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ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: FOURTH OF JULY

ALTERNATE NAMES:

DANIELS CAMP FLUOROSPAR  
ARIZONA EASTERN FLUOROSPAR CORP  
ARIZONA FLUOROSPAR  
BLACK BIRD  
FLOURINE  
SYDNEY

GREENLEE COUNTY MILS NUMBER: 88

LOCATION: TOWNSHIP 7 S RANGE 32 E SECTION 4 QUARTER NW  
LATITUDE: N 32DEG 51MIN 37SEC LONGITUDE: W 109DEG 04MIN 31SEC  
TOPO MAP NAME: YORK VALLEY - 15 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:

FLUORINE FLUOROSPAR

BIBLIOGRAPHY:

TRACE 1947 MSGS STRATEGIC MIN. INV. PRELIM.  
REPORT 3-207, P. 1-3, 2 MAPS  
ELEVATORSKI, 1971, AZ. FLUROSPAR ADMMR P.24-5  
AZBM BULL 180, P. 349-52, 1968  
AZBM CIRC 15, P. 2-9, 1950, WILSON  
AZBM BULL. 114, P. 6, 1921, ALLEN & BUTLER  
ADMMR FOURTH OF JULY FILE  
GEOL. SUMMIT MTS & VIC. GEO FILE MAP I-1310-B

SYDNEY MINE (Fourth of July Mine)

Greenlee

T7S R32E Sec. 04

See: "Geology of the Summit Mountains and Vicinity, Grant County, New Mexico, and Greenlee County, Arizona" IN GEOLOGY FILE

Trace 1947 MSGS Strategic Minerals inv. prelim. Report 3-207 p. 1-3,  
2 maps

Arizona Fluorspar, p. 24-25, ADMR Publication

ABM Bul 180, p. 349-352

ABM Bul. 114, p. 6

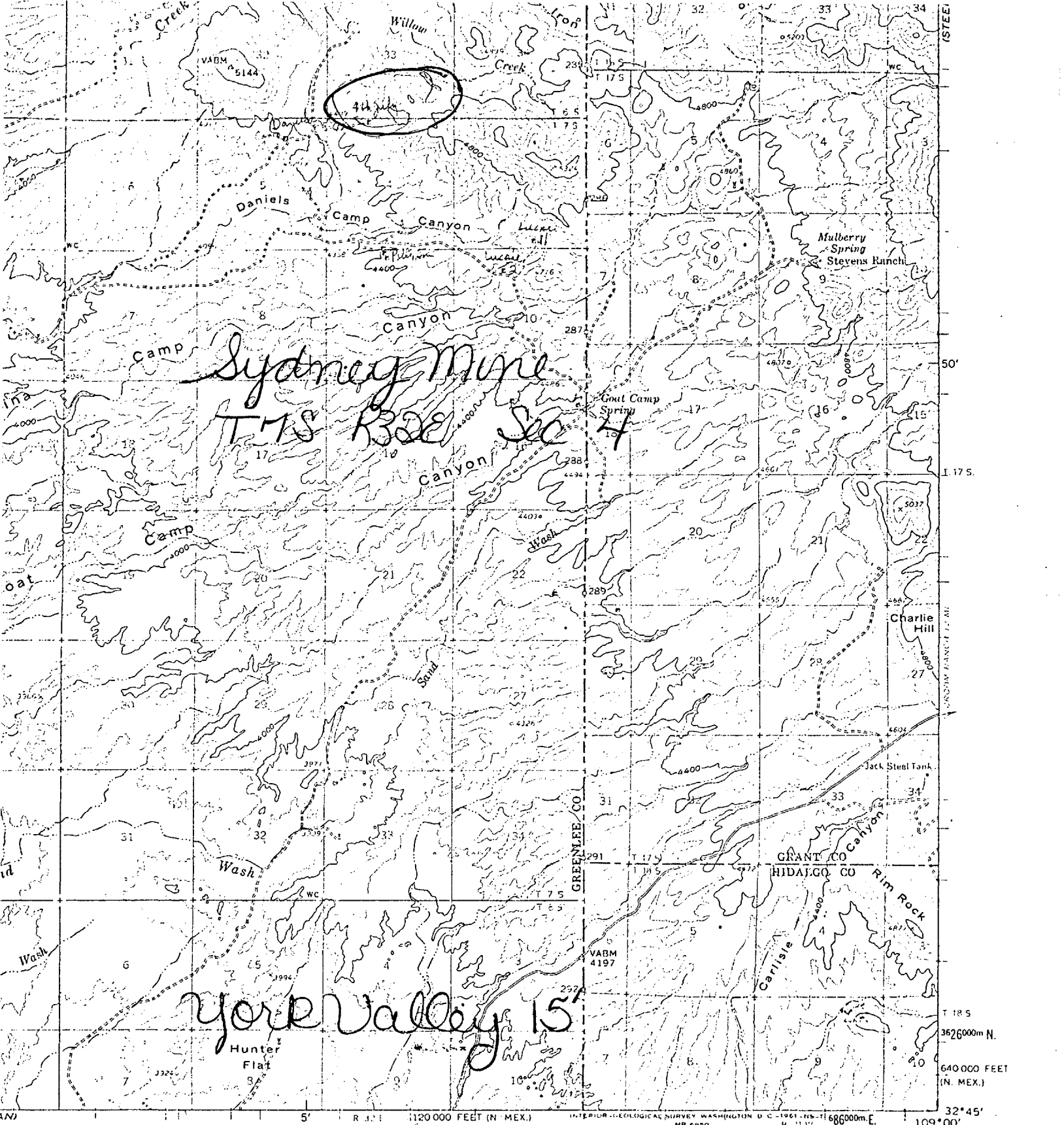
ABM Curcular 15, p. 2-9.

Maps on Fourth of July Mine in Flat File Storage area - Drawer 7

Greenlee Mills Index #88

See: Map I-1310-B p. 9; Mineral Deposit Map of the Silver City  
1° x 2° Quad., NM & AZ

AKA: Ellis Shaft, Daniels Camp Fluorospar, Arizona Eastern Fluorspar Corp,  
Arizona Fluorspar, Black Bird, Flourine

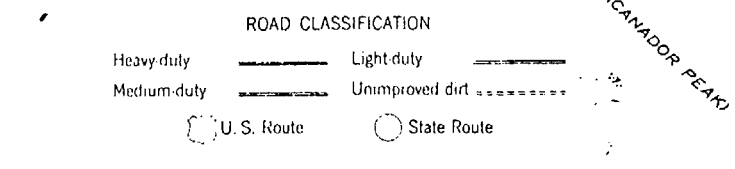
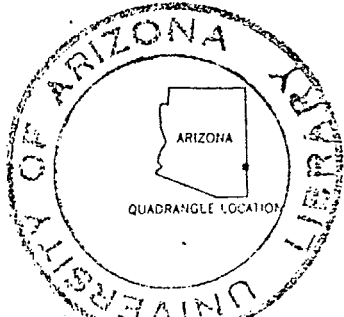
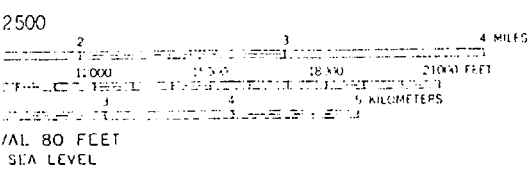
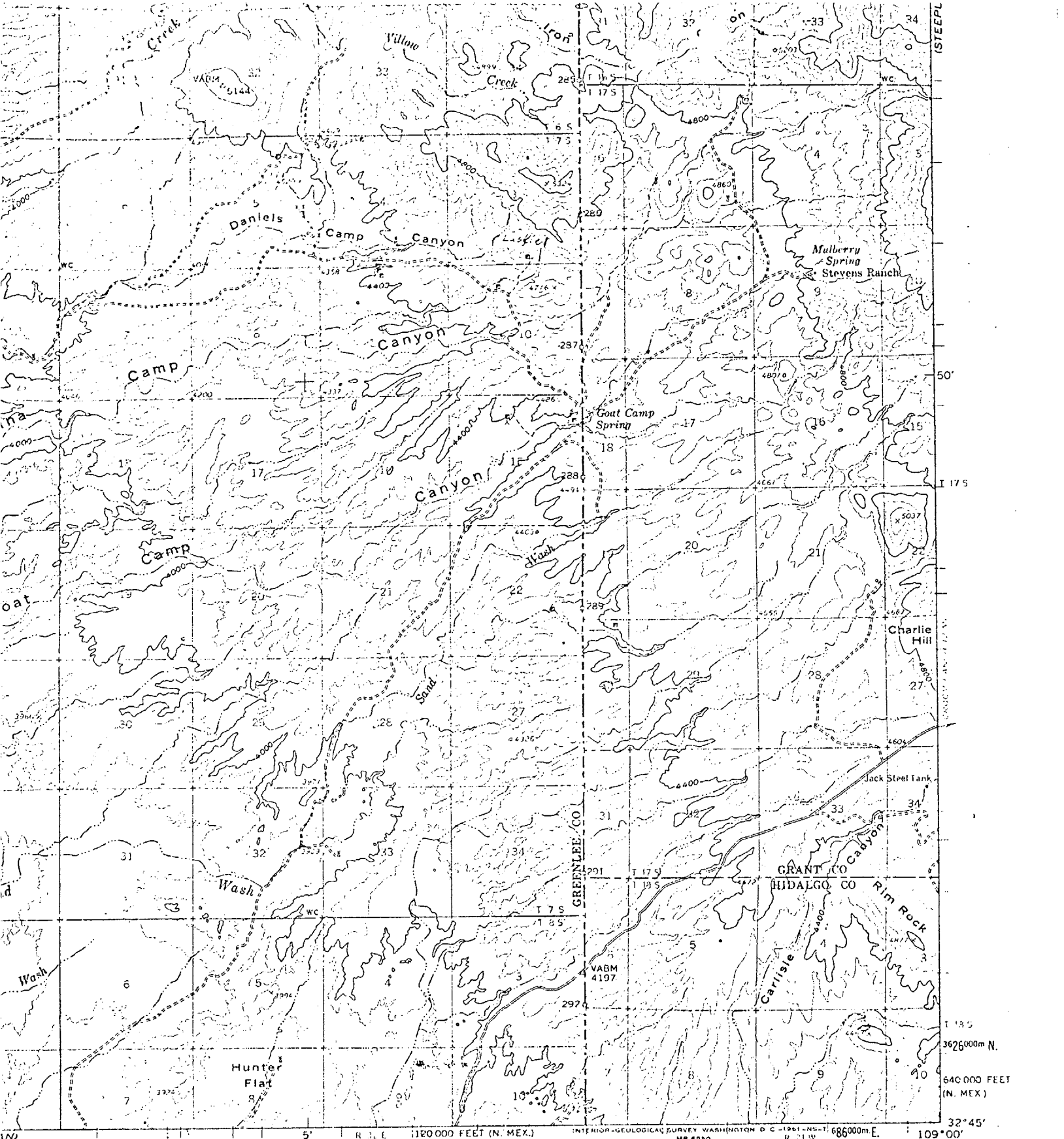


ROAD CLASSIFICATION

Heavy-duty		Light duty	
Medium-duty		Unimproved dirt	
	U. S. Route		State Route

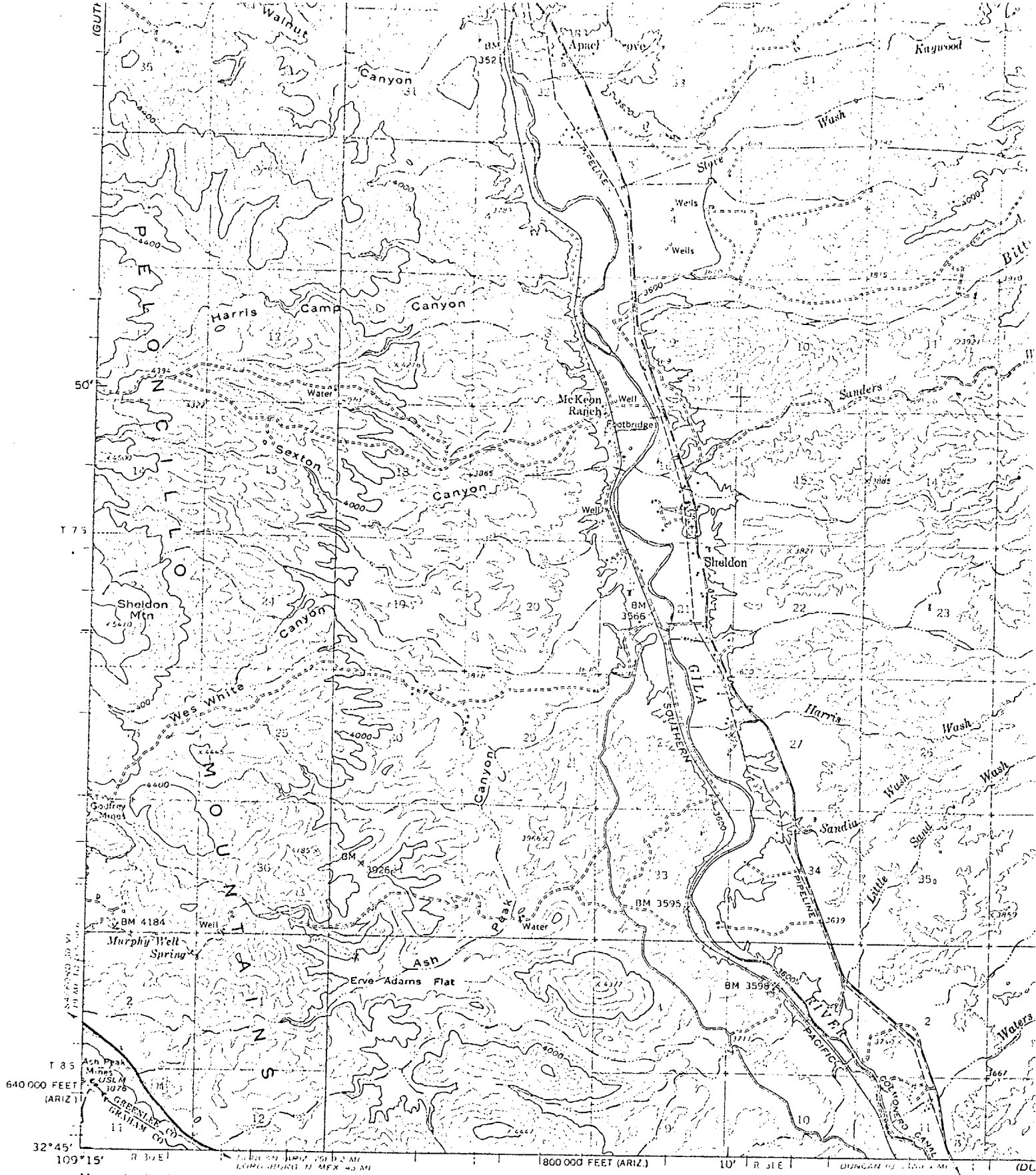
YORK VALLEY ARIZ. - N-MEX.  
N3245 - WT0900715

Fourth Edition 1959

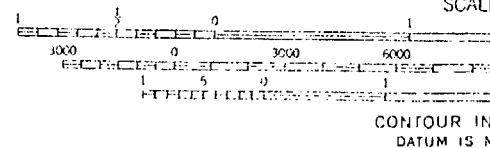
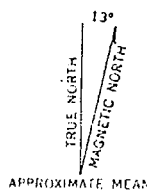


YORK VALLEY ARIZ.-N.MEX.  
N3245-W10900/15

MAP ACCURACY STANDARDS  
R 25, COLORADO OR WASHINGTON 25, D. C.  
AND SYMBOLS IS AVAILABLE ON REQUEST



Mapped, edited, and published by the Geological Survey  
 Control by USGS and USC&GS  
 Topography from aerial photographs by photogrammetric methods  
 Aerial photographs taken 1953. Field check 1959  
 Polyconic projection. 1927 North American datum  
 10,000-foot grids based on Arizona coordinate system, east zone  
 and New Mexico coordinate system, west zone  
 1000-meter Universal Transverse Mercator grid ticks,  
 zone 12, shown in blue  
 Dashed land lines indicate approximate locations  
 Land lines unsurveyed in part of T. 8 S.-R. 31 E.



THIS MAP COMPLIES WITH NATIONAL MAP ACT  
 FOR SALE BY U. S. GEOLOGICAL SURVEY, DEPARTMENT OF THE INTERIOR  
 A FOLDER DESCRIBING TOPOGRAPHIC MAPS



A-51-22

ARIZONIA EASTERN FLOURS MILL  
FOURTH OF JULY

1954



A-51-21

1954

FOURTH OF JULY MINE (also known as Ellis shaft)

Located in the NE 1/4 sec. 4, T7S R32E, about 1 mile due east of Daniels

Camp Mine at elevation 4600. It is one of the four largest producers in the district.

Mining at the Fourth of July Mine started in 1937 and continued until 1942, when about 1600 tons containing 60 to 65%  $\text{CaF}_2$  and 25 to 30%  $\text{SiO}_2$  were shipped.

Development work consists of a 150 ft. shaft, 500 ft. of drifting and two small open cuts. Fluorspar occurs in rhyolite porphyry that is faulted and notably porphyritic. Southwest of the shaft is a hydrothermally altered rhyolite tuff.

The veins contain dense milky to reddish-brown quartz, grey calcite, and colorless to green fluorspar. Secondary coatings of psilomelane are present and much of the ore is interlaced with reddish-brown iron-stained quartz veinlets. Commonly,

the fluorspar-rich part of the vein is a mixture of brecciated quartz and fluorspar.

The U. S. Bureau of Mines report a vein system of 2500 feet, but only small sections contain fluorspar. The width of the fluorspar averages 3 to 4 feet in the mine, which contains two separate veins on the 102 and 148 foot levels.

Dept.  
Min. Res.  
Fluorspar  
P. 24-5



4th of July mine

Location: The 4th of July fluorapatite mine is located in the northwest quarter of section 33 of Township 6 South, Range 32 East, about ~~12~~<sup>13</sup> miles north of Duenen, Arizona.

Physical Features: The area is in a hilly desert environment with sparse vegetation and annual rainfall of about 10 inches.

The mine consists of a shaft inclined at about 70°, several open ~~cuts~~<sup>cuts to connected underground workings</sup> and two prospect pits.

History: The mine was originally owned by Robert T. Ellis of Duenen in 1939. Production at that time was reported to be 150 tons per month. In 1942 Mr. Ellis took A.T. Laine of Fresno, California as a partner in the mine. At this time production was given as 500 tons of milled ore for the previous year. A 1952 report indicates that the mine was acquired by Ben Bellinsley of Duenen and Roy B. Wilson of Phoenix with Arizona Eastern Fluorapatite Corp. of Duenen operating the mine with an option to purchase which they did in 1953. The ownership

4th of July mine

2

reverted to Ben Billingsley in 1954 or 1955.

Ownership: Ben Billingsley.

Geology: The area of the mine is in ~~andesite~~ andesite porphyry.

The ore is found in 2 veins which strike Northwest and Southeast and dip to the ~~southwest~~ southwest at about  $82^\circ$ . The west vein is given as being about 4 feet wide and the east vein as 10 feet wide. The ore averages about 60% except for high grade "lenses" where the grade reaches 90%  $\text{CaFe}$ .

Development: According to a 1952 report the west vein had been developed for a length of 120 feet and ~~for~~ <sup>to</sup> a depth of 150'. The east vein had been developed for a length of 250' and to a depth of 50'.

Ore Reserves

Recommendations + conclusions.

4th of July Mine

(A1) - Greenlee Co., Ariz.  
- past producer  
- underground mine

(A4) Latitude N32° 51' 37"  
Longitude W109° 4' 30"  
ref. pt. lead frame  
precision of pt. location mea. 10m  
prec. meridian Gila + Salt River  
T7S, R32E, sec. 4, nw 1/4  
survey status - unknown  
elevation 4520' (1378 m)  
datum - above sea level  
precision of elev. mea. - 10m  
USGS 1:250,000 quad Silver City

(A5) distance of road needed 0  
distance to adequate water supply 6 mi.  
" " " electricity " 6 mi  
mining district Steeple Rock

domain BLM  
drainage basin?  
topography - hilly  
annual pptn. - about 10" (25.4 cm)  
distribution of pptn. - even  
temperature - temperate  
vegetation - desert  
soil texture - undetermined  
primary land use - grazing  
working season - all yr.  
water supply - undetermined  
map series - 15 minute  
map name - Ajoek Valley

(A8) economic + gangue minerals - etc. CaF<sub>2</sub>

(A9) same as Luckie No. 2

4<sup>th</sup> of July Mine.

This mine consists of two claims, the 4<sup>th</sup> of July and 4<sup>th</sup> of July #2 recorded in book 16 pages 569 + 570 by Ben Billingsley of Duncan, Az. in the Greenlee County Az. Records office, Clifton, Az.

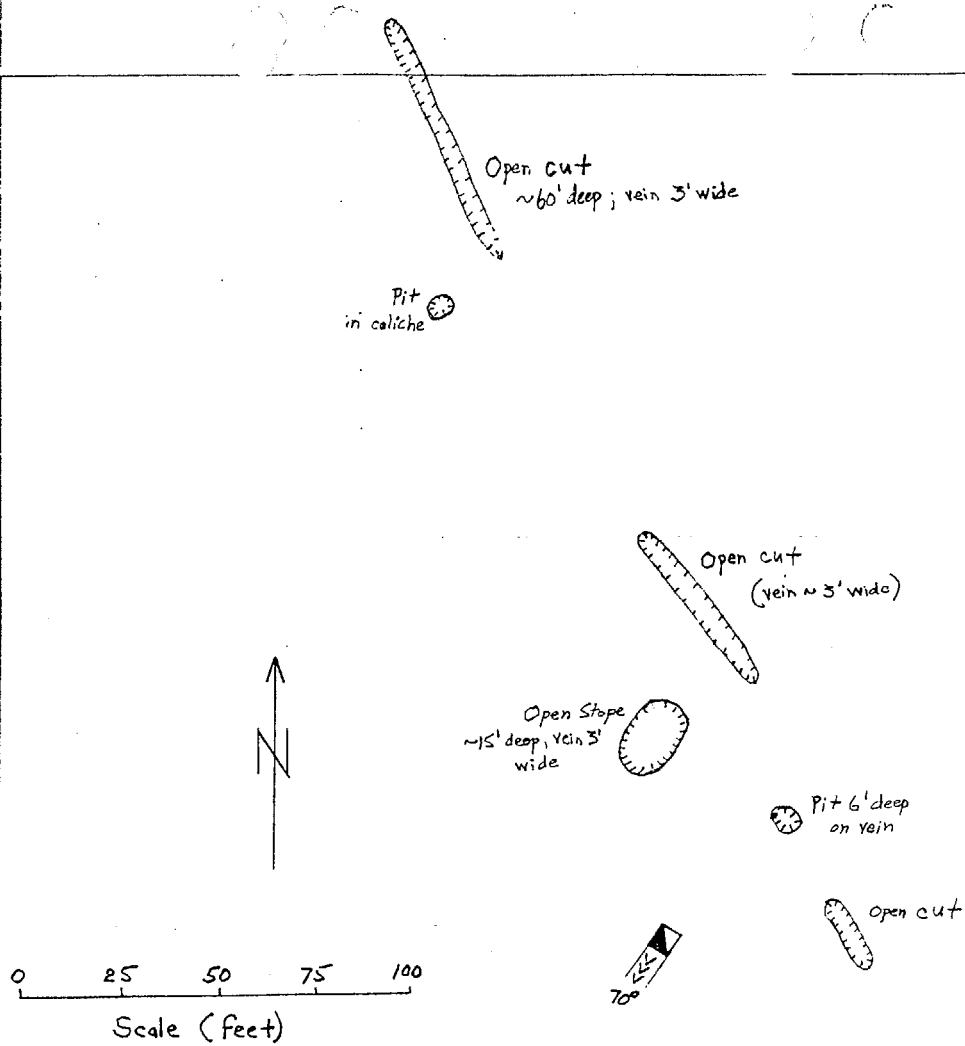
The property is located in section 4, T7S, R32E and the shaft is shown on the York Valley topographic sheet where the elevation is indicated to be 4520 ft. and the location as  $109^{\circ}04'30''$  longitude,  $32^{\circ}51'36''$  latitude.

The shaft can be reached by traveling NW along the county road from the Polly Ann about 2 miles to a wash up (turn northeast) which proceed  $2\frac{1}{2}$  miles to the

This mine has no recorded production but it is apparent that there has been an unknown amount.

Here too the MESA inspector denied access to the underground.

This property is leased by Producers Minerals Co. Safford Az. Ralph Monow, mgr.



Fourth of July Mine  
near Duncan, Ariz.

- country rock is andesite porphyry
- vein consists of brecciated andesite cemented by  
wt. + colorless  $\text{CaF}_2$ , abundant  $\text{qtz}$ ,  $\text{Mn ox}$ ,  $\text{Fe ox}$
- mapped 2/28/75 by Walker, Earl, and Hirt
- this drawing done 3/2/75 by Wm. Hirt

Vein Outcrop

(200)

St-8 pa.

no. 3-207

15315

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
U.S. Geological Survey  
1947

STRATEGIC MINERALS INVESTIGATIONS  
PRELIMINARY REPORT  
(3-207)

THE FOURTH OF JULY AND LUCKIE NO. 1  
AND NO. 2 FLUORSPAR VEINS  
GREENLEE COUNTY, ARIZONA.

by  
R. D. Trace

\*

FOURTH OF JULY VEIN

Introduction

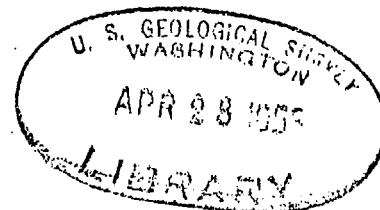
The Fourth of July fluorspar vein is about 20 miles by road north-northeast of Duncan, the nearest railroad station, in the SW $\frac{1}{4}$  sec. 33, T. 6 S., R. 32 E., and the NW $\frac{1}{4}$  sec. 4, T. 7 S., R. 32 E., Greenlee County, Ariz. The property is controlled by the R. T. Ellis Mining Co. of Duncan. The mine is reached from Duncan by following Arizona State Highway No. 75 north for 10.1 miles and a dirt road eastward for about 10 miles (see pl. 1).

Mining on the Fourth of July vein started in January 1937, and continued intermittently until August 1942. Between 1937 and 1941 the mine is reported to have produced approximately 2,600 tons of fluorspar containing 65 percent of CaF<sub>2</sub> and 25 to 30 percent of SiO<sub>2</sub>. The only available mill records indicate that between January 1 and August 18, 1942, a total of 573 tons of fluorspar containing 64 percent of CaF<sub>2</sub> was shipped from claim No. 2.

The nearest fluorspar mill is at Lordsburg, N. Mex., 35 miles by road southeast of Duncan, and about 55 miles from the mine. A mill using the heavy-media separation (sink-float) process is located at Gila, N. Mex., 97 miles east of Duncan, via the Tyrone road.

The Fourth of July claims are in the southern foothills of what are locally called the Mule Creek Mountains. The nearby relief varies from 300 to 400 feet. The drainage system is typical of that of a semiarid climate.

This report summarizes the results of field examinations made by the writer and D. A. Warner in January 1944.



The fluorspar is found as lenticular veins and pockets along fault-breccia zones and fissures in basalt. The dips of the veins range between  $60^{\circ}$  and  $80^{\circ}$ . Much of the fluorspar is brecciated, indicating post-mineralization movement along the faults. The basalt between the East and West veins is slightly brecciated in places and contains many stringers of quartz.

The distribution of fluorite, quartz, and calcite within the veins is not uniform. Calcite, however, commonly occurs near the hanging wall; this relation is shown in the mine by a rather continuous cavity near the hanging wall, where calcite apparently has been leached from the vein. Commonly the fluorspar-rich part of the vein is a mixture of brecciated quartz and fluorite. Locally, however, definite sequences were noted. A small pit on the surface, for example, contains from west to east: fluorite, calcite, quartz, and calcite. On the 102-foot level, a local sequence from west to east is: quartz, calcite, fluorite, and quartz.

The vein system has a length of at least 2,500 feet, but only small sections are known to contain fluorspar. The width of the fluorspar ranges from less than an inch to approximately 5 feet, and averages 3 to 4 feet in the mine. The surface and underground exposures of fluorspar are shown on plates 2 and 3. At the south end of claim No. 1, a section of the vein about 400 feet along the strike may contain commercial deposits. On the surface, the other veins on claim No. 1 are composed mostly of calcite and quartz. On claim No. 2, a section of the vein about 400 feet along the strike has economic widths of fluorspar, and the underground work has been done in this part of the vein.

The west vein in the Ellis shaft, between the surface and the 57-foot level, dips about  $60^{\circ}$  W, and this part of the shaft was sunk in fluorspar. Below the 57-foot level, the shaft steepens to  $80^{\circ}$  or  $85^{\circ}$  and is mostly in quartz.

The East vein has been mined more than the West vein. A comparison of the fluorspar widths on the 102- and 148-foot levels of the East vein indicates that the fluorspar body possibly is pinching downward. Much fluorspar, however, remains in the mine, particularly between the 57- and 102-foot levels. In the south end of the 102-foot level, the fluorspar vein splits, the wider vein turning gently eastward into the wall. In the north end of this level the vein also splits, one part bearing almost directly north and the other west-northwest. On the 148-foot level in the northwest end of the drift, the vein divides as it did on the level above. The west branch apparently contains more fluorspar.

## LUCKIE NO. 1 AND NO. 2 FLUORSPAR VEINS

### Introduction

The Luckie No. 1 and No. 2 fluorspar veins of Greenlee County, Ariz., are about  $14\frac{1}{2}$  miles by road north-northeast of Duncan and are in secs. 3 and 10, T. 7 S., R. 32 E., about half a mile west of the Arizona-New Mexico State line (see pl. 1). The shortest route to the claims from Duncan, the nearest railhead, is north by way of Arizona State Highway 75 for  $2\frac{1}{2}$  miles to a dirt road; then north-east about 12 miles, past the Goat Camp Spring and ranchhouse to the mines.

## Fluorspar deposits

The fluorspar deposits are the result of fissure filling, perhaps accompanied by some replacement of andesite porphyry along fault zones. Banded milky quartz is the predominant vein mineral, in places constituting almost the entire vein. Veinlets of drusy quartz are believed to be secondary. Even where the vein has been mined for its fluorite content, 35 to 40 percent of  $\text{SiO}_2$  is commonly present. No calcite was found, although vein samples contained an average of 5 percent of  $\text{CaCO}_3$ .

Both medium and coarse fluorite occur in veins, either brecciated or as a series of closely spaced veinlets interspersed through the brecciated andesite porphyry and gouge. Most of the fluorite is deep green, although some is blue green; fluorite cropping out at the surface is colorless. Fissure veinlets of fluorite as much as one inch thick are scattered irregularly through the quartz-rich part of the vein. The fluorite in these veinlets commonly occurs as well-developed cubes. The thickness of the veins containing fluorite ranges from less than an inch to 5 feet and averages between 3 and 4 feet.

Limonite in places coats fluorite and quartz. Psilomelane containing tungsten is also common in parts of the veins. Chemical analyses of two samples of psilomelane from the Luckie No. 1 vein showed the following:<sup>5/</sup>

$\text{WO}_3$	$\text{V}_2\text{O}_5$	Mn	$\text{BaO}^*$	$\text{SiO}_2$
1.97	none	47.7	14.74	1.59
1.96	none	47.1	15.75	1.79

\*BaO soluble in dilute HCl

The sequence of the vein minerals probably was milky quartz closely followed by fluorite or in part simultaneous with it. The veinlets of well-developed fluorite cubes cutting the milky quartz indicate that at least some of the fluorite was later than most of the quartz. The psilomelane and iron oxides are supergene minerals.

Claim No. 1.---The vein system in claim No. 1 (see pl. 5) is well exposed as low quartz ridges containing pockets of fluorspar. Because fluorspar is less resistant to erosion than quartz, the quartz content of the veins may be over-estimated in the outcrop.

On the surface fluorspar widths in all exposed veins range from less than an inch to 2.3 feet, although they may be greater in the debris-covered bottom of the long trench just west of the Sanders Shaft. Widths of fluorspar underground are as much as 4.5 feet. The entire fault zone is not mineralized, for barren sheeted zones in the andesite porphyry commonly are parallel to margins of the veins.

<sup>5/</sup> Analyses by Fleischer, Michael, U. S. Geol. Survey, June 1944.



The easternmost vein is the best and perhaps the only commercial deposit of fluorspar in Claim No. 1, but a branch vein about 125 feet northwest of the Sanders shaft may also be of economic value. At the surface, the easternmost vein dips about  $50^{\circ}$ ; about 20 feet down the raise from the surface the dip flattens to about  $35^{\circ}$  or  $40^{\circ}$  and then gradually steepens again, until on the 71-foot level it is about  $60^{\circ}$ . The widest section of fluorspar is found where the dip of the vein is about  $35^{\circ}$  or  $40^{\circ}$ . Neither the north nor south face of the drift on the 71-foot level contains as much fluorspar as the part of the vein near the three stopes. From surface indications, however, it is reasonable to believe that the fluorspar might widen to between 2 and 3 feet farther north along the strike of the vein.

Claim No. 2.—The vein system in the Luckie No. 2 claim is largely covered on the surface, in contrast to that in the No. 1 claim. The location of the vein is obtained only from the glory hole and shaft and by projection from underground workings.

The fault pattern and fluorspar widths are shown on plate 7. The veins, composed of fluorite and quartz, dip generally about  $70^{\circ}$  N. and have a more uniform dip than those in the Luckie No. 1 claim. The average fluorspar width that had been mined was probably between 3 and 5 feet, but no fluorspar width greater than 3 feet is exposed now. Underground, several veins of varying widths, diverging from the vein system, probably represent local irregularities in a complex fracture system. The vein shown in the underground workings, which strikes northwest from the shaft, however, may be related to another fracture system.

Much of the fluorspar in the mine is obviously later than the faults, since both the fluorspar and quartz surround and cement breccia fragments of andesite porphyry. Slickensides are common but give no evidence of the general direction of movement or amount of displacement along the faults.

erha

STATE OF ARIZONA  
DEPARTMENT OF MINERAL RESOURCES  
MINERAL BUILDING, FAIRGROUNDS  
PHOENIX, ARIZONA 85007

Fourth of July Mine

C  
O  
P  
Y

LOCATION: The Fourth of July Mine is located in the Steeple Rock mining district in the western foothills of the Mule Creek Mountains, about 20 miles northeast of Duncan. The mine shaft is shown on the York Valley, Ariz.-N. Mexico 15 minute quadrangel in T. 7 S., R. 32 E., Sec. 4, NW $\frac{1}{4}$ , NE $\frac{1}{4}$ , NE $\frac{1}{4}$ . According to the geologic map of the Fourth of July Mine in Trace's 1947 report, the northernmost open cut, approximately 200 feet northeast of the Ellis Shaft, is located in T. 6 S., R. 32 E., Sec. 33, and would thus be in Sec. 33, SW $\frac{1}{4}$ , SE $\frac{1}{4}$ , SW $\frac{1}{4}$ , SE $\frac{1}{4}$ . The mine shaft on the topographic map is at approximately 4640 feet elevation (1383 meters) and is located at 32.86036° (32° 51' 37.3") North latitude and 109.07528° (109° 4' 31.01") West longitude.

The Fourth of July Mine can be reached from Duncan by driving northwest on Arizona Highway 75 for 2 miles from the Ariz. 75 - U. S. 70 junction. Turn right through a gate in the highway fence and drive 8 $\frac{1}{2}$  miles northeast on a well-maintained gravel road to Goat Camp Spring. Turn left (northwest) on the jeep road for about 5 miles (about 2 miles past the Polly Ann Mine); then turn right (northeast) up a wash (probably Sanders Wash which branches into Daniels Camp Canyon) which becomes a jeep road to Daniels Camp mine. Daniels Camp Mine is about 2 miles along this road and the Fourth of July Mine is  $\frac{3}{4}$  mile beyond Daniels Camp and is at the end of the road.

The Fourth of July Mine can also be reached from Duncan by driving northwest on Arizona Highway 75 for 10.5 miles from the Ariz. 75 - U. S. 70 junction. Drive northeast on a dirt road along Sanders Wash for 4 miles to a fork in the road. (The right fork leads <sup>east</sup> to the Polly Ann Mine in 2 $\frac{1}{2}$  miles.) Take the left fork to the northeast for about 3 miles and the Fourth of July Mine is at the end of the road, about  $\frac{3}{4}$  mile east of Daniels Camp mine.

## Fourth of July

**HISTORY:** Mining on the Fourth of July vein started in January, 1937, and continued intermittently until August, 1942. The mine was originally owned by Robert T. Ellis of Duncan. In 1939 production was reported to be 150 tons per month. Between 1937 and 1941 the mine is reported to have produced approximately 2600 tons of fluorspar containing 65%  $\text{CaF}_2$  and 25 to 30 %  $\text{SiO}_2$ .

In 1942 Mr. Ellis took A. T. Laisne of Fresno, California, as a partner in the mine. At this time production was given as 500 tons of milling ore for the previous year (1941). In 1942 about 1600 tons containing 60 to 65%  $\text{CaF}_2$  and 25 to 30%  $\text{SiO}_2$  were shipped. The only available mill records indicate that between January 1 and August 18, 1942, a total of 573 tons of fluorspar containing 64%  $\text{CaF}_2$  was shipped from the Fourth of July claim no. 2. In 1944 the property was controlled by the R.T. Ellis Mining Co. of Duncan.

A 1952 report indicates that the mine was acquired by Ben Billingsley of Duncan and Roy B. Wilson of Phoenix with Arizona Eastern Fluorspar Corp. of Duncan operating the mine with an option to purchase, which they did in 1953. The ownership reverted to Ben Billingsley in 1954 or 1955.

**OWNERSHIP:** The Fourth of July Mine is currently owned by Ben Billingsley of Duncan, Arizona, and is recorded as two claims, the Fourth of July and the Fourth of July No. 2, in book 16, pages 569 and 570 in the Greenlee County Records Office, Clifton, Arizona. The property is leased by Producers Minerals Co. of Safford, Arizona, with Ralph Morrow as manager.

**GEOLOGY:** The predominant igneous rock of the area is a reddish-brown or greenish-gray olivine basalt of Tertiary or Quaternary age, which is generally porphyritic and in places vesicular. The vesicles are in many places lined with drusy quartz or calcite. Small veinlets of quartz and calcite as much as one-eighth inch thick are scattered without recognizable pattern through the basalt. A thin section by the U. S. G. S. showed that the ferromagnesian minerals are altered to iron oxide and a carbonate of dolomitic composition. The structure and conspicuous images of olivine crystals indicate that the rock was olivine basalt.

Near the north end of claim No. 1, an undulating contact between two basalt flows is exposed. The upper flow is dark red, and the lower is dark greenish gray. Both flows are slightly vesicular, and the vesicles parallel the curve of the flow contact. Some of the basalt is well jointed in at least two directions, approximately north and east.

A bed of very light gray, fine-grained, rhyolitic tuff dipping about  $24^{\circ}$  North crops out in the southwest corner of claim No. 2. A thin section by the U.S.G.S. of the rhyolitic tuff shows that it had been devitrified. The presence of chessboard albite suggests that the tuff has been hydrothermally altered.

On the surface, evidence of movement along the faults occupied by the fluor spar veins is slight. A boulder of slickensided basalt was found near the north end of claim No. 1. Underground, however, the basalt and the veins are considerably brecciated, although positive information about the direction of movement or the amount of displacement is lacking.

**FLUORSPAR DEPOSITS:** The fluor spar veins contain dense milky and reddish-brown quartz, medium-gray, coarsely crystalline calcite, and green fluorite, named in order of decreasing abundance. Secondary coatings and thin stringers of

psilomelane containing 44.9% of manganese and .89% tungstic oxide are also associated with the fluorspar veins.

The fluorspar is chiefly an intimate mixture of dense milky quartz and green, fine-to coarse-grained fluorite. After long exposure to light, the fluorite loses its color. Most of the fluorspar is interlaced with a network of reddish-brown, iron-stained quartz veinlets. Calcite commonly is concentrated near the hanging-wall edge of the vein.

The fluorspar is found as lenticular veins and pockets along fault-breccia zones and fissures in basalt. The dips of the veins range between 60° and 80°. Much of the fluorspar is brecciated, indicating post-mineralization movement along the faults. The basalt between the East and West veins is slightly brecciated in places and contains many stringers of quartz.

The distribution of fluorite, quartz, and calcite within the veins is not uniform. Calcite, however, commonly occurs near the hanging wall; this relation is shown in the mine by a rather continuous cavity near the hanging wall, where calcite apparently has been leached from the vein. Commonly the fluorspar-rich part of the vein is a mixture of brecciated quartz and fluorite. Locally, however, definite sequences were noted. A small pit of the surface, for example, contains from west to east: fluorite, calcite, quartz, and calcite. On the 102-foot level, a local sequence from west to east is: quartz, calcite, fluorite, and quartz.

The vein system has a length of at least 2,500 feet, but only small sections are known to contain fluorspar. The width of the fluorspar ranges from less than an inch to approximately 5 feet, and averages 3 to 4 feet in the mine. The surface and underground exposures of fluorspar are shown on maps in Trace's 1947 report. At the south end of claim No. 1, a section of the vein about 400 feet along the strike may contain commercial deposits. On

the surface, the other veins on claim No. 1 are composed mostly of calcite and quartz. On claim No. 2, a section of the vein about 400 feet along the strike has economic widths of fluorspar, and the underground work has been done in this part of the vein.

DEVELOPMENT: The maps and cross-sections in Trace's 1947 report show that the Fourth of July Mine is developed on two veins approximately 25 to 30 feet apart near the center of claim No. 2. The east vein has been developed from north to south with two long trenches about 60 to 70 feet long and 60 feet deep, (Hirt) a pit that was about 20 feet deep, and a large glory hole about 20 feet in diameter that connects with the underground workings. The west vein has been developed from north to south with a small pit, a large glory hole about 15 feet deep, a pit, and the Ellis shaft at the south end. The Ellis shaft is inclined about  $80^{\circ}$  from the vertical (S.  $60^{\circ}$  W., dipping  $82^{\circ}$ ) in the cross-section and is about 150 feet deep with 45 foot long crosscut to the east vein at the 57-foot level, 102-foot level, and 148-foot level. Stopes were extended upward from these levels in order to mine out the east vein. The 57-foot level was extended about 60 feet along the east vein; the 102-foot level was extended about 100 feet along the vein; and the 148-foot level was extended about 50 feet along the vein.

According to a 1952 report the west vein had been developed for a length of 120 feet and to a depth of 150 feet. The east vein had been developed for a length of 250 feet and to a depth of 50 feet.

The current (1975) investigation was not able to examine these workings because access was denied by MESA because of safety reasons.

The west vein in the Ellis shaft, between the surface and the 57-foot level, dips about  $60^{\circ}$  West, and this part of the shaft was sunk in fluospar. Below the 57-foot level, the shaft steepens to  $80^{\circ}$  or  $85^{\circ}$  and is mostly in quartz.

The east vein has been mined more than the west vein. A comparison of

#### Fourth of July Mine

the fluorspar widths on the 102- and 148-foot levels of the east vein indicates that the fluorspar body possibly is pinching downward. Much fluorspar, however, remained in the mine in 1944, particularly between the 57- and 102-foot levels. In the south end of the 102-foot level the vein splits, the wider vein turning gently eastward into the wall. In the north end of this level the vein also splits, one part bearing almost directly north and the other west-northwest. On the 148-foot level in the northwest end of the drift, the vein divides as it did on the level above. The west branch apparently contains more fluorspar.

Maps and cross-sections of the underground workings are included in the 1947 U.S.G.S. report by Trace. They show the fluorspar ranged from 25% to 86%, but the average grade shipped was 65%. The Fourth of July mine is one of the four largest producers in the district.

Fourth of July Mine same as Polly Ann etc. 2 sheets

(A-1)

6-9 0003 sequence #

42

(A4)

12 "

6-9 0003 sequence #

14-20 32.86000 32°51'36" Glenn 32°51'37" Be  
 $\frac{36''}{60''} = .600$   $\frac{51.600'}{60'} = .860$

(A2)

21 " 1

22-29 109.07500 109°41'30" Glenn Bill same  
 $\frac{30''}{60''} = .50$   $\frac{4.5'}{60'} = .075$

6-9 0003 sequence #

30 "

14 FOURTH OF JULY MINE

31-46

47 "

48 "

49-50 "

(A-3)

6-9 0003 sequence #

51-3 "

54 "

"

"

"

"

"

63

04  
 67  
 sec 4 Glenn  
 sec 4 NE 1/4 Eureka  
 1/6 = NE 1/4  
 1/9 = NW 1/4

NW 1/4 sec 33 Bill  
 NW 1/4 sec 4 Bill

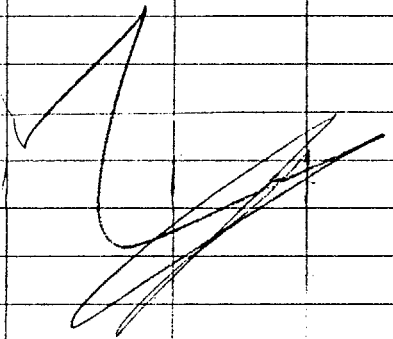


4th of July

same as Polly Ann except

64	2				
65	2				
66	"				
67-71	01377	<del>40000</del> 4520	<del>1377</del> 1378 m		
72	"	4580	3047 m		
73	"	01383			
74-5	"				
<b>A-5</b>	"			<b>A6</b>	
1-13	"			1-13	same as A-1
14	"	2 1/2 mi. up wash - road?		14	" 0 no corfed.
15	"	2.5 (1.6093 km) = 4.02325 km		15-16	" 75 1975
16	"	Bill O. Amorella		17	? 1 ore min. exposed in place
17-31	"			18-21	? up discovery
32-33	"			22-25	? 1937 yr 1st production Elevator <sup>1939 - Bill</sup>
34-7	"			26-29	1942 yr last production "
38	"			30-31	61 vert. test shaft
39-42	"			32	1 little (1-150' shaft) Elevator
	"			33	?
	"			34-37	? yr.
	"			38-39	72 horiz. drifting or crosscut
	"			40	1 little 500 ft drifting Elev
	"			41	?
	"			42-45	? yr.
	"			46-7	81 trenching
	"			48	1 little 2 small open cuts
	"			49	?
	"			50-53	? yr.
	"			54-5	80 test pit
	"			56	2 little 2 prospect pits Bill
	"			57	?
	"			58-61	? yr.
	"			<b>A-7</b>	
	"			1-9	same as A-1
	"			10-12	060
	"			14-36	ophylite porphyry DMR Elev andesite porphyry - Herb Olivine basalt USBM rhyolite off in corner #2 USBM
	"			37-39	120 Tertary -
	"			40	2 faulting

			A9 cont		
(A7) cont.			225	1	tabular
44-6	120	Text - log m.	26-7	2	see controls fract.
47	4	mineralization following event		3	" " fault.
48-50	30 <sup>2</sup>	density - see Polly Am	-28	3	mod. degree wall of alt.
51-53	158	olivine basalt	29-34	0.7	type " " silica" facies
54	1	fractures contain ore			
55	7	gangue	35-9	0	depth to ore
56-58	150	rhyolite (rhy. tuff <sup>SW end</sup> <sub>clown 2</sub> )		0	
59	7	gangue		0	
(A8)				0	
A1-13	as A1		53-8	763	length min zone 2500' (345 m) 900' + 400' $\frac{1525}{762.500}$
14-16	120	Text.			
17	3	phen. med (1-5mm) fine to coarse gr. <sup>Trace</sup>	59	1	N strike $\frac{1525}{762.500}$
18-20	200	fluorite	60-1	25	
21-22	06	halide	62	4	W
23	4	phen. coarse (75mm) fine to coarse gr. <sup>Trace</sup>	63-8	2	ave width min zone
24-7	65	65%			
28		wt % (1) vol % (2)	69-70	80	dip. 82° SW Bell 60-800 Trace 80, 70, 85 map
29-31	412	quartz	71	3	-W
32-3	15	SiO <sub>2</sub>	72-5	2	ave thick. 5' (1.305) 1.825
34	1				1" to 5" Trace ave 3-4
35-8	30	25-30% SiO <sub>2</sub>			
39		wt % (1) vol % (2)			
40-42	090	calcite			
43-44	07	carbonate			
45	4	phen. coarse (75mm) coarse <sup>(Trace)</sup>			
46-9		%			
50		wt % (1) vol % (2)			
51-53	402	psilomelane <sup>44.9% Al   187% Tungsten   10% Fe</sup>			
54-55	04	opide			
56	1	ephanitic <sup>grain size   thin strings   Trace</sup>			
57-60		wt % (1) vol % (2)			
61		iron stain			
(A9) 1-13	as A1				
14	0	no confid. info			
15-16	01	fissure veins			
17-18	02	shear zone			
19-20	04	breccia filling			
21-2	1	hydrothermal			



(200)

St-8pr  
no. 3-207

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
U.S. Geological Survey  
1947

STRATEGIC MINERALS INVESTIGATIONS  
PRELIMINARY REPORT  
(3-207)

THE FOURTH OF JULY AND LUCKLE NO. 1  
AND NO. 2 FLUORSPAR VEINS  
GREENLEE COUNTY, ARIZONA.

by  
R. D. Trace

\*

FOURTH OF JULY VEIN

Introduction

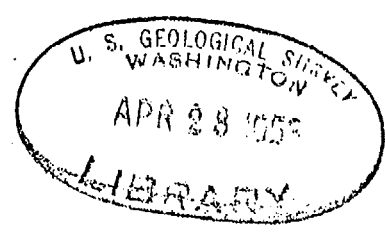
The Fourth of July fluor spar vein is about 20 miles by road north-northeast of Duncan, the nearest railroad station, in the SW $\frac{1}{2}$  sec. 33, T. 6 S., R. 32 E., and the NW $\frac{1}{2}$  sec. 4, T. 7 S., R. 32 E., Greenlee County, Ariz. The property is controlled by the R. T. Ellis Mining Co. of Duncan. The mine is reached from Duncan by following Arizona State Highway No. 75 north for 10.1 miles and a dirt road eastward for about 10 miles (see pl. 1).

Mining on the Fourth of July vein started in January 1937, and continued intermittently until August 1942. Between 1937 and 1941 the mine is reported to have produced approximately 2,600 tons of fluor spar containing 65 percent of CaF<sub>2</sub> and 25 to 30 percent of SiO<sub>2</sub>. The only available mill records indicate that between January 1 and August 18, 1942, a total of 573 tons of fluor spar containing 64 percent of CaF<sub>2</sub> was shipped from claim No. 2.

The nearest fluor spar mill is at Lordsburg, N. Mex., 35 miles by road south-east of Duncan, and about 55 miles from the mine. A mill using the heavy-media separation (sink-float) process is located at Gila, N. Mex., 97 miles east of Duncan, via the Tyrone road.

The Fourth of July claims are in the southern foothills of what are locally called the Mule Creek Mountains. The nearby relief varies from 300 to 400 feet. The drainage system is typical of that of a semiarid climate.

This report summarizes the results of field examinations made by the writer and D. A. Warner in January 1944.



## Geology

The predominant igneous rock of the area is a reddish-brown or greenish-gray olivine basalt of Tertiary or Quaternary age, which is generally porphyritic and in places vesicular (see pl. 2). The vesicles are in many places lined with dusty quartz or calcite. Small veinlets of quartz and calcite as much as one-eighth inch thick are scattered without recognizable pattern through the basalt. A thin section 1/ shows that the ferromagnesian minerals are altered to iron oxide and a carbonate of dolomitic composition. The structure and conspicuous images of olivine crystals indicate that the rock was olivine basalt.

Near the north end of claim No. 1, an undulating contact between two basalt flows is exposed. The upper flow is dark red, and the lower is dark greenish gray. Both flows are slightly vesicular, and the vesicles parallel the curve of the flow contact. Some of the basalt is well jointed in at least two directions, approximately north and east.

A bed of very light gray, fine-grained, rhyolitic tuff dipping about  $24^{\circ}$  N. crops out in the southwest corner of claim No. 2. A thin section of the rhyolitic tuff shows that it has been devitrified 2/. The presence of chessboard albite suggests that the tuff has been hydrothermally altered.

On the surface, evidence of movement along the faults occupied by the fluor-spar veins is slight. A boulder of slickensided basalt was found near the north end of claim No. 1. Underground, however, the basalt and the veins are considerably brecciated, although positive information about the direction of movement or the amount of displacement is lacking.

### Fluorspar deposits

The fluorspar veins contain dense milky and reddish-brown quartz, medium-gray, coarsely crystalline calcite, and colorless and green fluorite, named in order of decreasing abundance. Secondary coatings and thin stringers of psilomelane containing 44.9 percent of manganese and 0.89 percent of tungstic oxide 3/ are also associated with the fluorspar veins.

The fluorspar is chiefly an intimate mixture of dense milky quartz and green, fine- to coarse-grained fluorite. After long exposure to light, the fluorite loses its color. Most of the fluorspar is interlaced with a network of reddish-brown, iron-stained quartz veinlets. Calcite commonly is concentrated near the hanging-wall edge of the vein.

1/ Thin-section study by Glass, J. J., U. S. Geol. Survey, May 1944.

2/ Idem.

3/ Analysis by Fleischer, Michael, U. S. Geol. Survey, June 1944.

### Fourth of July Mine

LOCATION: The Fourth of July Mine is located in the Steeple Rock mining district in the western foothills of the Mule Creek Mountains, about 20 miles northeast of Duncan. The mine shaft is shown on the York Valley, Ariz.-N. Mex. 15 minute quadrangle in T. 7 S., R. 32 E., Sec. 4, NW $\frac{1}{4}$ , NE $\frac{1}{4}$ , NW $\frac{1}{4}$ , NE $\frac{1}{4}$ . According to the geologic map of the Fourth of July Mine in Trace's 1947 report, the northernmost open cut, approximately 200 feet northeast of the Ellis Shaft, is located in T. 6 S., R. 32 E., Sec. 33, and would thus be in Sec. 33, SW $\frac{1}{4}$ , SE $\frac{1}{4}$ , SW $\frac{1}{4}$ , SE $\frac{1}{4}$ . The mine shaft on the topographic map is at approximately 4640 feet elevation (1383 meters) and is located at 32.86036° (32° 51' 37.3") North latitude and 109.07528° (109° 4' 31.01") West longitude.

The Fourth of July Mine can be reached from Duncan by driving northwest on Arizona Highway 75 for 2 miles from the Ariz. 75 - U.S. 70 junction. Turn right through a gate in the highway fence and drive 8 $\frac{1}{2}$  miles northeast on a well-maintained gravel road to Goat Camp Spring. Turn left (northwest) on the jeep road for about 5 miles (about 2 miles past the Polly Ann Mine); then turn right (northeast) up a wash (probably Sanders Wash which branches into Daniels Camp Canyon), which becomes a jeep road to Daniels Camp mine. Daniels Camp Mine is about 2 miles along this road and the Fourth of July Mine is 3/4 mile beyond Daniels Camp and is at the end of the road.

The Fourth of July Mine can also be reached from Duncan by driving northwest on Arizona Highway 75 for 9 miles from the Ariz. 75 - U.S. 70 junction. Drive northeast on a dirt road along Sanders Wash for 1/4 miles to a fork in the road. (The right fork leads east to the Polly Ann Mine in 2 $\frac{1}{2}$  miles.) Take the left fork to the northeast for about 3 miles and the Fourth of July Mine is at the end of the road, about 3/4 mile east of Daniels Camp mine.

Fourth of July

HISTORY: Mining on the Fourth of July vein started in January, 1937, and continued intermittently until August, 1942. <sup>(Trace, 1947)</sup> The mine was originally owned by Robert T. Ellis of Duncan. In 1939 production was reported to be 150 <sup>(Hirt)</sup> tons per month. <sup>(Hirt)</sup> Between 1937 and 1941 the mine is reported to have produced approximately 2600 tons of fluorspar containing 65%  $\text{CaF}_2$  and 25 to 30%  $\text{SiO}_2$ . <sup>(Elevat)</sup>

In 1942 Mr. Ellis took A. T. Laine of Fresno, California, as a partner in the mine. At this time production was given as 500 tons of milling ore for the previous year (1941). <sup>(Hirt)</sup> In 1942 about 1600 tons containing 60 to 65%  $\text{CaF}_2$  and 25 to 30%  $\text{SiO}_2$  were shipped. <sup>(Elevat 75K; 1971)</sup> The only available mill records indicate that between January 1 and August 18, 1942, a total of 573 tons of fluorspar containing 64%  $\text{CaF}_2$  was shipped from the Fourth of July claim no. 2. In 1944 the property was controlled by the R. T. Ellis Mining Co. of Duncan. <sup>(Trace, 1947)</sup>

A 1952 report indicates that the mine was acquired by Ben Billingsley of Duncan and Roy B. Wilson of Phoenix with Arizona Eastern Fluorspar Corp. of Duncan operating the mine with an option to purchase, which they did in 1953. The ownership reverted to Ben Billingsley in 1954 or 1955. <sup>(Hirt)</sup>

OWNERSHIP: The Fourth of July Mine is currently owned by Ben Billingsley of Duncan, Arizona, and is recorded as two claims, the Fourth of July and the Fourth of July No. 2, in book 16, pages 569 and 570 in the Greenlee County Records Office, Clifton, Arizona. The property is leased by Producers Minerals Co. of Safford, Arizona, with Ralph Morrow as manager. <sup>(Walker)</sup>

**GEOLOGY:** "The predominant igneous rock of the area is a reddish-brown or greenish-gray olivine basalt of Tertiary or Quaternary age, which is generally porphyritic and in places vesicular. The vesicles are in many places lined with ~~dusy~~<sup>drusy</sup> quartz or calcite. Small veinlets of quartz and calcite as much as one-eighth inch thick are scattered without recognizable pattern through the basalt. A thin section by the U. S. G. S. showed that the ferromagnesian minerals are altered to iron oxide and a carbonate of dolomitic composition. The structure and conspicuous images of olivine crystals indicate that the rock was olivine basalt.

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A bed of very light gray, fine-grained, rhyolitic tuff dipping about  $24^{\circ}$  North crops out in the southwest corner of claim No. 2. A thin section by the U.S.G.S. of the rhyolitic tuff shows that it had been devitrified. The presence of chessboard albite suggests that the tuff has been hydrothermally altered.

On the surface, evidence of movement along the faults occupied by the fluor spar veins is slight. A boulder of slickensided basalt was found near the north end of claim No. 1. Underground, however, the basalt and the veins are considerably brecciated, although positive information about the direction of movement or the amount of displacement is lacking.

**FLUORSPAR DEPOSITS:** The fluor spar veins contain dense milky and reddish-brown quartz, medium-gray, coarsely crystalline calcite, and green fluorite, named in order of decreasing abundance. Secondary coatings and thin stringers of

psilomelane containing 44.9 % of manganese and .89% tungstic oxide are also associated with the fluorspar veins.

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The fluorspar is found as lenticular veins and pockets along fault-breccia zones and fissures in basalt. The dips of the veins range between 60° and 80°. Much of the fluorspar is brecciated, indicating post-mineralization movement along the faults. The basalt between the East and West veins is slightly brecciated in places and contains many stringers of quartz.

The distribution of fluorite, quartz, and calcite within the veins is not uniform. Calcite, however, commonly occurs near the hanging wall; this relation is shown in the mine by a rather continuous cavity near the hanging wall, where calcite apparently has been leached from the vein. Commonly the fluorspar-rich part of the vein is a mixture of brecciated quartz and fluorite. Locally, however, definite sequences were noted. A small pit on the surface, for example, contains from west to east: fluorite, calcite, quartz, and calcite. On the 102-foot level, a local sequence from west to east is: quartz, calcite, fluorite, and quartz.

The vein system has a length of at least 2,500 feet, but only small sections are known to contain fluorspar. The width of the fluorspar ranges from less than an inch to approximately 5 feet, and averages 3 to 4 feet in the mine. The surface and underground exposures of fluorspar are shown on maps in Trace's 1947 report. At the south end of claim No. 1, a section of the vein about 400 feet along the strike may contain commercial deposits. On



Fourth of July 1951

the surface, the other veins on claim No. 1 are composed mostly of calcite and quartz. On claim No. 2, a section of the vein about 400 feet along the strike has economic widths of fluorspar, and the underground work has been done in this part of the vein." (Trace, 1947)

The maps and cross-sections in Trace's 1947 report show that DEVELOPMENT: the Fourth of July Mine is developed on two veins approximately 25 to 30 feet apart near the center of claim No. 2. The east vein has been developed from north to south with two long trenches about 60 to 70 feet long and 20 to 30 feet deep, a <sup>pit</sup> shaft that was about 20 feet deep, and a large glory hole about 20 feet in diameter that connects with the underground workings. The west vein has been developed from north to south with a small pit, a large glory hole, about 15 feet deep, a small pit, and the Ellis shaft at the south end. The Ellis shaft is inclined about 80° from the vertical (S. 60° W., dipping 82°) <sup>in the cross-section</sup> and is about 150 feet deep with 45-foot long <sup>Crosscut</sup> drifts to the east vein at the 57-foot level, 102-foot level, and 148-foot level. Stopes were extended upward from these levels in order to mine out the east vein. The 57-foot level was extended about 60 feet along the east vein; the 102-foot level was extended about 100 feet along the vein; and the 148-foot level was extended about 50 feet along the vein.

According to a 1952 report the west vein had been developed for a length of 120 feet and to a depth of 150 feet. The east vein had been developed for a length of 250 feet and to a depth of 50 feet. (Hunt)

The current (1975) investigation was not able to examine these workings because access was denied by MESA because of safety reasons. (Walker)

The west vein in the Ellis shaft, between the surface and the 57-foot level, dips about 60° West, and this part of the shaft was sunk in fluorspar. Below the 57-foot level, the shaft steepens to 80° or 85° and is mostly in quartz.

The east vein has been mined more than the west vein. A comparison of

the fluorspar widths on the 102- and 148-foot levels of the east vein indicates that the fluorspar body possibly is pinching downward. Much fluorspar, however, remained in the mine in 1944, particularly between the 57- and 102-foot levels. In the south end of the 102-foot level, the fluorspar vein splits, the wider vein turning gently eastward into the wall. In the north end of this level the vein also splits, one part bearing almost directly north and the other west-northwest. On the 148-foot level in the northwest end of the drift, the vein divides as it did on the level above. The west branch apparently contains more fluorspar. *»(Trace, 1947)*

Maps and cross-sections of the underground workings are included in the 1947 U.S.G.S. report by Trace. They show the fluorspar ranged from 25% to 86%, but the average grade shipped was 65%. The Fourth of July mine is one of the four largest producers in the district. *»(Elevatorski, 1971)*

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Billingsley Fluorspar Mines & Mill Date Jan. 7, 1959  
District Twin Peaks District, Greenlee County Engineer Axel L. Johnson  
Subject: Field Engineers Report. Information from Ben F. Billingsley, Box 105, Duncan, Ariz.

↓ Mr. Billingsley informed the field engineer that he owns the Sibley (formerly, 4th of July) and the Daniels Camp fluorspar mines; and that he is in charge of the Polly Ann and the Lucky Group (Lucky #1, #2, #3) and also owns a major interest in the Duncan Fluorspar mill. He also stated that he is negotiating with a couple of parties for the lease of the mines and sale of the mill for the production of acid grade fluorspar. He also stated that if this fails to materialize, he considers starting production of metallurgical grade fluorspar.

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
FIELD ENGINEERS REPORT

Mine Fourth of July ✓

Date July 9, 1956

District Mayflower District, Greenlee Co.

Engineer Axel L. Johnson

Subject: Present Status.

Location 18 miles north-east of Duncan.

Number of Claims 7 unpatented claims.

Owners Ben Billingsley, Box 105, Duncan, Ariz. and Les Billingsley, Duncan, Ariz. ✓

Operators Not in operation. ✓

Principal Minerals Fluorspar. ✓

Production Rate None. Mine is idle. ✓

History (1) ✓ Former owner, R. T. Ellis deceased.  
(2) Relocated by Billingsley Bros., ~~Phoenix~~ Duncan, Ariz.  
(3) ✓ Sold to Arizona Eastern Fluorspar Corp. in 1953.  
(4) ✓ Ownership reverted to Billingsley Bros. in 1954 or 1955.

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
FIELD ENGINEERS REPORT

Mine Sydney Mine Date Jan. 7, 1954  
District Twin Peaks Mining Dist., Greenlee Co. Engineer Axel L. Johnson  
Subject: Field Engineers Report --- Present Status.

Location 16 miles north of Duncan

Number of Claims 2 unpatented claims

Owners Ben Billingsley, Box 105, Duncan, Ariz. and  
Roy B. Wilson, 100 West Osborn Road, Phoenix, Ariz.

Lessee and Operator Arizona Eastern Fluorspar Corporation, Duncan, Ariz.  
Lawrence K. Diffenderfer, General Manager, Box 146, Duncan, Ariz.

Principal Minerals Fluorspar.

Number of Men Employed Variable. 2 to 6.

Production Rate Very little production at present.

Milling Facilities Milling the ore at the company's mill at Duncan.

Present Operations Taking out broken up ore from the stopes, and sending same to the mill at Duncan for milling.

Future Plans According to the General Manager, Mr. Diffenderfer, the mine will be closed down, after the broken up ore now in the stopes is hoisted and transported to the Duncan mill. According to Mr. Diffenderfer, the mine is depleted of ore reserves. However, the owner, Mr. Billingsley, disagrees with that statement.

✓  
Sydney Mine (north of Duncan)

Report by Axel L. Johnson 7-9-53

Not operating at the present time. Repair work on the shaft was suspended late last fall. Company expects to resume work on this mine at some future date not yet determined.

ARIZONA EASTER N FLUORSPAR CORP.

Lawrence K. Diffenderfer, Gen. Mgr.  
Box 146, Duncan, Arizona

(See Fluorspar Producers Corp.)

Fourth of July Mine, Greenlee County - 18 Mi. NE of Duncan (1953)

Stotts # 1 & # 5, Greenlee County (1953)

DEPARTMENT OF MINERAL RESOURCES

State of Arizona

MINE OWNER'S REPORT

Date Sept. 4, 1952 (field inspect.)  
Oct. 16, 1952 (infor. from Supt.)

- 1. Mine: Sydney Mine
- 2. Location: Sec. 19 (appr.) Twp. 6 S Range 32 E Nearest Town Duncan  
Distance 16 miles Direction North Road Condition Good
- 3. Mining District & County: Twin Peaks Mining Dist., Greenlee County.
- 4. Former Name of Mine: Fourth of July Mine
- 5. Owners: Ben Billingsley, Box 105, Duncan, Arizona ----- Tel. 89-R  
~~Address~~ and Roy B. Wilson, 100 West Osborn Road, Phoenix, Arizona.
- 6. Operator: Arizona Eastern Fluorspar Corporation, Duncan, Arizona.  
~~Address~~ This company has lease from owners with option to purchase.
- 7. Principal Minerals: Fluorspar
- 8. Number of Claims: 2 Lode yes Placer \_\_\_\_\_  
Patented no Unpatented yes
- 9. Type of Surrounding Terrain: Very hilly and rough. At bottom slopes of low  
mountain range.
- 10. Geology & Mineralization: Country rock is rhyolite porphyry. This has been  
intruded by other rocks, notably andesite and rhyolites. There are two  
distinct veins on the property, almost parallel to each other, striking  
NW and SE, and both dipping about 82 deg. Southwest. These veins are fracture  
veins, and are about 30 ft. apart. The West vein is about 1 ft. wide, and the  
East vein is about 10 ft. wide. The ore in these veins is estimated by the  
Superintendent to average about 60% (Approximately) of Calcium Fluoride. High  
grade ore occurs in lenses in the vein, some of the high grade ore running up to  
90 % of Calcium Fluoride.
- 11. Dimension & Value of Ore Body: The west vein has been developed for a length  
of 120 ft. and for 150 ft. in depth. The east vein has been developed for a  
length of 250 ft. and for 50 ft. in depth.

12. Ore "Blocked Out" or "In Sight":..... about 6,000 tons.....

Ore Probable:..... about 30,000 tons.....

13. Mine Workings—Amount and Condition.....

No.	Feet	Condition
Shafts..... 1.....	150.....	Has just been repaired by new operators.....
Raises.....		
Tunnels.....		
Crosscuts..... 3.....	500.....	250 ft. on 50 ft. level & 125 ft. <sup>each</sup> on 100 & 150 ft. levels respectively. Some drifts in good shape.....
Stopes..... 2 old.....		

14. Water Supply:..... ~~None in immediate vicinity.~~ Operators are hauling the ore to their mill at Duncan for treatment.....

15. Brief History:..... Some ore is reported to have been mined from this property prior to 1944. This ore was milled at a mill on the property. Mill and mine has been idle now since 1944.....

16. Present Operations..... The operators are now employing 6 men on a 6 day per week basis. They are repairing the 150 ft. shaft and getting it ready for ore production. This job is just about completed now. Mining and milling of ore is scheduled to start about Nov. 15th.....

✓ Morris Albertoli is Superintendent  
✓ Ben Billingsley is Foreman.

16. Signature: *Apel Z Johnson, Field Engineer*  
*Dept. of Mineral Resources*

17. If Property for Sale, List Approximate Price and Terms:..... Not for sale or lease.....



NAME OF MINE: FOURTH OF JULY ✓

COUNTY: GREENLEE

DISTRICT: *E*

METALS: FL

OPERATOR AND ADDRESS:

MINE STATUS

DATE:

DATE:

5/1/44

R.T.Ellis, Duncan, Arizona

5/1/44

Developing

12/44

*Idle*

R.T.Ellis - now deceased (See Fourth of July Mine file) 7-1956

ARIZONA FLUORSPAR MINE

*Family* FOURTH OF JULY GROUP ✓

Fluorspar, Mn, Cu, Au, Ag

Greenlee 6 - 1 T 6 S, R 22 E

Robt. T. Ellis, Box 65X, Duncan

'43

*My Stamp*

*H.*

January 18, 1943

Mr. R. T. Ellis  
Duncan, Arizona

Dear Mr. Ellis:

I received your letter of January 16 and have asked W. C. Broadgate, Assistant Director of the Department and now in Washington, to look into your application and find out what is holding up the granting of same, or at least a decision regarding it.

I will advise you as soon as I hear.

Very truly yours,

J. S. Coupal  
Director

JSC:kk

January 18, 1943

MEMORANDUM

SUBJECT: Class "B" Loan  
Docket No. B-ND-4725  
R. T. Ellis and  
A. T. Laisne, Applicants  
Duncan, Arizona

To: W. C. Broadgate

From: J. S. Coupal

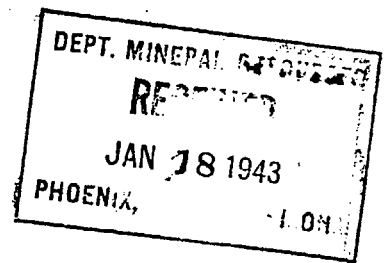
I have just received a letter dated January 16 from R. T. Ellis, Duncan, Arizona stating that "It has been 46 days since I mailed application and all information. I have received to date on matter, they wrote me letter December 12th. That they had received same in order. And application would receive their careful consideration."

This is an application on a fluorspar property which has had good production.

Could you see what is holding up the granting of this loan?

Duncan, Arizona  
January 16, 1943

J. S. Coupal  
Director of Department of  
Mineral Resources  
Phoenix, Arizona



Dear Mr. Coupal:

In regard to your letter of December 9th, 1942.

I notice you requested me to notify you in case I did not receive a reply regarding my class B. loan application with the R.F.C. in a reasonable length of time.

It has been 46 days since I mailed application and all information. I have received to date on matter, they wrote me letter December 12th. That they had received same in order. And application would receive their careful consideration.

They also sent me docket No, of application. Which is ( Re: R. T. Ellis & A. T. Laisne) in case you wish to ( Docket No. B-nd-4725 ); correspond with them regarding delay on matter.

Mr. Coupal any service you are your Department may render us in securing this loan will be highly appreciated by us.

Thanking you in advance for any service you may render regarding this matter.

I beg to remain, yours

Cooperatively

R. T. Ellis

*orig. Thompson*

*24*

December 9, 1942

Mr. R. T. Ellis  
P. O. Box 651  
Duncan, Arizona

Dear Mr. Ellis:

Many thanks for your letter of December 7 stating that your application for a loan was mailed on December 1.

As I recall it, yours was for a "C" loan and it should have been mailed to the Reconstruction Finance Corporation office here in Phoenix, but even though mailed to Washington, it will be examined and then returned to the Reconstruction Finance Corporation office in Phoenix for comments.

It usually takes several weeks to get these loans through, and if you do not hear within a reasonable time, please advise us and we will try to assist in getting quicker action.

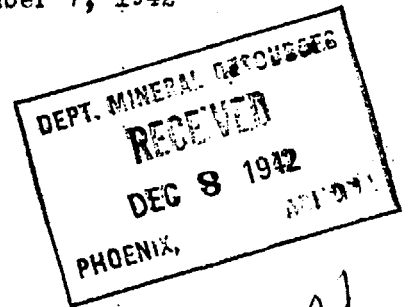
Very truly yours,

J. S. Coupal  
Director

JSC:kk

Duncan, Arizona  
December 7, 1942

Mr. J.S. Coupal  
Director of Department of  
Mineral Resources of Arizona  
Phoenix, Arizona



Dear Mr. Coupal:

Mr. Coupal I am writing you, in regard to my class B. loan application. We were quite a bit longer preparing the application than I expected to be, when I was discussing same to you on November 1st. However we got application completed, and mailed same to R.F.C Washington. D. C. December 1st.

Also mailed letter to Mineral Resources Dept. on same date, seeking their cooperation in obtaining same, and any assistance you or the Department may render me in obtaining loan will be highly appreciated by us.

Thanking you in advance for any service you may render.

I beg to remain,

Yours cooperatively

R. T. Ellis

P.O. Box # 651

Duncan Ariz.

*R.T. Ellis*

*H.  
C.*

2 MAY 1941

Mr. Robert T. Ellis,  
Duncan,  
Arizona.

My dear Mr. Ellis:

Mr. Henry J. Leir, President of the Continental Ore Corporation, 500 Fifth Avenue, New York City, New York, is interested in the purchase of fluorspar ore. I have given him your name as an owner of a property, and I should suggest that you communicate with him regarding the matter.

Mr. Leir advises me that he is in a position to give you a steady market for your product in case you would consider producing the ore.

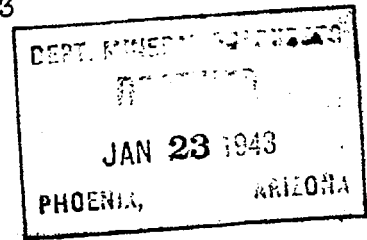
Yours very truly,

J. S. Coupal  
Director

JSC-jrf

Washington, D.C.  
Jan. 21, 1943

SUBJECT: Class B loan,  
Docket No. B-ND-4725  
Ellis and Laisne



This seemed like a pretty marginal application, but to give the applicant the benefit of the doubt, field examination was authorized Jan. 14th.

Bill Broadgate



ARIZONA FLUORSPAR MINE  
(formerly 4th of JULY MINE)  
18 miles northeast of Duncan

October 3, 1942

Fred H. Perkins

Increase production survey

R. T. Ellis, Manager. Postoffice <sup>B</sup>ox 65, Duncan, Arizona.  
A.T. Laisne. Postoffice Box 1189, Fresno, California.

This mine is located eighteen miles northeast of Duncan.

Up to date the production has all been fluorspar but at this stage the development has uncovered some very good manganese.

In 1941 production was all in fluorspar, and produced 500 tons of milling ore which was shipped to General Chemical Company, Deming, New Mexico.

This year only 250 tons has been shipped, going to Enden Metals Company at Lordsburg. Much of the time this year has been devoted to mine development.

The mine is equipped with gasoline hoist and compressor.

The property is worked through a 170 foot shaft and a 170 foot raise, they being on parallel veins 39 to 50 feet apart.

The present scale is:

50% Fluorspar	\$ 4.00
75% "	8.50
80% "	9.00
90% "	11.00

Prices F.O.B. MILL

PROBLEMS: The biggest problem is to get a fair price for the product. The milling men take the big end of the money offered for the milled product.

The management could easily increase the mine product if there was more incentive for doing so.

This is not a war metal but recent appearances indicate this may be a manganese mine worth watching.

(Fred H. Perkins)

October 3, 1942

INCREASE PRODUCTION SURVEY

ARIZONA FLUORSPAR MINE

By: FRED H. PERKINS

(formerly "4th OF JULY MINE")

R. T. Ellis, Manager  
Postoffice Box 65  
Duncan, Arizona

A. T. Laisne  
Postoffice Box 1189  
Fresno, California

ARIZONA FLUORSPAR MINE

This mine is located eighteen miles northeast of Duncan.

Up to date the production has all been fluorspar but at this stage the development has uncovered some very good manganese.

In 1941 production was all in fluorspar, and produced 500 tons of milling ore which was shipped to General Chemical Company, Deming, New Mexico.

This year only 250 tons has been shipped, going to Enden Metals Company at Lordsburg. Much of the time this year has been devoted to mine development.

The mine is equipped with gasoline hoist and compressor.

The property is worked through a 170 foot shaft and a 170 foot raise, they being on parallel veins 39 to 50 feet apart.

The present scale is:

50% Fluorspar	\$ 4.00
75% "	8.50
80% "	9.00
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Prices F.O.B. Mill

October 3, 1942

INCREASE PRODUCTION SURVEY

By: FRED H. PERKINS

✓  
ARIZONA FLUORSPAR MINE

PROBLEMS:

The biggest problem is to get a fair price for the product. The milling men take the big end of the money offered for the milled product.

The management could easily increase the mine product if there was more incentive for so doing.

This is not a war metal but recent appearances indicate this may be a manganese mine worth watching.

210

SURVEY OF OPERATING MINES

July 6, 1942

By: Fred H. Perkins

ARIZONA FLUORSPAR MINE

formerly

4th OF JULY GROUP

Arizona Fluorspar Mine ✓ 65'  
 R. T. Ellis, Mgr., P.O.Box 65, Duncan, Ariz.  
 A. T. Laisne, ✓ Box 1189, Fresno, California  
 Co-partnership

Arizona Fluorspar Mine  
 Located 18 miles Northeast of Duncan.

1941 Production all in fluorspar. This property is worked through a 170' shaft and 170' raise. There are two parallel veins. The shaft is on one vein and the raise, for air, on the other. The veins are from 39' to 50' apart. The mine is equipped with hoist and compressor, gasoline power.

The mine produced 500 tons milling ore in 1941.

The ore was shipped to General Chemical Co., Deming, New Mexico.

1942 This year they have shipped 250 tons only, but have been developing the mine. The ore went to Enden Metals Company, Lordsburg, New Mexico.

The present scale of pay is

50% fluorspar	\$ 4.00 per ton
75% "	8.50 " "
80% "	9.00 " "
90% "	11.00 " "

Prices F.O.B. mill.

DEPT. MINERAL RESOURCES  
 RECEIVED  
 JUL 16 1942  
 PHOENIX

SURVEY OF OPERATING MINES

July 6, 1942

By: Fred H. Perkins

ARIZONA FLUORSPAR MINE

Problems:

Mr. Ellis reports his problem is one of finding a fair mill to market his production to. He says it is hard to get a trucker, at a fair price, to haul his product.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Date October 20, 1939.

Engineer Newton Wolcott

Location 18 Miles Northeast of Duncan

Address Duncan, Arizona.

Address

Gen. Mgr.

Mill Supt.

Men Employed 4

Mill: Type & Cap.

Mine Fourth of July Group.

District Mayflower Mining District

Former name

Owner Robert T. Ellis

Operator

President

Mine Supt.

Principal Metals Fluorspar, copper, gold, silver

Production Rate 1 Car of fluorspar per week

Power: Amt. & Type

Operations: Present

Mining and shipping fluorspar to mill at Deming.

Operations Planned

More development work when able to finance.

Number Claims, Title, etc.

Seven unpatented claims.

Description: Topog. & Geog.

Low, rolling hills just at base of mountains in Steeplerock district. Elevation approximately 3500 feet above sea level. Vegetation very sparse.

Mine Workings: Amt. & Condition

On fluorspar veins: Approximately 200 feet of shafts, with open cuts, stopes and short drifts. On metallic vein: One shaft 40 feet in depth 100 feet of tunnel and an 18 foot winze. All workings are open.

**Geology & Mineralization**

Two types of veins are found on this property. The fluorspar occurs in a series of fissures which were formed in a zone of fracturing in a country rock of andesitic porphyry. These fissures strike NW-SE and dip from 60 degrees SW to vertical. Width varies from 2 to 6 feet. The gangue minerals are mainly calcite together with some manganese and iron oxides.

The vein carrying values in copper, gold and silver is known as the Riverview vein. The strike here is almost due E-W and the dip practically vertical. This is probably older geologically than the fluorspar veins. The gangue is silicious. Copper occurs both in sulfide and carbonate form and is associated with both gold and silver.

Lack of sufficient development makes it impossible to estimate any definite tonnage of ore, although in the case of the fluorspar veins there is doubtless a considerable tonnage available.

**Mine, Mill Equipment & Flow Sheet**

There is no equipment on the property.

**Road Conditions, Route**

State highway 666 ten miles north from Duncan, then about eight or nine miles of fair county road to property. Inquire in Duncan as to route.

**Water Supply**

No water supply developed.

**Brief History**

Development of the fluorspar veins on the property has been undertaken only recently; but the copper, gold, silver vein was worked a good many years ago and ore has been shipped from it. There are no records of these shipments available.

**Special Problems, Reports Filed**

The financing of further development work is the owners most serious problem, although he would benefit greatly from the construction of a different road into this district. Such a road could be constructed without any great expense.

**Remarks**

There is a great number of very promising surface showings on the property which have never been prospected in any manner whatever, and there is no work done to any depth at any point. Leasers working on the fluorspar are shipping a product which they state will average about 88 percent CaF2 to the mill at Deming.

If property for sale: Price, terms and address to negotiate.

The property is for sale or lease. Communicate with owner for price and terms.

Signed Herbert Wilson

## Duncan district

LOCATION: The Duncan fluor spar district is located in the Steeple Rock mining district in the western foothills of the Mule Creek Mountains, between 11 and 20 miles by road northeast of Duncan, Arizona. The mines are within 2 to 3 miles of the Arizona-New Mexico state line in T7S, R32E, sections 4, 5, 9, 10 and 15. The mines are shown on the York Valley, Arizona-N. Mexico 15 minute topographic quadrangle.

The Duncan fluor spar mines can be reached by driving northwest of Duncan, Arizona, on Arizona Highway 75 for 2 miles from the Ariz. 75-U.S. 70 junction. Turn right through a gate in the highway fence and drive  $8\frac{1}{2}$  miles northeast on a well-maintained gravel road to Goat Camp Spring. The Goat Camp Mine is near this; the Luckie No. 1 and 2 mines are about  $1\frac{1}{2}$  miles along a road to the northwest and the Polly Ann Mine is about 1 mile further along the road to the west. The Daniels Camp mine and the Fourth of July Mine can be reached from the Polly Ann Mine by continuing west on the same road for about 3 miles until it forks back to the northeast, and then by driving northeast for 2 miles to the Daniels Camp mine and an additional mile to the Fourth of July Mine. According to the topographic map this road fork can also be reached from Duncan by driving northwest on Arizona Highway 75 for 9 miles from the Ariz. 75-U.S. 70 junction and taking a northeast dirt road following along Sanders Wash for 4 miles.

Most of the mines are located near or above elevation 4400 feet (1341 meters) in hilly terrain with local relief about 250 feet within 1 square mile (75 to 100 meters). Duncan, Arizona, has precipitation evenly distributed throughout the year ranging from 12 inches in May to 1.83 inches in August with a mean yearly precipitation of 3.90 inches (Green & Sellers, 1964, p. 163, U. of A. Press). The climate is temperate with the mean daily temperature ranging from  $41.0^{\circ}\text{F}$  in December to  $78.6^{\circ}\text{F}$  in July (Green & Sellers). The area near the mines has desert vegetation and is pri-



marily used for grazing. The area is only 37 miles by road from Clifton, Arizona, a large town with a good labor supply of experienced miners.

**PRODUCTION HISTORY:** "Initial production began in 1918, with significant shipments in 1936-44, and the last production recorded in 1953. Total Greenlee production is estimated at 7,500 tons." (Elevatorski, 1971)

In 1921 Allen and Butler reported in Arizona Bureau of Mines Bulletin 114 that "according to the owners (Joe Hardy and associates), two carloads of fluorspar have been shipped from the deposits located about sixteen miles from Duncan." "The deposits on their other groups have yielded a small tonnage of high grade fluorspar. The owners estimate that 150 tons per month of selected fluorspar can be produced." (Allen & Butler, 1921)

"Fluorspar mining began in the Duncan district and in the Sierrita Mountains in 1918; however, output was small through 1920 and ceased during 1921-35. Production from the Duncan district was resumed in 1936 and continued until the end of 1944." (Val Alstine & Moore, 1969, Ariz. Bur. Mines Bull. 180, p. 349).

"Shipments, made largely during 1936-44, amounted to possibly 6,500 tons, valued at \$124,000. Most of this output came from the Fourth of July, Luckie, Polly Ann and Daniels Camp mines. It went largely to flotation mills at Lordsburg and Deming, but some was shipped directly to steel plants and for hydrofluoric acid manufacture. The spar averaged about 65 percent calcium fluoride and 25-30 percent silica, although some ranged up to 93 percent calcium fluoride." (Wilson, 1950, p. 8, Az. Bur. Mines Circ. 15).

"In 1952 some production again came from the Duncan district and in 1953 the largest amount (1,951 tons) of fluorspar produced in Arizona in a single year was shipped from mines in the Duncan and Castle Dome districts and from the Spar Mine." (Val Alstine & Moore, 1969, as above).

**GEOLOGY:** "This western foothill portion of the Mule Creek Mountains is made up of porphyritic andesite, basalt and rhyolite tuff; intruded by dikes of rhyolite porphyry.

The veins occupy two systems of fissures. One system, representing irregular and branching shear faults, strikes between north 10 degrees east and north 25 degrees west, subparallel to the principal rhyolite dikes; it has yielded somewhat more than half of the total district production and is exemplified at the Fourth of July and Luckie No. 1 mines.

The veins consist largely of dense massive to banded quartz, locally with coarsely crystalline calcite and colorless or green fluorite of medium to coarse texture.

Individual spar shoots, which are best in the andesite and basalt, average approximately 3 to 4 feet wide and 50 feet long by 50 feet high. In places spar shoots of good quality and size continue below water level, which was encountered at depths of from 90 to 165 feet. The Polly Ann is reported to have been drowned out at 185 feet or 50 feet below water level.

The Duncan area may not yet be considered as exhausted, but costs of mining, pumping, transportation and milling have held back further development of it during recent years." (Wilson, 1950, p. 8-9).

"Duncan (Steeple Rock) district - Medium - to coarse-grained, colorless or green fluorite, as lenses in veins of dense, massive to banded quartz cutting Tertiary rhyolite, andesite and basalt. Ore shoots, averaging 3-4 feet thick, 50 feet long and 50 feet high, contain about 65 percent  $\text{CaF}_2$  and 25-30 percent  $\text{SiO}_2$ . Arizona's most productive fluorspar district." (Val Alstine & Moore, 1969, p. 352)

Others of the Arizona fluorspar deposits, "exemplified in the Duncan, Castle Dome and Vulture areas, are many miles from outcrops of large intrusive bodies, but they are more or less closely associated with abundant dikes which indicate the presence of stock-like intrusives beneath. The associated dikes are rhyolite in the Duncan area, rhyolite and diorite porphyry in the Castle Dome district and andesite porphyry and pegmatite in the Vulture area." (Wilson, 1950, p. 6)

"The Duncan fluorite veins contain a little tungsten, but are 4 miles from gold veins of the Steeple Rock district and 11 miles from siliceous silver, gold, copper and lead deposits of the Ash Peak district. Psilomelane containing tungsten, generally under 2 percent  $\text{WO}_3$ , occurs in parts of the Duncan veins. Limonite is locally present." (Wilson, 1950, p. 7)

In the Duncan district mineralization generally followed faulting, although there was some additional movement as some of the fluorite is brecciated. The orebody type is generally fissure veins (mineral mass filling open spaces along a fracture with or without chemical alteration of adjoining rock), with some shear zones (zone of fissuring or shearing that has been mineralized by impregnating solutions, by replacement or by filling of open spaces), and some breccia filling (zone of shattering in which mineralization has cemented or replaced the shattered mass of angular fragments and comminuted material). The mode of origin

was hydrothermal (mineral deposition by heated, ascending solutions) and the shape of the orebodies are tabular (orebody relatively long in two dimensions and short in one dimension). The ore controls were generally fracturing (jointing) and faulting. The wall rock alteration is slight to moderate and the type of alteration was silification (increase in amount of quartz or opal in country rock). (Definitions within parentheses are from the MAS classification manual). There was no confidential information entered in the record or used in the study. Access to all underground workings in the area was denied by MESA for safety reasons. None of the mines are currently active.

Present Operations: DEPARTMENT OF MINERAL RESOURCES

Name of Mine

Date 8/1/39

Name of Property

Location of Mine

New Work Planned

Name of Property

Name of Property

Name of Property

Name of Property

Misc. Notes

This work has started only very recently.

Shipments are being made to Deming.

Mr. Ellis states that he found the fluorspar about three years ago, but has

not worked it before.

Name of Property

Name of Property

Name of Property

Name of Property

Name of Property

Name of Property

Name of Property

Name of Property

Name of Property

Name of Property

Name of Property

Name of Property

Name of Property

DEPARTMENT OF MINERAL RESOURCES

News Items

Date 8/1/39

Mine Fourth of July

Location 12 Mi. North of Duncan

Owner R. T. Ellis

Address Duncan, Arizona.

Leased to

Operating Co. Grover Curry

Address Duncan, Arizona.

Name of Property

Name of Property

Genl. Mgr. of Property

Mine Supt. of Property

Mill Supt. of Property

Principal Metals Fluorspar

Men Employed

Production Rate 1 Car every 5 days

Mill, Type & Capacity

Power, Amt. & Type

Signed *Newton Wolcott*

(Over)

DEPARTMENT OF MINERAL RESOURCES

News Items

Mining and shipping

Location 18 Miles Northeast of Duncan

Owner R.T. Ellis

Address Duncan, Arizona

Operating Co. Leasers

Address

Notes Leasers are working on two veins of mill grade spar. Have been averaging 5 cars per month. Shipping to mill at Deming, N.M. All work to date has been done at shallow depth, and Ellis hopes to be able to carry development on down.

DEPARTMENT OF MINERAL RESOURCES

News Items

Date 10/12/39

Mine Fourth of July Group

Location 18 Miles Northeast of Duncan

Owner R.T. Ellis

Address Duncan, Arizona

Operating Co. Leasers

Address

Pres.

Genl. Mgr.

Mine Supt.

Mill Supt.

Principal Metals Fluorspar

Men Employed 4 or 5

Production Rate 150 Tons per month

Mill, Type & Capacity

Power, Amt. & Type

Signed *W. W. Wood*

(Over)

Geology & Mineralization - Two types of veins are found on this property. The fluorspar occurs in a series of fissures which were formed in a zone of fracturing in a country rock of andesitic porphyry. These fissures strike NW-SE and dip from 60 degrees SW to vertical, Width varies from 2 to 6 ft. The gangue minerals are mainly calcite together with some manganese and iron oxides. The vein carrying values in copper, gold and silver is known as the Riverview vein. The strike here is almost due E-W and the dip practically vertical. This is probably older geologically than the fluorspar veins. The gangue is siliceous. Copper occurs both in sulphide and carbonate form and is associated with both gold and silver.

Ore: Positive & Probable, Ore Dumps, Tailings - Lack of sufficient development makes it impossible to estimate any definite tonnage of ore, although in the case of the fluorspar veins there is doubtless a considerable tonnage available.

Mine, Mill Equipment & Flow Sheet - There is no equipment on the property.

Road Conditions, Route - State highway 666 ten miles north from Duncan, then about 8 or 9 miles of fair county road to property. Inquire in Duncan as to route.

Water Supply - No water supply developed.

Brief History - Development of the fluorspar veins on the property has been undertaken only recently; but the copper, gold, silver vein was worked a good many years ago and ore has been shipped from it. There are no records of these shipments available.

Special Problems, Reports Filed - The financing of further development work is the owner's most serious problem, although he would benefit greatly from the construction of a different road into this district. Such a road could be constructed without any great expense.

Remarks - There is a great number of very promising surface showings on the property which have never been prospected in any manner whatever, and there is no work done to any depth at any point. Leasers working on the fluorspar are shipping a product which they state will average about 88 per cent  $\text{CaF}_2$  to the mill at Deming.

If property for sale: Price, terms and address to negotiate - The property is for sale or lease. Communicate with owner for price and terms.

SIGNED - Newton Wolcott

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Date October 20, 1939

Mine Fourth of July Group

Engineer Newton Wolcott

District - Mayflower Mining District

Location - 18 miles Northeast of Duncan.

Former Name

Owner Robert T. Ellis

Address - Duncan, Arizona

Operator

Address

President

Gen. Mgr.

Mine Supt.

Mill Supt.

Principal Metals - Fluorspar, copper, gold, silver

Men Employed - 4

Production Rate - 1 car of fluorspar per week

Mill: Type & Cap.

Power: Amt. & Type

Operations: Present - Mining and shipping fluorspar to mill at Deming.

Operations: Planned - More development work when able to finance.

Number Claims, Title, etc. - 7 unpatented claims.

Description: Topography & Geography - Low, rolling hills just at base of mountains in Steplerock district. Elevation approximately 3500 ft. above sea level. Vegetation very sparse.

Mine Workings: Amt. & Condition - On fluorspar veins - Approximately 200 ft. of shafts, with open cuts, stopes and short drifts.

On metallic vein - 1 shaft 40 ft. in depth; 100 ft. of tunnel and an 18 ft. winze.

All workings are open.