REPORT BY THE

Comptroller General

OF THE UNITED STATES

Mineral Data In The Forest Service's Roadless Area Review And Evaluation (RARE II) Is Misleading And Should Be Corrected

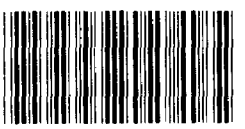
GAO found that the mineral data in the RARE II report contains several inaccuracies that may be misleading:

--Areas were rated as having little or no mineral potential when they should have been rated as having unknown potential.

--Indications of mineral potential were inconsistently applied from one area to another.

--Mineral data for certain confined geographic areas was projected into larger areas.

GAO wants the Congress to be aware of the inaccuracies and limitations of the RARE II report when considering wilderness legislation and recommends that the Department of Agriculture provide the Congress with corrected data.



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COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON D.C. 20548

B-205623

Chairmen, Selected Committees
and Subcommittees:

The General Accounting Office has been reviewing the executive branch input into establishing a national wilderness preservation system--primarily input developed by the Forest Service in response to the Wilderness Act of 1964, and the Bureau of Land Management under the Federal Land Policy and Management Act of 1976. We have identified several matters which we intend to explore further; these are synopsized for your information beginning on page 8. Our primary purpose in writing at this time, however, is because Congress is now actively considering several wilderness bills, and we believe you should be made aware that one of the key inputs to your deliberations--the U.S. Forest Service's Roadless Area Review and Evaluation report (RARE II)--contains several inaccuracies that may be misleading to its users. Specifically, the report implies a substantially firmer knowledge of mineral presence (or nonpresence) than actually exists:

--When sufficient mineral data was not available to rate an area, Forest Service frequently reported that areas had low or no mineral potential.

--Indications of mineral potential were inconsistently applied from one area to another.

--Mineral data for certain confined areas was considered representative of larger geographic areas, but this was not clearly disclosed in the report.

In addition, the amount of land the Forest Service recommended for wilderness which has unknown potential in combination with high mineral potential is notably high (see app. I).

The Forest Service did not intend to mislead those who relied on its RARE II report. Rather, we believe the problem resulted from failure to consistently follow coding instructions; lack of uniform mineral rating procedures; and arbitrary time limits which allowed less than 11 months to evaluate the mineral potential on 62 million acres of forest land.

To determine whether mineral potential on lands recommended for wilderness was adequately addressed in the decisionmaking process, we reviewed the Forest Service's RARE II effort. We conducted our review in three Forest Service regions which manage forest lands in Colorado, Idaho, Montana, Utah, and Wyoming. Thirty-seven percent of National Forest lands lie in those five Western States. In Colorado and Idaho, forest lands have recently been designated wilderness by the Congress, closely following recommendations in the RARE II report. We reviewed data supporting mineral ratings and discussed the mineral rating process with Regional Forest Service geologists in Regions 2 (Denver, Colorado), 1 (Missoula, Montana), and 4 (Ogden, Utah). We also made a cursory analysis of California mineral data presented in the RARE II report. This review was performed in accordance with our current "Standards for Audit of Governmental Organizations, Programs, Activities, and Functions." Our observations follow.

BACKGROUND

Prior to RARE II, the Congress had, in the 1964 Wilderness Act and various other special acts, designated 15 million acres of forest lands as wilderness. However, a vast amount of land--172 million acres--still remained in the Forest Service inventory. To evaluate the wilderness potential of this remaining land, the Forest Service initiated its first Roadless Area Review and Evaluation in 1972. That effort was criticized by both environmentalists and industry because all land with wilderness potential was not identified and mineral potential was not adequately evaluated. In response to those criticisms and because the Assistant Secretary of Agriculture was not satisfied with the rate of progress in designating wilderness from that initial study, he initiated RARE II in early 1977. RARE II's purpose was to (1) resolve wilderness issues in a timely manner; (2) avoid dealing separately with each wilderness area; and (3) provide recommendations to the Congress regarding the suitability of forest lands for inclusion in the Wilderness Preservation System.

Of 172 million acres in the Forest Service inventory at the start of the RARE II process, 62 million acres were selected by the Forest Service for intensive wilderness study. The other 110 million acres were not considered to have significant wilderness characteristics as defined in the Wilderness Act of 1964.

Magnitude and importance of RARE II

RARE II was an extensive public land allocation process, evaluating almost 3,000 roadless areas encompassing 62 million acres in 38 States. These areas were subjected to physical, biological, social, and economic evaluation to determine possible alternative impacts and trade-offs. This monumental task was

accomplished within a 1-1/2 year period, a time limit imposed by the Department of Agriculture. The process began in June 1977 and culminated in January 1979 with publication of the RARE II report.

The Forest Service expected the complete RARE II land inventory would be considered by the Congress at one time. However, the Congress opted to have each State delegation introduce separate wilderness proposals. Of the 62 million acres studied during RARE II, 15 million acres were recommended by the Forest Service for inclusion in the National Wilderness Preservation System; 36 million acres were allocated to non-wilderness; and the Forest Service decided to study further the remaining 11 million acres. To date, the Congress has added about 8.3 million acres (mostly in New Mexico, Colorado, Alaska, and Idaho) to the Wilderness System, closely following the Forest Service's RARE II recommendations. Thus, 6.7 million acres (15 minus 8.3) remain to be considered by the Congress. Further, based on its study of lands currently categorized as "further planning," the Forest Service could ask the Congress to consider wilderness legislation for up to 11 million additional acres.

Minerals in the RARE II process

Minerals were one of several resources considered in the RARE II process and, according to the RARE II report, the potential occurrence of minerals was an important consideration in making wilderness recommendations. (Other important considerations included wilderness values, recreation, timber, range, and wildlife.)

To evaluate mineral and energy potential in the 2,919 individual study areas, Forest Service geologists and mining engineers set up a mineral potential numerical rating system for each of six commodity categories (hardrock minerals, oil and gas, uranium, coal, geothermal, and low bulk value minerals). 1/ Data for these ratings was obtained from the Department of Energy, U.S. Geological Survey, Bureau of Mines (USGS/BOM) State mineral agencies, Forest Service, and industry. The Forest Service assigned numerical ratings ranging from 0 to 100 in each mineral category. Numerical mineral ratings were represented in the RARE II report as follows:

1/Six categories were included in the RARE II report. We did not include the sixth category--low bulk value minerals--in our analysis because Forest Service's principal rating component for low bulk value minerals was "presence within a market area." Most wilderness study areas were not situated close to a major market.

Producing or capable of production	100
High potential	81- 99
Moderate potential	41- 80
Low potential	0- 40
Insufficient data available	-1

Mineral ratings for each of the 2,919 study areas were shown in the RARE II report along with numerical ratings for wilderness attributes, development opportunities, grazing, timber, and recreation. Minerals were considered along with various competing land use values (including wilderness as a use) to decide on a range of ways the roadless areas could contribute to the wilderness and non-wilderness needs of the Nation.

RARE II MINERAL DATA MISLEADING

Many mineral ratings in the RARE II report for the five Western States we examined are misleading. The RARE II report misleads its reader into thinking that, in many study areas, there was little or no mineral potential at all when, in reality, mineral data was either not available or insufficient. In the five States we reviewed, up to 35 percent of the mineral ratings on lands recommended for wilderness were erroneously reported by Forest Service to have zero potential when the potential was actually not known.

Coding instructions not followed

Coding instructions were provided by the Forest Service to its regions to assure that, after ratings were determined, inputs to the RARE II mineral rating schedules would be consistent. However, the coding instructions were frequently not followed by three Forest Service regions. The instructions allowed three types of entries, as follows:

Condition	Entry
Sufficient mineral data available to rate area	0 to 100
Insufficient mineral data available to rate area	-1
Area not rated	no entry (blank)

The degree to which Forest Service geologists failed to follow coding instructions varied by region. For example, Region 2 officials advised us a zero rating was commonly used when data to rate an area was insufficient. The proper rating was a -1. Region 1 and 4 officials said a zero rating typically meant there was an absence of data to show positive mineral potential. That is, there were no indicators of industry interest,

such as claims or lease applications, so they assumed those areas had low mineral potential.

We believe Regions 1 and 4 used questionable logic based on the following example. A Forest Service geologist described an instance in Region 1 in which oil and gas potential in one study area was rated zero because there was no lease activity or geologic data indicating the presence of minerals. However, subsequent to the completion of RARE II, significant oil and gas lease activity occurred. The geologist said that if he had to rate the area today, a moderate to high oil and gas potential would result. Whereas the presence of exploration interest may be an indicator of mineral potential, we believe the absence of such interest does not automatically indicate zero potential, and a U.S. Geological Survey mineral expert agrees. The official stated there are many areas in which little is known and exploration of some form would be necessary to provide proper evaluation of the mineral potential. Wyoming's overthrust belt is a classic example of an area thought to have low oil and gas potential several years ago, but which today is one of the most promising onshore oil and gas prospects.

The disparity in following coding instructions varies from an admission (Region 2) that zeros were improperly used, to questionable logic (Regions 1 and 4) in assuming that because exploration or other data was not available to show presence of minerals there was, therefore, low potential.

Inconsistent application of mineral potential

The task of gathering and evaluating mineral data was carried out by each regional Forest Service office without formal mineral rating procedures. To assure that mineral ratings were prepared in a consistent manner, the Forest Service should have provided a uniform set of working procedures. However, none was provided and, as a result, individuals responsible for gathering and analyzing mineral data developed inconsistent ratings. For example, in calculating hard rock mineral ratings, the presence of claims and leases contributed up to 10 points toward the total 100-point possible rating. One geologist assigned 9 points based on the existence of 6 claims and leases within a wilderness study area. In another instance a rating of 8 was assigned in an area where 200 claims and leases existed.

In addition, because there was no statement to the contrary, the RARE II report implied that mineral ratings covered the full acreage within the wilderness study area. However, supporting data indicates that in some cases ratings applied to as little as 10 percent of the acreage within a study area. Therefore, those who rely on the RARE II report in making future wilderness decisions cannot be sure that ratings apply to the full acreage within a study area.

Arbitrary time limits placed constraints on adequacy of mineral data

Rather than establishing a wilderness review completion date based on the time required to adequately assess minerals potential, the Department of Agriculture force-fit mineral assessments into an arbitrary deadline. The rush to get the job completed was apparently more important than the content and data supporting wilderness recommendations. Only 11 months were available to acquire and analyze mineral data for 2,919 study areas covering 62 million acres. Furthermore, the Forest Service did not decide to assign numerical mineral potential ratings to study areas until mid-August 1978 and then allowed only 8 weeks--to October 12, 1978--to compute the ratings. Also, coding instructions were not provided until early October. A Forest Service geologist who helped compute ratings in two regions stated that numerical ratings were compiled in only 1 week.

Although not the subject of this report, other Federal agencies assess mineral potential on Federal lands. For example, the Congress, in the Wilderness Act of 1964, directed Government experts--the U.S. Geological Survey/Bureau of Mines--to conduct assessments on primitive wilderness areas--5.5 million acres. That process required about 10 years and still drew criticism. Minerals are a hidden resource requiring expensive, specialized, and scientific approaches in their discovery. We believe the short time frames allowed to conduct studies on 62 million acres contributed to Forest Service's inability to identify potential on 50 to 85 percent of the recommended wilderness lands included in our review. Further, mineral assessments and ratings were accomplished with insufficient minerals staff. For example, RARE II mineral assessments and ratings for approximately 20 million acres (Colorado, southern Idaho, Utah and Wyoming) were done by five Forest Service geologists. We believe there is little question as to the impracticality of such an operation. In contrast, a 230,000-acre area was evaluated for mineral potential by the USGS/BOM over a 4-year period utilizing 15 professionals (using 40 staff months).

While we are not in a position to say that the time frames of the Geological Survey's and the Bureau of Mines' mineral assessments are either appropriate or inappropriate, they do serve to demonstrate the extremely condensed time frames in which the Forest Service did its assessments.

Forest Service had another option when mineral potential was unknown

When mineral potential was unknown, rather than recommending land for wilderness designation, the Forest Service had an opportunity to defer its final decision by placing land into a further

planning category. For example, in one State--California--the Forest Service apparently placed greater emphasis on identifying mineral potential in its review of RARE II lands than it did in the 5 States we reviewed. The Service recommended 69 areas containing 900,000 acres for wilderness in California and placed 118 study areas containing 2.7 million acres into a further planning category, thereby deferring its wilderness decision until USGS/BCM mineral assessments were completed. In the other 5 States, the Service recommended 165 areas containing 6 million acres for wilderness while placing 60 areas containing almost 3 million acres in further planning.

AMOUNT OF RECOMMENDED WILDERNESS WITH UNKNOWN AND HIGH MINERAL POTENTIAL IS NOTABLE

We also noted that even though mineral potential, according to the RARE II report, was one of the the most important factors in deciding whether a study area would be recommended for inclusion in the Wilderness Preservation System, there was not always a close correlation between high mineral potential and recommendations for non-wilderness designation.

We recognize that mineral potential is but one of several considerations in making wilderness recommendations, and that even with high potential, some other use might still be deemed paramount. But, with minerals being a major factor in the decisionmaking process, one might have expected a tendency for wilderness recommendations to be concentrated in areas known to have little mineral potential, and non-wilderness recommendations to be predominantly in areas with high or uncertain mineral potential.

However, the Forest Service not only recommended many areas for wilderness when mineral and energy potential was unknown, it also recommended areas with known high mineral potential for wilderness. For example, in the 5 States we reviewed, between 50 and 85 percent of the land which the Forest Service recommended for wilderness had unknown potential in 2 or more mineral categories. (This includes areas with "0," "blank," and "-1" ratings.) Of the 6 million acres recommended for wilderness in the five States,

--almost 3 million acres were reported by the Forest Service to hold high potential in at least one mineral category, of which over 1 million acres had reportedly high potential in two or more mineral categories and

--3.5 million acres (60 percent) had either unknown or high mineral potential (see app. I).

OTHER OBSERVATIONS--ONGOING AND FUTURE GAO WORK

We are in various stages of progress in our evaluation of mineral assessments and the wilderness decisionmaking process. In addition to the adequacy of Forest Service mineral assessments covered in this report, we are reviewing U.S. Geological Survey/ Bureau of Mines mineral assessments. Preliminary observations on some of the issues follow.

Industry reluctant to explore for minerals in designated or proposed wilderness areas

The Wilderness Act of 1964 specifically authorized private exploration for minerals in wilderness areas until January 1, 1984, for areas covered by the Wilderness Act. This time limit is included in most subsequent acts establishing specific wilderness areas. Despite congressional encouragement, industry has been reluctant to explore for minerals in designated or proposed wilderness areas. As several industry geologists put it--and we believe it characterizes industry's overall attitude--when exploration funds are limited, it is difficult to convince management to risk funds in those areas where there is not only no guarantee production will be allowed, but also it is almost a certainty it will not. This situation was recognized by the Public Land Law Review Commission in 1970 when it stated:

> "* * * private enterprise without assurance of development rights will not have the incentive to finance such surveys."

Although there is legislation pending in the Congress to extend industry exploration and development rights beyond the limits established in the Wilderness Act of 1964, industry will remain reluctant to explore wilderness areas. Industry is not willing to subject its exploration funds to the prospect of political change.

Cost and uncertain usefulness of recurring USGS/BOM mineral assessments

The Wilderness Act of 1964 requires the USGS/BOM to conduct "planned, recurring" mineral assessments in designated wilderness areas. Specific time limits were not established by the Congress for these assessments. Our preliminary estimates suggest that when these assessments are conducted for the entire wilderness inventory, it could cost the Government over $320 million. As more land is added to the National Wilderness Preservation System, mineral assessment costs will grow. So far few, if any, recurring studies have been conducted because the USGS/BOM are responding to higher priority requests for which time limits have been established, such as Bureau of Land Management wilderness reviews required in the Federal Land Policy and Management Act.

The intent behind performing continued mineral assessments after an area is designated wilderness is uncertain, but presumably it must be based on the possibility of eventually re-opening the area to non-wilderness uses. However, there is no stated procedure for reconsidering prior wilderness decisions--in light of new minerals information--for the purpose of reclassifying wilderness lands to allow minerals exploration and development. In the absence of a Government plan to apply new knowledge generated from recurring mineral evaluations, the need for such assessments is questionable. Conversely, in light of (1) the lack of industry activity in possible wilderness areas discussed above, and (2) the deficiencies in mineral data going into present wilderness designations, the recurring assessments could serve as a useful tool if Congress envisions the possible redelineation of existing wilderness boundaries, and if a mechanism to reconsider prior wilderness designations is established.

The merit of requiring recurring mineral assessments is questionable for other reasons, as follows:

--The professional staffs of the U.S. Geological Survey/Bureau of Mines--the agencies which conduct Federal mineral assessments--do not normally have the benefit of industry's proprietary exploration data. Most mineral industries are highly specialized. The most highly qualified exploration geologists in certain mining companies have vast experience in locating specific minerals. Their geologists become very familiar with geologic models which suggest the location of the specific mineral being sought. In comparison, many of the USGS/BOM geologists and mining engineers are generalists in that they must be familiar with (but not completely knowledgeable about) a variety of minerals.

--Still another difference exists--funding. The USGS/BOM do not have necessary funding to conduct the range of geologic tests conducted by industry. The few industry representatives we talked to stated that their exploration programs begin where the USGS/BOM assessments stop. Industry feels that what Government agencies do is done very well, though less extensive and of less depth than industry's approach. The U.S. Geological Survey performs cursory reviews over large areas (called regional reviews). The Survey lacks necessary funding to undertake expensive geophysical studies--such as seismic--the density of its ground sampling is much less intensive than industry's, and the Survey does not use drilling or other physical exploration techniques in wilderness programs.

--Most of the easily identifiable mineral deposits already have been discovered in the lower 48 States. The kind of regional studies which, in the past, identified obvious mineral concentrations are no longer by themselves adequate.

--Remaining economic mineral resources are generally hidden, more difficult to locate, and require expensive and time consuming discovery techniques. USGS/BOM mineral assessments in wilderness areas are of a regional nature. Industry today begins with regional work but follows this with intensive, site specific, and expensive techniques, and it still has limited success in locating economic deposits.

CONCLUSIONS

In its apparent rush to compute numerical mineral ratings--a decision Forest Service made with only 8 weeks remaining to the report deadline--fundamental coding errors slipped into the RARE II report, misleading the reader into thinking many study areas had no mineral potential when the potential was not actually known. RARE II mineral ratings were not calculated consistently and are inadequate. The Congress closely followed RARE II recommendations in its wilderness designation for four States, but may have been misled on the quality and quantity of data on which Forest Service based its mineral ratings. Since wilderness legislation is currently pending and other State wilderness acts are expected to be introduced in the near future, we believe it is important that the Congress be aware of the inadequacy of mineral ratings in the RARE II report.

There are also other questions that we believe need to be addressed to assure the most orderly establishment and administration of the wilderness preservation system. These include

--the merits of recurring mineral assessments in established wilderness areas without a stated policy and procedure for possible reversal of wilderness decisions or other likely use of the assessments;

--possible solutions to the apparent failure to realize the Congress' intent of continued industry exploration in potential wilderness areas until 1984; and

--how best, and in what format, to provide the Congress with the type of mineral information it needs to make wilderness determinations.

We intend to pursue these matters in our future work. However, in the interim, we offer the following recommendations.

RECOMMENDATIONS

In order to be of assistance to the Congress in its deliberations, the Secretary of Agriculture should direct the Forest Service to review mineral data set forth in the January 1979

RARE II report, determine the extent to which mineral data is erroneously coded, and provide a corrected report to the Congress. This is not to suggest that the Forest Service repeat a massive analysis of its potential wilderness areas.

In light of the high percentage of RARE II areas with unknown mineral potential (up to 85 percent) which the Forest Service recommended for wilderness in five Western States we reviewed, we believe that your Committee--since potential mineral conflicts are important in the wilderness decisionmaking process--should hold off any decision until the Department of Agriculture provides you with corrected data showing the true extent of its mineral knowledge of possible wilderness areas under its jurisdiction.

AGENCY COMMENTS AND OUR EVALUATION

Both the Department of the Interior and the Forest Service reviewed and provided comments on a draft of this report. (Their responses are included as appendixes II and III.)

Both agreed with the essential points of the report. Interior stated that all who were involved knew the RARE II program was wholly inadequate for the purpose intended, and was a result of the driving policy that assumed (1) an overriding priority for non-economic use of public lands, and (2) that balanced resource decisions could be made with limited time. Interior also expressed concern about the adequacy of consideration given to high mineral potential in some areas.

The Forest Service agreed that there were coding errors in the RARE II report, but suggested that rather than reissue a corrected RARE II report, Congress would be better served by being provided the most recent minerals information on areas being considered for wilderness. The Forest Service pointed out that it works closely with the Congress in its wilderness deliberations, and could, at that time, clarify the coding question as well as provide other up-to-date mineral information.

We agree--at least in theory--that a totally updated and reprinted RARE II report may not be needed so long as Members of Congress, their staffs, and other users of the report are made aware of the existing report's inaccuracies and limitations and are provided corrected and updated information. We also agree that working closely with Congress would be very beneficial, if the Forest Service can assure itself that it is making the required data available at all needed times. We are not convinced this is practicable. In addition, even assuming the Forest Service can meet Congress' needs through direct contact, there are likely other users of the data as well, such as Agriculture

officials in the field and private parties. Accordingly, we would encourage the Forest Service to emphasize direct contacts with the Congress but also to prepare a corrected report.

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This report is being sent today to the Departments of Agriculture and the Interior, the Office of Management and Budget, and will be made available to other interested parties at their request.

Milton J. Socolar

Acting Comptroller General
of the United States

LIST OF ADDRESSEES FOR GAO REPORT ENTITLED "MINERAL DATA IN THE FOREST SERVICE'S RARE II IS MISLEADING AND SHOULD BE CORRECTED"

The Honorable James A. McClure
Chairman, Committee on Energy
and Natural Resources
United States Senate

The Honorable Morris K. Udall
Chairman, Committee on Interior
and Insular Affairs
House of Representatives

The Honorable James D. Santini
Chairman, Subcommittee on Mines
and Mining
Committee on Interior and Insular Affairs
House of Representatives

The Honorable John F. Seiberling
Chairman, Subcommittee on Public
Lands and National Parks
Committee on Interior and Insular Affairs
House of Representatives

MINERAL RATING DATA FOR RECOMMENDED WILDERNESS LANDS

Area ID	Acres	Mineral rating (note a)					Of 5 mineral categories:				
							No. of categories with unknown potential				
		Hard rock	Oil & gas	Uranium	Coal	Geo-thermal	-1 and blanks	zero	Total unk.	# of categories w/high potential	Total # of categories with unknown + high potential
Colorado											
A2181	93,250	85		45			3	-	3	1	4
A2196	121,680	70	95	70	85	70	-	-	-	2	2
A2198	50,660	30	95	0	65	0	-	2	2	1	3
A2217	8,800	35	0	40	0	0	-	3	3	-	3
E2180	137,900	90					4	-	4	1	5
02195	29,650	0	95	80	85	0	-	2	2	2	4
02215	51,600	80	0	80	0	0	-	3	3	-	3
02223	3,100	30	0	75	0	0	-	3	3	-	3
02228	10,240	0	60	70	85	70	-	1	1	1	2
02231	1,880	85	10	85	90	0	-	1	1	3	4
02241	19,780	0	10	70	65	0	-	2	2	-	2
02242	10,240	0	65	65	35	0	-	2	2	-	2
02359	600	85	0	50	0	0	-	3	3	1	4
A2266	131,520	90	10	99		95	1	-	1	3	4
A2280	43,960	60		55		50	2	-	2	-	2
02300	2,770	30	0	0	0	0	-	4	4	-	4
A2119	72,990	65	0	93	0	0	-	3	3	1	4
A2309	15,990	0	100	89	70	0	-	2	2	2	4
A2361	16,430			99			4	-	4	1	5
02145	46,570	65		75			3	-	3	-	3
02115	41,680	25	0	80	0	0	-	3	3	-	3
02118	9,030	60	0	93	0	0	-	3	3	1	4
02120	10,100	85	0	92	0	0	-	3	3	2	5
02322	3,380	0	80	35	0	0	-	3	3	-	3
02324	5,300	0	80	0	0	0	-	4	4	-	4
A2080	720	65		80	80		2	-	2	-	2
A2100	24,330	70	70	99			2	-	2	1	3
A2102	4,610	75		99			3	-	3	1	4
A2355	39,940	65	1				3	-	3	-	3
02157	2,090	0	0	0	85	0	-	4	4	1	5

a/As reported in the Forest Service's January 1979 Final Environment Statement (RARE II report).

APPENDIX I

Area ID	Acres	Mineral rating: Hard rock	Oil & gas	Uranium	Coal	Geo-thermal	Of 5 mineral categories: No. of categories with unknown potential: -1 and blanks	zero	Total unk.	# of categories w/high potential	Total # of categories with unknown + high potential
Colorado											
A2145	34,760						4	-	4	-	4
A2170	14,860	85		70			3	-	3	1	4
A2250	56,400	60		85			3	-	3	1	4
A2266	85,150	90	10	99		95	1	-	1	3	4
A2270	22,560	60		75			3	-	3	-	3
A2271	21,330	60		30		65	2	-	2	-	2
B2252	47,640	30					4	-	4	-	4
C2180	110,550	90		85		50	2	-	2	2	4
02259	26,140	85	0	75	0	0	-	3	3	1	4
A2284	128,736	80	55	55			2	-	2	-	2
A2290	1,100						5	-	5	-	5
A2292	39,650	30		70			3	-	3	-	3
A2293	1,200	60		60			3	-	3	-	3
A2294	15,200	45		80			3	-	3	-	3
A2297	600	60		30			3	-	3	-	3
A2298	440	85		40			3	-	3	1	4
A2302	4,500	60		80			3	-	3	-	3
A2303	15,650	60		80			3	-	3	-	3
A2306	77,167	80		75			3	-	3	-	3
02296	380	30	0	80	0	0	-	3	3	-	3
A2170	101,960	85		70			3	-	3	1	4
A2180	119,300	90				85	3	-	3	2	5
A2181	9,600	85		45			3	-	3	1	4
A2111	- - - - - - - - Not Listed In Mineral Section- - - - - -										
Total Colorado (54 areas)	1,945,663						89	57	146	38	184

APPENDIX I

Area ID	Acres	Mineral rating: Hard rock	Oil & gas	Uranium	Coal	Geothermal	Of 5 mineral categories: No. of categories with unknown potential: −1 and blanks	zero	Total unk.	# of categories w/high potential	Total # of categories with unknown + high potential
Idaho											
E4061	18,983	47	0	47			2	1	3	–	3
E4551	3,820	12	0			50	2	1	3	–	3
I4066	31,864	100	0	72			2	1	3	1	4
L4BAA	22,000	50	0	50			2	1	3	–	3
M1845	105,600	64	0	0	0	35	–	3	3	–	3
A1125	22,875	25	0	25	0	0	–	3	3	–	3
A1300	13,975	40	0	0	0	0	–	4	4	–	4
A1981	14,678	70	0	70	0	0	–	3	3	–	3
B1300	60,881	40	0	0	0	0	–	4	4	–	4
B1662	10,968	70	0	0	0	0	–	4	4	–	4
C1300	12,167	40	0	0	0	0	–	4	4	–	4
B1305	18,373	50	0	0	0	0	–	4	4	–	4
I4179	16,000	−1	99	0	0	50	1	2	3	1	4
I4066	124,660	99	0	72			2	1	3	1	4
I4066	49,676	100	0	72			2	1	3	1	4
I4210	119,864	40	0	40			2	1	3	–	3
N4201	43,568	75	25	68			2	–	2	–	2
W4202	77,710	95	25	67			2	–	2	1	3
E4451	87,500	12	0			50	2	1	3	–	3
E4921	40,193	96	0	50			2	1	3	1	4
H4455	62,750	95	0	99			2	1	3	2	5
N4921	42,263	96	0	0			2	2	4	1	5
P4913	411,552						5	–	5	–	5
04454	44,257	100	0	99	0	0	–	3	3	2	5
W4202	3,200	95	25	67			2	–	2	1	3
W4504	50,004	81	0	52			2	1	3	1	4
04505	33,625	95	0	52			2	1	3	1	4
B1662	506	70	0	0	0	0	–	4	4	–	4
E4061	22,016	47	0	47			2	1	3	–	3
I4553	87,330	99	0	78			2	1	3	1	4

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Area ID	Acres	Mineral rating: Hard rock	Oil & gas	Uranium	Coal	Geothermal	Of 5 mineral categories: No. of categories with unknown potential: -1 and blanks	zero	Total unk.	# of categories w/high potential	Total # of categories with unknown + high potential
Idaho											
N4201	62,392	75	25	68			2	-	2	-	2
D1845	97,720	94	0	94	0	30	-	2	2	2	4
01846	12,800	-1	0	0	0	0	1	4	5	-	5
H1941	65,100	71	0	0	0	30	-	3	3	-	3
C1309	5,052	38	0	0	0	0	-	4	4	-	4
P1300	69,045	71	0	0	0	0	-	4	4	-	4
Q1301	100,100	84	0	0	0	0	-	4	4	1	5
04941	20,000	-1	0				4	1	5	-	5
I4582	18,450	68	0	-1		-1	3	1	4	-	4
H4945	42,500	97	70	70			2	-	2	1	3
04963	16,860	60	30	55			2	-	2	1	2
P1913	---------Not Listed In Mineral Section--------										
Total Idaho (42 areas)	2,162,877						56	77	133	19	152
Montana											
B1001	6,532	20	0	0	0	0	-	4	4	-	4
I1945	12,996	-1	55	0	0	0	1	3	4	-	4
01008	94,091	95	0	95	0	55	-	2	2	2	4
B1485	23,199	0	94	-1	0	0	1	3	4	1	5
Z1485	18,360	62	47	0	0	0	-	3	3	-	3
H1845	12,600	64	0	0	0	35	-	3	3	-	3
S1BAA	12,800	87	0	87	0	30	-	2	2	2	4
01061	9,600	47	0	47	0	30	-	2	2	-	2
01062	7,800	-1	0	40	0	30	1	2	3	-	3
01063	2,500	83	0	0	0	30	-	3	3	1	4

APPENDIX I

Area ID	Acres	Mineral rating: Hard rock	Oil & gas	Uranium	Coal	Geo-thermal	Of 5 mineral categories: No. of categories with unknown potential: -1 and blanks	zero	Total unk.	# of categories w/high potential	Total # of categories with unknown + high potential
Montana											
01064	2,900	48	0	48	0	30	-	2	2	-	2
01065	700	-1	0	30	0	30	1	2	3	-	3
01066	1,100	-1	0	30	0	30	1	2	3	-	3
B1662	12,680	70	0	0	0	0	-	4	4	-	4
01362	9,800	0	0	0	0	0	-	5	5	-	5
01373	16,600	0	85	0	99	0	-	3	3	2	5
01427	9,700	86	0	0	0	0	-	4	4	1	5
01545	700	0	0	0	0	0	-	5	5	-	5
01914	2,300	0	0	0	0	0	-	5	5	-	5
01963	22,400	23	87	0	0	0	-	3	3	1	4
F1485	6,300	79	86	0	0	0	-	3	3	1	4
W1610	10,000	-1	90	-1	0	0	2	2	4	1	5
B1662	24,047	70	0	0	0	0	-	4	4	-	4
B1676	7,301	82	0	0	0	0	-	4	4	1	5
C1670	6,866	63	0	0	0	0	-	4	4	-	4
C1681	376	28	0	0	0	0	-	4	4	-	4
01682	1,037	34	0	0	0	0	-	4	4	-	4
F1485	32,000	79	86	0	0	0	-	3	3	1	4
T1485	2,400	0	94	0	0	0	-	4	4	1	5
U1485	3,255	0	94	0	0	0	-	4	4	1	5
W1485	25,649	0	90	0	0	0	-	4	4	1	5
D1301	12,600	58	0	0	0	0	-	4	4	-	4
Q1301	65,197	84	0	0	0	0	-	4	4	1	5
Q1485	66,945	62	47	0	0	0	-	3	3	-	3
Q1807	60,050	69	0	0	0	0	-	4	4	-	4
Total Montana (35 areas)	603,381						7	117	124	18	142

APPENDIX I

Area ID	Acres	Mineral rating: Hard rock	Oil & gas	Uranium	Coal	Geo-thermal	Of 5 mineral categories: No. of categories with unknown potential: -1 and blanks	zero	Total unk.	# of categories w/high potential	Total # of categories with unknown + high potential
Utah											
D4001	28,584	15	0	20	0		1	2	3	-	3
I4001	105,202	15	0	0	0		1	3	4	-	4
I4002	7,573	17	0	35	0		1	2	3	-	3
N4AAN	5,962	15	0	20	0		1	2	3	-	3
P4931	34,367						5	-	5	-	5
04251	111,395	21	61	61	74		1	-	1	-	1
04253	8,590	13	55	24	83		1	-	1	1	2
04254	9,100	12	75	24	28		1	-	1	-	1
04260	4,555	42	75	30	63		1	-	1	-	1
04307	24,920	16	70	41	0		1	1	2	-	2
04436	48,400	42	53	0	0		1	2	3	-	3
I4752	14,210	98	43	45	0	80	-	1	1	1	2
I4753	11,200	84	62	50	0	73	-	1	1	1	2
04757	55,160	37	29	45	0	67	-	1	1	-	1
04760	23,780	52	57	45	0	72	-	1	1	-	1
Total Utah (15 areas)	492,998						15	16	31	3	34
Wyoming											
02034	5,370	30	0	45	0	0	-	3	3	-	3
C4102	256,620	91	91	91	99	0	-	1	1	4	5
E4102	34,600	91	91	91		82	1	-	1	4	5
04101	28,156	-1	60		73	90	2	-	2	1	3
A2070	26,530	70	80				3	-	3	-	3
A2074	16,520	90	10	40	0	0	-	2	2	1	3
A2087	33,020	85	10	30			2	-	2	1	3
C2080	17,340						5	-	5	-	5
02086	13,840	70	0	30	0	0	-	3	3	-	3
A2041	7,424	40	40	50	0	0	-	2	2	-	2

APPENDIX I

Area ID	Acres	Mineral rating: Hard rock	Oil & gas	Uranium	Coal	Geo-thermal	Of 5 mineral categories: No. of categories with unknown potential: -1 and blanks	zero	Total unk.	# of categories w/high potential	Total # of categories with unknown + high potential
Wyoming											
A2047	2,[illegible]	30					4	–	4	–	4
A2901	18,02[illegible]	65		35			3	–	3	–	3
A2914	14,328	30		30			3	–	3	–	3
A2049	9,829	60		30			3	–	3	–	3
C2047	2,646	30	60				3	–	3	–	3
02043	2,500	60	0	30	0	0	–	3	3	–	3
02046	480	30	60	0	0	0	–	3	3	–	3
02058	28,600		90	69		75	2	–	2	1	3
[illegible]619	111,355	80	20	59	0	0	–	2	2	–	2
Total Wyoming (19 areas)	629,297						31	19	50	12	62
Grand total	5,826,116						198	286	484	90	575

Of 5 Mineral Categories:

Summary of recommended wilderness with high and unknown potential	2 or more categories rated zero: # of areas	acres	3 or more categories with unknown potential: # of areas	acres	4 or more categories with unknown + high potential: # of areas	acres
Colorado	19	364,280	37	1,129,247	27	1,142,010
Idaho	18	712,360	34	1,818,927	25	1,434,211
Montana	35	603,381	31	483,990	27	483,376
Utah	5	195,721	6	230,088	2	139,569
Wyoming	7	157,489	11	113,002	4	310,677
Total	84	2,033,231	119	3,775,654	85	3,509,843

APPENDIX I

APPENDIX II

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
PO Box 2417
Washington, DC 20013

JAN [illegible]
1920

Mr. Henry Eschwege
Director, Community and Economic Div.
General Accounting Office
Washington, DC 20548

Dear Mr. Eschwege:

Thank you for the opportunity to comment on the draft report prepared by the General Accounting Office on Mineral Data in the Forest Service's Roadless Area Review and Evaluation (RARE II).

The Draft Report represents constructive criticism of mineral treatment in the RARE II effort. The Forest Service is treated fairly through recognition of the overall effort to gather mineral information in a good faith effort and to utilize the information within the time constraints placed on the completion of the RARE II process.

Our review of the material presented in the Draft Report and discussions with some of our field geologists confirm that there was some misunderstanding in the use of the 0 and -1 ratings that resulted in some coding errors. While we can make corrections as suggested in your recommendations, we believe that providing the Congress with the most recent minerals information on areas being considered for wilderness will better meet the intent of your recommendation in the most efficient manner.

One area in the Draft Report should be clarified. The report implies that the presence of high mineral rating on an area should have caused the decision makers to place the area in a nonwilderness designation. While it is true that minerals were considered an important factor in the decision process, the mineral rating was not intended to be nor was it necessarily an overriding factor.

We believe the recommendation section of the report should recognize this Department's ongoing efforts in working with the Congress during their deliberations on wilderness designation. As we prepare testimony on pending wilderness bills and as we

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provide information to individual Members of Congress, Committees, and Committee Staff, we can clarify the coding question and, more importantly, provide the most up-to-date mineral and other resource information used in considering wilderness potential for specific areas.

In short we believe, as you do, that the Congress needs the best information available in arriving at its decisions on wilderness designations. The issue must be dealt with in a timely manner in order that lands not dedicated to wilderness will be available for other uses. The mineral potential of the numerous areas being considered for wilderness can only be certain following extensive detailed exploration work. In view of budget constraints and reasonable time factors, we believe a significant investment in money and manpower for detailed exploration of these vast lands is unrealistic.

Sincerely,

for R. MAX PETERSON
Chief

APPENDIX III

United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

December 28, 1981

Mr. J. Dexter Peach
Director, Energy and Minerals Division
General Accounting Office
441 G Street, N.W.
Washington, D.C. 20548

Dear Mr. Peach:

Your report on the RARE II program and its consideration of mineral values touches an area of critical importance to this Department in the way it identifies the larger problem of how decisions have often been made in which non-economic use of public lands was perceived as the dominant national goal.

We do want to say that the Geological Survey and Bureau of Mines over a two-month period went all out to provide the Forest Service with all of the information these two agencies could pull together for identifying the mineral resource potential of the immense acreage under consideration in RARE II. From what we learned, these Forest Service personnel aggressively contacted industry and held numerous meetings to gather the information it had. Early on, the Bureau of Mines worked with Forest Service on a mineral rating scheme by which to factor available indicators that might provide some handle on relative resource potential. We were impressed with the professional and conscientious manner in which the the Forest Service assessed available mineral information for RARE II.

Nevertheless, all who were involved in this crash program from the standpoint of minerals knew that the process going on was wholly inadequate, that the rating system was at best superficial, and that the eventual withdrawals would cost the country unknown but significant mineral resources.

We are unable to comment on how the ratings devised were eventually used in the overall evaluations, but any inadequacies in the process were foremost a result of the inadequacy of the driving policy that assumed, first, an overriding priority for non-economic use of public lands and, second, that balanced resource decisions can be made with limited time. In the recent trend of public land use, mineral resources have not received adequate consideration. In fact, it has been because of possible mining that some public land has been set aside.

We also need to point out that the on-site mineral studies of the Geological Survey and Bureau of Mines of areas within or proposed for the wilderness system did not start out to do what they could not do, to find specific mineral deposits in the time and dollar limits imposed. The objective was to make the best judgments possible within the given constraints on the potential of these areas on which decisions were imminent. However, to our knowledge, recommendations

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that reflected Geological Survey/Bureau of Mines findings of high mineral potential in areas proposed for the system neither came from or were never seriously considered either in the Executive or the Congress. In this sense, one must question whether any studies at all were necessary. It is our intent that the results of these studies will be used by this Department to make the best recommendations possible.

Relative to a possible extension of the withdrawal deadline for wilderness areas, the Secretary has spoken on the need for a 20-year extension principally because Congressional intent for exploration in these areas was never realized. We believe that if Congress and the Administration make a commitment to an extension, meaning that access is guaranteed, industry will carry out the exploration needed.

Sincerely,

Dan Miller

Daniel N. Miller, Jr.
Assistant Secretary
Energy and Minerals

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