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AUSA



THE SCOPE
OF THE ENVIRONMENTAL IMPACT STATEMENT
ON THE PROPOSED MT. EMMONS MINING PROJECT

MOUNT EMMONS

Mining Project

Gunnison
National
Forest

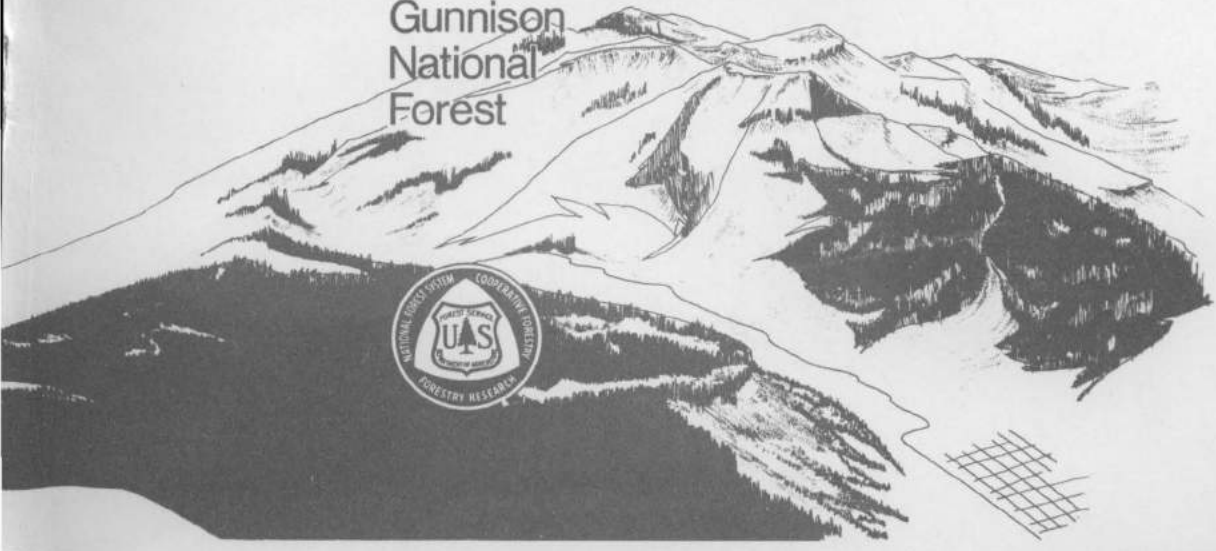


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December 19, 1979

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This scoping paper outlines the material that will be covered in the environmental impact statement (EIS) on the proposed Mount Emmons Mining Project. It also discusses a number of other items that need to be brought forward at this time. Finally, it solicits public comment on previously undescribed aspects of the proposed project and on the contents of this paper itself.

1. INTRODUCTION

The Secretary of Agriculture's Regulations to Protect Surface Resources during mining and prospecting operations are found in Part 252 of Title 36 of the Code of Federal Regulations (36 CFR 252). Under these regulations, the Forest Supervisor of the Grand Mesa-Uncompahgre-Gunnison National Forests must make a decision on the Operating Plan for the proposed Mount Emmons Mining Project. The proponent is AMAX, Inc. The area affected lies in the northern part of Gunnison County, Colorado. (Please consult the map on the back side of the folder.) The Forest Supervisor notified the proponent that the Operating Plan could not be approved until a Final EIS had been prepared and filed with the Environmental Protection Agency. An interdisciplinary team (please see Appendix A) located in the City of Gunnison has been assigned the task of preparing the EIS according to the procedures set forth by the Council on Environmental Quality (CEQ). These procedures are contained in 40 CFR 1500-1508 (1978).

Although the proposed action triggering the need for an EIS is the decision on the Operating Plan, a number of connected governmental actions will also be discussed. These are listed in Table 1, page 2.

If the proposed project becomes a reality, there will be other governmental actions that take place during the permitting process. These will occur at all levels of government, and to the extent possible the interdisciplinary team intends to discuss the environmental consequences of these actions in the EIS. For Federal actions in this category--all of which are believed to be connected actions--the EIS will serve as an umbrella under which any subsequent required environmental documentation can be tiered. This should preclude the need for another EIS related to the proposed project. State and local public authorities will reference the EIS as it serves them in their permitting actions. Many of the actions discussed here will require further environmental reviews.

Table 1: CONNECTED ACTIONS

<u>Federal Agency</u>	<u>Action</u>	<u>Facet of Project</u>
Forest Service	Approval of Operating Plan	All activities on current National Forest System lands
Forest Service	Issuance of Special Use Permit(s)	Power lines, access roads, haulage corridors, and other support facilities on National Forest System lands
Forest Service	Land Exchange	Millsite and tailings disposal areas
Forest Service	Archaeological clearance (with concurrence of the State Historic Preservation Officer)	All surface disturbance activities
Bureau of Land Management	Issuance of Right-of-Way Permit(s)	Power lines, access roads, haulage corridors, and other support facilities on Public lands
Bureau of Land Management	Land Exchange	Millsite and tailings disposal areas
Bureau of Land Management	Archaeological clearance (with concurrence of the State Historic Preservation Officer)	All surface disturbance activities
Department of Army Corps of Engineers	Issuance of 404 Dredge and Fill Permit(s)	Construction activities affecting major waterways or wetlands
Environmental Protection Agency	Review approval of State-issued National Pollutant Discharge Elimination System (NPDES) permit(s)	Mine, mill, and other point source discharges
Environmental Protection Agency	Issuance of Prevention of Serious Deterioration (PSD) Permit	Air emission discharges from project activities
Environmental Protection Agency	Resource Conservation Recovery Permit (continued on next page)	Treatment, storage, and disposal of hazardous wastes

<u>Federal Agency</u>	<u>Action</u>	<u>Facet of Project</u>
Environmental Protection Agency	Review of issuance of 404 Dredge and Fill Permits	Construction activities affecting major waterways or wetlands
Bureau of Reclamation	Approval of contract for use of water appropriated for the Blue Mesa Project	Consumption of water appropriated for the Blue Mesa Project

* * * * *

<u>Colorado Agency</u>	<u>Action</u>	<u>Facet of Project</u>
Dept. of Health, Air Pollution Control Division	Issue Emission Permits	Air emissions from project facilities and activities
Dept. of Health, Air Pollution Control Division	Issue Fugitive Dust permits	Fugitive dust from project activities
Dept. of Health, Air Pollution Control Division	Issue Open Burning permits	Open burning
Dept. of Health, Water Quality Control Division	Issue NPDES Permit	Mine, mill, and other point source discharges
Dept. of Health, Water Quality Control Division	Issue water quality certification	Construction activities affecting major waterways or wetlands
Dept. of Health, Water Quality Control Division	Certify sewage treatment plant operators	Sewage treatment plant operations
Dept. of Health, Water Quality Control Division	Approve sewage treatment plant siting and construction	Sewage treatment plant construction
Dept. of Health, Water Quality Control Division	Approve potable water supply systems	Potable water supply systems

(continued on next page)

<u>Colorado Agency</u>	<u>Action</u>	<u>Facet of Project</u>
Dept. of Health, Radiation and Hazardous Waste Control Division	Recommend to County Commissioners on approval of Solid Waste Certificate	Disposal of solid waste
Dept. of Natural Resources, Mined Land Reclamation Division	Issuance of Mining Permit	Mining and milling operations and reclamation
Dept. of Natural Resources, Div. of Water Resources	Issue well and pump permits	All wells
Dept. of Natural Resources, Div. of Water Resources	Approve change of water right use	Changes of water use
Dept. of Natural Resources, Div. of Water Resources	Approve reservoir and dam plans	Construction of dams over 10 feet in height
Dept. of Highways	Issue permits granting access, utilities right-of-way, and over-size highway use	Activities affecting State highways
Colorado State Inspector of Oils	Approve storage of liquified petroleum gas	Storage of liquid petroleum gas
State Historic Preservation Officer	Concurs on archaeological clearances	All surface disturbance activities

* * * * *

(continued on next page)

<u>Gunnison County</u>	<u>Action</u>	<u>Facet of Project</u>
Gunnison County	Approve plans for disposal of mine waste and general refuse	Disposal of all mine waste and general refuse
"	Approve land use change	All project activities and facilities
"	Issue building permits	All construction
"	Issue plumbing and heating permits	All plumbing and heating installations

(To the best knowledge of the interdisciplinary team, the above list constitutes the permits that may be required.)

2. ISSUES, CONCERNS, AND OPPORTUNITIES

The interdisciplinary team has been compiling information on issues for many months. Much emphasis has been placed on this effort because it is the identification of significant issues that defines what the EIS should focus on. In previous years, the typical EIS was encyclopedic and devoted huge numbers of pages to routine descriptions of the environment. Now, with CEQ's new regulations, the idea is to let the significant issues determine what material needs to be included in an EIS, and what material does not.

This section presents the issues, management concerns, and management opportunities that have arisen regarding the proposed Mt. Emmons Mining Project, and it identifies which ones have been found to be significant. The significant ones will be analyzed in detail in the EIS. For the most part, the material described in this Section will be used to define the content of the EIS.

a. General Procedure

On June 1, 1979, the Forest Service published a Notice of Intent in the Federal Register indicating that an EIS would be prepared for the proposed Mt. Emmons Mining Project. The Notice described initial procedures for obtaining public participation through the distribution of information packets. These were designed to solicit responses concerning issues and alternatives related to the proposed project. News releases to local and regional media on June 1 and June 18 announced the availability of these packets. On June 18, a general mailing of the packets was made to individuals, organizations, government agencies, and elected officials. A general categorization of recipients is shown below:

<u>Recipient</u>	<u>Number</u>	<u>Recipient</u>	<u>Number</u>
Individuals	344	Federal Government	95
Businesses	34	State Government	90
Organizations	78	County Governments	33
News Media	34	Municipal Governments	24

In addition, approximately 568 packets were disseminated through other forms of public contact. These included a mobile van, meetings of local organizations, and individual requests at Forest Service offices.

A deadline of July 18, 1979, was set for receiving public comment. This was not an absolute cutoff, of course, because any subsequent input could not altogether be ignored. Thus

some of the issue material in this document is based on more recent input. However, the primary information base used for identifying significant issues was centered on material that had been received by about mid-July. About 150 responses were received. The following basic steps were then taken:

1. Responses were analyzed for their basic arguments and assertions.
2. Issues were formulated and their content clarified.
3. The issues were analyzed for their significance.
4. Management concerns were identified and analyzed.
5. Management opportunities were identified and analyzed.

The first step was particularly time-consuming because of the difficulty encountered in grouping comments into units that treated similar subjects, and because of the care required in capturing accurately and fairly the essence of each comment received. In the second step, team members worked together in an interdisciplinary manner to identify issues and formulate language describing them. The third step was carried out by considering, basically, how controversial each issue appeared to be and the degree to which it was of interest to different parties concerned with the project. The fourth step consisted of analyzing management concerns according to whether or not a Federal responsibility was involved and whether or not a conflict of concerns existed. In the fifth step, management opportunities were rated according to the feasibility of being able to capitalize on each opportunity identified.

b. Issues

An issue is a point of debate. The significant issues of the proposed Mt. Emmons Mining Project are presented in Table 2, on pages 9-20. Each issue is displayed in the following format:

1. STATEMENT: a short question summarizing the essence of the issue.
2. NARRATIVE: a more detailed description of the contents of the issue, which is to serve as a guide for analysis.
3. REMARK: an optional item sometimes used to clarify how a given issue is to be treated.

All issues listed in Table 2 will be analyzed and the results displayed in the EIS. The amount of detail needed to carry out each analysis will be determined by the Forest Supervisor.

The issues in Table 2 are based on public input received over the past several months, and it should be pointed out that the makeup of this list can change as further input is received.

c. Management Concerns

A management concern asks about potential adverse impacts affecting the protection and management of resources and values that are likely to result because of the proposed action. In this case, management concerns are raised by Federal agencies. The management concerns related to the proposed project are presented in Table 3, pages 21-24. They are displayed in a format similar to that used for the issues. These concerns will be analyzed in the EIS.

d. Management Opportunities

A management opportunity is the potential ability to take advantage of someone else's proposed activity. The management opportunities related to the proposed project are presented in Table 4, pages 25-26. They are displayed in a format similar to that used for the issues. These opportunities will be analyzed in the EIS.

Table 2: SIGNIFICANT ISSUES

ISSUE 1	
STATEMENT	WHAT WILL BE THE IMPACTS ON THE QUALITY OF LOCAL AIR AND WATER?
NARRATIVE	<p>The issue seeks answers to questions about impacts the proposed project is likely to have on air and water quality. Specific topics to be looked at include: air emissions, fugitive dust, surface runoff, direct discharges, and groundwater contamination. Aspects of the project covered by the issue include mine, mill, ore haulage, and other project-related transportation systems. Secondary effects, particularly those impacting air quality, will also be considered. Analyses will explore effects on native plants and animals as well as on public health. The water requirements of the project will also be studied.</p>
ISSUE 2	
STATEMENT	WHERE SHOULD THE PROPOSED MILL/TAILINGS SITE BE LOCATED?
NARRATIVE	<p>There is much concern over the location of the mill complex, especially the tailings pond. It is recognized that a feature of the size proposed will cause a wide variety of impacts both on the surrounding environment and on nearby developments. Consequently, analysis of this issue must necessarily span a wide range of topics such as wildlife, energy implications, human and community matters, air and water quality, et cetera.</p> <p>Alternatives to the proposed site at Alkali Creek will be looked at. The interdisciplinary team has identified the Antelope Creek, Cabin Creek, and Upper Ohio-Carbon sites as ones attractive enough to deserve further study, and strong public interest expressed during the scoping process has indicated that the Chance Gulch site should also be investigated. These sites will be studied in further detail. The remainder of the twenty-nine sites originally inventoried will not be given detailed study unless unforeseen developments require that new sites be added.</p> <p>Alternative ore haulage routes will be analyzed for each mill/tailings site. This analysis will focus on</p>

basic alternatives such as using the East River valley for haulage rather than Ohio Creek as proposed. It will not concentrate on the finer details of precise alignment or site-specific design, although these matters will be covered generally in terms of mitigation measures.

Analyses will be based on designs contained in AMAX's various millsite reports, and alternatives to those designs will be generated as necessary.

ISSUE 3

STATEMENT HOW WILL DISTURBED AREAS BE RECLAIMED?

NARRATIVE The scale of earth-moving activities associated with the project is such that a substantial reclamation effort will have to occur. Visual, air-related, and water-related questions will be of notable importance. Particularly important is the assurance of long-term stability of the tailings deposit and its potential for water supply contamination.

ISSUE 4

STATEMENT WHAT WILL BE THE IMPACTS OF USING LOCAL SOURCE MATERIALS (COAL, GRAVEL, ETC.) IN THE PROPOSED PROJECT?

NARRATIVE This issue incorporates local coal mined and supplied to the project for its space-heating needs, local gravel for its aggregate requirements, etc. Each of these categories can have onsite as well as offsite impacts, and can impact water quality, wildlife, human-community matters, air quality, et cetera.

ISSUE 5

STATEMENT WHAT METHODS AND ROUTES SHOULD BE USED FOR TRANSPORTING PERSONNEL AND SUPPORT SERVICES TO THE PROPOSED PROJECT'S WORK SITES?

NARRATIVE The issue includes the impacts of significant traffic increases with their attendant road reconstruction requirements on: Wilderness, energy, air quality, water quality, historic sites, visual resources, accident rates, established uses including livestock movement, total construction, operation and maintenance (COM) costs, land disturbance, noise levels, wildlife, and traffic flows.

The distribution of COM costs is also included. Community bypasses will be considered. The main corridors of concern are the East River Valley, Ohio Creek, and Highway 50 between Gunnison and Cabin Creek.

The issue also incorporates concerns to limit vehicular traffic and to capture opportunities to serve other transportation needs. It considers travel from home or Gunnison to the mine and mill sites and the cost burden for this travel. The methods of transportation included are rail, bus, monorail, and personal vehicles. The effects of secondary travel on air, wildlife, and energy are considered in Issues 1, 6, and 16, respectively.

ISSUE 6

STATEMENT

WHAT IMPACT WILL THE PROPOSED PROJECT HAVE ON NATIVE ANIMALS AND PLANTS, THEIR PROCESSES, ATTRIBUTES AND SPECIFIC ENVIRONMENTS (WITH EMPHASIS ON THOSE IDENTIFIED VIA PUBLIC INPUT AND SCOPING)?

NARRATIVE

This issue puts many public concerns into an ecosystem context, as suggested by some respondents. The specific identified animals and plants of concern are: elk, grouse, deer, trout, Drosera rotundifolia (sundew plant) and any identified threatened or endangered species. There is an additional desire that in a broader context all wildlife be considered.

The environmental processes and attributes that the public is most concerned about are migration, reproduction, daily activity, population numbers, wildlife diversity, and habitat diversity.

In addition to the specific project work sites that the project may impact, other environments that people are concerned about are big game winter range, stream ecosystems, the Roaring Judy Fish Hatchery, Gunnison River, the iron bog on Mount Emmons, open meadowlands and sensitive study areas used by Rocky Mountain Biological Lab including Mt. Belleview, North Pole Basin, and Copper Creek.

The disturbance factors the public has identified are clearing, earthmoving, high voltage transmission lines, increased vehicle speeds, increased vehicle volumes, noise, new roads, ore transportation, snowmobiles, ORV's, molybdenum increases, cadmium increases, acid rain and development.

ISSUE 7

STATEMENT WHAT IMPACT WILL PROPOSED PROJECT ACTIVITIES AND THE GENERATED POPULATION INCREASE HAVE ON LOCAL RECREATIONAL USES?

NARRATIVE The issue relates to undeveloped and developed outdoor recreational uses. It considers changes--to existing recreation patterns, levels of demand, and quality--due to primary and secondary effects of the project. Topics of concern are: 1) backcountry loss (semi-primitive non-motorized); 2) off road vehicle damage (semi-primitive motorized); 3) hunting and fishing; 4) facilities adequacy; and 5) urbanization. Effects such as changes in visual proximity of new facilities, and other pertinent factors will also be considered.

ISSUE 8

STATEMENT WHAT IMPACT WILL CHANGES IN RECREATION ACTIVITIES HAVE ON OTHER RESOURCES AND USES OF THE AREA?

NARRATIVE Recreation activities, and levels of use, are expected to change as a result of the secondary effects (population increase, etc.) of the project. Recreation is perceived to have subsequent impacts on: 1) fragile ecosystems critical to ecologic baseline studies; 2) wildlife; 3) domestic grazing; and 4) wilderness. The issue is principally related to undeveloped lands and site-specific conflicts.

The issue is limited to matters of a physical/biological environmental nature; and although it does have indirect relationships to the socio-economic environment, the issue does not address this facet in detail.

ISSUE 9

STATEMENT HOW WILL THE WEST ELK WILDERNESS BE IMPACTED BY THE PROPOSED PROJECT?

NARRATIVE Maintenance of the quality of the West Elk Wilderness resource is the focus of this issue. Air quality and recreation pressures are the main topics of concern. Items that will be addressed include: impacts on air quality in the Class I airshed and on air quality-related values, increased levels of people use with attendant overuse, and problems with access and trespass.

ISSUE 10

STATEMENT WHAT WOULD BE THE IMPACTS OF A MINING OPERATION SCALED DOWN SO AS TO REQUIRE FEWER EMPLOYEES AND OPERATE OVER A LONGER PERIOD OF TIME?

NARRATIVE This issue is concerned with the size and duration of the proposed mining operation. It proposes that the mine employ fewer persons and remain operational for a longer period of time. Cultural, economic, institutional, environmental, and mine closure ("bust") impacts are included in the issue.

REMARK A 'small mine' alternative will be analyzed. As of this writing, a production rate has not been agreed upon. The decision will probably be made early in 1980.

ISSUE 11

STATEMENT WHAT WILL BE THE IMPACTS ON EXISTING INDUSTRIES AND RELATED BUSINESSES RESULTING FROM THE PROPOSED INTRODUCTION OF THE MINE?

NARRATIVE The introduction of the mine into the current established economy will impact existing industries in Gunnison County. Specific areas of concern include: 1) impacts of higher wage scales existing in the mining industry; 2) local labor availability and hire rates; 3) employment and unemployment effects; 4) impacts on agriculture, recreation and tourism, and to a lesser degree education; and 5) economic adjustment when the mine closes.

ISSUE 12

STATEMENT WHAT IMPACT WILL PROJECT-INDUCED POPULATION CHANGES HAVE ON HOUSING IN GUNNISON COUNTY?

NARRATIVE The issue addresses the kinds and amounts of housing needed to accommodate growth. Two distinct time phases, the construction period and the production period, are important. Availability of housing to students, low income and fixed income groups, both in a physical and economic sense, are the principal considerations.

ISSUE 13

STATEMENT WHAT IMPACT WILL THE PROPOSED PROJECT HAVE ON THE DEMAND FOR PUBLIC SERVICES IN LOCAL AREAS?

NARRATIVE Current adequacy of public service systems, capacity to accommodate growth, and needs for expanded services are the substance of the issue. Topics of concern are: education, health (physical and mental), water and sewer, law enforcement, transportation, fire protection, and urban recreation.

Fiscal impacts would be identified only in a general way. For example, an estimate of costs specific to the government services impacted may be made, but impacts to tax structures, who will pay, etc., would not be addressed. Transportation addresses only surface transportation effects.

ISSUE 14

STATEMENT WHAT WILL HAPPEN TO THE HISTORIC CHARACTER OF THE CRESTED BUTTE HISTORIC DISTRICT AS A RESULT OF THE PROPOSED PROJECT?

NARRATIVE The issue addresses the physical effects of the project, both direct and indirect. Those effects which have the potential to destroy or alter the historic property or surrounding environment or which may introduce visual, audible, or atmospheric elements which are out of character with the property, or which alter the setting, will be considered.

ISSUE 15

STATEMENT WHAT IMPACT WILL THE PROJECT-INDUCED POPULATION CHANGE HAVE ON THE EXISTING SOCIAL STRUCTURE OF THE GUNNISON COUNTY AREA?

NARRATIVE The effects of new people entering the social-cultural environment, anticipated changes in lifestyles, settlement patterns, group associations, and social practices such as recreational pursuits will be considered.

Economic effects will be addressed insofar as they can function as predictive tools for determining the above. Economic impacts to the business sectors will be addressed in Issue 11.

ISSUE 16

STATEMENT WHAT ARE THE IMPACTS OF THE TOTAL ENERGY REQUIREMENT OF THE PROPOSED PROJECT, AND WHAT CONSERVATION MEASURES WILL BE APPLIED TO LIMIT THOSE REQUIREMENTS?

NARRATIVE This issue encompasses the following forms of energy: electricity, coal, diesel, gasoline, wind, biomass conversion, geothermal, and solar. All phases of the project from construction through closing are included. Direct energy demand of facility and process heating and cooling, ore transport, equipment operation, and shipping the finished product are included as well as secondary energy demands from worker transportation and new structures connected to the project. Other connected actions of concern in this issue are new local power generating plants and coal mines. Conservation measures proposed include mass transit, life cycle costing, using alternative energy sources, and using heat from coal burning to generate electricity. The public asks that this issue look at the effects on local rates for fuel and the effects on local energy availability.

The effects on air and water quality are included in Issue 1, while the effects on native plants and animals are covered by Issue 6.

ISSUE 17

STATEMENT WHAT WILL HAPPEN TO THE 'QUALITY OF LIFE' IN GUNNISON COUNTY IF THE PROPOSED PROJECT IS IMPLEMENTED?

NARRATIVE Many Gunnison County residents perceive an existing 'quality of life' that they like and are reluctant to see changed by the proposed project. Examples of this quality include such things as quiet rural setting, friendly small town atmosphere, wild areas, aesthetics, and absence of heavy industry.

ISSUE 18

STATEMENT DOES THE NEED FOR MOLYBDENUM JUSTIFY THE PROJECT?

NARRATIVE The issue has two parts to it. One asks for a display of the projected supply-demand picture for molybdenum, including a discussion of the metal's uses. The other asks for a judgment of whether or not the benefits of mining the Mt. Emmons ore body outweigh the costs. This judgment includes both tangible and intangible considerations.

ISSUE 19

STATEMENT HOW WILL ANY LAND EXCHANGES ASSOCIATED WITH THE PROPOSED PROJECT BE IN THE PUBLIC INTEREST?

NARRATIVE The issue displays a concern that any land exchanges related to the project be considered from the additional perspectives of resource opportunities gained or lost, and effects on current resource management in addition to an economic valuation of the properties under consideration.

REMARK Please see Section 6(c), page 45, for further information on this matter.

ISSUE 20

STATEMENT HOW MUCH TIME SHOULD BE ALLOCATED TO THE PREPARATION OF THE EIS?

NARRATIVE This issue simply deals with the amount of time that is necessary to complete the EIS. It considers: the potential for environmental harm, the size of the proposed action, the degree to which relevant information is known and if unknown the time required to obtain it, the degree to which the action is controversial, the time necessary for a full and adequate analysis of issues, the need for one year's continuous monitoring of air quality, and unreasonable delays that could adversely affect the economics of the proponent's proposed venture.

REMARK Please see Table 9 on page 33, for the anticipated schedule.

ISSUE 21

STATEMENT SHOULD A REGIONAL EIS BE WRITTEN?

NARRATIVE This issue asks the Forest Service to consider the effects of similar potential mineral developments throughout the area of the Gunnison National Forest. The issue does not include established mining operations.

REMARK The Forest Supervisor has declined to prepare a regional EIS. Please see pages 17-18.

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
Grand Mesa, Uncompahgre and Gunnison N.F.
P.O. Box 138, Delta, Colorado 81416
May 21, 1979

1950/2820



Mrs. Dorothy M. Johnson
Administration Assistant
Board of Commissioners
Gunnison, Colorado 81230

Dear Mrs. Johnson:

This replies to your April 25, 1979, letter requesting that the Forest Service and the Bureau of Land Management make a comprehensive study of the Upper Gunnison River Drainage for the purpose of creating a master plan for mineral development. I have reviewed your request with Marlyn Jones, BLM Montrose District Manager. He will reply separately for the Bureau.

There are a number of reasons why I cannot honor your request for a study of the nature requested.

There are simply no means of determining whether, when, or where economically valuable mineral deposits may be found, much less produced. Currently, the level of interest in and exploration for a variety of minerals is quite high in the area. However, exploration is a chancy business. By way of illustration, twenty odd years ago, the U.S. Bureau of Mines made a study which indicated that only 1 of about 10,000 exploration ventures could be expected to result in the discovery of a minable deposit. Given such uncertainty, it would be very difficult for me to authorize spending public funds for a study that cannot be definitive.

We can deal with and exert a measure of control over surface use during exploration and in situations where mineral deposits have been discovered and for which development and production plans are under way. Examples are the completed environmental statement for the Pitch Project and the environmental statement currently under way for the Mt. Emmons Project.

Mineral operations on the public lands, exploration through production, are conducted by private individuals or businesses. Neither mining claimants nor mineral lessees are required to inform the Forest Service of their production plans or schedules until such time as they are ready to undertake activities that

will disturb the surface of the land. Nor, with some exceptions, are claimants or lessees required to inform us as to what they have found. The principal exceptions involve coal leases and applications for patent under the General Mining Law.


As you can see, I am in no particular position to know what can be expected or is likely to happen regarding the mineral estate. In fact, if I did know, I am obligated to keep much of the information confidential, since it is of a proprietary nature, at least until development plans are announced, at which time we must do the studies leading to operating plan approval. Under these circumstances, I see no realistic way in which I can prepare or assist in preparing a master plan for mineral development.

There are some Colorado State Agencies which may have information, authorities, and regulations which might be helpful to you. The Department of State Planning, Mined Land Reclamation Board, and Colorado Geological Survey are some that come to mind. These agencies often have direct contact with and specific information from potential developers. Confidentiality may still be a problem; nevertheless, valuable information might be obtained.

More close to home, I feel you, the County, are the most capable to plan for development. Through the County's ability to regulate and control land use, I think you are in the best position to determine the pattern of growth desired. Obviously, a potential developer must respond to county regulations. These could include such things as: building permits, housing location, water and sanitation, and roads. These either directly or indirectly control development and growth.

Although I cannot undertake the study you request, I can offer such pertinent information as we may have that would be helpful to you. I would be pleased to discuss the matter personally with you and the Board.

Sincerely,


JIMMY R. WILKINS
Forest Supervisor

ISSUE 22

STATEMENT HOW CAN PEOPLE AND INSTITUTIONS INVOLVED IN THE PROJECT GUARANTEE A QUALITY JOB?

NARRATIVE This issue centers on concerns that the EIS include all appropriate subjects and treat them equally and fairly.

Some people do not trust AMAX to provide honest data and interpretations. There is also a lack of trust in the Forest Service to objectively evaluate all data and honestly consider all alternatives. While some mechanisms to guarantee trust were suggested (e.g. bonding, public input, and public review), it is believed that people were asking for innovations in this area. This issue also includes the comments from many residents relating to how the EIS should be prepared. These comments cover the areas of issue determination, geographic and time scopes, impact analysis, validation, mitigation, decision criteria, and suggested references.

REMARK The issue is significant because of the risk of highly intense public concern if the Forest Service does not do a quality job. However, it is a process-oriented question and its answer lies within the realm of work performance rather than through analysis in the EIS.

To insure high quality both in its work and in its decisions, the Forest Service is operating in a highly visible atmosphere of public review, and is validating material submitted by AMAX for its accuracy before using it in the EIS. Through this effort it is believed that public trust will be increased for future efforts.

ISSUE 23

STATEMENT WILL THE 'NO ACTION' ALTERNATIVE BE GIVEN EQUAL CONSIDERATION WITH ALL OTHER ALTERNATIVES?

NARRATIVE A common complaint about the assessment of alternatives by government agencies during the environmental review process is that the 'no action' alternative is not actually treated seriously. The same worry is already being expressed regarding this project.

REMARK There are two perspectives on the concept of 'no action'. One is that the Foest Service does nothing at all. This is not the case for the proposed Mt. Emmons project. The other perspective is that 'no action' means 'no mine'. This is how the concept is being viewed.

ISSUE 24

STATEMENT SHOULD THE 1872 MINING LAW BE CHANGED SO THAT IT MORE ACCURATELY REFLECTS TODAY'S VALUES?

NARRATIVE The argument behind this issue is that the 1872 mining law was passed during a time of national emphasis on rapid economic expansion. Environmental values were hardly even recognized during that era. Since then, however, these values have risen to a level of much higher importance, rendering the 1872 mining law out-of-date. Because of this, this law should be updated.

ISSUE 25

STATEMENT CAN THE ORE HAULAGE SYSTEM BE DESIGNED AND UTILIZED TO SERVE OTHER TRANSPORTATION NEEDS IN GUNNISON COUNTY?

NARRATIVE Interest has been expressed in having the proposed project's ore haulage system be of use to a broader public than to just the project itself. An example commonly mentioned is a rail system connecting Gunnison with the Crested Butte area that could offer a commuter service to travellers.

ISSUE 26

STATEMENT HOW SHOULD DELIVERY OF ELECTRICAL POWER TO THE MINE AND MILL SITES BE ACCOMPLISHED?

NARRATIVE The public is concerned that consideration for methods of delivery include buried powerlines as well as aerial powerlines and onsite generation. This issue will consider alternative locations of powerline corridors that include burying under existing roads and consolidating them with other disturbances. An effect that will be considered is the visual impact of powerlines.

This issue does not include specific tower locations, but the effects of powerlines and their corridors on plants and animals are covered by Issue 6.

REMARK Please see Section 6(d), page 49, for further information on this matter.

TABLE 3: MANAGEMENT CONCERNS

CONCERN 1

STATEMENT IF ORE HAULAGE ON THE SURFACE IS BY RAIL, WHAT MUST BE DONE TO MINIMIZE THE EXPECTED INCREASE IN FIRE RISK? (Forest Service)

NARRATIVE There is a fear, based on past management experience, that introduction of a railroad might lead to an increased incidence of fire along the right-of-way. The risk of this increase should be assessed, and the costs of detection and control measures estimated.

CONCERN 2

STATEMENT IS IT POSSIBLE TO CONSOLIDATE UTILITY CORRIDORS IN THE GENERAL AREA AFFECTED BY THE PROPOSED PROJECT? (Forest Service)

NARRATIVE The interest here lies in keeping overall disturbance to a minimum, and since utility corridors are usually installed on a one-at-a-time basis there is a tendency for them to proliferate.

CONCERN 3

STATEMENT WHAT MUST BE DONE TO PROVIDE RECREATION OPPORTUNITIES FOR ADDITIONAL USERS BROUGHT IN BY THE PROPOSED PROJECT, AND TO ACCOMMODATE CHANGES IN USE, WITHOUT SIGNIFICANTLY IMPACTING OTHER RESOURCE VALUES? (Forest Service)

NARRATIVE Assuming the project becomes reality and the local population grows because of it, there will undoubtedly be an increased local demand for recreational experiences (developed, undeveloped, dispersed, and wilderness). The magnitude of this increase needs to be estimated, and the recreational preferences of the new people must be anticipated.

CONCERN 4

STATEMENT CAN MINIMIZATION OF LAND DISTURBANCE BE AIDED BY MAKING USE OF ALREADY-DISTURBED LANDS? (Forest Service)

NARRATIVE If certain features of the project can be located in areas that have already been disturbed, then the amount of new disturbance can be reduced.

CONCERN 5

STATEMENT WHAT MUST BE DONE TO PREPARE FOR AN EXPECTED INCREASE IN:

- LOCAL DEMAND FOR FOREST PRODUCTS (POSTS, POLES, FIREWOOD, MOSS ROCK, ETC.)
- FOREST RESOURCE TRESPASS CASES
- FOREST LAW ENFORCEMENT NEEDS (Forest Service)

NARRATIVE If the local population increases due to the proposed project as expected, then the local pressure on the above items will increase. Preparing for this takes time, and a plan will have to be developed.

CONCERN 6

STATEMENT WHAT MUST BE DONE IF THE PROPOSED PROJECT DISRUPTS THE CURRENT RANGE MANAGEMENT PROGRAM? (FOREST SERVICE)

NARRATIVE Any feature of the project could conflict with the current program, and if a conflict arises it will be necessary to rearrange pastures, allotments, and AUM's to accommodate the project.

CONCERN 7

STATEMENT HOW CAN THE PROPOSED PROJECT BE DESIGNED SO THAT, TO THE EXTENT POSSIBLE, IT REMAINS COMPATIBLE WITH THE EAST RIVER UNIT PLAN? (Forest Service)

NARRATIVE The East River Unit Plan has set management direction for portions of the Mt. Emmons project area, yet to some degree the project will conflict with that direction. The desire is to minimize that conflict, both during the life of the project and afterwards.

CONCERN 8

STATEMENT WHAT CAN BE DONE TO OFFSET AN EXPECTED LOSS OF PUBLIC ACCESS TO NATIONAL FOREST ACROSS PRIVATE LANDS? (Forest Service)

NARRATIVE As local economic activity picks up and some private lands change ownership, the current pattern of access may change. It could become necessary to acquire additional rights-of-way, or take other steps, to maintain adequate public access to National Forest.

CONCERN 9

STATEMENT WHAT CAN BE DONE TO PREVENT PROPOSED PROJECT ACTIVITIES FROM DEGRADING WATER QUALITY IN THE COAL CREEK MUNICIPAL WATERSHED? (Forest Service)

NARRATIVE The Forest Service has identified this watershed for special management, and it will be important to ensure that the proposed Mt. Emmons project conforms to the management direction that is set.

CONCERN 10

STATEMENT WHAT CAN BE DONE TO KEEP PROPOSED PROJECT ACTIVITIES FROM DEGRADING AIR QUALITY OVER EXISTING AND PROPOSED WILDERNESS LANDS? (Forest Service)

NARRATIVE This concern incorporates both air quality and air quality-related values (AQRV). Particularly in the case of AQRV's, the Forest Service has a legislative charge to maintain high quality air and associated values. This is always true in Class I (Wilderness) areas, and because RARE II has not been completely resolved it is also being applied to proposed additions to the Wilderness system.

CONCERN 11

STATEMENT WHAT ADDITIONAL FOREST BUDGET AND MANPOWER REQUIREMENTS WILL THE PROPOSED PROJECT GENERATE? (Forest Service)

NARRATIVE As the project moves into the construction phase, there will be a need for continuous monitoring of activities on National Forest System lands. Once production begins the demand for monitoring will probably lessen.

CONCERN 12

STATEMENT IF THE PURCHASE OF WATER FROM BLUE MESA RESERVOIR IS PROPOSED AS ONE ALTERNATIVE MEANS OF PROVIDING WATER FOR THE PROPOSED PROJECT, THEN THE EFFECTS OF THIS PURCHASE OUGHT TO BE ANALYZED IN THE EIS. (Bureau of Reclamation)

NARRATIVE Bureau of Reclamation is directly involved in the management of Blue Mesa Reservoir water.

CONCERN 13

STATEMENT WHAT IMPACTS MIGHT THE PROPOSED PROJECT HAVE ON CURECANTI RECREATION AREA? (National Park Service)

NARRATIVE The National Park Service manages Curecanti.

CONCERN 14

STATEMENT WHAT IMPACTS WILL THE PROPOSED PROJECT HAVE ON THE VISUAL RESOURCE WITHIN THE AREA? (Forest Service)

NARRATIVE Project facilities are likely to create visual settings that do not conform to their surroundings, and in Gunnison County the visual resource is highly valued.

Some of this may be unavoidable, but often there is much opportunity to mitigate visual impacts.

TABLE 4: MANAGEMENT OPPORTUNITIES

OPPORTUNITY 1	
STATEMENT	IS IT POSSIBLE TO USE PROJECT DESIGN TO IMPROVE THE CONDITION OF THE COAL CREEK MUNICIPAL SUPPLY WATERSHED? (Forest Service)
NARRATIVE	It may be possible to correct some of the existing causes of water quality degradation in Coal Creek through the design of the Mt. Emmons project.
OPPORTUNITY 2	
STATEMENT	CAN RECREATIONAL OPPORTUNITIES BE CREATED AS A RESULT OF PROJECT DESIGN? (Forest Service)
NARRATIVE	The project, if executed, may necessitate access to areas with special recreational values. It may be possible for the Forest Service to capitalize on the project and thereby provide additional recreational experiences.
OPPORTUNITY 3	
STATEMENT	WILL THE PROPOSED PROJECT MAKE TIMBER MANAGEMENT POSSIBLE IN AREAS THAT OTHERWISE COULD NOT BE REACHED? (Forest Service)
NARRATIVE	The project may enter areas in which the timber resource has been placed in the Marginal Component because access costs are too high. If this occurs, the access costs could be eliminated and some timber could be put under management.
OPPORTUNITY 4	
STATEMENT	CAN PUBLIC OWNERSHIP OF BIG GAME WINTER RANGE BE INCREASED VIA LAND EXCHANGE? (Forest Service)
NARRATIVE	A major limiting factor to big game populations is winter range. It is believed that increased public ownership of such range would aid in the protection and improvement of this habitat.
REMARK	Please see Section 6(c), page 45, for further information on this matter.

OPPORTUNITY 5

STATEMENT CAN THE MANAGEMENT OF THE RANGE RESOURCE ON SPECIFIC GRAZING ALLOTMENTS BE IMPROVED TO ELIMINATE PEOPLE/LIVE-STOCK CONFLICTS IN HIGH INTENSITY USE AREAS? (Forest Service)

NARRATIVE It might be possible to eliminate some of these conflicts as a result of land acquisitions made by the proponent and/or land exchanges made by the Forest Service.

OPPORTUNITY 6

STATEMENT WHAT OTHER OPPORTUNITIES EXIST TO IMPROVE THE MANAGEMENT OF NATIONAL FOREST SYSTEM LANDS THROUGH LAND EXCHANGE? (Forest Service)

NARRATIVE With the possibility of a project-related land exchange involving a few thousand acres, there may exist a wide range of opportunities for improved management. These need to be inventoried and considered if the land exchange process goes on.

3. ALTERNATIVES

AMAX has proposed a design for the Mt. Emmons Mining Project that is based on its own studies. In addition to analyzing the 'no action' alternative, the Forest Service interdisciplinary team will investigate and develop alternative designs to the one proposed by AMAX and will analyze them all for comparative purposes. The proposed standards for developing alternatives are described in Section 5(b), page 36.

a. General Makeup

Each alternative analyzed will consist of several component parts. Some components will be shown on maps, while others will be described in the text. Components that will appear on maps include:

- mine site
- mill/tailings site
- ore haulage route between mine and mill
- energy supply network
- worker access

Components that will be described primarily in the text include:

- mining method
- mine production rate
- ore haulage method
- energy supply method
- worker access method
- tailings disposal method
- scheduling

Each of these components will generate impacts. The nature of these impacts depends on assumptions that will have to be made at a later date. Alternative means of mitigating these impacts will then be developed, and the most effective ones will be built into the design of each alternative.

b. Specific Alternatives

Table 5, page 28, contains a list of specific alternatives to each component that are being proposed for analysis. A number of these have been in the public eye for several months and are the result of continuous interaction between the Forest Service, AMAX, other governmental agencies, and the general public.

Table 5: PROPOSED ALTERNATIVES

<u>Design Component</u>	<u>AMAX Proposal</u>	<u>Possible Alternative</u>
mine site	Coal Creek	Slate River
mill/tailings site	Alkali Creek	Antelope Creek Cabin Creek Chance Gulch Upper Ohio-Carbon
tailings disposal method	undefined *	undefined *
ore haulage route	via Ohio Creek	via East River
ore haulage method	rail	conveyor
energy supply network	see Section 6(d)	see Section 6(d)
energy supply method	powerline	see Section 6(d)
worker access route	mine: Ohio Creek Alkali mill: Ohio Cr.	mine: East River Alkali mill: East R.
worker access method	undefined *	personal vehicle rail bus
mining method	panel caving	undefined *
mine production rate	20,000 tons/day	no production an intermediate rate **
scheduling	see Table 10	undefined *

* Specifics are not known as of this writing. They will be identified in the near future.

** An intermediate mine production rate will be selected for analysis under the 'small mine' alternative. This will be done early in 1980.

4. COORDINATION

In order to maximize EIS effectiveness, a great deal of coordination is necessary early in the EIS process. Much of this entails laying out the activities of various public agencies that might be involved in the proposed project. The timing of activities is also crucial, particularly the scheduling of EIS preparation and completion. The following subsections describe the current status of these coordination matters.

a. Cooperating Agencies

On June 20, 1979, the Forest Supervisor contacted eighteen Federal agencies by letter to request or invite their participation as Cooperating Agencies. This was done as specified in 40 CFR 1501.5-1501.8. The agencies contacted were those which the Forest Supervisor felt might have jurisdiction or expertise regarding some facet of the proposed project, or have an interest in being involved for other reasons. Copies of the Plan of Operations submitted by AMAX were sent to those agencies believed to have jurisdiction. The status of the negotiations between the Forest Supervisor and the contacted agencies is shown in Tables 6-8, pages 31-32.

b. Related Environmental Studies

There are a number of other public environmental studies being planned or conducted that are related to, but not part of, the scope of the EIS. These are listed below:

<u>Agency</u>	<u>Study</u>
Forest Service	Coal Creek Municipal Watershed Management Plan
Forest Service	Forest Land Management Plan
Bureau of Land Management	Gunnison Grazing EIS
"	Eagle Survey of the Gunnison Area
"	Powderhorn Wilderness EIS
"	Uinta Regional Coal EIS
Rural Electrification Assoc.	Rifle to San Juan 345 kV Power Line EIS
Colorado State Historic Preservation Office	Architectural Resources Inventory of the Almont-Crested Butte Area
Colorado Air Pollution Control Division	Crested Butte Hi-Vol Sampler Study
Gunnison County	Socio-economic Baseline and Impact Study of the Gunnison County Area
Gunnison County	Gunnison County Public Transportation Study

c. Required Environmental Studies

Each Federal action listed in Table 1, page 2, is expected to require an environmental review prior to the action being taken. In addition, some other environmental studies are required as a part of the proposed project and are already underway. These are listed as follows:

Cultural Resources Inventory - required of all Federal agencies and the State of Colorado, and being performed by AMAX's consultants, Western Cultural Resource Management, Inc., and Centuries Research, Inc.

Endangered Species Consultation - required of all Federal agencies in consultation with the U. S. Fish and Wildlife Service, and being performed by the Forest Service.

d. Timing

Timing is an integral part of all planning efforts and is vital to measuring progress. Milestones represent points in the planning process where major steps and activities are completed. They become checkpoints for measuring progress. The estimated milestones for the Mt. Emmons EIS process are listed in Table 9, page 33. For comparative purposes, Table 10 on page 34 contains excerpts from AMAX's proposed schedule, as presented in the corporation's Plan of Operations. It should be noted that 40 CFR 1506.1 places limitations on actions that can be taken prior to submission of the record of decision.

Table 6: COOPERATING AGENCIES HAVING JURISDICTION

Agency	Invitation to Cooperate Sent	Informal Contact Made As Of:	Formal Reply Received On:	Initial Meeting	Assignments
Bureau of Land Management	6/20/79	7/16/79	9/5/79	8/21/79	*
Bureau of Reclamation	6/20/79	-	7/23/79	-	*
Army Corps of Engineers	6/20/79	7/18/79	7/19/79	-	*
Environmental Protection Agency	6/20/79	7/16/79	10/24/79	8/14/79	*

* It is too early in the process to identify specific assignments. It is anticipated that assignments will be made as study details are clarified.

Table 7: AGENCIES NOT RESPONDING OR DECLINING TO COOPERATE

Agency	Invitation to Cooperate Sent	Informal Contact Made As Of:	Formal Reply Received On:
Agricultural Stabilization and Conservation Service	6/22/79	N/C ¹	10/15/79
Council for Historic Preservation	6/20/79	10/3/79	10/17/79
Department of Commerce	6/20/79	N/C ¹	7/2/79
Health Education and Welfare	6/21/79	9/24/79	N/R ²
Rural Electrification Administration	6/20/79	9/24/79	10/28/79

¹ No informal contact made.

² No formal reply

TABLE 8: OTHER COOPERATING AGENCIES

Agency	Invitation to Cooperate Sent	Informal Contact Made As Of:	Formal Reply Received On:	Initial Meeting	Assignments
Bureau of Mines	6/21/79	-	7/10/79	8/27/79	*
Department of Energy	6/21/79	-	7/11/79	11/15/79	*
Federal Highway Administration	6/21/79	9/27/79	10/5/79	-	*
Fish and Wildlife Service	6/21/79	-	7/11/79	9/6/79	*
Heritage Conservation and Recreation Services	6/21/79	7/16/79	7/19/79	8/8/79	*
Department of Housing and Urban Development	6/22/79	-	7/11/79	-	*
Geological Survey	6/22/79	9/7/79	9/20/79	-	*
National Park Service	6/20/79	7/5/79	7/16/79	-	*
Soil Conservation Service	6/21/79	-	6/26/79	-	*

* It is too early in the process to identify specific assignments. It is anticipated that assignments will be made as study details are clarified.

Table 9: ESTIMATED MILESTONES FOR THE MT. EMMONS EIS PROCESS

<u>Completion Date</u>	<u>Activity</u>	<u>Time Needed</u>
12/31/79	Scoping	
2/1/80	Development of Criteria	4 weeks
3/31/80	Resource Inventory	13 weeks
5/19/80	Analysis of the Situation	7 weeks
7/7/80	Formulation of Alternatives	7 weeks
8/25/80	Analysis of Alternatives and Estimation of Effects	7 weeks
10/13/80	Evaluation of Alternatives and Identification of Preferred Alternatives	7 weeks
11/3/80	Documentation and Validation	3 weeks
12/15/80	Write-edit Pre-Draft EIS	6 weeks
12/29/80	Pre-Draft EIS Review	2 weeks
1/12/81	Write-edit Draft EIS	3 weeks
2/23/81	Print Draft EIS	5 weeks
2/25/81	Distribute Draft EIS	- -
4/27/81	Public Review of Draft EIS	60 days
5/25/81	Write-edit Final EIS	4 weeks
6/29/81	Print Final EIS	5 weeks
7/1/81	Distribute Final EIS and Record of Decision	- -
8/14/81	Implement Decision and Begin Monitoring and Control	45 days

Table 10: PROPOSED AMAX SCHEDULE

Year	Activity
1979	Prepare feasibility study for the proposed operation. Begin land acquisition. Complete environmental baseline studies and incorporate impact assessment and mitigation planning into feasibility studies. Conduct socio-economic study of Gunnison County. Continue work on the Clean-Up Coal Creek Project. Submit necessary permit applications.
1980	Complete AMAX environmental report for the project. Begin detailed design of mine facilities. Survey and layout Ohio Pass road.
1981	Obtain necessary government approvals. Complete the detailed design of mine facilities and begin mine construction and underground access drifts. Begin construction of administration building. Begin Ohio Creek road improvements. Begin access roads and site preparation.
1982	Begin mine, shop, office, warehouse, dry facilities, and fuel storage construction. Begin road for surface haulage facilities from Mt. Axtel to mill site.
1983	Begin Mt. Axtel haulage tunnel. Begin mill site preparation. Begin road from the East River area to the millsite and extend the Carbon Creek road.
1984	Begin haulage drift into the mine from Coal Creek. Begin tailings dam.
1985	Begin installation of surface equipment on haulage corridor. Begin erection of mill buildings.
1986	Begin equipment installation in the Mt. Axtel ore haulage tunnel.
1987	Begin testing and start-up of facilities and equipment.
1988	Build up production to approximately half capacity.
1989	Build up to full production.

Table 11: PARTIAL LIST OF ENVIRONMENTAL LAWS AND STANDARDS

Bald Eagle Protection Act
Clean Air Act
Colorado Air Pollution Control Act
Colorado Air Quality Standards
Colorado Mined Land Reclamation Act
Colorado Soil Conservation Act
Colorado Solid Wastes Disposal Sites and
Facilities Act
Colorado Water Quality Act
Colorado Water Quality Standards
Endangered Species Act
Executive Orders 11988 and 11990 (Floodplains
and Wetlands)
Fish and Wildlife Coordination Act
Migratory Bird Treaty Act
National Environmental Policy Act
National Historic Preservation Act
Noise Control Act
Resource Conservation and Recovery Act
Safe Drinking Water Supply Act
Toxic Substances Control Act
Water Pollution Control Act

5. STANDARDS AND CRITERIA

The quality of a product is measured by its conformance to the production standards set for it. For the Forest Service's role in the proposed Mt. Emmons Mining Project, there will be two main products: the EIS, and the process used in producing it. If these products are to withstand scrutiny successfully in both legal and public forums, the standards must be high and carefully defined. Only by doing so can the quality of the final product be measured.

In addition, it is important to establish evaluation criteria at an early date. These criteria are used in evaluating alternatives and in selecting preferred alternatives. The early display of such criteria permits timely review and helps dispel worries that an arbitrary decision might be made.

a. Information Collection Standards

The following standards apply to data collected for use in the EIS.

1. Data will be used in order to answer specific questions deriving from significant issues, concerns, and opportunities.
2. Data will be collected according to professionally accepted techniques. For data provided by outside sources, the collection methods used will be checked by government specialists for conformance to professionally accepted techniques.
3. When possible, data will be accompanied by statistical parameters of the mean, standard deviation, and number of observations.
4. Collection methods should be compatible with anticipated monitoring methods.

b. Alternative Formulation Standards

AMAX has proposed a specific project design. The Forest Service, in its EIS process, will look at reasonable alternatives to this design. Each alternative will be a composite of various components, such as mill/tailings locations, transportation routes, power supply systems, and others. Some possible alternatives that have already been identified are listed in Table 5 on page 28. The following set of standards will constrain the formulation of alternatives.

1. All reasonable alternatives will be considered in de-

veloping a reasonable range of alternatives. "Reasonable" is defined as that which appears feasible in technical, financial, economic, political, and legal terms. (Please see subsection 5(f)(3) on page 40 for a fuller explanation of these terms.) Reasonable components of alternatives not within the jurisdiction of the Forest Service to implement will be included.

2. A reasonable range of alternatives will be analyzed in the EIS. AMAX's proposal and the 'no action' alternative will be included within this range. Other alternatives posing distinct advantages toward reducing adverse or enhancing positive environmental effects will also be analyzed in the EIS. All reasonable alternatives or components of alternatives not included within this range will be identified and the rationale given for their exclusion from detailed consideration.
3. Alternatives must respond to significant issues, management concerns, and management opportunities. These items should be the focus for developing alternatives. If a particular alternative provides no significant advantage toward resolving any of these items, then it will not be analyzed further.
4. Alternatives should be consistent with existing plans, policies, and programs of all affected governmental agencies, and should be designed to enhance their implementation. Incompatibility should be avoided if possible, but where it cannot be avoided the nature of the incompatibility will be discussed.
5. The design of each alternative will include management requirements, mitigation measures, and monitoring requirements needed to conform to the environmental laws and standards listed in Table 11 on page 35.
6. 'No action' projections will be made. It is assumed that some degree of environmental change will occur during the time period covered by the EIS even if the proposed project is aborted. These changes will be reflected in the projection of baseline ('no action' alternative) conditions. They will be developed within the following constraints:
 - a. Assumptions for change will be developed for, and be specific to, each analysis time period for which comparisons are to be made. The rationale for the assumptions will be documented.

- b. Assumptions will be based on: growth and resource demand as derived from existing local, regional, and national trend projections; (2) known or highly probable industrial changes within the impacted area, such as ski area development; and (3) existing local, regional, and national policies and plans for managing growth and development, such as RPA, Colorado Human Settlement Policies, the Gunnison County Land Use Resolution, Community Master Plans, et cetera.

c. Analysis Standards

Considerable analysis of raw data will have to be performed. The following standards will apply to any such analysis.

1. Analyses will be for the purpose of displaying either baseline conditions or the effects of implementing an alternative (after planned mitigation).
2. Analyses will be performed according to professionally accepted techniques. If nonstandard methods prove to be necessary, government specialists will validate the methods before the results can be used.
3. When possible or applicable, analytical results should:
 - a. compare alternatives
 - b. show comparisons with legal standards or baseline conditions
 - c. include some measure of certainty
 - d. be displayed in tabular or graphical form
 - e. be displayed using time increments that reflect meaningfully on significant issues, concerns and opportunities.
4. Analyses must span the life of the proposed project, including an adequate amount of time following abandonment to display any predictable long-term effects.

d. Documentation Standards

The following standards will apply to the physical preparation of the EIS.

1. Organization - The EIS will be organized in accordance with the Forest Service Manual, Chapter 1950.

2. Contents - Presentations will be in plain language. Whenever possible, published sources will be referenced and their contents not used in the text.
3. Graphics - Where space economy will be served, graphics should be used instead of text.
4. Length - Total length of the main text should be kept under 150 pages. Comments to the Draft EIS, and the responses to them, may be incorporated in a separate volume for the Final EIS.
5. Style - Writing will be in conformance with the standards set forth in the U. S. Government Printing Office Style Manual (1973).

e. Procedural Standards

The basic procedures to be followed are embodied in 40 CFR 1500-1508 and in the Forest Service Manual, Chapter 1950. In order to determine adherence to these procedures, the following additional standards will apply to the interdisciplinary team.

1. Investigation of each major component of the project (power supply, millsite locations, etc.) will follow the sequencing outlined in the Forest Service Manual, Chapter 1950. Obviously this sequence is idealized and in many cases the treatment given a certain component will be more complicated than this, but the team must be in a position to demonstrate adherence to the basic principles underlying the sequence.
2. Contacts of substance with interested parties will be documented. Formal meetings will be summarized in memo form. Telephone contacts will be noted in a journal or other form.

f. Evaluation Standards

Evaluation standards are used for assessing the relative merits of alternative courses of action. They differ from analysis standards in two ways: (1) they refer more to the subject matter that will be considered rather than the methods that will be used; and (2) they are slanted more toward a decision-maker's perspective rather than a technical specialist's. They serve as a linkage between technical/scientific analysis and the preferences used as criteria for

identifying preferred alternatives, which are described in the next section. Each alternative developed pertaining to the EIS will be tested against the following evaluation standards.

1. How well does each alternative serve the government policies and plans listed below?

City of Gunnison Master Plan
East River Land Management Plan (Gunnison National Forest)
Forest Service Goals and Objectives
Guiding Policies for Mt. Crested Butte Comprehensive Planning
Gunnison Basin Resource Management Plan (BLM)
Gunnison County Land Use Resolution
Gunnison National Forest Multiple Use Plan
Human Settlement Policies (Colorado)
Town of Crested Butte Goal and Policy Statements

2. Have the environmental laws and standards listed in Table 11 on page 35 been met by each alternative? (This will identify any adverse environmental effects which cannot be avoided.)
3. Based on detailed analysis in the EIS, do the following feasibility standards appear to be met by each alternative?

Legal: Can each alternative being studied be implemented under the constraints of existing law? (This item does not involve the legal environmental standards covered by item 2 above; rather, it addresses the legal opportunity for the Forest Service to perform an action.) Any apparent or potential legal conflicts should be identified, both for lands under Federal jurisdiction and for lands under other jurisdictions.

Technical: Can an alternative, as planned, be implemented within the scope of currently used and proven technological applications, and what risk factors are inherent in those applications?

Financial: Does an alternative require a financial investment that is clearly not justified by the positive environmental advantages it will produce?

Economic: Will implementation of an alternative appear to allow the proponent a reasonable rate of return on its investment?

Political: Does each alternative have a reasonable chance of being accepted by state, county, and municipal governments, and by the general public?

4. To what extent does each alternative resolve significant issues, management concerns, and management opportunities?
5. To what extent does each alternative change the physical and biological environment from current and projected baseline conditions?
6. To what extent does each alternative change the economic and social environment of Gunnison County from current and projected baseline conditions?
7. What fiscal and personnel demands will each alternative have on the Forest Service?

g. Criteria for Identifying Preferred Alternatives

At least two preferred alternatives will be identified: an environmentally preferred alternative, and a Forest Service preferred alternative. These will be identified in the Draft EIS (if known at that time), in the Final EIS, and in the Record of Decision. The two alternatives may or may not be the same. The following criteria will be used in identifying these two alternatives.

1. The environmentally preferred alternative will be the one generating the least overall change from current and projected baseline (or 'no mine') conditions.
2. The Forest Service preferred alternative will be the one best able to maximize achievement of the following:
 - a. Least overall change from current and projected baseline conditions
 - b. Compliance with laws, regulations, plans, and policies that govern Forest Service activities
 - c. Compatibility with plans and policies of governmental agencies other than the Forest Service

- d. Ability to resolve significant issues and management concerns, and capitalize on management opportunities.

It is recognized that sometimes these items may conflict with one another. The EIS will discuss any such conflicts as they complicate the selection of a preferred alternative, and it will display the rationale used for giving any one item priority over another.

More detailed criteria will be developed for each major component of the proposed project, such as power supply systems. These will be completed according to the schedule set forth in Table 9 on page 33.

6. FURTHER DETAILS AND A REQUEST FOR MORE PUBLIC INPUT

a. Is Something Missing?

Once in a while an issue does not get listed as it should, or a pertinent ongoing environmental study is overlooked. The interdisciplinary team wishes to know if it has missed anything like this. There is a section in the Response Form for such remarks. Please feel free to include points of disagreement as well.

A word of caution! If an issue appears to be missing, please double check the material in Tables 2-4 before commenting. There is quite a bit of material in those tables, and even though the Issue Statements might not state your issue exactly right, it just might be that one of the narratives covers the point adequately.

b. Air Quality-Related Values

1. What They Are

The 1977 Amendments to the Clean Air Act introduced the concept of air quality-related values (AQRV) when Class I areas are involved. This concept focuses on values--other than air quality itself--that can be affected by changes in air quality.

(The 1977 Amendments established three categories of air quality protection: Class I areas have the most stringent protection, Class III the least. Class I areas include: international parks, national wilderness areas and national memorial parks larger than 5,000 acres, and national parks larger than 6,000 acres.)

There is no fixed list of AQRV's, except that the 1977 Amendments specifically call for visibility to be included. Other items that frequently appear on AQRV inventories are flora, fauna, odor, and water quality. Some examples might be useful. Consider a wilderness area that offers spectacular scenery. If an individual felt that the view is best when the air is perfectly clear, it would be logical to list visibility as an AQRV for that area. Similarly, if it were to seem as though clean air helps the trees to grow better, then the timber resource should be added to the AQRV list. Conversely, if it were believed that wildlife could tolerate any quality of reasonably expectable air, then there would be

no reason to put wildlife on the list. Also, it might be concluded that the geologic formations exposed in the area are immune to the chemical constituents in the air. In this case, geology would also be excluded.

2. Regulatory Setting

Whenever a major emitting facility applies for a Prevention of Significant Deterioration (PSD) permit, and the facility is expected to have some impact on a nearby Class I area, then a determination is made by the responsible Federal Land Manager on whether or not AQRV's in the area will be adversely affected. If it is determined that an adverse effect will occur, and if the Governor of the State can be convinced of it, then a PSD permit can be denied even if all other Class I criteria are met. Conversely, if the applicant can demonstrate to the satisfaction of both the Federal Land Manager and the Governor that AQRV's will not be adversely affected, then a permit can be issued even if the Class I criteria are exceeded.

As can be seen from the above discussion, AQRV's clearly play an important role in the analysis of impacts on air quality in Class I areas.

3. Regarding the Proposed Mt. Emmons Project

It is assumed that the proposed project will qualify as a major emitting facility. If so, then a PSD permit will have to be obtained from the Environmental Protection Agency and the Forest Service will have to make a determination on AQRV's. However, a formal determination would not be possible unless the permit application were submitted during EIS preparation. If the application came after the EIS, then the most that the EIS could do would be to present a preliminary assessment of AQRV impacts. On the other hand, if the project does not qualify as a major emitting facility, then there would be no need for an AQRV determination related to the project and the analysis described below might not be required. As of this writing, the project's status as a major emitting facility has not been established, and the interdisciplinary team's interim plan is to conduct a preliminary assessment for presentation in the EIS.

The primary Class I area targeted for AQRV analysis is the West Elk Wilderness, but several other areas will be

looked at to determine if AQRV analysis should be performed because of the possibility that they might someday be redesignated to Class I status. These include nearby wilderness areas (Maroon Bells-Snowmass, and La Garita), primitive areas (Uncompahgre and Powderhorn), RARE II areas recommended by the Forest Service for inclusion in the wilderness system (Raggeds, West Elk, Beaver-Castle, Elk Mountains-Collegiate, Mineral Mountain, and Middle Fork), and Black Canyon of the Gunnison National Monument.

The interdisciplinary team intends to analyze AQRV's in the following manner:

- a. Public input will be solicited regarding which AQRV's exist in the above-named areas, and what condition they are currently in.
- b. Evaluation criteria will be established. (These will serve as the basis for a preliminary assessment of adverse impact.)
- c. The interdisciplinary team will finalize the inventory of values and current conditions.
- d. An impact analysis will be performed which will be based primarily on available emissions data for the proposed project and on existing published information.
- e. A preliminary assessment will be made and documented in the EIS.

It should be realized that the physical relationships between air quality and AQRV's are not understood very well. Research on the topic is spotty. Thus it is expected that AQRV analysis for the proposed Mt. Emmons project will be imprecise.

4. Public Input Sought

The interdisciplinary team would like to receive comments on what air quality-related values exist in the areas listed above. The attached Response Form has a section in it for this purpose. The specific information sought includes: which values are perceived to exist, and what their current condition is.

c. Land Exchange

AMAX has submitted an exchange proposal for 4,423 acres of National Forest System land in the Alkali Creek drainage. AMAX intends to use these lands for its proposed mill and tailings

site. The private lands which would be offered in exchange have not yet been identified by the corporation.

1. Proponent Options

Although AMAX has elected to propose exchange as the means of obtaining these lands for its proposed needs, at least two other options may be available to the corporation under the 1872 mining law. The first would be a case where the lands are claimed for millsite and are utilized by the corporation for milling and tailings disposal purposes, and are taken to patent. Fee title of the lands would be conveyed to AMAX. The second option would be a case where the lands are claimed for millsite and are used for milling and tailings disposal purposes, but are not taken to patent. Fee title ownership and ultimate responsibility for the lands would be retained by the United States.

2. Management Agency Options

The action of land exchange is at the discretion of the Federal agency charged with responsibility for managing the affected lands. Although it does require a willing proponent, it cannot be consummated without the agreement of the agency. In the following discussion, both Forest Service and Bureau of Land Management options will be addressed since several alternative mill and tailings sites are located on Public Lands managed by the Bureau of Land Management. Please refer to Issue 2 on page 9 for the names of these sites.

a. U. S. Forest Service Option

Land Exchange. The agency requests patent issue to the selected National Forest lands in exchange for private lands.

b. Bureau of Land Management Options

Land Exchange. The agency conveys ownership of lands in return for private lands.

Right-of-Way Permit. The agency retains the lands and establishes environmental and administrative controls over the permitted uses. This approach is generally used for non-Federal facilities on Public lands.

Lease. The agency retains the lands and establishes environmental and administrative controls over the permitted uses. This generally provides the lessee with singular rights to occupancy and use.

Sale. The agency disposes of land at its appraised fair market value where it will serve important public objectives.

3. Land Exchange Processes

There are numerous requirements which must be met before a land exchange can be consummated. These requirements will vary from case to case based on: (1) the enabling legislation which is applicable to the kinds of Federal lands involved; (2) regulations developed to implement the legislation; and (3) policies of the particular agencies which are responsible for management of the affected lands.

Several of the more significant requirements which normally apply to land exchange transactions are listed below. These are only intended to provide examples of the kinds of objectives and constraints that must be met in an exchange and do not represent an exhaustive list.

a. U. S. Forest Service

The General Exchange Act of March 20, 1922, as amended, is the principal enabling legislation used when selected land is public domain land withdrawn for National Forest purposes. A partial list of criteria specified by the Act is as follows:

1. Offered and selected lands must be within the same State and offered lands must be within the proclaimed boundaries of a National Forest except as otherwise provided in specific amendments to the Act.
2. The value of the land to be conveyed in the exchange must be of equal market value compared to the lands which the United States will receive. (Values may be made equal by cash payment by either party. Such payment is limited to 25% of the value of the public lands being removed from Federal ownership.)
3. The public interest must be benefitted.
4. The exchange of lands must result in the con-

solidation of the National Forest land ownership pattern.

5. Offered lands must be chiefly valuable for National Forest purposes.
6. Selected lands must be nonmineral in character; or, if selected lands are valuable for minerals, then: (1) the minerals must be reserved to the United States; or (2) the minerals may be conveyed on the basis of appraised values.

b. Bureau of Land Management

The Federal Land Policy and Management Act of 1976 is the principal enabling legislation used when selected land is public domain land under management by the Bureau of Land Management. Final regulations implementing the Act are not yet approved. However, the following criteria describe the minimum basis for the requirements of land exchange:

1. The exchange must be in the public interest.
2. The value of the lands to be conveyed in the exchange must be of equal market value compared to the lands which the United States will receive. (Values may be made equal by cash payment by either party. Such payment is limited to 25% of the value of the public lands being removed from Federal ownership.)
3. The lands exchanged must be within the same State.

4. Implications

If land exchange is determined to be the preferred course of action by the Federal agencies, there are a number of considerations to be made with respect to the lands proposed for exchange. Some of the major implications are detailed below:

- a. Decision level: An exchange of the size proposed by AMAX would be coordinated at the Regional (USFS) or State (BLM) administrative level. Final decisions would be made at the National level of both agencies.
- b. Location of lands: The private lands offered to the Federal government need not necessarily be located in the same general area as the selected lands. An example: Federal lands in Gunnison County could be

exchanged for non-Federal lands in another part of Colorado.

- c. Kinds of lands: Exchange is based on the appraised market values of Federal and non-Federal lands. The appraisal is made on the highest and best use in the market and not on an acre-for-acre basis.

5. Agency Action

Alternative land management options of the two Federal agencies will be analyzed and evaluated in the EIS. A determination of the most appropriate course of action will be made.

The specifics of a land exchange transaction (i.e., which non-Federal parcels will be offered for selected Federal parcels) will not be addressed in the EIS. These decisions will be deferred until later and will be made based on the results of a subsequent environmental assessment which will be tiered under the Mt. Emmons EIS.

- d. Electrical Power Supply

1. Background

In November 1979, AMAX submitted an addendum to its Plan of Operations that identified a proposal to construct a transmission line to serve the Mt. Emmons mine and the Alkali Creek millsite. Exhibit A describes the alternative corridors identified by AMAX for this transmission line. AMAX proposes that after further study it will identify the corridor in which it would prefer to construct either a 115 kV or a 230 kV transmission line.

2. Alternatives

In addition to the proposed power supply concept, alternative approaches will be considered. Some possible alternatives are listed below:

- a. Alternative locations
 - none yet identified
- b. Alternative project designs
 - use or upgrade existing overhead systems
 - construct new overhead system
 - undergrounding

- surface pipe
- combinations of the above

- c. Alternative power sources
- no action (no utility right-of-way)
 - onsite generation (hydroelectric, coal, geothermal, combustion turbines, solar, biomass conversion, and nuclear)

If transmission lines are to be constructed, an early step will be to identify alternative corridors which have ecological, technical, economic, social, or similar advantages over other areas for the present or future location of utility rights-of-way within their boundaries. The location of these corridors will be displayed in the EIS. (The corridor location being referred to here is a linear strip of land as opposed to an 'alignment', which is the actual surveyed position of the transmission line. The width of a corridor can be variable and only represents an approximate boundary within which more detailed studies will be carried out to determine a preferred corridor. A corridor is not necessarily a strip of land that will be completely cleared of vegetation.)

3. The Forest Service Process

The Forest Service will use concepts described in the Forest Service handbook, National Forest Landscape Management, Volume 2, Chapter 2, "Utilities", to identify alternative corridors. Alternative corridors will be identified for each alternative millsite. The NEPA process will be used to identify a preferred corridor. The steps that will be taken are:

- a. Define the study area - This basically consists of identifying the locations of sources or surrounding power transmission lines having the capacity to supply the demand. In addition to power sources, the locations for delivery are also identified. In its Plan of Operations, AMAX defined a study area extending from south of Gunnison to the Glenwood Springs-Aspen area on the north, and from the Poncha Springs-Leadville area on the east to the Hotchkiss-Montrose area on the west. Please refer to Exhibit B.
- b. Identify corridor analysis areas - These are large blocks of land which generally might be capable environmentally, sociologically, technologically,

economically, and legally of accommodating a transmission line. Several alternative corridors will be located within the corridor analysis areas. Exhibit B proposes a corridor analysis area which deletes existing and Forest Service-recommended wilderness areas from the study area.

- c. Refine the corridor analysis areas - Up to this point, the actual power availability from the existing transmission lines has not been determined. If a portion or connection point of a corridor analysis area leads to a source which is not available for the project, then that portion of the corridor analysis area should not be further examined unless warranted.
- d. Identify corridors within corridor analysis areas - Using data from an extensive environmental inventory, alternative corridors will be identified. This will be accomplished using predetermined criteria. A list of possible criteria could include:
 1. Avoid areas of unstable soil.
 2. Minimize areas that are in the foreground of principal travel routes.
 3. Follow topographic contours.
 4. Use areas of high visual diversity.
 5. Seek fewest miles through alpine tundra.
 6. Seek fewest number of unavoidable wetlands.
 7. Seek fewest number of unavoidable wildlife areas (winter range, waterfowl resting areas, nesting areas, et cetera).
 8. Avoid areas with slopes over 40%.
- e. Select preferred corridors - This step requires selecting a preferred corridor for each alternative mine and mill location according to predetermined criteria. More intensive environmental data will be available for making these determinations. A list of possible criteria could include:
 1. Greatest length in the most visually absorptive landscapes
 2. Fewest number of miles away from existing utility corridors
 3. Fewest miles through alpine tundra areas
 4. Fewest number or smallest areas of known areas of cultural resource interest
 5. Lowest power losses

6. Accessibility for construction and minimum mileage of road construction
7. Accessibility for operation and maintenance
8. Fewest number of miles within mid-ground distance zone (.5 mile to 3 miles) as viewed from wilderness or recommended wilderness areas
9. Financial and economic feasibility

4. Public Input Sought

The Forest Service would like to receive comments on alternatives, process, and criteria related to the proposed high voltage transmission lines. The attached Response Form has a section in it for this purpose.

APPENDIX A

Planning Organization and Assignments

The primary responsibility for completion of the Mt. Emmons Mining Project planning effort rests with the Forest Supervisor. The technical skills and information required to implement the project planning process are coordinated through an interdisciplinary team. The team consists of a core group and other ad hoc members as needed. The following Forest Service organization has been established for this project.

