

Agenda and Abstracts
for

**“Doing it Right for Wildlife and People -
Coal Bed Methane Development in the West
*Effects and Mitigation for Wildlife,
Fisheries and Recreation*”**

Holiday Inn Grand, Billings, MT • March 1-2, 2003



Coal Bed Methane Conference

*“Doing It Right for Wildlife and People:
Coal Bed Methane Development in the West”*

Holiday Inn Grand (5500 Midland Road, Billings, Montana)
Saturday, March 1 (9:00 am) through Sunday, March 2 (1:00 pm), 2003

Sponsored By:

- Montana Trout Unlimited
- Montana Wildlife Federation
- Mule Deer Foundation
- National Wildlife Federation
- Northern Plains Resource Council
- Wildlife Management Institute
- Wyoming Wildlife Federation

Participating Institutions:

- Bureau of Land Management
- Montana Department of Fish, Wildlife & Parks
- Montana State University - Bozeman
- University of Wyoming
- US Fish & Wildlife Service
- Wyoming Game & Fish Department

Organizational Assistance Provided By:

Ms. Jenny Rasche, National Wildlife Federation, Missoula, MT

AV Assistance Provided By:

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Funding Provided Courtesy of The Energy Foundation

AGENDA

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March 1

9:15-9:30

Business keeping and welcome

Ben Deeble, National Wildlife Federation

John Gibson, Montana Wildlife Federation

9:30-10:00

Overview

Mickey Steward, CBM Coordinating Coalition

10:00-11:00

Panel One

Impacts to big game

John Ensign, MDFWP

Frederick Lindzey, University of WY Coop. Extension

Archie F. Reeve, Pic Technologies

11:00-11:15

Break

11:15-12:30

Panel Two

Impacts and issues for federally listed and petitioned wildlife (i.e. sage grouse, bald eagle, prairie dog, mountain plover)

Thomas Bills, BLM

Clait E. Braun, Colorado Division of Wildlife (ret.)

Lou Hanebury, USFWS

Sam Milodragovich, NorthWestern Energy

12:30-2:00

Luncheon

Speaker - Jamie Rappaport-Clark

Sr. VP Conservation Programs, National Wildlife Federation

2:00-3:30

Panel Three

Water: effects of produced water on water quality, fisheries and wildlife distribution

James W. Bauder, MSU

Carol Endicott, Confluence Inc.

Clint McRae, Landowner

Don Skaar, MDFWP

Bernie Smith, Educator

3:30-3:45

Break

ABSTRACTS

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Coal Bed Methane Overview

Mickey Steward, Coal Bed Methane Coordinating Coalition, 760 West Fetterman, Buffalo, WY 82834. Phone: (307) 684-7614, email: cbmcc@vcn.com.

Abstract: What coal bed methane is, field production methods, estimates of reserves and field longevity, positives and negatives for resources, focusing on Montana and Wyoming's Power River Basin.

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Panel One: *Impacts to Big Game*

John Ensign, Montana Department Fish, Wildlife and Parks, Region 7 Wildlife Manager, POB 1630, Miles City, MT 59301. Phone: (406) 232-0921, email: jensign@state.mt.us.

Abstract: Six species of big game occur in southeastern Montana. Pronghorn antelope and mule deer are the 2 of the 6 with the greatest potential impact from Coal Bed Methane (CBM) development. What is paramount is the maintenance of important habitats used by these species, maintenance of their connectivity to other habitats and minimizing disturbance during important use periods. The area is predominantly private surface ownership. This requires cooperative coordinated efforts by industry, landowners, and agencies to minimize and mitigate impacts of CBM development and management for not only the benefit of big game, but for all that call southeastern Montana home. The Wildlife Monitoring and Protection Plan (WMPP) included in the Montana Oil & Gas EIS offers tools to avoid or minimize impacts to wildlife. The success or failure of individual WMPP's is dependent upon cooperation and adequate, advance timing to gather necessary information and develop effective plans.

Frederick Lindzey, USGS, Wyoming Cooperative Fish and Wildlife Research Unit, University of Wyoming, Box 3166, Laramie, WY 82071. Phone: (307) 766-5415, email: flindzey@uwyo.edu.

Abstract: Movement patterns of ungulates differ among species and often within populations, with some animals moving seasonally among distant ranges and others remaining in relatively small areas, shifting only slightly to exploit resources and avoid stresses. Habitat changes and increased human activity associated with energy development will, as a result, influence populations differently and necessitate unique management approaches. For example, the tendency for immediate threats to focus our management efforts to a local scale can be catastrophic for migratory populations such as the Sublette mule deer herd, if other equally important seasonal ranges are ignored. Winter access restrictions may be effective in reducing stress on migratory elk wintering in sage-steppe habitats, but do little for elk that live year-round in these open habitats. Elk on the Piney Front of the Wyoming Range did not respond to roads that had been made impassable by snow, while Red Desert elk, only 80 km away, continued to avoid roads in winter even though they were effectively closed by snow accumulations.

Archie F. Reeve, PIC Technologies, Inc., 309 South 4th Street, Suite 201, Laramie, WY 82070. Phone: (307) 742-0848, email: archiereeve@pictechnologies.com.

Abstract: Pronghorn Responses to Vehicles

Pronghorn responses to vehicles before, during and after a construction project were evaluated by 1) vehicle-animal approach distances, 2) time taken to respond to a vehicle, 3) duration of escape and 4) distance animals escaped on the construction site and on a control site. Traffic on the control site remained at low levels; but on the construction site traffic increased 5-10 times during construction, then returned to pre-construction levels after project completion. There was no difference in response times for animals on the test and control sites before construction. During and after construction, pronghorns on that site were significantly less responsive to the study vehicle than those on the control site. But doe-fawn groups on the construction site remained more responsive than other group types by escaping sooner, farther and for longer periods of time. Pronghorns near CBM development may respond similarly, but effects to populations will probably not be readily detected.

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Panel Two:
***Impacts and Issues for Federally Listed and Petitioned Wildlife
(i.e. Sage Grouse, Bald Eagle, Prairie Dog, Mountain Plover)***

Thomas Bills, BLM Buffalo Field Office, Buffalo, WY 82834. Phone: (307) 684-1133, email: tom_bills@blm.gov.

Abstract: BLM's responsibilities for ESA listed species with emphasis on CBM development (bald eagle, black-footed ferret, mountain plover, Ute ladies'-tresses orchid). Summarize ESA consultation with US Fish and Wildlife Service on Powder River Basin Oil and Gas EIS (Wyoming). Review protective measures within EIS/ biological assessment and resulting biological opinion. BLM's sensitive species policy and management of other special status species. Review Wyoming BLM's sensitive species list. (2 amphibians, 14 birds, 1 fish, 5 mammals, 2 plants). Review Wyoming BLM's methods to minimize impacts to sensitive species and other non-ESA listed wildlife. Discuss CBM permitting process, practices to reduce habitat fragmentation and protect wildlife. Summarize proposed ESA consultation and wildlife reviews during site-specific CBM applications.

Clait E. Braun, Director, Grouse Inc., 5572 Ventana Vista Road, Tuscon, AZ 85750. Phone: (520) 529-4614, email: sg-wtp@juno.com.

Abstract: Impacts of Coal Bed Methane Development on Sage-Grouse
Sage grouse (*Centrocercus* spp.) are sagebrush (*Artemisia* spp.) steppe obligate species native only to North America. They presently occur in two provinces in Canada and 11 states in the US. Their distribution has declined by about 50%, while estimated population size has declined by about 90%. The decrease in overall distribution and abundance is attributed to habitat loss, degradation and fragmentation. Currently, habitat fragmentation and degradation are most important in affecting populations. Petitions have been filed to list both species and all populations as threatened or endangered under the Endangered Species Act of 1973. Development of CBM will negatively impact sage-grouse through habitat fragmentation and degradation. These impacts will occur because of development of roads, pipelines, transmission lines and compressor stations. Fragmentation of habitat will reduce population connectivity and breeding and nest success, and will increase mortality. Operation of compressor stations will reduce area available for breeding activities, including nesting. The direct and indirect effects of CBM development and production on sage-grouse will be both short- and long-term. At full or even 50% CBM development, statistically significant decreases in sage-grouse population size in impacted areas will occur short-term. The long-term impacts are presently unknown. The burden should be placed on the oil and gas industry to demonstrate their activities will not irreparably damage the health of the sage-grouse resource.

Lou Hanebury, USFWS/ES, 2900 4th Avenue North, #301, Billings, MT 59101. Phone: (406) 247-7366, email: lou_hanebury@fws.gov.

Abstract: The US Fish and Wildlife Service is the principal Federal Agency responsible for conserving, protecting and enhancing fish, wildlife and plants and their habitats for the continuing benefit of the American people. The agency enforces Federal wildlife laws, administers the Endangered Species Act, manages migratory bird populations, and conserves and restores wildlife habitat such as wetlands. Out of a list of federally listed and proposed species, it was determined that coal bed methane would have adverse impacts for the bald eagle and mountain plover. Through a collaborative informal consultation process, a Biological Opinion was developed that outlined conservation and reasonable and prudent measures to minimize take. These measures were in current and new stipulations, guidelines, and monitoring protocols. A significant result of formal consultation was an agreement to track cumulative impacts and the establishment of a threshold of suitable habitat loss that would trigger additional consultation on the impacts of coal bed methane on the bald eagle and mountain plover.

Sam Milodragovich, NorthWestern Energy, 40 East Broadway, Butte, MT 59701. Phone: (406) 497-3102, email: sam.milodragovich@northwestern.com.

Abstract: Power Lines and Wildlife: an important part of the CBM equation Power lines may have both positive and negative impacts on wildlife and wildlife habitat. Raptors utilize power poles for roosting, hunting, eating, nesting, shade, and protection from wind in areas without many trees. Improperly constructed lines may cause electrocution of raptors. In addition, raptors using power lines for hunting perches may impact sage grouse, especially on breeding grounds (leks) and possibly in wintering areas. Birds using power lines are protected under the Migratory Bird Treaty Act, the Endangered Species Act, and the Bald and Golden Eagle Protection Act. Electric utilities are under pressure to make power lines safe for raptors, but concern for sage grouse populations may conflict with the legal mandate to make lines safe for raptors. Sage grouse may also fly into the wires resulting in mortality from the collision. Other sensitive species such as prairie dogs may also be affected by raptors hunting from power lines. Disturbance of the ground during construction or maintenance may also contribute to a weed problem. Construction or scheduled maintenance of power lines may also impact reproduction of sensitive species. Methods for mitigating the above impacts will be discussed.

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Panel Three:
***Water: Effects of Produced Water on Water Quality,
Fisheries and Wildlife Distribution***

James W. Bauder, Professor & Soil and Water Quality Specialist, Department of Land Resources and Environmental Sciences, Montana State University, 806 Leon Johnson Hall, Montana State University, Bozeman, MT 59715. Phone: (406) 994-5685, fax: (406) 994-3933, email: jbauder@montana.edu.

Abstract: Coal bed methane (CBM) development has only recently gained attention in Montana and Wyoming. One of the first-to-be recognized issues to be dealt with during CBM development is product water management, which is often saline and sodic. Salinity and sodicity are often problematic. CBM development in Wyoming has been dependent on permitted discharges to surface waters or channels, which has proven acceptable in only a very limited number of circumstances. Numerous studies unrelated to CBM have validated the projections of CBM product water chemistry dynamics—both in channel and when in contact with soil. Recent studies have investigated the potential relationships between CBM product water and native and culturally significant plant species, irrigable soils, and crops traditionally grown under irrigation in the Powder and Tongue River valleys where CBM development is proceeding. This presentation focuses on the chemistry of receiving streams, comparison with projected CBM product water chemistries, dynamics of CBM product water in channels and soils and potential interaction between CBM product water and native and culturally significant plants of the Powder River and Tongue River drainages.

Carol Endicott, Watershed Specialist, Confluence Consulting, Inc., POB 1133, 211 North Grand, Suite E, Bozeman, MT 59771. Phone: (406) 585-9500, fax: (406) 582-9142, email: cendicott@confluenceinc.com.

Abstract: We conducted this investigation to assist decision-making with regard to the fate of the CBM-produced water. One component of this study was a review of the literature addressing effects of dissolved solids on fish, macroinvertebrate, and aquatic plants. In addition, we conducted assessments of the biological, chemical, and physical integrity of streams in the Tongue River basin using protocols developed by the Environmental Protection Agency (EPA). These assessments provided both baseline data on streams likely to be influenced by CBM development, and upstream/downstream comparisons of streams where CBM development was already occurring. A primary conclusion drawn from the literature review was that different taxa demonstrate wide variation in response to dissolved solids. Baseline assessments of tributary streams in the Tongue River basin indicated varying levels of biological, chemical and physical conditions among streams due to variation in land use, geology and water quantity. Comparisons of streams above and below CBM development

suggested that elevated dissolved solids may have deleterious effects on fish and aquatic life; however, drought and local geology may also be contributing factors. We recommend that an adaptive management approach be employed in managing streams near CBM activities.

Clint McRae, Rancher, HC 84, Box 2056, Forsyth, MT 59327. Phone: (406) 347-5221, email: ctmcrae@rangeweb.net.

Abstract: CBM impacts will be broken down to three areas: water quality, water quantity, and surface impacts as they apply to growing grass and raising cattle. Inferences will be drawn to implications for wildlife, as wildlife and cattle share many habitats and may experience similar impacts.

Don Skaar, Water Pollution Biologist, Montana Department of Fish, Wildlife and Parks, 1420 East 6th Avenue, Helena, MT 59620. Phone: (406) 444-5686, email: dskaar@state.mt.us.

Abstract: Potential Effects of CBM production water on fishes in the Powder and Tongue River Drainages
Saline water from CBM production wells has the potential to be toxic to fish eggs by way of disruption of the necessary osmotic balance between egg and environment. Once eggs hatch, an overabundance of salts can also affect the regulation of ion intake and excretion, as well as the pH balance of blood and tissues. Effects of high salinity on fish range from outright killing of fish and eggs, to deformities of hatchlings, poor growth, failure to properly maintain buoyancy, increase oxygen demand, and kidney damage. The effects of these salts on most of the fishes native to these drainages are not known. The one native species that has been studied the most (fathead minnow) seems to be fairly tolerant of saline conditions. Several nonnative gamefish (northern pike and walleye) have been studied, however, and they appear to be considerably more sensitive to these salts.

Bernie Smith, Science Instructor, POB 509, Colstrip, MT 59323. Phone: (406) 748-2920 ext. 1299, email: bernie.smith@colstrip.k12.mt.us.

Abstract: This presentation will include the data collected through a water quality monitoring project on the Tongue River by Colstrip High School students. The specific issue of macro-invertebrate populations and diversity will be the focus of this PowerPoint presentation. Issues such as trends in data, the history of the project, and concerns over CBM development will be included. Data from the study will be available to interested parties.

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Panel Four:
Impacts to Public Access and Outdoor Activities

Bryce Christensen, MDFWP , Warden Captain, POB 1630, Miles City, MT 59301.
Phone: (406) 232-0918, email: bchristensen@state.mt.us.

Abstract: A review of enforcement issues related to CBM development was conducted with officers in affected areas of Wyoming and Montana. Many enforcement and access problems are anecdotal and difficult to quantify. However patterns are emerging that public access can significantly change with CBM development, depending upon land ownership patterns. The demographics and abilities of individuals afield also changes with field development; generally new people with different values, more free time and equipment go farther afield. As a result, effectively enforcing resource laws becomes more burdensome and costly to state fish and game agencies. Additional enforcement staff have been requested for southeast Montana, and denied by the 2003 legislature. Industry may be called upon to support increased enforcement needs.

Dave Stalling, Western Field Coordinator, Trout Unlimited, 240 North Higgins Avenue, Suite 15, Missoula, MT 59802. Phone: (406) 721-4441, email: stalling@tu.org.

Abstract: It's a fairly straightforward relationship: Good fishing and hunting require healthy populations of fish and game. Healthy populations of fish and game require healthy habitat. Proposals to drastically expand gas and oil development on public lands in Montana, Wyoming, Utah, Colorado and New Mexico will likely have immense and unprecedented impacts on crucial fish and wildlife habitat, therefore reducing fishing and hunting opportunities. These impacts include diminished water quality and quantity; loss and disruption of crucial migratory corridors, calving and fawning habitat, and winter range, and adverse aesthetic impacts on the solitude and wildness cherished by anglers and hunters. There are more than 50 million American hunters and anglers; if we join forces with environmentalists, finding common ground in our shared love of the wild, we would be a potent force for the protection of public lands and public wildlife.

Mark Winland, 5303 Van Ripper Street, Gillette, WY 82718. Phone: (307) 682-6749, email: mwinland@ccsd.k12.wy.us.

Abstract: Recreating in a Semi-industrial Landscape
This presentation will explore existing and projected impacts of CBM development to recreation and public access in the Powder River Basin. As CBM development moves to and through vast acreage of public land in the PRB, the landscape and the outdoor experience will be transformed. Increased traffic, road density, and the presence of industrial facilities will significantly alter the recreational experience. In addition,

many private landowners are closing their CBM-developed lands to hunting, due to safety concerns, pressure from operators, and/or the decreased need for extra income.

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Panel Five:

Mitigation: What Works, What Doesn't, and What Might

Roxanne Falise, Wildlife Program Manager, Montana/DKs BLM, POB 36800, Billings, MT 59107. Phone: (406) 896-5025, email: Roxanne_Falise@blm.gov.

Abstract: The Powder River CBM Wildlife Monitoring and Protection Plan for Montana was written with input and consultation with state and federal agencies. The Plan establishes a framework for future cooperative efforts to collect wildlife information and monitor population responses to development. It also provides guidance and recommendations for the conservation of wildlife species, establishes protocols for biological clearances of special status species, and offers a roadmap for wildlife compatible CBM development for industry and landowners. I will discuss the premise for it's development, the agencies' commitment for successful implementation, and potential for benefits to wildlife species.

Mark Gordon, Ucross Foundation, 779 US Hwy 16 East, Buffalo, WY 82834. Phone: (307) 684-7139, email: mgordon@wyoming.com.

Abstract: The scope of CBM related activity on the Ucross Foundation Ranch using examples from four different companies will be discussed, focusing upon adequate regulation and enforcement; fostering more creative less obtrusive and planned development; and recognizing *a priori* the true commitment for reclamation. Review includes the Clear Creek and Piney Creek watersheds, examining the problems with development as currently practiced in the area. Much of this development has occurred or will proceed poorly. This development has affected the area in ways that we are only now beginning to comprehend. To some degree these impacts are unavoidable under the current scenario of regulation, financing, leasehold, and surface ownership mosaic. Nevertheless, perhaps there is an opportunity to begin to examine restoration and reclamation in the aggregate for the valley.

Susan A. T. MacGrath, Park and Gallatin Citizen's Alliance, 319 South Third, Bozeman, MT 59715. Phone: (406) 587-8440, email: smacgrath@yahoo.com.

Abstract: Use of county and state regulation to ensure protection for surface owners against the adverse impacts CBM development on their land.

David L. Mills, Bureau of Land Management, Price Field Office, 125 South 600 West, Price, UT 84501. Phone: (435) 636-3600, email: david_mills@blm.gov.

Abstract: Working Model for Mitigating Wildlife Impacts From Coal Bed Methane Development

The Price Field Office of the BLM, in cooperating with UTAH Division of Wildlife Resources and National Fish and Wildlife Foundation, has developed and implemented a Wildlife Mitigation Program to compensate for unavoidable surface disturbance impacts of CBM development to critically valued wildlife habitats. *The program does not replace more traditional mitigation efforts to minimize impacts to the wildlife resource.* The program is administered under a cooperative agreement between all involved parties that outlines the management and operation of a mitigation account to fund habitat enhancement projects. The mitigation account receives private funds from CBM companies when development results in unavoidable surface disturbance of critically valued wildlife habitat. A prerequisite to such a program is the identification of need in Land Use Planning Documents and/or Environmental Impact Statements. Key elements of the program include: determination of appropriate compensation, financial management of the private funds and strict guidelines for collection and dispersal of funds for project funding.

Harmon Ranney, Montana Natural Gas Alliance, 602 Second Street, Helena, MT 59601. Phone: (406) 495-0781, email: harmonltd@quest.net.

Abstract: Not available.

Mickey Steward, Coal Bed Methane Coordinating Coalition, 760 West Fetterman, Buffalo, WY 82834. Phone: (307) 684-7614, email: cbmcc@vcn.com.

Abstract: Ways to mitigate for, and take advantage of, CBM development characteristics. Critical issues: infrastructure, land value, recreation, wildlife, agriculture and water. Several real examples. A major problem is lack of a coordinated, integrated approach.

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Panel Six:

Innovative Partnerships

Facilitator: Brian Kahn, Artemis Common Ground

POB 748, Helena, MT 59624. Phone: (406) 449-9460, email: Brian@ArtemisGroup.org.

Mark Gordon, Ucross Foundation, 779 US Hwy 16 East, Buffalo, WY 82834. Phone: (307) 684-7139, email: mgordon@wyoming.com.

Abstract: The Ucross Foundation is engaged with several institutions in an effort to determine the true effects of Coal Bed Methane related developments, specifically as to how discharged and impounded water will affect shallow aquifers. Examples include cooperating with a few coal bed methane development companies, several academic institutions, and some major corporations. Also details on how Ucross is operating a working ranch with a Nature Conservancy easement.

Ira New Breast, Executive Director, Native American Fish and Wildlife Society, 750 Burbank Street, Broomfield, CO 80020. Phone: (303) 466-1725, email: irand@nafws.org.

Abstract: The Native American Fish and Wildlife Society (Society) is a national nonprofit organization headquartered in the Denver, CO area. In 1982 the Society was established as a grass-roots initiative. Tribal Fish & Wildlife Managers, Administrators and Conservation Law Enforcement Officers sought to form an organization that would assist Tribes and their respective fish and wildlife programs to address unmet management needs and interests. The Mission of the Society is to assist Native American and Alaska Native Tribes with the conservation, protection and enhancement of their fish, wildlife, habitat and cultural resources. The goals of the Society include charitable, scientific, educational and cultural services. The Society provides mechanisms of information and publication networking, conferencing, training symposiums, instructive professional and youth practicums, technical services and administrative counsel support. Long-range goals include increasing the Society's capability to service all elements of Tribal Fish and Wildlife programs. Society services strive to facilitate enlargement of a Tribe's capacity to manage fish, wildlife and their habitats. The future of the Society will be measured and valued by our unwavering commitment to advance, charitably, services to Tribes and their fish and wildlife management interests.

Larry Peterman, Chief of Field Operations, Montana Department of Fish, Wildlife and Parks, 1420 East 6th Avenue, Helena, MT 59620. Phone: (406) 444-9817, email: lpeterman@state.mt.us.

Abstract: FWP is concerned about the impacts of full scale development of coalbed methane on the fisheries, wildlife, cultural and recreational resources of southeastern Montana. Much is unknown regarding the effects of CBM development on water

quality, water quantity and terrestrial resources and how to mitigate those impacts. The agency favors a go-slow approach to new coalbed methane development to safeguard these resources. A go-slow approach involves initial leasing of 20 to 35 percent of the potential lands and clustering the gas wells. A proactive mitigation strategy is essential. Intensive monitoring and evaluation would occur and future development would be modified to reduce impacts. This approach needs to be established prior to development occurring. Partnerships between agencies, private organizations and the industry are essential if this approach is to be successful.

Tom France, Director, Northern Rockies Project Office, National Wildlife Federation, 240 North Higgins Avenue, Suite 2, Missoula, MT 59802. Phone: (406) 721-6705, email: france@nwf.org.

Laurie D. Goodman, Director, Western Water Project, Trout Unlimited, 3355 Ten Sleep Drive, Suite 5, Jackson, WY 83001. Phone: (307) 733-3581, email: ldgoodman1@aol.com.

Dave McIlroy, BLM Field Manager, 111 Garryowen Road, Miles City, MT 59301. Phone: (406) 233-2800, email: dmcilroy@blm.gov.

Harmon Ranney, Montana Natural Gas Alliance, 602 Second Street, Helena, MT 59601. Phone: (406) 495-0781, email: harmonltd@quest.net.

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