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11/14/94

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: SUNSET CRATER PUMICE

ALTERNATE NAMES:

WHITE VULCAN 1 & 2  
BONNER POZZOLAN  
SUGARLOAF PEAK PUMICE  
WHITE VULCAN PUMICE  
TUFFLITE PUMICE DEPOSIT

COCONINO COUNTY MILS NUMBER: 363A

LOCATION: TOWNSHIP 23 N RANGE 8 E SECTION 19 QUARTER E2  
LATITUDE: N 35DEG 21MIN 36SEC LONGITUDE: W 111DEG 35MIN 07SEC  
TOPO MAP NAME: SUNSET CRATER WEST - 7.5 MIN

CURRENT STATUS: PRODUCER 1994

COMMODITY:

PUMICE LT WT AGGREG  
ABRASIVE PUMICE

BIBLIOGRAPHY:

ADMMR SUNSET CRATER MINE FILE  
ADMMR BONNER POZZOLAN FILE  
PHILLIPS, K.A., 1987, ARIZ. INDUSTRIAL MINERALS  
AZDMMR MINERAL REPORT MR-4, P. 148  
COMBINES ORIGINAL AZMILS 363A & 363B

# THE ARIZONA REPUBLIC

*Sunset Crater Parrot (P)*  
online Edition

## End near to furor over mine in peaks

• AP Wire

### ON AZCENTRAL.COM

- THE REP
- CALENDARS
- ARIZONA GUIDE
- PHOENIXAZ.COM
- COMMUNITY STORIES
- COMMUNITY OPINIONS
- GOLF
- FOOD
- ELECTION 2000
- COMICS
- LEIBOWITZ
- NEWS FROM HOME
- ACCESS MAGAZINE
- OBITUARIES

### 7 DAY ARCHIVE

- SUNDAY
- MONDAY
- TUESDAY
- WEDNESDAY
- THURSDAY
- FRIDAY
- SATURDAY

By Judd Slivka  
The Arizona Republic  
July 19, 2000

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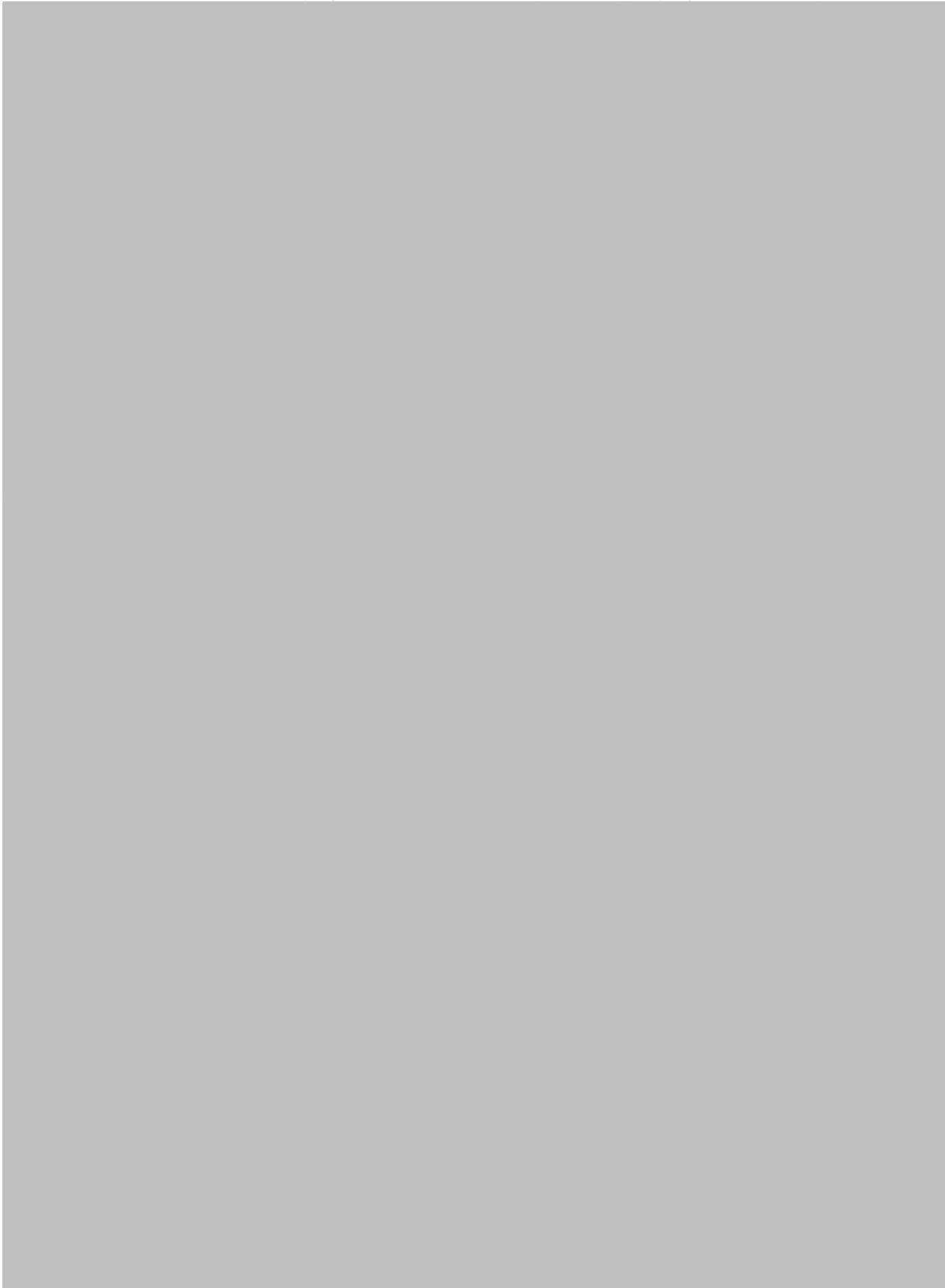
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# THE ARIZONA REPUBLIC

Sunset Crater Pumice  
file Coconino County

Congress OKs funds to close Flagstaff mine

Oct. 29, 2000



- Doug
- Ken
- Nyal
- Dean

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[Back to Article](#)



U.S., tribes, company agree to close mine

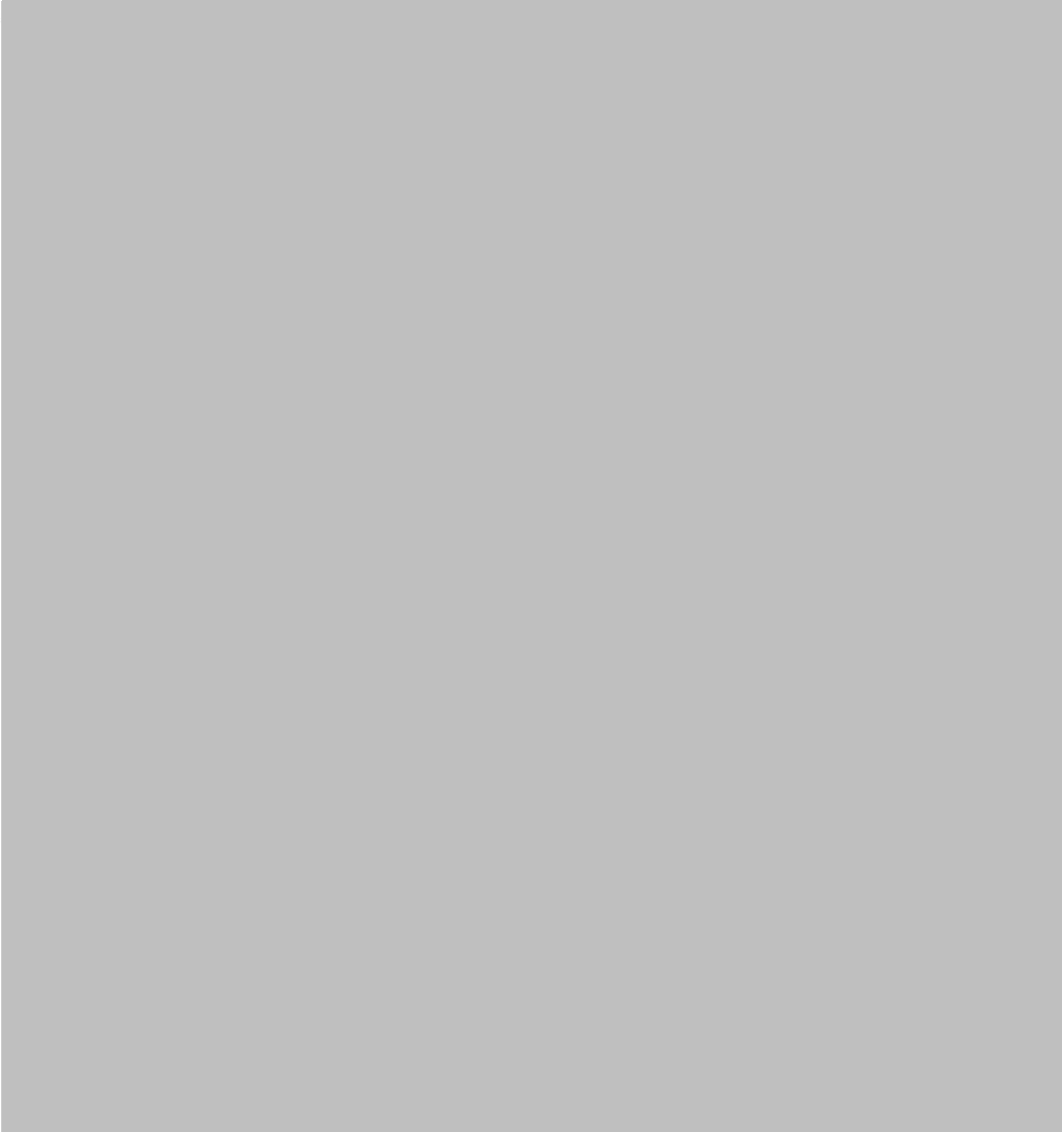
# THE ARIZONA REPUBLIC

Page 1 of

*Sunset Crater Permian(?)  
More Sand (f)  
Cocaine*

**U.S., tribes, company agree to close mine**  
Sacred land going back to Indians





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[Back to Article](#)

SUNSET CENTER PUBLIC (F)

# Protection for sacred mountains?

AZ REPUBLIC MAY 9, 2000





United States  
Department of  
Agriculture

Forest  
Service

Coconino Natio  
Forest

2323 E. Greenlaw lane  
Flagstaff, AZ 86004-1890

*Sunset Crater Mine 363A F*

File Code: 2800

Date: March 5, 1999

*File -  
White  
Vulcan  
Mine  
363A*

Dear concerned citizen:

This letter provides an update of the proposed San Francisco Peaks mineral withdrawal and the White Vulcan Mine expansion. For those of you who have recently provided comment, I thank you for your input. Your comments have been included in the project record for both proposals and your name has been added to our mailing lists so that you will receive future related documents. The issues and concerns expressed in your comments will be considered as part of our environmental analysis of the proposals.

A public meeting that will address the proposed San Francisco Peaks mineral withdrawal has been scheduled for March 31, 1999, 5:00 PM to 8:00 PM, at the Flagstaff City Council Chambers. This meeting will provide interested persons an additional opportunity to comment on the proposed withdrawal. The San Francisco Peaks withdrawal proposal will be part of the Flagstaff/Lake Mary Ecosystem Analysis (FLEA), which will result in an amendment to the Coconino National Forest Land Management Plan. Additional opportunities for input will be available through the FLEA process.

The initial scoping process, in compliance with the National Environmental Policy Act (NEPA), has been completed for the proposed expansion and new plan of operations for the White Vulcan Mine. We have asked Tufflite Inc., the operators of the mine, to provide additional information that is necessary to adequately evaluate the environmental effects of their proposal. I anticipate that Tufflite will submit this information in the very near future, which will enable us to complete the environmental analysis, likely in the form of an Environmental Impact Statement. You will receive additional documents through the mail concerning this proposal as the NEPA process develops.

If you have any questions or wish to have a discussion concerning the above subjects, contact Ken Jacobs at the Peaks Ranger District, by mail; 5075 N. Highway 89, Flagstaff, AZ, 86004; or e-mail: [kjacob/r3\\_coconino\\_peaks@fs.fed.us](mailto:kjacobs/r3_coconino_peaks@fs.fed.us); or by phone- (520) 527-8214.

The Coconino National Forest recognizes that the San Francisco Peaks are a unique feature on the landscape that has tremendous importance to the people of this region. I appreciate your concern and welcome your continued participation in the management of your National Forests.

Sincerely,

*Jim Golden*  
JIM GOLDEN  
Forest Supervisor



Caring for the Land and Serving People

Printed on Recycled Paper





United States  
Department of  
Agriculture

Forest  
Service

*Sunset Crater Mine file*  
Coconino NF

2323 E. Greenlaw Lane  
Flagstaff, AZ 86004  
FAX: (520) 527-3620  
V/TTY: (520) 527-3600

*on  
re*

File Code: 1950/2230

Date: May 7, 1998

Dear Friend of the Coconino:

Enclosed is the quarterly update to the Coconino National Forest's Schedule of Environmental Analysis. This revision identifies changes to the annual schedule released in January of this year. We will review the schedule in another three months, and will mail you that update as well.

At least one change in personnel is reflected in this document: Forest Supervisor Fred Trevey retired this last January. Fred Salinas has assumed the position of Acting Forest Supervisor until the position is permanently filled.

We hope you find the enclosed information a useful tool in alerting you to projects you may have an interest in and helping you track our ongoing projects. For further information, or to notify us of a change in address, or that you be added or removed from our mailing list, please contact any of the individuals identified in this document or Sharon Churchill at the above address or at (520) 527-3412.

We look forward to your participation in our planning and analysis efforts.

Sincerely,

*Fred Salinas*  
FRED S. SALINAS  
Acting Forest Supervisor

Enclosure



☆ **White Vulcan Mine Expansion.** Add to Nature of Project paragraph : "An Environmental Impact Statement will be prepared for this project." Change Alternatives/Analysis to 9/98. Change Estimated Decision to 4/99.

**Giant Refinery Gas Pipeline.** Add to nature of project: "This project has been placed on hold by the proponent." Change Scoping to unknown. Change Alternatives/Analysis to unknown. Change Decision to unknown.

**Windmill Allotment EIS.** Change Estimated Decision to 9/98. Change contact phone to (520) 526-0866

**Lake Mary Urban Interface.** Change Scoping to 5/98. Change Alternatives/Analysis to 7/98. Change Decision to 9/98.

#### *New Projects:*

##### **Sedona Allotment AMP.**

**Project Description:** Develop a new Allotment Management Plan on this 18,000 acre allotment which surrounds Sedona and Schnebly Hill Road.

**Location:** Coconino and Yavapai County, Sedona area. **Scoping:** 5/98. **Alternatives/Analysis:** 6/98. **Decision:** 9/98. **Responsible Official:** Ken Anderson, Sedona District Ranger. **USFS Contact:** Mike Hannemann, Range, (520) 526-0866.

#### **Mogollon Center (Blue Ridge & Long Valley Ranger Districts)**

#### *Disposition of Projects:*

**Wilkins Watershed Rehabilitation.** Change Decision Date to 4/98 and Implementation Date to 6/98.

**Tule-Good 20K Management Plan.** Change dates for Development of Alternatives & Analysis to 6/98, Decision to 9/98, and Implementation to 1999. Change Responsible Official to Current Forest Supervisor.

**Buck Springs Allotment Pasture Fences.** Change dates for Begin Scoping and Development of Alternatives & Analysis to 5/98, Decision to 6/98, and Implementation to 7/98.

**Ironmine/Maxwell 20 K Analysis Area.** Change dates for Begin Scoping (Proposed Action) to 5/98, Development of Alternatives & Analysis to 7/98, Decision to 9/98.

**Happy Jack Ranger Station Youth Camp.** Change date for Decision and Implementation to 7/99, and USFS Contact to Don Muise, Customer Service Staff Officer, (520) 477-2255.

~~WHITE VULCAN PUMICE~~

*Sunset Crater Pumice*

COCONINO COUNTY

NJN WR 1/30/87: Hilton Cass (c) Forest Service Zone Office, reported that the hearing on the validity of the White Vulcan Pumice (file) Coconino County, is over but they are still waiting for the judge's decision.

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NJN WR 3/13/87: Wes Morgan, vice president of sales, Arizona Tufflite (c) reported that they are shipping 125 tons of pumacite a day from their More Sand Moon Sand (file) and/or White Vulcan (Sunset Crater Pumice Co - file) Coconino County. The material is being sold at 8 cents per pound to Levy Straus for prewashing blue jeans.

-----

KAP WR 10/23/87: Talked to Clarence Morgan, Arizona Tufflite (card). He reported they have produced 44,677 cubic yards of plus 1" pumice in the first six months of 1987. This material is used as a scouring agent to make "stone washed" jeans. They could sell more if they could produce more. Production comes from their White Vulcan Mine (Sunset Crater Pumice- file) Coconino Co.

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SUNSET CRATER PUMICE CO.

COCONINO COUNTY

RRB WR 10/30/81: Visited pumice quarry in Sec. 19, T23N R8E. There was a loader, belts and screens, etc., but no one was there and there was no sign to indicate who is working it.

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NJN WR 2/18/83: Howard Wurtz of the Forest Service Zone Office reported that Hale Tognoni, et al. have applied for patent on their White Vulcan 1 & 2 claims consisting of 320 acres in T23N R8E Sec. 19 S $\frac{1}{2}$ , Coconino County. The property has been supplying pumice for light weight concrete for the floors of high rise buildings for the last 4-5 years. The claims were located in August of 1952 and so predate the Surface Materials Act.

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NJN WR 11/18/83: Wes Morgan owner of Arizona Tufflight Inc., AKA Arizona Pozzalon, visited. He reported that his Flagstaff operations produce up to 500 tons per day of Pumice for Pozzalon and light weight aggregate uses. He controls 7,000 acres of claims. Included are Tognoni's White Vulcan 1 & 2 (Sunset Crater Pumice) and the More-Sand and Moon Sand Claims, Coconino Co. Their operations should be included in the Active Mines Directory next year. AZ Tufflight also sells decorative sand and gravel in the Phoenix area for landscaping.

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NJN WR 8/12/85: John Challinor (c) called and reported that he has been working for Arizona Tufflite Inc. (c) in the area of the More Sand & Moon Sand Claims (f) and the Sunset Crater Pumice Co. (f) both in Coconino County. Most of the company's lightweight aggregate production is coming from the Sunset Crater Pumice Co. Material being produced from the More Sand and Moon Sand is being used to backfill gas line trenches and to manufacture blocks. Mr. Challinor has been staking claims and conducting geophysical surveys in the area of both properties. He hopes to conduct some exploration drilling to see what materials underlie areas covered by basalt flows.

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NJN WR 11/1/85: C.T. Morgan of Arizona Tufflite Inc. (c) reports that the 6 month sales of March thru September from Sunset Crater Pumice (f) Coconino County were more than all of 1984's. The company is going to start up a grinding plant to produce a natural pozzolan like that produced in the 1960's for Glen Canyon Dam. They also hope to market the material as filler to the paint and wall product industries.

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BONNER POZZOLAN DEPOSITS

COCONINO COUNTY

Mining World August 1961 p. 49

See: Sunset Crater Pumice Co., Coconino Co. (file)  
More-Sand and Moon-Sand Claims, Coconino Co. (file)

For more site specific quarry information see the above files.

Banner Pozzolana  
**Pozzolana**  
**At Damsite**  
R. 4/7/60

reference :

Mining World  
G

August 1961 p. 49



A-180-1

C-1950



A-180-2



United States  
Department of  
Agriculture

Forest  
Service

*Bonner Prozzolan file*

Coconino N

2323 E. Greenlaw Lane  
Flagstaff, AZ 86004  
FAX: (520) 527-3620  
V/TTY: (520) 527-3600

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File Code: 1950/2230

Date: May 7, 1998

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The Bonner pozzolan project north of Flagstaff, Arizona, has been taken over by Standard Pozzolan Company of Hereford, Texas. Darrell W. Sumner, Flagstaff, is supt. Output from the plant is averaging about 300 tpd, and plans call for 400 tons per day very soon. The pozzolan is trucked to the Glen Canyon Dam to be used with cement to give the concrete mix additional strength. The Bureau of Reclamation specifications are quite exacting - requiring extremely selective mining and close control of size of product. A crew of 20 men is employed. Mining World Jan. 1961 p. 47

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Active Mine List Feb. 1961 - 20 men working

Visited the Bonner Pozzolan Plant. Deliveries are being made to Glen Canyon dam at the rate of 65 loads (27 yards each) or about 1750 tons per week. Additional grinding capacity is being installed in the plant. TPL WR 4-15-61

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Visited the Standard Pozzolan Co. The plant was operating at a normal rate shipping 12 loads at 27 tons each to the Glen Canyon Dam job. 20 men are employed. TPL WR 9-16-61

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Active Oct. 1961

Visits of April 12 & May 16, 1963 - The plant was down for repairs. Interviewed Andy Zinkl, who said he was in charge. He said the plant would be operating again by May 20. He said their contract for the Glen Canyon dam would last about another six weeks. 20 men still working.

Mr. Zinkl said the Ploycone Corp. of La Grange, Ill. is much interested in their product and a deal may be worked out with them in the near future.

Taemin Chung, P.O. Box 1638, Flagstaff - Supt.

Memo EGW

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No activity. EGW WR 9-17-63

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Visited Standard Pozzolan. B. B. Bonner, Jr. Inactive. FTJ WR 9-17-65

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BONNER POZZOLAN DEPOSITS

COCONINO COUNTY  
FLAGSTAFF

MEMO

Visited the Bonner Pozzolan plant on Aug. 19. Construction is essentially complete. The project is waiting upon settlement of the Page strike when shipment will begin to the Glen Canyon dam site (at about the same time that cement shipments are made from the new Clarkdale cement plant).

September 4, 1959

TRAVIS P. LANE

---

Visited the Bonner Pozzolan deposit and the processing plant which is expected to go into production around the first of October (shortly after the strike is settled at the Glen Canyon dam project). The sacks in which the ground product will be shipped are marked "Raw Material by B. B. Bonner; transported by Shupe Bros.; manufactured by J. B. Shotwell; for use at Glen Canyon Dam." The company address is Tuba Star Route. Mr. Darrel W. Sumner is Supt. Tom Burney who supervised the plant construction is working on other projects for "Concrete Aggregates" which is the Seattle firm controlled by J. B. Shotwell. I gathered some samples of raw material for Art Flagg for the Department of Mineral Resources Museum.

TRAVIS P. LANE - Weekly Report - 9-19-59

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C. A. Richardson of Denver Equipt. Co. said that the Bonner Pozzolana plant has installed the ball mill to grind the pumice to 95% minus 325 mesh.

FRANK P. KNIGHT - Memo - 5-24-60

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DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Bonner Pozzolan

Date September 30, 1960

District Flagstaff, Coconino Co.

Engineer Travis P. Lane

Subject: Visit, Sept. 15, 1960

This property was first described in a Department of Mineral Resources report dated May 26, 1959 and later memos.

Recently the project was taken over by the Standard Gilsonite Company, 343 So. State Street, Salt Lake City 11, Utah, and is now operated as the Pozzolan Division of that company. Darrell W. Sumner is Supt., address: Box 1422, Flagstaff, Arizona.

Following the plant start-up about a year ago a considerable number of "bugs" was encountered and equipment changes and circuit revisions were necessary. The original Williams roller mills have been replaced by two 8' x 36" Hardinge mills, and two more of these mills are now being installed. The Bureau of Reclamation specifications are quite exacting with consequent need for extremely selective mining and close control of size of product. The grind requirement is still not completely satisfactory. The present size requirement is that all must be finer than 325 M, actually 9000 Blaine. The plant only recently began producing and shipping ground pozzolan at a sustained volume rate. The present output is averaging about 200 TPD. This will soon be stepped up to 400 TPD. 17 men are employed including Mr. Sumner. Pozzolan will be mixed with cement in the proportion: 1 part pozzolan to 2 parts cement. The use of pozzolan with cement gives the concrete mix extra strength for the following more important reasons:

- 1) It combines with free lime hydrated from the cement to form a cementeous property of its own.
- 2) It reduces the heat of hydration and while the set is slower the final product is harder.
- 3) The action of acid and alkali on the concrete is inhibited.
- 4) The cement is more impervious (dense).

The material flow in the plant is essentially as follows: The incoming material is dumped on a grizzly w/8" openings from which the undersize passes over a screen (where the plus 2" size is discarded) to a surge pile. Next it goes to rolls set at 1/2" opening, then to a dryer (the natural moisture content is from 6 to 15%). From the dryer the material goes to two 8' x 36" Hardinge ball mills in closed circuit with air separators and finally to the shipping bins (silos).

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine ✓ BONNER POZZOLAN DEPOSITS

Date May 26, 1959

District Flagstaff, Coconino County

Engineer Travis P. Lane

Subject: Visit to deposit and plant.

*90 Jozanini et al and → visit (please?)*

The Pozzolan deposits are located approximately 25 miles north from Flagstaff on U. S. Highway 89. The deposits are numerous over an area of several square miles. The light buff-colored pozzolan is covered by about 6 feet of overburden.

Owner: ✓ B. B. Bonner, of  
Bonner Construction Co.  
14 E. Santa Fe Ave.  
Flagstaff, Arizona

Operator: ✓ J. <sup>B</sup> Shotwell (sole proprietor)  
Box 1422  
Flagstaff, Arizona

Supt: ✓ Tom C. Burney

Mr. Shotwell is building a plant to process the Bonner pozzolan material for delivery to the U. S. Bureau of Reclamation at the Glen-Canyon dam site. The material is to be ground to 95% - 325 M, and will be mixed at the dam site with cement in the proportions of 1/3 pozzolan and 2/3 cement. Mr. Shotwell's contract calls for delivery of 250,000 tons of ground pozzolan with delivery to begin at the same time that the Clarkdale cement plant begins to deliver cement - in August of this year.

Bonner will contract the mining and delivery of the material to the plant. The plant is located in the area of the deposits and is 1/4 mile east of the highway. It consists essentially of 3 stages of crusher-grinding units, a dryer, screens, and classification system. Expected capacity is 30 TPH. The plant and pit operation will employ about 10 men.



*Sunset Crater Pumice  
mine file*

**SCOPING DOCUMENT  
PUMICE MINING  
PEAKS RANGER DISTRICT  
COCONINO NATIONAL FOREST**

## **I. INTRODUCTION/PURPOSE AND NEED**

Continued demand for pumice used for stone washed jeans has created a need for the Peaks Ranger District to conduct an environmental analysis. The analysis will evaluate the ecosystem impacts associated with continued pumice mining on and adjacent to the San Francisco Peaks, and will be documented in either an Environmental Assessment (EA) or Environmental Impact Statement (EIS) as appropriate.

The purpose of this scoping document is to solicit comments on issues and concerns associated with: (1) Current mining operations on the White Vulcan Mining Claims; (2) Future proposals that expand mining operations within the White Vulcan Claims; and (3) Potential mineral development elsewhere on or adjacent to the San Francisco Peaks.

Public involvement in this analysis will help us to both identify issues that need to be addressed and to build reasonable actions that respond to the issues/concerns. Our intent is to ensure that continued exploration, development, and production of mineral resources in the San Francisco Peaks area are integrated with management of other National Forest resources.

## **II. EXISTING CONDITION**

Tuffite Inc. of Glendale Arizona is currently operating a pumice mine on mining claims called the White Vulcan #1 and #2, located on the Peaks Ranger District, Coconino National Forest. The claims total 320 acres, of which approximately 80 acres have been disturbed by the current open pit strip mining operation. The White Vulcan claims are located on lower eastern slopes of the San Francisco Peaks, one mile west of Highway 89 on Forest Road 553. The legal description is T23N, R8E, south 1/2 of Section 19.

There are four other mining operations on patented mining claims and one operation under Forest Service Permit in this general area. These operations are all cinder or sand and rock operations that produce aggregate material for construction purposes.

The attached maps show the specific location of the White Vulcan Claims and other active mining operations.

## **III. HISTORY**

Geologic features on the Peaks Ranger District are dominated by past volcanic activity. The San Francisco Peaks, as well as the other prominent peaks in the area are extinct volcanoes. Because of this geologic history, mining activity in the Flagstaff area has been limited to the production of cinders, pumice, and other aggregate material.

Mining activity on the White Vulcan claims has taken place since 1968. The primary use of pumice until the mid eighties was associated with construction and horticulture as a soil amendment. White Vulcan pumice was primarily used as light weight aggregate for concrete. Surface disturbance associated with this production was less than five acres until the mid 1980s. Around 1985, the faded look of jeans became stylish. Pumice is used in the garment finishing industry to give blue jeans a soft feel and faded look. The demand for pumice used for stone washing stimulated significant increased mining activity on the claims. Mining activity has expanded at a rate of about 10 acres per year and now totals approximately 80 acres.

Approximately 950,000 cubic yards of pumice material has been produced from the claims over the last seven years. The stone wash jeans industry generally uses pumice that is one to three inches in diameter. Pumice, separated into sizes less than 3/4 inch in diameter continues to be used in construction and horticulture as a secondary product. Tufflite has stockpiled approximately 500,000 cubic yards of the less than one inch diameter product on site.

The pumice deposit is covered by an overburden of dirt and rock ranging in depth from five to sixty feet. Pumice is mined by clearing trees and vegetation, then stripping the overburden off of the deposit using large dozers. Pumice is removed with large front end loaders and transported to an in-pit screening operation where it is separated into different sizes for different products.

Several thousand acres adjacent to the White Vulcan operation are currently under claim and may have potential for mineral development. The demand for pumice could result in submission of operating plans for mining on other claims in the San Francisco Peaks area.

No reclamation has been accomplished on the White Vulcan claims. A detailed reclamation plan has been prepared indicating good potential for the re-establishment of native trees and grasses. Tufflite has, incrementally with expansion, submitted reclamation bonds totalling \$225,000, as required by the approved operating plan.

#### IV. DECISIONS/GOALS/OBJECTIVES

The Forest Service administers minerals under three categories by regulation. They are locatable, common variety, and leasable minerals. Locatable minerals are administered through the General Mining Law of 1872 and are limited to minerals of uncommon value, typically precious metals such as gold or silver, or other minerals that have unique characteristics that make them more valuable. Common variety minerals, the second category, are mineral material of common occurrence that are generally used in construction. The third category is energy resources such as oil and gas, and are termed leasable.

Valuable minerals are termed "locatable minerals" under the mining law. Pumice that meets the physical needs for the stone washed jeans process is considered a "locatable mineral" because of its uncommon value or price that it commands for this purpose. The locatability of pumice has historically been contested by the Forest Service. However, recent decisions by the Department of Interior have supported the locatability of pumice used for stone washed jeans.

Under the Mining Law of 1872, the Forest Service's authority for locatable minerals is limited to determining mitigation measures necessary to reduce adverse environmental impacts associated

with mining operations. Specifically, the scope of this decision is limited to determining what reasonable mitigating measures need to be applied to Tufflite's mining operation to reduce environmental impacts to an acceptable level.

The Code of Federal Regulations, 36 CFR, 228, Subpart A, sets forth the rules and procedures for activities on National Forest System Lands authorized by the Mining Law of 1872. The Code of Federal Regulations requires that the use of the surface of National Forest System lands in connection with activities authorized by the mining law, "...be conducted so as to minimize adverse environmental impacts on National Forest System surface resources". The Forest Service has the authority to require reasonable actions by the claimant in his operations to reduce environmental impacts. The Forest Service exercises this authority through the approval of operating plans.

Tufflite has an approved operating plan that authorizes mining operations on the current area of disturbance. If Tufflite intends to continue mining, a new operating plan will be required to authorize expansion activity.

Decisions to be made as a result of this analysis are:

- Identify necessary mitigation measures for Tufflite's current mining operation.
- Identify mitigation measures that will be required for expansion of Tufflite's mining operation.
- Identify areas of concern, issues, and ecosystem needs in this area that are in conflict with mineral development.
- Tufflite's operation also produces pumice material less than 3/4 inch diameter, which is considered a common variety material. Consequently, a decision by the Forest Service to sell this material is within the scope of this analysis.

## V. POSSIBLE ISSUES

The following issues have been identified in initial project discussions. This is not intended to be a complete list, as other issues may arise as the public involvement process continues.

1. **Cultural resources** - Numerous archaeological sites are located around and within the White Vulcan Claims.
2. **Threatened, Endangered, or Sensitive species** - A pair of Mexican Spotted Owls is known to inhabit the area immediately adjacent to the Claims. Continued expansion of the operation may impact this threatened species. Suitable Owl habitat in the area has been impacted by mining operations on private land. The impact of the Tufflite operation and the cumulative impacts of the other private mines will require analysis and consultation with the U.S. Fish and Wildlife Service.

3. **Visual Quality** - Mining operations are visible from Sunset Crater National Monument, Highway 89 and other important Forest vistas. Continued expansion may increase adverse visual impacts.

4. **American Indian Religious Concerns** - The San Francisco Peaks are sacred to numerous tribes particularly the Hopi and Navajo. Mining on the Peaks is a concern and a possible conflict with their beliefs and practices.

5. **Soil and Water** - Because pumice floats, potential for off-site sedimentation problems are high and have been a problem associated with current operations. Stockpiled overburden easily erodes into stream channels.

6. **Air Quality** - Dust can be a problem associated with this operation, contributing to air quality concerns and adverse visual impacts.

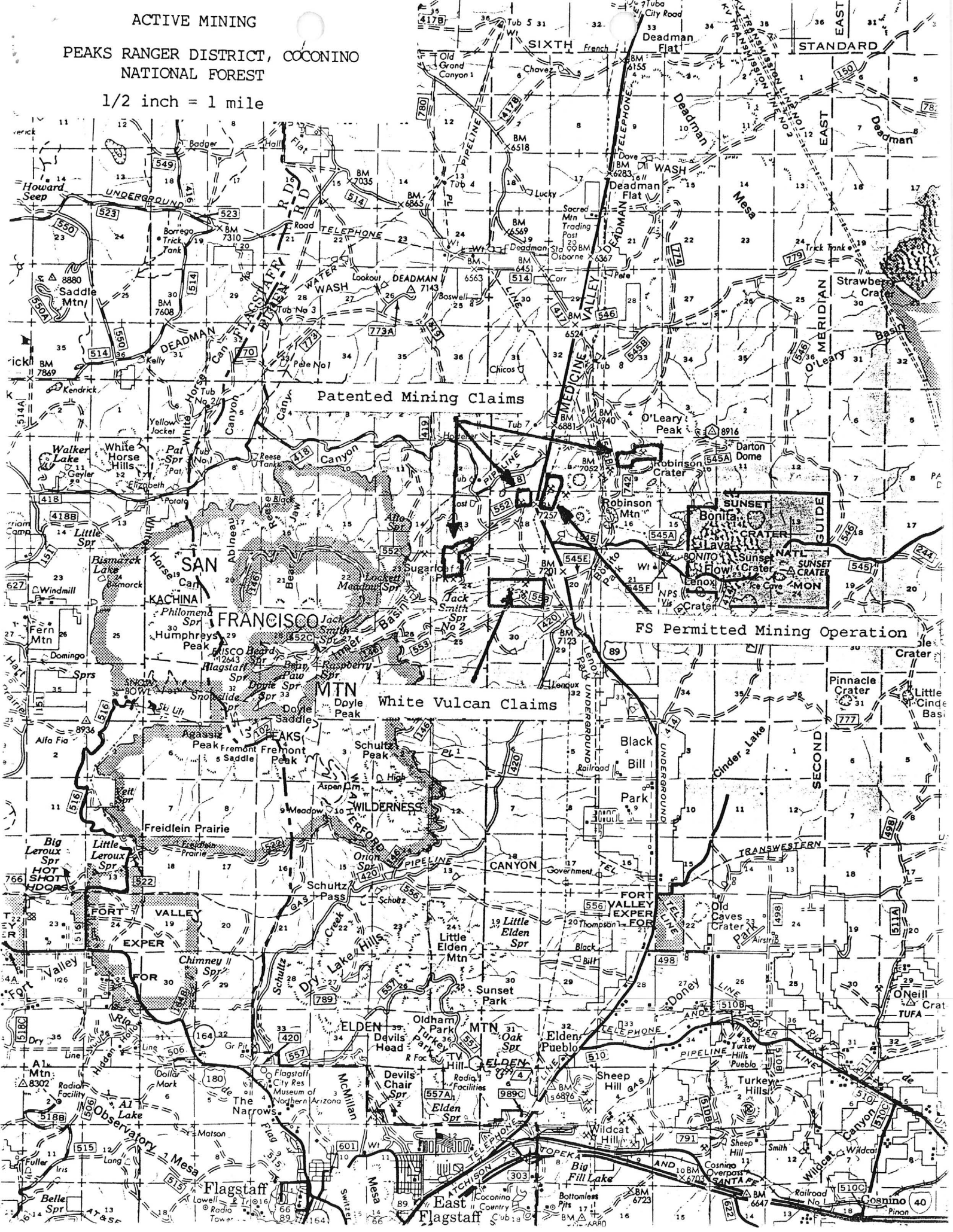
## VI. FOREST SERVICE CONTACT

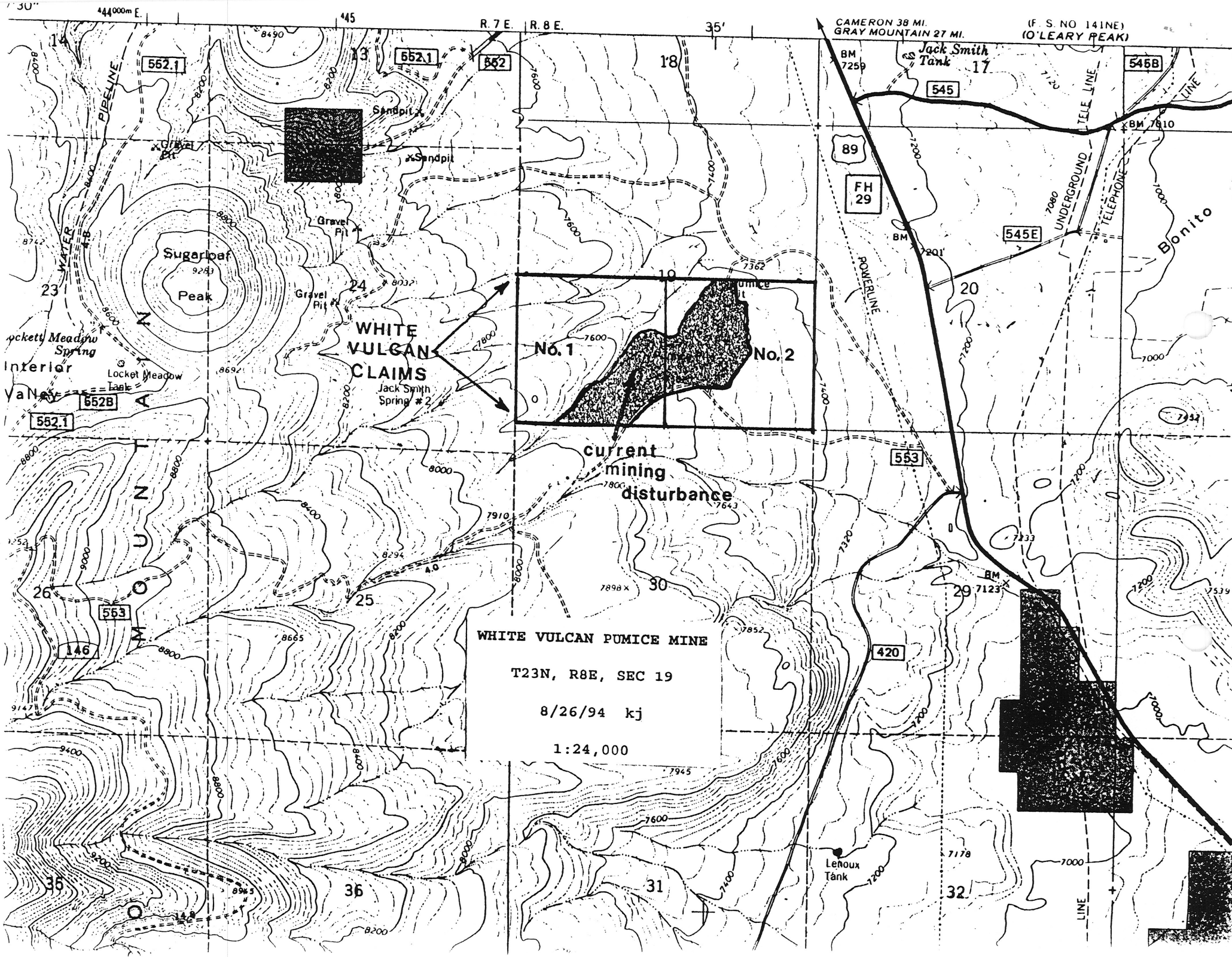
If you have any issues, concerns or questions regarding this proposal, contact Ken Jacobs at the Peaks Ranger Station, 5075 N. Hwy 89, Flagstaff, AZ 86004, or call (602) 526-0866. If you wish to respond, please contact this office by October 10, 1994.

ACTIVE MINING

PEAKS RANGER DISTRICT, COCONINO NATIONAL FOREST

1/2 inch = 1 mile





**WHITE VULCAN PUMICE MINE**

T23N, R8E, SEC 19

8/26/94 kj

1:24,000

11-19-48

Mr. Penning -

Sorry I missed  
you. Here is a copy of  
the report I spoke of.  
Will see you the next  
time I am down

C. G. Foster

our office address is -

Sunset Crater Pencil Co  
Room 211 Falkington Bldg  
Flagstaff Arizona  
Phone # 843 NJ-

Foster  
9

C O P Y

PITTSBURGH TESTING LABORATORY  
Established 1881  
Pittsburgh, Pa.

Order No. SF-3828

Laboratory No. 18664

File No. 28958.1

851 Howard Street  
San Francisco 5, California

R E P O R T

September 24, 1948

Pumice -- Chemical Determinations

Purpose: To determine suitability for use in making building blocks

Chemical analysis shows the following composition:

Silica (SiO <sub>2</sub> )	69.23%
Iron Oxide (Fe <sub>2</sub> O <sub>3</sub> )	3.77%
Alumina (AL <sub>2</sub> O <sub>3</sub> )	10.53%
Titania (TiO <sub>2</sub> )	0.10%
Manganese Oxide (Mn <sub>3</sub> O <sub>4</sub> )	0.10%
Lime (CaO)	4.52%
Magnesia (MgO)	0.12%
Loss on ignition	6.69%
Alkalies (by difference)	4.94%

Physical Examination: The sample submitted shows no indications of Bentonite, clay, free alkalies, foreign contaminants, or other elements which may be detrimental to its use in the manufacture of building blocks, or for use as a light aggregate with cement in any construction work. The sample furnished shows a specific gravity of 0.79. It shows clean uniform material which can be quarried, crushed, and screened to suitable sizes for building aggregates.

Conclusions: This pumice is high in silica and shows a firm, highly silicious material with no outstanding detrimental qualities, and should make excellent light aggregate for the manufacture of building blocks or other building uses.

Respectfully submitted,

PITTSBURGH TESTING LABORATORY

(Signed) Parker M. Robinson  
District Manager

WPS/LK:nb

cc: 2



DEPARTMENT OF MINERAL RESOURCES

State of Arizona

MINE OWNER'S REPORT

Date 9-2-48

1. Mine: Sunset Crater Pumice Co.

2. Location: Sec. Twp. 23N Range 7E Nearest Town Flagstaff

Distance 17 Direction S Road Condition 15 mi paved 2 mi dirt

3. Mining District & County: Valle Coconino

4. Former Name of Mine:

5. Owner: B.B. Banner

Address: Flagstaff, Ariz

6. Operator: C.A. Foster & L.L. Crawford - Box 4 Chino Valley

Address: Chino Valley, Ariz

7. Principal Minerals: Pumice

8. Number of Claims: 12 Lode Placer

Patented Unpatented

9. Type of Surrounding Terrain: NE slope San Francisco peaks

El. 7300. grass and Ponderosa pines.

10. Geology & Mineralization: Pumice has 1 foot overburden of sand & silt. F.W. is clay.

11. Dimension & Value of Ore Body: Exposed to depth at 35' by dozer in two places. Covers several claims. No uniform dip or strike. Appears to have settled an eroded area that was fairly uneven.

Good grade of pumice

12. Ore "Blocked Out" or "In Sight":  
.....  
.....  
.....  
.....

Ore Probable:  
.....  
.....

13. Mine Workings—Amount and Condition:

No.	Feet	Condition
Shafts.....		<i>open cut.</i>
Raises.....		
Tunnels.....		
Crosscuts.....		
Stopes.....		

14. Water Supply: *none on property.*

15. Brief History: *New discovery.*

16. Signature: *Visited by Manning & Walcott 9-18*

17. If Property for Sale, List Approximate Price and Terms:

**USDA** United States  
Department of  
Agriculture

Forest  
Service

Southwestern  
Region



*White Vulcan Site  
Sunset crater Rimmed  
(file)*

# Environmental Assessment for the San Francisco Mountain/ Mount Elden Mineral Withdrawal

Peaks Ranger District  
Coconino National Forest



# CHAPTER 1- Introduction, Purpose and Need, Decision to be Made

## A. Introduction

Rising abruptly from the Colorado Plateau to an elevation of 12,630 feet above sea level, the San Francisco Mountain (the Mountain) is the most prominent and highest geographic feature of Arizona. The Mountain and Mount Elden are clearly visible for over a hundred miles in all directions. The Mountain is the focal point of the Flagstaff region providing the scenic backdrop and outdoor recreation opportunities that are the foundation of the area's tourism industry. The Mountain is also the cultural focal point for American Indian tribes in Northern Arizona and the Four Corners area. The Coconino National Forest recognizes the Mountain as a traditional cultural property that is likely to be eligible for inclusion on the National Register of Historic Places.

The United States Department of Agriculture, Forest Service has filed a mineral withdrawal application with the Bureau of Land Management to protect the San Francisco Mountain/Mount Elden area from additional mining activities under the 1872 Mining Law. The area proposed for special protection totals approximately 73,380 acres encompassing the San Francisco Mountain and Mount Elden on the Peaks Ranger District of the Coconino National Forest. The Secretary of Interior has the authority to make withdrawals on National Forest System lands. All Federal agencies must process withdrawal requests through the Department of Interior, Bureau of Land Management (BLM).

In response to the application for withdrawal, a notice was filed and published in the Federal Register dated November 4, 1998 proposing to formally withdraw the area identified above. The notice segregates and closes the area for up to 2 years from entry and location under the 1872 Mining Law. This temporary segregation protects the area from new mining claims while an analysis is completed to determine the effects of a formal 20-year withdrawal. Twenty years is the maximum time period for a withdrawal. The Federal Land Policy and Management Act (FLPMA) of 1976 requires that withdrawal decisions be revisited at least every 20 years.

After formal withdrawal, all mining activities under the 1872 Mining Law will be prohibited, except actions authorized under an approved Plan of Operations on mining claims with prior valid existing rights. In order to establish valid existing rights in the withdrawal area, a mining claim must have been staked prior to the Federal Register notice date for the withdrawal. In addition, the mining claimant must have proof that a valuable mineral had been discovered on the claim

prior to the date of the Federal Register notice. It is still possible that mining could occur on existing claims within the withdrawal area, if they meet the criteria described above. As of the date of the withdrawal application, there were 51 mining claims in the proposed withdrawal area totaling approximately 5,800 acres. Most of the claims are located in the northeastern portion of the withdrawal area, surrounding the active pumice mining area and are presumably staked for pumice, or other volcanic rocks. There is one association placer claim located in the north-central part of the proposed withdrawal, on the White Horse Hills, that is staked for limestone. We do not know how many of these might have valid existing rights; rather such information would only be forthcoming from the claimant if mining of the claim were proposed. If claimants who hold claims in the withdrawal area decide to propose operations pursuant to 36 CFR 228, subpart A, locatable mineral regulations, the Forest Service would conduct a validity examination on the areas to determine if there are valid existing rights.

## B. Current Situation

The Coconino Forest Plan (Forest Plan) contains a list of areas identified as needing mineral withdrawal. Existing withdrawals, previously completed by BLM and approved by the Secretary of Interior or accomplished through legislation, are also described in the Forest Plan. The upper elevations of the San Francisco Mountain are permanently withdrawn via legislation for the Kachina Peaks Wilderness and the Snowbowl Ski Area. There is currently a patchwork of withdrawn areas, open areas, and areas listed in the Forest Plan as desirable to withdraw within the proposed withdrawal area. The list below and maps which follow on pages 3 and 4, show the area location and relationship of withdrawn and open areas.

Sites Currently Withdrawn	Acres
Elden Guard Station	111
Mt. Elden Lookout Site	40
Flagstaff Watershed	6,380
Elden Environmental Study Area	761
Lockett Meadow Area	772
Roadside Zones, US Highway 89	40
Elden Pueblo	25
Medicine Fort	48
Kachina Peaks Wilderness	18,705
Arizona Snowbowl Ski Area	777
<b>Total</b>	<b>27,659</b>

Sites on Forest Plan List Not Yet Implemented	Acres
Fern Mountain Botanical Area	186
C Hart Merriam Base Camp	40
<b>Total</b>	<b>226</b>

### C. Forest Plan Direction and Other Community Plans

Standards and guidelines such as those for visual quality objectives, sensitive species management, and recreation management are not consistent with surface disturbance from mining activities. The Forest Plan states that, "During Forest Plan implementation, it is possible that additional withdrawal candidate areas will be identified. Any such candidate will be subject to public review and FLPMA procedures."

In addition, recent local and regional planning documents have also identified the importance of protecting the cultural, recreational, and visual resources of the San Francisco Mountain/Mount Elden area. Mining activities authorized under the Mining Law of 1872 are not consistent with objectives suggested in a variety of City of Flagstaff and Coconino County planning documents, such as the "Flagstaff Area Open Spaces and Greenways Plan," the "Flagstaff 2020 - A Vision for our Community," or the draft "Flagstaff Area Regional Land Use and Transportation Plan."

### D. Past Experiences with the 1872 Mining Law

Mining activities have and are currently adversely impacting areas important to American Indian culture within the proposed withdrawal area. Surface disturbance from mining on the slopes of the Mountain also represents a long-term degradation to the visual resources unique to this area. Mining activity on the Mountain has impacted the visual quality from Sunset Crater Volcano National Monument and Highway 89. In addition, past mining activity and the resulting ground disturbance is adversely impacting visual and recreational opportunities on the east side of the Mountain and the Lockett Meadow area. The threat of continued

expansion of mining operations to produce pumice has rallied the community in support of protection of the area.

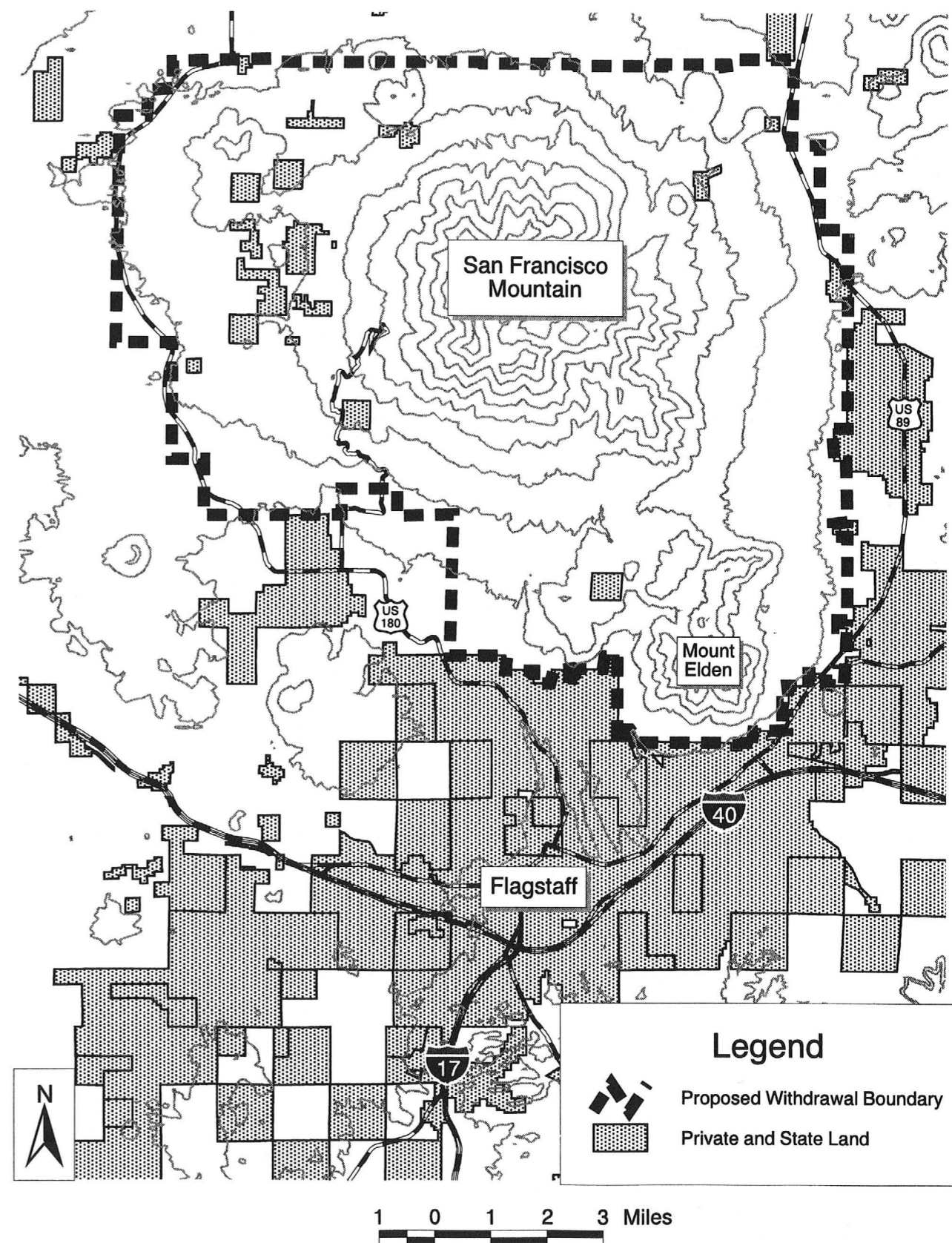
Even though there is a low potential for the presence of valuable metallic minerals such as gold, silver and copper, etc., this area is still at risk from surface disturbance and patenting under the 1872 Mining Law. The Mining Law of 1872 has been used in this area to gain access to minerals usually considered to be common variety (sand, gravel, cinders) and to patent national forest land. Patenting is the process that transfers ownership of Federal land to mining claimants under the Mining Law of 1872. Patenting of national forest land in the proposed withdrawal area has resulted from rulings by Interior Board of Land Appeals Administrative Law Judges that certain types of sand, gravel, cinders and pumice were locatable minerals. There are 140 acres of mining claims in the proposed withdrawal area that have been patented. All of the patented claims are located in areas of extreme environmental and cultural sensitivity. Sand, gravel, and cinders, normally not considered to be a locatable mineral, were produced from these claims. The patented mining claims are located on steep, unstable slopes and are highly visible for great distances. Most of the claims are no longer active and have been left without reclamation. In addition, mining disturbance on the patented mining claims has adversely impacted habitat for threatened and endangered species, and to the Indian tribes with religious ties to the area, represents irreparable damage to the traditional cultural property.

There were two proposals that stimulated much discussion in the community and within the Forest Service about the uniqueness of the San Francisco Mountain/Mount Elden area; its cultural importance, and the need for protection. One was a proposal by Arizona Tufflite Inc. to expand pumice mining operations on the east side of the Mountain. The other proposal, from a group of investors seeking a limestone source for scrubbers at the Navajo Generation Plant at Page, Arizona, was a plan to conduct exploratory drilling on the east side of Mount Elden and the White Horse Hills.

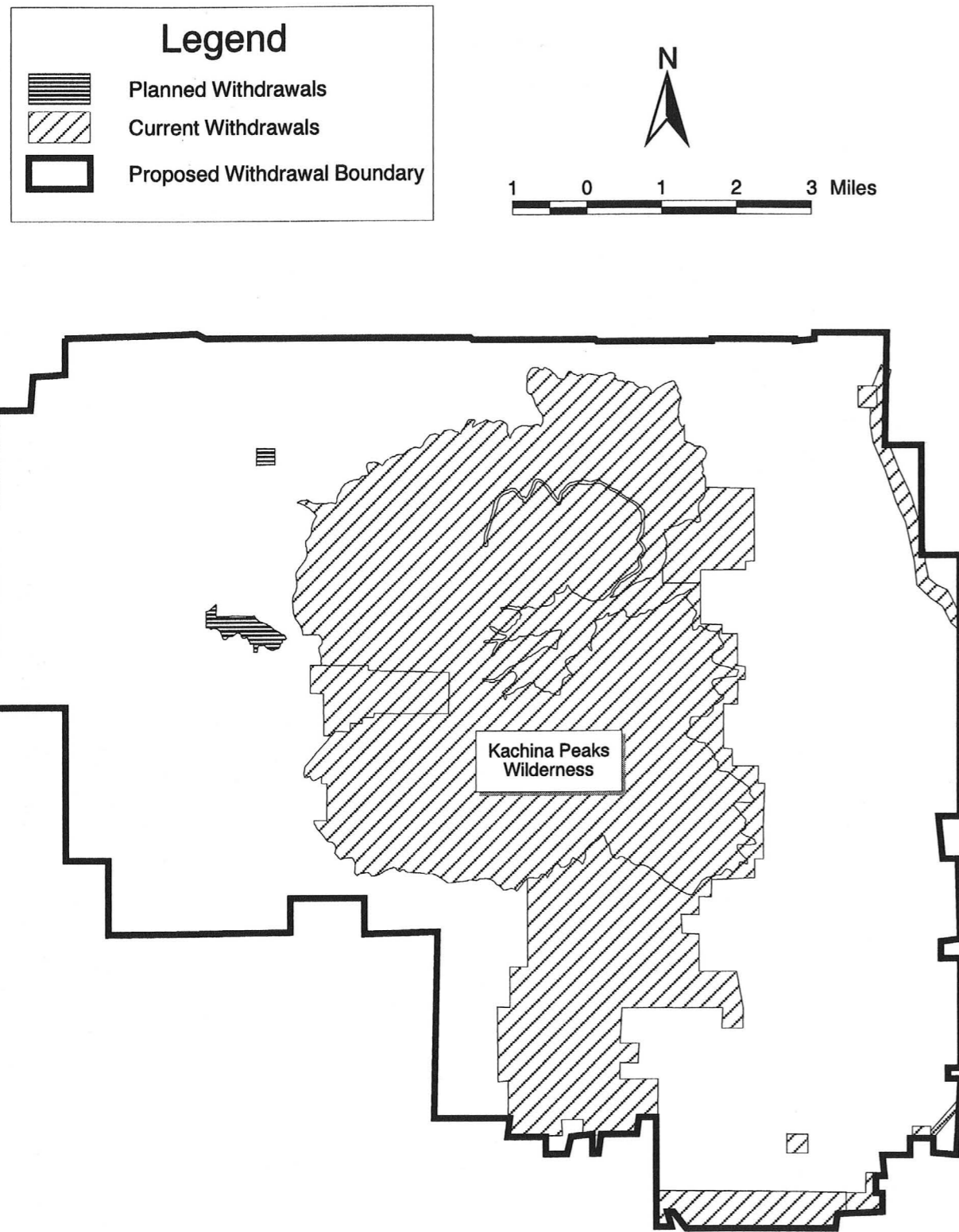
### E. Purpose and Need

Under current Forest Service policy and law, withdrawal from mineral entry is generally not necessary to supplement protection afforded by existing law and regulation. Mineral withdrawal is an

## San Francisco Mountain/Mount Elden Proposed Withdrawal Area



# Current and Planned Withdrawals within the San Francisco Mountain/Mount Elden Area



Environmental Assessment for the San Francisco Mountain/Mount Elden Mineral Withdrawal  
Map created on 4/13/00

important management tool, however, the action must be justified by showing that the area cannot be managed for multiple-use or protected by other means. The BLM considers the uniqueness of resource values the most significant measurement in assessing whether or not a withdrawal will be approved. When used for withdrawal justification, the BLM defines the term unique as, "A resource feature of limited occurrence, on a regional or national basis, that has unusual value for scientific or scenic purposes, or as an outstanding example of natural phenomenon. Characteristics that make a feature unique are its rarity, significance, fragility and irreplaceability."

Here are the reasons why a withdrawal is appropriate for this area at this time. The following values are important and unique and cannot tolerate surface disturbance from mining: 1) the area is geologically and biologically unique; 2) the area is culturally significant; 3) there are diverse and popular recreation opportunities; 4) there are spectacular scenic experiences; 6) communities have identified the area as important to local economies and a sense of place; and 7) our experience has shown that we are unable to afford adequate protection to these values under current laws.

**Unique Geology and Biology:** The San Francisco Mountain/Mount Elden area contains the highest point in Arizona and is clearly visible from distances in excess of 100 miles. This type of feature is of very limited occurrence in Arizona. Rising from an elevation of 7,000 feet above sea level to over 12,000 feet, the Mountain is unique in juxtaposition of several life zones and the only tundra life zone in Arizona. C. Hart Merriam used the Mountain to study and develop his theories of elevation life zones. The lands being considered for withdrawal contain suitable habitat for 18 threatened, endangered, or sensitive species.

**Unique and Important American Indian Cultural Values:** The area is unique and central to American Indian religious and cultural practices, and important to the cultures of at least 13 tribes in the Southwest United States. No other area or feature can substitute for the Mountain in its role as one of the most important traditional cultural properties in the Southwest. Tribal consultations have indicated that surface disturbance from mining activities represents irreparable damage to the traditional cultural

property. This area, which includes the flanks of San Francisco Mountain and Mount Elden, has a very high archaeological site density, and is likely eligible for nomination to the National Register of Historic Places. Many of these archaeological sites have previously been determined eligible, or potentially eligible, for the National Register, including Elden Pueblo.

**Recreational Use:** The Mount Elden/Dry Lake Hills area contains an extensive recreation trail system that is linked with the Flagstaff Urban Trails System and the Arizona Trail. The San Francisco Mountain/Mount Elden area is a summer and winter recreation destination from the Phoenix metropolitan area and local residents. Visitors traveling to the Grand Canyon pass close to the Mountain on Highways 180 and 89. Big game and other wildlife habitat provide opportunity for hunting and wildlife viewing, both popular activities in Arizona. This area is one of the few in the state with large groves of aspen, and viewing fall colors is a major attraction. Mining disturbance is not compatible with managing and maintaining trail systems, vegetation, and wildlife habitat that have a significant role in recreation and tourism for the community.

**Scenic Vistas:** This area provides the scenic backdrop for Flagstaff and its outlying communities. Scenic vistas are enjoyed along the major highways and from vantage points along the popular Snowbowl Road. Current mining operations are clearly visible from Sunset Crater Volcano National Monument. Surface disturbance associated with mining is not compatible with the recreation and visual management direction for the area.

**Community Sense of Place:** The San Francisco Mountain/Mount Elden area is an integral part of the community of Flagstaff's history and sense of place. Northern Arizona is referred to as the Mountain Campus. Most publications and documentaries about the community feature pictures of the Mountain, and many local businesses display the Mountain in their advertising logos. Resolutions expressing the importance of the Mountain and support for the withdrawal from Flagstaff City Council and Coconino County Board of Supervisors demonstrate the relationship and significance of this area to the community.

**Ability to Manage Surface Disturbance:** The Forest Service's surface management regulations do not provide adequate protection from prospecting disturbance, mining operations, or mineral patent. The surface management regulations have no provisions for disapproving mineral related operations or activities that are authorized under the Mining Law of 1872. Therefore, mining operations cannot be controlled by Forest Service surface management regulations and disturbance cannot be eliminated. The risk of losing a variety of public benefits provided by the San Francisco Mountain/Mount Elden area remains, if this area is left open to mineral location under the General Mining Law of 1872.

**Summary:** Maintaining the recreational, visual, wildlife, and cultural resources that the San Francisco Mountain/Mount Elden area provides is extremely important to the local community as well as society in general. The value of the cultural, recreational and

visual resources far exceeds the mineral value that the area presents. Mineral extraction is not compatible with the management direction the general public is insisting on for this area. Although many values are protected by current or planned withdrawals, important areas are not included. In addition, by consolidating areas outside of the wilderness into one withdrawal with one 20-year timeframe to track, Forest Service and BLM efficiency is increased.

## F. Decision To Be Made

The Coconino National Forest Supervisor will decide, as a result of this analysis, whether or not to amend the Forest Land Management Plan by adding the San Francisco Mountain/Mount Elden area to the list of areas needing special protection of a mineral withdrawal. The decision will also include a recommendation to the Bureau of Land Management to act on the Forest Service's application to formally withdraw the area for 20 years.

# CHAPTER II - Alternatives

## A. Summary of Alternative Development

Following publication of the Federal Register Notice of the withdrawal application, the Forest Service issued press releases, held a public meeting on March 31, 1999, and initiated tribal consultation. The proposed action was described in the "Ideas for Change" booklet that was mailed to approximately 1,300 individuals, agencies, and organizations in May of 1999. The proposed action described at the public meetings and in the "Ideas for Change" was developed into Alternative A. Alternative B, the no action alternative, was developed as required by the National Environmental Policy Act (NEPA). An alternative to recommend a smaller area for withdrawal was considered, but dropped from further analysis.

## B. Summary of Public Comment Received in Response to the Proposal

The Forest has received over 3,000 comments concerning the withdrawal application since November of 1998. Approximately 1,365 names were collected on petitions expressing support for the potential withdrawal application and opposition to expansion of an active mining operation within the potential withdrawal area. Approximately 750 similar comments were received via form letters. Thirty-three speakers commented during the March 31, 1999 public meeting, all expressing support for the withdrawal action. In addition, 5 written comments were also received during that meeting. All other comments came in the form of e-mail, letters, postcards, telephone conversations, and formal resolutions.

Formal resolutions were passed by various groups, including Teesto Chapter of the Navajo Nation, Navajo Medicine Men's Association, Western Navajo Agency, the Dine' Medicine Men's Association, Kayenta Chapter of the Navajo Tribe, Navajo Nation Council, HATAALII Advisory Council, the Hopi Tribe, the Flagstaff City Council, and a recommendation was submitted by the Coconino County Board of Supervisors. Tribal resolutions emphasized:

1. The San Francisco Peaks are religiously and culturally significant.
2. They are the homes of Holy People.
3. They are a place where Native Americans gather medicines, minerals, and other materials for ceremonial and traditional uses.

4. They are a place for conducting sacred ceremonies and prayers.
5. They are a location with traditional stories associated with it.

Tribes submitting letters supporting the mineral withdrawal were the Yavapai-Apache, Yavapai-Prescott, White Mountain Apache, San Carlos Apache, Havasupai, Pueblo of Zuni, Hualapai, and the Hopi.

The Flagstaff City Council issued Resolution #2242: "NOW THEREFORE, BE IT RESOLVED, to protect the integrity of the Peaks, the Council of the City of Flagstaff is opposed to any expansion of the White Vulcan mine, but should it not be within the preview of the Forest Service to deny an expansion, the Council urges the Forest Service to move forward with Environmental Impact Statement process; and further urges that the San Francisco Peaks be withdrawn from any future mining." This Resolution was passed and adopted the March 17, 1999, by the Mayor and Council of the City of Flagstaff.

The Coconino County Board of Supervisors commented via an official letter that opposed further mining in the potential withdrawal area. Concerns expressed by the Coconino County Board of Supervisors were: potential patenting of mining claims that could result in inappropriate development; abandoned mine sites left without reclamation; visual impacts associated with mining; Native American issues; general concerns with the 1872 Mining Act; and other environmental issues associated with mining on the Peaks.

Other organizations and groups submitting comments opposing mining in the San Francisco Mountain/Mount Elden area, and in support of the mineral withdrawal are the: Sierra Club, Northern Arizona Audubon, National Park Service, Arizona Game & Fish Department, Grand Canyon Trust, Coconino Community College of Environmental Sciences, Society for Applied Anthropology, Flagstaff Activist Network, Southwest Forest Alliance, Southwest Center for Biodiversity, Coconino Sportsmen, and the Arizona Ethno Botanical Research Association.

All of the above mentioned comments, in support of withdrawal, are represented by Alternative A.

Of the approximately 3,000 comments received, there were 4 that expressed opposition or concern with the proposed withdrawal. These comments were generally concerned with limiting the supply of important mineral resources. Additionally, a law firm that

# Alternative A - New Withdrawal Area

represents a local mining operation questioned the purpose and need of the mineral withdrawal. The Forest Service reviewed these comments and determined that the no-action alternative best represented these concerns.

## C. Alternatives Considered but Dropped from Further Analysis

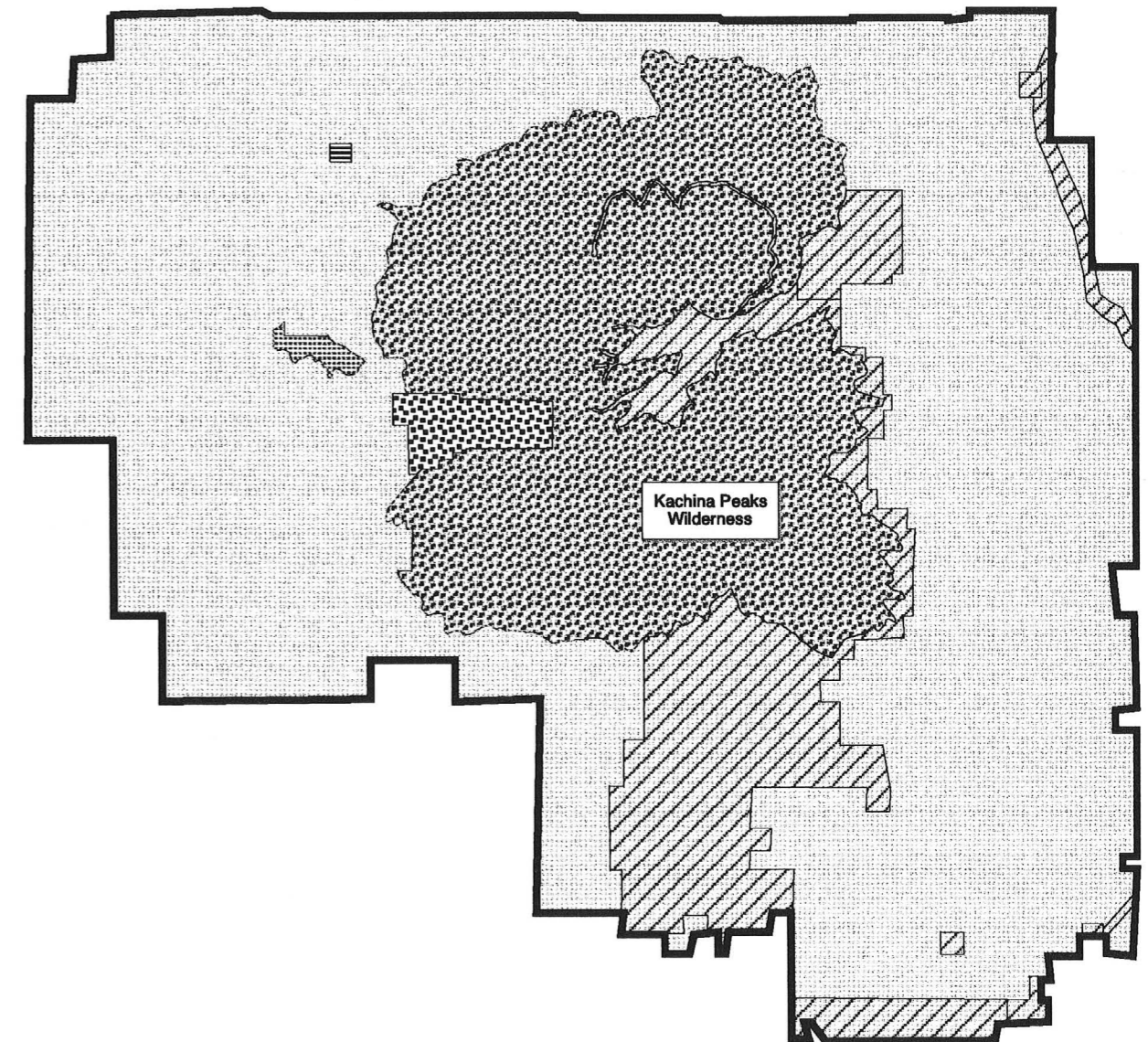
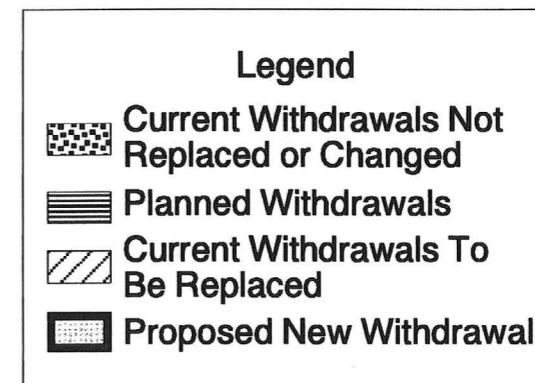
The objective in establishing a boundary for the potential withdrawal was protection of the unique resources described in the Purpose and Need section of this document. American Indian Tribes do not conceptualize boundaries as Euro Americans do. Consequently, the various tribes consulted were unable to provide direct and specific input as to the location of a boundary. Through evaluating the information gathered from consultations with various tribes with cultural ties to the Mountain, the agency decided on the proposed boundary. Other alternatives were discussed that involved smaller areas. They were dropped from further consideration because the resources identified by the community, tribal officials, and tribal representatives as unique and special could not be protected through withdrawal of a smaller area. The area proposed for withdrawal is connected culturally and environmentally and functions as a whole. Protecting only portions of this area would degrade the qualities and unique resources that various communities are demanding to be protected. Consequently, withdrawing only a portion of the area proposed was dropped from further consideration because it does not meet the objectives and purpose of the proposal. This action was supported through several thousand documented comments from the

public, including numerous tribes that supported the boundary as proposed. Additionally, the boundaries as proposed are readily identifiable and follow an elevation that delineates the landmass of the San Francisco Mountain/Mount Elden area.

## D. Alternatives Analyzed in Detail

**Alternative A** will amend the Forest Land Management Plan by adding the San Francisco Mountain/Mount Elden area to the list of areas needing special protection of a mineral withdrawal. Alternative A will also include a recommendation to the Bureau of Land Management to act on the Forest Service's application to formally withdraw the area for 20 years. Alternative A will replace all existing withdrawals with the exception of the Kachina Peaks Wilderness and the Snowbowl Ski Area, in the area with a new consolidated 20-year timeframe. The Kachina Peaks Wilderness and Snowbowl Ski Area are permanently withdrawn; therefore, there is no need to include those areas in the withdrawal recommendation. Approximately 37 percent, or 27,659 acres, are currently covered by existing withdrawals. Under Alternative A, 46,721 additional acres will be protected by withdrawal as depicted by the map labeled Alternative A on the opposite page.

**Alternative B** is the "no action" alternative where no change would be made to the Forest Plan and no recommendation would be made to BLM for withdrawal. Current withdrawals will continue until expired or renewed.



Environmental Assessment  
for the San Francisco Mountain/Mount Elden  
Mineral Withdrawal  
Map created on 4/13/00

1 0 1 2 3 Miles





## CHAPTER III - Affected Environment and Environmental Consequences

### A. Traditional Cultural Property

The San Francisco Mountain/Mount Elden area is well known as a place holding extreme religious and cultural values to a number of American Indian tribes in the Southwest. The tribes holding significant traditional interests for the San Francisco Mountain are the Hopi, Navajo, Zuni, Hualapai, Havasupai, Yavapai-Apache, Yavapai-Prescott, Tonto Apache, White Mountain Apache, San Carlos Apache, San Juan Southern Paiute, Fort McDowell Mohave Apache, and Acoma. The significance of the Mountain to the tribes encompasses many aspects, including healing powers, serving as home to deities, as a physical carrier of prayers to the gods, their role in creation myths and other stories, and many other cultural and religious associations. The Mountain has been identified as a traditional cultural property to the Coconino National Forest by these tribes, and is currently being evaluated for eligibility for the National Register of Historic Places.

The Coconino National Forest has been told by the tribes that commercial ground disturbing activities associated with mining are a desecration. Continued mining will further adversely affect the traditional and spiritual values as well as the quality of religion experienced. Tribal and spiritual leaders have repeatedly expressed to the Forest Service the importance of protecting the area from further mining. Mining activities are not consistent with management and protection of perhaps the most significant traditional cultural property in the Southwest. The Forest Service's surface management regulations do not provide adequate protection. This is illustrated by several large and highly visible mining related scars on the slopes of the Mountain, left without reclamation and in an unstable condition. Mining activity has impacted archaeological sites, and additional sites will be destroyed or damaged if mining continues.

**Conclusion:** Should the BLM and Secretary of Interior approve the withdrawal as recommended in Alternative A, then traditional cultural values will be protected from surface disturbance mining in the San Francisco Mountain/Mount Elden area.

Under Alternative B, there is the potential for further degradation of traditional cultural property values from surface disturbance from mining.

### B. Economics

Mineral withdrawal will reduce commercial mining opportunities that may affect the economic opportunities of a few members of the local community. Continued mining could adversely affect the area's visual and recreational resources, which could ultimately have adverse economic and quality of life impacts to the residents of Flagstaff and the surrounding region. By statute, Federal agencies are to administer these lands for the benefit of all Americans, including those who live near public lands or whose economic well-being depends on the goods and services these lands produce.

Mining is not a major economic factor for Flagstaff or Northern Arizona. The only active mining operation not on patented land within the withdrawal area is the White Vulcan Pumice Mine, operated by Arizona Tufflite Inc. This mine employs locally between 3 and 6 individuals depending upon market conditions. The potential for locatable pumice deposits within the proposed withdrawal area is rated as high, although the probability for economic recovery of those deposits is considered low. Tourism is a major economic factor for Flagstaff and Northern Arizona. The Mountain is very important to the tourism industry. Maintaining the visual quality, cultural integrity, recreational opportunities, and wildlife habitat the area provides is vital to the economic well-being of the region. The economic effects of the withdrawal will be positive for the community because the resources that attract tourism and recreation will be protected. The economic impact from the loss of a few mining jobs that may result from the withdrawal action will not affect the community as a whole. Maintaining the visual quality and recreational opportunities is an important factor in the quality of life for most people that live in the Flagstaff area. The value of the San Francisco Mountain/Mount Elden area, for uses other than mineral extraction, far exceeds the mineral value.

**Conclusion:** Should the BLM and Secretary of Interior approve the withdrawal as recommended in Alternative A, then economic values associated with tourism and recreation will be protected from surface disturbance from mining. A few mining jobs may be lost, but the value for uses other than mineral extraction far exceeds the mineral value of this area.

Under Alternative B, there is the potential for degradation of economic values associated with tourism and recreation from surface disturbance from mining.

### C. Visual Quality

The Forest Plan visual quality objectives for the San Francisco Mountain/Mount Elden area are preservation, retention, and partial retention. A preservation objective is prescribed for all wilderness areas including the Kachina Peaks Wilderness and, aside from some very low impact recreation facilities, allows evidence of ecological change only. A retention objective only allows impacts that are not visually evident to the casual observer. A partial retention objective only allows impacts that remain subordinate to the characteristic landscape. The potential for mitigating the visible effects of mining activity on the San Francisco Mountain/Mount Elden area is very low given the high visibility of the area from important recreation areas and travel routes, the high color contrast between exposed soil and surrounding vegetation, and the difficulty of re-vegetating disturbed ground in the area.

**Conclusion:** Should the BLM and Secretary of Interior approve the withdrawal as recommended in Alternative A, then visual quality will be maintained in regards to surface disturbance mining.

Under Alternative B, there is the potential for degradation of visual quality values from surface disturbance from mining. Any surface mining activity on the slopes of the San Francisco Mountain/Mount Elden area will not meet Forest Plan objectives for scenic quality.

### D. National Interests

National forests have an essential role in contributing to an adequate and stable supply of mineral and energy resources. Large mineral withdrawals may preclude opportunities to develop mineral resources that are vital to the Nation. The Federal Land Policy Management Act of 1976 (FLPMA) declares among other things, that it is the policy of the United States that "public lands be managed in a manner that recognizes the Nation's need for domestic resources of minerals, food, timber, and fiber from the lands." The potential withdrawal area does not contain any mineral resources that are strategically important to the country.

**Conclusion:** Implementing Alternative A and subsequent approval by BLM and the Secretary of Interior will not withdraw mineral resources that are strategically important to the country.

### E. Wildlife

#### Threatened, Endangered or Sensitive Species

The lands being considered for withdrawal contain suitable habitat for 18 threatened, endangered, or sensitive species.

The withdrawal would protect threatened, endangered, and sensitive species from negative affects of mining. Mining can affect species by habitat loss, fragmentation of habitat, and noise disturbance. A detailed evaluation of the potential effects to threatened, endangered, and sensitive species is located in the project record. All threatened, endangered, or sensitive species could potentially be impacted if mining activities occurred within suitable or occupied habitat for each species. The table on the following page identifies the 18 species, which may be potentially impacted.

There is a high potential for impact to four species: the Mexican spotted owl, northern goshawk, peregrine falcon, and cliff fleabane. These species are located in areas where there is a high probability for mineral activity and that could experience impacts at a population or geographic range level as discussed below:

**Threatened Species:** Mexican spotted owls occur within the mixed conifer forests. Tree clearing for mines or road access could destroy habitat. Loss of habitat to support breeding pairs may lead to a population decline. Although mine rehabilitation could restore habitat, this species requires dense old forests that would take over 100 years to grow again to replace lost habitat.

**Sensitive Species:** The northern goshawk is a rare hawk that prefers large ponderosa pine trees for nesting. Tree clearing for mines or road access could affect habitat for the northern goshawk. Loss of habitat to support breeding pairs may lead to a population decline. Habitat restoration for this species would take over 100 years.

The peregrine falcon nests on cliffs and is extremely sensitive to disturbance. Mining within 3 miles of a cliff-nesting site could cause nest abandonment. Loss of reproductive sites for the peregrine falcon could impact the

Species Name	Suitable Habitat Present = Potential for Impact	High Potential for Impact
<b>Mammals</b>		
Black-footed ferret, <i>Mustela nigripes</i> . . . . .	X . . . . .	
Navajo Mountain Mexican vole, <i>Microtus mexicanus navaho</i> . . . . .	X . . . . .	
<b>Birds</b>		
American peregrine falcon, <i>Falco peregrinus anatum</i> . . . . .	X . . . . .	X
Bald eagle, <i>Haliaeetus leucocephalus</i> . . . . .	X . . . . .	
Mexican spotted owl, <i>Strix occidentalis lucida</i> . . . . .	X . . . . .	X
Northern goshawk, <i>Accipiter gentilis</i> . . . . .	X . . . . .	X
<b>Reptiles and Amphibians</b>		
Northern leopard frog, <i>Rana pipiens</i> . . . . .	X . . . . .	
<b>Plants</b>		
Rusby's milk vetch, <i>Astragalus rusbyi</i> . . . . .	X . . . . .	
Cliff fleabane, <i>Erigeron saxatilis</i> . . . . .	X . . . . .	X
Flagstaff beardtongue, <i>Penstemon nudiflorus</i> . . . . .	X . . . . .	
Mt. Dellenbaugh sandwort, <i>Arenaria aberans</i> . . . . .	X . . . . .	
Sunset Crater beardtongue, <i>Penstemon clutei</i> . . . . .	X . . . . .	
<b>Insects</b>		
Arynxia giant skipper, <i>Agathymus aryxna</i> . . . . .	X . . . . .	
Freeman's agave borer, <i>Agathymus baueri freemani</i> . . . . .	X . . . . .	
Early elfin, <i>Incisalia fotis</i> . . . . .	X . . . . .	
Spotted skipperling, <i>Piruna polingii</i> . . . . .	X . . . . .	
Mountain silverspot butterfly, <i>Speyeria nokomis nitocris</i> . . . . .	X . . . . .	
Blue-black silverspot butterfly, <i>Speyeria nokomis nokomis</i> . . . . .	X . . . . .	

population level. Once endangered by possible extinction, this species has been recovered and was recently removed from the Endangered Species List. Loss of reproductive sites will increase the likelihood of re-listing the peregrine falcon.

Cliff fleabane is a rare plant. There is one known location near Little Elden Spring. It is found growing in the crevices of dacite rocks. Mining in this area could destroy the plant and its habitat. This is the northern-most location of the plant within its range. Loss of this location would change the geographic range of the species.

**Conclusion:** Should the BLM and Secretary of Interior approve the withdrawal as recommended in Alternative A, then threatened and sensitive species habitat values will be protected from disturbance from mining.

Under Alternative B, the potential exists for surface disturbance from mining to: 1) change the geographic range of cliff fleabane, a rare plant; 2) add to loss of reproductive sites for peregrine falcon; 3) add to loss of habitat to support breeding pairs of northern goshawks; and, 4) add to loss of habitat for Mexican spotted owls. It is important to note that northern goshawks and Mexican spotted owl habitat can take up to 100 years to re-establish after large-scale surface disturbance.

## F. Soils and Water

The San Francisco Mountain/Mount Elden area is located within portions of four different fifth code watersheds. The Flagstaff, Sycamore Canyon and Cataract-Spring Valley fifth code watersheds drain into the Verde River. The Cedar-Deadman watershed drains into the Little Colorado River. The Little Colorado River and segments of the Verde River are currently in non-attainment for turbidity standards (1996 Arizona Department of Environmental Quality (ADEQ) Water Quality Assessment).

Generally, the Forest Service lands within the San Francisco Mountain/Mount Elden area are in satisfactory watershed condition, though pockets of unsatisfactory conditions exist in meadows and old wildfire areas.

The area does not contain any perennial streams or rivers, however, heavy runoff occurs in the spring from snowmelt. Past mining activity, especially in the Sugar Loaf area, has caused localized erosion and off-site sedimentation. The withdrawal action will protect downstream water quality and off-site sedimentation problems by limiting potential ground disturbing activities associated with mining.

The Nonpoint Source Intergovernmental Agreement signed by the Forest Service (Region 3) and the Arizona Department of Environmental Quality states that the Forest Service will endeavor to minimize and mitigate all potential nonpoint source pollution activities. As agreed upon by the State of Arizona and the Forest Service, the most practical and effective means of controlling potential nonpoint pollution sources from forests and rangelands is through the development of preventative or mitigating land management practices, generally referred to as Best Management Practices (BMPs), or in the case of Arizona's process, Guidance Practices (GPs). The purpose of this agreement is to meet objectives defined by the United States Congress in the Federal Water Pollution Control Act (as amended in 1987). These objectives are to restore and maintain the chemical, physical and biological integrity of the Nation's waters in Arizona by complying with water quality standards identified for designated uses in downstream perennial waters.

**Conclusion:** Should the BLM and Secretary of Interior approve the withdrawal as recommended in Alternative A, then soil and water quality and watershed health will have greater protection from additional surface disturbance from mining.

Under Alternative B, we cannot guarantee that BMP's and GP's could be implemented because of potential patenting of claims. There is potential for surface disturbance from mining to impact soil and water quality and create additional patches of unsatisfactory watershed.

## G. Air

The San Francisco Mountain/Mount Elden area lies on top of the Colorado Plateau and air quality on the Coconino Plateau is generally good. This area is in the Little Colorado, Verde and Colorado River air sheds and is classified as a Class 2 airshed. Class 2 airshed standards are under the jurisdiction of the state. Surface mining can cause localized impacts to air quality through dust and particulates generated from mining and hauling activities.

**Conclusion:** In the overall airshed there is little difference between the two alternatives, however, at a more local scale, Alternative A limits impacts to air quality from mining activities, and Alternative B maintains the potential for such impacts.

## H. Vegetation

The potential withdrawal area is predominately ponderosa pine cover type. The higher elevations near the wilderness boundary and including the Kachina Peaks Wilderness are mixed conifer with aspen stands.

**Conclusion:** The withdrawal action of Alternative A will protect vegetative resources, including ponderosa pine and mixed conifer old growth, which have vital importance to wildlife including threatened and endangered species.

## I. Recreation

Popular trails in the project area receive over 10,000 visitors per year. The Flagstaff area national monuments (Walnut Canyon, Wupatki and Sunset Crater Volcano National Monuments) combined receive approximately 500,000 visitors per year. In 1997, the Flagstaff Visitor Center reported 110,729 walk-ins. The Snowbowl Ski Area receives approximately 125,000 winter visitors and 35,000 summer visitors each year. Although the ski area itself is withdrawn, areas along the popular Snowbowl Road, and areas within the vistas are not withdrawn. San Francisco

Mountain and Mount Elden are within a 2- to 3-hour drive from the Phoenix metropolitan area. Especially during the summer months, many people travel to the area for recreation and to enjoy cooler temperatures afforded by the high elevations. Popular activities enjoyed by local and touring public include hiking, mountain biking, horseback riding, dispersed camping, and driving for pleasure. There are outfitter guides operating within the San Francisco Mountain/Mount Elden area, and many groups request special use permits each year for events such as weddings, group gatherings, and races. Rock climbing is a popular activity on Mount Elden, which includes training for search and rescue crews. In the fall, major forest roads such as Hart Prairie and Lockett Meadow Roads are bumper to bumper with vehicles carrying people through the aspen fall colors.

Visitor experiences or recreation settings are described in the Forest Plan using the Recreation Opportunity Spectrum (ROS) system. A map of the ROS inventory for the San Francisco Mountain/Mount Elden area is located in the Forest Service office as a geographic information system layer. The ROS inventory for the area is generally described below:

- There are semi-primitive non-motorized and semi-primitive motorized settings in the majority of the area outside of Kachina Peaks Wilderness. Roaded natural corridors occur along major forest roads.
- There are patches of roaded natural settings in areas close to major highways or developments.

The Forest Plan states that total acres of any ROS class are allowed to change no more than plus or minus 15 percent from the updated inventoried levels during the first decade. Surface disturbance mining changes a recreation setting to Roaded Natural, Rural or even Urban depending on the facilities and disturbance occurring. The Forest Plan directs us to manage the Mount Eden/Dry Lake Hills to maintain a semi-primitive non-motorized ROS class. It is desirable to maintain semi-primitive non-motorized and semi-primitive motorized settings to maintain the recreation activities described above, and ensure a good wild land experience for visitors. Localized dust, noise, and wildlife disturbance detract from recreation experiences.

**Conclusion:** Should the BLM and Secretary of Interior approve the withdrawal as recommended in Alternative A, then recreation settings and recreation opportunities will be protected from surface disturbance from mining.

Under Alternative B, there remains the potential for surface disturbance mining that would be inconsistent with Forest Plan objectives for recreation settings and recreation opportunity.

## J. Cumulative Effects

Cumulative effects are effects on the environment which result from the incremental impact of the action when added to other past, present, and reasonable foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions.

Past, present and ongoing activities have been considered in conjunction with Alternatives A and B. The current status of air, soil, water, vegetation, wildlife habitat, visuals, recreation, and cultural resources are described in other sections of this chapter. There are approximately 110 acres of current soil disturbance on patented mining claims and 100 acres of disturbance on unpatented claims located within the proposed withdrawal area. Implementation of Alternative A will limit additional soil disturbance. Under Alternative B, there remains the potential for additional acres of ground disturbance within the San Francisco Mountain/Mount Elden area. Cumulative economic effects of Alternative A and Alternative B are described in section B of this chapter. Neither alternative has a large effect on the region's economy. Ongoing and future actions as described in the "Schedule of Proposed Actions" for the Coconino National Forest have been reviewed and are located in the Project Record.

**Conclusion:** There is not a significant cumulative effect to the environment, or to the economy of the Flagstaff region or the Nation, from implementing Alternative A. Under Alternative B, there is a potential for additional surface disturbance from mining, which when combined with current mining uses, could have a cumulative effect.

## K. Environmental Justice

The issue of environmental equity and justice in natural resource allocation and decision-making is receiving increasing political and social attention (Albrecht, 1995; Scott, 1996). Following President Clinton's Executive Order 12898 (Federal Register, February 1994), all Federal land management agencies have been mandated to address environmental justice in nonwhite and/or low-income populations, with the goal of achieving environmental protection for all communities regardless of their racial and economic composition.

**Conclusion:** Alternative A does not result in disproportionate impacts to low-income populations,

nor does it impact minority populations. As stated earlier in the economics section, the overall economy of the Flagstaff area, including its low income and minority populations is strongly tied to the tourism industry, with mineral extraction a very small percentage of the overall economy. Alternative A has a beneficial effect on the traditional cultural values of minority American Indian Tribes in the region.

Alternative B continues the potential for adverse natural resource effects that could negatively impact recreation and tourism-based businesses. Alternative B continues the potential for negative effects to traditional cultural values of minority American Indian Tribes.

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