



United States Department of the Interior

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February 21, 2007

Mr. Edward Alexander Lee
Office Director
Office of Canadian Affairs
U.S. Department of State
WHA/CAN Room 3917
2201 C Street NW
Washington, DC 20520

**RE: Lodgpole Coal Mine Proposal- Draft Terms of Reference for the
Environmental Assessment Application, British Columbia, Canada**

Dear Mr. Lee:

The following are the U.S. Department of the Interior (Interior) comments on the British Columbia's draft terms of reference (TOR) for the environmental assessment application for the Lodgpole coal mine proposal.

We greatly appreciate the efforts that the British Columbia Environmental Assessment Office has made to facilitate Interior Bureau involvement in the development of this TOR. During the past year, representatives of the U.S. National Park Service (NPS) and U.S. Fish and Wildlife Service (USFWS) have participated in various Lodgpole Project working groups (wildlife and vegetation, water quality, fisheries) and have attended numerous meetings with British Columbia and Mining Corporation (Cline) officials regarding the proposed Lodgpole Project, and have provided comments on earlier drafts of the TOR. Copies of these earlier letters are attached at the end of this letter.

We also want to thank the chair, Richard Moy, and staff of the Flathead Basin Commission, State of Montana, for the leadership they have provided in coordinating Interior Bureau and Montana agency comments on the Lodgpole TOR. The Province of British Columbia has a liaison to the Flathead Basin Commission, a position currently held by Kathy Eichenberger, and we appreciate her frequent updates on the status of the Lodgpole TOR.

GENERAL COMMENTS

Cline is proposing to open an open pit coal mine in the headwaters of the North Fork of the Flathead River, or simply the Flathead River as it is called in Canada. The proposed mine is

located approximately 25 miles (40 kilometers) north of the US-Canadian border. After crossing the international border the Flathead River flows south, forming the western boundary of Glacier National Park, Montana.

Cline states that there will be 16 million tons of overburden rock removed each year from this mine and that this crushed and broken rock will be deposited along the banks of Foisey Creek and Crabb Creek in the Flathead River drainage. Water from rain and snow will leach through these overburden materials and will enter the Flathead River system carrying heavy metals such as selenium and high levels of nitrates from blasting compounds. It has been estimated that water leaching through these overburden materials will reach the border of the United States in 24 hours and will enter Flathead Lake in approximately 48 hours. Mine development, including associated construction activities, providing transportation corridors, the operation of heavy equipment and increased settlement, and human activity in and around the project area is expected to have significant adverse impacts upon fish and wildlife of high importance to the United States and under the direct purview of the Interior.

Important fish and wildlife resources in the area migrate back and forth across the international border. The area proposed for mine development is located within a region that is considered ecologically important from an international perspective. Significantly elevated increases in human activity within a relatively pristine ecological area that is currently insulated from such impacts due to its isolation, combined with large increases in noise, vehicular traffic, and increased air and water pollution have the potential to adversely impact fish and wildlife populations and habitat that were formerly secure. The effects of mine development may threaten the natural resource values of two landholdings of the Interior, Glacier National Park and the Flathead National Wild and Scenic River. A World Biosphere Reserve and a World Heritage Site, along with the Crown of the Continent and the International Peace Park at Waterton-Glacier, also occur nearby.

Interior has significant concerns regarding the impacts of the proposed mine on both the biological and physical resources of the Flathead River, Flathead Lake, Glacier National Park, and on the broader ecosystem of this transboundary area. Of particular concerns are such areas as the narrowness of the study area; the need to assess cumulative impacts; and the need for more comprehensive pre-mine data collection on water quality, fisheries, and wildlife.

Overall, we are concerned that the TOR focuses too narrowly on individual components of the proposed mining operation and does not adequately provide for the assessment of cumulative project impacts, especially transboundary impacts. By presenting the analysis in a piecemeal fashion and limiting the analysis to only individual components of the Lodgepole proposal, such as, logging, roads, or waste rock dumps, the document fails to require that the project proponent present to the public an integrated evaluation of the impacts of the mine proposal as a whole. The boundary waters between the United States and Canada, as well as waters of the United States, that exist in and/or that drain into Glacier National Park and Flathead Lake are the eventual recipient of all waters exiting the mine site as either surface flows or ground water, making a "cumulative impact analysis" all the more necessary.

INDIAN TRIBAL ISSUES

The Secretary of Interior has a trust responsibility to preserve and protect Indian trust assets and resources from loss, damage, unlawful alienation, waste, and depletion. There are ten (10) federally recognized Northwest tribal governments located downstream from the proposed coal mine operation. These tribal governments have treaty reserved rights (trust assets and resources) from the United States which could receive “potential effects” (potential adverse impacts) from the activities relating to Lodgepole coal mine operation.

We suggest that the following information be addressed in the “application for an Environmental Assessment Certificate (Certificate)”:

1. Recognition that there could be adverse potential effects (adverse impacts) to the interests of down stream tribal user groups, including water quality issues;
2. Recognition that tribal user groups are more reliant (culturally and spiritually) on the land, water, and air resources of Northwest than non-tribal user groups;
3. Identification of consultation requirements with Tribes, Provincial, State, and Federal governments.

NATIONAL PARK RESOURCES

It is important to note that the surface coal mining and reclamation laws of the United States afford special protection to “units of the National Park System” and “publicly owned parks,” such as, Glacier National Park. However, these special resources of the United States are not protected under Canadian mining laws, so care must be taken under existing bilateral agreements to fully analyze all possible impacts attributable to the proposed Lodgepole mine and require mitigation to safeguard pristine downstream resources. To assess such impacts upfront, credible baseline information is essential.

The ecosystem in which the Lodgepole project is located also includes Waterton Lakes National Park in Alberta. Waterton is the Canadian portion of the Waterton-Glacier International Peace Park World Heritage Site. We understand that Waterton’s Field Unit Supervisor has also commented on the Revised TOR.

The transboundary Flathead area is recognized as one of the most ecologically intact drainages remaining in the temperate regions of the world. Its air and waters are of the highest quality and the drainage has a diversity and abundance of wildlife that is close to that found under historical conditions. In recent years, scientific studies on both sides of the border have documented not only the rich biodiversity found in the drainage, but also that grizzly bears, wolves, moose, elk, and bull trout move freely back and forth across the border. Ecologically speaking, the health of this drainage depends upon the stewardship efforts of both countries.

Reasons why the transboundary Flathead has remained in good ecological health are that it is remote, has only a modest level of human development, has largely unpaved road access, and has a very large percentage of land that has remained in federal, state and crown ownership.

Just as importantly, the drainage has been protected by a series of important conservation decisions by governments and citizens in both the United States and Canada. Some of these include:

- The designations of Glacier National Park and the Flathead National Forest during the first decade of the 20th century. Glacier National Park manages its portion of the drainage primarily as wilderness. The park's 1999 General Management Plan states in part that, "*resources would be managed to preserve the wild character of the area and the important linkage to the entire North Fork valley, including the Canadian portion, for wildlife conservation*".
- The Flathead National Forest manages its share of the Flathead drainage in accordance with a multiple use mandate. The portion of the National Forest that adjoins the Canadian border has a special management emphasis on preserving the area's rich grizzly bear habitat.
- The designation of Waterton and Glacier National Parks as an International Peace Park in 1932.
- The designation of the North Fork of the Flathead River in the United States as a Wild and Scenic River in 1976.
- The designation of Glacier National Park as having Class I air under the United States Clean Air Act. This designation gives the Federal Land Manager and the Park Manager the responsibility to protect air quality and air quality related values in the park.
- The protections afforded by the U.S. Endangered Species Act (ESA)– Five threatened or endangered species reside in the North Fork drainage and utilize lands on both sides of the International Border, including Glacier National Park.
- The designation of Glacier National Park as an International Biosphere Reserve in 1976.
- The designation of the Waterton- Glacier International Peace Park as a World Heritage Site in 1995
- The designation of the North Fork of the Flathead River as Class A-1 waters by the State of Montana. Class A-1 is the State's highest and most pristine water quality value and provides a strict non-degradation standard.
- The designation of the Akamina-Kishinena Provincial Park by British Columbia. This park, located at the international border adjoins Waterton and Glacier National Parks in Alberta and Montana respectively.

FISH AND WILDLIFE RESOURCES

Wildlife impacts from this mine would occur not only in British Columbia, but in Alberta and Montana as well. The TOR needs to thoroughly describe the international aspects of wildlife movements in the Flathead drainage. In the past 15 years no fewer than 6 graduate student studies (both MS and PhD) have been completed that document movements of elk, mule deer, moose and wolves between the Montana and British Columbia portions of the Flathead drainage. In addition, Canadian researcher, Dr. Bruce McLellan has documented grizzly bear movements back and forth across the international border and across the continental divide. Research conducted by Dr. Diane Boyd documented utilization of the proposed mine area by both wolves and elk some of which undoubtedly were seasonal residents of Glacier National Park.

Considerable effort needs to be expended to document what is already known about such transborder wildlife movements and to then assess the impacts of the industrialization that Cline's proposal represents.

Industrialization of the transboundary Flathead area is not a new concern but in fact was considered by the International Joint Commission in their evaluation of the proposed Sage Creek mine in the late 1980's - a study that resulted in a recommendation that the Sage Creek Mine not be developed at that point in time and that in the interim:

"The Governments consider, with appropriate jurisdictions, opportunities for defining and implementing compatible, equitable and sustainable development activities and management strategies in the upper Flathead River Basin."

Such binational planning has yet to occur despite repeated attempts to initiate such an effort by state and federal officials in Montana. The Interior has serious concerns regarding moving forward with mine plan approval until such time as a comprehensive international planning effort in this remarkable valley has occurred

The NPS has recently funded a \$100,000 study, by the Flathead Lake Biological Station, of the impacts of hydrocarbon development in the British Columbia Flathead. This study, which began in the summer of 2006, is assessing impacts to water quality, sedimentation, and river corridor habitats and would look specifically at such issues as coal seam geochemistry in the vicinity of the proposed Lodgepole project.

Also, the U.S. Geological Survey and NPS are cooperatively funding a baseline assessment of water quality and aquatic communities of the North Fork of the Flathead River in order to document conditions in the watershed before coal development in the drainage occurs.

The NPS has also recently finalized an Inventory and Monitoring Program that includes a park-wide assessment of selected streams in Glacier National Park. The initial focus of such monitoring would be on streams that enter the Flathead drainage.

All three of these studies will provide valuable baseline information that NPS will make available to the province of British Columbia.

Due to the paucity of long-term monitoring efforts in the Transboundary Flathead area and the significant resources that could be impacted by the proposed mine, NPS recommends that the British Columbia Ministry of the Environment significantly revise the TOR for the Lodgepole Project. This revised TOR should require a minimum of three years of resource data for such elements as water quality, wildlife and fisheries and that the specific parameters to be measured be far more carefully spelled out than in the current draft.

The attached letter from Mark Delaray, Montana Department of Fish, Wildlife and Parks discusses fishery data needs necessary to assess impacts of the proposed mine on such species as the bull trout and westslope cutthroat trout, both of which spawn near the proposed mine site.

PROTECTION OF FEDERALLY-LISTED THREATENED SPECIES

ESA in the United States

The purpose of the ESA is to protect endangered and threatened species and the ecosystems on which they depend and to take steps to recover these species as key components of America's heritage. To implement the ESA, we work in cooperation with the National Oceanic and Atmospheric Administration - Fisheries, other Federal, State, and local agencies, nongovernmental organizations, and the public.

Pursuant to Section 4 of the ESA, species are listed as either *endangered* or *threatened*. An "endangered" species is one that is in danger of extinction throughout all or a significant portion of its range. A "threatened" species is one that is likely to become endangered in the foreseeable future.

In order to list a species, a strict legal process is followed. A "Notice of Review" is published that identifies U.S. species that we believe meet the definition of threatened or endangered at which point they are referred to as "candidates" for listing. Through status reviews for these candidate species, a priority system has been developed to direct our efforts toward the plants and animals in the greatest need. When we have enough scientific information, either through the petition process or the candidate assessment program, to indicate that listing is warranted, a "Proposed Listing Rule" is drafted. For foreign species, the proposed rule is drafted by the USFWS Office of Scientific Authority in Washington, D.C. The listing proposal provides background information on the species, a summary of the threats faced by the species, a determination and/or designation of critical habitat if appropriate, examples of available conservation measures and a preview of actions that would be prohibited (as well as actions that would *not* be prohibited) if the species were to be listed. The USFWS Director makes the final decision to approve a listing which is then published in the Federal Register.

Among the conservation benefits authorized for threatened and endangered plants and animals under the ESA are: protection from being jeopardized by Federal activities; restrictions on take and trafficking; a requirement that the USFWS develop and implement recovery plans for listed species under U.S. jurisdiction; authorization to seek land purchases or exchanges for important habitat and Federal aid to State and Commonwealth conservation departments with cooperative endangered species agreements. Listing also lends greater recognition to a species' precarious

status encouraging conservation efforts by other agencies (foreign, Federal, State, and local), independent organizations, and concerned individuals.

Candidate species are plants and animals for which the USFWS has sufficient information on their biological status and threats to propose them as endangered or threatened under the ESA, but for which development of a proposed listing regulation is precluded by other higher priority listing activities. The USFWS endangered species specialists work closely with staff from other USFWS resource programs, such as fisheries, refuges, and migratory birds, as well as representatives of other Federal and State natural resource agencies, local and tribal governments, business and industry, academia, conservation organizations and other private interests to identify potential candidate species.

More information on ESA can be found at <http://www.fws.gov/endangered/>.

Species At Risk Act and Committee on the Status of Endangered Wildlife in Canada

The Canadian Federal government follows their own version of the ESA process. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) exists to provide Canadians and their governments with advice regarding the status of wild species that are nationally at risk of extinction or extirpation. The COSEWIC assessment process consists of 3 sequential steps, each with tangible outcomes. First is the preparation of a Prioritized Candidate list, followed by compilation of available data, knowledge and information on a particular species into a COSEWIC status report and then assessment of a species' risk of extinction or extirpation and subsequent designation – the COSEWIC status designation. Following the outcome of that process, species may be recommended for listing as a threatened or endangered species under the Species At Risk Act (SARA).

The definitions for categories under the COSEWIC process are as follows: *Sensitive*: Species that are not believed to be at risk of immediate extirpation or extinction, but may require special attention or protection to prevent them from becoming at risk. *May Be At Risk*: Species that may be at risk of extirpation or extinction and are therefore candidates for a detailed risk assessment by COSEWIC or provincial or territorial equivalents. *Special Concern*: Species that are particularly sensitive to human activities or natural events, but are not endangered or threatened species.

More information is available on the COSEWIC can be found at http://www.cosewic.gc.ca/eng/sct5/index_e.cfm.

Terrestrial Species

This proposed mine lies in the upper end of the Flathead drainage which has a complete suite of terrestrial wildlife species and borders a National park in Canada (Waterton) and in the United States (Glacier). Terrestrial species found in the project area listed under the ESA include grizzly bear and Canada lynx, both listed as threatened, and gray wolf listed as endangered. All of these species would be highly sensitive to heavy industrial development. The upper Flathead drainage has no permanent residents, no electricity, and no paved roads. Note that in Canada,

and the western population of wolverine and grizzly bears are categorized as species of Special Concern. Lynx and gray wolf are considered to be “not at risk”.

Long term baseline data are necessary to account for natural climatic variation and the long life cycles of larger terrestrial species. At least five years of baseline data on fish and wildlife resources are necessary for credible information on which to base a decision. Temporally and spatially limited baseline data will be of limited value in understanding the actual impacts of the mine and in creating meaningful mitigation and management plans should it be approved.

The impacts of human communities in the Highway 3 corridor where the workers and support communities will live will have significant impacts on wildlife on a landscape scale due to settlement, site development, and recreation. These should be evaluated along with the projected development impacts in this area in a cumulative effects context. To do so, one would need to project levels of development in the Highway 3 corridor into the future and compound those impacts on wildlife fragmentation and mortality and habitat loss with the simultaneous impacts of this proposed mine.

The pristine ecological system in this drainage is the result of its undeveloped character. Credible consideration of heavy industrial development such as the open-pit Lodgepole Mine in this drainage requires detailed scientific evaluations of the baseline values and the landscape level impact of such a mine. A decision to permit this mine is an irretrievable commitment of this drainage and of the habitats and security the species that currently live there need to survive. The unique quality of the fish and wildlife resources in this region are irreplaceable and great care must be given to how any proposed development should proceed so that its special character is not lost. Thus, careful deliberation and sufficient time are required in order to know as much as possible prior to making such a decision.

In a letter dated October 19, 2006, to Garry Alexander, Director, Strategic Policy and Planning, Environmental Assessment Office, Dr. Chris Servheen, Grizzly Bear Recovery Coordinator for the USFWS, provided comments on effects of the proposed project on terrestrial species (Enclosed). Therefore, comments here on terrestrial species are specific to the Terms of Reference.

Recommendations on Terrestrial Species

We recommend the following step-by-step process to establish baseline data before activity begins:

- 1) Baseline data collection on the existing natural resources in an area appropriate to the influence of the mine and haul road.
- 2) Specific to grizzly bears and key species like lynx, determination of the mortality and displacement impacts expected and the number of adult females that would be impacted by the mine and the haul road.

- 3) Determination of the regional population impacts based on an ecosystem population assessment (i.e., a DNA grid survey).
- 4) Determination of the acceptability and sustainability of these impacts at the local and regional population levels.
- 5) Explicit consideration of the domino effect of project approval on accelerating and facilitating further energy development in the area and the expected impacts of these facilitated developments.
- 6) Assessment of the cost/benefit ratios of the project benefits with the impacts on all species particularly forest-carnivores like grizzly bears, lynx, and wolverine, and the multiple impacts on aquatic species such as bull trout and west slope cutthroat trout and water quality impacts on the Flathead River and in Flathead Lake.
- 7) Review of possible mitigation to reduce these impacts and the ability of mitigation to, in fact, reduce these impacts.
- 8) Assessment of the economic and environmental capability of the project to go forward with these mitigation factors fully funded and in place.
- 9) Project approval/disapproval based on this foundation of information and the results of these assessments.

Aquatic Species

The USFWS listed bull trout in the Columbia River Basin (including the Flathead and Kootenai Rivers) as a threatened species June 10, 1998 (63 FR 31647-31674). The listing rule (63 FR 31662) indicated: “The North Fork Flathead River headwaters in Canada contain a large coal deposit that could be developed. Mining this deposit could destroy spawning habitat and degrade water quality in the Montana portion of the Flathead River system.” The listing rule further notes: “Approximately 20 percent of the bull trout subpopulations in the Columbia River population segment are threatened by past, ongoing, or potential future mining activities.”

Bull trout do not currently reside on the COSEWIC candidate list (October, 2006 update), though Dolly Varden *Salvelinus malma* and lake trout *Salvelinus namaycush* are on the list as Priority 2 (Mid Priority) candidates. Bull trout are considered by the Canadian Government to be “sensitive” species in Alberta, British Columbia, and Yukon Territories and in Canada as a whole, but “may be at risk” in the Northwest Territories under the listing of Wild Species 2005 of the Canadian Government: (<http://www.wildspecies.ca/wildspecies2005/Results.cfm?lang=e&sec=9>). Thus, bull trout are not listed as a threatened or endangered species in Canada and do not appear to be destined to become so any time in the near future.

A Draft Bull Trout Recovery Plan (Plan) was published in 2002 (USFWS 2002). The Plan reiterates (pages 74-75) the nature of the threat that mining in British Columbia could pose to the Flathead Lake bull trout core area (Flathead Lake and connected upstream watershed). The Flathead Lake core area is described in the Plan (pages 133-134) as one of ten primary core areas in the Clark Fork River Bull Trout Recovery Unit (which includes most of western Montana and a portion of northern Idaho). As such, recovery criteria designed to maximize the likelihood of bull trout persistence and to lead toward eventual delisting call for maintaining or increasing the number of local (spawning) populations of bull trout and maintaining their existing broad distribution (page 135). The recovery criteria in the Plan (page 139) also call for stable or increasing bull trout trends for the Clark Fork Recovery Unit as a whole and maintaining the existing high level of connectivity in the Flathead Lake core area.

The Plan also highlights specific recovery measures for the Flathead Lake core area including maintaining or improving water quality (Recovery measure 1.1, pages 179-181) by, amongst other actions, implementing measures to reduce sediment sources (1.1.1), addressing forest road maintenance (1.1.2), improving maintenance along major transportation corridors (1.1.3), and assessing nutrient input and increasing water quality monitoring and remediation (1.1.7). Recovery measure 1.1.5 (page 180) explicitly states: “**Monitor existing and future coal mine development in British Columbia.** Monitor sediment and potential acid mining runoff related to existing and proposed coal mining activities in the British Columbia portion of the North Fork Flathead River.”

Recovery measure 6.1.3 (page 193) states: “**Support habitat protection and monitoring in British Columbia.** Work collaboratively with the British Columbia Ministry of Environment and other Canadian governmental and nongovernmental entities to ensure that bull trout habitat is protected and enhanced in the Flathead River watershed upstream of the international border.”

Similarly, the Plan for the Kootenai River Drainage (USFWS 2002; Chapter 4) highlights specific concerns about the importance of maintaining the attributes of the Wigwam River drainage that contribute to its status as the most important spawning tributary for bull trout in the Lake Koocanusa core area. This is of concern because of the proximity of the haul road for the Lodgepole Mine. It is proposed to cross over the Flathead/Kootenai divide and will upgrade and utilize the existing Wigwam Creek drainage road system to transport coal to the shipping yard.

Critical Habitat for Bull Trout

A revised version of the 2004 final rule to designate critical habitat for bull trout was published in the Federal Register on September 26, 2005 (70 FR 56212-56311). Critical Habitat Unit 2 in the Clark Fork River basin (70 FR 56267) includes numerous fragmentary segments of the North Fork Flathead River (70 FR 56271) and portions of the upper main stem Flathead River (70 FR 56270), where the river is bordered by Glacier National Park and private or State lands. The total extent of the designated critical habitat is mapped (70 FR 56273), but has not been quantified.

Status of Bull Trout

The USFWS initiated a five-year review on the status of bull trout in April 2004. The USFWS also developed its own assessment of the current status of bull trout which was released as a peer-reviewed report (USFWS 2005a).

Using the Status Assessment model, the Flathead Lake core area received a final score placing it in the “At Risk” category. Core areas in the “At Risk” category were placed there because of very limited and/or declining numbers, range, and/or habitat, making bull trout in the core area vulnerable to extirpation. The Flathead Lake core area was considered more stable than some, due to moderate levels of population abundance and relatively high amounts of internal connectivity and interconnected habitat, including headwaters in British Columbia. But, this area was still considered “At Risk” due to declining population trends and substantial and imminent threats. The threats were characterized as follows: “Information collected since the time of listing indicates the status of this core area remains static at best. The magnitude of the lake trout threat has not declined, and some local populations are at precariously low levels. Magnitude and imminence of existing nonnative species threats remain high, despite management efforts to mitigate them. Recent (2004) efforts by the British Columbia government to auction coalbed methane leases and more recently to reopen exploratory coal mines (2005) in the headwaters of the Flathead North Fork in British Columbia indicate the magnitude and imminence of threats to habitat and water quality in this contiguous transboundary system are elevated.” (USFWS 2005b).

Bull Trout Habitat and Population Impacts of the Lodgepole Project

The potential impacts of the Lodgepole Mine could adversely affect fisheries and aquatic resources of the North Fork Flathead River. The proponents are essentially proposing to remove a mountain situated between Foisey Creek and McLatchie Creek and develop an open pit coal mine. The site is immediately upstream of the major bull trout spawning grounds of the upper North Fork Flathead River and project activities could have a major impact on the population. Several points need to be made relative to these possible impacts.

First, the best available scientific information indicates that all of the bull trout spawning in the upper North Fork Flathead River are migratory fish from Flathead Lake. As such, they represent a shared resource between our two Nations, and this resource is protected within United States jurisdiction as a federally-listed threatened species.

Second, the contribution to the Flathead Lake bull trout core area from fish spawning in the upper North Fork Flathead River is significant. The overall health of that core area (recently considered “at risk” based on the USFWS 2005 status assessment; USFWS 2005a) is well below recovery criteria targets. Since the 1980s the status of bull trout in the Flathead Lake core area has declined and the contribution made by fish spawning in Canadian headwaters seems to be increasing. Canadian headwaters of the North Fork Flathead River are critically important to supporting the continued health and future recovery of bull trout in the Flathead Lake core area.

Third, the Flathead Lake core area is disproportionately important to the overall status of bull trout and recovery across the United States portion of their range. Flathead Lake represents the largest lake and the largest connected adfluvial (lake-dwelling) core area for bull trout in the Columbia River basin and, along with Lake Pend Oreille in Idaho, these systems are considered the evolutionary heart of the range of adfluvial bull trout. As such, the Draft Recovery Plan (USFWS 2002) acknowledges this in setting higher abundance targets for bull trout recovery in these major waters. The imposition of headwater mining impacts will complicate efforts to meet recovery measures pertaining to maintaining or improving water quality (Recovery measure 1.1, pages 179-181; USFWS 2002) and could compromise the long-term attainment of recovery objectives, potentially affecting delisting of bull trout rangewide. Such impacts would have to be considered as part of the upcoming analysis of the status of bull trout in Canada for consideration of listing under SARA.

Related Water Quality Concerns

Impacts to water quality introduced in the headwaters of the North Fork of the Flathead River have the potential to negatively impact bull trout survival and potentially disrupt bull trout migration for the entire Flathead Lake core area. There are substantial numbers of bull trout fry and juveniles (which may rear in their natural waters for up to 3 years prior to downstream migration) placed in jeopardy by sediment or contaminants produced by the mine operation or processing and haul facilities.

Because the North Fork and mainstem of the Flathead River downstream of the confluence of the Middle Fork represent the migratory corridor for all bull trout in the Flathead Lake core area, there is potential for disruption (through chemical or sediment impacts) of the entire migratory population of bull trout in the Flathead Lake core area. As described by the State of Montana and others, detrimental impacts to water quality from the proposed coal mine could include introductions of heavy metals or toxic substances, increased sedimentation, stream and groundwater flow modifications, loss of physical habitat, reductions in dissolved oxygen and changes in water temperature. The latter have been identified as particularly important to stenothermic cold-water adapted species such as bull trout and there are concerns that water temperature impacts may be exacerbated due to global climate change.

Recommendation on Aquatic Species

For all these reasons, we concur with the State of Montana, the Northwest Power and Conservation Council and other partners who have worked diligently to protect and restore the bull trout resources in the Flathead Lake core area, that the proposed TOR for the Cline Mining Corporation's Lodgepole Project should be revised to more effectively address effects to aquatic resources downstream from the project. We reiterate their concerns that the TOR must include a basin-wide comprehensive and quantitative assessment of fisheries resources and water quality in the entire bull trout core area, including downstream migratory corridors and aquatic resources of Flathead Lake. We are concerned that the scope of the study area proposed in the TOR is limited, that a detailed mining proposal has not been presented, and that an adequate cumulative effects analysis has not been conducted. In addition to the direct effects from the project itself, bull trout are very vulnerable to angling. The cumulative effects should consider the additional

impacts of added angling pressure by off-duty mine employees and the general public that will benefit from improved access to the upper North Fork of the Flathead. Therefore, we recommend and support the call for a 3-5-year baseline survey on fish and wildlife resources before this project is implemented.

Migratory Bird Resources

In addition to the project's effects on federally-listed threatened and endangered species, there is a need to address the proposed project's potential effects upon migratory birds. Bald eagles, which are protected in the United States under ESA and by the Bald and Golden Eagle Protection Act (BGEPA), and other migratory birds, which are protected under the Migratory Bird Treaty Act (MBTA), do occur in the project area and migrate back and forth across the border between the United States and Canada. Therefore, impacts to migratory birds should be considered in any assessment of effects related to the proposed mine. We recommend that the project proponents check the applicable regulations under the Convention for the Protection of Migratory Birds (1916) (Convention), United States and Great Britain (on behalf of Canada), with the migratory bird office in Canada.

In the United States, the MBTA is a strict liability statute which does not require that intent to "take" be proven, rather that only "take" occurs. Thus "take" is illegal except as permitted by regulations. Under MBTA, except as permitted by regulations, it is unlawful to pursue, hunt, take, capture or kill or attempt to take, capture or kill any migratory bird or their active nests included in the terms of the Convention. Pursuant to 50 CFR 10.12, "take" means to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect. There is no provision for disturbance or molestation under MBTA unless the action results in the mortality of a bird or eggs.

The BGEPA prohibits knowingly taking, or taking with wanton disregard for the consequences of an activity, any bald or golden eagles or their body parts, nests, or eggs, which includes collection, molestation, disturbance, or killing activities. Note that take of nests covered under BGEPA is illegal even when the nests are inactive.

For projects in the United States, the USFWS recommends avoidance of construction during the nesting season if there is a reasonable expectation that there will be nesting in the area of the project. If the proposed construction project is planned to occur during the primary nesting season, February 1 – August 15 or at any other time which may result in the take of nesting migratory birds, they recommend that the project proponent, or construction contractor, arrange to have a qualified biologist conduct a field survey of the affected habitats and structures to determine the absence or presence of nesting migratory birds. Surveys must be conducted during the nesting season. It is further recommended that the results of field surveys for nesting birds, along with information regarding the qualifications of the biologist(s) performing the surveys, be thoroughly documented and that such documentation be maintained on file by the project proponent (and/or construction contractor) for potential review by the USFWS, if requested, until such time as construction on the proposed project has been completed. More information on protection of migratory birds in the United States can be found at <http://www.fws.gov/birds/>.

SPECIFIC COMMENTS ON DRAFT TERMS OF REFERENCE

Section 3.0, Project Background and Rationale - The description of the project area should include figures on the estimated hectares of ground disturbance that will be required for the various project alternatives.

Section 3.1, Project Description – Bullet #3 indicates that this section of the Application will “describe any sustainability principles that have guided the project planning.” To be complete, the project analysis should consider contributions to greenhouse gases. Specifically, consideration might be given to the long-term nature of the project, the local clear cutting/deforestation of the project site, the consumption of energy in mining, processing, and transporting the coal, and the related emissions in the final use/combustion of the product.

Beyond the soil material used in the reclamation cover, the filled mine pit essentially becomes an unlined and uncovered waste rock landfill. Some analysis of the water budget of this disturbed area (recharge and discharge to ground water and ultimately surface water) may be easily performed using the HELP Model (Hydrologic Evaluation of Landfill Performance) or some similar computer model more directly applicable to mine sites, based on site hydro geologic conditions and climate. The higher hydraulically conductive units in the west hanging wall of the pit are likely to become the primary migration pathways for ground water exiting the pit. It should be investigated if these units are capable of discharging through springs to Foisey Creek.

Section 3.5.1, Lodgepole Route and Elko Connector Route – The TOR needs to specify an analysis of all air impacts related to road use, including truck emissions and dust, and analyze the contributions of various roads to sedimentation. Runoff issues related to dust control measures, if implemented, should also be analyzed.

Section 3.5.1, Lodgepole Mine – An analysis of regional air quality impacts related to using backup diesel generators is necessary. Fuel storage for the generators and leak containment should also be addressed in detail.

Section 4.1, Baseline Climate Monitoring, Current Environmental Conditions – Consideration should be given to climate monitoring (temperature, precipitation) co-located with stream gage and water quality monitoring stations. Fully integrated and automated units offering telemeter, real-time data in a single monitoring package are now available at a reasonable cost through a competitive bid process.

Section 4.2.2, Issue Identification, Hydrology – In the absence of baseline hydrologic data (quantity and quality) of a continuous nature (it appears only synoptic measures have been made so far), due to seasonal and diurnal variability of such data, the information content is compromised in drawing too many conclusions about the site and area hydrology. Therefore, continuous monitored water quality and quantity data should be part of the Application if the understanding of potential impacts within the natural range of variability (diurnal, monthly, seasonal, annual, and across wet/dry and warm/cool climatic cycles) is to be understood to some reasonable degree to manage the site.

Section 4.2.4, Baseline Conditions, Hydrology – The Application should also provide baseline flow and water quality (continuous) data for Foisey Creek, which is likely the most impacted watershed/stream drainage during the mine development and restoration period. Crab and Jack Creek data may be appropriate for comparison. The Foisey Creek drainage is also where hydrogeologic conditions will change as a result of the mining activity (e.g., aquifer removal in the pit area, pumping to supply make up water, ground water management to minimize flow into the pit, disposal of waste rock and related surface water runoff and run on controls and diversions and potential discharge from the site resulting from a positive mass balance of water use, etc.). All of these mine-related disturbances could affect surface water flows and water quality and should be addressed in the long-term monitoring plan for critical review prior to approval of the Application.

Section 4.3.4, Baseline Conditions, Hydrogeology – Long-term monitoring wells at undisturbed sites surrounding plant and mine operations are the only way to establish and monitor changes to baseline conditions in the subsurface and impacts that these changes are likely to have in the watershed. Boreholes only provide a limited snapshot in time of subsurface hydrogeology. The application will be deficient if only borehole data is relied on to obtain hydrogeologic information and sufficient numbers of monitoring wells at appropriate locations are not included in a monitoring plan.

Section 4.4, Water Quality (Surface Water and Groundwater Quality) – Continuous water quality and quantity data records for Foisey and Lodgepole Creeks should have been established before the Application Process started, so that some minimal continuous data set of two or more years would be available prior to the onset of mine-related disturbance. Such a data set would also permit correlation with seasonal synoptic sampling results, reference sites used in the region by monitoring agencies and the established historical stream gauging/sampling networks on Crab and Jack Creeks.

Section 4.4.2, Issues Identification, Water Quality – It would appear that issue identification may be inadequate prior to the Application, as much of the information will only be obtained once the environmental monitoring work proposed in the Application is implemented. At best, the baseline monitoring conducted so far appears rather cursory and anecdotal. While this data set may be appropriate for development of a monitoring plan subject to further review by stakeholders, it would appear to be an inadequate data set for approval of an Application.

Section 4.4.2, Baseline Conditions, Water Quality – We recommend the establishment of a network of continuous water level (gage) and water quality monitoring stations (minimum of 3 sites) including: 1) the likely most impacted drainage by the project (e.g., Foisey Creek above confluence with Flathead River), 2) a reference site in an un-impacted nearby drainage of similar hydrologic and hydrogeologic setting that could be used for comparison to Foisey Creek data, and 3) a site on the Flathead River near the international boundary to assess and determine if any effects are of a trans-boundary scale. These long-term sites should be established in the summer of 2007 to establish baseline (pre-impact/pre-disturbance conditions) for use in upfront analysis prior to the provincial government making a permitting decision on the mine. If the mine is approved, then the sites will be able to continuously monitor for water quality parameters

(temperature, pH, specific conductance, dissolved oxygen, turbidity and water level) at a minimum along with air temperature and precipitation over the duration of the project.

Section 4.5, Aquatic and Fisheries Resources – This section should include a summary of existing water quality and fisheries data for the project area as well as for the broader Transboundary Flathead drainage (citations for these studies should be provided). Included in this summary should be the findings of the International Joint Commission's Flathead River International Study Board Report (1989) and the reports of its four technical committees, one subcommittee and one task force. This section should also discuss new studies and monitoring efforts that have been completed between the end of the IJC Flathead Reference in the late 1980's and today. We refer you to fishery comments included in the attached letters from the Montana Department of Natural Resources & Conservation and the Montana Department of Fish Wildlife and Parks.

Section 4.9.4, Baseline Conditions, page 16 – While the reference definition for identifying baseline vegetation includes listed plant species and considers established baseline ecosystem units and forest capability units at the entire project site, the reference definition does not indicate inclusion of potentially occurring invasive plant species. That information might be useful during reclamation of the mined site.

Section 4.10.3, Wildlife – The study area for the wildlife baseline and the necessary types of baseline data should be defined and examined at 3 different scales - landscape, drainage, and site specific as follows:

Landscape level impacts along Highway 3 from Elko to Sparwood involving regional impacts of the mine including the homes of the workers and the communities that will be involved in supporting the workers and their families. The communities will increase in size with increasing impacts on wildlife and wildlife habitat through increased presence, traffic volume, human site developments, and recreation. These impacts, individually and cumulatively, will increase the fragmentation impacts of Highway 3 on terrestrial wildlife communities. Habitat alienation will increase along with a rise in human presence, as will the likelihood of increased human/wildlife conflict and higher mortality rates for wildlife due to attractants (potential food items) associated with human settlement.

These impacts must be evaluated as to their long-term fragmentation of contiguous wildlife populations along the spine of the Rockies. The viability of populations of each sensitive species must be evaluated. Cost and trade-offs of these impacts must be explicitly disclosed including reductions in genetic diversity, dispersal success, and likely reduction in hunting opportunities due to lower population numbers and increased mortality due to conflicts with humans that must be offset by reductions in hunting.

The types of impacts noted above will be most profound on noted sensitive wildlife species such as forest carnivores. In particular, Canada lynx, grizzly bear, and gray wolf could be adversely affected by habitat fragmentation. These impacts should be evaluated as a cumulative effect in combination with, and in addition to, the existing levels of human use and the projected increases

in human activities in this Highway 3 area due to other growth issues like recreation and settlement.

Landscape level impacts on sensitive and migratory wildlife species within the Flathead drainage, including that portion of the drainage south to Polebridge, Montana, need to be considered. Many of the larger carnivores and some ungulates have home ranges that take in much of the Flathead drainage and, in some cases, cross the international border. The Lodgepole Mine will be an irretrievable commitment of resources that will change the habitat and movement patterns of wildlife in the Flathead drainage. Also, the ancillary impacts of the mine would increase human use and recreation within the Flathead drainage with potential impacts on resident species within the drainage including some of the transboundary migrants. Multiple years are necessary for adequate and scientifically credible data to account for yearly variations in weather and precipitation and to develop a sound baseline of average conditions on which to base evaluations of impacts. A logical approach would require a minimum of 5 years of detailed data on numbers, distribution, movement patterns, reproduction rate, mortality factors and seasonal habitat use multiple years of baseline monitoring to account for natural variation.

We recommend haul road-scale and mine site-scale evaluations on the baseline conditions on all terrestrial species. Baseline data for sensitive forest carnivores and for special species like mountain goats should be gathered for a minimum of five years and should include detailed data on numbers, distribution, movement patterns, reproduction rate, mortality factors and seasonal habitat use. Multiple years are necessary for adequate and scientifically credible data to account for yearly variations in weather and precipitation and to develop a sound baseline of average conditions on which to base evaluations of impacts.

Section 4.14, Land Use - The land use section of the TOR should include discussion of the large number of special designations afforded the Flathead Valley in both the United States and Canada (i.e., World Heritage Site, National and Provincial parks, Biosphere Reserve, etc). The Environmental Assessment office has previously been provided with important reference documents in these regards including: *The North Fork of the Flathead Conceptual Strategy, Flathead Basin Commission, 1992*) and *Points that Montana and the United States Would like British Columbia to consider in its planning process for the Flathead River Basin (Flathead Basin Commission, 2002)*

The land use section should also discuss the findings previously made by the International Joint Commission in its 1988 assessment of the Sage Creek Coal Mine that was proposed for the Flathead River Valley in British Columbia (see "*Report of the Flathead River International Study Board*", *International Joint Commission, 1988*). In this document, the International Joint Commission recommended that the proposed mine not be approved by the British Columbia government and that "governments consider with appropriate jurisdictions, opportunities for defining and implementing compatible, equitable, and sustainable development activities in the upper Flathead River Basin."

To date, no such international, basin-wide planning effort has occurred. This is despite repeated efforts to initiate such a process on the part of governmental officials in Montana and the United States. Given the importance of this drainages resources and the threats there to on both sides of

the border, the need for such a planning effort is great, especially given the pending submittal of Cline proposed Lodgepole Project.

Section 4.15, Geochemical Characterization of Mine Wastes – A detailed Acid Base Accounting (ABA) must also be included along with selenium analysis to determine the acid generating potential of all mine waste. Further, an analysis of receiving streams and receiving stream sediments is necessary to determine how altered pH may affect the existing environment (i.e., changes in receiving stream chemistry allowing other existing metals in sediments to be taken into solution).

The discussion of tests to characterize the geochemical composition of the mine waste and waste rock should include a determination of its leach ability and the resulting water quality using representative ground water sample(s) from the area and precipitation after passing through a representative cap material. This waste rock will be used in part to back fill the pit and will be of a finer grained material than in its original undisturbed state so will have more surface area for chemical reactions to occur and will likely become re-saturated by ground water as the pit fills. Given the site location on a ridge high in the watershed, it is reasonable to assume that ground water will be impaired from waste rock spoils and will eventually discharge to surface water on the down dip slope of the mine site (i.e., largely to Foisey Creek over the long-term). Therefore, some anticipation of the resulting change in water quality should be ascertained from waste rock leach testing. Presumably the thinner, uneconomic/un-mined coal seams will also be disposed along with the waste rock so this will be a component of the mine backfill as well.

Consideration should be given to applying a low permeability cover material (e.g., something along the lines of a spray on mixture of rock Crete and betonites) to the walls of the pit as it is back-filled. This could reduce hydraulic conductivity of the face and reduce discharge from the pit via the principal water-bearing units that slope west, northwest and eventually may discharge to Foisey Creek via the Mist Mountain Formation and overlying units.

There should be a discussion of the inferred ground water flow path(s) from the pit and the sealing (acquitter) properties of shale units in the valley of Foisey Creek that may overlie water bearing zones to limit upward ground water flow and discharge of any mine-impacted ground water. At a minimum, some conceptual model should be presented based on the area geology, hydrogeology, and data gaps identified where information of a critical nature is lacking.

Section 5, Socioeconomic Considerations - The TOR does not address the need to assess economic or social valuation of wildlife and habitat impacts relative to the development. What will be the costs of lost hunting/fishing/trapping/viewing opportunities to local economies?

This section should also discuss impacts to the State of Montana and in particular to the Flathead drainage south of the International border. The Flathead River (called the North Fork of the Flathead River in the US.) forms the western boundary of Glacier National Park. This valley is renowned for its wild character, its beauty, its remoteness and its abundant wildlife. All such characteristics carry with them real economic benefits to the Montana's Flathead County and in a broader sense to the entire State of Montana. Similarly, the section on socioeconomics should

discuss impacts to the Province of Alberta and in particular to Waterton Lakes National Park which is located just across the continental divide from the Flathead River of British Columbia.

The scope of the assessment should be expanded to include lower portions of the transboundary Flathead drainage including Glacier National Park and other areas south of the International border. Regional communities such as Columbia Falls and Kalispell MT should be included in the assessment.

Section 6.4, Site Water and Load Balance – The mass balance model should include a total suspended solids (TSS) component using turbidity as a surrogate from continuously monitored data. It is unlikely that the entire project will be able to control sediment discharge from all associated infrastructure, particularly during unusual, peak flow, longer duration, high intensity low frequency (10 year or 100 year rainfall event) or combination rain/snow melt events. Also, some baseline characterization of sediment should be done at the first location where significant fines are trapped in the down stream drainage system. (Given the high gradient of smaller streams in the area, this sediment analysis may have to occur somewhere on the Flathead River).

The proposed models will only be as accurate or representative of the future conditions as Cline is prepared to fund the data collection needs upon which the models will be built and the input parameters selected.

Section 6.12, Vegetation, page 25 - As stated, "...this section will provide an assessment that describes the potential for adverse impacts on plant communities and listed plant species. ... Potential impacts during construction and preproduction, operation and closure will also be assessed." Nonetheless, the potential for weed invasion is not mentioned. Because invasive plant species can be opportunistic at the expense of native vegetation, proactive mitigation of weed invasion warrants consideration. For example, ensuring weed-free project transport vehicles, through cleaning and inspection, is one such technique to minimize weed invasion. Given the influx of manpower, equipment and material this project entails over its duration, introduction of invasive species and their management/control should also be addressed in this section.

A baseline description is needed for vegetation as well as for wildlife. Are the plant communities intact, or have they been disturbed by humans? What is the level of weed species present? What percentage of the surrounding region is pristine versus disturbed? Surveys for rare species throughout the area proposed for disturbance should be conducted in spring, summer, and fall for plants (e.g., May, July, September depending on local phenology). These surveys should include all seasons for wildlife (possibly monthly surveys).

Vegetation samples should be collected and assayed for baseline conditions, so comparison monitoring can detect changes in vegetation due to potential pollutants. Baseline surveys should also describe current community composition and diversity of vegetation communities (by type) prior to disturbance.

If rare or sensitive communities or habitat types are included in the project area, describe their extent both in the project area and in the region should be described, as well as how impacts to these communities would be prevented or mitigated.

A section should also be included which describes the cumulative impact of past, present, and reasonably foreseeable activities. What has been the impact on vegetation caused by the 36 drill holes, 875 meters of surface trenching, local logging operations, and other past activities?

Section 6.13, Wildlife - This section specifically states that the evaluation of impacts will be limited to the project footprint which presumably includes only the mine site and haul road and the development activities at these sites, including construction, operations, and closure of the mine. This evaluation area is but one of the 3 scales that need to be addressed in terms of wildlife impacts (see above). Limitation of the evaluation of impacts to such a site-specific scale will grossly underestimate the impacts of this project on larger terrestrial species, such as forest carnivores (i.e., bears, wolves, etc.). This underestimation will provide misleading information on mine impacts on which to make a decision and could lead to the development of mitigation plans that are of limited value.

Section 6.14, Air Quality – Greenhouse gas emissions/atmospheric loading (methane liberated through coal combustion) should be included in the air quality analysis.

Section 6.14, Air Quality – The draft TOR should have an in-depth analysis of all non-point air emissions from mobile mining equipment, haul trucks, and trains to determine the overall contribution of mine related operations to regional air quality. This is an important component to the resulting EA's cumulative impacts analysis.

Section 6.17, Land Use – The draft TOR should contain a broader evaluation of land use. Evaluation of the mine's impacts on other uses of the Flathead Valley including residential hunting and fishing, commercial guiding, and use of Provincial and National parks in the valley and across the continental divide in Alberta.

Section 7.0, Cumulative Effects Assessment - The application should include an assessment of the cumulative effects of adding the Lodgepole Project to other existing and proposed activities in the Flathead and Elk drainages. In the Flathead drainage such activities include the possibility of additional coal mine development in British Columbia (Lillyburt, Sage Creek), proposed coal bed methane development in BC, timber harvest activities in both Montana and British Columbia and residential development in Montana.

Study area boundaries for such parameters as water quality, wildlife, and socioeconomics should be extended to include Glacier National Park in Montana and Waterton Lakes National Park in Alberta.

A cumulative impact analysis is necessary to determine the combined impact of all mine access roads and logging roads associated with the Lodgepole mine development proposal. Associated sediment control structures must be designed to control cumulative runoff from project-related roads to minimize impacts on downstream waters. The draft TOR merely mentions that a rail

load out will be located at Elko, but fails to require an environmental examination of the proposed activities. Surface runoff from the Elko rail site must be analyzed as a contributor to the proposed project's downstream impact.

Section 8.2, Crushing and Processing Plant – Disposal of process water from the flotation system and tailings dewatering plant must be analyzed as part of proposed project's overall water balance and cumulative impact on downstream resources. The TOR only briefly mentions that the flotation system and dewatering plant and does not appear to require an in-depth analysis.

Section 8.2, Crushing and Processing Plant – Air emissions from the thermal drying process should be considered as part of a regional air quality impact analysis as this is an integral part of the coal preparation process.

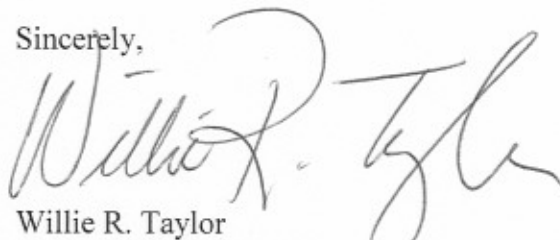
Section 11.0, CEEA Environmental Assessment Requirements - Accidents and Malfunctions – This section of the draft TOR references a risk assessment that will be performed on the project. We believe that a risk assessment, particularly focusing on impacts to downstream and cross-border resources, is likely the most important component in the application process. At a minimum, the risk assessment should analyze major mine component failures, such as, settling or retention pond dam failures, mine fires, highwall failures, and haul truck or train accidents resulting in spills of fuel or coal. Further, the risk assessment must take into account the performance and possible failure of the above listed components in light of a maximum precipitation event. We suggest an analysis under a 100-year storm event.

SUMMARY COMMENTS

Interior believes that the scale of Cline Mining Corporation's proposed open-pit coal mine and its location at the headwaters of the Flathead River in British Columbia has the potential to generate significant adverse environmental effects downstream in the United States that cannot be mitigated.

Interior has a continuing interest in working with the Environmental Assessment Office to ensure that impacts to resources of concern to Interior are adequately addressed. If you have any questions concerning our comments, please contact Dr. Vijai N. Rai, Office of Environmental Policy and Compliance, at (202) 208-6661 or at Vijai_Rai@ios.doi.gov. We appreciate the opportunity to provide these comments.

Sincerely,



Willie R. Taylor
Director, Office of Environmental
Policy and Compliance

Enclosures

References Cited

- U.S. Fish and Wildlife Service. 2002. Draft Recovery Plan for the Klamath River and Columbia River Distinct Population Segments of Bull Trout (*Salvelinus confluentus*). U.S. Fish and Wildlife Service, Portland, Oregon.
- U. S. Fish and Wildlife Service. 2005a. Bull trout core area templates - complete core area by core area analysis. W. Fredenberg and J. Chan, *editors*. U. S. Fish and Wildlife Service. Portland, Oregon. 660 pages.
- U. S. Fish and Wildlife Service. 2005b. Bull trout core area conservation status assessment. W. Fredenberg, J. Chan, J. Young, and G. Mayfield, *editors*. U. S. Fish and Wildlife Service. Portland, Oregon. 95 pages plus attachments.
- Weaver, T., M. Deleray, and S. Rumsey. 2006. Flathead Lake and River System Fisheries Status Report. DJ Report No. F-113-R1-R-4, SBAS Project No. 3130, Montana Fish, Wildlife and Parks, Kalispell, Montana.

Selected letters regarding the Lodgepole Terms of Reference

April 7, 2006 Montana Department of Fish, Wildlife and Parks, RE: *Baseline*
Data Needs Associated with the Lodgepole Mine Project, Mark Deleray, Montana
Fish, Wildlife and Parks

These recommendations for baseline data collection on basin-wide scales stem from the need to understand what fisheries resources currently exist at the immediate mining project site and in downstream waters, which may be impacted by the proposed development. Without these data, it will not be possible to assess or mitigate for potential impacts to these resources or monitor future changes. These data are required for informed decision-making and responsible resource management. The following sections provide brief rationale and a list of techniques for baseline data collection. In addition, there are fisheries datasets in the Flathead Basin, some ongoing for 25 years, which should be consulted.

Fish Population Demographics in the Flathead and Wigwam rivers and their tributaries:

- Presence/Absence surveys will provide information on species distribution and habitat use.
 - Conduct redd count surveys for westslope cutthroat trout and bull trout
 - Conduct electrofishing surveys to determine distribution of fish species, update the 1997 survey for the Flathead tributaries.
 - Conduct surveys during all four seasons, as possible.
 - Describe distribution of native fish assemblages and aquatic communities
- Abundance/Density surveys repeated over a three to five year period provide quantitative information to assess current population levels and demographics.
 - Conduct annual redd count surveys for westslope cutthroat trout and bull trout
 - Conduct annual population estimates for all species present.
 - Describe age and size structures and life history strategies of sampled populations; (1997 surveys suggested that there was exceptional cutthroat trout growth rates and that there may be a resident bull trout population above a barrier. This would be the first documented resident bull trout population in the basin and of regional significance)
- Population status and trends over a 5 to 10 year period will allow comparisons to future levels and assessment of Project impacts.
 - Conduct redd count surveys for cutthroat trout and bull trout
 - Conduct juvenile population estimates in rearing areas
- Determine baseline levels of toxins in fish tissues and conduct laboratory studies to assess species sensitivity to potential mining wastes. Refer to the last section of these recommendations for further discussion of this issue.
- Locate the adult bull trout staging areas in the mine vicinity and downstream in the Flathead and Wigwam rivers and their tributaries. Adult bull trout will remain in rivers for extended periods prior to tributary spawning, making them susceptible to impacts from mining pollutants. These staging areas need to be identified to assess potential impacts.
- Determine fish use of the Flathead and Wigwam rivers and their tributaries. In addition to bull trout staging, adult bull trout and westslope cutthroat trout use the Flathead, Wigwam and Elk rivers; some may reside there for their entire lives. Also, juvenile trout use these waters for rearing and migrations. The knowledge of the extent of these uses and what

proportion of populations may be affected by the Project needs to be quantified to assess potential impacts.

- Genetic analysis of westslope cutthroat trout in the immediate area and other tributaries is required to understand which species may be impacted and the status of native fish populations.
- River creel surveys in the Flathead and Wigwam rivers are required to assess potential impacts to fisheries and economic impacts to local communities. Likewise, creel surveys on Flathead Lake and Lake Koocanusa are required to assess potential impacts to those fisheries and associated economies.

Availability and Quality of spawning and winter habitats in the Flathead and Wigwam rivers and their tributaries:

- Measure sediment size composition in spawning gravels to assess habitat quality and reproductive success of trout populations.
 - Substrate coring
- Identify and quantify existing point and non-point source sediment sources.
 - Road drainage surveys including mapping old roads and trails
 - Sediment source surveys
 - Map and date past timber harvests
 - Describe the hydrographs for the upper Flathead and Wigwam rivers.
- Determine current level and rates for alga growth in the Flathead and Wigwam rivers and site-specific tributaries.
- Delineate and map groundwater upwelling areas and correlate with documented spawning areas.
 - Infrared aerial mapping of thermal differences during winter
- Determine the groundwater regime in trout spawning and winter habitats; groundwater movement patterns and volume.
- Determine DO levels and temperature regimes in groundwater in trout spawning and winter habitats. The above groundwater characteristics are required to determine suitability, use and current conditions of these habitats and will allow for comparisons to future conditions.

Availability and Quality of rearing habitat in the Flathead and Wigwam rivers and their tributaries:

- Determine sediment size composition and embeddedness to determine juvenile bull trout rearing habitat quality.
 - Substrate scoring
- Describe the abundance of pools and large wood debris to evaluate trout rearing habitat quality.
 - Stream habitat availability surveys such as “R1/R4 surveys”.
- Delineate and determine groundwater characteristics mentioned above.
- Determine species distribution and relative abundances of alga growth and macroinvertebrate populations. Specific insect species are good indicators of contamination levels due to their sensitivities and tolerances of specific pollutants.

Selenium Levels in Aquatic Biota in the Flathead and Wigwam rivers and their tributaries:

- A 1998 report, Selenium Mobilization from Surface Coal Mining in the Elk River Basin, British Columbia: A Survey of Water, Sediment and Biota (McDonald and Strosher) from the Ministry of Environment, Lands and Parks, Kootenay Region, British Columbia, found elevated levels of selenium in water, sediments, and aquatic life including westslope cutthroat trout downstream of coal mining in the Elk River Drainage and recommended additional studies to further investigate selenium impacts. These recommended studies would provide baseline information on impacts to westslope cutthroat trout, side-channel wetlands, aquatic birds, and Lake Kootenay and on release mechanisms responsible for high selenium concentrations. These issues should be revisited and considered in the draft TOR. In addition, the original study is now 10 years old and should be repeated. There is the need to assess cumulative impacts of additional selenium mobilization from the proposed mining operations in the Lodgepole Creek Drainage and the associated impacts to the Elk River and Lake Kootenay. For the Flathead Basin, a baseline study is needed to assess current selenium levels in water, sediments and aquatic biota. The above study recommended the following additional studies, some or all of these may have since been conducted:
 - Compare the frequency of embryonic mortalities and deformities in a westslope cutthroat trout reference site with those in areas with high selenium exposure, below coal mines.
 - Thoroughly evaluate selenium bioaccumulation in side-channel wetlands in the Elk Valley.
 - Survey selenium bioaccumulation and toxic effects in aquatic birds in the Elk Valley.
 - Survey the bioaccumulation of selenium in the zooplankton and fish communities in Lake Kootenay, which receives selenium discharge from the Elk River.
 - Investigate the geochemical mechanism and current rock dump reclamation practices responsible for the release of selenium into surface waters from coal mining.



United States Department of the Interior

NATIONAL PARK SERVICE
Glacier National Park
West Glacier, Montana 59936

N3619

April 11, 2006

Mr. Garry Alexander
Director, Strategic Policy and Planning
Environmental Assessment Office
2nd floor, 836 Yates Street
PO Box 9426 Stn Prov Govt
Victoria BC V8W 0V1
CANADA

**Re: Draft Terms of Reference – Lodgepole Project for Cline Mining Corporation’s
Application for an Environmental Assessment Certificate pursuant to the British Columbia
Environmental Assessment Act**

Dear Mr. Alexander:

Thank you for inviting Glacier National Park to participate in the Lodgepole Project Working Group Meeting on March 28, 2006 in Cranbrook. The park also appreciated the briefing that you and Margaret Bakelaar provided to United States participants on the evening of March 27.

As the attached comments on the draft Terms of Reference demonstrate, coal and other industrial developments in British Columbia’s Flathead drainage raise serious environmental and socioeconomic concerns to those of us charged with managing lands downstream.

Glacier National Park’s comments on the draft Terms of Reference are not inclusive of those that will be submitted by other state and federal agencies, many of which have specific expertise not duplicated by Glacier National Park.

In commenting on the draft Terms of Reference, the park did not have the benefit of being able to review Cline’s proposed mine plan. It was our understanding that Cline would provide this plan to all those who attended the Working Group meeting on March 28 so that it could be reviewed before the April 12 deadline for submitting comments.

Brace Hayden, Regional Issues Specialist, is the park's principle contact with regards to our review of the Draft Terms of Reference. Brace can be contacted at brace_hayden@nps.gov and (406) 888-7913.

Thank you for the opportunity to comment. We look forward to continuing to work with your agency on Cline's Lodgepole proposal.

Sincerely,

Michael O. Holm
Superintendent

Attachments

cc:

Margaret Bakelaar, Senior Program Officer, 320-757 West Hastings Street, Sinclair Centre, Vancouver, BC V6C 1A1 CANADA

Rich Moy , Chief, Water Management Bureau, Montana Dept of Natural Resources and Conservation, 1424 9th Ave., Helena, MT 59620

**Glacier National Park Comments
Draft Terms of Reference - Lodgepole Project
April 10, 2006**

Section 1.7 Lodgepole Project Team

It is stated that baseline study requirements will not be described in the Terms of Reference (TOR) but rather will be a part of Cline's application after appropriate consultation with government agencies, etc. How will the content, duration, and scope of the various baseline study requirements be determined and who will make such determinations? Is this something that will be delegated to technical working groups described at the March 28 meeting in Cranbrook

Baseline study requirements are extremely important from a transboundary perspective (i.e. fisheries, water quality, and wildlife) and from the standpoint of assessing cumulative impacts.

The TOR should describe the involvement of Canadian Federal Government agencies in reviewing Cline's application. Which of the C.E.E.A "triggers" that cause the involvement of Canadian Federal agencies are relevant to the Cline application? This section might also discuss the harmonization agreement regarding how the Provincial EA process and the Federal CEAA process will be dovetailed.

Section 3.1 Project Background and Rationale (also sections 3.2, 3.4 etc)

The description of the project area should include figures on the estimated hectares of ground disturbance that will be required for the various project alternatives.

Section 4.11 Wildlife and Fisheries Protection Plan

This section should also include plans for protection of wildlife and fisheries habitat during mining, processing and transportation activities.

Section 6.1 Overview of Effects Assessment Approach and Methods

Where are we from a time standpoint with regards to scoping? Is a listing of agency and non agency contacts being assembled? How much longer will scoping comments be accepted?

Vegetation should be addressed in a separate section from wildlife as the wildlife section in CMC's application is likely to be extensive. It is more common to combine vegetation and soils into one section although in this case it is not recommended.

Section 6.3 Cumulative Environmental Effects

The application should include an assessment of the cumulative effects of adding CMC's Lodgepole Project to other existing and proposed activities in the Flathead and Elk drainages. In the Flathead drainage such activities include the possibility of additional coal mine development

in BC (Lillyburt), proposed coal bed methane development in BC, and timber harvest activities in both MT and BC.

Study area boundaries for such parameters as water quality, wildlife, and socioeconomics should extend to the south of the international border and include Glacier National Park.

Section 8.0 Water Quality and Aquatic Fish Resources

This section should include a summary of existing water quality and fisheries data for the project area as well as for the broader transboundary Flathead drainage (citations for these studies should be provided). Included in this summary should be the findings of the International Joint Commission's Flathead River International Study Board Report (1989) and the reports of its four technical committees, one subcommittee and one task force. This section should also discuss new studies and monitoring efforts that have or will be initiated as a result of CMC's application.

The US National Park Service is preparing to fund a study of the impacts of hydrocarbon development in the British Columbia Flathead. This study will assess impacts to water quality, sedimentation, and river corridor habitats and would look specifically at such issues as coal seam geochemistry. This study's principal investigator is Dr. Richard Hauer, Professor of Limnology at the Flathead Lake Biological Station. The estimated funding level is \$100,000 (US). Field work is scheduled to commence in the spring of 2006. Attached is a copy of Dr. Hauer's proposal (*Potential Effects of Canadian Resource Development on Glacier National Park*).

The US Geological Survey and US National Park Service have also proposed funding of a baseline assessment of water quality and aquatic communities of the North Fork of the Flathead River in order to document conditions in the watershed before industrialization occurs. Funding for this assessment is currently being sought. A copy of the study proposal is attached (*Baseline Assessment of Water Quality and Aquatic Communities of the North Fork of the Flathead River*).

Lastly, The National Park Service is finalizing an Inventory and Monitoring program that includes a park wide assessment of selected streams in Glacier National Park. The initial focus of such monitoring would be on streams that enter the Flathead drainage. A "straw man" draft of this water quality assessment was discussed at the Flathead drainage Science Conference that was held at park headquarters in the fall of 2005. Attached is a current draft of this study proposal (*North Fork of the Flathead Basin: ROMN Stream Protocol Development and Pilot Project*) When this study design is finalized, copies will be provided to the BC Environmental Assessment Office, the Canadian Environmental Assessment Agency, and to Cline Mining.

Sections 8.2.2 Baseline Conditions – Water Quality and Aquatic Resources

In the Flathead drainage, a description of baseline conditions should extend at least as far south as the international border.

Section 8.2.3 Assessment of Potential Effects, Mitigation Measures, and Residual Effects – Water quality and Aquatic Resources

Similarly, the assessment of potential impacts should extend at least as far south as the international border.

The T.O.R. needs to include an annotated bibliography of existing studies, so as to help ensure that these are utilized as Cline develops its application. Glacier National Park can help assemble such existing information.

Section 10 – Vegetation and Wildlife

Vegetation should be a separate section from wildlife as the wildlife section is likely to be extensive and it would be difficult to address vegetation in the same section.

Wildlife impacts from this mine would likely be felt not only in British Columbia, but in Alberta and Montana as well. The T.O.R. needs to thoroughly describe the international aspects of wildlife movements in the Flathead drainage. In the past 12 years no fewer than 6 graduate student studies (both MS and PhD) have been completed that document movements of elk, mule deer, moose and wolves between the Montana and BC portions of the Flathead drainage. In addition, Canadian researcher, Bruce McLellan has documented grizzly bear movements back and forth across the international border and across the continental divide (Waterton N. Park). Diane Boyd's wolf research during the 1990's documented utilization of the Foisey Creek drainage by both wolves and elk. All such existing wildlife information needs to be carefully laid out and then evaluated from a mine impact standpoint as well as from a cumulative effects standpoint.

Considerable effort needs to be expended to document what is already known about such transborder wildlife movements and to then assess the impacts of the industrialization that Cline's proposal represents in this largely undeveloped valley

Bibliographies of past research and other data collections exist. In addition, some authors have summarized exiting wildlife data in reports such as John Weaver's *The Transboundary Flathead – a Critical landscape for Carnivores in the Rocky Mountains*.

A baseline description is needed for vegetation, as well as for wildlife—one reason it would work better to separate the two sections. Are the plant communities intact, or have they been disturbed by humans? What is the level of weed species present? What percentage of the surrounding region is pristine vs. disturbed? Conduct and include data from surveys for rare species throughout the area proposed for disturbance. These should be conducted in spring, summer, and fall for plants (e.g. May, July, September depending on local phenology), and should include all seasons for wildlife (possibly monthly surveys).

Vegetation samples should be collected and assayed for baseline conditions, so comparison monitoring can detect changes in vegetation due to potential pollutants. Baseline surveys should also describe current community composition and diversity of vegetation communities (by type) prior to disturbance.

If rare or sensitive communities or habitat types are included in the project area, describe their extent both in the project area and in the region, and list how impacts to these communities would be prevented or mitigated.

A section should also be included which describes the cumulative impact of past, present, and reasonably foreseeable activities. What has been the impact on vegetation caused by the 36 drill holes, 875 meters of surface trenching, local logging operations, and other past activities? What projects besides this are currently occurring in the area, and what are other projects are in planning stages? What is the overall impact of all of these activities when combined with the proposal? Cumulative effects should be addressed for all discussion topics.

Section 13 – Land Use

This section (and perhaps in Section 15 as well) needs to provide a thorough review and impact assessment of land use planning in both the BC and Montana portions of the transboundary Flathead drainage. Please see the attached documents prepared by US officials:

North Fork of the Flathead Conceptual Strategy (1992)

Points Montana and the United States would like British Columbia to consider in its new planning process for the Flathead River Basin (2002)

The wide range of protections afforded this valley in the US (statutes, special designations, zoning ordinances, etc.) are designed to protect the drainages near pristine ecosystem. The International Joint Commission acknowledged such efforts in 1988 in its report entitled: *Impacts of a Proposed Coal Mine in the Flathead River Basin*. The IJC specifically called for a strong, binational planning effort and recommended:

The Governments consider, with appropriate jurisdictions, opportunities for defining and implementing compatible, equitable and sustainable development activities and management strategies in the upper Flathead River Basin.

To date, no such international, basin wide planning effort has occurred. This is despite repeated efforts to initiate such a process on the part of governmental officials in Montana and the United States. Given the importance of this drainages resources and the threats there to on both sides of the border, the need for such a planning effort is great, especially given the submittal of the Cline application.

Section 14 – Socioeconomic Considerations

The TOR does not address the need to assess economic or social valuation of wildlife and habitat impacts relative to the development. What will be the costs of lost hunting/fishing/trapping/viewing opportunities to local economies?

This section should also discuss impacts to the state of Montana and in particular to the Flathead drainage south of the International border. The Flathead River (called the North Fork of the

Flathead River in the US.) forms the western boundary of Glacier National Park. This valley is renowned for its wild character, its beauty, its remoteness and its abundant wildlife. All such characteristics carry with them real economic benefits to the Montana's Flathead County and in a broader sense to the entire State of Montana. Similarly, the section on socioeconomics should discuss impacts to the Province of Alberta and in particular to Waterton Lakes National Park which is located just across the continental divide from the Flathead River of BC.

Section 15 – Socio-Community, Socioeconomic, & Health

The scope of the assessment should be expanded to include lower portions of the transboundary Flathead drainage including Glacier National Park and other areas south of the International border. Regional communities such as Columbia Falls and Kalispell MT should be included in the assessment.

**May 2, 2006 United States Department of the Interior, National Park Service
RE: Review of Cline Mining Corporation Lodgepole Coal Mine Proposal (File:
“2005 LODGEPOLE Fisheries Draft Report (Updated March 11).doc”)**

Reviewed by:

Dr. E. William Schweiger

**Ecologist, Rocky Mountain Inventory and Monitoring Network
National Park Service**

The following comments offer a general review of the draft fisheries assessment by Cline Mining Corporation and/or its contractor (Cline) dated March 11th, 2006. Overall the assessment and Cline’s protocols are incomplete and have some significant scientific and technical shortcomings. Given these problems, it is unlikely that the current description of baseline conditions is accurate or defensible.

The main problem with the approach taken by Cline is the lack of a statistically appropriate methodology for selecting sample sites (both in space and time) and generating inferences or predictions from these data. This applies to both the empirical data collected by Cline as well as the summarization of existing data generated by others within the likely affected watersheds. Section 3.5 of the report summarizes the key areas of potential impact from the mine and associated activities (sedimentation, nutrient inputs, road/bridge construction and operation/use, waste dumps, increased angling pressure, and alteration of groundwater input). While Cline’s list is incomplete it still demonstrates the distributed, possibly cumulative effects on stream integrity that the mine and associated activities will create. A true baseline assessment of aquatic conditions and/or the fishery must incorporate either a robust survey design coupled with appropriate design-based inference and/or a well defended and supported model-based approach to generate loadings and flux. Cline does neither of these and therefore the data collected and summarized have no basis for generating confidence intervals or any other estimate of uncertainty in their results (statistics) or predicted conditions. While there may be limited value (see below) in Cline’s general narrative summary of basin conditions and the site specific estimates via a pseudo experimental design (repeat visits after mining commences), they are glaringly insufficient given the scale of possible impact in the basin from mining activities.

Cline claims to use “representative” sites yet offers no methodology or defense of this site selection for either the close proximity reaches or the data and results compilation from the “broader study area”. Given well known local and meso-scale spatial variability in stream physical habitat and biota (especially benthos and periphyton) the targeted site selection is likely inadequate and the true degree of representativeness is both unknown and unquantifiable. While water chemistry is probably better mixed (vs. habitat and biota) at the scale of the basin, this is an untested assumption and the study should acknowledge the uncertainty in extrapolating water quality data from point grab samples to unsampled locations. A correct approach would use both a survey (*sensu* the sample design developed by the US EPA Environmental Monitoring and Assessment Program (EMAP)) and a model-based protocol (such as that used by the USGS NAQWA program). Both of these programs couple the analytical (inference) methods to the sample design and can generate estimates of uncertainty.

The site level and specific analytical methods also have several problems:

1. Cline uses single or few index periods for sampling. For the physiochemistry measure this is clearly insufficient given the temporal variability of the hydrograph. Cline does not even really offer a cogent defense of the time periods in which they sample. The flashiness of system is evident in Cline’s failed September 2005 sample event.

2. The sample reach length of 100 meters may not be long enough (e.g., does it capture sufficient meander cycles?) and in general a fixed sampled reach size is inappropriate. Cline offers no defense of their chosen sampled length. While no sample objectives were really articulated by Cline, if we assume (for example) that Cline would like to capture at least 90% of the fish taxa in a sample reach, a large body of research suggests a sampled length closer to 40 times the mean wetted width would be preferred.
3. It is likely that the channel morphology and substrate methods are inadequate. Bedform and substrate type exhibit marked local spatial structure and more robust methods are needed to quantify this. The full suite of EMAP methods (in situ) or, where applicable, the remotely sensed channel and floodplain analyses advanced by the Flathead Lake Biological Station (FLBS) should be employed.
4. There is no attention given to the hyporheic zone. Cline's own (general narrative) results and significant research in other systems (e.g., by FLBS) clearly suggest that there are real and important ground water interactions occurring in these kinds of habitats. Therefore, a robust sampling of ground water systems (hydrology, water chemistry and hyporheic macroinvertebrates) is needed.
5. A Surber sampler is, depending on flow and depth characteristics of the sampled reach, potentially flawed. Many organisms likely floated past the net opening, thus Cline's benthos estimates are probably depauperate. The FLBS has a preferred protocol for the types of streams in the North Fork and Elk basins.
6. They need a citation that justifies the benthos sub-sampling and picking protocol. How many individuals were picked and identified? What percent of the total sample is this? Was a species-effort curve developed?
7. The exclusive use of a single diversity index (Shannon Wiener) to summarize the assemblage data is inadequate and inappropriate. There are much more informative multi metric indices and RIVPACS O/E models that have been developed for western BC, the State of MT and the Northern Rockies ecoregion for benthos and periphyton. These would resolve community responses much better. Cline's reasoning behind benthic diversity and equitability is simplistic and in lieu of more robust data on community composition in the study reaches and broader area, it is unknown if the community state described by Cline exists.
8. There was no literature cited section in the version of the document reviewed.

Finally, the results provided by Cline are insufficient and must be preliminary or incomplete in this draft of the report? There is no real enumeration (tables, etc.) of their results, no summary, or a report from the broader study area review? Cline provides narratives that are somewhat subjective. The description of stream morphology, LWD density, substrate types, etc. should be replaced with quantitative (repeatable) empirical data. The little numerical data that is provided does not even have simple estimates of variability (e.g., sample variances) and there is no indication that Cline recognizes the importance of the multiple components of variation that impact monitoring data and the subsequent power of statistics generated.

For all of these reasons (and likely others) the assessment by Cline Mining Corporation and/or its contractor is insufficient and will not provide an adequate baseline by which impacts of mining may be judged using a quantitative and statically valid approach.

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May 4, 2006 Montana Department of Fish, Wildlife and Parks, RE: *Comments on the Scope of Work 2006: Fisheries and Aquatic Resources Assessment*

5/4/2006

REF:MD026-06

TO: Montana/CSKT Delegation of the Lodgepole Coal Mine working group

FROM: Mark Deleray

SUBJECT: MFWP Comments on Lodgepole Mine Scope of Work 2006: Fisheries and Aquatic Resource Assessment

I have reviewed the Scope of Work for 2006 and the following are my comments. Please include these as necessary with comments from other reviewers.

Sec 1.0 Introduction: It is stated that the baseline program will be increased for the "...purpose of evaluating and mitigating potential impacts associated with the project, and to provide a benchmark for future monitoring during operational, decommissioning and reclamation phases." It is my opinion that the proposed methodology and sampling strategy described in the 2006 Scope of Work will not provide quantitative or comprehensive data to fulfill the above purpose. MFWP reiterates our previous comments that the sampling design is too limited in scope and study area, insufficient in time frame, and is not statistically valid or defensible. Knowledge of existing resources is required in order to evaluate and mitigate for project impacts. Specifically for fisheries resources, presence and distribution of fish species, their life history, seasonal habitat use, and population status are required information to determine potential impacts.

Sec 2.2 2006 Study Reaches: The document states that in 2006 there will be 16, 100m long representative study reaches surveyed. It is important to describe how the number, length, and locations of the sites were determined. These parameters should be determined based on the information needed to achieve the purpose of the assessment. If these sites are meant to represent other reaches of stream, their representation should be described and there should be sufficient number of sampling sites to sufficiently capture variation observed in resources of the larger stream reach. A quantitative and statistically rigorous approach should be taken.

Sec 2.2 Study Timing and Summary of Activities: Specific survey activities should address specific data needs of the assessment. The proposed surveys are to determine the productive capacity of stream habitats through temporal and spatial comparisons of habitat capability and utilization. Knowledge of fish species and their life histories, including seasonal use of habitats, is required to do this (see above comment under Sec 1.0). This survey methodology will not provide these data.

The winter season is not included in the 2006 sampling period. We believe this will limit the ability of sampling to address habitat capability, utilization and productivity of the

area. The availability of suitable winter habitat may be a limiting factor for the fish populations. These habitats need to be identified and assessed.

The modeling methodologies chosen to estimate habitat capability and productive capacity of stream reaches and the assignment of capability ratings for species and life history stages need to be fully described and supported by referenced literature. How this approach will determine the parameters needed to assess the potentially impacts of the project to fisheries resources should be described.

Table 1. The timing of the proposed cutthroat trout spawning survey in April to early-May is likely too early. Cutthroat trout spawn on the descending stream hydrograph and peak flows will usually occur after this timeframe. Cutthroat trout will likely start spawning after the proposed survey dates and into June. The proposed survey will likely miss characterize habitat suitability and utilization by cutthroat trout. In addition, the availability of spawning habitat throughout the study area should be determined and the reach lengths for spawning surveys should be described.

Sec 2.2.1: The description of cutthroat trout life history provided in this section should be referenced with appropriate reports and survey data. The timing for spawning, limit on size of streams used for spawning, and emergence dates do not appear typical for cutthroat trout in Flathead River tributaries. The proposed survey dates should be modified if the intent is to assess these or related characteristics of the cutthroat trout population.

Sec 2.2.3: Groundwater availability is an important characteristic of spawning and over wintering habitats. The availability and quantity of upwelling groundwater should be assessed to determine availability and quality of spawning and over wintering habitats.

Sec 3.1: MFWP has collected over 25 years of data and written over 30 publications assessing fisheries resources in the North Fork of the Flathead Drainage. Some of these data are from the Flathead River and tributaries in British Columbia. All of these data should be considered in the ongoing review of fisheries and aquatic resource information.

Sec 3.2.1: The biological and physical characteristics being surveyed should be done quantitatively. Percent composition of the streambed should be done using coring techniques and not by an ocular means, if quality of spawning habitat is being assessed. Groundwater quantity and distribution should be determined. All stream characteristics that will potentially be affected by the mine project should be measured.

Sec 3.2.4: The number of samples needed should be determined by the observed variance in initial sampling. Sampling will be needed more frequently, such as over monthly intervals, to capture seasonal changes in the benthic community.

Sec 3.2.5: This section describes a wider timeframe to assess cutthroat trout spawning than did earlier sections of this document. The later dates mentioned here are more suitable; however, spawning may continue past late June.

The electrofishing methodology provided will at best provide qualitative information and will likely be incomplete. In these relatively short and unconfined stream reaches, fish may avoid the sampling gear, especially larger fish, which will provide misleading information when assessing presence of fish species and life histories. This may also be true for detection of juvenile tailed frogs.

The methodology described will not provide reliable and statistically robust estimates of catch-per-unit-effort. If estimating CPUE and sampling variance is a goal of this survey, a much different methodology would be required as would repeat sampling over multiple years.

Sec 4.0: The sampling design described in this document will not produce a report that will "...describe and quantify existing fisheries and aquatic resources". Nor will it provide an understanding of fish species life histories needed to discuss all potential impacts of the mining proposal. The inability to assess all potential impacts will not allow for necessary mitigation plans required to minimize impacts to fisheries and other aquatic resources. The proposed scope of work will not provide the information needed to produce the quality of data and report that is described in this section.

July 6, 2006 United States Department of the Interior, Fish and Wildlife Service, RE: *Lodgepole Project Working Group for Cline Mining Corporation's Application for an Environmental Assessment Certificate Pursuant to the Environmental Assessment Act, Wildlife Technical Subcommittee*

Re: Lodgepole Coal Mine Proposal Impacts

Comments provided during and subsequent to the July 6, 2006 Wildlife Working Group meeting by Chris Servheen on behalf of the US Fish and Wildlife Service.

From the US perspective, this project is viewed as a landscape-level project; the health of the Flathead Basin ecosystem on the US side is due to efforts to minimize detrimental impacts on public lands.

Chris is unclear if the end goal of this wildlife impact assessment is management to minimize impacts during operation, or to remediate/reclaim when the mine closes.

EAO indicated that both operational minimization of impacts and mine remediation are management goals to be addressed during the wildlife impact assessment.

Four grizzly populations cross the international border area in the Flathead region, and this project has the potential to fracture grizzly populations in the US. Twenty years of mining would be equivalent to two generations of grizzlies, and it is difficult to remedy a significant interruption to these populations. Logging has been ongoing, but does not happen in the winter.

Ongoing improvement to Highway 3 near Fernie and Crows Nest Pass and ongoing development of the Fernie area may have significant impacts to grizzly bears. The Lodgepole mine and its haul road have to be put into the context of all of these developments; impacts of this mine will cumulatively interact with the other developments, and therefore, need to be included as part of the impact assessment.

There are also other proposed mines and extensive coal reserves in the Flathead as well and coal bed methane development interest; therefore any consideration of the impacts of the Lodgepole mine and its haul road need to be evaluated in this context. This project has the potential to facilitate and accelerate the development of other coal mines and coal bed methane drilling and extraction, which would cause a significant impact to this ecosystem. Once the Lodgepole haul road exists and electric lines are built into the Flathead, further energy development will require only extensions of the road and the electric system. Any evaluation of the development of the Lodgepole mine must evaluate the probability and impacts of the development of other energy projects in the Flathead basin. The development of the Lodgepole mine will result in multiple impacts beyond the mine site and haul road location including: a higher speed and heavy capacity haul road into an area that currently has only low-standard timber roads; the creation of electric power facilities deep into this drainage that currently has no electric service; and

continuous winter human presence, road plowing, and industrial operations in an area that is currently not open to anything but snowmachine winter travel. It is not credible or logical to evaluate the Lodgepole mine solely in the context of its immediate, direct impacts. A thorough and credible assessment would evaluate the ancillary impacts such as facilitating the development of other energy extraction actions in the Flathead and increasing the human impacts of presence, recreation, and development throughout the Flathead drainage.

Comments on Workplan:

Self-correcting capacity of the ecosystem... Servheen has an issue with this, because the other developments reduce the ability of the environment to correct itself when Lodgepole Project impacts are included. Restored ecosystems are inferior to intact, relatively undisturbed ecosystems. The existing, complex processes and ecological interactions between organisms, hydrologic regimes, and plant and animal communities can never be recreated or replicated once they are disturbed and destroyed by major human developments.

Need to consider all land developments and their impacts on key species. For example, as traffic volume increases along Hwy 3, female bears may stop crossing the highway, so it will be impossible for the ecosystem to self-correct.

Extrapolation of population density: need to think about individual behaviour among the bears. Avoidance of this area is expected should the mine go ahead. Over two generations of bears may avoid this area and this will be a significant population-level impact. The population-level impacts of concern could happen due to probable changes in survival, habitat use, dispersal, feeding, and seasonal movement patterns. These impacts will likely occur to at least 2 generations of grizzly bears, and multiple generations of other species including lynx, wolverine, wolves, fisher, mountain lions, and black bears. The single largest impacts on wildlife, however, will be increased mortality and displacement due to the increased human use of the area resulting from road improvements, year-around access, and increased human activity.

From the U.S. Fish and Wildlife Service point of view, in order to judge the impacts of this activity, you need baseline data for the entire area including the access route; 3-5 years of data are needed to capture the baseline data with which to judge impacts; and will need to consider other land developments as part of the assessment. There are numerous other sensitive carnivore species in addition to grizzly bears that will also be impacted by this mine including lynx, wolverine, fisher, wolves. Baseline data must be developed for these species as the proposed project will impact them. The degree of impact and the cumulative effects of multiple species impacts are necessary for a credible biological evaluation.

Regional study area based on movement of species, as Garth suggested, would give very large areas, more than the 8 sq km.

Access and traffic is a problem for bear and moose and other sensitive species and will create a potential fracture zone between the proposed mine and the railhead. Traffic volume will be approximately one truck every 5-10 minutes 24 hours a day (2 million tons coal/year = 2 million ÷ 365 = 5479 tons/day ÷ 50 tons/truck = 109 trucks/day ÷ 24 hours = 4.56 trucks/hour out + 4.56 trucks/hour in = 9 trucks/hour or 60 minutes ÷ 9 = one truck every 6.66 minutes 24 hours/day,

365 days/year plus the workers travel, supplies, fuel, and maintenance vehicles). All this traffic has the high potential to alienate and fracture, and displace wildlife populations in riparian areas along the haul road and increase wildlife mortality through collisions with vehicles.

Climate change impacts should also be considered due to the trend in northward and altitudinal shifts in species range (6.1 km/decade northward or 6 meters/decade higher in elevation) (C. Parmesan and G. Yoder. 2003. A globally coherent fingerprint of climate change impacts across natural systems. *Nature* 421:37-42.). This change will have significant impacts on plant species and animal species. Ironically, such climate change results from increases in release of carbon such as CO₂ from the burning of fossil fuels, primarily coal (each ton of coal produces approximately 2.5 tons of CO₂ when burned; thus, at a production of 2 million tons/year over 20 years, the coal from the Lodgepole mine will produce 100 million tons of CO₂). Given that this is a new coal mine that, if approved, will result in a net increase in CO₂ production that will directly contribute to additional global warming, it seems especially relevant to consider the impacts of global warming on wildlife species and their key food species in the mine influence area.

Another issue in the consideration of this mine is the external costs associated with this much carbon production. External costs are those resulting from the activity (in this case increased carbon production from coal burning contributing to continued global warming), which are rarely directly paid for by those accruing benefits from the action (in this case mining and selling the coal). Four external costs of increasing carbon in the atmosphere are of direct interest to the people and economy of British Columbia: 1) rising sea levels and the resulting impacts on coastal communities and infrastructure; 2) impacts to coastal fisheries by invading alien fish species and changes to currents and water temperatures; 3) conversion of forest cover in significant areas of Canada and the rest of the planet to grassland biomes (see Scholze, M, W. Knorr, N. W. Arnell and I. C. Prentice. 2006. A climate-change risk analysis for world ecosystems. *Proc. Nat. Acad. Sci.* 103:13116-13120); and 4) impacts on forest industries due to increases in fire regimes as changes in average rainfall and temperature continue. Externalizing these costs to others allows the production of this coal and the economic consideration of this mine by the proponents. If the proportional economic costs of the resulting impacts of this carbon production from the Lodgepole mine were to be paid by the proponents of the mine rather than externalized to others, it is unlikely that they would be interested in the development of this mine. The significant ecological impacts are also a biological and ecosystem cost as well as an economic cost. These ecological costs should also be added to the cost of the coal when considering the true cost of the mine rather than externalizing these costs to taxpayers and other affected publics.

When one considers species and their status, resource management agencies often use terms like species at risk or threatened or endangered species. Fundamental to the status of these species is the amount and availability of habitat to meet their needs, and the level and type of human activity within the areas they need to survive. Land ownership patterns and levels of human development in the interior Rocky Mountains have resulted in development in almost all mountain valleys with paved, high-speed highways and railroads, contiguous human site developments including homes, agriculture and industry; and rural electrification that accelerates human development.

The fact is that few large mountain valleys in the interior Rockies outside of formally designated national parks remain undeveloped. The Flathead is one of these few large mountain valleys and one of the few watersheds crossing the international border not developed in this way. Along the US-Canada border there are few places with a full compliment of native species due to the level of human development. There are even fewer transboundary places with a full compliment of large carnivores. Thus, the Flathead is a rare area in that it is: 1) a transboundary large watershed with no paved highways, contiguous human site development, or electricity; 2) it has the full compliment of native wildlife species still present; and 3) it has all the large native carnivore species still present. If we return to terms like species at risk or threatened or endangered species, it is clear that the Flathead watershed itself is a watershed at risk and it is threatened or endangered by development. The current status of the Flathead makes it one of the rarest transboundary landscapes in North America. Industrial development on the scale of coal mining and other energy production will be an irretrievable commitment, and the unique and rare status of the Flathead will be gone forever if coal mining and energy production is allowed in this watershed. We cannot create or re-create such places. We can only make decisions to preserve them or to eliminate them. That decision to preserve this rare place or to eliminate it forever will be made with the decision on the Lodgepole mine.

The Flathead basin area has the highest level of US protection and is the healthiest drainage that crosses the Canadian-US border; it should be treated accordingly.

**September 19, 2006 State of Montana, Department of Fish, Wildlife and Parks
RE: *Lodgepole Project Revised Draft Terms of Reference for Cline Mining Corporation's Application for an Environmental Assessment Certificate Pursuant to the Environmental Assessment Act***

Mark Deleray, Montana Fish Wildlife and Parks

The following comments regard inadequate treatment of concerns previously provided to Cline Mining Corporation in April, 2006 for consideration in revising the Terms of Reference (ToR). I will reiterate these here since they are still relevant and affect the fisheries resources of Montana.

4.5.4 Baseline Conditions, Fisheries:

- The project study area is too limited. For Application to assess impacts to migratory westslope cutthroat trout and bull trout, which use the entire Flathead River and Elk River/Lake Koocanusa drainages, the project study site must be expanded to include all receiving waters in these drainages, such as the Wigwam River downstream of Lodgepole Creek and all along the haul route. Baseline fisheries data from the entire Flathead and Elk Drainages are needed to assess the significance of potential impacts near the project to the wider distributions of these species and the associated downstream fisheries. Migratory westslope cutthroat trout and bull trout are resources shared by British Columbia and Montana. Impacts to spawning and rearing habitat at or near the proposed project will affect the status of these fisheries in Montana, including Flathead Lake and Lake Koocanusa. The Assessment must consider impacts at this scale. The Draft ToR does not provide for this.
- The proposed baseline fisheries program will identify fish presence, fish habitat, water quality, and seasonal flow effects but it is inadequate. It does not, but must, provide the means for a quantitative assessment of westslope cutthroat trout and bull trout population demographics including juvenile and adult densities, life history strategies, and use of spawning and rearing habitats. These data are required to allow the Application to assess potential affects of the project. In addition, data across the extended drainages (Flathead River and Lake and Elk River and Lake Koocanusa) are needed to assess the impacts of the project and fisheries losses at the immediate site to the wider distribution and status of these migratory species. Three to ten years of quantitative survey data would be required to establish baseline information to assess impacts of the proposed project on the larger populations.
- In the Lodgepole-ToR Issues Tracking 26Aug2006 document, the project Proponent states in ID #s 138 and 155 that there is an agreement between the Proponent and the BC regulatory authorities and BC Ministry of Environment that only one year of baseline data collection would be required. If so, is this agreement available for review?

6.9 Aquatic and Fisheries Resources:

- Prediction of potential impacts includes assessment of potential for affecting fish habitat in Foisey and Lodgepole Creeks and the Elk and Flathead Rivers. There should also be predictions for all receiving waters including the Wigwam River, Lake Koocanusa and Flathead Lake. Also, the Assessment should include predictions of impacts not only to habitat but predictions of impacts to specific characteristics of the migratory fish

populations, including abundance and distribution near the site and in terms of impacts to these species across the drainages.

- Specific mitigation and management measures for aquatic and fisheries resources should include all six measures included under 6.13 Wildlife on pages 24 and 25.

7.0 Cumulative Effects Assessment:

- The cumulative effects assessment will consider effects within the “specified cumulative effects study area boundary and specified timeframe”. In order to assess these effects and those of other projects on migratory westslope cutthroat trout and bull trout populations, the study area boundaries need to be expanded to include the entire drainages used by these fish species. These fish species rely on habitat in the entire Flathead River/Lake and Elk River/Lake Koocanusa drainages. For example, an assessment of cumulative effects to spawning habitat for bull trout must incorporate all spawning habitat in the drainage to determine the significance of impacts to the larger populations.

8.12 Fisheries Protection Plan:

- The Fisheries Protection Plan must also describe proposed mitigation measures for the Flathead and Wigwam Rivers and Flathead Lake and Lake Koocanusa. Any habitat loss to migratory westslope cutthroat trout or bull trout, not only in Foisey, Lodgepole and Crabb Creeks, but also in the Flathead and Wigwam Rivers represents losses to Montana fisheries. Where fish habitat cannot be maintained, the justification for the habitat loss and compensation programs must include all impacted waters and losses to Montana.

October 18, 2006 State of Montana Department of Natural Resources and Conservation RE: *Lodgepole Project Revised Draft Terms of Reference for Cline Mining Corporation's Application for an Environmental Assessment Certificate Pursuant to the Environmental Assessment Act*

October 18, 2006

Garry Alexander
Director, Strategic Policy and Planning
Environmental Assessment Office
2nd Floor, 836 Yates Street
PO Box 9426 Stn Prov Govt
Victoria, B.C. V8W 0V1
CANADA

Re: Lodgepole Project Revised Draft Terms of Reference for Cline Mining Corporation's Application for an Environmental Assessment Certificate Pursuant to the Environmental Assessment Act

Dear Garry Alexander,

I would again like to thank you and Premier Campbell for allowing Montana to participate in the British Columbia's environmental assessment process on Cline Mining Corporation's proposed Lodgepole/Foisey mine. The following reflects the comments of the Montana Department of Environmental Quality, Department of Natural Resources and Conservation, Department of Fish Wildlife and Parks, the Flathead Basin Commission and Glacier National Park.

After extensive review of the Revised Draft Terms of Reference, the above listed State and Federal agencies and the Office of the Governor are concerned that the entirety of our comments submitted on the original Draft Terms of Reference were not addressed in the Revised Draft TOR. The State of Montana submitted 129 comments in total that resulted in no change to the Revised Draft.

In the February 2006 letter of invitation to Montana regarding participation in the Cline Environmental Assessment Working Group, the Environmental Assessment Office stated that the purpose of the Working Group is to review the adequacy of the baseline work carried out by Cline Mining Corporation. As stated in our April 2006 comments, we were concerned by the lack of detail, specificity and overall lack of information presented in the original draft Terms of Reference regarding baseline and impact assessment data needs. The State of Montana submitted over sixteen pages of comments detailing known data gaps and the scope and scale of research necessary to accurately assess the impacts of the proposed Lodgepole/Foisey mine. The National Park Service submitted an additional seven pages of comments regarding the inadequacy of information. However, despite the stated purpose of the Working Group, none of these comments were responded to or reflected in the Revised Draft.

Given that the comments of the State of Montana and the National Park Service have not been addressed, we again refer you to the entirety of the original comments submitted, which are contained in the documents referenced at the end of this letter. In addition to these comments, we would like to emphasize the following:

The Need for a Transboundary Basin-Scale Baseline and Environmental Assessment

At the September 2006 meeting of the Working Group, the Proponent stated that the transboundary, downriver impacts of the proposed mine are outside the scope of Cline's Environmental Assessment. Specifically, the Proponent has limited the scope of their EA to the mine site, haul road and loadout facility. The Proponent stated that they would not study the entire ecosystem and watershed of the Flathead River Basin, including water quality, transboundary bull trout and westslope cutthroat and mid and large carnivore populations.

As you well know, the proposed Lodgepole/Foisey mine lies within a region of international ecological significance. The State of Montana and Glacier National Park are downstream and downriver of the proposed Lodgepole/Foisey Project at the headwaters of the Flathead River. The proposed mine poses serious threat to the natural resource values of the Flathead National Wild and Scenic River, Glacier National Park, the world's first International Peace Park at Waterton-Glacier, a World Biosphere Reserve, World Heritage Site and the Crown of the Continent.

The Proponent has agreed to undertake an air quality analysis that includes potential impacts to Montana, Alberta and Waterton-Glacier International Peace Park. It logically follows that the assessment of wildlife, fisheries, water quality, noise and ecological impacts should also extend beyond the international border to encompass the entire Flathead Basin. Given the international significance of this landscape and the legacy of protection and preservation for this landscape, including transboundary populations of species listed under the United States Endangered Species Act (ESA), a responsible and accurate review of this mine must include the potential impacts at the basin-scale.

Lack of Detailed Mine Design Plan and Insufficient Comparison to Existing Open-Pit Coal Mines in the Elk River Valley

In the first meeting of the Cline Mine Lodgepole/Foisey Working Group in March 2006, the Proponent stated that they could not guarantee that the external waste dumps and settling ponds will not fail. At the second meeting of the Cline Mine Lodgepole/Foisey Working Group in September 2006, it was stated that all of the waste dumps in the Elk Valley have failed at least once. At present the Proponent has failed to submit a finalized mine design plan that addresses

the steep topography and complex geology of the mountainous terrain in which the mine is proposed. Specifically, the Proponent cited the following uncertainties:

- Stability of the waste pit walls
- Unknown groundwater regime and hydrogeology of the waste pit walls
- Stability of the footwalls
- Stability of the pit waste rock dumps
- Stability of the plant site
- Stability of waste retention ponds
- Stability of the loadout facility and associated infrastructure

The Flathead River supports rich periphyton, macroinvertebrate, bull trout and westslope cutthroat trout populations. These populations represent a level of diversity and abundance unique to cold, clear clean mountain watersheds and are particularly vulnerable to the type of disturbance posed by the proposed Lodgepole/Foisey open-pit coal mine. The above-listed mine plan and waste dump uncertainties, as specified by the Proponent, pose an unacceptable risk to the integrity of the Flathead River and the fisheries populations it supports downstream of the proposed open-pit coal mine.

Based on these uncertainties, the Lodgepole/Foisey Project Environmental Assessment needs to include the following:

- Documentation of Elk Valley mine failures and the associated impacts
- Documentation of the fish populations upstream and downstream of the Elk Valley mines
- Documentation of the macroinvertebrate and periphyton species abundance and diversity upstream and downstream of the Elk Valley mines
- Documentation of loading of heavy metals in fish tissues, particularly selenium, upstream and downstream of the Elk Valley mines
- Documentation of water quality upstream and downstream of the Elk Valley mines
- Documentation of sedimentation and heavy metals loading upstream and downstream of the Elk Valley mines
- Documentation of nutrient loading upstream and downstream of the Elk Valley mines

Insufficient Response to Data Recommendations of the Technical Subcommittees

We are concerned that the extensive analysis of baseline and impact assessment data needs provided by Working Group Technical Subcommittees has not been incorporated into the Revised Draft TOR, and is therefore, not included in the Environmental Assessment. As documented at the March 2006 meeting of the Working Group, “the purpose of the subcommittees is to provide a forum for discussion, analysis and resolution of key technical issues associated with the proposed Lodgepole Project, and to provide advice to the EAO, the Working Group and Proponent on technical issues.”

As documented in our letter dated September 19, 2006 the state and federal agencies participating in the review are concerned that the expertise invested in the Wildlife, Water Quality and Fisheries subcommittees have not been incorporated into the Revised Draft TOR. For example, at the July 2006 Wildlife Subcommittee meeting, it was confirmed that no baseline data for grizzly bears exists at the proposed mine site. Given this, extensive recommendations were made regarding the scope and scale of baseline data necessary to accurately assess the impacts of the proposed mine on the grizzly bear population of inter-provincial and international significance. Despite this, at present, the Proponent has determined they will not conduct any baseline data collection for grizzly bears.

Insufficient Detail Regarding Cumulative Effects Analysis

Montana has submitted multiple requests for more detailed information regarding Cumulative Effects Analysis (CEA), including a request for a CEA Subcommittee, which has not been established. According to the comments of the United States Fish and Wildlife Service,

“Any evaluation of the development of the Lodgepole mine must evaluate the probability and impacts of the development of other energy projects in the Flathead basin. The development of the Lodgepole mine will result in multiple impacts beyond the mine site and haul road location including: a higher speed and heavy capacity haul road into an area that currently has only low-standard timber roads; the creation of electric power facilities deep into this drainage that currently has no electric service; and continuous winter human presence, road plowing, and industrial operations in an area that is currently not open to anything but snowmachine winter travel. It is not credible or logical to evaluate the Lodgepole mine solely in the context of its immediate, direct impacts. A thorough and credible assessment would evaluate the ancillary impacts such as facilitating the development of other energy extraction actions in the Flathead and increasing the human impacts of presence, recreation, and development throughout the Flathead drainage.”

Finally, as stated previously, the proposed Cline Mine Lodgepole/Foisey Project lies at the headwaters of the Flathead Basin, which is a transboundary ecosystem of global significance. Given the ecological value of this region, we are gravely concerned at the lack of information provided thus far, and the lack of commitment on the part of the Proponent to carrying out the necessary scientific and technical research to conduct an accurate and responsible assessment of the proposed open-pit coal mine. Please refer to the referenced documentation below for a detailed description of the extent of our recommendations on the draft Terms of Reference. Based on the commitment of the Premier, we trust that you will continue to ensure the highest level of integrity for the Cline Mining Corporation Environmental Assessment, given the location of the mine within the transboundary Flathead Basin.

We look forward to our continued participation in British Columbia’s environmental assessment process.

Sincerely,

Rich Moy,
Montana Department of Natural Resources and Conservation



United States Department of the Interior
FISH AND WILDLIFE SERVICE



**GRIZZLY BEAR RECOVERY COORDINATOR
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October 19, 2006

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CANADA

Dear Garry,

Thank you, Garry, and thanks to Premier Campbell for allowing the U.S. Fish and Wildlife Service and the state of Montana and other US Federal agencies the opportunity to comment on and to participate in the British Columbia's environmental assessment process on Cline Mining Corporation's proposed Lodgepole/Foisey coal mine.

The approval of this mine will be an irretrievable commitment of resources in one of the most unique and ecologically important transboundary watersheds along the entire US-Canada border. Logical consideration of the approval or disapproval of this mine requires a credible process. It seems that the most defensible process would involve a stepwise approach that would lead to a logical and fact-based decision. Here is a possible outline of such a stepwise approach:

- 1) Baseline data collection on the existing natural resources in an area appropriate to the influence of the mine and haul road.
- 2) Specific to grizzly bears and key species like wolverines and lynx, determination of the mortality and displacement impacts expected and the number of adult females that would be impacted by the mine and the haul road.

- 3) Determination of the regional population impacts based on an ecosystem population assessment (i.e. a DNA grid survey).
- 4) Determination of the acceptability and sustainability of these impacts at the local and regional population levels.
- 5) Explicit consideration of the domino effect of project approval on accelerating and facilitating further energy development in the area and the expected impacts of these facilitated developments. This could only be avoided by documentation that further energy development in the Flathead will not be permitted should this project be approved.
- 6) Assessment of the cost/benefit ratios of the project benefits with the impacts on all species (with our interests being related to carnivores like grizzly bears, lynx, wolverine, etc; but realizing that there are multiple impacts on aquatic species, water quality, and non-carnivores that also need to be assessed).
- 7) Review of possible mitigation to reduce these impacts and the ability of mitigation to in fact reduce these impacts.
- 8) Assessment of the economic and environmental capability of the project to go forward with these mitigation factors fully funded and in place.
- 9) Project approval/disapproval based on this foundation of information and the results of these assessments.

In my view, project approval requires this stepwise approach with the foundation being adequate baseline information on which to build defensible decisions.

If the current baseline biological data on carnivore species is deemed sufficient, then all determinations on the impact of this mine will be based on extrapolations. Given the irretrievable resource impacts upon approval of this mine project, it is illogical and indefensible to make this decision on extrapolations of data rather than on a foundation of actual biological information collected prior to mine development. I believe that the baseline data on carnivores in the mine area and in the area of the haul road are not sufficient to make a defensible decision using a stepwise approach outlined above. This mine, if approved, will impact grizzly bear recovery in adjacent areas of the US and will impact other sensitive species that we share along the US-Canada border.

We urge you to reconsider a decision on this mine until adequate baseline data are available to make an informed decision on this project.

Thank you again for the opportunity to comment and to participate in this process. We are committed to work cooperatively with you in the Flathead to secure the long-term health of our unique, shared ecosystem in this watershed.

Sincerely,

Christopher Servheen, Ph.D.

Partial listing of studies relevant to the Lodgepole Terms of Reference

Muhlfeld, C.C., B. Marotz, S. Thorrold, and J. Fitzgerald. 2005c. Geochemical signatures in scales record stream of origin in westslope cutthroat trout. *Transactions of the American Fisheries Society* 134:945-959.

Proctor, M.F., et.al., Genetic analysis reveals demographic fragmentation of grizzly bears yielding vulnerably small populations. 2005. *Proceedings of the Royal British Society*. 272, 2409-2416. Published on-line 20 September 2005.

Summit Environmental Consultants, March 31, 2004. Summary of existing baseline water quality data. Prepared for the British Columbia Ministry of Energy and Mines.

Weaver, John.L. The Transboundary Flathead: A Critical Landscape for Carnivores in the Rocky Mountains. The Wildlife Conservation Society, Working Papers No. 18, July 2001.

Weaver, T.M. 2005. Forest-wide fisheries monitoring Flathead. 2005 Annual Progress Report. Montana Fish, Wildlife and Parks.

Zielinski, William J. and Thomas E. Kucera. 1995. American marten, fisher, lynx, and wolverine: survey methods for their detection. Gen. Tech. Rep. PSW-GTR-157. Albany, CA: Pacific Southwest Research Station, Forest Service, U.S. Dept. of Agriculture; 163 pp.