

**Bitter Creek
Watershed Plan**

2004

Developed by

**Powell-Clarks Fork Conservation District
Bitter Creek Watershed Steering Team**

With Assistance From

**Wyoming Association of Conservation Districts
USDA Natural Resources Conservation Service
Wyoming Department of Environmental Quality
Shoshone Irrigation District
Park County
City of Powell**

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Bitter Creek Watershed Plan

MISSION/VISION STATEMENT

The mission of the Bitter Creek Watershed Steering Team is to maintain and, where possible, improve water quality, natural resources, economic stability, and quality of life in the Bitter Creek Watershed. Water quality issues identified by the water quality investigation of Bitter Creek will be addressed considering historic and natural background influences within the watershed, through voluntary, financial, technical, and educational resources, thereby preventing the need for regulatory enforcement actions.

PURPOSE

The purpose for this watershed plan is:

1. To summarize the condition of the Bitter Creek Watershed;
2. To maintain local control to increase voluntary participation in implementation efforts and to prevent potential regulation;
3. To maintain or improve the quality of Bitter Creek by addressing possible human caused pollutants and mitigating those pollutants to a realistic and achievable level, through feasible Best Management Practices (BMPs) on a voluntary basis;
4. To facilitate public understanding of BMPs and evaluate, and implement BMPs within the watershed to assist in voluntary implementation of practices to improve water quality;
5. To continue to sample water quality to monitor progress achieved through implementation of this watershed plan.

BACKGROUND

Bitter Creek (HUC 10080014) was listed on Wyoming's 2000 303(d) impaired water body list as impaired by fecal coliform bacteria. Bitter Creek was a high priority on the 2000 303(d) list. The source of impairment was unknown. Possible sources included but were not limited to: agriculture and wildlife waste; and failing, or inadequate, household septic systems. Water Quality Rules and Regulations-Chapter 1, Water Quality Standards for Wyoming Surface Waters, Section 27 at that time stated, "*(b) During the recreation season (May 1 through September 30) fecal coliform concentrations shall not exceed geometric mean of 200 fecal coliform groups per 100 milliliters (based on a minimum of not less than 5 samples obtained during separate 24 hour periods for any 30 day period), nor shall 10 percent of the samples exceed 400 groups per 100 milliliters during any 30 day period in all Wyoming surface waters (except those listed in (a) and (c) and are hereby classified as full body contact recreation waters.*".

Bitter Creek is classified by DEQ as a Class 2 stream, which supports the following beneficial uses: agriculture, fish and wildlife, industry, drinking water, aquatic life, and full contact recreation. Fecal coliform contamination is a human health hazard. Contamination of contact recreation waters is responsible for outbreaks of gastrointestinal diseases as well as skin, ear,

and respiratory tract infections. Water quality and recreation use on the Shoshone River below Bitter Creek is greatly impacted by Bitter Creek: at times during heavy irrigation, the Shoshone River may be almost dry above the Bitter Creek confluence. Bitter Creek is the source water for the Sidon Canal used by the Sidon Irrigation District. Bitter Creek water ultimately enters Big Horn Lake with a multitude of recreational uses. An NPDES-permitted municipal wastewater treatment plant discharges to Bitter Creek. An NPDES-permitted animal feeding operation is located in the Bitter Creek drainage.

Bitter Creek begins at springs located on the East face of Polecat Bench and runs easterly for a distance of 19 miles across the Powell Flats before entering the Shoshone River. There are no significant tributaries flowing into Bitter Creek. The major water supply for Bitter Creek is return irrigation flows from the Garland Canal through an extensive network of surface and subsurface drains. Since there are no other influent sources, and the watershed is bounded by a geological bench on two sides and the canal on one side with a single drain (Bitter Creek), the system is essentially closed and, therefore, ideal for producing conclusive results of a watershed planning effort.

Water quality samples collected by USGS at Station 6284500 were the basis for Bitter Creek being listed as an impaired stream. Samples, including fecal coliform bacteria, had been collected at this site on a quarterly basis. According to USGS published data, between March 1995 and September 1998 a total of 16 samples were collected at this station. Eight of these sample events occurred during the recreation period. Six of the eight recreation period samples (75%) exceeded the state standard of 200 colonies per 100 milliliters. The highest count observed in this time period occurred on June 25, 1997 was 1100 colonies per 100 milliliters. Elevated fecal counts appear to correspond with relatively high flows (exceeding 275 cubic feet per second discharge) and moderately warm temperatures (greater than 12 °C or 53.6 °F). These suggest the source is not limited to a single, continuous-flow source, but may encompass a wide variety of sources influenced by flow contributions.

A number of past studies have also indicated high amounts of fecal coliform in Bitter Creek. The Bitter Creek Water Quality Assessment (Wyoming Conservation Commission, 1984) cited 15 of 16 measurements exceeded 1000 colonies per 100 milliliters between October of 1981 and October of 1982. A stream survey conducted November 15-20, 1976 by DEQ-WQD recorded counts of 1500, 1940, 260, and 600 colonies per 100 milliliters at various points on Bitter Creek.

Topography: Surface geology consists of numerous alluvial terraces bordering the Shoshone River. Broad alluvial fans lay between the uplands and the terraces.

Elevation: The elevations range from a high of 4840 feet above sea level to a low of 4060 feet at the confluence with the Shoshone River.

Land Ownership: Primarily private. Approximate distribution of ownership:

45,900 acres private 89%

700 acres state 1%

4,200 acres BOR 8 %

1,200 acres BLM 2%

52,000 total acres (approximately)

Land Use: Land use in this area of 80 square miles is approximately 82% irrigated agriculture, 7% urban, 8% badlands, and 3% grazing and sagebrush.

Precipitation: The 30-year average rainfall is 5.66 inches with a range of 3.2 to 12 inches. Normal patterns show the least amount during the winter months December – February with most precipitation falling in May and June.

Soils and Geology: Nearly level to slightly sloping alluvial soils consist mainly of shallow to deep clay loams, sandy loams, and loams well suited to irrigation. Tight clay loams contribute to drainage problems in the north side of the watershed. Soils were developed over shale and sandstone containing moderate to excessive amounts of soluble salts.

Erosion Potential: Erosion potential is high from croplands, ditch and streambank erosion, with a contribution from badlands on the fringes of the agriculture area during runoff events. Recent data suggests current agronomic practices have reduced irrigated cropland contribution. BMP installation such as the use of concrete ditches, gated pipe, sedimentation settling ponds, return flow grass filter strips and PAM have been implemented to help reduce erosion.

Agricultural: Major crops include sugar beets, dry beans, barley, wheat, alfalfa hay and seed, silage corn, and pasture with other various crops. All crops are produced under irrigation, predominately flood. Livestock enterprise consists mainly of cow-calf with some sheep production. There is one large feedlot in the watershed. 140 farms have been initially identified in the watershed.

Urban: The city of Powell, population approximately 5,500, lies in the watershed. Development is occurring around this city, with at least 2,200 in rural population (1980) in the Bitter Creek watershed. There is a small rural community of Garland, population 50, located beside Bitter Creek which uses only private septic tank facilities. Total population in the Bitter Creek drainage of 7750 people in 80 square miles or 96.9 persons per square mile is significantly higher than the overall Park County density of 4.1.

WATERSHED CONCERNS

Education and Awareness

This watershed plan will serve as an outreach tool to the residents of the Bitter Creek Watershed to emphasize the importance of water quality and highlight activities undertaken by local natural resource professionals to improve water quality. Recognition of water quality issues by the public is an initial challenge and in order to encourage participation in voluntary BMP activities, the Powell-Clarks Fork Conservation District will have to lead effective information dissemination programs for all implementation activities.

In order to encourage citizens of the Bitter Creek watershed to voluntarily address any potential pollutant contributions or modify any contributing land use or infrastructure under their control, awareness of potential problems and alternatives to remedy those problems will need to be available.

Homeowners, developers, agricultural producers and planning officials need to have accurate and current information readily available to make informed decisions.

The public will need to be informed of this plan as human and financial resources will present a challenge, but will need to be acquired and utilized to achieve activities of the plan.

Water Quality

Based on both historical and current credible data, the quality of the water in Bitter Creek, specifically the bacteria concentrations, could have an adverse impact on human health. A regulatory water quality issue also exists with the listing of Bitter Creek on Table A of the 2000 WDEQ 303 (d) list of waters with water quality impairments.

This watershed plan was locally driven and developed to address the requirements of the Clean Water Act, in an effort to increase local participation in implementation activities in a voluntary and incentive based approach to water quality improvement. Continuing monitoring of the water quality, after implementation of this plan, will be expensive and time consuming, yet a high priority. The Bitter Creek Watershed Steering Team is confident that there is sufficient data to provide a water quality baseline for comparison as BMPs are implemented to assess the effectiveness of this plan. Resources must be found in order to keep water quality monitoring data credible and accurate. For these reasons, water quality training for district personnel will be a priority.

Agriculture

Agriculture is a vital component of the local economy and provides a desirable lifestyle for many within the Bitter Creek Watershed. It is a priority of the Bitter Creek Watershed Steering Team to protect the existing uses of Bitter Creek water and to maintain or improve the viability of the agricultural industry within the watershed in conjunction with improving water quality. Specific issues include:

- *Waste Management* –The Natural Resources Conservation Service (NRCS) is currently improving three Animal Feeding Operations within the Bitter Creek

Watershed to address water quality. In addition to these three projects, all started since 2003, NRCS has also been on several site visits within the watershed at the request of landowners wishing to evaluate their operations for risk of contaminating surface water. NRCS did not find any resource concerns on these visits. The Bitter Creek Watershed Steering Team and NRCS are confident that they have addressed waste management, at least for the time being, sufficiently to protect the water quality.

- *Grazing Management* – The Bitter Creek Watershed is not intensively used for livestock grazing. Only 3% of the land area is used primarily for this purpose. The majority of the watershed is used for irrigated cropland. Livestock grazing is generally limited to post-harvest crop pasture. Since these lands are irrigated for crops, there is little potential for improving grazing practices.
- *Irrigation Management* – The water quality monitoring data may suggest that fecal coliform contributions are not coming from overland flow due to flood irrigation. The seasonal rises in fecal concentrations have been observed prior to the irrigation season, possibly indicating that fecal coliform contributions may be largely attributable to other sources, such as faulty septic systems. Opportunities do, however, exist for enhanced irrigation management practices to minimize the possibility for contamination of nearby surface waters. The Powell NRCS has accepted more applications for pivot systems than they have been able to fund in recent years. While there have been no applications for pivot systems within the Bitter Creek Watershed, to this point, applications from this area are expected. Irrigation water management has always been a priority of the Conservation District and NRCS. The Conservation District and NRCS have traditionally extensively advertised technical assistance and the Environmental Quality Incentive Program (EQIP) to landowners of the Powell-Clarks Fork Conservation District. Since the 2000 Farm Bill the NRCS with guidance from the Conservation District Steering Committee has allocated \$109,057 toward irrigation water management in the Bitter Creek Watershed.

Septic Systems

Proper installation and periodic maintenance of septic systems are very important to minimize potential contributions of bacteria to ground and surface water. Septic systems are common in the Bitter Creek Watershed and inadequate or malfunctioning systems present a potential source of contamination of Bitter Creek. There is also a high water table in much of the Bitter Creek Watershed that may facilitate contributions of bacteria to the creek. Because of the relatively high water table, many tile drains and surface drains were installed with the introduction of irrigation water to keep water moving through the system and to prevent salt accumulation on the soil surface. The tile and surface drain systems, high water table and positioning of houses collectively suggest that more elaborate designs, such as mounded systems, may be necessary to replace non-existent or faulty septic systems. Septic system remediation will be the initial focus of the Bitter Creek Watershed Plan as most resources will be directed at this issue. The Bitter Creek Watershed Steering Team feels that septic system

remediation offers the most potential for improving water quality and may alleviate the impairment altogether. Bitter Creek Watershed Residents will need to be informed of potential issues with their septic systems and offered alternatives, including cost-share opportunities, to ensure the systems are operating correctly.

City of Powell

The City of Powell lies within the Bitter Creek watershed and is within a mile of the stream channel itself. Impervious surfaces such as concrete and asphalt have an obvious impact on water quality as pet wastes and other contaminants have a direct link to surface water.

- Stormwater Discharge – Discharge from street runoff may potentially contribute significant levels of contaminants to Bitter Creek. Coordination with the City of Powell will be a priority to address future planning for stormwater management.
- Wastewater Treatment Plants – The Bitter Creek Steering Team recognizes that the treatment plant for the City of Powell is operating under a discharge permit, but may be contributing fecal coliform to Bitter Creek regardless.

Wildlife

There are significant numbers of waterfowl utilizing the Bitter Creek Watershed. The Bitter Creek Watershed Steering Team considers wildlife an asset that improves the quality of life, but also recognizes the unknown contribution of bacteria associated with their presence. Wildlife constitute one of many factors that seem irrelevant to the overall quality of water within Bitter Creek, but when considered collectively with other factors, such as pet contributions and limited livestock contributions, these factors may be an obstacle to achieving water quality standards.

Water Usage

The Bitter Creek Watershed Steering Team recognizes that water quality concerns have no impact on Wyoming Water Law. Protection of water usage is an underlying principle guiding the direction for the steering team and this watershed plan. Diversions of water do alter hydrology of watersheds, which can be beneficial or in some cases may be detrimental, and should be considered in watershed planning.

Coordination Efforts

The Powell-Clarks Fork Conservation District will provide leadership for the implementation of this watershed plan. As mentioned above, there will need to be coordination with many different agencies to ensure all activities outlined in this plan can be executed. WDEQ participation will be important to provide updates on monitoring activities in the watershed as well as keeping the district updated regarding changes in rules and regulations potentially impacting Bitter Creek's status and this watershed plan. In addition, WDEQ administers the grant programs providing the primary funding for this watershed plan. The Powell-Clarks Fork Conservation District will be responsible for ensuring that grant requirements are met. The NRCS will provide much of the technical assistance and cost-share programs to address resource concerns confronted by the agricultural sector of the watershed. The City of Powell

will be consulted to address urban impacts on Bitter Creek. Park County will play a primary role of disseminating information pertaining to septic system installation requirements, permitting and certification issues. The Farm Service Agency (FSA) will be utilized to help disseminate information through their periodic newsletter.

OBJECTIVES TO ADDRESS WATERSHED CONCERNS

Education and Awareness

ISSUE

Citizens within the watersheds must be kept apprised of resource management activities and the status of the water quality within the watersheds to allow for voluntary BMP implementation

OBJECTIVES

Capitalize on as many options as possible to inform residents of the progress of this plan and opportunities for assistance with BMP implementation

ACTION ITEMS

1. Publish 1 article per year pertaining to the progress of the Bitter Creek Watershed Plan, in the FSA quarterly newsletter
2. Publish 3 articles yearly in the local newspapers pertaining to water quality within the watersheds at least once a year
3. Participate in National Water Quality Monitoring Day with local school children biannually
4. Host a tour of the watersheds after plan implementation to highlight results
5. Contact the Park County, University of Wyoming Cooperative Extension Service and request they conduct the Living on a Few Acres Program.

Comment [ejs1]: Add to action register

Comment [ejs2]: add time table / action register

RESPONSIBLE PARTY

Powell-Clarks Fork Conservation District

Water Quality

ISSUE

The Bitter Creek Watershed Steering Team believes that sufficient data exists to provide an accurate representation of water quality. After implementation of BMPs, however, further water quality monitoring will occur to assess the effectiveness of those BMPs and evaluate if a change of focus from septic issues to other impacts is necessary.

OBJECTIVES

1. Ensure Conservation District personnel are adequately trained to assess and monitor watersheds
2. Continue water quality monitoring, after implementation of the BMPs outlined in this plan, to assess the impacts of resource management on water quality

ACTION ITEMS

1. Provide appropriate Conservation District personnel with watershed management and water quality monitoring training at least annually or more often as needed

2. Resume water quality monitoring at previously established monitoring sites in 2007 through 2009
3. The Bitter Creek Watershed Steering Team will continue to meet at least annually to monitor the progress of implementation of the watershed plan

RESPONSIBLE PARTY

Powell-Clarks Fork Conservation District

Agriculture

ISSUE

It is a priority of the Bitter Creek Watershed Steering Team to maintain or improve the viability of agricultural industry within the watershed in conjunction with improving water quality.

Specific Issues Include: Waste Management, Grazing Management, Irrigation Management and Economic Impacts of Remediation

Waste Management

ISSUE

Corrals and feedlots near streams should be managed to minimize potential impacts on water quality. As mentioned above, these situations have been addressed.

OBJECTIVES

1. Increase awareness of water quality impacts associated with corrals and feedlots
2. Relieve the economic burden of BMP implementation by providing information pertaining to potential cost-share opportunities available to willing participants

ACTION ITEMS

1. Continue to advertise the availability of technical assistance and cost-share opportunities available through NRCS to address resource concerns related to corrals and feedlots through the FSA quarterly newsletter

RESPONSIBLE PARTY

NRCS and the Powell-Clarks Fork Conservation District

Grazing Management

ISSUE

Since grazing is not a major influence within the Bitter Creek Watershed, the Bitter Creek Watershed Steering Team recognizes the limited potential for water quality improvement in this arena, but encourages proper grazing management regardless.

OBJECTIVES

1. Reduce, to the extent possible and economically feasible, the amount of fecal coliform/E. coli entering Bitter Creek as a result of livestock grazing

ACTION ITEMS

1. Continue to advertise the availability of technical assistance and cost-share opportunities available through NRCS to address water quality concerns related to grazing practices through the FSA quarterly newsletter

RESPONSIBLE PARTY

NRCS and the Powell-Clarks Fork Conservation District

Irrigation Management

ISSUE

Water quality data collected to this point may indicate the fecal coliform/E. coli contamination can not be significantly improved through irrigation management. However, there is a trend within the Powell-Clarks Fork Conservation District to switch from traditional flood irrigation practices to sprinkler irrigation, which should reduce the amount of overland flow or irrigation tailwater entering Bitter Creek. While the impact of flood irrigation water return-flow may be small, irrigation efficiency improvements should reduce the amount of fecal coliform/E. coli entering Bitter Creek.

OBJECTIVES

1. Reduce, to the extent possible and economically feasible, the amount of fecal coliform/E. coli entering Bitter Creek as a result of irrigation water return-flow

ACTION ITEMS

1. Continue to advertise the availability of technical assistance and cost-share opportunities available through NRCS to address water quality concerns related to irrigation practices through the FSA quarterly newsletter
2. Attempt to install 3 pivot irrigation systems within the five-years of this watershed plan to be contingent upon funding availability and voluntary participation
3. Host an irrigation management workshop that focus on BMP's and the opportunities for increased irrigation efficiency for the patrons of the Powell – Clarks Fork Conservation District

Comment [ejs3]: Kristin, add #3 to timeline

RESPONSIBLE PARTY

NRCS and the Powell-Clarks Fork Conservation District

Septic Systems

ISSUE

Proper installation and periodic maintenance of septic systems are very important to minimize potential contributions of bacteria to ground and surface water. Septic system remediation will be the main focus, at least initially, for addressing the fecal coliform/E. coli water quality concern for Bitter Creek.

OBJECTIVES

1. Increase awareness of septic system function and potential impacts on water quality
2. Reduce, to the extent possible and economically feasible, the amount of fecal coliform/E. coli entering Bitter Creek as a result of faulty or non-existent septic systems

ACTION ITEMS

1. Mail the “Wyoming Homeowner’s Guide to Septic Systems” brochure to residents of the Bitter Creek Watershed and host an open house to solicit participation in the septic remediation program
2. Attempt to remediate 35 (based on \$8500.00 per system) septic systems in 2005 and 2006, contingent upon funding availability and voluntary participation.
3. Draft a septic system maintenance letter and have it published in the local paper each March

Comment [ejs4]: Kristin add to task table

RESPONSIBLE PARTY

Powell-Clarks Fork Conservation District

City of Powell

ISSUE

Due to the proximity of Bitter Creek to the City of Powell, water quality may be negatively impacted. Specific issues include:

Stormwater Discharge

Discharge from street runoff may potentially contribute significant levels of contaminants to Bitter Creek.

OBJECTIVES

1. Evaluate the potential impact of stormwater runoff on fecal coliform/E. coli concentration within Bitter Creek

ACTION ITEMS

1. Meet with City of Powell officials to emphasize the importance of water quality considerations in planning for stormwater runoff. Encourage the use of stormceptors and a storm drain stenciling program identifying direct discharge intake points.

RESPONSIBLE PARTY

Powell-Clarks Fork Conservation District

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ACTION REGISTER/MILESTONE TABLE	2005				2006				2007				2008				2009			
	J-M	A-J	J-S	O-D	J-M	A-J	J-S	O-D	J-M	A-J	J-S	O-D	J-M	A-J	J-S	O-D	J-M	A-J	J-S	O-D
Publish 1 article per year pertaining to the progress of the Bitter Creek Watershed Plan, in the FSA quarterly newsletter	X				X				X				X				X			
Completed																				
Publish an article in the local newspapers pertaining to water quality within the watersheds at least once a year				X				X				X				X				X
Completed																				
Participate in National Water Quality Monitoring Day with local school children biannually		X				X				X				X				X		
Completed																				
Host a tour of the watersheds after plan implementation to highlight results																			X	
Completed																				
Provide appropriate Conservation District personnel with watershed management and water quality monitoring training at least annually or more often as needed				X				X				X				X				X
Completed																				
Resume water quality monitoring at previously established monitoring sites in 2007 through 2009										X	X			X	X			X	X	
Completed																				

Bitter Creek Watershed Plan

The Bitter Creek Watershed Steering Team will continue to meet at least annually to monitor the progress of implementation of the watershed plan	X				X				X				X				X		
Completed																			
Continue to advertise the availability of technical assistance and cost-share opportunities available through NRCS to address resource concerns related to corrals and feedlots through the FSA quarterly newsletter				X				X					X				X		X
Completed																			
Continue to advertise the availability of technical assistance and cost-share opportunities available through NRCS to address water quality concerns related to grazing practices through the FSA quarterly newsletter	X				X				X				X				X		
Completed																			
Continue to advertise the availability of technical assistance and cost-share opportunities available through NRCS to address water quality concerns related to irrigation practices through the FSA quarterly newsletter		X				X			X				X				X		
Completed																			
Attempt to install 3 pivot irrigation systems within the five-years of this watershed plan to be contingent upon funding availability and voluntary participation			X			X			X				X				X		X

Bitter Creek Watershed Plan

Completed																		
Mail the "Wyoming Homeowner's Guide to Septic Systems" brochure to residents of the Bitter Creek Watershed and host an open house to solicit participation in the septic remediation program	X				X				X					X				
Completed																		
Attempt to remediate 35 (based on \$8500.00 per system) septic systems in 2005 and 2006, contingent upon funding availability and voluntary participation		X	X			X	X											
Completed																		
Meet with City of Powell officials to emphasize the importance of water quality considerations in planning for stormwater runoff														X				
Completed																		

ACRONYMS

- BCST ----- Bitter Creek Steering Team
BLM ----- Bureau of Land Management
BMP ----- Best Management Practice - BMP'S are described as "Guidelines for managing the use or a resource in a manner that protects the resource and promotes ecological and economic sustainability."
BOR ----- Bureau of Reclamation
CWA ----- Clean Water Act
EPA ----- Environmental Protection Agency
FSA ----- Farm Service Agency
HUC ----- Hydrologic Unit Code - refers to a strictly hierarchical mapping of water containment units conducted by US Geological Survey
NPDES --- National Pollutant Discharge Elimination System – The NPDES permit program was established under Section 402 of the CWA, which prohibits the unauthorized discharge of pollutants from a point source (pipe, ditch, well, etc.) to U.S. waters, including municipal, commercial, and industrial wastewater discharges and discharges from large animal feeding operations. Permittees must verify compliance with permit requirements by monitoring their effluent, maintaining records, and filing periodic reports.
NRCS ----- Natural Resources Conservation Service
PAM ----- Polyacrylamide – A synthetic water-soluble polymer made from monomers of acrylamide. PAM binds soil particles together.
PCFCD --- Powell-Clarks Fork Conservation District
USGS ----- United States Geological Society
WDEQ --- Wyoming Department of Environmental Quality
WQD ----- Water Quality Division of WDEQ

Bitter Creek Watershed Plan

Written Comments Received Log

NAME	ORGANIZATION/AGENCY & AGENCY	MAILING ADDRESS	DATE COMMENTS RECEIVED
Don Newton	Wyoming Department of Environmental Quality	122 W 25 th Street Cheyenne, WY 82002	February 28, 2005

Bitter Creek Watershed Plan

On Monday, March 7, 2005, the Bitter Creek Watershed Steering Team adopted the Bitter Creek Watershed Plan as a method for addressing the water quality concerns in the Bitter Creek Watershed.

Regan Smith

Shane Smith

Brett Stutzman

Bret Faber

Lyle Bjornestad

Loren Burch

Bryant Startin
Shoshone Irrigation District

Tim French
Park County Commissioner

Kurt Mellinger
Park Co. Small Waste
Water Treatment
Specialist

Tim Miller
City Of Powell Waste Water Treatment

The Powell-Clarks Fork Conservation District Board of Supervisors approved the Bitter Creek Watershed Plan on Monday, March 7, 2005.

Floyd Derry, Chairman

Ken Borchert, Vice-Chairman

Duane Dearcorn, Secretary-Treasurer

The Bitter Creek Watershed Plan was approved by the Wyoming Department of Environmental Quality.

Wyoming Department of Environmental Quality

Date

SEPTIC SYSTEM PRIORITY RANKING CRITERIA

Distance from septic system to a 303(d) listed stream segment or tributary thereof _____

Less than 100 ft, with >5% slope towards – 400 Points

Between 100 ft and 500 ft, with >5% slope towards – 300 Points

Less than 100 ft, with flat slope – 200 Points

Between 100 ft and 500 ft, with flat slope – 100 Points

More than 500 ft – 0 Points

Wastewater discharged through a straight pipe into stream or man-made means of conveyance (no tank or leach field) _____

Yes – 500 Points

No – 0 Points

Soil suitability for absorption (leach) fields (as indicated in NRCS soil survey) _____

Severe – 200 Points

Moderate – 100 Points

Slight – 0 Points

Distance to any water well _____

Less than 100 ft – 200 Points

Between 100 ft and 500 ft – 100 Points

More than 500 ft – 0 Points

Septic system risk factors

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- Impermeable surface such as brick, concrete or asphalt over the leach field – 50 Points _____
- Odors around septic tank or leach field – 50 Points _____
- Ponding or wastewater breakout – 200 Points _____
- Change in color of vegetation in leach field – 50 Points _____
- Pipes exposed at or near ground surface of leach field – 50 Points _____
- Cracks or signs of leakage in risers and lids – 50 Points _____
- Trees, large shrubs or other plants with extensive root systems were observed in the vicinity (10 feet) of the leach field – 50 Points _____
- Stormwater, sump pumps, foundation drains or roof runoff is diverted to flow into the septic system – 50 Points _____
- An apparent cave-in or exposed component was identified – 50 Points _____

Adequacy of septic tank size _____

Tank Size	Number of Bedrooms		
	1-3	4	5
<1000 gal	100	200	300
1000 gal	0	100	200
1250 gal	0	0	100
1500 gal	0	0	0

TOTAL _____