they were serviced (battery replacement, data download, etc). These "real data" were then compared to the results of the hydraulic models and adjustment made as necessary. Results of the gaging effort are tabulated in Appendix 3D.

3.6 Stream Geomorphology

3.6.1 General

The field of fluvial geomorphology is the study of how land is formed under processes associated with running water. The balance between processes such as erosion, deposition, and sediment transport determines the character and condition of a stream. The objective of the geomorphic evaluation of the study area is to determine the nature of this balance, and where the balance has been upset.

The condition of a stream can be assessed with respect to its basic form (width, depth, slope, etc.), as well as its state of equilibrium, or geomorphic stability (Thorne, et al, 1996; Johnson, et al., 1999). Stable, or equilibrium, channels are generally defined as those that have achieved a balance between flow energy and sediment delivery, such that sediment is transported at the rate at which it is delivered, and the form and pattern of the channel is maintained (Thorne, et al., 1996). Dynamically stable channels are adjustable in nature, and “stability” does not preclude lateral migration and associated dynamics such as bank erosion and sediment deposition.

In geomorphically stable conditions, minor changes in either sediment supply or transport energy result in gradual adjustment of channel form to accommodate those changes (Lane, 1955). Channels destabilize when changes in those factors are extreme enough that rapid and dramatic alterations in pattern or form occur. Common indicators of channel instability include active downcutting and accelerated bank

erosion, major changes in channel width/depth ratios, and increased flooding due to sediment deposition. Geomorphic function is achieved when a channel is in equilibrium, while undergoing processes such as lateral migration, sediment reworking, and occasional overbank flooding that effectively create and sustain quality habitat elements, such as bars, pool/riffles, step/pools, and healthy, regenerating riparian corridors.

Impairments to geomorphic function reflect a significant loss of the functional potential of the green channel segment. These impairments are typically described in general, qualitative terms, and any rehabilitation of impaired channel segments requires a more thorough, site-specific assessment of impacts, impairments, and feasible remedies.

3.6.2 Rosgen Classification System

The literature presents descriptions of numerous systems for classifying and evaluating stream systems. Of these, perhaps the most widely used today is the Rosgen classification system (Rosgen, 1996). This system, based upon the stream's existing channel morphology, was utilized in this study. Parameters such as the sinuosity, slope, width/depth ratio, and size of channel materials are evaluated and used to classify the stream into one of the various "types" included in the system.

There are four levels of classification in the Rosgen system, each being more detailed than the previous level. Figure 3.6-1 displays the hierarchy of the assessment levels and the general nature of effort associated with each. Much of the Level I geomorphic characterization is qualitative and utilizes aerial photography and topographic maps. Streams are divided into eight (8) broad types on the basis of their channel and floodplain geometry. Rosgen's classification system stream types can be thought of in their relative location within the watershed, from their headwaters through lowlands. The major stream types reflect their location in the watershed. For example, "A" type streams are located in headwaters; "C" & "E" stream types are located in meandering lowlands, etc.

The Level II effort provides a more detailed description of the stream using measurements at selected locations. Stream types are further subdivided into 94 subtypes based upon degree of entrenchment, width-to-depth ratio, water surface slope, streambed materials, and sinuosity (Figure 3.6-2). Consequently, the Level II characterization is more quantitative than the Level I effort. Levels III and IV require more extensive data collection and quantification of stream characteristics. The Blacks Fork Watershed Study included Level I evaluation of the mainstem streams and their principal tributaries.

3.6.3 Level I Methods

The purpose of the Level I geomorphic classification is to provide an inventory of the Blacks Fork Watershed study area's overall stream morphology, character, and condition. It is intended to serve as an initial assessment for use in more detailed assessments and to determine the location and

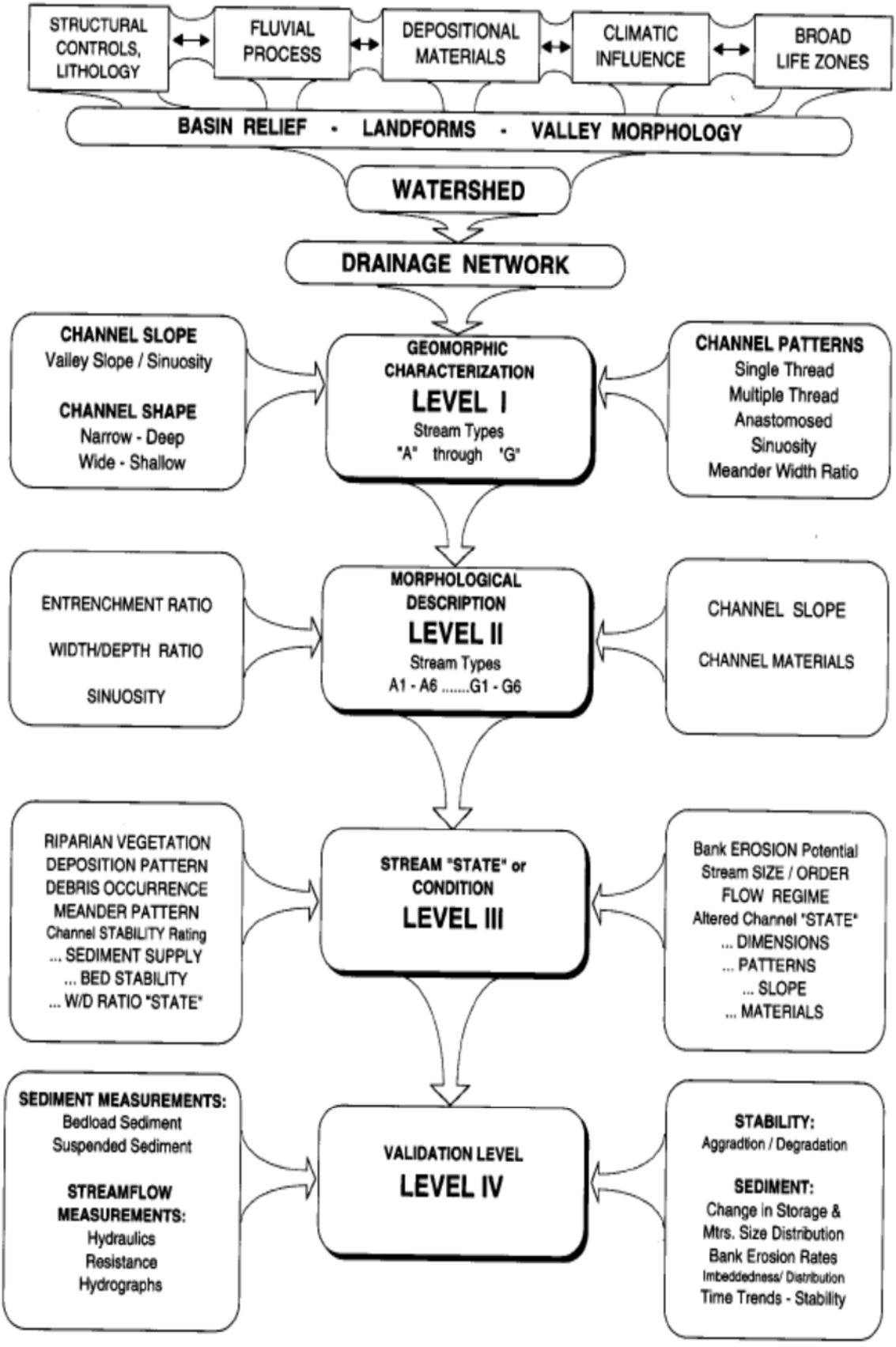


Figure 3.6-1 Hierarchy of the Rosgen Stream Classification System.

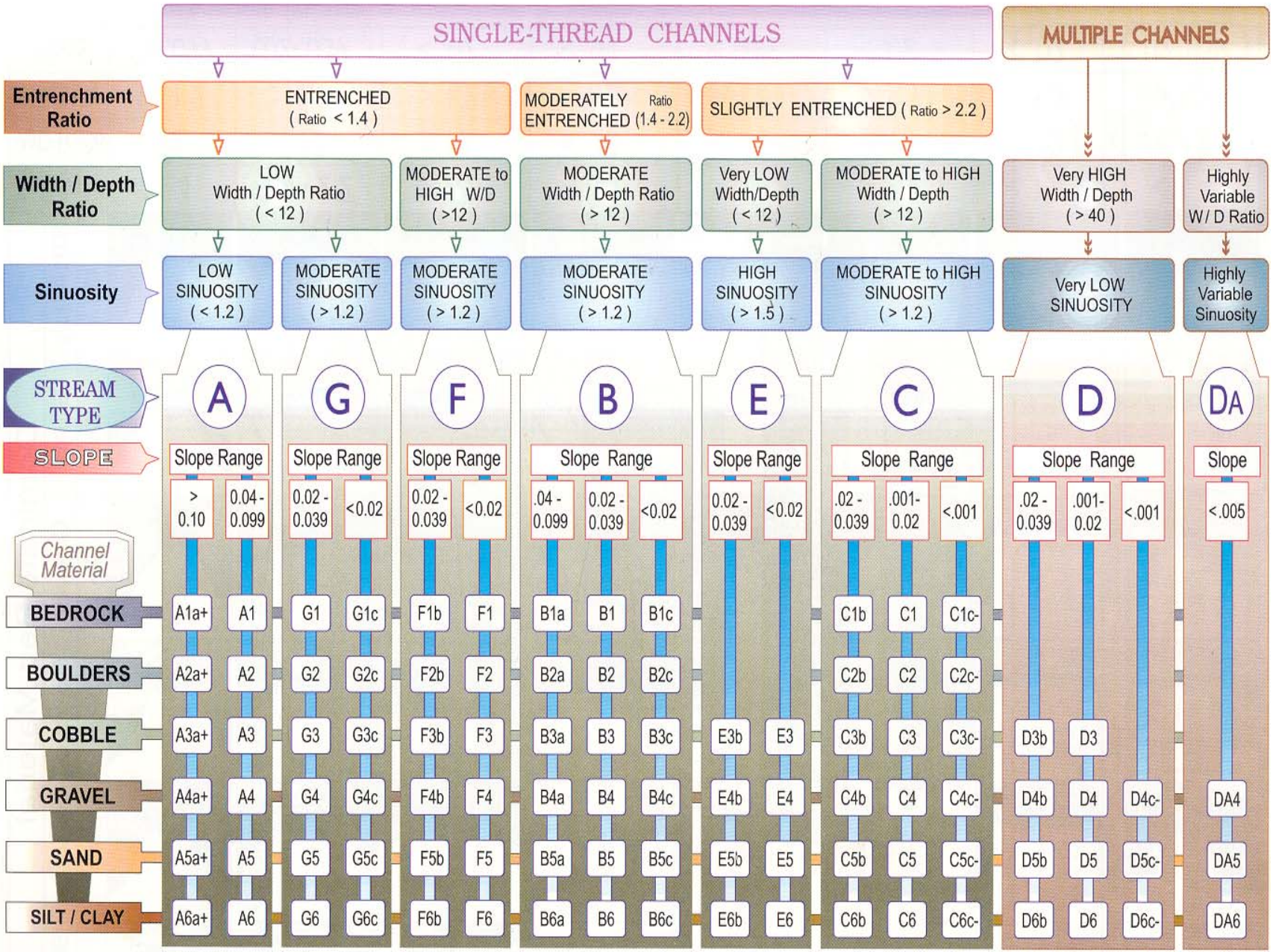


Figure 3.6-2 Rosgen Classification Matrix (Rosgen, 1996).

approximate percentage of stream types within the basin. The results of the Level I classification can be integrated directly into the project Geographic Information System (GIS) providing a graphical "snapshot" of the basin. Based upon this initial effort, potential stream reference reaches can be identified for further study in Level II classification efforts. The end product of the Level I classification is the determination of the major stream types, A through G.

Figure 3.6-3 shows the major stream types within the Rosgen Classification System along with their relative locations within a typical watershed. Brief descriptions of the various stream types encountered in the watershed are presented in the following paragraphs.

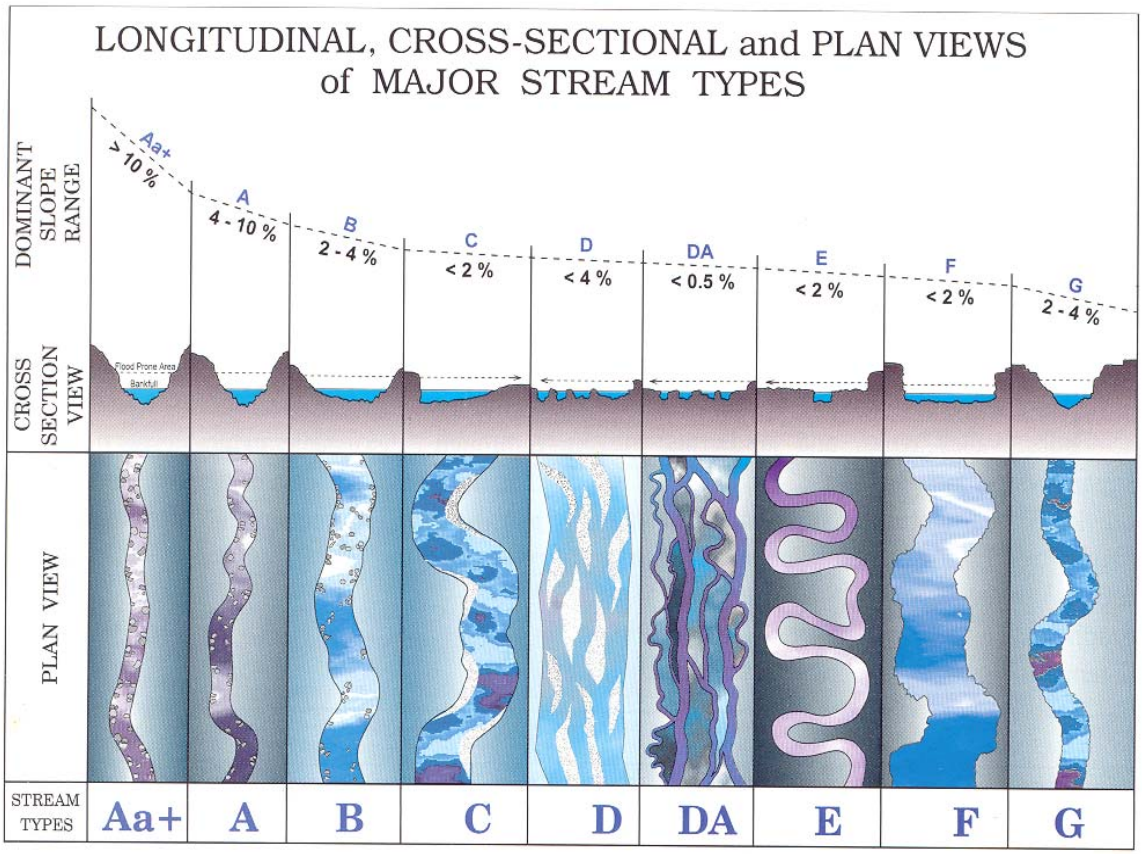


Figure 3.6-3 Major Stream Types within the Rosgen Classification System (Rosgen, 1996).

A-Type Channels are relatively steep channels that form in headwater areas as well as within bedrock canyons. These channels are entrenched and confined by steep valley margins such that little to no floodplain area borders them. As the boundaries of A-type channels are typically highly resistant to erosion, these stream types are generally quite resilient with respect to human impacts. The most common cause of geomorphic change within A-type channels is due to large-scale sediment transport events, (landslides, debris flows, debris jam failure) that may result in blockage or deflection of channel flow.

B-Type Channels tend to form downstream of headwater channels, in areas of moderate slope where the watershed transitions from headwater environments to valley bottoms (Figure 3.6-4). B-Type channels are characterized by moderate slopes, moderate entrenchment, and stable channel boundaries. Due to the relatively steep channel slopes and stable channel boundaries, B-channels are moderately resistant to human impacts, although, their reduced slopes relative to headwater areas can make them prone to sediment deposition and subsequent adjustment following a large sediment transport event such as an upstream landslide, debris flow, or flood.

Figure 3.6-4 Example Type B Channel: Gilbert Creek.

C-Type Channels are typically characterized by relatively low slopes, meandering planforms (i.e., the shape one would see if viewing from above, as on a map or aerial photo), and pool/riffle sequences (Figure 3.6-5). The channels tend to occur in broad alluvial valleys, and they are typically associated with broad floodplain areas; they are not entrenched and still have 'access' to their floodplains. C-channels tend to be relatively sinuous, as they follow a meandering course within a single channel thread. In stream systems in which the boundaries of C-type channels are composed of alluvial sediments, channels tend to be dynamic in nature, and susceptible to rapid adjustment in response to disturbance.

Figure 3.6-5 Example Type C Channel: Henrys Fork.

E-Type Channels are somewhat similar to C channels, as they form as single threads with defined, accessible floodplain areas. However, E channels are different in that they tend to have fine-grained channel margins, which provide cohesion and support dense bankline vegetation. The fine-grained, vegetation-reinforced banklines allow for the development of steep banks, very sinuous planforms, and relatively deep, U-shaped channel cross sections. E-type channels commonly form in low gradient areas with fine-grained source areas, mountain meadows, and in beaver-dominated environments. E-channels tend to have very stable planforms, and efficient sediment transport capacities due to low width/depth ratios.

F-Type Channels typically have relatively low slopes (<2%), similar to C and E channel types. The primary difference between C/E channels and F channels is with respect to entrenchment. F channels are entrenched, which means that the floodplain is quite narrow relative to the channel width. The entrenchment of alluvial F-type channels typically is an indicator of an historic downcutting event. F-type channels may form in resistant boundary materials (e.g., U-shaped bedrock canyons), and relatively

erodible alluvial materials (e.g., arroyos). When the boundary materials are erodible, the steep valley walls are prone to instability, and channel widening commonly occurs within the entrenched channel cross section (Figure 3.6-6).

Figure 3.6-6 Example Type F Channel: Lower Hams Fork.

G-Type Channels are narrow, steep entrenched gullies. G-Type channels typically have high bank erosion rates and a high sediment supply. Channel degradation and sideslope rejuvenation processes are typical.

The Level I classification effort was conducted primarily using existing information incorporated into the project GIS. Several analytical tools were developed and integrated into the GIS which allowed the evaluation of various geomorphic parameters (sinuosity, slope, stream station determination). The data collated and incorporated in the Project GIS include digital aerial photography, USGS topographic maps, a digital elevation model (DEM), and digitized hydrography information. The most current data available were used in the geomorphic evaluation. Because the DEM was limited to a 10-meter grid, elevations and subsequent slope calculations are approximate. Stream alignments were digitized using 2012 aerial photography and represent the best available estimate of current channel alignment.

The streams evaluated were divided into reaches based upon definable geographic factors (e.g. confluences with tributaries, major road crossings, etc.) or where their geomorphic character displayed changes. Each reach was evaluated in light of the characteristics required at the Level I classification. These parameters, as indicated in Figure 3.6-2, were channel slope, channel shape, channel patterns, and valley morphology. Note that in the Level I classification, these parameters are not typically quantified and the relative magnitude (i.e., “moderate”, “slightly”, etc.) is utilized to classify the stream.

3.6.4 Level I Classification Results

Results of the Level I classification effort are presented in Table 3.6-1 and graphically in Figure 3.6-7. This figure displays a map of the study area depicting the various stream types as well as the reach designations used in the classification effort.

The Blacks Fork River Watershed study includes three primary waterways: Blacks Fork, Hams Fork, and Henry’s Fork. The Blacks Fork and Henrys Fork along with their primary tributaries originate in the steeper slopes of the Uinta-Wasatch-Cache National Forest. The Hams Fork headwaters begin in the Bridger-Teton National Forest in the mountainous northern region of the watershed and flow southeasterly joining the Blacks Fork River near Granger, WY. Within the mountainous areas, the channels are steep and bounded by very coarse, resistant materials that include hillslope colluvium and bedrock. Rocks here are harder igneous and metamorphic Precambrian rocks. Channel change in these

Table 3.6-1 Rosgen Level I Stream Classification Results.

Stream	Reach Number	Station (Distance from Mouth)		Reach Length (ft)	Sinuosity	Slope	Rosgen
		Station Start (ft)	Staion End (ft)				
Albert Creek	1	0	187,129	187,129	1.93	0.001	F
	2	187,129	332,357	145,228	1.82	0.001	F
	3	332,357	470,107	137,750	1.59	0.007	B
Big Dry Creek	1	0	66,234	66,234	1.49	0.003	F
	2	66,234	178,571	112,337	1.46	0.003	F
	3	178,571	242,437	63,866	1.35	0.008	F
Blacks Fork	1	0	317,254	317,254	1.99	0.001	C/F
	2	317,254	560,829	243,575	1.72	0.001	C/F
	3	560,829	751,943	191,114	1.58	0.005	C/D
	4	751,943	856,653	104,710	1.13	0.071	B
Dry Muddy Creek	1	0	119,647	119,647	1.85	0.002	F
	2	119,647	206,112	86,465	1.32	0.006	C
Hams Fork	1	0	491,805	491,805	2.56	0.001	C/F
	2	491,805	684,935	193,130	1.72	0.002	C/F
	3	684,935	961,144	276,209	1.97	0.005	B
Henrys Fork	1	0	144,850	144,850	1.62	0.005	C
	2	144,850	231,279	86,429	1.68	0.006	C
	3	231,279	312,009	80,730	1.40	0.014	B
Muddy Creek	1	0	174,241	174,241	1.98	0.001	E/F
	2	174,241	423,803	249,562	1.74	0.003	C/F
Smiths Fork	1	0	88,538	88,538	1.75	0.002	C
	2	88,538	170,271	81,733	1.42	0.007	C
	3	170,271	217,258	46,987	1.34	0.013	B

upper subreaches typically results from punctuated hillslope processes rather than gradual channel migration. The channels are A-type or B-type channels which reflects their steep slope and stable boundaries.

As the major stream channels descend into the lower basin, the lateral confinement is reduced, the slope lessens and the boundary materials become less coarse. As a result of these downstream changes in boundary conditions, the lower subreaches tend to display meandering channel dynamics; that is, pool/riffle development and increased lateral channel migration. The channels transition from B-type channels, which are located in transition zones at the foot of the mountains, to C-type channels, which are gravel bed meandering streams that dominate the lower basin.

As is clearly evident upon review of the table, many of the channels were classified as either Type F or Type G stream channels in at least portions of their extent. Type F and Type G stream classifications both denote channels which have “disconnected” from their floodplains. These channels are typically erosive, actively downcutting, or widening. Based upon the GIS classification effort followed by field verification, it was concluded that the majority of stream channels within the study area are entrenched to some degree. Entrenchment occurs for a variety of reasons including presence of erosive soils coupled with land use practices including road construction, energy development, grazing, etc. Observations of channel conditions within the study revealed entrenchment ranging from slight to severe. Figure 3.6-8 displays an entrenched reach of Little Muddy Creek.

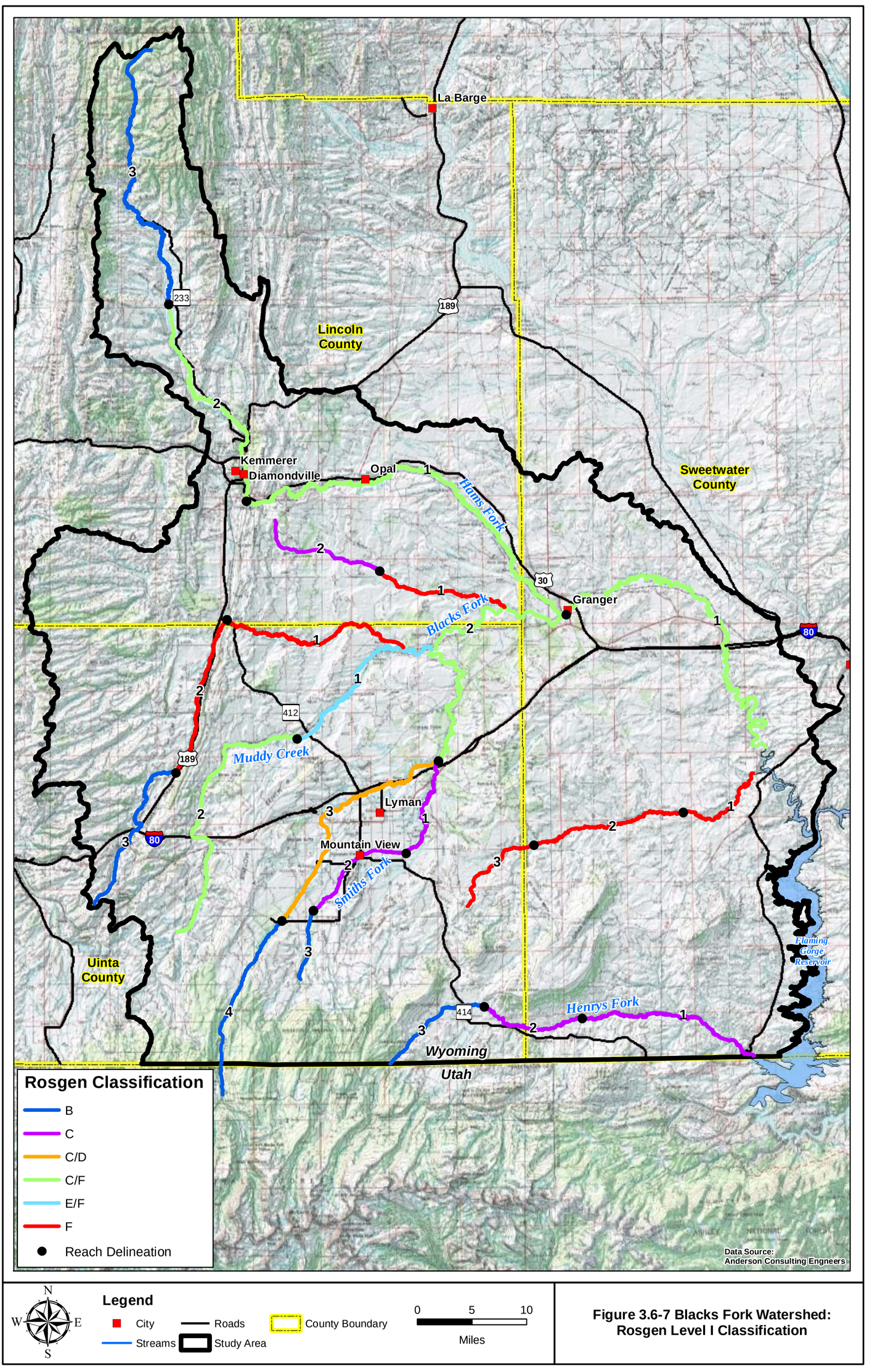


Figure 3.6-7 Blacks Fork Watershed: Rosgen Level I Classification

Many of the first-order tributaries in the lower portions of the basin can be classified as G-Type channels, or gullies. These channels are highly erosive, generate high sediment volumes, and can result in the loss of productive lands and destabilize upland conditions. Observation of many of these channels indicates that while the major stream channels appear to have achieved a level of stability, the upper reaches of the watershed are still suffering a level of destabilization. These channels could be forming in response to one or more of numerous stimuli including both natural and anthropogenic causes.

Figure 3.6-8 Entrenched reach of Little Muddy Creek.

3.6.5 Proper Functioning Condition

At the time of this report Proper Functioning Condition (PFC) data was not made available from the Rock Springs or Kemmerer BLM field offices. The only PFC data available was data related to the Wyoming Landscape Conservation Initiative (WLCI), and was originally collected in 2010. This WLCI data was obtained from the United States Geological Survey (USGS). The USGS compiled PFC data from various BLM field offices within the WLCI study area, which comprises most of southwestern Wyoming.

The BLM utilizes a procedure for assessing the health of a stream called Proper Functioning Condition assessment or PFC. PFC is described by the BLM as:

> *"A qualitative method for assessing the condition of riparian-wetland areas. The term PFC is used to describe both the assessment process, and a defined, on the-ground condition of a riparian-wetland area. The PFC assessment refers to a consistent approach for considering hydrology, vegetation, and erosion/deposition (soils) attributes and processes to assess the condition of riparian-wetland areas. A checklist is used for the PFC assessment, which synthesizes information that is foundational to determining the overall health of a riparian-wetland system" (BLM, 1998).*

The PFC assessment terminates with the definition of one of three classes for a given stream segment as described below.

Proper Functioning Condition: A stream is said to be functioning properly when adequate vegetation, landform, or debris is present to:

- dissipate energies associated with wind action, wave action, and overland flow from adjacent sites, thereby reducing erosion and improving water quality;
- filter sediment and aid floodplain development;
- improve flood water retention and groundwater recharge;

- develop root masses that stabilize islands and shoreline features against cutting action;
- restrict water percolation;
- develop diverse ponding characteristics to provide the habitat and water depth, duration, and temperature necessary for fish production, water bird breeding, and other uses; and
- support greater biodiversity.

Functional At Risk: Riparian/wetland areas are classified as *functioning-at-risk* when they are in functioning condition but an existing soil, water, or vegetation attribute makes them susceptible to degradation. These areas are further distinguished based on whether or not they demonstrate an *upward*, *not apparent*, or *downward* trend.

Nonfunctioning: Riparian/wetland areas are classified as *nonfunctioning* when they clearly are not providing adequate riparian vegetation, physical structure, or large woody debris to dissipate stream energy associated with high flows.

The data collected from the USGS for use with the Wyoming Landscape Conservation Initiative (WLCI) indicates that approximately 739 miles of stream within the Blacks Fork Watershed Stud Area has been assessed for Proper Functioning Condition (PFC). Of the 739 miles of assessed streams, 45 miles are classified as Nonfunctioning, 520 miles are classified as Functional At Risk, and 174 miles are classified as being in Proper Functioning Condition.

3.6.6 Impairments

Impairments to stream channels within the study area appear to fall into three broad and interrelated categories:

- Channel Degradation: Entrenchment of streambeds, loss of aquatic habitat, vertical instability,
- Riparian Vegetation Degradation: Impaired riparian condition and habitat, and
- Riparian Degradation: Generally bank erosion and physical disturbance of stream banks.

Reaches of perennial streams commonly displayed indications of riparian degradation as evidenced by bank erosion, loss of riparian habitat, channel widening, channel degradation, etc. Channels classified as F-type channels, common in the lower portions of the study area reaches of these streams, are entrenched and consequently have lost connection with their floodplains. Some streams are heavily incised and restoration could be problematic Figure 3.6-9 displays a photo of Sage Creek (tributary to Smiths Fork) which is experiencing severe channel degradation.

Figure 3.6-9 Severe channel degradation on Sage Creek.

Multiple approaches to restoration can be applied to incised river channels (Rotar and Boyd, 1999). Common objectives in such restoration efforts are to promote channel stability, as well as to connect the channel to its historic floodplain. The reconnection of the channel to its historic floodplain requires raising the channel bed, which can be achieved through grade controls and channel infilling, or even reconstruction of a new channel. These approaches can have difficult and costly challenges; however, such as tying in the project end points to the incised channel grade, or preventing post-project channel relocation (avulsion).

Another approach to incised channel stabilization is to completely armor the channel banks and add grade control structures. This process will reduce sediment inputs, but will not provide a dynamic, functional channel configuration. Perhaps the most geomorphically beneficial approach to incised channel restoration is to promote the natural recovery process of channel widening and incised floodplain development. This can be achieved by encouraging the development of a new floodplain surface adjacent to the channel to provide an area for flood energy dissipation and new riparian corridor establishment.

Any work in incised channel restoration requires an assessment of the status of the current channel stability, so that the potential for further downcutting is known and accommodated for in the channel restoration design.

3.7 Water Quality

3.7.1 Stream Classifications

The Water Quality Division of the WDEQ has classified waterbodies in the state into two parts, primary (Table A) and secondary (Table B). Table A classifications are those either named on the USGS 1:500,000 scale hydrologic map or those specifically classified by the WDEQ. Table B classifications are taken from the WGFD's "Streams and Lakes Inventory" and are based on the presence or absence of fish species. Where there are differences in classification, Table A takes precedence. Table 3.7-1 presents the use designation associated with each classification.

There are 57 waters classified by the WDEQ in Table A within the watershed. Table 3.7-2 summarizes the WDEQ Table A classification counts for waterbodies within the study area. The definitions of the stream classes applicable to the watershed are quoted from the Water Quality Rules and Regulations, Chapter 1, Wyoming Surface Water Quality Standards (WDEQ, 2007) as follows:

> *Class 2AB waters are those known to support game fish populations or spawning and nursery areas at least seasonally and all their perennial tributaries and adjacent wetlands and where a game fishery and drinking water use is otherwise attainable. Class 2AB waters include all permanent and seasonal game fisheries and can be either "cold water" or "warm water" depending upon the predominance of cold water or warm water species present. All Class 2AB waters are designated as cold water game fisheries unless identified as a warm water game*

fishery by a "ww" notation in the "Wyoming Surface Water Classification List". Unless it is shown otherwise, these waters are presumed to have sufficient water quality and quantity to support drinking water supplies and are protected for that use. Class 2AB waters are also protected for nongame fisheries, fish consumption, aquatic life other than fish, recreation, wildlife, industry, agriculture and scenic value uses.

Class 2C waters are those known to support or have the potential to support only nongame fish populations or spawning and nursery areas at least seasonally including their perennial tributaries and adjacent wetlands. Class 2C waters include all permanent and seasonal nongame fisheries and are considered "warm water". Uses designated on Class 2C waters include nongame fisheries, fish consumption, aquatic life other than fish, recreation, wildlife, industry, agriculture, and scenic value.

Class 3B waters are tributary waters including adjacent wetlands that are not known to support fish populations or drinking water supplies and where those uses are not attainable. Class 3B waters are intermittent and ephemeral streams with sufficient hydrology to normally support and sustain communities of aquatic life including invertebrates, amphibians, or other flora and fauna which inhabit waters of the state at some stage of their life cycles. In general, 3B waters are characterized by frequent linear wetland occurrences or impoundments within or adjacent to the stream channel over its entire length. Such characteristics will be a primary indicator used in identifying Class 3B waters."

Table 3.7-1 Wyoming Surface Water Classification and Use Designations.

Designated Use	Surface Water Classification										
	1	2AB	2A	2B	2C	3A	3B	3C	4A	4B	4C
Drinking Water	X	X	X								
Game Fish	X	X		X							
Nongame Fish	X	X		X	X						
Fish Consumption	X	X		X	X						
Other Aquatic Life	X	X	X	X	X	X	X	X			
Recreation	X	X	X	X	X	X	X	X	X	X	X
Wildlife	X	X	X	X	X	X	X	X	X	X	X
Agriculture	X	X	X	X	X	X	X	X	X	X	X
Industry	X	X	X	X	X	X	X	X	X	X	X
Scenic Value	X	X	X	X	X	X	X	X	X	X	X

Table 3.7-2 Table A Water Classifications Within the Study Area.

Surface Water Classification	Waterbody Count
2AB	21
2C	8
3B	28
Total	57

Figure 3.7-1 displays the various stream classifications within the project study area.

3.7.2 WYPDES Permitted Discharges

A database of permitted discharges under the National Pollution Discharge Elimination System (NPDES) was obtained from the Wyoming Department of Environmental Quality. There are a total of 13 Wyoming Pollution Discharge Elimination System (WYPDES) point source discharge permits in the watershed with a total of 26 outfalls, shown in Figure 3.7-1. A list of WYPDES permits can be found in Table 3.7-3. Of the WYPDES permits, three are listed with at least one Sanitary Wastewater outfall: Kemmerer Mine (WY0000051), Fort Bridger Sewer District (WY0022071), and Haystack Coal Company (WY0094811). There are no permitted Municipal Separate Storm Sewer Systems (MS4s) in the study area.

Table 3.7-3 Wyoming Pollution Discharge Elimination System Permitted Discharges Within the Study Area.

WYPDES Permit No.	Permittee	Facility Name	Permit Type	Outfalls
WY0000051	Westmoreland Kemmerer, Inc.	Kemmerer Mine	Coal Mine	1
			Sanitary Wastewater	5
WY0000116	Kemmerer-Diamondville Joint Powers Board	Kemmerer Water Treatment Plant	Coal Mine	1
WY0020117	Lyman, Town of	Lyman Wastewater Lagoon	Coal Mine	2
WY0020311	PacifiCorp	Naughton Plant	Coal Mine	1
			Industrial	1
WY0020320	Kemmerer-Diamondville Joint Powers Board	Kemmerer Wastewater Treatment	Industrial	2
WY0022071	Fort Bridger Sewer District	Fort Bridger Sewer District	Sanitary Wastewater	1
WY0022373	Granger, Town of	Granger Wastewater Lagoon	Industrial	1
WY0022896	Mountain View, Town of	Mountain View Wastewater Lagoon	Coal Mine	1
WY0023132	Church and Dwight Company, Inc.	Company's Green River Plant	Coal Mine	1
WY0032697	Chevron USA, Inc.	Carter Creek Gas Plant	Coal Mine	2
WY0036153	Travel Centers of America	Ft. Bridger Travel Stop	Coal Mine	1
WY0056499	Enterprise Products Operating, LP	Pioneer Cryogenic Gas Plant	Industrial	1
WY0094811	Haystack Coal Company	Haystack Coal Company	Coal Mine	1
			Industrial	1
			Sanitary Wastewater	2
			Water Treatment Plant	1

3.7.3 Waters Requiring TMDLs

The Clean Water Act of 1972 requires States to evaluate water quality, establish beneficial uses, and define water quality criteria which protect the beneficial uses. Section 303(d) of the Clean Water Act requires each state to establish a list and track impaired waterbodies every two years. Any waterbodies deemed “impaired” require a Total Maximum Daily Load (TMDL) analysis for each pollutant responsible for impairment of designated use. A TMDL analysis determines the maximum load of pollutant a waterbody can receive while still meeting its designated uses and associated water quality standards. Once a TMDL is established, required reductions are calculated based on current loadings. Reduction strategies and implementation plans are recommended as a part of the TMDL analysis.

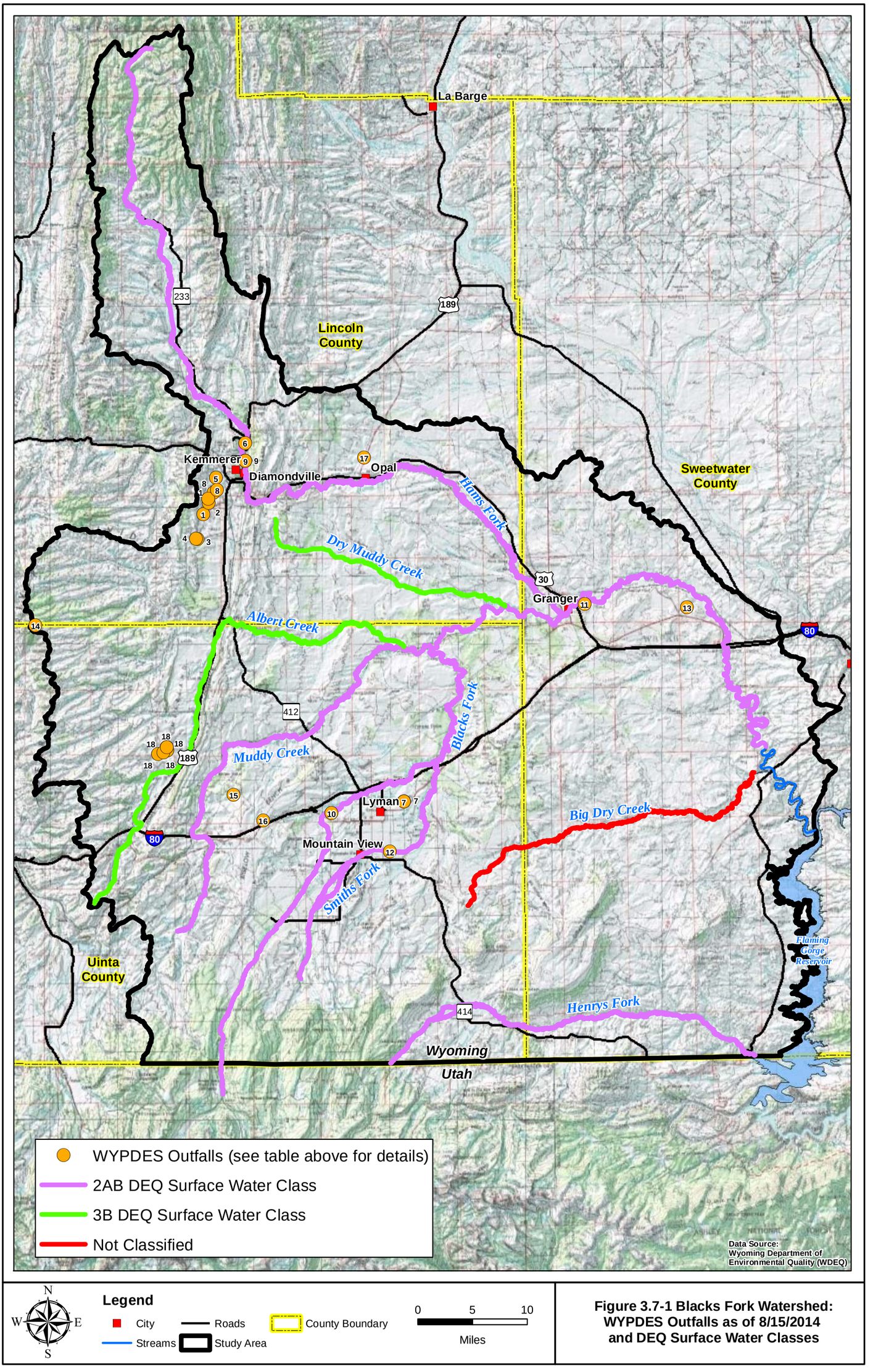


Figure 3.7-1 Blacks Fork Watershed: WYPDES Outfalls as of 8/15/2014 and DEQ Surface Water Classes

The Blacks Fork Watershed has several waterbodies listed as impaired in the State of Wyoming's 2012 Integrated Report [Wyoming Department of Environmental Quality, 2012]. Fecal Coliform and E. coli loadings have resulted in exceedances of the recreational use criterion in two reaches of the Blacks Fork River and in two reaches of the Smiths Fork River. One reach of the Smiths Fork River along with Willow Creek have altered habitats resulting in a non-supported or threatened Cold Water Game Fishery, Aquatic Life other than Fish use. One reach of Hams Fork is non-supporting of the Cold Water Game Fishery, Aquatic Life other than Fish use due to pH loadings thought to be caused by a municipal waste water treatment facility. Table 3.7-4 summarizes the locations, use, and impairments of these waterbodies.

Table 3.7-4. Impaired Waterbodies, Description, and Status within the Study Area.

Waterbody	305(b) Identifier	Class	Location	Stream Miles	Non Supported Uses	Reported Cause - Source	List Date	TMDL Date
Blacks Fork	WYGR140401070106_01	2AB	From the confluence with the Smiths Fork upstream to Millburne	25.4	Recreation	E. coli - Unknown	2000	2012
Willow Creek	WYGR140401070205_01	2AB	Entire watershed upstream of the confluence with the Smiths Fork	73	Threatened - Cold Water Game Fishery, Aquatic Life other than Fish	Habitat Alterations - Grazing	1998	2012
Smiths Fork	WYGR140401070208_00	2AB	From the confluence with Cottonwood Creek upstream to the confluence with East and West Forks Smiths Fork	34.5	Recreation	Fecal Coliform - Unknown	2002	2012
Smiths Fork	WYGR140401070208_01	2AB	From the confluence with the Blacks Fork upstream to the confluence with Cottonwood Creek	4	Cold Water Game Fishery, Aquatic Life other than Fish	Habitat Alterations - Unknown	2000	2012
Smiths Fork	WYGR140401070208_01	2AB	From the confluence with the Blacks Fork upstream to the confluence with Cottonwood Creek	4	Recreation	E. coli - Unknown	2002	2012
Blacks Fork	WYGR140401070403_01	2AB	From the confluence with the Hams Fork upstream to the confluence with the Smiths Fork	45	Recreation	Fecal Coliform - Unknown	2000	2012
Hams Fork	WYGR140401070701_01	2AB	From below the Kemmerer-Diamondville WWTF to a point 7.6 miles downstream	7.6	Cold Water Game Fishery, Aquatic Life other than Fish	pH - Municipal WWTF	1996	2010

3.7.4 Colorado River Salinity Control

The following synopsis of the Colorado River Salinity Control Program was extracted from supporting technical memoranda to the Green River Basin Plan (Tyrell, 2009):

> "*The Colorado River Basin Salinity Control Act (Public Law 93-320), as amended by Public Laws 98-569, 104-20, 104- 127, 106-459 and 110-234 authorizes the Secretaries of the U.S. Departments of Interior and Agriculture to improve the quality of water available in the Colorado River for use in the United States and the Republic of Mexico. Title I of the Act authorized construction of features to enable the United States to deliver water to Mexico having an*

average salinity no greater than 115 ppm (parts per million or mg/l) +/- 30 ppm over the annual average salinity at Imperial Dam. Title II of the Act authorized specific salinity control units above Imperial Dam which are collectively referred to as the Colorado River Basin Salinity Control Program (CRBSCP).

The Program is a cooperative effort among water users in the Colorado River Basin, the seven-state Colorado River Basin Salinity Control Forum (Forum), the USDA's Natural Resources Conservation Service (NRCS) and the USBR and the U.S. Bureau of Land Management (USBLM). Pursuant to the Salinity Control Act, the USBR has the federal lead for coordination among the three federal agencies (USBR, USBLM and USDA) that are implementing on-the-ground salinity control measures. Each of the three agencies has designated agency-wide coordinators and all three have adjoining offices in the USBR's Upper Colorado Regional office building in Salt Lake City, Utah. The U.S. Geological Survey assists with salinity concentration water quality monitoring and provides other technical advice and scientific expertise in support of this basinwide program. The U.S. Fish & Wildlife Service is consulted as issues of concern to that agency arise" (Tyrell, 2009).

Salinity control projects have been implemented throughout the Colorado River Basin by the actions of local, state, and federal partners. The USDA Natural Resources Conservation Service currently administers 11 projects in the three states of Colorado, Utah, and Wyoming. Through the combined actions of all the partners, the salt load of the Colorado River has now been reduced by about 1.2 million tons annually. In order to maintain the current water quality (with respect to salinity concentrations), prevent increased damages, and allow for full development of water resources under the Colorado River Compact an additional .5 to 1 million tons of salt control are needed by 2030.

The Natural Resources Conservation Service recently developed a plan and FEIS to reduce 6,540 tons of annual salt loading to the Colorado River system by implementing conservation practices in the upper Henrys Fork project area. The Henrys Fork area was not identified by name in Title II of the Colorado River Basin Salinity Control Act, but was identified by USDA as an area which should be studied for possible salinity control. The salt loads from the project area entering the Colorado River contribute to overall salinity concerns (NRCS, 2013).

According to the EIS prepared in association with the Henrys Fork area, the combined Plan and FEIS has three major components:

1. to determine the contribution of the salt loading to the Colorado River from irrigated hay and pasture land;
2. to reduce salt loading through improvements in on-farm irrigation delivery and application systems; and
3. to determine environmental effects of the recommended plan, Alternative B – Irrigation System Improvements.

The recommended plan consists of irrigation systems improvements to an estimated 70 percent of irrigated acres within the project study area. Improvements include conversion of flood irrigation systems to sprinkler systems in an effort to reduce seepage and salt loading.

3.8 Irrigation System Inventory

For the purposes of this study, specific irrigation structure inventories and evaluations were conducted at the request of irrigators/stakeholders at locations identified by them.

Specific tasks completed during this effort included the following:

- interviewing ditch representatives and users;
- field inventory of ditch structures;
- inventory of physical ditch conditions;
- assessment of hydraulic efficiency of existing ditch structures;
- photographic documentation of structures and an assessment of their condition;
- location of the structures using GPS technology; and
- incorporation of data into the project GIS.

Possible improvements include rehabilitation or replacement of existing infrastructure, bank stabilization (particularly near structures), and installation of new structures. Many of the ditch system components inspected are significantly deteriorated and have exceeded their design life. Several ditches were built prior to statehood and have been nursed along over the years through the efforts of private landowners.

Due to the fact that only problematic structures were visited, results of the irrigation structure inventories are incorporated directly into the watershed management plan (Chapter 4).

3.9 Water Storage and Retention

A number of potential benefits of additional storage have been identified during the course of this study and are recommended for more detailed evaluation should a storage project(s) advance to the next level of study. The potential benefits of additional storage would vary as a function of the size and cost of the facility, but could include the following:

- Provision of a source of late season irrigation water,
- Enhancement/establishment of late-season stream flows to benefit aquatic and wildlife species, riparian habitat, and livestock,
- Provision of additional direct wildlife/livestock watering opportunities and potential to serve gravity-fed watering systems,
- Reduction of flooding impacts to the aquatic and riparian habitats downstream and potentially downstream municipalities,

- Improvement of stream bank/channel conditions,
- Establishment of a lake fishery,
- Provision of seasonal recreational opportunities (consistent with meeting other needs and achieving other benefits).

In the sections which follow, discussion of existing storage facilities and results from previous water resources investigations and the hydrologic modeling conducted in support of them are presented. It was beyond the scope of this project to update or develop hydrologic models associated with the project study area. Consequently, not all streams or subwatersheds are modeled explicitly.

3.9.1 Existing Storage Locations

The Blacks Fork watershed study area contains many reservoirs used for several purposes including storage for irrigation, municipal, industrial, recreation, fish propagation and flood control uses, among others. These reservoirs help sustain what is otherwise arid to semi-arid land. The reservoirs are owned by various state, federal, industrial and private interests.

The water rights database maintained by the Wyoming State Engineers Office was searched in order to establish the location of every reservoir storage right located within the Blacks Fork watershed study area. This search yielded over 500 complete or fully adjudicated reservoir storage water rights. Each water right has an associated use category and for the purposes of this report the irrigation, stock and municipal uses were focused upon. Over 90% of the reservoirs with the selected uses (irrigation, stock, municipal) are small reservoirs with less than 50 acre feet of storage capacity. For presentation purposes, reservoirs assigned a use of irrigation, stock, or municipal and possessing a storage capacity of 50 acre feet and above were extracted and are listed in Table 3.9-1. Figure 3.9-1 shows the locations of these selected reservoirs geographically.

The five reservoirs with the largest storage capacities are described below:

Viva Naughton Reservoir

Viva Naughton Reservoir is operated by the Naughton Power Plant in Kemmerer. This plant (previously owned by PacifiCorp, now owned by Berkshire Hathway Energy) uses water from the reservoir for the cooling needs of the coal-fired process. Under the original permit issued in 1957 there was no irrigation uses; however, irrigation use was included with the permit for the reservoir expansion in 1971. Naughton does release water for downstream irrigation during times of sufficient supply. While Viva Naughton is not a flood control structure, the owner does try to operate the plant in a fashion to minimize downstream flooding. The State Engineers office lists the capacity of the reservoir as 69,645 acre feet.

Meeks Cabin Reservoir

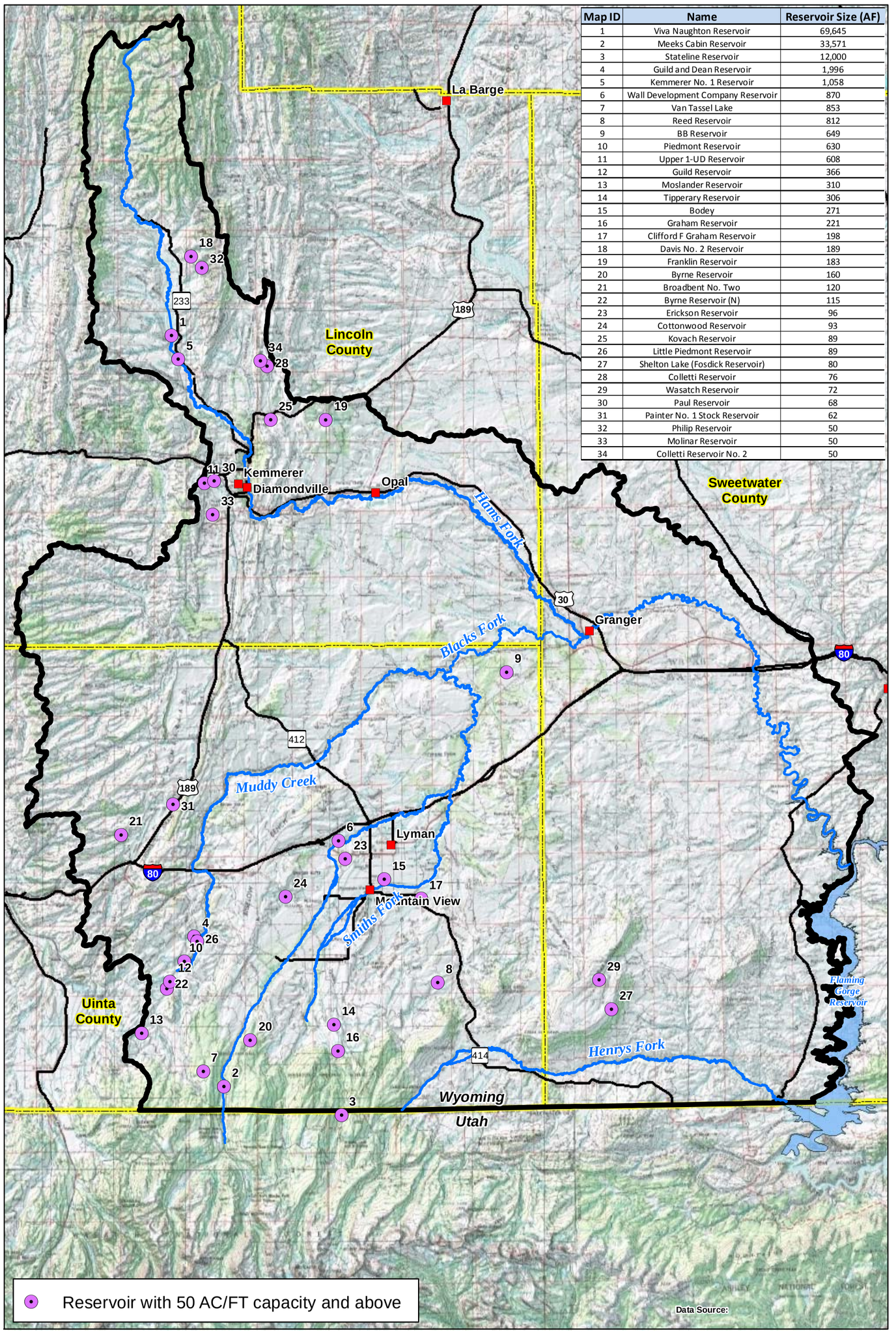
Meeks Cabin reservoir is a part of a Bureau of Reclamation Project known as the Lyman Project which includes nearby Stateline Reservoir. The Lyman Project is located in southwestern Wyoming; however, much of the drainage area and one storage feature (Stateline Reservoir) are in Utah, just across the Utah-Wyoming state line. Meeks Cabin Reservoir regulates the flows of Blacks Fork river for irrigation, municipal and industrial use, fish and wildlife conservation, and recreation. Meeks Cabin also provides water for irrigation and stock from its 33,571 AF permitted capacity. The additional late-season irrigation water provided by the reservoir, increases the yields of forage and grain crops to bolster the local livestock industry. The water supply to the area served by Meeks Cabin Reservoir has made possible a regrowth of pasture after haying, and the production of feed grains on the same land that previously yielded only native grass. Hay, alfalfa, barley, and oats are the principal crops. The reservoir is operated by the Bridger Valley Water Conservancy District. Additional Meeks Cabin reservoir information and data are available at: http://www.usbr.gov/projects/Project.jsp?proj_Name=Lyman+Project

Table 3.9-1 Tabulation of Reservoirs with 50 Acre Feet or More of Storage

Map ID	Name	Reservoir Size (AF)
1	Viva Naughton Reservoir	69,645
2	Meeks Cabin Reservoir	33,571
3	Stateline Reservoir	12,000
4	Guild and Dean Reservoir	1,996
5	Kemmerer No. 1 Reservoir	1,058
6	Wall Development Company Reservoir	870
7	Van Tassel Lake	853
8	Reed Reservoir	812
9	BB Reservoir	649
10	Piedmont Reservoir	630
11	Upper 1-UD Reservoir	608
12	Guild Reservoir	366
13	Moslander Reservoir	310
14	Tipperary Reservoir	306
15	Bodey	271
16	Graham Reservoir	221
17	Clifford F Graham Reservoir	198
18	Davis No. 2 Reservoir	189
19	Franklin Reservoir	183
20	Byrne Reservoir	160
21	Broadbent No. Two	120
22	Byrne Reservoir (N)	115
23	Erickson Reservoir	96
24	Cottonwood Reservoir	93
25	Kovach Reservoir	89
26	Little Piedmont Reservoir	89
27	Shelton Lake (Fosdick Reservoir)	80
28	Colletti Reservoir	76
29	Wasatch Reservoir	72
30	Paul Reservoir	68
31	Painter No. 1 Stock Reservoir	62
32	Philip Reservoir	50
33	Molinar Reservoir	50
34	Colletti Reservoir No. 2	50

Stateline Reservoir

Stateline reservoir is also a part of a Bureau of Reclamation Project known as the Lyman Project. Stateline Reservoir regulates the flows of the East Fork of the Smiths Fork River for irrigation, municipal and industrial use, fish and wildlife conservation, and recreation. Stateline Reservoir has no State of Wyoming permits, however, water within its storage capacity is used for irrigation of Wyoming lands and for municipal use in the Lyman/Fort Bridger valley. A municipal and industrial water supply of



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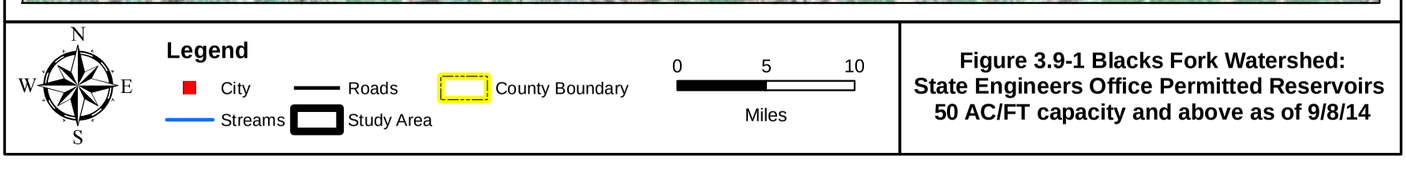


Figure 3.9-1 Blacks Fork Watershed: State Engineers Office Permitted Reservoirs 50 AC/FT capacity and above as of 9/8/14

1,500 acre-feet a year is available from Stateline Reservoir for the towns of Lyman and Mountain View and surrounding rural areas. The Bureau of Reclamation lists the storage capacity of Stateline reservoir at 14,000 AF. The reservoir is operated by the Bridger Valley Water Conservancy District. Additional Stateline reservoir information and data are available at: http://www.usbr.gov/projects/Project.jsp?proj_Name=Lyman+Project

Guild and Dean Reservoir

The Guild and Dean reservoir is located approximately halfway between Evanston and Mountain View, WY. The reservoir is built on Piedmont Creek which is a tributary to the upper reaches of Muddy Creek. According to the State Engineers Office the reservoir was originally permitted in 1965 with a capacity of 770 AF with permitted uses of irrigation and stock water. Since that time the reservoir has gone through two enlargements (1994 and 2003) and now has a capacity of 1,996 AF and the additional permitted use of fish propagation along with irrigation and stock uses.

Kemmerer City (Kemmerer No. 1) Reservoir

Located on the Hams Fork River below Viva Naughton reservoir and near the Town of Kemmerer, Wyoming, this reservoir serves as a diversion point for the town's municipal water supply. The State Engineers office has the capacity listed as 1,058 AF.

3.9.2 Surface Water Availability

The evaluation of flows available for potential storage projects versus irrigation shortages within the watershed was based upon results of the Wyoming Water Development Commission (WWDC) basin planning model developed for the Green River watershed (WWC Consulting, et al., 2010). Much of the discussion of the model, assumptions inherent to it, and its limitations was extracted from previous reports. It is included herein to provide the background necessary to interpret model results.

3.9.2.1 Green River Basin Model

The Green River Basin Model is a water accounting spreadsheet that incorporates multiple diversions, gaging stations, and other water resources data within the Green River Basin. One of the primary purposes of the model is to provide a planning tool for Green River Basin water users and the State of Wyoming for use in determining those river reaches in which flows may be available to Wyoming water users for future development.

For the purposes of this study, the spreadsheet model was utilized without modification. The Green River model consists of four individual spreadsheet models, each representing a specific subbasin of the watershed. One of the individual spreadsheet models focused on the Blacks Fork River including the Smiths Fork River. Another focused on the Henrys Fork. The individual spreadsheet models are linked to

enable data generated in one model to be "passed along" to subsequent models. Furthermore, models were generated to reflect each of three hydrologic conditions: dry, normal, and wet year water supply.

The spreadsheets each represent one calendar year of streamflow data, on a monthly time step. Each spreadsheet relies on a calibration model that reflects available historical data from the 1971 to 2007 study period to estimate the hydrologic conditions. Streamflow, consumptive use, diversions, and irrigation return flows are the basic input data to the model. For all of these data, average values drawn from the dry, normal, or wet subset of the study period were computed for use in the spreadsheets. The model does not explicitly account for water rights, reservoir operations, compact allocations, or the management of the basin water supply based on these legal constraints. It is assumed that the historic discharge data reflect effects of any limitations that may have been placed upon water users by water rights or compact restrictions as well as reservoir operations.

To mathematically represent the Green River system subbasins, each basin was first divided into reaches based primarily upon the location of USGS gaging stations. Each reach was then sub-divided by identifying a series of individual nodes representing locations where diversions occur, basin imports are added, tributaries converge, or other significant water resource features are located.

At each node, a water budget computation is completed to determine the amount of water that flows out of the node. Total flow into the node and diversions or other losses from the node are calculated. The difference between total inflow and diversions/losses is the amount of flow available to the next node downstream. Mass balance, or water budget calculations, are repeated for all nodes in a reach, with the outflow of the last node being the inflow to the beginning node in the next reach. Figure 3.9-2 displays a graphical representation of the water balance approach. For each reach, ungaged stream gains (e.g., ungaged tributaries, groundwater inflow, and return flows from unspecified diversions) and losses (e.g., seepage, evaporation, and unspecified diversions) are taken as the difference between average historical gage flows (or outflows) and model-predicted outflow from the reach. Stream gains are input at the top of a reach to be available for diversion throughout the reach and losses are subtracted at the bottom of each reach.

3.9.2.2 Model Limitations

There are several limitations to the model, which must be considered when reviewing the model and results generated by its use. These limitations and their implications with respect to a determination of water availability are discussed below.

Use of a monthly time step in the river simulation may result in the exclusion of peak flows on 'flashier' systems. These peaks would be incorporated within the monthly average streamflows within the model; however, in instances where peaks exceed demand, the monthly time step could result in underestimation of available flows.

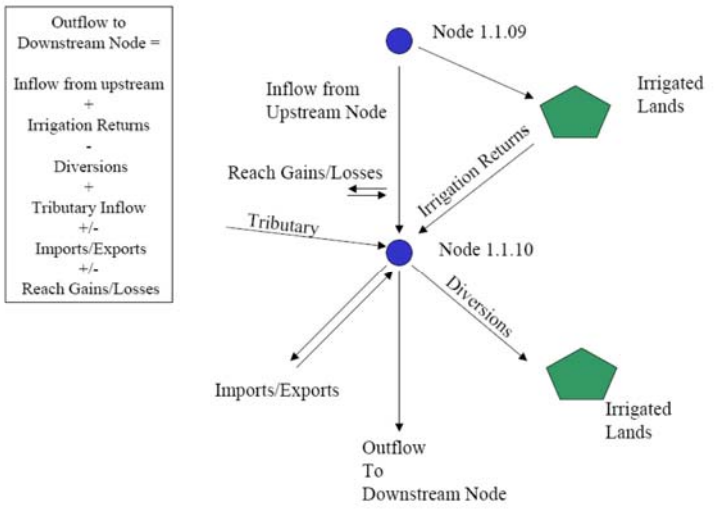


Figure 3.9-2 Diagram of Model Water Budget Computations.

- The spreadsheet model does not explicitly account for diversions from the river in accordance with Wyoming water law and is not operated on these legal principals. Simply stated, this means that the model cannot forego a diversion to an upstream junior water appropriator to satisfy a downstream senior water right.
- The basin planning model was originally developed under the assumption that if this situation occurred historically, the diversion data would reflect this occurrence and the junior appropriator would incur a shortage.
- The model does not incorporate reservoir operational rules for release or storage of water. Consequently, evaluation of changes in practices that accompany reservoirs is problematic. For each simulation condition (normal-, dry- and wet-year conditions), reservoir releases do not deviate from historic releases. For example, releases from Viva Naughton Reservoir remain consistent with historic patterns despite changes to reservoir inflow and storage.
- The model uses data generated outside of the program in several instances. Consequently, evaluation of different water usage scenarios involving this data is cumbersome. For example, the model does not directly facilitate evaluation of effects of improvements to farm irrigation practices resulting in increased irrigation efficiency without recalculation of input data outside of the model environment.
- The spreadsheet model does not contain logic to evaluate impacts upon the state's obligations under the Colorado River Compact (Compact).
- Comparison of historic data with full supply diversion estimates indicates that irrigators typically operate under supply-limited conditions. The model simulates diversion data related to a multitude of uses (irrigation, municipal, industrial, etc.). Given the magnitude of the irrigation diversions, however, special attention is devoted to the water requirements associated with

irrigated lands. To fully understand this potential limitation, it is important to know that the spreadsheet model can be run in three different modes:

- *Calibration (Historical):* This mode simulates the historical diversions where data are available. This mode is typically used for model calibration because historic diversion data are utilized.
- *Full Supply for Existing Irrigated Lands:* This mode reflects full supply diversions, based on computed diversion requirements for existing irrigated lands (lands presently irrigated and mapped during the planning process).

3.9.2.3 Available Flows Analysis

To determine how much of the physical supply is actually available for storage at any given model node, "available water" was defined as that portion of the physically available streamflow that could be stored without causing a shortage to existing water users in any downstream river reach. *In other words, the water available at any node was determined as the minimum of the physically available flow at that point or the minimum available flow at any node downstream in the system.* As noted previously, this evaluation is made on a water budget basis (inherent to the Basin Plan model) and does not directly incorporate individual water rights.

Results of the availability analyses at selected model nodes are summarized in Table 3.9-2 (See Appendix 3E) for complete results of the Blacks Fork and Henrys Fork spreadsheet models. As indicated in this table, results show that there is flow available for storage without incurring a shortage in downstream reaches throughout much of the study area in all hydrologic conditions (Dry, Normal and Wet) for modeled stream nodes within the watershed. The total annual available flow for the entire Blacks Fork River watershed (represented by Node No. 13.04) is estimated in the model as over 66,000 ac-ft for a dry (2 out of 10 years) condition and over 195,000 ac-ft for a normal (6 out of 10 years) condition. The model results show that the large majority of available flows occur in March, April, and May as would be expected in this hydrologic setting and consistent with the pattern of gaged flows as previously described. As indicated in Table 3.9-2, there is water available for storage without causing downstream shortages in the mainstem tributaries as well as the Henrys Fork.

Any availability evaluation must consider potential impacts of interstate compacts. The following excerpt from the Green River Basin Plan, Technical Memorandum: Available Surface Water Determination (AECOM, 2010) is presented. Note that this discussion and the numerical valued included within it pertain to the entire Green River within the context of the Colorado River Basin Compact:

Table 3.9-2 Summary of Water Availability (WWC Consulting, 2010).

Node	Name	Condition	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
7.02	Blacks Fork naer Lyman (USGS Gage 09222000)	Dry	1,219	2,009	6,758	4,952	5,357	3,072	1,297	609	579	1,809	1,743	1,342	30,745
		Normal	2,369	3,244	10,393	11,664	19,584	19,259	5,874	2,618	2,209	3,023	3,436	2,459	86,131
		Wet	4,102	4,181	12,329	16,160	34,619	58,126	25,687	8,179	6,074	5,550	5,039	3,463	183,509
7.04	Henrys Fork Near Manila (USGS Gage 09229500)	Dry	1,906	1,995	3,999	2,062	3,353	3,652	815	354	315	981	2,050	2,156	23,638
		Normal	2,866	3,132	4,561	4,438	8,591	12,111	3,717	1,706	1,400	2,746	3,491	3,049	51,809
		Wet	3,730	3,072	7,711	8,548	20,187	35,012	16,462	6,529	4,259	4,723	4,194	3,358	117,786
10.02	Muddy Creek near Hampton (USGS Gage 09224000)	Dry	308	505	943	1,420	674	228	81	139	90	241	686	479	5,794
		Normal	553	900	4,680	4,248	7,370	3,280	844	202	164	784	817	781	24,631
		Wet	686	1,830	6,140	21,070	17,070	7,440	1,450	871	763	187	283	188	57,978
13.04	Blacks Fork near Little America (USGS Gage 09224700)	Dry	2,034	3,645	15,266	12,000	14,979	6,287	2,041	745	676	3,431	3,295	2,338	66,736
		Normal	4,175	5,645	22,845	28,501	53,372	42,764	12,580	5,095	3,872	5,569	6,264	4,399	195,082
		Wet	8,734	8,428	26,579	38,226	90,625	124,795	47,528	14,951	11,651	9,223	9,244	6,724	397,706

"Compact considerations

The "Total" values … far exceed the remaining developable allowance as limited by the Colorado River Compact and Upper Colorado River Basin Compact. "Remaining developable allowance" is a value that depends on assumptions behind the calculation of the State's entitlement under the Compact (allowance), and the estimate of current depletions.

*Wyoming's allowance has been estimated variously by the State and Federal government. The Wyoming Water Development Office recently estimated Wyoming's allowance as either 947,800 or 842,800 af/yr, depending on the Upper Basin State's obligation under the Mexico Treaty. Since the Upper Basin States currently maintain that they have no obligation under the Mexico Treaty, only the larger of these two numbers is shown as the Compact Allowance (WWDC Estimate) in Table 3 (*Table 3.9-3 in this report*). The U.S. Bureau of Reclamation calculated Wyoming's allowance as 834,400 af in its 2007 Hydrologic Determination report, executed in support of the Navajo-Gallup Water Supply Project as required to enable a contract for water from the Navajo Indian Irrigation Project. This value is shown as Compact Allowance (USBR Estimate) in Table 3 (*Table 3.9-3 in this report*). The increment between current basin use (computed in the Basin Use Profiles of this Green River Basin Plan update) and the Compact allowance is the amount of water that could be developed by Wyoming, strictly from the Compact perspective. These values are shown as Remaining Compact Allowance, for comparison with the available surface water estimation developed by way of the spreadsheet models.*

The spreadsheet models do not contain logic to operate curtailment to meet the state's obligations under the Upper Colorado River Basin Compact (the Compact). The models were developed to portray historical use over the study period 1971-2007. Never during that time, nor since the Compact was ratified, have diversions been curtailed pursuant to Article IV of the Compact. While the principles under which administration should be conducted are set forth in the Compact, actual details of their application have not been worked out by the Upper Colorado River Commission. Accordingly, simulation of curtailment was outside the scope of this effort.

3.9.3 New Water Storage Opportunities

Results of the WWDC Spreadsheet Model availability analyses indicate that there is flow available for storage without incurring a shortage in downstream reaches as summarized in Table 3.9-2 for modeled stream nodes within the watershed. The total annual available flow for the entire Blacks Fork River watershed (represented by Node No. 13.04) is estimated in the model as over 66,000 ac-ft for a dry (2 out of 10 years) condition and over 195,000 ac-ft for a normal (6 out of 10 years) condition. As indicated in Table 3.9-2, there is water available for storage without causing downstream shortages in the mainstem tributaries as well as the Henrys Fork. The model results show that the large majority of available flows occur in March, April, and May as would be expected in this hydrologic setting and consistent with the pattern of gaged flows as previously described.

Table 3.9-3 Remaining Compact Allowance Compared with Available Flow from Spreadsheet Models.

	Dry Condition (af/yr)	Normal Condition (af/yr)	Wet Condition (af/yr)
Municipal Use (includes City of Cheyenne at 15,300 AF/Yr.)	n/a	22,800	n/a
Industrial Use	n/a	58,800	n/a
Agricultural Use	n/a	396,200	n/a
Domestic	n/a	3,000	n/a
Evaporation - Main Stem	n/a	88,500	n/a
Evaporation - In State	n/a	32,800	n/a
Recreation Use	n/a		
Environmental Use	n/a	2,000 +/-	n/a
Total Use	n/a	604,100	n/a
Compact Allowance (USBR Estimate)[1]	n/a	834,400	n/a
Compact Allowance (WWDC Estimate)[1]	n/a	947,800	n/a
RemainingCompact Allowance (USBR Estimate)		**230,300**	
RemainingCompact Allowance (WWDC Estimate)		**343,700**	
Available Water (from Table 2)	**863,000**	**1,792,000**	**2,964,000**

[1] Water use values based upon normal year estimates of surface water and groundwater use

Potential new reservoir storage and existing reservoir rehabilitation opportunities were identified during the completion of the watershed inventory phase of the project. Previously published reports were reviewed and local landowners/stakeholders were interviewed. These studies include:

1991: Forsgren Associates, Bridger Valley Water Supply Study Level I Study
1995: Forsgren Associates, Bridger Valley Water Supply Level II Study
2004: ECI, Viva Naughton Enlargement Level II Study
2004: ECI, Bridger Valley Reservoir Level II Study
2006: Gannett Fleming, Bridger Valley Reservoir Level II Phase II Study
2007: Gannett Fleming, Viva Naughton Enlargement Level II, Phase II Study
2008: Short Elliott Hendrickson Inc., Bridger Valley Reservoir Project Level II Study
2001: States West Water Resources Corporation, Green River Basin Plan
2010: WWC Engineering, Green River Basin Plan, Dec, 2010 (kb)

Table 3.9-4 tabulates the potential projects identified during this effort. It includes several large reservoir enlargement projects (Meeks Cabin, Viva Naughton, Stateline Reservoirs) and new reservoir construction (Upper or Lower Dempsey Reservoirs).

Table 3.9-4 Potential Reservoir Storage Opportunities.

Study Area Phase	Project name	Action	Source	Storage		Source
				Existing	New Construcion / Enlarged	
Large Reservoirs						
I	Viva Naughton Reservoir	Enlargement	Hams Fork	69,645	+5,000	Gannet Fleming, 2007 / WWDO, 2014
II	Meeks Cabin	Enlargement	East Fork Smiths Fork	32,470	+3,750 - 4,000	ECI, 2004 / WWC Engineering, 2010 / Public Input
II	Stateline	Enlargement	East Fork Smiths Fork	14,000	+2,000	ECI, 2004 / WWC Engineering, 2010 / Public Input
I	Lower/Upper Dempsey Gulch	New Construction	Dempsey Gulch	N/A	+24,180	Gannet Fleming, 2007
Small Reservoirs						
III	Beaver Meadows	Enlargement	Lost Creek	676	+750 - 1,000	Public Input 2014
II	Austin Reservoir	Rehabilitation	Austin Canal /	2,295	N/A	Public Input 2014
II	Moslander Reservoir	Rehabilitation	Cold Spring Creek	310	+75 - 100	Public Input 2014
II	Cottonwood Reservoir	Rehabilitation	Cottonwood Creek	92	+350	Public Input 2014
I	Davis Reservoir	Rehabilitation	Lake Creek	98.9	N/A	Public Input 2014
II	Horse Creek Reservoir	New Construction	Horse Creek	N/A	200	Public Input 2014
II	West Fork Smiths Fork	New Construction	West Fork Smiths Fork	N/A	200	Public Input 2014
III	Wadsworth Fishing Reservoir	Rehabilitation	Beaver Creek	16.3	N/A	Public Input 2014

For those projects classified as "large" projects, a reservoir evaluation matrix was prepared and presented as Table 3.9.5. Relevant information was compiled from the results of the watershed inventory. The information included environmental, hydrologic, geologic, potential benefits, costs, and many others.

The following attributes are included in the evaluation matrix and described below:

Category A: Reservoir Description

- On - Channel vs. Off-Channel Sites: On-Channel sites are intended to store water associated with the stream impounded. Off-channel sites are located on tributaries and store mainstem waters via diversions. Off-channel sites are generally simpler to implement due to typically reduced environmental impacts and permitting mitigation requirements.
- Direct Supply Source: the stream upon which the dam is placed (all sites).
- Indirect Supply: the stream which would be used to fill the dam (off-channel sites only).**Category**

Category B: Watershed Description

- Basic quantifiable attributes of the directly contributing watershed (ex. Basin area, elevations, relief, etc).

Category C: Reservoir Statistics

- Basic quantifiable attributes associated with the reservoir pool (ex. Maximum storage, surface area, etc).

Category D: Dam Statistics

- Basic quantifiable attributes associated with impoundment structure (ex. Height, length, volume, etc).

Table 3.9-5 Reservoir Evaluation Matrix.

Site #	1	2	3	4
Site Name	**Viva Naughton**	**Meeks Cabin**	**Stateline Reservoir**	**Dempsey Reservoir**
Ranked Priority	1	1	**2**	**3**
Project Type	Enlargement	Enlargement	Enlargement	New Construction
Latitude	41.968297	41.02602	40.988676	42.007688
Longitude	-110.661509	-110.581021	-110.386189	-110.687683
Category A: Reservoir Description				
On-Channel / Off-Channel	On Channel	On Channel	On Channel	Off Channel
Direct Supply Source	Hams Fork River	Blacks Fork River	Smiths Fork	Dempsey Draw
Indirect Supply Source	NA	NA	NA	Hams Fork
Supply Mechanism	Mainstem Dam	Mainstem Dam	Mainstem Dam	New Diversion
Category B: Watershed				
Contributing Drainage Area -Direct (square miles)	239.62	145.13	48.43	17.73
Contributing Drainage Area -Indirect (square miles)	NA	NA	NA	221.89
Maximum Elevation (feet MSL)	9,920	12,960	13,159	8,860
Minimum Elevation (Feet MSL)	7,244	8,704	9,097	7,254
Maximum basin relief in feet	2,676	4,256	4,062	1,606
Mean annual precipitation				
Category C: Reservoir Statistics				
Existing Capacity (acre-feet)	45,465	32,470	14,000	0
Enlargement (acre-feet)	4,535	3500 - 5000	3500 - 5000	24,180
Surface Area (acres)	2000	678	284	542
Category D: Dam Description				
Dam				
Project Type	Enlargement	Enlargement	Enlargement	New Construction
Proposed Type	Concrete	Earthen	Earthen	Earthen
Method of Reservoir Fill	None / On channel	None / On channel	None / On channel	Supply Canal
Category E: Hydrology				
Hydrology Method	Green River Basin Plan: Node 12.06	Green River Basin Plan: Node 1.06	Green River Basin Plan: Node 3.06	Green River Basin Plan: Node 12.06
Storage Availability				
Normal Year (Available)	149,031	28,096	20,107	149,031
Dry Year (Available)	56,880	8,614	8,128	56,880
Category F: Geology				
Dam embankment foundation	B	B	B	B
Reservoir pool area	B	B	B	B
Contributing watershed	B	B	B	B
Category G: Environmental Issues / Infrastructure				
Environmental Issues				
Wetlands (acres impacted) From NWI data	High	Medium	Low	Low
Game: Antelope	Seasonal Range	Seasonal Range	Mapping Not Available	Seasonal Range
Game: Elk	Seasonal Range	Seasonal Range	Mapping Not Available	Seasonal Range
Game: Moose	Crucial Range / Seasonal Range	Crucial Range / Seasonal Range	Mapping Not Available	Seasonal Range
Game: Mule Deer	Seasonal Range	Seasonal Range	Mapping Not Available	Seasonal Range
Game: White Tailed Deer	None	None	Mapping Not Available	None
Sage Grouse Leks within 2 miles	Yes	No	Mapping Not Available	Yes
Sage Grouse Core Population Area	Pool entirely within Core Area	None of pool in Core Area	Mapping Not Available	Pool entirely within Core Area
WDEQ Stream Classification	2AB	2AB	2AB	2AB
Irrigated Acreage Inundated	268	0	0	0
Infrastructure				
Residences	0	0	0	0
Transportation	2.6 miles dirt	1.2 miles dirt	0	2.9 miles dirt
Category H: Economic Considerations				
Estimated Construction Cost	$5.5M	$5-10M	$5-10M	$55.5M
Total Project per ac-ft of storage	$2,750	$1000 - $2,000	$1000 - $2,000	$2,295
Category I: Ownership				
Embankment	Private	Forest Service	Forest Service	Private / BLM
Impoundment	Private / BLM	Forest Service / BLM	Forest Service	Private / BLM
Category J: Potential Benefits				
Location Relative to Demand (Irrigated Acres downstrea	High	High	High	High
Demand Potential (downstream shortages) (Dry/Normal	High	High	High	High
Potential for flood protection	Moderate	Low	Low	Low

Category E: Hydrology

- Available for storage: Based upon the Green River Basin Planning Model, this value represents the amount of water at the site which is available for storage without causing shortages downstream.
- Indirect supply source: The water body identified as a supply source for the site if an off-channel reservoir.

Category F: Geology

- Bedrock Geology and Surficial geology were assigned relative 'grades' based upon the relative feasibility of constructing a reservoir at each site given the local geologic conditions. The scale ranges from "A", which indicates no potential problems identified to "F", which indicates fatal flaws associated with local geology. For this Level I site screening effort, no subsurface investigation was completed. The geologic investigation was completed primarily using existing mapping within the GIS environment. Consequently, there was insufficient information to assign A's or F's to any of the sites .

Category G: Environmental / Infrastructure

- Wetlands: Quantified acreage using LANDFIRE database.
- Game habitat: Type of game range affected by the embankment and reservoir: (seasonal, crucial, or parturition range).
- WYDEQ Classification: Determined from Tables A and B of Wyoming Department of Environmental Quality Surface Water Standards. (Ex. Class 1, Class 2AB, Class 3, etc).
- Fisheries: Comments received from WGF pertaining to each location.
- Irrigated acres inundated: irrigated acres flooded by the embankment and pool.
- Infrastructure - Residences: Number of farmsteads and structures affected based upon 2012 aerial photography.
- Infrastructure - Transportation: Length of roads of various classes affected.
- Other: Infrastructure such as communications infrastructure including fiber optics.

Category H Economic Considerations

- Conceptual level cost estimate and comparative economic statistics. Approximate embankment volumes were computed using topographic mapping of each site. Conceptual costs associated with reservoir appurtenances such as emergency spillways, outlet works, etc, were estimated using previously estimated costs for reservoirs of similar size within Wyoming. Total project costs include consideration of permitting, engineering design and construction management.

Category I: Ownership

- Property ownership plays an important role in determining the relative feasibility of development of storage alternatives. For the purposes of this study, it was assumed based upon previous investigations, that the relative feasibility to construct a reservoir alternative from an ownership perspective would be as follows:

    - Private Ownership: Least difficult assuming land owner concurrence
    - State Ownership: Moderately difficult
    - Federal Ownership: Most difficult

This assumption does mean to say that sites on federally owned lands should not be investigated further. It merely indicates that the permitting and consents process could be more problematic than with privately or state-owned parcels. Likewise, it is not meant to imply that privately owned lands are available. The State has indicated they are not interested in condemnation of private lands for the purposes of constructing reservoirs.

Category J: Potential Benefits

- Quantifiable and qualified benefits associated with each site (ex. Irrigated acres benefitting)

The Project GIS was used to quantify many of the attributes associated with the sites. For example, quantification of irrigated acres and wetlands affected by each site could be easily determined. Contributing watershed areas were delineated and their characteristics quantified using the GIS in conjunction with a digital elevation model.

Color coding in the Reservoir Evaluation Matrix reflects the relative feasibility of several attributes. Green shading indicates attributes with favorable or minimal impacts, lower costs, or other beneficial attributes. Red shading indicates negative impacts, high costs, etc. Yellow indicates neutral attributes.

The comparison matrix was used to assign relative priorities to the sites. The priorities are listed below:

Priority 1 Sites: These sites represent the most potentially feasible of the sites evaluated and provide the most benefit at the least cost or environmental impact. These sites would be recommended for further evaluation in future investigations.

Priority 2 Sites: These sites, while potentially feasible, contained attributes making them less desirable for further study than the Priority 1 Sites. For example, some sites showed potential benefits commensurate with Priority 1 sites but their costs were higher. Designation as a Priority 2 site does not preclude the alternative being included in future Level II, Phase 1 studies.

Priority 3 Sites: These sites contained either 'fatal flaws' which eliminated them from recommendation for further study (e.g., location within the wilderness area), or other attributes causing them to be highly unlikely to be implemented.

IV. WATERSHED MANAGEMENT AND REHABILITATION PLAN

4.1 Overview

The objective of this Level I study is to generate a watershed management and rehabilitation plan that is technically sound, practical in nature, and economically feasible. In conjunction with the development of the study's GIS, the inventory focused on assessment of the watershed and the identification and evaluation of improvements to address those issues described in Chapter 3.0. Potential improvements were developed and categorized into the following:

- **Irrigation System Conservation and Rehabilitation.** The inventory and evaluation of the existing infrastructure was completed and improvements identified for the rehabilitation of existing structures and the potential conservation of existing irrigation diversions.
- **Livestock/Wildlife Upland Watering Opportunities**. Based upon an evaluation of existing water sources and the condition of upland grazing resources, potential upland water source development projects were identified.
- **Grazing Management Opportunities**. Based upon a review of the pertinent ESDs and the ambient vegetation and soil conditions, grazing management strategies are presented.
- **Surface Water Storage Opportunities**. Results of previous investigations pertaining to development of water storage and opportunities identified during the project inventory phase of this investigation are incorporated.
- **Stream Channel Condition and Stability**. Stream channels within the watershed were characterized with respect to their condition and stability. Impaired channels were identified for further evaluation and alternative improvements developed.
- **Other Watershed Management Opportunities**. For each of the categories described above, a series of recommended projects are prescribed in the following portions of this chapter.

These plans have been prepared to provide an overview of potential improvements that can partially or fully address the key issue identified within the watershed.

In the remainder of this chapter, the conceptual plans developed within each watershed component are described and evaluated with respect to providing benefits to improving the existing water supply through conservation. For the purposes of tracking individual components of the watershed management plan, each component was designated a unique project or "improvement" number. The prefixes used for each improvement describe the category of the watershed management plan it falls under. The prefixes are as follows:

- Project Components "I": Irrigation system rehabilitation components (Section 4.3)
- Project Components "L/W": Livestock/wildlife upland watering opportunities (Section 4.4)
- Project Components "G": Grazing management opportunities (Section 4.5)
- Project Components "S": Surface water storage opportunities (Section 4.6)

- Project Components “C”: Stream channel stability components (Section 4.7)
- Project Components “O”: Other watershed management opportunities (Section 4.8).

4.2 Potential Effects and Benefits of Watershed Management Plan Components

The Wyoming Water Development Commission’s (WWDC) Level I Watershed Study is a fundamental landscape analysis confined to a hydrologically connected drainage area or watershed and is focused on two primary components. The first is an identification of the physical attributes of that analysis area. This is accomplished by conducting a comprehensive inventory of the natural resources and subsequently using that inventory to articulate a description of the current natural resource conditions. The second is a long range plan outlining management and/or rehabilitation opportunities and activities that address ecological enhancement and watershed function.

Such activities, in the conservation community, are commonly referred to as best management practices (BMPs) or conservation practices. These BMPs and conservation practices are eligible for grant funding assistance through the WWDC’s Small Water Project Program (SWPP). The WWDC’s SWPP funds are mainly used for installing BMPs and conservation practices such as stock ponds, water wells, buried water delivery pipelines, stock tanks, spring developments, solar platforms and pumps, wetland enhancement and restoration, windmills, and irrigation diversion and conveyance improvements.

There can be one or more benefits resulting from the implementation of BMPs and conservation practices. Such benefits can be either quantitative or qualitative or both. Benefits can be local or global and specific or surrogate, depending on multiple factors unique and specific to the BMP or conservation practice, ecological site, watershed, or major land resource area. BMPs and conservation practices also provide opportunities to relieve grazing pressure on riparian areas and create the potential to induce improvements to soil health, plant community diversity, and improved forage production. They allow for grazing deferment in the event that rest is required due to invasive species control efforts, which can also stimulate water release.

Benefits to ecosystem functionality and landscape health can be and is a response to soil health, water infiltration/percolation and a functioning water cycle. Expected project benefits can be related to watershed function including collection and storage of water along with ecological enhancements such as plant and animal habitat and stream corridor or riverine stability as well as societal values including economic stability and open space maintenance. Multiple benefits can result from improvement opportunities for water resources, which are critical to meet the daily water demands of the resident population of man and beast, develop, increase or extend irrigation water availability, and improve fishery habitat and potential recreational benefits.

4.2.1 Natural Resources Conservation Service Conservation Effects Assessment Program

In 2003, in the interest of government accountability, Congress and the Office of Management and Budget requested information from the U.S. Department of Agriculture (USDA) about the effectiveness

of its conservation programs. In response, the Conservation Effects Assessment Project (CEAP) was initiated by NRCS to provide quantitative information about the environmental impacts of its conservation practices on agricultural lands within the contiguous 48 United States. The CEAP is a joint effort of the NRCS, Agricultural Research Service (ARS), National Institute for Food and Agriculture, other federal agencies, and university scientists to quantify the environmental effects of NRCS conservation practices and programs and develop the science base for managing the agricultural landscape for environmental quality. Initially focused on croplands, the CEAP effort has been expanded to include wildlife, wetlands, pastures, and rangelands.

Project findings have been used to guide USDA conservation policy and program development that will assist conservationists, farmers, and ranchers with informed conservation decisions" [Spaeth et al., 2013]. The end product of the CEAP is a literature review and concise collation of information from hundreds of published scientific papers, journals, and additional references. Consequently, the CEAP documents provides a valuable source of information pertaining to various BMPs incorporated in this plan and is referenced throughout the remainder of this section.

4.2.2 Watershed Function

Identifying improvement opportunities for hydrologic and watershed function, including water quantity, yield and use, is an essential element of the Level I Watershed Study. Hydrologically, there are three fundamental watershed functions: (1) collection of the water from rainfall, snowmelt, and storage that becomes runoff, (2) storage of various amounts and durations, and (3) discharge of water as runoff [Black, 1997]. Watershed characteristics such as geologic structure, soils, landform, topography, vegetation, and climate influence the capture or collection of precipitation, infiltration and storage of surface and ground water, and the runoff or discharge of water.

4.2.2.1 Water Quantity

Implementation of BMPs and conservation practices can affect water resource quantity through improvement of plant communities, vegetative diversity, and ecological site health achieved from water development and the creation of reliable water sources in areas devoid of such allows for the establishment of grazing systems and changes in grazing distribution.

Hydrological responses to grazing are strongly contingent on the vegetative community composition, with communities that provide greater cover and obstruction to overland flow, such as midgrass-dominated communities having greater hydrological function, including infiltration rate, than shortgrass-dominated communities [Wood and Blackburn 1981b; Thurow 1991; Natural Resources Conservation Service, 2011]. Poor water distribution has been the primary cause of poor livestock distribution [Holecheck, 1997]. Livestock distribution and grazing behavior can be modified by adjusting the location of supplemental feed and water, implementation of patch burns, and herding in addition to the traditional practice of fencing [Williams 1954; Ganskopp 2001; Fuhlendorf and Engle 2004; Bailey 2005]. Natural Resources Conservation Service [2011] reviewed many studies and found that water

distribution, steep slopes, and high elevations unequivocally influenced livestock distribution. Also sufficient evidence existed to recommend that NRCS increase the role of herding and supplement placement along with water development and fences for managing livestock distribution [Natural Resources Conservation Service, 2011].

Soil vegetative cover is widely recognized as a critical factor in maintaining soil surface hydrologic condition and reducing soil erosion [Gifford, 1985; Natural Resources Conservation Service, 2011]. Stocking rates, regardless of grazing system, that reduce soil surface vegetative cover below a site-specific threshold increases detachment and mobilization of soil particles due to raindrop impact, decreases soil organic matter and soil aggregate stability, increases soil surface crusting and reduces soil surface porosity, and thus decreasing infiltration and increasing soil erosion and sediment transport [Blackburn, 1984]. Sufficient vegetative cover, critical soil cover, or residual biomass must remain during and following grazing to protect soil surface condition (e.g., porosity, aggregate stability, and organic matter) and hydrologic properties (e.g., infiltration), however, these site-specific vegetation cover requirements vary depending on cover type (e.g., vegetation, litter, or rock), soil type, rainfall intensities, and water quality goals [Gifford 1985]. The erosive energy of water and the long-term reduction of organic matter additions to soil detrimentally affect numerous soil properties, including the increase of bulk density, disruption of biotic crusts, reduced aggregate stability, and organic matter content, which collectively reduce infiltration rate and increase sediment yield and runoff [Natural Resources Conservation Service, 2011].

These efforts can increase water infiltration/percolation, stimulate spring flows and increase flow volume and duration. An example of restoring watershed function and water quantity was in a 74,000 acre watershed in West Texas near San Angelo where West Rocky Creek, a dry, intermittent stream for decades, started flowing again [Moseley, 1983; Wiedenfeld, 1986]. In the early part of the 20th century, West Rocky Creek was a yearlong flowing stream until the late 1910s, when it became an intermittent stream and by 1935, the springs feeding the creek had been dried up by mesquite and other invading woody plants [Moseley, 1983; Wiedenfeld, 1986].

During the 1950s and 1960s, ranchers and landowners on five ranches, covering about half the watershed, began conservation work including root-plowing, reseeding, tree-dozing, aerial spraying, and chaining of mainly mesquite and juniper brush, which limited water availability for native grasses such as sideoats grama, buffalograss, curly mesquite, and tobosa [Moseley, 1983]. About 30,000 acres or 70 percent of the mesquite was removed from the watershed, and the original prairie was restored [Moseley, 1983; Wiedenfeld, 1986]. In the mid to late 1960s, one of the 5 ranchers noticed that a spring, which was dry since 1935, had started flowing again and by replacing the water-hungry brush with a good grass cover, more rainfall soaked into the aquifer, recharging the dormant springs which began flowing on all 5 ranches by 1970 [Moseley, 1983]. Ongoing grazing management on each ranch enhanced the cover of grasses in the watershed with soils producing an estimated 2,000 to 2,500 pounds of forage per acre which helps retard brush succession; the ranchers periodically must do maintenance brush control to keep the desired vegetation balance [Moseley, 1983].

In southeast Arizona, long-term data on soils, vegetation, hydrology, and climate have been collected for over five decades on the Walnut Gulch Experimental Watershed, which is operated by the USDA's Agricultural Research Service (ARS). The Walnut Gulch Experimental Watershed is one of the most intensively instrumented semiarid experimental watersheds in the world, with a 10 to 100-year record of abiotic and biotic measurements and photographs [Moran et al, 2008]. Researchers studied the interaction between rainfall intensity and soils and vegetation by comparing the frequency of runoff producing summer events between a shrub-dominated watershed and a grass-dominated watershed and found that it takes higher rainfall intensities to produce runoff on the grassed watershed [U.S. Department of Agriculture, 2013]. Results also indicate that the grassland plant community is producing more plant material than the shrubland, with close to the same amount of precipitation input, making the grassland ecosystem more water use efficient [U.S. Department of Agriculture, 2013]. The researchers found that runoff quantities at the watershed scale are controlled more by infiltration of water into alluvial channels and spatial distribution of thunderstorm rainfall [U.S. Department of Agriculture, 2013].

4.2.3 Ecological Enhancement

An ecological enhancement is any activity that improves an ecosystem such as stabilizing erosive soils, increasing soil quality, planting or maintaining native grasses, shrubs, or trees, removing and controlling invasive species, and improving or maintaining riparian/wetland areas. Ecological sites are complex and varied within the study area as described in Section 3.4.5.5 and Figure 3.3-12. And so are the potential benefits achieved from project activities and implementations that influence the condition of those ecological sites and characteristics.

Conjunctive to soil function is plant community diversity, health and productivity and subsequent forage diversity, production and wildlife habitat. Benefits accrued to water quality are significant as improvements to the chemical, physical, and biological constituents of a water body produce both local site enhancements and those transferred downstream. Wetland enhancement and restoration provides benefits to ecological stabilization as well as contributions to water quality and quantity. Ecologically, watersheds function by providing diverse sites and pathways along which vital chemical reactions occur and furnishing habitat for the flora and fauna that constitute the biological elements of ecosystems [Black, 1997].

4.2.3.1 Plant and Animal Habitat

Locations of conservation practices and rangeland infrastructure can have a large, indirect impact on overall vegetation change with the spatial design of infrastructure including the locations of fences, watering points, and feeders that are used to modify patterns of animal movement and forage utilization, taking into account livestock behavior and the template of topography and plant communities to which livestock respond [Laca, 2009; Natural Resources Conservation Service, 2011]. The use of rangelands for sustainable livestock production has the potential to ensure the maintenance of wildlife habitat which will ensure that wildlife habitat will persist into the future [Natural Resources

Conservation Service, 2011]. Livestock grazing can have negative or positive impacts on game bird habitat, depending on timing and intensity of grazing and the habitat being influenced [Beck and Mitchell, 2000]. Wildlife responses to conservation practices are usually species and even species-habitat specific, meaning not only that each species may respond differently to any specific practice but also that a single species may respond differently to the same practice in different vegetation associations or conditions [Natural Resources Conservation Service, 2011].

Free-stranding water has been considered to be a resource that limits distribution and abundance of many species of wildlife in arid regions of the United States, and water developments have been used since the 1940s to improve wildlife habitat [Simpson et al, 2011]. Simpson et al [2011] compiled and evaluated available literature for evidence of effects of water sources on wildlife populations. Positive effects of water developments on wildlife have been documented, and species thought previously not to use free-standing water developments do so when it is available [Simpson et al, 2011]. Additionally, researchers studied effects of wildlife water developments in southwestern Arizona and found that water developments were used by a diverse array of wildlife, including mule deer, game birds, a number of nongame species [Rosenstock et al, 2004].

4.2.3.2 Stream Corridors and Riparian/Wetland Areas

Reducing impact to riparian plant communities through the development of upland water resources can result in stream corridor benefits. Riparian plant community diversity and regeneration of desirable important woody species can help restore local water tables, trap sediments, increase wildlife habitat and migration corridors, and stabilize stream banks which can affect localized land loss. In addition, aquatic population benefits can accrue and recreation potential can be realized.

Livestock distribution practices such as water developments, supplement placement, and herding are effective means of managing the intensity and season of livestock grazing in riparian areas [Natural Resources Conservation Service, 2011]. Season of grazing also determines livestock grazing effects on riparian plant communities, particularly woody plants, and can be managed to conserve riparian habitats and their associated services [Natural Resources Conservation Service, 2011]. Sufficient evidence in peer-reviewed studies existed that Natural Resources Conservation Service [2011] suggested riparian grazing management that maintains or enhances key riparian vegetation attributes (i.e., species composition, root mass and root density, cover, and biomass) will enhance stream channel and riparian soil stability, which will in turn support ecosystem services, such as flood and pollutant attenuation and high-quality riparian habitat. Peer-reviewed literature generally supports the effectiveness of water developments, supplement placement and herding for reducing riparian vegetation utilization, or time spent in riparian areas [Natural Resources Conservation Service, 2011].

4.2.4 Societal Value

Natural resource stewardship not only has economic value in terms of forage, livestock, and wildlife production relationships, but also can have non-economic value placed on those conservation practices

by society. Those values can even influence the perception of those implementing conservation practices and can be as much an influence in the decision process to implement conservation as is an economic value. Additionally, it is possible for a BMP or conservation practice that provides an ecological service to accrue more value to society in general than to a local landowner. Ecosystem services are defined as those things or experiences produced by natural systems on which humans place value [Natural Resources Conservation Service, 2011]. Ecosystem services benefit society in numerous and diverse ways while each of the conservation practices can potentially produce different kinds, qualities, and amounts of these goods and services, depending on location, natural potentials, current states, and other factors.

Non-economic values can and should be considered in determining watershed enhancement programs, particularly when considering public investment in conservation. Natural Resources Conservation Service [2011] found little to no research exists showing the direct noneconomic effects of BMPs and conservation practices on individuals, households, or social systems but acknowledged it was likely that producers do realize psychological benefits from conservation because stewardship typically ranks high among the management goals of livestock producers [Huntsinger and Fortmann, 1990; Sayre, 2004]. Moreover, livestock producers who believe strongly in a responsibility to society are more likely to engage in environmentally desirable management practices, such as invasive weed control and riparian protection [Kreuter et al, 2006].

In 2012, in cooperation with the Wyoming Stock Growers Association (WGSA), University of Wyoming, and University of California-Davis, research scientists with the USDA's ARS Rangeland Resources Research Unit in Cheyenne, Wyoming investigating effects of rangeland management decision-making asked WGSA producer members about their goals, ranching operations, and management practices via a mail survey and received a total of 307 rancher responses to the survey [Kacheris et al, 2013; Mealor, 2013]. Livestock production and forage production were the top management goals, with ecosystem characteristics that support these goals (e.g., soil health, water quality) tied for second [Kacheris et al, 2013; Mealor, 2013].

In addition to other social values and ecological enhancements, open spaces have long been held with high value to Wyoming and other western region states. From a ranching industry perspective, tourism interest, outdoor recreationist activity, or a real estate value, open space is significant. Preservation of our custom and culture has been and continues to be a focal point of consideration. Open spaces are critical for upland/riparian conductivity, wildlife migrations and habitat, and recreational opportunity. Open space is valued for preservation of cultural resources and for the reduction or prevention of land conversion to a condition that can be stewarded to an improved ecological condition.

4.3 Irrigation System Inventory

As presented in Chapter 3, the irrigation system inventory effort associated with this project consisted of evaluation of structures and ditch conditions at the request of interested landowners and stakeholders. No ditch systems were inventoried in their entirety. Instead, and at the request of those

individuals who came forward with requests to participate in the study, individual irrigation system components were inventoried. The recommendations included herein are not all-inclusive; there will be additional irrigation structures located throughout the watershed in need of rehabilitation or replacement. By virtue of their location within the geographic boundaries of this study, those potential projects involving those structures would still be considered eligible for application funding through the WWDC Small Water Project Program (SWPP).

The improvements that comprise this component of the watershed management plan include:

- Rehabilitation/replacement of existing structures
- Mitigation of seepage losses
- Enhanced delivery of water
- Reduction in annual operation and maintenance costs
- Improvement in ditch management and efficiency through water measurement
- Economic practicality
- Physical feasibility

The plan is intended to provide the ditch owners an assessment of conditions associated with the ditch and its associated hydraulic structures. The ditch owner / manager can use the plan as a "resource or wish list" from which they can select projects for potential future funding assistance from sources such as the WWDC Small Water Project Program or NRCS EQIP.

In this Basinwide volume of the Blacks Fork River Watershed Study, only the results of the irrigation system inventory are presented. Consequently, for detailed information and description of the individual projects, the reader is directed to the appropriate volume of this level I investigation. The projects identified in all three of the individual Phases and their respective component identifiers in the watershed management plan are summarized in Table 4.3-1. Figure 4.3-1 displays the general location of all irrigation rehabilitation projects.

4.4 Upland Wildlife/Livestock Watering Sources (Watershed Management Plan Component L/W)

4.4.1 Alternative New Watering Opportunities

Based upon the premise that existing water sources are capable of providing water to livestock within a one mile radius, buffers were drawn around existing water sources discussed in Chapter 3 (Figure 4.4-1). Note that this figure does not show buffers about perennial/intermittent streams, nor springs. A general objective of this effort was to provide means of providing reliable sources of livestock/wildlife drinking water as alternative water supplies to riparian corridors. As indicated in this figure, much of the study area appears to be adequately supplied with water sources. However, it is important to note that many of these sources are stock reservoirs located on intermittent/ephemeral channels and are

Table 4.3-1 Blacks Fork Watershed Management Plan: Irrigation Components.

Watershed Plan Component: Irrigation Rehabilitation Projects (I)										
Watershed Management Plan Component	Project ID	Project Name	Diversion	Headgate	Measurement Device	Siphon	Splitter Box	Ditch Earthwork	Geotextile Liner	Pipeline
Phase I										
I-001	Sears 001	Christman #1 Ditch Rehabilitation	1			1		3,000		
I-002	Schulthess 001	Davison Ditch Diversion Structure	1							
I-003	Schulthess 002	Davison Ditch Lined Segment							1,150	
I-004	Weston 001	Philbrick and Johnson Ditch Rehabilitation	1		1		1	6,100		
Phase II										
I-005	Eyre 001	Twin Buttes Canal Measurement Devices			3					
I-006	Eyre 002	Twin Buttes Canal Measurement Devices			1					
I-007	Eyre 003	Twin Buttes Canal Measurement Devices			1					
I-008	Eyre 004	Twin Buttes Canal Measurement Devices			1					
I-009	Kofford 003	Graham Reservoir Enhancement Project	1		1			1		
I-010	Kofford 004	Graham Reservoir Diversion Supply Ditch	1		1					
I-011	Mecham 001	Bridger Butte Canal Farm Turnout Rehabilitation		1						
I-012	Mecham 002	Bridger Butte Canal Diversion Structure Rehabilitation	1	1						
I-013	Micheli 001	Twin Buttes Canal Diversion Rehabilitation	1	1						
Phase III										
I-014	Anderson 001	Pearson Ditch Diversion	1							
I-015	Anderson 002	Hamilton Ditch Diversion	1							
I-016	Anderson 003	Heiser Ditch Diversion	1							
I-017	Anderson 006	Muskrat and Gillis Ditch Rehabilitation								8,000
I-018	Potter 001	Beach Desert Ditch Improvements		1	1					6,800
I-019	Schell 001	Wade Ditch Diversion Structure	1							
I-020	Schell 002	Leavitt & Easton Ditch Diversion Structure	1							
I-021	Taylor 001	Nelson Ditch Headgate and Diversion Structure	1	1						
Total			13	5	10	1	1	9,101	1,150	14,800

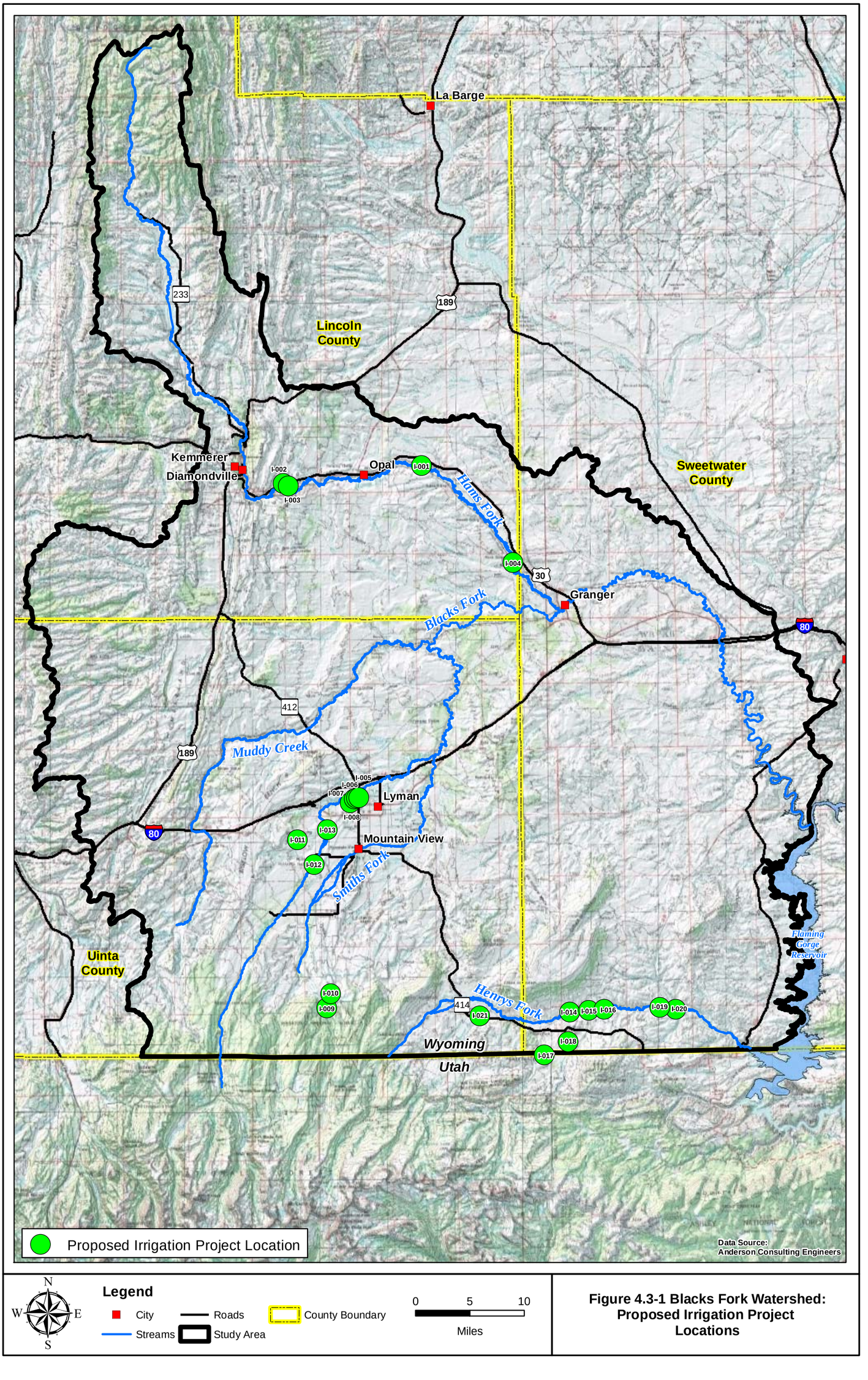


Figure 4.3-1 Blacks Fork Watershed: Proposed Irrigation Project Locations

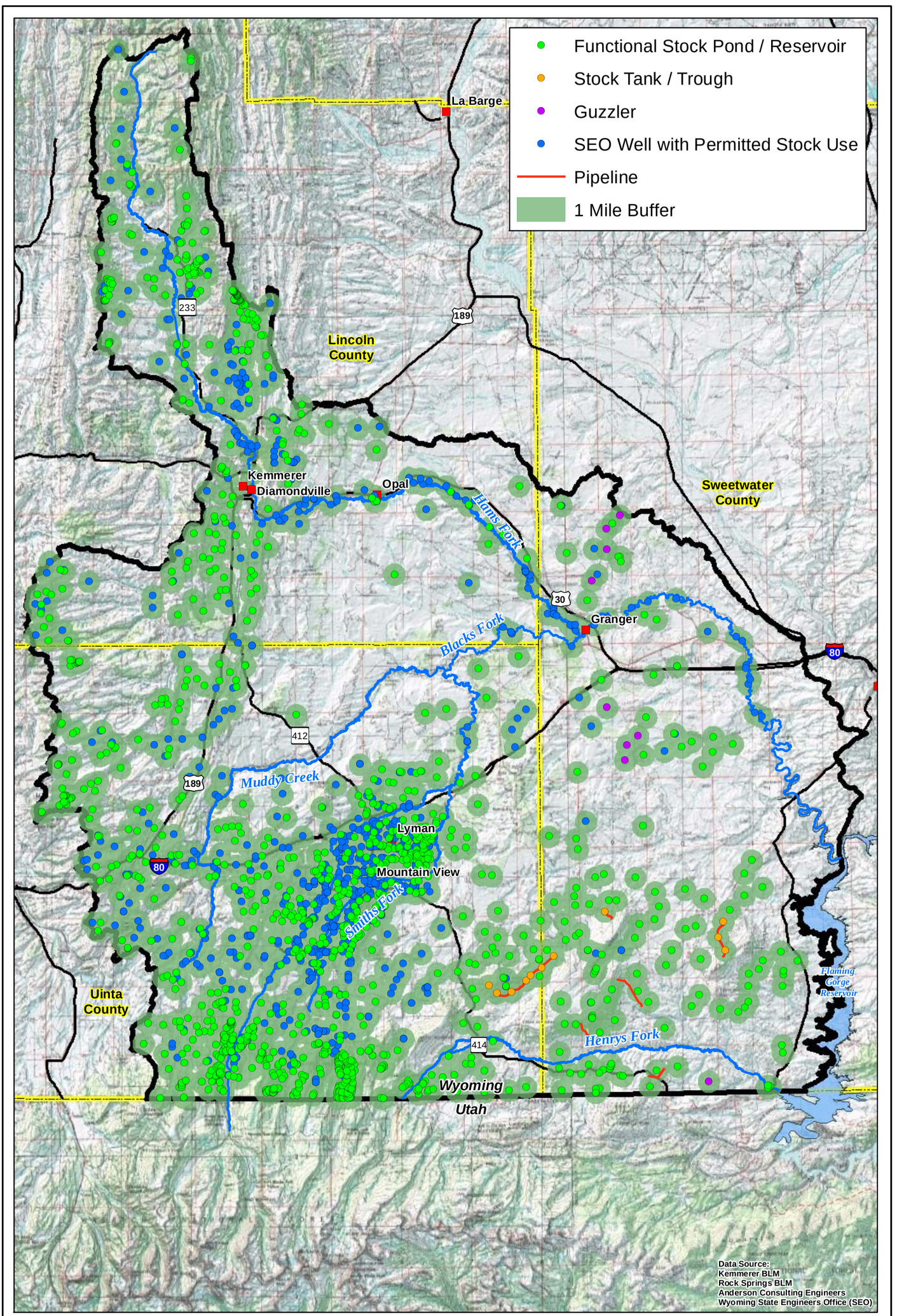


Figure 4.4-1 Blacks Fork Watershed: Existing Water Sources with 1 Mile Buffer

consequently reliant upon uncertain runoff. Long-term or season-long utility is not always certain. Based upon this analysis, much of the study area may benefit by the development of upland water sources. In addition, land owners indicated locations where existing sources could benefit from enhanced or improved infrastructure. It must be noted that any water project involving a change in water use or location of water use must be permitted with the Wyoming State Engineers office prior to construction.

As presented in Chapter 3, there are numerous springs scattered throughout the study area. Many of these could conceivably be developed as upland water sources for wildlife and livestock. Prior to the design of any project, site-specific evaluation of the water source would be required to ensure adequate water yield and to develop environmental safeguards. Final design of any upland water projects would consequently require consideration of the yield of the water source and the number of animals the project is anticipated to serve. Sizing of water facilities cannot be determined at this time due to the uncertainties associated with the grazing management plan proposed by the BLM. For the purposes of this project, watering facilities were assumed to consist of rubber tire stock tanks providing approximately 1,200 gallons of storage. This volume would facilitate the water needs of approximately 80 cattle per day assuming a water requirement of 15 gallons per day. A water source capable of providing 1 gallon per minute would be required to supply these facilities. By incorporating closed storage tanks in a project design, greater use of existing water sources could be realized.

It must be kept in mind that designs presented in this report are conceptual only. The indicated alignments of pipelines and placement of livestock / wildlife watering facilities are general and intended to represent the concept behind the alternatives if implemented, detailed design would be required.

4.4.2 Upland Wildlife/Livestock Water Development Projects

A list of interested land owners and allotment permittees was generated based upon input obtained at project meetings. Individual meetings were scheduled and completed to gain their input on the water needs of their respective geographical areas of interest. Based upon the results of these interviews and the information presented above pertaining to existing water supplies and areas in need of upland water development, several conceptual water development projects were identified. The general objective of this effort was to create a means of providing reliable sources of livestock / wildlife drinking water in water-short portions of the watershed as well as alternative water supplies to riparian corridors.

Federal lands are significant in extent within the project area, particularly within the Checkerboard portion of the region. Consequently, many of the upland water development projects could involve coordination with the BLM in order for construction to occur. Additionally, pipeline projects have the potential to require cooperation among multiple landowners. Written agreements would be required which define the maintenance responsibility and ownership liability associated with each project.

In addition, environmental evaluations would be required for the impacts identified with each project. BLM typically conducts these evaluations; however, the NRCS or other agencies may provide input,

particularly on archaeological or cultural resources issues. Consequently, implementation would be partially contingent upon BLM scheduling and manpower for their completion of the requisite evaluation and documentation. It is our understanding that the permitting process is simplified for those projects which do not involve placement of above ground facilities pipeline alignment only and thus requiring granting of easement for buried pipelines.

In this Basinwide volume of the Blacks Fork River Watershed Study, only the results of the alternative water source development effort are presented. In each of the three individual phase volumes, the following information is presented for each of the livestock/wildlife (L/W) watershed plan components:

1. Narrative description of the project including the individual components, land ownership, location and benefit.
2. Conceptual Drawings showing the overall layout and design of the project
3. Conceptual Cost estimates

Consequently, for detailed information and description of the individual projects, the reader is directed to the appropriate volume of this level I investigation. The projects identified in all three of the individual phases of the investigation and their respective component identifiers in the watershed management plan are summarized in Table 4.4-1. Figure 4.4-2 displays the general location of all livestock/wildlife water opportunity projects.

4.5 Grazing Management Opportunities (Watershed Management Plan Component G)

4.5.1 State and Transition Models

In Chapter 3, the ecological sites found within the watershed were presented and the concept of the ecological site description (ESD) was introduced. The ESD for a given ecological site contains a wealth of information pertaining to the site and its community. Within each ESD is a State and Transition model.

State and transition models describe the patterns, causes, and indicators of transitions between communities within an ecological site based upon the ecological site description (ESD). In a graphical form, they display information obtained from literature supplemented by the knowledge and experience of range scientists and managers. Basically, they display the response of a given ecological site to various range management practices or disturbances. They help to distinguish changes in vegetation and soils that are easily reversible versus changes that are subject to thresholds beyond which reversal is costly or unlikely. By being aware of the predicted response of a given ecological site to a treatment, the land manager can use this knowledge to best prescribe land management practices or treatments to direct the transition in a desirable direction. For instance, land management strategies can be prescribed which could result in restoration of the Historic Climax Plant Community (HCPC) under the right circumstances.

Table 4.4-1 Blacks Fork Watershed Management Plan: Livestock/Wildlife Water Supply Components.

Watershed Plan Component: Livestock / Wildlife Water Supply Projects (L/W)											
Watershed Management Plan Component	Project ID	Project Name	Spring Development	Pipeline	Stock Tank	Storage Tank	Well Construction / Rehabilitation	Solar Pump / Generator	Stock Reservoir Rehabilitation	Stock Reservoir Construction	Guzzler Construction
Phase I											
L/W-001	Circle B 001	Cow Camp Springs	1	100	1						
L/W-002	Circle B 002	Mounded Springs	1	470	1						
L/W-003	Circle B 003	Mayfield Cabin Spring	1	100	1						
L/W-004	Circle B 004	Waterhouse Canyon	1	150	1						
L/W-005	Circle B 005	Cattail Spring	1	200	1						
L/W-006	Haslem 001	Cow Hollow Stock Pond								1	
L/W-007	Haslem 002	Craven Creek Stock Pond								1	
L/W-008	Haslem 003	Nutria Ditch Pipeline Project		5,250	1			1			
L/W-009	Hoffman 001	Beaver Dam Creek Well Project		200	1		1	1			
L/W-010	Hoffman 002	Corral Creek Well Project		200	1		1	1			
L/W-011	Hoffman 003	Fenn Creek Stock Reservoir								1	
L/W-012	Hoffman 004	Robert Fox Stock Reservoir Rehabilitation							1		
L/W-013	Julian 001	State Section Pipeline Project		2,000	1						
L/W-014	Julian 002	MAU #2 Well Modification			1			1			
L/W-015	Julian 003	Oyster Ridge Pipeline Project	1	1,300	1	1					
L/W-016	Lamborn 001	Lamborn Pipeline Project No. 1		3,400	2		1	1			
L/W-017	Walker 001	Walker Pipeline Project No. 1		10,650	2		1	1			
L/W-018	Walker 002	Walker Well Replacement Project No. 1			1		1	1	1		
L/W-043	UDC-001	Joe #1							1		
L/W-044	UDC-002	Joe #2							1		
L/W-052	UDC-010	Highway Pit							1		
		Total	6	24020	16	1	5	7	5	3	0

Table 4.4-1 Blacks Fork Watershed Management Plan: Livestock/Wildlife Water Supply Components (continued).

Watershed Plan Component: Livestock / Wildlife Water Supply Projects (L/W)											
Watershed Management Plan Component	Project ID	Project Name	Spring Development	Pipeline	Stock Tank	Storage Tank	Well Construction / Rehabilitation	Solar Pump / Generator	Stock Reservoir Rehabilitation	Stock Reservoir Construction	Guzzler Construction
Phase II											
L/W-019	CR001	Meadow Draw #6	1	5,890	2	1					
L/W-020	CR002	Section 19 Seep/Spring on Anadarko	1	200	1						
L/W-021	CR003	Bridger Well No. 13 on Anadarko	1	400	1						
L/W-022	CR004	Section 6 Well on BLM		5,280	2	1		1			
L/W-023	CR005	Cumberland No. 9 on Anadarko							1		
L/W-024	CR006	Cumberland No.31 Pond							1		
L/W-025	CR007	Cumberland No. 22 Well on Anadarko	1	400	1						
L/W-026	CR008	Bridger Pond No. 3 on Anadarko									1
L/W-027	CR009	Section 30 Spring on BLM	1	200	1						
L/W-028	CR010	Albert Creek Well #1 on State Lands		11,880	2	1		1			
L/W-029	CR011	Bridger No. 10 Pond on Anadarko/BLM		1,320	1	1	1	1			
L/W-030	CR012	Elkol No. 3 Pond							1		
L/W-031	CR013	Section 1 Well on Anadarko		200	1			1			
L/W-032	CR014	Section 20 Spring/Pipeline on BLM/Anadarko	1	13,200	3						
L/W-033	CR015	Section 31 Spring/Pipeline on Anadarko/BLM	1	5,280	3	1					
L/W-034	CR016	Section 4 Pond on BLM							1		
L/W-035	CR017	Bridger No. 14 Well and Bridger No. 7 Pond on Anadarko	1	200	1						
L/W-036	CR018	Section 19 Well/Pipeline on Anadarko/BLM		10,560	2	1	1	1			
L/W-037	Hamilton 001	West Fork of Smith Fork Pipeline Project		20,000	1						
L/W-038	Hamilton 002	Cold Spring Pipeline Project	1	570	1						
L/W-039	Kofford 001	Wildflower Spring Development Project 1	1	200	1						
L/W-040	Kofford 002	Clifford Spring Development	1	200	1						
L/W-054	UDC-012	South-East Stock Reservoir							1		
L/W-055	UDC-013	Wildcat #3 Stock Reservoir							1		
L/W-056	UDC-014	Wildcat #1 Stock Reservoir							1		
L/W-057	UDC-015	Stock Reservoir							1		
L/W-058	UDC-016	Outer Blacksfork #7		300	1		1				
L/W-059	UDC-017	BP American Champlin Unit Well No. 186-B1		300	1		1				
L/W-060	UDC-018	Section 5 Spring	1	300	1						
L/W-062	UDC-020	Stock Reservoir							1		
L/W-065	UDC-023	Stock Reservoir							1		
L/W-066	UDC-024	Stock Reservoir							1		
L/W-068	UDC-026	Stock Reservoir							1		
L/W-069	UDC-027	Wildcat #4	1	300	1						
L/W-070	UDC-028	Flowing Well		300			1		1		
L/W-071	UDC-029	Bruff Wsw #1		300	1		1				
L/W-072	UDC-030	Stock Reservoir							1		
L/W-073	UDC-031	Stock Reservoir							1		
L/W-074	UDC-032	Mud Springs	1	300	1				1		
L/W-075	UDC-033	Bluemel Stock Reservoir							1		
L/W-099	UDC-057	Stock Reservoir							1		
L/W-110	UDC-068	Spring	1	300	1						
L/W-111	UDC-069	Spring	1	300	1						
L/W-112	UDC-070	Spring	1	300	1						
		Total	17	78980	34	6	6	5	18	0	1

Table 4.4-1 Blacks Fork Watershed Management Plan: Livestock/Wildlife Water Supply Components (continued).

Watershed Plan Component: Livestock / Wildlife Water Supply Projects (L/W)											
Watershed Management Plan Component	**Project ID**	**Project Name**	**Spring Development**	**Pipeline**	**Stock Tank**	**Storage Tank**	**Well Construction / Rehabilitation**	**Solar Pump / Generator**	**Stock Reservoir Rehabilitation**	**Stock Reservoir Construction**	**Guzzler Construction**
Phase III											
L/W-041	Anderson 004	Horse Ranch Pipeline		31,000	3						
L/W-042	Anderson 005	Blakes Knoll Pipeline		23,000	3						
L/W-045	UDC-003	UDCO 72-17							1		
L/W-046	UDC-004	Flowing Well		300	1		1				
L/W-047	UDC-005	Hydro Test Pit							1		
L/W-048	UDC-006	Pipeline Pit							1		
L/W-049	UDC-007	Stock Reservoir							1		
L/W-050	UDC-008	Stock Reservoir							1		
L/W-051	UDC-009	Flowing Well		300	1		1				
L/W-053	UDC-011	Pit and Pipeline			1						
L/W-061	UDC-019	Stock Reservoir							1		
L/W-063	UDC-021	Stock Reservoir							1		
L/W-064	UDC-022	Water Well		300	1		1				
L/W-067	UDC-025	Water Well and Stock Reservoir					1				
L/W-076	UDC-034	Stock Reservoir							1		
L/W-077	UDC-035	Spring in the Bluff	1	300	1						
L/W-078	UDC-036	Spring	1								
L/W-079	UDC-037	Carter Spring	1	300	1						
L/W-080	UDC-038	Meadow Spring	1						1		
L/W-081	UDC-039	Stock Reservoir							1		
L/W-082	UDC-040	Stock Reservoir							1		
L/W-083	UDC-041	Upper Coyote Springs	1	300	1						
L/W-084	UDC-042	Lower Tin Can Spring	1	300	1						
L/W-085	UDC-043	Chicken Springs	1	300	1						
L/W-086	UDC-044	Stock Reservoir							1		
L/W-087	UDC-045	Antelope #20							1		
L/W-088	UDC-046	Antelope #21							1		
L/W-089	UDC-047	Stock Reservoir							1		
L/W-090	UDC-048	Stock Reservoir							1		
L/W-091	UDC-049	Stock Reservoir							1		
L/W-092	UDC-050	Stock Pond and Trough			1				1		
L/W-093	UDC-051	Stock Reservoir							1		
L/W-094	UDC-052	Stock Reservoir							1		
L/W-095	UDC-053	Stock Reservoir							1		
L/W-096	UDC-054	Stock Reservoir							1		
L/W-097	UDC-055	Stock Reservoir							1		
L/W-098	UDC-056	Stock Reservoir							1		
L/W-100	UDC-058	Stock Reservoir							1		
L/W-101	UDC-059	Stock Reservoir							1		
L/W-102	UDC-060	Stock Reservoir							1		
L/W-103	UDC-061	Stock Reservoir							1		
L/W-104	UDC-062	Stock Reservoir							1		
L/W-105	UDC-063	Stock Reservoir							1		
L/W-106	UDC-064	Spring	1	300	1						
L/W-107	UDC-065	Spring	1	300	1						
L/W-108	UDC-066	Well		300	1		1				
L/W-109	UDC-067	Water Well		300	1		1				
L/W-113	UDC-071	Little America Pipeline		122,000	9						
L/W-114	UDC-072	Cow Hollow Pipeline		57,000	3						
Total			**9**	**236600**	**32**	**0**	**6**	**0**	**30**	**0**	**0**
Grand Total			**32**	**339,600**	**82**	**7**	**17**	**12**	**53**	**3**	**1**
Grand Total			**32**	**339,600**	**82**	**7**	**17**	**12**	**53**	**3**	**1**

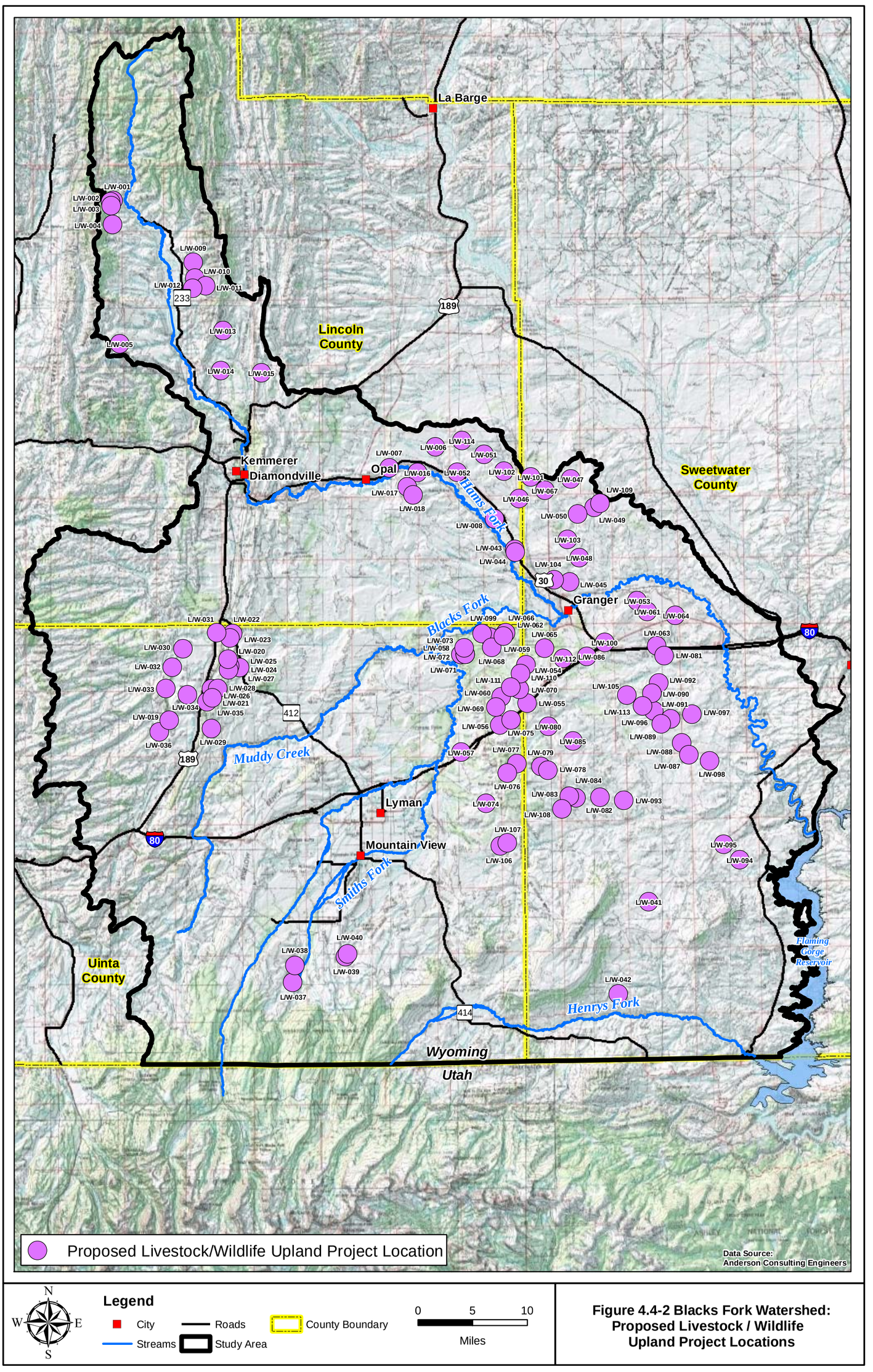


Figure 4.4-2 Blacks Fork Watershed: Proposed Livestock / Wildlife Upland Project Locations

Based upon the assumptions presented in Chapter 3, the three dominant ecological sites found within the mapped portions of the Blacks Fork River Watershed study area are likely to be the following:

- R034AY144WY Saline Upland (SU) 7-9" Green River and Great Divide Basins
- R034AY150WY Sandy (Sy) 7-9" Green River and Great Divide Basins
- R034AY162WY Shallow Loamy (SwLy) 7-9" Green River and Great Divide Basins

It is important to note that other ecological sites will be encountered and that the list above is provided as an initial point for prescription of grazing practices. Prior to prescription of a grazing management plan, local site-specific conditions must be considered and the appropriate ESD determined.

4.5.1.1 ESD: Saline Upland (SU) 7-9" Green River and Great Divide Basins

One of the most prevalent ecological sites within the mapped portions of the study area is the saline upland 7-9 inch precipitation zone, Green River and Great Divide Basins site. Figure 4.5-1 displays the state and transition model for this site.

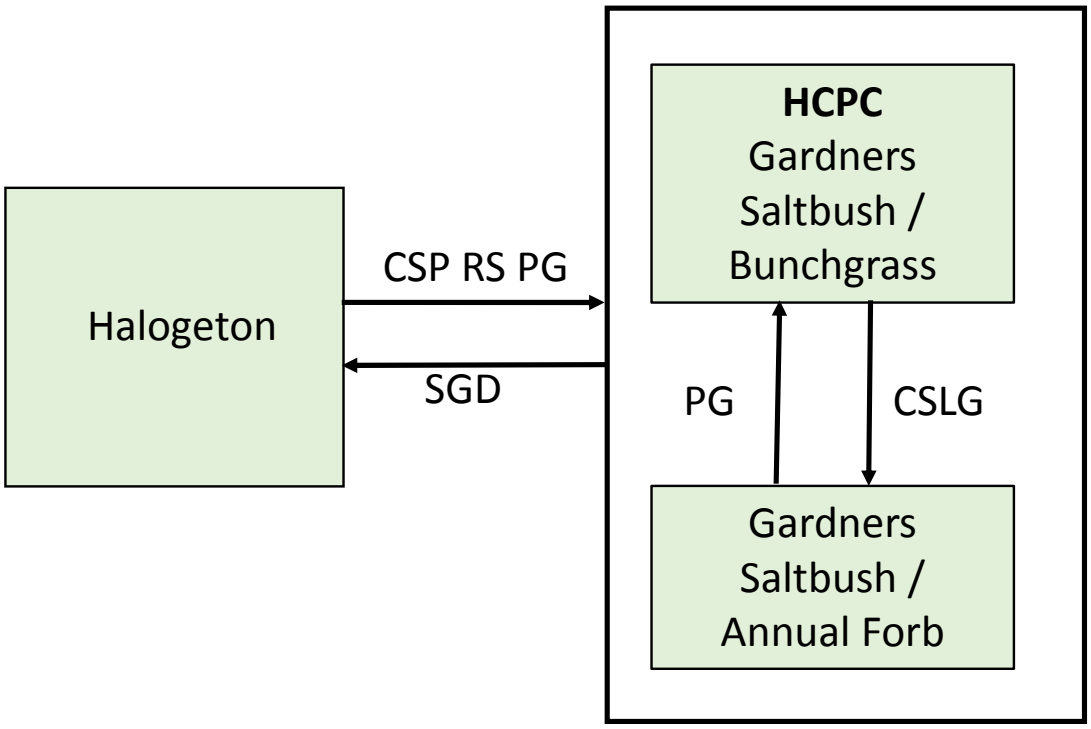
The following descriptions of the Historic Climax Plant Communities (HCPC) associated with these ESDs are extracted from the NRCS descriptions (NRCS, 2008).

The interpretive plant community for this site is the Historic Climax Plant Community. Potential vegetation is about 50% grasses or grass-like plants, 5% forbs, and 45% woody plants. Saline tolerant plants dominate this site. The major grasses include bottlebrush squirreltail and Indian ricegrass. Other grasses may include rhizomatous wheatgrass, needleandthread, Sandberg bluegrass, and Salina wildrye. Gardner's saltbush and bud sagebrush are the dominant woody plants. Other woody plants may include greasewood and winterfat.

A typical plant composition for this state consists of bottlebrush squirreltail 15-30%, Indian ricegrass 15-25%, other grasses and grass-like plants 5-20%, perennial forbs 1-5%, Gardner's saltbush 25-45%, bud sagebrush 5-15%, and 5-10% other woody species. This state provides valuable winter grazing for domestic livestock. Ground cover, by ocular estimate, varies from 20-40%.

The total annual production (air-dry weight) of this state is about 400 pounds per acre, but it can range from about 200 lbs./acre in unfavorable years to about 600 lbs./acre in above average years.

This state is fragile, but well adapted to the Cool Central Desertic Basins and Plateaus climatic conditions. The diversity in plant species allows for some drought resistance. This is a sustainable plant community, but is difficult to reestablish when damaged. (Site/soil stability, watershed function, and biologic integrity).



BMA – Brush Management (All Methods)	NF – No Fire
BMC – Brush Management (Chemical)	NS – Natural Succession
BMF – Brush Management (Fire)	NWC – Noxious Weed Control
BMM – Brush Management (Mechanical)	NWI – Noxious Weed Invasion
CSP – Chemical Seedbed Preparation	NU - Nonuse
DR - Drainage	P&C – Plow & Crop (including hay)
CSG – Continuous Spring Grazing	PG – Prescribed Grazing
HB – Heavy Browse	RPT – Replant Trees
HCSLG – Heavy Continuous Season – Long Grazing	RS – Re-Seed
HI – Heavy Inundation	SGD – Severe Ground Disturbance
LPG – Long Term Prescribed Grazing	SHC – Severe Hoof Compaction
MT – Mechanical Treatment (chiseling, ripping, pitting)	WD – Wildlife Damage (Beaver)
	WF - Wildfire

Figure 4.5-1 State and Transition Model: Saline Upland (SU) 7-9" Green River and Great Divide Basins.

Transitions or pathways leading to other plant communities are as follows:

- *Severe Ground Disturbance will convert this plant community to the Halogeton State.*
- *Continuous Season-long Grazing will convert this plant community to the Gardner's Saltbush/Annual Forb State*

4.5.1.2 Sandy (Sy) 7-9" Green River and Great Divide Basins

Another of the most prevalent ecological sites within the mapped portions of the study area is the Sandy (Sy) 7-9" Green River and Great Divide Basins site. Figure 4.5-2 displays the state and transition model for this site.

The following descriptions of the Historic Climax Plant Communities (HCPC) associated with these ESDs are extracted from the NRCS descriptions (NRCS, 2008).

The interpretive plant community for this site is the Historic Climax Plant Community. This state evolved with grazing by large herbivores and is well suited for grazing by domestic livestock. Potential vegetation is estimated at 70% grasses or grass-like plants, 10% forbs, and 20% woody plants.

The major grasses include needleandthread, Indian ricegrass, thickspike wheatgrass, bluebunch wheatgrass, and bottlebrush squirreltail. Other grasses occurring in the state may include Sandberg bluegrass, prairie junegrass, needleleaf sedge, Canby bluegrass, plains reedgrass, threeawn, and galleta. Wyoming big sagebrush is the dominant woody plant. Other woody species include green and rubber rabbitbrush, spiny hopsage, spineless and spiny horsebrush, bitterbrush, and winterfat.

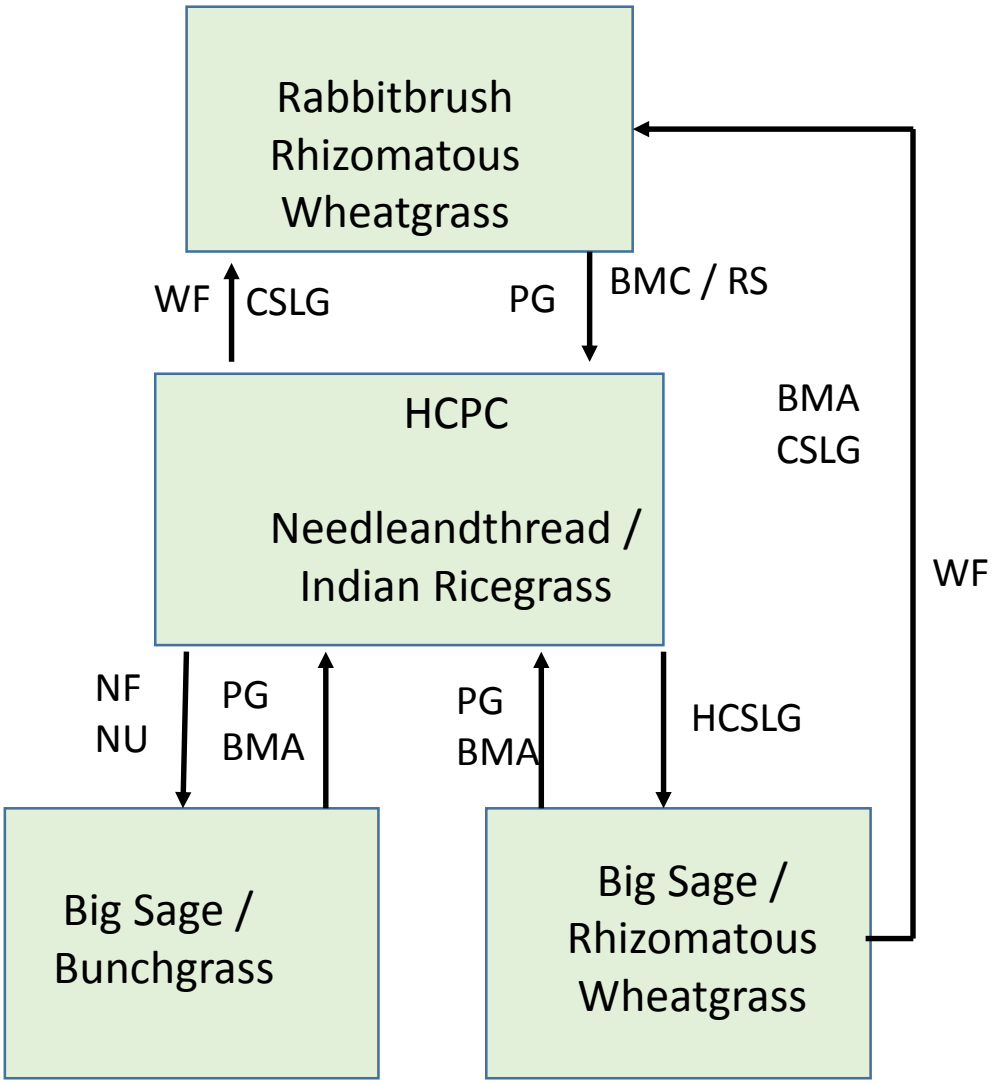
A typical plant composition for this state consists of needleandthread 10-30%, Indian ricegrass 10-30%, thickspike wheatgrass 10-25%, bottlebrush squirreltail 5-15%, bluebunch wheatgrass 5-10%, other grasses and grass-like plants 5-10%, perennial forbs 5-10%, Wyoming big sagebrush 5-10%, and 5-10% other woody species. Ground cover, by ocular estimate, varies from 20-30%.

The total annual production (air-dry weight) of this state is about 550 pounds per acre, but it can range from about 350 lbs./acre in unfavorable years to about 750 lbs./acre in above average years.

The state is stable and well adapted to the Cool Central Desertic Basins and Plateaus climatic conditions. The diversity in plant species allows for high drought resistance. This is a sustainable plant community (site/soil stability, watershed function, and biologic integrity).

Transitions or pathways leading to other plant communities are as follows:

- Nonuse and No Fire will convert this plant community to the Big Sagebrush/Bunchgrass State.
- Heavy Continuous Season-Long Grazing will convert this plant community to the Big Sagebrush/Rhizomatous Wheatgrass State.
- Wildfire followed by Continuous Season-long Grazing will convert this plant community to the Rabbitbrush/Rhizomatous Wheatgrass State.



BMA – Brush Management (All Methods)	NF – No Fire
BMC – Brush Management (Chemical)	NS – Natural Succession
BMF – Brush Management (Fire)	NWC – Noxious Weed Control
BMM – Brush Management (Mechanical)	NWI – Noxious Weed Invasion
CSP – Chemical Seedbed Preparation	NU - Nonuse
DR - Drainage	P&C – Plow & Crop (including hay)
CSG – Continuous Spring Grazing	PG – Prescribed Grazing
HB – Heavy Browse	RPT – Replant Trees
HCSLG – Heavy Continuous Season – Long Grazing	RS – Re-Seed
HI – Heavy Inundation	SGD – Severe Ground Disturbance
LPG – Long Term Prescribed Grazing	SHC – Severe Hoof Compaction
MT – Mechanical Treatment (chiseling, ripping, pitting)	WD – Wildlife Damage (Beaver)
	WF - Wildfire

Figure 4.5-2 State and Transition Model: Sandy (Sy) 7-9" Green River and Great Divide Basins.

4.5.1.3 Shallow Loamy (SwLy) 7-9" Green River and Great Divide Basins

Another of the most prevalent ecological sites within the mapped portions of the study area is the Shallow Loamy (SwLy) 7-9" Green River and Great Divide Basins site. Figure 4.5-3 displays the state and transition model for this site.

The following descriptions of the Historic Climax Plant Communities (HCPC) associated with these ESDs are extracted from the NRCS descriptions (NRCS, 2008).

The interpretive plant community for this site is the Historic Climax Plant Community. Potential vegetation is about 70% grasses or grass-like plants, 10% forbs, and 20% woody plants. The major grasses include bluebunch wheatgrass, needleandthread, Indian ricegrass, and thickspike wheatgrass. Other grasses include Letterman needlegrass, Sandberg bluegrass, prairie junegrass, bottlebrush squirreltail, Salina wildrye, and needleleaf sedge. Winterfat is the major woody plant. Other woody plants include black, low, and big sagebrush, and green rabbitbrush.

A typical plant composition for this state consists of bluebunch wheatgrass 20-40%, needleandthread 10-20%, Indian ricegrass 10-20%, thickspike wheatgrass 10-20%, other grasses and grass-like plants 5-15%, perennial forbs 5-15%, winterfat 1-10%, and 5-15% other woody species. Ground cover, by ocular estimate, varies from 10-30%.

The total annual production (air-dry weight) of this state is about 350 pounds per acre, but it can range from about 200 lbs./acre in unfavorable years to about 450 lbs./acre in above average years.

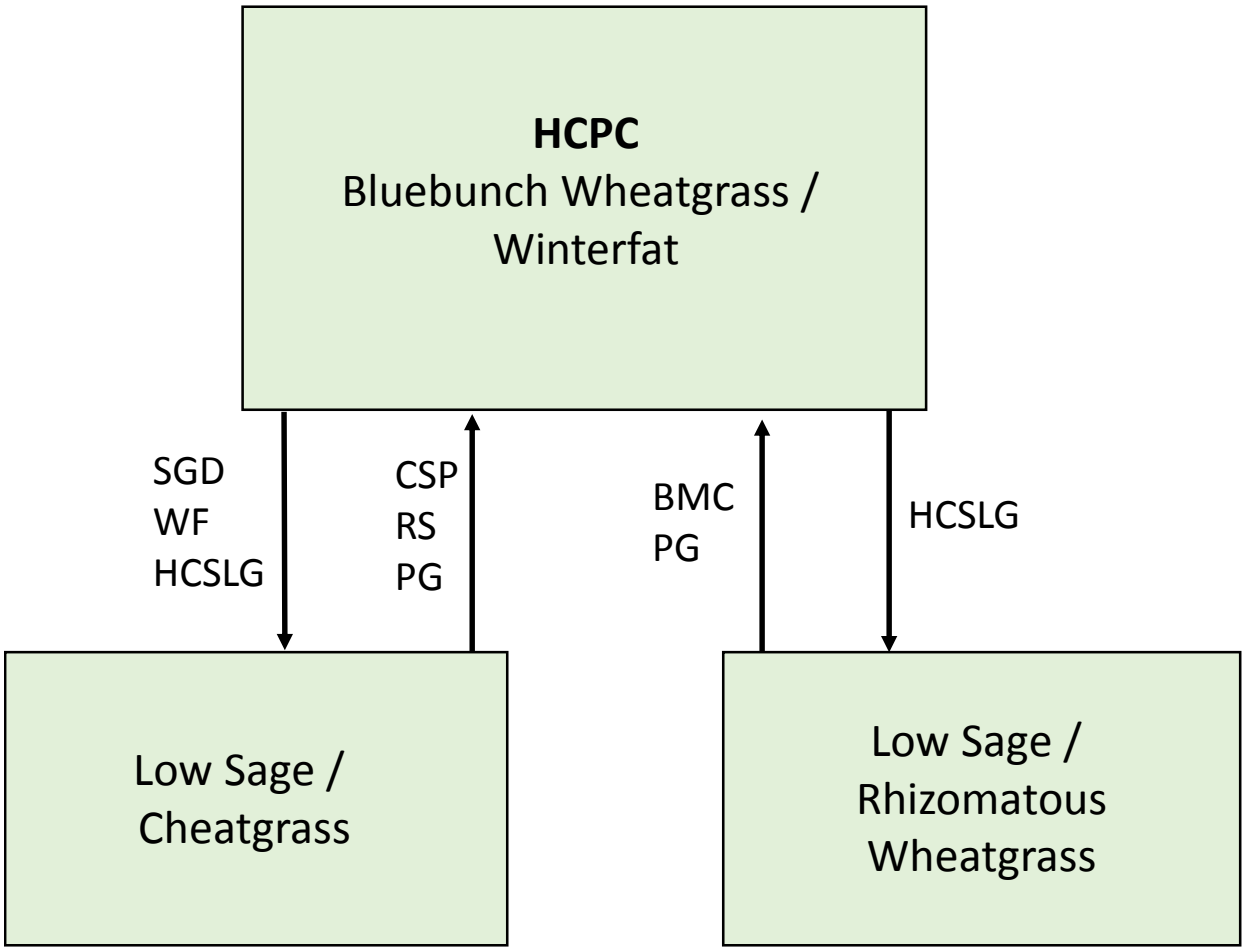
The state is extremely stable and well adapted to the Cool Central Desertic Basins and Plateaus climatic conditions. The diversity in plant species allows for high drought resistance. This is a sustainable plant community (site/soil stability, watershed function, and biologic integrity).

Transitions or pathways leading to other plant communities are as follows:

- *Wildfire or Severe Ground Disturbance followed by Heavy Continuous Season-long Grazing will convert this plant community to the Low Sagebrush/Cheatgrass State.*
- *Heavy Continuous Season-long Grazing will convert this plant community to the Low Sagebrush/Rhizomatous Wheatgrass State*

4.5.2 Range and Grazing Management Components of the Watershed Plan

Based on the information presented above, the following items are presented for inclusion in the watershed management plan:



BMA – Brush Management (All Methods)	NF – No Fire
BMC – Brush Management (Chemical)	NS – Natural Succession
BMF – Brush Management (Fire)	NWC – Noxious Weed Control
BMM – Brush Management (Mechanical)	NWI – Noxious Weed Invasion
CSP – Chemical Seedbed Preparation	NU - Nonuse
DR - Drainage	P&C – Plow & Crop (including hay)
CSG – Continuous Spring Grazing	PG – Prescribed Grazing
HB – Heavy Browse	RPT – Replant Trees
HCSLG – Heavy Continuous Season – Long Grazing	RS – Re-Seed
HI – Heavy Inundation	SGD – Severe Ground Disturbance
LPG – Long Term Prescribed Grazing	SHC – Severe Hoof Compaction
MT – Mechanical Treatment (chiseling, ripping, pitting)	WD – Wildlife Damage (Beaver)
	WF - Wildfire

Figure 4.5-3 State and Transition Model: Shallow Loamy (SwLy) 7-9" Green River and Great Divide Basins.

Watershed Plan Component G-1: Water developments can be used to expand grazing distribution to areas that do not currently have reliable water. Riparian area plant community condition can be enhanced by development of water into upland areas.

Watershed Plan Component G-2: Fencing can be used to enhance grazing management options and to facilitate the planned grazing system.

Watershed Plan Component G-3: Strategic salting and herding are other tools that can be used to enhance grazing distribution.

Watershed Plan Component G-4: Most range improvement practices which improve watershed condition, may also improve wildlife habitat. Wildlife needs should be considered when installing practices such as wildlife friendly fences, wildlife escape ramps from tanks, and wildlife watering facilities.

Watershed Plan Component G-5: Strategies recommended in the state and transition models associated with NRCS descriptions of the ecological sites found within the watershed should be adopted and employed to optimize range conditions through prescribed grazing management and best management practices.

Watershed Plan Component G-6: Prescribed fire may be utilized as a tool to assist in the restoration of range health areas benefitting by this treatment according to the state and transition models. Delineation of specific areas potentially benefitting from this practice was beyond the scope of this Level I project. However, based upon input from landowners and land managers and observations made during the completion of this investigation, it is evident that there are areas which would likely benefit from prescribed fires.

Watershed Plan Component G-7: Application of chemicals may be utilized as a tool to assist in the restoration of range health areas benefitting by this treatment according to the state and transition models. Delineation of specific areas potentially benefitting from this practice was beyond the scope of this Level I project.

These tools can be used to maintain and/or improve watershed function particularly when coupled with implementation of appropriate grazing management strategies.

4.6 Water Storage Opportunities

Table 4.6-1 tabulates the potential storage projects identified in the watershed inventory phase of the project. Figure 4.6-1 shows their locations. Reservoir project opportunities identified for consideration in the watershed management plan include rehabilitation of existing reservoirs (ex. Cottonwood Reservoir, Austin Reservoir, etc), enlargement of existing reservoirs (ex. Meeks Cabin, etc) and construction of new reservoirs (ex. Dempsey Gulch).

Table 4.6-1 Potential Water Storage Opportunities.

Watershed Plan Component	Priority	Study Area Phase	Project name	Action	Source	Storage	
						Existing	New Construcion / Enlarged
Large Reservoirs							
S-001	1	I	Viva Naughton Reservoir	Enlargement	Hams Fork	69,645	+5,000
S-002	1	II	Meeks Cabin	Enlargement	East Fork Smiths Fork	32,470	+3,750 - 4,000
S-003	2	II	Stateline	Enlargement	East Fork Smiths Fork	14,000	+2,000
S-004	2	I	Lower/Upper Dempsey Gulch	New Construction	Dempsey Gulch	N/A	+24,180
S-005	2	III	Beaver Meadows	Enlargement	Lost Creek	676	+750 - 1,000
S-006	3	II	Austin Reservoir	Rehabilitation	Austin Canal /	2,295	N/A
Small Reservoirs							
S-007		II	Moslander Reservoir	Rehabilitation	Cold Spring Creek	310	+75 - 100
S-008		II	Cottonwood Reservoir	Rehabilitation	Cottonwood Creek	92	+350
S-009		I	Davis Reservoir	Rehabilitation	Lake Creek	98.9	N/A
S-010		II	Horse Creek Reservoir	New Construction	Horse Creek	N/A	200
S-011		II	West Fork Smiths Fork	New Construction	West Fork Smiths Fork	N/A	200
S-012		III	Wadsworth Fishing Reservoir	Rehabilitation	Beaver Creek	16.3	N/A

Descriptions of the projects are provided in the respective Phase report volumes.

4.7 Stream Channel Condition and Stability

The general condition of the principal stream channels and primary tributaries were evaluated during the geomorphic investigation which included:

- classification of approximately 587 miles of stream channel within the GIS environment,
- review of BLM Proper Functioning Condition assessments,
- field reconnaissance,

These efforts and their results are presented in Chapter 3. During the evaluation of existing channel conditions, several impaired reaches were identified and three general classes of impairments noted. The general categories of impairments were classified as indicated below:

- channel degradation/incision,
- bank erosion associated with channel migration and/or widening, and
- loss or reduction of riparian vegetation.

4.7.1 Stream Channel Rehabilitation

With respect to overall stream stabilization efforts, various approaches can be taken during channel restoration and stabilization efforts, including both "hard" engineering and "soft" approaches and combinations of the two. Examples of "hard" approaches would include construction of channel structures or reconstruction of channels themselves. The selection of the appropriate mitigation/restoration technique depends upon site-specific information and critical review of hydrologic and hydraulic data. Installation of an inappropriate type of structure or improper installation could exacerbate conditions.

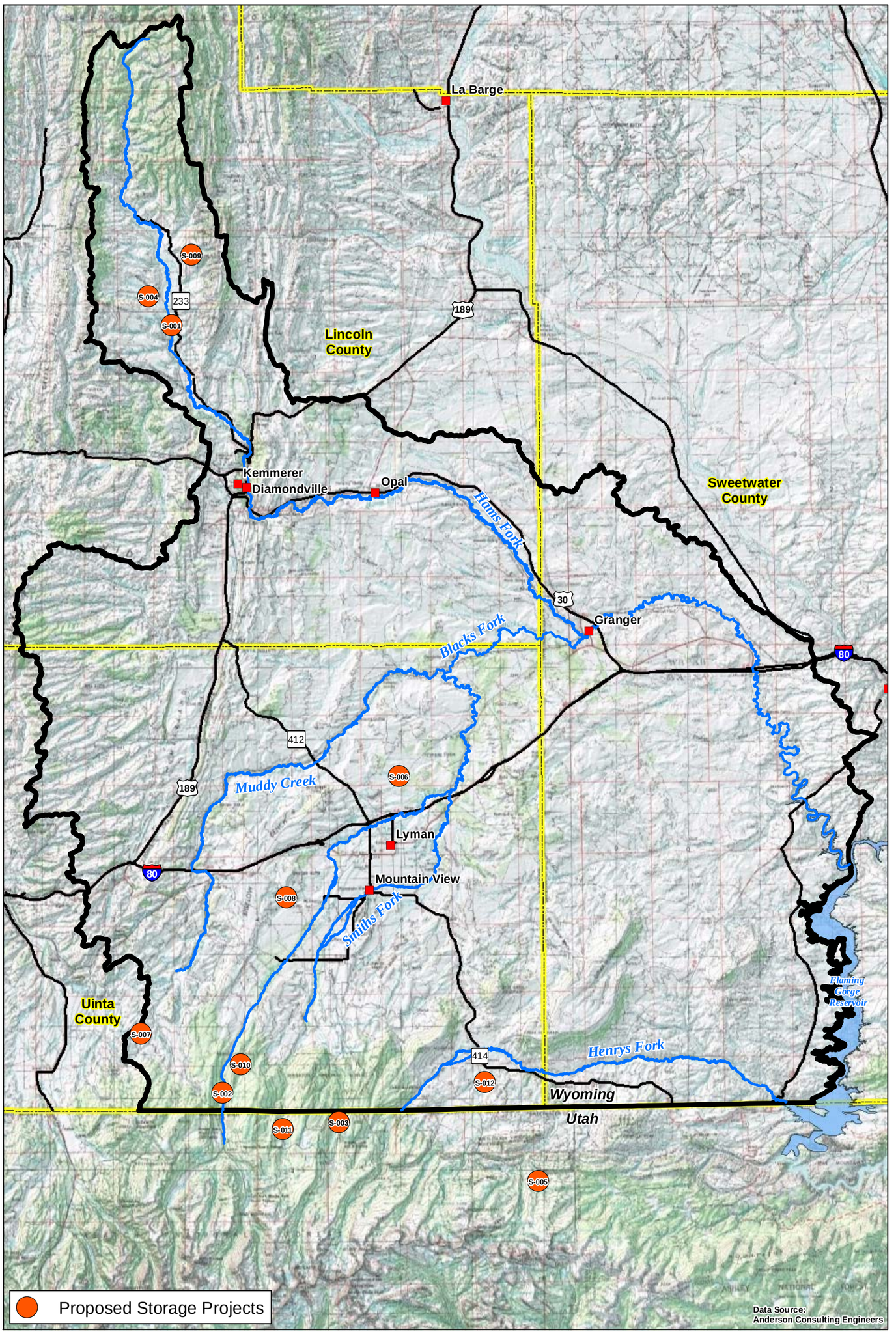


Figure 4.6-1 Blacks Fork Watershed: Proposed Storage Project Locations

For instance, methods of restoring incised channels may include construction of gradient restoration facilities (i.e., drop structures, check structures) within the incised channel. Figure 4.7-1 displays a diagram of a typical stream channel stabilization strategy for a small channel experiencing minor downcutting or bank erosion. A vortex weir can be placed within a problematic reach to serve as a grade control structure as well as directing and centralizing streamflow. Weir configuration can be varied to provide additional functions such as facilitating irrigation diversions. Figure 4.7-2 displays a photograph of a typical installation.

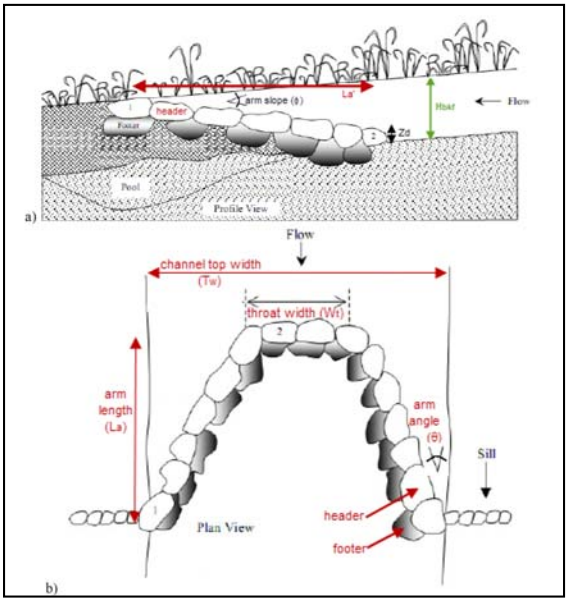


Figure 4.7-1 Rock Vortex Weir Structure Diagram (Adapted from Rosgen, 2006).

Re-establishment of pre-incision channel elevations can be accomplished by means of check dams. Figure 4.7-3 displays a photo of a large-scale check dam on Muddy Creek in the Little Snake River watershed near Baggs, Wyoming. This structure serves as a good example of how gradient restoration strategies can be utilized to restore diversion capabilities at irrigation headgates rendered inoperable by changes in channel configuration.

Figure 4.7-2 Stream Stabilization Structure: Rock Vortex Weir.

Figure 4.7-3 Channel Gradient Restoration Feature on Muddy Creek near Baggs, WY. Photo on left is viewed downstream from the dam at incised channel. Photo on the right is viewed upstream at restored gradient.

Examples of "soft" approaches include a variety of Best Management Practices (BMPs). Examples of potentially applicable BMPs designed for channel restoration activities include those that result in reducing or, at least temporarily excluding wildlife and livestock from accessing designated riparian zones, establishment of riparian buffers, etc. The proposed wildlife/livestock water developments discussed previously (and others that may be identified in the future) can be considered elements of a range management BMP that will help restore over time those areas of channel impairment that have resulted from overutilization of riparian areas or adjacent upland range. Figure 4.7-4 displays a photo of willow fascine installation. This strategy could be employed on many of the perennial channels or intermittent where sufficient flow exists to support the vegetation, in an effort to restore riparian habitat and stabilize streambanks.

Figure 4.7-4 Stream Stabilization Measure: Willow Fascine Installation.

These examples of "hard" and "soft" approaches represent both extremes of the continuum of channel restoration strategies that exist. In practice, it must be kept in mind that it is generally a combination of strategies, integrated into a cohesive plan that provides the most effective solution. Table 4.7-1 presents a summary of some of these channel restoration strategies which can be employed during future restoration efforts. Development of more specific projects and BMPs was beyond the scope of this Level I study. Such projects can be identified and developed on the basis of more detailed geomorphic analysis of impaired stream reaches.

Table 4.7-1 Summary of Potential Stream Channel Stabilization/Restoration Techniques.

Flow-Redirection Techniques	**Biotechnical Techniques**
Vanes	Woody Plantings
Groins	Herbaceous Cover
Buried Groins	Soil Reinforcement
Barbs	Coir Logs
Engineered Log Jams	Bank Reshaping
Drop Structures	**Internal Bank-Drainage Techniques**
Porous Weirs	Subsurface Drainage Systems
Structural Techniques	**Avulsion-Prevention Techniques**
Anchor Points	Floodplain Roughness
Roughness Trees	Floodplain Grade Control
Riprap	Floodplain Flow Spreaders
Log Toes	**Other Techniques**
Roughened-Rock Toes	Channel Modifications
Log Cribwalls	Riparian-Buffer Management
Manufactured Retention Systems	Spawning-Habitat Restoration
	Fish Ladders/bypass structures
	Fish Screens/entrainment prevention

As would be recommended with any similar project, monitoring of the success of the project(s) is highly recommended. At a minimum, monitoring should include visual inspection of rehabilitation features to determine the effectiveness and ability of the rehabilitation to withstand high flow events. Evidence of existing or induced erosion, movement of rehabilitation features (rock, root wads, etc), sedimentation, vegetation establishment, etc. should be noted. In addition, long term monitoring of rehabilitation sites should include:

- Photographic documentation
- Cross sections
- Longitudinal profiles
- Bank surveys
- Bank erosion pins
- Scour chains
- Pebble counts

Several stream reaches were identified which would benefit from site-specific stream restoration strategies. These stream segments were either classified as F-type channels in the stream channel characterization phase of the project (see Chapter 3) or were brought to the attention of the project team during completion of field investigations or project meetings. This list is not intended to be all-inclusive. It is understood that there will be stream segments throughout the watershed that could benefit from stream restoration activities.

- Albert Creek
- Big Dry Creek
- Sage Creek
- Lower Blacks Fork
- Lower Smiths Fork
- Muddy Creek
- Little Muddy Creek
- Lower Hams Fork
- Dry Muddy Creek

Based on the information presented above, the following items are presented for inclusion in the Blacks Fork Watershed Management Plan:

Watershed Plan Component C-01: Installation of stream channel degradation/incision mitigation measures based upon site-specific evaluation of conditions. Appropriate mitigation measures could be 'hard' engineering, 'soft' approaches, or combinations of both.

Watershed Plan Component C-02: Installation of stream bank erosion mitigation measures based upon site-specific evaluation of conditions. Appropriate mitigation measures could be 'hard' engineering, 'soft' approaches, or combinations of both.

Watershed Plan Component C-03 Initiation of routine monitoring of completed stream restoration projects to determine their effectiveness and viability. Repairs should be made as necessary as soon as is practical.

4.8 Other Upland Management Opportunities (Watershed Management Plan Component O)

4.8.1 Noxious Weed and Undesirable Plant Control

The Uinta, Lincoln and Sweetwater County Weed and Pest Districts implement aggressive, well planned, and cost-effective treatment and control measures for noxious and other weeds as available staffing and funding allow. The Districts have been successful in enlisting broadly based participation in various control programs, work days and workshops. The most effective overall strategy going forward would appear to be to assist the Districts in applying for additional grant funding, participate with in-kind efforts on work days and attend/support workshops and planning sessions.

4.9 The Blacks Fork River Watershed Management Plan

The information presented in this chapter provides recommendations for improvements associated with:

- Irrigation system rehabilitation components
- Livestock / wildlife upland watering opportunities
- Grazing management opportunities
- BLM recommendations
- Storage opportunities
- Stream channel stability components
- Other watershed management plan alternatives

These improvements focus on potential mitigation of several key issues that presently exist within the watershed. For the Blacks Fork River watershed, the watershed management plan consists of a compilation of the recommendations for each category. The plan is summarized in Table 4.9-1.

4.10 Potential Effects and Benefits of Watershed Management Plan Components

In the following sections, the potential effects and benefits associated with key BMPs and conservation practices are discussed in relation to the various plan components: Livestock/Wildlife water supply (Components LW), irrigation system rehabilitation (Components I), and storage (Components S). The intent of this discussion is to provide the decision makers with the background necessary to make informed decisions regarding future planning efforts.

The NRCS prepares NEDs of conservation practices or BMPs which act together to achieve desired purposes. The NEDs "are flow charts of direct, indirect and cumulative effects resulting from installation of the practices. Completed network diagrams are an overview of expert consensus on the direct, indirect and cumulative effects of installing proposed practice installation. They show the potential positive and negative outcomes of practice installation, and are useful as a reference point for next steps, and as a communication tool with partners and the public" [Natural Resources Conservation Service, 2014].

Benefits associated with a particular conservation practice or BMP can be classified as direct, indirect or cumulative. Direct and indirect benefits would be considered measureable or tangible benefits. For example, construction of a reservoir designed to augment late season irrigation water supplies provides the direct or measurable benefit, of providing a supply of water commensurate with its storage capacity. An indirect benefit could be the habitat provided to wildlife. Likewise, the same reservoir could provide the cumulative benefit of increased income to producers and improved health of the local economy.

As previously discussed, such benefits can be either quantitative or qualitative or both. Benefits can be local or global and specific or surrogate, depending on multiple factors unique and specific to the BMP, ecological site, watershed, or major land resource area. Project benefits can be related to ecological enhancement, water quantity, economic stability, stream corridor or riverine stability, or maintenance of open spaces. Where appropriate, the NRCS NED for the conservation practice is presented within this document.

Table 4.9-1 Blacks Fork Watershed Management Plan.

Watershed Plan Component: Irrigation Rehabilitation Projects (I)										
Watershed Management Plan Component	Project ID	Project Name	Diversion	Headgate	Measurement Device	Siphon	Splitter Box	Ditch Earthwork	Geotextile Liner	Pipeline
Phase I										
I-001	Sears 001	Christman #1 Ditch Rehabilitation	1			1		3,000		
I-002	Schulthess 001	Davison Ditch Diversion Structure	1							
I-003	Schulthess 002	Davison Ditch Lined Segment							1,150	
I-004	Weston 001	Philbrick and Johnson Ditch Rehabilitation	1		1		1	6,100		
Phase II										
I-005	Eyre 001	Twin Buttes Canal Measurement Devices			3					
I-006	Eyre 002	Twin Buttes Canal Measurement Devices			1					
I-007	Eyre 003	Twin Buttes Canal Measurement Devices			1					
I-008	Eyre 004	Twin Buttes Canal Measurement Devices			1					
I-009	Kofford 003	Graham Reservoir Enhancement Project	1		1			1		
I-010	Kofford 004	Graham Reservoir Diversion Supply Ditch	1		1					
I-011	Mecham 001	Bridger Butte Canal Farm Turnout Rehabilitation		1						
I-012	Mecham 002	Bridger Butte Canal Diversion Structure Rehabilitation	1	1						
I-013	Micheli 001	Twin Buttes Canal Diversion Rehabilitation	1	1						
Phase III										
I-014	Anderson 001	Pearson Ditch Diversion	1							
I-015	Anderson 002	Hamilton Ditch Diversion	1							
I-016	Anderson 003	Heiser Ditch Diversion	1							
I-017	Anderson 006	Muskrat and Gillis Ditch Rehabilitation								8,000
I-018	Potter 001	Beach Desert Ditch Improvements		1	1					6,800
I-019	Schell 001	Wade Ditch Diversion Structure	1							
I-020	Schell 002	Leavitt & Easton Ditch Diversion Structure	1							
I-021	Taylor 001	Nelson Ditch Headgate and Diversion Structure	1	1						
Total			13	5	10	1	1	9,101	1,150	14,800

Watershed Plan Component: Livestock / Wildlife Water Supply Projects (L/W)										
Watershed Management Plan Component	Project ID	Project Name	Spring Development	Pipeline	Stock Tank	Storage Tank	Well Construction / Rehabilitation	Solar Pump / Generator	Stock Reservoir Rehabilitation	Stock Reservoir Construction	Guzzler Construction
Phase I											
L/W-001	Circle B 001	Cow Camp Springs	1	100	1						
L/W-002	Circle B 002	Mounded Springs	1	470	1						
L/W-003	Circle B 003	Mayfield Cabin Spring	1	100	1						
L/W-004	Circle B 004	Waterhouse Canyon	1	150	1						
L/W-005	Circle B 005	Cattail Spring	1	200	1						
L/W-006	Haslem 001	Cow Hollow Stock Pond								1	
L/W-007	Haslem 002	Craven Creek Stock Pond								1	
L/W-008	Haslem 003	Nutria Ditch Pipeline Project		5,250	1			1			
L/W-009	Hoffman 001	Beaver Dam Creek Well Project		200	1		1	1			
L/W-010	Hoffman 002	Corral Creek Well Project		200	1		1	1			
L/W-011	Hoffman 003	Fenn Creek Stock Reservoir								1	
L/W-012	Hoffman 004	Robert Fox Stock Reservoir Rehabilitation							1		
L/W-013	Julian 001	State Section Pipeline Project		2,000	1						
L/W-014	Julian 002	MAU #2 Well Modification			1			1			
L/W-015	Julian 003	Oyster Ridge Pipeline Project	1	1,300	1	1					
L/W-016	Lamborn 001	Lamborn Pipeline Project No. 1		3,400	2		1	1			
L/W-017	Walker 001	Walker Pipeline Project No. 1		10,650	2		1	1			
L/W-018	Walker 002	Walker Well Replacement Project No. 1			1		1	1	1		
L/W-043	UDC-001	Joe #1							1		
L/W-044	UDC-002	Joe #2							1		
L/W-052	UDC-010	Highway Pit							1		
		Total	6	24020	16	1	5	7	5	3	0

Table 4.9-1 Blacks Fork Watershed Management Plan (continued).

Watershed Plan Component: Livestock / Wildlife Water Supply Projects (L/W)											
Watershed Management Plan Component	Project ID	Project Name	Spring Development	Pipeline	Stock Tank	Storage Tank	Well Construction / Rehabilitation	Solar Pump / Generator	Stock Reservoir Rehabilitation	Stock Reservoir Construction	Guzzler Construction
Phase II											
L/W-019	CR001	Meadow Draw #6	1	5,890	2	1					
L/W-020	CR002	Section 19 Seep/Spring on Anadarko	1	200	1						
L/W-021	CR003	Bridger Well No. 13 on Anadarko	1	400	1						
L/W-022	CR004	Section 6 Well on BLM		5,280	2	1		1			
L/W-023	CR005	Cumberland No. 9 on Anadarko							1		
L/W-024	CR006	Cumberland No.31 Pond							1		
L/W-025	CR007	Cumberland No. 22 Well on Anadarko	1	400	1						
L/W-026	CR008	Bridger Pond No. 3 on Anadarko									1
L/W-027	CR009	Section 30 Spring on BLM	1	200	1						
L/W-028	CR010	Albert Creek Well #1 on State Lands		11,880	2	1		1			
L/W-029	CR011	Bridger No. 10 Pond on Anadarko/BLM		1,320	1	1	1	1			
L/W-030	CR012	Elkol No. 3 Pond							1		
L/W-031	CR013	Section 1 Well on Anadarko		200	1			1			
L/W-032	CR014	Section 20 Spring/Pipeline on BLM/Anadarko	1	13,200	3						
L/W-033	CR015	Section 31 Spring/Pipeline on Anadarko/BLM	1	5,280	3	1					
L/W-034	CR016	Section 4 Pond on BLM							1		
L/W-035	CR017	Bridger No. 14 Well and Bridger No. 7 Pond on Anadarko	1	200	1						
L/W-036	CR018	Section 19 Well/Pipeline on Anadarko/BLM		10,560	2	1	1	1			
L/W-037	Hamilton 001	West Fork of Smith Fork Pipeline Project		20,000	1						
L/W-038	Hamilton 002	Cold Spring Pipeline Project	1	570	1						
L/W-039	Kofford 001	Wildflower Spring Development Project 1	1	200	1						
L/W-040	Kofford 002	Clifford Spring Development	1	200	1						
L/W-054	UDC-012	South-East Stock Reservoir							1		
L/W-055	UDC-013	Wildcat #3 Stock Reservoir							1		
L/W-056	UDC-014	Wildcat #1 Stock Reservoir							1		
L/W-057	UDC-015	Stock Reservoir							1		
L/W-058	UDC-016	Outer Blacksfork #7		300	1		1				
L/W-059	UDC-017	BP American Champlin Unit Well No. 186-B1		300	1		1				
L/W-060	UDC-018	Section 5 Spring	1	300	1						
L/W-062	UDC-020	Stock Reservoir							1		
L/W-065	UDC-023	Stock Reservoir							1		
L/W-066	UDC-024	Stock Reservoir							1		
L/W-068	UDC-026	Stock Reservoir							1		
L/W-069	UDC-027	Wildcat #4	1	300	1						
L/W-070	UDC-028	Flowing Well		300			1		1		
L/W-071	UDC-029	Bruff Wsw #1		300	1		1				
L/W-072	UDC-030	Stock Reservoir							1		
L/W-073	UDC-031	Stock Reservoir							1		
L/W-074	UDC-032	Mud Springs	1	300	1				1		
L/W-075	UDC-033	Bluemel Stock Reservoir							1		
L/W-099	UDC-057	Stock Reservoir							1		
L/W-110	UDC-068	Spring	1	300	1						
L/W-111	UDC-069	Spring	1	300	1						
L/W-112	UDC-070	Spring	1	300	1						
		Total	17	78980	34	6	6	5	18	0	1
Phase III											
L/W-041	Anderson 004	Horse Ranch Pipeline		31,000	3						
L/W-042	Anderson 005	Blakes Knoll Pipeline		23,000	3						
L/W-045	UDC-003	UDCO 72-17							1		
L/W-046	UDC-004	Flowing Well		300	1		1				
L/W-047	UDC-005	Hydro Test Pit							1		
L/W-048	UDC-006	Pipeline Pit							1		
L/W-049	UDC-007	Stock Reservoir							1		
L/W-050	UDC-008	Stock Reservoir							1		
L/W-051	UDC-009	Flowing Well		300	1		1				
L/W-053	UDC-011	Pit and Pipeline			1						
L/W-061	UDC-019	Stock Reservoir							1		
L/W-063	UDC-021	Stock Reservoir							1		
L/W-064	UDC-022	Water Well		300	1		1				
L/W-067	UDC-025	Water Well and Stock Reservoir					1				
L/W-076	UDC-034	Stock Reservoir							1		
L/W-077	UDC-035	Spring in the Bluff	1	300	1						
L/W-078	UDC-036	Spring	1								
L/W-079	UDC-037	Carter Spring	1	300	1						
L/W-080	UDC-038	Meadow Spring	1						1		
L/W-081	UDC-039	Stock Reservoir							1		
L/W-082	UDC-040	Stock Reservoir							1		
L/W-083	UDC-041	Upper Coyote Springs	1	300	1						
L/W-084	UDC-042	Lower Tin Can Spring	1	300	1						
L/W-085	UDC-043	Chicken Springs	1	300	1						
L/W-086	UDC-044	Stock Reservoir							1		
L/W-087	UDC-045	Antelope #20							1		
L/W-088	UDC-046	Antelope #21							1		
L/W-089	UDC-047	Stock Reservoir							1		
L/W-090	UDC-048	Stock Reservoir							1		
L/W-091	UDC-049	Stock Reservoir							1		
L/W-092	UDC-050	Stock Pond and Trough			1				1		
L/W-093	UDC-051	Stock Reservoir							1		
L/W-094	UDC-052	Stock Reservoir							1		
L/W-095	UDC-053	Stock Reservoir							1		
L/W-096	UDC-054	Stock Reservoir							1		
L/W-097	UDC-055	Stock Reservoir							1		
L/W-098	UDC-056	Stock Reservoir							1		
L/W-100	UDC-058	Stock Reservoir							1		
L/W-101	UDC-059	Stock Reservoir							1		
L/W-102	UDC-060	Stock Reservoir							1		
L/W-103	UDC-061	Stock Reservoir							1		
L/W-104	UDC-062	Stock Reservoir							1		
L/W-105	UDC-063	Stock Reservoir							1		
L/W-106	UDC-064	Spring	1	300	1						
L/W-107	UDC-065	Spring	1	300	1						
L/W-108	UDC-066	Well		300	1		1				
L/W-109	UDC-067	Water Well		300	1		1				
L/W-113	UDC-071	Little America Pipeline		122,000	9						
L/W-114	UDC-072	Cow Hollow Pipeline		57,000	3						
Total			**9**	**236600**	**32**	**0**	**6**	**0**	**30**	**0**	**0**
Grand Total			**32**	**339,600**	**82**	**7**	**17**	**12**	**53**	**3**	**1**

Table 4.9-1 Blacks Fork Watershed Management Plan (continued).

Watershed Plan Component: Storage Opportunities (S)						
Watershed Plan Component	Study Area Phase	Project name	Action	Source	Storage	
					Existing	New Construcion / Enlarged
Large Reservoirs						
S-001	I	Viva Naughton Reservoir	Enlargement	Hams Fork	69,645	+5,000
S-002	II	Meeks Cabin	Enlargement	East Fork Smiths Fork	32,470	+3,750 - 4,000
S-003	II	Stateline	Enlargement	East Fork Smiths Fork	14,000	+2,000
S-004	I	Dempsey Gulch	New Construction	Dempsey Gulch	N/A	+24,180
S-005	III	Beaver Meadows	Enlargement	Lost Creek	676	+750 - 1,000
S-006	II	Austin Reservoir	Rehabilitation	Austin Canal /	2,295	N/A
Small Reservoirs						
S-007	II	Moslander Reservoir	Rehabilitation	Cold Spring Creek	310	+75 - 100
S-008	II	Cottonwood Reservoir	Rehabilitation	Cottonwood Creek	92	+350
S-009	I	Davis Reservoir	Rehabilitation	Lake Creek	98.9	N/A
S-010	II	Horse Creek Reservoir	New Construction	Horse Creek	N/A	200
S-011	II	West Fork Smiths Fork	New Construction	West Fork Smiths Fork	N/A	200
S-012	III	Wadsworth Fishing Reservoir	Rehabilitation	Beaver Creek	16.3	N/A

4.10.1 Irrigation Rehabilitation Projects

The Watershed Management Plan includes seven recommendations. These projects include various forms of irrigation improvements and rehabilitation projects.

Irrigation Water Conveyance—Pipeline

The rehabilitation and replacement of existing irrigation system delivery conveyance structures help to efficiently deliver or convey water from a source of supply or diversion structures to areas of application or storage to facilitate management of irrigation water. The practice reduces erosion, conserves water, and protects water quality. Underground pipelines serve as an integral part of the irrigation water distribution system and significantly improve the overall efficiency of the system.

Strategies defining placement of irrigation water conveyance pipelines typically involve:

- Rehabilitation/replacement of existing structures
- Mitigation of seepage losses
- Enhanced delivery of irrigation water
- Reduction in annual operation and maintenance costs
- Improvement in ditch management and efficiency through water management
- Facilitation of irrigation water management plans
- Economic practicality
- Physical feasibility.

Effects and benefits of rehabilitating and improving water conveyance for irrigation systems are numerous and are displayed in the NRCS's NED in Figure 4.10-1. As shown in this figure, direct and indirect benefits associated with this BMP include:

- Water availability for irrigation
    - Plant growth and productivity
- Infiltration and evaporation losses
    - Increased plant growth and productivity
    - Decreased leaching of nutrients
- Erosion associated with practice
    - Decreased sediment delivery to surface waters

Cumulative effects/benefits of provision of reliable water supplies are described as:

- Positive impacts to income and stability of individual producers and the community
- Improved aquatic health of humans, domestic animals and wildlife
- Improved stream fauna and environmental quality.

4.10.2 Livestock/Wildlife Water Supply Projects

The Watershed Management Plan includes 114 livestock/wildlife water supply projects. These projects include various forms of water facilities, water wells, spring developments, pipelines, and stock ponds.

Water Facilities

The development of reliable watering facilities in areas otherwise lacking reliable sources of water for livestock and wildlife, help to promote improved rangeland conditions in several ways. Water facilities may be associated with wells, springs, streams, ponds or hauled water. ***Reliable sources of water are integral aspects of any range management plan involving distribution of livestock.***

Strategies defining placement of water facilities typically involve:

- Facilitation of prescribed grazing management plans
- Alternative water supplies to riparian sources
- Provision of a reliable source where no other sources may exist
- Optimization of upland range resources.

Benefits of providing reliable water facilities for livestock and wildlife are numerous and are displayed in the NRCS's NED in Figure 4.10-2. As shown in this figure, direct and indirect benefits associated with this BMP include:

- Controlled access to streams, ponds, water supplies, and sensitive areas (when combined with proper fencing),
    - Decreased loading of pathogens, sediments, and nutrients to existing surface waters,
    - Improved water quality, quantity and distribution of livestock and wildlife
    - Increased plant productivity
    - Improved wildlife habitat
    - Increased species diversity
    - Increased livestock food sources

Cumulative benefits of provision of reliable water supplies are described as:

- Positive impacts to income and stability of individual producers and the community,
- Improved aquatic health of humans, domestic animals and wildlife, and
- Improved health of humans, domestic animals and wildlife

4.10.3 Grazing Management Alternatives

These alternatives include conservation practices and BMPs such as water developments, fencing, salting and herding, ecological sites and state and transition models, prescribed fire, and application of chemicals along with other tools that can be used to facilitate and enhance grazing distribution and optimize range conditions through prescribed grazing practices.

Prescribed Grazing

Prescribed grazing is the controlled harvest of vegetation with grazing animals managed with the intent to achieve a specific objective. Prescribed grazing may be applied on lands where grazing and/or browsing animals are managed. A grazing schedule is prepared for allotments, pastures to be grazed. Removal of vegetation by the grazing animals is in conformity with realistic yield goals, plant growth needs, and management goals. Duration and intensity of grazing is based on desired plant health and expected productivity of the forage species to meet management objectives.

Strategies for applying prescribed grazing involve managing the intensity, frequency, duration, distribution, and season of grazing by:

- Defining landowner and/or manager goals and objectives
- Identifying needs for reliable water sources and supplies
- Feed and forage inventories and analyses
- Range condition and health evaluations and assessments
- Managing desirable and undesirable plant communities to meet grazing objectives

Benefits of implementing prescribed grazing and associated BMPs and conservation practices are numerous and are displayed in the NRCS's NED in Figure 4.10-3. As shown in this figure, direct and indirect benefits associated with this BMP include:

- Increased control of livestock grazing, feeding, watering locations
- Decreased loading of pathogens, sediments, and nutrients to surface waters,
- Increased manure distribution
- Increased soil quality
- Reduced contaminants, pathogens, sediments to receiving waters
- Soil erosion and compaction
- Increased plant productivity and maintenance
- Increased livestock production and health
- Increased wildlife health and populations

Cumulative benefits of implementing prescribing grazing could include:

- Positive impacts to income and stability of individual producers and the community
- Improved water quality and aquatic habitat
- Improved health of humans, domestic animals and wildlife

4.10.4 Stream Channel Restoration Projects

These alternatives include conservation practices and BMPs such as installation of stream channel degradation/incision and streambank erosion mitigation measures based upon site-specific evaluation of conditions along with routine monitoring of completed stream projects to identify necessary maintenance repairs and determine their effectiveness. Appropriate measures could be 'hard' engineering, 'soft' approaches, or combinations of both.

Streambank and Shoreline Protection

Streambank and shoreline protection is the stabilization and protection of streambanks, constructed channels, and shorelines of lakes and reservoirs. Strategies for applying streambank and shoreline protection involve:

- Streambanks of natural or constructed channels and shorelines of lakes and reservoirs where they are susceptible to erosion.
- Various materials may be used for protection of streambanks and shorelines,
- A site-specific assessment should be conducted to determine if the causes are local or systemic and used to select appropriate treatment to achieve the desired objective,
- Functional and stable treatments for design flows and sustainable for higher flows.
- Preventing the loss of adjacent land or damage to land uses or other facilities
- Protecting historical, archeological, and traditional cultural properties
- Reducing the offsite or downstream effects of sediment resulting from bank erosion
- Improving the stream corridor for fish and wildlife habitat, aesthetics, and recreation

Benefits of implementing streambank and shoreline protection and associated BMPs and conservation practices are numerous and are displayed in the NRCS's NED in Figure 4.10-4. As shown in this figure, direct and indirect benefits associated with this BMP include:

- Decreased streambank and/or shoreline erosion
    - Increased soil quality
    - Decreased sedimentation
- Increased flow capacity of streams and channels
- Increased streambank vegetation and root matrices
    - Increased soil quality

- Increased native plant recruitment
- Decreased invasive/noxious species

Cumulative benefits of implementing streambank and shoreline protection could include:

- Positive impacts to income and stability of individual producers and the community,
- Improved water quality and aquatic and/or terrestrial habitat,
- Improved recreational opportunities

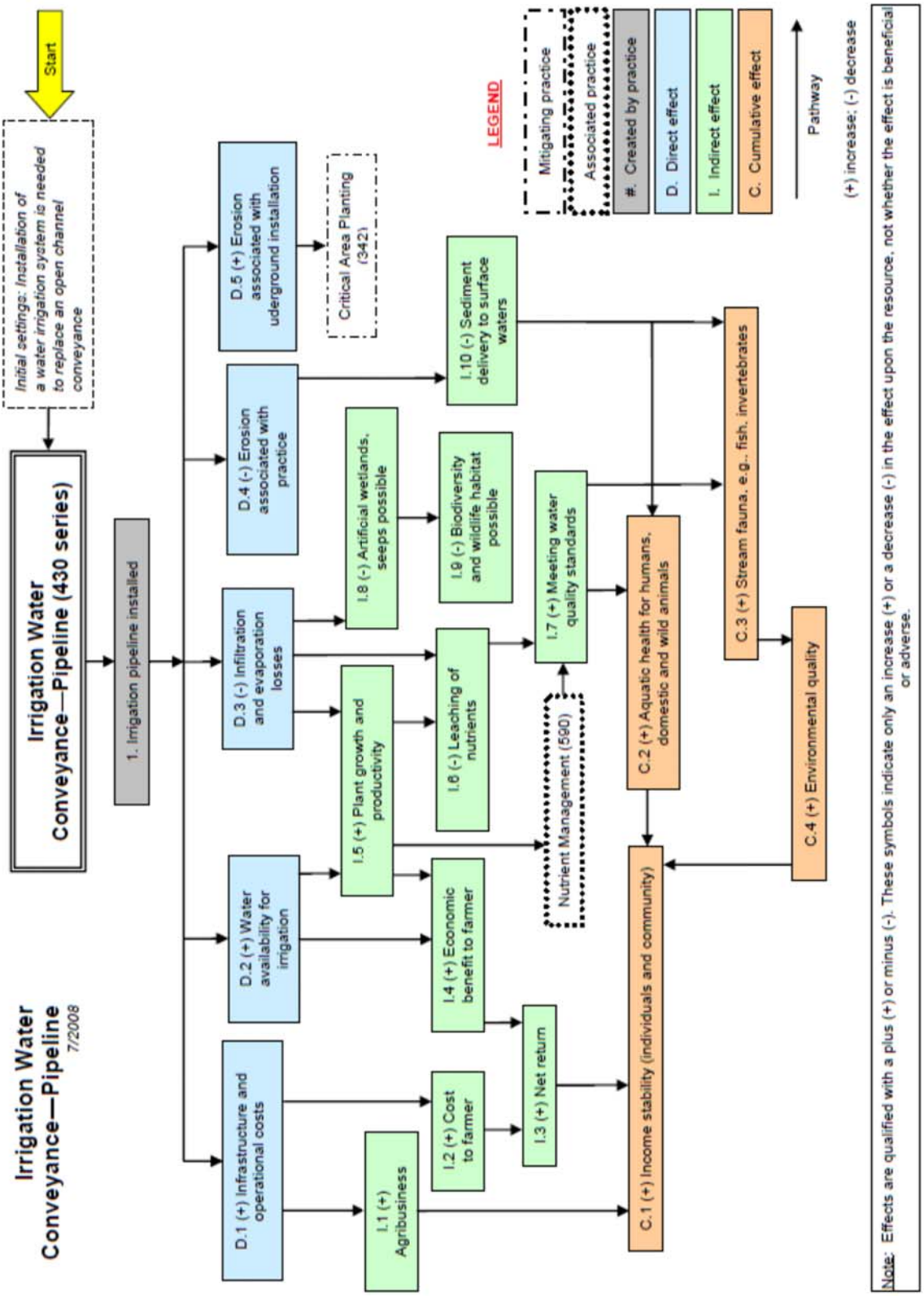


Figure 4.10-1 Network Effects Diagram for Irrigation Conveyance – Pipeline.

Figure 4.10-2 Network Effects Diagram for Streambank and Shoreline Protection.

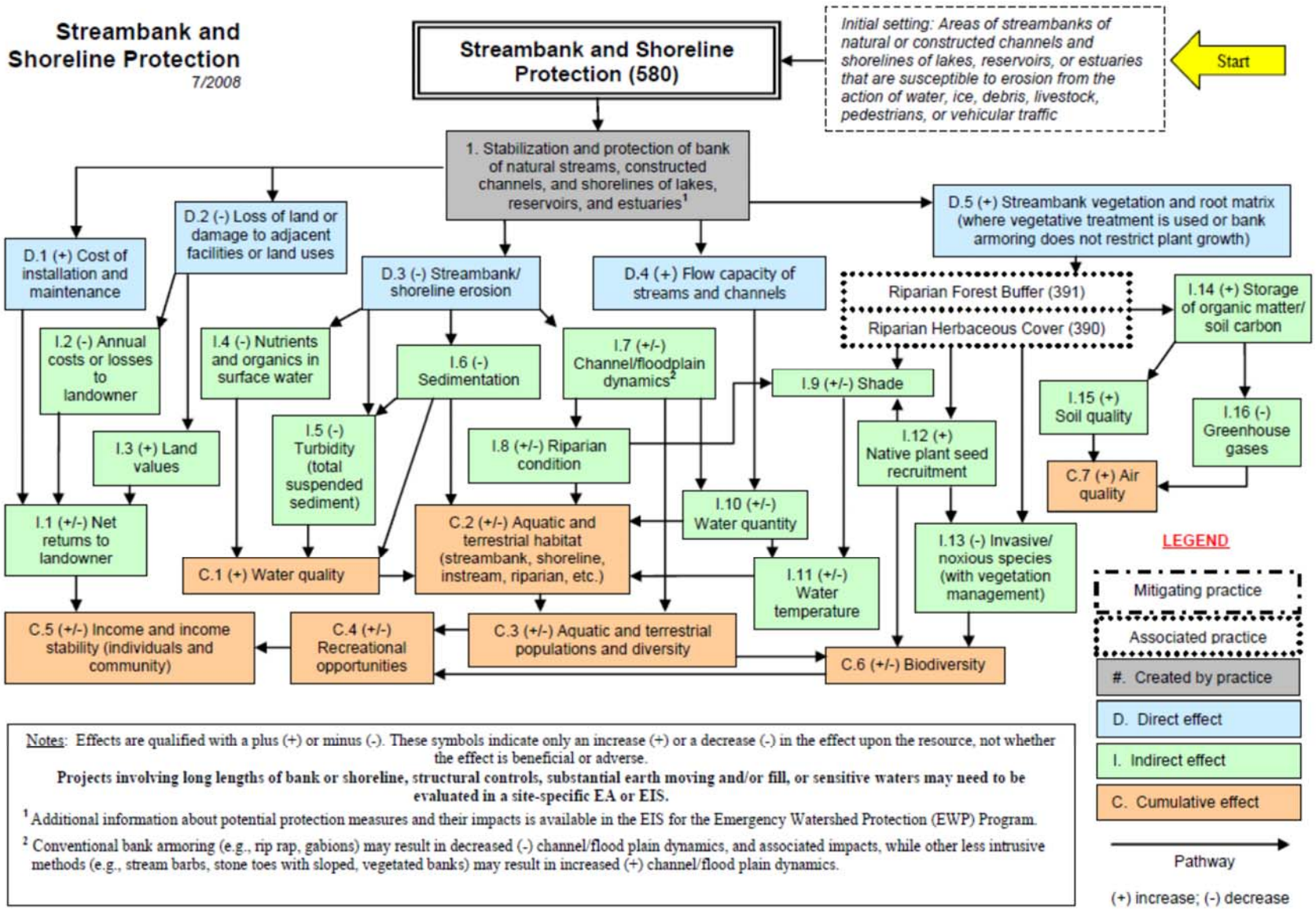
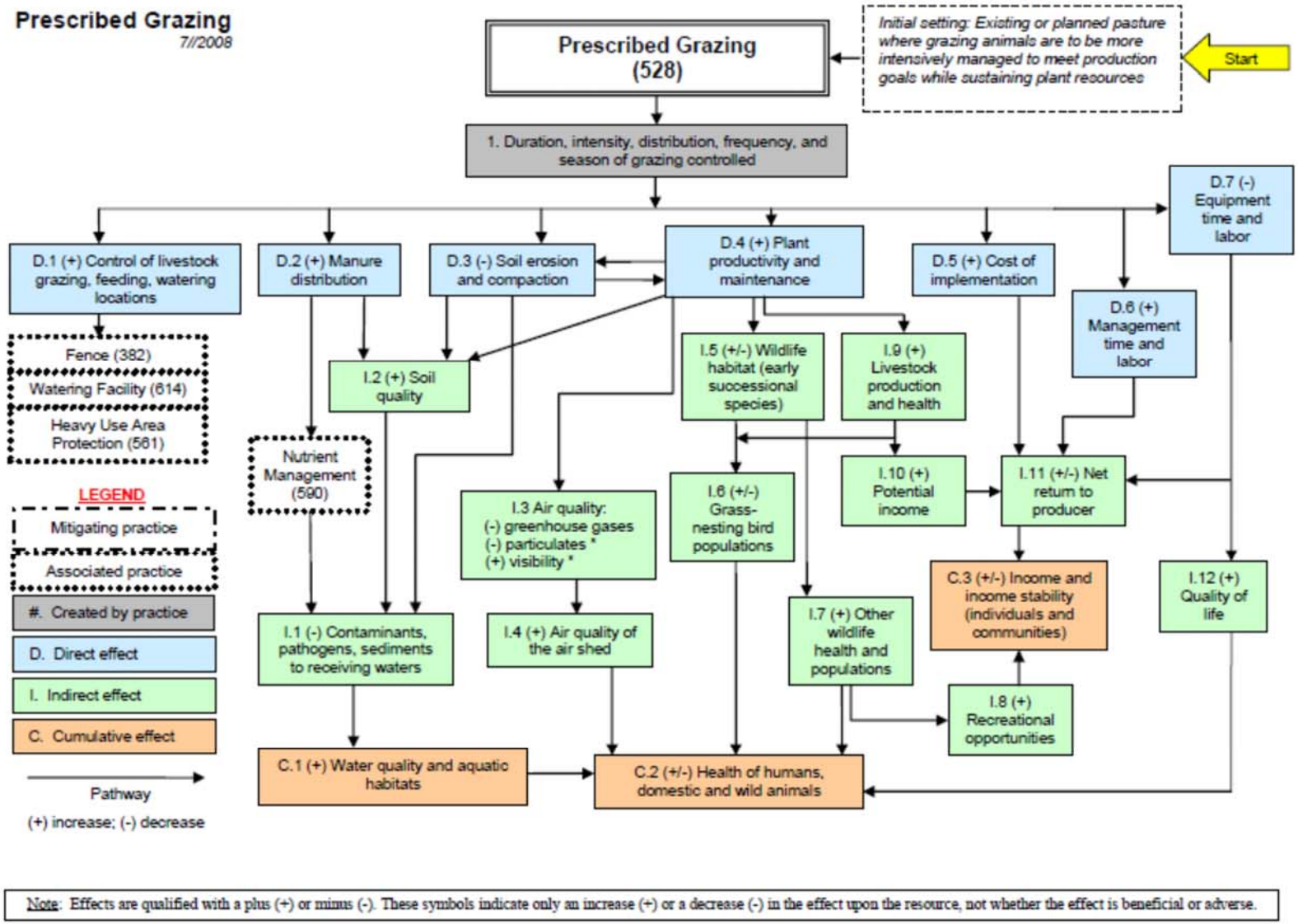
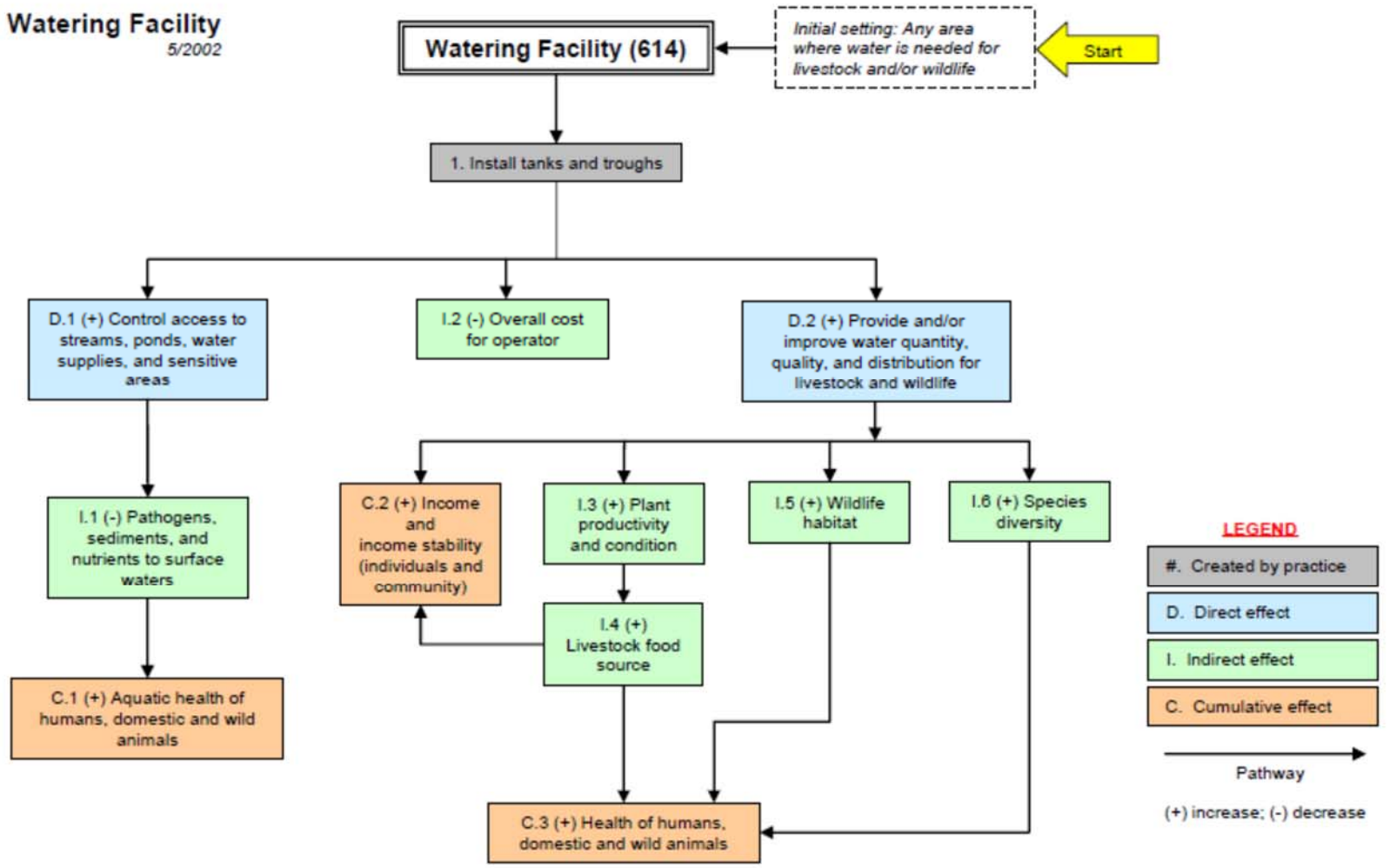


Figure 4.10-3 Network Effects Diagram for Prescribed Grazing.



Note: Effects are qualified with a plus (+) or minus (-). These symbols indicate only an increase (+) or a decrease (-) in the effect upon the resource, not whether the effect is beneficial or adverse.

Figure 4.10-4 Network Effects Diagram for Watering Facility.



Note: Effects are qualified with a plus (+) or minus (-). These symbols indicate only an increase (+) or a decrease (-) in the effect upon the resource, not whether the effect is beneficial or adverse.

V. PERMITS

The following discussion presents the results of an early regulatory process analysis for the types of alternative projects that have been identified in Chapter 5. The purpose of this analysis is to characterize the known and likely environmental processes, permits and related requirements and conditions associated with the alternative projects, including identification of environmental documentation, permits, agency clearances and approvals, and agency coordination steps that would be required for implementation of the proposed actions and alternatives.

Many of the potential projects described in this plan will be subject to the National Environmental Policy Act (NEPA) and other federal environmental regulations administered by federal agencies such as the EPA, Bureau of Land Management (BLM), Army Corps of Engineers (COE), and/or the U.S. Fish and Wildlife Service (FWS). The Wyoming agencies which may have environmental, land use, and other regulatory approval requirements include, but are not necessarily limited to the Department of Environmental Quality (WDEQ), State Engineer's Office (WSEO), State Historic Preservation Officer (SHPO), Board of Land Commissioners through the State Lands and Investments Board (SLIB), and Game and Fish Department (WGFD).

Much of the following text was extracted from previous watershed investigations conducted on behalf of the Wyoming Water Development Commission (WWDC) in which Anderson Consulting Engineers (ACE) participated. Specifically, the Middle North Platte River Basin Watershed Management Plan (RESPEC, 2014) and the Badwater/Poison Creek Watershed Study (Anderson Consulting Engineers, 2013) are referenced here as sources of permitting information. The previously prepared descriptions of the permitting process were revised to reflect conditions anticipated within the Blacks Fork Watershed.

5.1 NEPA Compliance and Documentation

NEPA applies to any of the proposed actions for which the project site is located on federal land, federal funds may be used, and/or when formal federal agency actions are necessary for the project to move forward. One of the primary intentions of the NEPA process is to avoid, minimize and mitigate adverse environmental consequences of federal actions. NEPA requires analysis and documentation of potential adverse and beneficial effects of a proposed action and alternatives and an open public involvement process.

For this project, it is likely that BLM would be the lead federal agency for implementation of the NEPA process for projects on lands under their administration. The COE would presumably be the lead federal agency otherwise where wetlands may be impacted. It is also possible that these agencies may work out a shared lead under a Memorandum of Understanding (MOU) if there are significant issues best led by both agencies for a given project.

5.1.1 NEPA Process Upland Project Types

The applicability of NEPA to projects other than major (non-stock pond) reservoir storage and typical of those incorporated in the watershed management plan, must be determined on a case-by-case basis. For example, proposed new wildlife/livestock watering developments, including especially tank/pipeline systems that cross and/or serve federal or state rangeland will require that an appropriate NEPA process be followed. In this case, and for many of the lesser potential impact projects (e.g., a well, stock/wildlife pond, guzzler, etc.), it is possible if not likely that an EA process will be found appropriate rather than a full EIS (see related discussion in Section 5.1 above).

BLM. Under current practice, NEPA evaluations and processes for projects on BLM lands, reservoir storage projects and other types of projects that may be proposed where BLM is the lead federal agency will be performed by BLM staff or qualified, independent third party experts responsible to BLM. These experts may include specialists from other federal and/or state agencies working under memoranda of understanding (MOU) or other appropriate arrangement(s). Compliance with NEPA will be guided in large part by the Rock Springs Resource Management Plan (LRMP) which is currently being revised and the Kemmerer Resource Management Plan which has been approved.

Other Local/State/Federal Agencies. Depending on the specific circumstances of a particular project, it is possible that another state or federal agency may lead the NEPA process. For example, a project proposed within the Bridger-Teton National Forest would presumably be led by the U.S. Forest Service. All of the relevant state and federal land management agencies have management plans developed from NEPA-compliant processes where appropriate. As discussed above for BLM, these plans will guide these agencies' NEPA process for any applicable proposed projects or improvements.

Watershed-Wide Environmental Analysis. Given the significant number of planned and potential wildlife/livestock water development projects and the opportunity for larger-scale, cooperative projects as discussed identified Chapter 4, it is recommended that serious consideration be given to the potential benefits of conducting a comprehensive "watershed-wide" environmental analysis for these and other potential water-resources related improvement projects. A key benefit of this approach would be developing a single baseline characterization and impacts assessment of the relevant environmental issues associated with these types of projects rather than repetitively for many similar individual projects. This should, in turn, substantially reduce the overall resources and time necessary to conduct the required environmental permitting (including especially NEPA compliance) for these projects. If necessary, the overall environmental analysis could be supplemented on a case-by-case basis for a particular issue in a focused, time and resource efficient manner.

5.1.2 NEPA Process for Reservoir Storage Projects

The following discussion characterizes the basic steps of the NEPA process applicable to a reservoir storage project.

Prepare a Purpose and Need Statement for the Project. It is important to develop an accurate and defensible Purpose and Need statement for the project as one of the first steps in the NEPA process. The Purpose and Need statement provides an overall or basic purpose for the proposed action and presents details supporting various needs for the project. The Purpose and Need statement should provide enough information to develop and support a "reasonable range" of alternatives. More specifically, the Purpose and Need statement guides the alternative development and screening process. With the COE as the lead agency, the Purpose and Need would include a reference to finding the "least damaging practicable alternative." This reference relates to the Clean Water Act Section 404 requirements that are under the jurisdiction of the COE and is an important part of the NEPA process for a reservoir storage project. Additional details about the Section 404 process are provided in Section 6.2. Develop Project Alternatives and NEPA Documentation Determination. The NEPA process requires analysis of the No Action alternative and a reasonable range of alternatives that fully address the project's purpose and need. The reasonable range of alternatives may include one or more "build" alternatives, depending on the nature and extent of anticipated project impacts and level of NEPA documentation to be provided.

For new, expanded or reconstructed reservoir storage projects, key issues associated with alternative development will or may include:

- loss of wetland and riparian habitat from direct inundation by a new, expanded or reconstructed reservoir;
- potential impacts on threatened and endangered species;
- potential impacts on fish and other aquatic species; and
- potential impacts on other wildlife (e.g., sage grouse; big game).

Given these issues and risk management considerations, the project team anticipates that an EIS will likely be the appropriate NEPA documentation for reservoir storage projects. An EIS involves analysis of more than one build alternative and typically takes up to several years to complete. An Environmental Assessment (EA) may or may not involve analysis of more than one build alternative and can typically be completed in less than 18 months. The outcome of an EA is either a Finding of No Significant Impact (FONSI) or a recommendation to prepare an EIS. If an EA is prepared, there is a possibility that the outcome might be that an EIS is needed. This could occur as a result of "significant impact findings" or as a result of substantial public controversy over the project's effects. If this occurs at the end of the EA process, the EIS process would need to start from the beginning, wasting a considerable amount of time and money. At this time, it appears it would be prudent to assume that an EIS process would be applicable, while leaving the option open for an EA/FONSI, rather than to proceed with an EA and take the risk that an EIS will ultimately be needed. This decision should be reviewed during a Level II study (should the project advance) when more detailed information is available on a preferred proposed action and its appropriate alternatives.

Conduct a Proactive Public Involvement Program. The NEPA process begins with public and agency outreach and related input focused on alternatives and potential impacts. Education about the project's

purpose and need, project details and issues is provided and input is solicited in various ways. It is very important that the public have a clear understanding of the benefits and potential adverse impacts of the proposed action and alternatives. Public involvement is continuous throughout the project and can influence alternative development, alternative screening, issues addressed, mitigation measures, the level of NEPA documentation to be prepared (EA or EIS), and the selection of the preferred alternative.

Collect and Analyze Environmental Baseline Data. It is important to carefully identify environmental constraints and considerations early and incorporate them into alternative development efforts as a means of avoiding and minimizing potential impacts. Early field investigations and agency consultation and coordination efforts help to focus this effort and streamline subsequent analysis methods, schedule needs, and budget requirements. Creating "self-mitigating" alternatives is highly advantageous and fully consistent with the intent of NEPA.

Many NEPA analyses relate to compliance with various laws and regulations. Integrating the NEPA, National Historic Preservation Act, Endangered Species Act and other compliance processes will reduce overall permitting timeframes and costs, and streamline agency decision-making. These issues are discussed in Section 6.2.

Prepare the Draft and Final Environmental Impact Statement. The Draft EIS would be prepared in two versions. A Preliminary Draft EIS would be prepared for internal review. The Draft EIS would respond to comments on the Preliminary Draft EIS. The Draft EIS would be circulated for public review and would be the subject of a public hearing. The Final EIS would also be prepared in two versions. A Preliminary Final EIS would be prepared for internal review. The Final EIS would respond to comments on the Preliminary Final EIS. The Final EIS would be circulated for public review and would be the subject of a public hearing. A Record of Decision would be prepared to complete the NEPA process.

5.2 Permitting/Clearances/Approvals

5.2.1 Dam and Reservoir Construction

In addition to the U.S. Army Corps of Engineers (COE) Section 404 Permit, there are numerous other permits and/or approvals required for new dam and reservoir construction. Presented below are the primary additional permits and/or approvals that would be required for any of the alternative projects under consideration.

Section 404 Permit. Like all water development projects, any dam and reservoir storage project in the watershed will face environmental permitting issues. Typically the most significant environmental permit to be secured is a Section 404 Dredge and Fill permit from the COE, Omaha District. Even when impacts are anticipated to be modest, the process of obtaining a Section 404 permit for new storage projects may take several years from initiation of the NEPA process.

The primary guidance in embarking on the permitting process for a new dam and reservoir storage project is the development of a defensible Purpose and Need for the project. The NEPA process dictates that the least environmentally damaging practical alternative that addresses the purpose and need be pursued. This is the alternative most likely to be successfully permitted.

Endangered Species Act (Section 7 Consultation). The lead agency would prepare a biological assessment to determine project effects on threatened and endangered plant and animal species listed or proposed for listing (candidate species) under the Endangered Species Act (16 U.S.C. § 1531 et seq.). U.S. Fish and Wildlife Service (FWS) would then issue an opinion on whether federal actions are likely to jeopardize the continued existence of a threatened or endangered species, or destroy or adversely modify critical habitat. FWS must approve the preparation of a biological assessment to comply with the Endangered Species Act in order to render its decision. If FWS determines that the preferred alternative would jeopardize the continued existence of a species, it may offer a reasonable and prudent alternative.

Fish and Wildlife Coordination Act. The Fish and Wildlife Coordination Act requires federal agencies involved in actions that will result in the control or structural modification of any natural stream or body of water for any purpose to take action to protect the fish and wildlife resources which may be affected by the action. It requires federal agencies or applicants to first consult with state and federal wildlife agencies to prevent, mitigate and compensate for project-caused losses of wildlife resources, as well as to enhance those resources.

Laws and Regulations Addressing Cultural Resources. Because federal approvals are likely involved with any of the identified alternatives, a consideration of effects on cultural resources must be undertaken (Section 106 consultation), as required under the following laws and regulations: the National Historic Preservation Act (NHPA) of 1966 (16 U.S.C. § 470 et seq.); the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C., § 4321); the Archaeological Resources Protection Act (ARPA) of 1979 (16 U.S.C. § 470aa et seq.); the National Park Services (NPS) procedures concerning the National Register of Historic Places (NR) (36 CFR Part 60); the Advisory Council on Historic Preservation's Procedures for the Protection of Cultural Properties (36 CFR Part 800); the Treatment of Archaeological Properties of 1980: Determination of Eligibility for Inclusion in the NR (36 CFR 63); the Secretary of Interior's Standards and Guidelines for Archaeological Historical Preservation of 1983; Reservoir Salvage Act of 1960; and the l974 Amendment to the Reservoir Salvage Act of 1960. The State of Wyoming Historic Preservation Office (SHPO) coordinates with federal agencies in determining the significance of cultural resources potentially affected by ground disturbing activities.

In addition, consultation with relevant Native American groups concerning traditional cultural properties is required under the American Indian Religious Freedom Act of 1978 (AIRFA, P.L. 95-341.42 U.S.C. § 1996) and Section 4 of ARPA of 1979. Guidelines for evaluation of traditional cultural properties are contained in Bulletin 38 issued by the National Park Service.

Wyoming Board of Land Commissioners. The Wyoming Board of Land Commissioners through the State Lands and Investments Board (SLIB) is responsible for regulating all activities on state lands, including granting of rights-of-way. Any facility, utility, road, railroad, ditch or reservoir to be constructed on state or school lands must have a right-of-way, as required in the "Rules and Regulations Governing the Issuance of Rights Of Way" (W.S. 36-20 and W.S. 36-202).

Wyoming State Engineer's Office Surface Water Storage Permit. The State Engineer's Office administers the water rights system of appropriation within the state. The Applicant must obtain the necessary water rights permits from the State of Wyoming for the diversion and storage of the State's surface water.

Wyoming State Engineer's Office Permit to Construct/Dam Safety Review. The Wyoming Dam Safety Law (W.S. 41-3) requires that any persons, public company, government entity or private company who proposes to construct a dam which is greater than 20 feet high or which will impound more than 50 acre-feet of water, or a diversion system which will carry more than 50 cubic feet of water per second, must obtain approval for construction of the dam or ditch from the Wyoming State Engineer's Office. The approval by the State Engineer's Office of a dam's construction is contingent upon the Office's review and approval of all dam plans and specifications, which must be prepared by a registered professional engineer licensed in Wyoming. Design, construction, and operation of jurisdictional dams must also comply with dam safety regulations promulgated pursuant to the Dam Safety Act.

Wyoming State Engineer's Office Ditch Enlargement Permit. In addition to the permits and clearances that will be required for reservoir construction, existing irrigation ditches may require enlargement to convey water to off-channel reservoirs. If so, this effort would require an enlargement filing with the Wyoming SEO. Even if physical enlargement of the existing ditch was found to not be required, the enlargement filing would be a legal formality as a water right requirement.

Wyoming Department of Environmental Quality – National Pollution Discharge Elimination System (NPDES) permit and Section 401 Certification. The federal Clean Water Act is administered in Wyoming by the Department of Environmental Quality (WDEQ), Water Quality Division (WQD) consistent with the Wyoming Environmental Quality Act. The Section 401 Certification is the State's approval to ensure that the activities authorized under Section 404 meet state water quality standards and do not degrade water quality. Any discharge of pollutants into the broadly defined "waters of the state" requires application to and permit issuance by WQD in accord with WQD's Rules and Regulations. This body of regulations sets forth classification of surface and groundwater uses and establishes water quality standards (Wyoming Water Quality Standards). The WQD administers the NPDES permit system including storm water permits and construction-related, short-term discharge permits.

Implementation of any of the action alternatives would require application for and compliance with the provisions of the statewide general NPDES Construction Storm Water Discharge Permit (WYR10-000). Construction activities associated with dam construction or enlargement often result in the requirement to temporarily discharge pumped water. These discharges are provided for in a general permit. Upon

acceptance of the application by DEQ, the temporary discharge must be in compliance with the terms of the general permit and any stipulations applied as a result of the application's review.

EPA has oversight responsibility for federal Clean Water Act programs delegated to and administered by the State Water Quality Division. EPA also may intervene to resolve interstate disputes where discharges of pollutants in an upstream state may affect water quality in a downstream state.

Mining Permit. A Wyoming mining permit is not required for development of an aggregate and/or borrow material source solely for use in construction of one of the various reservoir alternatives and whose product is not for commercial sale. Commercial sources of aggregate, rock, or other mined materials are responsible for obtaining and maintaining all required permits and clearances for their operations.

Special Use Permits/Rights-of-Way/Easements. Special use permits, rights-of-way (ROW) or easements will be required wherever access across the lands of others (private, state or federal) is needed for construction and/or operation of the project facilities. These may be temporary (e.g., access to a temporary borrow area or quarry site to be closed and reclaimed; construction of a new haul road; etc.) or permanent (e.g., construction of a wildlife/livestock pipeline alignment). Usually privately owned lands that will be rendered permanently unavailable (such as the dam and reservoir footprint of a storage project) would be purchased unless the owner desired (and the sponsoring entity agreed) to a permanent easement. Permanent use of BLM lands would most likely be administered under a grant with an appropriate term issued under their ROW process; the U.S. Forest Service would use their equivalent special use process. An easement or ROW from the Wyoming Department of Transportation (WYDOT), Uinta County, Lincoln County or Sweetwater County may also be required. The specific requirements for rights-of-way, special use permits and easements vary widely and should be determined as part of the early stages of planning for a specific proposed project. This will help to avoid the potential for significant project delay, higher costs, or required changes in location/alignment or design during project development and implementation.

Other. In addition to the above, there may be other permits and clearances required for a given dam and reservoir project. These might include permits typically required to be provided by the construction contractor (e.g., air quality permit; trash/slash burning permit; etc.).

5.2.2 Other Project Types

Permits, clearances and approvals for projects other than major dams and storage reservoirs will depend on the specific nature and location of the project. Various permits and clearances discussed above in Section 6.2.1 may also apply to other types of projects. The specific permits and clearances necessary for a particular project should be determined early in the planning stages of the project to ensure compliance with applicable laws and regulations, and to avoid possible delays, increased costs and possibly re-design later during project implementation.

5.3 Environmental Considerations

Proposed, Threatened and Endangered Species. The following species have the potential to occur within the proposed project areas within the watershed:

Endangered:	Black-footed Ferret (*Mustela nigripes)*
	Whooping Crane (*Grus Americana*)
	Bonytail (*Gila elegans*)
	Colorado Pikeminnow (*Ptychocheilus lucius*)
	Humpback Chub (*Gila cypha*)
	Razorback Sucker (*Xyrauchen texanus*)
Threatened:	Canada Lynx (*Lynx canadensis*)
	Grizzly Bear (*Ursus arctos arctos*)
Proposed	
Threatened:	North American Wolverine (*Gulo luscus*)
	Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*)
	(Wyoming Natural Diversity Database [WYNDD], 2013)

The Wyoming Natural Diversity Database (WYNDD) lists several other species of concern and species of potential concern existing within the study area. This list was presented and discussed in Chapter 3 of this report and contained 5 amphibians, 76 birds, 1 crustacean, 1 Fern and Fern Ally, 11 Fish, 34 Mammals, 6 Mulloscs, 2 Plant: Gymnosperms, 7 Reptiles, and 51 flowering plants.

The potential exists for some of these species to occur within appropriate habitats within the watershed. Although none of these species receive federal or state protection, sage grouse are identified as a sensitive species/species of concern and merit special attention as discussed in some detail in the following paragraphs.

The greater sage grouse (Centrocercus urophasianus) is a native species to the area and is almost totally dependent on open sagebrush plain. The males will gather in the early spring to lek (breeding ground) locations to start their elaborate courtship rituals (strutting). They are considered omnivores, eating insects, sagebrush and seeds; but are most reliant upon sagebrush for both cover from predators and for food.

The greater sage grouse is listed as a sensitive species by the BLM, and a species of concern by WGFD. The BLM definition of a sensitive species is as follows: species that could easily become endangered or extinct in the state, including: (a) species under status review by the FWS/National Marine and Fisheries Service; (b) species whose numbers are declining so rapidly that Federal listing may become necessary; (c) species with typically small or fragmented populations; and (d) species inhabiting specialized refugia or other unique habitats. WGFD lists the greater sage grouse as: species that are widely distributed, with population status or trends unknown but suspected to be stable; habitat restricted or vulnerable but no recent or on-going significant loss; species likely sensitive to human disturbance. The sage grouse

are not listed as a Threatened or Endangered species and does not receive any protections from the Endangered Species Act; however, BLM and WGFD have developed restrictions/recommendations to help protect the sage grouse.

It is recommended that coordination with BLM and WGFD occur regarding any proposed or alternative project that has the potential to impact sage grouse habitat. Note that providing water to areas where water is limited may create a beneficial impact for sage grouse and should be considered when evaluating the net potential impacts to this species.

Rare Plant Species of Concern. The WYNDD has 41 known sensitive plant species of concern located in the watershed as discussed in Chapter 3 of this report. The potential exists for some of these species to occur within appropriate habitats within the project area. However, none of these species receive federal or state protection.

Big Game. The Blacks Fork watershed contains portions of crucial big game habitat for antelope, mule deer, elk and moose managed by the Wyoming Game and Fish Department (WGFD) and big game (elk) parturition (birthing) sites. The WGFD maps the seasonal ranges by herd unit for each big game species and makes special note of areas listed as crucial habitat. Crucial habitat or range is defined as those seasonal ranges or habitats (mostly winter range) that have been documented as the determining factor in a population's ability to maintain itself at a certain level over a long period of time.

Fisheries. Most of the alternative reservoir sites are located on tributaries that are considered perennial and contain viable fisheries resources. Impacts to the various streams and associated fishery resources will occur with any of the alternative dam and reservoir storage alternatives and should be considered during further environmental evaluation of these sites.

Wetland Resources. Formal wetland delineation in accordance with the Corps of Engineers guidelines was beyond the scope of this Level I study and was not conducted. GIS digital mapping from the National Wetland Inventory (NWI) was acquired to preliminarily identify wetland habitats in the study area. Likewise, LANDFIRE data were obtained and evaluated as presented in Chapter 3. The various locations identified as potential alternative reservoir storage sites are all located on what are considered intermittent to perennial riverine systems. These systems are associated with streambeds and their associated wetland/riparian habitat. Riparian habitats are considered to be valuable habitat for both mammals and birds, along with assisting in reducing flooding. The creation of a reservoir on the drainage would inundate the basin bottoms changing the landscape/habitat.

Some of the areas identified on the NWI maps and within the LANDFIRE datasets as wetlands or other riparian system categories, may in fact not qualify as jurisdictional wetlands upon subsequent detailed examination in the field. This is due to inherent limitations in the aerial photography or satellite imagery-based methodologies used to prepare the NWI maps. In general, our previous experience suggests that estimates of wetland acreage based on the NWI maps or within LANDFIRE datasets tend to be conservatively high and actual acreage of jurisdictional wetlands may be less.

Formal wetlands delineation would be necessary prior to construction at any proposed reservoir storage site, and in any other areas of proposed disturbance (e.g., at spring development sites and along associated pipeline alignments) to determine the level of impacts to wetlands located in the alternative project area and to identify and quantify any necessary mitigation of those impacts.

5.4 Mitigation

Based on prior experience, mitigation could be required at any of the identified alternative dam and reservoir sites to address impacts to wetlands, riparian vegetation, stream channel habitat, cultural resources, fish and game resources, and possibly threatened or endangered species. It is preferred to avoid the need for mitigation of a potentially significant impact by relocation and/or "self-mitigating" design if technically and economically feasible.

Detailed mitigation plans would need to be prepared and approved to replace any lost wetlands identified and quantified by formal wetlands delineation, and riparian vegetation communities. However, given the relatively small acreages of wetlands at the alternative dam and reservoir sites (ranging from less than 1 to 12.2 acres), it is anticipated that mitigation of this resource will be possible at any of the sites by constructing additional wetlands nearby, ideally in the same mainstem stream and/or in a close-by tributary.

Mitigation of potential raptor and big game impacts would generally involve control of certain construction activities during sensitive time periods, and avoidance of direct disturbance of the subject species. Mitigation of potential sage grouse lek impacts will be given special consideration as discussed previously. If any T&E species were encountered at a given site special studies would be required to determine if appropriate mitigation could be implemented. In general, any such impacts would be avoided to the greatest extent possible by relocation of site facilities.

Additional cultural and historic resource fieldwork would need to be completed to identify and document any such resources that would be inundated or otherwise impacted as a result of constructing any one (or more) of the alternative dams and reservoirs or other potential projects described in Chapter 5. This would include, in turn, a class I (literature search) survey, a Class II (reconnaissance inventory) survey, and if needed, a class III (intensive inventory) survey. Ultimately, a mitigation plan for cultural resources would be developed which would culminate in a Memorandum of Agreement (MOA) between the Wyoming SHPO and the lead federal agency with concurrence by the project sponsor(s), and possibly affected Native American tribes. The agreement would require approval from the Advisory Council on Historic Preservation.

5.5 Land Ownership and Property Owners

Where applicable, permission must be negotiated for easement/right-of-access for all construction activities associated with the project.

VI. FUNDING OPPORTUNITIES

6.1 Overview

Project funding/financing is a critical aspect associated with the implementation of watershed improvement projects. Given the scope of the investigation and the perceived projects which may be pursued (storage reservoirs, irrigation infrastructure improvements, wildlife/stock watering, stream/riparian corridor rehabilitation, and "other" water-resource related project types), there may be a large variety of funding sources which may be available to provide funding for future watershed improvements.

Alternative sources of funding to watershed projects are discussed in the pages that follow. Potential sources include local, state, and federal entities. Much of the information contained in this report was obtained through the following sources which provide a wealth of information on grant, loan and in-kind support for watershed related projects:

- ***Water Management & Conservation Assistance Programs Directory, Fourth Edition*** (WWDC, May 2009) first compiled by the Wyoming State Engineer's Office and now maintained by the Wyoming Water Development Commission at the following website: http://wwdc.state.wy.us/wconsprog/WtrMgntConsDirectory.html.

- ***Catalog of Federal Funding Sources for Watershed Protection*** developed and maintained by the Environmental Protection Agency. This site is a searchable database of financial assistance sources (grants, loans, cost-sharing programs, etc.) available to fund a variety of watershed protection projects. The document is available at the following website: http://cfpub.epa.gov/fedfund/

- ***Habitat Extension Bulletin No. 50 – Fisheries and Wildlife Habitat Cost Share Programs and Grants*** published by the Wyoming Game and Fish Department provides a very comprehensive listing of potential funding sources for fisheries and wildlife habitat projects. The document is available at the following website: http://wgfd.wyo.gov/web2011/Departments/Wildlife/pdfs/BULLETIN_NO500001792.pdf

In addition, discussions of several funding programs were extracted from previous watershed investigations completed on behalf of the Wyoming Water Development Commission. Specifically, the Badwater/Poison Creek Watershed Investigation (Anderson Consulting Engineers, 2013) and the Middle North Platte River Watershed Study (RESPEC, 2014) were reviewed and sections incorporated herein where appropriate.

It is important to understand that the potential sources identified herein are not necessarily exhaustive of the resources that may be available, that existing programs change and sometimes disappear over

time, new programs arise, funding levels vary year to year, and competition for many of the programs is significant. Also, contact information for various programs and key people can also change. Key local contacts for current information on funding sources relevant to watershed protection, restoration and conservation, wildlife/stock watering, and irrigation infrastructure improvements include, but are not limited to the following:

- Sweetwater County Conservation District (307-362-3062 Ext. 4)
- Uinta County Conservation District (307-787-3070)
- Lincoln County Conservation District (307-279-3256)
- Lyman NRCS Office (307-787-3211)
- Rock Springs NRCS Office (307-362-3062)
- Cokeville NRCS Office (307-279-3256)
- Bureau of Land Management/Rock Springs District Office (307-352-0256)
- Bureau of Land Management/Kemmerer District Office (307-828-4500)

Key aspects and information about the primary funding programs identified are discussed in the following sections and summarized in a matrix format (Table 6.1-1).

6.2 Local Agencies

6.2.1 Conservation Districts

The Sweetwater County, Uinta County and Lincoln County Conservation Districts serve as the local liaison between local landowners and resource users and state and federal government agencies. In addition to their many other roles and responsibilities, these districts can also provide funding assistance as follows:

- In-kind technical assistance as local resources, capacity and expertise allow.
- Administration of programs, projects and grants on behalf of recipients of state and federal natural resources program funding.
- Assistance in development of leveraged, partnered programs and projects.

6.2.2 County Weed and Pest Districts

Wyoming Weed and Pest Districts provide in-kind support to landowners and other agencies/entities including, but not necessarily limited to:

- Assistance in the identification of noxious weeds and other undesirable plants
- Organization and/or participation in local meetings, seminars and field trips to educate local landowners and agencies on the problems and potential solutions for weed and other undesirable plant control

Table 6.1-1 Potential Funding Sources.

Agency/Entity	Program Name	Project Type(s)	Internet Site	Telephone	Email
Local					
Sweetwater County Conservation District	n/a	Liaison, in-kind administrative and technical assistance, program coordination/partnering	http://www.swccd.us/	307-362-3062 ext 4	admin@swccd.us
Lincoln County Conservation District	n/a		http://www.lincolnconservationdistrict.org/		brenda.lazcanotegui@wy.nacdnet.net
Uinta County Conservation District	n/a		http://www.uintacountycd.com/	307-787-3070	ksabey@bvea.net
NRCS Cokeville Office	n/a		http://www.nrcs.usda.gov/wps/portal/nrcs/site/wy/home/	307-279-3256	gary.blazejewski@wy.usda.gov
NRCS Rock Springs Office	n/a		http://www.nrcs.usda.gov/wps/portal/nrcs/site/wy/home/	307-362-3062	jeff.lewis@wy.usda.gov
NRCS Lyman Office	n/a		http://www.nrcs.usda.gov/wps/portal/nrcs/site/wy/home/	307-787-3211	jeff.lewis@wy.usda.gov
Sweetwater County Weed and Pest	n/a		http://www.sweet.wy.us/index.aspx?NID=443	307-273-9683	swwp1@bvea.net
Lincoln County Weed and Pest	n/a		http://www.lcwy.org/public_services/weedpest.php	307-885-9333	jamiwilkes@yahoo.com
Uinta County Weed and Pest	n/a		http://www.ucwp.org/	307-789-9289	uintawp@hotmail.com
State					
Wyoming Department of Environmental Quality	Nonpoint Source Implementation Grants (319 Program)	Water quality BMPs	http://deq.state.wy.us/wqd/watershed/nps/NPS.htm	307-777-6080	jennifer.zygmunt@wyo.gov
Wyoming Game and Fish Department	Riparian Habitat Improvement Grant	Stock water development; streambank stabilization; etc.	http://wgfd.wyo.gov/web2011/home.aspx	Scott Talbott Director 307-777-4600	See WGF Website for contact diretories
	Water Development/Maintenance Habitat Project Grant	Water developments (springs, windmills, guzzlers, pumps, etc.)			
	Upland Development Grant	Range management; prescribed burns			
	Fish Wyoming	Public fishing opportunities	http://wgfd.wyo.gov/web2011/fishing-1000182.aspx		
	Wyoming Sage Grouse Conservation Fund	Sage-grouse habitat protection or improvement	http://wgfd.wyo.gov/web2011/WILDLIFE-1000817.aspx		
Wyoming Office of State Lands and Investments	Regular Farm Loans	Projects involving most agricultural purposes	http://lands.wyo.gov/	Bridget Hill Director 307-777-6629	bridget.hill1@wyo.gov
	Small Water Development Project Loans	Converson of dry land to irrigated land and/or water use efficiency improvements			
Wyoming Water Development Commission	Wyoming Water Development Program	Planning, design and construciton of new reservoir storage and rehabiliation of existing reservoir storage projects	http://wwdc.state.wy.us/	307-777-7626	jon.wade@wyo.gov
	Small Water Project Program	Small reservoirs and stock ponds, wells, pipelines/conveyance, spring			ron.vore@wyo.gov
Wyoming Wildlife and Natural Resource Trust	n/a	Aquatic and wildlife habitat improvement, including water developments, prescribed burns, invasive plant control, etc.	http://wwnrt.state.wy.us	Don Schramm (District 3) 307-382-6244	NA
Federal					
Bureau of Land Management	Riparian Habitat Management Program	Projects to maintain, restore, improve, protect and expand riparian/wetland areas	http://www.blm.gov/wy/st/en.html	307-352-0256 (Rock Springs FO)	Rock_Springs_WYMail@blm.gov
				307-828-4500 (Kemmerer FO)	Kemmerer_WYMail@blm.gov
	Cooperative Agreement for Range Improvements	Reservoirs, pits, spring developments, wells, and associated distribution pipelines	http://www.blm.gov/wy/st/en/info/offices.html	307-352-0256 (Rock Springs FO)	Rock_Springs_WYMail@blm.gov
				307-828-4500 (Kemmerer FO)	Kemmerer_WYMail@blm.gov
Bureau of Reclamation	WaterSMART Grants Program	Water conservation, efficiency and marketing	http://www.usbr.gov/WaterSMART/grants.html	307-261-5671	http://www.usbr.gov/gp/contact.html
Environmental Protection Agency	Targeted Watershed Grants Program	Riparian, wetland, aquatic and upland habitat protection and improvement	http://water.epa.gov/grants_funding/shedfund/watershedfunding.cfm	800-227-8917 (Region 8 EPA)	r8eisc@epa.gov
Farm Service Agency	Conservation Reserve Program (CRP)	Removal of highly erobible lands from production	http://www.fsa.usda.gov/FSA/stateoffapp?mystate=wy&area=home&subject=landing&topic=landing	307-261-5231	gregor.goertz@wy.usda.gov
	Continuous Sign-Up for High Priority Conservation Practices	Riparian buffers, filter strips, grass waterways, salt tolerant vegetation, shallow water areas for wildlife, etc.			
	Emergency Conservation Program (ECP)	Emergency livestock watering conservation during severe drought			
Fish and Wildlife Service	Partners for Wildlife Habitat Restoration	Various fish and wildlife habitat restoration projects	http://www.fws.gov/partners/?viewPage=home	307-332-8719	Mark_J_Hogan@fws.gov
	North American Wetlands Conservation Act Program	Various wetlands conservation projects	http://www.fws.gov/birdhabitat/Grants/NAWCA/index.shtm	703-358-1784	dbhc@fws.gov
	Landowner Incentive Program (Non-Tribal)	Funding to WGFD to support above project types	http://wsfrprograms.fws.gov/Subpages/GrantPrograms/LIP/LIP.htm	Mountain-Prarie Region 303-236-7905	mountainprairie@fws.gov
Natural Resources Conservation Service	Environmental Quality Incentives Program	Conservation planning, range management, irrigation rehabilitation, livestock watering, etc.	http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/eqip/	307-233-6750 (State Office) 307-787-3211 (Lyman Office) 307-362-3062 (Rock Springs Office) 307-279-3256 (Cokeville Office)	astrid.martinez@wy.usda.gov
	Watershed and Flood Prevention Operations Program	Water supply, water quality control, erosion and sediment control, wetland creation and restoration, fish and wildlife habitat enhancement, flood control, public recreation, etc.	http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/landscape/wfpo/		
	Wildlife Habitat Incentives Program(WHIP)	See websites and/or local contacts for detailed information on these programs	http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/financial/whip/?cid=nrcs143_008423		
	Wetlands Reserve Program (WRP)		http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/easements/wetlands/		
	Grassland Reserve Program (GRP)		http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/easements/grassland/		
	Conservation Security Program (CSP)		http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/alphabetical/csp		
	Farm and Ranchlands Protection Program (FRPP)		http://www.nrcs.usda.gov/programs/frpp/		
	Emergency Watershed Protection (ERP)		http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/ewp/		
	Sage Grouse Restoration Project (SGRP)		http://sgrp.usu.edu/		
	Grazing Lands Conservation Initiative (GLCI) Grants		http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/technical/?cid=nrcs143_008456		
	Sage Grouse Initiative (SGI)	See website for details on project types	http://www.sagegrouseinitiative.com/	Brian Jensen WY State Biologist, 307-233-6740	brian.m.jensen@wy.usda.gov
USDA Rural Development Utilities	See website for program names	Water/Wastewater disposal facilities	http://www.rurdev.usda.gov/utilities_lp.html	Alana Cannon (WY State Director)- 307-233-6709	alana.cannon@wy.usda.gov
US Army Corps of Engineers	See website for program names	Planning, Floodplain Mangement, Flood Damage, Aquatic Ecosystem Restoration	http://www.usace.army.mil/	202-761-0011	hq-publicaffairs@usace.army.mil
Wyoming Landscape Conservation Initiative (WLCI)	See website for program names	habitat projects to improve aquatic habitats and terrain	http://www.wlci.gov/	307-352-0222	wlci_wymail@blm.gov
Private					
Ducks Unlimited	n/a	Waterfowl aquatic and upland habitat protection, restoration and enhancement	http://www.ducks.org/conservation/du-regional-offices	Great Plains Regional Office: 701-355-3500	http://www.ducks.org/about-du/contact-du-online
National Fish and Wildlife Foundation	Pulling Together Initiative	Long-term weed management projects	http://www.nfwf.org/whatwedo/grants/Pages/home.aspx	202-857-0166	info@nfwf.org
	Native Plant Conservation Initiative	Restoration of native plant communities			
	Bring Back the Natives Grant Program	Riverine habitat and aquatic species restoration projects			
	Five-Star Restoration Program	Wetland and riparian habitat restoration			
Trout Unlimited	Western Restoration	Erosion control, fish habitat structures, willow and other riparian plantings, etc.	http://www.tu.org/tu-programs/western-restoration	1-800-834-2419 (National Office)	trout@tu.org

- Facilitating work days attended by a broad base of stakeholders (e.g., Russian olive tree cutting)
- Assistance in preparation of grant applications

The Lincoln County, Sweetwater County or Uinta County Weed and Pest Districts should be contacted to determine the specific assistance available from each.

- Lincoln County Weed and Pest (307-885-9333)
- Sweetwater County Weed and Pest (307-273-9683)
- Uinta County Weed and Pest (307-789-9289)

6.3 State Programs

6.3.1 Wyoming Department of Environmental Quality

The Wyoming Department of Environmental Quality (WDEQ) provides funding for implementation of best management practices (BMPs) to address non-point sources of pollution under Section 319 of the Clean Water Act. Section 319 grant funding requires a non-federal (i.e., local) match of 40 percent from the applicant. These matching funds may be provided by landowners, a conservation district, other quasigovernmental entities (e.g., watershed improvement district, irrigation district, etc.), and/or non-profit organizations (e.g., Trout Unlimited, Ducks Unlimited, and the Rocky Mountain Elk Foundation). Applications (proposals) conforming to a specified format are required. The proposal describes in some detail the issues to be addressed and the proposed methods/BMPs to be implemented, as well as providing all other information required to evaluate the proposed project and matching fund entity (ies). These proposals are normally due in August or September of each year. For more information please visit: http://deq.state.wy.us/wqd/watershed/nps/NPS.htm

6.3.2 Wyoming Game and Fish Department

The following summary of funding assistance available from the Wyoming Game and Fish Department (WGFD) is quoted from the Water Management & Conservation Assistance Program Directory (WWDC, 2009). The full document can be accessed here:

http://wwdc.state.wy.us/wconsprog/WtrMgntConsDirectory.html

"The Wyoming Game and Fish Department offers a funding program to help landowners, conservation groups, institutions, land managers, government agencies, industry and non-profit organizations develop and/or maintain water sources for fish and wildlife. This program also provides funding for the improvement and/or protection of riparian/wetland areas for fish and wildlife resources in Wyoming. Applications for projects are accepted any time with approval on January 1 and August 1 of each year."

- **Riparian Habitat Improvement Grant**. The purpose of this program is to improve or maintain riparian and wetland resources. Fencing, herding, stock water development, streambank stabilization, small damming projects and beaver transplanting are a few examples of efforts that qualify under this program. Permits, NEPA compliance, construction, maintenance, access and management planning are all grantee responsibilities. There is $10,000/project maximum available with 50% cash or in-kind required from grantee.
- **Water Development/Maintenance Habitat Project Grant.** The purpose of this program is to develop or maintain water for fish and wildlife. Spring development, windmills, guzzlers, water protection and pumping payments are examples of the extent of this program. Permits, NEPA compliance, maintenance, access and water rights are responsibilities of the grantee. There is a maximum of $7,500/project and 50% cash or in-kind contribution required from the grantee.
- **Upland Development Grant**. The purpose of this program is to develop upland wildlife habitat. Example project include management, grazing systems, prescribed burning, wildlife food plots such as oat, millet or corn plantings, range pitting and range seeding. Permits, NEPA compliance, maintenance, access and management planning are responsibilities of the grantee. There is a maximum of $10,000/project and 50% cash or in-kind contribution required from the grantee.
- **Fish Wyoming**. The purpose of this program is to develop public fishing opportunities. Examples of projects within this effort are boat ramps and fishing access. This program provides a 50% match of funding which is channeled through a private organization or municipality."
- **Wyoming Sage Grouse Conservation Fund**. WGFD also administers the Wyoming Sage-Grouse Conservation Fund (WSGCF. The WSGCF is a special fund established by the Wyoming State Legislature to support the efforts of Local Sage-Grouse Working Groups (LWGs). The WSGCF funding is intended to promote conservation of sage grouse populations and habitat (sagebrush ecosystems), including socio-economic and human use of the habitat.

  During its 2014 session, the Wyoming Legislature approved the Governor's budget request to support the local sage-grouse working groups and fund conservation projects benefiting sagegrouse and their habitat. Implementation of projects consistent with local sage-grouse conservation plans will reduce the likelihood of sage-grouse being listed under the federal Endangered Species Act

Requests for WSGCF funding must be made on a Project Proposal Form available at: http://wgfd.wyo.gov/web2011/Departments/Wildlife/pdfs/WSGCF_PROJECTPROPOSAL_FORM0005643.pdf. This documents includes the following project application criteria:

- Project funding is provided for the purpose of implementing projects that address the primary threats to sage-grouse as identified in local sage-grouse conservation plans. Applicants should read the appropriate plans and tailor projects accordingly.
- Projects will be evaluated based on consistency with Wyoming's Core Area management strategy, local sage-grouse conservation plan, likelihood of success, project readiness, matching

funds, multiple species benefits, significance at local/state/regional level, duration of benefits, and adequacy of monitoring.

- Funds are distributed as reimbursable grants in most cases. This means the grantee must submit for reimbursement of expenses incurred as a result of the project. “Up front” funding is not allowed. Grantees (non-profit organization, government agency or private individuals) are required to enter into grant agreements and request reimbursement of expenditures made. For-profit entities are not eligible for grants but may be contracted by grantees to conduct actions prescribed by the grant.
- For habitat improvement projects, including water developments, details of the posttreatment
- livestock grazing management plan must be included in the project description. Habitat treatment projects must also be consistent with Wyoming Game and Fish Department Protocols for Treating Sagebrush to Benefit Sage-Grouse.
- Research projects, including all projects that involve radio telemetry, should be conducted
- with the rigor and intent to publish in peer-reviewed scientific press.
- Habitat projects conducted on private lands should be partnered with programmatic sagegrouse efforts such as a U.S. Fish & Wildlife Service Candidate Conservation Agreement with Assurances (CCAA), NRCS Sage-Grouse Initiative (SGI) or other landscape scale, sage-grouse specific, effort.
- Funds must be expended July 1, 2014 – September 30, 2016. Do not submit for funding needed outside of these dates.

6.3.3 Wyoming Office of State Lands and Investments

As the administrative advisory arm of the Board of Land Commissioners and State Loan and Investment Board, the Office of State Lands and Investments (OSLI) administers Regular Farm Loans and Small Water Development Project Loans that may be applicable to potential projects identified in Chapter 5.

- **Regular Farm Loans**. These loans are made for a wide range of agricultural purposes, including as most applicable to the potential projects identified in Chapter 5, purchasing, constructing or installing equipment and/or improvements necessary to maintain or improve the earning capacity of the farming operation. Eligible applicants include individuals whose primary residence is in Wyoming and legal entities with a majority of the ownership meeting the individual residency requirements. Single loans or combinations of loans cannot exceed an outstanding principal balance of $600,000. Loan rates are 8 percent for loans up to 50 percent of the appraised value of the security land and improvements and 9 percent for loans between 50 and 60 percent of the security. The term of a given loan is limited to 30 years.
- **Small Water Development Project Loans**. These loans are authorized for projects for development and use of water upon agricultural lands for agricultural purposes. These projects may convert dry land into irrigated land or lead to more efficient use of water and/or increased crop or forage production. Eligible recipients may include court approved water districts, agencies of state and local government, persons, corporations, associations, and other legal

entities recognized under state law. Individual loans up to $150,000 may be made. Interest is currently set at 6 percent and the maximum term of loans is 40 years.

6.3.4 Wyoming Water Development Commission

The mission of the Wyoming Water Development Commission (WWDC) as defined in the enabling legislation is to: *"provide, through the commission, procedures and policies for the planning, selection, financing, construction, acquisition and operation of projects and facilities for the conservation, storage, distribution and use of water, necessary in the public interest to develop and preserve Wyoming's water and related land resources. The program shall encourage development of water facilities for irrigation...for abatement of pollution, for preservation and development of fish and wildlife resources…and shall help make available the waters of the state for all beneficial uses…"* (W.S. 41-2-112(a)).

Key aspects of the Wyoming Water Development Program and the Small Water Project Program administered by WWDC are described in the following subsections.

6.3.4.1 Wyoming Water Development Program

The main Wyoming Water Development Program encompasses new development, dams and reservoirs, rehabilitation, water resources planning and master planning. Of most relevance to the Blacks Fork Watershed Study Area in terms of implementing alternative projects are the New Development - Rehabilitation Programs and Dams and Reservoirs Program described below. This information was abstracted from the Operating Criteria of the Wyoming Water Development Program available at: http://wwdc.state.wy.us/opcrit/final_opcrit.pdf and from a form titled Information for New Applicants available at the following website: http://wwdc.state.wy.us/projappl/New_Ap_Info.pdf .

It is very important to ensure that the most current information on funding is reviewed prior to making an application as WWDC's policies and procedures can and do change over time in response to legislative direction and/or Commission action. Review of information available at the above websites and contact with the staff of the WWDC (306-776-7626) is recommended prior to beginning the application process.

- New Development Program — the New Development Program develops presently unused and/or unappropriated waters of Wyoming.
- Rehabilitation Program — The Rehabilitation Program provides funding assistance for the improvement of water projects completed and in use for at least fifteen (15) years.
- Dam and Reservoir Program — proposed new dams with storage capacity of 2,000 acre feet or more and proposed expansions of existing dams of 1,000 acre feet or more qualify for the Dam and Reservoir Program.

- Water Resource Planning — The Wyoming Water Development Commission serves as the water development planning agency for the State of Wyoming. In this capacity, the WWDC can provide the following assistance to project sponsors.
    - Basin Wide Plans — the program serves to develop basin wide plans for each of the state's major drainage basins.
    - Master Plans — the program provides a service to municipalities, districts and other entities to assist in the preparation of planning documents which serve as master plans for future water supply systems and improvements. The plans serve as a framework for the entities to establish project priorities and to perform the financial planning necessary to meet those priorities. These plans can assist entities in preparing the reports necessary to achieve federal funding assistance for water development and other water related projects.
- Groundwater Grant Program — The primary purpose of the program is to inventory the available groundwater resources in the state. The program also serves to assist communities in developing efficient water supplies. Municipalities and special districts that purvey drinking water are eligible to receive up to $400,000 in grant funds if 25% of the total project costs will be paid by local matching funds.

New Development Program. This program provides technical assistance and funding to develop waters of the state that are unused and/or unappropriated at present. It deals with a wide range of projects; including as most relevant to the Blacks Fork Watershed Study Area are the following types of projects:

- Multiple Purpose (including among other uses two or more of the following: agriculture, recreation, environmental, and erosion control);
- New Storage (dams and reservoirs less than 2,000 acre-feet);
- New Supply (e.g., deep wells, alluvial wells, diversion dams);
- Watershed Improvement (for components whose primary function or benefit is water development); and
- Recreation.

These project types are listed above in the order of preference assigned by WWDC when determining what projects to pursue among all of the applications received for funding.

Rehabilitation Program. The Rehabilitation Program addresses the improvement of water projects completed and in use for at least fifteen years in order to assist in keeping existing water supplies effective and viable for the future. Relative to the Blacks Fork Watershed Study Area, the Rehabilitation Program can improve existing agricultural storage facilities or conveyance systems to insure safety, decrease operation and maintenance (O&M) costs, and increase the efficiency of agricultural water use.

The types of projects supported relevant to this watershed are essentially the same as listed above for the New Development Program.

Note that on-farm improvements (e.g., gated pipe, side rolls, center pivots and related facilities and/or equipment such as pumps, power lines) are excluded from WWDC funding under both the New Development and Rehabilitation Programs.

Dam and Reservoir Program. Proposed new dams with storage capacity of 2,000 acre feet or more and proposed expansions of existing dams of 1,000 acre feet or more qualify for the Dam and Reservoir Program. The source of revenue for the program is Water Development Account No. III [W.S. 41-2-124(a) (iii)], which has received Water Development Account No. I appropriations and budget reserve account appropriations on occasion, as approved by the legislature; the interest earnings that have accrued to the Water Development Account No. III; and a percentage (0.5%) of the revenues which accrue to the state's severance tax distribution account. Legislative approval must be granted prior to allocating funds to a particular purpose or project.
Dams and reservoirs typically provide opportunities for many potential uses. While water supply shall be emphasized in the development of reservoir operating plans, recreation, environmental enhancement, flood control, erosion control and hydropower uses should be explored as secondary purposes.

Key Criteria and Procedures. An application for funding under either the New Development and Rehabilitation Programs must meet the following key criteria most applicable to potential projects as identified in Chapter 5:

- *"The project sponsor shall be a public entity that can legally receive state funds, incur debt, generate revenues to repay a state loan, hold title and grant a minimum of a parity position mortgage on the existing water system and improvements or provide other adequate security for the anticipated state construction loan."*
- *"The proposed project must serve…2,000 or more acres of irrigated cropland, or must rehabilitate watershed infrastructure, which will develop or preserve the beneficial use of water in a watershed. The watershed rehabilitation projects must possess an estimated minimum useful life span of twenty-five (25) years and demonstrate that sufficient public benefits will accrue to justify construction of the anticipated improvements..."*

Important procedures, deadlines and requirements for applications to the New Development and Rehabilitation Programs include but are not necessarily limited to the following:

- A fee of $1,000 must be submitted with initial project applications; the fee does not apply to projects advanced to the next level of study or to construction.
- A certified resolution passed by the governing body of the sponsoring entity must accompany an application for a Level II study or Level III construction. This requirement may be deferred if the applicant is in the process of forming a public entity.

- A public entity must be in place before a Level II study or Level III construction can commence, with certain exceptions discussed below.
- The due date for new project applications is August 15 of each year; the due date for applications for advancing to the next study level or construction funding is October 1 of each year.

Two important criteria that apply specifically to dam and reservoir projects are:

- *"For projects that enlarge existing storage projects by 1,000 acre-feet or greater or for proposed new dam and reservoirs with a capacity of 2,000 acre-feet or greater, expenses associated with final engineering design and required National Environmental Policy Act reviews, including but not limited to environmental assessments and environmental impact statements, are eligible components of a Water Development Program Level II, Phase III Study Project."*
- *"For dam and reservoir projects, the Commission may waive sponsor eligibility requirements through Level II, Phase II. However. the eligible entity requirements shall be met prior to initiation of Level II, Phase III activities described herein."*

Financial Plan. The current standard terms of the Wyoming Water Development Program financial plan are summarized as follows:

- Sixty-seven (67) percent grant to thirty-three (33) percent loan mix
- Minimum four (4) percent loan interest rate (current rate is 4 percent, but legislature may increase rate)
- Maximum 50-year term of loans; term shall not exceed economic life of project
- Payment of loan interest and principal may be deferred up to 5 years after substantial completion at WWDC's discretion under special circumstances

In the document titled Information for New Applicants the following additional relevant information is provided regarding financial terms:

- *"The best available project financial terms include a grant for Level I and Level II expenses, a grant of 75% of the Level III costs, a loan of 25% of the Level III costs with an interest rate of four percent (4%) and a term equal to the economic life of the project/improvements or fifty (50) years, whichever is less. Principal and interest payments may be deferred for five (5) years after project completion. However, these favorable terms will be granted when a project is essential and the project sponsor has a very limited ability to pay."*
- *"Those sponsors who feel more favorable terms are warranted due to a limited ability to pay must make a formal presentation to the Commission documenting their case. Sponsors electing to pursue this option should be aware that the Commission is reluctant to deviate from this standard and such requests will be denied unless they are clearly documented and justified."*

The Commission will evaluate whether or not a project will be funded for Level III construction following review of the results of Level II studies. If the Commission determines that the project should not advance due to high repayment costs (as determined by an analysis of the sponsor's ability-to-pay and after other funding sources have been considered), the sponsor has the option of making a formal presentation to WWDC relative to the sponsor's ability and willingness to pay. This presentation must address the need for the project, the direct and indirect benefits of the project, and any other information the sponsor feels is relevant to the Commission's final decision.

The project sponsor shall be a public entity that can legally receive state funds, incur debt, generate revenues to repay a state loan, hold title and grant a minimum of a parity position mortgage on the existing water system and improvements appurtenant to the project or provide other adequate security for the anticipated state construction loan.
The WWDC may waive the requirement that the project sponsor be a public entity under the following exceptions:

1. The WWDC may accept applications for Level I studies from applicants that are not public entities. This will allow the applicant to know if there is a viable project prior to becoming a public entity. However, the applicant must be a public entity before applying for a Level II study. Under these circumstances, the Level I process will have a two-year duration with the study being completed the first year and the sponsor forming a public entity the second year.

2. The WWDC may accept applications related to the construction of dams and reservoirs from applicants that are not public entities. As the evaluations of the feasibility of new dams are complex, this will allow the applicant to know if the proposed reservoir is feasible prior to becoming a public entity. However, the applicant must be a public entity before applying for Level II, Phase III funding.

6.3.4.2 Small Water Project Program

The Small Water Project Program (SWPP) is intended to be compatible with the conventional WWDC program described above. Small water projects are defined as providing multiple benefits where the total estimated project costs (including construction, permitting, construction engineering, and land procurement) are less than $100,000 or where WWDC's maximum financial contribution is 50 percent of project costs or twenty-five thousand dollars ($25,000), whichever is less. SWPP funding is a "one-time" grant so that ongoing operation and maintenance costs are not included. Loans are not available under SWPP.

Eligibility. The kinds of projects eligible for SWPP funding include, but are not necessarily limited to:

- small reservoirs and stock watering ponds (up to 20 feet high and 20 acre-feet capacity);
- wells;

- pipelines and conveyance facilities;
- spring developments;
- windmills;
- wetland developments;
- solar platforms; and
- irrigation infrastructure.

These projects may address environmental concerns by providing water supplies to support plant and animal species, and serve as instruments to improve range land conditions.
Funding can only be provided to eligible public entities including but not necessarily limited to conservation districts, watershed improvement districts, water conservancy districts, and irrigation districts.

Application, Evaluation and Administration. Details of the application and evaluation process and program administrative procedures are provided in the Small Water Project Program Operating Criteria available online as noted previously. Some key aspects of the process and procedures applicable to the potential projects identified in Chapter 5 include the following:

1. Planning for small water projects will be generated by a WWDC watershed study or equivalent as determined by the WWDO. A watershed study will incorporate, at a minimum, available technical information describing conditions and assessments of the watershed including hydrology, geology, geomorphology, geography, soils, vegetation, water conveyance infrastructure, and stream system data. A plan outlining the site specific activities that may remediate existing impairments or address opportunities beneficial to the watershed shall also be included. A watershed study may identify one or more projects that may qualify for SWPP funding. A professional engineer and/or geologist, as appropriate, shall certify any analysis submitted unless generated by a federal agency.

2. Applications shall be received by January 1 of each calendar year. Applications meeting criteria requirements will be considered during the regularly scheduled WWDC meeting in March. Applications shall include a project application, sponsor project referral, project location map, project cost estimates and any letters of authorization or commitment of participation that may be available from other funding sources.

3. Projects that improve watershed condition and function, provide multiple benefits, and meet the funding criteria specified in W.S. 99-3-703(j) (vii) or W.S. 99-3-704(g) (vii), as described in B.4 herein, are eligible for consideration.

4. The sponsoring entity will be required to address the WWDC and provide testimony and other additional supporting evidence that justifies SWPP funding whenever the public benefit documentation, submitted with the application, is deemed to be insufficient by the WWDO.

6.3.5 Wyoming Wildlife and Natural Resource Trust

The Wyoming Wildlife and Natural Resource Trust (WWNRT) was formed by the state legislature in 2005 to preserve and enhance Wyoming's wildlife and natural resources. Projects funded by WWNRT must provide a public benefit such as continued agricultural production to maintain open space and healthy ecosystems, enhancements to water quality, and maintenance or enhancement of wildlife habitat.

Wildlife and Natural Resource Trust funding is available for a wide variety of projects throughout the state, including natural resource programs of other agencies. Some examples include the following:

- Projects that improve or maintain existing terrestrial habitat necessary to maintain optimum wildlife populations may include grassland restoration, changes in management, prescribed fire, or treatment of invasive plants.
- Preservation of open space by purchase or acquisition of development rights contractual obligations, or other means of maintaining open space.
- Improvement and maintenance of aquatic habitats, including wetland creation or enhancement, stream restoration, water management or other methods.
- Acquisition of terrestrial or aquatic habitat when existing habitat is determined crucial / critical, or is present in minimum amounts, and acquisition presents the necessary factor in attaining or preserving desired wildlife or fish population levels.
- Mitigation of impacts detrimental to wildlife habitat, the environment and the multiple use of renewable natural resources, or mitigation of conflicts and reduction of potential for disease transmission between wildlife and domestic livestock.

Allowable projects under this program that are potentially relevant to this watershed management plan study include:

- Improvement and maintenance of existing aquatic habitat necessary to maintain optimum fish populations.
- Conservation, maintenance, protection and development of wildlife resources, the environment, and Wyoming's natural resource heritage.
- Participation in water enhancement projects to benefit aquatic habitat for fish populations and allow for other watershed enhancements that benefit wildlife.

Funding is by grant with no matching funds required. Non-profit and governmental organizations (including watershed improvement districts, conservation districts, etc.) are eligible for funding by WWNRT. Projects will be funded in July and January. Applications deadlines are March 1 and September 1. The application form has been included in the digital library. For more information on the application process please see: https://sites.google.com/a/wyo.gov/wwnrt/how-to-apply

6.4 Federal Agencies

6.4.1 Bureau of Land Management

- **BLM's Riparian Habitat Management Program** offers the opportunity to coordinate with outside interests on riparian improvement projects. The goal of BLM's riparian-wetland management is to maintain, restore, improve, protect, and expand these areas so they are in proper functioning condition for their productivity, biological diversity, and sustainability. The overall objective is to achieve an advanced ecological status, except where resource management objectives, including proper functioning condition, would require an earlier successional stage. The goal includes aggressive riparian-wetland information, inventory, training, and research programs as well as improving the partnerships and cooperative management processes.

  Partnerships have been available for riparian improvement projects and for research into riparian issues. Funding is available on an annual basis subject to budget allocations from Congress. All submitted cooperative projects compete for the funds available in the riparian program.

- **Range Improvement Planning and Development** is a cooperative effort not only with the livestock operator but also with other outside interests including the various environmental/conservation groups. Water development, whether it be for better livestock distribution or improved wetland habitats for wildlife, is key to healthy rangelands and biodiversity. Before actual range improvement development occurs, an approved management plan must be in place. These plans outline a management strategy for an area and identify the type of range improvements needed to accommodate that management. Examples of these plans are Coordinated Resource Plans, Allotment Management Plans, and Wildlife Habitat Management Plans.

  All rangeland improvement projects on lands administered by the Bureau of Land Management require the execution of a Permit. Although there are a couple of methods for authorizing range improvements on the public lands, Cooperative Agreement for Range Improvements form 4120-6 is the method most commonly used. This applies equally to range improvement projects involving water such as reservoirs, pits, springs, and wells including any associated pipelines for distribution. The major funding source for the Bureau of Land Management's share comes from the range improvement fund which is generated from the grazing fees collected. There, too, is a limited amount of funding from the general rangeland management appropriations. If the cooperator is a livestock operator, their contributions come generally in the form of labor. There are times they also provide some of the material costs as well. Contributions from the conservation/environmental interests is monetary and often come in the form of grants. They also contribute labor on occasion.

- **BLM's Watershed and Water Quality Improvement** efforts are undertaken in a cooperative approach with the State of Wyoming, Conservation Districts, livestock operators and various conservation groups. Wyoming's BLM is partnering in the implementation of several Section 319 watershed plans state-wide.

  It is anticipated that as the Wyoming Department of Environmental Quality (WDEQ) continues the inventory of waters of the State and the identification of Impaired and/or Threatened water bodies, BLM will be partnering with the WDEQ to improve water quality in water bodies on Public Lands. In the course of developing watershed plans or TMDL's for these watersheds, BLM will be routinely involved in watershed health assessments, planning, project implementation and Best Management Practice (BMP) monitoring.

Now, and in the future, the goals of cooperative watershed projects will typically be the restoration and maintenance of healthy watershed function. These goals will typically be accomplished through approved BMP's, e.g. prescribe burns, vegetation treatments, instream structures, too enhance vegetation cover, control accelerated soil erosion, increase water infiltration and enhance stream flows and water quality.

Currently, in response to the Clean Water and Watershed Restoration initiative and associated funding increases, BLM is expanding its efforts to address water quality and environmental concerns associated with abandoned mines. This work will also be accomplished, in cooperation with the State Abandoned Mine Lands Division, on a priority watershed basis and will employ appropriate BMP's to address identified acid mine drainage and runoff problems from mine tailings and waste rock piles.

6.4.2 Bureau of Reclamation

The Bureau of Reclamation (BOR) administers the Water 2025 Challenge Grant Program. This program provides funding on a competitive basis for projects focused on water conservation, efficiency and water marketing. Preference is given to projects that can be completed within 24 months that will help to prevent crises over water in areas identified as "hot spots" where potential for conflict is judged to be moderate to highly likely by 2025.

6.4.3 Environmental Protection Agency

The Targeted Watershed Grants Program administered by the Environmental Protection Agency (EPA) "encourages watershed practitioners to examine local water related problems in the context of the larger watershed in which they exist, to develop solutions to those problems by creatively applying the full array of available tools, including general, state and local programs, to restore and preserve water resources through strategic planning and coordinated project management that draw in public and private sector partners..." as described in the following program website: http://www.epa.gov/twg/2006/2006faq.html#intro. Organizations eligible for funding include nonprofits, tribes, and local governments. The assistance provided consists of grants for up to

75 percent of the total project costs. A match of at least 25 percent is required. The typical median amount awarded is $700,000 with a typical range of $300,000 to $900,000. It is important to note that application must be made by the governor, and that the competition for these grants is keen.

6.4.4 Farm Service Agency

The Farm Service Agency (FSA) administers three different programs that may be applicable to some of the alternative projects identified in Chapter 5. Technical assistance for the FSA programs is provided by NRCS. Each of these three programs is briefly discussed below.

- **Conservation Reserve Program (CRP).** The Conservation Reserve Program (CRP) is a land conservation program administered by the Farm Service Agency (FSA). In exchange for a yearly rental payment, farmers enrolled in the program agree to remove environmentally sensitive land from agricultural production and plant species that will improve environmental health and quality. Contracts for land enrolled in CRP are 10-15 years in length. The long-term goal of the program is to re-establish valuable land cover to help improve water quality, prevent soil erosion, and reduce loss of wildlife habitat.

- **Emergency Conservation Program (ECP)**. The Emergency Conservation Program (ECP) helps farmers and ranchers to repair damage to farmlands caused by natural disasters and to help put in place methods for water conservation during severe drought. The ECP does this by giving ranchers and farmers funding and assistance to repair the damaged farmland or to install methods for water conservation. The funding for ECP is determined by Congress. Up to 75% of the cost to implement emergency conservation practices can be provided, however the final amount is determined by the committee reviewing the application. Qualified limited resource producers may earn up to 90% cost-share. The FSA County Committee is able to approve applications up to $50,000 while $50,001 to $100,000 requires state committee approval. Amounts over $100,000 require the approval of the national FSA office.

- **Continuous Sign-Up for High Priority Conservation Practices:** Continuous sign-up provides management flexibility to farmers and ranchers to implement certain high-priority conservation practices on eligible land. Land must meet the requirements of CRP and be determined by the NRCS to be eligible and suitable for:

Riparian buffers	Living snow fences
Filter strips	Contour grass strips
Grass waterways	Salt tolerant vegetation
Shelter belts	Shallow water areas for wildlife Field windbreaks

  This is a cost share program that offers rental rates based on the average value of dryland cash rent with an additional financial incentive of up to 20% of the soil rental rate for field

windbreaks, grass waterways, filter strips and riparian buffers. An additional 10% may be added if the land is located in an EPA-designated wellhead protection area. There is also a provision for cost share of up to 50% of the cost of establishing permanent cover.

6.4.5 Fish and Wildlife Service

Technical and financial assistance are available to private landowners, profit or nonprofit entities, public agencies and public-private partnerships under several programs addressing the management, conservation, restoration or enhancement of wildlife and aquatic habitat (including riparian areas, streams, wetlands and grasslands). These programs include, but are not necessarily limited to:

- **Partners for Wildlife Habitat** This program provides technical and financial assistance directly to private landowners through voluntary cooperative agreements called Wildlife Extension Agreements (WEA). The program targets habitats that are in need of management, restoration or enhancement such as riparian areas, streams, wetlands and grasslands. Under these Wildlife Extension Agreements, private landowners agree to maintain the restoration projects as specified in the agreement but otherwise retain full control of the land. Depending on the number of partners, the cost share may vary somewhat but is typically 75% partners and 25% landowner.

- **North American Wetlands Conservation Act Grant Program** This grant program promotes long-term conservation of wetlands ecosystems and the waterfowl, migratory birds, fish and wildlife that depend upon such habitat. Conservation actions supported are acquisition, enhancement and restoration of wetlands and wetlands associated habitat. This program encourages voluntary, public-private partnerships. Public or private, profit or non-profit entities or individuals establishing public-private sector partnerships are eligible. Cost-share partners must at least match grant funds with non-federal monies*… Small Grants are typically for $50,000.*

- **Wildlife Conservation and Appreciation Program .** This program provides grants to state fish and wildlife agencies to fund projects that bring together USFWW S, state agencies and private organizations and individuals. Projects include identification of significant problems that can adversely affect fish and wildlife and their habitats, actions to conserve species and their habitats, actions that will provide opportunities for the public to use and enjoy fish and wildlife through non-consumptive activities, monitoring of species and identification of significant habitats.

- **Cooperative Endangered Species Conservation Fund.** This program is available to states that have a cooperative agreement with the Secretary of Interior. The intent is to provide Federal assistance too any state to assist in the development of programs for the conservation of endangered and threatened species. Potential programs include animal, plant and habitat surveys, research, planning, management, land acquisition, protection and public education. Single states may receive up to 75% of program costs.

- **Landowner Incentive Program (Non-Tribal**). This program provides funding directly to the lead state wildlife service agency (WGFD in Wyoming) for programs addressing the issues noted previously.

6.4.6 Natural Resources Conservation Service

The Natural Resources Conservation Service (NRCS) administers a number of funding and technical assistance programs applicable to many of the alternative projects identified in Chapter 5. These programs are briefly described below and summarized in Table 6.1-1.

- **Environmental Quality Incentives Program.** The Environmental Quality Incentives Program (EQIP) is a voluntary program available to agricultural producers that provides technical assistance, cost sharing and incentive payments for projects and practices that improve water quality, enhance grazing lands, and/or increase water conservation. Current priorities used by NRCS in allocating EQIP funds that are applicable to the Blacks Fork Watershed study area include reduction of nonpoint source pollution of surface waters, reduction in soil erosion and sedimentation from agricultural lands, and promotion of at-risk species habitat conservation.

  Non-federal landowners (including American Indian tribes) that engage in livestock operations or agricultural production are eligible for funding. Eligible land includes cropland, rangeland, pasture, forestland, and other farm and ranch lands. Eligibility also requires that the applicant develop an EQIP plan of operations that becomes the basis of the cost-sharing agreement between NRCS and the participant.

  EQIP provides payments up to 75 percent of the incurred costs and income foregone of certain conservation practices and activities. However certain historically underserved producers (Limited resource farmers/ranchers, beginning farmers/ranchers, socially disadvantaged producers) may be eligible for payments up to 90 percent of the estimated incurred costs and income foregone. Farmers and ranchers may elect to use a certified Technical Service Provider (TSP) for technical assistance needed for certain eligible activities and services. The new Farm Bill established a new payment limitation for individuals or legal entity participants who may not receive, directly or indirectly, payments that, in the aggregate, exceed $300,000 for all program contracts entered during any six year period. Projects determined as having special environmental significance may, with approval of the NRCS Chief, have the payment limitation raised to a maximum of $450,000.

  Detailed information about the EQIP program is available at the following website: http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/eqip/.

- **Watershed Protection and Flood Prevention Operations Program.** Also known as the "Small Watershed Program" or the "PL 566 Program," this program provides technical and financial assistance to address resource and related economic problems on a watershed basis. Projects

related to watershed protection, flood prevention, water supply, water quality, erosion and sediment control, wetland creation and restoration, fish and wildlife habitat enhancement, and public recreation are eligible for assistance. Technical and financial assistance is also available for planning and installation of works of improvement to protect, develop, and use land and water resources in small watersheds.

Applicants eligible for funding through this program that are potentially relevant to the Blacks Fork Watershed study area include: local or state agencies, counties, conservation districts, or other subunits of state government (e.g., watershed improvement, water conservancy and irrigation districts) with the authority and capacity to carry out, operate, and maintain installed works of improvement. Projects are limited to watersheds containing less than 250,000 acres.

The assistance provided consists of technical assistance and cost sharing (amount varies) for implementation of NRCS-authorized watershed plans. Technical assistance is provided on watershed surveys and planning. Although projects vary significantly in scope and complexity, projects receiving $3.5 million to $5 million in federal financial assistance are not uncommon.

Detailed information about the Watershed and Flood Prevention Operations program is available at the following website: http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/landscape/wfpo/

- **Sage Grouse Initiative**
  The Sage Grouse Initiative is an organization of public and private entities conserving at-risk wildlife through voluntary cooperation, incentives, and community support. The Natural Resources Conservation Service launched SGI in 2010, applying the power of the Farm Bill to target lands where habitats are intact and sage grouse numbers are highest – covering 78 million acres across 11 western states. While private lands are the primary focus, the Initiative serves as a catalyst for public land enhancements. The Sage Grouse Initiative applies Farm Bill dollars and certifies conservation projects in the core areas for sage grouse with a dual goal of sustaining rangelands and sage grouse. In addition to directing dollars to private lands where 40 percent of sage grouse live, SGI dollars can be applied on public lands where ranchers have grazing leases. For more details related to funding opportunities please contact your local NRCS office. Detailed information related to the Sage Grouse Initiative can be found at the following website: http://www.sagegrouseinitiative.com/

- **Other NRCS Programs.** Other programs administered through NRCS that may be relevant to certain of the alternative projects discussed in Chapter 5 include, but are not necessarily limited to the following:

  - **Wildlife Habitat Incentives Program (WHIP**) – Through WHIP, technical and financial assistance is provided to landowners and others to develop and improve wildlife habitat on private lands.

- **Wetlands Reserve Program (WRP)** – Eligible landowners may receive technical and financial assistance through the WRP to address wetland, wildlife habitat, soil, water and related natural resource concerns on private lands.
- **Grassland Reserve Program (GRP**) – This program emphasizes support for grazing operations, plant and animal biodiversity, and grassland and land containing shrubs and forbs under the greatest threat of conversion.
- **Farm and Ranch Lands Protection Program (FRPP**) – FRPP is designed to help farmers and ranchers keep their land in agriculture. It provides matching funds to State, Tribal or local governments and non-governmental organizations with existing farm and ranch land protection programs to purchase conservation easements.
- **Resource Conservation and Development (RC&D)** – Wyoming's five RC&D areas assist communities by promoting conservation, development and use of natural resources; improving the general level of economic activity; and enhancing the environment and standard of living for residents of those communities.
- **Emergency Watershed Protection (ERP)**
- **Small Watershed Rehabilitation Program**
- **Sage Grouse Restoration Project (SGRP)**
- **Grazing Lands Conservation Initiative (GLCI) Grants**
- **Cooperative Conservation Partnership Initiative (CCPI)**

Information on all NRCS programs is available from the local contacts listed Table 6.1-1.

6.4.7 US Army Corps of Engineers

The Army Corps of Engineers has civil responsibilities for flood damage reduction, hydroelectric power generation and navigational improvement as well as other water and land resource problems and needs including environmental preservation and enhancement, ecosystem management and comprehensive flood plain management. The Corps is responsible for a worldwide military construction program, an extensive environmental program and a broad national civil works program.

The Corps of Engineers is authorized to provide technical assistance to local communities, States and federally recognized Indian Tribes in support of their efforts to alleviate flooding impacts, reduce erosion and otherwise plan for the wise and prudent use of the nation's water and related land resources. They also have authority to construct certain water resources related projects and respond to water resource needs.

- **Planning Assistance to States.** This program provides for assistance in preparation of plans for the development, utilization and conservation of water and related land resources. The Corps provide technical planning assistance in all areas related to water resources development such as bank stabilization, sedimentation, water conservation, ecosystem and watershed planning

and water quality. Assistance is limited to $500,000 per state and studies are cost-shared on a 50-50 basis with a non-federal sponsor such as a state, public entity or an Indian Tribe.

- **Floodplain Management Services.** This program provides technical services and planning guidance for support and promotion of effective flood plain management. Flood and flood plain data are developed and interpreted with assistance and guidance provided in the form of "Special Studies" on all aspects of flood plain management planning. All services are provided free of charge to local, regional, state or non-federal public agencies. Federal agencies and private entities have to cover 100% of costs.

- **Flood Damage Reduction Projects.** This program provides structural and non-structural projects to reduce damages caused by flooding and focuses on solving local flood problems in urban areas, towns and villages. The Corps works with the project sponsor to define the flood problem, evaluate solutions, select a plan, develop the design and construct a project. A feasibility study is conducted to identify potential projects with the first $100,000 of the cost Federal. Any cost above this amount is cost-shared 50-50 with the sponsor in the form of cash and in-kind services. Construction lands, easements, rights-of-way, relocations and disposal and 5% of the projects costs are the sponsor's responsibility. Operation and maintenance and a maximum of 50% of total project cost are the sponsor's responsibility.

- **Project Modification For Improvement of Environment.** The purpose of this program is to modify structures or operation of previously constructed water resources projects to improve environmental quality, especially fish and wildlife values. A study, at federal expense, is initiated followed by a feasibility plan that is cost-shared 25% by the sponsor.

- **Aquatic Ecosystem Restoration.** This effort is for restoration of historic habitat conditions to benefit fish and wildlife resources. This is primarily to provide structural or operational changes to improve the environment such river channel reconnection, wetland creation or improving water quality. Conditions are similar to the Project Modification program with sponsor cost-share being 35%.

- **Water Resources Projects.** The purpose of this program is to construct larger projects for flood damage reduction and to provide technical assistance in resolving more complex water resource problems. It is used to evaluate projects costing more than $10 million that include purposes of flood control, water supplies, water quality, environmental protection and restoration, sedimentation or recreation. This would include reservoirs, diversions, levees, channels or flood plain parks as examples. The Corps works with a non-federal sponsor to define the flood or water resource related problem or opportunity, evaluate flood control or solutions, select a plan, develop a design and construct a project. This requires special authorization and funding from Congress with a reconnaissance study being federal cost. A feasibility study to establish solutions is cost-shared 50% by the non-federal sponsor with 35 to 50% of construction cost the responsibility of the sponsor.

- **Support For Others Program.** This program provides for environmental protection and restoration or facilities and infrastructure. This includes Environmental Planning and

Compliance, Economic and Financial Analyses, Flood Plain Management, Cultural Resources and General Planning. All costs for these programs are provided by the customer agency.

- **Regulatory Authority/Responsibility.** The Corps of Engineers has regulatory authority under the Clean Water Act and the River and Harbor Act. The purpose of these laws is to restore and maintain the chemical, physical and biological integrity of waters of the United States. Section 404 of the Clean Water Act authorizes the Corps to regulate the discharge of dredged or fill material into waters. This would include dams and dikes, levees, riprap, bank stabilization and development fill. There are three kinds of permits issued by the Corps. They are Individual, Nationwide and Regional General permits.

6.4.8 Rural Utilities Service

The United States Department of Agriculture, Rural Development's utilities program is authorized to provide financial assistance for water and waste disposal facilities in rural areas and towns of up to 10,000 people. This program is intended for Non-profit corporations and public bodies such as municipalities, counties, and special purpose districts and authorities.

Funding may be obtained through Rural Development only when the applicant is unable to secure funding from other sources at reasonable rates and terms. The applicant must have legal capacity to borrow and repay loans, to pledge security for loans and to operate and maintain the facilities. The applicant must be financially sound and able to manage the facility effectively as well as have a financially sound facility based upon taxes, assessments, revenues, fees or other satisfactory sources of income to pay costs of operating, debt service and reserve. Grants are also available and are used to supplement loans to reduce debt service where necessary to achieve reasonable user rates. Assistance is also available on how to assemble information concerning engineering, financing and management of proposed improvements.

Loans and grants may be used to construct, repair, improve, expand or modify rural water supplies and distribution facilities such as reservoirs, pipelines, wells and pumping stations, waste collection, pumping, treatment or other disposal facilities. This assistance may also be used to acquire a water supply or water right or finance facilities in conjunction with funds from other agencies or those provided by the applicant. These funds can be used to pay legal and engineering fees connected with the development of a facility or pay other costs related to development including rights-of-way or easements and relocation of roads or utilities. Loan terms are a maximum of 40 years, State Statute, or the useful life, whichever is less with interest rates based on current market yields for municipal obligations.

USDA Rural Development also guarantees loans to eligible commercial lenders to improve, develop or finance water or waste disposal facilities in rural areas. This guarantee is a warrant to protect the lender and may cover up to 90% of the principal advanced. The guarantee fee is 1% of the loan amount

multiplied by the percent of the guarantee. Interest rates will be negotiated between the lender and the borrower.

6.4.9 Wyoming Landscape Conservation Initiative (WLCI) (FROM WLCI WEBSITE)

The WLCI is a long-term science based effort to assess and enhance aquatic and terrestrial habitats at a landscape scale in southwest Wyoming, while facilitating responsible development through local collaboration and partnerships. The WLCI is composed of numerous committees and teams made up of representatives from the participating agencies. These agencies include: BLM, USGS, US Fish and Wildlife Service, US Forest Service, Wyoming Game and Fish Department, Wyoming Department of Agriculture, Southwest Wyoming County Commissions, Southwest Wyoming Conservation Districts, US National Park Service, NRCS, University of Wyoming, and the US Bureau of Reclamation.

Information gathered through scientific inventory and assessment of species and habitat is combined with local input and knowledge to develop and implement conservation projects. The WLCI conducts regular Local Project Development Team meetings, where public participation is needed and expected. If you have ideas for projects, they can be presented at these meetings or sent to the WLCI Coordination Team through the BLM High Desert District Office at (307) 352-0256 or WLCI_WYMail@blm.gov.

The project application form, project tracking and project ranking score sheet are available from the following website, and have been included in the digital library delivered with this report (http://www.wlci.gov/lpdt-resources).

6.5 Non-Profit and Other Organizations

6.5.1 Ducks Unlimited

Ducks Unlimited, Inc. (DU) is a potential funding source for wetlands and waterfowl restoration projects. Although direct grant funding is limited (to the extent that there is generally about $20,000 to $30,000 available annually statewide), in-kind assistance may be available from the local chapter of DU. Additional information on DU's funding programs and opportunities is available in the Water Management & Conservation Assistance Program Directory referenced previously.

6.5.2 National Fish and Wildlife Foundation

The National Fish and Wildlife Foundation (NFWF) is a private, non-profit, tax exempt organization chartered by Congress in 1984 to sustain, restore and enhance the Nation's fish, wildlife, plants and habitats. NFWF provides grant funding on a competitive basis through their Keystone Initiative Grants and Special Grant Program. Some of the grants/programs that may be applicable to potential projects in the Blacks Fork Watershed Study Area include, but are not limited to the following:

- **Pulling Together Initiative** - provides support on a competitive basis for the formation of local Weed Management Area (WMA) partnerships that engage federal resource agencies, state and local governments, private landowners, and other interested parties in developing long-term weed management projects within the scope of an integrated pest management strategy; minimum 1:1 nonfederal match is required.
- **Native Plant Conservation Initiative** – funding preference for "on-the-ground" projects that involve local communities and citizen volunteers in the restoration of native plant communities.
- **Bring Back the Natives Grant Program** – funds to restore damaged or degraded riverine habitats and their native aquatic species provided by BLM, Bureau of Reclamation, FWS, Forest Service, and NFWF; minimum 2:1 nonfederal match required.
- **Five-Star Restoration Program** - provides modest financial assistance on a competitive basis to support community-based wetland, riparian, and coastal habitat restoration projects that build diverse partnerships and foster local natural resource stewardship through education, outreach and training activities; average grant is $13,000.

Information about all of these and other NFWF grants/programs is available at their website: http://nfwf.org/.

6.5.3 Trout Unlimited

The Wyoming Council of Trout Unlimited provides funding and volunteer labor for a variety of stream and watershed projects such as erosion control and fish habitat structures, willow and other riparian plantings and stream protection fencing. Embrace-A-Stream grants are available for up to $10,000 per project. Partnerships are encouraged and can include local conservation districts and state and federal agencies.

VII. COST ESTIMATES

Conceptual-level costs have been developed for each of the alternative potential projects identified and described in Chapter 4. The bases for these costs are described in the following subsections for each of the overall project categories. Cost estimates presented represent 2015 dollars.

7.1 Irrigation System Components

Costs associated with irrigation system components of the watershed management plan were estimated based upon current itemized unit costs for individual improvements. NRCS Fiscal Year (2014) Practice Payment Rates for EQIP Program costs cost data were used where feasible for typical design items. In Table 7.1-1 summarizes conceptual cost estimates for irrigation system components of the watershed management plan.

7.2 Upland Wildlife/Livestock Water Components

The anticipated costs associated with these components of the watershed management plan were based upon previous experience completing similar projects in the study area, current NRCS EQIP cost tables, and current costs of various other system components obtained from reliable sources.

Table 7.2-1 presents the estimated costs associated with each of the upland wildlife / livestock water source components of the watershed management plan. Table 7.2-2 presents tabular conceptual cost estimates for projects recommended by the Uinta Development Company (UDC). Conceptual designs were not prepared for these projects. Instead, based upon information provided by UDC site inventories, individual project components were itemized and conceptual costs generated. The following components are common to most of the systems and are itemized below for general reference.

Spring Developments: Typical costs range from $1,000 to $5,000 depending on size and yield of the spring. For the purposes of this Level I investigation a cost of $3,600 was used because site-specific information was not available.

Wells: Well construction costs were assumed to be approximately $100 per foot of depth. This value was determined based upon input from local stakeholders, conservation districts, and the NRCS.

Solar Pump Facility: A cost of $8,500 per solar pump facility was used. This cost was assumed to include the pump, solar arrays, and requisite controls and regulators. Actual price would vary based upon depth to water.

Table 7.1-1 Conceptual Cost Estimates: Irrigation System Components.

Watershed Plan Component	Study Area Phase	Proect Name	Construction Subtotal	Engineering (10%)	Constuction and Engineering	Contingency (15%)	Total Construction	Final Plans and Specs	Additional	Permitting / Legal Fees /	Total Project Cost
I-001	Phase I	Sears 001	$156,300	$15,630	$171,930	$25,790	$197,720	$2,500	$0	$2,000	**$202,220**
I-002	Phase I	Schulthess 001	$135,000	$13,500	$148,500	$22,275	$170,775	$2,500	$0	$500	**$173,775**
I-003	Phase I	Schulthess 002	$67,600	$6,760	$74,360	$11,154	$85,514	$2,500	$0	$500	**$88,514**
I-004	Phase I	Weston 001	$41,000	$4,100	$45,100	$6,765	$51,865	$2,500	$0	$500	**$54,865**
I-005	Phase II	Eyre 001	$15,000	$1,500	$16,500	$2,475	$18,975	$2,500	$0	$0	**$21,475**
I-006	Phase II	Eyre 002	$4,000	$400	$4,400	$660	$5,060	$2,500	$0	$0	**$7,560**
I-007	Phase II	Eyre 003	$4,000	$400	$4,400	$660	$5,060	$2,500	$0	$0	**$7,560**
I-008	Phase II	Eyre 004	$4,000	$400	$4,400	$660	$5,060	$2,500	$0	$0	**$7,560**
I-009	Phase II	Kofford 003	$62,000	$6,200	$68,200	$10,230	$78,430	$2,500	$0	$500	**$81,430**
I-010	Phase II	Kofford 004	$14,000	$1,400	$15,400	$2,310	$17,710	$2,500	$0	$500	**$20,710**
I-011	Phase II	Mecham 001	$40,000	$4,000	$44,000	$6,600	$50,600	$2,500	$0	$0	**$53,100**
I-012	Phase II	Mecham 002	$110,000	$11,000	$121,000	$18,150	$139,150	$2,500	$0	$1,000	**$142,650**
I-013	Phase II	Micheli 001	$36,000	$3,600	$39,600	$5,940	$45,540	$2,500	$0	$1,000	**$49,040**
I-014	Phase III	Anderson 001	$146,500	$14,650	$161,150	$24,173	$185,323	$2,500	$0	$2,000	**$189,823**
I-015	Phase III	Anderson 002	$146,500	$14,650	$161,150	$24,173	$185,323	$2,500	$0	$2,000	**$189,823**
I-016	Phase III	Anderson 003	$146,500	$14,650	$161,150	$24,173	$185,323	$2,500	$0	$2,000	**$189,823**
I-017	Phase III	Anderson 006	$116,800	$11,680	$128,480	$19,272	$147,752	$2,500	$0	$1,000	**$151,252**
I-018	Phase III	Potter 001	$173,000	$17,300	$190,300	$28,545	$218,845	$2,500	$0	$500	**$221,845**
I-019	Phase III	Schell 001	$120,000	$12,000	$132,000	$19,800	$151,800	$2,500	$0	$2,000	**$156,300**
I-020	Phase III	Schell 002	$175,000	$17,500	$192,500	$28,875	$221,375	$2,500	$0	$2,000	**$225,875**
I-021	Phase III	Taylor 001	$34,000	$3,400	$37,400	$5,610	$43,010	$1,500	$0	$500	**$45,010**

Table 7.2-1 Summary of Conceptual Costs: Livestock / Wildlife Components.

Project Phase		Phase I	Phase I	Phase I	Phase I	Phase I	Phase I	Phase I	Phase I	Phase I
		Watershed Component L/W-000	Watershed Component L/W-001	Watershed Component L/W-002	Watershed Component L/W-003	Watershed Component L/W-004	Watershed Component L/W-005	Watershed Component L/W-006	Watershed Component L/W-007	Watershed Component L/W-008
Project Number:			Circle B 001	Circle B 002	Circle B 003	Circle B 004	Circle B 005	Haslem 001	Haslem 002	Haslem 003
Description:		Project Description goes here	Spring Development / Pipeline / Stock Tank Construction	Spring Development / Pipeline / Stock Tank Construction	Spring Development / Pipeline / Stock Tank Construction	Spring Development / Pipeline / Stock Tank Construction	Spring Development / Pipeline / Stock Tank Construction	Stock Pond Construction	Stock Pond Construction	Pipeline / Stock Tank Construction
Project Name:		name the project	Cow Camp Springs	Mounded Spring	Mayfield Cabin Spring	Waterhouse Canyon	Cattail Spring	Cow Hollow Stock Pond	Craven Creek Stock Pond	Nutria Ditch Pipeline Project
Water Source:		what is the source?	Existing Spring	Existing Spring	Existing Spring	Existing Spring	Existing Spring	Proposed Reservoir	Proposed Reservoir	Existing Ditch
Mobilization		$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000
Well Construction / Spring Development	Source:	Existing Spring	Existing Spring	Existing Spring	Existing Spring	Existing Spring	Existing Spring	NA	NA	NA
	Units (each)	0	1	1	1	1	1			
	Depth Each	NA	NA	NA	NA	NA	NA			
	Unit Cost ($/LF wells or $/EA springs	$5,000	$3,600	$3,600	$3,600	$3,600	$3,600			
	Well Screen (LF each well)	NA	NA	NA	NA	NA	NA			
	Well Screen ($/LF)	NA	NA	NA	NA	NA	NA			
	Component Subtotal	$3,000	$3,600	$3,600	$3,600	$3,600	$3,600			
Stock Pond / Guzzler Construction / Rehabilitation	Units (each)	NA	NA	NA	NA	NA	NA	1	1	NA
	Earthwork (Stock Pond)							$11,200	$11,200	
	Agri-Drain Installation (Stock Pond)							$4,800	$4,800	
	Rock Stabilization (Stock Pond)							NA	NA	
	Bentonite Lining (Stock Pond)							$10,000	$10,000	
	Guzzler Installation (Materials and Labor)							NA	NA	
	Pond/ Guzzler Component Subtotal							$26,000	$26,000	
Pump	Units (EA)	0	NA	NA	NA	NA	NA	NA	NA	1
	Type	Solar Pump								Solar Pump
	Unit Cost (EA)	$8,500								$8,500
	Component Subtotal	$0								$8,500
Pipeline	Low Pressure 1 1/2 in Pipe Diameter:	1.5	1.5	1.5	1.5	1.5	1.5	NA	NA	1.5
	Units (LF)	0	100	470	100	150	200			5,250
	Unit Cost (EA)	$1.60	$3.34	$3.34	$3.34	$3.34	$3.34			$3.34
	Component Subtotal	$0	$334	$1,570	$334	$501	$668			$17,535
	Other Pipe	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Units (LF)									
	Unit Cost (EA)									
	Component Subtotal									
Additional Storage Tanks	Units (EA)	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Size (gal)									
	Unit Cost ($/gal)									
	Component Subtotal									
Livestock / Wildlife Water Tanks	Units (EA)	0	1	1	1	1	1	NA	NA	1
	Size (gal)	1,200	1,200	1,200	1,200	1,200	1,200			1,200
	Unit Cost	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000			$3,000
	Component	$0	$3,000	$3,000	$3,000	$3,000	$3,000			$3,000
Miscellaneous	Item	Fencing	Fencing	Fencing	Fencing	Fencing	Fencing	NA	NA	NA
	Units (Each)	0	1,020	1,700	1,220	1,350	1,460			
	Unit Cost ($/ea)	$2.50	$5.00	$5.00	$5.00	$5.00	$5.00			
	Component Subtotal	$0.00	$5,100.00	$8,500.00	$6,100.00	$6,750.00	$7,300.00			
Construction Subtotal		$3,000	$15,034	$19,670	$16,034	$16,851	$17,568	$29,000	$29,000	$32,035
Engineering (10%)		$300	$1,503	$1,967	$1,603	$1,685	$1,757	$2,900	$2,900	$3,204
Constuction and Engineering Subtotal		$3,300	$16,537	$21,637	$17,637	$18,536	$19,325	$31,900	$31,900	$35,239
Contingency (15%)		$495	$2,481	$3,246	$2,646	$2,780	$2,899	$4,785	$4,785	$5,286
Total Construction Cost		$3,795	$19,018	$24,882	$20,283	$21,317	$22,224	$36,685	$36,685	$40,524
Final Plans and Specs		$0	$300	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,500
Additional		$0	$0	$0	$0	$0	$0	$0	$0	$0
Permitting / Legal Fees / Access and Rights of Way		$0	$0	$500	$500	$500	$500	$500	$500	$500
Total Project Cost		**$3,795**	**$19,318**	**$26,382**	**$21,783**	**$22,817**	**$23,724**	**$38,185**	**$38,185**	**$42,524**

Table 7.2-1 Summary of Conceptual Costs: Livestock / Wildlife Components (continued).

Project Phase		Phase I	Phase I	Phase I	Phase I	Phase I	Phase I	Phase I	Phase I	Phase I
		Watershed Component L/W-010	Watershed Component L/W-011	Watershed Component L/W-012	Watershed Component L/W-013	Watershed Component L/W-014	Watershed Component L/W-015	Watershed Component L/W-016	Watershed Component L/W-017	Watershed Component L/W-018
Project Number:		Hoffman 002	Hoffman 003	Hoffman 004	Julian 001	Julian 002	Julian 003	Lamborn 001	Walker 001	Walker 002
Description:		Well / Stock Tank Construction	Stock Pond Construction	Stock Pond Rehabilitation	Pipeline / Stock Tank Construction	Solar Pump / Stock Tank Construction	Spring Development / Pipeline / Storage and Stock Tank Construction	Well / Pipeline and Stock Tank Construction	Well / Pipeline and Stock Tank Construction	Well / Stock Tank Construction and Reservoir Rehabilitation
Project Name:		Corral Creek Well Project	Fenn Creek Stock Reservoir	Hoffman 004	State Section Pipeline Project	MAU #2 Well Modification	Oyster Ridge Pipeline Project	Lamborn Pipeline Project No. 1	Walker Pipeline Project No.1	Walker Well Replacement Project No. 1
Water Source:		Proposed Well	Proposed Reservoir	Rehabilitate Reservoir	Existing Spring	Existing Well	Existing Spring	Proposed Well	Proposed Well	Proposed Well
Mobilization		$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000
Well Construction / Spring Development	Source:	Proposed Well	NA	NA	NA	NA	Existing Spring	Proposed Well	Proposed Well	Proposed Well
	Units (each)	1					1	1	1	1
	Depth Each	250					NA	50	200	200
	Unit Cost ($/LF wells or $/EA springs	$100					$3,600	$100	$100	$100
	Well Screen (LF each well)	NA					NA	NA	NA	NA
	Well Screen ($/LF)	NA					NA	NA	NA	NA
	Component Subtotal	$25,000					$3,600	$5,000	$20,000	$20,000
Stock Pond / Guzzler Construction / Rehabilitation	Units (each)	NA	1	1	NA	NA	NA	NA	NA	1
	Earthwork (Stock Pond)		$11,200	$10,000						NA
	Agri-Drain Installation (Stock Pond)		$4,800	$4,800						NA
	Rock Stabilization (Stock Pond)		NA	NA						NA
	Bentonite Lining (Stock Pond)		$10,000							10000
	Guzzler Installation (Materials and Labor)		NA	NA						NA
	Pond/ Guzzler Component Subtotal		$26,000	$14,800						$10,000
Pump	Units (EA)	1	NA	NA	NA	1	NA	1	1	1
	Type	Solar Pump				Solar Pump		Solar Pump	Solar Pump	Solar Pump
	Unit Cost (EA)	$8,500				$8,500		$8,500	$8,500	$8,500
	Component Subtotal	$8,500				$8,500		$8,500	$8,500	$8,500
Pipeline	**Low Pressure 1 1/2 in Pipe Diameter:**	1.5	NA	NA	1.5	NA	1.5	1.5	1.5	NA
	Units (LF)	200			2,000		1,300	3,400	10,650	
	Unit Cost (EA)	$3.34			$3.34		$3.34	$3.34	$3.34	
	Component Subtotal	$668			$6,680		$4,342	$11,356	$35,571	
	Other Pipe	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Units (LF)									
	Unit Cost (EA)									
	Component Subtotal									
Additional Storage Tanks	Units (EA)	NA	NA	NA	NA	NA	1	NA	NA	NA
	Size (gal)						5000			
	Unit Cost ($/gal)						$1			
	Component Subtotal						$5,000			
Livestock / Wildlife Water Tanks	Units (EA)	1	NA	NA	1	1	1	2	2	1
	Size (gal)	1,200			1,200	1,200	1,200	1,200	1,200	1,200
	Unit Cost	$3,000			$3,000	$3,000	$3,000	$3,000	$3,000	$3,000
	Component	$3,000			$3,000	$3,000	$3,000	$6,000	$6,000	$3,000
Miscellaneous	Item	NA	NA	NA	Fencing	NA	Fencing	NA	NA	NA
	Units (Each)				850		850			
	Unit Cost ($/ea)				$5.00		$5.00			
	Component Subtotal				$4,250.00		$4,250.00			
Construction Subtotal		$40,168	$29,000	$17,800	$16,930	$14,500	$23,192	$33,856	$73,071	$44,500
Engineering (10%)		$4,017	$2,900	$1,780	$1,693	$1,450	$2,319	$3,386	$7,307	$4,450
Constuction and Engineering Subtotal		$44,185	$31,900	$19,580	$18,623	$15,950	$25,511	$37,242	$80,378	$48,950
Contingency (15%)		$6,628	$4,785	$2,937	$2,793	$2,393	$3,827	$5,586	$12,057	$7,343
Total Construction Cost		$50,813	$36,685	$22,517	$21,416	$18,343	$29,338	$42,828	$92,435	$56,293
Final Plans and Specs		$1,000	$1,000	$1,500	$1,500	$1,500	$1,500	$1,000	$1,500	$1,500
Additional		$0	$0	$0	$0	$0	$0	$0	$0	$0
Permitting / Legal Fees / Access and Rights of Way		$500	$500	$1,000	$500	$1,000	$1,000	$500	$2,000	$500
Total Project Cost		**$52,313**	**$38,185**	**$25,017**	**$23,416**	**$20,843**	**$31,838**	**$44,328**	**$95,935**	**$58,293**

Table 7.2-1 Summary of Conceptual Costs: Livestock / Wildlife Components (continued).

Project Phase		Phase II	Phase II	Phase II	Phase II	Phase II	Phase II	Phase II	Phase II	Phase II
		Watershed Component L/W-019	Watershed Component L/W-020	Watershed Component L/W-021	Watershed Component L/W-022	Watershed Component L/W-023	Watershed Component L/W-024	Watershed Component L/W-025	Watershed Component L/W-026	Watershed Component L/W-027
Project Number:		CR 001	CR 002	CR 003	CR 004	CR 005	CR 006	CR 007	CR 008	CR 009
Description:		Spring Development / Pipeline / Stock Tank Construction	Spring Development / Pipeline / Stock Tank Construction	Spring Development / Pipeline / Stock Tank Construction	Well Rehabilitation / Pipeline / Stock Tank Construction	Stock Pond Rehabilitation	Stock Pond Rehabilitation	Spring Development / Pipeline / Stock Tank Construction	Guzzler Construction	Spring Development / Pipeline / Stock Tank Construction
Project Name:		Meadow Draw #6	Section 19 Seep/Spring on Anadarko	Bridger Well No. 13 on Anadarko	Section 6 Well on BLM	Cumberland No. 9 on Anadarko	Cumberland No.31 Pond	Cumberland No. 22 Well on Anadarko	Bridger Pond No. 3 on Anadarko	Section 30 Spring on BLM
Water Source:		Existing Spring	Existing Spring	Existing Spring	Existing Well	Rehabilitate Reservoir	Rehabilitate Reservoir	Existing Spring	Proposed Guzzler	Existing Spring
Mobilization		$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$0	$3,000
Well Construction / Spring Development	Source:	Existing Spring	Existing Spring	Existing Spring	NA	NA	NA	Existing Spring	NA	Existing Spring
	Units (each)	1	1	1				1		1
	Depth Each	NA	NA	NA				NA		NA
	Unit Cost ($/LF wells or $/EA springs	$3,600	$3,600	$3,600				$3,600		$3,600
	Well Screen (LF each well)	NA	NA	NA				NA		NA
	Well Screen ($/LF)	NA	NA	NA				NA		NA
	Component Subtotal	$3,600	$3,600	$3,600				$3,600		$3,600
Stock Pond / Guzzler Construction / Rehabilitation	Units (each)	NA	NA	NA	NA	1	1	NA	1	NA
	Earthwork (Stock Pond)					$10,000	$10,000		$10,000	
	Agri-Drain Installation (Stock Pond)					NA	NA		NA	
	Rock Stabilization (Stock Pond)					$4,000	$4,000		NA	
	Bentonite Lining (Stock Pond)					NA	NA		NA	
	Guzzler Installation (Materials and Labor)					NA	NA		$5,000	
	Pond/ Guzzler Component Subtotal					$14,000	$14,000		$15,000	
Pump	Units (EA)	NA	NA	NA	1	NA	NA	NA	NA	NA
	Type				Solar Pump					
	Unit Cost (EA)				$8,500					
	Component Subtotal				$8,500					
Pipeline	**Low Pressure 1 1/2 in Pipe Diameter:**	1.5	1.5	1.5	1.5	NA	NA	1.5	NA	1.5
	Units (LF)	5,890	200	400	5,280			400		200
	Unit Cost (EA)	$3.34	$3.34	$3.34	$3.34			$3.34		$3.34
	Component Subtotal	$19,673	$668	$1,336	$17,635			$1,336		$668
	Other Pipe	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Units (LF)									
	Unit Cost (EA)									
	Component Subtotal									
Additional Storage Tanks	Units (EA)	1	NA	NA	1	NA	NA	NA	NA	NA
	Size (gal)	5000			5000					
	Unit Cost ($/gal)	$1			$1					
	Component Subtotal	$5,000			$5,000					
Livestock / Wildlife Water Tanks	Units (EA)	2	1	1	2	NA	NA	1	NA	1
	Size (gal)	1,200	1,200	1,200	1,200			1,200		1,200
	Unit Cost	$3,000	$3,000	$3,000	$3,000			$3,000		$3,000
	Component	$6,000	$3,000	$3,000	$6,000			$3,000		$3,000
Miscellaneous	Item	Fencing	Fencing	Fencing	Fencing	NA	NA	Fencing	NA	Fencing
	Units (Each)	500	850	850	850			850		850
	Unit Cost ($/ea)	$5.00	$5.00	$5.00	$5.00			$5.00		$5.00
	Component Subtotal	$2,500.00	$4,250.00	$4,250.00	$4,250.00			$4,250.00		$4,250.00
Construction Subtotal		$39,773	$14,518	$15,186	$44,385	$17,000	$17,000	$15,186	$15,000	$14,518
Engineering (10%)		$3,977	$1,452	$1,519	$4,439	$1,700	$1,700	$1,519	$1,500	$1,452
Constuction and Engineering Subtotal		$43,750	$15,970	$16,705	$48,824	$18,700	$18,700	$16,705	$16,500	$15,970
Contingency (15%)		$6,562	$2,395	$2,506	$7,324	$2,805	$2,805	$2,506	$2,475	$2,395
Total Construction Cost		$50,312	$18,365	$19,210	$56,147	$21,505	$21,505	$19,210	$18,975	$18,365
Final Plans and Specs		$1,500	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500
Additional		$0	$0	$0	$0	$0	$0	$0	$0	$0
Permitting / Legal Fees / Access and Rights of Way		$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000
Total Project Cost		**$52,812**	**$20,865**	**$21,710**	**$58,647**	**$24,005**	**$24,005**	**$21,710**	**$21,475**	**$20,865**

Table 7.2-1 Summary of Conceptual Costs: Livestock / Wildlife Components (continued).

Project Phase		Phase II	Phase II	Phase II	Phase II	Phase II	Phase II	Phase II	Phase II	Phase II
		Watershed Component L/W-028	Watershed Component L/W-029	Watershed Component L/W-030	Watershed Component L/W-031	Watershed Component L/W-032	Watershed Component L/W-033	Watershed Component L/W-034	Watershed Component L/W-035	Watershed Component L/W-036
Project Number:		CR 010	CR 011	CR 012	CR 013	CR 014	CR 015	CR 016	CR 017	CR 018
Description:		Well Rehabilitation / Pipeline / Stock Tank Construction	Well / Pipeline / Stock Tank Construction	Stock Pond Rehabilitation	Well Rehabilitation / Pipeline / Stock Tank Construction	Spring Development / Pipeline / Stock Tank Construction	Spring Development / Pipeline / Stock Tank Construction	Stock Pond Rehabilitation	Spring Development / Pipeline / Stock Tank Construction	Well Rehabilitation / Pipeline / Stock Tank Construction
Project Name:		Albert Creek Well #1 on State Lands	Bridger No. 10 Pond on Anadarko/BLM	Elkol No. 3 Pond	Section 1 Well on Anadarko	Section 20 Spring/Pipeline on BLM/Anadarko	Section 31 Spring/Pipeline on Anadarko/BLM	Section 4 Pond on BLM	Bridger No. 14 Well and Bridger No. 7 Pond on Anadarko	Section 19 Well/Pipeline on Anadarko/BLM
Water Source:		Existing Well	Proposed Well	Rehabilitate Reservoir	Existing Well	Existing Spring	Existing Spring	Rehabilitate Reservoir	Existing Spring	Existing Well
Mobilization		$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000
Well Construction / Spring Development	Source:	NA	Proposed Well	NA	NA	Existing Spring	Existing Spring	NA	Existing Spring	Proposed Well
	Units (each)		1			1	1		1	1
	Depth Each		200			NA	NA		NA	200
	Unit Cost ($/LF wells or $/EA springs		$100			$3,600	$3,600		$3,600	$40
	Well Screen (LF each well)		NA			NA	NA		NA	NA
	Well Screen ($/LF)		NA			NA	NA		NA	NA
	Component Subtotal		$20,000			$3,600	$3,600		$3,600	$8,000
Stock Pond / Guzzler Construction / Rehabilitation	Units (each)	NA	NA	1	NA	NA	NA	1	NA	NA
	Earthwork (Stock Pond)			$10,000				$10,000		
	Agri-Drain Installation (Stock Pond)			NA				NA		
	Rock Stabilization (Stock Pond)			$4,000				NA		
	Bentonite Lining (Stock Pond)			NA				NA		
	Guzzler Installation (Materials and Labor)			NA				NA		
	Pond/ Guzzler Component Subtotal			$14,000				$10,000		
Pump	Units (EA)	1	1	NA	1	NA	NA	NA	NA	1
	Type	Generator and Fuel Storage	Solar Pump		Solar Pump					Solar Pump
	Unit Cost (EA)	$1,000	$8,500		$8,500					$8,500
	Component Subtotal	$1,000	$8,500		$8,500					$8,500
Pipeline	**Low Pressure 1 1/2 in Pipe Diameter:**	1.5	1.5	NA	1.5	1.5	1.5	NA	1.5	1.5
	Units (LF)	11,880	1,320		200	13,200	5,280		200	10,560
	Unit Cost (EA)	$3.34	$3.34		$3.34	$3.34	$3.34		$3.34	$3.34
	Component Subtotal	$39,679	$4,409		$668	$44,088	$17,635		$668	$35,270
	Other Pipe	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Units (LF)									
	Unit Cost (EA)									
	Component Subtotal									
Additional Storage Tanks	Units (EA)	1	1	NA	NA	NA	1	NA	NA	1
	Size (gal)	5000	5000				5000			5000
	Unit Cost ($/gal)	$1	$1				$1			$1
	Component Subtotal	$5,000	$5,000				$5,000			$5,000
Livestock / Wildlife Water Tanks	Units (EA)	2	1	NA	1	3	3	NA	1	2
	Size (gal)	1,200	1,200		1,200	1,200	1,200		1,200	1,200
	Unit Cost	$3,000	$3,000		$3,000	$3,000	$3,000		$3,000	$3,000
	Component	$6,000	$3,000		$3,000	$9,000	$9,000		$3,000	$6,000
Miscellaneous	Item	NA	NA	NA	NA	Fencing	NA	NA	Fencing	NA
	Units (Each)					850			850	
	Unit Cost ($/ea)					$5.00			$5.00	
	Component Subtotal					$4,250.00			$4,250.00	
Construction Subtotal		$54,679	$43,909	$17,000	$15,168	$63,938	$38,235	$13,000	$14,518	$65,770
Engineering (10%)		$5,468	$4,391	$1,700	$1,517	$6,394	$3,824	$1,300	$1,452	$6,577
Constuction and Engineering Subtotal		$60,147	$48,300	$18,700	$16,685	$70,332	$42,059	$14,300	$15,970	$72,347
Contingency (15%)		$9,022	$7,245	$2,805	$2,503	$10,550	$6,309	$2,145	$2,395	$10,852
Total Construction Cost		$69,169	$55,545	$21,505	$19,188	$80,882	$48,368	$16,445	$18,365	$83,200
Final Plans and Specs		$1,500	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500
Additional		$0	$0	$0	$0	$0	$0	$0	$0	$0
Permitting / Legal Fees / Access and Rights of Way		$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000
Total Project Cost		**$71,669**	**$58,045**	**$24,005**	**$21,688**	**$83,382**	**$50,868**	**$18,945**	**$20,865**	**$85,700**

Table 7.2-1 Summary of Conceptual Costs: Livestock / Wildlife Components (continued).

Project Phase		Phase II	Phase II	Phase II	Phase II	Phase III	Phase III	Phase III	Phase III
		Watershed Component L/W-037	Watershed Component L/W-038	Watershed Component L/W-039	Watershed Component L/W-040	Watershed Component L/W-041	Watershed Component L/W-042	Watershed Component L/W-113	Watershed Component L/W-114
Project Number:		Hamilton 001	Hamilton 002	Kofford 001	Kofford 002	Anderson 004	Anderson 005	UDC-071	UDC-072
Description:		Pipeline / Stock Tank Construction	Pipeline / Stock Tank Construction	Spring Development / Pipeline / Stock Tank Construction	Spring Development / Pipeline / Stock Tank Construction	Pipeline / Stock Tank Construction	Pipeline / Stock Tank Construction	Pipeline / Stock Tank Construction	Pipeline / Stock Tank Construction
Project Name:		West Fork of Smith Fork Pipeline Project	Cold Spring Pipeline Project	Wildflower Spring Development Project 1	Clifford Spring Development	Horse Ranch Pipeline	Blakes Knoll Pipeline	Little America Pipeline Project	Cow Hollow Pipeline Project
Water Source:		Existing Ditch	Existing Spring	Existing Spring	Existing Spring	Existing Well	Existing Pipeline	Existing Well	Existing Well
Mobilization		$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000
Well Construction / Spring Development	Source:	NA	Existing Spring	Existing Spring	Existing Spring	NA	NA	NA	NA
	Units (each)		1	1	1				
	Depth Each		NA	NA	NA				
	Unit Cost ($/LF wells or $/EA springs		$3,600	$3,600	$3,600				
	Well Screen (LF each well)		NA	NA	NA				
	Well Screen ($/LF)		NA	NA	NA				
	Component Subtotal		$3,600	$3,600	$3,600				
Stock Pond / Guzzler Construction / Rehabilitation	Units (each)	NA	NA	NA	NA	NA	NA	NA	NA
	Earthwork (Stock Pond)								
	Agri-Drain Installation (Stock Pond)								
	Rock Stabilization (Stock Pond)								
	Bentonite Lining (Stock Pond)								
	Guzzler Installation (Materials and Labor)								
	Pond/ Guzzler Component Subtotal								
Pump	Units (EA)	NA	NA	NA	NA	NA	NA	NA	NA
	Type								
	Unit Cost (EA)								
	Component Subtotal								
Pipeline	**Low Pressure 1 1/2 in Pipe Diameter:**	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
	Units (LF)	20,000	570	200	200	31,000	23,000	122,000	57,000
	Unit Cost (EA)	$3.34	$3.34	$3.34	$3.34	$3.34	$3.34	$3.34	$3.34
	Component Subtotal	$66,800	$1,904	$668	$668	$103,540	$76,820	$407,480	$190,380
	Other Pipe	NA	NA	NA	NA	NA	NA	NA	NA
	Units (LF)								
	Unit Cost (EA)								
	Component Subtotal								
Additional Storage Tanks	Units (EA)	NA	NA	NA	NA	NA	NA	NA	NA
	Size (gal)								
	Unit Cost ($/gal)								
	Component Subtotal								
Livestock / Wildlife Water Tanks	Units (EA)	1	1	1	1	3	3	9	3
	Size (gal)	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200
	Unit Cost	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000
	Component	$3,000	$3,000	$3,000	$3,000	$9,000	$9,000	$27,000	$9,000
Miscellaneous	Item	NA	NA	Fencing	Fencing	NA	NA	NA	NA
	Units (Each)			850	850				
	Unit Cost ($/ea)			$5.00	$5.00				
	Component Subtotal			$4,250.00	$4,250.00				
Construction Subtotal		$72,800	$11,504	$14,518	$14,518	$115,540	$88,820	$437,480	$202,380
Engineering (10%)		$7,280	$1,150	$1,452	$1,452	$11,554	$8,882	$43,748	$20,238
Constuction and Engineering Subtotal		$80,080	$12,654	$15,970	$15,970	$127,094	$97,702	$481,228	$222,618
Contingency (15%)		$12,012	$1,898	$2,395	$2,395	$19,064	$14,655	$72,184	$33,393
Total Construction Cost		$92,092	$14,552	$18,365	$18,365	$146,158	$112,357	$553,412	$256,011
Final Plans and Specs		$1,000	$1,000	$1,000	$1,000	$1,500	$1,500	$300	$300
Additional		$0	$0	$0	$0	$0	$0	$0	$0
Permitting / Legal Fees / Access and Rights of Way		$1,500	$1,500	$500	$500	$1,000	$1,000	$0	$0
Total Project Cost		**$94,592**	**$17,052**	**$19,865**	**$19,865**	**$148,658**	**$114,857**	**$553,712**	**$256,311**

Table 7.2-2 Summary of Conceptual Costs: UDC Livestock/Wildlife Water Supply Projects.

Project Name	UDC Inventory Waypoint	Watershed Component	Estimated Project Cost	Construction Subtotal	Engineering (10%)	Constuction and Engineering Subtotal	Contingency (15%)	Total Construction Cost	Final Plans and Specs	Additional	Permitting / Legal Fees / Access and Rights of Way	Total Project Cost
Joe #1	8	L/W-043	$26,000	$26,000	$2,600	$28,600	$4,290	$32,890	$1,500	$0	$500	**$34,890**
Joe #2	9	L/W-044	$26,000	$26,000	$2,600	$28,600	$4,290	$32,890	$500	$0	$500	**$33,890**
UDCO 72-17	11	L/W-045	$26,000	$26,000	$2,600	$28,600	$4,290	$32,890	$1,500	$0	$500	**$34,890**
Flowing Well	12	L/W-046	$9,750	$9,750	$975	$10,725	$1,609	$12,334	$300	$0	$500	**$13,134**
Hydro Test Pit	16	L/W-047	$26,000	$26,000	$2,600	$28,600	$4,290	$32,890	$1,500	$0	$500	**$34,890**
Pipeline Pit	17	L/W-048	$15,000	$15,000	$1,500	$16,500	$2,475	$18,975	$1,500	$0	$500	**$20,975**
Stock Reservoir	18	L/W-049	$26,000	$26,000	$2,600	$28,600	$4,290	$32,890	$1,500	$0	$500	**$34,890**
Stock Reservoir	19	L/W-050	$26,000	$26,000	$2,600	$28,600	$4,290	$32,890	$1,500	$0	$500	**$34,890**
Flowing Well	20	L/W-051	$14,750	$14,750	$1,475	$16,225	$2,434	$18,659	$500	$0	$500	**$19,659**
Highway Pit	21	L/W-052	$26,000	$26,000	$2,600	$28,600	$4,290	$32,890	$1,500	$0	$500	**$34,890**
Pit and Pipeline	24	L/W-053	$3,000	$3,000	$300	$3,300	$495	$3,795	$0	$0	$500	**$4,295**
Stock Reservoir	25	L/W-054	$26,000	$26,000	$2,600	$28,600	$4,290	$32,890	$1,000	$0	$500	**$34,390**
Stock Reservoir	27	L/W-055	$26,000	$26,000	$2,600	$28,600	$4,290	$32,890	$1,000	$0	$500	**$34,390**
Stock Reservoir	28	L/W-056	$26,000	$26,000	$2,600	$28,600	$4,290	$32,890	$2,000	$0	$500	**$35,390**
Stock Reservoir	29	L/W-057	$15,000	$15,000	$1,500	$16,500	$2,475	$18,975	$1,000	$0	$500	**$20,475**
Flowing Well	31	L/W-058	$9,750	$9,750	$975	$10,725	$1,609	$12,334	$500	$0	$500	**$13,334**
Flowing Well	32	L/W-059	$9,750	$9,750	$975	$10,725	$1,609	$12,334	$500	$0	$500	**$13,334**
Spring Development	34	L/W-060	$14,850	$14,850	$1,485	$16,335	$2,450	$18,785	$500	$0	$1,000	**$20,285**
Stock Reservoir	35	L/W-061	$5,000	$5,000	$500	$5,500	$825	$6,325	$1,500	$0	$500	**$8,325**
Stock Reservoir	37	L/W-062	$26,000	$26,000	$2,600	$28,600	$4,290	$32,890	$2,000	$0	$500	**$35,390**
Stock Reservoir	38	L/W-063	$5,000	$5,000	$500	$5,500	$825	$6,325	$1,000	$0	$500	**$7,825**
Water Well	39	L/W-064	$14,000	$14,000	$1,400	$15,400	$2,310	$17,710	$1,000	$0	$1,000	**$19,710**
Stock Reservoir	40	L/W-065	$26,000	$26,000	$2,600	$28,600	$4,290	$32,890	$2,000	$0	$500	**$35,390**
Stock Reservoir	41	L/W-066	$26,000	$26,000	$2,600	$28,600	$4,290	$32,890	$1,500	$0	$500	**$34,890**
Water Well and Stock Reservoir	43	L/W-067	$4,250	$4,250	$425	$4,675	$701	$5,376	$0	$0	$500	**$5,876**
Stock Reservoir	46	L/W-068	$5,000	$5,000	$500	$5,500	$825	$6,325	$1,500	$0	$500	**$8,325**
Wildcat #4 Spring	48	L/W-069	$14,850	$14,850	$1,485	$16,335	$2,450	$18,785	$1,500	$0	$500	**$20,785**
Flowing Well	49	L/W-070	$26,000	$26,000	$2,600	$28,600	$4,290	$32,890	$1,500	$0	$500	**$34,890**
Water Well	50	L/W-071	$14,000	$14,000	$1,400	$15,400	$2,310	$17,710	$1,500	$0	$500	**$19,710**
Stock Reservoir	51	L/W-072	$26,000	$26,000	$2,600	$28,600	$4,290	$32,890	$1,500	$0	$500	**$34,890**
Stock Reservoir	52	L/W-073	$15,000	$15,000	$1,500	$16,500	$2,475	$18,975	$1,500	$0	$500	**$20,975**
Mud Springs	54	L/W-074	$14,850	$14,850	$1,485	$16,335	$2,450	$18,785	$1,500	$0	$500	**$20,785**
Stock Reservoir	56	L/W-075	$26,000	$26,000	$2,600	$28,600	$4,290	$32,890	$1,500	$0	$500	**$34,890**
Stock Reservoir	59	L/W-076	$5,000	$5,000	$500	$5,500	$825	$6,325	$1,500	$0	$500	**$8,325**

Table 7.2-2 Summary of Conceptual Costs: UDC Livestock/Wildlife Water Supply Projects (continued).

Project Name	UDC Inventory Waypoint	Watershed Component	Estimated Project Cost	Construction Subtotal	Engineering (10%)	Constuction and Engineering Subtotal	Contingency (15%)	Total Construction Cost	Final Plans and Specs	Additional	Permitting / Legal Fees / Access and Rights of Way	Total Project Cost
Spring in the Bluff	60	L/W-077	$14,850	$14,850	$1,485	$16,335	$2,450	$18,785	$1,500	$0	$500	**$20,785**
Spring	63	L/W-078	$4,250	$4,250	$425	$4,675	$701	$5,376	$1,500	$0	$500	**$7,376**
Carter Spring	64	L/W-079	$14,850	$14,850	$1,485	$16,335	$2,450	$18,785	$1,500	$0	$500	**$20,785**
Meadow Spring	67	L/W-080	$26,000	$26,000	$2,600	$28,600	$4,290	$32,890	$1,500	$0	$500	**$34,890**
Stock Reservoir	68	L/W-081	$11,500	$11,500	$1,150	$12,650	$1,898	$14,548	$1,500	$0	$500	**$16,548**
Stock Reservoir	72	L/W-082	$26,000	$26,000	$2,600	$28,600	$4,290	$32,890	$1,500	$0	$500	**$34,890**
Upper Coyote Springs	74	L/W-083	$14,850	$14,850	$1,485	$16,335	$2,450	$18,785	$1,500	$0	$500	**$20,785**
Lower Tin Can Spring	75	L/W-084	$14,850	$14,850	$1,485	$16,335	$2,450	$18,785	$1,500	$0	$500	**$20,785**
Chicken Springs	78	L/W-085	$14,850	$14,850	$1,485	$16,335	$2,450	$18,785	$1,500	$0	$500	**$20,785**
Stock Reservoir	79	L/W-086	$26,000	$26,000	$2,600	$28,600	$4,290	$32,890	$1,500	$0	$500	**$34,890**
Antelope #20	82	L/W-087	$15,000	$15,000	$1,500	$16,500	$2,475	$18,975	$1,500	$0	$500	**$20,975**
Antelope #21	83	L/W-088	$26,000	$26,000	$2,600	$28,600	$4,290	$32,890	$1,500	$0	$500	**$34,890**
Stock Reservoir	84	L/W-089	$15,000	$15,000	$1,500	$16,500	$2,475	$18,975	$1,500	$0	$500	**$20,975**
Stock Reservoir	85	L/W-090	$15,000	$15,000	$1,500	$16,500	$2,475	$18,975	$1,500	$0	$500	**$20,975**
Stock Reservoir	86	L/W-091	$5,000	$5,000	$500	$5,500	$825	$6,325	$1,500	$0	$500	**$8,325**
Stock Pond and Trough	87	L/W-092	$26,000	$26,000	$2,600	$28,600	$4,290	$32,890	$1,500	$0	$500	**$34,890**
Stock Reservoir	88	L/W-093	$26,000	$26,000	$2,600	$28,600	$4,290	$32,890	$1,500	$0	$500	**$34,890**
Stock Reservoir	89	L/W-094	$5,000	$5,000	$500	$5,500	$825	$6,325	$1,500	$0	$500	**$8,325**
Stock Reservoir	90	L/W-095	$5,000	$5,000	$500	$5,500	$825	$6,325	$1,500	$0	$500	**$8,325**
Stock Reservoir	91	L/W-096	$26,000	$26,000	$2,600	$28,600	$4,290	$32,890	$1,500	$0	$500	**$34,890**
Stock Reservoir	93	L/W-097	$26,000	$26,000	$2,600	$28,600	$4,290	$32,890	$1,500	$0	$500	**$34,890**
Stock Reservoir	94	L/W-098	$15,000	$15,000	$1,500	$16,500	$2,475	$18,975	$1,500	$0	$500	**$20,975**
Stock Reservoir	96	L/W-099	$26,000	$26,000	$2,600	$28,600	$4,290	$32,890	$1,500	$0	$500	**$34,890**
Stock Reservoir	98	L/W-100	$26,000	$26,000	$2,600	$28,600	$4,290	$32,890	$1,500	$0	$500	**$34,890**
Stock Reservoir	100	L/W-101	$5,000	$5,000	$500	$5,500	$825	$6,325	$1,500	$0	$500	**$8,325**
Stock Reservoir	101	L/W-102	$5,000	$5,000	$500	$5,500	$825	$6,325	$1,500	$0	$500	**$8,325**
Stock Reservoir	103	L/W-103	$5,000	$5,000	$500	$5,500	$825	$6,325	$1,500	$0	$500	**$8,325**
Stock Reservoir	104	L/W-104	$26,000	$26,000	$2,600	$28,600	$4,290	$32,890	$1,500	$0	$500	**$34,890**
Stock Reservoir	108	L/W-105	$5,000	$5,000	$500	$5,500	$825	$6,325	$1,500	$0	$500	**$8,325**
Spring	114	L/W-106	$14,850	$14,850	$1,485	$16,335	$2,450	$18,785	$1,500	$0	$500	**$20,785**
Spring	115	L/W-107	$14,850	$14,850	$1,485	$16,335	$2,450	$18,785	$1,500	$0	$500	**$20,785**
Well	121	L/W-108	$9,750	$9,750	$975	$10,725	$1,609	$12,334	$1,500	$0	$500	**$14,334**
Water Well	134	L/W-109	$5,500	$5,500	$550	$6,050	$908	$6,958	$1,500	$0	$500	**$8,958**
Spring	240	L/W-110	$14,850	$14,850	$1,485	$16,335	$2,450	$18,785	$1,500	$0	$500	**$20,785**
Spring	241	L/W-111	$14,850	$14,850	$1,485	$16,335	$2,450	$18,785	$1,500	$0	$500	**$20,785**
Spring	248	L/W-112	$14,850	$14,850	$1,485	$16,335	$2,450	$18,785	$1,500	$0	$500	**$20,785**

***Pipelines**:* A cost of approximately $3.34 / lineal foot (installed) for 1.5-inch diameter pipe was used and is based upon information provided by the NRCS for "easily" installed pipeline. Areas where installation is more difficult (i.e, rough terrain, rocky, etc.) could result in higher costs. A cost of $5.00 per linear foot for pipeline installed below the frost line was assumed. Length of pipe associated with each project was approximated within the GIS environment.

Water Tanks (Stock and Storage): A cost of $3,000 per stock tank was used for a typical rubber-tire type tank based upon a unit cost of approximately $2.46 per gallon. Cost of storage tanks were assumed to be approximately $1 per gallon of storage.

Stock Pond Construction. A cost of $16,000 per stock reservoir was used based upon summation of NRCS unit costs associated with a typical facilities:

- Assumed embankment of approximately 2,800 cy (10 ft high, 10 crest width, 250 feet crest length) applied to a unit cost of approximately $4/cy earthwork
- Agridrain outlet facility: $4,800 installed

Fencing. A cost of 2.30 per linear foot was utilized for general fencing requirements (barbed or smooth wire). For sensitive areas / protected areas, a cost of $5.00 per linear foot was used.

***Stock Pond Sealant*.** Unit cost of $10,000 per acre of inundated area was used based upon information presented in previous Level I watershed studies previous. This cost assumes incorporation of bentonite at appropriate application rates.

Guzzler Installation. Based upon information obtained from BLM, a unit cost of $5,000 per installation was utilized.

Guzzlers: A cost of $10,000 was used for a 2,250 square feet catchment area feeding a 1800 gallon, BOSS brand tank.

Solar Water Pump: A total cost of $8,640 was used for a typical system.

7.3 Surface Water Storage

Conceptual level estimates for each of the surface water storage alternatives identified in Chapter 4 were prepared using data presented in previous reports and from previous cost estimation experience. A review of cost estimates associated with storage projects of similar magnitude was conducted. Based upon this review, relationships between costs of various reservoir project components and the size of the embankment were determined as described below.

Table 7.2-3 Summary of Conceptual Costs: Storage Components

Watershed Plan Component	Priority	Study Area Phase	Project name	Action	Conceptual Project Cost
Large Reservoirs					
S-001	1	I	Viva Naughton Reservoir	Enlargement	$5.5M
S-002	1	II	Meeks Cabin	Enlargement	$5-10M
S-003	2	II	Stateline	Enlargement	$5-10M
S-004	3	I	Lower/Upper Dempsey Gulch	New Construction	$55.5M
Small Reservoirs					
S-005		III	Beaver Meadows	Enlargement	$500,000
S-006		II	Austin Reservoir	Rehabilitation	$500,000
S-007		II	Moslander Reservoir	Rehabilitation	$425,000
S-008		II	Cottonwood Reservoir	Rehabilitation	$325,000
S-009		I	Davis Reservoir	Rehabilitation	$100,000
S-010		II	Horse Creek Reservoir	New Construction	$200,000
S-011		II	West Fork Smiths Fork	New Construction	$200,000
S-012		III	Wadsworth Fishing Reservoir	Rehabilitation	$15,000

7.4 Other Management Practices and Improvements

The costs of other potential management practices and improvements such as:

- Stream channel restoration,
- Range/grazing management,
- Prescribed burning, and
- Removal/control of invasive plants and noxious weeds are very project and site dependent.

Normally, all but some of the range/grazing management practices or improvements would be implemented by the appropriate agency (NRCS, BLM, Weed and Pest Districts, etc.).

Local staff of those agencies should be consulted regarding the costs of these practices and improvements. The cost of range/grazing practices and improvements (other than wildlife/livestock watering addressed in Section 7.2 above) mostly involve the rancher's time for planning, herding, salting, noxious weed and plant control/removal (where not otherwise covered by cooperative efforts managed by the Weed and Pest Districts), and possibly installation of local fencing in critical areas.

VIII. CONCLUSIONS AND RECOMMENDATIONS

A multidisciplinary inventory of the Blacks Fork watershed was conducted in an effort to identify and evaluate key resource issues and concerns. A comprehensive Geographic Information System (GIS) was completed in conjunction with the inventory. The GIS incorporates the data collected and results generated during the study and collates it with information collected from a wide variety of sources. The GIS will be a valuable resource for the community and future studies which will likely be conducted in the watershed.

8.1 Conclusions

Upon completion of the watershed inventory phase of the project, the project team developed the watershed management plan. The plan was developed based upon findings of the inventory phase, a series of public meetings, questionnaires, and interaction with the project steering committee. In previous chapters, the key issues and problems were identified and ultimately, project goals and objectives were formulated to address them. Specifically, plans were developed to address issues associated with the following broad categories:

- *Irrigation System Conservation and Rehabilitation,*
- *Livestock/Wildlife Upland Watering Opportunities,*
- *Surface Water Storage Opportunities,*
- *Stream Channel Condition and Stability,*
- *Grazing Management Opportunities, and*
- *Other Upland Management Opportunities.*

In summary, the following conclusions are provided.

8.1.1 Irrigation System Components

1. Potential solutions to the primary issues and problems associated with irrigation system infrastructure were identified. Consequently, twenty one (21) individual projects were incorporated into the watershed management plan. Conceptual level cost estimates were completed for the recommended improvements.

2. Individual improvements range from installation of measurement devices on ditches where there currently are no means of measuring flows at a cost of approximately $5000 to construction of new diversion structures and headgates on the Henrys Fork, Blacks Fork, and Hams Fork rivers. These projects would be much more extensive with respect to costs, permitting, and construction. Conceptual costs of the major structures would approach $200,000.

3. The recommended improvements to each irrigation system can be implemented individually, in combination, or as a complete package depending on the needs, preferences and financial ability

of the owner. Funding assistance is available from a number of sources, especially the WWDC Small Water Project Program and various programs administered by the NRCS.

4. Partnering opportunities may exist for construction of in-stream structures. Trout Unlimited (TU) is currently providing partial funding for projects within the study area in an effort to minimize their impacts upon fisheries and fish passage. Particularly in the Henrys Fork area, TU has expressed interest in participating in future projects.

8.1.2 Livestock/Wildlife Upland Watering Opportunities

1. There appears to be numerous opportunities to improve range and riparian conditions by means of increasing the availability of upland water sources for wildlife and livestock use.

2. Pipeline/tank systems appear to offer the most efficient and cost-effective means to provide adequate watering to large areas of rangeland. Water sources for these systems will depend on the location of the rangeland to be served and the available alternative sources. The most likely sources are wells or spring developments.

3. Through discussion with local landowners and stakeholders, a total of 114 potential livestock / wildlife water supply projects were identified. Conceptual plans and conceptual level cost estimates were prepared for each project. Projects ranged from installation of a guzzler to larger regional upland water supply projects.

4. Many of the projects would involve coordination with the Bureau of Land Management (BLM) through either the Kemmerer or the Rock Springs Field Offices. BLM consultation will be necessary in order to obtain the requisite permits and cultural clearances.

5. Seventy two (72) of the livestock / wildlife were identified on lands owned and managed by the Uinta Development Company (UDC). These lands lie within the “Checkerboard” region. Existing water supplies within most of this region are generally sparse.

6. Any such improvements and practices must be fully implemented and maintained by the landowner to gain the maximum overall benefits to the watershed.

8.1.3 Surface Water Storage Opportunities

1. Results of previous studies were reviewed and their results incorporated into the watershed management plan. In addition, local landowners and stakeholders identified several additional storage projects which were ultimately incorporated into the plan as well.

2. Several small scale, new construction reservoir projects were identified which could provide a source of late season irrigation water for a limited number of users. These sites included two sites located in the State of Utah which, if completed, would benefit Wyoming water users.

3. Reservoir rehabilitation projects were also included in the watershed management plan. Completion of these projects could result in not only additional storage for irrigation purposes, but could also provide valuable habitat in regions generally dry otherwise.

4. Reservoir enlargement may be the most feasible means of providing reliable sources of late season irrigation water. Potential enlargement projects identified include: Meeks Cabin Reservoir, Stateline Reservoir, and Beaver Meadows Reservoir.

5. Meeks Cabin Reservoir enlargement has been discussed with representatives of the Bridger Valley Conservancy District, which manages the reservoir, and application for further investigation through the WWDC has been recommended.

6. The Green River Basin Plan water availability model was reviewed with respect to the availability of water for storage within the study area. Results indicate that there is water available throughout most of the watershed depending upon the time of year for any of the three hydrologic conditions: dry, normal, or wet. Consequently, from the standpoint of water available for storage without injuring downstream water users, availability is not a significant constraint throughout much of the watershed. The results of the flow availability assessment confirmed water is available predominantly during May and June.

7. Permitting efforts and NEPA compliance associated with completion of new reservoir projects will likely be complicated, lengthy, and involve coordination with several regulatory agencies.

8. It is recommended that consideration be given to development of a StateMod (or equivalent) hydrologic model for the watershed during Level II so that appropriate exercise of water rights and reservoir operations can be included in the more detailed evaluations.

8.1.4 Stream Channel Condition and Stability

1. Based on the geomorphic assessment, several impaired channel reaches were identified within the watershed. The categories of impairments identified include, but are not limited to degradation of riparian vegetation and degradation of riparian condition in the form of stream bank erosion and channel degradation.

2. Site-specific solutions should be developed to mitigate the channel impairment and ultimately included in the watershed management rehabilitation plan.

3. Community-sponsored stream channel and habitat improvement projects could provide numerous benefits to the watershed. Potential projects would include efforts such as bank stabilization efforts using techniques such as willow plantings. In addition to providing direct benefits to the specific stream, ancillary benefits include education and community involvement.

8.1.5 Grazing Management Opportunities

1. Construction and operation of reliable water supply projects must be developed and implemented in areas with inadequate water sources before adjustments or alternatives in grazing management could be made on a particular area or allotment.

2. Development of reliable water sources and associated watering facilities can aid in distribution, timing, and frequency of grazing animals. However, additional measures such as cross-fencing, low-stress herding, mineral/salting, and grazing density should be evaluated as part of the site-specific, grazing management inventory and plan.

3. Available tools such as the ESD and the STM can be used by landowners and managers to become aware of the growth potential of desirable vegetation and predicted responses on a particular range site.

4. These tools could be used in developing appropriate rangeland treatments and grazing practices to begin the transition from an undesirable to a desirable plant community

8.2 Recommendations

Based upon the information presented throughout this report and the conclusions presented above, the recommendations listed below are presented for consideration:

1. Many of the irrigation rehabilitation alternatives and the livestock / wildlife upland watering alternatives fall within the constraints for funding eligibility of the WWDC's Small Water Project Program (SWPP).These projects should be reviewed and selected alternatives should be implemented as soon as is practical. Completion of one or more of these projects in the near future would serve to benefit those directly involved in the project and increase interest and awareness of the benefits associated with the watershed planning process**.**

   Funding through the SWPP does not require formation of a district. Consequently, individuals can seek funding through this program by applying through a conservation district as their sponsor. As discussed in Chapter 7, projects providing multiple benefits and for which total project cost are less than $135,000 are eligible for funding under this program. Grants are available for up to 50 percent of the total project cost or $35,000, whichever is less.

Several alternative sources exist for funding of improvements within the watershed including on-farm improvements, irrigation rehabilitation projects, stream enhancements/restoration projects, and conservation and flood control projects. Creative strategies for funding/financing of projects should be more fully investigated following identification of projects worthy of additional evaluation and potential implementation. As an example, replacement of a failing ditch headgate and diversion which are also identified by WGFD as a barriers to fish passage, could potentially be eligible for funding through SWPP (if total project cost meets SWPP criteria). Additional funding could also be attained through WGFD, Trout Unlimited, and other sources because of the fisheries and stream habitat benefits achievable with completion of the project. *By combining funding sources, the owner could conceivably obtain grants for most, if not all, of the project costs.*

2. Collection of stream gage data should continue for streams and tributaries within the watershed. State and Federal agencies should be contacted in an effort to determine the potential for re-establishment of permanent stream gages to assist in future planning efforts.

3. Landowners or managers seeking to participate in the SWPP should consult and coordinate with their local conservation districts, which are eligible sponsors of SWPP applications and project agreements.

4. The study's GIS and digital library should be used as a tool in planning and developing potential projects and should be updated as necessary from available information sources.

5. Potential funding opportunities exist for proposed and future improvement projects within the watershed including ranch and farm improvements, irrigation system rehabilitation, riparian/wetland enhancements, river corridor and stream channel restoration, and urban drainage and flood control projects.

6. Innovative strategies for coordinated project funding and financing should be investigated and focus on local, collaborative endeavors that integrate more than one watershed issue or concern that could potentially result in achievement of multiple benefits.

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APPENDIX 3A

ALLOTMENT LISTING

BLM Allotments

Field Office Name	Allotment Number	Allotment Name	Public AUMs	Private AUMs	State AUMs	Acres	ACE_ID
Kemmerer	11533	21 GROVE	50			3524.49	1
Kemmerer	21052	AIRPORT	231	116		6097.74	2
Kemmerer	11202	ALBERT CREEK	2252	2000	100	37829.77	3
Kemmerer	11540	ALTAMONT	408			9031.17	4
Kemmerer	1461	ANGELO	233	364		2733.54	5
Kemmerer	21514	ASPEN	152			3086.47	6
Kemmerer	11311	AUSTIN PLACE	30	106		4105.85	7
Kemmerer	11312	AUSTIN TRIANGLE	706	328	10	47029.25	8
Kemmerer	11529	BALSAM DRAW	43			1949.12	9
Kemmerer	11106	BASIN	8			314.05	10
Kemmerer	21042	BEAVER CREEK	2206	176	380	10309.39	11
Kemmerer	1418	BENCH	1150	15		5538.42	12
Kemmerer	11318	BIGELOW BENCH	571	405	36	16459.23	13
Kemmerer	21511	BIGELOW DITCH	80			4570.76	14
Kemmerer	11525	BLAKE HOLLOW	280	598		5715.07	15
Kemmerer	1434	BOND	42			822.39	16
Kemmerer	11317	BRIDGER AIRPORT	2477	698		36640.34	17
Kemmerer	1440	BRIDGER BUTTE	300	200		3050.67	18
Kemmerer	1433	BUFFALO CORRAL	58	60		773.09	19
Kemmerer	21505	BYRNE CREEK	284			9859.9	20
Kemmerer	11306	CARTER LEASE	13184	16699	945	238798.19	21
Rock Sprg	3201	CEDAR MOUNTAIN	20214	314	376	190916.54	22
Kemmerer	1455	CHOKECHERRY	6			163.87	23
Kemmerer	11108	CHRISTENSEN	40	78		2799.46	24
Kemmerer	11319	COAL MINE DRAW	225	219		8735.17	25
Kemmerer	11109	COLLETTI	134	210	9	1602.44	26
Kemmerer	21043	COMMISSARY	511	7	113	5686.33	27
Kemmerer	11414	COTTONWOOD	68	120		1246.35	28
Kemmerer	11301	COW HOLLOW	687	425	66	18058.58	29
Kemmerer	1419	COYOTE HOLLOW	15			1120.38	30
Kemmerer	11304	COYOTE SPRINGS	168	154	27	8186.07	31
Kemmerer	1442	CROOKED CANYON	344			4159.26	32
Kemmerer	1439	CROWFOOT	6			746.03	33
Kemmerer	1458	CUMBERLAND FLATS	1561	1872	90	43318.7	34
Kemmerer	1206	CUMBERLAND/UINTA	29447	17882	2799	337658.85	35
Kemmerer	21038	DEMPSEY BASIN	2030	909	86	15226.91	36
Kemmerer	1426	DOMINGO	7			75.74	37
Kemmerer	11417	DRY CREEK BENCH	60	33		675.16	38
Kemmerer	1444	DUTCHY HOLLOW	28			533.54	39
Kemmerer	11522	EAST BRANCH	86			1942.76	40
Kemmerer	21041	EAST FORK	100			1026.53	41
Kemmerer	11053	EAST WILLOW CREEK	210	70		3765.14	42
Kemmerer	1460	ELKOL	304			11885.05	43
Kemmerer	21039	FISH CREEK	3037	1660	123	18840.75	44
Kemmerer	11402	FORT BRIDGER	10			3880.55	45
Kemmerer	1448	FOURTY	23			41.44	46
Kemmerer	11412	GOURLEY	45			2844.22	47
Kemmerer	1424	GRAHAM RESERVOIR	56			427.77	48
Kemmerer	11302	GRANGER LEASE	13865	15172	727	470679.64	49
Kemmerer	21044	GRANNY PEAK	229	188		3149.75	50
Kemmerer	11528	GUILD RANCH	58			1841.68	51
Kemmerer	11326	H.F. ALLOT.	36			551.29	52
Kemmerer	1527	HAGUE CREEK	80			1300.72	53
Kemmerer	1451	HALF SEC HORSE CR	31			495.94	54
Kemmerer	11314	HANBLIN	44	10		372.19	55
Kemmerer	1445	HANNA JOHNSON	40			222.16	56
Kemmerer	11305	HASSETT	116	172		4695.68	57
Kemmerer	21510	HAYSTACK DRAW	474	395		9684.73	58
Rock Sprg	4013	HICKEY MOUNTAIN	678	84		8961.45	59
Kemmerer	1447	HIGHWAY	96			2599.54	60
Kemmerer	21507	HINSHAW CREEK	427	1027	79	13346.25	61
Kemmerer	21032	HOODOO	450	21	97	3495.32	62
Kemmerer	1438	HORSE CREEK	88			2432.1	63
Kemmerer	11324	INDIAN FLAT	578			7922.11	64
Kemmerer	11410	JACKMAN	3			414.08	65
Kemmerer	1420	JOHNSON	8			722.77	66
Kemmerer	11541	KEMMERER JUNCTION	278	453		6159.86	67
Kemmerer	11045	LAKE CREEK	142	46		3599.16	68
Kemmerer	11413	LEAVITT BENCH	402	245		6471.42	69
Kemmerer	1456	LEAVITT CREEK	66	30		1271.46	70
Kemmerer	11320	LEROY	759	801	20	13036.9	71
Kemmerer	11406	LITTLE CREEK	286	785		14067.23	72
Kemmerer	1450	LITTLE DRY CREEK	511			6663.02	73
Kemmerer	11409	LOWER BENCH	70			668.62	74
Kemmerer	11303	LYMAN CATTLE	2313	1075	45	46896.37	75

Field Office Name	Allotment Number	Allotment Name	Public AUMs	Private AUMs	State AUMs	Acres	ACE_ID
Kemmerer	1105	MAMMOTH HOLLOW	725	574	425	17273.29	76
Kemmerer	21036	MAYFIELD	126	1982	296	5214.03	77
Kemmerer	21501	MEDICINE BUTTE	928	1117	115	17223.91	78
Kemmerer	11512	MEEKS CABIN	642			20820.43	79
Kemmerer	11404	MILBURNE	30	53		414.67	80
Kemmerer	11308	MONUMENT	186	467	91	8287.93	81
Kemmerer	11539	MOSS CREEK	94			3909.2	82
Kemmerer	11534	MOSSLANDER RANCH	370			14222.25	83
Kemmerer	1552	MUDDY CREEK	37	45		971.38	84
Kemmerer	1427	MURRAY DITCH	30			752.47	85
Kemmerer	1423	MURRAY RESERVOIR	190			2529.65	86
Kemmerer	11535	MYERS	452			15902.31	87
Kemmerer	11403	NEBRASKA FLAT	34			4599.39	88
Kemmerer	11321	NELSON SECTION	20	80		1019.21	89
Kemmerer	11313	NIPPLE	30			1144.56	90
Kemmerer	1435	NORTH HORSE CREEK	435			2518.02	91
Kemmerer	11056	NORTH MOYER	82	18		681.5	92
Kemmerer	11323	NUTRIA ALLOT.	20	80		1153.52	93
Kemmerer	11315	OAKS	37			745.84	94
Kemmerer	11322	OPAL	232			4989.88	95
Kemmerer	11058	OYSTER RIDGE	16			636.69	96
Kemmerer	11030	PINE CREEK	312		75	4080.92	97
Kemmerer	11040	POLE CREEK	780	787	204	6837.55	98
Kemmerer	11107	POMEROY BASIN	2182	1819	859	27670.84	99
Kemmerer	11408	POVERTY FLAT	443			3569.06	100
Kemmerer	21048	QUAKENASP CANYON	556			8999.39	101
Kemmerer	1446	QUARRY CREEK	85			2153	102
Kemmerer	11110	QUEALY PEAK	91	151		3080.54	103
Kemmerer	11542	RADIO TOWER	229	472		6726.01	104
Kemmerer	21001	REDDEN PASTURE	35			1571.31	105
Kemmerer	11325	ROBERSON CREEK	130	201	41	5728.33	106
Kemmerer	21035	ROCK CREEK	9096	1064	1793	81808.33	107
Kemmerer	11503	ROCK HOUSE	565	1189		14525.36	108
Rock Sprg	13018	ROCK SPRINGS	105584	68453	1182	87936.55	109
Kemmerer	1443	ROCKY SPRINGS	77			289.69	110
Kemmerer	1436	SAGE CHICKEN FLAT	57			1311.2	111
Kemmerer	1449	SAGE CREEK	2378			32305.08	112
Rock Sprg	3200	SAGE CREEK MOUNTA	11844	184	220	79618.1	113
Kemmerer	21050	SAWMILL	240	74		1995.04	114
Kemmerer	11415	SIDEHILL	10			286.91	115
Kemmerer	11113	SLATE CREEK	11082	1527	615	258077.92	116
Kemmerer	21034	SLIDE ROCK	119	204	92	3400.31	117
Kemmerer	1421	SMITH	25			645.78	118
Kemmerer	1422	SMITHS FORK	100			3494.33	119
Kemmerer	1437	SOUTH HORSE CREEK	360			2015.26	120
Kemmerer	11310	SOUTH MONUMENT	10			434.23	121
Kemmerer	11054	SOUTH MOYER	5	81		745.68	122
Kemmerer	11405	SPRING CREEK	87			8005.02	123
Kemmerer	21031	SUBLETTE CANYON	454			2582.63	124
Kemmerer	11521	THE BOILERS DRAW	200			2778.8	125
Kemmerer	1429	THUNDERBOLT	50			676.08	126
Kemmerer	1425	TIMBER PLACE	17			327.6	127
Kemmerer	11411	TIPPERARY	4			420.61	128
Kemmerer	21033	TOM GOURE	545	913		6064.36	129
Kemmerer	21508	TOMS DRAW	311	489		7922.69	130
Kemmerer	11401	TOOMER	2			368.6	131
Kemmerer	21046	TRAIL CREEK	1146		128	7654.1	132
Kemmerer	1459	TWIN CREEK	4255	270	435	42693.19	133
Kemmerer	1452	UPPER FLAT	136			2274.18	134
Kemmerer	11316	UPPER RANCH	7	60		438.42	135
Kemmerer	11544	VAN TASSEL	395	1378	158	16901.26	136
Kemmerer	1432	WALL	12			242.9	137
Kemmerer	1453	WALL RESERVOIR	45			979.88	138
Kemmerer	11416	WEST LOWER BENCH	24			120.47	139
Kemmerer	11051	WEST WILLOW CREEK	159	98		1318.9	140
Kemmerer	1428	WESTFORK	227			2869.36	141
Kemmerer	21049	WESTPHAL CREEK	218	15		1155.72	142
Kemmerer	21037	WILKINSON CREEK	530	1224		8290.89	143
Kemmerer	1430	WILLOW CREEK	1205	51		4173.14	144
Kemmerer	1431	YELLOW HOLLOW CRE	78			2404.72	145
Kemmerer	N/L	ZNOT LEASED	0			668.52	146
Kemmerer	ST-DR	ZSTOCK DRIVEWAY	0			80.34	147
		Currently no name	0			418506.37	148
		Currently no name	0			10104.23	149
		Currently no name	0			23555.9	150
		Currently no name	0			678.24	151

APPENDIX 3B

STOCK RESERVOIR EVALUATION

ACE ID	Name	Source	Condition	Water Source	Notes	Lattitude	Longitude	Phase	HUC 12 Name	Allotment	Land Owner	T	R	S
1	Devils Hole Lakes	ACE Mapscan	Wet	Yes		42.33	-110.64	Phase I	Hams Fork-East Fork Hams Fork	Devils Hole	USFS	27N	116W	17
2	Devils Hole Lakes	ACE Mapscan	Wet	Yes		42.33	-110.64	Phase I	Hams Fork-East Fork Hams Fork	Devils Hole	USFS	27N	116W	17
3	Unknown	ACE Mapscan	Wet	Yes		42.22	-110.77	Phase I	West Fork Hams Fork	Basin Creek	USFS	26N	117W	19
4	Unknown	ACE Mapscan	Wet	Yes		42.22	-110.77	Phase I	West Fork Hams Fork	Basin Creek	USFS	26N	117W	19
5	Unknown	ACE Mapscan	Wet	Yes		42.21	-110.66	Phase I	Hams Fork-East Fork Hams Fork	Elk Creek	USFS	26N	116W	30
6	Unknown	ACE Mapscan	Wet	Yes		42.20	-110.75	Phase I	Hams Fork-East Fork Hams Fork	Aspen Springs	USFS	26N	117W	32
7	Unknown	ACE Mapscan	Wet	Yes		42.19	-110.74	Phase I	Hams Fork-East Fork Hams Fork	Hams Fork	USFS	25N	117W	4
8	Unknown	ACE Mapscan	Wet	Yes		42.17	-110.74	Phase I	Hams Fork-East Fork Hams Fork	Aspen Springs	USFS	25N	117W	9
9	Unknown	ACE Mapscan	Wet	Yes		42.17	-110.74	Phase I	Hams Fork-East Fork Hams Fork	Aspen Springs	USFS	25N	117W	9
10	Unknown	ACE Mapscan	Wet	Yes		42.17	-110.74	Phase I	Hams Fork-East Fork Hams Fork	Hams Fork	USFS	25N	117W	9
11	Unknown	ACE Mapscan	Wet	Yes		42.16	-110.65	Phase I	Beaver Creek	Pole Creek	USFS	25N	116W	17
12	Unknown	ACE Mapscan	Wet	Yes		42.14	-110.65	Phase I	Beaver Creek	Beaver Creek	BLM	25N	116W	20
13	Unknown	ACE Mapscan	Wet	Yes		42.13	-110.77	Phase I	Hams Fork-West Beaver Creek	Mayfield	Private	25N	117W	29
14	Unknown	ACE Mapscan	Wet	Yes		42.13	-110.77	Phase I	Hams Fork-West Beaver Creek	Mayfield	Private	25N	117W	29
15	Unknown	ACE Mapscan	Wet	Yes		42.13	-110.77	Phase I	Hams Fork-West Beaver Creek	Mayfield	Private	25N	117W	29
16	Unknown	ACE Mapscan	Wet	Yes		42.13	-110.78	Phase I	Hams Fork-West Beaver Creek	Mayfield	BLM	25N	117W	30
17	Unknown	ACE Mapscan	Wet	Yes		42.13	-110.78	Phase I	Hams Fork-West Beaver Creek	Mayfield	BLM	25N	117W	30
18	Unknown	ACE Mapscan	Wet	Yes		42.13	-110.78	Phase I	Hams Fork-West Beaver Creek	Mayfield	BLM	25N	117W	30
19	Unknown	ACE Mapscan	Wet	Yes		42.12	-110.77	Phase I	Hams Fork-West Beaver Creek	Wilkinson Creek	Private	25N	117W	29
20	Unknown	ACE Mapscan	Wet	Yes		42.12	-110.78	Phase I	Hams Fork-West Beaver Creek	Wilkinson Creek	Private	25N	117W	30
21	Unknown	ACE Mapscan	Wet	Yes		42.12	-110.78	Phase I	Hams Fork-West Beaver Creek	Wilkinson Creek	Private	25N	117W	30
22	Unknown	ACE Mapscan	Wet	Yes		42.12	-110.64	Phase I	Beaver Creek	Beaver Creek	BLM	25N	116W	29
23	Unknown	ACE Mapscan	Wet	Yes		42.12	-110.65	Phase I	Beaver Creek	Beaver Creek	BLM	25N	116W	29
24	Unknown	ACE Mapscan	Wet	Yes		42.12	-110.65	Phase I	Beaver Creek	Beaver Creek	BLM	25N	116W	29
25	Unknown	ACE Mapscan	Wet	Yes		42.12	-110.65	Phase I	Beaver Creek	Beaver Creek	BLM	25N	116W	29
26	Unknown	ACE Mapscan	Wet	Yes		42.12	-110.65	Phase I	Beaver Creek	Beaver Creek	BLM	25N	116W	29
27	Unknown	ACE Mapscan	Wet	Yes		42.11	-110.61	Phase I	Beaver Creek	Beaver Creek	BLM	25N	116W	34
28	Unknown	ACE Mapscan	Wet	Yes		42.11	-110.66	Phase I	Hams Fork-West Beaver Creek	Beaver Creek	Private	25N	116W	32
29	Unknown	ACE Mapscan	Wet	Yes		42.11	-110.62	Phase I	Beaver Creek	Beaver Creek	BLM	25N	116W	34
30	Unknown	ACE Mapscan	Wet	Yes		42.11	-110.74	Phase I	Hams Fork-West Beaver Creek	No Allotment	Private	25N	117W	33
31	Unknown	ACE Mapscan	Wet	Yes		42.11	-110.74	Phase I	Hams Fork-West Beaver Creek	No Allotment	Private	25N	117W	33
32	Unknown	ACE Mapscan	Wet	Yes		42.11	-110.74	Phase I	Hams Fork-West Beaver Creek	No Allotment	Private	25N	117W	33
33	Unknown	ACE Mapscan	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY	42.10	-110.66	Phase I	Beaver Creek	Beaver Creek	Private	24N	117W	2
34	Unknown	ACE Mapscan	Wet	Yes		42.09	-110.64	Phase I	Beaver Creek	Beaver Creek	State of Wyoming	24N	117W	1
35	Unknown	ACE Mapscan	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY	42.09	-110.66	Phase I	Beaver Creek	Beaver Creek	Private	24N	117W	2
36	Unknown	ACE Mapscan	Wet	Yes		42.08	-110.79	Phase I	Hams Fork-West Beaver Creek	Wilkinson Creek	BLM	24N	118W	3
37	Unknown	ACE Mapscan	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY	42.08	-110.65	Phase I	Hams Fork-Dempsey Creek	No Allotment	Private	24N	117W	12
38	Unknown	ACE Mapscan	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY	42.08	-110.65	Phase I	Hams Fork-Dempsey Creek	No Allotment	Private	24N	117W	12
39	Unknown	ACE Mapscan	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY	42.08	-110.65	Phase I	Hams Fork-Dempsey Creek	No Allotment	Private	24N	117W	12
40	Unknown	ACE Mapscan	Wet	Yes		42.07	-110.62	Phase I	Hams Fork-Dempsey Creek	Lake Creek	Private	24N	116W	7
41	Unknown	ACE Mapscan	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY	42.07	-110.65	Phase I	Hams Fork-Dempsey Creek	No Allotment	Private	24N	117W	12
42	Unknown	ACE Mapscan	Wet	Yes		42.07	-110.66	Phase I	Hams Fork-Dempsey Creek	No Allotment	Private	24N	117W	11
43	Unknown	ACE Mapscan	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY	42.07	-110.63	Phase I	Hams Fork-Dempsey Creek	Lake Creek	Private	24N	116W	7
44	Unknown	ACE Mapscan	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY	42.07	-110.62	Phase I	Hams Fork-Dempsey Creek	Lake Creek	Private	24N	116W	7
45	Unknown	ACE Mapscan	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY	42.07	-110.62	Phase I	Hams Fork-Dempsey Creek	Lake Creek	Private	24N	116W	7
46	Unknown	ACE Mapscan	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY	42.07	-110.63	Phase I	Hams Fork-Dempsey Creek	Lake Creek	Private	24N	116W	7
47	Unknown	ACE Mapscan	Wet	Yes		42.07	-110.63	Phase I	Hams Fork-Dempsey Creek	Lake Creek	Private	24N	116W	7
48	Unknown	ACE Mapscan	Wet	Yes		42.07	-110.63	Phase I	Hams Fork-Dempsey Creek	Lake Creek	BLM	24N	117W	13
49	Unknown	ACE Mapscan	Wet	Yes		42.07	-110.63	Phase I	Hams Fork-Dempsey Creek	Lake Creek	BLM	24N	117W	13
50	Unknown	ACE Mapscan	Wet	Yes		42.06	-110.63	Phase I	Hams Fork-Dempsey Creek	Lake Creek	BLM	24N	117W	13
51	Unknown	ACE Mapscan	Wet	Yes		42.06	-110.64	Phase I	Hams Fork-Dempsey Creek	Lake Creek	Private	24N	117W	13
52	Unknown	ACE Mapscan	Wet	Yes		42.06	-110.64	Phase I	Hams Fork-Dempsey Creek	No Allotment	Private	24N	117W	13
53	Unknown	ACE Mapscan	Wet	Yes		42.06	-110.63	Phase I	Hams Fork-Dempsey Creek	No Allotment	Private	24N	117W	13
54	Unknown	ACE Mapscan	Wet	Yes		42.06	-110.65	Phase I	Hams Fork-Dempsey Creek	No Allotment	Private	24N	117W	13
55	Unknown	ACE Mapscan	Wet	Yes		42.06	-110.63	Phase I	Hams Fork-Dempsey Creek	Lake Creek	Private	24N	116W	18
56	Unknown	ACE Mapscan	Wet	Yes		42.06	-110.63	Phase I	Hams Fork-Dempsey Creek	Lake Creek	Private	24N	116W	18
57	Unknown	ACE Mapscan	Wet	Yes		42.06	-110.66	Phase I	Hams Fork-Dempsey Creek	No Allotment	Private	24N	117W	14
58	Unknown	ACE Mapscan	Wet	Yes		42.06	-110.66	Phase I	Hams Fork-Dempsey Creek	No Allotment	Private	24N	117W	14
59	Unknown	ACE Mapscan	Wet	Yes		42.06	-110.63	Phase I	Hams Fork-Dempsey Creek	Lake Creek	Private	24N	116W	18
60	Unknown	ACE Mapscan	Wet	Yes		42.06	-110.63	Phase I	Hams Fork-Dempsey Creek	No Allotment	Private	24N	117W	13
61	Unknown	ACE Mapscan	Wet	Yes		42.06	-110.63	Phase I	Hams Fork-Dempsey Creek	No Allotment	Private	24N	117W	13
62	Unknown	ACE Mapscan	Wet	Yes		42.06	-110.63	Phase I	Hams Fork-Dempsey Creek	No Allotment	Private	24N	117W	13
63	Unknown	ACE Mapscan	Wet	Yes		42.05	-110.63	Phase I	Hams Fork-Dempsey Creek	No Allotment	Private	24N	117W	13
64	Unknown	ACE Mapscan	Wet	Yes		42.05	-110.64	Phase I	Hams Fork-Dempsey Creek	No Allotment	Private	24N	117W	13
65	Unknown	ACE Mapscan	Wet	Yes		42.05	-110.61	Phase I	Hams Fork-Dempsey Creek	Granny Peak	Private	24N	116W	17
66	Unknown	ACE Mapscan	Wet	Yes		42.05	-110.78	Phase I	Hams Fork-Dempsey Creek	Dempsey Basin	BLM	24N	118W	23
67	Unknown	ACE Mapscan	Wet	Yes		42.05	-110.70	Phase I	Hams Fork-Dempsey Creek	Dempsey Basin	BLM	24N	117W	21
68	Unknown	ACE Mapscan	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY	42.05	-110.78	Phase I	Hams Fork-Dempsey Creek	Dempsey Basin	BLM	24N	118W	23
69	Unknown	ACE Mapscan	Wet	Yes		42.05	-110.78	Phase I	Hams Fork-Dempsey Creek	Dempsey Basin	BLM	24N	118W	23
70	Unknown	ACE Mapscan	Wet	Yes		42.05	-110.78	Phase I	Hams Fork-Dempsey Creek	Dempsey Basin	BLM	24N	118W	23
71	Unknown	ACE Mapscan	Wet	Yes		42.05	-110.78	Phase I	Hams Fork-Dempsey Creek	Dempsey Basin	BLM	24N	118W	23
72	Unknown	ACE Mapscan	Wet	Yes		42.05	-110.78	Phase I	Hams Fork-Dempsey Creek	Dempsey Basin	BLM	24N	118W	23
73	Unknown	ACE Mapscan	Wet	Yes		42.04	-110.78	Phase I	Hams Fork-Dempsey Creek	Dempsey Basin	BLM	24N	118W	23

ACE ID	Name	Source	Condition	Water Source	Notes	Lattitude	Longitude	Phase	HUC 12 Name	Allotment	Land Owner	T	R	S
74	Unknown	ACE Mapscan	Wet	Yes		42.04	-110.77	Phase I	Hams Fork-Dempsey Creek	Dempsey Basin	BLM	24N	118W	23
75	Unknown	ACE Mapscan	Wet	Yes		42.04	-110.64	Phase I	Hams Fork-Dempsey Creek	No Allotment	Private	24N	117W	24
76	Unknown	ACE Mapscan	Wet	Yes		42.04	-110.78	Phase I	Hams Fork-Dempsey Creek	Dempsey Basin	BLM	24N	118W	26
77	Unknown	ACE Mapscan	Wet	Yes		42.04	-110.79	Phase I	Hams Fork-Dempsey Creek	Dempsey Basin	Private	24N	118W	26
78	Unknown	ACE Mapscan	Wet	Yes		42.04	-110.79	Phase I	Hams Fork-Dempsey Creek	Dempsey Basin	Private	24N	118W	26
79	Unknown	ACE Mapscan	Wet	Yes		42.03	-110.79	Phase I	Hams Fork-Dempsey Creek	Dempsey Basin	BLM	24N	118W	26
80	Unknown	ACE Mapscan	Wet	Yes		42.03	-110.57	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	Private	24N	116W	27
81	Unknown	ACE Mapscan	Dry	No	BREACHED	42.03	-110.79	Phase I	Hams Fork-Dempsey Creek	Dempsey Basin	Private	24N	118W	27
82	Unknown	ACE Mapscan	Wet	Yes		42.03	-110.62	Phase I	Hams Fork-Dempsey Creek	Lake Creek	Private	24N	116W	30
83	Unknown	ACE Mapscan	Wet	Yes		42.03	-110.57	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	Private	24N	116W	27
84	Unknown	ACE Mapscan	Wet	Yes		42.03	-110.57	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	Private	24N	116W	27
85	Unknown	ACE Mapscan	Wet	Yes		42.03	-110.57	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	Private	24N	116W	27
86	Unknown	ACE Mapscan	Wet	Yes		42.03	-110.57	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	Private	24N	116W	27
87	Unknown	ACE Mapscan	Wet	Yes		42.03	-110.57	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	Private	24N	116W	27
88	Unknown	ACE Mapscan	Wet	Yes		42.03	-110.57	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	Private	24N	116W	27
89	Unknown	ACE Mapscan	Wet	Yes		42.03	-110.56	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	Private	24N	116W	27
90	Unknown	ACE Mapscan	Wet	Yes		42.03	-110.56	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	Private	24N	116W	27
91	Unknown	ACE Mapscan	Wet	Yes		42.03	-110.56	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	Private	24N	116W	27
92	Unknown	ACE Mapscan	Wet	Yes		42.03	-110.56	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	Private	24N	116W	27
93	Unknown	ACE Mapscan	Wet	Yes		42.03	-110.56	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	Private	24N	116W	27
94	Unknown	ACE Mapscan	Wet	Yes		42.03	-110.56	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	Private	24N	116W	27
95	Unknown	ACE Mapscan	Wet	Yes		42.03	-110.63	Phase I	Hams Fork-Dempsey Creek	No Allotment	Private	24N	117W	25
96	Unknown	ACE Mapscan	Wet	Yes		42.03	-110.56	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	Private	24N	116W	27
97	Unknown	ACE Mapscan	Wet	Yes		42.03	-110.78	Phase I	Hams Fork-Dempsey Creek	Dempsey Basin	Private	24N	118W	26
98	Unknown	ACE Mapscan	Wet	Yes		42.03	-110.56	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	Private	24N	116W	27
99	Unknown	ACE Mapscan	Wet	Yes		42.03	-110.56	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	Private	24N	116W	27
100	Unknown	ACE Mapscan	Wet	Yes		42.03	-110.68	Phase I	Hams Fork-Dempsey Creek	Dempsey Basin	BLM	24N	117W	27
101	Unknown	ACE Mapscan	Wet	Yes		42.03	-110.56	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	Private	24N	116W	27
102	Unknown	ACE Mapscan	Wet	Yes		42.03	-110.56	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	Private	24N	116W	27
103	Unknown	ACE Mapscan	Wet	Yes		42.03	-110.56	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	Private	24N	116W	27
104	Unknown	ACE Mapscan	Wet	Yes		42.03	-110.56	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	Private	24N	116W	27
105	Unknown	ACE Mapscan	Wet	Yes		42.03	-110.56	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	Private	24N	116W	26
106	Unknown	ACE Mapscan	Dry	No	BREACHED	42.02	-110.78	Phase I	Hams Fork-Dempsey Creek	Dempsey Basin	Private	24N	118W	35
107	Unknown	ACE Mapscan	Wet	Yes		42.02	-110.57	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	State of Wyoming	24N	116W	34
108	Unknown	ACE Mapscan	Wet	Yes		42.02	-110.79	Phase I	Hams Fork-Dempsey Creek	Dempsey Basin	Private	24N	118W	35
109	Unknown	ACE Mapscan	Wet	Yes		42.02	-110.79	Phase I	Hams Fork-Dempsey Creek	Dempsey Basin	Private	24N	118W	35
110	Unknown	ACE Mapscan	Wet	Yes		42.02	-110.79	Phase I	Hams Fork-Dempsey Creek	Dempsey Basin	Private	24N	118W	35
111	Unknown	ACE Mapscan	Wet	Yes		42.02	-110.57	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	State of Wyoming	24N	116W	34
112	Unknown	ACE Mapscan	Wet	Yes		42.02	-110.56	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	State of Wyoming	24N	116W	34
113	Unknown	ACE Mapscan	Wet	Yes		42.02	-110.79	Phase I	Hams Fork-Dempsey Creek	Dempsey Basin	Private	24N	118W	35
114	Unknown	ACE Mapscan	Wet	Yes		42.02	-110.56	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	Private	24N	116W	35
115	Unknown	ACE Mapscan	Wet	Yes		42.02	-110.56	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	State of Wyoming	24N	116W	34
116	Unknown	ACE Mapscan	Wet	Yes		42.02	-110.79	Phase I	Hams Fork-Dempsey Creek	Dempsey Basin	Private	24N	118W	35
117	Unknown	ACE Mapscan	Wet	Yes		42.02	-110.56	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	Private	24N	116W	35
118	Unknown	ACE Mapscan	Wet	Yes		42.02	-110.56	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	State of Wyoming	24N	116W	34
119	Unknown	ACE Mapscan	Wet	Yes		42.02	-110.56	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	Private	24N	116W	35
120	Unknown	ACE Mapscan	Wet	Yes		42.02	-110.56	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	Private	24N	116W	35
121	Unknown	ACE Mapscan	Wet	Yes		42.02	-110.79	Phase I	Hams Fork-Dempsey Creek	Dempsey Basin	Private	24N	118W	35
122	Unknown	ACE Mapscan	Wet	Yes		42.02	-110.56	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	Private	24N	116W	35
123	Unknown	ACE Mapscan	Wet	Yes		42.02	-110.79	Phase I	Hams Fork-Dempsey Creek	Dempsey Basin	Private	24N	118W	35
124	Unknown	ACE Mapscan	Wet	Yes		42.02	-110.56	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	State of Wyoming	24N	116W	34
125	Unknown	ACE Mapscan	Wet	Yes		42.02	-110.56	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	State of Wyoming	24N	116W	34
126	Unknown	ACE Mapscan	Wet	Yes		42.02	-110.56	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	State of Wyoming	24N	116W	34
127	Unknown	ACE Mapscan	Wet	Yes		42.02	-110.55	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	Private	24N	116W	35
128	Unknown	ACE Mapscan	Wet	Yes		42.02	-110.55	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	Private	24N	116W	35
129	Unknown	ACE Mapscan	Dry	No	BREACHED	42.02	-110.78	Phase I	Hams Fork-Dempsey Creek	Dempsey Basin	Private	24N	118W	35
130	Unknown	ACE Mapscan	Wet	Yes		42.02	-110.55	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	Private	24N	116W	35
131	Unknown	ACE Mapscan	Wet	Yes		42.01	-110.55	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	Private	24N	116W	35
132	Unknown	ACE Mapscan	Wet	Yes		42.01	-110.55	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	Private	24N	116W	35
133	Unknown	ACE Mapscan	Wet	Yes		42.01	-110.55	Phase I	Willow Creek-East Branch Willow Creek	Mammoth Hollow	Private	24N	116W	35
134	Unknown	ACE Mapscan	Wet	Yes		42.01	-110.56	Phase I	Willow Creek-East Branch Willow Creek	No Allotment	BLM	23N	116W	2
135	Unknown	ACE Mapscan	Wet	Yes		42.00	-110.54	Phase I	Willow Creek-East Branch Willow Creek	No Allotment	BLM	23N	116W	2
136	Unknown	ACE Mapscan	Wet	Yes		42.00	-110.53	Phase I	Willow Creek-East Branch Willow Creek	No Allotment	Private	23N	116W	1
137	Unknown	ACE Mapscan	Wet	Yes		42.00	-110.53	Phase I	Willow Creek-East Branch Willow Creek	No Allotment	BLM	23N	116W	1
138	Unknown	ACE Mapscan	Wet	Yes		42.00	-110.55	Phase I	Willow Creek-East Branch Willow Creek	No Allotment	BLM	23N	116W	2
139	Unknown	ACE Mapscan	Wet	Yes		42.00	-110.54	Phase I	Willow Creek-East Branch Willow Creek	No Allotment	BLM	23N	116W	1
140	Unknown	ACE Mapscan	Wet	Yes		42.00	-110.54	Phase I	Willow Creek-East Branch Willow Creek	No Allotment	BLM	23N	116W	2
141	Unknown	ACE Mapscan	Wet	Yes		41.99	-110.53	Phase I	Willow Creek-East Branch Willow Creek	No Allotment	BLM	23N	116W	12
142	Unknown	ACE Mapscan	Wet	Yes		41.99	-110.54	Phase I	Willow Creek-East Branch Willow Creek	No Allotment	BLM	23N	116W	12
143	Unknown	ACE Mapscan	Dry	Potential		41.99	-110.53	Phase I	Willow Creek-East Branch Willow Creek	No Allotment	BLM	23N	116W	12
144	Unknown	ACE Mapscan	Wet	Yes		41.99	-110.53	Phase I	Willow Creek-East Branch Willow Creek	No Allotment	BLM	23N	116W	12
145	Unknown	ACE Mapscan	Wet	Yes		41.99	-110.53	Phase I	Willow Creek-East Branch Willow Creek	No Allotment	BLM	23N	116W	12
146	Unknown	ACE Mapscan	Wet	Yes		41.99	-110.53	Phase I	Willow Creek-East Branch Willow Creek	No Allotment	BLM	23N	116W	12

ACE ID	Name	Source	Condition	Water Source	Notes	Lattitude	Longitude	Phase	HUC 12 Name	Allotment	Land Owner	T	R	S
147	Unknown	ACE Mapscan	Wet	Yes		41.98	-110.56	Phase I	Willow Creek-East Branch Willow Creek	Pomeroy Basin	Private	23N	116W	15
148	Unknown	ACE Mapscan	Wet	Yes		41.98	-110.52	Phase I	Willow Creek-East Branch Willow Creek	Pomeroy Basin	BLM	23N	115W	18
149	Unknown	ACE Mapscan	Wet	Yes		41.98	-110.51	Phase I	Willow Creek-East Branch Willow Creek	Pomeroy Basin	BLM	23N	115W	18
150	Unknown	ACE Mapscan	Wet	Yes		41.97	-110.78	Phase I	Hams Fork-Fish Creek	Fish Creek	Private	23N	118W	14
151	Unknown	ACE Mapscan	Wet	Yes		41.97	-110.78	Phase I	Hams Fork-Fish Creek	Fish Creek	Private	23N	118W	14
152	Unknown	ACE Mapscan	Wet	Yes		41.97	-110.78	Phase I	Hams Fork-Fish Creek	Fish Creek	Private	23N	118W	14
153	Unknown	ACE Mapscan	Wet	Yes		41.97	-110.78	Phase I	Hams Fork-Fish Creek	Fish Creek	BLM	23N	118W	23
154	Unknown	ACE Mapscan	Wet	Yes		41.97	-110.66	Phase I	Hams Fork-Fish Creek	No Allotment	Private	23N	117W	23
155	Unknown	ACE Mapscan	Wet	Yes		41.97	-110.54	Phase I	Willow Creek-East Branch Willow Creek	Pomeroy Basin	Private	23N	116W	24
156	Lake Viva Naughten	ACE Mapscan	Wet	Yes		41.96	-110.65	Phase I	Hams Fork-Dempsey Creek	No Allotment	Private	23N	117W	23
157	Unknown	ACE Mapscan	Wet	Yes		41.96	-110.66	Phase I	Hams Fork-Fish Creek	No Allotment	Private	23N	117W	23
158	Unknown	ACE Mapscan	Wet	Yes		41.96	-110.61	Phase I	Hams Fork-Fish Creek	Trail Creek	BLM	23N	116W	20
159	Unknown	ACE Mapscan	Wet	Yes		41.96	-110.54	Phase I	Willow Creek-East Branch Willow Creek	Pomeroy Basin	Private	23N	116W	23
160	Unknown	ACE Mapscan	Dry	Potential		41.96	-110.58	Phase I	Willow Creek-East Branch Willow Creek	Pomeroy Basin	BLM	23N	116W	21
161	Unknown	ACE Mapscan	Dry	Potential		41.96	-110.63	Phase I	Hams Fork-Fish Creek	Trail Creek	BLM	23N	116W	19
162	Unknown	ACE Mapscan	Dry	Potential		41.96	-110.57	Phase I	Willow Creek-East Branch Willow Creek	Pomeroy Basin	Private	23N	116W	22
163	Unknown	ACE Mapscan	Wet	Yes		41.96	-110.55	Phase I	Willow Creek-East Branch Willow Creek	Pomeroy Basin	Private	23N	116W	23
164	Unknown	ACE Mapscan	Wet	Yes		41.96	-110.54	Phase I	Willow Creek-East Branch Willow Creek	Pomeroy Basin	Private	23N	116W	23
165	Unknown	ACE Mapscan	Wet	Yes		41.96	-110.56	Phase I	Willow Creek-East Branch Willow Creek	Pomeroy Basin	Private	23N	116W	22
166	Unknown	ACE Mapscan	Wet	Yes		41.96	-110.54	Phase I	Willow Creek-East Branch Willow Creek	Oyster Ridge	Private	23N	116W	23
167	Unknown	ACE Mapscan	Dry	Potential		41.95	-110.68	Phase I	Hams Fork-Fish Creek	Fish Creek	BLM	23N	117W	22
168	Unknown	ACE Mapscan	Wet	Yes		41.95	-110.51	Phase I	Willow Creek-East Branch Willow Creek	Pomeroy Basin	BLM	23N	115W	30
169	Unknown	ACE Mapscan	Wet	Yes		41.94	-110.55	Phase I	Willow Creek-East Branch Willow Creek	Basin	Private	23N	116W	26
170	Kemmerer Reservoir	ACE Mapscan	Wet	Yes		41.94	-110.65	Phase I	Hams Fork-Fish Creek	No Allotment	Private	23N	117W	26
171	Coletti Reservoir 2	ACE Mapscan	Wet	Yes		41.93	-110.51	Phase I	Willow Creek-East Branch Willow Creek	Colletti	BLM	23N	115W	31
172	Unknown	ACE Mapscan	Dry	No	BREACHED	41.93	-110.50	Phase I	Willow Creek-East Branch Willow Creek	Colletti	BLM	23N	115W	31
173	Unknown	ACE Mapscan	Dry	No	BREACHED	41.92	-110.50	Phase I	Willow Creek-East Branch Willow Creek	Colletti	Private	22N	115W	6
174	Unknown	ACE Mapscan	Wet	Yes		41.91	-110.54	Phase I	Willow Creek-East Branch Willow Creek	Pomeroy Basin	Private	22N	116W	2
175	Unknown	ACE Mapscan	Dry	No	BREACHED	41.91	-110.51	Phase I	Willow Creek-East Branch Willow Creek	Pomeroy Basin	Private	22N	115W	6
176	Unknown	ACE Mapscan	Dry	Potential		41.90	-110.59	Phase I	Willow Creek-East Branch Willow Creek	Sawmill	BLM	22N	116W	9
177	Unknown	ACE Mapscan	Wet	Yes		41.89	-110.65	Phase I	Hams Fork-Fish Creek	Quakenasp Canyon	Private	22N	117W	11
178	Unknown	ACE Mapscan	Wet	Yes		41.89	-110.54	Phase I	Willow Creek-East Branch Willow Creek	Pomeroy Basin	Private	22N	116W	14
179	Unknown	ACE Mapscan	Wet	Yes		41.89	-110.66	Phase I	Hams Fork-Fish Creek	Quakenasp Canyon	Private	22N	117W	14
180	Unknown	ACE Mapscan	Wet	Yes		41.89	-110.59	Phase I	Hams Fork-Fish Creek	Sawmill	BLM	22N	116W	16
181	Unknown	ACE Mapscan	Wet	Yes		41.89	-110.64	Phase I	Hams Fork-Fish Creek	Quakenasp Canyon	BLM	22N	117W	13
182	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.89	-110.49	Phase I	Willow Creek-East Branch Willow Creek	Pomeroy Basin	BLM	22N	115W	17
183	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.89	-110.59	Phase I	Hams Fork-Fish Creek	Sawmill	BLM	22N	116W	16
184	Unknown	ACE Mapscan	Dry	Potential		41.89	-110.55	Phase I	Willow Creek-East Branch Willow Creek	Pomeroy Basin	Private	22N	116W	14
185	Unknown	ACE Mapscan	Dry	No	BREACHED	41.88	-110.50	Phase I	Willow Creek-East Branch Willow Creek	Pomeroy Basin	BLM	22N	115W	17
186	Unknown	ACE Mapscan	Dry	Potential		41.88	-110.58	Phase I	Hams Fork-Fish Creek	Sawmill	State of Wyoming	22N	116W	15
187	Unknown	ACE Mapscan	Dry	Potential		41.88	-110.58	Phase I	Hams Fork-Fish Creek	Sawmill	BLM	22N	116W	22
188	Unknown	ACE Mapscan	Dry	Potential		41.87	-110.57	Phase I	Hams Fork-Fish Creek	Sawmill	BLM	22N	116W	22
189	Unknown	ACE Mapscan	Wet	Yes		41.87	-110.50	Phase I	Willow Creek-East Branch Willow Creek	East Willow Creek	Private	22N	115W	20
190	Unknown	ACE Mapscan	Dry	Potential		41.86	-110.50	Phase I	Willow Creek-East Branch Willow Creek	East Willow Creek	BLM	22N	115W	29
191	Craven Creek Reservoir (Franklin Res)	ACE Mapscan	Wet	Yes		41.86	-110.40	Phase I	Craven Creek	Slate Creek	Private	22N	114W	30
192	Unknown	ACE Mapscan	Dry	Potential		41.86	-110.51	Phase I	Willow Creek-East Branch Willow Creek	East Willow Creek	Private	22N	115W	30
193	Unknown	ACE Mapscan	Wet	Yes		41.85	-110.45	Phase I	Alkali Creek-Hams Fork	Slate Creek	BLM	22N	115W	27
194	Unknown	ACE Mapscan	Wet	Yes		41.85	-110.49	Phase I	Willow Creek-East Branch Willow Creek	East Willow Creek	BLM	22N	115W	29
195	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.85	-110.58	Phase I	Hams Fork-Fish Creek	No Allotment	Private	22N	116W	27
196	Unknown	ACE Mapscan	Dry	No	BREACHED	41.85	-110.58	Phase I	Hams Fork-Fish Creek	Airport	BLM	22N	116W	33
197	Unknown	ACE Mapscan	Dry	No	BREACHED	41.85	-110.30	Phase I	Craven Creek	Slate Creek	State of Wyoming	22N	114W	36
198	Unknown	ACE Mapscan	Dry	Potential		41.84	-110.32	Phase I	Craven Creek	Slate Creek	BLM	22N	114W	35
199	Unknown	ACE Mapscan	Wet	Yes		41.84	-110.48	Phase I	Alkali Creek-Hams Fork	Quealy Peak	Private	21N	115W	5
200	Unknown	ACE Mapscan	Wet	Yes		41.84	-110.57	Phase I	Hams Fork-Fish Creek	Airport	BLM	21N	116W	3
201	Unknown	ACE Mapscan	Dry	No	BREACHED	41.83	-110.45	Phase I	Alkali Creek-Hams Fork	Slate Creek	Private	21N	115W	3
202	Unknown	ACE Mapscan	Dry	No	BREACHED	41.83	-110.58	Phase I	Hams Fork-Oakley Draw	Airport	BLM	21N	116W	4
203	Unknown	ACE Mapscan	Dry	Potential		41.82	-110.45	Phase I	Alkali Creek-Hams Fork	Slate Creek	Private	21N	115W	3
204	Unknown	ACE Mapscan	Dry	Potential		41.82	-110.58	Phase I	Hams Fork-Oakley Draw	Airport	BLM	21N	116W	3
205	Unknown	ACE Mapscan	Dry	Potential		41.82	-110.46	Phase I	Alkali Creek-Hams Fork	Quealy Peak	Private	21N	115W	3
206	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.82	-110.51	Phase I	Hams Fork-Oakley Draw	Slate Creek	BLM	21N	115W	6
207	Unknown	ACE Mapscan	Dry	Potential		41.82	-110.34	Phase I	Craven Creek	Slate Creek	Private	21N	114W	3
208	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.82	-110.45	Phase I	Alkali Creek-Hams Fork	Slate Creek	Private	21N	115W	3
209	Unknown	ACE Mapscan	Dry	No	BREACHED	41.82	-110.58	Phase I	Hams Fork-Oakley Draw	Airport	Private	21N	116W	9
210	Unknown	ACE Mapscan	Dry	Potential		41.82	-110.59	Phase I	Hams Fork-Oakley Draw	North Moyer	BLM	21N	116W	9
211	Unknown	ACE Mapscan	Wet	Yes		41.81	-110.47	Phase I	Alkali Creek-Hams Fork	Quealy Peak	Private	21N	115W	9
212	Unknown	ACE Mapscan	Dry	No	BREACHED	41.81	-110.57	Phase I	Hams Fork-Oakley Draw	Airport	Private	21N	116W	10
213	Unknown	ACE Mapscan	Dry	Potential		41.81	-110.33	Phase I	Craven Creek	Slate Creek	Private	21N	114W	11
214	Unknown	ACE Mapscan	Wet	Yes		41.81	-110.59	Phase I	Hams Fork-Oakley Draw	North Moyer	Private	21N	116W	9
215	Unknown	ACE Mapscan	Dry	No	BREACHED	41.81	-110.59	Phase I	Hams Fork-Oakley Draw	South Moyer	Private	21N	116W	16
216	Unknown	ACE Mapscan	Wet	Yes		41.81	-110.59	Phase I	Hams Fork-Oakley Draw	South Moyer	Private	21N	116W	16
217	Unknown	ACE Mapscan	Wet	Yes		41.80	-110.59	Phase I	Hams Fork-Oakley Draw	South Moyer	Private	21N	116W	16
218	Unknown	ACE Mapscan	Dry	No	BREACHED	41.80	-110.57	Phase I	Hams Fork-Oakley Draw	Airport	Private	21N	116W	15
219	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.80	-110.52	Phase I	Hams Fork-Oakley Draw	Slate Creek	Private	21N	116W	13

ACE ID	Name	Source	Condition	Water Source	Notes	Lattitude	Longitude	Phase	HUC 12 Name	Allotment	Land Owner	T	R	S
220	Unknown	ACE Mapscan	Wet	Yes		41.80	-110.58	Phase I	Hams Fork-Oakley Draw	South Moyer	Private	21N	116W	16
221	Unknown	ACE Mapscan	Wet	Yes		41.80	-110.58	Phase I	Hams Fork-Oakley Draw	South Moyer	Private	21N	116W	16
222	Unknown	ACE Mapscan	Dry	Potential		41.80	-110.59	Phase I	Hams Fork-Oakley Draw	South Moyer	Private	21N	116W	16
223	Unknown	ACE Mapscan	Dry	Potential		41.80	-110.59	Phase I	Hams Fork-Oakley Draw	South Moyer	Private	21N	116W	16
224	Unknown	ACE Mapscan	Dry	Potential		41.79	-110.31	Phase I	Craven Creek	Slate Creek	Private	21N	114W	23
225	Unknown	ACE Mapscan	Dry	Potential		41.79	-110.47	Phase I	Alkali Creek-Hams Fork	Slate Creek	Private	21N	115W	21
226	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.79	-110.36	Phase I	Craven Creek	Slate Creek	Private	21N	114W	21
227	Unknown	ACE Mapscan	Dry	No	BREACHED	41.79	-110.31	Phase I	Craven Creek	Slate Creek	Private	21N	114W	23
228	Unknown	ACE Mapscan	Wet	Yes		41.79	-110.47	Phase I	Alkali Creek-Hams Fork	Slate Creek	Private	21N	115W	21
229	Unknown	ACE Mapscan	Dry	Potential		41.78	-110.32	Phase I	Craven Creek	Slate Creek	Private	21N	114W	23
230	Unknown	ACE Mapscan	Dry	Potential		41.78	-110.48	Phase I	Hams Fork-Oakley Draw	Slate Creek	Private	21N	115W	21
231	Unknown	ACE Mapscan	Dry	Potential		41.78	-110.59	Phase II	Upper North Fork Little Muddy Creek	Elkol	Private	21N	116W	28
232	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.77	-110.38	Phase I	Hams Fork-Oakley Draw	Slate Creek	Private	21N	114W	29
233	Unknown	ACE Mapscan	Wet	Yes		41.77	-110.20	Phase I	Hams Fork-Cow Hollow Creek	Cow Hollow	Private	21N	113W	26
234	Unknown	ACE Mapscan	Dry	Potential		41.77	-110.35	Phase I	Hams Fork-Oakley Draw	Slate Creek	BLM	21N	114W	28
235	Unknown	ACE Mapscan	Dry	Potential		41.77	-110.26	Phase I	Hams Fork-Cow Hollow Creek	Opal	Private	21N	113W	29
236	Unknown	ACE Mapscan	Dry	No	BREACHED	41.77	-110.56	Phase II	Upper North Fork Little Muddy Creek	No Allotment	Private	21N	116W	27
237	Unknown	ACE Mapscan	Wet	Yes		41.77	-110.59	Phase II	Upper North Fork Little Muddy Creek	Elkol	Private	21N	116W	28
238	Unknown	ACE Mapscan	Dry	Potential		41.77	-110.50	Phase I	Hams Fork-Oakley Draw	Slate Creek	BLM	21N	115W	30
239	Unknown	ACE Mapscan	Dry	Potential		41.77	-110.48	Phase I	Hams Fork-Oakley Draw	Slate Creek	Private	21N	115W	29
240	Unknown	ACE Mapscan	Wet	Yes		41.77	-110.57	Phase II	Upper North Fork Little Muddy Creek	Cumberland Flats	Private	21N	116W	27
241	Unknown	ACE Mapscan	Dry	Potential		41.77	-110.55	Phase I	Hams Fork-Oakley Draw	No Allotment	Private	21N	116W	26
242	Unknown	ACE Mapscan	Wet	Yes		41.77	-110.33	Phase I	Hams Fork-Oakley Draw	No Allotment	Private	21N	114W	27
243	Unknown	ACE Mapscan	Wet	Yes		41.76	-110.32	Phase I	Hams Fork-Oakley Draw	No Allotment	Private	21N	114W	35
244	Unknown	ACE Mapscan	Wet	Yes		41.76	-110.32	Phase I	Hams Fork-Oakley Draw	No Allotment	Private	21N	114W	35
245	Unknown	ACE Mapscan	Wet	Yes		41.76	-110.33	Phase I	Hams Fork-Oakley Draw	No Allotment	Private	21N	114W	35
246	Unknown	ACE Mapscan	Wet	Yes		41.76	-110.33	Phase I	Hams Fork-Oakley Draw	No Allotment	Private	21N	114W	35
247	Unknown	ACE Mapscan	Dry	Potential		41.76	-110.50	Phase I	Hams Fork-Oakley Draw	Slate Creek	Private	21N	115W	31
248	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.76	-110.37	Phase I	Hams Fork-Oakley Draw	Roberson Creek	BLM	21N	114W	32
249	Unknown	ACE Mapscan	Wet	Yes		41.76	-110.57	Phase II	Upper North Fork Little Muddy Creek	Cumberland Flats	BLM	21N	116W	34
250	Unknown	ACE Mapscan	Wet	Yes		41.76	-110.17	Phase I	Hams Fork-Cow Hollow Creek	Cow Hollow	Private	21N	112W	31
251	Unknown	ACE Mapscan	Dry	No	BREACHED	41.76	-110.36	Phase I	Hams Fork-Oakley Draw	Roberson Creek	Private	21N	114W	33
252	Unknown	ACE Mapscan	Wet	Yes		41.76	-110.17	Phase I	Hams Fork-Cow Hollow Creek	Cow Hollow	Private	21N	112W	31
253	Unknown	ACE Mapscan	Wet	Yes		41.75	-110.01	Phase III	Upper Sevenmile Gulch	Granger Lease	Private	21N	111W	33
254	Unknown	ACE Mapscan	Wet	Yes		41.75	-110.51	Phase I	Hams Fork-Oakley Draw	Slate Creek	Private	21N	115W	31
255	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.75	-110.24	Phase I	Hams Fork-Cow Hollow Creek	Opal	Private	21N	113W	33
256	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.74	-110.39	Phase II	Dry Muddy Creek-Little Round Mountain Spring	Coyote Springs	Private	20N	115W	3
257	Unknown	ACE Mapscan	Wet	Yes		41.74	-110.60	Phase II	Upper North Fork Little Muddy Creek	Elkol	Private	20N	117W	2
258	Unknown	ACE Mapscan	Dry	No	BREACHED	41.74	-110.60	Phase II	Upper North Fork Little Muddy Creek	Cumberland Flats	Private	20N	117W	1
259	Unknown	ACE Mapscan	Dry	Potential		41.74	-110.37	Phase II	Dry Muddy Creek-Roberson Creek	Roberson Creek	BLM	20N	115W	2
260	Unknown	ACE Mapscan	Wet	Yes		41.74	-110.59	Phase II	Upper North Fork Little Muddy Creek	Cumberland Flats	Private	20N	117W	1
261	Unknown	ACE Mapscan	Dry	No	BREACHED *** GOOD EXAMPLE	41.74	-110.36	Phase II	Dry Muddy Creek-Roberson Creek	Roberson Creek	Private	20N	115W	1
262	Unknown	ACE Mapscan	Wet	Yes		41.74	-110.60	Phase II	Upper North Fork Little Muddy Creek	Elkol	Private	20N	117W	11
263	Unknown	ACE Mapscan	Dry	No	BREACHED	41.74	-110.55	Phase II	Upper North Fork Little Muddy Creek	Cumberland Flats	Private	20N	116W	8
264	Unknown	ACE Mapscan	Dry	No	BREACHED	41.74	-110.57	Phase II	Upper North Fork Little Muddy Creek	Cumberland Flats	Private	20N	116W	7
265	Unknown	ACE Mapscan	Wet	Yes		41.74	-110.58	Phase II	Upper North Fork Little Muddy Creek	Cumberland Flats	Private	20N	117W	12
266	Unknown	ACE Mapscan	Dry	Potential		41.73	-110.50	Phase I	Hams Fork-Oakley Draw	Cumberland Flats	Private	20N	116W	11
267	Unknown	ACE Mapscan	Dry	Potential		41.73	-110.45	Phase II	Dry Muddy Creek-Little Round Mountain Spring	Coyote Springs	Private	20N	115W	7
268	Unknown	ACE Mapscan	Dry	No	BREACHED	41.73	-110.49	Phase I	Hams Fork-Oakley Draw	Carter Lease	Private	20N	116W	11
269	Unknown	ACE Mapscan	Wet	No	INDUSTRIAL, ASSOCIATED WITH MINING ACTIVITIES	41.73	-109.86	Phase III	Blacks Fork-Eckes Draw	Currently No Name	BLM	20N	110W	8
270	Unknown	ACE Mapscan	Dry	Potential		41.73	-110.43	Phase II	Dry Muddy Creek-Little Round Mountain Spring	Coyote Springs	BLM	20N	115W	8
271	Unknown	ACE Mapscan	Dry	Potential		41.73	-110.53	Phase I	Hams Fork-Oakley Draw	Cumberland Flats	Private	20N	116W	9
272	Unknown	ACE Mapscan	Wet	No	INDUSTRIAL, ASSOCIATED WITH MINING ACTIVITIES	41.73	-109.87	Phase III	Blacks Fork-Eckes Draw	Currently No Name	Private	20N	110W	7
273	Unknown	ACE Mapscan	Dry	Potential		41.73	-110.52	Phase I	Hams Fork-Oakley Draw	Cumberland Flats	BLM	20N	116W	10
274	Unknown	ACE Mapscan	Wet	Yes		41.73	-110.13	Phase I	Hams Fork-Cow Hollow Creek	No Allotment	Private	20N	113W	12
275	Unknown	ACE Mapscan	Dry	No	BREACHED	41.73	-110.41	Phase II	Dry Muddy Creek-Little Round Mountain Spring	Coyote Springs	Private	20N	115W	9
276	Unknown	ACE Mapscan	Dry	Potential		41.73	-110.51	Phase I	Hams Fork-Oakley Draw	Cumberland Flats	BLM	20N	116W	10
277	Unknown	ACE Mapscan	Dry	No	BREACHED	41.72	-110.45	Phase II	Dry Muddy Creek-Little Round Mountain Spring	Coyote Springs	BLM	20N	115W	18
278	Unknown	ACE Mapscan	Wet	Yes		41.72	-110.61	Phase II	Upper North Fork Little Muddy Creek	Elkol	Private	20N	117W	14
279	Unknown	ACE Mapscan	Dry	Potential		41.72	-110.53	Phase I	Hams Fork-Oakley Draw	Cumberland Flats	State of Wyoming	20N	116W	16
280	Unknown	ACE Mapscan	Wet	Yes		41.72	-110.64	Phase II	Upper North Fork Little Muddy Creek	Elkol	State of Wyoming	20N	117W	16
281	Unknown	ACE Mapscan	Dry	No	BREACHED	41.72	-110.52	Phase I	Hams Fork-Oakley Draw	Cumberland Flats	Private	20N	116W	15
282	Unknown	ACE Mapscan	Wet	Yes		41.72	-110.52	Phase I	Hams Fork-Oakley Draw	Cumberland Flats	State of Wyoming	20N	116W	16
283	Unknown	ACE Mapscan	Dry	Potential		41.72	-110.50	Phase I	Hams Fork-Oakley Draw	Cumberland Flats	Private	20N	116W	15
284	Unknown	ACE Mapscan	Dry	No	BREACHED	41.72	-110.42	Phase II	Dry Muddy Creek-Little Round Mountain Spring	Coyote Springs	Private	20N	115W	17
285	Unknown	ACE Mapscan	Dry	Potential		41.72	-110.51	Phase I	Hams Fork-Oakley Draw	Cumberland Flats	Private	20N	116W	15
286	Unknown	ACE Mapscan	Wet	Yes		41.72	-110.56	Phase II	Upper North Fork Little Muddy Creek	Cumberland Flats	BLM	20N	116W	18
287	Unknown	ACE Mapscan	Dry	Potential		41.72	-110.56	Phase II	Upper North Fork Little Muddy Creek	Cumberland Flats	BLM	20N	116W	18
288	Unknown	ACE Mapscan	Wet	Yes		41.72	-110.11	Phase I	Hams Fork-Cow Hollow Creek	No Allotment	Private	20N	112W	18
289	Unknown	ACE Mapscan	Dry	No	BREACHED	41.72	-110.55	Phase II	Upper North Fork Little Muddy Creek	Cumberland Flats	Private	20N	116W	17
290	Unknown	ACE Mapscan	Dry	Potential		41.71	-110.52	Phase I	Hams Fork-Oakley Draw	Cumberland Flats	State of Wyoming	20N	116W	16
291	Unknown	ACE Mapscan	Wet	Yes		41.71	-110.53	Phase I	Hams Fork-Oakley Draw	Cumberland Flats	State of Wyoming	20N	116W	16
292	Unknown	ACE Mapscan	Dry	Potential		41.71	-110.54	Phase II	Upper North Fork Little Muddy Creek	Cumberland Flats	Private	20N	116W	21

ACE ID	Name	Source	Condition	Water Source	Notes	Lattitude	Longitude	Phase	HUC 12 Name	Allotment	Land Owner	T	R	S
293	Unknown	ACE Mapscan	Dry	Potential		41.70	-110.58	Phase II	Upper North Fork Little Muddy Creek	Cumberland Flats	BLM	20N	116W	19
294	Unknown	ACE Mapscan	Wet	Yes		41.70	-110.60	Phase II	Upper North Fork Little Muddy Creek	Cumberland Flats	Private	20N	117W	23
295	Unknown	ACE Mapscan	Wet	Yes		41.70	-110.59	Phase II	Upper North Fork Little Muddy Creek	Cumberland Flats	BLM	20N	117W	24
296	Unknown	ACE Mapscan	Dry	Potential		41.70	-110.53	Phase II	Upper North Fork Little Muddy Creek	Cumberland Flats	Private	20N	116W	21
297	Unknown	ACE Mapscan	Dry	No	BREACHED	41.70	-110.51	Phase II	Dry Muddy Creek-Little Round Mountain Spring	Cumberland Flats	BLM	20N	116W	22
298	Unknown	ACE Mapscan	Dry	Potential		41.70	-110.51	Phase II	Dry Muddy Creek-Little Round Mountain Spring	Cumberland Flats	BLM	20N	116W	22
299	Unknown	ACE Mapscan	Dry	Potential		41.69	-110.59	Phase II	Upper North Fork Little Muddy Creek	Cumberland Flats	Private	20N	117W	25
300	Unknown	ACE Mapscan	Dry	Potential		41.69	-110.55	Phase II	Upper North Fork Little Muddy Creek	Cumberland Flats	Private	20N	116W	29
301	Unknown	ACE Mapscan	Wet	Yes		41.69	-110.62	Phase II	Upper North Fork Little Muddy Creek	Elkol	Private	20N	117W	27
302	Unknown	ACE Mapscan	Wet	Yes		41.69	-110.61	Phase II	Upper North Fork Little Muddy Creek	Elkol	BLM	20N	117W	26
303	Unknown	ACE Mapscan	Wet	Yes		41.69	-109.91	Phase III	Lower Sevenmile Gulch	Granger Lease	BLM	20N	111W	26
304	Unknown	ACE Mapscan	Wet	Yes		41.69	-109.91	Phase III	Lower Sevenmile Gulch	Granger Lease	BLM	20N	111W	26
305	Unknown	ACE Mapscan	Wet	Yes		41.69	-110.07	Phase I	Hams Fork-Zieglers Wash	No Allotment	Private	20N	112W	28
306	Unknown	ACE Mapscan	Dry	Potential		41.69	-110.06	Phase I	Hams Fork-Zieglers Wash	Granger Lease	Private	20N	112W	28
307	Unknown	ACE Mapscan	Wet	Yes		41.69	-110.65	Phase II	Lower North Fork Little Muddy Creek	Cumberland/Uinta	BLM	20N	117W	28
308	Unknown	ACE Mapscan	Dry	No	BREACHED	41.68	-110.30	Phase II	Dry Muddy Creek-Roberson Creek	Carter Lease	BLM	20N	114W	28
309	Unknown	ACE Mapscan	Wet	Yes		41.68	-109.91	Phase III	Lower Sevenmile Gulch	Granger Lease	BLM	20N	111W	26
310	Unknown	ACE Mapscan	Dry	Potential		41.68	-110.53	Phase II	Upper North Fork Little Muddy Creek	Cumberland Flats	Private	20N	116W	33
311	Unknown	ACE Mapscan	Dry	Potential		41.68	-110.55	Phase II	Upper North Fork Little Muddy Creek	Cumberland Flats	Private	20N	116W	32
312	Unknown	ACE Mapscan	Dry	Potential		41.68	-110.69	Phase II	Lower North Fork Little Muddy Creek	Cumberland/Uinta	Private	20N	117W	31
313	Unknown	ACE Mapscan	Wet	Yes		41.68	-110.65	Phase II	Lower North Fork Little Muddy Creek	Cumberland/Uinta	Private	20N	117W	33
314	Unknown	ACE Mapscan	Dry	Potential		41.68	-110.74	Phase II	Little Muddy Creek-Chicken Creek	Cumberland/Uinta	BLM	20N	118W	34
315	Unknown	ACE Mapscan	Wet	Yes		41.68	-110.60	Phase II	Upper North Fork Little Muddy Creek	Cumberland Flats	Private	20N	117W	35
316	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.68	-110.19	Phase I	Hams Fork-Zieglers Wash	Carter Lease	Private	20N	113W	33
317	Unknown	ACE Mapscan	Wet	Yes		41.68	-110.87	Phase II	Little Muddy Creek-Chicken Creek	Cumberland/Uinta	Private	20N	119W	34
318	Unknown	ACE Mapscan	Dry	No	BREACHED	41.68	-110.26	Phase II	Dry Muddy Creek-Rocky Crossing	Carter Lease	Private	20N	114W	35
319	Unknown	ACE Mapscan	Wet	Yes		41.67	-110.86	Phase II	Little Muddy Creek-Chicken Creek	Cumberland/Uinta	Private	20N	119W	34
320	Unknown	ACE Mapscan	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY	41.67	-110.54	Phase II	Upper North Fork Little Muddy Creek	Cumberland Flats	Private	20N	116W	33
321	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.67	-110.71	Phase II	Little Muddy Creek-Chicken Creek	Cumberland/Uinta	Private	20N	118W	35
322	Unknown	ACE Mapscan	Wet	Yes		41.67	-110.67	Phase II	Lower North Fork Little Muddy Creek	Cumberland/Uinta	Private	20N	117W	31
323	Unknown	ACE Mapscan	Wet	Yes		41.67	-110.61	Phase II	Upper North Fork Little Muddy Creek	Cumberland Flats	Private	20N	117W	35
324	Unknown	ACE Mapscan	Dry	Potential		41.67	-110.89	Phase II	Little Muddy Creek-Chicken Creek	Cumberland/Uinta	BLM	20N	119W	33
325	Unknown	ACE Mapscan	Dry	Potential		41.67	-110.59	Phase II	Upper North Fork Little Muddy Creek	Cumberland Flats	State of Wyoming	20N	117W	36
326	Unknown	ACE Mapscan	Wet	Yes		41.67	-110.53	Phase II	Upper North Fork Little Muddy Creek	Cumberland Flats	Private	20N	116W	33
327	Unknown	ACE Mapscan	Wet	Yes	SPRING FED?	41.67	-110.29	Phase II	Dry Muddy Creek-Roberson Creek	Carter Lease	Private	20N	114W	33
328	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.67	-110.53	Phase II	Upper North Fork Little Muddy Creek	Cumberland Flats	Private	20N	116W	33
329	Unknown	ACE Mapscan	Wet	Yes		41.66	-110.58	Phase II	Upper North Fork Little Muddy Creek	Cumberland Flats	Private	19N	117W	1
330	Unknown	ACE Mapscan	Dry	No	BREACHED	41.66	-110.70	Phase II	Little Muddy Creek-Chicken Creek	Cumberland/Uinta	Private	19N	118W	1
331	Unknown	ACE Mapscan	Dry	No	BREACHED	41.66	-110.25	Phase II	Dry Muddy Creek-Rocky Crossing	Carter Lease	Private	19N	114W	1
332	Unknown	ACE Mapscan	Wet	Yes		41.66	-110.54	Phase II	Upper North Fork Little Muddy Creek	Cumberland Flats	BLM	19N	116W	4
333	Unknown	ACE Mapscan	Dry	Potential		41.66	-110.56	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	Private	19N	116W	5
334	Unknown	ACE Mapscan	Wet	Yes		41.66	-110.67	Phase II	Little Muddy Creek-Chicken Creek	Cumberland/Uinta	Private	19N	117W	5
335	Unknown	ACE Mapscan	Dry	Potential		41.66	-110.58	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	Private	19N	117W	1
336	Unknown	ACE Mapscan	Dry	Potential		41.66	-110.56	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	BLM	19N	116W	6
337	Unknown	ACE Mapscan	Dry	Potential		41.65	-110.58	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	Private	19N	117W	1
338	Unknown	ACE Mapscan	Dry	Potential	RIPS DATABASE	41.65	-110.65	Phase II	Lower North Fork Little Muddy Creek	Cumberland/Uinta	BLM	19N	117W	4
339	Unknown	ACE Mapscan	Wet	Yes		41.65	-110.86	Phase II	Little Muddy Creek-Chicken Creek	Cumberland/Uinta	BLM	19N	119W	10
340	Unknown	ACE Mapscan	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY	41.65	-110.53	Phase II	Little Muddy Creek-Ziller Ranch	Cumberland Flats	Private	19N	116W	9
341	Unknown	ACE Mapscan	Dry	Potential		41.65	-110.89	Phase II	Little Muddy Creek-Chicken Creek	Cumberland/Uinta	BLM	19N	119W	8
342	Unknown	ACE Mapscan	Wet	Yes		41.65	-110.89	Phase II	Little Muddy Creek-Chicken Creek	Cumberland/Uinta	Private	19N	119W	8
343	Unknown	ACE Mapscan	Dry	Potential		41.65	-110.62	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	BLM	19N	117W	10
344	Unknown	ACE Mapscan	Dry	Potential		41.65	-110.61	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	Private	19N	117W	11
345	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.65	-110.68	Phase II	Little Muddy Creek-Chicken Creek	Cumberland/Uinta	Private	19N	117W	7
346	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.64	-110.68	Phase II	Little Muddy Creek-Chicken Creek	Cumberland/Uinta	Private	19N	117W	7
347	Unknown	ACE Mapscan	Wet	Yes		41.64	-110.54	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	Private	19N	116W	9
348	Unknown	ACE Mapscan	Wet	Yes		41.64	-110.91	Phase II	Little Muddy Creek-Chicken Creek	Cumberland/Uinta	BLM	19N	119W	8
349	Unknown	ACE Mapscan	Wet	Yes		41.64	-110.88	Phase II	Little Muddy Creek-Chicken Creek	Cumberland/Uinta	BLM	19N	119W	9
350	Unknown	ACE Mapscan	Dry	Potential		41.64	-110.61	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	Private	19N	117W	11
351	Unknown	ACE Mapscan	Dry	Potential		41.64	-110.53	Phase II	Little Muddy Creek-Ziller Ranch	Cumberland Flats	Private	19N	116W	9
352	Unknown	ACE Mapscan	Dry	Potential		41.64	-110.88	Phase II	Little Muddy Creek-Chicken Creek	Cumberland/Uinta	BLM	19N	119W	9
353	Unknown	ACE Mapscan	Dry	Potential		41.64	-110.61	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	Private	19N	117W	11
354	Unknown	ACE Mapscan	Dry	Potential		41.64	-110.57	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	BLM	19N	116W	7
355	Unknown	ACE Mapscan	Wet	Yes		41.64	-110.60	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	Private	19N	117W	12
356	Unknown	ACE Mapscan	Dry	Potential		41.64	-110.58	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	Private	19N	116W	7
357	Unknown	ACE Mapscan	Dry	Potential		41.64	-110.56	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	Private	19N	116W	7
358	Unknown	ACE Mapscan	Dry	Potential		41.64	-110.54	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	Private	19N	116W	9
359	Unknown	ACE Mapscan	Dry	Potential		41.64	-110.26	Phase II	Dry Muddy Creek-Roberson Creek	Carter Lease	Private	19N	114W	11
360	Unknown	ACE Mapscan	Dry	Potential		41.64	-110.54	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	Private	19N	116W	17
361	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.64	-110.64	Phase II	Lower North Fork Little Muddy Creek	Cumberland/Uinta	Private	19N	117W	15
362	Unknown	ACE Mapscan	Dry	Potential		41.64	-110.52	Phase II	Little Muddy Creek-Ziller Ranch	Cumberland Flats	State of Wyoming	19N	116W	16
363	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.63	-110.68	Phase II	Little Muddy Creek-Bell Creek	Cumberland/Uinta	BLM	19N	117W	18
364	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.63	-110.56	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	Private	19N	116W	18
365	Unknown	ACE Mapscan	Dry	Potential		41.63	-110.57	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	Private	19N	116W	18

ACE ID	Name	Source	Condition	Water Source	Notes	Lattitude	Longitude	Phase	HUC 12 Name	Allotment	Land Owner	T	R	S
366	Unknown	ACE Mapscan	Dry	Potential		41.63	-110.59	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	Private	19N	117W	13
367	Unknown	ACE Mapscan	Dry	Potential		41.63	-110.60	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	Private	19N	117W	13
368	Unknown	ACE Mapscan	Dry	Potential		41.63	-110.53	Phase II	Little Muddy Creek-Ziller Ranch	Cumberland Flats	State of Wyoming	19N	116W	16
369	Unknown	ACE Mapscan	Dry	Potential		41.63	-110.22	Phase II	Dry Muddy Creek-Rocky Crossing	Carter Lease	BLM	19N	113W	18
370	Unknown	ACE Mapscan	Dry	No	BREACHED	41.63	-110.54	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	Private	19N	116W	17
371	Unknown	ACE Mapscan	Wet	No	INDUSTRIAL, ASSOCIATED WITH TRONA MINE?	41.63	-109.82	Phase III	Blacks Fork-Eckes Draw	Currently No Name	Private	19N	110W	15
372	Unknown	ACE Mapscan	Dry	No	BREACHED	41.63	-110.67	Phase II	Little Muddy Creek-Bell Creek	Cumberland/Uinta	Private	19N	117W	17
373	Unknown	ACE Mapscan	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY	41.62	-110.54	Phase II	Little Muddy Creek-Ziller Ranch	Cumberland Flats	Private	19N	116W	21
374	Unknown	ACE Mapscan	Dry	Potential		41.62	-110.54	Phase II	Little Muddy Creek-Ziller Ranch	Cumberland Flats	Private	19N	116W	21
375	Unknown	ACE Mapscan	Dry	Potential		41.62	-110.57	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	Private	19N	116W	19
376	Unknown	ACE Mapscan	Dry	Potential		41.62	-110.36	Phase II	Dry Muddy Creek-Roberson Creek	Carter Lease	BLM	19N	115W	24
377	Unknown	ACE Mapscan	Wet	Yes		41.62	-110.90	Phase II	Carter Creek	Cumberland/Uinta	Private	19N	119W	20
378	Unknown	ACE Mapscan	Dry	Potential		41.62	-110.58	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	Private	19N	117W	24
379	Unknown	ACE Mapscan	Dry	No	BREACHED	41.62	-110.54	Phase II	Little Muddy Creek-Ziller Ranch	Cumberland Flats	Private	19N	116W	21
380	Unknown	ACE Mapscan	Dry	Potential		41.62	-110.57	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	Private	19N	116W	19
381	Unknown	ACE Mapscan	Dry	Potential		41.62	-110.64	Phase II	Lower North Fork Little Muddy Creek	Cumberland/Uinta	Private	19N	117W	21
382	Unknown	ACE Mapscan	Dry	Potential		41.62	-110.64	Phase II	Lower North Fork Little Muddy Creek	Cumberland/Uinta	Private	19N	117W	21
383	Unknown	ACE Mapscan	Dry	No	BREACHED	41.62	-110.54	Phase II	Little Muddy Creek-Ziller Ranch	Cumberland Flats	Private	19N	116W	21
384	Unknown	ACE Mapscan	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY	41.61	-110.89	Phase II	Carter Creek	Cumberland/Uinta	BLM	19N	119W	21
385	Unknown	ACE Mapscan	Dry	Potential		41.61	-110.64	Phase II	Lower North Fork Little Muddy Creek	Cumberland/Uinta	Private	19N	117W	21
386	Unknown	ACE Mapscan	Wet	Yes		41.61	-109.87	Phase III	Blacks Fork-Eckes Draw	Granger Lease	BLM	19N	110W	20
387	Unknown	ACE Mapscan	Dry	No	BREACHED	41.61	-110.90	Phase II	Carter Creek	Cumberland/Uinta	Private	19N	119W	20
388	Unknown	ACE Mapscan	Dry	Potential		41.61	-110.46	Phase II	Little Muddy Creek-Ziller Ranch	Carter Lease	Private	19N	115W	19
389	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.61	-110.56	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	Private	19N	116W	19
390	Unknown	ACE Mapscan	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY	41.61	-110.55	Phase II	Little Muddy Creek-Ziller Ranch	Cumberland Flats	BLM	19N	116W	20
391	Unknown	ACE Mapscan	Dry	Potential		41.61	-110.61	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	Private	19N	117W	23
392	Unknown	ACE Mapscan	Dry	Potential		41.61	-110.59	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	Private	19N	117W	24
393	Unknown	ACE Mapscan	Dry	Potential		41.61	-110.58	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	Private	19N	116W	30
394	Unknown	ACE Mapscan	Dry	Potential		41.61	-110.63	Phase II	Lower North Fork Little Muddy Creek	Cumberland/Uinta	Private	19N	117W	27
395	Unknown	ACE Mapscan	Wet	Yes		41.60	-110.89	Phase II	Carter Creek	Cumberland/Uinta	BLM	19N	119W	29
396	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.60	-110.90	Phase II	Carter Creek	Cumberland/Uinta	Private	19N	119W	29
397	Unknown	ACE Mapscan	Dry	Potential		41.60	-110.55	Phase II	Little Muddy Creek-Ziller Ranch	Cumberland Flats	Private	19N	116W	29
398	Unknown	ACE Mapscan	Dry	Potential		41.60	-110.60	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	BLM	19N	117W	26
399	Unknown	ACE Mapscan	Dry	No	BREACHED	41.60	-110.60	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	BLM	19N	117W	26
400	Unknown	ACE Mapscan	Dry	Potential	WET IN 2010 PHOTOGRAPHY	41.59	-109.82	Phase III	Blacks Fork-Eckes Draw	Granger Lease	Private	19N	110W	27
401	Unknown	ACE Mapscan	Dry	Potential		41.59	-110.46	Phase II	Little Muddy Creek-Ziller Ranch	Carter Lease	Private	19N	115W	31
402	Unknown	ACE Mapscan	Dry	Potential	WET IN 2010 PHOTOGRAPHY	41.59	-109.83	Phase III	Blacks Fork-Eckes Draw	Granger Lease	BLM	19N	110W	28
403	Unknown	ACE Mapscan	Dry	Potential		41.59	-110.65	Phase II	Little Muddy Creek-Bell Creek	Cumberland/Uinta	Private	19N	117W	33
404	Unknown	ACE Mapscan	Dry	Potential		41.59	-110.64	Phase II	Little Muddy Creek-Bell Creek	Cumberland/Uinta	Private	19N	117W	33
405	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.59	-110.65	Phase II	Little Muddy Creek-Bell Creek	Cumberland/Uinta	Private	19N	117W	33
406	Unknown	ACE Mapscan	Dry	No	BREACHED	41.59	-110.61	Phase II	Little Muddy Creek-Bell Creek	Cumberland Flats	Private	19N	117W	35
407	Unknown	ACE Mapscan	Dry	Potential		41.59	-110.60	Phase II	Little Muddy Creek-Ziller Ranch	Cumberland Flats	Private	19N	117W	35
408	Unknown	ACE Mapscan	Wet	Yes		41.58	-110.85	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	Private	19N	119W	34
409	Unknown	ACE Mapscan	Wet	Yes		41.58	-110.85	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	Private	19N	119W	34
410	Unknown	ACE Mapscan	Dry	Potential		41.58	-110.85	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	Private	19N	119W	34
411	Unknown	ACE Mapscan	Wet	Yes		41.58	-110.85	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	Private	19N	119W	34
412	Unknown	ACE Mapscan	Dry	Potential		41.58	-110.85	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	Private	19N	119W	34
413	Unknown	ACE Mapscan	Dry	Potential		41.58	-110.85	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	Private	19N	119W	34
414	Unknown	ACE Mapscan	Dry	Potential		41.58	-110.85	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	Private	19N	119W	34
415	Unknown	ACE Mapscan	Dry	Potential		41.58	-110.85	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	Private	19N	119W	34
416	Unknown	ACE Mapscan	Dry	Potential		41.58	-110.62	Phase II	Little Muddy Creek-Bell Creek	Cumberland Flats	BLM	19N	117W	34
417	Unknown	ACE Mapscan	Dry	Potential		41.58	-110.61	Phase II	Little Muddy Creek-Bell Creek	Cumberland Flats	Private	19N	117W	35
418	Unknown	ACE Mapscan	Dry	Potential		41.58	-110.59	Phase II	Little Muddy Creek-Ziller Ranch	Cumberland Flats	Private	19N	117W	36
419	Unknown	ACE Mapscan	Dry	Potential		41.58	-110.64	Phase II	Little Muddy Creek-Bell Creek	Cumberland/Uinta	Private	19N	117W	33
420	Unknown	ACE Mapscan	Dry	Potential		41.56	-110.67	Phase II	Ryckman Creek	Cumberland/Uinta	BLM	18N	117W	8
421	Unknown	ACE Mapscan	Dry	Potential		41.56	-110.56	Phase II	Little Muddy Creek-Ziller Ranch	Albert Creek	BLM	18N	116W	8
422	Unknown	ACE Mapscan	Dry	No	BREACHED	41.56	-110.56	Phase II	Little Muddy Creek-Ziller Ranch	Albert Creek	Private	18N	116W	7
423	Unknown	ACE Mapscan	Dry	Potential		41.56	-110.57	Phase II	Little Muddy Creek-Ziller Ranch	Albert Creek	Private	18N	116W	7
424	Unknown	ACE Mapscan	Dry	No	BREACHED	41.56	-110.84	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	Private	18N	119W	11
425	Unknown	ACE Mapscan	Dry	No	BREACHED	41.56	-110.84	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	Private	18N	119W	11
426	Unknown	ACE Mapscan	Dry	No	BREACHED	41.56	-110.84	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	Private	18N	119W	11
427	Unknown	ACE Mapscan	Wet	Yes		41.56	-110.85	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	Private	18N	119W	11
428	Unknown	ACE Mapscan	Wet	Yes		41.56	-110.85	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	Private	18N	119W	11
429	Unknown	ACE Mapscan	Wet	Yes		41.56	-110.85	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	BLM	18N	119W	10
430	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.56	-110.65	Phase II	Little Muddy Creek-Bell Creek	Albert Creek	Private	18N	117W	9
431	Unknown	ACE Mapscan	Wet	Yes		41.56	-110.83	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	Private	18N	119W	11
432	Unknown	ACE Mapscan	Wet	Yes		41.56	-110.83	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	Private	18N	119W	11
433	Unknown	ACE Mapscan	Wet	Yes		41.56	-110.83	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	Private	18N	119W	11
434	Unknown	ACE Mapscan	Wet	Yes		41.56	-110.84	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	Private	18N	119W	11
435	Unknown	ACE Mapscan	Wet	Yes		41.56	-110.84	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	Private	18N	119W	11
436	Unknown	ACE Mapscan	Dry	No	BREACHED	41.56	-110.57	Phase II	Little Muddy Creek-Ziller Ranch	Albert Creek	Private	18N	116W	7
437	Unknown	ACE Mapscan	Wet	Yes		41.56	-110.84	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	Private	18N	119W	11
438	Unknown	ACE Mapscan	Wet	Yes		41.56	-110.84	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	Private	18N	119W	11

ACE ID	Name	Source	Condition	Water Source	Notes	Lattitude	Longitude	Phase	HUC 12 Name	Allotment	Land Owner	T	R	S
439	Unknown	ACE Mapscan	Wet	Yes		41.56	-110.84	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	Private	18N	119W	11
440	Unknown	ACE Mapscan	Dry	Potential		41.56	-110.68	Phase II	Ryckman Creek	Cumberland/Uinta	Private	18N	117W	7
441	Unknown	ACE Mapscan	Wet	Yes		41.56	-110.84	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	Private	18N	119W	11
442	Unknown	ACE Mapscan	Wet	Yes		41.55	-110.59	Phase II	Lower Albert Creek	Albert Creek	Private	18N	117W	12
443	Unknown	ACE Mapscan	Wet	Yes		41.55	-110.85	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	BLM	18N	119W	10
444	Unknown	ACE Mapscan	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY	41.55	-110.65	Phase II	Lower Albert Creek	Albert Creek	State of Wyoming	18N	117W	16
445	Unknown	ACE Mapscan	Dry	Potential		41.55	-110.54	Phase II	Little Muddy Creek-Ziller Ranch	Albert Creek	Private	18N	116W	17
446	Unknown	ACE Mapscan	Dry	Potential		41.54	-110.31	Phase II	Big Muddy Creek	Carter Lease	Private	18N	114W	17
447	Unknown	ACE Mapscan	Dry	Potential		41.54	-110.38	Phase II	1.40401E+11	Carter Lease	BLM	18N	115W	14
448	Unknown	ACE Mapscan	Dry	Potential		41.54	-110.06	Phase II	Porter Hollow	Granger Lease	State of Wyoming	18N	112W	16
449	Unknown	ACE Mapscan	Dry	Potential		41.54	-110.59	Phase II	Lower Albert Creek	Albert Creek	Private	18N	117W	13
450	Unknown	ACE Mapscan	Dry	Potential		41.54	-110.54	Phase II	Little Muddy Creek-Ziller Ranch	Albert Creek	Private	18N	116W	17
451	Unknown	ACE Mapscan	Dry	No	BREACHED	41.54	-110.83	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	BLM	18N	119W	14
452	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.54	-110.76	Phase II	Ryckman Creek	Cumberland/Uinta	BLM	18N	118W	16
453	Unknown	ACE Mapscan	Dry	Potential		41.54	-110.58	Phase II	Lower Albert Creek	Albert Creek	Private	18N	117W	13
454	Unknown	ACE Mapscan	Dry	Potential		41.54	-110.67	Phase II	Ryckman Creek	Cumberland/Uinta	BLM	18N	117W	20
455	Unknown	ACE Mapscan	Dry	No	BREACHED	41.53	-110.70	Phase II	Ryckman Creek	Cumberland/Uinta	Private	18N	118W	24
456	Unknown	ACE Mapscan	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY	41.53	-110.57	Phase II	Little Muddy Creek-Ziller Ranch	Albert Creek	Private	18N	116W	19
457	Unknown	ACE Mapscan	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY	41.53	-110.65	Phase II	Lower Albert Creek	Albert Creek	Private	18N	117W	21
458	Unknown	ACE Mapscan	Dry	Potential		41.53	-110.68	Phase II	Ryckman Creek	Cumberland/Uinta	Private	18N	117W	19
459	Unknown	ACE Mapscan	Dry	Potential		41.53	-110.58	Phase II	Lower Albert Creek	Albert Creek	Private	18N	116W	19
460	Unknown	ACE Mapscan	Dry	Potential		41.53	-110.34	Phase II	Big Muddy Creek	Carter Lease	Private	18N	114W	19
461	Unknown	ACE Mapscan	Dry	Potential		41.53	-110.84	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	Private	18N	119W	23
462	Unknown	ACE Mapscan	Dry	No	BREACHED	41.53	-110.86	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	BLM	18N	119W	22
463	Unknown	ACE Mapscan	Dry	No	BREACHED	41.53	-110.86	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	BLM	18N	119W	22
464	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.53	-110.77	Phase II	Ryckman Creek	Cumberland/Uinta	Private	18N	118W	21
465	Unknown	ACE Mapscan	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY	41.53	-109.94	Phase III	Blacks Fork-Town of Granger	Granger Lease	BLM	18N	111W	22
466	Unknown	ACE Mapscan	Dry	Potential		41.53	-110.63	Phase II	Lower Albert Creek	Albert Creek	BLM	18N	117W	22
467	Unknown	ACE Mapscan	Dry	Potential		41.53	-110.35	Phase II	Big Muddy Creek	Carter Lease	Private	18N	114W	19
468	Unknown	ACE Mapscan	Dry	Potential		41.52	-110.80	Phase II	Ryckman Creek	Cumberland/Uinta	Private	18N	118W	19
469	Unknown	ACE Mapscan	Dry	No	BREACHED	41.52	-110.88	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	Private	18N	119W	21
470	Unknown	ACE Mapscan	Wet	Yes		41.52	-110.56	Phase II	Little Muddy Creek-Ziller Ranch	Albert Creek	Private	18N	116W	19
471	Unknown	ACE Mapscan	Dry	Potential		41.52	-110.64	Phase II	Lower Albert Creek	Albert Creek	Private	18N	117W	21
472	Unknown	ACE Mapscan	Dry	No	BREACHED	41.52	-110.88	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	Private	18N	119W	21
473	Unknown	ACE Mapscan	Dry	No	BREACHED	41.52	-110.84	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	Private	18N	119W	23
474	Unknown	ACE Mapscan	Dry	Potential		41.52	-110.62	Phase II	Lower Albert Creek	Albert Creek	Private	18N	117W	27
475	Unknown	ACE Mapscan	Dry	Potential		41.52	-110.86	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	Private	18N	119W	27
476	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.52	-110.69	Phase II	Ryckman Creek	Cumberland/Uinta	BLM	18N	117W	30
477	Unknown	ACE Mapscan	Dry	Potential		41.51	-110.69	Phase II	Ryckman Creek	Cumberland/Uinta	BLM	18N	117W	30
478	Unknown	ACE Mapscan	Dry	Potential		41.51	-110.63	Phase II	Lower Albert Creek	Albert Creek	Private	18N	117W	27
479	Unknown	ACE Mapscan	Dry	No	BREACHED	41.51	-110.81	Phase II	Ryckman Creek	Cumberland/Uinta	BLM	18N	118W	30
480	Unknown	ACE Mapscan	Dry	Potential		41.51	-110.82	Phase II	Ryckman Creek	Cumberland/Uinta	Private	18N	119W	25
481	Unknown	ACE Mapscan	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY	41.51	-110.69	Phase II	Ryckman Creek	Cumberland/Uinta	BLM	18N	117W	30
482	Unknown	ACE Mapscan	Dry	Potential		41.51	-110.39	Phase II	1.40401E+11	Carter Lease	Private	18N	115W	27
483	Unknown	ACE Mapscan	Dry	Potential		41.51	-110.68	Phase II	Lower Albert Creek	Cumberland/Uinta	BLM	18N	117W	30
484	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.51	-110.58	Phase II	Little Muddy Creek-Ziller Ranch	Albert Creek	Private	18N	117W	25
485	Unknown	ACE Mapscan	Dry	Potential		41.51	-110.71	Phase II	Ryckman Creek	Cumberland/Uinta	State of Wyoming	18N	118W	36
486	Unknown	ACE Mapscan	Dry	Potential		41.50	-110.65	Phase II	Lower Albert Creek	Albert Creek	Private	18N	117W	33
487	Unknown	ACE Mapscan	Dry	Potential		41.50	-110.60	Phase II	Lower Albert Creek	Albert Creek	State of Wyoming	18N	117W	36
488	Unknown	ACE Mapscan	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY	41.50	-110.69	Phase II	Ryckman Creek	Cumberland/Uinta	State of Wyoming	18N	118W	36
489	Unknown	ACE Mapscan	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY	41.50	-110.68	Phase II	Lower Albert Creek	Cumberland/Uinta	Private	18N	117W	31
490	Unknown	ACE Mapscan	Dry	Potential		41.50	-110.58	Phase II	Little Muddy Creek-Ziller Ranch	Carter Lease	Private	18N	116W	31
491	Unknown	ACE Mapscan	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY	41.50	-110.70	Phase II	Ryckman Creek	Cumberland/Uinta	State of Wyoming	18N	118W	36
492	Unknown	ACE Mapscan	Dry	Potential		41.50	-110.59	Phase II	Lower Albert Creek	Albert Creek	State of Wyoming	18N	117W	36
493	Unknown	ACE Mapscan	Dry	No	BREACHED	41.50	-110.86	Phase II	Ryckman Creek	Cumberland/Uinta	BLM	18N	119W	34
494	Unknown	ACE Mapscan	Dry	Potential	WET IN 2009 IMAGERY	41.50	-110.57	Phase II	Little Muddy Creek-Ziller Ranch	Carter Lease	Private	18N	116W	31
495	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.50	-110.72	Phase II	Ryckman Creek	Cumberland/Uinta	Private	18N	118W	35
496	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.49	-110.72	Phase II	Ryckman Creek	Cumberland/Uinta	Private	18N	118W	35
497	Unknown	ACE Mapscan	Dry	No	BREACHED	41.49	-110.75	Phase II	Ryckman Creek	Cumberland/Uinta	Private	17N	118W	3
498	Unknown	ACE Mapscan	Dry	Potential		41.49	-110.22	Phase II	Blacks Fork-Jackknife Draw	Austin Triangle	BLM	17N	113W	6
499	Unknown	ACE Mapscan	Wet	Yes		41.49	-110.24	Phase II	Blacks Fork-Jackknife Draw	Austin Triangle	Private	17N	114W	1
500	Unknown	ACE Mapscan	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY	41.49	-110.46	Phase II	1.40401E+11	Carter Lease	Private	17N	116W	1
501	Unknown	ACE Mapscan	Dry	No	BREACHED	41.49	-110.81	Phase II	Ryckman Creek	Cumberland/Uinta	Private	17N	119W	1
502	Unknown	ACE Mapscan	Dry	Potential		41.48	-110.60	Phase II	Lower Albert Creek	Albert Creek	BLM	17N	117W	1
503	Unknown	ACE Mapscan	Wet	Yes		41.48	-110.86	Phase II	Ryckman Creek	Cumberland/Uinta	Private	17N	119W	3
504	Unknown	ACE Mapscan	Dry	Potential		41.48	-110.71	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	Private	17N	118W	11
505	Unknown	ACE Mapscan	Dry	Potential		41.47	-110.72	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	Private	17N	118W	11
506	Unknown	ACE Mapscan	Wet	Yes		41.47	-110.80	Phase II	Ryckman Creek	Cumberland/Uinta	Private	17N	118W	7
507	Unknown	ACE Mapscan	Wet	Yes		41.47	-110.84	Phase II	Ryckman Creek	Cumberland/Uinta	Private	17N	119W	11
508	Unknown	ACE Mapscan	Dry	Potential		41.47	-110.72	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	Private	17N	118W	11
509	Unknown	ACE Mapscan	Wet	Yes		41.47	-110.84	Phase II	Ryckman Creek	Cumberland/Uinta	Private	17N	119W	11
510	Unknown	ACE Mapscan	Dry	Potential		41.47	-109.90	Phase III	Upper Meadow Springs Wash	Granger Lease	BLM	17N	111W	12
511	Unknown	ACE Mapscan	Dry	Potential		41.47	-110.61	Phase II	Lower Albert Creek	Albert Creek	Private	17N	117W	11

ACE ID	Name	Source	Condition	Water Source	Notes	Lattitude	Longitude	Phase	HUC 12 Name	Allotment	Land Owner	T	R	S
512	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.46	-110.77	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	Private	17N	118W	17
513	Unknown	ACE Mapscan	Dry	No	BREACHED	41.46	-110.87	Phase II	Ryckman Creek	Cumberland/Uinta	State of Wyoming	17N	119W	16
514	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.46	-110.76	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	State of Wyoming	17N	118W	16
515	Unknown	ACE Mapscan	Dry	Potential		41.46	-110.56	Phase II	Muddy Creek-Lost Draw	Carter Lease	Private	17N	116W	17
516	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.46	-110.76	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	State of Wyoming	17N	118W	16
517	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.46	-110.76	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	State of Wyoming	17N	118W	16
518	Unknown	ACE Mapscan	Dry	Potential		41.46	-110.25	Phase II	Austin Reservoir	Austin Triangle	BLM	17N	114W	14
519	Unknown	ACE Mapscan	Dry	No	BREACHED	41.46	-110.76	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	State of Wyoming	17N	118W	16
520	Unknown	ACE Mapscan	Dry	Potential		41.45	-110.26	Phase II	Austin Reservoir	Austin Triangle	BLM	17N	114W	14
521	Unknown	ACE Mapscan	Dry	Potential		41.45	-110.60	Phase II	Muddy Creek-Lost Draw	Albert Creek	Private	17N	117W	13
522	Unknown	ACE Mapscan	Wet	Yes		41.45	-110.68	Phase II	Clear Creek-Shurtleff Creek	Albert Creek	Private	17N	117W	19
523	Unknown	ACE Mapscan	Dry	No	BREACHED	41.45	-110.85	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	BLM	17N	119W	22
524	Unknown	ACE Mapscan	Dry	Potential		41.44	-110.60	Phase II	Muddy Creek-Lost Draw	Albert Creek	Private	17N	117W	23
525	Unknown	ACE Mapscan	Dry	Potential		41.44	-110.66	Phase II	Lower Albert Creek	Albert Creek	BLM	17N	117W	20
526	Unknown	ACE Mapscan	Dry	No	BREACHED	41.44	-110.60	Phase II	Muddy Creek-Lost Draw	Albert Creek	Private	17N	117W	23
527	Unknown	ACE Mapscan	Dry	Potential		41.44	-110.60	Phase II	Muddy Creek-Lost Draw	Albert Creek	Private	17N	117W	23
528	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.44	-110.71	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	BLM	17N	118W	24
529	Unknown	ACE Mapscan	Dry	No	BREACHED	41.44	-110.67	Phase II	Lower Albert Creek	Albert Creek	BLM	17N	117W	20
530	Unknown	ACE Mapscan	Dry	Potential		41.44	-110.65	Phase II	Lower Albert Creek	Albert Creek	Private	17N	117W	21
531	Unknown	ACE Mapscan	Wet	Yes		41.44	-110.68	Phase II	Lower Albert Creek	Albert Creek	Private	17N	117W	19
532	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.44	-110.72	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	Private	17N	118W	23
533	Unknown	ACE Mapscan	Dry	No	BREACHED	41.43	-110.74	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	BLM	17N	118W	22
534	Unknown	ACE Mapscan	Dry	No	BREACHED	41.43	-110.85	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	BLM	17N	119W	26
535	Unknown	ACE Mapscan	Wet	Yes		41.43	-110.85	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	BLM	17N	119W	26
536	Unknown	ACE Mapscan	Dry	Potential		41.43	-110.66	Phase II	Lower Albert Creek	Albert Creek	Private	17N	117W	29
537	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.43	-110.64	Phase II	Lower Albert Creek	Albert Creek	BLM	17N	117W	28
538	Unknown	ACE Mapscan	Dry	Potential		41.43	-110.71	Phase II	Lower Albert Creek	Cumberland/Uinta	Private	17N	118W	25
539	Unknown	ACE Mapscan	Dry	Potential		41.43	-110.71	Phase II	Lower Albert Creek	Cumberland/Uinta	Private	17N	118W	25
540	Unknown	ACE Mapscan	Wet	Yes		41.43	-110.22	Phase II	Austin Reservoir	Monument	BLM	17N	113W	30
541	Unknown	ACE Mapscan	Wet	Yes		41.43	-110.87	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	Private	17N	119W	28
542	Unknown	ACE Mapscan	Wet	Yes		41.43	-110.87	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	Private	17N	119W	28
543	Unknown	ACE Mapscan	Wet	Yes		41.43	-110.87	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	Private	17N	119W	28
544	Unknown	ACE Mapscan	Wet	Yes		41.43	-110.87	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	Private	17N	119W	28
545	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.42	-110.64	Phase II	Lower Albert Creek	Albert Creek	BLM	17N	117W	28
546	Unknown	ACE Mapscan	Dry	Potential		41.42	-110.75	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	Private	17N	118W	27
547	Unknown	ACE Mapscan	Dry	Potential		41.42	-110.65	Phase II	Lower Albert Creek	Albert Creek	Private	17N	117W	28
548	Unknown	ACE Mapscan	Wet	Yes	WET I N TWO YEARS OF PHOTOGRAPHY	41.42	-110.76	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	State of Wyoming	17N	118W	28
549	Unknown	ACE Mapscan	Wet	Yes		41.42	-110.32	Phase II	Austin Reservoir	Austin Place	Private	17N	114W	32
550	Unknown	ACE Mapscan	Dry	No	BREACHED	41.42	-110.70	Phase II	Lower Albert Creek	Haystack Draw	State of Wyoming	17N	118W	36
551	Unknown	ACE Mapscan	Dry	Potential		41.42	-110.28	Phase II	Austin Reservoir	Austin Place	Private	17N	114W	34
552	Unknown	ACE Mapscan	Wet	Yes		41.41	-110.25	Phase II	Austin Reservoir	Monument	State of Wyoming	17N	114W	36
553	Unknown	ACE Mapscan	Wet	Yes		41.41	-110.29	Phase II	Austin Reservoir	Austin Place	Private	17N	114W	34
554	Unknown	ACE Mapscan	Wet	Yes		41.41	-110.25	Phase II	Austin Reservoir	Monument	Private	17N	114W	35
555	Unknown	ACE Mapscan	Dry	Potential		41.41	-110.48	Phase II	Muddy Creek-Lost Draw	Bridger Airport	BLM	17N	116W	36
556	Unknown	ACE Mapscan	Dry	Potential		41.41	-110.32	Phase II	Austin Reservoir	Austin Place	Private	17N	114W	32
557	Unknown	ACE Mapscan	Wet	Yes		41.41	-110.28	Phase II	Austin Reservoir	Austin Place	Private	17N	114W	34
558	Unknown	ACE Mapscan	Wet	Yes		41.41	-110.86	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	Private	17N	119W	34
559	Unknown	ACE Mapscan	Dry	Potential		41.41	-110.41	Phase II	Muddy Creek-Town of Carter	Bridger Airport	Private	17N	115W	33
560	Unknown	ACE Mapscan	Wet	Yes		41.41	-110.26	Phase II	Austin Reservoir	Monument	Private	17N	114W	35
561	Unknown	ACE Mapscan	Dry	Potential		41.41	-110.34	Phase II	Austin Reservoir	Austin Place	Private	17N	114W	31
562	Unknown	ACE Mapscan	Dry	Potential		41.41	-110.61	Phase II	Muddy Creek-Lost Draw	Coal Mine Draw	Private	17N	117W	35
563	Unknown	ACE Mapscan	Dry	Potential		41.41	-110.62	Phase II	Muddy Creek-Lost Draw	Coal Mine Draw	BLM	17N	117W	34
564	Unknown	ACE Mapscan	Dry	Potential		41.41	-110.42	Phase II	Muddy Creek-Town of Carter	Bridger Airport	Private	17N	115W	33
565	Unknown	ACE Mapscan	Dry	Potential		41.41	-110.50	Phase II	Muddy Creek-Lost Draw	Bridger Airport	BLM	17N	116W	34
566	Unknown	ACE Mapscan	Dry	No	BREACHED	41.41	-110.45	Phase II	Rock Creek-Spring Creek	Bridger Airport	Private	17N	115W	31
567	Unknown	ACE Mapscan	Dry	Potential		41.41	-110.67	Phase II	Middle Albert Creek	Haystack Draw	BLM	17N	117W	32
568	Unknown	ACE Mapscan	Dry	Potential		41.41	-110.53	Phase II	Muddy Creek-Lost Draw	Bridger Airport	Private	17N	116W	33
569	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.41	-110.80	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	Private	17N	118W	31
570	Unknown	ACE Mapscan	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY	41.41	-110.22	Phase II	Blacks Fork-Rollins Reservoir	Monument	Private	17N	113W	31
571	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.41	-110.80	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	Private	17N	118W	31
572	Unknown	ACE Mapscan	Wet	Yes		41.40	-110.33	Phase II	Austin Reservoir	Austin Place	Private	17N	114W	31
573	Unknown	ACE Mapscan	Wet	Yes		41.40	-110.80	Phase II	Clear Creek-Shurtleff Creek	Rock House	Private	16N	119W	2
574	Unknown	ACE Mapscan	Dry	No	BREACHED	41.40	-110.68	Phase II	Middle Albert Creek	Haystack Draw	Private	16N	118W	1
575	Unknown	ACE Mapscan	Dry	Potential		41.40	-110.56	Phase II	Muddy Creek-Lost Draw	Bridger Airport	Private	16N	117W	1
576	Unknown	ACE Mapscan	Dry	No	BREACHED	41.40	-110.78	Phase II	Clear Creek-Shurtleff Creek	Rock House	Private	16N	119W	1
577	Unknown	ACE Mapscan	Wet	Yes		41.40	-110.31	Phase II	Austin Reservoir	No Allotment	Private	16N	114W	6
578	Unknown	ACE Mapscan	Wet	Yes		41.40	-110.81	Phase II	Clear Creek-Shurtleff Creek	Rock House	Private	16N	119W	2
579	Unknown	ACE Mapscan	Wet	Yes		41.40	-110.30	Phase II	Austin Reservoir	Monument	Private	16N	114W	5
580	Unknown	ACE Mapscan	Wet	Yes		41.40	-110.65	Phase II	Middle Albert Creek	Haystack Draw	Private	16N	117W	6
581	Unknown	ACE Mapscan	Wet	Yes		41.40	-110.18	Phase II	Blacks Fork-Jackknife Draw	Granger Lease	BLM	16N	113W	6
582	Unknown	ACE Mapscan	Dry	No	BREACHED	41.40	-110.78	Phase II	Clear Creek-Shurtleff Creek	Rock House	Private	16N	119W	1
583	Unknown	ACE Mapscan	Dry	No	BREACHED	41.40	-110.52	Phase II	Muddy Creek-Lost Draw	Bridger Airport	Private	16N	116W	5
584	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.40	-110.51	Phase II	Muddy Creek-Lost Draw	Bridger Airport	BLM	16N	116W	4

ACE ID	Name	Source	Condition	Water Source	Notes	Lattitude	Longitude	Phase	HUC 12 Name	Allotment	Land Owner	T	R	S
585	Unknown	ACE Mapscan	Dry	No	BREACHED	41.40	-110.52	Phase II	Muddy Creek-Lost Draw	Bridger Airport	Private	16N	116W	5
586	Unknown	ACE Mapscan	Dry	No	BREACHED	41.40	-110.45	Phase II	Rock Creek-Spring Creek	Bridger Airport	BLM	16N	116W	2
587	Unknown	ACE Mapscan	Dry	No	BREACHED	41.40	-110.43	Phase II	Rock Creek-Spring Creek	Bridger Airport	Private	16N	116W	1
588	Unknown	ACE Mapscan	Dry	No	BREACHED	41.40	-110.86	Phase II	Clear Creek-Shurtleff Creek	Rock House	Private	16N	119W	5
589	Unknown	ACE Mapscan	Dry	No	BREACHED	41.40	-110.44	Phase II	Rock Creek-Spring Creek	Bridger Airport	Private	16N	116W	1
590	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.40	-110.45	Phase II	Rock Creek-Spring Creek	Bridger Airport	BLM	16N	116W	2
591	Unknown	ACE Mapscan	Dry	No	BREACHED	41.40	-110.85	Phase II	Clear Creek-Shurtleff Creek	Rock House	BLM	16N	119W	4
592	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.40	-110.78	Phase II	Clear Creek-Shurtleff Creek	Rock House	Private	16N	119W	1
593	Unknown	ACE Mapscan	Wet	Yes		41.39	-110.86	Phase II	Clear Creek-Shurtleff Creek	Rock House	Private	16N	119W	5
594	Unknown	ACE Mapscan	Wet	Yes		41.39	-110.83	Phase II	Clear Creek-Shurtleff Creek	Rock House	Private	16N	119W	3
595	Unknown	ACE Mapscan	Dry	Potential		41.39	-110.51	Phase II	Rock Creek-Spring Creek	Bridger Airport	Private	16N	116W	5
596	Unknown	ACE Mapscan	Wet	Yes		41.39	-110.81	Phase II	Clear Creek-Shurtleff Creek	Rock House	Private	16N	119W	2
597	Unknown	ACE Mapscan	Dry	Potential		41.39	-110.44	Phase II	Rock Creek-Spring Creek	Bridger Airport	BLM	16N	116W	1
598	Unknown	ACE Mapscan	Wet	Yes		41.39	-110.27	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	BLM	16N	114W	4
599	Unknown	ACE Mapscan	Dry	No	BREACHED	41.39	-110.47	Phase II	Rock Creek-Spring Creek	Bridger Airport	BLM	16N	116W	3
600	Unknown	ACE Mapscan	Wet	Yes		41.39	-110.26	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	Private	16N	114W	9
601	Unknown	ACE Mapscan	Wet	Yes		41.39	-110.34	Phase II	Blacks Fork-Rollins Reservoir	Oaks	Private	16N	115W	11
602	Unknown	ACE Mapscan	Dry	No	BREACHED	41.39	-110.48	Phase II	Rock Creek-Spring Creek	Bridger Airport	Private	16N	116W	10
603	Unknown	ACE Mapscan	Dry	No	BREACHED	41.39	-110.85	Phase II	Clear Creek-Shurtleff Creek	Rock House	State of Wyoming	16N	119W	9
604	Unknown	ACE Mapscan	Dry	No	BREACHED	41.39	-110.85	Phase II	Clear Creek-Shurtleff Creek	Rock House	State of Wyoming	16N	119W	8
605	Unknown	ACE Mapscan	Dry	No	BREACHED	41.39	-110.85	Phase II	Clear Creek-Shurtleff Creek	Rock House	State of Wyoming	16N	119W	8
606	Unknown	ACE Mapscan	Dry	No	BREACHED	41.39	-110.85	Phase II	Clear Creek-Shurtleff Creek	Rock House	Private	16N	119W	9
607	Unknown	ACE Mapscan	Dry	Potential		41.39	-110.60	Phase II	Muddy Creek-Lost Draw	Coal Mine Draw	BLM	16N	117W	10
608	Unknown	ACE Mapscan	Wet	Yes		41.39	-110.86	Phase II	Clear Creek-Shurtleff Creek	Rock House	State of Wyoming	16N	119W	8
609	Unknown	ACE Mapscan	Wet	Yes		41.39	-110.86	Phase II	Clear Creek-Shurtleff Creek	Rock House	State of Wyoming	16N	119W	8
610	Unknown	ACE Mapscan	Wet	Yes		41.39	-110.86	Phase II	Clear Creek-Shurtleff Creek	Rock House	State of Wyoming	16N	119W	8
611	Unknown	ACE Mapscan	Wet	Yes		41.39	-110.86	Phase II	Clear Creek-Shurtleff Creek	Rock House	State of Wyoming	16N	119W	8
612	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.39	-110.76	Phase II	Middle Albert Creek	Byrne Creek	Private	16N	118W	7
613	Unknown	ACE Mapscan	Wet	Yes		41.39	-110.86	Phase II	Clear Creek-Shurtleff Creek	Rock House	State of Wyoming	16N	119W	8
614	Unknown	ACE Mapscan	Wet	Yes		41.39	-110.86	Phase II	Clear Creek-Shurtleff Creek	Rock House	State of Wyoming	16N	119W	8
615	Unknown	ACE Mapscan	Wet	Yes		41.38	-110.86	Phase II	Clear Creek-Shurtleff Creek	Rock House	State of Wyoming	16N	119W	8
616	Unknown	ACE Mapscan	Wet	Yes		41.38	-110.66	Phase II	Middle Albert Creek	Haystack Draw	Private	16N	117W	7
617	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.38	-110.74	Phase II	Middle Albert Creek	Byrne Creek	BLM	16N	118W	8
618	Unknown	ACE Mapscan	Dry	No	BREACHED	41.38	-110.33	Phase II	Blacks Fork-Rollins Reservoir	Hanblin	Private	16N	115W	12
619	Unknown	ACE Mapscan	Wet	Yes		41.38	-110.85	Phase II	Clear Creek-Shurtleff Creek	Rock House	Private	16N	119W	9
620	Unknown	ACE Mapscan	Wet	Yes		41.38	-110.34	Phase II	Blacks Fork-Rollins Reservoir	Oaks	Private	16N	115W	11
621	Unknown	ACE Mapscan	Wet	Yes		41.38	-110.85	Phase II	Clear Creek-Shurtleff Creek	Rock House	Private	16N	119W	9
622	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.38	-110.51	Phase II	Rock Creek-Spring Creek	Bridger Airport	BLM	16N	116W	8
623	Unknown	ACE Mapscan	Wet	Yes		41.38	-110.85	Phase II	Clear Creek-Shurtleff Creek	Rock House	Private	16N	119W	9
624	Unknown	ACE Mapscan	Wet	Yes		41.38	-110.28	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	Private	16N	114W	8
625	Unknown	ACE Mapscan	Wet	Yes		41.38	-110.66	Phase II	Middle Albert Creek	Haystack Draw	BLM	16N	118W	12
626	Unknown	ACE Mapscan	Wet	Yes		41.38	-110.86	Phase II	Clear Creek-Shurtleff Creek	Rock House	State of Wyoming	16N	119W	8
627	Unknown	ACE Mapscan	Wet	Yes		41.38	-110.86	Phase II	Clear Creek-Shurtleff Creek	Rock House	State of Wyoming	16N	119W	8
628	Unknown	ACE Mapscan	Dry	Potential		41.38	-110.63	Phase II	Muddy Creek-Mussleman Creek	Coal Mine Draw	BLM	16N	117W	8
629	Unknown	ACE Mapscan	Dry	Potential		41.38	-110.63	Phase II	Muddy Creek-Mussleman Creek	Coal Mine Draw	BLM	16N	117W	8
630	Unknown	ACE Mapscan	Dry	Potential		41.38	-110.34	Phase II	Blacks Fork-Rollins Reservoir	Upper Ranch	Private	16N	115W	11
631	Unknown	ACE Mapscan	Wet	Yes		41.38	-110.86	Phase II	Clear Creek-Shurtleff Creek	Rock House	State of Wyoming	16N	119W	8
632	Unknown	ACE Mapscan	Wet	Yes		41.38	-110.86	Phase II	Clear Creek-Shurtleff Creek	Rock House	State of Wyoming	16N	119W	8
633	Unknown	ACE Mapscan	Wet	Yes		41.37	-110.86	Phase II	Clear Creek-Shurtleff Creek	Rock House	State of Wyoming	16N	119W	8
634	Unknown	ACE Mapscan	Wet	Yes		41.37	-110.55	Phase II	Muddy Creek-Lost Draw	Bigelow Bench	BLM	16N	117W	12
635	Unknown	ACE Mapscan	Wet	Yes		41.37	-110.33	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	Private	16N	115W	13
636	Unknown	ACE Mapscan	Wet	Yes		41.37	-110.87	Phase II	Clear Creek-Shurtleff Creek	Rock House	State of Wyoming	16N	119W	8
637	Unknown	ACE Mapscan	Wet	Yes		41.37	-110.35	Phase II	Blacks Fork-Rollins Reservoir	Upper Ranch	Private	16N	115W	14
638	Unknown	ACE Mapscan	Wet	Yes		41.37	-110.33	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	Private	16N	115W	13
639	Unknown	ACE Mapscan	Wet	Yes		41.37	-110.30	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	Private	16N	114W	18
640	Unknown	ACE Mapscan	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY	41.37	-110.71	Phase II	Middle Albert Creek	Byrne Creek	Private	16N	118W	15
641	Unknown	ACE Mapscan	Wet	Yes		41.37	-110.42	Phase II	Blacks Fork-Quarry Creek	Bridger Airport	Private	16N	115W	18
642	Unknown	ACE Mapscan	Dry	No	BREACHED	41.37	-110.77	Phase II	Middle Albert Creek	Byrne Creek	BLM	16N	118W	18
643	Unknown	ACE Mapscan	Wet	Yes		41.37	-110.31	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	Private	16N	114W	18
644	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.37	-110.82	Phase II	Middle Albert Creek	Rock House	Private	16N	119W	15
645	Unknown	ACE Mapscan	Wet	Yes		41.37	-110.81	Phase II	Middle Albert Creek	Byrne Creek	Private	16N	119W	14
646	Unknown	ACE Mapscan	Wet	Yes		41.37	-110.74	Phase II	Middle Albert Creek	Byrne Creek	State of Wyoming	16N	118W	16
647	Unknown	ACE Mapscan	Wet	Yes		41.37	-110.30	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	Private	16N	114W	18
648	Unknown	ACE Mapscan	Wet	Yes		41.37	-110.30	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	Private	16N	114W	18
649	Unknown	ACE Mapscan	Dry	Potential		41.37	-110.76	Phase II	Middle Albert Creek	Byrne Creek	Private	16N	118W	18
650	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.37	-110.78	Phase II	Middle Albert Creek	Byrne Creek	Private	16N	119W	13
651	Unknown	ACE Mapscan	Wet	Yes		41.36	-110.90	Phase II	Clear Creek-Shurtleff Creek	No Allotment	Private	16N	120W	13
652	Unknown	ACE Mapscan	Dry	Potential		41.36	-110.59	Phase II	Muddy Creek-Mussleman Creek	Bigelow Bench	Private	16N	117W	15
653	Unknown	ACE Mapscan	Wet	Yes		41.36	-110.34	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	Private	16N	115W	14
654	Unknown	ACE Mapscan	Dry	Potential		41.36	-110.73	Phase II	Middle Albert Creek	Byrne Creek	State of Wyoming	16N	118W	16
655	Unknown	ACE Mapscan	Dry	No	BREACHED	41.36	-110.77	Phase II	Middle Albert Creek	Byrne Creek	BLM	16N	118W	18
656	Unknown	ACE Mapscan	Wet	Yes		41.36	-110.34	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	Private	16N	115W	14
657	Unknown	ACE Mapscan	Dry	Potential		41.36	-110.79	Phase II	Middle Albert Creek	Byrne Creek	Private	16N	119W	13

ACE ID	Name	Source	Condition	Water Source	Notes	Lattitude	Longitude	Phase	HUC 12 Name	Allotment	Land Owner	T	R	S
658	Unknown	ACE Mapscan	Dry	Potential		41.36	-110.67	Phase II	Middle Albert Creek	Coal Mine Draw	Private	16N	118W	13
659	Unknown	ACE Mapscan	Dry	Potential		41.36	-110.67	Phase II	Middle Albert Creek	Coal Mine Draw	Private	16N	118W	13
660	Unknown	ACE Mapscan	Wet	Yes		41.36	-110.23	Phase II	Blacks Fork-Rollins Reservoir	Highway	Private	16N	114W	23
661	Unknown	ACE Mapscan	Wet	Yes		41.36	-110.35	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	Private	16N	115W	14
662	Unknown	ACE Mapscan	Wet	Yes		41.36	-110.21	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	16N	114W	24
663	Unknown	ACE Mapscan	Wet	Yes		41.36	-110.82	Phase II	Middle Albert Creek	Byrne Creek	Private	16N	119W	22
664	Unknown	ACE Mapscan	Dry	Potential		41.36	-110.76	Phase II	Middle Albert Creek	Byrne Creek	Private	16N	118W	19
665	Unknown	ACE Mapscan	Dry	Potential		41.35	-110.73	Phase II	Middle Albert Creek	Toms Draw	Private	16N	118W	21
666	Unknown	ACE Mapscan	Dry	Potential		41.35	-110.53	Phase II	Rock Creek-Spring Creek	Bigelow Bench	Private	16N	116W	19
667	Unknown	ACE Mapscan	Dry	No	BREACHED	41.35	-110.81	Phase II	Middle Albert Creek	Byrne Creek	Private	16N	119W	23
668	Unknown	ACE Mapscan	Wet	Yes		41.35	-110.26	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	Private	16N	114W	21
669	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.35	-110.71	Phase II	Middle Albert Creek	Toms Draw	Private	16N	118W	22
670	Unknown	ACE Mapscan	Dry	No	BREACHED	41.35	-110.46	Phase II	Blacks Fork-Quarry Creek	Bridger Airport	BLM	16N	116W	23
671	Unknown	ACE Mapscan	Wet	Yes		41.35	-110.28	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	Private	16N	114W	20
672	Unknown	ACE Mapscan	Wet	Yes		41.35	-110.23	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	16N	114W	23
673	Unknown	ACE Mapscan	Wet	Yes		41.35	-110.31	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	Private	16N	114W	19
674	Unknown	ACE Mapscan	Dry	No	BREACHED	41.35	-110.81	Phase II	Middle Albert Creek	Byrne Creek	Private	16N	119W	22
675	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.35	-110.70	Phase II	Middle Albert Creek	Toms Draw	Private	16N	118W	23
676	Unknown	ACE Mapscan	Wet	Yes		41.35	-110.23	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	16N	114W	23
677	Unknown	ACE Mapscan	Wet	Yes		41.35	-110.32	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	Private	16N	115W	24
678	Unknown	ACE Mapscan	Wet	Yes		41.35	-110.57	Phase II	Muddy Creek-Mussleman Creek	Bigelow Bench	Private	16N	117W	23
679	Unknown	ACE Mapscan	Wet	Yes		41.34	-110.56	Phase II	Muddy Creek-Mussleman Creek	Bigelow Bench	BLM	16N	117W	25
680	Unknown	ACE Mapscan	Dry	No	BREACHED	41.34	-110.71	Phase II	Middle Albert Creek	Toms Draw	BLM	16N	118W	22
681	Unknown	ACE Mapscan	Wet	Yes		41.34	-110.71	Phase II	Middle Albert Creek	Toms Draw	Private	16N	118W	27
682	Unknown	ACE Mapscan	Wet	Yes		41.34	-110.24	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	Private	16N	114W	27
683	Unknown	ACE Mapscan	Wet	Yes		41.34	-110.25	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	Private	16N	114W	27
684	Unknown	ACE Mapscan	Wet	Yes		41.34	-110.75	Phase II	Middle Albert Creek	Toms Draw	Private	16N	118W	29
685	Unknown	ACE Mapscan	Wet	Yes		41.34	-110.34	Phase II	Blacks Fork-Quarry Creek	No Allotment	Private	16N	115W	26
686	Unknown	ACE Mapscan	Wet	Yes		41.34	-110.60	Phase II	Muddy Creek-Mussleman Creek	Bigelow Bench	Private	16N	117W	27
687	Unknown	ACE Mapscan	Wet	Yes		41.34	-110.26	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	Private	16N	114W	27
688	Unknown	ACE Mapscan	Wet	Yes		41.34	-110.74	Phase II	Middle Albert Creek	Toms Draw	Private	16N	118W	28
689	Unknown	ACE Mapscan	Wet	Yes		41.34	-110.20	Phase II	Lower Cottonwood Creek-Blacks Fork	Christensen	Private	16N	113W	30
690	Unknown	ACE Mapscan	Wet	Yes		41.34	-110.29	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	Private	16N	114W	29
691	Unknown	ACE Mapscan	Wet	Yes		41.34	-110.30	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	Private	16N	114W	30
692	Unknown	ACE Mapscan	Dry	No	BREACHED	41.34	-110.73	Phase II	Upper Albert Creek	Toms Draw	Private	16N	118W	28
693	Unknown	ACE Mapscan	Wet	Yes		41.34	-110.24	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	16N	114W	26
694	Unknown	ACE Mapscan	Wet	Yes		41.34	-110.28	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	Private	16N	114W	29
695	Unknown	ACE Mapscan	Wet	Yes		41.34	-110.56	Phase II	Muddy Creek-Mussleman Creek	Bigelow Bench	Private	16N	117W	25
696	Unknown	ACE Mapscan	Wet	Yes		41.34	-110.33	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	Private	16N	115W	25
697	Unknown	ACE Mapscan	Wet	Yes		41.34	-110.28	Phase II	Blacks Fork-Rollins Reservoir	Toomer	Private	16N	114W	29
698	Unknown	ACE Mapscan	Wet	Yes		41.34	-110.28	Phase II	Blacks Fork-Rollins Reservoir	Toomer	Private	16N	114W	28
699	Unknown	ACE Mapscan	Wet	Yes		41.34	-110.24	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	16N	114W	27
700	Unknown	ACE Mapscan	Dry	No	BREACHED	41.33	-110.71	Phase II	Middle Albert Creek	Toms Draw	Private	16N	118W	27
701	Unknown	ACE Mapscan	Wet	Yes		41.33	-110.24	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	16N	114W	27
702	Unknown	ACE Mapscan	Wet	Yes		41.33	-110.26	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	Private	16N	114W	28
703	Unknown	ACE Mapscan	Wet	Yes		41.33	-110.69	Phase II	Middle Albert Creek	Kemmerer Junction	BLM	16N	118W	26
704	Wall Reservoir	ACE Mapscan	Wet	Yes		41.33	-110.39	Phase II	Blacks Fork-Quarry Creek	Wall Reservoir	Private	16N	115W	28
705	Unknown	ACE Mapscan	Wet	Yes		41.33	-110.23	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	16N	114W	26
706	Unknown	ACE Mapscan	Wet	Yes		41.33	-110.80	Phase II	Middle Albert Creek	Hinshaw Creek	Private	16N	119W	26
707	Unknown	ACE Mapscan	Wet	Yes		41.33	-110.80	Phase II	Middle Albert Creek	Hinshaw Creek	Private	16N	119W	26
708	Unknown	ACE Mapscan	Wet	Yes		41.33	-110.24	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	16N	114W	26
709	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.33	-110.68	Phase II	Middle Albert Creek	Kemmerer Junction	BLM	16N	118W	26
710	Unknown	ACE Mapscan	Wet	Yes		41.33	-110.29	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	Private	16N	114W	29
711	Unknown	ACE Mapscan	Dry	Potential		41.33	-110.15	Phase II	Lower Cottonwood Creek-Blacks Fork	Indian Flat	BLM	16N	113W	28
712	Unknown	ACE Mapscan	Wet	Yes		41.33	-110.24	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	16N	114W	27
713	Unknown	ACE Mapscan	Wet	Yes		41.33	-110.23	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	16N	114W	26
714	Unknown	ACE Mapscan	Wet	Yes		41.33	-110.36	Phase II	Blacks Fork-Quarry Creek	No Allotment	Private	16N	115W	34
715	Unknown	ACE Mapscan	Wet	Yes		41.33	-110.51	Phase II	Rock Creek-Spring Creek	Bigelow Bench	Private	16N	116W	29
716	Unknown	ACE Mapscan	Wet	Yes		41.33	-110.30	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	Private	16N	114W	31
717	Unknown	ACE Mapscan	Wet	Yes		41.33	-110.24	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	16N	114W	34
718	Unknown	ACE Mapscan	Wet	Yes		41.33	-110.25	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	16N	114W	34
719	Unknown	ACE Mapscan	Wet	Yes		41.33	-110.33	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	Private	16N	115W	36
720	Unknown	ACE Mapscan	Dry	Potential		41.33	-110.71	Phase II	Middle Albert Creek	Toms Draw	BLM	16N	118W	34
721	Unknown	ACE Mapscan	Wet	Yes		41.33	-110.20	Phase II	Lower Cottonwood Creek-Blacks Fork	Christensen	Private	16N	114W	36
722	Unknown	ACE Mapscan	Wet	Yes		41.33	-110.28	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	State of Wyoming	16N	114W	33
723	Unknown	ACE Mapscan	Wet	Yes		41.33	-110.31	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	Private	16N	114W	31
724	Unknown	ACE Mapscan	Wet	Yes		41.33	-110.28	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	Private	16N	114W	32
725	Unknown	ACE Mapscan	Wet	Yes		41.33	-110.57	Phase II	Muddy Creek-Mussleman Creek	Bigelow Bench	Private	16N	117W	35
726	Unknown	ACE Mapscan	Wet	Yes		41.33	-110.23	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	16N	114W	35
727	Unknown	ACE Mapscan	Wet	Yes		41.33	-110.24	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	16N	114W	35
728	Unknown	ACE Mapscan	Wet	Yes		41.33	-110.26	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	16N	114W	34
729	Unknown	ACE Mapscan	Wet	Yes		41.33	-110.26	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	16N	114W	33
730	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.33	-110.68	Phase II	Middle Albert Creek	Kemmerer Junction	State of Wyoming	16N	118W	36

ACE ID	Name	Source	Condition	Water Source	Notes	Lattitude	Longitude	Phase	HUC 12 Name	Allotment	Land Owner	T	R	S
731	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.33	-110.70	Phase II	Middle Albert Creek	Kemmerer Junction	BLM	16N	118W	34
732	Unknown	ACE Mapscan	Wet	Yes		41.33	-110.27	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	State of Wyoming	16N	114W	33
733	Unknown	ACE Mapscan	Wet	Yes		41.33	-110.25	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	16N	114W	34
734	Unknown	ACE Mapscan	Wet	Yes		41.33	-110.24	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	16N	114W	35
735	Unknown	ACE Mapscan	Wet	Yes		41.32	-110.34	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	Private	16N	115W	35
736	Unknown	ACE Mapscan	Dry	Potential		41.32	-110.69	Phase II	Middle Albert Creek	Kemmerer Junction	Private	16N	118W	35
737	Unknown	ACE Mapscan	Wet	Yes		41.32	-110.33	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	Private	16N	115W	36
738	Unknown	ACE Mapscan	Wet	Yes		41.32	-110.24	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	16N	114W	34
739	Unknown	ACE Mapscan	Wet	Yes		41.32	-110.24	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	16N	114W	34
740	Unknown	ACE Mapscan	Wet	Yes		41.32	-110.34	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	Private	16N	115W	35
741	Unknown	ACE Mapscan	Wet	Yes		41.32	-110.52	Phase II	Rock Creek-Spring Creek	Bigelow Bench	BLM	16N	116W	32
742	Unknown	ACE Mapscan	Wet	Yes		41.32	-110.32	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	Private	16N	115W	36
743	Unknown	ACE Mapscan	Wet	Yes		41.32	-110.32	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	16N	114W	31
744	Unknown	ACE Mapscan	Wet	Yes		41.32	-110.25	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	16N	114W	34
745	Unknown	ACE Mapscan	Dry	No	BREACHED	41.32	-110.74	Phase II	Upper Albert Creek	Toms Draw	BLM	16N	118W	32
746	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.32	-110.69	Phase II	Middle Albert Creek	Kemmerer Junction	Private	16N	118W	35
747	Unknown	ACE Mapscan	Wet	Yes		41.32	-110.31	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	16N	114W	31
748	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.32	-110.67	Phase II	Muddy Creek-Mussleman Creek	Kemmerer Junction	State of Wyoming	16N	118W	36
749	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.32	-110.69	Phase II	Middle Albert Creek	Kemmerer Junction	Private	16N	118W	35
750	Unknown	ACE Mapscan	Wet	Yes		41.32	-110.32	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	16N	115W	36
751	Unknown	ACE Mapscan	Wet	Yes		41.32	-110.70	Phase II	Middle Albert Creek	Kemmerer Junction	BLM	16N	118W	34
752	Unknown	ACE Mapscan	Wet	Yes		41.32	-110.27	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	16N	114W	33
753	Unknown	ACE Mapscan	Wet	Yes		41.32	-110.29	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	16N	114W	32
754	Unknown	ACE Mapscan	Wet	Yes		41.32	-110.31	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	16N	114W	31
755	Unknown	ACE Mapscan	Wet	Yes		41.32	-110.29	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	15N	114W	5
756	Unknown	ACE Mapscan	Wet	Yes		41.32	-110.30	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	15N	114W	6
757	Unknown	ACE Mapscan	Wet	Yes		41.31	-110.25	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	15N	114W	3
758	Unknown	ACE Mapscan	Wet	Yes		41.31	-110.25	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	15N	114W	3
759	Unknown	ACE Mapscan	Wet	Yes		41.31	-110.31	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	15N	114W	6
760	Unknown	ACE Mapscan	Wet	Yes		41.31	-110.19	Phase II	Lower Cottonwood Creek-Blacks Fork	Christensen	Private	15N	113W	6
761	Unknown	ACE Mapscan	Wet	Yes		41.31	-110.26	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	15N	114W	4
762	Unknown	ACE Mapscan	Dry	No	SEDIMENT? NEW CHANNEL SEEMS TO SKIRT RESERVOIR ON SE SIDE	41.31	-110.72	Phase II	Upper Albert Creek	Kemmerer Junction	BLM	15N	118W	4
763	Unknown	ACE Mapscan	Wet	Yes		41.31	-110.42	Phase II	Blacks Fork-Quarry Creek	Fort Bridger	Private	15N	115W	6
764	Unknown	ACE Mapscan	Wet	Yes		41.31	-110.38	Phase II	Blacks Fork-Quarry Creek	No Allotment	Private	15N	115W	4
765	Unknown	ACE Mapscan	Wet	Yes		41.31	-110.73	Phase II	Upper Albert Creek	Toms Draw	Private	15N	118W	4
766	Unknown	ACE Mapscan	Wet	Yes		41.31	-110.43	Phase II	Blacks Fork-Quarry Creek	Fort Bridger	Private	15N	115W	6
767	Unknown	ACE Mapscan	Wet	Yes		41.31	-110.25	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	15N	114W	3
768	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.31	-110.43	Phase II	Blacks Fork-Quarry Creek	Fort Bridger	Private	15N	116W	1
769	Unknown	ACE Mapscan	Wet	Yes		41.31	-110.28	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	15N	114W	5
770	Unknown	ACE Mapscan	Wet	Yes		41.31	-110.27	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	15N	114W	4
771	Unknown	ACE Mapscan	Wet	Yes		41.31	-110.27	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	15N	114W	4
772	Unknown	ACE Mapscan	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY	41.31	-110.36	Phase II	Blacks Fork-Rollins Reservoir	No Allotment	Private	15N	115W	3
773	Unknown	ACE Mapscan	Wet	Yes		41.31	-110.27	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	15N	114W	4
774	Unknown	ACE Mapscan	Wet	Yes		41.31	-110.26	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	15N	114W	4
775	Unknown	ACE Mapscan	Wet	Yes		41.31	-110.66	Phase II	Muddy Creek-Mussleman Creek	Kemmerer Junction	Private	15N	118W	1
776	Unknown	ACE Mapscan	Dry	No	BREACHED	41.31	-110.71	Phase II	Middle Albert Creek	Kemmerer Junction	Private	15N	118W	3
777	Unknown	ACE Mapscan	Wet	Yes		41.31	-110.67	Phase II	Muddy Creek-Mussleman Creek	Kemmerer Junction	Private	15N	118W	1
778	Unknown	ACE Mapscan	Wet	Yes		41.31	-110.24	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	15N	114W	2
779	Unknown	ACE Mapscan	Wet	Yes		41.31	-110.28	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	15N	114W	5
780	Unknown	ACE Mapscan	Wet	Yes		41.31	-110.26	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	15N	114W	4
781	Unknown	ACE Mapscan	Wet	Yes		41.31	-110.24	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	15N	114W	3
782	Unknown	ACE Mapscan	Wet	Yes		41.31	-110.74	Phase II	Upper Albert Creek	Toms Draw	Private	15N	118W	5
783	Unknown	ACE Mapscan	Wet	Yes		41.31	-110.68	Phase II	Muddy Creek-Mussleman Creek	Kemmerer Junction	Private	15N	118W	1
784	Unknown	ACE Mapscan	Wet	Yes		41.31	-110.38	Phase II	Blacks Fork-Quarry Creek	No Allotment	Private	15N	115W	4
785	Unknown	ACE Mapscan	Wet	Yes		41.31	-110.52	Phase II	Rock Creek-Spring Creek	No Allotment	Private	15N	116W	5
786	Unknown	ACE Mapscan	Wet	Yes		41.31	-110.27	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	15N	114W	4
787	Unknown	ACE Mapscan	Wet	Yes		41.31	-110.26	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	15N	114W	3
788	Unknown	ACE Mapscan	Wet	Yes		41.31	-110.26	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	15N	114W	4
789	Unknown	ACE Mapscan	Wet	Yes		41.31	-110.26	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	3
790	Unknown	ACE Mapscan	Wet	Yes		41.30	-110.26	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	4
791	Unknown	ACE Mapscan	Wet	Yes		41.30	-110.75	Phase II	Upper Albert Creek	Radio Tower	Private	15N	118W	5
792	Unknown	ACE Mapscan	Wet	Yes		41.30	-110.34	Phase II	Lower Smiths Fork-Blacks Fork	No Allotment	Private	15N	115W	2
793	Unknown	ACE Mapscan	Dry	Potential		41.30	-110.59	Phase II	Muddy Creek-Mussleman Creek	Leroy	Private	15N	117W	3
794	Unknown	ACE Mapscan	Wet	Yes		41.30	-110.43	Phase II	Blacks Fork-Quarry Creek	Fort Bridger	Private	15N	115W	6
795	Unknown	ACE Mapscan	Wet	Yes		41.30	-110.38	Phase II	Blacks Fork-Quarry Creek	No Allotment	Private	15N	115W	4
796	Unknown	ACE Mapscan	Wet	Yes		41.30	-110.27	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	4
797	Unknown	ACE Mapscan	Wet	Yes		41.30	-110.24	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	3
798	Unknown	ACE Mapscan	Wet	Yes		41.30	-110.31	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	6
799	Unknown	ACE Mapscan	Wet	Yes		41.30	-110.30	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	6
800	Unknown	ACE Mapscan	Wet	Yes		41.30	-110.27	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	9
801	Unknown	ACE Mapscan	Wet	Yes		41.30	-110.30	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	7
802	Unknown	ACE Mapscan	Wet	Yes		41.30	-110.29	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	8
803	Unknown	ACE Mapscan	Wet	Yes		41.30	-110.24	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	11

ACE ID	Name	Source	Condition	Water Source	Notes	Lattitude	Longitude	Phase	HUC 12 Name	Allotment	Land Owner	T	R	S
804	Unknown	ACE Mapscan	Wet	Yes		41.30	-110.28	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	9
805	Unknown	ACE Mapscan	Dry	No	BREACHED	41.30	-110.24	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	10
806	Unknown	ACE Mapscan	Wet	Yes		41.30	-110.25	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	10
807	Unknown	ACE Mapscan	Wet	Yes		41.30	-110.28	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	8
808	Unknown	ACE Mapscan	Wet	Yes		41.30	-110.26	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	9
809	Unknown	ACE Mapscan	Wet	Yes		41.30	-110.25	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	10
810	Unknown	ACE Mapscan	Wet	Yes		41.30	-110.33	Phase II	Upper Smiths Fork	No Allotment	Private	15N	115W	12
811	Unknown	ACE Mapscan	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY	41.30	-110.60	Phase II	Muddy Creek-Mussleman Creek	Leroy	Private	15N	117W	10
812	Unknown	ACE Mapscan	Wet	Yes		41.30	-110.72	Phase II	Upper Albert Creek	Radio Tower	Private	15N	118W	9
813	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.30	-110.77	Phase II	Upper Albert Creek	Toms Draw	Private	15N	118W	7
814	Unknown	ACE Mapscan	Wet	Yes		41.30	-110.67	Phase II	Muddy Creek-Mussleman Creek	Radio Tower	Private	15N	118W	12
815	Unknown	ACE Mapscan	Wet	Yes		41.30	-110.32	Phase II	Upper Smiths Fork	No Allotment	Private	15N	115W	12
816	Unknown	ACE Mapscan	Wet	Yes		41.30	-110.49	Phase II	Blacks Fork-Quarry Creek	Bridger Butte	Private	15N	116W	9
817	Unknown	ACE Mapscan	Wet	Yes		41.30	-110.31	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	7
818	Unknown	ACE Mapscan	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY	41.30	-110.55	Phase II	Rock Creek-Spring Creek	Spring Creek	Private	15N	117W	12
819	Unknown	ACE Mapscan	Wet	Yes		41.30	-110.77	Phase II	Upper Albert Creek	Radio Tower	Private	15N	118W	7
820	Unknown	ACE Mapscan	Wet	Yes		41.30	-110.59	Phase II	Muddy Creek-Mussleman Creek	Leroy	Private	15N	117W	10
821	Unknown	ACE Mapscan	Wet	Yes		41.30	-110.42	Phase II	Blacks Fork-Quarry Creek	Fort Bridger	Private	15N	115W	7
822	Unknown	ACE Mapscan	Wet	Yes		41.30	-110.64	Phase II	Muddy Creek-Mussleman Creek	Leroy	BLM	15N	117W	8
823	Unknown	ACE Mapscan	Wet	Yes		41.30	-110.32	Phase II	Upper Smiths Fork	No Allotment	Private	15N	115W	12
824	Unknown	ACE Mapscan	Wet	Yes		41.30	-109.69	Phase III	Blacks Fork-Flaming Gorge Reservoir	Granger Lease	BLM	15N	109W	10
825	Unknown	ACE Mapscan	Wet	Yes		41.30	-110.26	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	10
826	Unknown	ACE Mapscan	Wet	Yes		41.30	-110.28	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	9
827	Unknown	ACE Mapscan	Wet	Yes		41.30	-110.25	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	10
828	Unknown	ACE Mapscan	Dry	Potential		41.30	-110.64	Phase II	Muddy Creek-Mussleman Creek	Leroy	Private	15N	117W	7
829	Unknown	ACE Mapscan	Wet	Yes		41.29	-110.32	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	7
830	Unknown	ACE Mapscan	Wet	Yes		41.29	-110.81	Phase II	Upper Albert Creek	Hinshaw Creek	Private	15N	119W	11
831	Unknown	ACE Mapscan	Wet	Yes		41.29	-110.25	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	10
832	Unknown	ACE Mapscan	Wet	Yes		41.29	-110.42	Phase II	Blacks Fork-Quarry Creek	Fort Bridger	Private	15N	115W	7
833	Unknown	ACE Mapscan	Dry	No	BREACHED	41.29	-110.80	Phase II	Upper Albert Creek	Hinshaw Creek	Private	15N	119W	11
834	Unknown	ACE Mapscan	Wet	Yes		41.29	-110.78	Phase II	Upper Albert Creek	Toms Draw	BLM	15N	119W	12
835	Unknown	ACE Mapscan	Wet	Yes		41.29	-110.32	Phase II	Upper Smiths Fork	No Allotment	Private	15N	115W	12
836	Unknown	ACE Mapscan	Dry	No	BREACHED AND SEDIMENT	41.29	-110.65	Phase II	Muddy Creek-Mussleman Creek	Leroy	Private	15N	117W	7
837	Unknown	ACE Mapscan	Wet	Yes		41.29	-110.24	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	10
838	Unknown	ACE Mapscan	Wet	Yes		41.29	-110.25	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	10
839	Unknown	ACE Mapscan	Dry	Potential		41.29	-110.56	Phase II	Rock Creek-Spring Creek	Spring Creek	Private	15N	117W	12
840	Unknown	ACE Mapscan	Wet	Yes		41.29	-110.49	Phase II	Blacks Fork-Quarry Creek	Nebraska Flat	Private	15N	116W	9
841	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.29	-110.53	Phase II	Rock Creek-Spring Creek	Spring Creek	Private	15N	116W	7
842	Unknown	ACE Mapscan	Dry	Potential		41.29	-110.83	Phase II	Upper Albert Creek	Hinshaw Creek	BLM	15N	119W	10
843	Unknown	ACE Mapscan	Wet	Yes		41.29	-110.42	Phase II	Blacks Fork-Quarry Creek	Fort Bridger	Private	15N	115W	7
844	Unknown	ACE Mapscan	Wet	Yes		41.29	-110.25	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	10
845	Unknown	ACE Mapscan	Wet	Yes		41.29	-110.41	Phase II	Blacks Fork-Quarry Creek	No Allotment	Private	15N	115W	8
846	Unknown	ACE Mapscan	Wet	Yes		41.29	-110.26	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	10
847	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.29	-110.72	Phase II	Upper Albert Creek	Radio Tower	Private	15N	118W	9
848	Unknown	ACE Mapscan	Wet	Yes		41.29	-110.33	Phase II	Upper Smiths Fork	No Allotment	Private	15N	115W	12
849	Unknown	ACE Mapscan	Wet	Yes		41.29	-110.26	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	9
850	Unknown	ACE Mapscan	Wet	Yes		41.29	-110.34	Phase II	Upper Smiths Fork	No Allotment	Private	15N	115W	11
851	Unknown	ACE Mapscan	Wet	Yes		41.29	-110.43	Phase II	Blacks Fork-Quarry Creek	Fort Bridger	Private	15N	116W	12
852	Unknown	ACE Mapscan	Wet	Yes		41.29	-110.34	Phase II	Upper Smiths Fork	No Allotment	Private	15N	115W	14
853	Unknown	ACE Mapscan	Wet	Yes		41.29	-110.43	Phase II	Blacks Fork-Quarry Creek	Fort Bridger	Private	15N	116W	13
854	Unknown	ACE Mapscan	Wet	Yes		41.29	-110.26	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	15
855	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.29	-110.72	Phase II	Upper Albert Creek	Radio Tower	Private	15N	118W	9
856	Unknown	ACE Mapscan	Wet	Yes		41.29	-110.36	Phase II	Upper Smiths Fork	No Allotment	Private	15N	115W	15
857	Unknown	ACE Mapscan	Dry	Potential		41.29	-110.67	Phase II	Muddy Creek-Mussleman Creek	Radio Tower	Private	15N	118W	13
858	Unknown	ACE Mapscan	Dry	No	BREACHED, GOOD EXAMPLE	41.29	-110.79	Phase II	Upper Albert Creek	Altamont	BLM	15N	119W	13
859	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.29	-110.72	Phase II	Upper Albert Creek	Radio Tower	Private	15N	118W	15
860	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.29	-110.68	Phase II	Muddy Creek-Mussleman Creek	No Allotment	Private	15N	118W	14
861	Unknown	ACE Mapscan	Dry	Potential		41.28	-110.44	Phase II	Blacks Fork-Quarry Creek	Bridger Butte	Private	15N	116W	13
862	Unknown	ACE Mapscan	Wet	Yes		41.28	-110.36	Phase II	Upper Smiths Fork	No Allotment	Private	15N	115W	15
863	Unknown	ACE Mapscan	Wet	Yes		41.28	-110.34	Phase II	Upper Smiths Fork	No Allotment	Private	15N	115W	14
864	Unknown	ACE Mapscan	Wet	Yes		41.28	-110.51	Phase II	Blacks Fork-Quarry Creek	Nebraska Flat	Private	15N	116W	17
865	Unknown	ACE Mapscan	Wet	Yes		41.28	-110.51	Phase II	Blacks Fork-Quarry Creek	No Allotment	Private	15N	116W	17
866	Unknown	ACE Mapscan	Wet	Yes		41.28	-110.43	Phase II	Blacks Fork-Quarry Creek	No Allotment	Private	15N	115W	18
867	Unknown	ACE Mapscan	Wet	Yes		41.28	-110.74	Phase II	Upper Albert Creek	No Allotment	Private	15N	118W	17
868	Unknown	ACE Mapscan	Wet	Yes		41.28	-110.75	Phase II	Upper Albert Creek	No Allotment	Private	15N	118W	17
869	Unknown	ACE Mapscan	Wet	Yes		41.28	-110.60	Phase II	Muddy Creek-Mussleman Creek	Little Creek	Private	15N	117W	15
870	Unknown	ACE Mapscan	Wet	Yes		41.28	-110.36	Phase II	Upper Smiths Fork	No Allotment	Private	15N	115W	15
871	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.28	-110.79	Phase II	Upper Albert Creek	Altamont	Private	15N	119W	13
872	Unknown	ACE Mapscan	Wet	Yes		41.28	-110.51	Phase II	Blacks Fork-Quarry Creek	No Allotment	Private	15N	116W	17
873	Unknown	ACE Mapscan	Wet	Yes		41.28	-110.53	Phase II	Rock Creek-Spring Creek	Spring Creek	Private	15N	116W	18
874	Unknown	ACE Mapscan	Dry	Potential		41.28	-110.52	Phase II	Blacks Fork-Quarry Creek	No Allotment	Private	15N	116W	17
875	Unknown	ACE Mapscan	Wet	Yes		41.28	-110.73	Phase II	Upper Albert Creek	Radio Tower	State of Wyoming	15N	118W	16
876	Unknown	ACE Mapscan	Wet	Yes		41.28	-110.61	Phase II	Antelope Creek	Little Creek	Private	15N	117W	16

ACE ID	Name	Source	Condition	Water Source	Notes	Lattitude	Longitude	Phase	HUC 12 Name	Allotment	Land Owner	T	R	S
877	Unknown	ACE Mapscan	Wet	Yes		41.28	-110.41	Phase II	Blacks Fork-Quarry Creek	No Allotment	Private	15N	115W	17
878	Unknown	ACE Mapscan	Wet	Yes		41.28	-110.24	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	14
879	Unknown	ACE Mapscan	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY	41.28	-110.55	Phase II	Rock Creek-Spring Creek	Spring Creek	Private	15N	117W	13
880	Unknown	ACE Mapscan	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY	41.28	-109.70	Phase III	Blacks Fork-Flaming Gorge Reservoir	Granger Lease	BLM	15N	109W	16
881	Unknown	ACE Mapscan	Wet	Yes		41.28	-110.78	Phase II	Upper Albert Creek	Altamont	Private	15N	119W	13
882	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.28	-110.73	Phase II	Upper Albert Creek	Radio Tower	State of Wyoming	15N	118W	16
883	Unknown	ACE Mapscan	Wet	Yes		41.28	-110.73	Phase II	Upper Albert Creek	Radio Tower	State of Wyoming	15N	118W	16
884	Unknown	ACE Mapscan	Wet	Yes		41.28	-110.41	Phase II	Blacks Fork-Quarry Creek	No Allotment	Private	15N	115W	17
885	Unknown	ACE Mapscan	Wet	Yes		41.28	-110.42	Phase II	Blacks Fork-Quarry Creek	No Allotment	Private	15N	115W	18
886	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.28	-110.74	Phase II	Upper Albert Creek	No Allotment	Private	15N	118W	17
887	Unknown	ACE Mapscan	Dry	Potential		41.28	-110.45	Phase II	Blacks Fork-Quarry Creek	No Allotment	Private	15N	116W	13
888	Unknown	ACE Mapscan	Wet	Yes		41.28	-110.80	Phase II	Upper Albert Creek	Altamont	BLM	15N	119W	14
889	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.28	-110.72	Phase II	Upper Albert Creek	Radio Tower	State of Wyoming	15N	118W	16
890	Unknown	ACE Mapscan	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY	41.28	-110.54	Phase II	Rock Creek-Spring Creek	Spring Creek	Private	15N	116W	18
891	Unknown	ACE Mapscan	Wet	Yes		41.27	-110.26	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	15
892	Unknown	ACE Mapscan	Wet	Yes		41.27	-110.37	Phase II	Upper Smiths Fork	No Allotment	Private	15N	115W	15
893	Unknown	ACE Mapscan	Wet	Yes		41.27	-110.26	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	21
894	Unknown	ACE Mapscan	Wet	Yes		41.27	-110.30	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	19
895	Unknown	ACE Mapscan	Wet	Yes		41.27	-110.39	Phase II	Blacks Fork-Quarry Creek	No Allotment	Private	15N	115W	20
896	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.27	-110.70	Phase II	Antelope Creek	The Boilers Draw	Private	15N	118W	23
897	Unknown	ACE Mapscan	Dry	No	BREACHED	41.27	-110.62	Phase II	Antelope Creek	Little Creek	BLM	15N	117W	20
898	Unknown	ACE Mapscan	Wet	Yes		41.27	-110.49	Phase II	Blacks Fork-Quarry Creek	Nebraska Flat	Private	15N	116W	21
899	Unknown	ACE Mapscan	Wet	Yes		41.27	-110.31	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	19
900	Unknown	ACE Mapscan	Wet	Yes		41.27	-110.29	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	20
901	Unknown	ACE Mapscan	Wet	Yes		41.27	-110.57	Phase II	Muddy Creek-Mussleman Creek	Little Creek	Private	15N	117W	23
902	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.27	-110.69	Phase II	Antelope Creek	The Boilers Draw	Private	15N	118W	23
903	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.27	-110.66	Phase II	Antelope Creek	Little Creek	Private	15N	117W	19
904	Unknown	ACE Mapscan	Wet	Yes		41.26	-110.39	Phase II	Blacks Fork-Quarry Creek	No Allotment	Private	15N	115W	21
905	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.26	-110.70	Phase II	Antelope Creek	Myers	Private	15N	118W	22
906	Unknown	ACE Mapscan	Wet	Yes		41.26	-110.55	Phase II	Rock Creek-Spring Creek	Little Creek	Private	15N	117W	24
907	Unknown	ACE Mapscan	Wet	Yes		41.26	-110.38	Phase II	Upper Smiths Fork	No Allotment	Private	15N	115W	21
908	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.26	-110.74	Phase II	Upper Albert Creek	The Boilers Draw	BLM	15N	118W	20
909	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.26	-110.52	Phase II	Blacks Fork-Quarry Creek	No Allotment	Private	15N	116W	20
910	Unknown	ACE Mapscan	Wet	Yes		41.26	-110.48	Phase II	Blacks Fork-Quarry Creek	No Allotment	Private	15N	116W	22
911	Unknown	ACE Mapscan	Dry	Potential		41.26	-110.73	Phase II	Upper Albert Creek	The Boilers Draw	Private	15N	118W	21
912	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.26	-110.72	Phase II	Upper Albert Creek	The Boilers Draw	Private	15N	118W	21
913	Unknown	ACE Mapscan	Wet	Yes		41.26	-110.38	Phase II	Upper Smiths Fork	No Allotment	Private	15N	115W	21
914	Unknown	ACE Mapscan	Wet	Yes		41.26	-110.27	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	21
915	Unknown	ACE Mapscan	Wet	Yes		41.26	-110.54	Phase II	Rock Creek-Spring Creek	Spring Creek	Private	15N	116W	19
916	Unknown	ACE Mapscan	Wet	Yes		41.26	-110.26	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	21
917	Unknown	ACE Mapscan	Wet	Yes		41.26	-110.32	Phase II	Upper Smiths Fork	No Allotment	Private	15N	115W	24
918	Unknown	ACE Mapscan	Wet	Yes		41.26	-110.37	Phase II	Upper Smiths Fork	No Allotment	Private	15N	115W	21
919	Unknown	ACE Mapscan	Dry	No	BREACHED	41.26	-110.68	Phase II	Antelope Creek	The Boilers Draw	Private	15N	118W	23
920	Unknown	ACE Mapscan	Wet	Yes		41.26	-110.26	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	28
921	Unknown	ACE Mapscan	Wet	Yes		41.26	-110.55	Phase II	Rock Creek-Spring Creek	Spring Creek	Private	15N	117W	25
922	Unknown	ACE Mapscan	Wet	Yes		41.26	-110.77	Phase II	Upper Albert Creek	Altamont	Private	15N	118W	19
923	Unknown	ACE Mapscan	Wet	Yes		41.26	-110.32	Phase II	Upper Smiths Fork	No Allotment	Private	15N	115W	25
924	Unknown	ACE Mapscan	Wet	Yes		41.26	-110.39	Phase II	Upper Smiths Fork	No Allotment	Private	15N	115W	28
925	Unknown	ACE Mapscan	Wet	Yes		41.26	-110.32	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	30
926	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.26	-110.22	Phase II	Little Dry Creek-Smiths Fork	Poverty Flat	BLM	15N	114W	25
927	Unknown	ACE Mapscan	Wet	Yes		41.25	-110.33	Phase II	Upper Smiths Fork	No Allotment	Private	15N	115W	25
928	Unknown	ACE Mapscan	Dry	Potential		41.25	-110.50	Phase II	Blacks Fork-Quarry Creek	Nebraska Flat	Private	15N	116W	28
929	Unknown	ACE Mapscan	Wet	Yes		41.25	-110.31	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	30
930	Unknown	ACE Mapscan	Wet	Yes		41.25	-110.48	Phase II	Blacks Fork-Quarry Creek	No Allotment	Private	15N	116W	27
931	Unknown	ACE Mapscan	Dry	Potential		41.25	-110.50	Phase II	Blacks Fork-Quarry Creek	Nebraska Flat	Private	15N	116W	28
932	Unknown	ACE Mapscan	Wet	Yes		41.25	-110.40	Phase II	Blacks Fork-Quarry Creek	No Allotment	Private	15N	115W	29
933	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.25	-110.71	Phase II	Antelope Creek	Myers	Private	15N	118W	27
934	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.25	-110.70	Phase II	Antelope Creek	Myers	Private	15N	118W	27
935	Unknown	ACE Mapscan	Dry	No	BREACHED	41.25	-110.74	Phase II	Upper Albert Creek	Altamont	Private	15N	118W	29
936	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.25	-110.72	Phase II	Antelope Creek	Myers	Private	15N	118W	28
937	Unknown	ACE Mapscan	Dry	Potential		41.25	-110.70	Phase II	Antelope Creek	Myers	Private	15N	118W	27
938	Unknown	ACE Mapscan	Wet	Yes		41.25	-110.71	Phase II	Antelope Creek	Myers	Private	15N	118W	27
939	Unknown	ACE Mapscan	Wet	Yes		41.25	-110.32	Phase II	Upper Smiths Fork	No Allotment	Private	15N	115W	25
940	Unknown	ACE Mapscan	Wet	Yes		41.25	-110.46	Phase II	Blacks Fork-Quarry Creek	No Allotment	Private	15N	116W	26
941	Unknown	ACE Mapscan	Wet	Yes		41.25	-110.34	Phase II	Upper Smiths Fork	No Allotment	Private	15N	115W	26
942	Unknown	ACE Mapscan	Wet	Yes		41.25	-110.52	Phase II	Blacks Fork-Quarry Creek	No Allotment	Private	15N	116W	29
943	Unknown	ACE Mapscan	Wet	Yes		41.25	-110.52	Phase II	Blacks Fork-Quarry Creek	Nebraska Flat	Private	15N	116W	29
944	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.25	-110.73	Phase II	Upper Albert Creek	The Boilers Draw	BLM	15N	118W	28
945	Unknown	ACE Mapscan	Wet	Yes		41.25	-110.36	Phase II	Upper Smiths Fork	No Allotment	Private	15N	115W	27
946	Unknown	ACE Mapscan	Dry	Potential		41.25	-110.51	Phase II	Blacks Fork-Quarry Creek	Nebraska Flat	Private	15N	116W	28
947	Unknown	ACE Mapscan	Wet	Yes		41.25	-110.39	Phase II	Upper Smiths Fork	No Allotment	Private	15N	115W	28
948	Unknown	ACE Mapscan	Wet	Yes		41.25	-110.32	Phase II	Upper Smiths Fork	No Allotment	Private	15N	115W	25
949	Unknown	ACE Mapscan	Wet	Yes		41.24	-110.44	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	15N	116W	25

ACE ID	Name	Source	Condition	Water Source	Notes	Lattitude	Longitude	Phase	HUC 12 Name	Allotment	Land Owner	T	R	S
950	Unknown	ACE Mapscan	Wet	Yes		41.24	-110.48	Phase II	Blacks Fork-Sixmile Creek	Nebraska Flat	Private	15N	116W	34
951	Unknown	ACE Mapscan	Wet	Yes		41.24	-110.53	Phase II	Blacks Fork-Quarry Creek	Spring Creek	Private	15N	116W	31
952	Unknown	ACE Mapscan	Wet	Yes		41.24	-110.47	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	15N	116W	34
953	Unknown	ACE Mapscan	Dry	Potential		41.24	-110.58	Phase II	Muddy Creek-Mussleman Creek	Little Creek	Private	15N	117W	35
954	Unknown	ACE Mapscan	Wet	Yes		41.24	-110.39	Phase II	Upper Smiths Fork	No Allotment	Private	15N	115W	33
955	Unknown	ACE Mapscan	Wet	Yes		41.24	-110.31	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	31
956	Unknown	ACE Mapscan	Wet	Yes		41.24	-110.37	Phase II	Upper Smiths Fork	No Allotment	Private	15N	115W	34
957	Unknown	ACE Mapscan	Wet	Yes		41.24	-110.39	Phase II	Upper Smiths Fork	No Allotment	Private	15N	115W	32
958	Unknown	ACE Mapscan	Wet	Yes		41.24	-110.33	Phase II	Upper Smiths Fork	No Allotment	Private	15N	115W	36
959	Unknown	ACE Mapscan	Dry	No	BREACHED	41.24	-110.23	Phase II	Leavitt Creek	Little Dry Creek	BLM	15N	114W	35
960	Unknown	ACE Mapscan	Wet	Yes		41.24	-110.46	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	15N	116W	35
961	Unknown	ACE Mapscan	Dry	No	BREACHED	41.24	-110.80	Phase II	Upper Albert Creek	No Allotment	Private	15N	119W	35
962	Unknown	ACE Mapscan	Wet	Yes		41.24	-110.54	Phase II	Rock Creek-Spring Creek	Spring Creek	Private	15N	116W	31
963	Unknown	ACE Mapscan	Wet	Yes		41.24	-110.40	Phase II	Upper Smiths Fork	No Allotment	Private	15N	115W	32
964	Unknown	ACE Mapscan	Wet	Yes		41.24	-110.55	Phase II	Muddy Creek-Mussleman Creek	Spring Creek	State of Wyoming	15N	117W	36
965	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.24	-110.66	Phase II	Antelope Creek	Meeks Cabin	Private	15N	117W	31
966	Unknown	ACE Mapscan	Wet	Yes		41.24	-110.48	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	15N	116W	34
967	Unknown	ACE Mapscan	Wet	Yes		41.24	-110.36	Phase II	Upper Smiths Fork	No Allotment	Private	15N	115W	34
968	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.24	-110.66	Phase II	Antelope Creek	Meeks Cabin	Private	15N	118W	36
969	Unknown	ACE Mapscan	Dry	No	BREACHED	41.23	-110.15	Phase III	Big Dry Creek-Shurtliff Spring	Lyman Cattle	BLM	15N	113W	33
970	Unknown	ACE Mapscan	Dry	Potential		41.23	-110.50	Phase II	Blacks Fork-Quarry Creek	No Allotment	Private	15N	116W	33
971	Unknown	ACE Mapscan	Wet	Yes		41.23	-110.45	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	15N	116W	35
972	Unknown	ACE Mapscan	Wet	Yes		41.23	-110.40	Phase II	Upper Smiths Fork	No Allotment	Private	15N	115W	32
973	Unknown	ACE Mapscan	Dry	No	BREACHED	41.23	-110.32	Phase II	Upper Smiths Fork	No Allotment	Private	15N	115W	36
974	Unknown	ACE Mapscan	Wet	Yes		41.23	-110.50	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	15N	116W	33
975	Unknown	ACE Mapscan	Wet	Yes		41.23	-110.47	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	15N	116W	34
976	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.23	-110.81	Phase II	Upper Albert Creek	No Allotment	Private	15N	119W	35
977	Unknown	ACE Mapscan	Wet	Yes		41.23	-110.49	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	15N	116W	34
978	Unknown	ACE Mapscan	Dry	Potential		41.23	-110.30	Phase II	Little Dry Creek-Smiths Fork	Jackman	Private	15N	114W	31
979	Unknown	ACE Mapscan	Wet	Yes		41.23	-110.32	Phase II	Upper Smiths Fork	Upper Flat	Private	15N	115W	36
980	Unknown	ACE Mapscan	Wet	Yes		41.23	-110.48	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	15N	116W	34
981	Unknown	ACE Mapscan	Wet	Yes		41.23	-110.32	Phase II	Upper Smiths Fork	Upper Flat	Private	15N	115W	36
982	Unknown	ACE Mapscan	Wet	Yes		41.23	-110.41	Phase II	Upper Smiths Fork	No Allotment	Private	15N	115W	32
983	Unknown	ACE Mapscan	Dry	No	BREACHED	41.23	-110.79	Phase II	Upper Albert Creek	No Allotment	State of Wyoming	15N	119W	36
984	Unknown	ACE Mapscan	Wet	Yes		41.23	-110.36	Phase II	Upper Smiths Fork	No Allotment	Private	15N	115W	34
985	Unknown	ACE Mapscan	Wet	Yes		41.23	-110.47	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	15N	116W	34
986	Unknown	ACE Mapscan	Wet	Yes		41.23	-110.37	Phase II	Upper Smiths Fork	No Allotment	Private	15N	115W	34
987	Unknown	ACE Mapscan	Wet	Yes		41.23	-110.46	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	14N	116W	2
988	Unknown	ACE Mapscan	Wet	Yes		41.23	-110.36	Phase II	Upper Smiths Fork	No Allotment	Private	14N	115W	3
989	Cottonwood Reservoir	ACE Mapscan	Wet	Yes		41.23	-110.18	Phase II	Lower Cottonwood Creek-Blacks Fork	Lyman Cattle	BLM	14N	113W	5
990	Unknown	ACE Mapscan	Wet	Yes		41.23	-110.37	Phase II	Upper Smiths Fork	No Allotment	Private	14N	115W	3
991	Unknown	ACE Mapscan	Dry	No	breached	41.23	-109.66	Phase III	Flaming Gorge Reservoir-Buckboard Reservoir	Cedar Mountain	BLM	14N	109W	2
992	Unknown	ACE Mapscan	Wet	Yes		41.23	-110.50	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	14N	116W	4
993	Unknown	ACE Mapscan	Wet	Yes		41.23	-110.44	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	14N	116W	1
994	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.23	-110.63	Phase II	Muddy Creek-Little Creek	Meeks Cabin	Private	14N	117W	5
995	Unknown	ACE Mapscan	Wet	Yes		41.23	-110.45	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	14N	116W	2
996	Unknown	ACE Mapscan	Wet	Yes		41.23	-110.36	Phase II	Upper Smiths Fork	No Allotment	Private	14N	115W	3
997	Unknown	ACE Mapscan	Wet	Yes		41.23	-110.35	Phase II	Upper Smiths Fork	No Allotment	Private	14N	115W	2
998	Unknown	ACE Mapscan	Dry	Potential		41.22	-110.35	Phase II	Upper Smiths Fork	No Allotment	Private	14N	115W	2
999	Unknown	ACE Mapscan	Wet	Yes		41.22	-110.47	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	14N	116W	2
1000	Unknown	ACE Mapscan	Wet	Yes		41.22	-110.33	Phase II	Upper Smiths Fork	Upper Flat	Private	14N	115W	1
1001	Unknown	ACE Mapscan	Wet	Yes		41.22	-110.49	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	14N	116W	4
1002	Unknown	ACE Mapscan	Wet	Yes		41.22	-110.44	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	14N	116W	1
1003	Unknown	ACE Mapscan	Wet	Yes		41.22	-110.66	Phase II	Antelope Creek	Meeks Cabin	Private	14N	117W	6
1004	Unknown	ACE Mapscan	Wet	Yes		41.22	-110.44	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	14N	116W	1
1005	Unknown	ACE Mapscan	Wet	Yes		41.22	-110.44	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	14N	116W	1
1006	Unknown	ACE Mapscan	Wet	Yes		41.22	-110.80	Phase II	Upper Albert Creek	No Allotment	Private	14N	119W	2
1007	Unknown	ACE Mapscan	Wet	Yes		41.22	-110.44	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	14N	116W	1
1008	Unknown	ACE Mapscan	Wet	Yes		41.22	-110.36	Phase II	Upper Smiths Fork	No Allotment	Private	14N	115W	3
1009	Unknown	ACE Mapscan	Wet	Yes		41.22	-110.45	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	14N	116W	1
1010	Unknown	ACE Mapscan	Wet	Yes		41.22	-110.44	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	14N	116W	1
1011	Unknown	ACE Mapscan	Wet	Yes		41.22	-110.44	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	14N	116W	1
1012	Unknown	ACE Mapscan	Wet	Yes		41.22	-110.01	Phase III	Big Dry Creek-Cattail Draw	Sage Creek Mountain	BLM	14N	112W	2
1013	Unknown	ACE Mapscan	Wet	Yes		41.22	-110.33	Phase II	Little Dry Creek-Smiths Fork	Upper Flat	Private	14N	115W	1
1014	Unknown	ACE Mapscan	Wet	Yes		41.22	-110.44	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	14N	116W	1
1015	Unknown	ACE Mapscan	Dry	Potential		41.22	-110.55	Phase II	Muddy Creek-Little Creek	Spring Creek	Private	14N	117W	1
1016	Whiskey Reservoir	ACE Mapscan	Dry	Potential		41.22	-110.17	Phase III	Big Dry Creek-Shurtliff Spring	Lyman Cattle	BLM	14N	113W	5
1017	Unknown	ACE Mapscan	Wet	Yes		41.22	-110.38	Phase II	Upper Smiths Fork	No Allotment	Private	14N	115W	4
1018	Calamagrottis	ACE Mapscan	Dry	No	Breached	41.22	-109.98	Phase III	Big Dry Creek-Cattail Draw	Sage Creek Mountain	BLM	14N	111W	6
1019	Unknown	ACE Mapscan	Wet	Yes		41.22	-110.38	Phase II	Upper Smiths Fork	No Allotment	Private	14N	115W	4
1020	Unknown	ACE Mapscan	Wet	Yes		41.22	-110.39	Phase II	Upper Smiths Fork	No Allotment	Private	14N	115W	4
1021	Unknown	ACE Mapscan	Wet	Yes		41.22	-110.35	Phase II	Upper Smiths Fork	Tipperary	Private	14N	115W	2
1022	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.22	-110.70	Phase II	Muddy Creek-Little Creek	Myers	BLM	14N	118W	2

ACE ID	Name	Source	Condition	Water Source	Notes	Lattitude	Longitude	Phase	HUC 12 Name	Allotment	Land Owner	T	R	S
1023	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.21	-110.70	Phase II	Muddy Creek-Little Creek	Myers	BLM	14N	118W	2
1024	Unknown	ACE Mapscan	Wet	Yes		41.21	-110.63	Phase II	Muddy Creek-Little Creek	Meeks Cabin	Private	14N	117W	8
1025	Unknown	ACE Mapscan	Wet	Yes		41.21	-110.54	Phase II	Blacks Fork-Sixmile Creek	Spring Creek	Private	14N	116W	7
1026	Unknown	ACE Mapscan	Wet	Yes		41.21	-110.80	Phase II	Upper Albert Creek	Altamont	Private	14N	119W	11
1027	Unknown	ACE Mapscan	Dry	No	BREACHED	41.21	-110.52	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	14N	116W	8
1028	Unknown	ACE Mapscan	Wet	Yes		41.21	-110.38	Phase II	Upper Smiths Fork	No Allotment	Private	14N	115W	9
1029	Unknown	ACE Mapscan	Dry	Potential		41.21	-110.66	Phase II	Muddy Creek-Little Creek	Meeks Cabin	BLM	14N	118W	12
1030	Unknown	ACE Mapscan	Wet	Yes		41.21	-110.36	Phase II	Upper Smiths Fork	No Allotment	Private	14N	115W	10
1031	Unknown	ACE Mapscan	Wet	Yes		41.21	-110.38	Phase II	Upper Smiths Fork	No Allotment	Private	14N	115W	9
1032	Little Piedmont Reservoir	ACE Mapscan	Wet	Yes		41.21	-110.62	Phase II	Muddy Creek-Little Creek	Meeks Cabin	Private	14N	117W	8
1033	Unknown	ACE Mapscan	Wet	Yes		41.21	-110.38	Phase II	Upper Smiths Fork	No Allotment	Private	14N	115W	9
1034	Unknown	ACE Mapscan	Wet	Yes		41.21	-110.35	Phase II	Upper Smiths Fork	Tipperary	Private	14N	115W	11
1035	Unknown	ACE Mapscan	Wet	Yes		41.21	-110.36	Phase II	Upper Smiths Fork	No Allotment	Private	14N	115W	10
1036	Unknown	ACE Mapscan	Wet	Yes		41.20	-110.37	Phase II	Upper Smiths Fork	No Allotment	Private	14N	115W	10
1037	Unknown	ACE Mapscan	Wet	Yes		41.20	-110.37	Phase II	Upper Smiths Fork	No Allotment	Private	14N	115W	10
1038	Unknown	ACE Mapscan	Wet	Yes		41.20	-110.36	Phase II	Upper Smiths Fork	No Allotment	Private	14N	115W	10
1039	Unknown	ACE Mapscan	Wet	Yes		41.20	-110.38	Phase II	Upper Smiths Fork	No Allotment	Private	14N	115W	9
1040	Unknown	ACE Mapscan	Wet	Yes		41.20	-110.36	Phase II	Upper Smiths Fork	No Allotment	Private	14N	115W	10
1041	Unknown	ACE Mapscan	Wet	Yes		41.20	-110.42	Phase II	Upper Smiths Fork	No Allotment	Private	14N	115W	7
1042	Unknown	ACE Mapscan	Dry	Potential		41.20	-110.70	Phase II	Muddy Creek-Little Creek	Myers	Private	14N	118W	10
1043	Unknown	ACE Mapscan	Wet	Yes		41.20	-110.68	Phase II	Muddy Creek-Little Creek	Meeks Cabin	Private	14N	118W	12
1044	Unknown	ACE Mapscan	Wet	Yes		41.20	-110.76	Phase II	Antelope Creek	Aspen	Private	14N	118W	7
1045	Unknown	ACE Mapscan	Wet	Yes		41.20	-110.37	Phase II	Upper Smiths Fork	No Allotment	Private	14N	115W	15
1046	Unknown	ACE Mapscan	Wet	Yes		41.20	-110.51	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	14N	116W	16
1047	Unknown	ACE Mapscan	Wet	Yes		41.20	-110.71	Phase II	Muddy Creek-Little Creek	Myers	Private	14N	118W	15
1048	Unknown	ACE Mapscan	Wet	Yes		41.20	-110.48	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	14N	116W	15
1049	Unknown	ACE Mapscan	Dry	No	BREACHED	41.20	-110.32	Phase II	Little Dry Creek-Smiths Fork	Gourley	Private	14N	115W	13
1050	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.20	-110.62	Phase II	Muddy Creek-Little Creek	No Allotment	State of Wyoming	14N	117W	16
1051	Unknown	ACE Mapscan	Wet	Yes		41.20	-110.44	Phase II	Upper Smiths Fork	No Allotment	Private	14N	116W	13
1052	Unknown	ACE Mapscan	Dry	No	BREACHED	41.20	-110.69	Phase II	Muddy Creek-Little Creek	Meeks Cabin	State of Wyoming	14N	118W	14
1053	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.20	-110.60	Phase II	Muddy Creek-Little Creek	No Allotment	Private	14N	117W	15
1054	Unknown	ACE Mapscan	Wet	Yes		41.19	-110.42	Phase II	Upper Smiths Fork	No Allotment	Private	14N	115W	18
1055	Unknown	ACE Mapscan	Wet	Yes		41.19	-110.42	Phase II	Upper Smiths Fork	No Allotment	Private	14N	115W	18
1056	Unknown	ACE Mapscan	Wet	Yes		41.19	-110.37	Phase II	Upper Smiths Fork	No Allotment	Private	14N	115W	15
1057	Unknown	ACE Mapscan	Wet	Yes		41.19	-110.38	Phase II	Upper Smiths Fork	No Allotment	Private	14N	115W	16
1058	Unknown	ACE Mapscan	Dry	No	BREACHED	41.19	-110.59	Phase II	Muddy Creek-Little Creek	No Allotment	Private	14N	117W	15
1059	Unknown	ACE Mapscan	Wet	Yes		41.19	-110.55	Phase II	Muddy Creek-Little Creek	No Allotment	Private	14N	117W	13
1060	Unknown	ACE Mapscan	Wet	Yes		41.19	-110.75	Phase II	Antelope Creek	Myers	Private	14N	118W	17
1061	Unknown	ACE Mapscan	Wet	Yes		41.19	-110.75	Phase II	Antelope Creek	Myers	Private	14N	118W	17
1062	Unknown	ACE Mapscan	Wet	Yes		41.19	-110.44	Phase II	Willow Creek-Yellow Hollow Creek	No Allotment	Private	14N	116W	13
1063	Unknown	ACE Mapscan	Dry	No	BREACHED, LOOK PURPOSELY BREACHED TO DIRECT WATER IN CERTAIN DIRECTIONS	41.19	-110.34	Phase II	Little Dry Creek-Smiths Fork	Gourley	Private	14N	115W	14
1064	Unknown	ACE Mapscan	Wet	Yes		41.19	-110.47	Phase II	Upper Smiths Fork	No Allotment	Private	14N	116W	14
1065	Unknown	ACE Mapscan	Wet	Yes		41.19	-110.39	Phase II	Upper Smiths Fork	No Allotment	Private	14N	115W	16
1066	Unknown	ACE Mapscan	Dry	Potential		41.19	-110.55	Phase II	Muddy Creek-Little Creek	No Allotment	Private	14N	117W	13
1067	Unknown	ACE Mapscan	Wet	Yes		41.19	-110.45	Phase II	Willow Creek-Yellow Hollow Creek	No Allotment	Private	14N	116W	13
1068	Unknown	ACE Mapscan	Wet	Yes		41.19	-110.34	Phase II	Little Dry Creek-Smiths Fork	Gourley	Private	14N	115W	14
1069	Unknown	ACE Mapscan	Wet	Yes		41.19	-110.37	Phase II	Upper Smiths Fork	No Allotment	Private	14N	115W	15
1070	Unknown	ACE Mapscan	Dry	No	BREACHED, LOOK PURPOSELY BREACHED TO DIRECT WATER IN CERTAIN DIRECTIONS	41.19	-110.35	Phase II	Little Dry Creek-Smiths Fork	Gourley	Private	14N	115W	23
1071	Unknown	ACE Mapscan	Wet	Yes		41.19	-110.40	Phase II	Upper Smiths Fork	No Allotment	Private	14N	115W	20
1072	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.19	-110.62	Phase II	Muddy Creek-Little Creek	Moss Creek	Private	14N	117W	21
1073	Unknown	ACE Mapscan	Dry	No	BREACHED, LOOK PURPOSELY BREACHED TO DIRECT WATER IN CERTAIN DIRECTIONS	41.19	-110.34	Phase II	Little Dry Creek-Smiths Fork	Gourley	Private	14N	115W	23
1074	Unknown	ACE Mapscan	Wet	Yes		41.18	-110.40	Phase II	Upper Smiths Fork	No Allotment	Private	14N	115W	20
1075	Unknown	ACE Mapscan	Wet	Yes		41.18	-110.46	Phase II	Upper Smiths Fork	No Allotment	Private	14N	116W	23
1076	Unknown	ACE Mapscan	Wet	Yes		41.18	-110.47	Phase II	Upper Smiths Fork	No Allotment	Private	14N	116W	23
1077	Piedmont Reservoir	ACE Mapscan	Wet	Yes		41.18	-110.65	Phase II	Muddy Creek-Little Creek	Meeks Cabin	Private	14N	117W	19
1078	Box Spring Reservoir	ACE Mapscan	Wet	Yes		41.18	-109.97	Phase III	Big Dry Creek-Cattail Draw	Sage Creek Mountain	BLM	14N	111W	19
1079	Unknown	ACE Mapscan	Dry	No	BREACHED	41.18	-110.76	Phase II	Antelope Creek	Myers	Private	14N	118W	19
1080	Unknown	ACE Mapscan	Wet	Yes		41.18	-110.46	Phase II	Willow Creek-Yellow Hollow Creek	No Allotment	Private	14N	116W	23
1081	Unknown	ACE Mapscan	Dry	Potential		41.18	-110.60	Phase II	Muddy Creek-Little Creek	No Allotment	Private	14N	117W	22
1082	Unknown	ACE Mapscan	Wet	Yes		41.18	-110.45	Phase II	Willow Creek-Yellow Hollow Creek	No Allotment	Private	14N	116W	23
1083	Unknown	ACE Mapscan	Wet	Yes		41.18	-110.40	Phase II	Upper Smiths Fork	No Allotment	Private	14N	115W	20
1084	Unknown	ACE Mapscan	Dry	No	BREACHED, LOOK PURPOSELY BREACHED TO DIRECT WATER IN CERTAIN DIRECTIONS	41.18	-110.35	Phase II	Little Dry Creek-Smiths Fork	Gourley	Private	14N	115W	23
1085	Unknown	ACE Mapscan	Wet	Yes		41.18	-110.38	Phase II	Upper Smiths Fork	No Allotment	Private	14N	115W	21
1086	Unknown	ACE Mapscan	Wet	Yes		41.18	-110.56	Phase II	Muddy Creek-Little Creek	Hague Creek	BLM	14N	117W	24
1087	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.18	-110.71	Phase II	Muddy Creek-Little Creek	Meeks Cabin	BLM	14N	118W	22
1088	Unknown	ACE Mapscan	Dry	No	BREACHED, LOOK PURPOSELY BREACHED TO DIRECT WATER IN CERTAIN DIRECTIONS	41.18	-110.35	Phase II	Little Dry Creek-Smiths Fork	Gourley	Private	14N	115W	23
1089	Unknown	ACE Mapscan	Dry	No	BREACHED	41.18	-110.69	Phase II	Muddy Creek-Little Creek	Meeks Cabin	Private	14N	118W	23
1090	Unknown	ACE Mapscan	Wet	Yes		41.18	-110.46	Phase II	Willow Creek-Yellow Hollow Creek	No Allotment	Private	14N	116W	23
1091	Unknown	ACE Mapscan	Dry	No	BREACHED	41.18	-110.61	Phase II	Muddy Creek-Little Creek	Moss Creek	Private	14N	117W	21
1092	Unknown	ACE Mapscan	Wet	Yes		41.18	-110.40	Phase II	Upper Smiths Fork	Coyote Hollow	Private	14N	115W	20
1093	Unknown	ACE Mapscan	Wet	Yes		41.18	-110.46	Phase II	Willow Creek-Yellow Hollow Creek	No Allotment	Private	14N	116W	23
1094	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.17	-110.40	Phase II	Upper Smiths Fork	Coyote Hollow	Private	14N	115W	20
1095	Unknown	ACE Mapscan	Wet	Yes		41.17	-110.05	Phase III	Dry Creek-Big Hollow Creek	Sage Creek Mountain	BLM	14N	112W	28

ACE ID	Name	Source	Condition	Water Source	Notes	Lattitude	Longitude	Phase	HUC 12 Name	Allotment	Land Owner	T	R	S
1096	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.17	-110.68	Phase II	Muddy Creek-Little Creek	Meeks Cabin	Private	14N	118W	26
1097	Unknown	ACE Mapscan	Wet	Yes		41.17	-110.44	Phase II	Upper Smiths Fork	No Allotment	Private	14N	116W	25
1098	Unknown	ACE Mapscan	Wet	Yes		41.17	-110.43	Phase II	Upper Smiths Fork	No Allotment	Private	14N	115W	30
1099	Unknown	ACE Mapscan	Dry	No	BREACHED	41.17	-110.71	Phase II	Muddy Creek-Little Creek	Mosslander Ranch	Private	14N	118W	27
1100	Unknown	ACE Mapscan	Dry	Potential		41.17	-110.45	Phase II	Willow Creek-Yellow Hollow Creek	No Allotment	Private	14N	116W	26
1101	Unknown	ACE Mapscan	Wet	Yes		41.17	-110.49	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	14N	116W	28
1102	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.17	-110.41	Phase II	Upper Smiths Fork	Coyote Hollow	Private	14N	115W	29
1103	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.17	-110.69	Phase II	Muddy Creek-Little Creek	Meeks Cabin	State of Wyoming	14N	118W	26
1104	Unknown	ACE Mapscan	Wet	Yes		41.17	-110.16	Phase II	Sage Creek-Reed Reservoir	Currently No Name	BLM	14N	113W	28
1105	Unknown	ACE Mapscan	Dry	Potential		41.17	-110.30	Phase II	Upper Cottonwood Creek-Blacks Fork	Leavitt Bench	BLM	14N	114W	30
1106	Unknown	ACE Mapscan	Wet	Yes		41.17	-110.43	Phase II	Upper Smiths Fork	No Allotment	Private	14N	115W	30
1107	Unknown	ACE Mapscan	Dry	Potential		41.16	-110.46	Phase II	Willow Creek-Yellow Hollow Creek	No Allotment	Private	14N	116W	26
1108	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.16	-109.88	Phase III	Little Dry Creek-Lane Meadow Creek	Currently No Name	Private	14N	111W	25
1109	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.16	-110.70	Phase II	Muddy Creek-Little Creek	Meeks Cabin	State of Wyoming	14N	118W	26
1110	Unknown	ACE Mapscan	Wet	Yes		41.16	-109.96	Phase III	Winter Fat Reservoir	Cedar Mountain	BLM	14N	111W	29
1111	Unknown	ACE Mapscan	Wet	Yes		41.16	-110.42	Phase II	Upper Smiths Fork	Smiths Fork	Private	14N	115W	30
1112	Guild Reservoir	ACE Mapscan	Wet	Yes		41.16	-110.67	Phase II	West Muddy Creek	Meeks Cabin	Private	14N	118W	25
1113	Ringdahl Reservoir	ACE Mapscan	Wet	Yes		41.16	-109.96	Phase III	Winter Fat Reservoir	Cedar Mountain	BLM	14N	111W	32
1114	Unknown	ACE Mapscan	Wet	Yes		41.15	-110.68	Phase II	West Muddy Creek	Van Tassel	Private	14N	118W	35
1115	Unknown	ACE Mapscan	Dry	Potential		41.15	-110.47	Phase II	Willow Creek-Yellow Hollow Creek	No Allotment	BLM	14N	116W	35
1116	Unknown	ACE Mapscan	Wet	Yes		41.15	-110.69	Phase II	West Muddy Creek	Mosslander Ranch	Private	14N	118W	35
1117	Byrne Reservoir	ACE Mapscan	Wet	Yes		41.15	-110.68	Phase II	West Muddy Creek	Van Tassel	State of Wyoming	14N	118W	36
1118	Unknown	ACE Mapscan	Wet	Yes		41.15	-110.11	Phase III	Dry Creek-Balsam Root Reservoir	Currently No Name	Private	14N	113W	35
1119	Unknown	ACE Mapscan	Wet	Yes		41.15	-110.11	Phase III	Dry Creek-Balsam Root Reservoir	Currently No Name	Private	14N	113W	35
1120	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.15	-110.64	Phase II	East Muddy Creek	Van Tassel	Private	14N	117W	31
1121	Unknown	ACE Mapscan	Wet	Yes		41.15	-110.66	Phase II	West Muddy Creek	Van Tassel	State of Wyoming	14N	118W	36
1122	Unknown	ACE Mapscan	Dry	Potential		41.14	-110.27	Phase II	Sage Creek-Reed Reservoir	Sage Creek	BLM	13N	114W	4
1123	Unknown	ACE Mapscan	Wet	Yes		41.14	-110.11	Phase III	Dry Creek-Big Hollow Creek	Sage Creek Mountain	BLM	13N	113W	2
1124	Unknown	ACE Mapscan	Wet	Yes		41.14	-110.67	Phase II	West Muddy Creek	Van Tassel	Private	13N	118W	1
1125	Unknown	ACE Mapscan	Wet	Yes		41.14	-110.59	Phase II	Blacks Fork-Sixmile Creek	Van Tassel	Private	13N	117W	3
1126	Unknown	ACE Mapscan	Dry	Potential		41.14	-110.59	Phase II	Blacks Fork-Sixmile Creek	Van Tassel	Private	13N	117W	3
1127	Unknown	ACE Mapscan	Wet	Yes		41.13	-110.42	Phase II	Upper Smiths Fork	Smiths Fork	Private	13N	115W	6
1128	Unknown	ACE Mapscan	Wet	Yes		41.13	-110.43	Phase II	Upper Smiths Fork	Smiths Fork	Private	13N	115W	6
1129	Unknown	ACE Mapscan	Wet	Yes		41.13	-109.93	Phase III	Little Dry Creek-Lane Meadow Creek	Cedar Mountain	Private	13N	111W	4
1130	Unknown	ACE Mapscan	Wet	Yes		41.13	-110.60	Phase II	Muddy Creek-Little Creek	Van Tassel	Private	13N	117W	3
1131	Unknown	ACE Mapscan	Wet	Yes		41.13	-110.61	Phase II	Muddy Creek-Little Creek	Van Tassel	Private	13N	117W	4
1132	Unknown	ACE Mapscan	Wet	Yes		41.13	-109.88	Phase III	Little Dry Creek-Lane Meadow Creek	Cedar Mountain	BLM	13N	111W	12
1133	Unknown	ACE Mapscan	Wet	Yes		41.13	-110.38	Phase II	Little Dry Creek-Smiths Fork	Rocky Springs	BLM	13N	115W	4
1134	Unknown	ACE Mapscan	Wet	Yes		41.13	-110.39	Phase II	Upper Smiths Fork	Smith	Private	13N	115W	4
1135	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.13	-110.32	Phase II	Leavitt Creek	Sage Creek	BLM	13N	115W	12
1136	Unknown	ACE Mapscan	Wet	Yes		41.12	-110.42	Phase II	Upper Smiths Fork	Smiths Fork	Private	13N	115W	7
1137	Unknown	ACE Mapscan	Wet	Yes		41.12	-110.59	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	13N	117W	10
1138	Unknown	ACE Mapscan	Wet	Yes		41.12	-110.59	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	13N	117W	10
1139	Unknown	ACE Mapscan	Wet	Yes		41.12	-110.60	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	13N	117W	10
1140	Unknown	ACE Mapscan	Wet	Yes		41.12	-110.57	Phase II	Blacks Fork-Sixmile Creek	Bigelow Ditch	Private	13N	117W	11
1141	Unknown	ACE Mapscan	Wet	Yes		41.12	-110.33	Phase II	Leavitt Creek	Sage Creek	Private	13N	115W	12
1142	Unknown	ACE Mapscan	Wet	Yes		41.12	-110.53	Phase II	Blacks Forks-Meeks Cabin Reservoir	No Allotment	Private	13N	116W	8
1143	Unknown	ACE Mapscan	Wet	Yes		41.12	-110.42	Phase II	Upper Smiths Fork	No Allotment	Private	13N	115W	7
1144	Unknown	ACE Mapscan	Wet	Yes		41.12	-110.60	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	13N	117W	10
1145	Unknown	ACE Mapscan	Wet	Yes		41.12	-110.60	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	13N	117W	10
1146	Unknown	ACE Mapscan	Wet	Yes		41.12	-110.49	Phase II	Willow Creek-Yellow Hollow Creek	Yellow Hollow Creek	Private	13N	116W	10
1147	Unknown	ACE Mapscan	Wet	Yes		41.12	-110.43	Phase II	Upper Smiths Fork	Smiths Fork	Private	13N	115W	7
1148	Unknown	ACE Mapscan	Wet	Yes		41.12	-110.63	Phase II	East Muddy Creek	Van Tassel	BLM	13N	117W	8
1149	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.12	-109.90	Phase III	Little Dry Creek-Lane Meadow Creek	Cedar Mountain	BLM	13N	111W	11
1150	Unknown	ACE Mapscan	Wet	Yes		41.11	-110.42	Phase II	Upper Smiths Fork	No Allotment	Private	13N	115W	7
1151	Unknown	ACE Mapscan	Wet	Yes		41.11	-110.59	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	13N	117W	10
1152	Unknown	ACE Mapscan	Wet	Yes		41.11	-110.57	Phase II	Blacks Fork-Sixmile Creek	Bigelow Ditch	Private	13N	117W	11
1153	Unknown	ACE Mapscan	Wet	Yes		41.11	-110.59	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	13N	117W	15
1154	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.11	-110.70	Phase II	West Muddy Creek	Mosslander Ranch	Private	13N	118W	15
1155	Unknown	ACE Mapscan	Dry	Potential	Pipeline leading to it from spring	41.11	-109.88	Phase III	Little Dry Creek-Lane Meadow Creek	Cedar Mountain	BLM	13N	111W	13
1156	Unknown	ACE Mapscan	Wet	Yes		41.11	-110.57	Phase II	Blacks Fork-Sixmile Creek	Bigelow Ditch	Private	13N	117W	14
1157	Unknown	ACE Mapscan	Wet	Yes		41.11	-110.61	Phase II	Muddy Creek-Little Creek	Van Tassel	State of Wyoming	13N	117W	16
1158	Unknown	ACE Mapscan	Wet	Yes		41.11	-110.49	Phase II	Willow Creek-Yellow Hollow Creek	Yellow Hollow Creek	State of Wyoming	13N	116W	16
1159	Unknown	ACE Mapscan	Dry	Potential		41.10	-110.66	Phase II	East Muddy Creek	No Allotment	Private	13N	118W	13
1160	Unknown	ACE Mapscan	Wet	Yes		41.10	-110.51	Phase II	Willow Creek-Yellow Hollow Creek	South Horse Creek	BLM	13N	116W	17
1161	Murray Reservoir	ACE Mapscan	Wet	Yes		41.10	-110.40	Phase II	Upper Smiths Fork	Murray Reservoir	BLM	13N	115W	17
1162	Unknown	ACE Mapscan	Wet	Yes		41.10	-109.71	Phase III	Henrys Fork-Cottonwood Creek	Cedar Mountain	BLM	13N	109W	17
1163	Unknown	ACE Mapscan	Wet	Yes		41.10	-110.46	Phase II	Upper Smiths Fork	Willow Creek	BLM	13N	116W	14
1164	Unknown	ACE Mapscan	Wet	Yes		41.10	-110.36	Phase II	Leavitt Creek	Bench	BLM	13N	115W	15
1165	Unknown	ACE Mapscan	Wet	Yes		41.10	-110.65	Phase II	East Muddy Creek	Mosslander Ranch	Private	13N	117W	18
1166	Unknown	ACE Mapscan	Dry	Potential		41.10	-109.91	Phase III	Little Dry Creek-Lane Meadow Creek	Cedar Mountain	BLM	13N	111W	22
1167	Unknown	ACE Mapscan	Wet	Yes		41.10	-109.96	Phase III	Henrys Fork-Logan Hollow	Cedar Mountain	Private	13N	111W	19
1168	Unknown	ACE Mapscan	Wet	Yes		41.10	-110.61	Phase II	Blacks Fork-Sixmile Creek	Van Tassel	Private	13N	117W	21

ACE ID	Name	Source	Condition	Water Source	Notes	Lattitude	Longitude	Phase	HUC 12 Name	Allotment	Land Owner	T	R	S
1169	Unknown	ACE Mapscan	Wet	Yes		41.10	-110.53	Phase II	Blacks Forks-Meeks Cabin Reservoir	Horse Creek	Private	13N	116W	19
1170	Unknown	ACE Mapscan	Wet	Yes		41.10	-110.58	Phase II	Blacks Forks-Meeks Cabin Reservoir	Bigelow Ditch	Private	13N	117W	23
1171	Unknown	ACE Mapscan	Wet	Yes		41.10	-110.62	Phase II	Muddy Creek-Little Creek	Van Tassel	Private	13N	117W	21
1172	Unknown	ACE Mapscan	Wet	Yes		41.10	-110.66	Phase II	West Muddy Creek	No Allotment	Private	13N	118W	24
1173	Unknown	ACE Mapscan	Wet	Yes		41.10	-109.96	Phase III	Henrys Fork-Logan Hollow	Cedar Mountain	Private	13N	111W	19
1174	Unknown	ACE Mapscan	Wet	Yes		41.10	-109.96	Phase III	Henrys Fork-Logan Hollow	Cedar Mountain	Private	13N	111W	19
1175	Unknown	ACE Mapscan	Wet	Yes		41.10	-110.67	Phase II	West Muddy Creek	No Allotment	Private	13N	118W	24
1176	Unknown	ACE Mapscan	Wet	Yes		41.09	-110.58	Phase II	Blacks Forks-Meeks Cabin Reservoir	Bigelow Ditch	Private	13N	117W	23
1177	Unknown	ACE Mapscan	Wet	Yes		41.09	-110.58	Phase II	Blacks Forks-Meeks Cabin Reservoir	Bigelow Ditch	Private	13N	117W	23
1178	Unknown	ACE Mapscan	Dry	Potential		41.09	-110.66	Phase II	East Muddy Creek	Mosslander Ranch	Private	13N	117W	19
1179	Unknown	ACE Mapscan	Wet	Yes		41.09	-110.58	Phase II	Blacks Forks-Meeks Cabin Reservoir	Bigelow Ditch	Private	13N	117W	23
1180	Unknown	ACE Mapscan	Wet	Yes		41.09	-110.58	Phase II	Blacks Forks-Meeks Cabin Reservoir	Bigelow Ditch	Private	13N	117W	23
1181	Moslander Reservoir	ACE Mapscan	Wet	Yes		41.09	-110.72	Phase II	West Muddy Creek	Mosslander Ranch	Private	13N	118W	22
1182	Unknown	ACE Mapscan	Wet	Yes		41.09	-110.58	Phase II	Blacks Forks-Meeks Cabin Reservoir	Bigelow Ditch	Private	13N	117W	23
1183	Unknown	ACE Mapscan	Wet	Yes		41.09	-110.58	Phase II	Blacks Forks-Meeks Cabin Reservoir	Bigelow Ditch	Private	13N	117W	23
1184	Unknown	ACE Mapscan	Wet	Yes		41.09	-110.57	Phase II	Blacks Forks-Meeks Cabin Reservoir	Bigelow Ditch	Private	13N	117W	23
1185	Unknown	ACE Mapscan	Wet	Yes		41.09	-110.69	Phase II	West Muddy Creek	Mosslander Ranch	Private	13N	118W	23
1186	Unknown	ACE Mapscan	Dry	No	BREACHED	41.09	-110.70	Phase II	West Muddy Creek	Mosslander Ranch	Private	13N	118W	22
1187	Unknown	ACE Mapscan	Wet	Yes		41.09	-110.46	Phase II	Upper Smiths Fork	Willow Creek	Private	13N	116W	23
1188	Unknown	ACE Mapscan	Wet	Yes		41.09	-110.18	Phase III	Henrys Fork-Poison Creek	Hickey Mountain	BLM	13N	113W	20
1189	Unknown	ACE Mapscan	Wet	Yes		41.09	-110.63	Phase II	East Muddy Creek	Mosslander Ranch	Private	13N	117W	20
1190	Unknown	ACE Mapscan	Wet	Yes		41.09	-110.35	Phase II	Upper Cottonwood Creek-Blacks Fork	Bench	BLM	13N	115W	23
1191	Unknown	ACE Mapscan	Dry	No	Breached	41.09	-109.77	Phase III	Little Dry Creek-Lane Meadow Creek	Cedar Mountain	BLM	13N	110W	23
1192	Unknown	ACE Mapscan	Wet	Yes		41.09	-110.61	Phase II	Blacks Fork-Sixmile Creek	Van Tassel	Private	13N	117W	21
1193	Unknown	ACE Mapscan	Wet	Yes		41.09	-110.66	Phase II	East Muddy Creek	No Allotment	Private	13N	118W	24
1194	Unknown	ACE Mapscan	Wet	Yes		41.09	-110.54	Phase II	Blacks Forks-Meeks Cabin Reservoir	Horse Creek	Private	13N	116W	19
1195	Unknown	ACE Mapscan	Wet	Yes		41.09	-110.58	Phase II	Blacks Fork-Sixmile Creek	Bigelow Ditch	Private	13N	117W	23
1196	Unknown	ACE Mapscan	Dry	No	BREACHED	41.09	-110.73	Phase II	West Muddy Creek	21 Grove	Private	13N	118W	21
1197	Unknown	ACE Mapscan	Wet	Yes		41.09	-110.58	Phase II	Blacks Fork-Sixmile Creek	No Allotment	Private	13N	117W	22
1198	Unknown	ACE Mapscan	Wet	Yes		41.09	-110.40	Phase II	Upper Smiths Fork	Dutchy Hollow	BLM	13N	115W	20
1199	Unknown	ACE Mapscan	Wet	Yes		41.09	-110.54	Phase II	Blacks Forks-Meeks Cabin Reservoir	Horse Creek	Private	13N	116W	19
1200	Unknown	ACE Mapscan	Wet	Yes		41.09	-110.16	Phase III	Henrys Fork-Poison Creek	Sage Creek Mountain	BLM	13N	113W	21
1201	Unknown	ACE Mapscan	Dry	No	BREACHED	41.09	-110.50	Phase II	Willow Creek-Yellow Hollow Creek	No Allotment	Private	13N	116W	21
1202	Unknown	ACE Mapscan	Wet	Yes		41.08	-110.58	Phase II	Blacks Forks-Meeks Cabin Reservoir	Bigelow Ditch	Private	13N	117W	23
1203	Unknown	ACE Mapscan	Wet	Yes		41.08	-110.55	Phase II	Blacks Forks-Meeks Cabin Reservoir	Horse Creek	Private	13N	117W	24
1204	Unknown	ACE Mapscan	Wet	Yes		41.08	-110.58	Phase II	Blacks Forks-Meeks Cabin Reservoir	Bigelow Ditch	Private	13N	117W	26
1205	Byrne Reservoir	ACE Mapscan	Wet	Yes		41.08	-110.54	Phase II	Blacks Forks-Meeks Cabin Reservoir	Horse Creek	BLM	13N	116W	30
1206	Unknown	ACE Mapscan	Wet	Yes		41.08	-110.62	Phase II	East Muddy Creek	Van Tassel	BLM	13N	117W	28
1207	Unknown	ACE Mapscan	Wet	Yes		41.08	-110.66	Phase II	East Muddy Creek	Van Tassel	Private	13N	117W	30
1208	Unknown	ACE Mapscan	Wet	Yes		41.08	-110.61	Phase II	Blacks Fork-Sixmile Creek	Van Tassel	BLM	13N	117W	28
1209	Unknown	ACE Mapscan	Wet	Yes		41.08	-110.63	Phase II	East Muddy Creek	Van Tassel	Private	13N	117W	29
1210	Unknown	ACE Mapscan	Wet	Yes		41.08	-110.45	Phase II	West Fork Smiths Fork	Westfork	Private	13N	116W	26
1211	Unknown	ACE Mapscan	Wet	Yes		41.08	-110.47	Phase II	Upper Smiths Fork	Willow Creek	Private	13N	116W	27
1212	Unknown	ACE Mapscan	Wet	Yes		41.08	-110.59	Phase II	Blacks Fork-Sixmile Creek	Van Tassel	Private	13N	117W	27
1213	Unknown	ACE Mapscan	Dry	No	BREACHED	41.08	-110.72	Phase II	West Muddy Creek	21 Grove	Private	13N	118W	28
1214	Unknown	ACE Mapscan	Wet	Yes		41.08	-110.59	Phase II	Blacks Fork-Sixmile Creek	Van Tassel	Private	13N	117W	27
1215	Unknown	ACE Mapscan	Wet	Yes		41.08	-110.57	Phase II	Blacks Forks-Meeks Cabin Reservoir	Bigelow Ditch	Private	13N	117W	26
1216	Unknown	ACE Mapscan	Dry	No	SEDIMENT	41.08	-110.74	Phase II	West Muddy Creek	Redden Pasture	Private	13N	118W	29
1217	Unknown	ACE Mapscan	Wet	Yes		41.08	-110.55	Phase II	Blacks Forks-Meeks Cabin Reservoir	No Allotment	Private	13N	117W	25
1218	Unknown	ACE Mapscan	Wet	Yes		41.08	-110.39	Phase II	Upper Smiths Fork	Graham Reservoir	Private	13N	115W	28
1219	Unknown	ACE Mapscan	Dry	Potential		41.08	-110.47	Phase II	Upper Smiths Fork	Willow Creek	BLM	13N	116W	27
1220	Unknown	ACE Mapscan	Wet	Yes		41.07	-110.59	Phase II	Blacks Forks-Meeks Cabin Reservoir	Van Tassel	Private	13N	117W	27
1221	Unknown	ACE Mapscan	Wet	Yes		41.07	-110.54	Phase II	Blacks Forks-Meeks Cabin Reservoir	Half Sec Horse Cr	BLM	13N	116W	30
1222	Unknown	ACE Mapscan	Wet	Yes		41.07	-110.58	Phase II	Blacks Forks-Meeks Cabin Reservoir	Bigelow Ditch	Private	13N	117W	26
1223	Unknown	ACE Mapscan	Wet	Yes		41.07	-110.55	Phase II	Blacks Forks-Meeks Cabin Reservoir	No Allotment	Private	13N	117W	25
1224	Unknown	ACE Mapscan	Wet	Yes		41.07	-110.58	Phase II	Blacks Forks-Meeks Cabin Reservoir	Bigelow Ditch	Private	13N	117W	26
1225	Unknown	ACE Mapscan	Wet	Yes		41.07	-110.57	Phase II	Blacks Forks-Meeks Cabin Reservoir	Bigelow Ditch	Private	13N	117W	26
1226	Unknown	ACE Mapscan	Wet	Yes		41.07	-110.58	Phase II	Blacks Forks-Meeks Cabin Reservoir	Bigelow Ditch	Private	13N	117W	26
1227	Unknown	ACE Mapscan	Dry	No	BREACHED	41.07	-110.42	Phase II	West Fork Smiths Fork	Murray Ditch	Private	13N	115W	30
1228	Unknown	ACE Mapscan	Wet	Yes		41.07	-110.55	Phase II	Blacks Forks-Meeks Cabin Reservoir	No Allotment	Private	13N	117W	25
1229	Unknown	ACE Mapscan	Wet	Yes		41.07	-110.57	Phase II	Blacks Forks-Meeks Cabin Reservoir	Bigelow Ditch	Private	13N	117W	26
1230	Unknown	ACE Mapscan	Wet	Yes		41.07	-110.59	Phase II	Blacks Fork-Sixmile Creek	Van Tassel	Private	13N	117W	27
1231	Unknown	ACE Mapscan	Wet	Yes		41.07	-110.64	Phase II	East Muddy Creek	Van Tassel	Private	13N	117W	29
1232	Unknown	ACE Mapscan	Wet	Yes		41.07	-110.56	Phase II	Blacks Forks-Meeks Cabin Reservoir	No Allotment	Private	13N	117W	25
1233	Unknown	ACE Mapscan	Wet	Yes		41.07	-110.59	Phase II	Blacks Forks-Meeks Cabin Reservoir	Van Tassel	Private	13N	117W	27
1234	Unknown	ACE Mapscan	Wet	Yes		41.07	-110.58	Phase II	Blacks Forks-Meeks Cabin Reservoir	Bigelow Ditch	Private	13N	117W	26
1235	Unknown	ACE Mapscan	Wet	Yes		41.07	-110.58	Phase II	Blacks Forks-Meeks Cabin Reservoir	Bigelow Ditch	Private	13N	117W	26
1236	Unknown	ACE Mapscan	Wet	Yes		41.07	-110.55	Phase II	Blacks Forks-Meeks Cabin Reservoir	No Allotment	Private	13N	117W	25
1237	Unknown	ACE Mapscan	Wet	Yes		41.07	-110.55	Phase II	Blacks Forks-Meeks Cabin Reservoir	No Allotment	Private	13N	117W	25
1238	Graham Reservoir No 1	ACE Mapscan	Wet	Yes		41.07	-110.39	Phase II	Upper Smiths Fork	Graham Reservoir	Private	13N	115W	28
1239	Unknown	ACE Mapscan	Wet	Yes		41.07	-110.58	Phase II	Blacks Forks-Meeks Cabin Reservoir	Bigelow Ditch	Private	13N	117W	26
1240	Unknown	ACE Mapscan	Dry	No	Sediment and vegetation, no water storage	41.07	-109.59	Phase III	Twin Buttes Draw	No Allotment	USFS	13N	108W	33
1241	Unknown	ACE Mapscan	Wet	Yes		41.07	-110.59	Phase II	Blacks Forks-Meeks Cabin Reservoir	Balsam Draw	BLM	13N	117W	34

ACE ID	Name	Source	Condition	Water Source	Notes	Lattitude	Longitude	Phase	HUC 12 Name	Allotment	Land Owner	T	R	S
1242	Unknown	ACE Mapscan	Wet	Yes		41.07	-110.13	Phase III	Henrys Fork-Louse Creek	No Allotment	Private	13N	113W	34
1243	Unknown	ACE Mapscan	Wet	Yes		41.07	-110.72	Phase II	West Muddy Creek	No Allotment	Private	13N	118W	33
1244	Unknown	ACE Mapscan	Wet	Yes		41.07	-110.56	Phase II	Blacks Forks-Meeks Cabin Reservoir	No Allotment	State of Wyoming	13N	117W	36
1245	Unknown	ACE Mapscan	Wet	Yes		41.07	-110.43	Phase II	West Fork Smiths Fork	Gilbert Creek	USFS	13N	115W	31
1246	Unknown	ACE Mapscan	Wet	Yes		41.07	-110.58	Phase II	Blacks Forks-Meeks Cabin Reservoir	Balsam Draw	Private	13N	117W	35
1247	Unknown	ACE Mapscan	Wet	Yes		41.07	-110.56	Phase II	Blacks Forks-Meeks Cabin Reservoir	No Allotment	State of Wyoming	13N	117W	36
1248	Unknown	ACE Mapscan	Wet	Yes		41.07	-110.43	Phase II	West Fork Smiths Fork	Gilbert Creek	USFS	13N	115W	31
1249	Unknown	ACE Mapscan	Wet	Yes		41.07	-110.43	Phase II	West Fork Smiths Fork	Gilbert Creek	USFS	13N	115W	31
1250	Unknown	ACE Mapscan	Wet	Yes		41.07	-110.58	Phase II	Blacks Forks-Meeks Cabin Reservoir	Balsam Draw	Private	13N	117W	35
1251	Unknown	ACE Mapscan	Wet	Yes		41.07	-110.56	Phase II	Blacks Forks-Meeks Cabin Reservoir	No Allotment	State of Wyoming	13N	117W	36
1252	Unknown	ACE Mapscan	Wet	Yes		41.07	-110.43	Phase II	West Fork Smiths Fork	Gilbert Creek	USFS	13N	115W	31
1253	Unknown	ACE Mapscan	Wet	Yes		41.07	-110.56	Phase II	Blacks Forks-Meeks Cabin Reservoir	No Allotment	State of Wyoming	13N	117W	36
1254	Unknown	ACE Mapscan	Wet	Yes		41.06	-110.43	Phase II	West Fork Smiths Fork	Gilbert Creek	USFS	13N	116W	36
1255	Unknown	ACE Mapscan	Wet	Yes		41.06	-110.58	Phase II	Blacks Forks-Meeks Cabin Reservoir	Balsam Draw	Private	13N	117W	35
1256	Unknown	ACE Mapscan	Wet	Yes		41.06	-110.56	Phase II	Blacks Forks-Meeks Cabin Reservoir	No Allotment	State of Wyoming	13N	117W	36
1257	Unknown	ACE Mapscan	Wet	Yes		41.06	-110.42	Phase II	Gilbert Creek	Gilbert Creek	USFS	13N	115W	31
1258	Unknown	ACE Mapscan	Wet	Yes		41.06	-110.56	Phase II	Blacks Forks-Meeks Cabin Reservoir	No Allotment	State of Wyoming	13N	117W	36
1259	Unknown	ACE Mapscan	Wet	Yes		41.06	-110.52	Phase II	Willow Creek-Yellow Hollow Creek	No Allotment	Private	13N	116W	32
1260	Unknown	ACE Mapscan	Wet	Yes		41.06	-110.56	Phase II	Blacks Forks-Meeks Cabin Reservoir	No Allotment	State of Wyoming	13N	117W	36
1261	Unknown	ACE Mapscan	Wet	Yes		41.06	-110.58	Phase II	Blacks Forks-Meeks Cabin Reservoir	Balsam Draw	Private	13N	117W	35
1262	Unknown	ACE Mapscan	Wet	Yes		41.06	-110.54	Phase II	Willow Creek-Yellow Hollow Creek	West Fork Smith Fork	Private	13N	116W	31
1263	Unknown	ACE Mapscan	Wet	Yes		41.06	-110.59	Phase II	Blacks Forks-Meeks Cabin Reservoir	Balsam Draw	BLM	13N	117W	34
1264	Unknown	ACE Mapscan	Wet	Yes		41.06	-110.56	Phase II	Blacks Forks-Meeks Cabin Reservoir	No Allotment	State of Wyoming	13N	117W	36
1265	Unknown	ACE Mapscan	Wet	Yes		41.06	-110.56	Phase II	Blacks Forks-Meeks Cabin Reservoir	No Allotment	State of Wyoming	13N	117W	36
1266	Unknown	ACE Mapscan	Wet	Yes		41.06	-110.65	Phase II	East Muddy Creek	Van Tassel	Private	13N	117W	31
1267	Unknown	ACE Mapscan	Wet	Yes		41.06	-110.56	Phase II	Blacks Forks-Meeks Cabin Reservoir	No Allotment	State of Wyoming	13N	117W	36
1268	Unknown	ACE Mapscan	Wet	Yes		41.06	-110.34	Phase II	Upper Cottonwood Creek-Blacks Fork	Red Mountain	USFS	13N	115W	35
1269	Unknown	ACE Mapscan	Wet	Yes		41.06	-110.56	Phase II	Blacks Forks-Meeks Cabin Reservoir	No Allotment	State of Wyoming	13N	117W	36
1270	Unknown	ACE Mapscan	Wet	Yes		41.06	-110.56	Phase II	Blacks Forks-Meeks Cabin Reservoir	No Allotment	State of Wyoming	13N	117W	36
1271	Unknown	ACE Mapscan	Wet	Yes		41.06	-110.58	Phase II	Blacks Forks-Meeks Cabin Reservoir	Balsam Draw	Private	13N	117W	35
1272	Unknown	ACE Mapscan	Wet	Yes		41.06	-110.59	Phase II	Blacks Forks-Meeks Cabin Reservoir	Balsam Draw	BLM	13N	117W	34
1273	Unknown	ACE Mapscan	Wet	Yes		41.06	-110.58	Phase II	Blacks Forks-Meeks Cabin Reservoir	Balsam Draw	BLM	13N	117W	34
1274	Unknown	ACE Mapscan	Wet	Yes		41.06	-110.42	Phase II	Gilbert Creek	Gilbert Creek	USFS	13N	115W	31
1275	Unknown	ACE Mapscan	Wet	Yes		41.06	-110.59	Phase II	Blacks Forks-Meeks Cabin Reservoir	Balsam Draw	BLM	13N	117W	34
1276	Unknown	ACE Mapscan	Wet	Yes		41.06	-110.59	Phase II	Blacks Forks-Meeks Cabin Reservoir	Balsam Draw	BLM	13N	117W	34
1277	Unknown	ACE Mapscan	Wet	Yes	WET IN 3 YEARS OF PHOTOGRAPHY	41.06	-110.29	Phase II	Sage Creek-Reed Reservoir	Red Mountain	USFS	13N	114W	32
1278	Unknown	ACE Mapscan	Wet	Yes		41.06	-110.59	Phase II	Blacks Forks-Meeks Cabin Reservoir	Balsam Draw	BLM	13N	117W	34
1279	Unknown	ACE Mapscan	Wet	Yes		41.06	-110.59	Phase II	Blacks Forks-Meeks Cabin Reservoir	Balsam Draw	BLM	13N	117W	34
1280	Unknown	ACE Mapscan	Wet	Yes		41.06	-110.34	Phase II	Upper Cottonwood Creek-Blacks Fork	Red Mountain	Private	13N	115W	35
1281	Unknown	ACE Mapscan	Wet	Yes		41.06	-110.58	Phase II	Blacks Forks-Meeks Cabin Reservoir	Balsam Draw	Private	13N	117W	35
1282	Unknown	ACE Mapscan	Wet	Yes		41.06	-110.34	Phase II	Upper Cottonwood Creek-Blacks Fork	Red Mountain	Private	13N	115W	35
1283	Unknown	ACE Mapscan	Wet	Yes		41.06	-110.41	Phase II	Gilbert Creek	Gilbert Creek	USFS	13N	115W	31
1284	Unknown	ACE Mapscan	Wet	Yes		41.06	-110.59	Phase II	Blacks Forks-Meeks Cabin Reservoir	Balsam Draw	BLM	13N	117W	34
1285	Unknown	ACE Mapscan	Wet	Yes		41.06	-110.36	Phase II	Upper Cottonwood Creek-Blacks Fork	Red Mountain	USFS	13N	115W	34
1286	Unknown	ACE Mapscan	Wet	Yes		41.06	-110.42	Phase II	Gilbert Creek	Gilbert Creek	USFS	13N	115W	31
1287	Unknown	ACE Mapscan	Wet	Yes		41.06	-110.50	Phase II	Willow Creek-Yellow Hollow Creek	No Allotment	Private	13N	116W	33
1288	Unknown	ACE Mapscan	Wet	Yes		41.06	-110.52	Phase II	Willow Creek-Yellow Hollow Creek	No Allotment	Private	13N	116W	32
1289	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.53	Phase II	Willow Creek-Yellow Hollow Creek	No Allotment	Private	13N	116W	32
1290	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.52	Phase II	Willow Creek-Yellow Hollow Creek	No Allotment	Private	13N	116W	32
1291	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.52	Phase II	Willow Creek-Yellow Hollow Creek	West Fork Smith Fork	USFS	12N	116W	5
1292	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.59	Phase II	Blacks Forks-Meeks Cabin Reservoir	Balsam Draw	Private	12N	117W	3
1293	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.69	Phase II	West Muddy Creek	No Allotment	Private	12N	118W	2
1294	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.66	Phase II	East Muddy Creek	No Allotment	Private	12N	117W	6
1295	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	4
1296	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.60	Phase II	East Muddy Creek	Balsam Draw	Private	12N	117W	3
1297	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.64	Phase II	East Muddy Creek	Van Tassel	Private	12N	117W	5
1298	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.52	Phase II	Willow Creek-Yellow Hollow Creek	West Fork Smith Fork	USFS	12N	116W	5
1299	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.42	Phase II	Gilbert Creek	Gilbert Creek	USFS	12N	115W	6
1300	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.42	Phase II	Gilbert Creek	Gilbert Creek	USFS	12N	115W	6
1301	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.59	Phase II	Blacks Forks-Meeks Cabin Reservoir	Balsam Draw	Private	12N	117W	3
1302	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.52	Phase II	Willow Creek-Yellow Hollow Creek	West Fork Smith Fork	USFS	12N	116W	5
1303	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.32	Phase II	Sage Creek-Reed Reservoir	Red Mountain	USFS	12N	115W	1
1304	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	4
1305	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	4
1306	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.34	Phase II	Upper Cottonwood Creek-Blacks Fork	Red Mountain	USFS	12N	115W	2
1307	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.31	Phase II	Sage Creek-Reed Reservoir	Red Mountain	USFS	12N	114W	6
1308	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	4
1309	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.60	Phase II	Blacks Forks-Meeks Cabin Reservoir	Balsam Draw	Private	12N	117W	3
1310	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.34	Phase II	Upper Cottonwood Creek-Blacks Fork	Red Mountain	USFS	12N	115W	2
1311	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	4
1312	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.53	Phase II	Willow Creek-Yellow Hollow Creek	West Fork Smith Fork	Private	12N	116W	5
1313	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	4
1314	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	4

ACE ID	Name	Source	Condition	Water Source	Notes	Lattitude	Longitude	Phase	HUC 12 Name	Allotment	Land Owner	T	R	S
1315	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.21	Phase III	Henrys Fork-Louse Creek	No Allotment	Private	12N	114W	1
1316	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.52	Phase II	Willow Creek-Yellow Hollow Creek	West Fork Smith Fork	USFS	12N	116W	5
1317	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.53	Phase II	Willow Creek-Yellow Hollow Creek	West Fork Smith Fork	USFS	12N	116W	6
1318	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	4
1319	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.57	Phase II	Blacks Forks-Meeks Cabin Reservoir	No Allotment	Private	12N	117W	2
1320	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.45	Phase II	West Fork Smiths Fork	West Fork Smith Fork	USFS	12N	116W	2
1321	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.59	Phase II	Blacks Forks-Meeks Cabin Reservoir	Balsam Draw	Private	12N	117W	3
1322	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	5
1323	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.51	Phase II	Willow Creek-Yellow Hollow Creek	West Fork Smith Fork	USFS	12N	116W	5
1324	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.40	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	5
1325	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.52	Phase II	Willow Creek-Yellow Hollow Creek	West Fork Smith Fork	USFS	12N	116W	5
1326	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.17	Phase III	Henrys Fork-Louse Creek	No Allotment	Private	12N	113W	5
1327	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	4
1328	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.53	Phase II	Willow Creek-Yellow Hollow Creek	West Fork Smith Fork	USFS	12N	116W	6
1329	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.40	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	5
1330	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	5
1331	Unknown	ACE Mapscan	Wet	Yes		41.05	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	4
1332	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	4
1333	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.37	Phase II	Little Dry Creek-Smiths Fork	No Allotment	Private	12N	115W	3
1334	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.52	Phase II	Willow Creek-Yellow Hollow Creek	West Fork Smith Fork	USFS	12N	116W	5
1335	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	5
1336	Van Tassel Lake	ACE Mapscan	Wet	Yes		41.04	-110.62	Phase II	East Muddy Creek	Van Tassel	BLM	12N	117W	4
1337	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.49	Phase II	West Fork Smiths Fork	West Fork Smith Fork	USFS	12N	116W	4
1338	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	5
1339	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.37	Phase II	Little Dry Creek-Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	3
1340	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.40	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	5
1341	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	4
1342	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.47	Phase II	West Fork Smiths Fork	West Fork Smith Fork	USFS	12N	116W	3
1343	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.49	Phase II	West Fork Smiths Fork	West Fork Smith Fork	USFS	12N	116W	4
1344	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.40	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	5
1345	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.66	Phase II	East Muddy Creek	No Allotment	Private	12N	117W	6
1346	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	4
1347	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	5
1348	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	5
1349	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.47	Phase II	West Fork Smiths Fork	West Fork Smith Fork	USFS	12N	116W	3
1350	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	9
1351	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	9
1352	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.50	Phase II	West Fork Smiths Fork	West Fork Smith Fork	USFS	12N	116W	9
1353	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.40	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	8
1354	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.47	Phase II	West Fork Smiths Fork	West Fork Smith Fork	USFS	12N	116W	11
1355	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	9
1356	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.47	Phase II	West Fork Smiths Fork	West Fork Smith Fork	USFS	12N	116W	11
1357	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.37	Phase II	Little Dry Creek-Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	10
1358	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.18	Phase III	Henrys Fork-Louse Creek	No Allotment	Private	12N	113W	8
1359	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	9
1360	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	8
1361	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.60	Phase II	Blacks Forks-Meeks Cabin Reservoir	Meeks Cabin	BLM	12N	117W	10
1362	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.17	Phase III	Henrys Fork-Louse Creek	No Allotment	Private	12N	113W	8
1363	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.60	Phase II	Blacks Forks-Meeks Cabin Reservoir	Meeks Cabin	BLM	12N	117W	10
1364	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.50	Phase II	West Fork Smiths Fork	West Fork Smith Fork	USFS	12N	116W	9
1365	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.52	Phase II	Willow Creek-Yellow Hollow Creek	West Fork Smith Fork	USFS	12N	116W	8
1366	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.32	Phase II	Sage Creek-Reed Reservoir	Red Mountain	USFS	12N	115W	12
1367	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	9
1368	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.37	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	9
1369	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.60	Phase II	Blacks Forks-Meeks Cabin Reservoir	Meeks Cabin	BLM	12N	117W	10
1370	Unknown	ACE Mapscan	Wet	Yes		41.04	-109.93	Phase III	Henrys Fork-Logan Hollow	No Allotment	Private	12N	111W	9
1371	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.37	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	10
1372	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	9
1373	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	9
1374	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.59	Phase II	Blacks Forks-Meeks Cabin Reservoir	Meeks Cabin	BLM	12N	117W	10
1375	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.32	Phase II	Sage Creek-Reed Reservoir	Red Mountain	USFS	12N	115W	12
1376	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.60	Phase II	Blacks Forks-Meeks Cabin Reservoir	Meeks Cabin	BLM	12N	117W	10
1377	Unknown	ACE Mapscan	Wet	Yes		41.04	-109.97	Phase III	Birch Creek-Upper Henrys Fork	No Allotment	Private	12N	111W	7
1378	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.37	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	10
1379	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.37	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	9
1380	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	9
1381	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.32	Phase II	Sage Creek-Reed Reservoir	Red Mountain	USFS	12N	115W	12
1382	Unknown	ACE Mapscan	Wet	Yes		41.04	-110.32	Phase II	Sage Creek-Reed Reservoir	Red Mountain	USFS	12N	115W	12
1383	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.54	Phase II	Blacks Forks-Meeks Cabin Reservoir	West Fork Smith Fork	Private	12N	116W	7
1384	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.68	Phase II	West Muddy Creek	No Allotment	Private	12N	118W	11
1385	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.39	Phase II	Gilbert Creek	East Fork Smiths Fork	USFS	12N	115W	8
1386	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.57	Phase II	Blacks Forks-Meeks Cabin Reservoir	Meeks Cabin	Private	12N	117W	11
1387	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.60	Phase II	Blacks Forks-Meeks Cabin Reservoir	Meeks Cabin	BLM	12N	117W	10

ACE ID	Name	Source	Condition	Water Source	Notes	Lattitude	Longitude	Phase	HUC 12 Name	Allotment	Land Owner	T	R	S
1388	Unknown	ACE Mapscan	Wet	Yes		41.03	-109.93	Phase III	Henrys Fork-Logan Hollow	No Allotment	Private	12N	111W	9
1389	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.32	Phase II	Sage Creek-Reed Reservoir	Red Mountain	USFS	12N	115W	12
1390	Unknown	ACE Mapscan	Wet	Yes		41.03	-109.93	Phase III	Henrys Fork-Logan Hollow	No Allotment	Private	12N	111W	9
1391	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.37	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	10
1392	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.37	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	9
1393	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.43	Phase II	Gilbert Creek	Gilbert Creek	USFS	12N	115W	7
1394	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	9
1395	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.32	Phase II	Sage Creek-Reed Reservoir	Red Mountain	USFS	12N	115W	12
1396	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.37	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	10
1397	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.61	Phase II	East Muddy Creek	Van Tassel	Private	12N	117W	9
1398	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.02	Phase III	Henrys Fork-Spring Creek	No Allotment	Private	12N	112W	10
1399	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.39	Phase II	Gilbert Creek	East Fork Smiths Fork	USFS	12N	115W	8
1400	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	9
1401	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.39	Phase II	Gilbert Creek	East Fork Smiths Fork	USFS	12N	115W	8
1402	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.37	Phase II	Little Dry Creek-Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	10
1403	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.59	Phase II	Blacks Forks-Meeks Cabin Reservoir	Meeks Cabin	BLM	12N	117W	10
1404	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	9
1405	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	9
1406	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.47	Phase II	West Fork Smiths Fork	West Fork Smith Fork	USFS	12N	116W	10
1407	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.37	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	10
1408	Unknown	ACE Mapscan	Wet	Yes		41.03	-109.93	Phase III	Henrys Fork-Logan Hollow	No Allotment	Private	12N	111W	9
1409	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.60	Phase II	Blacks Forks-Meeks Cabin Reservoir	Meeks Cabin	BLM	12N	117W	10
1410	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.60	Phase II	Blacks Forks-Meeks Cabin Reservoir	Meeks Cabin	BLM	12N	117W	10
1411	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.15	Phase III	Henrys Fork-Beaver Creek	No Allotment	Private	12N	113W	9
1412	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	9
1413	Unknown	ACE Mapscan	Wet	Yes		41.03	-109.95	Phase III	Henrys Fork-Logan Hollow	No Allotment	Private	12N	111W	8
1414	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.49	Phase II	West Fork Smiths Fork	West Fork Smith Fork	USFS	12N	116W	9
1415	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	9
1416	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.60	Phase II	East Muddy Creek	Van Tassel	Private	12N	117W	9
1417	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.60	Phase II	Blacks Forks-Meeks Cabin Reservoir	Meeks Cabin	BLM	12N	117W	10
1418	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.51	Phase II	West Fork Smiths Fork	West Fork Smith Fork	USFS	12N	116W	9
1419	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.37	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	10
1420	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.50	Phase II	West Fork Smiths Fork	West Fork Smith Fork	USFS	12N	116W	9
1421	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	9
1422	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.60	Phase II	Blacks Forks-Meeks Cabin Reservoir	Meeks Cabin	BLM	12N	117W	10
1423	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.60	Phase II	Blacks Forks-Meeks Cabin Reservoir	Meeks Cabin	BLM	12N	117W	10
1424	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	9
1425	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.59	Phase II	Blacks Forks-Meeks Cabin Reservoir	Meeks Cabin	BLM	12N	117W	10
1426	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.43	Phase II	Gilbert Creek	Gilbert Creek	USFS	12N	115W	7
1427	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.60	Phase II	Blacks Forks-Meeks Cabin Reservoir	Meeks Cabin	BLM	12N	117W	10
1428	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.60	Phase II	Blacks Forks-Meeks Cabin Reservoir	Meeks Cabin	BLM	12N	117W	10
1429	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.60	Phase II	Blacks Forks-Meeks Cabin Reservoir	Meeks Cabin	BLM	12N	117W	10
1430	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	9
1431	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.61	Phase II	East Muddy Creek	Van Tassel	Private	12N	117W	9
1432	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.46	Phase II	West Fork Smiths Fork	West Fork Smith Fork	Private	12N	116W	11
1433	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	State of Wyoming	12N	115W	16
1434	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	State of Wyoming	12N	115W	16
1435	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.60	Phase II	Blacks Forks-Meeks Cabin Reservoir	Meeks Cabin	Private	12N	117W	9
1436	Meeks Cabin Reservoir	ACE Mapscan	Wet	Yes		41.03	-110.58	Phase II	Blacks Forks-Meeks Cabin Reservoir	Meeks Cabin	USFS	12N	117W	11
1437	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.60	Phase II	Blacks Forks-Meeks Cabin Reservoir	Meeks Cabin	BLM	12N	117W	10
1438	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	State of Wyoming	12N	115W	16
1439	Unknown	ACE Mapscan	Wet	Yes		41.03	-110.50	Phase II	West Fork Smiths Fork	West Fork Smith Fork	State of Wyoming	12N	116W	16
1440	Unknown	ACE Mapscan	Wet	Yes		41.02	-110.00	Phase III	Henrys Fork-Spring Creek	No Allotment	Private	12N	112W	14
1441	Unknown	ACE Mapscan	Wet	Yes	Private lands	41.02	-109.95	Phase III	Henrys Fork-Logan Hollow	No Allotment	Private	12N	111W	17
1442	Unknown	ACE Mapscan	Wet	Yes		41.02	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	State of Wyoming	12N	115W	16
1443	Unknown	ACE Mapscan	Wet	Yes		41.02	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	State of Wyoming	12N	115W	16
1444	Unknown	ACE Mapscan	Wet	Yes		41.02	-110.49	Phase II	West Fork Smiths Fork	West Fork Smith Fork	Private	12N	116W	15
1445	Unknown	ACE Mapscan	Wet	Yes		41.02	-110.57	Phase II	Blacks Forks-Meeks Cabin Reservoir	Meeks Cabin	USFS	12N	117W	14
1446	Unknown	ACE Mapscan	Wet	Yes		41.02	-110.45	Phase II	West Fork Smiths Fork	West Fork Smith Fork	USFS	12N	116W	14
1447	Unknown	ACE Mapscan	Wet	Yes		41.02	-110.37	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	15
1448	Unknown	ACE Mapscan	Wet	Yes		41.02	-109.98	Phase III	Henrys Fork-Spring Creek	No Allotment	Private	12N	112W	13
1449	Unknown	ACE Mapscan	Wet	Yes		41.02	-110.45	Phase II	West Fork Smiths Fork	West Fork Smith Fork	USFS	12N	116W	14
1450	Unknown	ACE Mapscan	Wet	Yes		41.02	-110.56	Phase II	Blacks Forks-Meeks Cabin Reservoir	Meeks Cabin	Private	12N	117W	13
1451	Unknown	ACE Mapscan	Wet	Yes		41.02	-110.56	Phase II	Blacks Forks-Meeks Cabin Reservoir	Meeks Cabin	Private	12N	117W	13
1452	Unknown	ACE Mapscan	Wet	Yes		41.02	-110.37	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	15
1453	Unknown	ACE Mapscan	Wet	Yes		41.02	-109.92	Phase III	Henrys Fork-Logan Hollow	No Allotment	State of Wyoming	12N	111W	15
1454	Unknown	ACE Mapscan	Wet	Yes		41.02	-110.49	Phase II	West Fork Smiths Fork	West Fork Smith Fork	State of Wyoming	12N	116W	16
1455	Unknown	ACE Mapscan	Wet	Yes		41.02	-109.91	Phase III	Henrys Fork-Logan Hollow	No Allotment	Private	12N	111W	15
1456	Unknown	ACE Mapscan	Wet	Yes		41.02	-110.65	Phase II	East Muddy Creek	Van Tassel	BLM	12N	117W	18
1457	Unknown	ACE Mapscan	Wet	Yes		41.02	-110.61	Phase II	East Muddy Creek	Van Tassel	State of Wyoming	12N	117W	16
1458	Unknown	ACE Mapscan	Wet	Yes		41.02	-110.60	Phase II	Blacks Forks-Meeks Cabin Reservoir	Meeks Cabin	Private	12N	117W	15
1459	Unknown	ACE Mapscan	Wet	Yes		41.02	-110.60	Phase II	Blacks Forks-Meeks Cabin Reservoir	Meeks Cabin	Private	12N	117W	15
1460	Unknown	ACE Mapscan	Wet	Yes		41.02	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	State of Wyoming	12N	115W	16

ACE ID	Name	Source	Condition	Water Source	Notes	Lattitude	Longitude	Phase	HUC 12 Name	Allotment	Land Owner	T	R	S
1461	Unknown	ACE Mapscan	Wet	Yes		41.02	-110.61	Phase II	East Muddy Creek	Van Tassel	State of Wyoming	12N	117W	16
1462	Unknown	ACE Mapscan	Wet	Yes		41.02	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	State of Wyoming	12N	115W	16
1463	Unknown	ACE Mapscan	Wet	Yes		41.02	-110.46	Phase II	West Fork Smiths Fork	West Fork Smith Fork	USFS	12N	116W	14
1464	Vacher Reservoir	ACE Mapscan	Wet	Yes		41.02	-110.63	Phase II	East Muddy Creek	Van Tassel	Private	12N	117W	17
1465	Unknown	ACE Mapscan	Wet	Yes		41.02	-110.61	Phase II	East Muddy Creek	Van Tassel	State of Wyoming	12N	117W	16
1466	Unknown	ACE Mapscan	Wet	Yes	Intermittent	41.02	-110.28	Phase III	Henrys Fork-Louse Creek	Hickey Mountain	State of Wyoming	12N	114W	16
1467	Unknown	ACE Mapscan	Wet	Yes		41.02	-110.60	Phase II	Blacks Forks-Meeks Cabin Reservoir	Meeks Cabin	Private	12N	117W	15
1468	Unknown	ACE Mapscan	Wet	Yes		41.02	-110.66	Phase II	East Muddy Creek	Van Tassel	BLM	12N	117W	18
1469	Unknown	ACE Mapscan	Wet	Yes		41.02	-110.66	Phase II	East Muddy Creek	Van Tassel	BLM	12N	117W	18
1470	Unknown	ACE Mapscan	Wet	Yes		41.02	-110.66	Phase II	East Muddy Creek	No Allotment	Private	12N	118W	13
1471	Unknown	ACE Mapscan	Wet	Yes		41.02	-110.37	Phase II	Little Dry Creek-Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	15
1472	Unknown	ACE Mapscan	Wet	Yes		41.02	-110.46	Phase II	West Fork Smiths Fork	West Fork Smith Fork	USFS	12N	116W	14
1473	Unknown	ACE Mapscan	Wet	Yes		41.02	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	State of Wyoming	12N	115W	16
1474	Unknown	ACE Mapscan	Dry	No	on topo, but vegetated no water storage	41.02	-109.97	Phase III	Birch Creek-Upper Henrys Fork	No Allotment	Private	12N	111W	18
1475	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.66	Phase II	East Muddy Creek	Van Tassel	BLM	12N	117W	18
1476	Unknown	ACE Mapscan	Wet	Yes	Intermittent	41.01	-110.28	Phase III	Henrys Fork-Louse Creek	Hickey Mountain	State of Wyoming	12N	114W	16
1477	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.25	Phase III	Henrys Fork-Louse Creek	No Allotment	BLM	12N	114W	15
1478	Unknown	ACE Mapscan	Wet	Yes	Intermittent	41.01	-110.27	Phase III	Henrys Fork-Louse Creek	Hickey Mountain	State of Wyoming	12N	114W	16
1479	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.46	Phase II	West Fork Smiths Fork	West Fork Smith Fork	USFS	12N	116W	14
1480	Unknown	ACE Mapscan	Wet	Yes	Intermittent	41.01	-110.27	Phase III	Henrys Fork-Louse Creek	Hickey Mountain	State of Wyoming	12N	114W	16
1481	Unknown	ACE Mapscan	Wet	Yes	Intermittent	41.01	-110.28	Phase III	Henrys Fork-Louse Creek	Hickey Mountain	State of Wyoming	12N	114W	17
1482	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.66	Phase II	East Muddy Creek	Van Tassel	BLM	12N	117W	18
1483	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.25	Phase III	Henrys Fork-Louse Creek	No Allotment	BLM	12N	114W	15
1484	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.37	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	15
1485	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	State of Wyoming	12N	115W	16
1486	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	20
1487	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.67	Phase II	West Muddy Creek	No Allotment	Private	12N	118W	13
1488	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.28	Phase III	Henrys Fork-Louse Creek	Red Mountain	USFS	12N	114W	20
1489	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.66	Phase II	West Muddy Creek	No Allotment	Private	12N	118W	13
1490	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.37	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	22
1491	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	21
1492	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	20
1493	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	21
1494	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.46	Phase II	West Fork Smiths Fork	West Fork Smith Fork	Private	12N	116W	23
1495	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	20
1496	Archie Pond	ACE Mapscan	Wet	Yes		41.01	-110.50	Phase II	West Fork Smiths Fork	West Fork Smith Fork	Private	12N	116W	21
1497	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	21
1498	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.50	Phase II	West Fork Smiths Fork	West Fork Smith Fork	Private	12N	116W	21
1499	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.29	Phase III	Henrys Fork-Louse Creek	Red Mountain	USFS	12N	114W	20
1500	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.40	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	20
1501	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	21
1502	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.37	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	22
1503	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.60	Phase II	Blacks Forks-Meeks Cabin Reservoir	Meeks Cabin	BLM	12N	117W	22
1504	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	21
1505	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.51	Phase II	West Fork Smiths Fork	West Fork Smith Fork	Private	12N	116W	21
1506	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.59	Phase II	Blacks Forks-Meeks Cabin Reservoir	Meeks Cabin	BLM	12N	117W	22
1507	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.62	Phase II	East Muddy Creek	Guild Ranch	Private	12N	117W	21
1508	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.51	Phase II	West Fork Smiths Fork	West Fork Smith Fork	USFS	12N	116W	20
1509	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.59	Phase II	Blacks Forks-Meeks Cabin Reservoir	Meeks Cabin	BLM	12N	117W	22
1510	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.37	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	22
1511	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	21
1512	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.50	Phase II	West Fork Smiths Fork	West Fork Smith Fork	Private	12N	116W	21
1513	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.51	Phase II	West Fork Smiths Fork	West Fork Smith Fork	Private	12N	116W	21
1514	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.26	Phase III	Henrys Fork-Louse Creek	No Allotment	BLM	12N	114W	22
1515	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.52	Phase II	West Fork Smiths Fork	West Fork Smith Fork	USFS	12N	116W	20
1516	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.51	Phase II	West Fork Smiths Fork	West Fork Smith Fork	USFS	12N	116W	20
1517	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.59	Phase II	Blacks Forks-Meeks Cabin Reservoir	Meeks Cabin	BLM	12N	117W	22
1518	Unknown	ACE Mapscan	Wet	Yes	Wet in 3 years of photography	41.01	-110.23	Phase III	Henrys Fork-Poison Creek	No Allotment	Private	12N	114W	23
1519	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.52	Phase II	West Fork Smiths Fork	West Fork Smith Fork	USFS	12N	116W	20
1520	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.51	Phase II	West Fork Smiths Fork	West Fork Smith Fork	USFS	12N	116W	20
1521	Unknown	ACE Mapscan	Wet	Yes	National Recreation Area lands	41.01	-109.67	Phase III	Henrys Fork-Flaming Gorge Reservoir	No Allotment	USFS	12N	109W	23
1522	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.51	Phase II	West Fork Smiths Fork	West Fork Smith Fork	USFS	12N	116W	20
1523	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.51	Phase II	West Fork Smiths Fork	West Fork Smith Fork	Private	12N	116W	21
1524	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	20
1525	Unknown	ACE Mapscan	Wet	Yes		41.01	-110.51	Phase II	West Fork Smiths Fork	West Fork Smith Fork	Private	12N	116W	21
1526	Unknown	ACE Mapscan	Wet	Yes		41.01	-109.95	Phase III	Henrys Fork-Logan Hollow	No Allotment	Private	12N	111W	20
1527	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.59	Phase II	Blacks Forks-Meeks Cabin Reservoir	Meeks Cabin	BLM	12N	117W	22
1528	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.50	Phase II	West Fork Smiths Fork	West Fork Smith Fork	Private	12N	116W	21
1529	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	21
1530	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.50	Phase II	West Fork Smiths Fork	West Fork Smith Fork	Private	12N	116W	21
1531	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.50	Phase II	West Fork Smiths Fork	West Fork Smith Fork	Private	12N	116W	21
1532	Unknown	ACE Mapscan	Wet	Yes	National Recreation Area lands	41.00	-109.66	Phase III	Henrys Fork-Flaming Gorge Reservoir	No Allotment	USFS	12N	109W	23
1533	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.52	Phase II	West Fork Smiths Fork	West Fork Smith Fork	USFS	12N	116W	20

ACE ID	Name	Source	Condition	Water Source	Notes	Lattitude	Longitude	Phase	HUC 12 Name	Allotment	Land Owner	T	R	S
1534	Unknown	ACE Mapscan	Wet	Yes		41.00	-109.96	Phase III	Henrys Fork-Logan Hollow	No Allotment	Private	12N	111W	20
1535	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.47	Phase II	West Fork Smiths Fork	West Fork Smith Fork	Private	12N	116W	23
1536	Unknown	ACE Mapscan	Wet	Yes	National Recreation Area lands	41.00	-109.67	Phase III	Henrys Fork-Flaming Gorge Reservoir	No Allotment	USFS	12N	109W	23
1537	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.51	Phase II	West Fork Smiths Fork	West Fork Smith Fork	Private	12N	116W	21
1538	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.37	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	22
1539	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	21
1540	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.51	Phase II	West Fork Smiths Fork	West Fork Smith Fork	USFS	12N	116W	20
1541	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.51	Phase II	West Fork Smiths Fork	West Fork Smith Fork	USFS	12N	116W	20
1542	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.52	Phase II	West Fork Smiths Fork	West Fork Smith Fork	USFS	12N	116W	20
1543	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.40	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	20
1544	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	20
1545	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.51	Phase II	West Fork Smiths Fork	West Fork Smith Fork	Private	12N	116W	21
1546	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	21
1547	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	21
1548	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.47	Phase II	West Fork Smiths Fork	West Fork Smith Fork	Private	12N	116W	23
1549	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.51	Phase II	West Fork Smiths Fork	West Fork Smith Fork	Private	12N	116W	21
1550	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.52	Phase II	West Fork Smiths Fork	West Fork Smith Fork	USFS	12N	116W	20
1551	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.19	Phase III	Henrys Fork-Poison Creek	No Allotment	Private	12N	113W	19
1552	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.02	Phase III	Burnt Fork	No Allotment	Private	12N	112W	23
1553	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.51	Phase II	West Fork Smiths Fork	West Fork Smith Fork	Private	12N	116W	21
1554	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	21
1555	Unknown	ACE Mapscan	Wet	Yes	National Recreation Area lands	41.00	-109.67	Phase III	Henrys Fork-Flaming Gorge Reservoir	No Allotment	USFS	12N	109W	23
1556	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.40	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	20
1557	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	21
1558	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.40	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	20
1559	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.15	Phase III	Henrys Fork-Beaver Creek	No Allotment	BLM	12N	113W	21
1560	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.44	Phase II	Gilbert Creek	Gilbert Creek	USFS	12N	116W	24
1561	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.47	Phase II	West Fork Smiths Fork	West Fork Smith Fork	Private	12N	116W	23
1562	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	21
1563	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.47	Phase II	West Fork Smiths Fork	West Fork Smith Fork	Private	12N	116W	23
1564	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	21
1565	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.47	Phase II	West Fork Smiths Fork	West Fork Smith Fork	USFS	12N	116W	22
1566	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	21
1567	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.47	Phase II	West Fork Smiths Fork	West Fork Smith Fork	USFS	12N	116W	22
1568	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.47	Phase II	West Fork Smiths Fork	West Fork Smith Fork	USFS	12N	116W	22
1569	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.47	Phase II	West Fork Smiths Fork	West Fork Smith Fork	Private	12N	116W	23
1570	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	21
1571	Unknown	ACE Mapscan	Wet	Yes	Private Property	41.00	-109.96	Phase III	Henrys Fork-Logan Hollow	No Allotment	Private	12N	111W	20
1572	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.44	Phase II	Gilbert Creek	Gilbert Creek	USFS	12N	116W	24
1573	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.47	Phase II	West Fork Smiths Fork	West Fork Smith Fork	USFS	12N	116W	22
1574	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	21
1575	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	21
1576	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	21
1577	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.37	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	21
1578	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.66	Phase II	East Muddy Creek	Guild Ranch	Private	12N	117W	19
1579	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	21
1580	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	21
1581	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.70	Phase II	West Muddy Creek	No Allotment	Private	12N	118W	23
1582	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	21
1583	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	21
1584	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	29
1585	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.40	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	29
1586	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	28
1587	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	28
1588	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.37	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	28
1589	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.38	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	28
1590	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.32	Phase III	Henrys Fork-Dahlgreen Creek	Red Mountain	USFS	12N	115W	25
1591	Unknown	ACE Mapscan	Wet	Yes		41.00	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	28
1592	Unknown	ACE Mapscan	Wet	Yes		40.99	-110.32	Phase III	Henrys Fork-Dahlgreen Creek	Red Mountain	USFS	12N	115W	25
1593	Grahams Reservoir	ACE Mapscan	Wet	Yes		40.99	-110.39	Phase II	East Fork Smiths Fork	East Fork Smiths Fork	USFS	12N	115W	29
1594	Unknown	Kemmerer BLM	Wet	Yes	RIPS DATABASE	42.05	-110.71	Phase I	Hams Fork-Dempsey Creek	Dempsey Basin	BLM	24N	117W	20
1595	Unknown	Kemmerer BLM	Wet	Yes	RIPS DATABASE	42.04	-110.70	Phase I	Hams Fork-Dempsey Creek	Dempsey Basin	BLM	24N	117W	28
1596	Unknown	Kemmerer BLM	Dry	No	Listed as "Blown Out" by BLM, no water present, hummocks, trampled	42.00	-110.50	Phase I	Willow Creek-East Branch Willow Creek	Slate Creek	BLM	23N	115W	6
1597	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.97	-110.60	Phase I	Hams Fork-Fish Creek	Trail Creek	BLM	23N	116W	20
1598	Unknown	Kemmerer BLM	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY, RIPS DATABASE	41.89	-110.45	Phase I	Alkali Creek-Hams Fork	Slate Creek	BLM	22N	115W	15
1599	Unknown	Kemmerer BLM	Dry	Yes	RIPS DATABASE	41.87	-110.45	Phase I	Alkali Creek-Hams Fork	Slate Creek	BLM	22N	115W	22
1600	Unknown	Kemmerer BLM	N/A	No	NO VISIBLE RESERVOIR, RIPS DATABASE	41.86	-110.46	Phase I	Alkali Creek-Hams Fork	Slate Creek	BLM	22N	115W	27
1601	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.85	-110.45	Phase I	Alkali Creek-Hams Fork	Slate Creek	BLM	22N	115W	27
1602	Unknown	Kemmerer BLM	Wet	Yes	RIPS DATABASE	41.85	-110.46	Phase I	Alkali Creek-Hams Fork	Slate Creek	BLM	22N	115W	27
1603	Unknown	Kemmerer BLM	N/A	No	NO VISIBLE RESERVOIR, RIPS DATABASE	41.85	-110.49	Phase I	Willow Creek-East Branch Willow Creek	East Willow Creek	BLM	22N	115W	32
1604	Unknown	Kemmerer BLM	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY	41.85	-110.45	Phase I	Alkali Creek-Hams Fork	Slate Creek	BLM	22N	115W	34
1605	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.85	-110.44	Phase I	Alkali Creek-Hams Fork	Slate Creek	BLM	22N	115W	35
1606	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.84	-110.44	Phase I	Alkali Creek-Hams Fork	Slate Creek	BLM	22N	115W	35

ACE ID	Name	Source	Condition	Water Source	Notes	Lattitude	Longitude	Phase	HUC 12 Name	Allotment	Land Owner	T	R	S
1607	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.84	-110.35	Phase I	Craven Creek	Slate Creek	BLM	22N	114W	33
1608	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.84	-110.43	Phase I	Craven Creek	Slate Creek	BLM	22N	115W	35
1609	Unknown	Kemmerer BLM	Wet	Yes	WET IN TWO YEARS PHOTOGRAPHY, RIPS DATABASE	41.84	-110.48	Phase I	Alkali Creek-Hams Fork	Quealy Peak	Private	22N	115W	32
1610	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.84	-110.56	Phase I	Hams Fork-Fish Creek	Airport	BLM	22N	116W	34
1611	Unknown	Kemmerer BLM	Dry	No	SEDIMENT	41.84	-110.42	Phase I	Craven Creek	Slate Creek	BLM	22N	115W	36
1612	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.84	-110.31	Phase I	Craven Creek	Slate Creek	BLM	22N	114W	35
1613	Unknown	Kemmerer BLM	Dry	No	BREACHED, RIPS DATABASE	41.84	-110.44	Phase I	Alkali Creek-Hams Fork	Slate Creek	BLM	22N	115W	35
1614	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.83	-110.36	Phase I	Craven Creek	Slate Creek	BLM	21N	114W	4
1615	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.83	-110.43	Phase I	Alkali Creek-Hams Fork	Slate Creek	BLM	21N	115W	2
1616	Unknown	Kemmerer BLM	Dry	No	BREACHED, RIPS DATABASE	41.83	-110.34	Phase I	Craven Creek	Slate Creek	BLM	21N	114W	3
1617	Unknown	Kemmerer BLM	Dry	No	BREACHED, RIPS DATABASE	41.83	-110.44	Phase I	Alkali Creek-Hams Fork	Slate Creek	BLM	21N	115W	2
1618	Unknown	Kemmerer BLM	Dry	No	SEDIMENT, RIPS DATABASE	41.83	-110.46	Phase I	Alkali Creek-Hams Fork	Quealy Peak	Private	21N	115W	3
1619	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.83	-110.33	Phase I	Craven Creek	Slate Creek	BLM	21N	114W	3
1620	Unknown	Kemmerer BLM	Wet	Yes	WET IN TWO YEARS PHOTOGRAPHY, RIPS DATABASE	41.83	-110.32	Phase I	Craven Creek	Slate Creek	BLM	21N	114W	2
1621	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.83	-110.31	Phase I	Craven Creek	Slate Creek	BLM	21N	114W	2
1622	Unknown	Kemmerer BLM	Dry	No	SEDIMENT, RIPS DATABASE	41.83	-110.43	Phase I	Alkali Creek-Hams Fork	Slate Creek	BLM	21N	115W	2
1623	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.82	-110.44	Phase I	Alkali Creek-Hams Fork	Slate Creek	BLM	21N	115W	2
1624	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.82	-110.35	Phase I	Craven Creek	Slate Creek	BLM	21N	114W	4
1625	Unknown	Kemmerer BLM	Wet	Yes	RIPS DATABASE	41.82	-110.48	Phase I	Alkali Creek-Hams Fork	Quealy Peak	BLM	21N	115W	4
1626	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.82	-110.30	Phase I	Craven Creek	Slate Creek	Private	21N	114W	1
1627	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.82	-110.33	Phase I	Craven Creek	Slate Creek	BLM	21N	114W	10
1628	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.81	-110.30	Phase I	Craven Creek	Slate Creek	BLM	21N	114W	12
1629	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.81	-110.34	Phase I	Craven Creek	Slate Creek	BLM	21N	114W	10
1630	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.80	-110.32	Phase I	Craven Creek	Slate Creek	BLM	21N	114W	14
1631	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.79	-110.49	Phase I	Hams Fork-Oakley Draw	Slate Creek	Private	21N	115W	17
1632	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE (TWO RIPS NO. 940055, 945016)	41.79	-110.49	Phase I	Hams Fork-Oakley Draw	Slate Creek	BLM	21N	115W	20
1633	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.79	-110.50	Phase I	Hams Fork-Oakley Draw	Slate Creek	BLM	21N	115W	20
1634	Unknown	Kemmerer BLM	Dry	No	BREACHED, RIPS DATABASE	41.78	-110.30	Phase I	Craven Creek	Slate Creek	BLM	21N	114W	24
1635	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.78	-110.29	Phase I	Craven Creek	Slate Creek	BLM	21N	114W	24
1636	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.78	-110.50	Phase I	Hams Fork-Oakley Draw	Slate Creek	BLM	21N	115W	20
1637	Unknown	Kemmerer BLM	Dry	No	BREACHED, SEDIMENT, RIPS DATABASE	41.78	-110.44	Phase I	Alkali Creek-Hams Fork	Slate Creek	BLM	21N	115W	26
1638	Unknown	Kemmerer BLM	Dry	No	SEDIMENT, RIPS DATABASE	41.77	-110.36	Phase I	Hams Fork-Oakley Draw	Slate Creek	BLM	21N	114W	28
1639	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.77	-110.47	Phase I	Hams Fork-Oakley Draw	Slate Creek	BLM	21N	115W	28
1640	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.77	-110.43	Phase I	Alkali Creek-Hams Fork	Slate Creek	Private	21N	115W	26
1641	Unknown	Kemmerer BLM	Dry	No	BREACHED, RIPS DATABASE	41.77	-110.47	Phase I	Hams Fork-Oakley Draw	Slate Creek	BLM	21N	115W	28
1642	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.77	-110.50	Phase I	Hams Fork-Oakley Draw	Slate Creek	BLM	21N	115W	30
1643	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.76	-110.48	Phase I	Hams Fork-Oakley Draw	Slate Creek	BLM	21N	115W	32
1644	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.74	-110.17	Phase I	Hams Fork-Cow Hollow Creek	Hassett	Private	20N	113W	10
1645	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.73	-110.63	Phase II	Upper North Fork Little Muddy Creek	Elkol	BLM	20N	117W	10
1646	Unknown	Kemmerer BLM	Dry	Potential	no water present, immediately beside other reservoir	41.73	-110.64	Phase II	Upper North Fork Little Muddy Creek	Elkol	BLM	20N	117W	9
1647	Unknown	Kemmerer BLM	Dry	Potential	no water present, immediately beside other reservoir	41.73	-110.64	Phase II	Upper North Fork Little Muddy Creek	Elkol	BLM	20N	117W	9
1648	Unknown	Kemmerer BLM	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY, RIPS DATABASE	41.72	-110.60	Phase II	Upper North Fork Little Muddy Creek	Elkol	BLM	20N	117W	14
1649	Unknown	Kemmerer BLM	Dry	No	Unknown status by BLM, not considered a watersource	41.72	-110.65	Phase II	Upper North Fork Little Muddy Creek	Twin Creek	State of Wyoming	20N	117W	16
1650	Unknown	Kemmerer BLM	Wet	Yes	RIPS DATABASE	41.71	-110.59	Phase II	Upper North Fork Little Muddy Creek	Cumberland Flats	BLM	20N	117W	24
1651	Unknown	Kemmerer BLM	Wet	Yes	RIPS DATABASE	41.71	-110.13	Phase I	Hams Fork-Cow Hollow Creek	Hassett	BLM	20N	113W	24
1652	Unknown	Kemmerer BLM	Wet	Yes	water pesent	41.70	-110.51	Phase II	Dry Muddy Creek-Little Round Mountain Spring	Cumberland Flats	BLM	20N	116W	22
1653	Unknown	Kemmerer BLM	Dry	Potential	no water	41.70	-110.51	Phase II	Dry Muddy Creek-Little Round Mountain Spring	Cumberland Flats	BLM	20N	116W	22
1654	Unknown	Kemmerer BLM	Dry	No	BREACHED, RIPS DATABASE	41.69	-110.65	Phase II	Lower North Fork Little Muddy Creek	Cumberland/Uinta	BLM	20N	117W	28
1655	Unknown	Kemmerer BLM	Dry	No	SEDIMENT, RIPS DATABASE	41.69	-110.57	Phase II	Upper North Fork Little Muddy Creek	Cumberland Flats	BLM	20N	116W	30
1656	Unknown	Kemmerer BLM	Dry	No	REMOVED BY MINING ACTIVITIES, RIPS DATABASE	41.68	-110.62	Phase II	Upper North Fork Little Muddy Creek	Elkol	BLM	20N	117W	34
1657	Unknown	Kemmerer BLM	Dry	No	BREACHED, RIPS DATABASE	41.68	-110.67	Phase II	Lower North Fork Little Muddy Creek	Cumberland/Uinta	BLM	20N	117W	32
1658	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.68	-110.67	Phase II	Lower North Fork Little Muddy Creek	Cumberland/Uinta	BLM	20N	117W	32
1659	Unknown	Kemmerer BLM	Dry	No	BREACHED, RIPS DATABASE	41.67	-110.67	Phase II	Lower North Fork Little Muddy Creek	Cumberland/Uinta	BLM	20N	117W	32
1660	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.67	-110.73	Phase II	Little Muddy Creek-Chicken Creek	Cumberland/Uinta	BLM	20N	118W	34
1661	Unknown	Kemmerer BLM	Dry	No	REMOVED BY MINING ACTIVITY, RIPS DATABASE	41.67	-110.62	Phase II	Upper North Fork Little Muddy Creek	Elkol	BLM	20N	117W	34
1662	Unknown	Kemmerer BLM	Dry	No	POTENTIALLY BREACHED, RIPS DATABASE	41.67	-110.67	Phase II	Lower North Fork Little Muddy Creek	Cumberland/Uinta	BLM	20N	117W	32
1663	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.66	-110.68	Phase II	Little Muddy Creek-Chicken Creek	Cumberland/Uinta	BLM	19N	117W	6
1664	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.66	-110.61	Phase II	Upper North Fork Little Muddy Creek	Cumberland Flats	BLM	19N	117W	2
1665	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.66	-110.65	Phase II	Lower North Fork Little Muddy Creek	Cumberland/Uinta	BLM	19N	117W	4
1666	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.66	-110.60	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	BLM	19N	117W	2
1667	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.65	-110.60	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	BLM	19N	117W	2
1668	Unknown	Kemmerer BLM	Wet	Yes	RIPS DATABASE	41.65	-110.58	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	BLM	19N	117W	12
1669	Unknown	Kemmerer BLM	Wet	Yes	RIPS DATABASE	41.65	-110.59	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	BLM	19N	117W	12
1670	Unknown	Kemmerer BLM	Wet	Yes	water present	41.64	-110.64	Phase II	Lower North Fork Little Muddy Creek	Cumberland/Uinta	Private	19N	117W	9
1671	Unknown	Kemmerer BLM	Dry	Potential	dam face not blown out, good conditiion	41.63	-110.88	Phase II	Carter Creek	Cumberland/Uinta	State of Wyoming	19N	119W	16
1672	Unknown	Kemmerer BLM	Wet	Yes	possible overflow water present	41.63	-110.90	Phase II	Carter Creek	Cumberland/Uinta	Private	19N	119W	17
1673	Unknown	Kemmerer BLM	Dry	Potential	no water present	41.63	-110.66	Phase II	Lower North Fork Little Muddy Creek	Cumberland/Uinta	Private	19N	117W	17
1674	Unknown	Kemmerer BLM	Dry	No	Listed as "Blown Out" by BLM, no water present	41.62	-110.58	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	Private	19N	117W	13
1675	Unknown	Kemmerer BLM	Dry	Potential	no water present	41.62	-110.67	Phase II	Little Muddy Creek-Bell Creek	Cumberland/Uinta	Private	19N	117W	17
1676	Unknown	Kemmerer BLM	Dry	No	Listed as "Blown Out" by BLM, no water present	41.62	-110.60	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	BLM	19N	117W	14
1677	Unknown	Kemmerer BLM	Wet	No	Listed as "Blown Out" by BLM, water present split btween allotments Not a watersource because BLM lists it as "blown out"	41.62	-110.62	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	Private	19N	117W	15
1678	Unknown	Kemmerer BLM	Wet	Yes	water present reservoir split between allotments some erosion occuring	41.62	-110.62	Phase II	Lower North Fork Little Muddy Creek	Cumberland Flats	BLM	19N	117W	22
1679	Unknown	Kemmerer BLM	Dry	No	Listed as "Blown Out" by BLM, blown out two track on birm channelization present	41.62	-110.62	Phase II	Lower North Fork Little Muddy Creek	Cumberland/Uinta	BLM	19N	117W	22

ACE ID	Name	Source	Condition	Water Source	Notes	Lattitude	Longitude	Phase	HUC 12 Name	Allotment	Land Owner	T	R	S
1680	Unknown	Kemmerer BLM	Dry	Potential	no water present	41.62	-110.65	Phase II	Lower North Fork Little Muddy Creek	Cumberland/Uinta	Private	19N	117W	21
1681	Unknown	Kemmerer BLM	Dry	Potential	no water present	41.62	-110.69	Phase II	Little Muddy Creek-Bell Creek	Cumberland/Uinta	Private	19N	117W	19
1682	Unknown	Kemmerer BLM	Wet	Yes	water present	41.62	-110.66	Phase II	Little Muddy Creek-Bell Creek	Cumberland/Uinta	BLM	19N	117W	20
1683	Unknown	Kemmerer BLM	Dry	Potential	no water present	41.62	-110.67	Phase II	Little Muddy Creek-Bell Creek	Cumberland/Uinta	BLM	19N	117W	20
1684	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.61	-110.78	Phase II	Carter Creek	Cumberland/Uinta	BLM	19N	118W	20
1685	Unknown	Kemmerer BLM	Dry	No	SEDIMENT	41.61	-110.79	Phase II	Carter Creek	Cumberland/Uinta	BLM	19N	118W	30
1686	Unknown	Kemmerer BLM	Dry	No	Listed as "Blown Out" by BLM, no water present	41.60	-110.66	Phase II	Little Muddy Creek-Bell Creek	Cumberland/Uinta	Private	19N	117W	29
1687	Unknown	Kemmerer BLM	Dry	No	Listed as "Blown Out" by BLM, no water present	41.60	-110.65	Phase II	Little Muddy Creek-Bell Creek	Cumberland/Uinta	BLM	19N	117W	28
1688	Unknown	Kemmerer BLM	Dry	No	Listed as "Blown Out" by BLM, no water present	41.60	-110.66	Phase II	Little Muddy Creek-Bell Creek	Cumberland/Uinta	Private	19N	117W	29
1689	Unknown	Kemmerer BLM	Dry	No	Listed as "Blown Out" by BLM, no water present	41.59	-110.67	Phase II	Little Muddy Creek-Bell Creek	Cumberland/Uinta	BLM	19N	117W	32
1690	Unknown	Kemmerer BLM	Dry	No	Listed as "Blown Out" by BLM, no water present	41.59	-110.65	Phase II	Little Muddy Creek-Bell Creek	Cumberland/Uinta	Private	19N	117W	33
1691	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.59	-110.23	Phase II	Big Muddy Creek	Carter Lease	BLM	19N	114W	36
1692	Unknown	Kemmerer BLM	Dry	No	Listed as "Blown Out" by BLM, No water present, unable to notice any livestock use due to snowy conditions	41.59	-110.90	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	Private	19N	119W	32
1693	Unknown	Kemmerer BLM	Wet	Yes	Water present, unable to notice any livestock use due to snowy conditions	41.58	-110.89	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	Private	19N	119W	33
1694	Unknown	Kemmerer BLM	Dry	No	Listed as "Blown Out" by BLM, ooks filled in	41.58	-110.67	Phase II	Little Muddy Creek-Bell Creek	Cumberland/Uinta	BLM	19N	117W	32
1695	Unknown	Kemmerer BLM	Dry	Potential	No water present, unable to notice any livestock use due to snowy conditions	41.58	-110.90	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	Private	19N	119W	32
1696	Unknown	Kemmerer BLM	Dry	Potential	no water present	41.58	-110.66	Phase II	Little Muddy Creek-Bell Creek	Cumberland/Uinta	BLM	19N	117W	32
1697	Unknown	Kemmerer BLM	Dry	No	Listed as "Blown Out" by BLM, no water	41.58	-110.66	Phase II	Little Muddy Creek-Bell Creek	Cumberland/Uinta	BLM	19N	117W	32
1698	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.58	-110.87	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	BLM	18N	119W	4
1699	Unknown	Kemmerer BLM	Dry	Potential	Culvert in dam face, no water present, unable to notice any livestock use due to snowy conditions	41.58	-110.91	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	BLM	18N	119W	6
1700	Unknown	Kemmerer BLM	Dry	Potential	No Water Present	41.58	-110.72	Phase II	Little Muddy Creek-Bell Creek	Cumberland/Uinta	BLM	18N	118W	2
1701	Unknown	Kemmerer BLM	N/A	No	NO VISIBLE RESERVOIR, RIPS DATABASE	41.57	-110.87	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	BLM	18N	119W	4
1702	Unknown	Kemmerer BLM	Dry	No	BREACHED, RIPS DATABASE	41.57	-110.88	Phase II	Sheep Creek-North Fork Sheep Creek	Cumberland/Uinta	BLM	18N	119W	4
1703	Unknown	Kemmerer BLM	Dry	Potential	No Water Present	41.57	-110.68	Phase II	Little Muddy Creek-Bell Creek	Cumberland/Uinta	BLM	18N	117W	6
1704	Unknown	Kemmerer BLM	Dry	Potential	no water present	41.57	-110.62	Phase II	Little Muddy Creek-Bell Creek	Cumberland Flats	Private	18N	117W	3
1705	Unknown	Kemmerer BLM	Dry	No	Listed as "Blown Out" by BLM, No Water Present	41.56	-110.68	Phase II	Ryckman Creek	Cumberland/Uinta	Private	18N	117W	7
1706	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.56	-110.55	Phase II	Little Muddy Creek-Ziller Ranch	Albert Creek	BLM	18N	116W	8
1707	Unknown	Kemmerer BLM	Dry	Potential	no water present	41.56	-110.68	Phase II	Ryckman Creek	Cumberland/Uinta	Private	18N	117W	7
1708	Unknown	Kemmerer BLM	Dry	No	Listed as "Blown Out" by BLM,	41.55	-110.67	Phase II	Ryckman Creek	Cumberland/Uinta	BLM	18N	117W	8
1709	Unknown	Kemmerer BLM	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY, RIPS DATABASE	41.55	-110.55	Phase II	Little Muddy Creek-Ziller Ranch	Albert Creek	BLM	18N	116W	8
1710	Unknown	Kemmerer BLM	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY, RIPS DATABASE	41.55	-110.55	Phase II	Little Muddy Creek-Ziller Ranch	Albert Creek	BLM	18N	116W	8
1711	Unknown	Kemmerer BLM	Dry	Potential	no water present	41.55	-110.69	Phase II	Ryckman Creek	Cumberland/Uinta	Private	18N	117W	7
1712	Unknown	Kemmerer BLM	Dry	No	SEDIMENT, RIPS DATABASE	41.55	-110.71	Phase II	Ryckman Creek	Cumberland/Uinta	BLM	18N	118W	12
1713	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.55	-110.63	Phase II	Lower Albert Creek	Albert Creek	BLM	18N	117W	10
1714	Unknown	Kemmerer BLM	Dry	No	Listed as "Blown Out" by BLM, no water present	41.55	-110.68	Phase II	Ryckman Creek	Cumberland/Uinta	BLM	18N	117W	18
1715	Unknown	Kemmerer BLM	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY, RIPS DATABASE	41.54	-110.58	Phase II	Little Muddy Creek-Ziller Ranch	Albert Creek	BLM	18N	116W	18
1716	Unknown	Kemmerer BLM	Dry	No	Listed as "Blown Out" by BLM, no water present	41.54	-110.69	Phase II	Ryckman Creek	Cumberland/Uinta	BLM	18N	117W	18
1717	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.54	-110.56	Phase II	Little Muddy Creek-Ziller Ranch	Albert Creek	BLM	18N	116W	20
1718	Unknown	Kemmerer BLM	Wet	Yes	RIPS DATABASE	41.53	-110.63	Phase II	Lower Albert Creek	Albert Creek	BLM	18N	117W	22
1719	Unknown	Kemmerer BLM	Wet	No	Listed as "Blown Out" by BLM, water present: Not a watersource because BLM lists it as "blown out"	41.53	-110.69	Phase II	Ryckman Creek	Cumberland/Uinta	Private	18N	117W	19
1720	Unknown	Kemmerer BLM	Dry	No	SEDIMENT, RIPS DATABASE	41.53	-110.58	Phase II	Lower Albert Creek	Albert Creek	BLM	18N	117W	24
1721	Unknown	Kemmerer BLM	Wet	Yes	RIPS DATABASE	41.53	-110.59	Phase II	Lower Albert Creek	Albert Creek	BLM	18N	117W	24
1722	Unknown	Kemmerer BLM	Wet	Yes	RIPS DATABASE	41.53	-110.62	Phase II	Lower Albert Creek	Albert Creek	BLM	18N	117W	22
1723	Unknown	Kemmerer BLM	Wet	Yes	water present	41.53	-110.65	Phase II	Lower Albert Creek	Albert Creek	Private	18N	117W	21
1724	Unknown	Kemmerer BLM	Dry	No	Listed as "Blown Out" by BLM, water present, RIPS DATABASE	41.52	-110.66	Phase II	Lower Albert Creek	Albert Creek	BLM	18N	117W	20
1725	Unknown	Kemmerer BLM	Dry	No	SEDIMENT, RIPS DATABASE	41.52	-110.59	Phase II	Lower Albert Creek	Albert Creek	BLM	18N	117W	24
1726	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.51	-110.56	Phase II	Little Muddy Creek-Ziller Ranch	Albert Creek	BLM	18N	116W	30
1727	Unknown	Kemmerer BLM	Wet	Yes	RIPS DATABASE	41.51	-110.69	Phase II	Ryckman Creek	Cumberland/Uinta	BLM	18N	117W	30
1728	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.51	-110.37	Phase II	Big Muddy Creek	Carter Lease	BLM	18N	115W	26
1729	Unknown	Kemmerer BLM	Wet	Yes	water present	41.51	-110.66	Phase II	Lower Albert Creek	Albert Creek	BLM	18N	117W	32
1730	Unknown	Kemmerer BLM	Wet	Yes	water present	41.50	-110.66	Phase II	Lower Albert Creek	Albert Creek	BLM	18N	117W	32
1731	Unknown	Kemmerer BLM	Wet	Yes	RIPS DATABASE	41.49	-110.21	Phase II	Blacks Fork-Jackknife Draw	Austin Triangle	BLM	18N	113W	32
1732	Unknown	Kemmerer BLM	Dry	Potential	no water present	41.49	-110.67	Phase II	Lower Albert Creek	Albert Creek	Private	17N	117W	5
1733	Unknown	Kemmerer BLM	Dry	No	Listed as "Blown Out" by BLM, no water present	41.49	-110.67	Phase II	Lower Albert Creek	Albert Creek	Private	17N	117W	5
1734	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.49	-110.64	Phase II	Lower Albert Creek	Albert Creek	BLM	17N	117W	4
1735	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.48	-110.64	Phase II	Lower Albert Creek	Albert Creek	BLM	17N	117W	4
1736	Unknown	Kemmerer BLM	Dry	Potential	no water present	41.48	-110.67	Phase II	Lower Albert Creek	Albert Creek	Private	17N	117W	5
1737	Unknown	Kemmerer BLM	Wet	Yes	water present	41.48	-110.67	Phase II	Lower Albert Creek	Albert Creek	Private	17N	117W	5
1738	Unknown	Kemmerer BLM	Wet	Yes	RIPS DATABASE	41.48	-110.87	Phase II	Ryckman Creek	Cumberland/Uinta	BLM	17N	119W	10
1739	Unknown	Kemmerer BLM	Dry	No	BREACHED, RIPS DATABASE	41.48	-110.62	Phase II	Lower Albert Creek	Albert Creek	BLM	17N	117W	10
1740	Unknown	Kemmerer BLM	Dry	Potential	No water present	41.47	-110.87	Phase II	Ryckman Creek	Cumberland/Uinta	Private	17N	119W	9
1741	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.47	-110.62	Phase II	Lower Albert Creek	Albert Creek	BLM	17N	117W	10
1742	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.47	-110.59	Phase II	Muddy Creek-Lost Draw	Albert Creek	BLM	17N	117W	12
1743	Unknown	Kemmerer BLM	Dry	Potential	no water present	41.46	-110.67	Phase II	Clear Creek-Shurtleff Creek	Albert Creek	BLM	17N	117W	8
1744	Unknown	Kemmerer BLM	Dry	No	Listed as "Blown Out" by BLM, no water present	41.46	-110.74	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	Private	17N	118W	15
1745	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.46	-110.42	Phase II	Muddy Creek-Town of Carter	Carter Lease	BLM	17N	115W	16
1746	Unknown	Kemmerer BLM	Wet	Yes	Water present, culvert through dam face	41.46	-110.73	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	Private	17N	118W	15
1747	Unknown	Kemmerer BLM	Dry	Potential	no water present cement diversion ditch present	41.45	-110.80	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	BLM	17N	118W	18
1748	Unknown	Kemmerer BLM	Dry	Potential	No Water Present	41.45	-110.79	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	Private	17N	118W	17
1749	Unknown	Kemmerer BLM	Dry	Potential	No Water Present	41.45	-110.79	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	Private	17N	118W	17
1750	Unknown	Kemmerer BLM	Wet	No	Listed as "Blown Out" by BLM, water present blown out: Not a watersource because BLM lists it as "blown out"	41.45	-110.67	Phase II	Clear Creek-Shurtleff Creek	Albert Creek	Private	17N	117W	17
1751	Unknown	Kemmerer BLM	Dry	Potential	No Water Present	41.45	-110.79	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	Private	17N	118W	17
1752	Unknown	Kemmerer BLM	Dry	Potential	no water present overflow pipe present	41.45	-110.79	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	Private	17N	118W	17

ACE ID	Name	Source	Condition	Water Source	Notes	Lattitude	Longitude	Phase	HUC 12 Name	Allotment	Land Owner	T	R	S
1753	Unknown	Kemmerer BLM	Dry	Potential	no water present	41.45	-110.82	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	Private	17N	119W	13
1754	Unknown	Kemmerer BLM	Dry	Potential	No Water Present	41.45	-110.82	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	Private	17N	119W	13
1755	Unknown	Kemmerer BLM	Wet	Yes	water present overflow pipe present	41.45	-110.78	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	Private	17N	118W	17
1756	Unknown	Kemmerer BLM	Wet	Yes	Water Present	41.45	-110.77	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	Private	17N	118W	20
1757	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.45	-110.63	Phase II	Lower Albert Creek	Albert Creek	BLM	17N	117W	22
1758	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.45	-110.47	Phase II	Muddy Creek-Town of Carter	Carter Lease	BLM	17N	116W	24
1759	Unknown	Kemmerer BLM	Wet	Yes	Water Present	41.45	-110.77	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	Private	17N	118W	20
1760	Unknown	Kemmerer BLM	Dry	Potential	No Water Present	41.44	-110.77	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	Private	17N	118W	20
1761	Unknown	Kemmerer BLM	Wet	Yes	Water Present	41.44	-110.79	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	Private	17N	118W	20
1762	Unknown	Kemmerer BLM	Dry	No	BREACHED, RIPS DATABASE	41.44	-110.62	Phase II	Lower Albert Creek	Albert Creek	BLM	17N	117W	22
1763	Unknown	Kemmerer BLM	Wet	No	Listed as "Blown Out" by BLM, Water Present, Channelization has occured: Not a watersource because BLM lists it as "blown out"	41.44	-110.79	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	Private	17N	118W	19
1764	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.44	-110.63	Phase II	Lower Albert Creek	Albert Creek	BLM	17N	117W	22
1765	Unknown	Kemmerer BLM	Wet	Yes	Water Present	41.44	-110.80	Phase II	Clear Creek-Shurtleff Creek	Cumberland/Uinta	Private	17N	118W	19
1766	Unknown	Kemmerer BLM	Dry	No	SEDIMENT, RIPS DATABASE	41.44	-110.66	Phase II	Lower Albert Creek	Albert Creek	BLM	17N	117W	20
1767	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.43	-110.68	Phase II	Lower Albert Creek	Albert Creek	BLM	17N	117W	30
1768	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.43	-110.61	Phase II	Muddy Creek-Lost Draw	Albert Creek	BLM	17N	117W	26
1769	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.43	-110.69	Phase II	Lower Albert Creek	Albert Creek	BLM	17N	117W	30
1770	Unknown	Kemmerer BLM	Wet	Yes	RIPS DATABASE	41.38	-110.36	Phase II	Blacks Fork-Rollins Reservoir	Bridger Airport	BLM	16N	115W	10
1771	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.38	-110.39	Phase II	Blacks Fork-Rollins Reservoir	Bridger Airport	BLM	16N	115W	9
1772	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.38	-110.45	Phase II	Rock Creek-Spring Creek	Bridger Airport	BLM	16N	116W	12
1773	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.37	-110.39	Phase II	Blacks Fork-Rollins Reservoir	Bridger Airport	BLM	16N	115W	16
1774	Unknown	Kemmerer BLM	Wet	Yes	RIPS DATABASE	41.37	-110.15	Phase II	Lower Smiths Fork-Blacks Fork	Indian Flat	BLM	16N	113W	16
1775	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.37	-110.41	Phase II	Blacks Fork-Rollins Reservoir	Bridger Airport	BLM	16N	115W	17
1776	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.36	-110.64	Phase II	Muddy Creek-Mussleman Creek	Coal Mine Draw	BLM	16N	117W	18
1777	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.36	-110.43	Phase II	Blacks Fork-Quarry Creek	Bridger Airport	BLM	16N	115W	19
1778	Unknown	Kemmerer BLM	Wet	Yes	WET IN TWO YEARS PHOTOGRAPHY, RIPS DATABASE	41.36	-110.48	Phase II	Rock Creek-Spring Creek	Bridger Airport	BLM	16N	116W	22
1779	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.35	-110.55	Phase II	Muddy Creek-Mussleman Creek	Bigelow Bench	BLM	16N	117W	24
1780	Unknown	Kemmerer BLM	Dry	No	SEDIMENT, RIPS DATABASE	41.35	-110.45	Phase II	Blacks Fork-Quarry Creek	Bridger Airport	BLM	16N	116W	23
1781	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.34	-110.79	Phase II	Middle Albert Creek	Byrne Creek	BLM	16N	119W	24
1782	Unknown	Kemmerer BLM	Wet	Yes	RIPS DATABASE	41.34	-110.58	Phase II	Muddy Creek-Mussleman Creek	Bigelow Bench	Private	16N	117W	26
1783	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.34	-110.15	Phase II	Lower Cottonwood Creek-Blacks Fork	Indian Flat	BLM	16N	113W	28
1784	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.34	-110.15	Phase II	Lower Cottonwood Creek-Blacks Fork	Indian Flat	BLM	16N	113W	28
1785	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.33	-110.08	Phase II	Lower Cottonwood Creek-Blacks Fork	Lyman Cattle	BLM	16N	112W	30
1786	Unknown	Kemmerer BLM	Wet	Yes	RIPS DATABASE	41.33	-110.17	Phase II	Lower Cottonwood Creek-Blacks Fork	Indian Flat	BLM	16N	113W	32
1787	Unknown	Kemmerer BLM	Dry	No	SEDIMENT, RIPS DATABASE	41.32	-110.59	Phase II	Muddy Creek-Mussleman Creek	Leroy	BLM	16N	117W	34
1788	Bigelow Bench Reservoir	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.32	-110.51	Phase II	Blacks Fork-Quarry Creek	Bigelow Bench	BLM	16N	116W	32
1789	Unknown	Kemmerer BLM	Wet	Yes	RIPS DATABASE	41.32	-110.17	Phase II	Lower Cottonwood Creek-Blacks Fork	Lyman Cattle	BLM	15N	113W	5
1790	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.31	-110.58	Phase II	Muddy Creek-Mussleman Creek	Leroy	BLM	15N	117W	2
1791	Unknown	Kemmerer BLM	Wet	Yes	RIPS DATABASE	41.31	-110.47	Phase II	Blacks Fork-Quarry Creek	Quarry Creek	BLM	15N	116W	2
1792	Unknown	Kemmerer BLM	Wet	Yes	RIPS DATABASE	41.30	-110.48	Phase II	Blacks Fork-Quarry Creek	Bridger Butte	BLM	15N	116W	3
1793	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.30	-110.45	Phase II	Blacks Fork-Quarry Creek	Quarry Creek	BLM	15N	116W	1
1794	Unknown	Kemmerer BLM	Wet	Yes	RIPS DATABASE	41.30	-110.70	Phase II	Middle Albert Creek	Radio Tower	BLM	15N	118W	10
1795	Unknown	Kemmerer BLM	Wet	Yes	RIPS DATABASE TWO RIPS NUMBERS: 944927, 940479	41.28	-110.15	Phase II	Lower Cottonwood Creek-Blacks Fork	Lyman Cattle	BLM	15N	113W	16
1796	Cliff Graham Reservoir No.3	Kemmerer BLM	Wet	Yes	RIPS DATABASE	41.26	-110.25	Phase II	Upper Smiths Fork	No Allotment	Private	15N	114W	22
1797	Unknown	Kemmerer BLM	Dry	No	BREACHED, RIPS Database	41.18	-110.21	Phase II	Sage Creek-Reed Reservoir	Sage Creek	BLM	14N	114W	24
1798	Unknown	Kemmerer BLM	Dry	Potential	RIPS Database	41.16	-110.24	Phase II	Sage Creek-Reed Reservoir	Sage Creek	BLM	14N	114W	26
1799	Reed Reservoir	Kemmerer BLM	Wet	Yes	RIPS Database	41.15	-110.23	Phase II	Sage Creek-Reed Reservoir	Sage Creek	Private	14N	114W	35
1800	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.15	-110.47	Phase II	Willow Creek-Yellow Hollow Creek	North Horse Creek	BLM	14N	116W	34
1801	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.14	-110.47	Phase II	Willow Creek-Yellow Hollow Creek	North Horse Creek	BLM	14N	116W	34
1802	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.14	-110.49	Phase II	Willow Creek-Yellow Hollow Creek	North Horse Creek	BLM	14N	116W	34
1803	Unknown	Kemmerer BLM	Wet	Yes	RIPS Database	41.14	-110.34	Phase II	Leavitt Creek	Sage Creek	BLM	13N	115W	1
1804	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.14	-110.49	Phase II	Willow Creek-Yellow Hollow Creek	Sage Chicken Flat	BLM	13N	116W	3
1805	Unknown	Kemmerer BLM	Wet	Yes	RIPS Database	41.13	-110.35	Phase II	Leavitt Creek	Bench	BLM	13N	115W	2
1806	Unknown	Kemmerer BLM	Wet	Yes	RIPS Database	41.13	-110.40	Phase II	Upper Smiths Fork	Smith	BLM	13N	115W	5
1807	Unknown	Kemmerer BLM	Dry	Potential	RIPS DATABASE	41.12	-110.51	Phase II	Willow Creek-Yellow Hollow Creek	North Horse Creek	BLM	13N	116W	8
1808	Unknown	Kemmerer BLM	Wet	Yes	RIPS DATABASE	41.08	-110.51	Phase II	Willow Creek-Yellow Hollow Creek	South Horse Creek	BLM	13N	116W	29
1809	Unknown	Kemmerer BLM	Wet	Yes	RIPS DATABASE	41.07	-110.60	Phase II	Blacks Fork-Sixmile Creek	Balsam Draw	BLM	13N	117W	34
1810	Unknown	Rock Springs BLM	N/A	No	NO VISIBLE RESERVOIR	41.28	-109.70	Phase III	Blacks Fork-Flaming Gorge Reservoir	Granger Lease	BLM	15N	109W	16
1811	Big Hollow Pit Reservoir	Rock Springs BLM	Wet	Yes		41.28	-109.94	Phase III	Big Dry Creek-Tin Cup Draw	Sage Creek Mountain	BLM	15N	111W	16
1812	Unknown	Rock Springs BLM	Dry	No	BREACHED	41.28	-109.70	Phase III	Blacks Fork-Flaming Gorge Reservoir	Granger Lease	BLM	15N	109W	16
1813	Unknown	Rock Springs BLM	Wet	Yes		41.28	-109.96	Phase III	Big Dry Creek-Tin Cup Draw	Sage Creek Mountain	BLM	15N	111W	17
1814	Unknown	Rock Springs BLM	Dry	No	BREACHED	41.28	-110.00	Phase III	Big Dry Creek-Cattail Draw	Sage Creek Mountain	BLM	15N	112W	13
1815	Needle Pit Reservoir	Rock Springs BLM	Wet	Yes		41.28	-109.89	Phase III	Needle Reservoir	Sage Creek Mountain	BLM	15N	111W	14
1816	Badlands Reservoir	Rock Springs BLM	Dry	No	BREACHED	41.27	-109.91	Phase III	Big Dry Creek-Tin Cup Draw	Sage Creek Mountain	BLM	15N	111W	22
1817	Unknown	Rock Springs BLM	Dry	No	BREACHED	41.27	-109.99	Phase III	Big Dry Creek-Cattail Draw	Sage Creek Mountain	BLM	15N	112W	24
1818	Unknown	Rock Springs BLM	N/A	No	NO VISIBLE RESERVOIR	41.27	-110.00	Phase III	Big Dry Creek-Cattail Draw	Sage Creek Mountain	BLM	15N	112W	24
1819	Unknown	Rock Springs BLM	Dry	No	BREACHED	41.27	-110.09	Phase III	Big Dry Creek-Shurtliff Spring	Sage Creek Mountain	BLM	15N	113W	24
1820	Wild Onion Pit Reservoir	Rock Springs BLM	Dry	No	BREACHED ON EAST SIDE	41.26	-109.94	Phase III	Big Dry Creek-Tin Cup Draw	Sage Creek Mountain	BLM	15N	111W	21
1821	Unknown	Rock Springs BLM	Wet	Yes		41.26	-109.99	Phase III	Big Dry Creek-Cattail Draw	Sage Creek Mountain	BLM	15N	112W	24
1822	Cedar Mountain Reservoir #10	Rock Springs BLM	Dry	Potential		41.26	-109.86	Phase III	Winter Fat Reservoir	Sage Creek Mountain	BLM	15N	110W	19
1823	Cedar Mountain Reservoir #9	Rock Springs BLM	N/A	No	NO RESERVOIR VISIBLE	41.26	-109.80	Phase III	Winter Fat Reservoir	Cedar Mountain	BLM	15N	110W	22
1824	Burntfork Reservoir #5	Rock Springs BLM	Dry	No	BREACHED	41.26	-109.79	Phase III	Needle Reservoir	Cedar Mountain	BLM	15N	110W	23
1825	Northeast Pit Reservoir	Rock Springs BLM	Dry	Potential		41.26	-109.73	Phase III	Blacks Fork-Flaming Gorge Reservoir	Cedar Mountain	BLM	15N	109W	20

ACE ID	Name	Source	Condition	Water Source	Notes	Lattitude	Longitude	Phase	HUC 12 Name	Allotment	Land Owner	T	R	S
1826	Unknown	Rock Springs BLM	Wet	Yes		41.26	-109.80	Phase III	Winter Fat Reservoir	Cedar Mountain	BLM	15N	110W	27
1827	Hearth Reservoir	Rock Springs BLM	Wet	Yes		41.26	-109.85	Phase III	Winter Fat Reservoir	Cedar Mountain	BLM	15N	110W	30
1828	Unknown	Rock Springs BLM	Dry	No	BREACHED	41.25	-109.81	Phase III	Winter Fat Reservoir	Cedar Mountain	BLM	15N	110W	28
1829	Unknown	Rock Springs BLM	Dry	Potential		41.25	-110.04	Phase III	Dry Creek-Balsam Root Reservoir	Sage Creek Mountain	BLM	15N	112W	28
1830	Unknown	Rock Springs BLM	Dry	Potential		41.25	-109.78	Phase III	Needle Reservoir	Cedar Mountain	BLM	15N	110W	26
1831	Pipeline Reservoir No. 2	Rock Springs BLM	Dry	Potential		41.25	-109.68	Phase III	Buckboard Wash	Cedar Mountain	BLM	15N	109W	27
1832	Unknown	Rock Springs BLM	Wet	Yes		41.25	-109.99	Phase III	Big Dry Creek-Cattail Draw	Sage Creek Mountain	BLM	15N	112W	25
1833	Ridge Pit Reservoir	Rock Springs BLM	Wet	Yes		41.25	-109.70	Phase III	Buckboard Wash	Cedar Mountain	BLM	15N	109W	28
1834	Seismograph No. 4 Pit Reservoir	Rock Springs BLM	Dry	No	SEDIMENT	41.25	-110.09	Phase III	Dry Creek-Balsam Root Reservoir	Currently No Name	BLM	15N	113W	25
1835	Trail Reservoir	Rock Springs BLM	Wet	Yes		41.25	-109.77	Phase III	Needle Reservoir	Cedar Mountain	BLM	15N	110W	25
1836	Unknown	Rock Springs BLM	Wet	Yes		41.25	-109.93	Phase III	Big Dry Creek-Cattail Draw	Sage Creek Mountain	BLM	15N	111W	28
1837	Unknown	Rock Springs BLM	Wet	Yes		41.25	-109.92	Phase III	Big Dry Creek-Tin Cup Draw	Sage Creek Mountain	BLM	15N	111W	27
1838	Unknown	Rock Springs BLM	Wet	Yes		41.24	-110.03	Phase III	Big Dry Creek-Cattail Draw	Sage Creek Mountain	BLM	15N	112W	34
1839	Sitanton Reservoir	Rock Springs BLM	N/A	No	NO VISIBLE RESERVOIR	41.24	-110.01	Phase III	Big Dry Creek-Cattail Draw	Sage Creek Mountain	BLM	15N	112W	35
1840	Unknown	Rock Springs BLM	Wet	Yes		41.24	-109.97	Phase III	Big Dry Creek-Cattail Draw	Sage Creek Mountain	BLM	15N	111W	31
1841	Horse Reservoir No. 4	Rock Springs BLM	Wet	Yes		41.24	-109.99	Phase III	Big Dry Creek-Cattail Draw	Sage Creek Mountain	BLM	15N	112W	36
1842	Buckboard Reservoir	Rock Springs BLM	Dry	No	BREACHED, PART OF FLAMING GORGE NOW	41.24	-109.62	Phase III	Flaming Gorge Reservoir-Buckboard Reservoir	No Allotment	USFS	15N	108W	31
1843	Burntfork Reservoir #4	Rock Springs BLM	Wet	Yes		41.24	-109.85	Phase III	Winter Fat Reservoir	Cedar Mountain	BLM	15N	110W	32
1844	Unknown	Rock Springs BLM	Dry	No	PIPING UNDERNEATH EMBANKMENT?	41.23	-109.82	Phase III	Winter Fat Reservoir	Cedar Mountain	BLM	15N	110W	33
1845	Unknown	Rock Springs BLM	Wet	Yes		41.23	-110.12	Phase III	Big Dry Creek-Shurtliff Spring	Currently No Name	BLM	15N	113W	35
1846	Pine Spring Reservoir	Rock Springs BLM	Wet	Yes		41.23	-109.73	Phase III	Buckboard Wash	Cedar Mountain	BLM	15N	109W	32
1847	Unknown	Rock Springs BLM	N/A	No	NO VISIBLE RESERVOIR	41.23	-110.06	Phase III	Dry Creek-Balsam Root Reservoir	Sage Creek Mountain	BLM	14N	112W	5
1848	Cow Reservoir #1	Rock Springs BLM	Dry	Potential		41.23	-110.14	Phase III	Big Dry Creek-Shurtliff Spring	Currently No Name	BLM	14N	113W	3
1849	Pipeline Reservoir No. 1	Rock Springs BLM	Dry	No	SEDIMENT	41.23	-109.66	Phase III	Flaming Gorge Reservoir-Buckboard Reservoir	Cedar Mountain	BLM	14N	109W	2
1850	Unknown	Rock Springs BLM	Dry	Potential		41.22	-109.97	Phase III	Big Dry Creek-Cattail Draw	Sage Creek Mountain	BLM	14N	111W	6
1851	Crested Wheat Pit Reservoir #2	Rock Springs BLM	Dry	Potential		41.22	-110.11	Phase III	Dry Creek-Balsam Root Reservoir	Currently No Name	BLM	14N	113W	2
1852	Seismograph No. 1 Pit Reservoir	Rock Springs BLM	N/A	No	NO VISIBLE RESERVOIR	41.22	-110.00	Phase III	Big Dry Creek-Cattail Draw	Sage Creek Mountain	BLM	14N	112W	1
1853	Unknown	Rock Springs BLM	N/A	No	NO VISIBLE RESERVOIR	41.22	-109.74	Phase III	Buckboard Wash	Cedar Mountain	BLM	14N	109W	6
1854	Burntfork Reservoir #7	Rock Springs BLM	Wet	Yes		41.22	-109.86	Phase III	Winter Fat Reservoir	Cedar Mountain	BLM	14N	110W	6
1855	Winch Pit Reservoir (Powerline Pit)	Rock Springs BLM	Wet	Yes		41.22	-110.05	Phase III	Dry Creek-Balsam Root Reservoir	Sage Creek Mountain	BLM	14N	112W	4
1856	Three Corners Pit Reservoir	Rock Springs BLM	Dry	No	BREACHED, CHANNEL SKIRTING WEST SIDE THROUGH RESERVOIR	41.22	-109.66	Phase III	Flaming Gorge Reservoir-Buckboard Reservoir	Cedar Mountain	BLM	14N	109W	2
1857	Seismograph No. 2 Pit Reservoir	Rock Springs BLM	Dry	Potential		41.22	-110.02	Phase III	Big Dry Creek-Cattail Draw	Sage Creek Mountain	BLM	14N	112W	10
1858	Cedar Mountain Reservoir	Rock Springs BLM	Wet	Yes		41.22	-109.88	Phase III	Winter Fat Reservoir	Cedar Mountain	BLM	14N	111W	12
1859	Spring Creek Reservoir	Rock Springs BLM	N/A	No	NO VISIBLE RESERVOIR	41.22	-109.76	Phase III	Buckboard Wash	Cedar Mountain	BLM	14N	110W	12
1860	Cow Reservoir #2	Rock Springs BLM	Dry	Potential		41.22	-110.12	Phase III	Dry Creek-Balsam Root Reservoir	Currently No Name	BLM	14N	113W	2
1861	Burntfork Reservoir #10	Rock Springs BLM	Wet	Yes	BREACHED BUT HOLDING WATER, POSSIBLY SECONDARILY EXCAVATED	41.21	-109.79	Phase III	Needle Reservoir	Cedar Mountain	BLM	14N	110W	11
1862	Cedar Mountain Reservoir #8	Rock Springs BLM	Dry	Potential		41.21	-109.84	Phase III	Winter Fat Reservoir	Cedar Mountain	BLM	14N	110W	8
1863	Canal Pit Reservoir	Rock Springs BLM	Dry	No	BREACHED	41.21	-109.65	Phase III	Flaming Gorge Reservoir-Buckboard Reservoir	Cedar Mountain	BLM	14N	109W	12
1864	Unknown	Rock Springs BLM	N/A	No	NO VISIBLE RESERVOIR	41.21	-109.87	Phase III	Winter Fat Reservoir	Cedar Mountain	BLM	14N	111W	12
1865	Eastfork Pit Reservoir #3	Rock Springs BLM	Dry	Potential		41.21	-110.04	Phase III	Dry Creek-Balsam Root Reservoir	Sage Creek Mountain	BLM	14N	112W	10
1866	North Black Mountain Pit Reservoir	Rock Springs BLM	Wet	Yes		41.21	-109.80	Phase III	Needle Reservoir	Cedar Mountain	BLM	14N	110W	10
1867	Standard Pit	Rock Springs BLM	Dry	Potential		41.21	-110.10	Phase III	Dry Creek-Balsam Root Reservoir	Currently No Name	BLM	14N	113W	12
1868	Cow Pit Reservoir #3	Rock Springs BLM	Wet	Yes		41.21	-110.14	Phase III	Big Dry Creek-Shurtliff Spring	Currently No Name	BLM	14N	113W	9
1869	Unknown	Rock Springs BLM	Wet	Yes		41.20	-109.98	Phase III	Big Dry Creek-Cattail Draw	Sage Creek Mountain	BLM	14N	112W	12
1870	Standard Reservoir	Rock Springs BLM	Wet	Yes		41.20	-110.08	Phase III	Dry Creek-Balsam Root Reservoir	Sage Creek Mountain	BLM	14N	112W	7
1871	Boundary Reservoir	Rock Springs BLM	Wet	Yes		41.20	-109.99	Phase III	Big Dry Creek-Cattail Draw	Sage Creek Mountain	BLM	14N	112W	13
1872	Cedar Brake Reservoir #1	Rock Springs BLM	Wet	Yes		41.20	-110.12	Phase III	Dry Creek-Balsam Root Reservoir	Currently No Name	BLM	14N	113W	14
1873	Unknown	Rock Springs BLM	N/A	No	NO VISIBLE RESERVOIR	41.20	-110.01	Phase III	Dry Creek-Balsam Root Reservoir	Sage Creek Mountain	BLM	14N	112W	14
1874	Unknown	Rock Springs BLM	Dry	Potential		41.20	-109.98	Phase III	Big Dry Creek-Cattail Draw	Sage Creek Mountain	BLM	14N	111W	18
1875	Unknown	Rock Springs BLM	Wet	Yes	NOTE DIVERSION DITCH	41.20	-109.89	Phase III	Winter Fat Reservoir	Cedar Mountain	BLM	14N	111W	14
1876	Unknown	Rock Springs BLM	N/A	No	NO VISIBLE RESERVOIR	41.20	-109.85	Phase III	Winter Fat Reservoir	Cedar Mountain	BLM	14N	110W	17
1877	Seismograph Reservoir No 3	Rock Springs BLM	Wet	Yes		41.20	-110.01	Phase III	Dry Creek-Balsam Root Reservoir	Sage Creek Mountain	BLM	14N	112W	14
1878	Unknown	Rock Springs BLM	Dry	No	BREACHED	41.20	-109.98	Phase III	Big Dry Creek-Cattail Draw	Sage Creek Mountain	BLM	14N	111W	18
1879	High Mesa No. 2 Pit Reservoir	Rock Springs BLM	Dry	Potential		41.19	-110.11	Phase III	Dry Creek-Balsam Root Reservoir	Currently No Name	BLM	14N	113W	14
1880	Burntfork Reservoir #6	Rock Springs BLM	N/A	No	NO VISIBLE RESERVOIR	41.19	-109.83	Phase III	Needle Reservoir	Cedar Mountain	BLM	14N	110W	16
1881	Unknown	Rock Springs BLM	Dry	Potential		41.19	-110.14	Phase III	Dry Creek-Balsam Root Reservoir	Currently No Name	BLM	14N	113W	15
1882	Freak Island Reservoir	Rock Springs BLM	Dry	No	SEDIMENT	41.19	-109.65	Phase III	Flaming Gorge Reservoir-Buckboard Reservoir	Cedar Mountain	BLM	14N	109W	13
1883	Seismograph No. 3 Pit Reservoir	Rock Springs BLM	N/A	No	NO VISIBLE RESERVOIR	41.19	-110.00	Phase III	Dry Creek-Big Hollow Creek	Sage Creek Mountain	BLM	14N	112W	13
1884	Cedar Break Reservoir #2	Rock Springs BLM	Wet	Yes		41.19	-110.13	Phase III	Dry Creek-Balsam Root Reservoir	Currently No Name	BLM	14N	113W	15
1885	Clemitis Reservoir	Rock Springs BLM	Dry	Potential		41.19	-110.16	Phase III	Dry Creek-Balsam Root Reservoir	Currently No Name	BLM	14N	113W	21
1886	Bland Reservoir #2	Rock Springs BLM	Dry	Potential		41.19	-109.59	Phase III	Flaming Gorge Reservoir-Squaw Hollow	No Allotment	USFS	14N	108W	21
1887	Unknown	Rock Springs BLM	N/A	No	Nothing visible on imagery	41.19	-109.77	Phase III	Needle Reservoir	Cedar Mountain	BLM	14N	110W	24
1888	Buck Basin Reservoir	Rock Springs BLM	Wet	Yes		41.18	-110.06	Phase III	Dry Creek-Balsam Root Reservoir	Sage Creek Mountain	BLM	14N	112W	20
1889	Soap Holes Reservoir	Rock Springs BLM	Wet	Yes		41.18	-110.04	Phase III	Dry Creek-Big Hollow Creek	Sage Creek Mountain	BLM	14N	112W	22
1890	Dobie Reservoir	Rock Springs BLM	Dry	Potential		41.18	-110.07	Phase III	Dry Creek-Balsam Root Reservoir	Currently No Name	BLM	14N	112W	20
1891	Unknown	Rock Springs BLM	N/A	No	NO VISIBLE RESERVOIR	41.18	-109.99	Phase III	Dry Creek-Big Hollow Creek	Sage Creek Mountain	BLM	14N	112W	24
1892	Unknown	Rock Springs BLM	Wet	Yes		41.18	-109.83	Phase III	Needle Reservoir	Cedar Mountain	BLM	14N	110W	21
1893	Sage Mountain Reservoir No. 1	Rock Springs BLM	Wet	Yes		41.18	-110.13	Phase III	Dry Creek-Balsam Root Reservoir	Currently No Name	BLM	14N	113W	22
1894	Balsam Root Reservoir	Rock Springs BLM	Wet	Yes		41.18	-110.14	Phase III	Dry Creek-Balsam Root Reservoir	Currently No Name	BLM	14N	113W	22
1895	Cedar Mountain Reservoir #7	Rock Springs BLM	Dry	Potential		41.18	-110.15	Phase III	Dry Creek-Balsam Root Reservoir	Currently No Name	BLM	14N	113W	21
1896	Island Reservoir	Rock Springs BLM	Wet	Yes		41.18	-109.64	Phase III	Flaming Gorge Reservoir-Squaw Hollow	Cedar Mountain	BLM	14N	109W	24
1897	Burntfork Reservoir #8	Rock Springs BLM	Dry	Potential		41.18	-109.80	Phase III	Needle Reservoir	Cedar Mountain	BLM	14N	110W	22
1898	Unknown	Rock Springs BLM	Wet	Yes		41.18	-109.95	Phase III	Winter Fat Reservoir	Cedar Mountain	BLM	14N	111W	20

ACE ID	Name	Source	Condition	Water Source	Notes	Lattitude	Longitude	Phase	HUC 12 Name	Allotment	Land Owner	T	R	S
1899	Artemisia Cana Pit Reservoir	Rock Springs BLM	Wet	Yes		41.18	-110.10	Phase III	Dry Creek-Balsam Root Reservoir	Currently No Name	BLM	14N	113W	24
1900	Blane Reservoir #1	Rock Springs BLM	Dry	Potential		41.18	-109.60	Phase III	Flaming Gorge Reservoir-Squaw Hollow	No Allotment	USFS	14N	108W	21
1901	Cedar Mountain Reservoir #6	Rock Springs BLM	Dry	No	BREACHED	41.18	-110.16	Phase II	Sage Creek-Reed Reservoir	Currently No Name	BLM	14N	113W	21
1902	High Mesa No. 1 Pit Reservoir	Rock Springs BLM	Dry	Potential		41.17	-110.12	Phase III	Dry Creek-Balsam Root Reservoir	Currently No Name	BLM	14N	113W	23
1903	Soapholes Pit Reservoir	Rock Springs BLM	Wet	Yes		41.17	-110.05	Phase III	Dry Creek-Big Hollow Creek	Sage Creek Mountain	BLM	14N	112W	28
1904	Eastfork Pit Reservoir #2	Rock Springs BLM	Dry	Potential		41.17	-110.03	Phase III	Dry Creek-Big Hollow Creek	Sage Creek Mountain	BLM	14N	112W	27
1905	Symphoricarpus No. 3 Pit Reservoir	Rock Springs BLM	N/A	No	NO VISIBLE RESERVOIR	41.17	-110.11	Phase III	Dry Creek-Balsam Root Reservoir	Currently No Name	BLM	14N	113W	26
1906	Burntfork Reservoir #9	Rock Springs BLM	Dry	No	BREACHED	41.17	-109.83	Phase III	Needle Reservoir	Cedar Mountain	BLM	14N	110W	28
1907	Symphoricarpus No. 1 Reservoir	Rock Springs BLM	Dry	No	BREACHED	41.17	-110.08	Phase III	Dry Creek-Balsam Root Reservoir	Currently No Name	BLM	14N	112W	30
1908	Symphoricarpus No. 2 Pit Reservoir	Rock Springs BLM	Dry	Potential		41.17	-110.09	Phase III	Dry Creek-Balsam Root Reservoir	Currently No Name	BLM	14N	113W	25
1909	Unknown	Rock Springs BLM	Wet	Yes		41.17	-109.78	Phase III	Needle Reservoir	Cedar Mountain	BLM	14N	110W	26
1910	Cedar Mountain Reservoir #5	Rock Springs BLM	Wet	Yes		41.17	-110.17	Phase II	Sage Creek-Reed Reservoir	Currently No Name	BLM	14N	113W	29
1911	Two Island Reservoir	Rock Springs BLM	Wet	Yes		41.17	-109.67	Phase III	Flaming Gorge Reservoir-Squaw Hollow	Cedar Mountain	BLM	14N	109W	26
1912	Symphoricarpus No. 5 Pir Reservoir	Rock Springs BLM	N/A	No	NO VISIBLE RESERVOIR	41.17	-110.10	Phase III	Dry Creek-Balsam Root Reservoir	Currently No Name	BLM	14N	113W	25
1913	Prairie Dog Pit Reservoir	Rock Springs BLM	Wet	Yes		41.17	-109.61	Phase III	Flaming Gorge Reservoir-Squaw Hollow	Cedar Mountain	BLM	14N	108W	29
1914	Unknown	Rock Springs BLM	Dry	Potential		41.16	-110.09	Phase III	Dry Creek-Balsam Root Reservoir	Currently No Name	BLM	14N	112W	30
1915	Indian Pit Reservoir	Rock Springs BLM	Wet	Yes		41.16	-109.84	Phase III	Little Dry Creek-Lane Meadow Creek	Cedar Mountain	BLM	14N	110W	29
1916	Unknown	Rock Springs BLM	N/A	No	NO VISIBLE RESERVOIR	41.16	-110.09	Phase III	Dry Creek-Balsam Root Reservoir	Currently No Name	BLM	14N	113W	25
1917	Unknown	Rock Springs BLM	Wet	Yes		41.16	-110.19	Phase II	Sage Creek-Reed Reservoir	Sage Creek Mountain	BLM	14N	113W	30
1918	Unknown	Rock Springs BLM	Dry	Potential		41.16	-109.80	Phase III	Little Dry Creek-Lane Meadow Creek	Cedar Mountain	BLM	14N	110W	34
1919	Twin Pit Reservoir	Rock Springs BLM	Wet	Yes		41.16	-109.68	Phase III	Flaming Gorge Reservoir-Squaw Hollow	Cedar Mountain	BLM	14N	109W	34
1920	Seismic Pit Reservoir	Rock Springs BLM	Wet	Yes		41.15	-109.64	Phase III	Flaming Gorge Reservoir-Squaw Hollow	Cedar Mountain	BLM	14N	109W	36
1921	Unknown	Rock Springs BLM	Wet	Yes		41.15	-109.96	Phase III	Winter Fat Reservoir	Cedar Mountain	Private	14N	111W	32
1922	Unknown	Rock Springs BLM	Wet	Yes		41.15	-109.89	Phase III	Little Dry Creek-Lane Meadow Creek	Cedar Mountain	BLM	14N	111W	35
1923	Unknown	Rock Springs BLM	Wet	Yes		41.15	-110.05	Phase III	Dry Creek-Big Hollow Creek	Sage Creek Mountain	BLM	14N	112W	33
1924	Shadscale Reservoir	Rock Springs BLM	Wet	Yes		41.15	-109.70	Phase III	Anvil Wash	Cedar Mountain	BLM	14N	109W	33
1925	Groundhog Pit Reservoir	Rock Springs BLM	Wet	Yes		41.15	-109.64	Phase III	Flaming Gorge Reservoir-Squaw Hollow	Cedar Mountain	BLM	14N	109W	36
1926	Unknown	Rock Springs BLM	N/A	No	NO VISIBLE RESERVOIR	41.14	-110.01	Phase III	Dry Creek-Big Hollow Creek	Sage Creek Mountain	BLM	13N	112W	2
1927	Eastfork Pit Reservoir #1	Rock Springs BLM	N/A	No	NO VISIBLE RESERVOIR	41.14	-110.06	Phase III	Dry Creek-Big Hollow Creek	Sage Creek Mountain	BLM	13N	112W	5
1928	Juniper Pit Reservoir	Rock Springs BLM	N/A	No	NO VISIBLE RESERVOIR	41.14	-110.12	Phase III	Dry Creek-Big Hollow Creek	Sage Creek Mountain	BLM	13N	113W	2
1929	Flint Rock Reservoir	Rock Springs BLM	Dry	No	BREACHED	41.14	-109.78	Phase III	Little Dry Creek-Lane Meadow Creek	Cedar Mountain	BLM	13N	110W	2
1930	Unknown	Rock Springs BLM	Dry	No	BREACHED	41.14	-109.84	Phase III	Little Dry Creek-Lane Meadow Creek	Cedar Mountain	BLM	13N	110W	5
1931	Unknown	Rock Springs BLM	N/A	No	NO VISIBLE RESERVOIR	41.14	-109.77	Phase III	Little Dry Creek-Lane Meadow Creek	Cedar Mountain	BLM	13N	110W	2
1932	Cedar Mountain Reservoir #4	Rock Springs BLM	Wet	Yes		41.13	-110.17	Phase II	Sage Creek-Reed Reservoir	Sage Creek Mountain	BLM	13N	113W	5
1933	Old Reservoir	Rock Springs BLM	Wet	Yes		41.13	-109.70	Phase III	Anvil Wash	Cedar Mountain	BLM	13N	109W	4
1934	Alkali Pit Reservoir	Rock Springs BLM	Wet	Yes		41.13	-109.64	Phase III	Anvil Wash	Cedar Mountain	BLM	13N	109W	1
1935	Dry Creek Reservoir	Rock Springs BLM	Dry	Potential		41.12	-110.08	Phase III	Dry Creek-Big Hollow Creek	Sage Creek Mountain	BLM	13N	112W	7
1936	Unknown	Rock Springs BLM	Wet	Yes		41.12	-109.78	Phase III	Little Dry Creek-Lane Meadow Creek	Cedar Mountain	BLM	13N	110W	11
1937	Hickey Reservoir No. 2	Rock Springs BLM	Wet	Yes		41.12	-110.16	Phase II	Sage Creek-Reed Reservoir	Sage Creek Mountain	BLM	13N	113W	9
1938	Shelton Lake	Rock Springs BLM	Wet	Yes		41.12	-109.94	Phase III	Little Dry Creek-Lane Meadow Creek	Cedar Mountain	Private	13N	111W	9
1939	Unknown	Rock Springs BLM	Dry	No	BREACHED	41.12	-109.94	Phase III	Little Dry Creek-Lane Meadow Creek	Cedar Mountain	Private	13N	111W	9
1940	Middle Reservoir	Rock Springs BLM	Dry	Potential		41.12	-109.84	Phase III	Little Dry Creek-Lane Meadow Creek	Cedar Mountain	BLM	13N	110W	8
1941	Unknown	Rock Springs BLM	N/A	No	NO VISIBLE RESERVOIR	41.12	-110.03	Phase III	Dry Creek-Big Hollow Creek	Sage Creek Mountain	BLM	13N	112W	10
1942	General Petroleum Well Reservoir	Rock Springs BLM	N/A	No	NO VISIBLE RESERVOIR	41.12	-110.03	Phase III	Dry Creek-Big Hollow Creek	Sage Creek Mountain	BLM	13N	112W	10
1943	Hussman Reservoir	Rock Springs BLM	Wet	Yes		41.12	-110.02	Phase III	Winter Fat Reservoir	Cedar Mountain	BLM	13N	112W	11
1944	Bomb Pit Reservoir	Rock Springs BLM	Dry	Potential		41.12	-110.11	Phase III	Dry Creek-Big Hollow Creek	Sage Creek Mountain	BLM	13N	113W	11
1945	Haystack Butte No 2 Reservoir	Rock Springs BLM	Dry	No	BREACHED	41.12	-109.58	Phase III	Flaming Gorge Reservoir-Squaw Hollow	Cedar Mountain	BLM	13N	108W	9
1946	Heiner Reservoir No. 3	Rock Springs BLM	Wet	Yes		41.12	-109.87	Phase III	Little Dry Creek-Lane Meadow Creek	Cedar Mountain	BLM	13N	111W	12
1947	Phil Mass Reservoir	Rock Springs BLM	Wet	Yes		41.12	-109.96	Phase III	Winter Fat Reservoir	Cedar Mountain	BLM	13N	111W	7
1948	Buck Crossing Reservoir	Rock Springs BLM	Wet	Yes		41.11	-109.70	Phase III	Anvil Wash	Cedar Mountain	BLM	13N	109W	16
1949	Unknown	Rock Springs BLM	N/A	No	NO VISIBLE RESERVOIR	41.11	-110.03	Phase III	Dry Creek-Big Hollow Creek	Sage Creek Mountain	State of Wyoming	13N	112W	15
1950	Thunderhead Reservoir	Rock Springs BLM	Wet	Yes		41.11	-109.79	Phase III	Little Dry Creek-Lane Meadow Creek	Cedar Mountain	BLM	13N	110W	15
1951	Unknown	Rock Springs BLM	Dry	No	BREACHED	41.11	-109.66	Phase III	Anvil Wash	Cedar Mountain	BLM	13N	109W	14
1952	Hole in Bank Reservoir	Rock Springs BLM	Dry	No	BREACHED	41.11	-109.76	Phase III	Little Dry Creek-Lane Meadow Creek	Cedar Mountain	BLM	13N	110W	13
1953	Section Corner Reservoir	Rock Springs BLM	Wet	Yes		41.11	-109.70	Phase III	Henrys Fork-Cottonwood Creek	Cedar Mountain	BLM	13N	109W	16
1954	Gumbo Reservoir	Rock Springs BLM	N/A	No	NO VISIBLE RESERVOIR	41.11	-109.72	Phase III	Henrys Fork-Cottonwood Creek	Cedar Mountain	BLM	13N	109W	17
1955	Dead Cedar Reservoir	Rock Springs BLM	Wet	Yes		41.11	-109.75	Phase III	Flaming Gorge Reservoir-Wildhorse Draw	Cedar Mountain	BLM	13N	109W	18
1956	Joe Hickey Reservoir# 1	Rock Springs BLM	Dry	Potential		41.10	-110.12	Phase III	Henrys Fork-Poison Creek	Sage Creek Mountain	BLM	13N	113W	14
1957	Hickey Reservoir No. 1	Rock Springs BLM	Dry	Potential		41.10	-110.10	Phase III	Dry Creek-Big Hollow Creek	Sage Creek Mountain	BLM	13N	113W	13
1958	Unknown	Rock Springs BLM	Wet	Yes		41.10	-109.96	Phase III	Henrys Fork-Logan Hollow	Cedar Mountain	Private	13N	111W	20
1959	Mel Behunin Road Reservoir	Rock Springs BLM	Dry	Potential		41.10	-110.12	Phase III	Henrys Fork-Poison Creek	Sage Creek Mountain	BLM	13N	113W	23
1960	Roundup Reservoir	Rock Springs BLM	Dry	Potential		41.10	-110.05	Phase III	Dry Creek-Big Hollow Creek	Sage Creek Mountain	BLM	13N	112W	21
1961	Cedar Mountain Reservoir #3	Rock Springs BLM	N/A	No	NO VISIBLE RESERVOIR	41.09	-110.16	Phase III	Henrys Fork-Poison Creek	Sage Creek Mountain	BLM	13N	113W	21
1962	Butte Reservoir	Rock Springs BLM	Dry	Potential		41.09	-109.62	Phase III	Anvil Wash	Cedar Mountain	BLM	13N	108W	19
1963	Branch Reservoir	Rock Springs BLM	Wet	Yes		41.09	-109.92	Phase III	Little Dry Creek-Lane Meadow Creek	Cedar Mountain	BLM	13N	111W	21
1964	Rim Rock Reservoir	Rock Springs BLM	N/A	No	NO VISIBLE RESERVOIR	41.09	-109.91	Phase III	Little Dry Creek-Lane Meadow Creek	Cedar Mountain	BLM	13N	111W	22
1965	Blue Horse Pit Reservoir	Rock Springs BLM	Dry	Potential		41.09	-109.73	Phase III	Twin Buttes Draw	Cedar Mountain	BLM	13N	109W	20
1966	Blue Horse Pit Reservoir 2	Rock Springs BLM	Dry	Potential		41.09	-109.73	Phase III	Twin Buttes Draw	Cedar Mountain	BLM	13N	109W	20
1967	Unknown	Rock Springs BLM	Wet	Yes		41.09	-110.01	Phase III	Henrys Fork-Spring Creek	Cedar Mountain	Private	13N	112W	23
1968	Ribbon Pit Reservoir	Rock Springs BLM	Dry	Potential		41.09	-109.77	Phase III	Little Dry Creek-Lane Meadow Creek	Cedar Mountain	BLM	13N	110W	24
1969	Unknown	Rock Springs BLM	N/A	No	NO VISIBLE RESERVOIR	41.09	-109.96	Phase III	Henrys Fork-Logan Hollow	Cedar Mountain	Private	13N	111W	20
1970	Hickey Mountain Reservoir	Rock Springs BLM	Dry	Potential		41.09	-110.19	Phase III	Henrys Fork-Poison Creek	Hickey Mountain	BLM	13N	113W	19
1971	Unknown	Rock Springs BLM	Wet	Yes		41.09	-109.99	Phase III	Henrys Fork-Spring Creek	Cedar Mountain	Private	13N	112W	24

ACE ID	Name	Source	Condition	Water Source	Notes	Lattitude	Longitude	Phase	HUC 12 Name	Allotment	Land Owner	T	R	S
1972	Star Pit Reservoir	Rock Springs BLM	Dry	Potential		41.09	-109.79	Phase III	Little Dry Creek-Lane Meadow Creek	Cedar Mountain	BLM	13N	110W	22
1973	Franklin Pit Reservoir	Rock Springs BLM	Dry	Potential		41.08	-109.75	Phase III	Flaming Gorge Reservoir-Wildhorse Draw	Cedar Mountain	BLM	13N	110W	25
1974	Unknown	Rock Springs BLM	Dry	Potential	INTERMITTENT AT BEST	41.08	-110.22	Phase III	Henrys Fork-Louse Creek	Hickey Mountain	BLM	13N	114W	25
1975	Unknown	Rock Springs BLM	Wet	Yes		41.08	-109.84	Phase III	Little Dry Creek-Lane Meadow Creek	Cedar Mountain	BLM	13N	110W	29
1976	Frankln Pit Reservoir	Rock Springs BLM	N/A	No	NO VISIBLE RESERVOIR	41.08	-109.86	Phase III	Little Dry Creek-Lane Meadow Creek	Cedar Mountain	BLM	13N	110W	30
1977	Unknown	Rock Springs BLM	N/A	No	NO VISIBLE RESERVOIR	41.08	-110.06	Phase III	Henrys Fork-Spring Creek	Cedar Mountain	BLM	13N	112W	29
1978	Black Mountain South Reservoir	Rock Springs BLM	Dry	Potential		41.08	-109.77	Phase III	Little Dry Creek-Lane Meadow Creek	Cedar Mountain	BLM	13N	110W	25
1979	Silt Reservior	Rock Springs BLM	Dry	Potential		41.08	-109.81	Phase III	Little Dry Creek-Lane Meadow Creek	Cedar Mountain	BLM	13N	110W	27
1980	Heiner Reservoir No. 2	Rock Springs BLM	Wet	Yes		41.08	-109.95	Phase III	Henrys Fork-Logan Hollow	Cedar Mountain	BLM	13N	111W	29
1981	Cedar Mountain Reservoir #2	Rock Springs BLM	N/A	No	BREACHED, LOOKS LIKE RESERVOIR REMOVED	41.08	-110.15	Phase III	Henrys Fork-Poison Creek	Sage Creek Mountain	Private	13N	113W	28
1982	Hammer Reservoir	Rock Springs BLM	Dry	Potential		41.07	-109.68	Phase III	Twin Buttes Draw	Cedar Mountain	BLM	13N	109W	34
1983	Antler Reservoir	Rock Springs BLM	Dry	Potential		41.07	-109.98	Phase III	Henrys Fork-Spring Creek	Cedar Mountain	BLM	13N	111W	31
1984	South Cedar Mountain Pit Reservoir	Rock Springs BLM	Dry	Potential		41.06	-110.00	Phase III	Henrys Fork-Spring Creek	Cedar Mountain	BLM	13N	112W	35
1985	Picket Pen Pit Reservoir	Rock Springs BLM	Dry	Potential		41.06	-109.67	Phase III	Twin Buttes Draw	Cedar Mountain	BLM	13N	109W	35
1986	Slide Reservoir	Rock Springs BLM	Dry	Potential		41.06	-110.05	Phase III	Henrys Fork-Spring Creek	Cedar Mountain	BLM	13N	112W	33
1987	Unknown	Rock Springs BLM	N/A	No	NO VISIBLE RESERVOIR	41.06	-109.65	Phase III	Twin Buttes Draw	Cedar Mountain	BLM	13N	109W	36
1988	Linwood Pit Reservoir	Rock Springs BLM	Wet	Yes		41.06	-109.64	Phase III	Twin Buttes Draw	Cedar Mountain	BLM	13N	109W	36
1989	Birch Pit Reservoir	Rock Springs BLM	Wet	Yes		41.05	-110.02	Phase III	Henrys Fork-Spring Creek	Cedar Mountain	BLM	12N	112W	2
1990	Twin Buttes Pit Reservoir	Rock Springs BLM	Wet	Yes		41.05	-109.64	Phase III	Twin Buttes Draw	Cedar Mountain	BLM	12N	109W	1
1991	Bullock Reservoir	Rock Springs BLM	Dry	No	BREACHED	41.05	-110.25	Phase III	Henrys Fork-Louse Creek	Hickey Mountain	BLM	12N	114W	3
1992	Trail Pit Reservoir	Rock Springs BLM	Dry	Potential		41.04	-109.70	Phase III	Flaming Gorge Reservoir-Wildhorse Draw	Cedar Mountain	BLM	12N	109W	9
1993	Unknown	Rock Springs BLM	Wet	Yes		41.03	-109.82	Phase III	Flaming Gorge Reservoir-Wildhorse Draw	No Allotment	BLM	12N	110W	9
1994	Unknown	Rock Springs BLM	N/A	No	RESERVOIR REMOVED	41.03	-110.22	Phase III	Henrys Fork-Louse Creek	No Allotment	BLM	12N	114W	12
1995	Unknown	Rock Springs BLM	Wet	Yes		41.03	-109.86	Phase III	Henrys Fork-Logan Hollow	No Allotment	BLM	12N	110W	18
1996	Evans Reservoir	Rock Springs BLM	Wet	Yes		41.02	-110.20	Phase III	Henrys Fork-Louse Creek	No Allotment	BLM	12N	113W	18
1997	O'neil Pit Reservoir	Rock Springs BLM	Wet	Yes		41.02	-110.24	Phase III	Henrys Fork-Louse Creek	No Allotment	BLM	12N	114W	14
1998	Unknown	Rock Springs BLM	Wet	Yes		41.02	-110.22	Phase III	Henrys Fork-Louse Creek	No Allotment	BLM	12N	114W	13
1999	Antelope Wash Pit Reservoir	Rock Springs BLM	N/A	No	NO VISIBLE RESERVOIR	41.02	-109.84	Phase III	Flaming Gorge Reservoir-Wildhorse Draw	No Allotment	BLM	12N	110W	17
2000	Unknown	Rock Springs BLM	Dry	Potential	INTERMITTENT SOURCE AT BEST	41.02	-110.23	Phase III	Henrys Fork-Louse Creek	No Allotment	BLM	12N	114W	14
2001	Unknown	Rock Springs BLM	Wet	Yes		41.02	-110.25	Phase III	Henrys Fork-Louse Creek	No Allotment	BLM	12N	114W	15
2002	Unknown	Rock Springs BLM	Dry	Potential	INTERMITTENT SOURCE AT BEST	41.02	-110.21	Phase III	Henrys Fork-Louse Creek	No Allotment	BLM	12N	114W	13
2003	Unknown	Rock Springs BLM	Dry	Potential		41.01	-110.23	Phase III	Henrys Fork-Louse Creek	No Allotment	BLM	12N	114W	14
2004	Unknown	Rock Springs BLM	Wet	Yes		41.01	-110.25	Phase III	Henrys Fork-Louse Creek	No Allotment	BLM	12N	114W	15
2005	Unknown	Rock Springs BLM	Dry	Potential		41.01	-110.24	Phase III	Henrys Fork-Poison Creek	No Allotment	Private	12N	114W	23
2006	Unknown	Rock Springs BLM	Wet	Yes		41.01	-110.08	Phase III	Henrys Fork-Spring Creek	No Allotment	BLM	12N	112W	20
2007	Neff Reservoir	Rock Springs BLM	Wet	Yes		41.01	-109.87	Phase III	Flaming Gorge Reservoir-Wildhorse Draw	No Allotment	BLM	12N	110W	19
2008	Private	Rock Springs BLM	Wet	Yes		41.01	-110.26	Phase III	Henrys Fork-Louse Creek	No Allotment	Private	12N	114W	21
2009	Unknown	Rock Springs BLM	Wet	Yes		41.01	-110.24	Phase III	Henrys Fork-Poison Creek	No Allotment	BLM	12N	114W	22
2010	Private	Rock Springs BLM	Wet	Yes	VISIBLE BREACH BUT HOLDING WATER	41.00	-110.26	Phase III	Henrys Fork-Louse Creek	No Allotment	Private	12N	114W	21
2011	Well Reservoir	Rock Springs BLM	Wet	Yes		41.00	-110.11	Phase III	Henrys Fork-Spring Creek	No Allotment	BLM	12N	113W	23
2012	Unknown	Rock Springs BLM	Wet	Yes		41.00	-110.24	Phase III	Henrys Fork-Poison Creek	No Allotment	Private	12N	114W	22
2013	Private	Rock Springs BLM	Wet	Yes		41.00	-110.26	Phase III	Henrys Fork-Poison Creek	No Allotment	BLM	12N	114W	21
2014	Unknown	UDCo	Wet	Yes	See UDCo pdf Summary	41.78	-110.08	Phase III	Upper Sevenmile Gulch	Granger Lease	Private	21N	112W	23
2015	HIGHWAY PIT	UDCo	Dry	No	BREACHED, See UDCo pdf Summary	41.78	-110.16	Phase I	Hams Fork-Cow Hollow Creek	Granger Lease	Private	21N	112W	19
2016	Unknown	UDCo	Dry	Potential	See UDCo pdf Summary	41.77	-110.03	Phase III	Upper Sevenmile Gulch	Granger Lease	Private	21N	111W	29
2017	HYDRO TEST PIT	UDCo	Dry	No	BREACHED, See UDCo pdf Summary	41.77	-109.96	Phase III	Upper Sevenmile Gulch	Granger Lease	Private	21N	111W	25
2018	Unknown	UDCo	Wet	Yes	See UDCo pdf Summary	41.73	-109.92	Phase III	Lower Sevenmile Gulch	Granger Lease	Private	20N	111W	11
2019	Unknown	UDCo	Dry	No	WASHED OUT, See UDCo pdf Summary	41.72	-109.95	Phase III	Lower Sevenmile Gulch	Granger Lease	Private	20N	111W	9
2020	Unknown	UDCo	Wet	Yes	See UDCo pdf Summary	41.69	-110.00	Phase III	Lower Sevenmile Gulch	Granger Lease	Private	20N	111W	19
2021	Unknown	UDCo	Dry	Potential	See UDCo pdf Summary	41.69	-109.97	Phase III	Lower Sevenmile Gulch	Granger Lease	Private	20N	111W	29
2022	JOE # 1	UDCo	Dry	Potential	See UDCo pdf Summary	41.68	-110.06	Phase I	Hams Fork-Zieglers Wash	Granger Lease	Private	20N	112W	33
2023	JOE #3	UDCo	Dry	No	BREACHED, See UDCo pdf Summary	41.67	-110.06	Phase I	Hams Fork-Zieglers Wash	Granger Lease	Private	20N	112W	33
2024	JOE #2	UDCo	Dry	No	See UDCo pdf Summary	41.67	-110.06	Phase I	Hams Fork-Zieglers Wash	Granger Lease	Private	20N	112W	33
2025	PIPELINE PIT	UDCo	Dry	Potential	See UDCo pdf Summary	41.66	-109.95	Phase III	Lower Sevenmile Gulch	Granger Lease	Private	20N	111W	33
2026	Unknown	UDCo	Dry	Potential	WET IN 2010 PHOTOGRAPHY, See UDCo pdf Summary	41.66	-109.98	Phase III	Lower Sevenmile Gulch	Granger Lease	Private	19N	111W	5
2027	Unknown	UDCo	Dry	No	See UDCo pdf Summary	41.64	-109.99	Phase III	Blacks Fork-Town of Granger	Granger Lease	Private	19N	111W	7
2028	UDCo 72-17	UDCo	Dry	Yes	WET IN TWO YEARS OF PHOTOGRAPHY, See UDCo pdf Summary	41.63	-109.96	Phase III	Blacks Fork-Town of Granger	Granger Lease	Private	19N	111W	17
2029	Unknown	UDCo	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY, See UDCo pdf Summary	41.61	-109.85	Phase III	Blacks Fork-Eckes Draw	Granger Lease	Private	19N	110W	21
2030	Unknown	UDCo	Dry	Potential	See UDCo pdf Summary	41.59	-109.83	Phase III	Blacks Fork-Eckes Draw	Granger Lease	Private	19N	110W	27
2031	Unknown	UDCo	Dry	Potential	See UDCo pdf Summary	41.57	-109.73	Phase III	Green River-Greasewood Canyon	Granger Lease	BLM	18N	109W	4
2032	Unknown	UDCo	Dry	Potential	See UDCo pdf Summary	41.57	-110.08	Phase II	Porter Hollow	Granger Lease	Private	18N	112W	5
2033	Unknown	UDCo	Dry	Potential	See UDCo pdf Summary	41.56	-110.12	Phase II	Blacks Fork-Church Buttes Siding	Granger Lease	Private	18N	113W	1
2034	Unknown	UDCo	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY, See UDCo pdf Summary	41.56	-110.08	Phase II	Porter Hollow	Granger Lease	State of Wyoming	18N	112W	8
2035	Unknown	UDCo	Dry	No	WASHED OUT, See UDCo pdf Summary	41.56	-110.08	Phase II	Porter Hollow	Granger Lease	State of Wyoming	18N	112W	8
2036	Unknown	UDCo	Dry	No	SPILLWAY WASHED OUT, See UDCo pdf Summary	41.55	-109.90	Phase III	Blacks Fork-Town of Granger	Granger Lease	BLM	18N	111W	12
2037	Unknown	UDCo	Dry	No	WASHED OUT, See UDCo pdf Summary	41.55	-110.09	Phase II	Porter Hollow	Granger Lease	Private	18N	112W	8
2038	Unknown	UDCo	Dry	Potential	See UDCo pdf Summary	41.55	-110.10	Phase II	Porter Hollow	Granger Lease	Private	18N	112W	18
2039	Unknown	UDCo	Wet	Yes	See UDCo pdf Summary	41.55	-110.15	Phase II	Blacks Fork-Church Buttes Siding	Granger Lease	BLM	18N	113W	14
2040	LITTLE AMERICA #1 STOCK RESERVOIR	UDCo	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY, See UDCo pdf Summary	41.55	-109.81	Phase III	Lower Meadow Springs Wash	Granger Lease	Private	18N	110W	15
2041	Unknown	UDCo	Dry	No	See UDCo pdf Summary	41.54	-110.11	Phase II	Porter Hollow	Granger Lease	Private	18N	112W	18
2042	Unknown	UDCo	Dry	Potential	NEEDS A LOT OF WORK, See UDCo pdf Summary	41.54	-110.01	Phase II	Blacks Fork-Church Buttes Siding	Granger Lease	Private	18N	112W	13
2043	B. B. RESERVOIR	UDCo	Dry	No	WASHED OUT, See UDCo pdf Summary	41.54	-110.11	Phase II	Porter Hollow	Granger Lease	Private	18N	112W	18
2044	Unknown	UDCo	Dry	No	See UDCo pdf Summary	41.54	-110.08	Phase II	Porter Hollow	Granger Lease	Private	18N	112W	17

ACE ID	Name	Source	Condition	Water Source	Notes	Lattitude	Longitude	Phase	HUC 12 Name	Allotment	Land Owner	T	R	S
2045	CHURCH BUTTES #1	UDCo	Dry	No	See UDCo pdf Summary	41.54	-110.15	Phase II	Blacks Fork-Church Buttes Siding	Granger Lease	BLM	18N	113W	14
2046	Unknown	UDCo	Wet	Yes	WET IN TWO YEARS PHOTOGRAPHY, See UDCo pdf Summary	41.54	-109.85	Phase III	Lower Meadow Springs Wash	Granger Lease	Private	18N	110W	17
2047	Unknown	UDCo	Dry	No	See UDCo pdf Summary	41.53	-109.93	Phase III	Blacks Fork-Town of Granger	Granger Lease	BLM	18N	111W	22
2048	Unknown	UDCo	Dry	No	BREACHED, See UDCo pdf Summary	41.53	-109.80	Phase III	Lower Meadow Springs Wash	Granger Lease	Private	18N	110W	23
2049	TELEPHONE STOCK RESERVOIR	UDCo	Dry	No	SEDIMENT, See UDCo pdf Summary	41.53	-110.05	Phase II	Porter Hollow	Granger Lease	BLM	18N	112W	22
2050	Unknown	UDCo	Dry	Potential	See UDCo pdf Summary	41.52	-109.83	Phase III	Lower Meadow Springs Wash	Granger Lease	Private	18N	110W	21
2051	SOUTH-EAST STOCK RESERVOIR	UDCo	Dry	No	BREACHED, See UDCo pdf Summary	41.52	-110.04	Phase II	Porter Hollow	Granger Lease	BLM	18N	112W	22
2052	BRUFF DRAW STOCK RESERVOIR	UDCo	Dry	Potential	See UDCo pdf Summary	41.52	-110.08	Phase II	Porter Hollow	Granger Lease	Private	18N	112W	29
2053	CATERPILLAR DRAW STOCK RESERVOIR	UDCo	Dry	Potential	See UDCo pdf Summary	41.52	-110.06	Phase II	Porter Hollow	Granger Lease	BLM	18N	112W	28
2054	CHURCH BUTTES 26-030	UDCo	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY, See UDCo pdf Summary	41.51	-110.14	Phase II	Porter Hollow	Granger Lease	Private	18N	113W	26
2055	Unknown	UDCo	Dry	No	BREACHED, See UDCo pdf Summary	41.50	-110.00	Phase III	Blacks Fork-Town of Granger	Granger Lease	Private	18N	111W	31
2056	Unknown	UDCo	Dry	No	See UDCo pdf Summary	41.50	-109.81	Phase III	Upper Meadow Springs Wash	Granger Lease	BLM	18N	110W	35
2057	Unknown	UDCo	Dry	Potential	See UDCo pdf Summary	41.48	-109.82	Phase III	Chicken Draw	Granger Lease	Private	17N	110W	3
2058	Unknown	UDCo	Dry	Potential	See UDCo pdf Summary	41.48	-110.02	Phase III	Upper Meadow Springs Wash	Granger Lease	BLM	17N	112W	2
2059	Unknown	UDCo	Wet	Yes	WET IN TWO YEARS PHOTOGRAPHY, See UDCo pdf Summary	41.48	-109.87	Phase III	Upper Meadow Springs Wash	Granger Lease	Private	17N	110W	5
2060	Unknown	UDCo	Dry	No	ABANDON, See UDCo pdf Summary	41.48	-110.11	Phase II	Porter Hollow	Granger Lease	Private	17N	112W	7
2061	WILDCAT #3 STOCK RESERVOIR	UDCo	Dry	No	WASHED OUT, See UDCo pdf Summary	41.47	-110.04	Phase II	Porter Hollow	Granger Lease	BLM	17N	112W	10
2062	72-3 STOCK RESERVOIR	UDCo	Dry	No	See UDCo pdf Summary	41.47	-109.72	Phase III	Chicken Draw	Granger Lease	Private	17N	109W	9
2063	Unknown	UDCo	Dry	Potential	See UDCo pdf Summary	41.47	-110.01	Phase III	Upper Meadow Springs Wash	Granger Lease	BLM	17N	112W	12
2064	Unknown	UDCo	Dry	No	BREACHED, See UDCo pdf Summary	41.47	-109.90	Phase III	Upper Meadow Springs Wash	Granger Lease	BLM	17N	111W	12
2065	Unknown	UDCo	Wet	Yes	See UDCo pdf Summary	41.46	-109.82	Phase III	Chicken Draw	Granger Lease	Private	17N	110W	15
2066	Unknown	UDCo	Wet	Yes	See UDCo pdf Summary	41.45	-109.75	Phase III	Chicken Draw	Granger Lease	BLM	17N	109W	18
2067	BLUEMEL STOCK RESERVOIR	UDCo	Dry	No	BREACHED, See UDCo pdf Summary	41.45	-110.07	Phase II	Porter Hollow	Granger Lease	State of Wyoming	17N	112W	16
2068	Unknown	UDCo	Wet	Yes	See UDCo pdf Summary	41.45	-109.79	Phase III	Chicken Draw	Granger Lease	Private	17N	110W	13
2069	72-5 STOCK RESERVOIR	UDCo	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY, See UDCo pdf Summary	41.45	-109.72	Phase III	Chicken Draw	Granger Lease	Private	17N	109W	21
2070	WILDCAT #1 STOCK RESERVOIR	UDCo	Dry	No	WASHED OUT, See UDCo pdf Summary	41.44	-110.09	Phase II	Porter Hollow	Granger Lease	BLM	17N	112W	20
2071	Unknown	UDCo	Wet	Yes	See UDCo pdf Summary	41.44	-109.81	Phase III	Chicken Draw	Granger Lease	Private	17N	110W	23
2072	72-6 STOCK RESERVOIR	UDCo	Wet	Yes	WET IN TWO YEARS PHOTOGRAPHY, See UDCo pdf Summary	41.44	-109.75	Phase III	Chicken Draw	Granger Lease	Private	17N	109W	19
2073	Unknown	UDCo	N/A	No	NO VISIBLE RESERVOIR	41.43	-110.00	Phase III	Upper Meadow Springs Wash	Granger Lease	Private	17N	111W	19
2074	72-10 STOCK RESERVOIR	UDCo	Wet	Yes	See UDCo pdf Summary	41.43	-109.87	Phase III	Chicken Draw	Granger Lease	Private	17N	110W	19
2075	Unknown	UDCo	Dry	No	ABANDON, See UDCo pdf Summary	41.43	-110.11	Phase II	Porter Hollow	Granger Lease	BLM	17N	112W	30
2076	Unknown	UDCo	Dry	Potential	See UDCo pdf Summary	41.42	-109.99	Phase III	Upper Meadow Springs Wash	Granger Lease	Private	17N	111W	31
2077	ANTELOPE #21	UDCo	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY, See UDCo pdf Summary	41.42	-109.77	Phase III	Lower Little Dry Creek	Granger Lease	Private	17N	109W	31
2078	ANTELOPE #7	UDCo	Wet	Yes	WET IN TWO YEARS OF PHOTOGRAPHY, See UDCo pdf Summary	41.41	-109.98	Phase III	Chicken Draw	Granger Lease	Private	17N	111W	31
2079	Unknown	UDCo	Wet	Yes	See UDCo pdf Summary	41.41	-110.16	Phase II	Blacks Fork-Jackknife Draw	Granger Lease	BLM	17N	113W	34
2080	ANTELOPE #20	UDCo	Dry	Potential	See UDCo pdf Summary	41.40	-109.76	Phase III	Lower Little Dry Creek	Granger Lease	Private	16N	110W	1
2081	Unknown	UDCo	Dry	Potential	See UDCo pdf Summary	41.39	-109.72	Phase III	Lower Little Dry Creek	Granger Lease	Private	16N	109W	5
2082	Unknown	UDCo	Dry	No	BREACHED, See UDCo pdf Summary	41.38	-110.08	Phase III	Upper Meadow Springs Wash	Granger Lease	BLM	16N	112W	8
2083	73-1 STOCK RESERVOIR	UDCo	Dry	Potential	WET IN 2010 PHOTOGRAPHY, See UDCo pdf Summary	41.37	-109.99	Phase III	Big Dry Creek-Tin Cup Draw	Granger Lease	Private	16N	112W	13
2084	Unknown	UDCo	Dry	No	ABANDON, See UDCo pdf Summary	41.35	-109.82	Phase III	Upper Little Dry Creek	Granger Lease	Private	16N	110W	21
2085	73-3 STOCK RESERVOIR	UDCo	Dry	Potential	See UDCo pdf Summary	41.35	-109.91	Phase III	Big Dry Creek-Tin Cup Draw	Granger Lease	Private	16N	111W	27
2086	Unknown	UDCo	Wet	Yes	See UDCo pdf Summary	41.34	-109.87	Phase III	Upper Little Dry Creek	Granger Lease	Private	16N	111W	25
2087	Unknown	UDCo	Wet	Yes	See UDCo pdf Summary	41.33	-110.03	Phase III	Big Dry Creek-Cattail Draw	Lyman Cattle	BLM	16N	112W	34
2088	Unknown	UDCo	Wet	Yes	See UDCo pdf Summary	41.33	-109.99	Phase III	Big Dry Creek-Cattail Draw	Lyman Cattle	BLM	16N	112W	36
2089	Unknown	UDCo	Wet	Yes	See UDCo pdf Summary	41.31	-109.98	Phase III	Big Dry Creek-Cattail Draw	Lyman Cattle	Private	15N	112W	1
2090	Unknown	UDCo	Dry	Potential	See UDCo pdf Summary	41.28	-109.70	Phase III	Blacks Fork-Flaming Gorge Reservoir	Granger Lease	BLM	15N	109W	16
2091	Unknown	UDCo	Wet	Yes		41.28	-110.13	Phase II	Lower Cottonwood Creek-Blacks Fork	Lyman Cattle	Private	15N	113W	15
2092	HALFWAY HOLLOW	UDCo	Wet	Yes	See UDCo pdf Summary	41.26	-109.67	Phase III	Buckboard Wash	Granger Lease	Private	15N	109W	23
2093	Unknown	UDCo	Dry	Potential	See UDCo pdf Summary	41.25	-110.12	Phase III	Big Dry Creek-Shurtliff Spring	Lyman Cattle	BLM	15N	113W	26

APPENDIX 3C

PEAK FLOW CHARACTERISTICS

Peak Flow Characteristics

Region 1 : Rocky Mountains Region

Recurrence	A	B
Q 1.5	0.126	0.885
Q 2	0.313	0.866
Q 2.33	0.458	0.858
Q 5	1.89	0.829
Q 10	4.71	0.81
Q 25	12.1	0.79
Q 50	22.3	0.776
Q 100	38.6	0.764
Q 200	64.3	0.752
Q 500	120	0.738

Region 5 : Overthrust Belt Region

Recurrence	A	B
Q 1.5	2.08	0.871
Q 2	3.07	0.869
Q 2.33	3.58	0.868
Q 5	6.19	0.864
Q 10	8.71	0.861
Q 25	12.3	0.857
Q 50	15.2	0.853
Q 100	18.3	0.85
Q 200	21.6	0.847
Q 500	26.2	0.842

Region 6 : High Desert Region

Recurrence	A	B
Q 1.5	12.7	0.626
Q 2	22.2	0.608
Q 2.33	28.1	0.6
Q 5	66.4	0.567
Q 10	116	0.544
Q 25	204	0.52
Q 50	290	0.504
Q 100	394	0.489
Q 200	519	0.476
Q 500	719	0.459

Region 1

HUC12 Basin Name	A (mi2)	Q 1.5	Q 2	Q 2.33	Q 5	Q 10	Q 25	Q 50	Q 100	Q 200	Q 500
1 - West Muddy Creek	33.62	2.8	6.6	9.3	34.8	81.2	194.4	341.1	566.1	904.0	1,606.2
2 - East Muddy Creek	28.32	2.4	5.7	8.1	30.2	70.7	169.8	298.6	496.5	794.6	1,415.1
3 - Muddy Creek-Little Creek	47.16	3.8	8.8	12.5	46.1	106.8	254.0	443.6	733.2	1,166.1	2,062.0
25 - Blacks Forks-Meeks Cabin Reservoir	26.46	2.3	5.3	7.6	28.6	66.9	160.9	283.3	471.4	755.0	1,345.9
26 - Blacks Fork-Sixmile Creek	44.66	3.6	8.4	11.9	44.1	102.2	243.3	425.2	703.2	1,119.2	1,980.6
29 - East Fork Smiths Fork	8.22	0.8	1.9	2.8	10.8	25.9	63.9	114.3	192.9	313.4	567.8
30 - Gilbert Creek	10.92	1.0	2.5	3.6	13.7	32.7	80.0	142.5	239.7	388.1	700.4
31 - West Fork Smiths Fork	21.20	1.9	4.4	6.3	23.8	55.9	135.1	238.6	398.1	639.3	1,143.1
33 - Willow Creek-Yellow Hollow Creek	32.78	2.8	6.4	9.1	34.1	79.6	190.6	334.5	555.3	887.1	1,576.6
35 - Leavitt Creek	25.58	2.2	5.2	7.4	27.8	65.1	156.7	276.0	459.4	736.1	1,312.9
37 - Upper Cottonwood Creek-Blacks Fork	29.87	2.5	5.9	8.4	31.6	73.8	177.1	311.2	517.2	827.1	1,471.9
38 - Sage Creek-Reed Reservoir	64.14	5.0	11.5	16.3	59.5	137.0	323.9	563.2	927.3	1,469.5	2,587.2
88 - Henrys Fork-Louse Creek	33.02	2.8	6.5	9.2	34.3	80.0	191.7	336.4	558.4	891.9	1,585.0
89 - Henrys Fork-Poison Creek	17.17	1.6	3.7	5.3	20.0	47.1	114.4	202.5	338.8	545.5	978.3
90 - Henrys Fork-Beaver Creek	11.44	1.1	2.6	3.7	14.3	33.9	83.0	147.8	248.5	402.0	725.1
92 - Henrys Fork-Spring Creek	42.85	3.5	8.1	11.5	42.6	98.8	235.5	411.8	681.4	1,085.0	1,921.2
93 - Burnt Fork	2.55	0.3	0.7	1.0	4.1	10.1	25.3	46.1	78.9	130.0	239.4
94 - Birch Creek-Upper Henrys Fork	3.59	0.4	0.9	1.4	5.5	13.3	33.2	60.2	102.6	168.2	308.4

Region 5

HUC12 Basin Name	A (mi2)	Q 1.5	Q 2	Q 2.33	Q 5	Q 10	Q 25	Q 50	Q 100	Q 200	Q 500
10 - Little Muddy Creek-Chicken Creek	42.83	54.87	80.38	93.39	159.06	221.30	307.86	374.77	446.14	520.69	619.83
11 - Carter Creek	30.30	40.59	59.50	69.14	117.93	164.25	228.81	278.93	332.40	388.34	463.08
12 - Little Muddy Creek-Bell Creek	31.09	41.50	60.84	70.70	120.57	167.92	233.90	285.10	339.72	396.87	473.18
13 - Sheep Creek-North Fork Sheep Creek	38.35	49.83	73.02	84.83	144.56	201.20	280.01	341.02	406.10	474.12	564.70
14 - Ryckman Creek	53.83	66.96	98.04	113.87	193.78	269.43	374.46	455.43	541.79	631.89	751.34
15 - Little Muddy Creek-Ziller Ranch	58.72	72.23	105.74	122.80	208.90	290.37	403.43	490.49	583.36	680.19	808.42
16 - Upper North Fork Little Muddy Creek	46.60	59.05	86.50	100.48	171.08	237.97	330.93	402.72	479.30	559.25	665.44
17 - Lower North Fork Little Muddy Creek	35.51	46.60	68.29	79.35	135.25	188.29	262.12	319.33	380.36	444.17	529.23
21 - Upper Albert Creek	40.46	52.21	76.49	88.87	151.41	210.69	293.16	356.96	425.02	496.12	590.74
22 - Middle Albert Creek	48.11	60.72	88.93	103.30	175.86	244.60	340.11	413.83	492.48	574.57	683.56
23 - Lower Albert Creek	42.29	54.26	79.49	92.35	157.31	218.88	304.50	370.70	441.31	515.08	613.18
24 - Clear Creek-Shurtleff Creek	58.39	71.87	105.21	122.19	207.87	288.94	401.45	488.10	580.52	676.89	804.52
44 - Dry Muddy Creek-Little Round Mountain Spring	48.51	61.16	89.57	104.04	177.12	246.34	342.51	416.75	495.93	578.58	688.31
47 - Hams Fork-East Fork Hams Fork	74.15	88.50	129.50	150.37	255.55	354.97	492.72	598.49	711.31	828.80	983.89
48 - West Fork Hams Fork	32.48	43.12	63.20	73.44	125.23	174.38	242.85	295.96	352.62	411.89	490.99
49 - Hams Fork-West Beaver Creek	42.38	54.36	79.64	92.52	157.60	219.28	305.05	371.36	442.10	516.00	614.27
50 - Beaver Creek	23.51	32.54	47.72	55.48	94.72	132.02	184.10	224.65	267.92	313.25	374.01
51 - Hams Fork-Dempsey Creek	67.11	81.14	118.75	137.90	234.45	325.77	452.36	549.69	653.50	761.67	904.65
52 - Hams Fork-Fish Creek	69.12	83.25	121.83	141.47	240.50	334.14	463.93	563.68	670.07	780.92	927.38
53 - Willow Creek-East Branch Willow Creek	65.07	78.98	115.60	134.24	228.26	317.19	440.51	535.35	636.51	741.94	881.35
54 - Hams Fork-Oakley Draw	63.43	77.24	113.07	131.30	223.29	310.31	430.99	523.84	622.87	726.10	862.64
55 - Alkali Creek-Hams Fork	21.98	30.69	45.01	52.33	89.37	124.60	173.79	212.12	253.03	295.90	353.42

Region 6

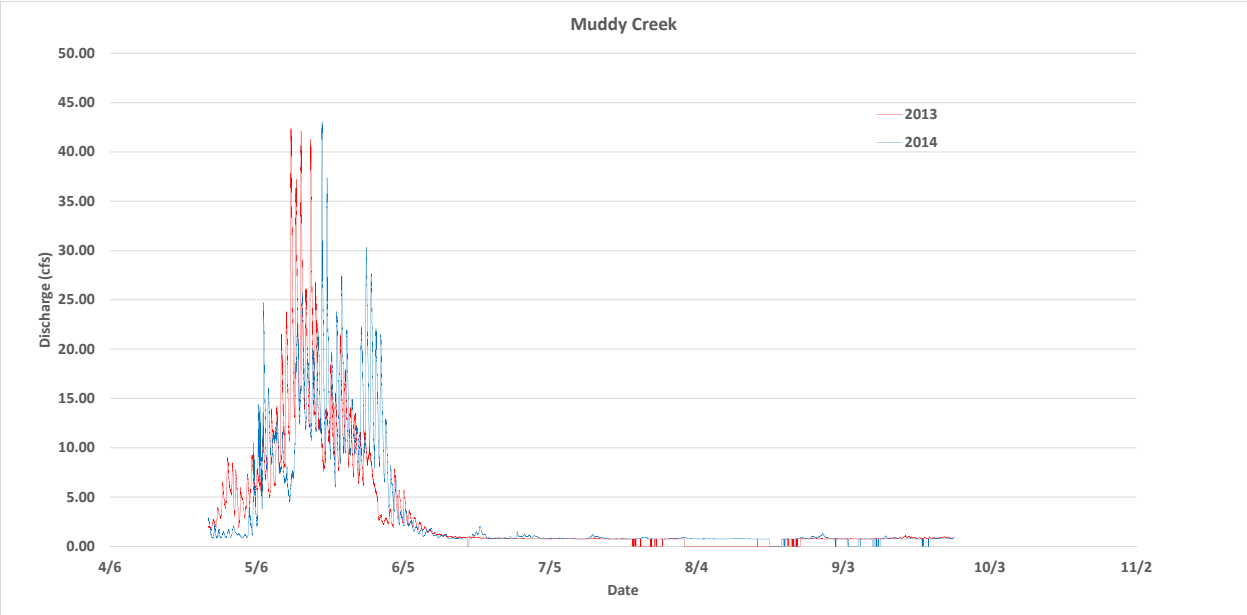
HUC12 Basin Name	A (mi2)	Q 1.5	Q 2	Q 2.33	Q 5	Q 10	Q 25	Q 50	Q 100	Q 200	Q 500
4 - Muddy Creek-Mussleman Creek	50.10	147.19	239.80	294.17	610.89	975.35	1561.48	2085.00	2671.20	3344.11	4334.56
5 - Antelope Creek	31.60	110.32	181.22	223.13	470.46	759.14	1228.85	1652.99	2132.42	2685.63	3508.43
6 - Muddy Creek-Lost Draw	48.28	143.82	234.46	287.71	598.21	955.91	1531.71	2046.47	2623.29	3285.71	4261.55
7 - Rock Creek-Spring Creek	33.09	113.54	186.35	229.36	482.88	778.35	1258.56	1691.71	2180.87	2745.02	3583.20
8 - Muddy Creek-Town of Carter	45.36	138.32	225.74	277.14	577.42	924.02	1482.83	1983.14	2544.50	3189.61	4141.29
9 - Big Muddy Creek	40.88	129.59	211.90	260.37	544.34	873.16	1404.73	1881.82	2418.26	3035.47	3948.14
18 - Little Muddy Creek-Mulkay Spring	24.49	94.04	155.19	191.47	407.13	660.81	1076.25	1453.64	1882.43	2378.67	3120.92
19 - 140401080210	25.90	97.41	160.58	198.03	420.30	681.30	1108.13	1495.35	1934.82	2443.08	3202.37
20 - Desertion Point	20.18	83.32	137.98	170.50	364.85	594.83	973.29	1318.65	1712.59	2169.49	2855.85
27 - Blacks Fork-Quarry Creek	68.00	178.22	288.74	353.35	726.43	1151.69	1830.33	2432.08	3101.62	3867.56	4987.07
28 - Blacks Fork-Rollins Reservoir	41.77	131.37	214.71	263.78	551.08	883.53	1420.67	1902.51	2444.06	3066.99	3987.66
32 - Upper Smiths Fork	74.12	188.10	304.28	372.10	762.81	1206.98	1914.23	2540.06	3235.14	4029.53	5188.33
34 - Little Dry Creek-Smiths Fork	31.98	111.14	182.53	224.72	473.63	764.05	1236.44	1662.89	2144.81	2700.82	3527.56
36 - Lower Smiths Fork-Blacks Fork	29.62	105.92	174.20	214.60	453.45	732.78	1188.03	1599.75	2065.74	2603.86	3405.36
39 - Lower Cottonwood Creek-Blacks Fork	34.32	116.16	190.52	234.43	492.96	793.93	1282.63	1723.06	2220.06	2793.02	3643.61
40 - Blacks Fork-Jackknife Draw	61.88	168.00	272.65	333.91	688.61	1094.09	1742.73	2319.17	2961.82	3697.77	4775.79
41 - Austin Reservoir	35.53	118.70	194.58	239.36	502.74	809.04	1305.96	1753.43	2258.02	2839.50	3702.06
42 - Blacks Fork-Church Buttes Siding	52.60	151.76	247.01	302.90	628.01	1001.56	1601.57	2136.86	2735.65	3422.62	4432.65
43 - Porter Hollow	54.44	155.05	252.22	309.20	640.35	1020.43	1630.39	2174.13	2781.93	3478.97	4503.00
45 - Dry Muddy Creek-Roberson Creek	55.30	156.58	254.64	312.13	646.09	1029.20	1643.79	2191.44	2803.41	3505.12	4535.63
46 - Dry Muddy Creek-Rocky Crossing	42.85	133.48	218.07	267.85	559.11	895.88	1439.65	1927.14	2474.75	3104.47	4034.64
56 - Craven Creek	53.33	153.06	249.08	305.40	632.92	1009.06	1613.03	2151.69	2754.06	3445.04	4460.65
57 - Hams Fork-Cow Hollow Creek	61.76	167.79	272.32	333.51	687.83	1092.92	1740.94	2316.87	2958.96	3694.29	4771.46
58 - Hams Fork-Zieglers Wash	47.17	141.75	231.17	283.73	590.38	943.91	1513.33	2022.66	2593.68	3249.60	4216.38
59 - Blacks Fork-Town of Granger	45.94	139.42	227.49	279.26	581.60	930.43	1492.67	1995.89	2560.36	3208.96	4165.51
60 - Blacks Fork-Eckes Draw	64.06	171.68	278.46	340.92	702.27	1114.91	1774.41	2360.03	3012.43	3759.26	4852.34
61 - Green River-Greasewood Canyon	54.20	154.63	251.55	308.40	638.78	1018.02	1626.72	2169.38	2776.03	3471.79	4494.04
62 - Upper Meadow Springs Wash	53.90	154.09	250.70	307.36	636.75	1014.92	1621.98	2163.26	2768.43	3462.54	4482.49
63 - Lower Meadow Springs Wash	51.30	149.40	243.29	298.40	619.19	988.05	1580.91	2110.14	2702.45	3382.18	4382.14
64 - Blacks Fork-140401070806	53.20	152.84	248.72	304.97	632.07	1007.76	1611.05	2149.12	2750.88	3441.16	4455.80
65 - Chicken Draw	62.50	169.05	274.31	335.91	692.50	1100.04	1751.78	2330.84	2976.28	3715.34	4797.67
66 - Blacks Fork-Blacks Fork Bridge	36.37	120.45	197.36	242.73	509.44	819.38	1321.90	1774.17	2283.93	2871.20	3741.91
67 - Blacks Fork-Flaming Gorge Reservoir	33.86	115.18	188.97	232.54	489.19	788.11	1273.65	1711.37	2205.45	2775.12	3621.09
68 - Upper Sevenmile Gulch	61.69	167.68	272.15	333.30	687.42	1092.28	1739.97	2315.62	2957.41	3692.41	4769.12
69 - Lower Sevenmile Gulch	52.93	152.35	247.95	304.04	630.25	1004.98	1606.79	2143.62	2744.04	3432.84	4445.41
70 - Dry Creek-Big Hollow Creek	38.23	124.28	203.45	250.12	524.08	841.96	1356.71	1819.43	2340.44	2940.33	3828.75
71 - Dry Creek-Balsam Root Reservoir	36.72	121.18	198.53	244.15	512.25	823.72	1328.59	1782.87	2294.80	2884.51	3758.63
72 - Big Dry Creek-Shurtliff Spring	28.91	104.34	171.67	211.53	447.32	723.27	1173.29	1580.51	2041.63	2574.27	3368.04
73 - Big Dry Creek-Cattail Draw	54.73	155.57	253.03	310.19	642.28	1023.38	1634.91	2179.97	2789.17	3487.79	4514.00
74 - Big Dry Creek-Tin Cup Draw	56.01	157.83	256.61	314.52	650.76	1036.33	1654.67	2205.51	2820.87	3526.37	4562.14
75 - Winter Fat Reservoir	53.97	154.21	250.89	307.60	637.22	1015.63	1623.07	2164.67	2770.18	3464.67	4485.15
76 - Needle Reservoir	45.82	139.20	227.13	278.83	580.75	929.12	1490.67	1993.29	2557.13	3205.02	4160.58
77 - Big Dry Creek-Flaming Gorge Reservoir	24.28	93.53	154.36	190.47	405.11	657.66	1071.34	1447.21	1874.36	2368.73	3108.35
78 - Upper Little Dry Creek	47.14	141.69	231.09	283.62	590.17	943.58	1512.83	2022.02	2592.88	3248.63	4215.16
79 - Lower Little Dry Creek	29.58	105.85	174.08	214.46	453.16	732.34	1187.35	1598.86	2064.63	2602.49	3403.63
80 - Flaming Gorge Reservoir-Buckboard Reservoir	27.54	101.20	166.66	205.43	435.12	704.34	1143.92	1542.14	1993.53	2515.21	3293.50
81 - Buckboard Wash	30.47	107.81	177.22	218.27	460.78	744.14	1205.64	1622.72	2094.52	2639.16	3449.87
82 - Flaming Gorge Reservoir-Squaw Hollow	31.46	110.00	180.71	222.51	469.24	757.24	1225.92	1649.17	2127.63	2679.76	3501.04
83 - Henrys Fork-Cottonwood Creek	12.51	61.77	103.17	127.98	278.22	458.60	759.05	1036.29	1355.56	1727.92	2293.14
84 - Anvil Wash	23.62	91.94	151.83	187.38	398.89	647.97	1056.26	1427.46	1849.53	2338.19	3069.69
85 - Twin Buttes Draw	19.81	82.35	136.42	168.60	361.01	588.81	963.88	1306.29	1697.01	2150.29	2831.46
86 - Flaming Gorge Reservoir-Chokecherry Draw	7.39	44.43	74.92	93.33	206.44	344.44	577.34	794.87	1048.00	1345.05	1801.06
87 - Henrys Fork-Dahlgreen Creek	0.89	11.85	20.75	26.29	62.35	109.20	192.55	274.21	373.16	492.26	683.25
91 - West Fork Beaver Creek	0.06	2.27	4.18	5.40	13.98	26.02	48.87	72.60	102.79	140.32	203.69
95 - Henrys Fork-Logan Hollow	43.26	134.27	219.32	269.37	562.11	900.49	1446.73	1936.32	2486.19	3118.44	4052.15
96 - Little Dry Creek-Lane Meadow Creek	62.71	169.41	274.87	336.59	693.83	1102.05	1754.84	2334.80	2981.18	3721.29	4805.08
97 - Flaming Gorge Reservoir-Wildhorse Draw	39.37	126.58	207.11	254.56	532.85	855.48	1377.52	1846.48	2374.19	2981.60	3880.56
98 - Henrys Fork-Flaming Gorge Reservoir	6.65	41.56	70.22	87.54	194.33	325.01	546.18	753.26	994.72	1278.44	1714.98

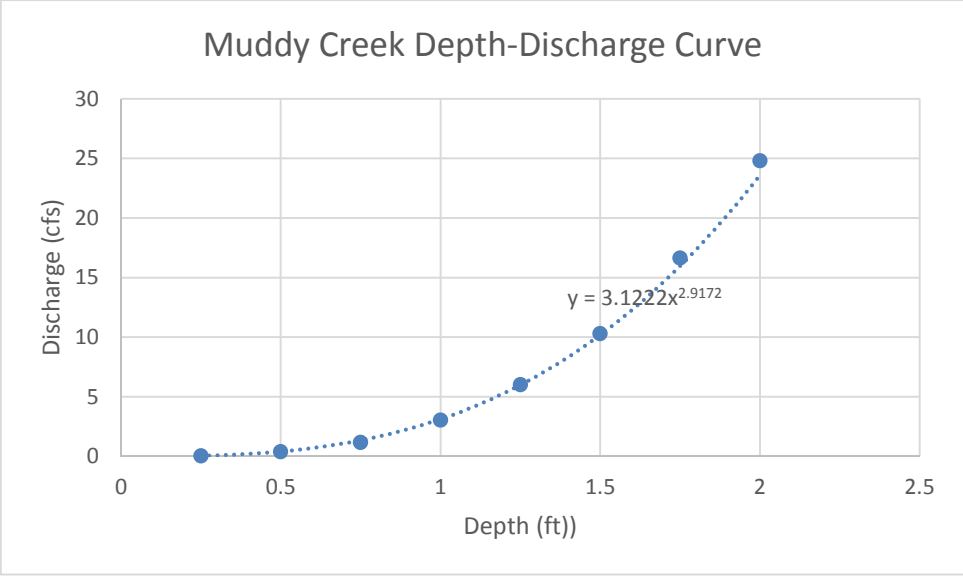
APPENDIX 3D

TEMPORARY STREAM GAGING DATA

Appendix 3D Temporary Stream Gage Data

Muddy Creek Gage



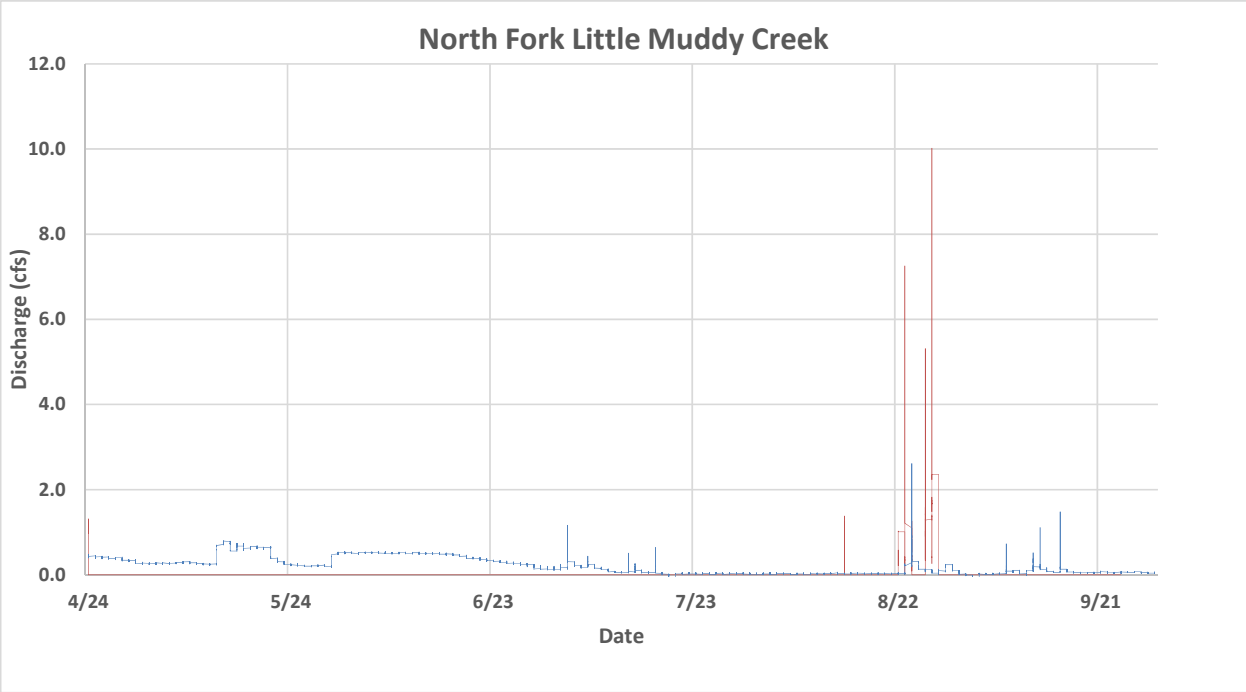


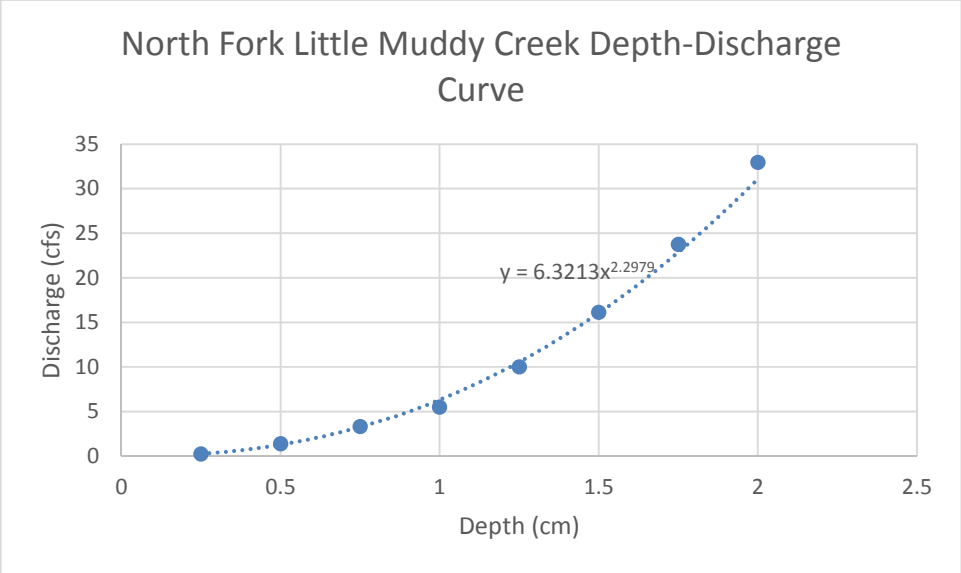

View Upstream


View Downstream


Gage

North Fork Little Muddy Creek



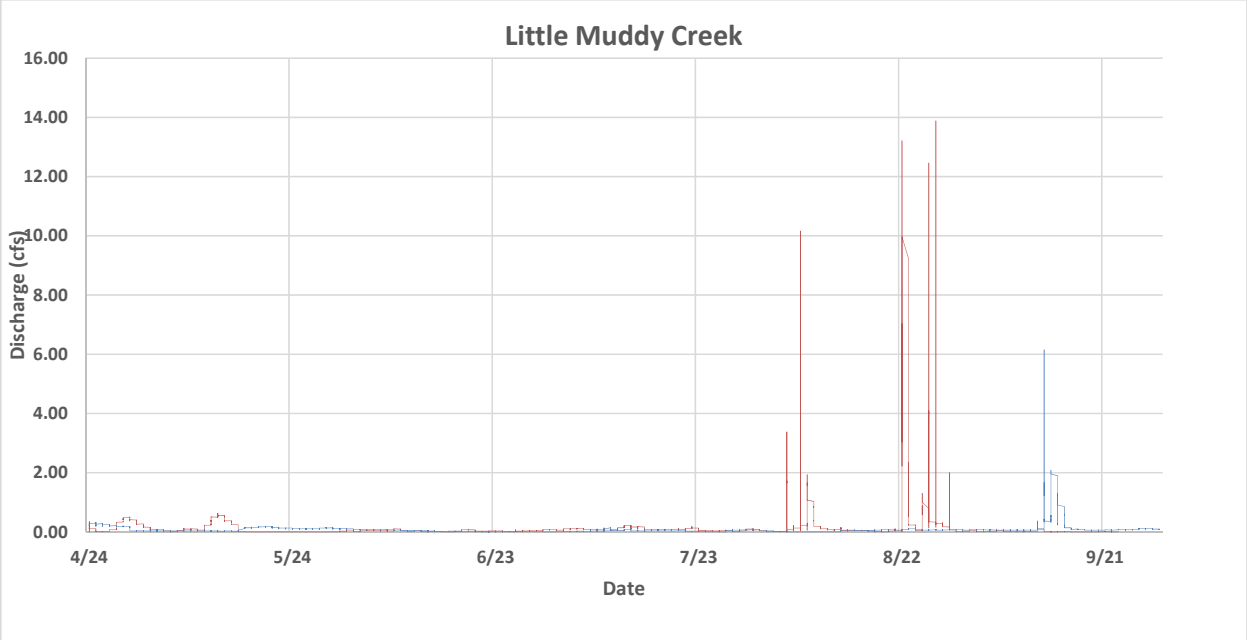


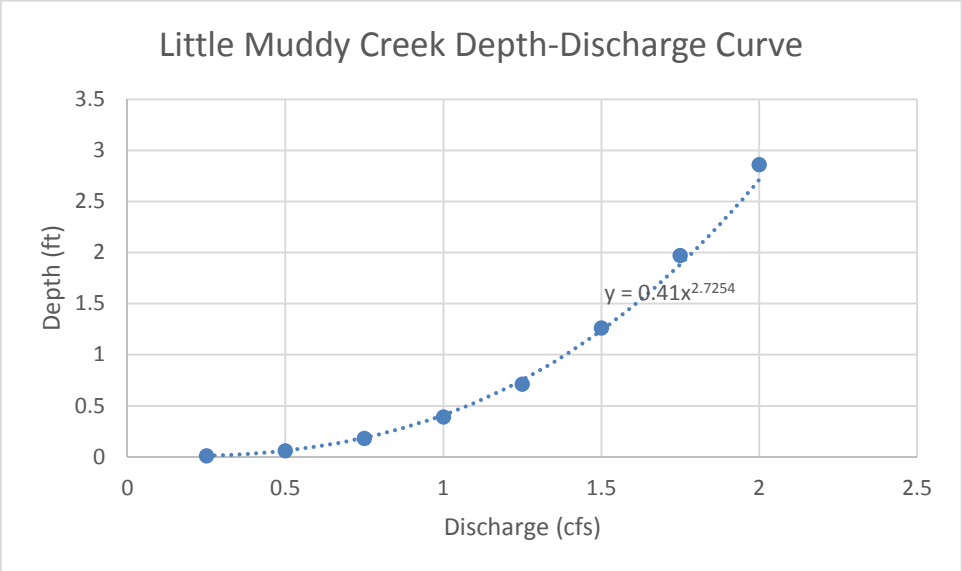

View Upstream


View Downstream


Gage

Little Muddy Creek






View Upstream


View Downstream


Gage

APPENDIX 3E

WATER AVAILABILITY ANALYSIS

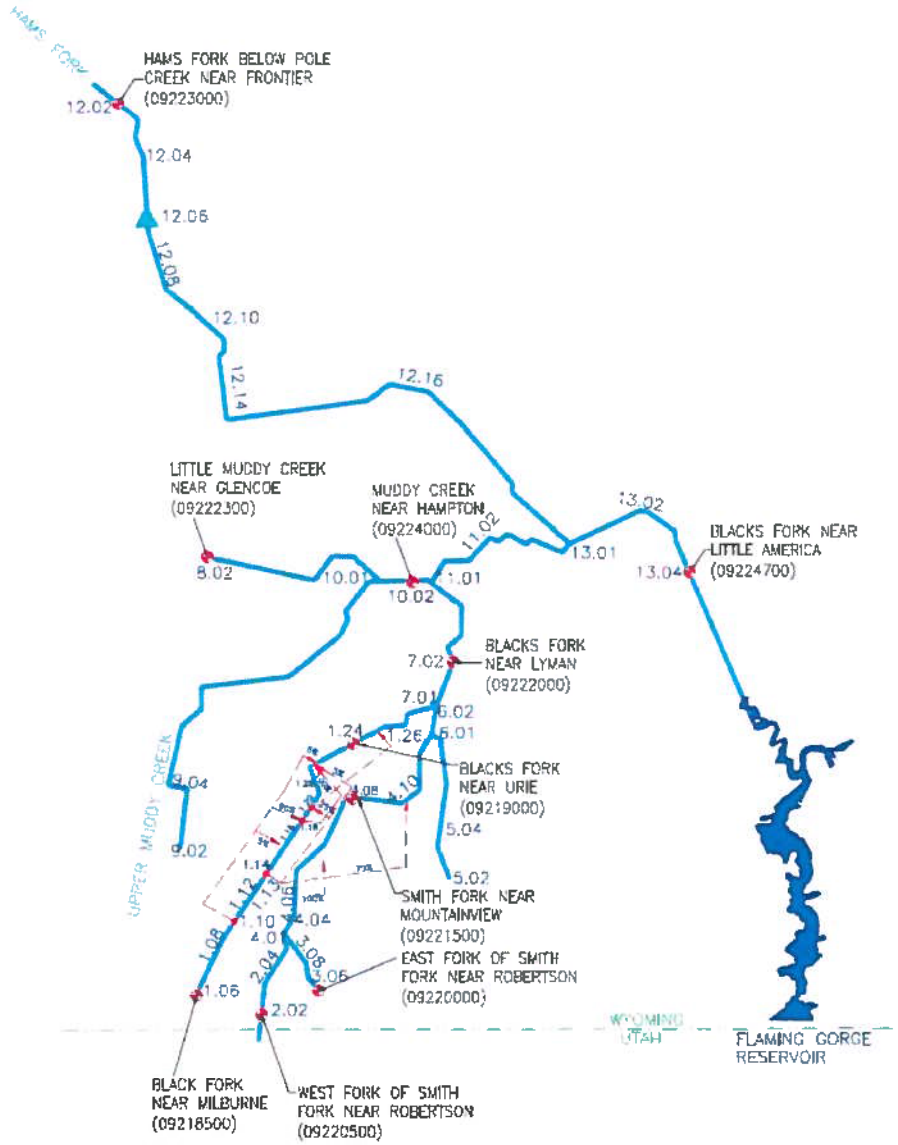


Figure A-1 Blacks Fork Node Diagram

Table A-1
Available Flow for Black's Fork River Basin and Dry Hydrologic Condition (af)

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1.06	Blacks Fork near Milburne (09218500)	462	628	606	622	2,239	1,258	495	200	188	715	687	515	8,614
1.08	Below Blacks Fork near Millburne gage and above Pine Grove	462	801	2,840	2,065	2,239	1,258	495	200	188	715	687	515	12,464
1.10	Pine Grove	462	801	2,840	2,065	2,239	1,258	495	200	188	715	687	515	12,464
1.12	Below Pine Grove and above Blacks Fork Canal	462	801	2,840	2,065	2,239	1,258	495	200	188	715	687	515	12,464
1.13	BVJPB Pipeline (Blacks Fork)	462	801	2,840	2,065	2,239	1,258	495	200	188	715	687	515	12,464
1.14	Blacks Fork Canal	462	801	2,840	2,065	2,239	1,258	495	200	188	715	687	515	12,464
1.16	Below Blacks Fork Canal and above Bridger Butte Canal	462	801	2,840	2,065	2,239	1,258	495	200	188	715	687	515	12,464
1.18	Bridger Butte Canal	462	801	2,840	2,065	2,239	1,258	495	200	188	715	687	515	12,464
1.20	Fort Bridger Canal / Center / Twin Buttes	462	801	2,840	2,065	2,239	1,258	495	200	188	715	687	515	12,464
1.22	Below Fort Bridger / Twin Buttes and above Blacks Fork near Urie gage	462	801	2,840	2,065	2,239	1,258	495	200	188	715	687	515	12,464
1.24	Blacks Fork near Urie (09219000)	462	801	2,840	2,065	2,239	1,258	495	200	188	715	687	515	12,464
1.26	Below Blacks Fork near Urie gage	517	904	3,243	2,361	2,463	1,993	1,297	609	579	1,043	780	576	16,364
2.02	West Fork of Smith Fork near Robertson (09220500)	189	304	995	880	1,464	634	185	84	86	274	265	206	5,567
2.04	Below West Fork Smiths Fork nr Robertson and above confluence with East Fork Smith Fork	212	408	1,499	1,077	1,464	634	185	84	86	274	272	243	6,438
3.06	East Fork of Smith Fork near Robertson (09220000)	389	354	374	675	2,038	1,227	622	370	365	796	536	380	8,128
3.08	East Fork of Smith Fork gage and above confluence with West Fork Smith Fork	422	502	1,091	955	2,038	1,227	622	370	365	796	547	432	9,368

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
4.01	Confluence of East and West Fork of Smiths Fork	587	867	2,539	1,894	2,038	1,227	622	370	365	796	777	632	12,715
4.04	Below confluence of East and West Fork Smith Fork and above BVJPB pipeline	587	867	2,539	1,894	2,038	1,227	622	370	365	796	777	632	12,715
4.06	BVJPB Pipeline (Smiths Fork)	587	867	2,539	1,894	2,038	1,227	622	370	365	796	777	632	12,715
4.08	Smiths Fork near Mountain View (09221500)	599	877	2,550	1,914	2,057	1,252	626	383	373	806	783	642	12,862
4.10	Between Smiths Fork near Mountain View gage and confluence with Cottonwood Creek	623	939	2,831	2,105	3,332	3,072	1,297	609	579	1,216	943	673	18,219
5.02	Cottonwood Creek	79	165	684	487	574	433	147	32	30	144	136	93	3,004
5.04	Agricultural diversions on Cottonwood Creek	79	165	684	487	574	433	147	32	30	144	136	93	3,004
6.01	Confluence Cottonwood Creek and Smiths Fork	703	1,105	3,515	2,591	3,907	3,072	1,297	609	579	1,359	1,079	766	20,582
6.02	Smiths Fork agricultural diversions between Cottonwood Creek and Blacks Fork	703	1,105	3,515	2,591	3,907	3,072	1,297	609	579	1,359	1,079	766	20,582
7.01	Confluence Smiths Fork and Blacks Fork	1,219	2,009	6,758	4,952	5,357	3,072	1,297	609	579	1,809	1,743	1,342	30,745
7.02	Blacks Fork near Lyman (09222000)	1,219	2,009	6,758	4,952	5,357	3,072	1,297	609	579	1,809	1,743	1,342	30,745
8.02	Little Muddy Creek near Glencoe (09222300)	308	487	600	971	450	167	81	139	90	241	547	479	4,560
9.02	Upper Muddy Creek	0	18	343	449	224	61	0	0	0	0	139	0	1,234
9.04	Upper Muddy Creek agricultural diversions	0	18	343	449	224	61	0	0	0	0	139	0	1,234
10.01	Confluence of Little Muddy Creek and Muddy Creek	308	505	943	1,420	674	228	81	139	90	241	686	479	5,794
10.02	Muddy Creek nr Hampton (09224000)	308	505	943	1,420	674	228	81	139	90	241	686	479	5,794
11.01	Confluence Muddy Creek and Blacks Fork	1,527	2,690	9,514	7,516	7,388	3,477	1,391	745	669	2,203	2,468	1,821	41,410
11.02	Blacks Fork agricultural diversions between Muddy	1,527	2,690	9,514	7,516	7,388	3,477	1,391	745	669	2,203	2,468	1,821	41,410

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
	Creek and Hams Fork													
12.02	Hams Fork below Pole Creek near Frontier (09223000)	530	458	520	1,185	4,224	2,810	650	456	474	797	726	554	13,383
12.04	Hams Fork between Hams Fork below Pole Creek gage and Viva Naughton	530	458	520	1,185	4,224	2,810	650	456	474	797	726	554	13,383
12.06	Viva Naughton Reservoir	530	458	520	1,185	4,224	2,810	650	745	651	797	726	554	13,849
12.08	Below Viva Naughton Reservoir	530	458	520	1,185	4,224	2,810	650	745	651	797	726	554	13,849
12.10	Viva Naughton Power Plant	530	458	520	1,185	4,224	2,810	650	745	651	797	726	554	13,849
12.14	City of Kemmerer	530	955	5,752	4,484	7,591	2,810	650	745	651	1,228	827	554	26,776
12.16	Below Kemmerer and above Hams Fork/Blacks Fork confluence	530	955	5,752	4,484	7,591	2,810	650	745	651	1,228	827	554	26,776
13.01	Confluence Hams Fork and Blacks Fork	2,034	3,645	15,266	12,000	14,979	6,287	2,041	745	676	3,431	3,295	2,338	66,736
13.02	Agricultural diversions below confluence of Hams Fork and Blacks Fork	2,034	3,645	15,266	12,000	14,979	6,287	2,041	745	676	3,431	3,295	2,338	66,736

Table A-2
Available Flow for Black's Fork River Basin and Normal Hydrologic Condition (af)

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1.06	Blacks Fork near Milburne (09218500)	956	943	981	970	7,985	8,207	2,460	1,063	887	1,237	1,414	994	28,096
1.08	Below Blacks Fork near Millburne gage and above Pine Grove	956	1,331	4,400	4,946	7,985	8,207	2,460	1,063	887	1,237	1,414	994	35,880
1.10	Pine Grove	956	1,331	4,400	4,946	7,985	8,207	2,460	1,063	887	1,237	1,414	994	35,880
1.12	Below Pine Grove and above Blacks Fork Canal	956	1,331	4,400	4,946	7,985	8,207	2,460	1,063	887	1,237	1,414	994	35,880
1.13	BVJPB Pipeline (Blacks Fork)	956	1,331	4,400	4,946	7,985	8,207	2,460	1,063	887	1,237	1,414	994	35,880
1.14	Blacks Fork Canal	956	1,331	4,400	4,946	7,985	8,207	2,460	1,063	887	1,237	1,414	994	35,880
1.16	Below Blacks Fork Canal and above Bridger Butte Canal	956	1,331	4,400	4,946	7,985	8,207	2,460	1,063	887	1,237	1,414	994	35,880
1.18	Bridger Butte Canal	956	1,331	4,400	4,946	7,985	8,207	2,460	1,063	887	1,237	1,414	994	35,880
1.20	Fort Bridger Canal / Center / Twin Buttes	956	1,331	4,400	4,946	7,985	8,207	2,460	1,063	887	1,237	1,414	994	35,880
1.22	Below Fort Bridger / Twin Buttes and above Blacks Fork near Urie gage	956	1,331	4,400	4,946	8,346	8,207	2,460	1,063	887	1,237	1,414	994	36,241
1.24	Blacks Fork near Urie (09219000)	956	1,331	4,400	4,946	8,346	8,207	2,460	1,063	887	1,237	1,414	994	36,241
1.26	Below Blacks Fork near Urie gage	1,076	1,506	5,025	5,768	9,544	10,076	4,314	2,345	1,778	1,636	1,578	1,120	45,764
2.02	West Fork of Smith Fork near Robertson (09220500)	356	484	1,525	1,551	4,145	3,153	737	325	303	433	512	369	13,893
2.04	Below West Fork Smiths Fork nr Robertson and above confluence with East Fork Smith Fork	447	671	2,307	2,255	4,145	3,153	737	325	379	433	590	452	15,895
3.06	East Fork of Smith Fork near Robertson (09220000)	465	408	453	646	4,462	6,867	2,294	1,099	979	1,218	713	503	20,107
3.08	East Fork of Smith Fork gage and above confluence with West Fork Smith Fork	595	675	1,566	1,649	4,462	6,867	2,294	1,099	979	1,218	825	622	22,851

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
4.01	Confluence of East and West Fork of Smiths Fork	1,004	1,312	3,831	3,867	6,759	6,867	2,294	1,099	979	1,218	1,380	1,036	31,647
4.04	Below confluence of East and West Fork Smith Fork and above BVJPB pipeline	1,004	1,312	3,831	3,867	6,759	6,867	2,294	1,099	979	1,218	1,380	1,036	31,647
4.06	BVJPB Pipeline (Smiths Fork)	1,004	1,312	3,831	3,867	6,759	6,867	2,294	1,099	979	1,218	1,380	1,036	31,647
4.08	Smiths Fork near Mountain View (09221500)	1,004	1,312	3,831	3,867	6,759	6,867	2,294	1,099	979	1,218	1,380	1,036	31,647
4.10	Between Smiths Fork near Mountain View gage and confluence with Cottonwood Creek	1,089	1,438	4,288	4,470	8,859	9,952	5,677	2,618	2,209	1,839	1,615	1,125	45,179
5.02	Cottonwood Creek	205	300	1,081	1,425	2,286	2,238	659	265	208	284	321	215	9,488
5.04	Agricultural diversions on Cottonwood Creek	205	300	1,081	1,425	2,286	2,238	659	265	208	284	321	215	9,488
6.01	Confluence Cottonwood Creek and Smiths Fork	1,293	1,738	5,368	5,895	11,146	12,190	5,874	2,618	2,209	2,124	1,937	1,339	53,731
6.02	Smiths Fork agricultural diversions between Cottonwood Creek and Blacks Fork	1,293	1,738	5,368	5,895	11,146	12,190	5,874	2,618	2,209	2,124	1,937	1,339	53,731
7.01	Confluence Smiths Fork and Blacks Fork	2,369	3,244	10,393	11,664	19,584	19,259	5,874	2,618	2,209	3,023	3,436	2,459	86,131
7.02	Blacks Fork near Lyman (09222000)	2,369	3,244	10,393	11,664	19,584	19,259	5,874	2,618	2,209	3,023	3,436	2,459	86,131
8.02	Little Muddy Creek near Glencoe (09222300)	267	317	1,432	1,335	762	260	280	202	164	317	236	370	5,941
9.02	Upper Muddy Creek	286	584	3,248	2,913	6,608	3,029	564	0	0	467	582	411	18,691
9.04	Upper Muddy Creek agricultural diversions	286	584	3,248	2,913	6,608	3,029	564	0	0	467	582	411	18,691
10.01	Confluence of Little Muddy Creek and Muddy Creek	553	900	4,680	4,248	7,370	3,289	844	202	164	784	817	781	24,631
10.02	Muddy Creek nr Hampton (09224000)	553	900	4,680	4,248	7,370	3,289	844	202	164	784	817	781	24,631
11.01	Confluence Muddy Creek and Blacks Fork	2,956	4,273	16,680	16,769	30,094	24,230	7,186	2,852	2,373	3,845	4,461	3,240	118,960
11.02	Blacks Fork agricultural	2,956	4,273	16,680	16,769	30,094	24,230	7,186	2,852	2,373	3,845	4,461	3,240	118,960

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
	diversions between Muddy Creek and Hams Fork													
12.02	Hams Fork below Pole Creek near Frontier (09223000)	925	854	1,278	6,253	14,799	15,491	4,924	1,530	941	1,358	1,202	1,009	50,564
12.04	Hams Fork between Hams Fork below Pole Creek gage and Viva Naughton	925	854	1,278	6,253	14,799	15,491	4,924	1,530	941	1,358	1,202	1,009	50,564
12.06	Viva Naughton Reservoir	1,133	1,012	1,531	9,263	14,799	15,491	5,340	2,244	2,059	1,624	1,212	1,172	56,880
12.08	Below Viva Naughton Reservoir	1,133	1,012	1,531	9,263	14,799	15,491	5,340	2,244	2,059	1,624	1,212	1,172	56,880
12.10	Viva Naughton Power Plant	1,133	1,012	1,531	9,263	14,799	15,491	5,340	2,244	2,059	1,624	1,212	1,172	56,880
12.14	City of Kemmerer	1,219	1,372	6,165	11,733	23,278	18,534	5,394	2,244	2,059	1,724	1,803	1,172	76,696
12.16	Below Kemmerer and above Hams Fork/Blacks Fork confluence	1,219	1,372	6,165	11,733	23,278	18,534	5,394	2,244	2,059	1,724	1,803	1,172	76,696
13.01	Confluence Hams Fork and Blacks Fork	4,175	5,645	22,845	28,501	53,372	42,764	12,580	5,095	3,872	5,569	6,264	4,399	195,082
13.02	Agricultural diversions below confluence of Hams Fork and Blacks Fork	4,175	5,645	22,845	28,501	53,372	42,764	12,580	5,095	3,872	5,569	6,264	4,399	195,082

Table A-3
Available Flow for Black's Fork River Basin and Wet Hydrologic Condition (af)

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1.06	Blacks Fork near Milburne (09218500)	1,438	1,351	1,481	1,868	14,461	24,892	10,966	3,450	2,546	2,321	2,102	1,426	68,303
1.08	Below Blacks Fork near Millburne gage and above Pine Grove	1,700	1,733	5,232	6,876	14,461	24,892	10,966	3,450	2,546	2,321	2,102	1,426	77,706
1.10	Pine Grove	1,700	1,733	5,232	6,876	14,461	24,892	10,966	3,450	2,546	2,321	2,102	1,426	77,706
1.12	Below Pine Grove and above Blacks Fork Canal	1,700	1,733	5,232	6,876	14,461	24,892	10,966	3,450	2,546	2,321	2,102	1,426	77,706
1.13	BVJPB Pipeline (Blacks Fork)	1,700	1,733	5,232	6,876	14,461	24,892	10,966	3,450	2,546	2,321	2,102	1,426	77,706
1.14	Blacks Fork Canal	1,700	1,733	5,232	6,876	14,461	24,892	10,966	3,450	2,546	2,321	2,102	1,426	77,706
1.16	Below Blacks Fork Canal and above Bridger Butte Canal	1,700	1,733	5,232	6,876	14,461	24,892	10,966	3,450	2,546	2,321	2,102	1,426	77,706
1.18	Bridger Butte Canal	1,700	1,733	5,232	6,876	14,461	24,892	10,966	3,450	2,546	2,321	2,102	1,426	77,706
1.20	Fort Bridger Canal / Center / Twin Buttes	1,700	1,733	5,232	6,876	14,461	24,892	10,966	3,450	2,546	2,321	2,102	1,426	77,706
1.22	Below Fort Bridger / Twin Buttes and above Blacks Fork near Urie gage	1,700	1,733	5,232	6,876	14,801	24,892	10,966	3,450	2,546	2,321	2,102	1,426	78,045
1.24	Blacks Fork near Urie (09219000)	1,700	1,733	5,232	6,876	14,801	24,892	10,966	3,450	2,546	2,321	2,102	1,426	78,045
1.26	Below Blacks Fork near Urie gage	1,928	1,967	5,978	7,938	16,364	26,751	12,722	4,907	4,114	3,063	2,491	1,614	89,838
2.02	West Fork of Smith Fork near Robertson (09220500)	480	562	1,628	2,067	5,034	8,935	3,763	1,181	913	753	705	494	26,515
2.04	Below West Fork Smiths Fork nr Robertson and above confluence with East Fork Smith Fork	696	789	2,586	3,157	6,530	8,935	3,778	1,181	913	753	757	576	30,651
3.06	East Fork of Smith Fork near Robertson (09220000)	641	562	601	933	4,455	18,309	10,857	3,229	2,435	1,712	1,142	728	45,603
3.08	East Fork of Smith Fork gage and above confluence with West Fork Smith Fork	949	885	1,965	2,485	6,076	18,309	10,857	3,229	2,435	1,712	1,218	845	50,965
4.01	Confluence of East and West Fork of Smiths Fork	1,615	1,642	4,514	5,601	11,469	19,289	10,912	3,229	2,435	2,036	1,945	1,389	66,077

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
4.04	Below confluence of East and West Fork Smith Fork and above BVJPB pipeline	1,615	1,642	4,514	5,601	11,469	19,289	10,912	3,229	2,435	2,036	1,945	1,389	66,077
4.06	BVJPB Pipeline (Smiths Fork)	1,615	1,642	4,514	5,601	11,469	19,289	10,912	3,229	2,435	2,036	1,945	1,389	66,077
4.08	Smiths Fork near Mountain View (09221500)	1,615	1,642	4,514	5,601	11,469	19,289	10,912	3,229	2,435	2,036	1,945	1,389	66,077
4.10	Between Smiths Fork near Mountain View gage and confluence with Cottonwood Creek	1,780	1,811	5,060	6,380	14,042	24,278	15,365	6,629	5,110	3,278	2,540	1,525	87,798
5.02	Cottonwood Creek	394	402	1,292	1,841	4,213	7,097	2,032	802	560	596	496	324	20,050
5.04	Agricultural diversions on Cottonwood Creek	394	402	1,292	1,841	4,213	7,097	2,032	802	560	596	496	324	20,050
6.01	Confluence Cottonwood Creek and Smiths Fork	2,174	2,214	6,351	8,222	18,255	31,375	17,397	7,431	5,670	3,874	3,036	1,849	107,849
6.02	Smiths Fork agricultural diversions between Cottonwood Creek and Blacks Fork	2,174	2,214	6,351	8,222	18,255	31,375	17,397	7,431	5,670	3,874	3,036	1,849	107,849
7.01	Confluence Smiths Fork and Blacks Fork	4,102	4,181	12,329	16,160	34,619	58,126	25,687	8,179	6,074	5,550	5,039	3,463	183,509
7.02	Blacks Fork near Lyman (09222000)	4,102	4,181	12,329	16,160	34,619	58,126	25,687	8,179	6,074	5,550	5,039	3,463	183,509
8.02	Little Muddy Creek near Glencoe (09222300)	686	1,520	3,640	13,390	5,520	3,250	1,340	871	673	187	283	188	31,548
9.02	Upper Muddy Creek	0	310	2,500	7,680	11,550	4,190	110	0	90	0	0	0	26,430
9.04	Upper Muddy Creek agricultural diversions	0	310	2,500	7,680	11,550	4,190	110	0	90	0	0	0	26,430
10.01	Confluence of Little Muddy Creek and Muddy Creek	686	1,830	6,140	21,070	17,070	7,440	1,450	871	763	187	283	188	57,978
10.02	Muddy Creek nr Hampton (09224000)	686	1,830	6,140	21,070	17,070	7,440	1,450	871	763	187	283	188	57,978
11.01	Confluence Muddy Creek and Blacks Fork	4,962	6,011	18,696	37,230	51,689	69,617	29,024	9,662	7,146	6,182	5,878	3,816	249,913
11.02	Blacks Fork agricultural diversions between Muddy Creek and Hams Fork	4,962	6,011	18,696	37,230	51,689	69,617	29,024	9,662	7,146	6,182	5,878	3,816	249,913
12.02	Hams Fork below Pole Creek	996	900	1,475	7,389	42,169	45,037	10,064	2,733	2,010	1,703	1,467	1,155	117,098

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
	near Frontier (09223000)													
12.04	Hams Fork between Hams Fork below Pole Creek gage and Viva Naughton	996	900	1,475	7,389	42,169	45,037	10,064	2,733	2,010	1,703	1,467	1,155	117,098
12.06	Viva Naughton Reservoir	3,280	4,217	7,240	15,342	45,215	45,037	14,695	4,214	3,811	1,767	1,768	2,447	149,031
12.08	Below Viva Naughton Reservoir	3,280	4,217	7,240	15,342	45,215	45,037	14,695	4,214	3,811	1,767	1,768	2,447	149,031
12.10	Viva Naughton Power Plant	3,280	4,217	7,240	15,342	45,215	45,037	14,695	4,214	3,811	1,767	1,768	2,447	149,031
12.14	City of Kemmerer	3,771	4,217	7,883	15,342	45,215	55,178	18,504	5,289	4,505	3,041	3,365	2,908	169,218
12.16	Below Kemmerer and above Hams Fork/Blacks Fork confluence	3,771	4,217	7,883	15,342	45,215	55,178	18,504	5,289	4,505	3,041	3,365	2,908	169,218
13.01	Confluence Hams Fork and Blacks Fork	8,734	9,428	26,579	38,226	90,625	124,795	47,528	14,951	11,651	9,223	9,244	6,724	397,706
13.02	Agricultural diversions below confluence of Hams Fork and Blacks Fork	8,734	9,428	26,579	38,226	90,625	124,795	47,528	14,951	11,651	9,223	9,244	6,724	397,706

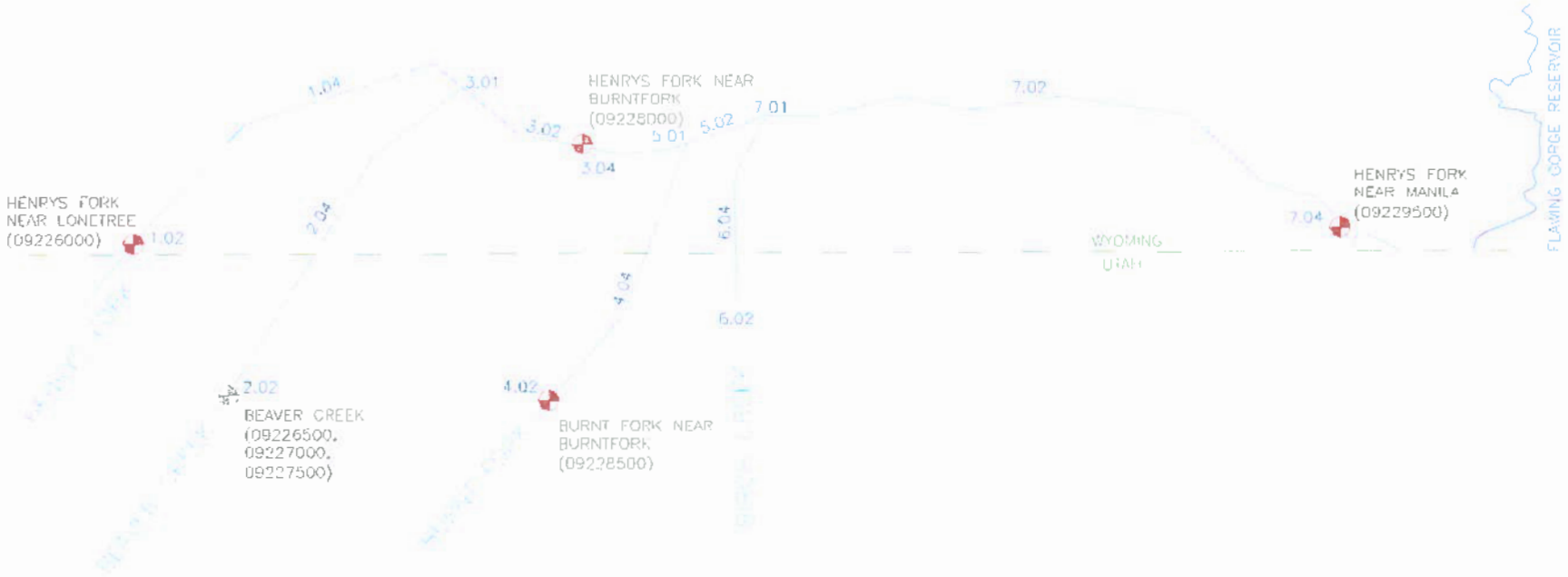


Figure A-2 Henrys Fork Node Diagram

Table A-4
Available Flow for Henry's Fork River Basin and Dry Hydrologic Condition (af)

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1.02	Henrys Fork near Lonetree (09226000)	237	215	274	780	2,591	2,825	451	70	49	502	378	285	8,656
1.04	Below Henrys Fork nr Lonetree and above confluence with Beaver Creek	451	494	1,318	780	2,591	2,825	451	70	49	502	513	549	10,593
2.02	Beaver Creek Inflows (09226500, 09227000, 09227500)	653	619	705	1,251	2,591	2,825	451	70	49	540	796	716	11,265
2.04	Beaver Creek diversions	876	909	1,791	1,251	2,591	2,825	451	70	49	540	937	992	13,282
3.01	Confluence Beaver Creek and Henrys Fork	1,328	1,403	3,109	1,461	2,591	2,825	451	70	49	540	1,451	1,541	16,817
3.02	Diversions below Beaver Creek and above Henrys Fork near Burntfork	1,328	1,403	3,109	1,461	2,591	2,825	451	70	49	540	1,451	1,541	16,817
3.04	Henrys Fork near Burntfork (09228000)	1,328	1,403	3,109	1,461	2,591	2,825	451	70	49	540	1,451	1,541	16,817
4.02	Burnt Fork near Burntfork (09228500)	443	430	467	682	2,383	3,213	815	354	298	611	532	473	10,700
4.04	Burnt Fork diversions	443	430	467	682	2,383	3,213	815	354	298	611	532	473	10,700
5.01	Confluence Burnt Fork and Henrys Fork	1,771	1,836	3,826	2,062	3,353	3,652	815	354	298	981	1,982	2,014	22,945
5.02	Henrys Fork diversions between Burnt Fork and Birch Creek	1,771	1,836	3,826	2,062	3,353	3,652	815	354	298	981	1,982	2,014	22,945
6.02	Birch Creek inflows	163	159	172	251	918	1,349	504	314	173	225	196	175	4,600
6.04	Birch Creek diversions	163	159	172	251	918	1,349	504	314	173	225	196	175	4,600
7.01	Confluence Birch Creek and Henrys Fork	1,906	1,995	3,999	2,062	3,353	3,652	815	354	315	981	2,050	2,156	23,638
7.02	Henrys Fork diversions between Birch Creek and Henrys Fork near Manila	1,906	1,995	3,999	2,062	3,353	3,652	815	354	315	981	2,050	2,156	23,638
7.04	Henrys Fork near Manila, UT (09229500)	1,906	1,995	3,999	2,062	3,353	3,652	815	354	315	981	2,050	2,156	23,638

Table A-5
Available Flow for Henry's Fork River Basin and Normal Hydrologic Condition (af)

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1.02	Henrys Fork near Lonetree (09226000)	335	291	365	843	5,485	8,967	2,887	1,183	529	746	515	403	22,549
1.04	Below Henrys Fork nr Lonetree and above confluence with Beaver Creek	862	979	1,563	1,476	5,485	8,967	2,887	1,183	529	816	1,125	937	26,807
2.02	Beaver Creek Inflows (09226500, 09227000, 09227500)	735	677	778	1,348	5,840	8,296	2,887	1,183	930	1,156	919	808	25,558
2.04	Beaver Creek diversions	1,283	1,393	2,025	2,007	5,840	8,296	2,887	1,183	930	1,229	1,553	1,364	29,990
3.01	Confluence Beaver Creek and Henrys Fork	2,145	2,372	3,588	3,483	7,018	10,014	2,887	1,183	930	2,045	2,677	2,301	40,643
3.02	Diversions below Beaver Creek and above Henrys Fork near Burntfork	2,145	2,372	3,588	3,483	7,018	10,014	2,887	1,183	930	2,045	2,677	2,301	40,643
3.04	Henrys Fork near Burntfork (09228000)	2,145	2,372	3,588	3,483	7,018	10,014	2,887	1,183	930	2,045	2,677	2,301	40,643
4.02	Burnt Fork near Burntfork (09228500)	505	477	524	725	3,180	5,696	2,279	994	539	760	619	548	16,847
4.04	Burnt Fork diversions	505	477	524	725	3,180	5,696	2,279	994	539	760	619	548	16,847
5.01	Confluence Burnt Fork and Henrys Fork	2,680	2,956	4,367	4,208	8,591	12,111	3,717	1,706	1,387	2,746	3,296	2,849	50,614
5.02	Henrys Fork diversions between Burnt Fork and Birch Creek	2,680	2,956	4,367	4,208	8,591	12,111	3,717	1,706	1,387	2,746	3,296	2,849	50,614
6.02	Birch Creek inflows	186	176	193	268	1,218	2,240	943	404	235	281	228	202	6,574
6.04	Birch Creek diversions	186	176	193	268	1,218	2,240	943	404	235	281	228	202	6,574
7.01	Confluence Birch Creek and Henrys Fork	2,866	3,132	4,561	4,438	8,591	12,111	3,717	1,706	1,400	2,746	3,491	3,049	51,809
7.02	Henrys Fork diversions between Birch Creek and Henrys Fork near Manila	2,866	3,132	4,561	4,438	8,591	12,111	3,717	1,706	1,400	2,746	3,491	3,049	51,809
7.04	Henrys Fork near Manila, UT (09229500)	2,866	3,132	4,561	4,438	8,591	12,111	3,717	1,706	1,400	2,746	3,491	3,049	51,809

Table A-6
Available Flow for Henry's Fork River Basin and Wet Hydrologic Condition (af)

Node	Node Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1.02	Henrys Fork near Lonetree (09226000)	493	453	546	1,485	8,161	16,772	7,043	2,539	1,220	1,075	771	582	41,140
1.04	Below Henrys Fork nr Lonetree and above confluence with Beaver Creek	1,232	956	2,882	3,071	8,161	16,772	7,043	2,539	1,220	1,667	1,431	1,079	48,054
2.02	Beaver Creek Inflows (09226500, 09227000, 09227500)	879	841	955	2,259	10,162	16,152	7,596	3,210	2,258	1,443	1,157	967	47,880
2.04	Beaver Creek diversions	1,648	1,365	3,387	3,911	10,162	16,152	7,596	3,210	2,258	2,059	1,845	1,484	55,077
3.01	Confluence Beaver Creek and Henrys Fork	2,881	2,321	6,269	6,982	16,889	29,507	13,718	5,262	3,330	3,726	3,275	2,563	96,724
3.02	Diversions below Beaver Creek and above Henrys Fork near Burntfork	2,881	2,321	6,269	6,982	16,889	29,507	13,718	5,262	3,330	3,726	3,275	2,563	96,724
3.04	Henrys Fork near Burntfork (09228000)	2,881	2,321	6,269	6,982	16,889	29,507	13,718	5,262	3,330	3,726	3,275	2,563	96,724
4.02	Burnt Fork near Burntfork (09228500)	574	533	591	950	3,745	10,859	6,665	2,271	1,238	975	739	637	29,778
4.04	Burnt Fork diversions	574	533	591	950	3,745	10,859	6,665	2,271	1,238	975	739	637	29,778
5.01	Confluence Burnt Fork and Henrys Fork	3,519	2,876	7,493	8,197	20,187	35,012	16,462	6,529	4,259	4,701	4,014	3,200	116,449
5.02	Henrys Fork diversions between Burnt Fork and Birch Creek	3,519	2,876	7,493	8,197	20,187	35,012	16,462	6,529	4,259	4,701	4,014	3,200	116,449
6.02	Birch Creek inflows	212	197	218	351	1,423	4,126	2,548	868	468	360	273	235	11,278
6.04	Birch Creek diversions	212	197	218	351	1,423	4,126	2,548	868	468	360	273	235	11,278
7.01	Confluence Birch Creek and Henrys Fork	3,730	3,072	7,711	8,548	20,187	35,012	16,462	6,529	4,259	4,723	4,194	3,358	117,786
7.02	Henrys Fork diversions between Birch Creek and Henrys Fork near Manila	3,730	3,072	7,711	8,548	20,187	35,012	16,462	6,529	4,259	4,723	4,194	3,358	117,786
7.04	Henrys Fork near Manila, UT (09229500)	3,730	3,072	7,711	8,548	20,187	35,012	16,462	6,529	4,259	4,723	4,194	3,358	117,786

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