

Comments By Gregory Yount

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Comments

Mitigating Measures

Attachment 1 to this commentary has two sections from the NEPA regulations and Question 19 from the "Forty Most Ask Questions About NEPA" regarding mitigating measures that are pertinent to the discussion regarding this Draft EIS.

The DEIS doesn't satisfy the requirements of NEPA regarding mitigating measures. It seems that for the most part, the mitigating measures considered are the Alternatives themselves. This is hardly in accordance with NEPA. Mitigating measures should be developed and proposed as required by NEPA for those impacts identified for which current mitigating practices are insufficient and where new practices will result in lower impact levels.

Only a few of the Issues analyzed for impacts offered mitigating measures in and of themselves. Most mitigating measures identified are measures already being implemented. The NEPA process requires the identification of mitigating measures be made for each of the issues identified and analyzed if mitigating measures can be developed. I have provided excerpts of most of the occurrences in this DEIS where any mention of mitigation occurred and some context for how the concept was used in Appendix 1. I have provided separate comments for many of these passages.

From Question 19 of Forty most asked NEPA questions: *All relevant, reasonable mitigation measures that could improve the project are to be identified, even if they are outside the jurisdiction of the lead agency or the cooperating agencies.....Because the EIS is the most comprehensive environmental document, it is an ideal vehicle in which to lay out not only the full range of environmental impacts but also the **full spectrum of appropriate mitigation.***

*The mitigation measures discussed in an EIS must cover the **range of impacts of the proposal.** The measures must include such things as design alternatives that would decrease pollution emissions, construction impacts, esthetic intrusion, as well as relocation assistance, possible land use controls that could be enacted, and other possible efforts.*

It is my suggestion that each impact section in Chapter 4 have its own Mitigation Section which discusses the mitigation methods already in use and whether they are considered adequate as currently used. In addition would be any new mitigating measures that could be implemented that would help mitigate projected impacts for that particular impact category.

I thought the "Night Sky" section had good recommendations for mitigating measures:

Night Sky page 4-177

Given the quality of the dark night skies in the area, minimal increases in night lighting could impact the area's night skies. **Mitigation** of night lighting plays an important role in protecting night skies and would be determined on a specific mining project basis. These measures could include using low visibility spectrum lights and appliances (full cut-off fixtures that emit no light above the light's horizontal line) on mine structures, minimizing night time mining activity, and limiting ore truck travel during night hours. With mitigation, impacts to the area's night sky would be minimal.

The above paragraph is a good example, I think, of what NEPA requires for proposing mitigating measures.

Another example from the Cultural Resources Impact Section is:

Other **potential mitigation** measures include avoidance of impacts through the design or relocation of activities or facilities; required education of workers to ensure that they understand and comply with cultural resource protection measures; and implementation of discovery plans to address any unexpected finds during exploration, construction, or operation. **Mitigation** measures near access roads could include implementation of site monitoring plans to detect violations and support enforcement of the Archaeological Resources Protection Act.

Visual intrusions could be **mitigated** through measures designed to reduce visual impacts by lowering the contrast of mining-related facilities with the surrounding terrain and viewshed. Auditory intrusions could be mitigated through scheduling of mining activities to avoid sensitive times of the year. Reclamation could restore aspects of the setting after mining activities conclude. However, it may not be possible to reduce all such adverse effects in the long term, especially impacts to the character, association, and feeling of the setting.

The above paragraph is a good example, I think, of what NEPA requires for proposing mitigating measures.

It may be that for a given Impact category, the present mitigation methods commonly used are satisfactory. A statement of what kinds of mitigation used and that they are considered widely used/required and are effective would be sufficient. However, I think that all impact sections should be looked at to see if there are new mitigating methods that might make a difference.

The Water Resources Impact section is totally devoid of any suggestions for mitigating measures, even though this section is one that *claims* many higher level impacts to water resources. That no mitigating measures are proposed, is not in compliance with NEPA.

A possible mitigation measure that could be investigated, and would address one of the central issues of water resource impacts is the issue of the possibility that some breccia pipes might be permeable and allow mine tainted water to seep down into the R-Aquifer.

I would propose the following mitigating measures for reclaimed mines:

Apply a sealant to the exposed low grade ore that will be left in place such that water flowing over the surface will not come into actual contact with the rock surface.

In addition, the bottom of the mine could have a granulated filter media containing minerals that would have an extremely large surface area within the media that would act like sinks for any uranium that had become soluble in water. As the uranium enriched water passed through the media at the bottom of the mine, the uranium would be precipitated out and tightly sequestered such that it would be unlikely to be re-mobilized at a later time. Modeling could be done to determine the depth to which the media should be infilled and the amount of uranium in solution that it could capture.

This kind of media could also be put in the mine sump, when the mine is in operation.

These are the kinds of mitigating measures that should be generated to address many of the impacts that this EIS has come up with. I find it quite disturbing that the most popular mitigating measure proposed is just the Alternatives that reduce the area available for mineral entry. A greater effort is required by NEPA than the one that has been made so far in the writing of this DEIS.

I believe that NEPA requires more than what has been delivered so far.

Attachment 1

Sec. 1502.14 Alternatives including the proposed action.

This section is the heart of the environmental impact statement. Based on the information and analysis presented in the sections on the Affected Environment (Sec. 1502.15) and the Environmental Consequences (Sec. 1502.16), it should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public. In this section agencies shall:

- (a) Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated.
- (b) Devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits.
- (c) Include reasonable alternatives not within the jurisdiction of the lead agency.
- (d) Include the alternative of no action.
- (e) Identify the agency's preferred alternative or alternatives, if one or more exists, in the draft statement and identify such alternative in the final statement unless another law prohibits the expression of such a preference.
- (f) Include appropriate mitigation measures not already included in the proposed action or alternatives.**

Sec. 1502.16 Environmental consequences.

This section forms the scientific and analytic basis for the comparisons under Sec. 1502.14. It shall consolidate the discussions of those elements required by sections 102(2)(C)(i), (ii), (iv), and (v) of NEPA which are within the scope of the statement and as much of section 102(2)(C)(iii) as is necessary to support the comparisons. The discussion will include the environmental impacts of the alternatives including the proposed action, any adverse environmental effects which cannot be avoided should the proposal be implemented, the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and any irreversible or irretrievable commitments of resources which would be involved in the proposal should it be implemented. This section should not duplicate discussions in Sec. 1502.14. It shall include discussions of:

- (a) Direct effects and their significance (Sec. 1508.8).
- (b) Indirect effects and their significance (Sec. 1508.8).
- (c) Possible conflicts between the proposed action and the objectives of Federal, regional, State, and local (and in the case of a reservation, Indian tribe) land use plans, policies and controls for the area concerned. (See Sec. 1506.2(d).)
- (d) The environmental effects of alternatives including the proposed action. The comparisons under Sec. 1502.14 will be based on this discussion.
- (e) Energy requirements and conservation potential of various alternatives and mitigation measures.
- (f) Natural or depletable resource requirements and conservation potential of various alternatives and mitigation measures.
- (g) Urban quality, historic and cultural resources, and the design of the built environment, including the reuse and conservation potential of various alternatives and mitigation measures.
- (h) Means to mitigate adverse environmental impacts (if not fully covered under Sec. 1502.14(f)).**

From the 40 Most Asked NEPA Questions

19a. **Mitigation Measures.** What is the scope of mitigation measures that must be discussed?

A. The mitigation measures discussed in an EIS must cover the range of impacts of the proposal. The measures must include such things as design alternatives that would decrease pollution emissions, construction impacts, esthetic intrusion, as well as relocation assistance, possible land use controls that could be enacted, and other possible efforts. Mitigation measures must be considered even for impacts that by themselves would not be considered "significant." Once the proposal itself is considered as a whole to have significant effects, all of its specific effects on the environment (whether or not "significant") must be considered, and mitigation measures must be developed where it is feasible to do so. Sections 1502.14(f), 1502.16(h), 1508.14.

19b. How should an EIS treat the subject of available mitigation measures that are (1) **outside the jurisdiction** of the lead or cooperating agencies, or (2) **unlikely** to be adopted or enforced by the responsible agency?

A. All relevant, reasonable mitigation measures that could improve the project are to be identified, even if they are outside the jurisdiction of the lead agency or the cooperating agencies, and thus would not be committed as part of the RODs of these agencies. Sections 1502.16(h), 1505.2(c). This will serve to [46 FR 18032] alert agencies or officials who can implement these extra measures, and will encourage them to do so. *Because the EIS is the most comprehensive environmental document, it is an ideal vehicle in which to lay out not only the full range of environmental impacts but also the full spectrum of appropriate mitigation.*

However, to ensure that environmental effects of a proposed action are fairly assessed, the probability of the mitigation measures being implemented must also be discussed. Thus the EIS and the Record of Decision should indicate the likelihood that such measures will be adopted or enforced by the responsible agencies. Sections 1502.16(h), 1505.2. If there is a history of nonenforcement or opposition to such measures, the EIS and Record of Decision should acknowledge such opposition or nonenforcement. If the necessary mitigation measures will not be ready for a long period of time, this fact, of course, should also be recognized.

From Chapter 1.

Clean Air Act (Extension) of 1970

The Clean Air Act of 1970, as amended (CAA), established National Ambient Air Quality Standards (NAAQS) to control air pollution. Impacts to air quality from industry, including mineral exploration and development, are controlled by **mitigation** measures developed on a case-by-case basis during project review.

From Chapter 2.

Alternative C would leave the remaining portion of the proposed withdrawal area with isolated or low concentrations of these resources open to operation of the Mining Law. The **mitigation** of potential effects from exploration or development would continue under the applicable surface managing agency regulations.

Alternative D would leave the remaining portion of the proposed withdrawal area with isolated or low concentrations of these resources open to operation of the Mining Law. The **mitigation** of potential effects from exploration or development would continue under the applicable surface managing agency regulations.

2.3.3 No Withdrawal—Phased Mine Development

The RFD scenarios described in Appendix B do not indicate the likelihood of multiple mines' overlapping in time or location and creating such extensive cumulative impacts that phased development would be a particularly useful **mitigation** approach.

It seems like the various alternative are what this DEIS considers to be the mitigating measures. This is incorrect.

The BLM and Forest Service would not approve a plan of operations in which the environmental analysis determines that substantial irreparable harm would occur to significant natural or cultural resources in the Grand Canyon watershed that could not be effectively **mitigated**.

This is true at any time.

The review and approval of a plan of operations by the BLM or Forest Service involve the following basic steps: 1) review of the proposed plan of operations to determine whether the operator has submitted complete operating, reclamation, monitoring, and interim management plans; 2) NEPA analysis, including the opportunity for public comment; 3) development of **mitigating** measures as conditions of approval required to meet the requirements of the regulations; 4) determination of the reclamation cost and financial guarantee amount; and 5) approval of the plan of operations and financial guarantee instrument. The approved plan of operations is subject to compliance monitoring by the BLM or Forest Service to ensure that the operator is following the approved plan.

Changes in night sky

Impact duration: *More than 5 years*
Given the quality of the dark night skies in the area, minimal increases in night lighting could impact the area's night skies. With **mitigation**, impacts to the area's night sky would be minimal. Impacts could occur to casual observers in the vicinity of the mines and exploration sites, persons traveling along area roads at night, and recreationists camping in the area.

Direct impacts would be mitigated through established regulations and procedures of avoidance and **mitigation**. Impacts could result in loss of NRHP eligibility. If avoidance is not possible.

From Chapter 3.

Degradation of soil productivity is of low probability, and areas within this erosion hazard class generally stabilize under natural conditions. Areas rated moderate exhibit PSL rates that exceed TSL rates, and loss of soil productivity is probable; reasonable and economically feasible mitigation measures are required to prevent significant losses in productivity. Severe hazard ratings are assigned to areas where PSL rates exceed TSL rates and where loss of productivity is inevitable. Areas with severe erosion hazards require significant **mitigation** measures to be applied to prevent irreversible loss in soil productivity, and there is a high probability of some productivity loss before **mitigation** can be applied.

What might these mitigating measures be? Are they well established ones or new ones? What mitigating measure could be developed such that mitigating measures would be applied before productivity loss occurred?

The TES unsurfaced road category pertains to the suitability for the use of native soils for unsurfaced roads in terms of construction and maintenance requirements (Brewer et al. 1991). These roads would be of low design and minimum construction cost (such as haul roads and for most exploratory drilling). A rating of slight indicates that there are few limitations or risks associated with unsurfaced roads. A rating of moderate or severe indicates that there would be problems in construction and maintenance of unsurfaced roads. Since most of these roads would be expected to receive little maintenance, alternative routes may be considered to avoid **mitigation** limitations and significant damage to soils rated moderate or severe.

HUMAN SAFETY RISKS

As previously noted, there are also potential safety risks associated with the mining operations themselves. In general, public safety risks are **mitigated** by proposed safety mechanisms mandated by the land managing agencies such as BLM and Forest Service, as well as MSHA. In general, mine operations are secured with locking gates to prevent public access and are reclaimed to a standard to ensure that ground surface integrity is not compromised.

From Chapter 4.

Residual Impacts page 4-3

Impacts are considered residual when the effect from the proposed project cannot be completely

avoided or minimized and remains after or despite **mitigation**.

Air Quality Impact page 4-18

Air quality impacts would be **mitigated** through use of a compliance plan following the control measures as discussed in the Arizona 1 Mine Compliance Plan provided below. This reference was provided for informational purposes only. It should be noted that each individual mine would be required to submit a compliance plan specific to its operations. These plans will provide specific compliance measures for the individual project.

Hazardous Air Pollutant Impact Assessment page 4-19

HAPs can cause various adverse health effects. They are not regulated under the NAAQS, but high concentrations at the mine site boundary could indicate the need for further analysis and/or **mitigation** strategies. **NEPA requires YOU to do this!! What are you waiting for!**

Air Quality Section page 4-36

The majority of the development effects of the proposed mining projects would be **mitigated** by the fact that these projects would be constructed over different periods. Both development- and operation-related air emissions are not expected to have a significant impact on air quality within the area since the mines would likely have varying development schedules and must adhere to federal, state, and local regulations for the protection of ambient air quality.

Wells page 4-63

If mine drainage were to occur from a breccia pipe uranium mine within this capture zone and, although it is unlikely, if the mine drainage were to reach the R-aquifer and not be **mitigated**, it would be possible for the mine drainage to eventually become part of the groundwater yielded to the Tusayan wells at a highly diluted concentration.

So what is your mitigating measure that you think might work?? I have a proposal, where is yours?

Water Resources Section page 4-65

It should be emphasized that detailed, site-specific environmental analysis would be required for any new mines in the proposed withdrawal area and that the data necessary to assess the potential impacts on a case by case basis would be obtained and evaluated at that time. In addition, the ADEQ may require new Aquifer Protection Program (APP) permits for reactivation of existing mines operating under interim management plans; these permits can include measures for monitoring and environmental **mitigation** (for example, see ADEQ 2009d).

This does not relieve you from offering mitigating measure for this EIS.

Impacts to soil chemical quality page 4-105

Data collected by the USGS in 2009 (Otton et al. 2010) at the reclaimed Pigeon and Hermit mines support this conclusion; at the Pigeon Mine, only localized areas of soil were detected containing higher levels of trace elements than elsewhere on-site. These higher levels of mine-related constituents were likely related to the presence of mine-waste materials remaining on-site, possibly uncovered by erosion. These residual impacts are an example of reclamation efforts that were not completely successful; such impacts are minor because of their limited extent and could be **mitigated** through more aggressive remedial action and monitoring after closure.

So what aggressive remedial actions would you make as mitigating measures, NEPA wants to know!! The reclamation efforts were not completely successful, so now what??

Compliance with Environmental Regulations and Permitting page 4-115

2. All new temporary or existing upgraded roads on BLM lands may require **mitigation** to reduce the potential adverse impact of fugitive dust as specified by the authorized officer.

What might these be??

4.7 FISH AND WILDLIFE page 4-119

As previous discussed in Chapter 2, the BLM and Forest Service require the preparation of plans of operation for all uranium mining projects. Plans of operation include standard operating and reclamation measures to minimize or **mitigate** impacts to fish and wildlife resources.

Like what?

In particular, the Kaibab LRMP/ROD discusses avoidance or **mitigation** of impacts on wildlife habitats, including breeding, calving, and fawning areas; requires site-specific survey; and evaluates assessment areas during mining project design and plan (Forest Service 1988). The Forest Service manages vegetation resources in such a manner to maintain no fewer than three age classes of woody riparian species, with 10% of the woody plant cover in sprouts, suckers, seedlings, and saplings (Forest Service 1988).

Page 4-127

Although reclamation of breccia pipes can be nearly fully **mitigated** when a mine is closed (reduce or eliminate uranium and other contaminants from moving into aquifers), the potential for impacts associated with chemical and radiation exposure would remain in aquatic resources for more than 20 years; therefore, the duration of impact is considered long term.

Page 4-128

Alternative D would leave the remaining portion of the proposed withdrawal area with isolated or low concentrations of these resources open to operation under the Mining Law. The **mitigation** of potential effects from exploration or development would continue under the applicable surface managing agency regulations.

4.8 SPECIAL STATUS SPECIES/ 4.8.1 Impact Assessment Methodology page 4-138

As discussed in more detail in Chapter 2, the existing regulatory framework requires that all plans of operation be subject to subsequent site-specific NEPA analyses in compliance with laws, regulations, and policies and in conformance with applicable RMPs or forest plans. Both the BLM and Forest Service require a detailed plan of operation for proposed mine development projects. Based on site-specific analysis, **mitigation** and conservation measures are developed to avoid or minimize anticipated impacts and avoid unnecessary and undue degradation. Site-specific analysis of effects to threatened, endangered and proposed species is required for compliance with ESA regulations and agency management policies. Potential adverse effects would be avoided or minimized.

Conservation Measures page 147

The following general measures must be applied to federally listed species in the proposed withdrawal area:

All surface-disturbing activities would include conservation to reduce impacts to special status species and their habitat. Conservation measures developed for each listed or proposed species would be applied to any proposed project within the habitat of that species. Analysis of impacts and determinations of effects would include any and all **mitigation** and conservation measures.

What might these be?? An example list? Are they effective? Are the SOP?

Conformance with Visual Resource Designation page 4-165+

Each parcel contains specific visual resource designations as discussed in Chapter 3. Each designation outlines visual management objectives required for management actions and are established through the agencies' (BLM's and Forest Service's) land use planning processes. The designations are used to determine the acceptable level of visual disturbance and project-specific **mitigation** requirements to minimize visual disturbance in order to meet the designations. The Mining Law allows for development of mining on public lands, and, typically, visual designations do not stop mining activities. However, **mitigation** of visual impacts from mining activities might be required to attempt to meet visual designation objectives.

Page 166

Typically, on-site evaluations and visual contrast ratings would be required prior to any mine development in Class II areas to determine appropriate **mitigation** measures.However, mining operation visual impacts (described in Section 4.9.2) in high use and visually sensitive areas could be difficult to **mitigate** to meet the Class II objectives.

Do you have any ideas for mitigating measures that might overcome these difficulties?

The majority of the North Parcel is designated VRM Class III, with the objective of partially retaining the existing character of the landscape. A moderate level of change from management actions within these areas is acceptable but should not dominate the view of the casual observer. Mineral exploration, development, and accompanying activities do not conflict with this designation. However, all activities would require site-specific evaluations to reduce and **mitigate** potential visual impacts.

Page 4-167

The lands designated Modification are in the Kanab Creek and Snake Gulch area but outside the Kanab Creek Wilderness. Modification allows for management activities that may dominate the characteristic landscape but that must use naturally established form, line, color, and texture. Mineral exploration, development, and accompanying activities would not conflict with this designation with the application of project-specific visual resource **mitigations**.

East Parcel

This level of development could meet the VRM Class II objectives of minimal landscape change. However, mining operation visual impacts (described in Section 4.9.2) in high use and visually sensitive areas could be difficult to **mitigate** to meet the Class II objectives.

Again, make with the ideas for mitigating measures.

The VRM Class III area lies in the southern portion of House Rock Valley. Mineral exploration, development, and accompanying activities do not conflict with this designation. All activities would require site-specific evaluations to reduce and **mitigate** potential visual impacts.

The lands designated Modification are on the western edge of House Rock Valley. Modification allows for management activities that may dominate the characteristic landscape but that must use naturally established form, line, color, and texture. Mineral exploration, development, and accompanying activities could meet the visual resource quality objective within this designation with the use of project-specific visual resource **mitigation**.

South Parcel

The majority of the parcel is designated Moderate. These landscapes appear slightly altered, and any noticeable changes should remain visually subordinate to the landscape character being viewed. With site-specific design **mitigations**, mineral exploration, development, and associated activities would not conflict with the objectives of this designation.

Night Sky page 4-177

Given the quality of the dark night skies in the area, minimal increases in night lighting could impact the area's night skies. **Mitigation** of night lighting plays an important role in protecting night skies and would be determined on a specific mining project basis. *These measures could include using low-visibility spectrum lights and appliances (full cut-off fixtures that emit no light above the light's horizontal line) on mine structures, minimizing night time mining activity, and limiting ore truck travel during night hours.* With mitigation, impacts to the area's night sky would be minimal.

The above paragraph is starting to hit the mark about, I think, what the NEPA requirements are for proposing mitigating measures.

Conformance with Visual Resource Designation page 179

North Parcel

Using site-specific design **mitigation** could make it possible to conform to the Class II designation on a case-by-case basis.

South Parcel

One mine is projected for the South Parcel under Alternative B. This mine is expected to be located in the existing Canyon Mine area, which is designated SMS Moderate. With applicable visual **mitigation**, this mine can conform to the SMS Moderate visual objectives. This likely conformance would result in minor impacts to visual resources.

What might these mitigating measures be?

Soundscapes page 195+

The primary noise sources at a typical underground mine site include operation of heavy-duty diesel equipment (e.g., drill rigs, water trucks, graders, dump trucks, front-end loaders, ore haul trucks, etc.) and stationary mining equipment (e.g., mine shaft vent fans and sorting screens). The overall noise level generated by the equipment depends on where the equipment is being used, the number of individual equipment units, and the **mitigation** measures employed.

Under Alternatives A through D, exploration and development of a proposed mine sites would cause temporary increases in ambient noise levels in the immediate vicinity of the exploration and

development areas. The primary noise sources at a typical underground mine exploration/development sites include operation of heavy-duty diesel equipment (e.g., drill rigs, water trucks, graders, dump trucks, front-end loaders, etc.). The overall noise level generated by the heavy equipment use depends on where the equipment is being used, the number of individual equipment units, and the **mitigation** measures employed.

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Cultural Resources page 4-201+

Adverse impacts on cultural resources result from physical destruction, damage, or alteration of all or part of the property, or from alterations to the site's setting when the character of setting contributes to its eligibility. Such alterations could include visual, audible, or atmospheric elements that are out of character with the setting. A project may also result in no adverse effects; in those cases, an action does have an impact to a resource, but the impact either does not harm the resource or the harm to the resource can be successfully **mitigated**.

However, existing mining regulations do address cultural resource disturbance through **mitigation** (see below). Conversely, it is possible that a given mining project would not adversely affect cultural resources if no resources will be disturbed.

The implementation of **mitigation** measures according to current mining regulations would reduce adverse impacts to cultural resources. The primary **mitigation** measure would be avoidance. Under all the alternatives, areas proposed for mine development would be subjected to intensive archaeological surveys to identify and evaluate cultural resources that could be affected. Impacts to cultural resources would be considered and addressed through the NEPA and Section 106 processes, with efforts made to identify, avoid, **mitigate**, or otherwise resolve any adverse effects.

It is assumed that the majority of archaeological sites determined eligible for the NRHP would be valued for their potential to yield important information. Therefore, one of the **mitigation** measures would be the implementation of agency-approved plans for scientific data recovery. Data recovery procedures could include excavations, mapping, collection of artifacts and other archaeological materials, archival research, or oral histories. Final reports would be required to document the results of analysis, with collections and data preserved for long-term research in a museum or other federally approved repository.

Other **potential mitigation** measures include avoidance of impacts through the design or relocation of activities or facilities; required education of workers to ensure that they understand and comply with cultural resource protection measures; and implementation of discovery plans to address any unexpected finds during exploration, construction, or operation. **Mitigation** measures near access roads could include implementation of site monitoring plans to detect violations and support enforcement of the Archaeological Resources Protection Act.

Visual intrusions could be **mitigated** through measures designed to reduce visual impacts by lowering the contrast of mining-related facilities with the surrounding terrain and viewshed. Auditory intrusions

could be mitigated through scheduling of mining activities to avoid sensitive times of the year. Reclamation could restore aspects of the setting after mining activities conclude. However, it may not be possible to reduce all such adverse effects in the long term, especially impacts to the character, association, and feeling of the setting.

The above paragraphs satisfy, I think, what the NEPA requirements are for proposing mitigating measures.

Cumulative Impacts

If sites are found during this inventory, disturbance to those sites must be mitigated. Since avoidance is the primary **mitigation** measure for any project, it can be assumed that the total number of cultural resources that would need to be mitigated further through data recovery or other means for these projects is minimal and would not significantly change the historic or prehistoric character of the parcels; therefore, no cumulative impacts to cultural resources are anticipated under Alternative A.

American Indian Resources page 208+

Some of these impacts can be mitigated, while others cannot. **Mitigation** may be difficult or impossible in many cases, as alterations or damage to the values of significant, connected places may be irreversible and irreparable, regardless of reclamation; however, some potential **mitigation** measures include the following:

- avoidance or reduction of impacts through relocation or redesign of activities or facilities;
- measures implemented to reduce visual impacts, air quality impacts, and noise.
- access routes provided or kept open to traditional use areas and sacred sites.
- reclamation to restore aspects of setting.

Since damage to traditional cultural and sacred places is irreversible, the preferred mitigation measure is avoidance.

If a conflict arises, mine operators would then attempt to relocate drill or mining locations that are particularly sensitive to the interested tribes; however, since any drilling or excavation into the earth is considered wounding the earth, it may not be possible to **mitigate** all impacts by moving locations.

Human Safety Risks page 4-238

As previously noted in Section 3.15.1, potential safety risks associated with the mining operations could affect area recreationists and visitors; however, these risks would be **mitigated** by safety mechanisms mandated by the land managing agencies such as the BLM and Forest Service, as well as MSHA. For instance, secured gates at mine operations are required. Thus, no impacts to Human Safety under Alternative A are expected.

Transportation Conflicts page 4-238

This could impact roadways traveled by employees and visitors in the proposed withdrawal parcels should accidents occur as a result of increased traffic. However, with implementation of speed restrictions by the mining company (i.e., maximum speeds of 25 mph on unpaved roads), the potential for impacts would be **mitigated** and minimized.

The above paragraphs satisfy, I think, what the NEPA requirements are for proposing mitigating measures.

Impacts to Human Safety in terms of transportation conflicts under Alternative A are expected to be long term and moderate. Transportation containers and methods as well as area speed limits are expected to **mitigate** potential risks.