

environmental assessment
proposed plan of operation for bentonite mining
AMERICAN COLLOID COMPANY
may 1977

BIGHORN CANYON

NATIONAL RECREATION AREA / WYOMING - MONTANA



ENVIRONMENTAL REVIEW

Proposed
Plan of Operation
for
Bentonite Mining
AMERICAN COLLOID COMPANY
Big Horn County, Wyoming

- I. PROPOSED ACTION: Issuance of a special use permit to American Colloid Company in support of a proposed plan of operations for ongoing surface mining of bentonite from three unpatented mining claims located on lands within the Bighorn Canyon National Recreation Area, Big Horn County, Wyoming. The plan of operations is in accordance with the applicable provisions of 36 C.F.R. Part 9.
- II. AREAS OF ENVIRONMENTAL IMPACT: The implementation of the proposed action will have minimal adverse environmental impacts on the affected park administered lands. These impacts and their effects are as follows:
 1. Land Use - The surface mining activities will modify the present use of approximately 50 acres over a total 3 year period.
 2. Topography- The reconstructed lands which are disturbed will conform to the contour of the area similar to that which existed prior to the initiation of the operation.
 3. Hydrologic - The proposed surface mining operation will not encounter subsurface waters and such operations will be staged in such a manner to minimize interference with the normal surface water runoff.

4. Vegetation - There will be a temporary loss of vegetation on lands affected by the operation. The initial disturbance would result from the removal and temporary stockpiling and/or spreading of topsoil. The reclamation plan specifies that all natural topsoil will be removed from the area of operations prior to the initiation of surface mining activities and that such topsoil would be redistributed on a previous disturbance which has been graded and contoured.

5. Wildlife - The mining activity as proposed would result in a temporary displacement of physical habitat. This displacement would be caused by the surface mining operations, increased noise levels, and vehicular movement in the area.

6. Air Quality - The equipment used in support of the operation would produce gaseous emissions and would generate fugitive dust during periods of operations.

7. Recreation - The short-term proposed mining use during the 3 year mining period would restrict maximum park purpose use of the affected lands.

8. Aesthetics - The impact on the area's mood-atmosphere values of isolation, solitude, and inspiration could not be completely mitigated.

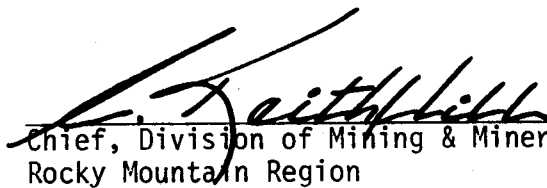
III. MAGNITUDE OF THE PROJECT:

Major action, significant effects	<u>No</u>
Federal	<u>Yes</u>
Substantive adverse impacts	<u>No</u>
Cumulative or secondary effects	<u>Yes</u>
Highly controversial	<u>No</u>
First time, precedent setting	<u>No</u>
Commits Service to future actions	<u>No</u>

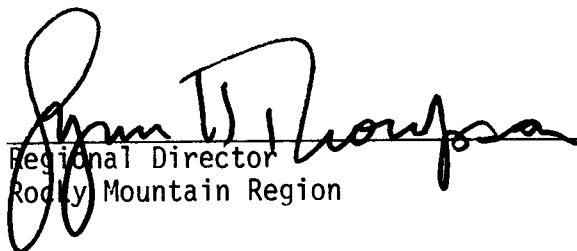
IV. RECOMMENDATION:

X PROPOSED ACTION IS NOT MAJOR WITH A POTENTIAL FOR
CAUSING SIGNIFICANT ENVIRONMENTAL IMPACT OR CONTROVERSY.
AN ENVIRONMENTAL STATEMENT IS NOT REQUIRED.

RECOMMENDED 5/20/77
Date


Chief, Division of Mining & Minerals
Rocky Mountain Region

APPROVED 5/22/77
Date


Regional Director
Rocky Mountain Region

DEPARTMENT OF THE INTERIOR

ENVIRONMENTAL ASSESSMENT

Proposed
Plan of Operation
for
Bentonite Mining
AMERICAN COLLOID COMPANY
Big Horn County, Wyoming

BIGHORN CANYON NATIONAL RECREATION AREA
ROCKY MOUNTAIN REGION
NATIONAL PARK SERVICE

5/20/77
Date


Regional Director

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I. DESCRIPTION OF PROPOSED ACTION

This statement was prepared by the National Park Service and represents an analysis of broad cumulative environmental impacts of proposed bentonite mining operations by the American Colloid Company on valid existing unpatented association placer mining claim locations which embrace lands within the Bighorn Canyon National Recreation Area, Big Horn County, Wyoming. This analysis considers the primary, secondary, and cumulative impacts of the American Colloid proposal.

The proposed mining plan as submitted by the American Colloid Company is in accordance with the applicable provisions of the National Park Service Comprehensive Regulations found at 36 C.F.R. Part 9 (Federal Register, Vol. 42, No. 17, Wednesday, January 26, 1977). These regulations apply to all activities and/or operations resulting from the exercise of valid existing mineral rights on mining claims within any unit of the National Park System. The purpose of the comprehensive regulations is to provide control over valid mining related activities within units of the National Park System to the extent as authorized within Section 2 of the Act of September 28, 1976, Public Law 94-429 (90 Stat. 1342, 16 U.S.C. 1901 et seq.). A copy of the Comprehensive Regulations and a copy of Public Law 94-429 are enclosed and identified respectively as "Exhibit A" and "Exhibit B".

The Act of October 15, 1966 (Public Law 89-664, 30 Stat. 913, 16 U.S.C. 460 et seq.) established the Bighorn Canyon National Recreation Area for the express purpose of providing "for public outdoor recreation use and enjoyment of the proposed Yellowtail Reservoir and lands adjacent thereto in the States of Wyoming and Montana by the people of the United States and for preservation of scenic, scientific, and historic features contributing to public enjoyment of such lands and waters" The enabling legislation for Bighorn Canyon NRA withdrew the area from further location, entry, and patent under the Mining Law of 1872; however, such withdrawal was subject to valid existing rights, to include those rights associated with valid existing unpatented mining claim locations. The mining claims which contain valuable bentonite deposits which are included in American Colloid's proposed plan of operation as addressed in this statement were located on August 8, 1949, prior to the enabling legislation for Bighorn Canyon NRA. American Colloid has been extracting bentonite by surface mining methods from lands in the area since 1965.

1. Location - The bentonite placer claims as identified within American Colloid's proposed plan of operations embrace 480 acres of land within the exterior boundary of the Bighorn Canyon NRA and are situated on the eastern flank of the Bighorn Basin, in Big Horn County, north central Wyoming (Figure 1). Lovell, Wyoming, the nearest

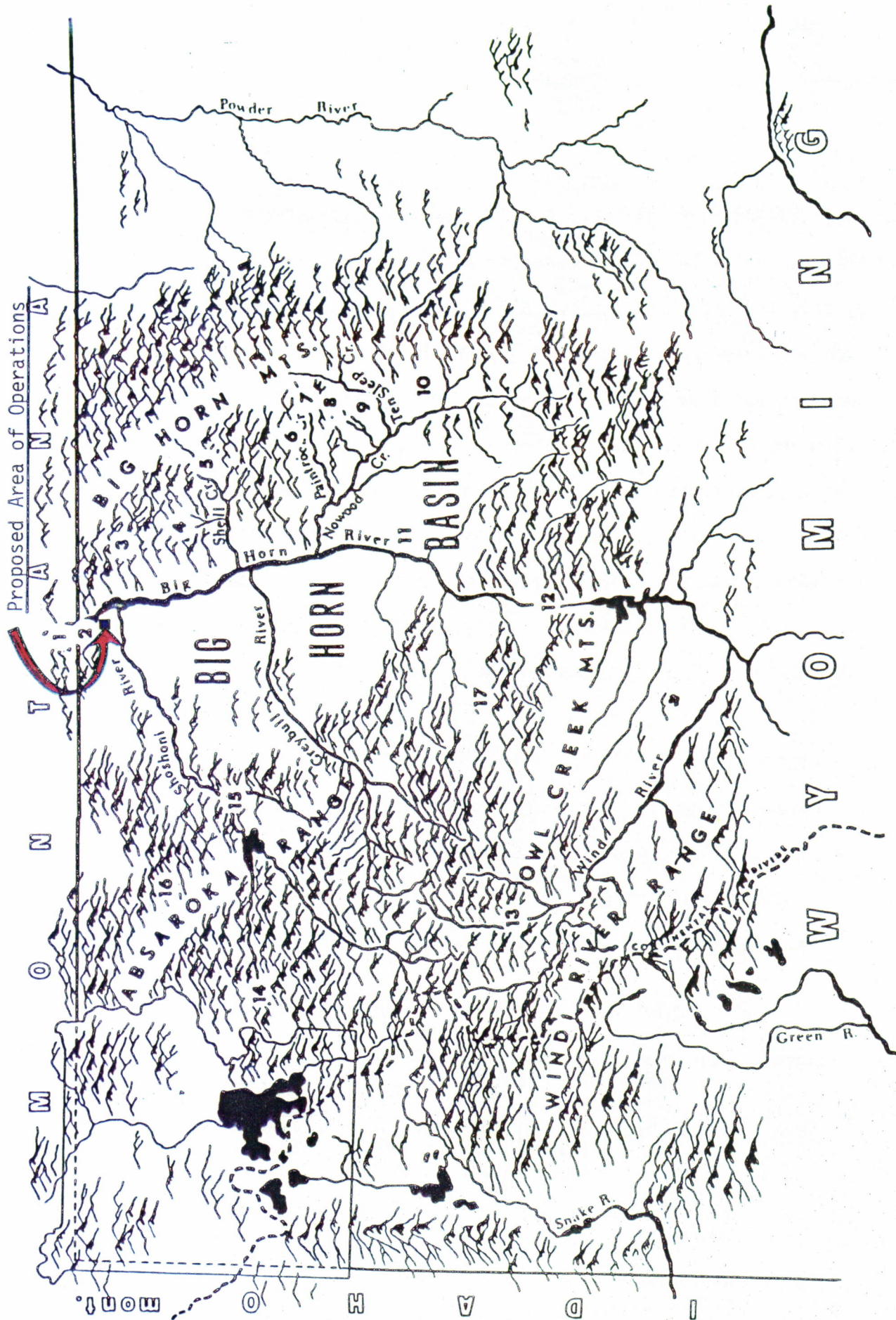


Figure 1

incorporated town, is about 8 air miles southwest of the subject claim group (Figure 2). Vehicular access to the claims can be gained by traveling north on Wyoming State Highway 37 approximately 8 miles from its intersection with U.S. Alternate 14, thence southeasterly on the unsurfaced park administered Crooked Creek Road approximately 1.3 miles. The physical location of American Colloid's bentonite claims as addressed within this assessment and included within their proposed plan of operations are depicted on a segment copy of the 7.5 minute U.S. Geological Survey quadrangle map entitled Sykes Spring Quadrangle (Figure 3). Information concerning these unpatented placer mining claim locations is as follows:

Claim: HILL

Type: 160-acre Placer

Claimant: American Colloid Company

Location Date: August 8, 1949

Recordation Date: August 15, 1949

Book: 89

Page: 449

Amended Location Date: September 1, 1949

Recordation Date: September 8, 1949

Book: 90

Page: 32

Legal Description: NW $\frac{1}{4}$ SW $\frac{1}{4}$, SW $\frac{1}{4}$ SW $\frac{1}{4}$, SE $\frac{1}{4}$ SW $\frac{1}{4}$, S $\frac{1}{2}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$, and S $\frac{1}{2}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 13, Township 57 North, Range 95 West, 6th P.M., Wyoming

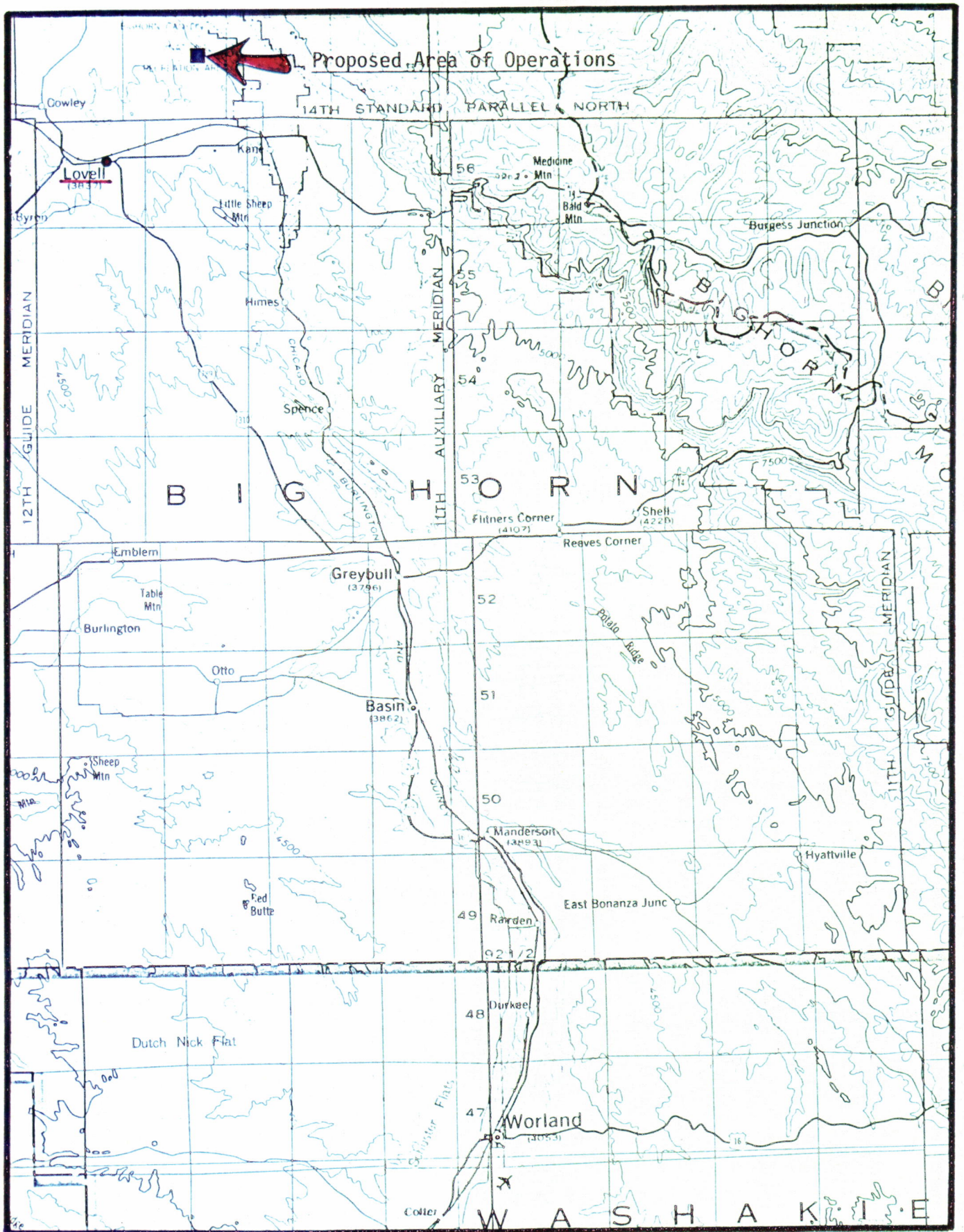


Figure 2

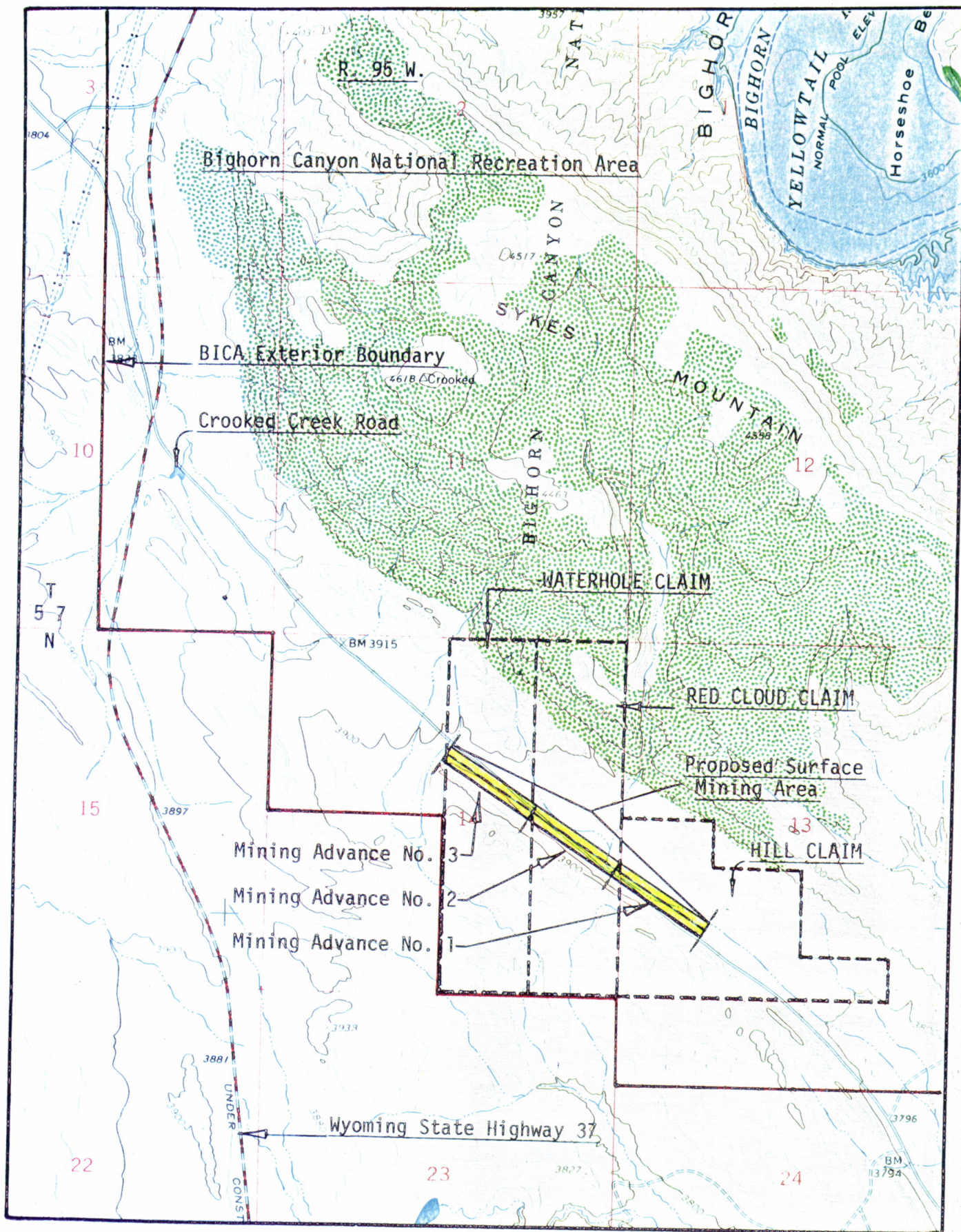


Figure 3

Claim: RED CLOUD

Type: 160-acre Placer

Claimant: American Colloid Company

Location Date: August 8, 1949

Recordation Date: August 15, 1949

Book: 89

Page: 450

Amended Location Date: September 1, 1949

Recordation Date: September 8, 1949

Book: 90

Page: 32

Legal Description: E $\frac{1}{2}$ E $\frac{1}{2}$ of Section 14, Township 57 North,
Range 95 West, 6th P.M., Wyoming

- - - - -

Claim: WATERHOLE

Type: 160-acre Placer

Claimant: American Colloid Company

Location Date: August 8, 1949

Recordation Date: August 15, 1949

Book: 89

Page: 450

Amended Location Date: September 1, 1949

Recordation Date: September 8, 1949

Book: 90

Page: 33

Legal Description: W $\frac{1}{2}$ E $\frac{1}{2}$ of Section 14, Township 57 North,
Range 95 West, 6th P.M., Wyoming

2. Nature and Extent of Mineral Deposits - Bentonites are monominerallic rocks, composed essentially of montmorillonite and derived from the alteration of volcanic material. The principal types of bentonite are sodium, calcium, intermediate, and mixed. Wyoming is the major source and primary producer of sodium bentonites. Sodium bentonites possess expansive water absorption capacities and exhibit high dry-bond strength properties which are well suited for taconite pelletization, binder in foundry sand moldings, and drilling mud use. The mining of bentonite on a large scale from eastern Bighorn Basin was initiated in the early 1950's by Dresser Industries, Inc., and Wyo-Ben Products, Inc. American Colloid Company's entry into large scale bentonite mining in the area began in the mid 1960's with the construction of a processing plant near Lovell, Wyoming, in 1965.

The sodium bentonites exploited in the eastern Bighorn Basin occur in the Cretaceous, Thermopolis, Mowry, and Frontier Formations. The bentonite strata are interbedded with shales and sandstone in both the Upper and Lower Cretaceous Series. Bentonite beds currently being mined in the Basin range from 1 to 14 feet in thickness and crop out intermittently along the entire eastern margin of the eastern Bighorn Basin. The mining of bentonite beds is most favorable in areas of shallow dip because the extent of mining is severely limited by

increasing thickness of the overburden in the dip direction. The color of the crude bentonite varies with moisture content and degree of weathering and will range from light gray or blue, through tan and olive green to yellow. The outcrops of bentonite are virtually barren of vegetation and in the absence of moisture develop a crusty surface resembling popcorn. The major users of processed bentonite require strict compliance or adherence to quality standards and/or specifications. These product specifications have been established by the taconite, foundry and petroleum industries. The evaluation of the economic potential of a bentonite deposit often requires extensive testing to determine the physical properties of the clay.

There are a total of three bentonite beds on American Colloid Company's unpatented mining claim locations within the Recreation Area. These beds lie stratigraphically within the exposed Frontier and Mowry Formations. The bentonite bed which is to be mined in the proposed plan of operations approximates 4 feet in thickness and extends approximately 4,800 feet in a northwesterly-southeasterly direction with a dip of about 45 degrees to the southwest. The thickness of the overburden is less than 30 feet and it is presently estimated by American Colloid that there are approximately 45,000 tons of crude bentonite associated with the bed as addressed in their proposed plan of operations. The projected mine life based upon this reserve figure and estimated

annual production figures would approximate 3 years. The initiation of mining operations in association with this bentonite deposit is tentatively scheduled to commence during the fall of 1978. American Colloid has been extracting bentonite by surface mining methods from unpatented mining claim locations within the area since 1965.

3. Proposed Mining Plan - Current plans call for surface mine operations to begin by early fall of 1978 on lands embraced by the unpatented HILL placer mining claim location. This operation will proceed in a northwesterly direction along the strike of the bentonite bed for a distance of approximately 4,800 feet from a point within the E $\frac{1}{2}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 13, Township 57 North, Range 95 West, 6th P.M., Big Horn County, Wyoming. The proposed mining operation sequence will approximate 1,600 feet annually which represents a projected mine life of 3 years (Figure 3). Surface mining will consist of the removal of the topsoil by using 15-cubic yard elevating bowl-type scrapers and the spreading of same on contoured lands which have been previously exploited. The remaining overburden will be removed and stockpiled adjacent to the cut using the scrapers and a Drott No. 50 crawler-type backhoe. The exposed bentonite bed will be excavated using an L-30 front-end loader and placed in 25-ton capacity trucks for transporting to American Colloid's processing plant which is located approximately 9 road miles from the proposed mining operation. Ingress and egress

in support of the initial operation will utilize 2.1 miles of the unsurfaced Crooked Creek park administered secondary road and Wyoming State Highway 37 (Figure 3). An average of four persons will be employed in the mining phase of the operation.

II. EXISTING ENVIRONMENT

This section provides a basic description of the existing environment and the important characteristics and values of the lands within the greater Bighorn Canyon and those specific lands within the Bighorn Canyon National Recreation Area which are embraced by the unpatented bentonite mining claim locations as enumerated with American Colloid's proposed plan of operations. This information establishes a basis for consideration of the impacts on the environment associated with the implementation of the proposed mining plan of operations.

1. Land Use - The Bighorn Canyon National Recreation Area encompasses about 120,000 acres to include a 71-mile long reservoir created by the construction of the Yellowtail Dam on the Bighorn River in 1965. The Yellowtail Dam, rising 525 feet above the canyon floor, is situated in the narrow mouth of Bighorn Canyon and backs up waters of the river creating one of the most scenic manmade lakes in the world. The dam, a tall variable-thickness arch type, is the highest in the Missouri River Basin and creates one of the largest reservoirs in volume on the tributary system of the Missouri River. The reservoir, named Bighorn Lake, is used for the generation of power, irrigation, recreation, enhancement of fish and wildlife, sediment retention, municipal and industrial water, and flood control. The recreation highlights of the lake include the high, colorful cliffs; deep, wooded canyons; and

sports such as fishing, boating, water skiing, swimming, and sightseeing. Below the dam, the canyon comes to an abrupt end with waters which are discharged at the base of the dam again being briefly captured by a small regulating dam. The Bighorn River resumes its meandering course below this regulating dam on its way to the Yellowstone River.

The Bighorn Canyon-Pryor Mountain Area of south-central Montana and north-central Wyoming lies within a region of great scenic diversity, where the middle Rocky Mountains spill onto the Great Plains. The region contains a variety of geological conditions from high-desert basins to prairie uplands and forested mountains. Recreation is the primary activity in the immediate area and includes such activities as boating, water skiing, fishing, scuba diving, hunting, camping, hiking, picnicking, sightseeing, nature study, spelunking, and photography. Other uses of the lands in the greater Bighorn Canyon area include livestock grazing, farming, and uranium and bentonite mining. The Crow Indian Reservation borders a large part of the Bighorn Canyon area within Montana with approximately 1,500,000 acres in tribal ownership. In 1968, 32,000 acres in the Pryor Mountains were set aside to be managed by the Bureau of Land Management as a wild horse range. There are approximately 165 wild horses which presently roam this range. Approximately 11,600 acres south of Horseshoe Bend and east of Lovell, Wyoming, are managed by the Wyoming Game and Fish Commission through a cooperative

agreement as a part of the Yellowtail Wildlife Habitat Management Unit. The primary objective of this Unit is to provide public hunting of upland game birds and waterfowl.

It is estimated that humans first resided in the Bighorn Canyon-Pryor Mountain Area 10,000 years ago. These early people were nomadic hunters who roamed the prairies and mountains on foot in search of now extinct forms of bison, horse, mammoth, and other Ice Age animals. Ancestors of the Crows were a Siouan speaking people who lived along the banks of the Missouri River in present-day North Dakota. One group, the Crow, migrated westward becoming bison hunters and nomads and acquiring horses.

The Big Horn region received brief notoriety in American history when gold was discovered in western Montana. This discovery opened the Bozeman Trail as a means of supply and access between Fort Laramie, Wyoming, and Virginia City, Montana. During the 1890's the area was subjected to homesteading and ranching and by 1900 farming communities had been established in Cowley and Lovell, Wyoming.

The commercial production of bentonite from Wyoming, in limited quantity, dates from the late 1880's. This production was shipped to eastern processing plants for use in cosmetics. Bentonite deposits of higher quality were discovered in the Black Hills region of Wyoming and South Dakota during the 1920's. The importance of bentonite to the foundry

industry and as an ingredient of drilling mud resulted in an increase in production during this period and in the erection of a processing plant near Upton, Wyoming, in the late 1920's. The mining and processing of bentonite on a large scale in eastern Bighorn Basin was initiated in the early 1950's by Wyo-Ben Products, Inc., and Dresser Industries with the construction of processing plants in the Greybull, Wyoming, area. American Colloid Company's bentonite processing plant which is located northeast of Lovell, Wyoming, was built in 1965.

The lands embraced by American Colloid's unpatented bentonite placer mining claim locations within the Bighorn Canyon NRA lie about 2 miles southwest of Horseshoe Bend and adjacent to and southwest of Sykes Mountain. These claims are approximately 8 air miles northeast of Lovell, Wyoming. The topography of the area under location is essentially flat and undulating with narrow elevated benches trending in a northwest-southeast direction. The elevation of the affected area ranges from 3,840 to 4,200 feet above sea level.

2. Geology - The formation of bentonite as reported by Wayland ^{1/} involves three processes (1) vulcanism; (2) sedimentation; and (3) weathering. Volcanic eruptions have caused pyroclastic material to be ejected

^{1/} Wayland, T.E., Geologic Occurrence and Evaluation of Bentonite Deposits, Society of Mining Engineers of AIME, Preprint Number 70-S-19, p. 4, 1970.

into the air and such fragments have been transported from the source areas by wind and redeposited as volcanic ash beds in terrestrial, marine, lacustrine, and estuarine environments. Bentonite is a monominerallic rock formed by the alteration of the volcanic ash beds to clay minerals of the montmorillonite group.

The general geology of Bighorn Basin, Wyoming, as described by Ackerman ^{2/} is in part as follows:

The Bighorn Basin is both a geologic basin and well defined topographic bowl. This broad structural basin is bounded on the east by the Big Horn Mountains, on the south by the Owl Creek Mountains, on the west by the Absaroka Range, and on the northwest by the Beartooth Mountains and on the north by a series of rough hills and the Pryor Mountains. The basin is drained by the Bighorn River whose major tributaries are the Shoshone and Greybull Rivers. The development of the basin as a tectonic unit began in Upper Cretaceous time with the elevation of the Big Horn, Owl Creek, Pryor and Beartooth Mountains. The west wall of the basin is formed by the volcanic Absaroka Range which began to evolve in the early Eocene and which is composed of lava flows, pyroclastics, and breccias of accumulated thicknesses up to 6,500 feet. Paleozoic, Mesozoic, and Cenozoic sediments dip steeply westward off the granite core of the Big Horn Mountains into the basin. Many anticlinal and synclinal structures were formed during the late Cretaceous period which structures are exposed around the periphery of the basin. The most notable of these structures are the Sheep Mountain and Little Sheep Mountain anticlines near Greybull and Lovell, Wyoming.

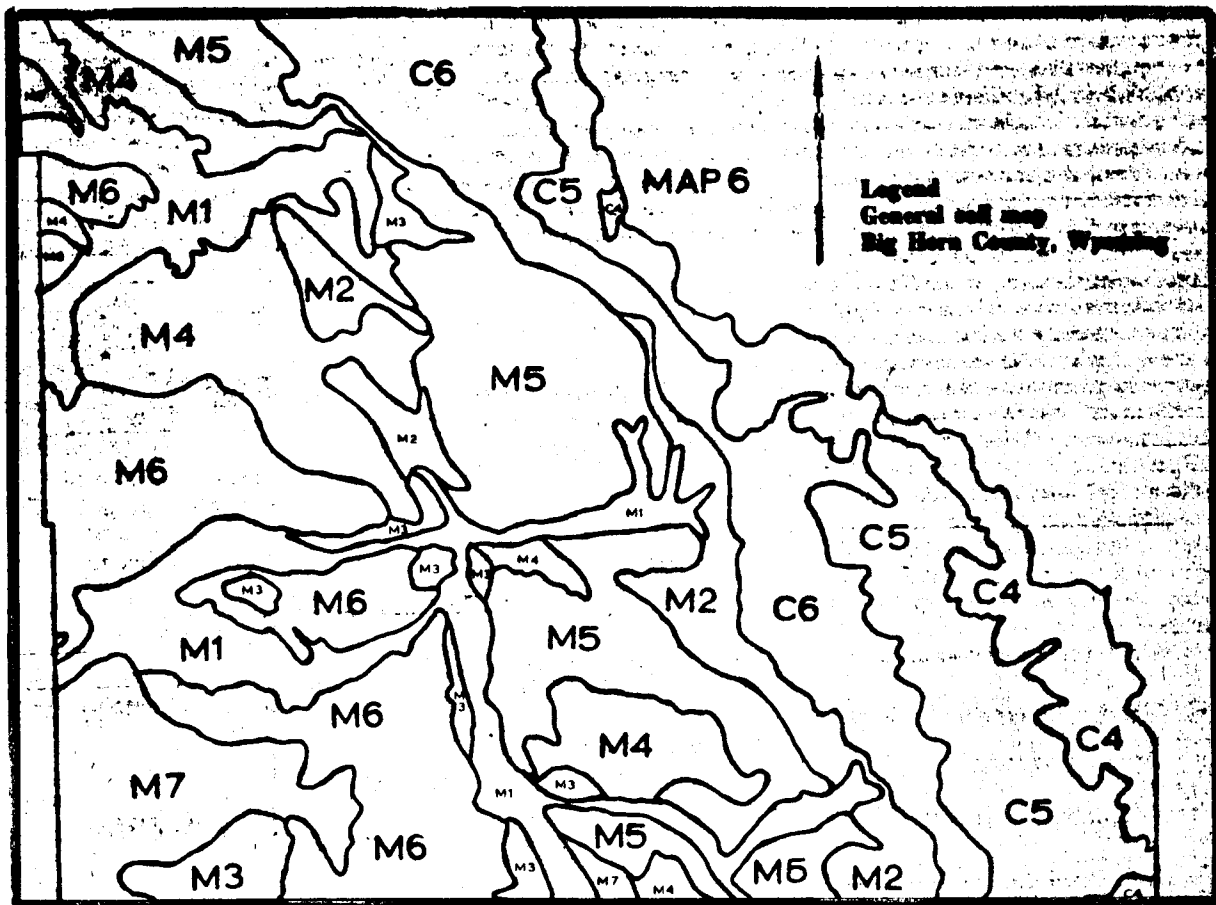
The geology of the area within the Bighorn Canyon NRA which is embraced by mining claim locations as identified by American Colloid

^{2/} Ackerman, W.C., Administrator, Land Quality Division, Department of Environmental Quality, State of Wyoming.

in their proposed plan of operations is shown on the Geophoto Geologic Map No. 9. A copy of a portion of this map depicting area geology is enclosed and identified as "Exhibit C". The bentonite deposits associated with the aforementioned mining claims is the high-swelling sodium-rich "Wyoming" type.

3. Soils - The soils for the lands as identified within American Colloid's proposed plan of operations are primarily Class M-4 as depicted on a General Soil Map, Big Horn County, Wyoming (Figure 4). These soils are developing in shale on nearly level to sloping uplands with narrow valleys with steep side slopes. Soils in this class have very severe limitations which restrict the choice of plants and require very careful management.

4. Hydrology - The principal stream draining the area is the Bighorn River which has an average flow of 2,345,000 acre-feet at the Montana-Wyoming border. The streams which eventually flow into the Bighorn carry high loads of dissolved solids due to erosion of the sparsely vegetated foothills and basin floor landscapes. Comparatively little groundwater has been developed to date in areas adjacent to the proposed mining operation. Such developments are associated with shallow aquifers and the beneficial use of these waters is primarily for domestic use and watering livestock. American Colloid will not require the use of water



Class M 4 - Soils developing in shale on nearly level to sloping uplands with some narrow valleys with steep sides slopes. Elevation ranges from 4,000 to 6,000 feet. Predominant slopes are 1 - 10 percent. Soils in this class have very severe limitations which restrict the choice of plants, require very careful management, or both.

Figure 4

from a point of diversion within the boundary of the Bighorn Canyon NRA. The only use of water which may be required in support of their proposed plan of operations would be for the suppression of fugitive dust which may be generated by commercial vehicles using unsurfaced haulage roads. The proposed mining operation will not encounter subsurface waters.

5. Climate - The high mountain barriers which surround the Bighorn Basin provide effective barriers to the passage of storms which in turn creates an arid climate. Thunderstorms are frequent during the spring and summer with a resulting mean annual precipitation of 7 inches. The mean daily maximum temperature for Lovell in January, the coldest month, is 29.3⁰ F; the mean daily maximum temperature for July, the warmest month, is 89.1⁰ F. The mean annual wind velocity for the area is 5 mph.

6. Air Quality - The Lovell area is in the Casper Intrastate Air Quality Control Region, U.S. Environmental Protection Agency, Region VIII. The region has been classified by EPA as Priority III for sulfur dioxide, nitrogen dioxide, carbon monoxide and oxidants; therefore, for those emissions, no limitations on equipment are required to meet ambient standards. For particulates, the region has been classified as Priority II, which means that some particulate emission limitations on equipment may be needed to achieve ambient standards. The State of Wyoming's ambient air quality standards for those emissions are presented in Table I of this

assessment (Figure 5). These standards meet or exceed existing Federal Ambient Air Quality Standards. The equipment which will be utilized in the proposed plan of operations by American Colloid satisfy the required Federal and State of Wyoming Standards.

7. Vegetation - The area which would be affected by American Colloid's proposed plan of operations is located on the southern edge of the Great Basin Shrubland which generally includes the lands between Horseshoe Bend and the rough upland near Devils Canyon. The dominant vegetation in this ecosystem is one of deciduous shrubs associated with scattered evergreen shrubs on barren escarpments with occasional stringer benchlands supporting scattered dry herbaceous forms.

Vegetation on the area itself consists of a variety of plant species. The herbaceous vegetation associated with the terrestrial plant community, which borders on the Great Basin shrubland and Desert Scrub, is low growth forms restricted to rock crevices or mat forms adhering to thin skeletal soils and rock outcrops. Examples of prostrate plant characteristics include gardener Saltbush - *Atriplex gardeneri*, Shadscale - *Atriplex confertifolia*, Squirreltail - *Sitanion hystrix*, Indian Ricegrass - *Oryzopsis hymenoides*, cactus - *Opuntia polyacantha*, and *Mamillaria vivipara*.

The overall effect of a lack of precipitation, high evapotranspiration rates, and unstable soil conditions have resulted in a pattern

Table I

WYOMING AMBIENT AIR QUALITY STANDARDS

Standard	Carbon Monoxide (ppm)	Oxidants (ppm)	Nitrogen Dioxide (ppm)	Suspended Particulates (ug/m ³)	Sulfur Dioxide (ppm)
1-hour	35	0.08	---	---	---
3-hour	---	---	---	---	0.50
8-hour	9	---	---	---	---
24-hour	---	---	---	150	0.10
Annual	---	---	0.05	60	0.02

Source: The Bureau of National Affairs, Incorporated, Environment Reporter

Note: The Wyoming Ambient Air Quality Standards meet or exceed the Federal Standards

Figure 5

of dry vegetational types such as salt tolerant shrubs and low plant forms. The composition of this association varies from site to site, due primarily to differences in the amount of available soil moisture, the degree of adaptation of the plant species to withstand drought conditions, and the current and past grazing practices.

No unique, rare, or endangered plant species have been identified on the lands as described in the proposed plan of operations.

8. Wildlife - The habitat of the area supports a diverse fauna of big game, medium-sized and small animals, birds, reptiles, amphibians, and arthropods. The only known big game species in the project area is an occasional transient mule deer. The nearest resident population of mule deer is the Sykes Mountain area which is adjacent to and north of the affected lands. The mammals in the area include the jackrabbit, desert cottontail, kangaroo rat, and mice. A variety of birds use the area as a temporary resting place and function as herbivores, insectivores, predators, and scavengers. The species which have been observed in the area include various songbirds, bald and golden eagles, and chukar partridges. Species of reptiles and amphibians are not numerous with the prairie rattler, hognose snake, and the eastern short-horned lizard being the most commonly observed. There are no known endangered wildlife species who inhabit the area.

9. Historical and Archeological Resources - There are no properties included in, or eligible for inclusion in, the National Register of Historic Places or National Registry of Natural Landmarks which will be directly or indirectly affected by the proposed mining related activities. This information was obtained as a result of the review of available related publications and a subsequent field survey of the area on April 11, 1977, by Robert K. Nickel, Archeologist, Midwest Archeological Center, National Park Service. Based upon available information, to include findings from the aforementioned field survey, it was concluded by Mr. Nickel that the area to be affected by the proposed operation should result in no adverse effect on any cultural resources (historical or archeological). Mr. Nickel's conclusions in this matter are contained in an April 29, 1977, memorandum to the Associate Regional Director, Planning and Resource Preservation, Rocky Mountain Region, NPS. A copy of this memorandum is enclosed and identified as "Exhibit D".

10. Socioeconomy - Information obtained in 1974 revealed that the population of the incorporated town of Lovell was 2,700 and that there were 10,800 individuals residing within Big Horn County, Wyoming. It is estimated that Lovell and Big Horn County will continue to experience a gradual population increase because of increased energy related activities in the area. The town of Lovell embraces 620 acres of which

approximately 50 acres are available for industrial development. The major industrial firms in Lovell include Great Western Sugar, Georgia Pacific, Wardell Construction, and American Colloid Company. The total revenues which were collected by the town of Lovell in 1975 were \$212,622. The revenues for Big Horn County for this period were \$3,727,580.

Lovell receives its potable water from the Shoshone River which is treated via a municipal system. Primary sewage treatment in Lovell is provided by a lagoon system. The town of Lovell has an elementary, junior high and high school with a combined enrollment of approximately 800 students. The North Big Horn Hospital, in Lovell, currently has a bed capacity of 30. There are two doctors, two clinics, and two dentists in Lovell. There are 966 housing units in Lovell of which 75 percent are owner-occupied. The vacancy rate approximates 10 percent.

Big Horn County provides numerous opportunities for outdoor recreation to include the Bighorn Canyon National Recreation Area, Big Horn National Forest, and the Yellowtail Wildlife Habitat. The area provides good hunting, fishing, boating, skiing, snowmobiling, picnicking, and back-packing experiences. The city parks and playgrounds have facilities for picnicking, baseball, and swimming.

Significant economic sectors within Big Horn County are agriculture, trade, services, and mineral resource extraction, the basic economic

sector being agriculture. The principal minerals which are produced within Big Horn County include petroleum, bentonite, natural gas, uranium, gypsum, lime, sand and gravel.

III. ENVIRONMENTAL IMPACTS

The following sections discuss anticipated environmental impacts associated with American Colloid Company's proposed plan of operations involving surface mining of a bentonite deposit on three unpatented mining claim locations within Bighorn Canyon NRA, Big Horn County, Wyoming.

1. Land Use - The implementation of surface mining activities as outlined in the proposed plan of operations will modify the present use of the affected lands within the Recreation Area. The mining activities as proposed would disturb a total of approximately 50 acres over a total three year period. The disturbances would be incremental with projected mining sequence advances of 1,600 feet-per-year. Reclamation of the disturbed areas would follow the mining advances. The surface support requirements would be limited to the use of the park administered Crooked Creek unsurfaced secondary road for ingress and egress and use of adjoining lands for temporary placement of overburden. The Crooked Creek road traverses American Colloid's mining claim interests as identified in the proposal and said road parallels the bentonite bed which would be exploited. The responsibility for the maintenance of this road during periods of mining operations would be performed by American Colloid in accordance with National Park Service standards for secondary roads. This cooperative maintenance agreement would be in lieu of a road use fee

as set forth within 36 C.F.R. Part 9.15(a)(1). The aforementioned 50-acre total area of disturbance would include the road right-of-way and the temporary overburden placement areas. The disturbed areas will be graded to conform to the contour of the area similar to that which existed prior to the initiation of operations with the replacement of natural topsoil necessary for vegetative restoration.

The proposed operation would result in a short-term adverse impact on park administered lands in the mining area and its immediate surroundings. The area receives limited public outdoor recreational use. A beneficial effect on land use may be attributed to knowledge gained through research associated with land reclamation.

2. Geologic - The reconstructed lands will conform to the contour of the area similar to that which existed prior to the initiation of the operation. Slope stability problems should be nonexistent. It is expected that some subsidence will occur in the replacement of overburden. In an effort to compensate for this settlement the operator will be required to overfill the excavated areas with overburden. The natural settlement of similar surface excavation in the area approximates 1 to 2 feet or about 3 percent. Erosion of overburden stockpiles from water and wind will occur. This impact is expected to be temporary in nature because of the reclamation precautions which will be required.

The reclamation phase will follow the mining sequence which will minimize the exposure and evapotranspiration.

3. Hydrologic - The proposed surface mining operation will not encounter subsurface waters and such operations will be staged in such a manner to minimize interference with the normal of surface water runoff. Small earthen dikes will be used to channel surface runoff away from the mining operation into existing natural drainages. The long-range impacts of surface mining on peak surface water flow are expected to be negative. Once the disturbed lands are reclaimed the peak flow rates should be similar to the area's current rates. The impact of water from surface excavations should be minimal since reclamation procedures will be implemented following the mining sequence. The post-mining erosion of the reclaimed lands should not significantly impact the water quality of the area.

4. Vegetation - There will be a temporary loss of vegetation on lands subjected to surface mining activities. It is estimated that this disturbance will approximate 50 acres in total and occur between 1978 and 1980. The initial disturbance would result from the removal and temporary stockpiling and/or spreading of topsoil. It is anticipated that the rate of the vegetation removal would approximate 1,600 feet-per-year along the strike of the bentonite bed as proposed for exploitation.

The average width of the vegetative cover which would be removed would approximate 30 feet. The proponent's reclamation plan specifies that all natural topsoil will be removed from the area of operation prior to the initiation of surface mining activities and that the topsoil will be redistributed on a previous disturbance which has been graded and contoured. The topsoil will be removed via a scraper and immediately redistributed on the graded contoured areas allowing for natural revegetation to occur. If natural revegetation does not reach pre-mining levels the operator will be required to supplement this process by broadcasting seeds of native species.

The quality of the vegetation on adjacent areas may be slightly modified as a result of the proposed operations. There may be damage to surrounding vegetation from surface water erosion and fugitive dust which may reduce the plant vigor.

The length of the impact of total vegetation loss would depend upon the success of reclamation. Loss of the native vegetation would be long, depending upon the rate and ability of the species to invade the area, and the extent to which the species were reintroduced. Sufficient information is not available to predict the amount of time required for native species invasion or the extent of lands unable to be revegetated.

5. Wildlife - The mining activity as proposed would result in a minimal loss of habitat for small animal species such as reptiles, amphibians, and arthropods. The larger and more mobile species such as deer, jackrabbits, and birds would be able to move onto adjacent lands. The displaced animals would be moving into an adjacent area that is currently supporting populations that are in balance with their habitat. It is unlikely that all of the animals would be displaced for the duration of the operation. Once the areas have been reclaimed it is anticipated that limited reestablishment of the animal population will occur. The impacts on wildlife related to increased noise level and vehicular movement in support of the operation could alter feeding and movement patterns for a variety of species.

6. Historical and Archeological Resources - As previously discussed in Section II (9) of this assessment, there are no properties included in, or eligible for inclusion in, the National Register of Historic Places or National Registry of Natural Landmarks which will be directly or indirectly affected by the proposed mining operation. This operation should result in no adverse effect on any cultural resources (historical or archeological).

7. Socioeconomic - The proposed mining operation would require about four individuals who would operate and maintain the heavy equipment and professional and managerial employees. This operation is not expected to generate new positions of employment and there would be no population

increase for the area as attributed to this proposed project. There should be no significant impact on the social environment of the immediate and surrounding area as a result of the implementation of the proposal. The production of bentonite by American Colloid from lands within the proposed operation will produce some impacts on the economy of Lovell and Big Horn County, Wyoming. These impacts will result primarily from the nature of the project and not from induced population growth. The removal and marketing of bentonite resources from the project area will result in incremental revenue increases for the community.

8. Other - The equipment used in support of the operation would produce gaseous emissions. These emissions would be regulated by ambient air quality standards. Another source of air emissions attributable to the project would be fugitive dust generated by heavy equipment in support of the mining operation and from wind erosion of disturbed areas. The dust generated by the operation is not expected to exceed state and Federal standards.

The noise levels during periods of proposed mining are expected to be high in the immediate area of operation; however, these levels should have minimal impact on human population centers because of the remoteness of the site. The noise generated by the operation will have an adverse impact on wildlife in the area; however, this impact is not considered to be as great as the physical habitat change.

A minimum amount of solid waste will be generated by activities staged in support of the project. These wastes will be removed by the operator to an approved offsite disposal area outside of the Recreation Area.

IV. MITIGATING MEASURES

This section presents measures which would lessen or minimize the impacts described in the previous section. Such measures may be required by law or regulation, while others would be incorporated as stipulations and/or conditions in a special use permit in support of an approved plan of operations in accordance with 36 C.F.R. Part 9.

The recently adopted National Park Service Comprehensive Regulations found at 36 C.F.R. Part 9 (Federal Register, Vol. 42, No. 17, Wednesday, January 26, 1977) apply to all activities and/or operations resulting from the exercise of valid existing mineral rights on mining claims within any unit of the National Park System. The purpose of the comprehensive regulations is to provide control over valid mining related activities associated with mining claim locations within park units to the extent as authorized within Section 2 of the Act of September 28, 1976, Public Law 94-429 (90 Stat. 1342, 16 U.S.C. 1901 et seq.).

Section 9.9(a) of the aforementioned Comprehensive Regulations contains the proviso that no mining related operations on valid mining claim locations shall be conducted within a park unit until a plan of operations has been submitted by the operator to the Superintendent of the affected unit and approved by the Regional Director. The proposed plan of operations contains, in part, the requirement that the operator

submit a mining reclamation plan demonstrating compliance with the requirements of Section 9.11. The conditions as contained in Section 9.11 which are applicable to American Colloid Company's plan of operations in support of the ongoing bentonite surface mining operations on mining claim locations within the Bighorn Canyon NRA are as follows:

(a) As contemporaneously as possible with the operations, but in no case later than six (6) months after completion of operations and within the time specified in an approved mining reclamation plan, unless a longer period is authorized in writing by the Regional Director, each operator shall initiate reclamation as follows:

(1) Not applicable.

(2) On any claim which was patented with surface use restrictions or is unpatented, each operator must take steps to restore natural conditions and processes, which steps shall include, but are not limited to:

(i) Removing all above ground structures, equipment and other manmade debris;

(ii) Providing for the prevention of surface subsidence;

(iii) Replacing overburden and spoil, wherever economically and technologically practicable;

(iv) Grading to reasonably conform the contour of the area of operations to a contour similar to that which existed prior to the initiation of operations, where such grading will not jeopardize reclamation; and

(v) Replacing the natural topsoil necessary for vegetative restoration; and

(vi) Reestablishing native vegetative communities.

(b) Reclamation under paragraph (a) (2), of this section is unacceptable unless it provides for the safe movement of native wildlife, the reestablishment of native vegetative communities, the normal flow of surface and reasonable flow of subsurface waters, the return of the area to a condition which does not jeopardize visitor safety or public use of the unit, and return of the area to a condition equivalent to its pristine beauty.

(c) Not applicable.

The proposed surface mining operations will alter the natural structure, fertility, and chemistry of soils resulting in unavoidable adverse effects on the reestablishment of soil organisms and vegetation. The disruption of original soil characteristics and stabilized plant communities is inevitable; however, many of the impacts on the area can be mitigated through the application and implementation of reclamation plans.

1. Reclamation - The purpose and goal of the mining reclamation plan is to restore all lands disturbed by mining related activities to productive conditions consistent with present uses of the area. Bentonite has and is currently being mined on lands in the vicinity of the project (outside of the Bighorn Canyon National Recreation Area); however, the land use of the subject area has been set aside for park purposes. The withdrawal of these lands for park purposes was subject to valid existing rights to include American Colloid's valid existing rights which are associated with the mining claim locations as enumerated within their proposed plan of operations.

The surface mining operations will disturb approximately 15 surface acres annually not to exceed an estimated total surface disturbance of approximately 50 acres during the period from 1978 through 1980. The natural topsoil will be removed from all areas to be affected by the mining operation and immediately redistributed on a previous disturbed

graded and contoured area allowing for natural revegetation to occur. The reclamation and excavation of overburden will take place concurrently with the exploitation of the bentonite deposit. The surface excavations, with the exception of the last cut, will be backfilled with overburden, graded, and contoured prior to placement of topsoil. Additional offsite overburden may be required to achieve pre-mining natural landforms as required in the reclamation plan. Such overburden will be secured by the operator from overburden stockpiled on previously disturbed lands lying adjacent to and outside of the Recreation Area. The operator will be required, as a condition in obtaining an approved plan of operations, to grade and contour all disturbed lands within the area of operations to include internal mining claim access roads, remaining overburden, and tailings piles. If natural revegetation does not reach pre-mining levels for mining related disturbed areas, the operator will supplement this process by broadcasting seeds of native species. Local expertise has been contacted by American Colloid and by the Superintendent, Bighorn Canyon National Recreation Area, for technical assistance in the inventory and evaluation of native vegetative communities. The U.S. Soil Conservation Service and the Big Horn County Agriculture Agent will be contacted for purposes of developing and reviewing the phases of the ongoing reclamation program.

American Colloid Company is currently operating under an approved State of Wyoming reclamation plan which covers their bentonite mining operations on lands within Big Horn County, Wyoming. A copy of this reclamation plan is attached and identified as "Exhibit E".

The mining operations will comply with applicable Federal, State of Wyoming, and Big Horn County laws, regulations, and standards for air and water quality and safety practices. Worker protection from noise will be provided by the operator in compliance with applicable provisions as required by the Mining Enforcement and Safety Administration.

The mining operation will be staged in such a manner as to minimize interference with the normal flow of surface runoff waters. Small earthen dikes, not to exceed 1 foot in height, will be placed ahead of the mining advances for purposes of diverting surface runoff waters and preventing said entry into excavations.

The erosion of disturbed soil by wind will be reduced by restricting vehicular travel across loose material and by the initiation of natural revegetation practices as soon as the overburden has been replaced in prior excavations. The fugitive dust on unsurfaced haulage roads will be controlled by the operator, if necessary, through the use of water trucks.

There are no known cultural resources on lands within the project area; however, if any cultural and/or scientific resources are encountered during the operation, such discoveries shall be allowed to remain intact in accordance with the applicable provisions of 36 C.F.R. Part 9.10 (e)(2) and (3).

Periodic field inspections will be performed by authorized National Park Service employees for purposes of monitoring the mining operation for compliance with conditions and/or stipulations as may be contained in an executed special use permit in support of an approved plan of operations.

V. ADVERSE IMPACTS WHICH CANNOT BE AVOIDED

This section presents the residual adverse impacts that would remain after the mitigating measures as previously discussed were implemented.

The adverse environmental effects which cannot be avoided include the eventual alteration of approximately 50 acres of land surface to include mining and marketing of the affected bentonite deposit. The reclamation of the surface mined areas will commence following each mining advance sequence. The topsoil for all disturbed areas will be removed by use of scrapers and redistributed on previously mined areas which have been backfilled, graded, and contoured. The immediate redistribution of the topsoil should encourage the natural succession of native vegetative species. The topographic features which remain following the completed mining and reclamation phases would essentially conform to existing conditions. The excavated areas would be overfilled with overburden to compensate for subsidence. Additional offsite overburden may be required to achieve pre-mining natural landforms as required in the reclamation plan. Such overburden will be secured by the operator from overburden stockpiled on previously disturbed lands lying adjacent to and outside of the Recreation Area.

The erosion of landforms by water and wind should be minimal because of mitigating measures to be implemented by the operator in the mining and reclamation phases.

Visibility in the vicinity of the area would be decreased during periods of mining operations due to fugitive dust and exhaust emissions from combustion-driven mining and mining support equipment. This degradation of air quality in the vicinity of the mining area is not expected to exceed ambient air quality standards and will cease upon completion of the 3 year project.

The noise level in the vicinity will be increased during periods of operation as a result of the use of vehicular mining and mining support equipment.

There will be a temporary alteration of terrestrial flora and fauna in the area due to the disruption of the natural habitat.

The impact on the area's mood-atmosphere values of isolation, solitude, and inspiration could not be completely mitigated. The relative value of these unavoidable adverse impacts would depend on the visual exposure of the affected site. The most severe impact to these values would be exposure of the operation from the park administered unsurfaced Crooked Creek road which provides visual access of the area.

VI. RELATIONSHIP BETWEEN SHORT-TERM USES AND LONG-TERM PRODUCTIVITY OF THE ENVIRONMENT

This section discusses the extent of long-term impairment or enhancement of resource values that could occur, given the short-term uses of the environment. Short-term refers to that period of time covering the proposed action. Long-term refers to that period in which both adverse and beneficial impacts would affect the environment.

The short-term use of the area would be for the production of bentonite from a single bed by surface mining methods. This use would involve the exploitation of a non-renewable mineral resource which would be permanently removed. The long-term productivity of bentonite is dependent on whether or not mining takes place in the long-term. If bentonite is mined in short-term, economic conditions may change which might enable recovery of some bentonite which remains behind.

Surface water courses in the mining area would be subjected to short-term impacts during periods of operation and until reclamation stabilizes the lands. The air pollution resulting from mining and mining related activities would be short-term if land surfaces are reclaimed to an equivalent of pre-mining conditions.

The long-term productivity of the soils on the disturbed areas may decline. The short-term use of the environment for bentonite production

would result in a temporary alteration of plant and animal species diversity on the area due to the disruption of natural habitat. The long-term productivity of the reclaimed land after mining will be below current production. The loss or modification of wildlife habitat acreage will cause a change in the short-term use of the area.

The short-term mining use of the area would restrict maximum park purpose use of the affected lands during the actual 3 year mining period. This period of lost use would constitute a small percentage of time compared to the indefinite period of use that would occur after completion of mining operations. In a monetary sense, the short-term mining use would add significantly more income to the national economy than recreational use. The mitigating measures, as previously discussed in Section IV of this assessment, would reduce adverse aesthetic impacts during the periods of operation; however, unavoidable impacts would be most pronounced during the short-term. The short-term use of the environment for the development of the bentonite deposit may contribute to a long-term degradation of the quality of life, as traffic volumes, air quality, and aesthetic values decrease.

The impacts associated with the transportation network as previously identified in Section I of this assessment would be unavoidable. The proposed Federal action would result in greater vehicular traffic volume on the Crooked Creek road and on Wyoming State Highway 37 which could result in traffic accident increases.

VII. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The irreversible and irretrievable commitment of resources by the proposed action would be the production for consumption of approximately 45,000 tons of bentonite.

Operations as proposed would result in limited air quality degradation which would be reversible upon completion of mining and reclamation phases. The disturbed lands should return to a self-sustaining ecosystem based upon the proposed reclamation practices and considering existing climatic and soil conditions. The loss of vegetative production during the mining and reclamation phases of the operation would represent an irreversible commitment. An irretrievable loss of wildlife resources may be encountered from the destruction of habitat during the life of the project. The majority of these wildlife losses will be reversible if the species and habitat are not impacted to the point where their ability to reproduce is seriously impaired.

A commitment to mine the bentonite deposit would represent an irreversible commitment of aesthetic resources during the period of operation. The action would also result in irreversible commitments of park administered recreational resources during this period. Unavoidable adverse impacts upon existing recreation resources would occur during the periods of operation; however, these resources would be retrievable if reclamation is accomplished in a satisfactory manner.

VIII. ALTERNATIVES TO THE PROPOSED ACTION

This section identifies and discusses the alternatives to the proposed action that were considered by the National Park Service.

The alternatives considered are:

1. Alternative Based on No Action
2. Alternative Based on Rejection Action
3. Alternative Based on Boundary Modification Action

1. No Action - This alternative could result in the unauthorized use of the unsurfaced Crooked Creek park administered road by American Colloid in support of bentonite mining operations on their unpatented mining claim locations within the Bighorn Canyon National Recreation Area. The use of this road and the actual surface mining operations on park administered lands embraced by the claims would be accomplished without the benefits and/or protection of park resources which would be derived if such uses were authorized under a special use permit system in support of an approved plan of operations in accordance with the applicable provisions as found at 36 C.F.R. Part 9.

2. Rejection Action - This action would deny American Colloid the right to enter, exploit, and remove bentonite from valid existing unpatented mining claims within the Recreation Area. American Colloid

has been extracting bentonite by surface mining methods from claims within the area since 1965. The enabling legislation for Bighorn Canyon National Recreation Area (Public Law 89-664, October 15, 1966) withdrew the area from further location, entry, and patent under the Mining Law of 1872; however, such withdrawal was subject to valid existing rights, to include those rights associated with valid existing unpatented mining claim locations. The mining claims that contain valuable bentonite deposits and which are the subject of American Colloid's proposed plan of operations were located prior to the enabling legislation for Bighorn Canyon National Recreation Area.

3. Boundary Modification Action - This alternative if implemented would amend the current exterior boundary for Bighorn Canyon National Recreation Area to delete the 480 acres which are embraced by American Colloid's three unpatented mining claim locations as included in their proposed plan of operations. The enabling legislation for Bighorn Canyon contains a provision whereby the Secretary of the Interior may make adjustments in the boundary of the area by publication of an amended description in the Federal Register. This action would resolve or eliminate the mining claim location conflict; however, it would also delete Recreation Area lands which in the opinion of Congress contained scenic, scientific, and historical features which contribute to public

enjoyment. The proposed mining operation would be a short-term use of the area and such lands would be reclaimed in a manner which would conform to a contour similar to that which existed prior to the initiation of operations. The short-term mining use would restrict maximum park purpose use during the 3 year mining period. This period of lost use would constitute a small percentage of time compared to the indefinite period of park purpose use that would occur after completion of mining and reclamation operations.

IX. CONSULTATION AND CORRINATION

The following agencies and organizations were contacted in regard to the preparation of the assessment:

Department of Agriculture - Soil Conservation Service

Department of the Interior - National Park Service, Midwest
Archeological Center

Wyoming Game and Fish

Big Horn County Planning Commission

Chamber of Commerce, Lovell, Wyoming

American Colloid Company

**Title 36—Parks, Forests, and Public
Property**

**CHAPTER 1—NATIONAL PARK SERVICE,
DEPARTMENT OF THE INTERIOR**

PART 9—MINING AND MINING CLAIMS

Comprehensive Regulations

On November 11, 1976, the Department of the Interior published in the *FEDERAL REGISTER* (41 FR 49862) Interim Regulations and Proposed Comprehensive Regulations. The Proposed Comprehensive Regulations were made available for public review and comment for a period of thirty (30) days following publication in the *FEDERAL REGISTER* and ending December 13, 1976.

A total of 14 written replies with recommendations or comments were received during the comment period, with about one-half being received from mining companies, which as a group stated that the Proposed Comprehensive Regulations went beyond the intent of Congress in the enactment of the Act of September 28, 1976 (Pub. L. 94-429, 90 Stat. 1342, 16 U.S.C. 1901 et seq.) and jeopardized the economic viability of mining operations within the National Park System. On the other hand, two conservation groups stated that these regulations were not, in their present form, strong enough to protect the resources and environments of the units of the National Park System affected by this statute. The additional comments suggested editorial, grammatical, or in some instances, substantive changes in the meaning of specific sections and paragraphs of the proposed regulations.

An attempt was made to utilize as many of the comments and recommendations as was appropriate in carrying out the provisions of section 2 of the Act of September 28, 1976, 16 U.S.C. 1901 et seq., in conjunction with the other statutory National Park Service responsibilities. A number of comments pertained to the preamble of the proposal. Since this has no particular standing with respect to the regulations themselves, no attempt was made to address those issues, with the one exception found in the following

paragraph. The preamble serves only to discuss and/or explain the regulations.

It was noted that a misstatement of section 4 of the Act appeared in the preamble of the proposed regulations. The proper interpretation of this section is that, where there has been no significant disturbance to the surface of one of the enumerated units for purposes of mineral extraction, an operation may expand an existing excavation only if the Secretary finds that such expansion is necessary to make feasible continued production therefrom at an annual rate not to exceed the average annual production level of that operation for the calendar years 1973, 1974, and 1975.

Likewise, a number of comments pertained to the Interim Regulations. Because these regulations were not open for comment and review and will be superseded upon publication of the Final Comprehensive Regulations, it was determined unnecessary to respond. The purpose of the Interim Regulations was to maintain essentially the status quo while more comprehensive regulations could be prepared following passage of the Act of September 28, 1976 (16 U.S.C. 1901 et seq.).

One major area of concern in the comments which were received was that the standards for approval of a plan of operations and for reclamation lacked clarity, particularly with regard to the concepts of "nuisance" and "injury." Those sections have been altered in response to these comments. However, since these doctrines all have foundation in jurisprudence, it has been determined that they are appropriate terms and concepts.

Comments were also received concerning compliance with the National Environmental Policy Act of 1969 (42 U.S.C. 4331 et seq.) (NEPA). The National Park Service has prepared an environmental assessment of the proposed regulations. Based on this assessment, it has been determined that the proposed action is not a major Federal action that would have a significant impact on the human environment, and therefore, that an environmental impact statement is not required prior to promulgation of the final regulations. Furthermore, an analysis of the environmental impacts associated with execution of each plan of operations submitted by an operator for approval will be made, and in the event that approval of the plan would constitute a major Federal action resulting in a significant impact on the human environment then an environmental impact statement as required by section 102(2)(C) would be prepared prior to approving or denying the plan of operations.

In addition to complying with the general provisions of NEPA, we have increased the potential for public participation by eliminating requirements for submission of certain proprietary documents, and by making available for public review copies of all plans of operations submitted by operators proposing mining activities in units of the National Park System.

A majority of comments related to the surface disturbance moratorium. It has been determined by the National Park

Service that the terms and conditions concerning surface disturbance were set by Congress with the passage of the Act of September 28, 1976, (16 U.S.C. 1901 et seq.) and little or no discretion is vested with the Secretary to allow additional surface disturbance, except as expressly authorized by the Act.

The section on the use of water in support of mining operations has been clarified to reflect that the Department's concern is for uses of water from sources within the units of the National Park System. The modification in this provision was made to reflect more accurately the limited extent of the Secretary's authority to dispose of water reserved to the United States.

Certain changes in § 9.5 of these regulations were made in response to comments concerning recorded proofs of labor and other recording requirements. The alterations made should also be considered as amendments to the requirements of the Notice of October 20, 1976, 41 FR 46357.

The regulations also make clear that the filing of notice with the National Park Service satisfies the requirement for the initial filing of notice of a mining claim under section 314 of the Federal Land Policy and Management Act of 1976, 90 Stat. 2743, 43 U.S.C. 1701, for mining claims within the National Park System. Thus, only one initial notice must be filed for unpatented claims in units of the National Park System and that is the notice prescribed by these regulations, which is a restatement of the October 20, 1976 Notice requirements with the amendments noted above. However, the subsequent annual notice requirements of section 314 are applicable and claimants must file the annual notice prescribed by section 314 and the implementing regulations.

The regulations also provide that the surface use provisions of 43 CFR, Subpart 3826 and 36 CFR 7.26 and paragraphs (a) and (b) of § 7.44 are superseded by the regulations of this Part. However, the regulations in 43 CFR 3826.2-5 and 3826.2-6, 3826.4-1(g) and 3826.4-1(h), and 3826.5-3 and 3826.5-4 will remain applicable to those claimants who wish to take their claim to patent. A technical amendment will also be made to delete the provisions of 36 CFR 7.26 and 7.44 (a) and (b) which have only interim application to existing permits for 120 days after publication of the final regulations unless extended by the Superintendent. The amendments will be made by separate publication.

Modification was made to § 9.11 Reclamation Requirements to more adequately reflect the tenet that a holder of a claim patented prior to the establishment of the areas as a unit of the National Park System shall not undertake activities on those lands so as to constitute a nuisance to the federally owned lands or adversely affect those lands. Claims not taken to patent are subject to a stricter reclamation standard.

Two new definitions have been added. Designated Roads, § 9.2(n), was added to clarify the meaning of existing and open public roads that might be used

with respect to mining operations only outside a unit. Only those roads so designated shall be used for this purpose. In § 9.4(c) lands contiguous to the existing excavation is defined to further amplify the public's understanding of the surface disturbance moratorium.

Concerning a prohibition on future surface mining activities within units of the National Park System not covered by the moratorium, it has been determined that with respect to unpatented claims or claims patented with surface use restrictions, surface mining will be permitted in the future only where such activity will not jeopardize the pristine beauty of the unit, or adversely affect the ecological or cultural resources thereof. As a caveat, it should be clearly noted that section 4 of the Act places a moratorium on surface mining activities in Death Valley and Organ Pipe Cactus National Monuments and Mount McKinley National Park, notwithstanding when the location was made. All units of the National Park System upon establishment are closed to further mineral entry and location unless Congress expressly provides otherwise. With respect to the six units of the System which were open to mineral entry and location (now closed under section 3 of Pub. L. 94-429), entry and location was subject to such surface use regulations and restrictions as the Department of the Interior might adopt. Those laws read together with Pub. L. 94-429 now provide a basis for restricting new surface mining operations in units of the National Park System. This restriction will not preclude underground or subsurface mining operations, even if a portal or entry tunnel is required to be developed within the unit.

Additional clarification was made to § 9.10 Plan of Operations Approval in order to develop standards for approval of three classes of claims based on the status of the claims and whether extraction operations had begun. As such, no plan of operations shall be approved: (1) For existing or new operations that would constitute a nuisance or injury Federal land if the claim was patented without surface use restrictions; or (2) where the surface of the claim, either unpatented or patented with surface use restrictions, was not significantly disturbed and the operations would preclude management or injure the resources of a unit; or (3) where the surface of the claim, either unpatented or patented subject to surface use restrictions, had been significantly disturbed and the operations would constitute a nuisance or injure Federal lands. In the latter class of claims the provisions of § 9.4 of this Part will apply to other units of the System besides Death Valley and Organ Pipe Cactus National Monuments and Mount McKinley National Park.

These regulations shall take effect on January 26, 1977, because it has been determined that the immediate application of these regulations is necessary to preserve units of the National Park System in their pristine character to fulfill the Congressional mandate that such units be managed to preserve and protect them for present as well as future geo-

erations. Furthermore, the continued application of the Interim Regulations would not be in the public interest, because those regulations are only designed to maintain the status quo, rather than comprehensively implement the policy and provisions of Pub. L. 94-429 (16 U.S.C. 1901 et seq.). Therefore the regulations contained in this Part shall be effective on January 26, 1977.

The purpose of these regulations is to provide control over mining activities within areas of the National Park System to the extent authorized by section 2 of Pub. L. 94-429, but not to constitute a "taking" of any compensable property interest of a mining claimant.

The National Park Service has determined that this document does not contain a major proposal requiring preparation of an Economic Impact Statement under Executive Orders 11821 and 11949 and OMB Circular A-107.

Title 36 of the Code of Federal Regulations is hereby amended by the addition of a new Part 9 as follows:

- Sec.
- 9.1 Purpose and scope.
- 9.2 Definitions.
- 9.3 Access permits.
- 9.4 Surface disturbance moratorium.
- 9.5 Recordation.
- 9.6 Transfer of interest.
- 9.7 Assessment work.
- 9.8 Use of water.
- 9.9 Plan of operations.
- 9.10 Plan of operations approval.
- 9.11 Reclamation requirements.
- 9.12 Supplementation or revision of plans of operations.
- 9.13 Performance bond.
- 9.14 Appeals.
- 9.15 Use of roads by commercial vehicles.
- 9.16 Penalties.
- 9.17 Public inspection of documents.
- 9.18 Surface use and patent restrictions.

AUTHORITY: Mining Law of 1872 (R.S. 2319; 30 U.S.C. 21 et seq.); Act of August 25, 1916 (39 Stat. 535, as amended (16 U.S.C. 1 et seq.)); Act of September 28, 1976; 90 Stat. 1842 (16 U.S.C. 1901 et seq.).

§ 9.1 Purpose and scope.

These regulations will control all activities resulting from the exercise of valid existing mineral rights on claims within any unit of the National Park System in order to insure that such activities are conducted in a manner consistent with the purposes for which the National Park System and each unit thereof were created, to prevent or minimize damage to the environment or other resource values, and to insure that the pristine beauty of the units are preserved for the benefit of present and future generations. These procedures apply to all operations conducted on claims in any unit of the National Park System.

§ 9.2 Definitions.

The terms used in this Part shall have the following meanings:

(a) **Secretary.** The Secretary of the Interior.

(b) **Operations.** All functions, work and activities in connection with mining on claims, including: prospecting, exploration, surveying, development and extraction; dumping mine wastes and

stockpiling ore; transport or processing of mineral commodities; reclamation of the surface disturbed by such activities; and all activities and uses reasonably incident thereto, including construction or use of roads or other means of access on National Park System lands, regardless of whether such activities and uses take place on Federal, State, or private lands.

(c) **Operator.** A person conducting or proposing to conduct operations.

(d) **Person.** Any individual, partnership, corporation, association, or other entity.

(e) **Superintendent.** The Superintendent, or his designee, of the unit of the National Park System containing claims subject to these regulations.

(f) **Surface mining.** Mining in surface excavations, including placer mining, mining in open glory-holes or mining pits, mining and removing ore from open cuts, and the removal of capping or overburden to uncover ore.

(g) **The Act.** The Act of September 28, 1976, 90 Stat. 1842, 16 U.S.C. 1901 et seq.

(h) **Commercial Vehicle.** Any motorized equipment used for transporting the product being mined or excavated, or for transporting heavy equipment used in mining operations.

(i) **Unit.** Any National Park System area containing a claim or claims subject to these regulations.

(j) **Claimant.** The owner, or his legal representative, of any claim lying within the boundaries of a unit.

(k) **Claim.** Any valid, patented or unpatented mining claim, mill site, or tunnel site.

(l) **Regional Director.** Regional Director for the National Park Service region in which the given unit is located.

(m) **Significantly disturbed for purposes of mineral extraction.** Land will be considered significantly disturbed for purposes of mineral extraction when there has been surface extraction of commercial amounts of a mineral, or significant amounts of overburden or spoil have been displaced due to the extraction of commercial amounts of a mineral. Extraction of commercial amounts is defined as the removal of ore from a claim in the normal course of business of extraction for processing or marketing. It does not encompass the removal of ore for purposes of testing, experimentation, examination or preproduction activities.

(n) **Designated roads.** Those existing roads determined by the Superintendent in accordance with 36 CFR 2.6(b) to be open for the use of the public or an operator.

(o) **Production.** Number of tons of a marketable mineral extracted from a given operation.

§ 9.3 Access permits.

(a) All special use or other permits dealing with access to and from claims within any unit are automatically revoked 120 days after January 26, 1977. All operators seeking new or continued access to and from a claim after that date must file for new access permits in accordance with these regulations, unless access to a mining claim is by pack animal or foot. (See § 9.7 for restrictions on assessment work and § 9.9(d) and § 9.10 (g) for extensions of permits.)

(b) Prior to the issuance of a permit for access to any claim or claims, the operator must file with the Superintendent a plan of operations pursuant to § 9.9. No permit shall be issued until the plan of operations has been approved in accordance with § 9.10.

(c) No access to claims outside a unit will be permitted across unit lands unless such access is by foot, pack animal, or designated road. Persons using such roads for access to such claims must comply with the terms of § 9.15 where applicable.

§ 9.4 Surface disturbance moratorium.

(a) For a period of four years after September 28, 1976, no operator of a claim located within the boundaries of Death Valley National Monument, Mount McKinley National Park, or Organ Pipe Cactus National Monument (see also claims subject to § 9.10(a)(3)) shall disturb for purposes of mineral exploration or development the surface of any lands which had not been significantly disturbed for purposes of mineral extraction prior to February 29, 1976, except as provided in this section. However, where a claim is subject, for a period of four years after September 28, 1976, to this section solely by virtue of § 9.10(a)(3), the date before which there must have been significant disturbance for purposes of mineral extraction is January 26, 1977.

(b) An operator of a claim in one of these units seeking to enlarge an existing excavation or otherwise disturb the surface for purposes of mineral exploration or development shall file with the Superintendent an application stating his need to disturb additional surface in order to maintain production at an annual rate not to exceed an average annual production level of said operations for the three calendar years 1973, 1974, and 1975. Accompanying the application shall be a plan of operations which complies with § 9.9 and verified copies of production records for the years 1973, 1974, and 1975.

(c) If the Regional Director finds that the submitted plan of operations complies with § 9.9, that enlargement of the existing excavation of an individual mining operation is necessary in order to make feasible continued production therefrom at an annual rate not to exceed the average annual production level of said operation for the three calendar years 1973, 1974, and 1975, and that the plan of operations meets the applicable standard of approval of § 9.10 (a)(1), he shall issue a permit allowing the disturbance of the surface of the lands contiguous to the existing excavation to the minimum extent necessary to effect such enlargement. For the purpose of this section "lands contiguous to the existing excavation" shall include land which actually adjoins the existing excavation or which could logically become an extension of the excavation; for example, drilling to determine the extent and direction to which the existing ex-

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cavation should be extended may be permitted at a site which does not actually adjoin the excavating.

(d) The appropriate reclamation standard to be applied will be determined by the nature of the claim. (See § 9.11(a)(1) and § 9.11(a)(2).)

(e) Operations conducted under a permit pursuant to this section shall be subject to all the limitations imposed by this Part.

(f) For the purposes of this section, each separate mining excavation shall be treated as an individual mining operation.

§ 9.5 Recordation.

(a) Any claimant of an unpatented mining claim in a unit shall, within 12 months after September 28, 1978, record the claim in the Office of the Superintendent of the unit. Actual receipt by the appropriate Superintendent on or before September 28, 1977, is required. Patented claims do not have to be recorded pursuant to this section.

(b) This recordation shall include, but is not limited to, the following instruments and information:

(1) A certified copy of each location notice should provide: Name of claim; locator(s); type (placer, lode, mill site, or tunnel site); mineral(s) for which claim was located; date of location, date of amendments or relocations, if any; recording date, book, page, county and State, where recorded; and a legal description of the lands included in the mining claim(s). If the location notice does not provide all of the foregoing information, it shall, to the extent possible, be attached in a supplement to the location notice. If the lands are surveyed or unsurveyed, the legal description shall be by:

(i) A recitation of the appropriate location of all or any part of the claim or site within a 160 acre quadrant (quarter section) of a section or sections, if more than one is involved. In addition, there must be furnished the township, range, meridian and State obtained from an official survey plat or other U.S. Government map showing either the surveyed or protracted U.S. Government grid, whichever is applicable.

(ii) A map with a scale of not less than 1/2 inch to a mile (1:125,000) showing the survey or protraction grids on which there will be depicted the location of the claim or site. Contiguous claims or sites and groups of claims or sites in the same general area may be depicted on this single map so long as the individual claims or sites are clearly identified.

(2) Current claimant's(s) name(s) and address(es).

(3) Statement that annual labor was performed since September 1, 1970.

(c) Pursuant to section 8 of the Act, any unpatented claim not so recorded pursuant to this section shall be conclusively presumed to be abandoned and shall be void. Such recordation will not render valid any unpatented claim which was not valid on September 28, 1976, the effective date of the Act, or which becomes invalid thereafter.

(d) A claimant who initially records under this section or under the notice of October 20, 1976 (41 FR 48357) is in full compliance with all applicable provisions of law, including the recordation provisions of section 314 of the Federal Land Policy and Management Act of 1976, 90 Stat. 2743, 43 U.S.C. 1701. Thus, a claimant does not have to file this initial notice with the Bureau of Land Management. Copies of all material received pursuant to this section or the notice of October 20, 1976, will be provided by the Regional Director to the Bureau of Land Management. However, subsequent annual filings of notice must be made under section 314 and implementing regulations with the Superintendent who will provide copies to the Bureau of Land Management. These subsequent filings with the Superintendent will satisfy the requirements of section 314 for mining claims in the National Park System.

§ 9.6 Transfer of interest.

(a) Whenever a claimant who has recorded his unpatented claim(s) with the Superintendent pursuant to the requirements of § 9.5 sells, assigns, bequeaths, or otherwise conveys all or any part of his interest in his claim(s), the Superintendent shall be notified within 60 days after completion of the transfer of: The name of the claim(s) involved; the name and legal address of the person to whom an interest has been sold, assigned, bequeathed, or otherwise transferred; and a description of the interest conveyed or received. Copies of the transfer documents will be provided by the Superintendent to the Bureau of Land Management. Failure to so notify the Superintendent shall render any existing access permit void.

(b) If the transfer occurs within the period of 12 months from the effective date of the Act and the prior owner has not recorded the unpatented claim with the Superintendent in accordance with these regulations, the holder by transfer shall have the remainder of the 12-month period to record the unpatented claim. Failure to record shall be governed by the provisions of § 9.5(c).

§ 9.7 Assessment work.

(a) An access permit and approved plan of operations must be obtained by a claimant prior to the performance of any assessment work required by Revised Statute 2324 (30 U.S.C. 28) on a claim in a unit.

(b) Permits will be issued in accordance with the following:

(1) In units subject to the surface disturbance moratorium of section 4 of the Act and § 9.4, no access permits will be granted for the purpose of performing assessment work.

(2) It has been determined that in all other units the Secretary will not challenge the validity of any unpatented claim within a unit for the failure to do assessment work during or after the assessment year commencing September 1, 1978. The Secretary expressly reserves, however, the existing right to contest claims for failure to do such work in the

past. No access permits will be granted solely for the purpose of performing assessment work in these units except where claimant establishes the legal necessity for such permit in order to perform work necessary to take the claim to patent, and has filed and had approved a plan of operations as provided by these regulations. (For exploratory or development type work, see § 9.9.)

§ 9.8 Use of water.

(a) No operator may use for operations any water from a point of diversion which is within the boundaries of any unit unless authorized in writing by the Regional Director. The Regional Director shall not approve a plan of operations requiring the use of water from such source unless the right to the water has been perfected under applicable State law, has a priority date prior to the establishment of the unit and there has been a continued beneficial use of that water right.

(b) If an operator whose operations will require the use of water from a point of diversion within the boundaries of the unit can show that he has a perfected State water right junior to the reserved water right of the United States and can demonstrate that the exercise of that State water right will not diminish the Federal right, which is that amount of water necessary for the purposes for which the unit was established, he will be authorized to use water from that source for operations. If he has complied with all other provisions of these regulations.

§ 9.9 Plan of operations.

(a) No operations shall be conducted within any unit until a plan of operations has been submitted by the operator to the Superintendent and approved by the Regional Director. All operations within any unit shall be conducted in accordance with an approved plan of operations.

(b) The proposed plan of operations shall relate, as appropriate, to the proposed operations (e.g. exploratory, developmental or extraction work) and shall include but is not limited to:

(1) The names and legal addresses of the following persons: The operator, the claimant if he is not the operator, and any lessee, assignee, or designee thereof;

(2) A map or maps showing the proposed area of operations; existing roads or proposed routes to and from the area of operations; areas of proposed mining; location and description of surface facilities, including dumps;

(3) A description of the mode of transport and major equipment to be used in the operations;

(4) An estimated timetable for each phase of operations and the completion of operations;

(5) The nature and extent of the known deposit to be mined and a description of the proposed operations;

(6) A mining reclamation plan demonstrating compliance with the requirements of § 9.11;

(7) All steps taken to comply with any applicable Federal, State, and local law

or regulations, including the applicable regulations in 36 CFR, Chapter I:

(8) In units subject to the surface disturbance moratorium of section 4 of the Act and § 9.4, proof satisfactory to the Regional Director that the surface of the area on which the operation is to occur was significantly disturbed for purposes of mineral extraction prior to February 26, 1976, or if the area was not so disturbed, proof, including production records for the years 1973, 1974, and 1975, that new disturbance is necessary to maintain an average annual rate of production not to exceed that of the years 1973, 1974, and 1975;

(9) An environmental report analyzing the following:

- (i) The environment to be affected by the operations;
- (ii) The impacts of the operations on the unit's environment;
- (iii) Steps to be taken to insure minimum surface disturbance;
- (iv) Methods for disposal of all rubbish and other solid and liquid wastes;
- (v) Alternative methods of extraction and the environmental effects of each;
- (vi) The impacts of the steps to be taken to comply with the reclamation plan; and

(10) Any additional information that is required to enable the Regional Director to effectively analyze the effects that the operations will have on the preservation, management and public use of the unit, and to make a decision regarding approval or disapproval of the plan of operations and issuance or denial of the access permit.

(c) In all cases the plan must consider and discuss the unit's Statement for Management and other planning documents, and activities to control, minimize or prevent damage to the recreational, biological, scientific, cultural, and scenic resources of the unit.

(d) Any person conducting operations on January 26, 1977, shall be required to submit a plan of operations to the Superintendent. If otherwise authorized, operations in progress on January 26, 1977, may continue for 120 days from that date without having an approved plan. After 120 days from January 26, 1977, no such operations shall be conducted without a plan approved by the Regional Director, unless access is extended under the existing permit by the Regional Director. (See § 9.10(g).)

§ 9.10 Plan of operations approval.

(a) The Regional Director shall not approve a plan of operations:

(1) For existing or new operations if the claim was patented without surface use restriction, where the operations would constitute a nuisance in the vicinity of the operation, or would significantly injure or adversely affect federally owned lands; or

(2) For operations which had not significantly disturbed the surface of the claim for purposes of mineral extraction prior to January 26, 1977, if the claim has not been patented, or if the patent is subject to surface use restrictions, where the operations would preclude

management for the purpose of preserving the pristine beauty of the unit for present and future generations, or would adversely affect or significantly injure the ecological or cultural resources of the unit. No new surface mining will be permitted under this paragraph except under this standard; or

(3) For operations which had significantly disturbed the surface of the claim for purposes of mineral extraction prior to January 26, 1977, if the claim has not been taken to patent, or the patent is subject to surface use restrictions, where the operations would constitute a nuisance in the vicinity of the operation, or would significantly injure or adversely affect federally owned lands. Provided, however, operations under this paragraph shall be limited by the provisions of § 9.4, notwithstanding the limitation of that section's applicability to the three enumerated units;

(4) Where the claim, regardless of when it was located, has not been patented and the operations would result in the destruction of surface resources, such as trees, vegetation, soil, water resources, or loss of wildlife habitat, not required for development of the claim; or

(5) Where the operations would constitute a violation of the surface disturbance moratorium of section 4 of the Act; or

(6) Where the plan does not satisfy each of the requirements of § 9.9.

(b) Within 60 days of the receipt of a proposed plan of operations, the Regional Director shall make an environmental analysis of such plan, and

(1) Notify the operator that he has approved or rejected the plan of operations; or

(2) Notify the operator of any changes in, or additions to the plan of operations which are necessary before such plan will be approved; or

(3) Notify the operator that the plan is being reviewed, but that more time, not to exceed an additional 30 days, is necessary to complete such review, and setting forth the reasons why additional time is required. Provided, however, that days during which the area of operations is inaccessible for such reasons as inclement weather, natural catastrophe, etc., for inspection shall not be included when computing either this time period, or that in subsection (b) above; or

(4) Notify the operator that the plan cannot be considered for approval until forty-five (45) days after a final environmental impact statement, if required, has been prepared and filed with the Council on Environmental Quality.

(c) Failure of the Regional Director to act on a proposed plan of operations and related permits within the time period specified shall constitute an approval of the plan and related permits for a period of three (3) years.

(d) The Regional Director's analysis may include:

- (1) An examination of the environmental report filed by the operator;
- (2) An evaluation of measures and timing required to comply with reclamation requirements;

(3) An evaluation of necessary conditions and amount of the bond or security deposit to cover estimated reclamation costs;

(4) An evaluation of the need for any additional requirements in access permit; and

(5) A determination regarding the impact of this operation and the cumulative impacts of all operations on the management of the unit.

(e) Prior to approval of a plan of operations, the Regional Director shall determine whether any properties included in, or eligible for inclusion in, the National Register of Historic Places or National Registry of Natural Landmarks may be affected by the proposed activity. This determination will require the acquisition of adequate information, such as that resulting from field surveys, in order to properly determine the presence of and significance of cultural resources within the area to be affected by mining operations. Whenever National Register properties or properties eligible for inclusion in the National Register would be affected by mining operations, the Regional Director shall comply with section 106 of the National Historic Preservation Act of 1966 as implemented by 36 CFR, Part 800.

(1) The operator shall not injure, alter, destroy, or collect any site, structure, object, or other value of historical, archeological, or other cultural scientific importance. Failure to comply with this requirement shall constitute a violation of the Antiquities Act (16 U.S.C. 431-433) (see 43 CFR, Part 3).

(2) The operator shall immediately bring to the attention of the Superintendent any cultural and/or scientific resource that might be altered or destroyed by his operation and shall leave such discovery intact until told to proceed by the Superintendent. The Superintendent will evaluate the discoveries brought to his attention, and will determine within ten (10) working days what action will be taken with respect to such discoveries.

(3) The responsibility for, and cost of investigations and salvage of such values that are discovered during operations will be that of the operator, where the claim is unpatented.

(f) The operator shall protect all survey monuments, witness corners, reference monuments and bearing trees against destruction, obliteration, or damage from mining operations, and shall be responsible for the reestablishment, restoration, or referencing of any monuments, corners and bearing trees which are destroyed, obliterated, or damaged by such mining operations.

(g) Pending approval of the plan of operations, the Regional Director may approve, on a temporary basis, the continuation of existing operations if necessary to enable timely compliance with these regulations and with Federal, State, or local laws, or if a halt to existing operations would result in an unreasonable economic burden or injury to the operator. Such work must be conducted in accordance with all applicable laws, and in a manner prescribed by the

Regional Director and designed to minimize or prevent significant environmental effects.

(h) Approval of each plan of operations is expressly conditioned upon the Superintendent having such reasonable access to the claim as is necessary to properly monitor and insure compliance with the plan of operations.

§ 9.11 Reclamation requirements.

(a) As contemporaneously as possible with the operations, but in no case later than six (6) months after completion of operations and within the time specified in an approved mining reclamation plan, unless a longer period is authorized in writing by the Regional Director, each operator shall initiate reclamation as follows:

(1) Where the claim was patented without surface use restriction, the operator shall at a minimum:

(i) Remove all above ground structures, equipment, and other manmade debris used for operations; and

(ii) Rehabilitate the area of operations to a condition which would not constitute a nuisance; or would not adversely affect, injure or damage, federally owned lands.

(2) On any claim which was patented with surface use restrictions or is unpatented, each operator must take steps to restore natural conditions and processes, which steps shall include, but are not limited to:

(i) Removing all above ground structures, equipment and other manmade debris;

(ii) Providing for the prevention of surface subsidence;

(iii) Replacing overburden and spoil, wherever economically and technologically practicable;

(iv) Grading to reasonably conform the contour of the area of operations to a contour similar to that which existed prior to the initiation of operations, where such grading will not jeopardize reclamation; and

(v) Replacing the natural topsoil necessary for vegetative restoration; and

(vi) Reestablishing native vegetative communities.

(b) Reclamation under paragraph (a) (2), of this section is unacceptable unless it provides for the safe movement of native wildlife, the reestablishment of native vegetative communities, the normal flow of surface and reasonable flow of subsurface waters, the return of the area to a condition which does not jeopardize visitor safety or public use of the unit, and return of the area to a condition equivalent to its pristine beauty.

(c) Reclamation required by this section shall apply to operations authorized under this Part, except that all terms relating to reclamation of previously issued special use permits revoked by this part for operations to be continued under an approved plan of operations shall be incorporated into the operator's reclamation plans.

§ 9.12 Supplementation or revision of plan of operations.

(a) An approved plan of operations may require reasonable revision or sup-

plementation to adjust the plan to changed conditions or to correct oversights.

(1) The Regional Director may initiate an alteration by notifying the operator in writing of the proposed alteration and the justification therefor. The operator shall have thirty (30) days to comment on the proposal.

(2) The operator may initiate an alteration by submitting to the Superintendent a written statement of the proposal, and the justification therefor.

(b) Any proposal initiated under paragraph (a) of this section by either party shall be reviewed and decided by the Regional Director in accordance with § 9.10. Where the operator believes he has been aggrieved by a decision under this paragraph, he may appeal the decision pursuant to § 9.14.

§ 9.13 Performance bond.

(a) Upon approval of a plan of operations the operator shall be required to file a suitable performance bond with satisfactory surety, payable to the Secretary or his designee. The bond shall be conditioned upon faithful compliance with applicable regulations, the terms and conditions of the permit, lease, or contract, and the plan of operations as approved, revised or supplemented.

(b) In lieu of a performance bond, an operator may elect to deposit with the Secretary, or his designee, cash or negotiable bonds of the U.S. Government. The cash deposit or the market value of such securities shall be at least equal to the required sum of the bond.

(c) The bond or security deposit shall be in an amount equal to the estimated cost of completion of reclamation requirements either in their entirety or in a phased schedule for their completion as set forth in the approved, supplemented or revised plan of operations.

(d) In the event that an approved plan of operations is revised or supplemented in accordance with § 9.12, the Superintendent may adjust the amount of the bond or security deposit to conform to the plan of operations as modified.

(e) The operator's and his surety's responsibility and liability under the bond or security deposit shall continue until such time as the Superintendent determines that successful reclamation of the area of operations has occurred.

(f) When all required reclamation requirements of an approved plan of operations are completed, the Superintendent shall notify the operator that performance under the bond or security deposit has been completed and that it is released.

§ 9.14 Appeals.

(a) Any operator aggrieved by a decision of the Regional Director in connection with the regulations in this Part may file with the Regional Director a written statement setting forth in detail the respects in which the decision is contrary to, or in conflict with, the facts, the law, these regulations, or is otherwise in error. No such appeal will be considered unless it is filed with the Regional Director within thirty (30) days after the

date of notification to the operator of the action or decision complained of. Upon receipt of such written statement from the aggrieved operator, the Regional Director shall promptly review the action or decision and either reverse his original decision or prepare his own statement, explaining that decision and the reasons therefor, and forward the statement and record on appeal to the Director, National Park Service, for review and decision. Copies of the Regional Director's statement shall be furnished to the aggrieved operator, who shall have 20 days within which to file exceptions to the Regional Director's decision. The Department has the discretion to initiate a hearing before the Office of Hearing and Appeals in a particular case. (See 43 CFR 4.700.)

(b) The official files of the National Park Service on the proposed plan of operations and any testimony and documents submitted by the parties on which the decision of the Regional Director was based shall constitute the record on appeal. The Regional Director shall maintain the record under separate cover and shall certify that it is the record on which his decision was based at the time it is forwarded to the Director of the National Park Service. The National Park Service shall make the record available to the operator upon request.

(c) If the Director considers the record inadequate to support the decision on appeal, he may provide for the production of such additional evidence or information as may be appropriate, or may remand the case to the Regional Director, with appropriate instructions for further action.

(d) On or before the expiration of forty-five (45) days after his receipt of the exceptions to the Regional Director's decision, the Director shall make his decision in writing. Provided, however, that if more than forty-five (45) days are required for a decision after the exceptions are received, the Director shall notify the parties to the appeal and specify the reason(s) for delay. The decision of the Director shall include (1) a statement of facts, (2) conclusions, and (3) reasons upon which the conclusions are based. The decision of the Director shall be the final administrative action of the agency on a proposed plan of operations.

(e) A decision of the Regional Director from which an appeal is taken shall not be automatically stayed by the filing of a statement of appeal. A request for a stay may accompany the statement of appeal or may be directed to the Director. The Director shall promptly rule on requests for stays. A decision of the Director on request for a stay shall constitute a final administrative decision.

§ 9.15 Use of roads by commercial vehicles.

(a) After January 26, 1977, no commercial vehicle shall use roads administered by the National Park Service without first being registered with the Superintendent.

(1) A fee shall be charged for such registration based upon a posted fee schedule, computed on a ton-miles basis.

The fee schedule posted shall be subject to change upon 60 days notice.

(2) An adjustment of the fee may be made at the discretion of the Superintendent where a cooperative maintenance agreement is entered into with the operator.

(b) No commercial vehicle which exceeds roadway load limits specified by the Superintendent shall be used on roads administered by the National Park Service unless authorized by written permit from the Superintendent.

(c) Should a commercial vehicle used in operations cause damage to roads or other facilities of the National Park Service, the operator shall be liable for all damages so caused.

§ 9.16 Penalties.

Undertaking any operation within the boundaries of any unit in violation of this Part shall be deemed a trespass against the United States, and the penalty provisions of 36 CFR Part 1 are inapplicable to this Part.

§ 9.17 Public inspection of documents.

(a) Upon receipt of the plan of operations the Superintendent shall publish a notice in the *FEDERAL REGISTER* advising the availability of the plan for public review.

(b) Any document required to be submitted pursuant to the regulations in this Part shall be made available for public inspection at the Office of Superintendent during normal business hours. The availability of such records for inspection shall be governed by the rules and regulations found at 43 CFR Part 2.

§ 9.18 Surface use and patent restrictions.

(a) The regulations in 43 CFR 3826.2-5 and 3826.2-6, 3826.4-1(g) and 3826.4-1(h), and 3826.5-3 and 3826.5-4 will apply to any claimant who wishes to take his claim to patent in Olympic National Park, Glacier Bay National Monument or Organ Pipe Cactus National Monument.

(b) The additional provisions of 43 CFR, Subpart 3826 and 36 CFR 7.26 and 7.44(a) and (b) will continue to apply to existing permits until 120 days after January 26, 1977, unless extended by the Regional Director. (See § 9.10(g).)

Dated: January 19, 1977.

NATHANIEL P. REED,
Assistant Secretary of the Interior.

[FR Doc. 77-2393 Filed 1-25-77; 8:45 am]



Public Law 94-429
94th Congress, S. 2371
September 28, 1976

An Act

To provide for the regulation of mining activity within, and to repeal the application of mining laws to, areas of the National Park System, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Congress finds and declares that—

(a) the level of technology of mineral exploration and development has changed radically in recent years and continued application of the mining laws of the United States to those areas of the National Park System to which it applies, conflicts with the purposes for which they were established; and

(b) all mining operations in areas of the National Park System should be conducted so as to prevent or minimize damage to the environment and other resource values, and, in certain areas of the National Park System, surface disturbance from mineral development should be temporarily halted while Congress determines whether or not to acquire any valid mineral rights which may exist in such areas.

SEC. 2. In order to preserve for the benefit of present and future generations the pristine beauty of areas of the National Park System, and to further the purposes of the Act of August 25, 1916, as amended (16 U.S.C. 1) and the individual organic Acts for the various areas of the National Park System, all activities resulting from the exercise of valid existing mineral rights on patented or unpatented mining claims within any area of the National Park System shall be subject to such regulations prescribed by the Secretary of the Interior as he deems necessary or desirable for the preservation and management of those areas.

SEC. 3. Subject to valid existing rights, the following Acts are amended or repealed as indicated in order to close these areas to entry and location under the Mining Law of 1872:

(a) the first proviso of section 3 of the Act of May 22, 1902 (32 Stat. 203; 16 U.S.C. 123), relating to Crater Lake National Park, is amended by deleting the words "and to the location of mining claims and the working of same";

(b) section 4 of the Act of February 26, 1917 (39 Stat. 938; 16 U.S.C. 350), relating to Mount McKinley National Park, is hereby repealed;

(c) section 2 of the Act of January 26, 1931 (46 Stat. 1043; 16 U.S.C. 350a), relating to Mount McKinley National Park, is hereby repealed;

(d) the Act of June 13, 1933 (48 Stat. 139; 16 U.S.C. 447), relating to Death Valley National Monument, is hereby repealed;

(e) the Act of June 22, 1936 (49 Stat. 1817), relating to Glacier Bay National Monument, is hereby repealed;

(f) section 3 of the Act of August 18, 1941 (55 Stat. 631; 16 U.S.C. 450y-2), relating to Coronado National Memorial is amended by replacing the semicolon in subsection (a) with a period and deleting the prefix "(a)", the word "and" immediately preceding subsection (b), and by repealing subsection (b); and

National
Park System.
Mining activ-
ity, regulation.
16 USC 1901.

16 USC 1902.

Repeals.

Repeal.

(g) The Act of October 27, 1941 (55 Stat. 745; 16 U.S.C. 450z), relating to Organ Pipe Cactus National Monument, is hereby repealed.

Certain mining operations, temporary cessation.
16 USC 1903.

SEC. 4. For a period of four years after the date of enactment of this Act, holders of valid mineral rights located within the boundaries of Death Valley National Monument, Mount McKinley National Park, and Organ Pipe Cactus National Monument shall not disturb for purposes of mineral exploration or development the surface of any lands which had not been significantly disturbed for purposes of mineral extraction prior to February 29, 1976: *Provided*, That if the Secretary finds that enlargement of the existing excavation of an individual mining operation is necessary in order to make feasible continued production therefrom at an annual rate not to exceed the average annual production level of said operation for the three calendar years 1973, 1974, and 1975, the surface of lands contiguous to the existing excavation may be disturbed to the minimum extent necessary to effect such enlargement, subject to such regulations as may be issued by the Secretary under section 2 of this Act. For purposes of this section, each separate mining excavation shall be treated as an individual mining operation.

16 USC 1904.

SEC. 5. The requirements for annual expenditures on mining claims imposed by Revised Statute 2324 (30 U.S.C. 28) shall not apply to any claim subject to section 4 of this Act during the time such claim is subject to such section.

Certain unpatented mining claims, recommendations for acquisition.
16 USC 1905.

Study. Recommendations, submission to Congress.

SEC. 6. Within two years after the date of enactment of this Act, the Secretary of the Interior shall determine the validity of any unpatented mining claims within Glacier Bay National Monument, Death Valley and Organ Pipe Cactus National Monuments and Mount McKinley National Park and submit to the Congress recommendations as to whether any valid or patented claims should be acquired by the United States, including the estimated acquisition costs of such claims, and a discussion of the environmental consequences of the extraction of minerals from these lands. The Secretary shall also study and within two years submit to Congress his recommendations for modifications or adjustments to the existing boundaries of the Death Valley National Monument and the Glacier Bay National Monument to exclude significant mineral deposits and to decrease possible acquisition costs.

Recommendations, submission to Congress.
16 USC 1906.

SEC. 7. Within four years after the date of enactment of this Act, the Secretary of the Interior shall determine the validity of any unpatented mining claims within Crater Lake National Park, Coronado National Memorial, and Glacier Bay National Monument, and submit to the Congress recommendations as to whether any valid or patented claims should be acquired by the United States.

Mining claims, recordation.
16 USC 1907.

SEC. 8. All mining claims under the Mining Law of 1872, as amended and supplemented (30 U.S.C. chapters 2, 12A, and 16 and sections 161 and 162) which lie within the boundaries of units of the National Park System shall be recorded with the Secretary of the Interior within one year after the effective date of this Act. Any mining claim not so recorded shall be conclusively presumed to be abandoned and shall be void. Such recordation will not render valid any claim which was not valid on the effective date of this Act, or which becomes invalid thereafter. Within thirty days following the date of enactment of this Act, the Secretary shall publish notice of the requirement for such recordation in the Federal Register. He shall also publish similar notices in newspapers of general circulation in the areas adjacent to those units of the National Park System listed in section 3 of this Act.

Notice, publication in Federal Register.

Landmarks.
16 USC 1908.

SEC. 9. (a) Whenever the Secretary of the Interior finds on his own motion or upon being notified in writing by an appropriate scientific,

historical, or archeological authority, that a district, site, building, structure, or object which has been found to be nationally significant in illustrating natural history or the history of the United States and which has been designated as a natural or historical landmark may be irreparably lost or destroyed in whole or in part by any surface mining activity, including exploration for or removal or production of minerals or materials, he shall notify the person conducting such activity and submit a report thereon, including the basis for his finding that such activity may cause irreparable loss or destruction of a national landmark, to the Advisory Council on Historic Preservation, with a request for advice of the Council as to alternative measures that may be taken by the United States to mitigate or abate such activity.

Report to
Advisory
Council on
Historic
Preservation.

(b) The Council shall within two years from the effective date of this section submit to the Congress a report on the actual or potential effects of surface mining activities on natural and historical landmarks and shall include with its report its recommendations for such legislation as may be necessary and appropriate to protect natural and historical landmarks from activities, including surface mining activities, which may have an adverse impact on such landmarks.

Report to
Congress.

Legislative
recommendations.

Sec. 10. If any provision of this Act is declared to be invalid, such declaration shall not affect the validity of any other provision hereof.

Severability.
16 USC 1909.

Sec. 11. The holder of any patented or unpatented mining claim subject to this Act who believes he has suffered a loss by operation of this Act, or by orders or regulations issued pursuant thereto, may bring an action in a United States district court to recover just compensation, which shall be awarded if the court finds that such loss constitutes a taking of property compensable under the Constitution. The court shall expedite its consideration of any claim brought pursuant to this section.

Civil actions.
16 USC 1910.

Sec. 12. Nothing in this Act shall be construed to limit the authority of the Secretary to acquire lands and interests in lands within the boundaries of any unit of the National Park System. The Secretary is to give prompt and careful consideration to any offer made by the owner of any valid right or other property within the areas named in section 6 of this Act to sell such right or other property, if such owner notifies the Secretary that the continued ownership of such right or property is causing, or would result in, undue hardship.

16 USC 1911.

SUNSHINE IN GOVERNMENT

Sec. 13. (a) Each officer or employee of the Secretary of the Interior who—

Interior
Department
employees,
financial
disclosure.
16 USC 1912.

(1) performs any function or duty under this Act, or any Acts amended by this Act concerning the regulation of mining within the National Park System; and

(2) has any known financial interest (A) in any person subject to such Acts, or (B) in any person who holds a mining claim within the boundaries of units of the National Park System; shall, beginning on February 1, 1977, annually file with the Secretary a written statement concerning all such interests held by such officer or employee during the preceding calendar year. Such statement shall be available to the public.

(b) The Secretary shall—

(1) act within ninety days after the date of enactment of this Act—

(A) to define the term "known financial interest" for purposes of subsection (a) of this section; and

Report to Congress. Possible exemptions. Violation, penalty.	(B) to establish the methods by which the requirement to file written statements specified in subsection (a) of this section will be monitored and enforced, including appropriate provisions for the filing by such officers and employees of such statements and the review by the Secretary of such statements; and (2) report to the Congress on June 1 of each calendar year with respect to such disclosures and the actions taken in regard thereto during the preceding calendar year. (c) In the rules prescribed in subsection (b) of this section, the Secretary may identify specific positions within such agency which are of a nonregulatory or nonpolicymaking nature and provide that officers or employees occupying such positions shall be exempt from the requirements of this section. (d) Any officer or employee who is subject to, and knowingly violates, this section or any regulation issued thereunder, shall be fined not more than \$2,500 or imprisoned not more than one year, or both.
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Approved September 28, 1976.

LEGISLATIVE HISTORY:

HOUSE REPORT No. 94-1428 (Comm. on Interior and Insular Affairs).
 SENATE REPORT No. 94-567 (Comm. on Interior and Insular Affairs).
 CONGRESSIONAL RECORD, Vol. 122 (1976):

Feb. 3, 4, considered and passed Senate.

Sept. 14, considered and passed House, amended.

Sept. 17, Senate concurred in House amendments.





United States Department of the Interior

12/1 11

NATIONAL PARK SERVICE
Midwest Archeological Center
Federal Building, Room 474
100 Centennial Mall North
Lincoln, Nebraska 68508

IN REPLY REFER TO:

H2215-BICA

April 29, 1977

Memorandum

To: Associate Regional Director, Planning and Resource ~~Planning~~
Rocky Mountain Region

From: Acting Chief, Midwest Archeological Center

Subject: Archeological clearance on American Colloid Company bentonite
strip mine at Bighorn Canyon National Recreation Area

During the week of April 11-15 while monitoring stabilization on historic structures ML Ranch, I conducted an archeological survey of a bentonite strip mine to be operated by the American Colloid Company. The area covered in the archeological survey is reflected in the attached figure and consists of portions of sections 13 and 14, Township 57 North, Range 57 West located in Bighorn County, Wyoming. South District Manager, Richard Houghfame, accompanied me to the mine area on April 11. The limits of the mine were clearly marked by the American Colloid Company with wooden stakes. A mine similar to the one being proposed for the survey area is presently in operation to the southeast. Inspection of this operating mine indicated the extent of the area which will be subjected to disturbance during the mining operation. An area approximately a mile in length and slightly under a quarter mile in width was surveyed covering all of the area proposed for the strip mine. No cultural materials (archeological or historical) were located during the survey. Provided that the mining operation is not substantially expanded beyond that marked on the ground, there should be no adverse effect on any cultural resource.

Robert K. Nickel
Robert K. Nickel

Exhibit D

UNITED STATES GOVERNMENT

Memorandum

TO : Superintendent, Bighorn Canyon National
Recreation Area

DATE: April 28, 1977

FROM : Staff Archeologist, Midwest Archeological Center

SUBJECT: Negative statement on archeological survey of bentonite mine, Bighorn Canyon
National Recreation Area.

Attached for your use are two photocopies of a map outlining the archeological survey area conducted in the vicinity of the American Colloid Company's bentonite strip mine. The legend on the map contains all of the essential information regarding the location of the area. No archeological or historical remains were located within the stippled survey area. The survey area should be sufficiently large to provide clearance not only on the mine but the associated backdirt piles and equipment parking areas. Copies of this map will accompany a more detailed statement on the survey being prepared for Associate Regional Director Strait. Unless the proposed mining operation is substantially expanded from that indicated on the ground, there should be no adverse effect on any cultural resource.


Robert K. Nickel

Enclosure



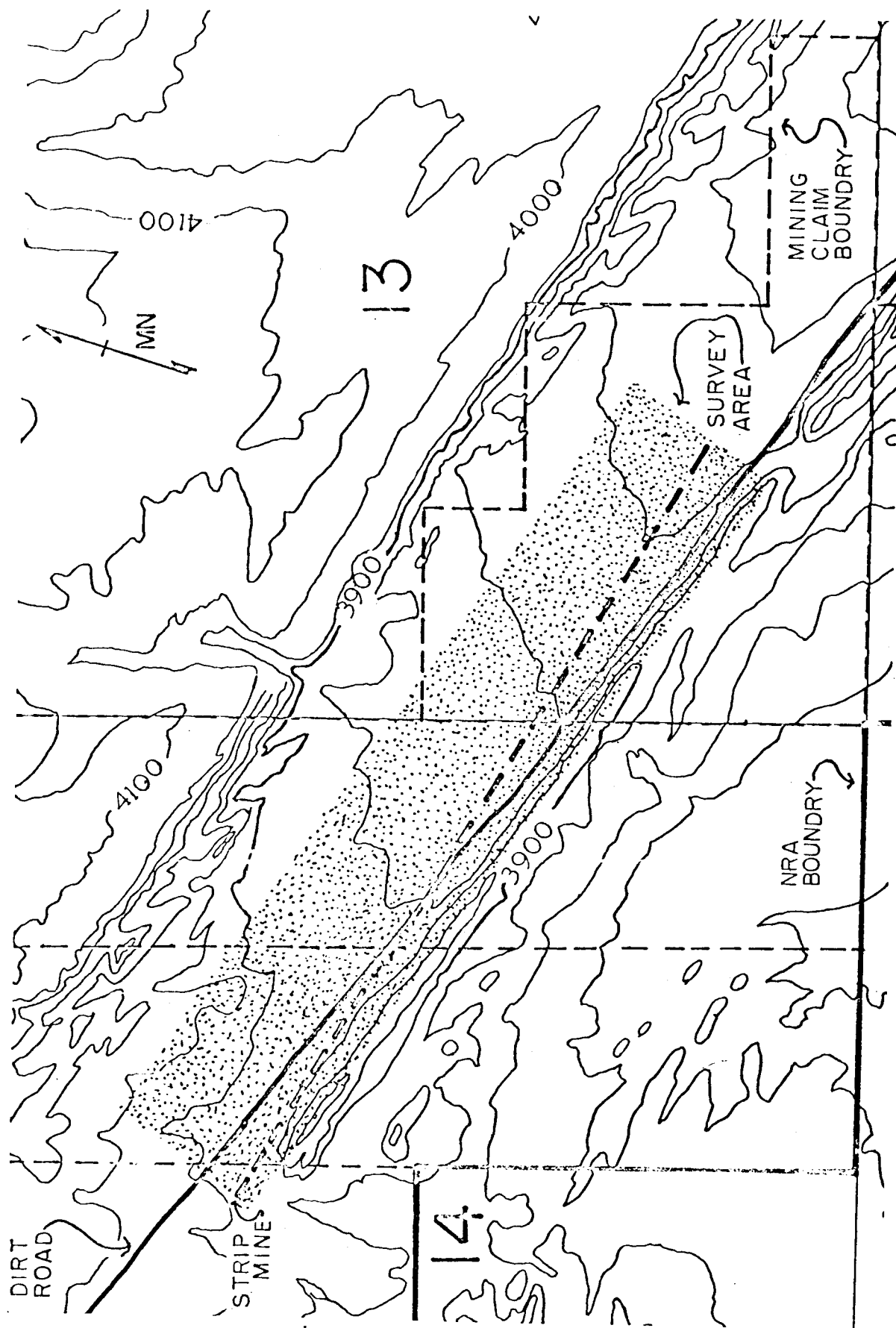


Fig. 1. Archeological survey of Bentonite Mine area, (Sec. 13 and 14, T 57 N, R 95 W) BICA NRA. Map reference U.S.G.S., 7.5 minute series (topographic). Sykes Spring Quadrangle, Wyoming - Big Horn co. 1964 ed.

AMERICAN COLLOID COMPANY
MINING AND RECLAMATION PLAN
PERMIT NO. 322-C
AMENDMENT NO. 2
BIG HORN COUNTY, WYOMING

(b) RECLAMATION PLAN

(i) Present and proposed land use

The present land uses of the permit area and adjacent areas are limited to winter grazing for domestic livestock, wildlife habitat and mining.

Most disturbed areas will be reclaimed to its previous use of limited winter grazing for both domestic livestock and wildlife. Where conditions are suitable, some areas will be reclaimed as livestock and wildlife watering sites, waterfowl habitat, fish ponds, sedimentation or erosion control structures or other beneficial use if it is necessary or desirable.

(ii) Topography after reclamation

All overburden and pit banks will be graded to a rolling topography similar to existing topography before mining and will conform with adjacent undisturbed areas. All slopes will be left in a stable condition and will be traversable by livestock. Natural drainages will be maintained as nearly as possible and all potential boggy conditions will be eliminated.

To accomplish a surface topography after reclamation as described above, each clay deposit will be evaluated and a mining plan developed to minimize interference with natural drainage and allow the final cut to drain if possible. Overburden from each succeeding pit will be used to backfill the previous pit and shaping will take place as the overburden is deposited. Unless developed as a water retention site the final pit will be shaped and graded to maintain natural drainage and all potential boggy conditions will be eliminated.

(iii) Existing vegetation and revegetation

The areas which will be disturbed by mining range from barren clay and shale out crops with little or no vegetation to upland areas which are generally described as short grass or mid grass rangeland. The results of the vegetation studies conducted on the areas covered by this amendment are included in Appendix D.

We will follow the recommendations of the Lovell Soil Conservation Service to determine our seeding mixture, as per the regulations. We plan on planting experimental plots on various soil types with species recommended by the Soil Conservation Service and others. The results of these plots will help determine the species that stand the best chance of success on mined areas and will form the basis for our seeding recommendations for future areas.

All seeding will be done with a drill on the contour unless conditions are such that a drill cannot be used. In areas where a drill cannot be used, the seed will be broadcast and harrowed or dragged on the contour. All seeding will be done between October 15 and May 15th with late fall the preferred planting time.

No fertilizers or other soil treatments are planned at this time. However if any such treatments are considered, recommendations of the appropriate State or Federal agencies will be sought.

If an area is to be reclaimed for some beneficial use other than grazing land, each site will be evaluated individually and the recommendations of the Soil Conservation Service or other appropriate agency will be sought and a revegetation plan developed for the site.

(iv) Disposal of Buildings and structures

Any buildings or structures, road culverts and cattle guards which may be erected in the permit area will be removed when operations cease and the site will be reclaimed according to the provisions of this plan.

(v) Reclamation maps

1" to 400' scaled reproductions of United States Geological Survey topographic maps are enclosed for the areas covered by this Amendment.

(vi) Reclamation Costs

When done in conjunction with mining operations the cost of grading is estimated at \$200.00 per acre and the cost of topsoiling at \$150.00 per acre. Other costs are approximately \$20.00 per acre for seed, \$21.00 per acre for seeding operations and \$9.00 per acre for miscellaneous costs. The total cost is approximately \$350.00 per acre.

(vii) Contour Maps

The contours of the reclaimed affected area will be approximately the same as they were before mining and are shown on the reclamation maps.

(viii) Salvaging and Replacement of Topsoil

All soil materials which are suitable for revegetation will be removed from all affected area including pits, spoil areas, diversion structures and impoundments, haul roads or other disturbed areas prior to the commencement of mining operations. If there is surface material in the affected area which is not suitable for revegetation, this material will be removed and buried so as not to interfere with revegetation and subsoil material from the disturbed area or soil materials from adjacent areas will be used for reclamation. See chart on next page.

As soil materials are salvaged from a new disturbance, they will be redistributed on a previous disturbance which has been graded. However, some soil materials must necessarily be stockpiled for future use and all precautions will be taken to safeguard these stockpiles from loss due to wind or water erosion. If the stockpile of soil is to be left more than one year and natural revegetation does not take place, a temporary cover of grasses will be planted on the soil stockpile and it will be marked as being topsoil.

(ix) Control of Toxic Materials

All bentonite from stray bentonite seams and bentonite cleanings will be deposited with other overburden and covered with non-toxic overburden and then with salvaged soil materials to the extent they are available.

In final cuts or areas that are to be developed as water retention sites, the mineral exposure will be covered with non-toxic overburden. This will eliminate boggy conditions which may

LOCATION	SOIL TYPE	AVERAGE DEPTH OF RECOVERY	REMARKS
4-57-95	371	6 inches	only soil material available
12-56-95	71	8 inches	
	315	24 inches	
	390	unsuitable	will use material from soil types 71 and 315 instead
22-58-96	103	6 inches	this is the only soil material available - we will try to recover as much as possible from revegetation
23,26-58-96	390	8 inches	only soil material available in the area - will be used to obtain vegetation comparable to what is there now.
30-57-94	363	12 inches	only material available
	363	unsuitable	only a small area - will use
	intrusion		material from 363 area

be hazardous to livestock and prevent pollution of surface or sub-surface water.

No acid forming or other toxic materials are encountered or created in the mining process.

(x) Instruments of consent from the surface owners are included as Appendix F.

(xi) General Operating Procedures

Full consideration will be given to the surface owners rights and we will work closely with the surface owner or operator in conducting our mining operation so as to interfere as little as possible with his operations.

Existing haul roads will be used to the fullest extent possible and any new roads that are developed, or any significantly improved existing roads, will have the road structure completely obliterated, and will be recontoured to the approximate original contours, topsoiled and seeded. All newly constructed roads will be within the permit boundary.

Mining plans for each clay deposit will include provisions for safe slopes on pit banks and overburden piles and control of drainage to eliminate potential boggy conditions.

Any hazardous conditions which may develop during the course of our mining operations will be eliminated or fenced to protect human or animal life.

All metal, refuse, petroleum based waste or other toxic materials will be removed from the premises or buried with overburden so as not to inhibit revegetation, cause water pollution, create a public nuisance or a fire, health or safety hazard.

(xii) Control and diversion of surface water

Each clay deposit will be evaluated and a mining plan developed which will minimize the interference with natural drainage. Diversion dams and ditches will be used where necessary to divert natural drainage around active pits or help prevent water pollution, erosion and sedimentation. Dams or other devices to control and/or treat sedimentation and water pollution will be developed as necessary.

(xiii) Reclamation practices to control erosion, siltation and water pollution

Our reclamation plan includes several provisions which will effectively control erosion of mined lands and siltation or water pollution of nearby streams. All bentonite cleanings and exposed bentonite seams will be covered with overburden before grading. Overburden piles will be shaped and graded as they are deposited and all slopes will be left in a stable condition and will not exceed 3:1. Topsoiling will normally take place immediately after grading, with the topsoil spread on the contour, and seeding, also on the contour, will normally be done during the first appropriate season after topsoiling in completed areas. This program will reclaim the land in segments and re-establish vegetation as quickly as possible after an area is disturbed.

(xiv) Water

No water will be used in mining or reclamation operations.

General

By the location and geologic character of the formations to be mined, the area is unlikely to contain any archaeological or historic artifacts. If any significant finds are made, they will be given appropriate protection and state authorities will be notified.

AMERICAN COLLOID COMPANY

RECLAMATION PLAN

PERMIT NO. 10

BIG HORN COUNTY, WYOMING

(b) RECLAMATION PLAN

(i) Present and proposed land use

The present land uses of the permit area and adjacent areas are limited to winter grazing for domestic livestock, wildlife habitat and mining.

Most disturbed areas will be reclaimed to its previous use of limited winter grazing for both domestic livestock and wildlife. Where conditions are suitable, some areas will be reclaimed as livestock and wildlife watering sites, waterfowl habitat, fish ponds, sedimentation or erosion control structures or other beneficial use if it is necessary or desirable.

(ii) Topography after reclamation

All overburden and pit banks will be graded to a rolling topography similar to existing topography before mining and will conform with adjacent undisturbed areas. All slopes will be left in a stable condition and will be traversable by livestock. Natural drainages will be maintained as nearly as possible and all potential boggy conditions will be eliminated.

To accomplish a surface topography after reclamation as

described above, each clay deposit will be evaluated and a mining plan developed to minimize interference with natural drainage and allow the final cut to drain if possible. Overburden from each succeeding pit will be used to backfill the previous pit and shaping will take place as the overburden is deposited. Unless developed as a water retention site the final pit will be shaped and graded to maintain natural drainage and all potential boggy conditions will be eliminated.

(iii) Existing vegetation and revegetation

The areas which will be disturbed by mining range from barren clay and shale outcrops with little or no vegetation to upland areas which are generally described as short grass or mid grass rangeland. Major grass species are western wheatgrass, thick spike wheat grass and Indian rice grass. Some shrubs and forbs such as sagebrush, 4 wing salt bush, Garnder salt bush and several species of cactus are also present in the mining areas. These include Russian olive and willow

All areas which are to be reclaimed for livestock grazing or wildlife habitat will be planted with a mixture of native grasses or crested wheatgrass. Depending on seed availability and the site location, the species to be used and the rates at which they will be planted will be according to the recommendations of Soil Conservation Service, Lovell, Wyoming. See appendix I.

All seeding will be done with a drill on the contour unless

surface conditions are such that a drill cannot be used. In areas where a drill cannot be used, the seed will be broadcast and harrowed or dragged on the contour. All seeding will be done between October 15 and May 15th with late fall the preferred planting time.

No fertilizers or other soil treatments are planned at this time. However if any such treatments are considered, recommendations of the appropriate State or Federal agencies will be sought.

If an area is to be reclaimed for some beneficial use other than grazing land, each site will be evaluated individually and the recommendations of the Soil Conservation Service or other appropriate agency will be sought and a revegetation plan developed for the site.

If more appropriate species or seeding methods are developed they will be incorporated into the revegetation plan.

(iv) Disposal of Buildings and structures

Any buildings or structures, road culverts and cattle guards which may be erected in the permit area will be removed when operations cease and the site will be reclaimed according to the provisions of this plan.

(v) Reclamation Maps

A. 1"=400' scaled reproductions of United States Geological Survey topographic maps as required by § 35-502.24, - (a), ix Wyoming L.Q.A. 1973 will be forwarded to your office when completed.

B. Reproductions of U.S.G.S. topographic Maps as required by § 35-502.24, - (a), viii of the Wyoming L.Q.A. 1973 delineating the permit area and American Colloid Company's Control number for each section quarter is enclosed.

C. Attached as Appendix G is a map showing a typical cross section of the mining area. Final gradient will conform to the surrounding area.

(vi) Reclamation Costs

The cost of grading is estimated at \$200.00 per acre when done in conjunction with mining operations. Other costs are approximately \$20.00 per acre for seed, \$21.00 per acre for seeding operations, and \$9.00 an acre for miscellaneous costs. The Total cost is approximately \$250.00 per acre.

(vii) Contour Maps

The contours of the reclaimed affected area will be approximately the same as they were before mining and are shown on the reclamation maps.

(viii) Salvaging and Replacement of Topsoil

All soil materials which are suitable for revegetation will be removed from all affected area including pits, spoil areas, diversion structures and impoundments, haul roads or other disturbed areas prior to the commencement of mining operation. If there is surface material in the affected area which is not suitable for revegetation, this material will be removed and buried so as not

to interfere with revegetation. Subsoil material from the disturbed area or soil materials from adjacent areas will be used for reclamation.

As soil materials are salvaged from a new disturbance, they will be redistributed on a previous disturbance which has been graded. However, some soil materials must necessarily be stockpiled for future use and all precautions will be taken to safeguard these stockpiles from loss due to wind or water erosion. If the stockpile of soil is to be left more than one year and natural revegetation does not take place, a temporary cover of grasses will be planted on the soil stockpile and marked as being topsoil.

(ix) Control of Toxic Materials

All bentonite from Stray bentonite seams and bentonite cleanings will be deposited with other overburden and covered with non-toxic overburden and then with salvaged soil materials to the extent they are available.

In final cuts or areas that are to be developed as water retention sites, the mineral exposure will be covered with non-toxic overburden.

This will eliminate boggy conditions which may be hazardous to livestock and prevent pollution of surface or sub-surface water. No acid forming or other toxic materials are encountered or created in the mining process.

(x) General Operating Procedures

Full consideration will be given to the surface owners rights and we will work closely with the surface owner or operator in conducting our mining operation so as to interfere as little as possible with his operations. Existing haul roads will be used to the fullest extent possible and any new roads that are developed will be reclaimed when they are abandoned.

Mining plans for each clay deposit will include provisions for safe slopes on pit banks and overburden piles and control of drainage to eliminate potential boggy conditions.

Any hazardous conditions which may develop during the course of our mining operations will be eliminated or fenced to protect human or animal life.

All metal, refuse, petroleum based waste or other toxic materials will be removed from the premises or buried with overburden so as not to inhibit revegetation, cause water pollution, create a public nuisance or a fire, health or safety hazard.

(xi) Control and diversion of surface water

Each clay deposit will be evaluated and a mining plan developed which will minimize the interference with natural drainage. Diversion dams and ditches will be used where necessary to divert natural drainage around active pits to help prevent water pollution, erosion and sedimentation. Dams or other devices to control and/or treat sedimentation and water pollution will be developed as necessary.

(xii) Reclamation practices to control erosion, siltation and water pollution

Our reclamation plan includes several provisions which will effectively control erosion of mined lands and siltation or water pollution of nearby streams. All bentonite cleanings and exposed bentonite seams will be covered with overburden before grading. Overburden piles will be shaped and graded as they are deposited and all slopes will be left in a stable condition. Top soiling will normally take place immediately after grading and seeding will normally be done the first appropriate season after top-soiling in completed areas. This program will reclaim the land in segments and re-establish vegetation as quickly as possible after an area is disturbed.

General

By the location and geologic character of the formations to be mined, the area is unlikely to contain any archaeological or historic artifacts. If any significant finds are made, they will be given appropriate protection and state authorities will be notified.

FORM 1

APPENDIX F

The Soil Conservation Service, Lovell, Wyoming concurs with the seeding period of October 15 to May 15. Tentative recommendations of SCS Lovell are a mixture of Tall Wheatgrass, and Crested Wheatgrass. Specific rates will be determined from the results of a test plot planted in October 1974 in the northern region of the permit area. This information will be forwarded when received from the SCS, Lovell.