APPENDIX G

COMMENT RESPONSES

Public Comments

Commenter	Comment #	Comment	Response
Augie Albers	1	Consider Zeolite for cleanup to mitigate the hazard.	The goal of the EE/CA is to focus on the comparisons between varying mitigation alternatives. The detailed methods used in the implementation of the preferred alternatives will be derived during the development of the construction plans and specification
Aveleena Feywine	1	"For the uninformed and unwary public, provide on-site signs warning of radioactivity at every entrance as well as beyond."	Thank you for your comment and suggestion
Aveleena Feywine	2	"On the web site: http://www.fs.fed.us/r1/custer/recreation/D3.shtml under "Recreational Activities," include all warnings pertinent to the abandoned uranium mines; the high radioactivity, limits of exposure, dangers of cancer and all precautions against accidental ingestion or skin contact with the dust and breathing the dust."	Thank you for your comment and suggestion
Aveleena Feywine	3	Provide all information to the SD Game Fish & Parks, mail or hand out packets with the above information to everyone who applies for hunting or fishing license in these areas.	The South Dakota Game, Fish and Parks has been provided this information.
Aveleena Feywine	4	Test all game and fish for contamination and publish the results in language lay persons can understand.	Thank you for your comment and suggestion. This would be outside the scope of an EE/CA
Aveleena Feywine	5	Inform the SD Cattlemen's Association of the dangers posed to ranchers and their stock.	Thank you for your comment and suggestion. This information is available to the public at large.
Aveleena Feywine	6	Test all meat raised in the area and publish the results; labeling where the meat that people are eating was raised.	This is beyond the scope of an EE/CA
Aveleena Feywine	7	Conduct medical research targeting Harding County and all communities touched by the fall out from these mines; include data for cancer, miscarriage, tumors and birth defect rates for the past forty years.	This is beyond the scope of an EE/CA
Aveleena Feywine	8	And last but not least, the subject most dear to all our	Thank you for your comment and suggestion

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		hearts; our children and how they are going to be educated. How will we teach our most vulnerable to minimize their exposure to the toxicity that exists all around them? I strongly encourage the development of curriculum K-12 that will provide teachers, parents, and students with all the knowledge necessary to keep them safe, whole and healthy. 1.) Provide weekly lesson plans, handouts, and power point presentations in language that can be understood by children. 2.) Visual aides; pictures of disturbed areas and what to avoid. 3.) Create documentary videos, Internet information. 4.) Drills on how to mitigate risks; accidental ingestion, skin contact, and dangers of breathing the dust. 5) Provide public service warnings to all SD newspapers, television, and all radio stations, especially those that are listened to by teens and young adults. 6.) Discourage all church groups, educational field trips, youth groups (Indian and non-Indian), camp-outs, horse back riding and hiking in contaminated areas. 7.) Provide all this information to the Tribes that have historically used this site for sacred ceremony.	
Aveleena Feywine	16	Allow this information to include the historical and unvarnished truths that U.S. government backed mining companies have been allowed to generate billions of dollars in profit without ever having to take responsibility for its clean-up or compensate tax paying citizens who have born the brunt illness, death and financial loss as a direct result of heavy metal	This is beyond the scope of an EE/CA
Aveleena Feywine	1	The FS needs to notify visitors to the site that there are human health and safety issues and what they are.	In 2000, letters were sent to local, known users and those that commented on the 1990 Environmental Assessment. Hazard warning signs were placed at bluffs of highest concern. Recently several public meeting have been held to educate the public. Public meetings will continue to be held throughout the project.

Commenter	Comment #	Comment	Response
Bill Rotenberger	1	Bill wanted to know what steps would be taken to get his comments on what would be done on his private land.	The implementation of any mitigation actions at the Riley Pass mine sites will need to include those private lands shown to be impacted by the historic mining activities. This will include the involvement of the land owners.
Bill Rotenberger	2	He has questions on the impacts to his land and whether or not he would ask for and/ or receive compensation for the damage to his land.	Compensation issues are not addressed in an EE/CA. The implementation of any mitigation actions at the Riley Pass Mine sites will need to include those private lands shown to be impacted by the historic mining activities. This will include the involvement of the land owners.
Bill Rotenberger	3	He requested meetings with FS personnel.	Meeting with the landowners will continue to occur
Bill Rotenberger	4	"There has been no testing of private lands to determine how contaminated the surrounding area is."	Testing on private lands is beyond the scope of this EE/CA. The goal of the EE/CA for the Riley Pass Mines Site is to identify any potential risks to human health and the environment, identify the degree of risks, outline potential alternatives for the mitigation of the risks, as well as, the effectiveness of the alternatives in mitigating the risks on National Forest System Lands.
Bill Rotenberger	5	" I have not been contacted as to if or how the forest service intends to remove the soil which has slid onto my land (Bluff H)"	Any removal actions taken at the various sites within the Riley Pass Mines Site in which contaminated material on private lands that are associated with the historic mining activities will need to include the removal or mitigation action. In so doing the local land owner will be involved in planning and implementation of any removal action.
Bill Rotenberger	6	"I would also question as to why the high bluffs would not be used (knocked down) to help cover the highly contaminated areas. I think those areas where alternative 5 is proposed it should be Alternative 6."	Conventional methodologies do not address mitigation of risks associated with physical hazards (e.g. high walls); consequently, no additional risk reduction is planned at the Site.
Bill Rotenberger	7	"I also have some serious reservations using the spoil piles as cover for the sites. I believe there should be fresh uncontaminated soil to cover the area."	Material used for final capping will be tested as part of Quality Assurance/Quality Control Plan that must be completed before the removal action begins. It may be necessary to use capping material from another source.

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Bill Rotenberger	8	" The Forest Service must address, validate, and specifically quantify the Health Risks."	Chapter 5.0 of the Final Draft EECA addresses human health risks.
Bill Rotenberger	9	A portion of bluff H exists on private land. FS needs to involve the landowner in the mitigation of that bluff.	Any hazardous materials found on private lands that originated from the Riley Pass Mine Sites on Forest Service land would be included in the removal action. Any action proposed on private lands would be completed after consultation with the landowner.
Bill Rotenberger	10	There is a concern that the spoils contain hazards. Using them to cap the other areas may not be sufficient.	Material used for final capping will be tested as part of Quality Assurance/Quality Control Plan that must be completed before the removal action begins. It may be necessary to use capping material from another source.
Bill Rotenberger	11	FS needs to monitor air quality, and control dust during cleanup	A Health and Safety Plan must be developed prior to implementation of the removal action
Bill Rotenberger	12	FS needs to monitor workers for exposure to containments of concern during cleanup	A Health and Safety Plan must be developed prior to implementation of the removal action
Bill Rotenberger	13	FS needs to monitor ranchers in area for exposure to containments of concern during cleanup	A Health and Safety Plan must be developed prior to implementation of the removal action. The Plan will include those directly impacted by activities at the Site.
Bill Rotenberger	14	Consider Alternative 6 for G, B and H so that the highwalls are removed.	Conventional methodologies do not address mitigation of risks associated with physical hazards (e.g. high walls); consequently, no additional risk reduction is planned at this site.
Bob Johnson	1	Beef should be tested now for retention of radioactivity, metals in muscle tissue that is commonly consumed by humans. (FS may have elevated risk #'s by assumptions that had not been tested.)	This is beyond the scope of an EE/CA
Bob Johnson	2	Concern off-site hazardous sediment movement onto PVT land.	Any hazardous materials found on private lands that originated from the Riley Pass Mine Sites on Forest Service land, would be included in the removal action. Any action proposed on private lands would be completed after consultation with the landowner.

Commenter	Comment #	Comment	Response
Bob Johnson	3	Will we be fenced out of our own property (private) if we allow EPA to test?	Actions taken on private lands would be conducted with the cooperation and input of the private land owner. The Forest Service has no intention of taking any innocent party's private property.
Bob Johnson	4	If the total estimates are thought "too much" by the "powers that be" will nothing get funded and nothing done. (risk to small; rural populations is large, urban population question)	Priorities at Riley Pass Mines Site is the protection of human health and the environment. Therefore actions will be taken to the degree that mitigates those risks to human health and the environment.
Calvin Hoisington	1	"I would like to see the land reclaimed back to it's original state."	Removal actions are proposed that would remove the elevated levels of hazards. This does not mean the area will be returned to its original state - it means hazards will be mitigated.
Calvin Hoisington	2	"The low grade tailings spread out over the mine site and covered and seeded down with grass to stop run off. "	In many of the cases the low grade tailings are proposed to be used in the preferred alternative for the individual bluffs to break the contamination pathways between the contaminates and humans or the environmental receptors.
Calvin Hoisington	3	"I know that this may seem cost prohibitive yet how do we put a cost on life".	The main goal of the EE/CA and resulting removal actions is the protection of human health.
Chad Rotenberger	1	"My concern is with the use of the spoil piles and overburden." "... and will it not be necessary to bring in non-contaminated surface & topsoil to cover the overburden."	Material used for final capping must be tested as part of Quality Assurance/Quality Control Plan that must be completed before the removal action begins. It may be necessary to use capping material from another source.
Chad Rotenberger	2	"How much of the toxic material is going to become airborne with the reclamation of the material"	All construction actions that have been taken in the past and those that will be taken in the future have and will continue to abide by Federal and State laws requiring the protection of the workers and the public form any hazardous materials and actions. In addition those laws and guidance that calls for the prevention of material from leaving the site and impacting the environment (including the air and water resources) will be followed. All actions will require health and safety plans.
Charles Verhulst	1	Concern regarding Permittee use of area when reclaiming is being done.	Discussions between the Forest Service and grazing permit holders of the area will occur prior to and during any removal actions to assure safety is properly managed.

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Charmaine Whiteface	1	How was the site wide risk determined. Clearly display meaning in the document.	The risks associated with individual sources and cumulative risks were determined using data collected from the 1999 and 2004 investigations and application of standard USEPA Guidance principles to this data. Section 6.0 of the EECA - References of the risk assessment report identifies the specific methodologies / resources used to develop the assessment.
Charmaine Whiteface	1	The sediment ponds are hazardous and migratory birds that use the ponds will be effected. The FS needs to mitigate those effects.	The Forest Service has a biological assessment for the Site and will be mitigating any adverse effects. The USFWS has also been consulted regarding actions at the Site.
Dean Wagner	1	Not in agreement that Mining Companies are responsible for clean up $$$	Actions taken at Riley Pass Mines Site are done under the Comprehensive Environmental Response and Compensation and Liability Act (CERCLA). Under CERCLA any viable past owners and/or operators are held responsible for mitigation of past activities.
Deborah His Horse is Thunder	1	"I walked away from your presentation with a better understanding of the serious level of risk presented by the mines on Riley Pass and the need for additional resources from the "Superfund as well as any other viable source to address this problem. Lives are at stake in this area because of the mining that took place in the past as well as the quality of life."	Thank you for your comment.
Deborah His Horse is Thunder	2	"I urge you to seek the additional resources needed to address this situation and to seek greater authority to increase the study area of your project."	The goal of the EE/CA for the Riley Pass Mines Site is to identify any potential risks to human health and the environment, identify the degree of risks, outline potential alternatives for the mitigation of the risks, as well as, the effectiveness of the alternatives in mitigating the risks. This does not prevent the performing of additional studies and sampling activities to ensure that no other factors (not taken into account by the EE/CA or stemming from activities not related to the historic mining activity within the Riley Pass Mines site) are posing a threat to human health and the environment.

Commenter	Comment #	Comment	Response
Deborah His Horse is Thunder	3	"It also appears that it is necessary to increase the types of testing that is being done to assure that the people and communities are truly assessed accurately and thoroughly."	The final draft EE/CA for the Riley Pass Mines Site has identified a potential risk to human health and the environment. The finalization of this EE/CA will not prevent the performing of additional studies and sampling activities to ensure that no other factors stemming from the activities at the Riley Pass Mines site are posing a threat to human health and the environment.
Deborah His Horse is Thunder	4	"I also recommend that you enter into Memorandums of Understanding or Memorandums of Agreement with the Lakota nations in this area e.g., the Standing Rock Sioux Tribe, the Cheyenne River Sioux Tribe and the Oglala Lakota people on the Pine Ridge Reservation. These are traditional hunting and food gathering lands and they have a vested interest in this area. You have already documented that there are religious activity by these tribes in this region. The mining has had and will continue to have a serious impact on these tribal nations."	Agreements already exist with the various tribal governmental entities and these entities have been consulted with respect to the EE/CA for the Riley Pass Mines site. Prior to and during the implementation of any mitigation actions further communications and working agreements with the various tribal governmental entities will need to be developed to ensure that all interests will be addressed.
Deborah His Horse is Thunder	5	"This information session was excellent. I urge you to continue these informational sessions on a continuous basis."	Thank you for your comment.
Deborah His Horse is Thunder	6	"There are also some common sense concerns that need to be addresses - for example, an increase in cancer rates indicates, in common sense terms, that something is wrong or out of balance and that there is an increased risk factor to life and the quality of that life. While uranium is an obvious factor, further coordination and collaboration with other federal, state, and tribal agencies to explore the existence of other potential risk factors would send a clear message that you are doing as much as possible. The community is very uneasy with the perceived danger caused by the mining activity so anything that could provide answers needs to be explored."	This is beyond the scope of an EE/CA
Deborah His Horse is Thunder	7	"I did not get a clear picture of how the federal government or any other government was addressing those accountable i.e., the mining companies. These companies need to be held accountable for the reclamation efforts and should do so willingly or through court action. It would help to add this information to	Actions taken at Riley Pass Mines Site are done under the Comprehensive Environmental Response and Compensation and Liability Act (CERCLA). Under CERCLA any viable past owners and/or operators are held responsible for mitigation of past activities.

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		future presentations."	
Deborah His Horse is Thunder	8	Obviously, action needs to be taken and it needs to happen now. I urge you to take action at minimum to follow the recommendations of Pioneer Technical, Inc."	Thank you for your comment.
Defenders of the Black Hills	1	"The engineering concepts and processes delineated in the EE/CA would not be addressable by anyone who is not an engineer specializing in this particular field of mine reclamation and cleanup. Average citizens, particularly the ones being impacted by the issues raised in this EE/CA, do not have the financial resources to hire a specialized engineer in mine cleanup to evaluate and assess the engineering processes of this report within the 60 days allowed. This raises a point regarding environmental justice."	The EE/CA must address all issues from a number of potentially involved parties. Therefore in order to do this the document needs to be thorough and all calculations and statements need to be backed with appropriate information. Specific comments and questions are responded to in this document. Several public meetings have been held to inform the publics and also to gather comments and questions. We feel fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies has been considered during this process.
Defenders of the Black Hills	2	"In addition to the technical report, a recommendation would be that the report be summarized in language appropriate for the average citizen with a longer time period for comments."	The EE/CA must address all issues from a number of potentially involved parties. Therefore in order to do this the document needs to be thorough and all calculations and statements need to be backed with appropriate information. Specific comments and questions are responded to in this document. Several public meetings have been held to inform the publics and also to gather comments and questions.
Defenders of the Black Hills	3	"While the Alternatives were generalized (E.G. Revegetate, Grading, Road Improvements, etc.) the inclusion of detailed information such as the Chain of Custody reports was unnecessary."	The EE/CA must address all issues from a number of potentially involved parties. Therefore in order to do this the document needs to be thorough and all calculations and statements need to be backed with appropriate information.
Defenders of the Black Hills	4	"On the other hand, it would have been more appropriate to provide a little more detailed information in the Alternatives section to such issues as revegetation. For example, a little more detail on the plans for how an area will be revegetated with "xyz" grasses until such time as plants indigenous to the area are able to replenish the area, would also allow for input regarding threatened and	The goal of the EE/CA is to focus on the comparisons between varying mitigation alternatives. The detailed methods used in the implementation of the preferred alternative will be derived during the development of the construction plans and specifications.

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		endangered plant species. This information could also lead to comments on the rejuvenation of insect, bird, and wildlife species."	
Defenders of the Black Hills	7	"More detailed information on the Design Document concerning the Sediment Basins, Road Improvements, and Control Ditches needs to be given lest further destruction of ecological or cultural areas occur."	The goal of the EE/CA is to focus on the comparisons between varying mitigation alternatives. The detailed methods used in the implementation of the preferred alternative will be derived during the development of the construction plans and specifications.
Defenders of the Black Hills	8	"Each one of the previously named activities, I.e. Sediment Basins, Road Improvements, and Control Ditches, in and of itself, requires an Environmental Assessment."	Any mitigation actions taken at the Riley Pass Mines Site will be conducted under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA). This process has been tested in the courts as following the intent of the NEPA.
Defenders of the Black Hills	9	"As a "national" forest, how was the 'nation' informed so that more input could be generated? This issue of radioactive sediment, whether carried by the air or in water runoff, does affect the nation. Will someone in New York be ingesting a hamburger made form SD Beef that was grown in the Cave Hills area and has been ingesting radiation polluted grass? More publicity regarding these abandoned mines should have been given to the "national" public. Otherwise, it appears as if there is a deliberate attempt not to raise national awareness of what is a national problem which is being paid for with the nation's taxes."	The Forest Service is very active in mitigating the impacts associated with historic mining activities. Within Region One of the Forest Service, over 800 historic mine sites have been identified as posing a potential impact to human health and the environment. The Forest Service in conjunction with other Federal, State, Local and Tribal agencies and groups have been informing the public regarding this issue through public meetings, individual conversations, newspaper articles and letter mailings.
Defenders of the Black Hills	10	"Furthermore, the fact that the information was available only with the use of a computer raises an environmental justice issue. How many of the people affected by the sediments, airborne or waterborne, have access to a computer? Without definitive statistics on the number of people with access to a computer, and with the necessary programs and Internet access to read the EE/CA, in order to reach as much of the public as possible, written copies should have been sent and also made available upon request."	The Forest Service has made continual efforts to provide the EE/CA as well as all other material pertaining to the Riley Pass Mine sites in any format (including written and electronic) that would facilitate the public right to know. It is available on the Custer National Forest external web site; it was made available in CD format and copies are available for review in Camp Crook and Buffalo, South Dakota.
Defenders of the Black Hills	11	"In addition accessibility to the Administrative Record only in Harding County Courthouse, or at the Camp Crook Ranger District created a situation whereby the	The Forest Service has made continual efforts to provide the EE/CA as well as all other material pertaining to the Riley Pass Mine sites in any format (including written

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		distances needed to travel by many made it impossible to research these documents. For example, a volunteer representative from our organization would have had to travel three hours one way in order to reach either place."	and electronic) that would facilitate the public right to know. It is available on the Custer National Forest external web site; it was made available in CD format and copies are available for review in Camp Crook and Buffalo, South Dakota.
Defenders of the Black Hills	12	"The USFS unwillingness to honor Freedom of Information Requests for those documents raises questions of what is in those documents that the USFS does not want the public to see."	Under the FOIA, written documents over 100 pages are made available at the printing expense of the requestor. No denial was made under FOIA except for the public to bear the cost of printing. The document has and is made available to the public for review.
Defenders of the Black Hills	13	Section 3.1 - "To say "no accurate relationship between gamma readings and analytical sample results could be "established" is not enough. Why could no accurate relationship be established? Is it possible that the results are accurate and the increase is due to amount of radioactive airborne sediment that settled in the sampling area?"	Enough data points were taken by Pioneer to complete a regression analysis. That attempt yielded a lack of a significant correlation which needed to be disclosed to the public. The correlation from Denver-Knight Piesold was based on three co-located samples (gamma/Ra); which was determined by the Forest Service to not be sufficient. There are several reasons for no correlation, including many non-analyzed radioactive elements/isotopes, shielding provided by soils, and calibration of the gamma meter.
Defenders of the Black Hills	14	"Secondly, was research conducted to find older investigations on background radiation on this site?"	Historical information was incorporated into the data set whenever data of known / verifiable quality was available.
Defenders of the Black Hills	15	"Without an accurate background level, the success of the project will be skewed. Accepting a higher background level will affect the risk to humans, and other life, both on- and off-site."	Based on 14 locations and extensive field screening the background levels measured at the site are fully supported for use in the assessment.
Defenders of the Black Hills	16	"The second paragraph in Section 3.2.1 Background sampling states: "The average background concentrations were significantly higher in arsenic, molybdenum, selenium, and uranium than average concentrations in the western United States (Shacklette and Boerngen, 1984), probably due to the mineralization found in this stratigraphic unit." Probably? With all the information available at South Dakota School of Mines and Technology in Rapid City SD, The US Geological Survey, and the SD Department of Environmental and Natural Resources, surely there is available information on the minerals and their concentrations at the Cave Hills	Based on 14 locations and extensive field screening the background levels measured at the site are fully supported for use in the assessment.

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		site so that "probably" would not be necessary. This response does not lead to confidence in the determination of background levels, and again the observation is made that inadequate background samples and levels will skew the expected outcome increasing risk to human health."	
Defenders of the Black Hills	17	"In section 3.3 page 3-16, in the third line it states that the average of 15, 000 cpm is 08.5 uRem/h. This could possibly be the misplacement of the decimal as this amount is calculated at 84.9 uRem/H,"	The value referenced in the text should be 150,000 cpm which is equivalent to 85 uRem/h.
Defenders of the Black Hills	18	"Part of the plans of this EE/CA is to control the erosion of radioactive sediments and their dispersal in surface water through the creation of catch ponds for this purpose. What safety measures will be made to insure that waterfowl, other birds and animals will not drink from these contaminated ponds?"	All reasonable measures to protect waterfowl and wildlife will be considered during the removal action design phase.
Defenders of the Black Hills	19	"The Forest Service is remiss in its responsibility to the public if no studies and mitigation plans are completed on the previous mining activity's contamination of ground water. Section 3.4 page 3-16 specifically states "Due to the sandy clay and silty clay soil types present on Bluff B, soil piping and tunneling with occasional sink holes are present." Sediments, of course, are washing down all those places of erosion, but water does not just run off the surface. Particularly with sink holes, how far down in to the earth is the water containing microscopic sediments descending?	The goal of the EE/CA and any resulting action that will result from the EE/CA is in response to the potential human health and environmental impacts stemming from contaminated material associated with historic mining activities associated with the sites. These activities do not exclude further efforts by any Federal, State, Tribal and Local governmental bodies ensure that the groundwater with in the area does not pose a human health risk.
Defenders of the Black Hills	19	CONTINUED FROM 19. As Bluff B involves the largest area and represents the most widespread contaminants, page 3-6 stated: " The mined pit floors are generally at or near bedrock.....Small, shallow ponds have formed in some of the area creating small retention basins, which during snowmelt and small storm events assist in controlling some of the surface water erosion. Water from these ponds most likely evaporate or seeps through the bedrock during the summer months." [author's emphasis] If the water is seeping through the bedrock, what aquifer is it contaminating? If Bluff B is filled with contaminated overburden, how will this impact the contamination of underground water?"	The goal of the EE/CA and any resulting action that will result from the EE/CA is in response to the potential human health and environmental impacts stemming from contaminated material associated with historic mining activities associated with the sites. These activities do not exclude further efforts by any Federal, State, Tribal and Local governmental bodies ensure that the groundwater with in the area does not pose a human health risk.

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Defenders of the Black Hills	20	"The Forest Service does not live in a vacuum. Neither does the impact and responsibilities of the Riley Pass Uranium Mines. Although USFS personnel have said they can only address issues within the boundaries of North Cave Hills, the impacts are being felt outside of those boundaries and the Forest Service is responsible. If a private individual was doing something that brought contamination into the Forest Service area, that individual would be held accountable. The Forest Service must also be accountable for impacts felt outside of the Forest Service boundaries. The Forest Service must conduct research on the underground water both at the Riley Pass Mine site and in the surrounding area. Accordingly, the Forest Service is also responsible for assessing the impact in off-site surface water due to surface runoff and airborne sediments."	Any removal actions taken at the Riley Pass Mine sites will include all wastes in and around the historic mining activity that can be shown associated with the historic mining activities.
Defenders of the Black Hills	21	" A plan needs to be developed to address: 1) current air dispersion of radioactive sediments; and 2) health and safety measures during the reclamation process for employees as well as citizens living downwind of the activities."	All construction actions that have been taken in the past and those that will be taken in the future have and will continue to abide by Federal and State laws requiring the protection of the workers and the public from any hazardous materials and actions. In addition those laws and guidance that calls for the prevention of material from leaving the site and impacting the environment (including the air and water resources) will be followed. All actions will require health and safety plans.
Defenders of the Black Hills	22	"How many rock messages (Petroglyphs), stone prayer circles, burial sites, and dwelling places, all sacred to Native American People, were demolished in the mining process? To say that these cannot be restored, and in some cases will probably be further destroyed by this cleanup process, continues the attack on the religious freedom of all Native American nations and people. It is long past the time for the federal government, in this case through the USFS, to stop this practice. The further destruction of cultural sites in the Riley Pass Mine Reclamation process must not be allowed to happen."	It is not possible to determine the extent any disturbance of culture and historical features during historical mining activities. However, during any mitigation activities at the Riley Pass Mine sites, the Forest Service will meet all laws and regulations regarding cultural and historical features. This means that all efforts to identify and mitigate potential impacts to cultural and historical features will occur.
Defenders of the Black Hills	23	"The following are recommendations to assist in the identification, recovery, and restoration of the Traditional Cultural Properties in the Riley Pass Mine area:" An	Thank you for your comment and suggestion

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		Advisory Board made up of persons known to the Native American communities as practioners of traditional ceremonies, and including Tribal Historic Preservation Officers should be assembled by the USFS to assist the USFS in developing a plan for the identification, recovery, and restoration of all Traditional Cultural Properties for as long as is necessary."	
Defenders of the Black Hills	24	(The following are recommendations to assist in the identification, recovery, and restoration of the Traditional Cultural Properties in the Riley Pass Mine area:)....."A Traditional Cultural Properties project, with a director, support staff, and budget, must be established within the Riley Pass mines reclamation efforts lest the process further destroy any more sacred places."	Thank you for your comment and suggestion
Defenders of the Black Hills	25	"The area in which Cave Hills and the Riley Pass mines are located are in western South Dakota and are still under the ownership of the Great Sioux Nation."	This is beyond the scope of an EE/CA
Defenders of the Black Hills	26	"Under what authority is the USFS considered the legal land owners of the Cave Hills area?"	This is beyond the scope of an EE/CA
Defenders of the Black Hills	27	"These comments are being submitted to insure the protection of all the Traditional Cultural Properties in the Cave Hills Area, and the restoration, not just reclamation, of the entire environment for the good health of all."	The EE/CA has shown that the Riley Pass Mine Sites have an impact on human health and the environment and therefore removal actions are warranted. The action to restore any cultural historical features is beyond the scope of an EE/CA.
Defenders of the Black Hills	28	"The recommendations given in Section 10.0 Preferred Alternative give the preferences based upon the most efficient means for the amount of dollars. However, we are talking about human life and all life in this region: plants, animals, birds, fish. The amount that is necessary to not just reclaim, but the amount that is necessary to RESTORE the area must be demanded including a survey and restoration of all Traditional Cultural Properties. If not, future generations are going to have to be dealing with these and similar problems again."	The EE/CA has shown that the Riley Pass Mine Sites have an impact on human health and the environment and therefore removal actions are warranted. The action to restore any cultural historical features is beyond the objectives and authorities of this action.
Harding County Commissioners	1	" Your analysis shows that testing has only been conducted on the top 6 inches of the overburden.....We	All construction actions that have been taken in the past and those that will be taken in the future have and will

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		need to make sure that we do not expose bigger hazards than what is currently exposed. We are concerned that the process of moving this overburden will result in a large amount of dust and further the potential for water shed problems in the future. Harding County does not feel that enough research has been completed to ensure a safe result from this action. "	continue to abide by Federal and State laws requiring the protection of the workers and the public form any hazardous materials and actions. In addition those laws and guidance that calls for the prevention of material from leaving the site and impacting the environment (including the air and water resources) will be followed. All actions will require health and safety plans.
Harding County Commissioners	2	"The water shed areas have been tested and determined to be a health risk. While we are confident that there is an immediate water shed problem, we are not confident that ample testing and results are showing true safety problems in the streams and water shed areas further distances from the Uranium sites. It is our belief that there are other contaminate sources along these routes that need addressed and the sole safety problem cannot be directly tied to the Riley Pass area."	The goal of the EE/CA is to identify any potential risks from the Riley Pass Mine Sites to human health and the environment, identify the degree of risks, outline potential alternatives for the mitigation of the risks, as well as, the effectiveness of the alternatives in mitigating the risks. This does not prevent the performing of additional studies and sampling activities to ensure that no other factors (not taken into account by the EE/CA or stemming from activities not related to the historic mining activity within the Riley Pass Mine Sites) are posing a threat to human health and the environment.
Harding County Commissioners	3	"Harding County has a concern about the definitions used in the General Response Actions, Technology Types, and Process Options that are defined in the Final Draft. On page 1877 of the Final Draft under subsection 7.1.2 - Institutional Controls it states "Institutional Controls that are developed as part of an alternative are enforced by the local government. Therefore, the local government must be involved in the development and eventual implementation of an Institutional Control. We appreciate that it is acknowledged that the local government needs to be involved, but also be aware of the fact that Harding County does not have the resources available to enforce this alternative, nor do we think that it is within our jurisdiction to do so."	The Forest Service would be the enforcing agency for any instutional controls on National Forest System lands. The term "local government" was inappropriately used. However, the Forest Service will continue to work with Harding County Commissioners as the remedial action continues.
Harding County Commissioners	4	"On all of the Bluffs there is mention of the access roads into the areas needing improvements and maintenance during the construction period. Harding County currently holds an active Sand & Gravel permit with the Forest Service to mine gravel out of the Craig Pass Pit (T22, R5E, Section 19). It is our hopes that the Forest Service will work with Harding County in the planning process for any improvements on these roads if it is intended to remove gravel from the mentioned pit. In the past the	Upon the finalization of the EE/CA and the beginning of construction activities the Forest Service will be coordinating all actions with all Federal, State, Local, and Tribal governmental entities. Sources of material used in any removal action at the Site will be addressed during the final planning and implementation stages.

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		County has done the crushing of the gravel and "sold" the gravel to the Forest Service at our cost. It will be important to know how much, if any, gravel is planned to be removed from the Craig Pass Pit so an appropriate amount can be crushed for that use, as well as any use that the County may have. It might also be necessary to increase the allotted amount that the County can crush each year to accommodate for the Forest Service's need."	
Harding County Commissioners	11	"We are also very concerned about the adverse affects this could have on our Agricultural economy. We have not been able to find in the study any indications of what health effects might by being passed on to the consumer from the livestock and grain crops that are being produced on the contaminated soil and water sheds. We are very concerned that the consumer groups will start shying away from purchasing any of the agricultural products that are remotely located within this area. The media has already touched on this subject in some of the articles covering this project and it could ruin the agricultural economy if this scare is not justified."	As was noted during public meetings in May and again in August of 2005, there presently has been no testing of the meat from cattle grazed at the Riley Pass Mine Site. It should be noted that the risks calculated for the site reflect a lifetime of exposure to the site and beef grazing at the site. The scenario reflects the permit holders who use the site regularly, consume beef raised there, and who do so over a long period of time. Outside consumers of beef raised here, are likely to consume one or two cuts of meat from the cattle, before they have been purchased by others, etc. In other words, the exposure to consumers is drastically less than of those who live, work, and eat meat regularly from the site.
Harold One Feather	1	The Final Draft EE/CA "..failed to consider adequately the fact that it contaminated the Grand River alluvial aquifer which until recently was the water supply for Bullhead and Little Eagle SD."	This EE/CA addresses site specific impacts occurring on National Forest System lands. The EE/CA has shown that the past mining at the Site is having an impact on human health and the environment and therefore removal actions are warranted. These removal actions do not prevent monitoring and implementing additional actions to ensure that those impacts are mitigated. All of the evidence that the Forest Service has reviewed to date strongly suggests that the environmental and public health impacts of historic mining operations onsite are localized to the vicinity of the Riley Pass Mines Site.
Harold One Feather	2	"..there is a high cancer and death rate in Bullhead SD caused by the contaminated surface runoff from the uranium mines at the" Custer National Forest	The scope of the EE/CA for the Riley Pass Mines Site was to determine the risk to human health and the environment and to develop preferred alternatives that will mitigate those threats at the Riley Pass Mines Site. Cancer rates are outside the scope of an EE/CA. The commentor can contact ATSDR and the South Dakota Department of Health to pursue additional information on these issues and to obtain information on hazardous substances and health statistics in South Dakota. South Dakota began a

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			cancer registry in 1996 and the reports, "Cancer in South Dakota: South Dakota Cancer Registry Report" for 1999 through 2001 can be found at: http://www.state.sd.us/doh/Stats/index.htm. Statistics on cancer in South Dakota can also be found on by the National Cancer Institute website at: http://www.cancer.gov/.
Harold One Feather	3	"It doesn't consider the recreational uses of the Grand and Moreau Rivers to downgrade communities.....This is a violation of the Clean Water Act."	This is beyond the scope of an EE/CA
Harold One Feather	4	"It doesn't consider the Winter's Doctrine reserved water rights held by the Standing Rock Sioux Tribe and the Cheyenne River Sioux Tribe reserving irrigation water in the basins."	This is beyond the scope of an EE/CA
Harold One Feather	5	"..nor does it consider the ...property is 1868 Fort Laramie Treaty Land."	The Site is within the South Dakota portion of the Sioux Ranger District so it would have been included within the boundaries of the "Great Sioux Reservation" created by the Fort Laramie Treaty of 1868. However, in 1877 Congress abrogated the treaty of 1868 and moved the boundary of the reservation to the 103rd meridian of longitude. Act of Feb 28, 1877, 19 Stat. 254. The federal courts have held that this action by Congress constituted a taking of tribal property which had been set aside for the Sioux and that the taking gave rise to an obligation to make just compensation to the Sioux. The courts awarded compensation for this taking and the Supreme Court has upheld this determination (U.S .v. Sioux Nation of Indians 448 U.S. 371 (1980)). In conclusion, the Fort Laramie Treaty of 1868 does not apply to the Site.
Harold One Feather	6	"It does expound on the fact that there are health dangers at the Riley Pass but, does so, in a very obtuse manner that will not be easily understood by the affected communities,.."	The EE/CA must address all issues from a number of potentially involved parties. Therefore in order to do this the document needs to be thorough and all calculations and statements need to be backed with appropriate information
Harold One Feather	7	"Also the EE/CA is very lengthy and very technical but for what purpose?"	The EE/CA must address all issues from a number of potentially involved parties. Therefore in order to do this the document needs to be thorough and all

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			calculations and statements need to be backed with appropriate information
Harold One Feather	8	"The fact remains that the US Forest Service killed a lot of innocent people in Rock Creek and Little Eagle..... through their ignorance of the downstream and downwind communities."	There is no link to deaths associated with the historic mining activity in and around the Site.
Harold One Feather	9	"The tribes have superior water rights and do have a very substantial claim enforceable for degradation of water flowing.."	This is beyond the scope of an EE/CA
Harold One Feather	10	"..it doesn't recommend cleaning up the other 87 uranium mines."	The Riley Pass EE/CA is meant to deal with the mining activities associated with the historic mining activity with in the Riley Pass Mine Sites on lands or adjacent to lands administrated by the Custer National Forest. This EE/CA is not meant to address other mining activities within the area nor does it preclude future activities or studies with regards to other historic mining activities within the area that occurred on lands under its jurisdiction .
Harold One Feather	11	"It doesn't extrapolate the results to other abandoned/inactive uranium mines in the Custer National Forest."	The Riley Pass EE/CA is meant to deal with the mining activities associated with the historic mining activity with in the Riley Pass Mine Sites on lands or adjacent to lands administrated by the Custer National Forest. This EE/CA is not meant to address other mining activities within the area nor does it preclude future activities or studies with regards to other historic mining activities within the area that occurred on lands under its jurisdiction .
Harold One Feather	12	"It doesn't examine the necessity for more sediment basins at other uranium mines in the North Cave Hills, South Cave Hills, and Slim Buttes to capture radiological contamination and prevent it from polluting the rivers and ecosystem. "	The Riley Pass EE/CA is meant to deal with the mining activities associated with the historic mining activity with in the Riley Pass Mine Sites on lands or adjacent to lands administrated by the Custer NF. This EE/CA is not meant to address other mining activities within the area nor does it preclude future activities or studies with regards to other historic mining activities within the area that occurred on lands under its jurisdiction .

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Harold One Feather	13	"..it didn't cause the USDA Forest Service to adequately inform the tribes and general public of the radiological hazards existing at the Custer National Forest and in the Grand and Moreau Rivers."	The Forest Service has and continues to conduct public involvement activities will all parties that have an interest in the site and those that could be impacted by historic mining activities within the Riley Pass Mine Sites that are under its administrative jurisdiction.
Harold One Feather	14	"It didn't study surface water contamination or extreme erosion problems existing as a result of irresponsible mining.."	The EE/CA has addressed surface water and sediment problems associated with the historic mining activities with in the Riley Pass Mine Sites. See EE/CA section 3.2.4 and 6.1.1.
Harold One Feather	15	"It didn't consider migration pathways to groundwater or effects on aquatic and riparian wildlife in the Grand and Moreau River basins."	This is outside the scope of an EE/CA.
Harold One Feather	16	"..failed to adequately consider environmental justice issues raised by the uranium mines and associated radiological hazards... on downstream and downwind communities."	The EE/CA for the Riley Pass Mine Sites was conducted following all the guidelines set out under the Comprehensive Environmental Response and Compensation and Liability Act (CERCLA) and all other laws pertaining to the protection of the environment and human health.
Harold One Feather	17	"..it didn't consider the fact mining during that time was illegal on the National Forests,.."	At the time mining occurred onsite, it was authorized on National Forest System lands by the 1872 Mining Law.
Harold One Feather	18	"..how the mining companies were permitted to mine uranium in the forests should be a question the USFS should answer for the tribes and general public;"	At the time mining occurred onsite, it was authorized on National Forest System lands by the 1872 Mining Law.
Harold One Feather	19	"..are guilty of violating the Clean Water Act and First Degree Murder and must be held liable for health problems and unnecessary deaths"	This is outside the scope of an EE/CA.
Harold One Feather	20	"..other than Kerr McGee, it doesn't list other Potentially Responsible Parties "PRP" in the Riley Pass EE/CA responsible for their toxic wastes."	The goal of the EE/CA is not to identify Potential Responsible Parties (PRPs). PRP identification is accomplished through other aspects of the CERCLA process. The goal of an EE/CA is to identify any potential risks to human health and the environment, identify the degree of risks, outline potential alternatives for the mitigation of the risks, as well as, the effectiveness of the alternatives in mitigating the risks.
Harold One Feather	21	"The previous reasons together illustrate the levels of mismanagement existing at the Custer National Forest	By following the CERCLA process which includes the development of an EE/CA the Forest Service is

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		and therewith I must disagree with the current Draft Final EE/CA as not adequately protecting the environment and health of nearby downstream and downwind communities."	conducting its role as a land management agency in an appropriate and lawful manner.
Harold One Feather	22	"..it will cause more problems since now it raises the question of why the USFS is not trying to clean up the other 87 mines a the CNF since they are contributing to the water pollution in the Grand and Moreau River basins and as such are violating the Clean Water Act."	The Riley Pass EE/CA is meant to deal with the mining activities associated with the historic mining activity with in the Riley Pass Mine Sites on lands or adjacent to lands administrated by the Custer NF. This EE/CA is not meant to address other mining activities within the area nor does it preclude future activities or studies with regards to other historic mining activities within the area that occurred on lands under its jurisdiction .
Harold One Feather	23	"For more than forty years, this mine, along with five other major uranium mining areas in the South Cave Hills and Slim Buttes, has been polluting the Grand and Moreau River basins with radiological materials that are hazardous to swimming, fishing, or for other beneficial purposes."	The goal of the EE/CA for the Site is to identify any potential risks to human health and the environment, identify the degree of risks, outline potential alternatives for the mitigation of the risks, as well as, the effectiveness of the alternatives in mitigating the risks. This does not prevent the performing of additional studies and sampling activities to ensure that no other factors (not taken into account by the EE/CA or stemming from activities not related to the historic mining activity within the Riley Pass Mine Sites) are posing a threat to human health and the environment.
Harold One Feather	24	"the US Forest Service also stated then that they would rehabilitate two of the five sediment basins that were filled with radioactive sediments."- Published in the Teton Times 08/24/2005 and Given to OSC as a at the public meeting held in Bullhead SD.	The current use of settling ponds in the Riley Pass mine Sites is to temporarily prevent the migration of sediment that contains arsenic and uranium from migrating downstream and off of lands administered by the Forest Service. In order to assure the ponds continue to collect the sediment, they have needed to be cleaned out periodically. The sediment that was cleaned out was placed back at the source of the contamination (the mined areas). Future removal actions at the site may require the construction of sediment ponds to be constructed to prevent non - contaminated sediment (sediment free of contaminates such as arsenic and uranium) from entering the watersheds outside of the Forest boundaries
Harold One Feather	25	Constructed in the early 90's by Kerr McGee the five sediment basins are designed to prevent contaminated	The current use of settling ponds in the Riley Pass Mine Sites is to temporarily prevent the migration of sediment

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		surface runoff at Riley Pass Uranium Mine from entering the rivers but must constantly maintained and when they fill to capacity the hazardous sediment again must be removed to another location which, in this case, is the abandoned mine."	that contains arsenic and uranium from migrating downstream and off of lands administered by the Forest Service. In order to assure the ponds continue to collect the sediment, they have needed to be cleaned out periodically. The sediment that was cleaned out was placed back at the source of the contamination (the mined areas). Future removal actions at the site may require the construction of sediment ponds to be constructed to prevent non - contaminated sediment (sediment free of contaminates such as arsenic and uranium) from entering the watersheds outside of the Forest boundaries.
Harold One Feather	26	"As for other mines in the South Cave Hills and the Slim Buttes they haven't been studied to determine their contribution to the radiological hazards leaving the mined areas as storm water discharges."	The goal of the EE/CA for the Riley Pass Mine Sites is to identify any potential risks to human health and the environment, identify the degree of risks, outline potential alternatives for the mitigation of the risks, as well as, the effectiveness of the alternatives in mitigating the risks. This does not prevent the performing of additional studies and sampling activities to ensure that no other factors (not taken into account by the EE/CA or stemming from activities not related to the historic mining activity within the Riley Pass Mine Sites) are posing a threat to human health and the environment.
Harold One Feather	27	"It is my theory that this radiological contamination in our rivers is the cause of the extreme cancer and diabetes rates existing on the Standing Rock Sioux Indian Reservation." "I also must suggest that it is also the cause of many miscarriages on our reservation."	The goal of the EE/CA for the Riley Pass Mine Sites is to identify any potential risks to human health and the environment, identify the degree of risks, outline potential alternatives for the mitigation of the risks, as well as, the effectiveness of the alternatives in mitigating the risks. It can not be used as a link to health issues that may exist on the Standing Rock Sioux Indian Reservation.
Harold One Feather	28	"This is the main purpose why the US Forest Service is coming to the Rock Creek district: to discuss the cancer, diabetes, and other critical health issues arising in the Rock Creek district."	The Forest Service conducted a public meeting for the Rock Creek District due to a request from the District. The purpose of the meeting was to inform the residents of the area the findings from the EE/CA for the Riley Pass Mine Sites and to outline the potential alternatives for the mitigation of the risks, as well as, discuss the effectiveness of the alternatives in mitigating the risks. In addition the meeting was to receive comments regarding the EE/CA.
Harold One Feather	29	"Once they have been informed of our health concerns on	The scope of the EE/CA for the Site was to determine

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		the Standing Rock they must prove that the cause of the rising cancer and diabetes rates, the miscarriages, birth defects, and other illnesses are not due to the abandoned uranium mines."	the risk to human health and the environment and to develop preferred alternatives that will mitigate those threats at the Site. Determination of health conditions is outside the scope of an EE/CA.
Harold One Feather	30	"Cercla also mandates that the potentially responsible party (PRP) be notified under an unilateral administrative order of their liability regarding the costs of hazardous waste site cleanup and should the PRP fail to repay Superfund, or the US Forest Service, in this case, the cleanup costs, they will be taken to court to recover the costs up to three times the original cleanup costs; in other words, CERCLA gives the PRP a chance to fulfill its moral obligations of cleaning up their hazardous waste site, if not, CERCLA will force the PRP to repay Superfund; this is the main intent of CERCLA."	Thank you for your comment.
Harold One Feather	31	"With the respect to the Riley Pass Uranium Mine, KERMAC Nuclear Fuels Corp., a subsidiary of Kerr-McGee, Oklahoma City, OK, has been given notice that it must cleanup the mine as a "Good Samaritan" or be forced under Federal law. Kerr-McGee responded that they did not leave any materials only the overburden and therefore they claim they are not obligated to cleanup the Riley Pass Uranium Mine."	Thank you for your comment.
Harold One Feather	32	"During that time Kerr-McGee mined the lignite for autunite, a high grade ore."	Thank you for your comment.
Harold One Feather	33	"Until then they didn't think such quality was possible. My theory is that the time the Cave Hills autinite caused demand for uranium ore to drop and ended uranium mining in the Cave Hills. Kerr McGee filled it's contract and left like a thief in the night"	Thank you for your comment. To avoid any potential confusion to the public, however, the Forest Service notes that the public record does not support the claim that the ore mined at the Site contained high percentages of uranium.
Harold One Feather	34	"The problem they having out there right now is with erosion caused by exposing the lignite beds to the elements. Rain washes the autinite out of the lignite and sunlight bakes the autinite to where it dissolves over the years to highly radioactive dust."	Thank you for your comment.
Harold One Feather	35	"This is the radioactive hazardous material that is polluting the rivers and blowing across the northwestern corner of South Dakota."	The goal of the EE/CA for the Riley Pass Mine Sites is to identify any potential risks to human health and the environment, identify the degree of risks, outline potential alternatives for the mitigation of the risks, as well

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			as, the effectiveness of the alternatives in mitigating the risks at the Site. This does not prevent the performing of additional studies and sampling activities to ensure that no other factors (not taken into account by the EE/CA or stemming from activities not related to the historic mining activity within the Riley Pass Mine Sites) are posing a threat to human health and the environment.
Harold One Feather	36	"There still remains the question of what they intend to do about the other sites that are just as contaminated due to the erosion and exposure to the elements."	The goal of the EE/CA for the Riley Pass Mine Sites is to identify any potential risks to human health and the environment, identify the degree of risks, outline potential alternatives for the mitigation of the risks, as well as, the effectiveness of the alternatives in mitigating the risks at the Site. This does not prevent the performing of additional studies and sampling activities to ensure that no other factors (not taken into account by the EE/CA or stemming from activities not related to the historic mining activity within the Riley Pass Mine Sites) are posing a threat to human health and the environment.
Harold One Feather	37	"Also, the question why their reports have not considered surface runoff and erosion and effects on the immediate and downstream environment."	The goal of the EE/CA for the Riley Pass Mine sites is to identify any potential risks to human health and the environment, identify the degree of risks, outline potential alternatives for the mitigation of the risks, as well as, the effectiveness of the alternatives in mitigating the risks at the Site. This does not prevent the performing of additional studies and sampling activities to ensure that no other factors (not taken into account by the EE/CA or stemming from activities not related to the historic mining activity within the Riley Pass Mine Sites) are posing a threat to human health and the environment.
Harold One Feather	38	The commentor provided a copy of Title 30 Chapter 16.622 Liability for damage, destruction, or loss of claim.	Thank you for your input.

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Harold One Feather	39	Pictures included in the EE/CA would better show existing conditions.	Thank you for your comment and suggestion
Harold One Feather	40	Locate "clinker piles" close to Bluff I 1	Areas in the EE/CA were broken into three categories. These include background, overburden, and mineralized zones. Any clinker units were broken into the background or over burden categories since clinker material as related to the Site are results of natural processes.
Harold One Feather	41	Is the FS going to withdraw this area from future hard rock mining?	This is outside the scope of an EE/CA.
Harold One Feather	42	Need for reclamation on ALL the mines across NFS lands on the Sioux Ranger District at the same time.	This is outside the scope of this EE/CA.
Harold One Feather	43	Units of measure within the risk assessment are confusing.	The units of measure are based on established and accepted scientific and engineering standards.
Harold Smolniker	1	Inspections of remediation need to be timely.	Inspections will be addressed in the Final Scope of Work for the removal action.
Harold Smolniker	2	Will there be Office of Surface Mining oversight?	The process for the removal action will be the CERCLA process. The Forest Service is the implementing agency and provides oversight.
Jean Feist	1	"...If anything will be done with the run off that has made a 20 foot deep ditch in our field and took out the dam below my spring from the silt."	Features that pose a migration path for further migration of contaminated material will be mitigated through this removal action process.
Jean Feist	2	"Lindy also worked a few months on the grading site. On the bluff just above our place - Kerr McGee. He and most of his family (also some of our girls) all had thyroid problems. He also had emphysema - all 5 of our girls have had female problems (excess bleeding, etc.)"	This is outside the scope of an EE/CA.
Jolisa Bahr White Face	1	"I would like to be a part of a possible research team to provide data."	Thank you for your comment.

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Kenny Paint	1	"Forest Service to address their responsibilities to respect the 1851 and 1868 Treaties."	The Site is within the South Dakota portion of the Sioux Ranger District so it would have been included within the boundaries of the "Great Sioux Reservation" created by the Fort Laramie Treaty of 1868. However, in 1877 Congress abrogated the treaty of 1868 and moved the boundary of the reservation to the 103rd meridian of longitude. Act of Feb 28, 1877, 19 Stat. 254. The federal courts have held that this action by Congress constituted a taking of tribal property which had been set aside for the Sioux and that the taking gave rise to an obligation to make just compensation to the Sioux. The courts awarded compensation for this taking and the Supreme Court has upheld this determination (U.S .v. Sioux Nation of Indians 448 U.S. 371 (1980)). In conclusion, the Fort Laramie Treaty of 1868 does not apply to the Site.
Monica Skye	1	"Please clean up the mining site! Start Land restoration ASAP!"	The Forest Service foresees work at the site to begin in the area in 2006 and last several years.
Monica Skye	2	"As a mother I am concerned about the air and water quality for my children."	Thank you for your comment.
Monica Skye	3	"If it is not cleaned up right away, it is environmental genocide and environmental racism."	The Forest Service foresees work at the site to begin in the area in 2006 and last for several years.
Monica Skye	4	"Please use compost, mulch, native plants for land healing and regeneration."	The goal of the EE/CA is to focus on the comparisons between varying mitigation alternatives. The detailed methods used in the implementation of the preferred alternatives will be derived during the development of the construction plans and specification that will probable incorporate to one degree or another the recommendations stated in the comment
Monica Skye	5	"We all live down wind, and I'm very concerned for my children and their children."	The goal of the EE/CA for the Riley Pass Mine Sites is to identify any potential risks to human health and the environment, identify the degree of risks, outline potential alternatives for the mitigation of the risks, as well as, the effectiveness of the alternatives in mitigating the risks. This does not prevent the performing of additional studies and sampling activities to ensure that no other factors (not taken into account by the EE/CA or stemming from activities not related to the historic mining activity within the Riley Pass Mine Sites) are posing a threat to human health and the environment.

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Nancy Kile	1	"Resources held in trust that are within the aboriginal homelands of American Indian people continue to be mismanaged. Human rights require that the managing agencies and corporate interests that allow the contamination reciprocate by cleaning up the hazards that exist on the land, in the air and water."	By working through the CERCLA process including the production of the EE/CA the Forest Service has identified the risks to human health and the environment the Forest Service is working to mitigate the impacts at the Riley Pass Mines Sites associated with historic mining activity.
Nancy Kile	2	"When will American Indian people be able to safely return to worship at the sacred sites within the areas in and around the Cave Hills/ Slim Buttes?	The Site has not been condemned and visitation of the North Cave Hills area is not limited. The Slim Buttes is not a part of the North Cave Hills and is not addressed in this EE/CA.
Nancy Kile	3	Is the Bill Barrett Corp. involved in oil & gas drilling on or into lands held within the boundaries of the Forest Service? If so, allowing new industry such as this to proceed will surely create new contamination on top of what already exists. Will the products these companies drill for, produce, and release for consumption also be contaminated with radioactive elements?"	This is beyond the scope of an EE/CA.
Nancy Kile	4	"I believe that the concern for the quality of the beef that the contaminated land produces is going unnoticed."	This is beyond the scope of an EE/CA
Nancy Kile	5	"What is being done to determine the amounts of contamination hunters who eat their kill are ingesting?"	Chapter 5.0 of the Final Draft EECA addresses human health risks.
Nancy Kile	6	When will the warning signage be placed in critical areas?"	Warning signs were put in place on the ground in 2000. Through environmental and human damage, these signs are monitored and replaced upon available
Nancy Kile	7	"What kind of educational processes are being developed to give the public the information we need to protect ourselves, our families and our livelihood?"	In 2000, letters were sent to local, known users and those that commented on the 1990 Environmental Assessment. Recently several public meeting have been held to inform the public. Public meetings will continue to be held throughout the project.
Nancy Kile	8	"Well informed decisions are a human and civil right. People are becoming more aware that State and Federal managing agencies continue to take on a paternalistic role that creates situations that leave the public out of crucial decision making processes. This condescending attitude is no longer acceptable. If our lead agencies and their	Thank you for your comment.

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		corporate partners will not act responsibly and be held accountable, who will?"	
Not Identified	1	How will worker safety be managed?	A Health and Safety Plan will be developed prior to implementation of the removal action
Not Identified	2	Test Capping material prior to use. I.e. overburden	Material used for final capping will be tested as part of Quality Assurance/Quality Control Plan that will be completed before the removal action begins.
Not Identified	3	What is the difference between Alt 5 & 6?	Generally, Alternative 6 propose to reduce high walls. Alternative 6 is described in depth in the EE/CA in Section 7.3.1.6 that begins on page 7-19.
Not Identified	4	How will the COC's that have moved off site be managed?	Any removal actions taken at the Riley Pass Mine Sites will include all wastes in and round the historic mining activity that can be shown associated with the historic mining activities.
Not Identified	5	The 10% conceptual does not appear to be in depth enough to address the hazards at the site.	The EE/CA addresses all known hazards at the bluffs in Sections 5.0 and 6.0
Not Identified	6	Timetables for construction and how long it will take?	The Forest Service foresees work at the site to begin in the area in 2006 and last for several years.
Not Identified	7	Noticed highwalls are not treated - how come? No contamination??	The highwalls at the site generally pose very little risk to human health by contaminants. The stability of each high wall will be evaluated prior to the removal action to determine if the highwall and falling rock pose a risk to workers at the sites. If a hazard is present, measures will be taken to reduce those risks.
Not Identified	8	Is the pvt land a part of this analysis?	Any removal actions taken at the Riley Pass Mines Site will include all wastes in and around the historic mining activity that can be shown to be associated with the historic mining activities.
Not Identified	9	Is money set aside or is there a potential budget issue?	This is outside the scope of an EE/CA.
Not Identified	10	The definition of highwall needs to be clarified, I.e. there is not a clear understanding that minerals were not mined.	In some cases when the historic mining activities within the Riley Pass Mine sites stopped, they left features in un-mined ground that were steep. These features are referred to as highwalls. The material making up the highwalls are predominately overburden rock with small amounts of exposed lignite material. In some cases these highwalls are prone to sloughing and erosion.

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Not Identified	11	Budget for reclamation of the sacred sites.	This is outside the scope of an EE/CA.
Pam Snyder- Varns	1	Will any contaminants be removed from the area to an off site location?	Contaminants will not be removed from the area to an off site location.
Pam Snyder- Varns	2	What will the exposures be after clean-up?	The exposures to human health and the environment due to contamination associated with the historic mining within the Riley Pass Mine sites will attempt to be the same or less than those associated with the surrounding soils and water quality.
Pam Snyder- Varns	3	Long term of sediment ponds - after reclamation what will be done with the sediment that collects in the ponds?	Once the containmented sediment is prevented from moving into the ponds, their need will be reassessed. They may be left in place for other resources uses such as wildlife habitat.
Pam Snyder- Varns	4	What is the project timeline?	The Forest Service foresees work at the site to begin in the area in 2006 and last for several years.
Published in the Teton Times	2	"the US Forest Service also stated then that they would rehabilitate two of the five sediment basins that were filled with radioactive sediments."	In 2004, a Time Critical Removal action was approved that addressed removal of sediment from the sediment ponds and placement of that material into a self-contained repository inside of Bluff B. The sediment ponds will continue to need to be cleaned out until sediments are stabilized through remediation.
Published in the Teton Times	3	"Constructed in the early 90's by Kerr McGee the five sediment basins are designed to prevent contaminated surface runoff at Riley Pass Uranium Mine from entering the rivers but must constantly maintained and when they fill to capacity the hazardous sediment again must be removed to another location which, in this case, is the abandoned mine."	The Forest Service constructed sediment basins to mitigate movements of containmented materials down gradient. Kerr McGee did not construct these basins. In 2004, a Time Critical Removal action was approved that addressed removal of sediment from the sediment ponds and placement of that material into a self-contained repository inside of Bluff B. The sediment ponds will continue to need to be cleaned out until sediments are stabilized through remediation.
Randy Fiest	1	"I fully endorse the cleanup and restoration of the Riley Pass Abandoned Uranium Mines. "	Thank you for your comment.
Randy Fiest	2	"I certainly hope the project will also encompass the adjacent land owners through erosion.."	Any removal actions taken at the Riley Pass Mine Sites WILL include all wastes in and round the historic mining activity that can be shown associated with the historic mining activities.

Commenter	Comment #	Comment	Response
Randy Fiest	3	"...we feel we have a problem with heavy metals on our land especially with run off in the drainages."	Any removal actions taken at the Riley Pass Mine Sites WILL include all wastes in and round the historic mining activity that can be shown associated with the historic mining activities.
Randy Fiest	4	"I think before you start you should test the overburden for toxicity..."	Material used for final capping will be tested as part of Quality Assurance/Quality Control Plan that will be completed before the removal action begins. It may be necessary to use capping material from another source.
Randy Fiest	5	"We have experienced a lot of health problems in our livestock and there is a lot of cancer and other health problems in the area."	Thank you for your comment.
Randy Fiest	6	"We fill if it done now and done right it is a win-win situation."	Thank you for your comment.
Ross Jacobi	1	The area has a high radioactive background - the area is radioactive naturally- which is why it was mined. Mr. Jacobi does not think the general public understands that.	Thank you for your comment.
Ross Jacobi	2	Consider that the worst of the erosion may have already occurred and that the area may be healing itself naturally. His concern is that more damage could be done through reclamation due to increased site disturbance.	In a number of the proposed alternatives outlined in the EE/CA it is realized that natural re-vegetation has occurred and should not be disturbed provided the natural re-vegetation is mitigating the human health risk and the risk to the environment.
Ross Jacobi	3	Mr. Jacobi doesn't think it right that the companies should now have to mitigate hazards when it was the government that wanted them to mine in the first place.	The goal of the EE/CA for the Riley Pass Mine Sites is to identify any potential risks to human health and the environment, identify the degree of risks, outline potential alternatives for the mitigation of the risks, as well as, the effectiveness of the alternatives in mitigating the risks. The involvement of companies associated with the historic activities that resulting in the potential impacts to human health and the environment are dealt with under other aspect of CERCLA as well as other environmental laws. CERCLA is not a punitive statute. CERCLA's focus is to address the cleanup of hazardous sites and it is not meant to punish individuals for past actions. The issue of retroactive liability has been extensively litigated through the courts and that Congress had clearly intended to grant this authority when it wrote the law.

Commenter	Comment #	Comment	Response
Ross Jacobi	4	Mr. Jacobi does not agree with spending Federal or company monies to reclaim the areas; he feels the money is better spent elsewhere.	The goal of the EE/CA for the Riley Pass Mine Sites is to identify any potential risks to human health and the environment, identify the degree of risks, outline potential alternatives for the mitigation of the risks, as well as, the effectiveness of the alternatives in mitigating the risks. The involvement of companies associated with the historic activities that resulting in the potential impacts to human health and the environment are dealt with under other aspect of CERCLA as well as other environmental laws.
Ross Jacobi	1	..he thinks the meat of the livestock that graze the area should be tested for toxins.	This is beyond the scope of an EE/CA
Ross Jacobi	2	He feels the EE/CA Risk Assessment makes assumptions regarding meat contamination that should be validated.	This is beyond the scope of an EE/CA
Ross Jacobi	3	Those assumptions could impact the ranchers economically should people begin to believe the meat is contaminated.	This is beyond the scope of an EE/CA.
SD Game Fish & Parks	1	Alternatives 3 and 5 Threshold Criteria of the EECA. Detailed Analysis of Reclamation Alternatives, 3 and 5 provides only some protection of human health and environment and is not sufficient to achieve source area risk reduction dictated by the risk assessment. The alternatives appear to fail EECA Threshold Criteria.	Thank you for your comment.
SD Game Fish & Parks	2	The EECA did not analyze other available engineering controls for additional risk reduction. Process options such as impervious caps, soil compaction, non-contaminated soil covers, etc. have not undergone comparative analysis for cost or risk reduction	Acutely contaminated wastes makeup a very small percentage of the overall volume of materials at the Riley Pass Mine Sites. The recommended alternatives primarily focus on reducing erosion and sedimentation, and placement of the acutely contaminated materials under many feet of overburden spoils. By doing this and establishing vegetation, direct contact and water infiltration are eliminated.
SD Game Fish & Parks	3	The Forest Service documents approximately 1000 acres of land having been disturbed by excavation, spoils deposition, and subsequent erosional deposits from the original mined areas. The EECA risk assessment identifies exposure risk in surface water, soils and sediments outside the original mine areas. Preferred alternatives only remediate original mine area spoils with the expectation that reclaiming the source will	Any removal actions taken at the Riley Pass Mine Sites will include all wastes in and round the historic mining activity that can be shown associated with the historic mining activities.

Commenter	Comment #	Comment	Response
		subsequently reduce problems associated with groundwater, surface water or sediments. Based on 58 to 85% risk reduction of mine spoils, areas of contamination outside of the source area will continue to risk various receptors for some time. For long-term effectiveness, permanence, and protection of human health and environment, the extent of "site" remediation should include all contamination media resulting from the original mine areas at the Riley Pass Site.	
SD Game Fish & Parks	4	3.0 "A requirement of this section is to determine wastes consolidation sites and /or cover soil borrow site. No options are given for locations or favorable soil characteristics of cover borrow sites in the EECA. "	Prior to completing the removal action design, additional testing/sampling of the subsurface soils will be completed to verify the suitability of the soils for use as a cap.
SD Game Fish & Parks	5	All waters of the State have selenium as a water quality standard. South Dakota surface water criteria can be found in South Dakota Administrative Rules Chapter 74:51:01 Appendix B.	Thank you for your comment.
SD Game Fish & Parks	6	Periodic maintenance of sediment ponds below source areas are not included in project or long-term operations and maintenance costs.	Thank you for your comment.
SD Game Fish & Parks	7	4.0 "It appears a typo exists in the second paragraph of this section. RA's, perhaps should be replaced with Remedial Investigations (RI)."	Remedial Actions is the proposed term. Section 4.0 of the Final Draft EE/CA will be changed.
SD Game Fish & Parks	8	6.1 "As stated earlier South Dakota has an Acute Aquatic Life Standard for selenium and should be investigated as Contaminate of Concern."	Selenium was investigated as a Potential COC, but did not meet the attribution rule.
SD Game Fish & Parks	9	8.3.1 "Alternate 3 fails the Threshold Criteria of Protection of Health and Environment and therefore should not be considered."	Thank you for your comment.
SD Game Fish & Parks	10	8.3.2 "Alternate 3 fails the Threshold Criteria of water quality ARAR compliance and therefore should not be considered. "	Thank you for your comment.
SD Game Fish & Parks	11	8.5.1 "Alternate 5 fails the Threshold Criteria of Protection of Health and Environment and should not be considered. "	Thank you for your comment.

Commenter	Comment #	Comment	Response
SD Game Fish & Parks	12	8.5.2 "Alternate 5 fails the Threshold Criteria of water quality ARAR compliance and therefore should not be considered. "	Thank you for your comment.
SD Game Fish & Parks	13	9.0 "Other engineering controls need to be retained for analysis of cost and risk reduction. The EECA did not analyze other engineering controls for risk reduction. Process options such as impervious caps, soil compaction, non-contaminated soil covers, etc. have not undergone comparative analysis for cost or risk reduction. "	Thank you for your comment.
SD Game Fish & Parks	14	"Alternative 3 is selected for remediation of Bluff A. Implementation of this alternative allows the 1 acre spoil pile on the south side to erode into the dry draw adjoining the large spoil pile associated with Bluff B. This side slope pile should be consolidated with other mine spoils on top of the bluff to comply with EECA criteria."	Alternative 3 is proposed for remediation of Bluff A; no selection has been made. Side slope spoils pile will be addressed during the design phase.
SD Game Fish & Parks	15	"Alternative 3 is selected for remediation of Bluffs I1,2,3. Implementation of this alternative allows side slopes and acutely contaminated to erode. Threshold and Balancing Criteria will not be fulfilled."	Thank you for your comment.
SD Game Fish & Parks	16	Alternative 3 is selected for remediation of Bluff K2. Implementation of this alternative allows acutely contaminated material to be incorporated into other mine spoils, continuing long-term health risks. The Threshold and Balancing Criteria of the EECA will not be fulfilled.	The acutely contaminated material is an exposed lignite coal seam within a highwall. During the removal action regrading operations, the lignite is proposed to be covered and revegetated.
SD Game Fish & Parks	17	Protective Wildlife Recommendations: · Wildlife fencing should exclude wildlife from reclaimed source areas containing contaminated sediment dams, soils or vegetation.	Thank you for your comment.
SD Game Fish & Parks	18	Protective Wildlife Recommendations: Revegetation should only occur on soils with less than 3x background level of (primary) COC	Thank you for your comment.
SD Game Fish & Parks	19	Protective Wildlife Recommendations: · Reclamation seed mixtures should contain minimal variety of native species.	Appropriate seed mixtures will be specified during the removal action design.

Commenter	Comment #	Comment	Response
SD Game Fish & Parks	20	Protective Wildlife Recommendations: Avoid riprap, rock piles, or other engineer features that may attract small mammals or other wildlife.	Thank you for your comment.
SD Game Fish & Parks	21	Protective Wildlife Recommendations: All contaminated wastes should be consolidated to alleviated the excessive mining of clean soil cover	Thank you for your comment.
SD Game Fish & Parks	22	Protective Wildlife Recommendations: Underlying bedrock, when possible, should be cleared free of contaminated spoils, stabilized and revegetated.	Thank you for your comment.
South Dakota DENR	1	"None of the alternatives put forth in the EECA, including the recommended alternative, produce the necessary risk reduction to meet the required risk reduction for the Cattle Rancher. The Forest Service should develop at least one alternative that meets all the necessary risk reductions. Once developed, the new alternative should be evaluated against other alternatives."	The Forest Service respectfully disagrees and believes that the EE/CA includes the appropriate range of cleanup alternatives.
South Dakota DENR	2	"Although institutional controls are discussed and evaluated in the preliminary screening of alternatives, they are not incorporated into any of the alternatives retained for detailed analysis or included as part of the recommended alternative. The Forest Service should develop alternatives that incorporate the use of institutional controls. The use of these controls may help reduce the overall remaining risk and help achieve the required risk reduction."	Thank you for your comment.
South Dakota DENR	3	"Why were no engineered, capping alternatives discussed in the EECA? The EECA should evaluate the use of engineered, waste caps to determine their ability to increase the sustainability of the remedy and their potential to reduce long-term risk."	The Forest Service respectfully disagrees with the comment that engineered capping alternatives are not considered in the EE/CA. The EE/CA contemplates that some waste may be entombed and capped in engineered repositories onsite.
South Dakota DENR	4	"The ARAR's presented in the document are incomplete. The department submitted Riley Pass ARARs to the Forest Service in and October 16, 2003 letter and again in a September 22, 2004 letter. Copies of these letters are enclosed for Forest Service review. The ARAR's identified in the enclosed letters are the state ARARs for the Riley Pass site and the department expects them to be incorporated into the final EE/CA."	The Forest Service received the State's proposed ARAR's and has considered all of them for inclusion in the Final EE/CA. Many of the ARAR's that have been selected in the final EE/CA were proposed by various South Dakota state agencies.

Commenter	Comment #	Comment	Response
South Dakota DENR	5	"2.1 Mining History" The second paragraph in this section should include a description of the work done in 2004 and 2005 as part of the time-critical removal action conducted by the Forest Service."	Thank you for your comment. This will be changed in the Final EE/CA
South Dakota DENR	6	"2.4.4 Land Use and Population" " This section does not contain any information on the population of Harding County. Either add population information about the county or remove "and population" from the title of this section."	Thank you for your comment. This will be changed in the Final EE/CA
South Dakota DENR	7	"2.4.4 Land Use and Population" The detailed description on the impacts of mining activities on cattle performance in the North Cave Hills area does not belong in this section. It should either be included as a stand alone section or should be incorporated into section 5.0 Baseline Human Health and Ecological Risk Assessments."	Thank you for your comment. This will be changed in the Final EE/CA
South Dakota DENR	8	4.0 "Comments in the first three paragraphs of this section imply that actions recommend by the EE/CA will be remedial actions (RA's). It is the departments understanding that the EE/CA was written in support of a CERCLA non-time critical removal action. If it were a remedial action, a remedial investigation/feasibility study would have been prepared. Please redraft the paragraph to clearly state the actions recommended by the EE/CA will be undertaken through a CERCLA non time critical removal action. Also, address the CERCLA requirements for complying with ARARs when conducting non time critical removal actions. "	The goal of this EE/CA is in fact to support the undertaking of removal actions at the Riley Pass Mines Site. These removal actions will be used to mitigate and/or stop the release of contaminates, as well as, stop contaminates from having an potential impact on human health and environment. This section of the document will be corrected to reflect this intent and clarify the relationship of removal actions with respect to the overall remediation of the site.
South Dakota DENR	9	4.0 "The fifth paragraph in this section states that the department has not formally identified ARARs for the Riley Pass site. The department submitted Riley Pass ARARs to the Forest Service in an October 16, 2003 letter and again in a September 22, 2004 letter. Copies of these letters are enclosed for Forest Service review. The ARARs identified in the above to letters are state ARARs for the Riley Pass site and the department expects them to be incorporated into the final EE/CA."	The Forest Service received the State's proposed ARAR's and has considered all of them for inclusion in the Final EE/CA. Many of the ARAR's that have been selected in the Final EE/CA were proposed by various South Dakota state agencies.

Commenter	Comment #	Comment	Response
South Dakota DENR	10	"The mine permitting statutes listed in Table 4-2 on page 4-16 (SDCL 45-6B-5, 6, 7, 10, 11, 35, and 92) only apply to areas mined after 1971.These are not ARARs for this site and should be removed from the	Thank you for the comment. The Forest Service received the State's proposed ARAR's and has considered all of them for inclusion in the Final EE/CA. Many of the ARAR's that have been selected were proposed by various South Dakota state agencies.
South Dakota DENR	11	6.2 "The required percent risk reduction for each bluff shown in Table 6-3 is based on one chemical of concern at each bluff. If, at any individual bluff, the required percent reduction is attained, will the risk for the other chemicals of concern also be reduced to the risk based soil concentration? This is especially important to know for arsenic since it, not Ra226, is the primary risk driver at the site."	Effective containment or removal of 226Radium as described in the EE/CA will result in the interruption of the exposure pathways that result in human health risks. In other words, 226Radium is used as an indicator for the entire clean-up process.
South Dakota DENR	12	7.3.1.2 "This section does not thoroughly evaluate the "land use restrictions" component of this option." What types of land use restrictions would be implemented? Would the land use restrictions be necessary on any private land? Would there be any cost associated with the administration of the land use restrictions? (i.e. legal fees to process deed restrictions)? For Forest Service properties, does the Forest Service have a way to administratively restrict the use of the land, I.e., preventing grazing, and how is this documented? If institutional controls, other than fencing, are intended as part of this alternative, please include a full evaluation of their effectiveness, implemetability, and costs in this section."	Thank you for your comment.
South Dakota DENR	13	"The department thinks warning signage should be incorporated into the fencing aspect of institutional control at all of the mined bluffs. Please add warning signage to all institutional control alternatives for all of the bluffs. This also applies to sections 7.3.2.2. 7.3.7.2, 7.3.8.2, 7.3.9.2, 7.3.10.2, 7.3.11.2, 7.3.12.2, 7.3.13.2, and 7.3.14.2."	Thank you for your comment.
South Dakota DENR	14	7.3.2.3 - "Please include the location of the proposed run-on/run-off ditches on Figure 7-2. Please apply this to all other alternatives and Figures containing run-on/run-off ditches."	Location, configuration and associated details concerning the run-on/run off control ditches will be completed during the removal action design.

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South Dakota DENR	15	7.3.2.4 - " Please include a narrative explaining why Alternative 4 is not applicable to Bluff B. This also applies to sections 7.3.9.4, 7.3.10.4, 7.3.11.4, 7.3.12.4, and 7.3.14.4."	The volume of material at Bluff B will require placement of excess material back into the open pit area. Bluffs I3, J, K1 and K2 have relatively small areas. It is assumed that these sites will require minimal response action work.
South Dakota DENR	16	7.3.2.6 -- "Screening Summary - This alternative must be retained for evaluation in the detailed analysis. South Dakota codified law 45-6B-42 specifically addresses the abandonment of high walls. This alternative must be retained in order to evaluate compliance with state ARARs. For your reference, this ARAR was included in the package submitted by the state ...This applies to sections 7.3.8.6 and 7.3.9.6."	Thank you for your comment.
South Dakota DENR	17	7.3.10.5 " Please include a narrative explaining why Alternative 5 is not applicable to Bluff I3. "	The volume of actively eroding material is confined to relatively small areas and it is expected that no excess material will be required to be moved. During the removal action design this will be confirmed.
South Dakota DENR	18	7.3.10.6 --- "Please include a narrative explaining why alternative 6 is not applicable to Bluff I3."	Conventional methodologies do not address mitigation of risks associated with physical hazards (e.g. high walls); consequently, no additional risk reduction would be observed at this site.
South Dakota DENR	19	7.4 "Edit Table 7-3 to show Alternative 6 as a retained alternative. See 15." (Reflected on table as 16.)	Thank you for your comment.
South Dakota DENR	20	8.0 "Compliance with ARARs - The department must be included in any discussion concerning the waiver of state ARARs."	Thank you for the comment.
South Dakota DENR	21	8.1 " What is the justification for the assumption made in the last paragraph of this section? Where they derived from CERCLA, professional judgment, or another source? Please explain."	The comment refers to % exposure reductions from various soil pathway remedies. These were based on professional judgment, various reference materials, and modeling.

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South Dakota DENR	22	8.2.2 " The ARARs included with the EE/CA are incomplete. Please use the ARARs included in the documents attached when evaluating an alternatives ability to comply with state ARARs."	Thank you for the comment.
South Dakota DENR	23	9.0 "The second paragraph of this section mentions the need for long term maintenance to ensure the sustainability of waste covers installed at the site. The department recommends the use of institutional controls as part of the long-term maintenance plan."	Thank you for your comment.
South Dakota DENR	24	9.0 " The seventh paragraph in this section short-term impacts from dust is discussed. The EE/CA should include best management practices for controlling dust created by the construction activities."	A Health and Safety Plan will be developed prior to implementation of the removal action
South Dakota DENR	25	10.0 "None of the recommended alternatives include the use of instiitiutional controls to increase the level of risk reduction and the sustainability of the remedy. Please revise the recommended alternatives to include the use of institutional controls. "	Thank you for your comment.
South Dakota DENR	26	Appendix E " In the cost estimates for Bluffs A and B, the costs to remove sediment ponds should decrease over the 30 year period. Vegetation growing on reclaimed areas should reduce the amount of sediment generated and entering the ponds. With less sediment, the costs to remove it should decrease. Please revise the cost estimates to reflect this."	Thank you for your comment.
South Dakota DENR	27	Appendix E " In addition, vegetation O & M costs for all alternatives should decrease over the 30-year period for all the bluffs since O & M should decrease as the vegetative cover becomes established. Please revise the cost estimates to reflect this."	Thank you for your comment.
Thomas Kalisiak	1	Paraphrased - Mr. Kalisiak is concerned with off Forest effects to sedimentation of dams and dugouts. He indicated several locations in Sections 30, 23, 26, 35, and 27 were dams have been washed out and filled with sediment that is contributed to the mines.	Any removal actions taken at the Riley Pass Mines Sites will include all wastes in and round the historic mining activity that can be shown associated with the historic mining activities.
Thomas Welch	1	"I greatly appreciate and support the efforts of the federal	Thank you for your comment.

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		government and the Forest Service to pursue reclaiming the mines and cleaning up the area."	
Thomas Welch	2	"Clean up efforts will help protect the health of people, livestock and wildlife for many generations."	Thank you for your comment.
Thomas Welch	3	"It is unfortunate that the mines were left in their exposed condition for such a long time and allowed to erode heavy metal and radioactive toxins to area watersheds and downwind land areas."	Any removal actions taken at the Riley Pass Mines Sites will include all wastes in and round the historic mining activity that can be shown associated with the historic mining activities.
Thomas Welch	4	"I strongly encourage your office and the federal government to pursue and encourage additional exposed uranium mine reclamation efforts on private lands in the area."	Any removal actions taken at the Riley Pass Mines Sites will include all wastes in and round the historic mining activity that can be shown associated with the historic mining activities.
Thomas Welch	5	"Again, I strongly support the Harding County mine reclamation efforts and encourage the clean-up and monitoring of the additional uranium mine spoils located on private lands in the area. This clean-up is obviously good stewardship of our land and water resources and most importantly will make the area and surrounding areas a safer place to live, work, farm, and rand, and recreate."	Any removal actions taken at the Riley Pass Mines Sites will include all wastes in and round the historic mining activity that can be shown associated with the historic mining activities.
US - EPA	1	"We concur with the multiple alternatives proposed for remediation of contaminated soil at each of the identified bluff areas."	Thank you for your comment.
US - EPA	2	"In terms of priority sites for remediation, the primary locations should coincide with the most highly contaminated areas (lignite mining locations) and areas where materials are mobile and affecting formerly uncontaminated locations."	Thank you for your comment.
US - EPA	3	"Our previous review of the risk assessment concluded that radiological and metal constituents found within the ore body may contribute human health hazards to site workers, USFS personnel, contractors, ranchers, or hunters, utilizing the more heavily impacted areas. The risk assessment in the EE/CA further supports this conclusion. In addition, the general public appears to be significantly concerned over human health hazards related	Thank you for your comment.

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		to site exposure. Thus, we believe remediation of these highly contaminated sites need to be addressed."	
US - EPA	4	"The risks identified for personnel and citizens not exposed to the more heavily impacted areas appear to be conservative as presented in the EE/CA."	The Forest Service makes risk management decisions using a conservative approach, to ensure that actions taken at the site do not require that additional clean-up is required in the future. This accomplishes two goals: 1) it allows the Forest Service to obtain funding to support efforts at the site and 2) it allows the Forest Service to evaluate clean up alternatives that are realistic and can be implemented in the future.
US - EPA	5	"We would be pleased to work with you on any issues you may encounter during the remediation of the Riley Pass Mining site."	Thank you for your comment.
Kerr McGee	1	Riley Pass is a non time critical removal action conducted under CERCLA, 40 C.F.R. § 300.415 of the National Contingency Plan (NCP), and available guidance.	The Forest Service agrees with this and has followed the NCP in its current removal action.
Kerr McGee	2	The EE/CA's analysis, however, is inconsistent with implementation instructions. The NCP applies to removals evaluated by any lead agency - in this case the FS. .... CERCLA "removal" actions such as those proposed by this EE/CA are authorized by CERCLA §104 and implementing regulations at 40 C.F.R §300.415.	While the Forest Service disagrees with the commentor's opinion that the Forest Service's actions have been inconsistent with the NCP, the Forest Service agrees that the NCP applies to this response action.
Kerr McGee	3	Generally, removal responses are considered relatively short term aid placed in contrast to CERCLA's other permanent, complex and costly set of "remedial" actions. Appreciating the purpose of removal actions is necessary to make them consistent with good site management principles. Although all removals must be protective of human health and the environment within their defined objectives, removals are distinct from remedial actions in that they may mitigate or stabilize the threat rather than comprehensively address all threats at a site. In 1990, EPA stated in the Federal Register: Removals are intended to be responses to near-term treats, with the ability to respond	The Forest Service believes that the commentor's summary of the various CERCLA cleanup processes does not reflect the full range of typical CERCLA response actions performed by either EPA or the Forest Service. There is considerable overlap in practice between the use of the two removal action processes (time-critical and non-time-critical) and the remedial action process. The language the commentor quotes generally relates to: 1) time-critical removal actions, which are used to address emergency situations on an interim basis; or 2) to Superfund financed cleanups, where very limited public funds need to be conserved as much as possible. To best conserve those limited Superfund monies, Congress gave the lead agency considerable discretion to select less

quickly when necessary; thus, ARARs that would delay rapid response when it is necessary, or cause the response to exceed removal goals, may be determined to be impracticable [depending on scope or urgency of the situation].

The scope of the removal action relates to the special nature of removals in that they may be used to minimize and mitigate potential harm rather than totally eliminate it. ... [U]sing the example above, even though standards" requiring cleanup of the lower level soil contamination would be an ARAR to that medium, they would be outside the scope of the removal action when such cleanup is not necessary for the stabilization of the site, or when it would cause an exceedance of the statutory limits and no exemption applied. Hence, such soil standards, while ARARs, would not be practicable to attain considering the exigencies of the situation.

comprehensive responses. Within the context of 1990 EPA discussion quoted above, a time-critical removal action is used to address urgent problems onsite, but the lead agency does not have enough time in such cases to develop or comply with long-term cleanup goals for the entire site. So, the cleanup standards analysis is deferred until more extensive studies can be conducted under either the non-time-critical removal action process or the remedial action process. Unfortunately, these studies take months or years to complete (typically much longer for remedial actions), and this delay would be far too long to wait when the lead agency is addressing immediate threats at a site.

In the non-time-critical removal process, the lead agency prepares an Engineering Evaluation/Cost Assessment ("EE/CA"), which assesses the contamination at a site and proposed cleanup alternatives. This non-time-critical process is the most common way CERCLA sites are cleaned up throughout the United States. If a site is particularly complex or difficult to clean up, however, EPA may add the site to the National Priorities List ("NPL"). In such a case, EPA uses the remedial action process to clean the site up. The remedial action process requires an extremely detailed and expensive Remedial Investigation/Feasibility Study ("RI/FS"), rather than the more efficient EE/CA. In practice, the remedial action process is used relatively rarely by Federal lead agencies, including EPA. For example, although there are tens of thousands of CERCLA sites within the United States where lead agencies will probably perform some CERCLA cleanup eventually, only about two thousand of these sites have been added to the NPL over the last 25 years. At present, the NPL contains about 1,500 sites.

The non-time-critical removal action process is an intermediate level of investigation between time-critical removals and remedial actions, and both the Forest Service and EPA have found in recent years that it is usually much more efficient to conduct non-time-critical removal actions than remedial actions. Despite this efficiency, however, the non-time-critical removal process can still ensure that the cleanup is as thorough and protective as with a remedial action. This is because most

non-time-critical removals use the same cleanup standards as a remedial action. Indeed, most non-time-critical removals must meet the same standards, which are found in CERCLA § 121(d). That statute generally requires that: 1) the cleanup protect the public health and environment, and 2) compliance with many detailed environmental regulations from other environmental programs (known collectively as "ARARs"). Both EPA and other Federal lead agencies, such as the Forest Service, have already cleaned up numerous CERCLA sites, using only the non-time-critical removal process.

The trend towards greater use of removal action authorities was speeded along in part by the criticism EPA received during the late 1980's and early 1990's because of its failure to actually clean up Superfund sites. Many CERCLA sites, particularly NPL sites, are in the investigation process for four years or more, and then the cleanups take many more years thereafter. One of the most frequently stated criticisms of CERCLA, particularly within the business community, was that RI/FSs were far too process-oriented and required too much study before any final remedy could be selected. This criticism was supported by many research studies that showed typical RI/FSs were costing more than one million dollars and in some cases costing tens of millions of dollars. These studies took many years to complete. Nevertheless, responsible parties still argued that these studies were incomplete.

Lead agencies have taken this criticism into account, and in recent years, both EPA and the Forest Service have limited the use of remedial actions to the most complex cleanups of the most intensively contaminated sites. Instead, now most CERCLA sites are cleaned up using only non-time-critical removal actions, which is the final CERCLA cleanup action. As the final cleanup action at a Site, the cleanup generally must comply with the § 121(d) standards of protectiveness and compliance with ARARs.

In some cases the lead agency begins with the non-time-critical removal process, but then it recognizes that the Site is more complex or difficult than it expected. In those cases, the agency can transition smoothly into the

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			more comprehensive remedial action process as is allowed for by NCP § 300.415(g). Another important point to note is that there is no obvious demarcation between the investigations performed under the removal processes and those under the remedial action process. In general, an EE/CA is more streamlined and less expensive than a RI/FS, but there is a great deal of possible overlap between each approach. In other words, some EE/CAs can be more detailed and comprehensive than some RI/FSs, depending on the particular situation. In the present case, the Forest Service has conducted a much more extensive and comprehensive EE/CA than it typically performs. This EE/CA cost several hundred thousand dollars, and it took several years to complete. In reality, the EE/CA performed by the Forest Service in this case is functionally equivalent to an RI/FS under the remedial process. In summary, the CERCLA statute is quite flexible and allows for a number of overlapping approaches to protecting the public health and the environment, depending on the circumstances of a particular case.
Kerr McGee	4	Some limitations that distinguish removals from remedial actions are apparent in the CERCLA statute and the NCP. For example, removal response actions must be terminated for fund financed removal actions if they would exceed the applicable limitation of time (no more than 12 months duration) and cost (no more than $2 million in response cost) without further justification for exceeding those limits. The NCP requires termination for these fund financed actions unless lead agencies determine: 1) there is an immediate risk to public health welfare or the environment, continued response actions are immediately required to respond to the emergency and other actions will not be provided in a timely basis; or 2) continued response is otherwise appropriate and consistent with remedial action to be taken. As to the second determination, EPA stated: "EPA expects to use the exemption primarily for proposed and final NPL sites, and only rarely for non-NPL site." Removals that are not fund financed are not subject to these limitations.	The Forest Service is not using any Superfund monies at this Site, so as the commentor notes elsewhere, the $2 million cap does not apply. The Forest Service is utilizing its own appropriations to fund its work on the Site, and the Forest Service expects the former Site operator to implement the cleanup alternative selected by the Forest Service for the Site. Thus, the agency does not expect any Superfund monies to be used at this Site. Nevertheless, even if this were a Fund-financed site, the Forest Service would use its discretion to continue with the non-time-critical process because the EE/CA demonstrates that an immediate risk to the public health and environment exists in this case. In addition, the removal actions considered in the EE/CA are consistent with the final remedy at the Site.

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Kerr McGee	5	Other cost related removal authority limitations make sure that the usual reduced scale of removal actions does not escalate to large expensive projects unnecessarily. For example, EPA requires regions to consult with headquarters management for all removal actions expected to cost over $6 million. Further, to be consistent, all removals should be mindful that relative costs are a factor in deciding the scope of any response. EPA has stated that the difference between fund financed and PRP performed removals would not alter the scope of appropriate removal or justify higher costs: time and dollar limitations generally will not result in PRP's performing a more extensive removal than EPA itself would conduct. In addition, at all private sites (and at federal facility sites if it is requested) where response costs are expected to exceed $20 million, an additional review is conducted by the national Remedy Review Board.	The Forest Service shares the commentor's concern for strong management oversight of CERCLA response actions, particularly at sites like the Riley Pass Mines Site, where the cleanup costs may exceed $ 20 million. Although the Forest Service does not have a formal counterpart to EPA's National Remedy Review Board, the Forest Service does take its responsibility to implement cost effective response actions very seriously. In this case, the Custer National Forest and the OSC have consulted intensively with the Forest Service's regional environmental staff to make sure that they have complied with the appropriate CERCLA and National Contingency Plan ("NCP") requirements. The regional environmental staff further discussed the conditions at the Site and the range of alternatives with the environmental staff and their management in the Forest Service's Washington, D.C. headquarters. The forest and regional staff have also consulted over several years with EPA's CERCLA experts in its Region VIII office in Denver. In addition, the Forest Service has requested and received detailed comments from South Dakota's Department of Environment and Natural Resources. The agency consulted the Montana Bureau of Mines and Geology for technical advice on background sampling issues at the Site. Finally, the Forest Service has asked the USDA's Field Coordinator for the Hazardous Materials Management Group to review and on the draft EE/CA. The Field Coordinator has over 15 years of CERCLA experience, mostly within EPA, and she is particularly familiar with the intricacies of implementing CERCLA cleanups at large mine sites. She has reviewed the draft EE/CA, and her comments have been incorporated into this final document.
Kerr McGee	6	Because this site is not on the NPL, it has greater affinity with sites where cost limits are commonly maintained, not exempted in rare cases.	The Forest Service agrees that the Site is not on the National Priorities List. The agency believes that this is an additional factor supporting the Forest Service's decision to employ the non-time-critical removal process rather than the more cumbersome and time-consuming remedial process, at least for the present If EPA were the lead agency in this case, it could not conduct a RI/FS at this Site because it can only use the remedial action process at NPL sites.

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Kerr McGee	7	Although it is hoped that removal actions, once completed, may obviate the need for further action, if sufficient data to choose a final long term response are unavailable, as is the case at this Site, the reasonable choice is to plan for necessary remedial work when data are available. Many of the deficiencies in the EE/CA, both structural and substantive, are the result of the EE/CA's attempt to provide a long-term comprehensive solution to problems that have not been adequately characterized at the Site rather than a more limited removal action commensurate with what is known and documented. The NCP states: > If the lead agency determines that the removal action will not fully address the threat posed by the release and the release may require remedial action, the lead agency shall ensure an orderly transition from removal to remedial response activities. And EPA clarified: > Although some courts have considered the "permanence" of a response action as relevant to discerning whether the action is removal or remedial in nature, the Agency believes that consideration of permanence per se is sometimes misleading in making a determination regarding whether to employ removal or remedial authorities. As a practical matter, removal actions are often permanent solutions such as can be the case in a typical soil or drum removal. Also, the Agency views the reference to "permanent" in the statutory definition of "remedy" as merely reflecting Congress' preference that remedial actions effect permanent solutions. U.S.C. Section 9621(b) (1). It does not suggest that removals cannot also achieve permanent solutions. Compare 42 V.S.C. Section 9601(23) (definition of "removal") ...42 U.S.C. Section 9601(24) (definition of "remedial action"). However, at sites where the other factors suggest that remedial	Although the agency respectfully disagrees with the commentor's opinion that insufficient data exists to select final long-term responses at the Site, the agency agrees that it should make a final response action decision only on those parts of the cleanup plan where sufficient data is available to support a final decision. The Forest Service also agrees with the importance of implementing Congress' statutory preference in § 121(b) (1) for permanent solutions at CERCLA sites. As the commentor notes, some removal actions do achieve permanent solutions, and the Forest Service expects that will be the case in this instance. Nevertheless, the Forest Service sometimes makes interim cleanup decisions, and then it monitors their effectiveness to determine whether further cleanup actions are warranted. In addition, sometimes the particular response actions selected at a site do not succeed as well as was originally hoped, so further response actions become necessary to ensure that the final response action meets the requirements of CERCLA § 121(d). This is one reason that long-term monitoring of most cleanups is necessary. Sometimes, that further response action may be a subsequent removal action, and at other times, it is more appropriate to transition into the remedial process. As the commentor notes, the NCP provides a process to transition smoothly from the removal process to the remedial process. The Forest Service has balanced the competing interests of ensuring that the cleanup is cost effective, and ensuring that the response actions selected for the Site are fully protective of the public health and the environment. In doing so, the Forest Service has exercised its discretion and decided that it is most appropriate to continue using the non-time-critical removal process at the Riley Pass Mine Site. As it carefully follows the progress of cleanup at the Site, however, the Forest Service will be evaluating the need to follow up the removal action with a subsequent remedial action. If the Forest Service does determine that a RI/FS is appropriate, it will proceed with a subsequent remedial action In such an eventuality, all of the past investigations performed at the Site will be just as valuable in preparing the RI/FS as they were in the EE/CA. The further work that is needed to complete the RI/FS will simply build

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		authority should be used, it may still be appropriate to use removal authority to conduct interim or partial response actions to achieve immediate risk reduction while the RI/FS is completed and the final remedy is selected.	upon this existing foundation of information already available. It should be noted that, in such an eventuality, the Forest Service will expect the former mine operators to perform the RI/FS at the Site. The agency notes that there is no requirement for a lead agency to study a site until it thinks it has perfect knowledge in order to make response action decisions. If that were the standard, no CERCLA site would ever be cleaned up because no agency can ever know everything about a site. Instead, the NCP only requires that the lead agency needs only to collect the "data necessary to **adequately** characterize the site for the purpose of developing and evaluating effective remedial alternatives (emphasis added)." [NCP § 300.430(d) (1)]. In the present case, the Forest Service believes it has adequate information to make a substantial number of final cleanup decisions for the Site.
Kerr McGee	8	CERCLA requires remedial actions to comply with ARARs but removals meet them only to the extent practicable. Applicable requirements means those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at a CERCLA site. The EE/CA ails to accurately assess the applicability of ARARs. EPA stated in 1990 is discussing the application of ARARs: Removal actions cannot be expected to attain all ARARs. Remedial actions, in contracts, must comply with all ARARs (or invoke a waiver). Indeed, the imposition by Congress of limits on the amount of time and Fund money that may be spent conducting a removal action often precludes comprehensive remedies by removal actions alone. Removal authority is mainly used to respond to emergency and time-critical situations where long deliberation prior to response it not feasible. All of these factors—limits on funding, planning time, and duration. As well as the more narrow purpose of removal	The Forest Service agrees with the commentor's concerns about whether a removal action can ensure compliance with all ARARs at the Site. As the commentor notes, ARARs must be attained in the final cleanup of the Site, unless one of a handful of rarely applied ARAR waivers is appropriate. Nevertheless, the 1990 Federal Register language quoted by the commentor does not provide a full picture of the implementation of ARARs in removal actions. The language quoted applies most specifically to: 1) interim removal actions that are followed by further investigations and cleanup under either the removal program or the remedial program; or 2) Superfund financed cleanups where very limited monies need to be conserved. It is critical to note that CERCLA § 121(d) specifically requires that **all final** CERCLA cleanups—both removal actions and remedial actions—protect the public and the environment and meet ARARs, not just remedial actions. In the present case, the Forest Service is committed to complying with § 121(d). Its selected cleanup actions will protect the public health and the environment, and the agency fully intends to comply with all ARARs selected for the Site. These response actions could be, in and of themselves, very expensive, but that will not be the end of the CERCLA process at the Site. The agency will then carefully monitor the effectiveness of those response

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		actions—combine to circumscribe the practicability of compliance with ARARs during individual removal actions.	actions to determine whether they attain all ARARs. If they do not, the agency will then evaluate the potential for achieving the ARARs with an additional removal action or a remedial action. If so, the agency will proceed with further response actions at the Site.
Kerr McGee	9	Only those state standards that are identified in a timely manner and are more stringent than federal requirements may be relevant and appropriate.	The Forest Service agrees with this comment. The State of South Dakota has provided a comprehensive list of state ARARs on a timely basis for the Forest Service to consider in this case, and they have been incorporated into the final EE/CA as appropriate.
Kerr McGee	10	The EE/CA has not relied on a sufficient quantity or quality of data, nor applied the available data correctly to: 1) identify potential risks and site conditions, 2) accurately quantify those risks, 3) or distinguish (and qualify) the risks associated with background conditions associated with the natural mineralization of the site and in the broad area surrounding the site. The consequence of this failure is that the EE/CA does not have the requisite foundation for evaluating risks or potential alternatives to mitigate those risks or select a response action consistent with the NCP. Establishing representative background concentrations in mineralized areas is complex because a high degree of natural and local variability is the norm.	The commentor has stated several very broad categories of criticisms concerning the adequacy of the EE/CA. The Forest Service respectfully disagrees with these general characterizations, and it will respond to the commentor's specific criticisms below.
Kerr McGee	11	The Cave Hills area is one of 11 identified areas in the three state region of eastern Montana, northwestern South Dakota and southwestern North Dakota known to contain substantial and wide-spread, uranium-bearing lignites and carbonaceous shales in the Paleocene age Fort Union Formation. USGS geologists 'named this region the "Uranium-bearing Impure Lignite and Lignitic Shale Province which encompasses about 13,750 square miles. Uraniferous lignites were first discovered by the U.S. government using airborne radiometric surveys in southwestern North Dakota in the summer of 1948 and in northwestern South Dakota and eastern Montana in 1949. Radioactive anomalies identified through these surveys were subsequently inspected on the ground by AEC or USGS geologists and documented in publicly available Preliminary Reconnaissance Reports. These surveys/reports were	The Forest Service agrees in general terms that uranium is present at scattered locations within the area and agrees that uranium is present in the lignite coal beds at the Site. Uranium is a naturally occurring metal, and at some locations in the area it is present in its natural state. The EE/CA provides a discussion of where uranium occurs naturally and its concentrations. The agency also agrees that the former Atomic Energy Commission and the United States Geological Survey performed certain investigations within the region concerning the presence of uranium, and the potential for future mining operations. Some of these investigations included the uranium found in the lignite coal beds within the Site, and some of those coal beds were later mined by Kerr-McGee Corp. Nevertheless, the agency respectfully disagrees with the commentor's opinion that valid background conditions

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		part of AEC's efforts beginning in 1948 to establish a domestic procurement program designed to stimulate prospecting and to build a domestic uranium mining industry. These AEC / USGS led investigations indicated that vast areas of eastern Montana and western North and South Dakota were underlain by the Fort Union formation which locally hosted low to high grade uranium deposits along with associated occurrences of various metals including arsenic and molybdenum. This region contains higher levels of naturally occurring uranium and associated metals (As and Mo) in many of its soils, rocks and waters (surface and groundwater). Detailed geologic mapping and sampling of surface sections and auger cuttings were done in selected areas in the North and South Cave Hills in the summers of 1955-56 by USGS geologists. Their finding showed that nearly all coal (lignite) beds in this area contain at least 0.001 % uranium, with ore grade (0.1 % or more) occurring in four discrete seams present in the upper part of the Ludlow member of the Ft. Union formation, and in two seams that occur directly above the major cliff forming sandstone located at the base of the Tongue River member of the Ft. Union. In addition, two non-coal units containing ore grade uranium are also present in the upper part of the Ludlow member. In addition to analyzing more then 400 lignite samples (raw and ashed) for their uranium content, these investigators also found anomalously high concentrations of uranium in both surface and ground waters (72 samples) as well as elevated concentrations of metals (352 samples) including arsenic and molybdenum in the Cave Hills area. In the Riley Pass area, valid background conditions cannot be derived -regionally or locally - without including samples of lignite because the lignite with anomalous concentrations of metal mineralization are in fact a part of the natural background.	cannot be derived without including samples of lignite. In most instances, the lignite coal beds at the Site were not exposed on the surface of the land before mining began at the Site. Thus, lignite coal would not have made up any significant part of the natural background contaminant levels on the surface. Further, if necessary, additional background sampling can be performed during the implementation of the removal actions selected by the agency. This comment and others, confuse the terms "naturally occurring" with "background". While it is recognized that the lignite at the Riley Pass Mines Site and throughout the region is part of natural geological processes, the overwhelming majority of excess exposed lignite exists due to historic mining activities; specifically, the removal of significant quantities of natural topsoil (overburden) in order to reach the lignite deposits. The highly disturbed areas in the historic mine workings at the Riley Pass Mines Site represent an "unnatural" quantity of lignite that would otherwise not be exposed absent mining. The increased availability of lignite is reflected in the assessment both in terms of radioactive dose and its availability to both human and biotic species in their potential exposures to radionuclides and metals.
Kerr McGee	12	In 1990 and 1991, Denver, Knight, Piesold (DKP) evaluated reclamation alternatives in the Riley Pass area. Their studies were site specific to Bluff B. As part of their investigation, DKP conducted a radiological screening survey over the mine pit and spoil piles. The survey reported the level of radioactivity associated with the naturally occurring mineralization in and	As noted in the prior comment, each of the four composites collected by Pioneer contained 3 sub samples. As one was eliminated as an outlier, the 1999 data coupled with the five discrete samples collected in 2005 results in data for 14 separate locations. While the variability of the 1999 results cannot be calculated, the variation is built into the results by virtue of their

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		surrounding the lignitic ore. DKP also surveyed overlying sedimentary rocks that contained less radioactivity than the lignite zone. Unfortunately, DKP compared the two different sample populations and implied, incorrectly, that the lignitic ore exceeded the "background" by a certain times factor instead of appreciating that the lignite is a part of the natural background of the area. The results of the DKP radiological screening survey compared unlike lithologies mineralized lignites versus unmineralized sedimentary rocks - and would not establish a true background value. Both the number and location of samples used to set the background concentrations used in the EE/CA and risk assessment are incorrect. A soil background sample (RP-SXX) showing a high concentration arsenic which was clearly collected at a "background" location (well removed from any evidence of historic mining activity) was determined to be an "outlier" and eliminated from the background estimation (no statistical evaluation was provided to justify this action). The concentration in this sample was more than an order of magnitude higher than that of samples retained to establish background. This clearly indicates, as would be expected in a region with extensive natural mineralization, a wide range and high degree of variability in background concentrations. EPA guidance addresses this type of situation, and provides a variety of statistical approaches for establishing a valid background value. Five background samples were collected (by Portage in 2004) at Bluff B, five at Bluff H, and three additional samples at another location. Given the known natural mineralization in the area, and the associated variability, proper determination of background for each Bluff (or closely located groups of Bluffs) is required. Fewer than 10 samples are generally insufficient to provide a representative data set to calculate background statistics, and will result in a biased low background.	composite nature. Given these conditions, it is unlikely that additional sampling will result in substantially different findings. During the 2003 investigation, 5 background samples all showed arsenic with concentrations ranging from 10 to 50 ug/kg. Similarly, the 1999 investigation collected 4 composite samples consisting of 3 sub samples each. Three of the composites showed arsenic concentrations ranging from 9 to 50 ug/kg. The sample in question had an arsenic concentration of 332 ug/kg, a value consistent with arsenic values found in disturbed areas at the Riley Pass Mines Site. Standard statistical principles conclude that this result (332 ug/kg) is an outlier. To further support the background data collected, extensive field screening was conducted throughout mined and unmined areas. During the investigation, undisturbed areas showing minimal elevation in activity were selected for collection of background samples for laboratory analysis (metals and radionuclides). Following the completion of the investigation, correlations were performed to determine if a reasonable relationship existed between radiation / radioactivity and heavy metals.
Kerr McGee	13	The EE/CA's determination of representative concentration of chemicals of concern in water is inadequate and relies on data that does not meet EPA guidance for usability in risk assessments. Of 14 water samples used in the risk assessment, 10 were collected	The Forest Service recognizes the degree of variability and uncertainty inherent in using a database of 14 on-site measurements and 2 background measurements of surface water concentrations. No surface water data is available for Bluff H. Variations in water quality can be expected

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		in a single discreet sampling event from sediment collection basins collecting runoff from overburden materials. This event was immediately after the highest 24 hour rainfall ever recorded in August (2.46 inches). These samples showed extremely high TSS levels, certainly not representative of either typical storm water runoff, or of typical surface water conditions in these ponds. (A detailed discussion of the sampling issues associated with this event is attached as Appendix A to these comments.) EPA guidance addresses this type of situation, and provides a variety of statistical approaches for establishing a valid background value. As stated in this guidance fewer than 10 samples are generally insufficient to provide a representative data set to calculate background statistics, and will result in a biased low background.	both within and between draws. Variation may occur within draws over time based on rainfall intensity or major erosional events. Variations may be expected between draws based on the percentage of drainage impacted and numerous other hydrologic variables controlling sedimentation. Note that the concentration of arsenic in dissolved (filtered) and total (unfiltered) results are nearly identical. The data suggests that arsenic in area surface waters is dissolved, and therefore, significant mobility during storm events is likely. Also note that sample SD1, collected in August 2000 (not during the August 1999 time event of concern in the comment) showed significantly elevated arsenic levels (263 ug/L). Finally, while water concentrations are evaluated in the risk assessment, it is not a pathway that is considered in establishing risk-based soil cleanup level goals. Additional surface water data may be informative, but it will not substantively change the EE/CA conclusions.
Kerr McGee	14	Accurate identification of natural mineralization is important because CERCLA does not authorize selecting response actions in areas where only naturally occurring levels of arsenic, radionuclides or other substances are found. EPA has stated: > EPA may be concerned with two types of background at sites: naturally occurring and anthropogenic. Natural background is usually limited to metals [but may also include radionuclides]; whereas, anthropogenic (i.e. man-made) background can include both organic and inorganic contaminants... Generally, EPA does not clean up below natural background levels. With regard to assessment of risks from radionuclides in particular, EPA has stated: > The process. . . for selection of chemical data for inclusion in the quantitative risk assessment generally applies for radionuclides as well. Radionuclides of concern should include those that are positively detected in at least one sample in a given medium, at	The Forest Service agrees that accurate identification of natural mineralization is important. As the commentor noted, § 104(a) generally does not allow the lead agency to clean up a naturally occurring substance in its unaltered form, or altered solely through natural processes, or from a location where it is naturally found. Both EPA and the Forest Service have used their CERCLA authorities to address hundreds of mine sites like the Riley Pass Mines Site. At those sites, the lead agency generally does not require surface soils, surface water, or groundwater to be cleaned up below pre-mining natural background levels, and the agency does not intend to require any cleanup below those background levels at this Site. This statutory provision does not, however, prevent a lead agency from performing response actions at former mine properties because the naturally occurring metals are no longer in their unaltered form or their original location. At this Site in particular, the former mine operator intensively disturbed the Site as part of its mining activity. For example, it stripped away hundreds of thousands of cubic yards of soil covering lignite coal beds to expose those beds for mining. In addition, the mining practices employed by Kerr-McGee Corp. spread large quantities of lignite coal and waste material throughout the Site, away

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		levels... significantly above local background levels. In NPL delisting decisions, EPA expressed its preference that response is not appropriate where contamination is naturally occurring. For example, the Lodi Municipal Well Site, located in Lodi, New Jersey, was placed on the NPL "primarily due to radiological contamination," however, EPA's investigation indicated that this contamination was naturally occurring, and therefore EPA determined that no further action was required in its ROD. Accordingly, in 1998 EPA proposed to delete the Lodi Municipal Well Site from the NPL. Parties are not liable for removing contaminants that are at naturally occurring levels. The First Circuit held, "a defendant may avoid joint and several liability for response costs.. .if it demonstrates that its share of hazardous waste deposited at the site constitutes no more than background amounts of such substances in the environment and cannot concentrate with other wastes to produce higher amounts." Acushnet Co. v. Mohasco Corp., 191 F.3d 69, 1999 U.S. App. LEXIS 22498, *23 (1st Cir. 1999). Similarly, in Us. v. Alcan Aluminum Corp., 990 F.2d 711, 722 (2d Cir. 1993), the court stated that causation principles may be used to "permit a defendant to escape payment where its pollutants did not contribute more than background contamination and also cannot concentrate." CERCLA prohibits such action. In 1986 CERCLA § 104(a)(3) and (4) was amended to state that EPA: shall not provide for a removal or remedial action under this section in response to a release or threat of release-- (A) of a naturally occurring substance in its unaltered form, or altered solely through naturally occurring processes or phenomena, from a location where it is naturally found.	from its original location and condition. There are a number of factors in determining the need for clean-up at the Riley Pass Mines Site. Prior discussions have delineated the distinction between "naturally occurring" minerals and mineralization and "background levels" constituents resulting from these materials. Other factors necessitating clean up at the Riley Pass Mines Site include: the condition of the property, the resulting mobility of heavy metals and radionuclides (both in terms of erodability and chemical mobility), and the excess exposure of naturally occurring minerals to these conditions due to historic mining. As stated, the Forest Service recognizes the highly mineralized nature of the Riley Pass Mines Sites locale and the region in general. However, any reasonable evaluation of the mine workings at the Riley Pass Mines Site indicates that an unnatural distribution of heavy metals and radionuclides exists and it exists because of actions related to mining. Excess and unnatural erosion of these materials has been occurring since the site was abandoned, releasing materials to Schleichart Draw, the downstream watershed, and lands adjacent to the site.
Kerr McGee	15	In a non-time critical removal action, EPA recommends that a-risk assessment be "streamlined" not intensive and "focus on the specific problem that the removal action is intended to address.	The agency believes that this is inconsistent with the commentor's preference stated earlier for a more thorough investigation of the Site. In this action, the agency intends to implement a final cleanup for the Site, not follow up the current removal action with a final

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			remedial action that would include a full risk assessment. As such, the agency is required to ensure that the final removal response is fully protective of the public health and the environment under CERCLA § 121(d). Therefore, the agency exercised its discretion and conducted a full Risk Assessment within the EE/CA. Because this removal action is for the entire Site cleanup, the Risk Assessment's scope was expanded from what is often considered sufficient for a removal action to evaluate the protectiveness of the entire cleanup project. This exercise of the agency's discretion is a further indication of how the EE/CA has been adapted to be the functional equivalent of a RI/FS at this Site.
Kerr McGee	16	EPA directs the lead agency to evaluate both for the reasonable maximum exposure (RME) and the central tendency exposure (CTE) to characterize risk.23 The CTE provides an indication of the degree of variability in exposure and risk between individuals in an exposed population. The FS has not accurately or adequately characterized the major exposure pathways and as a result risk estimates are overstated. In part, the risk assessment errors are also attributable to use of input data to calculate exposure that are either not of sufficient quality or not representative of realistic exposure. In addition, the risk assessment does not sufficiently distinguish the risk of exposure to naturally occurring (background) constituents from exposure to constituents that have migrated.	The existing risk assessment is streamlined, while focusing on surface soils and surface waters impacted by historic mining. Both RME and CTE risks are included in the risk assessment. This seems to conflict with subsequent comments, where a *more detailed and site-specific* risk assessment is requested. It is recognized that a more detailed risk assessment generally, but not necessarily, results in less conservative (reduced uncertainty and less margin of error for health protectiveness) risk estimates. However, multiple human and ecological receptors are believed to be at risk based on a reasonable sample set for the site. The quantitative risks presented in this assessment are consistent with arsenic concentrations above background.
Kerr McGee	17	The most significant human health risk pathway calculated by the risk assessment is ingestion of beef from cattle grazing or drinking at the site. Within this pathway arsenic in water consumed by cattle represents 99% of the total excess risks (all pathways, and all constituents of potential concern) identified in the risk assessment. The risk calculation assumes all cows consume the mean arsenic surface water concentration (Table B-4 of the risk assessment), for 365 days/year, regardless of the bluff where they graze. No water samples were collected near Bluff H, and all water samples collected near Bluffs J and K contain low levels of arsenic. As a result, using this assumption approach in the risk assessment does not support a finding of	The risk assessment specifically addresses the uncertainty associated with the beef ingestion pathway. The basis for pursuing remediation is not based solely on the beef ingestion pathway. Please refer to Table 5-1 of the risk assessment, which provides a range of risk-based cleanup levels based on different risk levels and exposure pathways (soil ingestion, dermal absorption and beef ingestion). Also, please refer to the ecological risk considerations that are most readily considered in Table 5-3, as they are also used to help inform risk-based cleanup decisions. Cattle owned by individual permit holders consume water from the sediment ponds throughout pasture usage. In

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		unacceptable risk associated with all bluffs.	recognition of the concern for the high risk estimates in this pathway, and considering the uncertainties involved, Table 3-3 was produced to determine risks by decreasing the amount of surface water ingested by cattle. To be protective of human health and the environment, the Forest Service wishes to emphasize the reasonable maximum exposure scenario. Use of the arithmetic average arsenic concentration for all streams provides a more representative, yet less conservative assessment. During a review of the risk assessment (addressing comments) Portage discovered an error in the surface water calculation. There is a units error in using surface water (ug/L) data to calculate concentration in animal meat (p. C-8) in mg/kg to the beef concentration. The effect of this is to reduce arsenic risks to the cattle rancher from 1 in 25 to 1 in 25,000. The adjusted value does not materially change the assessment, with cumulative risks still at an unacceptable level. The overall impact to cattle rancher risks is limited by the RME risk estimate for cattle ranchers due to radionuclide exposure at 1 in 250, which numerically becomes the RME risk value.
Kerr McGee	18	A more accurate expression of the probable chemical concentrations in water ingested by cows is necessary. The EE/CA identifies two surface water samples used in the assessment but admits that "These (water) data cannot provide meaningful information relative to releases of contaminants from sources at the site to surface water. These two water samples were those "collected after a storm event", which, as discussed in section III. A. of these comments cannot be considered representative of normal conditions. The two samples are part of a larger set of 10 collected on the same rain event day. One of them was not included in the total set of 14 samples used by Portage to develop the risk assessment for water exposures/risks but the other, non-representative sample was, along with the other non-representative samples collected that day. Eliminating samples such as these that are either non representative or of poor quality would alter the ingestion data rate for cattle considerably. Four water samples of sufficient quality (not in itself a data set that is sufficiently robust) would remain for use in the exposure assessment. The	The in the Final Draft EE/CA that "surface water samples collected following a storm event cannot be considered representative of natural conditions" was miss-stated. The word "cannot" was inadvertently added to this sentence. This assertion is substantiated by a simple fact at the Riley Pass Mines Sites: the only way to collect "representative" surface water samples from area drainages is either during or following a storm event, as all are ephemeral. It is further substantiated by an examination of total and dissolved arsenic collected from locations J2, J3, and SD1 following the storm event. In this comparison, you find that total and dissolved arsenic varies little. In fact the precision between filtered and unfiltered samples demonstrates a strong degree of comparability, with none showing relative percent differences greater than 20%. For J2, total arsenic is 17.6 ug/L while the dissolved is 20 ug/L (RPD = 12.8%). Arsenic at J3 shows similar results with total arsenic at 25.5 ug/L and dissolved arsenic at 25.8 ug/L (RPD = 1.2%). Finally, for location SD1 total arsenic was

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		maximum concentration of arsenic ingested by cattle would decrease by a factor of almost 7 compared to the level assumed in the risk assessment.	measured at 263 ug/L and dissolved arsenic at 217 ug/L (RPD = 19.2%). Other variables must also be considered when making generalizations about predictors of water quality and data suitability for risk assessment. For example, it is known that cattle who graze in Schleichart Draw substantially disturb bottom sediments when trying to escape the summer heat, insects, and during drinking. This further complicates an estimate of what constitutes an appropriate measure for estimating exposure to cattle. Available data indicates that increased sedimentation does not necessarily predict increased concentrations from ingested water. It is important to reiterate that the risk assessment is based on multiple pathways, not solely on the ingestion of cattle pathway. Finally, please note that the sample excluded from the Portage assessment was a field duplicate collected during Pioneer investigations. It was excluded so as not to bias toward the values measured at this location (which showed very good comparability between the location and its duplicate).
Kerr McGee	19	The EE/CA risk assessment also uses inappropriate measures of the bioavailability of the arsenic cattle are assumed to ingest. Only about 1 % of arsenic ingested is actually absorbed, with the remainder being excreted directly, as opposed to 80% assumed in both the RME and CTE exposure assessments. Arsenic occurring as a by-product in animal waste used to supplement cattle feed or used as an antiparasitic, is rapidly excreted in the urine. Greatest arsenic concentration in animals occurs in the liver, kidney, spleen and lung, skin, and hair. Cattle surviving an acute single oral arsenic dose are withheld from market for 2 weeks (6 weeks for multiple acute dosage). In a study conducted at Virginia Tech, arsenic levels in cows returned to control levels within three days of arsenic/feed withdrawal. The researchers note that most states recommend a 15 day withdrawal of arsenic tainted feed before slaughter to increase protection. Cows that consumed an acute field exposure of 300 mg arsenic per day for 7 days and died were shown to have 8 mg/kg in tissue and cattle consuming 1.25 mg/kg dietary arsenic for 8 weeks had muscle arsenic levels of 0.2 mg/kg, with all tissue concentrations less than 1 mg/kg. Veterinary research reports arsenic toxicosis and death in cattle from	Arsenic bioavailability is controlled by numerous factors including particle size, particle composition, arsenic speciation, multiple dietary factors, animal health and likely other factors. Clearly, a site-specific assessment of these factors could reduce uncertainty. However, it would certainly be a substantial undertaking to gather sufficient, representative data in order to refine current risk estimates. The benefit of doing so is questionable given the multitude of other chemical and physical hazards to human health and the environmental implicated by the risk assessment. The approach taken was to use transfer coefficients developed by EPA for risk assessment use, as shown for example at the bottom of page C-8. The 80% value referred to in the is the bioavailable portion to humans who may eat contaminated beef. Many risk assessments using EPA guidance assume 100% bioavailability of arsenic as a starting point in assessment. The choice to employ 80% results in lower risk estimates. This was done as a matter of professional judgment to guard against potentially excessive compounding conservatism of the complex models needed to address this pathway. In the absence of additional site-specific information, adjustments to the transfer coefficient or the human

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		ingesting large quantities of arsenic > 16,000 mg/kg with resulting tissue concentrations ranging from 14 to 400 mg/kg in various tissue organs. On a ranch in South Dakota, cows accidentally ingested Paris Green paint containing large quantities of arsenic and subsequently died. Autopsy results showed tissue concentrations of 25 to 44 mg/kg. In comparison, the EE/CA assumes ingestion of greater than 16.4 mg per day (page 3-13) and estimates 33 mg/kg in edible tissue). Clearly, the EE/CA assumption is at odds with the observable outcome of cattle mortality. The estimated tissue concentrations in cattle on which this critical aspect of the RA is based would result in arsenic toxicosis and/or death, and that has not been observed at Riley Pass.	bioavailability factor are not justified.
Kerr McGee	20	The exposure assessment for human ingestion of the cattle is also overstated. The EE/CA states that RME risks for the rancher due to exposure to radionuc1ides ranges from 4 x 10-3 to 6 x l0-5. The significant pathways are ingestion of cattle and incidental soil ingestion. Beef tissue concentrations of radionuc1ides are assumed in the risk assessment to be due (>70%) to pasture grass ingestion. To obtain the beef tissue concentration, it was assumed the cow obtains 75% of its feed by grazing in the potentially impacted area of the Bluff for 365 days per year. An additional 5% of the cow's diet is from supplemental (i.e., harvested) impacted feed is erroneously also assumed to be from the site. These figures are demonstrably excessive because grazing permits are allowed only for 5 months of the year. Yet the RA assumes cows are ingesting impacted forage and soil every day all year long. The EE/CA assumes that all forage and feed comes from the historically mined bluff area alone. To more realistically assess the potential for risk, the assessment would be modified to account for permit range size and the fraction of that area the bluffs represent. No plant material has been analyzed. Pasture grass concentrations are estimated using dry weight soil-root-plant uptake factors. Instead of dry weight plant uptake values, wet weight plant uptake factors should have been used for forage grass. Wet weight plant uptake values are readily available and are generally one order of magnitude	The Animal Meat Concentration calculations do not include an Exposure Duration variable. Therefore, statements about exposure "all year long" are not relevant. Rather an ongoing equilibrium is assumed in the exposure model, during which the cattle get 75% of their feed from grazing and 5% from locally raised feed. These are model default values. Moreover, there are additional factors to consider when moving to a more site-specific assessment. Typically, yearling males are harvested along with aging females. The time of year harvested and related pastures used may be a factor. Also, the time delay between removal from the field and harvest may be a factor. Again, the basis for deviating from default model values and moving to a more site-specific risk assessment must consider the cost vs. benefits given the numerous other human health and ecological risks identified by the model. Since neither the Forest Service nor EPA have control over when or how cattle are harvested, consideration of a time-to-market variable is not considered appropriate.

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		lower than dry weight values. (For example: the RA used an arsenic uptake value of 0.004; the wet weight value is 0.0009). The result would be estimated plant concentrations that are an order of magnitude lower than those used in the assessment	
Kerr McGee	21	The EE/CA assumes that the rancher is exposed to bluff materials during the entire time he/she manages the herd, throughout a grazing lease. Consideration of the area of the bluffs as a fraction of the entire permit area would dramatically reduce the estimated human gamma exposure levels. Additionally, no gamma shielding or distance from source is considered, yet ranchers are either on an ATV or on horseback. At other locations at the site, a rancher could not be exposed to lignite concentrations for 2 hours/day, 150 days per year. This would require him/her to spend the entire time he/she is assumed to be in the area tending a herd, sitting directly on a lignite pile.	Gamma exposures were determined assuming an infinite slab. This means that the thickness of the contaminated zone and its aerial extent are so large that it behaves as if it were infinite in its physical dimensions. In practice, soil contaminated to a depth greater than 15 cm and with an aerial extent greater than ~1,000 m2 will create a radiation field comparable to that of an infinite slab. The receptor was assumed to be standing outdoors without shielding. This is reasonable, since the use of ATVs, horses, bicycles, etc., which would provide shielding, requires additional parameters beyond the scope of the stream lined risk assessment. These parameters would include geometry of each potential transport vehicle, construction material types, time on vehicle versus foot, etc. The goal of the external exposure assessment was to bound the potential exposures to the receptors.
Kerr McGee	22	The most significant human health risk potential is assumed ingestion of beef from cows assumed to graze on the site and consume 100% of their water from sediment impacted ephemeral streams and ponds. However, the risk quantification is in error. It is clear that significant uncertainty exists in the primary pathway responsible for 99% of the risk assumed for the site. CERCLA requires risk management decisions to be made on the basis of "reasonably likely" risks. The NCP requires risk analysis to include a qualitative assessment of the likelihood that the assumed future land use will occur, only more productive private rangeland, pastureland or crops. The RA assumes that cows obtain 80% of their feed from a mixture of forage from a single bluff and stored feed obtained from the site for the entire year. These assumptions overestimate the intake of COPC by cattle and the estimated concentration in meat tissue.	The risk assessment specifically addresses the uncertainty associated with the beef ingestion pathway. The basis for pursuing remediation is not based solely on the beef ingestion pathway. Please refer to Table 5-1 of the risk assessment in the Final Draft EECA, which provides a range of risk-based cleanup levels based on different risk levels and exposure pathways (soil ingestion, dermal absorption and beef ingestion). Also, please refer to the ecological risk considerations that are most readily considered in Final Draft EECA Table 5-3, as they are also used to help inform risk-based cleanup decisions.
Kerr McGee	23	KMC supports the EE/CA human health evaluation focus on area uses by ranchers (permit holders), hunters,	The exposure scenarios put forth in the risk assessment, specifically, the cattle ranching / grazing scenario is

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		Native Americans and FS employees. None of these exposures are daily, lifetime exposures or at the levels assumed in the EE/CA. And as the EE/CA states, they do not involve human uses of water for drinking.	particularly realistic for the site, is documented by the land managers at the Custer National Forest, and is corroborated by the permit holders themselves. This scenario has a sound basis for daily, lifetime exposures. Other individuals within each of the other receptors, except workers, may have lifetime exposure durations at the documented exposure frequencies, based on site usage information documented by the Custer NF.
Kerr McGee	24	The human health risks are not as high as the FS calculates (up to 10-2). As a result, the risk reduction tables the EE/CA employs to illustrate the benefits from response do not identify the site hazards realistically or quantify the necessary benefits that should follow. The required risk reductions are neither so great as the FS asserts nor is the desired level of percent reduction as large as claimed. In order to be consistent with the NCP and applicable guidance, the risk quantifications presented in the risk assessment should be recalculated using reasonable assumptions and sufficient, valid, representative data before basing any response action decision on risk reduction.	More specific comments and their responses elsewhere address the quantitative risk assessment, data quality, and data usability. The basis for conclusions in the EE/CA are based on the risk-based preliminary remediation goals presented in Section 5 of the risk assessment that is included in the Final Draft EECA.
Kerr McGee	25	For purposes of designing responses, the NCP sets risk cleanup goals ranging from a 10-4 to a 10-6 excess cancer risk attributable to non-naturally occurring exposures. In the case of radionuclides, EPA has recognized that even greater flexibility is required to craft reasonable responses and that a cleanup level corresponding to an excess cancer risk of up to 3 x 10-4 is considered protective of human health. At least one other uranium mine site the FS recommended response is based on a risk target of 10-4.	The agency acknowledges these comments regarding the range of exposures to radioactive substances developed that have been considered safe in the past by EPA and the Forest Service. The agency has exercised its discretion in this case to identify a range of safe exposures to radioactive substances that is consistent with EPA guidance and the technical literature. The agency also notes that EPA has set the point of departure for safe levels of radioactivity at 10-6 in NCP § 300.430(e) and this is more conservative than the range adopted by the agency in this instance.
Kerr McGee	26	Once data, risk analysis and other deficiencies are addressed in the EE/CA, the selection of response choices should be based on flexible risk range targets commensurate with correctly developed response action objectives for removal actions.	The risk assessment in the Final Draft EECA provides the radionuclide risk based soil concentrations in section 5.2. Tables 5-4 through 5-9 provide risk based soil concentrations for excess cancer risk levels ranging from 1E-04 to 1E-06.
Kerr McGee	27	KMC disagrees with the expression of ARARs in the EE/CA and the uses to which they are put in evaluating response actions. EP A has explained that ARARs are	The agency has conducted a comprehensive review of the ARARs section in the draft EE/CA since it was issued for public comment. As a result, the ARARs analysis in this

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		used: During the implementation of the remedial action [where an ARAR is pertinent to the action itself] as well as at the completion of the action, and when carrying out removal actions "to the extent practicable considering the exigencies of the situation.	final EE/CA has been revised to identify the ARARs identified for this Site more clearly and focus them more on the circumstances of this case. As noted earlier, at removal actions that will implement the final cleanup at a Site, a lead agency is required by CERCLA § 121(d) to attain all selected ARARs, unless the elements of a specific waiver are met.
Kerr-McGee	28	The EE/CA presents a detailed review of many potential ARARs in Appendix A and lists which of those in the appendix the FS considers ARARs for this Site in chapter 4.0. However, the chapter 4.0 ARAR decisions do not correlate listed ARARs to "the [response] action itself' vs. "completion of the action." This omission inhibits the public's ability to on their intended use or whether they have been correctly identified.	The Forest Service has exercised its discretion to balance the need for detail within the EE/CA section with the need for clarity. Although the agency has not categorized the ARARs in the manner suggested by the commentor, it has comprehensively reviewed the draft ARARs and made substantial to the way they are described to provide more consistent information to the commentor and the public.
Kerr-McGee	29	Federal or state Safe Drinking Water Act requirements are not applicable or relevant and appropriate because water at the site is not used for human consumption. EPA has explained that these requirements are only used for human drinking water purposes. The proposed response action objectives cite to ARARs for drinking water that are not reflective of site conditions, an area humans do not use for drinking.	The Forest Service disagrees with this comment. Under NCP § 300.430(e), Safe Drinking Water ARARs must be applied if the water supply is a current or potential drinking water supply. If the rule were as the commentor suggests, water at contaminated sites would rarely be cleaned up because the contamination itself usually ensures that the water is not being used as a current water supply. In fact, if the lead agency failed to consider potential consumption, which would give responsible parties considerable incentive to make their sites worse than they already, are in order to avoid future cleanup requirements. The contaminated water presently at the Site is transported by the drainages in the area into streams and rivers that eventually lead into the Missouri River, a major drinking water supply for South Dakota. It should also be noted that the area surrounding the Site is relatively arid, and potential water supplies are rare. The water which is available in this area is therefore particularly important for both potential human consumption and consumption by domestic animals and wildlife in the area.
Kerr-McGee	30	RCRA or state hazardous waste lists are not applicable to onsite chemicals because RCRA only legally applies jurisdictionally to listed wastes generated after the effective date of the listing regulations, wastes at the site do not meet definitions of listed wastes and/or they are	Although the Resource Conservation and Recovery Act (RCRA) and state RCRA statutes may technically not be applicable to the Site, many of the RCRA provisions concerning the management of highly toxic wastes are still relevant and appropriate, as that term is used in

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		excluded from the definitions of hazardous wastes as the FS already recognizes. Normal earth moving that may occur during reclamation is not subject to land disposal restrictions. TSD requirements are not applicable because no treatment, storage or disposal of hazardous wastes has been identified.	CERCLA § 121(d). RCRA's statutory and regulatory provisions have been carefully developed by EPA precisely to protect the public health and the environment from hazardous wastes, including many toxic metals. The fact that the RCRA regulations were not in effect when the former mine operator's activities dispersed toxic metals like arsenic and uranium throughout the Site, does not make these toxic metals any less dangerous to the public or the environment. Nevertheless, the agency agrees that activities conducted wholly on-site do not trigger the applicability of land disposal restrictions for treatment, storage and disposal (TSD) requirements under RCRA. To the extent, however, that the commentor is suggesting that these provisions should not be evaluated as potentially relevant and appropriate cleanup standards, the agency disagrees. The category of relevant and appropriate ARARs was created for just such a situation as exists in the present case. As an example, if a permanent repository were to be constructed on-site at a location that is presently in an undisturbed area, the agency could, at its discretion, decide that RCRA TSD standards for hazardous waste disposal cells are relevant and appropriate.
Kerr-McGee	31	Mining reclamation requirements provide the most useful ARARs to develop a response and should be properly highlighted in the discussion of alternatives.	The agency agrees that, in many cases, existing mining removal action ARARs provide very useful cleanup standards and methods for CERCLA cleanups at mine sites. These standards are often specifically designed for the removal action of former mine sites, and they thus correlate closely to the need to cleaning up mine wastes at this Site.
Kerr-McGee	32	The reference to Clean Air Act (CAA) or comparable state standards as applicable seems to have no basis for the Site since none of the chemicals addressed are those for which CAA standards at 40 C.F.R. Part 50 have been issued.	The agency agrees that most of the provisions of the Clean Air Act should not be considered ARARs in this case. The primary provisions of the Clean Air Act that are ARARs at this Site are the provisions concerning fugitive dust emissions during the response action.
Kerr-McGee	33	References to federal or state wetlands or floodplain orders or fisheries do not support an "applicability" or relevant and appropriate determination because neither the action nor the site concern wetlands or floodplains or fisheries.	Although the area is relatively arid, there are seasonal flows of surface waters at the Site. In addition, a number of small ponds exist, some of which provide drinking water for the domestic animals and wildlife living in the area. Further, the existing waterways support some

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			riparian habitat. Brown's Pond is a fisheries and is being impacted by the Site, thus, some Federal and state wetland protection regulations are relevant and appropriate at this Site.
Kerr-McGee	34	Fortunately, the Site does not appear to affect the viable presence of threatened or endangered species. Please note that although the bald eagle is technically a threatened species, it has been proposed for removal from that designated status.	Thank you for your comment.
Kerr-McGee	35	There are no point source discharges to surface water connected either with response or completion of the action; therefore federal or state NPDES requirements are not ARARs; cleanup of groundwater is not addressed and there are no data for site groundwater-those requirements are not ARARs.	The agency respectfully disagrees. As noted earlier, some parts of the Site contain surface ponds that were constructed to provide water for animals and/or to control the substantial erosion of sediments into the drainages onsite and away from the Site. Under the Clean Water Act, these constructed ponds would be point source discharges, as would other man-made structures onsite like ditches, pipes, and drainage structures or channels. Thus, some Federal and state clean water regulations are relevant and appropriate at this Site.
Kerr-McGee	36	There are no petroleum contaminated soils, above ground or underground tanks at the site; so none of these requirements are ARARs.	It is inherently difficult to identify abandoned underground storage tanks (UST), and so the agency is not certain that none exist at this former mine site. To the extent that petroleum contamination is discovered onsite, the agency will need to determine whether the petroleum exclusion in CERCLA § 101(14) applies.
Kerr-McGee	37	On the other hand, KMC proposes that certain ARARs which have not been listed may be useful for identification of requirements for site action or at completion. These are OSHA and NRC standards for protection against exposure to radiation (29 C.F.R. §1926.53 and 10 C.F.R. Part 20.)	The Forest Service appreciates the commentor's recommendations. Even though worker protection standards are not usually considered ARARs under EPA guidance, the agency agrees that it is important to ensure worker safety during the response action. The agency intends to ensure that OSHA and NRC standards are followed throughout the response action by requiring a Health and Safety Plan for each specific response action.
Kerr-McGee	38	The FS proposes a response for all bluffs estimated in the EE/CA to cost approximately $23 million. At the public hearing on the EE/CA conducted August 23, 2006, the FS indicated that this figure was likely	The agency acknowledges the potential under-estimation of future response costs. The agency has carefully reviewed the cost estimates in the draft EE/CA, and it has revised the cost estimates where appropriate in the Final

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		significantly underestimated because the volume of the material could be at least 20-25% more than originally estimated. This uncertainty, and likely underestimation, is supported by early estimates of volumes of spoil materials by the FS in the vicinity of Bluff B seen in the Administrative Record indicating as much as 5 million cubic yards, versus the 1.14 million cubic yards stated in the EE/CA. One reason the EE/CA underestimates true costs is because total volumes of overburden to be moved as part of proposed response actions were not adequately evaluated. The EE/CA lacks data indicating how the widely varying thickness of such materials across the sites was factored into total volume calculations. The lack of both an adequate number and distribution of surface samples, and the absence of any subsurface sampling prevent estimating the volume and location of overburden where-the concentration of COPCs exceeds particular concentrations. As a result, the estimation of volumes of materials that will require actual handling under the action alternatives is inadequate to project costs.	EECA.
Kerr-McGee	39	The EE/CA proposed alternatives underestimate costs for upgrading and maintaining existing roads, and establishing new segments of road towards inaccessible bluffs involving steep upgrades and which traverse rock. Of particular concern is the road south from Riley Pass that climbs the butte on which Bluffs C, D, E, F, G, H are located. The cost estimates in the EE/CA include a line item for road improvement/road construction at a unit rate of$2,500/mile. Appendix E of the EE/CA estimates 26 miles of road will require upgrading or construction. At $2,500/mile, these costs are $65,000. At $3.30/foot (the value used in the EE/CA for the Juniper Uranium Mine produced for the FS (Stanislaus National Forest, June 2005), these costs would be $453,000.	The agency acknowledges the potential under-estimation of future response costs. The agency has carefully reviewed the cost estimates in the draft EE/CA, and it has revised the cost estimates where appropriate in the Final EECA
Kerr-McGee	40	The response action objectives (RAOs) as currently presented in the EE/CA are not well defined. KMC requests that the EE/CA adopt the following revised RAOs: 1) Stabilization/reclamation of site conditions consistent with quality and quantity of available data; 2) Creating temporary fencing barriers to exposure to onsite ingestion pathways for cattle used for human	The agency appreciates the commentor's proposal for alternative response action objectives, but the agency respectfully disagrees with the commentor's characterization of the present response action objectives. Although the commentor recommends selecting temporary response measures, the agency notes that the agency has been studying the Site for over 15 years

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		consumption until risk assessment can be verified; 3) Preservation of currently useful erosion control site features; 4) Evaluation of future data requirements; and 5) Evaluation of future response needs based on improvements from initial removal activity.	already. A further delay in the implementation of final cleanup alternatives would not be appropriate when many permanent cleanup alternatives could be implemented now. This is particularly important in light of CERCLA § 121(b) and NCP § 300.430(f), which contain specific language requiring that permanent response actions be given preference to the maximum extent practicable. In addition, as a land management agency that is responsible for millions of acres of public land, the Forest Service has a long-standing policy preference towards selecting permanent cleanup alternatives that require less oversight and maintenance than temporary measures such as fencing.
Kerr-McGee	41	The data and state of the draft EE/CA would lead to a different response consistent with the need to make supportable decisions in the best long term public interest. A reasonable response at this time would choose limited site stabilization and/or erosion control and fencing to cordon off areas of surface pond water where cattle graze. Temporary fencing would prevent a potential exposure pathway for animal ingestion of potentially impacted water in a small area of the site until the time that a more reliable risk assessment can be performed using measured data rather than the existing assumptions. After review of the effects of initial stabilization and fencing, a further review of data needs should be conducted to determine if the site requires additional site information or further action. The alternative response has the potential to address all site risks. Moreover, deficiencies in analysis and decision principles could affect the site adversely.	The agency appreciates the commentor's acknowledgement that some response actions are appropriate. The agency also appreciates that commentor's efforts to develop a specific proposal for alternative cleanup actions, but the agency believes that Temporary fencing may be effective over the short term (one or two years). Fences alone are not appropriate permanent remedies to the risks posed by the site and do not meet the NCP criteria.
Kerr-McGee	42	The proposed human health cleanup goals are premature because a valid exposure assessment using representative data requires further analysis.	The Final Draft EE/CA utilized baseline cleanup levels for the area to achieve a 1 X 10-6 human health carcinogenic goal and a non-carcinogenic quotient of 1. These values were used to evaluate all sites within the Riley Pass Mines Sites in a unified manner. Although natural conditions may result in variations to those risks and quotient numbers, additional analysis will not significantly alter the fact that the risk and quotient factors have increased both the carcinogenic and non-carcinogenic concerns for the area and as a result the mitigation actions to address those hazards will not vary.

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Kerr-McGee	43	Broad soil cleanup targets for the whole site would not reflect natural mineralization or distinguish the specific areas of naturally occurring chemicals for which CERCLA response is not authorized.	If a naturalized zones containing elevated metals and radioactive material were present within the Riley Pass Mines Site, the aerial extent of those zones were dramatically increased as a result of the historic mining activities that took place in the area. In addition, historic mining activities have caused an accelerated rate of erosion to occur that has resulted in the migration of large quantities of heavy metals and radioactive material onto areas that were not mineralized.
Kerr-McGee	44	KMC is also concerned that RAOs and the EE/CA analysis have not evaluated natural processes at the site, bluff contours and vegetation that should be preserved so as not to increase erosion effects. Subsequent EE/CA discussion of alternatives does not address the extent to which those responses may increase erosion and sediment transport and/or lose the value of current stability forces at work at the bluffs. Extensive grading, as proposed by the FS, would eliminate existing vegetation. Even with appropriate soil amendment to support plant growth, and mulching to minimize sheet-flow runoff, a pronounced and extended period of increased sediment transport would result. The existing vegetative cover that has self-established over disturbed surfaces for 40 years is mitigating erosion over a large portion of impacted areas. Supplementing and enhancing the existing stabilized areas would provide far greater benefit toward improving site conditions than would extensive grading.	The removal/disturbance of existing vegetation will be minimized to the extent practical to complete the removal action activities.
Kerr-McGee	45	The EE/CA does not appear to acknowledge the incremental areal extent (increase in footprint area) of surficial disturbance associated with the extensive proposed grading effort. The short and long-term increase in erosion due to removal of this vegetation, and replacement with newly planted vegetation, and the efforts and costs that will be required to establish new vegetation and manage increased sediment transport have not been adequately recognized.	The removal/disturbance of existing vegetation will be minimized to the extent practical to complete the removal action activities.

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Kerr-McGee	46	It would appear that the emphasis of response action alternatives at this site should more appropriately target hydraulic engineering attributes (i.e., effective drainage and conveyance of potentially erosive precipitation and runoff) in combination with surface stabilization techniques, rather than large-scale material regarding and/or movement that would eliminate existing vegetation and potentially contribute to further sediment releases during the project and for an extended time afterward.	Thank you for your comment.
Kerr-McGee	47 and 48	The alternative response further proposes the construction of a new sediment pond in T22N, R5E, Section 23 consistent with the analysis performed by the FS in its Action Memorandum dated September 7, 2004. The scope of any reclamation should minimize volumes of material that are handled and preserve natural vegetation that has started to establish itself on the bluffs and which act to limit erosive forces. After review of the effects of initial stabilization, a further review of data needs should be conducted to determine if the site requires additional site information or further action. A reclamation response based on standard mining reclamation principles and standards has the potential to address site risks.	Thank you for your comment.
Kerr-McGee	49	The EE/CA is further deficient in failing to address the federal government's extensive involvement at the Site as well as other mining companies that performed work on the 12 bluffs in the EE/CA. An accurate description of site history in the EE/CA, including operational status, site use, regulatory history, investigations by agencies is necessary and directed by EPA's EE/CA preparation instructions. Recent guidelines for remedial actions direct agencies to describe the results of PRP search and whether other PRPs have participated in RI/FS activities.	The Forest Service has exercised its discretion in keeping the focus of the EE/CA upon the cleanup of the Site, rather than using it as a substitute for a potentially responsible party report. Because some historical understanding of how the Site was disturbed is helpful to determining how to best address the problems that exist, the EE/CA contains a limited historical summary.

Commenter	Comment #	Comment	Response
Kerr-McGee	50	The AEC administered the uranium mining and procurement activities involving Riley Pass with powers of unprecedented magnitude. Federal courts have consistently acknowledged that the AEC exercised "pervasive control" over the entire domestic uranium industry during the relevant time period. The domestic uranium industry is unique in its relationship to the federal government. It was born when discussions in the United Nations Atomic Energy Commission at the end of World War II for control of nuclear weapons fell through. This failure created for the United States an urgent need to produce uranium for military purposes. Perhaps no military program undertaken by this country in peacetime has been considered more important or given higher priority. James Newman, one of the authors of the Atomic Energy Act of 1946, described the law as establishing in the midst of our privately controlled economy a socialist island with undefined and possibly expanding frontiers. Similarly, in its July 1950 Annual Report to Congress, the AEC stated that the industry employed forces that were as yet imperfectly understood; it is being developed at an unprecedented rate without benefit of the years of experience gained in other large industries; it is owned and controlled by the people of the United States; and it promised to be vitally important to the future of mankind. From its inception, the domestic uranium industry was owned and controlled by the federal government. The authorizing legislation, the Atomic Energy Act of 1946, began with a declaration of policy, stating that the development of atomic energy was to be subject at all times to the paramount objective of assuring the common defense and security. The law also stated that its purpose was to provide for a program of Government control of the production, ownership and use of fissionable material to assure the common defense and security and to insure the broadest possible exploitation of the fields. To that end, the Atomic Energy Act of 1946 provided the federal government with broad authority over all aspects of uranium procurement and processing. First, the Act provides that title to all enriched uranium and plutonium shall be held by the AEC. Second, the AEC was granted the power to requisition privately-owned uranium source materials and real property containing	The agency acknowledges these comments concerning the former AEC. As noted previously, the agency does not believe the EE/CA is the proper forum to determine the responsible parties for the Site.

deposits of source materials to the extent it deems necessary. Third, the Act required that a license from the AEC be obtained by anyone proposing to transfer or deliver, receive possession of or title to, or export from the United States any source material after removal from its place of deposit in nature. Fourth, subject to grandfathering exceptions, the Act made all source material extracted from public lands the property of the AEC, which could order that the material be delivered to it. By doing all this, Congress consciously gave the AEC the authority to override private enterprise where necessary to accomplish the paramount objective of assuring the national defense. Central to this program was securing adequate levels of source materials peculiarly essential to the production of fissionable material -- namely, uranium and thorium. To achieve this objective, the Atomic Energy Commission was granted broad powers to ensure adequate supplies of uranium. The Special Senate Committee on Atomic Energy emphasized that this high degree of authority and control was necessary because source materials were the Nation's most valuable mineral resource, and because the Commission must be assured an adequate and continuing supply of source materials for the operation of its production facilities for military or development purposes. Initially, the domestic uranium mining was practically nonexistent when the Atomic Energy Commission was created in 1946. To address this challenge, the Commission created a market virtually overnight and oversaw every aspect of its early development. The AEC early directed its efforts to reduce excessive dependence of the United States on the Belgian Congo source of supply through stimulation of discovery, exploration, development, and mining by private industry of domestic reserves of uranium-bearing ores. To create a domestic market, the AEC created the greatest possible interest in domestic uranium production. The energy of independent prospectors was directed by the AEC as part of a well orchestrated effort to stimulate production. Spokesmen for the AEC issued statements not once, but hundreds of times wherein they urged the miners to go out and produce the ore and they told them there would be a ready market available for the ore if and when they produced it. The effect of the

AEC circulars and notices was to create the greatest minerals rush of this century. As Senator O. Mahoney of Wyoming stated:

> The ore reserves were established as a result of one of the most dramatic outbursts of mining energy in the long history of mineral exploration in the west. The energy and talent marshaled for this effort were mobilized at the direct and insistent behest of the Atomic Energy Commission as set forth in official documents and widespread publicity on the need to search for reserves of uranium ore.

Because the United States would be the sole purchaser, the AEC established guarantees as to price and period of purchase to provide the incentive necessary for private industry to finance the development and operation of uranium mines and mills. The AEC's active and pervasive encouragement of the fledgling domestic uranium industry included the stationing of AEC field officers to assist exploration; dissemination of literature about prospecting; free assays; building of access roads; and frequent press releases to maintain public interest. These press releases and speeches stressed the military need for uranium and kept the booming uranium industry informed on continuing developments, affording a measure of anticipation and prediction of things to come. As the Claims Court explained in Gay v. United States:

> Beginning in 1948, and for all pertinent years thereafter, a number of measures were undertaken by the AEC as means of lending assistance and encouragement to private industry in the development of the uranium industry. Among these were the setting up of field offices to assist people searching for uranium deposits; publication and dissemination of literature on uranium prospecting; the distribution of radiation anomaly maps derived from airborne specific inquiries relating to geological or mining matters; assays of ore samples without charge;

> metallurgical testing of uranium ores to determine amenability to processing; conduct of drilling operations and the calculation of ore reserves on specific properties; the building of access roads to remote areas to facilitate the removal of ore to markets; construction of a pilot plant at Grand Junction, Colorado, to develop improved processes for treatment of uranium-bearing ores; establishment of ore-buying stations at widespread places in the western United States; and issuance of numerous press releases on developments in the expanding uranium industry.

The results of the Commission's procurement program measured in terms of volume were an enormous success. In a report to the AEC, the Atomic Industrial Forum, an association comprised of the domestic uranium producers, stated:

> This tremendous growth was made despite the almost total lack of knowledge regarding the location and geology or uranium deposits or of efficient treatment methods for recovering uranium from its ores. The primary incentive used so successfully in this endeavor to obtain production was the establishment by the Government of a guaranteed market for uranium ores and concentrates over a sufficient period to enable the successful prospector to realize a profit from his discovery.

By guaranteeing a market and providing comprehensive support to domestic uranium producers, the AEC satisfied a national priority of stimulating small, independent mining of uranium and provided the Department of Defense with a reliable source of uranium to build America's nuclear arsenal at the peak of the Cold War.

Commenter	Comment #	Comment	Response
Kerr-McGee	51	The AEC exercised an unusually high degree of actual control at Riley Pass both before and during KMC's involvement at the Site from 1962 through 1965. It was in acknowledgement of this actual control that the FS identified the Department of Energy, the successor to the AEC, as a potentially responsible party in its May 24, 1996, CERCLA Initiation Notice and First Information request. The FS initial assessment of the Department of Energy's status as a PRP at the Site is supported by the AEC's actual involvement at the Site. Despite this initial acknowledgement, the EE/CA fails to address any of the AEC's activities at the Site or the federal government's responsibility. The government acted in a capacity considerably greater than it other circumstances where it merely issues licenses or permits for other to carry out activities or establish facilities.	The agency acknowledges these comments concerning the former AEC. As noted previously, the agency does not believe the EE/CA is the proper forum to determine the responsible parties for the Site.

Commenter	Comment #	Comment	Response
Kerr-McGee	52	Following the identification of uranium bearing lignites in the region by the AEC, Homestake Mining Company discovered high-grade uranium bearing lignite and carbonaceous shale in the North Cave Hills in 1954. Homestake Mining Company staked initial claims in the area and conducted an extensive drilling and sampling program in the Riley Pass area. Beginning in 1954 through 1955 multiple claims were staked over most of the North Cave Hill area by a variety of mining companies, oil companies, and individuals. Ultimately, 15 active mine sites or prospects were identified in the North Cave Hills on maps generated as part of the regional coal mapping and uraniferous lignites studies conducted by the AEC and USGS geologists in 1955. To validate the claims, companies and individuals built access roads and bulldozed discovery pits, and some claims were further developed by stripping overburden to expose the mineralized lignite seams. Ore grade lignities were then mined J and shipped in multi-ton loads to the AEC as test loads and/or to satisfy existing AEC procurement contracts. This activity continued intermittently through 1960. Beginning in 1960, KMC acquired mining rights to certain parcels in the North Cave Hills area. On July 17, 1962, the AEC approved an allocation for Table Mountain and Riley Pass claims held by KMC for the purchase of specified quantities of uranium ore. In July 1962, KMC engaged a contractor to initiate mining activities on specific claims at the Riley Pass site. Notably, the activities of KMC did not involve a number of the bluffs evaluated in the EE/CA. KMC engaged in mining activities at select sites until mid-1965 under the July 1962 AEC Allocation after which time the lease holdings were re-conveyed back to the previous owners and operators or allowed to lapse. A summary of the production totals from KMC under the AEC Allocation is attached as Appendix 4. During this same time period, other mining companies and individuals were engaged in active mining in the Riley Pass area as outlined in the Impact Report on Mining Activity for Uranium-Bearing Lignite Deposits in Cave Hills-Slim Buttes Area, Harding County, south Dakota, Custer National Forest, R-I (April 21, 1964).	The agency appreciates the commentor's candor in acknowledging that Kerr-McGee Corp. leased and operated mining claims from 1962-65. As noted previously, the agency does not believe that the EE/CA is the proper forum to evaluate responsible parties.

Commenter	Comment #	Comment	Response
Kerr-McGee	53	While data validation was performed and documented for the samples collected by Portage in 2002, no documentation of data validation for the Pioneer samples collected in 1999 and 2000 was provided in the EE/CA. Sample RP-SW-SP2: Was taken from a sediment pond below Bluff B; was collected after the rain event on 8/19/99, and contained high TSS (18,000 mg/L) and high arsenic (the highest of all water samples, at 1,420 ug/L). The high arsenic concentration in SP2 was used to calculate the mean concentration cows would be consuming daily. As stated on page 3-13 of the EE/CA, samples RP-SW-SP1 through SP5, SP6, 7 and 8 were collected, and "two other locations where water was present (RP-SW-B3 and I1)" and "a duplicate of I1 was taken and labeled I5… All samples except RP-SW-B3, which followed significant precipitation the night before, were collected on August 12, 1999." A review of historical weather data form Ludlow, South Dakota finds that the rainfall that night was the highest 24 hour rainfall for August since the station began collecting data.	As noted previously, the comment that "surface water samples collected following a storm event cannot be considered representative of natural conditions" was miss-stated. The word "cannot" was inadvertently added to this sentence. This assertion is substantiated by a simple fact at the Riley Pass Mines Site: the only way to collect "representative" surface water samples from area drainages is either during or following a storm event, as all are ephemeral. It is further substantiated by an examination of total and dissolved arsenic collected from locations J2, J3, and SD1 following the storm event. In this comparison, you find that total and dissolved arsenic varies little. In fact the precision between filtered and unfiltered samples demonstrates a strong degree of comparability, with none showing relative percent differences greater than 20%. For J2, total arsenic is 17.6 ug/L while the dissolved is 20 ug/L (RPD = 12.8%). In this comparison, you find that total and dissolved arsenic varies little. In fact the precision between filtered and unfiltered samples demonstrates a strong degree of comparability, with none showing relative percent differences greater than 20%. For J2, total arsenic is 17.6 ug/L while the dissolved is 20 ug/L (RPD = 12.8%). Arsenic at J3 shows similar results with total arsenic at 25.5 ug/L and dissolved arsenic at 25.8 ug/L (RPD = 1.2%). Finally, for location SD1 total arsenic was measured at 263 ug/L and dissolved arsenic at 217 ug/L (RPD = 19.2%). Other variables must also be considered when making generalizations about predictors of water quality and data suitability for risk assessment. For example, it is known that cattle who graze in Schleichart Draw substantially disturb bottom sediments when trying to escape the summer heat, insects, and during drinking. This further complicates an estimate of what constitutes an appropriate measure for estimating exposure to cattle. Available data indicates that increased sedimentation does not necessarily predict increased concentrations from ingested water. It is important to reiterate that the risk assessment is based on multiple pathways, not solely on the ingestion of cattle pathway. Finally, please note that the sample excluded from the Portage assessment was a field duplicate collected during Pioneer investigations. It was excluded so as not to bias toward the values measured at this location.

Commenter	Comment #	Comment	Response
Kerr-McGee	54	Page 3-14 refers (incorrectly) to "samples RP-SW-I1 through I5"; only samples I1 and its duplicate I5 were collected- there are no I2, I3, or I4 samples. It states, "Since only 4 locations with available water surface flow were sampled, Samples RP-SW-I1 through I5 were collected after a storm event" and "These data cannot provide meaningful information relative to the release of contaminants form sources at the site to surface water." Samples I1 and I5, along with SP1 through SP8 were collected the same day (8/12). If I1/I5 "cannot provide meaningful information…", then for the same reasons, the rest of the samples collected that same day cannot either.	Change text to "samples I1 and I5." As stated, these were the only samples with surface water flowing in active drainages. The text should say "do provide meaningful information." Samples collected from settling ponds well after storm events are not impacted by the storm. This part of the text will be corrected and clarified.
Kerr-McGee	55	Table B-4 shows the 14 samples that are reflected in the upper section of data table C-2. While B-4 does not have the two lower entries seen in table c-2 for I1 and I5, it does maintain the Table c-2 entry of I1 in the upper set of 14. It also shows a high (arsenic) concentration of 1,420 ug/L (sample SP2), a mean of 410 ug/L, and a low of 18 ug/L. When the samples collected on 8/12 after the rain event are removed, 4 samples remain appropriate for use, with a high arsenic concentration of 262 ug/L, and a mean of 100.4 ug/L.	Surface water samples collected on the day following a storm event are appropriate for use in evaluating this pathway. This is the only time that surface water flows at the site. The pond water samples (SP samples) are the water being consumed by the cattle before, during and after storms. Note that at location SP-8/SD-1, arsenic concentration is 300% higher in 2000 (no storm) than in 1999 (after storm). Just shows that storm event or not, these are the range and magnitude of arsenic concentrations in surface waters at the site and all are appropriate for use in risk assessment.
Kerr-McGee	56	The data table C-2 shows results for 16 samples. There is an upper set of 14 samples that in clued I1 (and SP2). Below that are entries for I1 (again) along with I5. Chain of Custody for 8/99 samples (near end of Appendix C) shows SP1 – SP8, I1 and I5 all collected between 11 am and 6 pm on 8/12. The EE/CA shows B3 collected on 8/10 at 7:25pm. Interestingly, the 8/12 Chain of Command form shows Joe Balanger-Woods signed as sampler and Dawn Clark relinquished samples to the lab on 8/16 (no transfer from Woods to Clark is reflected). Additionally, data show sample SP1 taken at 10:25, SP2 taken at 11:00, sample I1 taken at 11:00 and sample I5 (the duplicate of I1) taken at 11:30. This seems unlikely since the location of I1/I5 is over a mile away from samples collected at the same time (SP2). This failure to accurately document sample collection should have been identified in data validation, and the impacted data should have been identified as of questionable validity.	Table C-2 lower part merely shows duplicate pair of samples (I1 and I5 with RPD).

Commenter	Comment #	Comment	Response
Kerr-McGee	57	Further refinement of the concentrations in surface water used to reflect cow ingestion concentrations should be made in the risk assessment. The regional watershed concentrations and/or area background concentrations of arsenic should be included to determine the average concentrations in cow-drinking water. Furthermore, ranchers near the site have installed alternative water sources for their cattle. Research demonstrates that cattle prefer to drink out of supplied water systems (tanks) rather than a stream or pond. The TSS in samples with high concentrations ranged up to 18,000 ug/L. Livestock will select the better quality water when given a choice.(*6). Clearly, the concentration of arsenic in water consumed by cattle used to predict the concentration in beef tissue is grossly overstated. Given the significance of this pathway to determination of overall risk and the need for response actions the assessment should be refined to more realistically predict the cow-drinking water concentration.	Site-specific information for the Riley Pass Mines Site indicates that cattle using Schleichart Draw regularly to both drink and wallow in the sediments ponds (Clarkson, 2005). In addition, the Custer National Forest has indicated that the permit holder using this pasture has not installed waters sources to replace the sediment ponds. The water sources are intended to disperse cattle; meaning the sediment ponds were included as available water for cattle. This results in routine and extended use of the sediment ponds for drinking water by cattle during pasture usage. Additionally, because of the wallowing action of cattle in the sediment ponds, additional - presumably contaminated - sediments are stirred prior to drinking. This effect has not been measured, but may increase the effect realized by cattle and therefore the permit holders.