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Arizona Department of Mines and Mineral Resources Mining Collection

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ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: DENTON CLAIMS

ALTERNATE NAMES:

ASH PEAK MANGANESE CO.  
SANDERS MANGANESE  
HARDY  
THURSTON  
ALLISON STEEL COMPANY  
POSPAHALA  
SOUTHWESTERN STRATEGIC METALS  
GEORGE SETTER

GREENLEE COUNTY MILS NUMBER: 69

LOCATION: TOWNSHIP 7 S RANGE 30 E SECTION 34 QUARTER C  
LATITUDE: N 32DEG 47MIN 06SEC LONGITUDE: W 109DEG 15MIN 11SEC  
TOPO MAP NAME: GUTHRIE - 15 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:

MANGANESE

BIBLIOGRAPHY:

USBM IC 7990, MANGANESE DEPOSITS OF EASTERN  
AZ, FARNHAM, STEWART & DELONG, 1961, P. 99  
USGS MAP I-1310-B, MINERAL DEPOSIT MAP OF THE  
SILVER CITY 1 X 2 QUADRANGLE, NEW MEXICO &  
AZ, RICHTER AND LAWRENCE, 1983, P. 4  
ADMMR U FILE  
ADMMR DENTON CLAIMS FILE

DENTON MINE & MILL

GREENLEE COUNTY  
T7S R30E Sec. NE 34, NW 35  
Ash Peak District

ABM Bull. 127 p. 62

USGS Bull. 710-D p. 130

IC 7990 p. 99

Hardy Mine (file)

Mining World May 1953 p. 91

ABM Bull. 180, p. 217

MAPS - Upstairs in flat storage area - Fifth Drawer

See: I-1310-B p. 4; Mineral Deposit Map of the Silver City 1<sup>0</sup> x 2<sup>0</sup> Quad., NM & AZ--Thurston & Hardy Mine

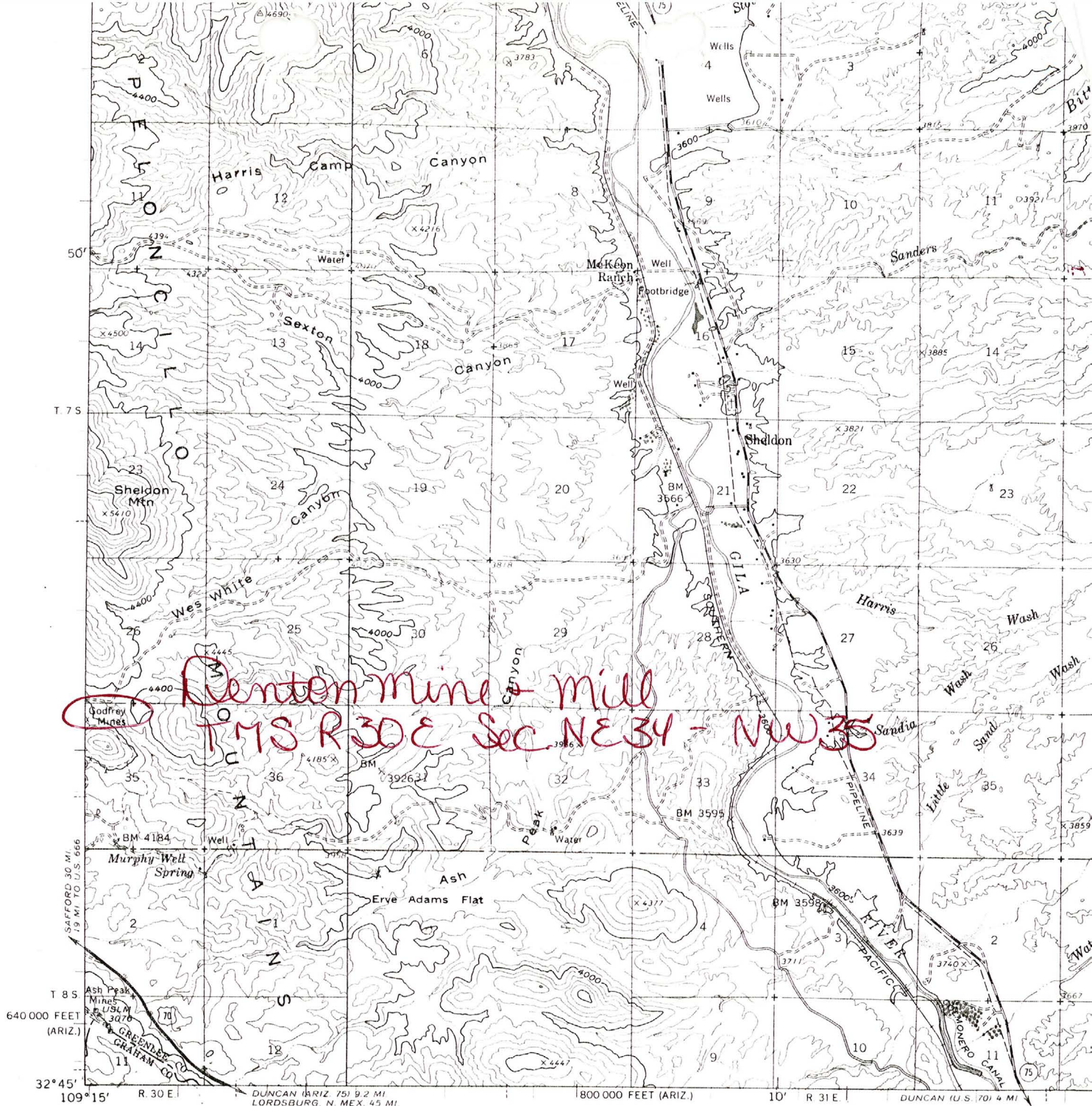
See: IC 7990 pp 99-101, Denton Claims

York Valley 15' Map (included in file)

Greenlee MILS Index #69

AKA: Thurston, Hardy, Godfrey





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.



APPROXIMATE MEAN DECLINATION 1959

*York Valley*  
*15'*

THIS MAP COMPLIES WITH  
FOR SALE BY U. S. GEOLOGICAL SURVEY.  
A FOLDER DESCRIBING TOPOGRAPHIC

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA

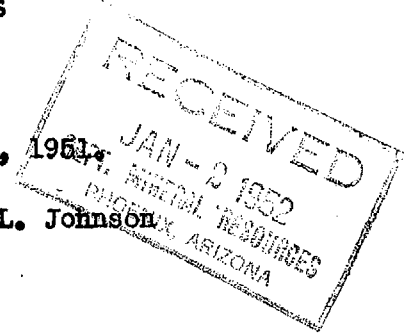
~~FIELD ENGINEERS REPORT~~

NEWS ITEM

Mine Denton Mine ✓  
(old Thurston & Hardy Mine)  
District Ash Peak Mining Dist., Greenlee County

Date Dec. 10, 1951  
Engineer Axel L. Johnson

Subject: News Item--- Source of Information-- Raymond Godfrey



Location Go 9 miles west of Duncan on Highway 70. Turn south, and go south for 3 miles. Good road into the property.

Number of claims 6 unpatented claims, located in August, 1951, by Raymond Godfrey. Former owners and operators, Thurston and Hardy lost right to the claims on account of failure to perform the ~~exploration work~~ assessment work on same.

Owners Raymond Godfrey, 620-- N. 3rd St., Safford, Arizona.  
John Pospahala, Safford, Arizona.

Operators Same as above.

Metals Mined Manganese.

Men Employed 5 men part time. ( Time distributed between this mine and Black Rock)

Production Rate Most of the time to date has been spent on exploration and development, and, consequently, no definite rate of production is established.

Milling Facilities Operator intends to install washing and milling equipment at Safford to up-grade the ore, before he ships it to Deming, N. Mex. to the Govt. depot. Water facilities and a Dorr Classifier now on hand at the river at Safford. Needs crushing machinery and other milling equipment.

Geology Numerous veins of manganese ore from 2 inches to 6 inches wide. Has an 8 inch vein of Manganese at bottom of an 80 ft. shaft, which runs 43 to 45 % Mn. Country rock is rhyolite and basalt. For more information on the geology, see Univ. of Arizona Bulletin "Manganese Deposits in Arizona" by Eldred D. Wilson, and G. M. Butler--- pages 62 to 64

Ore Values Apparently the ore has to be hand sorted and washed to obtain a product which would average 40 %.

Old Workings and Past Production See Univ. of Ariz. Bulletin "Manganese Ore Deposits in Arizona" by Eldred D. Wilson and G. M. Butler--- pages 62 and 64.

Present Operations Mostly exploration work to see how much ore can be shown up. A few tons of ore has been hauled to Safford.

Proposed Plans Continue exploration work until milling facilities are ready. Work on installation of washing and milling facilities. Operator would like to lease out the mine to some one, who would have the capital to build a large mill and mine the property on a large scale.

Remarks Mining this ore body is apt to be very costly on account of the fact that the ore stringers are so narrow that a very large amount of waste material has to be handled, and a large amount of hand sorting has to be done. Furthermore, the finer materials need to be separated by washing. Profits on the operation-problematical.

## DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

## MINE OWNER'S REPORT

10/15/40

Date

Mine Sanders Manganese Mine Location - 12 miles west of Duncan, Arizona. 1 mile from state highway by good trucking road.

Mining District & County - Ash Peak District, Greenlee County

Former Name - Hardy Mine

Owner - Mitch Sanders Address - Duncan, Arizona

Operator - (Agent) C. W. Mitchell Address - Duncan, Arizona

President, Owing Co. None President, Operating Co.

Gen. Mgr. Principal Minerals - Manganese

Mine Supt. Production Rate - Can be 50 to 75 tons weekly

Mill Supt. Mill: Type & Cap.

Men Employed Power: Amt. & Type

Operations: Present - None

Operations: Planned - Installing hoist, compressor, hack hammer, steal, tools, etc. to sink shaft and drift on vein which is 2 to 3 ft. wide. Former operations produced 50 to 60 tons weekly of 50% manganese as a Pyrolusite

Number of Claims, Title, etc. - 3 claims

Description: Topography & Geography - General formation is an Andesite. The vein is fissure in Andesite. It outcrops for 3,000 ft. The vein traverses low lying foothills. There are many small workings in the outcrop and one 80 ft. shaft and several 20 to 30 ft. shafts all produced high-grade manganese.

Mine Workings: Amt. & Condition - It has been 18 years since work was discontinued on the property by Joe Hardy who shipped several hundred tons of 50% manganese from the different workings. These workings are mostly caved in. The present owners intend opening up the vein to ship 45 to 50% manganese.

Geology & Mineralization - Vein is in low lying foothills. The ore occurs as a massive pyrolusite in a vein formation between Andesite walls and is almost vertical. Sometimes the ore occurs as pebbles, or large pieces in apparently a volcanic ash.

Ore: Positive & Probable, Ore Dumps, Tailings - A very small area of the vein has been explored with deepest working, a shaft 80 ft. deep. No ore on dump, or tailings. No doubt several thousand tons of probable ore to be mined.

Dimensions and Value of Ore body - In workings and outcrop vein is 1 to 3 ft. wide. Sometimes vein was said to be 2 ft. wide of solid manganese going 50%.

Mine, Mill Equipment & Flow-Sheet. - None

Road Conditions, Route - Paved state highway 1 mile from property then 1 mile good dirt road to property. Truck freight to railway at Duncan \$1 per ton.

Water Supply - 1 mile from mine for jigging purposes.

Brief History - Mine was worked in 1918 and several hundred tons of 50% manganese was sold from property.

Special Problems, Reports Filed

Remarks - Present owner is going to equip mine with air compressor, etc. to open up the vein and sell the manganese which he estimates will average from 45% to 50% in manganese.

If property for sale: Price, terms and address to negotiate - Address C. W. Mitchell in case of wanting to purchase the property or its product.

(SIGNED) C. W. Mitchell

Duncan, Arizona  
Box 252

Geology & Mineralization - Vein is in low lying foothills. The ore occurs as a massive pyrolusite in a vein formation between Andesite walls and is almost vertical. Sometimes the ore occurs as pebbles, or large pieces in apparently a volcanic ash.

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Duncan, Arizona  
Box 252



DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
MINE OWNER'S REPORT

DEPT. MINERAL RESOURCES  
RECEIVED  
OCT 15 1940  
PHOENIX, ARIZONA

- Date
1. Mine Sanders Manganese Mine.
  2. Location 12 miles west of Duncan
  3. Mining District & County Ash Peak, Greenlee County- Arizona, one mile from State Highway by good trucking road.
  4. Former name Hardy Mine
  5. Owner Mitch Sanders.
  6. Address (Owner) Duncan, Arizona
  7. ~~Operator~~ Agent-C.W. Mitchell.
  8. Address (Operator) Duncan, Arizona
  9. President, Owing Co. None
  - 9A. President, Operating Co. None
  10. Gen. Mgr. None
  14. Principal Minerals Manganese.
  11. Mine Supt. None
  15. Production Rate Can be 50 to 75 tons weekly
  12. Mill Supt. None
  16. Mill: Type & Cap. None
  13. Men Employed None
  17. Power: Amt. & Type None
  18. Operations: Present None
  19. Operations: Planned Installing hoist, compressor, Jack hammer, steel, tools etc to sink shaft and drift on vein which is 2 to 3 feet wide. Former operations produced 50 to 60 tons weekly of 50% manganese as a Pyrooposite.
  20. Number Claims, Title, etc. Three.
  21. Description: Topography & Geography General formation is an Andesite. The vein is a fissure in Andesite. It outcrops for 3,000 feet. The vein traverses low lying foothills. There are many shallow workings in the outcrop and one 80 foot shaft and several 20 to 30 foot shafts all produced high grade manganese.
  22. Mine Workings: Amt. & Condition It has been 18 years since work was discontinued on the property by Joe Hardy who shipped several hundred tons of 50% manganese from the different workings. These workings are mostly caved in. The present owners intends opening up the vein to ship 45 to 50% manganese.

23. Geology & Mineralization Vein is in low lying foothills. The ore occurs as a massive Pyrolusite in a vein formation between Andesite walls and is almost vertical. Sometimes the ore occurs as pebbles, or large pieces in apparently a volcanic ash.

24. Ore: Positive & Probable, Ore Dumps, Tailings A very small area of the vein has been explored with deepest working, a shaft 80 feet deep. No ore on dump, or tailing. No doubt several thousand tons of probable ore to be mined.

24A. Dimensions and Value of Ore body In workings and outcrop vein is 1 to 3 feet wide. Sometimes vein was said to be 2 feet wide of solid manganese going 50%.

25. Mine, Mill Equipment & Flow-Sheet None

26. Road Conditions, Route Paved State Highway one miles from property then one mile good dirt road to property. Truck freight to railway at Duncan one dollar per ton.

27. Water Supply One mile from mine for jiggling purposes.

28. Brief History Mine was worked in 1918 and several hundred tons of 50% manganese was sold from property.

29. Special Problems, Reports Filed

30. Remarks Present owner is going to equip mine with air compressor etc to open up the vein and sell the manganese which he estimates will average from 45 to 50% in manganese.

31. If property for sale: Price, terms and address to negotiate. Address C.W. Mitchell in case of wanting to purchase the property or its product.

32. Signature *C.W. Mitchell*  
*Duncan, Arizona*  
*Box 752*

33. Use additional sheets if necessary.

23. **Geology & Mineralization** Vein is in low lying foothills. The ore occurs as a massive Pyrolusite in a vein formation between Andesite walls and is almost vertical. Sometimes the ore occurs as pebbles, or large pieces in apparently a volcanic ash.
24. **Ore: Positive & Probable, Ore Dumps, Tailings** A very small area of the vein has been explored with deepest working, a shaft 80 feet deep. No ore on dump, or tailing. No doubt several thousand tons of probable ore to be mined.
- 24A. **Dimensions and Value of Ore body** In workings and outcrop vein is 1 to 3 feet wide. Sometimes vein was said to be 2 feet wide of solid manganese going 50%.
25. **Mine, Mill Equipment & Flow-Sheet** None
26. **Road Conditions, Route** Paved State Highway one miles from property then one mile good dirt road to property. Truck freight to railway at Duncan one dollar per ton.
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32. Signature.....

*C.W. Mitchell*  
*Duncan, Arizona*

33. Use additional sheets if.....

MS-47

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
OWNERS MINE REPORT

Date 10-15-40

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2. Mining District & County Ash Peak, Greenlee County
3. Former name Hardy Mine
4. Location 12 miles west of Duncan, Arizona, one mile from State Highway by good trucking road.
5. Owner Mitch Sanders
6. Address (Owner) Duncan, Arizona
7. ~~Operator~~ Agent - C. W. Mitchell
8. Address (Operator) Duncan, Arizona
9. President None
10. Gen. Mgr. None
11. Mine Supt. None
12. Mill Supt. None
13. Principal Metals Manganese
14. Men Employed None
15. Production Rate Can be 50 to 75 tons weekly
16. Mill: Type & Cap. None
17. Power: Amt. & Type None
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32. Signed.....C. W. Mitchell.....  
Box 252
33. Use additional sheets if necessary. Duncan, Arizona

23. Geology & Mineralization    vein is in low lying foothills.    ore occurs as a massive Pyrolusite in a vein formation between Andesite walls and is almost vertical. Sometimes the ore occurs as pebbles, or large pieces in apparently a volcanic ash.
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32. Signed.....C. W. Mitchell  
Box 252
33. Use additional sheets if necessary.    Duncan, Arizona

3-24-1941

Mr. Louis MacLoon

3327 W. Pico

Los Angeles, Cal.

has taken over

the Sanders Mangrove

in Greener County.

CHARLES H. DUNNING  
Mining Engineer

1635 W. Earll Drive  
Phoenix, Arizona

July 20, 1954

DENTON MINES

TO: Mr. E. J. Bartels  
306 Seventh St.  
Safford, Arizona

Pictures Read today  
Thanks. EJB

Pursuant to your request I have examined a group of mining claims known as the Denton Mines situated between Safford and Duncan, Arizona, Greenlee County.

The purpose of the examination was to make an estimate of the ore reserves and consider any other factors on which to base a conclusion as to the justification of further financing to increase production and efficiency.

Location and Title

The property in question consists of two main groups, the Denton Nos. 1, 2, 3, 4, 5 and 6 Claims situated about one mile North of highway #70 from a point 30 miles east of Safford; and the Paradise Nos. 1 and 2, S P & W #1 and Ohio #1 situated about four miles SE of the Denton Group on the South side of the highway.

Titles are by regular mineral locations and have stood for considerable time. The present operators have had undisputed possession for over two years. A recent opinion by attorney H. Earl Rogge of Clifton expressed satisfaction with the titles. Detailed description will be found in County Records at Clifton.

Geology

Geology is typical of the better manganese deposits in Arizona and consists of manganese mineralization in veins and brecciated or faulted zones in andesitic or basaltic lava flows.

Theories differ as to the origin of such deposits. Some hold to the theory that the manganese originated as component of the basic rock from which it was leached, and then precipitated in favorable areas by percolating waters. I am more inclined to believe that the original mineral carrying solutions came from below, depositing low grade manganese ore in fissures, and that subsequent downward precolation, keeping pace with erosion and reprecipitating at rather shallow depth, caused secondary zones of enrichment similar to those found in base metal mines.



Suffice it to say that experience with this type of deposit in Arizona has usually found a partially leached very low grade capping from 0 to a few feet thick, under which there is an increasing manganese content to a depth of 30 to 60 feet, followed by a decreasing grade to some depth and grade that can no longer be profitably mined.

In most places where there is mineralization the basaltic gangue rock has been partially altered to a clay. This is an important economic factor in your case and will be discussed below.

### History

This deposit was been known for considerable time and was worked by crude methods to produce manganese for World War I. It is written up in Wilson & Butler's "Manganese Ore Deposits in Arizona", Arizona Bureau of Mines 1930, under the name of Thurston & Hardy mine. Records show that it produced 1000 tons or more of 45% hand selected Mn ore at that time. It has since proven to be much larger than was then shown.

The ups and downs of manganese price and demand made production sporadic but the recent Government stockpiling program guarantees a good price for a considerable time to come.

### Mineralogy

The predominant manganese mineral is psilomelane, the hard hydrated manganese oxide. Nowhere on the claims did I observe any of the soft or sooty manganese minerals. This is a most fortunate situation as the psilomelane is easy to concentrate by cheap gravity methods whereas the softer minerals may be well high impossible.

There is some calcite, gypsum and barite with the manganese. The two former are light enough so they rarely appear in the concentrates, and the barite, while as heavy as the manganese, occurs in such small amounts as to scarcely effect the grade of the concentrates.

There is very little iron and no copper, lead, zinc or phosphorus. No penalty has ever been charged against any shipment and sometimes a slight premium for low iron is obtained.

### Ore Beneficiation

Two characteristics of the ore make it amenable to the simplest methods of gravity concentration. One is that the gangue rock has been altered to practically a clay. This not only lessens mining costs but the clayey gangue frees itself readily from the manganese mineral on comparatively coarse crushing (no

grinding) and much of it can be washed away by a simple machine such as a classifier or log washer.

The other important feature is the nature of psilomelane. It does not slime or break into very fine particles on handling or crushing but frees itself readily from the clayey gangue and is easily extracted to make a high grade concentrate, by simple gravity methods such as jigs.

Such machines have very high capacity compared with the cost, space, power and attendant labor required for other concentrating devices, thus minimizing your overall milling cost and producing a high grade concentrate and clean tailing.

It should be noted however that jigs work much better if the feed is first sized and the various sizes fed to separate jigs. In your case three sizes should be sufficient with possibly a table to re-treat middlings from the finest jig. Roughly your flow sheet should be to scalp off everything plus about  $1\frac{1}{4}$ " before crushing, as waste. This could be carried off by a belt to waste pile and if it were found that some "nuggets" were included an ore sorter could attend the belt. This would eliminate about 50% of the feed. Crusher product to classifier or log washer (installing both should not be necessary). Classifier overflow to waste. Underflow to triple screen to jigs. Coarse jig middlings to rolls and back to classifier. Fine jig middlings to table.

By such a method you should have upward of 60 tons per shift capacity with a small plant and produce a 43% plus product with an extraction of at least 85%.

Ore situation "A" showing stripped cropping.

Operating Features

Mining: Mining can be carried on entirely by open pit methods, using a power shovel at ore situation "A" (see sketch) and a drag-line - scraper at ore situation "B".

The soft nature of the rock requires only an occasional drill hole and blasting, but heavy equipment should be used.

Water: Water is somewhat of a problem and will add considerably to the operating costs. It is fortunate, however, that a considerable portion of the crude ore will be rejected at the crusher feed and the remaining need only be coarsely crushed. Most any kind of a contraption will recover the water from the coarse tails and concentrates, the largest losses being with the classifier overflow. If a good devise such as a thickener is installed to dewater that component I believe the new water requirements can be gotten down to  $\frac{1}{2}$  ton of fresh water per ton of original feed. (See further under "costs").

As some engineers might question such a low estimate I will submit my figures:

	<u>Water Loss (tons)</u>
50 tons rejected on crusher grizzly	0
20 tons classifier overflow dewatered to 35% H <sub>2</sub> O	7.0
10 tons concentrates @ 15%	1.5
20 tons coarse tailings @ 15%	3.0
<u>100</u>	<u>11.5</u>
Miscellaneous	5.0
Evaporation not over	25.0
Total new water per 100 tons	<u>41.5 tons</u>

The secret of the low water requirement is the quick rejection of coarse oversize and the general coarseness of the material handled.

Operating Costs: Mining situation "A" by power shovel and situation "B" by dragline slusher, 50-50 from each, including removal of any overburden, and 10% in barren "horses", or spots, per long ton

Hauling to mill	\$ .35
Exploration of other ore showings	.25
Milling on basis of 50 tons per 8 hours	2.00
Extra for water (hauled from Duncan)	.40
Hauling concentrates to Deming - per original ton	.40
General overhead	.75
Contingencies	.40
Total Cost per long ton before income taxes	<u>\$4.80</u>

Ore Reserves and Map

Referring to the attached sketch map, at situation "A" I believe it conservative to estimate an area 700' long by 75' wide by 35' deep. This area is supposedly over 100' wide and probably is, but the southern 25' has not been scraped off, or mined on, or sampled, to much extent, and I prefer to cut the estimate down to 75' width.

We thus have at "A" 1,837,500 cu. ft. which at 14.6 cu. ft. per long ton makes slightly more than 125,000 tons.

At situation "B" the vein has been opened for most of 2700' in length and 10' in width.

It is not certain that this entire 2700' is solid ore as there are spots with no "diggings". I prefer to cut it in half and at least that much is proven ore shoots.

Because of several shafts that had been put down from 65' to 85' deep, the dumps of which were good mill ore after the "high grade" had been picked out, I feel that you can count on mining this ore body to a depth of 50' by open trench methods. And this might be continued considerably deeper if some method were employed to protect those working below. The cost of such protection would be nominal compared to the extra tons made available. However, for present purposes we can estimate:  
 1300x10x50 equals  
 650,000 cu.ft.or 45,000 tons.

Ore situation "B"  
 Slusher operating in trench

The west showing at situation "A" and the south group claims are certain to produce at least some ore although no positive estimate can be made until they are further developed. We will, therefore, only add 5,000 tons for these possibilities.

#### Ore Values and Methods of Determining Same

Visual - One experienced with manganese deposits in Arizona and the actual production results from same can make a very close appraisal of the Mn content by visual inspection. In this case I would judge same to be between 5% and 6% Mn after removing a couple of feet of leached overburden and dodging some occasional low grade islands.

Freeman Sampling - Engineer George Freeman for the Allison Steel Co. cut 11 large deep trenches across ore situation "A" for width from 10 to 50 feet. At that time much of the leached capping had not been removed and since then a further extension of the ore body to the east, of excellent grade, has been proven, after removing some capping. Mr. Freeman's 11 samples assayed from 1.48% to 7.92% and averaged 4.2%.

Shipments - The present operators have shipped about 261 long tons of concentrates averaging 42.26% Mn. While no record of the crude tons has been kept, various aspects such as the amount of excavation, the time element, and the economics of their situation, indicate that their crude ore must have averaged between 5% and 6%. This was highly mixed, some old dumps, some capping, and some regular mining.

Mill Run - Being unable to do thorough trench sampling - (it would take probably 2 weeks and cost upward of \$2,000) I decided to have a mill run made, taking a truck load of ore here and there from available places. Six loads totaling 24.0 long tons were so taken and milled.

Results of this mill run show on the attached assay. In the present plant the middlings are rerun bringing them up to over 40%. In a better plant they would be recrushed first.

The object of the mill run was in no wise to show the efficiency of the present mill, but to show an average of the crude ore content via assay of the products.

Such a metallurgical balance sheet works out as follows:

<u>Product</u>	<u>Long Tons</u>	<u>Assay</u>	<u>Units Mn</u>
Coarse waste (10.874 yds)	13.10	1.16	15.4
Finished conc'ts (8 cans)	1.08	45.38	49.0
#1 Jig Mids. (21.6 cu.ft. gravity 2.23)	1.38	38.28	53.0
#1 " " (later) 10.8 cu.ft.	.70	15.00 (est)	10.5
#2 Jig Coarse 551 lbw.	.25	27.23	6.8
#2 Jig Fines (est)	.60	11.55	6.9
Classifier overflow (est)	6.89	nil	nil
	<u>24.00</u>		<u>141.6</u>
Heads 18.014 cu.yds.	24.00		
Calculated assay of heads	<u>141.6</u> 24	equals	5.90% Mn

The mill is no paragon of operating efficiency but makes high grade concentrates.

Considering the fact that all four of the above methods used to determine the average grade of the ore check each other closely, I feel that you can have full confidence that such an average can easily be maintained under sustained mining conditions.

Conclusion

In conclusion I can state that I believe you have a certainty of 175,000 tons of ore available, probably much more, at an assay value of at least 5% Mn.

With adequate financing and astute management you should obtain a 85% extraction on this ore with a cost not over \$4.80 per ton. At Government assured prices at the Deming depot your products should be worth \$9.60 per original ton, leaving a net profit of \$4.80, or a total of over \$840,000.

I should emphasize that such success is predicated on the above factors of finances and management. The management of a small mine often requires more all around ability than the highly paid executive of a large mining corporation. He must be everything unto himself. Many potentially good small mines have been ruined for lack of the above, while proper financing and management can often create a big success from a marginal situation.

May I stress again that in this case you are very fortunate to have:

1. Good geological conditions founded on experience with similar deposits.
2. Decomposed condition of the ore - the gangue freeing itself readily from the desired mineral.
3. Nearly vertical ore bodies permitting extended surface cuts.
4. A desired mineral that is hard and does not slime, which together with #2 permits of concentration by moderately coarse crushing and creates a high grade concentrate.
5. An assured market nearby.

So I can advise that plans be made to obtain sufficient financing to enlarge and improve your plant, and attain the efficiency above outlined.

Respectfully submitted,

SEAL

Registered Mining  
Engineer  
Certificate Expires  
December 31, 1954,  
Chas. H. Dunning,  
Arizona, U. S. A.

(signed) Chas. H. Dunning

## DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

~~FIELD ENGINEERS REPORT~~NEWS ITEM

Mine Denton Mine ✓  
 (old Thurston & Hardy Mine)  
 District Ash Peak Mining Dist., Greenlee County Engineer Axel L. Johnson  
 Date Dec. 19, 1951

Subject: News Item--- Source of Information-- Raymond Godfrey

Location Go 9 miles west of Duncan on Highway 70. Turn south, and go south for 3 miles. Good road into the property.

Number of claims 6 unpatented claims, located in August, 1951, by Raymond Godfrey. Former owners and operators, Thurston and Hardy lost right to the claims on account of failure to perform the ~~exploration work~~ assessment work on same.

Owners Raymond Godfrey, 620-- N. 3rd St., Safford, Arizona.  
 John Pospahala, Safford, Arizona.

Operators Same as above.

metals Mined ✓ Manganese.

Men Employed 5 men part time. (Time distributed between this mine and Black Rock)

Production Rate Most of the time to date has been spent on exploration and development, and, consequently, no definite rate of production is established.

Milling facilities Operator intends to install washing and milling equipment at Safford to up-grade the ore, before he ships it to Deming, N. Mex. to the Govt. depot. Water facilities and a Dorr Classifier now on hand at the river at Safford. Needs crushing machinery and other milling equipment.

Geology Numerous veins of manganese ore from 2 inches to 6 inches wide. Has an 8 inch vein of Manganese at bottom of an 80 ft. shaft, which runs 43 to 45 % Mn. Country rock is rhyolite and basalt. For more information on the geology, see Univ. of Arizona Bulletin "Manganese Deposits in Arizona" by Eldred D. Wilson, and G. M. Butler--- pages 62 to 64

Ore Values Apparently the ore has to be hand sorted and washed to obtain a product which would average 40 %.

Old Workings and Past Production See Univ. of Ariz. Bulletin "Manganese Ore Deposits in Arizona" by Eldred D. Wilson and G. M. Butler--- pages 62 and 64.

Present Operations Mostly exploration work to see how much ore can be shown up. A few tons of ore has been hauled to Safford.

Proposed Plans Continue exploration work until milling facilities are ready.  
 Work on installation of washing and milling facilities.  
 Operator would like to lease out the mine to some one, who would have the capital to build a large mill and mine the property on a large scale.

Remarks Mining this ore body is apt to be very costly on account of the fact that the ore stringers are so narrow that a very large amount of waste material has to be handled, and a large amount of hand sorting has to be done. Furthermore, the finer materials need to be separated by washing. Profits on the operation-problematical.





DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

MINE OWNER'S REPORT

Date

Mine Sanders Manganese Mine

Location - 12 miles west of Duncan, Arizona. 1 mile from state highway by good trucking road.

Mining District & County - Ash Peak District Greenlee County

Former Name - Hardy Mine

Owner - Mitch Sanders

Address - Duncan, Arizona

Operator - (Agent) C. W. Mitchell

Address - Duncan, Arizona

President, Owning Co. None

President, Operating Co.

Gen. Mgr.

Principal Minerals - Manganese

Mine Supt.

Production Rate - Can be 50 to 75 tons weekly

Mill Supt.

Mill: Type & Cap.

Men Employed

Power: Amt. & Type

Operations: Present - None

Operations: Planned - Installing hoist, compressor, hack hammer, steel, tools, etc. to sink shaft and drift on vein which is 2 to 3 ft. wide. Former operations produced 50 to 60 tons weekly of 50% manganese as a Pyrolusite

Number of Claims, Title, etc. - 3 claims

Description: Topography & Geography - General formation is an Andesite. The vein is fissure in Andesite. It outcrops for 3,000 ft. The vein traverses low lying foothills. There are many small workings in the outcrop and one 80 ft. shaft and several 20 to 30 ft. shafts all produced high-grade manganese.

Mine Workings: Amt. & Condition - It has been 18 years since work was discontinued on the property by Joe Hardy who shipped several hundred tons of 50% manganese from the different workings. These workings are mostly caved in. The present owners intend opening up the vein to ship 45 to 50% manganese.

Geology & Mineralization - Vein is in low lying foothills. The ore occurs as a massive pyrolusite in a vein formation between Andesite walls and is almost vertical. Sometimes the ore occurs as pebbles, or large pieces in apparently a volcanic ash.

Ore: Positive & Probable, Ore Dumps, Tailings - A very small area of the vein has been explored with deepest working, a shaft 80 ft. deep. No ore on dump, or tailings. No doubt several thousand tons of probable ore to be mined.

Dimensions and Value of Ore body - In workings and outcrop vein is 1 to 3 ft. wide. Sometimes vein was said to be 2 ft. wide of solid manganese going 50%.

Mine, Mill Equipment & Flow-Sheet - None

Road Conditions, Route - Paved state highway 1 mile from property then 1 mile good dirt road to property. Truck freight to railway at Duncan \$1 per ton.

Water Supply - 1 mile from mine for jigging purposes.

Brief History - Mine was worked in 1918 and several hundred tons of 50% manganese was sold from property.

Special Problems, Reports Filed

Remarks - Present owner is going to equip mine with air compressor, etc. to open up the vein and sell the manganese which he estimates will average from 45% to 50% in manganese.

If property for sale: Price, terms and address to negotiate - Address C. W. Mitchell in case of wanting to purchase the property or its product.

(SIGNED) C. W. Mitchell

Duncan, Arizona  
Box 252

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
MINE OWNER'S REPORT

Date \_\_\_\_\_

Mine Sanders Manganese Mine Location - 12 miles west of Duncan,  
Arizona. 1 mile from state  
Mining District & County - Ash Peak District highway by good trucking  
Greenlee County road.  
Former Name - Hardy Mine

Owner - Mitch Sanders Address - Duncan, Arizona

Operator - (Agent) C. W. Mitchell Address - Duncan, Arizona

President, Owing Co. None President, Operating Co.

Gen. Mgr. Principal Minerals - Manganese

Mine Supt. Production Rate - Can be 50 to 75 tons  
weekly

Mill Supt. Mill: Type & Cap.

Men Employed Power: Amt. & Type

Operations: Present - None

Operations: Planned - Installing hoist, compressor, hack hammer, steel, tools, etc.  
to sink shaft and drift on vein which is 2 to 3 ft. wide.  
Former operations produced 50 to 60 tons weekly of 50%  
manganese as a Pyrolusite.

Number of Claims, Title, etc. - 3 claims

Description: Topography & Geography - General formation is an Andesite. The vein is  
fissure in Andesite. It outcrops for 3,000 ft. The vein  
traverses low lying foothills. There are many small workings  
in the outcrop and one 80 ft. shaft and several 20 to 30 ft.  
shafts all produced high-grade manganese.

Mine Workings: Amt. & Condition - It has been 18 years since work was discontinued  
on the property by Joe Hardy who shipped several hundred tons  
of 50% manganese from the different workings. These workings  
are mostly caved in. The present owners intend opening up the  
vein to ship 45 to 50% manganese.

(SIGNED) C. W. Mitchell

Duncan, Arizona

Box 200  
Duncan, Arizona

Geology & Mineralization - Vein is in low lying foothills. The ore occurs as a massive pyrolusite in a vein formation between Andesite walls and is almost vertical. Sometimes the ore occurs as pebbles, or large pieces in apparently a volcanic ash.

Ore: Positive & Probable, Ore Dumps, Tailings - A very small area of the vein has been explored with deepest working, a shaft 80 ft. deep. No ore on dump, or tailings. No doubt several thousand tons of probable ore to be mined.

Dimensions and Value of Ore body - In workings and outcrop vein is 1 to 3 ft. wide. Sometimes vein was said to be 2 ft. wide of solid manganese going 50%.

Mine, Mill Equipment & Flow-Sheet - None

Road Conditions, Route - Paved state highway 1 mile from property then 1 mile good dirt road to property. Truck freight to railway at Duncan \$1 per ton.

Water Supply - 1 mile from mine for jigging purposes.

Brief History - Mine was worked in 1918 and several hundred tons of 50% manganese was sold from property.

Special Problems, Reports Filed

Remarks - Present owner is going to equip mine with air compressor, etc. to open up the vein and sell the manganese which he estimates will average from 45% to 50% in manganese.

If property for sale: Price, terms and address to negotiate - Address C. W. Mitchell in case of wanting to purchase the property or its product.

(SIGNED) C. W. Mitchell

Duncan, Arizona  
Box 252

DEPARTMENT OF MINERAL RESOURCE  
STATE OF ARIZONA  
MINE OWNER'S REPORT

Date \_\_\_\_\_

Mine Sanders Manganese Mine Location - 12 miles west of Duncan, Arizona. 1 mile from state highway by good trucking road.

Mining District & County - Ash Peak District Greenlee County

Former Name - Hardy Mine

Owner - Mitch Sanders Address - Duncan, Arizona

Operator - (Agent) C. W. Mitchell Address - Duncan, Arizona

President, Owing Co. None President, Operating Co.

Gen. Mgr. Principal Minerals - Manganese

Mine Supt. Production Rate - Can be 50 to 75 tons weekly

Mill Supt. Mill: Type & Cap.

Men Employed Power: Amt. & Type

Operations: Present - None

Operations: Planned - Installing hoist, compressor, hack hammer, steel, tools, etc. to sink shaft and drift on vein which is 2 to 3 ft. wide. Former operations produced 50 to 60 tons weekly of 50% manganese as a Pyrolusite

Number of Claims, Title, etc. - 3 claims

Description: Topography & Geography - General formation is an Andesite. The vein is fissure in Andesite. It outcrops for 3,000 ft. The vein traverses low lying foothills. There are many small workings in the outcrop and one 80 ft. shaft and several 20 to 30 ft. shafts all produced high-grade manganese.

Mine Workings: Amt. & Condition - It has been 18 years since work was discontinued on the property by Joe Hardy who shipped several hundred tons of 50% manganese from the different workings. These workings are mostly caved in. The present owners intend opening up the vein to ship 45 to 50% manganese.

(SIGNED) C. W. Mitchell

Duncan, Arizona

1917  
No. 1000

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
MINE OWNER'S REPORT

Geology & Mineralization - Vein is in low lying foothills. The ore occurs as a massive pyrolusite in a vein formation between Andesite walls and is almost vertical. Sometimes the ore occurs as pebbles, or large pieces in apparently a volcanic ash.

Ore: Positive & Probable, Ore Dumps, Tailings - A very small area of the vein has been explored with deepest working, a shaft 80 ft. deep. No ore on dump, or tailings. No doubt several thousand tons of probable ore to be mined.

Dimensions and Value of Ore body - In workings and outcrop vein is 1 to 3 ft. wide. Sometimes vein was said to be 2 ft. wide of solid manganese going 50%.

Mine, Mill Equipment & Flow-Sheet - None

Road Conditions, Route - Paved state highway 1 mile from property then 1 mile good dirt road to property. Truck freight to railway at Duncan \$1 per ton.

Water Supply - 1 mile from mine for jigging purposes.

Brief History - Mine was worked in 1918 and several hundred tons of 50% manganese was sold from property.

Special Problems, Reports Filed

Remarks - Present owner is going to equip mine with air compressor, etc. to open up the vein and sell the manganese which he estimates will average from 45% to 50% in manganese.

If property for sale: Price, terms and address to negotiate - Address C. W. Mitchell in case of wanting to purchase the property or its product.

(SIGNED) C. W. Mitchell

Duncan, Arizona  
Box 252

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
MINE OWNER'S REPORT

Date \_\_\_\_\_

Mine Sanders Manganese Mine Location - 12 miles west of Duncan,  
Arizona. 1 mile from state  
highway by good trucking  
road.

Mining District & County - Ash Peak District  
Greenlee County

Former Name - Hardy Mine

Owner - Mitch Sanders Address - Duncan, Arizona

Operator - (Agent) C. W. Mitchell Address - Duncan, Arizona

President, Owing Co. None President, Operating Co.

Gen. Mgr. Principal Minerals - Manganese

Mine Supt. Production Rate - Can be 50 to 75 tons  
weekly

Mill Supt. Mill: Type & Cap.

Men Employed Power: Amt. & Type

Operations: Present - None

Operations: Planned - Installing hoist, compressor, hack hammer, steel, tools, etc.  
to sink shaft and drift on vein which is 2 to 3 ft. wide.  
Former operations produced 50 to 60 tons weekly of 50%  
manganese as a Pyrolusite

Number of Claims, Title, etc. - 3 claims

Description: Topography & Geography - General formation is an Andesite. The vein is  
fissure in Andesite. It outcrops for 3,000 ft. The vein  
traverses low lying foothills. There are many small workings  
in the outcrop and one 80 ft. shaft and several 20 to 30 ft.  
shafts all produced high-grade manganese.

Mine Workings: Amt. & Condition - It has been 18 years since work was discontinued  
on the property by Joe Hardy who shipped several hundred tons  
of 50% manganese from the different workings. These workings  
are mostly caved in. The present owners intend opening up the  
vein to ship 45 to 50% manganese.

(SIGNED) C. W. Mitchell  
Duncan, Arizona  
Box 222

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
MINE OWNER'S REPORT

Geology & Mineralization - Vein is in low lying foothills. The ore occurs as a massive pyrolusite in a vein formation between Andesite walls and is almost vertical. Sometimes the ore occurs as pebbles, or large pieces in apparently a volcanic ash.

Ore: Positive & Probable, Ore Dumps, Tailings - A very small area of the vein has been explored with deepest working, a shaft 80 ft. deep. No ore on dump, or tailings. No doubt several thousand tons of probable ore to be mined.

Dimensions and Value of Ore body - In workings and outcrop vein is 1 to 3 ft. wide. Sometimes vein was said to be 2 ft. wide of solid manganese going 50%.

Mine, Mill Equipment & Flow-Sheet - None

Road Conditions, Route - Paved state highway 1 mile from property then 1 mile good dirt road to property. Truck freight to railway at Duncan \$1 per ton.

Water Supply - 1 mile from mine for jiggling purposes.

Brief History - Mine was worked in 1918 and several hundred tons of 50% manganese was sold from property.

Special Problems, Reports Filed

Remarks - Present owner is going to equip mine with air compressor, etc. to open up the vein and sell the manganese which he estimates will average from 45% to 50% in manganese.

If property for sale: Price, terms and address to negotiate - Address C. W. Mitchell in case of wanting to purchase the property or its product.

(SIGNED) C. W. Mitchell  
Duncan, Arizona  
Box 252



DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
OWNERS MINE REPORT

Date

1. Mine Sanders Manganese Mine.
2. Mining District & County Ash Peak, Greenlee County
3. Former name Hardy Mine
4. Location 12 miles west of Duncan, Arizona, one mile from State Highway by good trucking road.
5. Owner Mitch Sanders
6. Address (Owner) Duncan, Arizona
7. Operator Agent - C. W. Mitchell
8. Address (Operator) Duncan, Arizona
9. President None
10. Gen. Mgr. None
11. Mine Supt. None
12. Mill Supt. None
13. Principal Metals Manganese
14. Men Employed None
15. Production Rate Can be 50 to 75 tons weekly
16. Mill: Type & Cap. None
17. Power: Amt. & Type None
18. Operations: Present None

19. Operations Planned Installing hoist, compressor, jack hammer, steel, tools etc to sink shaft and drift on vein which is 2 to 3 feet wide. Former operations produced 50 to 60 tons weekly of 50% manganese as a Pyrolusite.

20. Number Claims, Title, etc. Three.

21. Description: Topography & Geography General formation is an Andesite. The vein is a fissure in Andesite. It outcrops for 3,000 feet. The vein traverses low lying foothills. There are many shall workings in the outcrop and one 80 foot shaft and several 20 to 30 foot shafts all produced high grade manganese.

22. Mine Workings: Amt. & Condition It has been 18 years since work was discontinued on the property by Joe Hardy who shipped several hundred tons of 50% manganese from the different workings. These workings are mostly caved in. The present owners intends opening up the vein to ship 45 to 50% manganese.

23. Geology & Mineralization Vein is in low lying foothills. Ore occurs as a massive Pyrolusite in a vein formation between Ahlesite walls and is almost vertical. Sometimes the ore occurs as pebbles, or large pieces in apparently a volcanic ash.

24. Ore: Positive & Probable, Ore Dumps, Tailings A very small area of the vein has been explored with deepest working, a shaft 80 feet deep. No ore on dump, or tailing. No doubt several thousand tons of probable ore to be mined.

24-A Vein Width, Length, Value, etc. In workings and outcrop vein is 1 to 3 feet wide. Sometimes vein was said to be 2 feet wide of solid manganese going 50%.

25. Mine, Mill Equipment & Flow Sheet None

26. Road Conditions, Route Paved State Highway one miles from property then one mile good dirt road to property. Truck freight to railway at Duncan one dollar per ton.

27. Water Supply One mile from mine for jigging purposes.

28. Brief History Mine was worked in 1918 and several hundred tons of 50% manganese was sold from property.

29. Special Problems, Reports Filed

30. Remarks Present owner is going to equip mine with air compressor etc to open up the vein and sell the manganese which he estimates will average from 45 to 50% in manganese.

31. If property for sale: Price, terms and address to negotiate. Address C. W. Mitchell in case of wanting to purchase the property or its product.

32. Signed..... C. W. Mitchell  
Box 252

33. Use additional sheets if necessary. Duncan, Arizona

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
FIELD ENGINEERS REPORT

Mine Sanders Manganese Mine  
(now called Denton Mine)  
District Ash Peak District, Greenlee County.

Date July 9, 1956

Engineer Axel L. Johnson

Subject: Present Status.

Location Section 34 -- T 7 S - R 30 E. Go 12 miles west of Duncan on Highway # 70. Turn right (north) and drive north for about 3/4 mile on mine road.

Number of claims 16 unpatented claims. First 6 claims located in Aug. 1951 by Raymond Godfrey. 10 additional claims located later by Raymond Godfrey and Grant Godfrey.

Owners Raymond E. Godfrey, 621 - 3rd St., Safford, Ariz.  
Grant Godfrey, Safford, Ariz.

Operators Not in operation. Mine is idle.

Principal Minerals Manganese ores.

References See my reports on the "Denton Mine", viz:  
Dec. 10, 1951  
May 7, 1952  
Sept. 3, 1952  
July 9, 1953  
Jan. 7, 1954  
Mar. 3, 1954  
May 6, 1954  
Oct. 6, 1954  
Dec. 8, 1954  
Feb. 3, 1955  
Apr. 7, 1955  
June 8, 1955  
Dec. 8, 1955

Present Status Mine is idle. Mine has remained idle ever since it closed down about May 29, 1955. Raymond Godfrey and Grant Godfrey, as reported in my report of Dec. 8, 1955, had planned to construct a new mill at Duncan and to start mining operations shortly after Jan. 1st, 1956. However, to date, this work has not been started.

PLEASE FILE UNDER "DENTON MINE"

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
FIELD ENGINEERS REPORT

Mine Denton Mine ✓ Date Dec. 8, 1955 -

District Ash Peak District -----Greenlee Co. Engineer Axel L. Johnson

Subject: Present Status. Information from personal visit & from Raymond Godfrey, Owner.

Location Section 34 -- T 7 S - R 30 E. Go 12 miles west of Duncan on Highway # 70. Turn right (north) and go north for about 3/4 mile on mine road. Road in good shape.

Number of Claims 16 unpatented claims.

Owners Raymond Godfrey, 621 - 3rd St., Safford, Ariz. Tel. 750-J  
✓ Grant Godfrey, ✓ Winkelman, Ariz.

Operators Operators will be the same as above, after operations start after January 1st. Former lessees, the Ash Peak Manganese Co. discontinued operations about June 1st and gave up their lease on the property. According to persons familiar with their operations, this company could not find sufficient ore to keep their HMS mill going, and the grade of ore mined and mill was of exceptionally low grade, resulting in a loss of their operations. All of their milling equipment was sold to the Black Queen Mining Co. (Lou Smith of Blythe, Calif. and Jack Stewart of Phoenix, Ariz.), who are now moving the mill equipment to Aguila, Ariz. to add to their mill at Aguila. Mr. Godfrey reports that the Ash Peak Manganese Co. shipped about \$25,000 worth of concentrates during their 5 months operation, but did not pay their royalties.

Principal Minerals Manganese ore ✓

Number of men employed None at present. Operations to start after Jan. 1st.

Geology and Ore Values See previous reports -----Sept. 3, 1952, March 3, 1954, and Dec. 8, 1954.

Ore in Sight and Probable Ore in Sight negligible. Probable ore uncertain. Estimate of 'Probable ore', mentioned in my report of Dec. 8, 1954, by former operators is evidently much too high.

Milling and Marketing Facilities The owners ~~expect~~ expect to start the construction of a mill to treat the ore in about 2 weeks. The mill will be located near Duncan, Ariz. at the old fluorspar mill just west of Duncan, where water is available. This mill will consist principally ~~of~~ of a scrubber (similar to a trommel screen), a classifier, and 4 jigs (3 jigs for a plus 10 mesh product and 1 jig for the minus 10 mesh product), and the necessary crushing equipment. The ore will be hauled a distance of about 12 miles to the mill. The concentrates will be shipped on the car lot program.

Present Operations The owners, Raymond Godfrey and Grant Godfrey, are at present hauling in and installing the necessary mining equipment for starting mining operations immediately after Jan. 1st.

Proposed plans Owners expect to have the mill finished in from 2 to 3 months.

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
FIELD ENGINEERS REPORT

Mine Denton Mine and Mill Date June 8, 1955  
District Ash Peak Dist., Greenlee County Engineer Axel L. Johnson  
Subject: Present Status -- Personal Visit, and information from watchman.

Location. See previous reports.

For all other information, see previous reports.

Present Status. Mill and mine reported to have closed down about ten days ago. Reason given by the watchman was the failure of the company to obtain ferro-silicon media for the H. M. S. plant. Parties familiar with the operation expressed the opinion that the company has had difficulties finding sufficient ore to keep the mill going, and also that the mill heads have been exceptionally low--probably less than 2%. It is not believed, for this reason, that the company will resume operations.

1  
DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
FIELD ENGINEERS REPORT

Mine Denton Mine ✓

Date April 7, 1955

District Ash Peak District ----- Greenlee County Engineer Axel L. Johnson

Subject: Present Status. Personal Visit and Information from Mr. Steffan, Mill Foreman.

Location See Feb. 3, Report.

Number of Claims See Feb. 3 Report.

Owners See Feb. 3 Report.

Lessees See Feb. 3 Report.

Officers Ted Biddle, P. O. Box 368 202, Duncan, Ariz. ----- Superintendent.  
✓ M. P. Steffan, P. O. Box 181, Duncan, Ariz. ----- Mill Foreman.

Principal Metals and Minerals Manganese ore. ✓

Number of Men Employed 13 men -----9 at the mill -----4 in the mining operations.

Production Rate Not in full production due to breakdowns in the milling equipment. Operators started operating the mill on April 1st., and had numerous breakdowns in the old equipment which was being used in connection with the Heavy Media Separation Mill, such as the log washer, the conveyor equipment and the classifier. Planned production calls for 500 tons of ore to be run through the log washer, (which is expected to discharge 300 tons of washed ore to the HMS plant) every 24 hours. Mill will be run 3 shifts, and the mine 1 shift, and it is expected that from 15 to 20 tons of concentrates will be produced from the 500 tons of ore milled every 24 hrs.

Ore Values On account of the fact that 12 ft. wide bulldozers are being used to mine the ore found in veins 6 ft. wide and less, a lot of barren material is mined with the ore. Consequently, it is doubtful that the ore milled will average more than 2 % Manganese.

Stockpile Ore stockpile at the mill amounts to about 60 tons of concentrates.

Cost Operators are reported to have spent about \$187,000 in the erection of the mill, ~~accessories~~ accessories to the mill, pipe line and pumping equipment, and power plant.

**DEPARTMENT OF MINERAL RESOURCES**  
**STATE OF ARIZONA**  
**FIELD ENGINEERS REPORT**

Mine Denton Mine ✓

Date Feb. 3, 1955.

District Ash Peak District ----Greenlee Co.

Engineer Axel L. Johnson

Subject: Present Status. Personal Visit and information from Ted Biddle, Gen. Mgr.

Location See my report of this property under date of Dec. 8, 1954.

Number of Claims 16 unpatented claims.

Owners Ace Building and Roofing Supplies (a partnership), owned by Raymond Godfrey, 620--N. 3rd St., Safford, Ariz., and G. T. Godfrey of the same address.

Lessees Ash Peak Manganese Co., Box 368, Safford, Ariz., a partnership including the following persons: (1) C. T. Robertson, Wichita Falls, Texas; (2) Patrick Daugherty, Billings, Mont. (Jack Bartels, former partner reported as having sold out to the others.) The Ash Peak Manganese Co. has a lease with option to buy. No terms published.

Officers Ted Biddle, Box 368, Safford, Ariz. -----Gen. Mgr.

Principal Minerals Manganese ores.

Number of Men Employed 18 men. At present all on mill construction.

Production Rate No production now. Production to start about March 1st, when mill is scheduled to be finished.

Geology and Ore Values See my reports of Sept. 3, 1954, and Dec. 8, 1954.

Ore in Sight and Probable See my report of Dec. 8, 1954.

Milling and Marketing Facilities The pipe line from the Gila River has now been completed. It is 27,000 ft. long, and 4 1/2 O. D. pipe was installed. A well, 72 ft. deep was dug next to the Gila River. One pump has been installed for pumping the water, and a second pump will be installed soon. Several miles of road have been built. The heavy media separation unit, a Western Machinery Mobile Mill, has now been installed. The log washer, gyrating screens, Dorr Classifier, and sand pumps are now being installed. The company operates their own power plant for furnishing electric power. (Also see report of the mill in my report of Dec. 8, 1954).

Proposed Plans To be ready for mining and milling ore about March 1st, running the mine one shift, and the mill 3 shifts. Estimated production ----500 tons per 24 hrs. They expect to concentrate the ore to 42 to 45 % Mang. They expect eventually to sell the ore on the Car Lot Program, but will ship to Deming depot first until the grade is controlled.

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
FIELD ENGINEERS REPORT

Mine Benton Mine

Date Dec. 8, 1954

District Ash Peak District ----- Greenlee Co.

Engineer Axel L. Johnson

Subject: Present Status. Information from personal visit, and from Mr. Ted Biddle, Gen. Mgr.

Location Section 34 -- T 7 S -- R 30 E. Go 12 miles ~~east~~ west of Duncan on Highway #70. Turn right (north) and go north for about 3/4 mile on mine road. Road in good shape.

Number of Claims 16 unpatented claims.

Owners Ace Building and Roofing Supplies (a partnership), owned by Raymond Godfrey, 620--N. 3rd St., Safford, Ariz., and G. T. Godfrey, of the same address

Lessees Ash Peak Manganese Co., Box 368, Safford, Ariz., a partnership including the following persons: (1) C. T. Robertson, Wichita Falls, Texas; (2) Patrick Daugherty, Billings, Mont.; (3) Jack Bartels, 306 -- 7th St., Safford, Ariz.  
Have lease with option to buy. No terms published.

Officers Ted Biddle, box 368, Safford, Ariz. ----- General Manager.

Minerals Manganese ores.

Number of Men Employed 7 men working at the mill site on leveling and miscell. work.

Production Rate No production now. No production until the mill is finished.

Geology See my report on this property under date of Sept. 3, 1952.

Ore Values Crude ore has been running from 2 to 7 % in manganese. May average from 3 to 4 %

Ore in Sight and Probable Ore in sight (blocked out) is very little. Mr. Biddle, Gen. Mgr. estimates the 'Possible' ore as about 125,000 tons, and the amount of 'Probable' ore as about 500,000 tons. Mr. Biddle says he is guided in these estimates by a recent report from Chas. Dunning, Consulting Engineer.

Milling and Marketing Facilities The Ash Peak Manganese Co. is now engaged in making preparations to construct a mill on the property. This mill will be a heavy media separation mill of 500 to 600 tons per day (24hr.) capacity. Water for the mill will be pumped from a well along the Gila River, and run through 32,000 ft. of 4 1/2 O.D. steel pipe from the well to the mill, with an 850 ft. static head plus an additional 800ft. of friction head.

The proposed flow sheet calls for the crude to be run through a 6 in. grizzly, and into a Log Washer, which will wash out the clay and dirt, and possibly reduced the volume of material to be treated by other methods to less than 1/2. From the log washer, the ore will be passed through a 1 inch screen, the oversize going to waste, and the undersize going to a gyratory crusher, where it will be crushed to minus 5/16 in.. From this crusher, the ore goes to the heavy ~~media~~ media ~~separation~~ ~~unit~~ separation unit. The heavy media separation unit will be a Western Machinery Mobile Mill with a 7 ft. dia. cone 12 ft. high. The capacity of the unit is 360 tons per day (24hr.). Cost of unit \$40,000. Will be shipped from factory about Dec. 9.

Total cost of the mill estimated at about \$200,000, distributed about as follows:  
(1) Pipe Line and pump ----\$75,000; (2) Heavy media plant ---- \$40,000; Remainder ---- \$85,000

Proposed Plans Will try to get mill finished some time in Feb. Will strip some of the ore body while the mill is being erected, using bulldozers.



DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
FIELD ENGINEERS REPORT

Mine Denton Mine

Date Oct. 6, 1954

District Ash Peak Dist., Greenlee Co.

Engineer Axel L. Johnson

Subject: Present Status. Information from Raymond and Grant Godfrey.

Note:- For General Information, see my report of March 3, 1954.

New Mill Construction One new gyratory crusher, ore feeders, screens and one jig has been added to the milling equipment, and a new ore bin has been constructed since my last report of May 6, 1954. The mill now consists of a crude ore bin, feeders, gyratory crusher, screens, classifier, and 4 jigs. Max. Cap. about 10 tons per hour.

Present Operations

(1) Normal daily operation reported by operators to be 64 tons per day of low grade manganese ore mined with bull dozer and car loader, when mine is being operated. Mine is operated about 1/3 time or about 2 days per week. Mill operations and repairs or improvements is being done the remainder of the time.

(2) Average weekly ore production has been about 100 tons per week of an ore averaging about 7 %, varying from 4 to 9 %.

(3) Average production per week of concentrates has been about 7 1/2 tons of concentrates, averaging about 43 %; and of middlings about 9 tons, averaging about 22 %.

(4) Average recovery about 75 %.

Possible Future Plans Raymond Godfrey reports that they are dickering with a party, a Texas oil man, to lease the mine to him at 5 % royalty, with a down payment of \$4,500. The party, who is planning to lease and operate the mine, intends to construct his own mill on the property, a heavy media separation mill with a capacity of 25 tons per hour. Water for the milling operation would be obtained by the construction of a 4 inch pipe line from the Gila River, a distance of 5 to 6 miles. The Godfreys would then remove their old mill and move it to some other mining operation.

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
FIELD ENGINEERS REPORT

Mine Denton Mine

Date May 6, 1954.

District Ash Peak District, Greenlee Co.

Engineer Axel L. Johnson

Subject: Report of Mining Operations

Note:- For General Information, see my report of March 3, 1954.

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Present Operations

(1) Mr. Godfrey reports that the new proposed mill construction has not been started yet. The reason for the delay is that the new partner, Mr. Schwarz of Globe, Ariz., has not been able to raise the necessary finances, as per agreement, according to statement by Mr. Raymond Godfrey,

(2) Operations have now been closed down for a week for repairs on equipment.

(3) Normal daily operation, according to Mr. Godfrey, when mine is operating, is as follows:-

- (a) 90 tons of manganese ore mined with help of bull dozer and car loader.
- (b) Plus 3/4 inch size screened out, leaving about 78 tons of minus 3/4 inch ore, assaying about 5 % to be put through the mill. (ore values vary widely ---2 to 7 %)
- (c) Concentrate obtained from same -----about 4 tons running about 43 % Mn
- (d) Middlings x obtained from same ---- about 6 tons running about 22 % Mn
- (e) Recovery is estimated at about 75 %.
- (f) Tailings assay about 1/2 % Mn.

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
FIELD ENGINEERS REPORT



Mine Denton Mine

Date March 3, 1954

District Ash Peak District ----Greenlee County

Engineer Axel L. Johnson

Subject: Report of Mining Operations

Location For location and general information see previous reports on this property.

Owners Change of Ownership, viz:

Raymond Godfrey and G. T. Godfrey, ~~in~~ 620 N. 3rd St., Safford, Ariz. ----50 %  
✓ Mark Schwarz, Globe, Ariz. -----50 %

Operators Same as above. Raymond Godfrey, mine superintendent.

Principal Minerals ✓ Manganese ores.

Number of Men Employed 6 men

Production Rate Present rate is approximately 3 tons of concentrates per day, obtained from a crude ore, running about 4 % manganese. This rate will be maintained until the new mill is finished, which will be in about 90 days. About 35 tons crude milled daily.

Ore Values Ore averages about 4 % manganese. Concentrates run about 44 %.

Ore in Sight and Probable Not determined by operators. Operators believe that they have a tonnage of low grade manganese ore, which can be mined by open pit operations, which will keep a 200 ton mill going for several years.

Milling and Marketing Facilities

(1) Additions which have been made to the old mill to use until the new mill is finished in about 90 days, are as follows: Dorr Classifier, Wemco feeder, Vibrating Screens, Pumping Equipment, Bulldozer.

(2) New mill on which construction is being started will consist ~~of~~ of one--2 compartment jig for coarse material, two--1 compartment jig for fine material, and, in addition the equipment, mentioned above, which has been recently added to the old mill. Capacity of the new mill will be 200 tons of ore every 8 hours, according to the operator, Mr. Godfrey. Water will be obtained from a 600 ft. well, located about 500 ft. from the mill site, supplemented from water stored by dams, and by water hauled in from outside.

**DEPARTMENT OF MINERAL RESOURCES**  
**STATE OF ARIZONA**  
**FIELD ENGINEERS REPORT**

Mine Denton Mine ✓

Date Jan. 7, 1954

District Ash Peak District --Greenlee Co.

Engineer Axel L. Johnson

Subject: Report of Mining Operations

Location For location and general information see previous report of this property under date of Sept. 3, 1952.

Present Mining Operations Of Owners Owners, Ace Building and Roofing Supplies (a partnership of Raymond Godfrey and G. T. Godfrey, 620 N. 3rd St., Safford, Ariz.). Owners scrape up the manganese ore with a bulldozer into piles, and then loads this ore into trucks with a car loader. Trucks dump the ore into a pile near the mill. This ore is fed from this stockpile into the mill as required by the help of a carloader.

Two jigs are used in the milling operations. All of the ore is run through the first jig. The product from the first jig is run through a second jig, which produces the final concentrate.

About 21 tons of crude ore is jiggged per day, which averages about 5 % of manganese. About 2 tons of concentrate is produced per day, which averages about 45 % of manganese. Owners report that they are getting a very good recovery in their milling operations. Production has now been stepped up to about 50 tons of concentrates per month.

Future Plans of the Owners and Operators

(1) To install a larger mill. Plans are being made for a 50 tons mill (50 ton per 8 hr.)// Operators plan to mine about 100 tons per day of crude ore, wash the clay out of same to about 50 tons of washed product. This 50 tons of washed product would then be run through the mill each day, from which they expect to get about 5 tons of 45 % manganese concentrate, on their lowest grade ores, up to 10 tons on their higher grade ores.

(2) Operators have leased a 600 ft. well from a neighboring ranch about 400 ft. from the mill. They have ordered a pump and piping to be installed in this well. Water from this well will be used for their milling operations.

(3) Operators have applied for a Small Business Administration Loan, according to Raymond Godfrey, part owner and operator.

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
FIELD ENGINEERS REPORT

Mine Denton Mine

Date July 9, 1953.

District Ash Peak District, Greenlee Co.

Engineer Axel L. Johnson

Subject: Report of Mining Operations

References For location and general information see previous report on this property under date of Sept. 3, 1952.

Status of D. M. E. A. Loan

Owners were granted a D. M. E. A. loan on or about May 1, 1953. The gross amount of this loan was \$23,840, with 75 % of same furnished by the government. The loan called for a headframe, hoist house, shops, and mining equipment, and for the sinking of a 110 ft. shaft, 250 ft. of drifting, and not to exceed 50 ft. of raising.

Owners report that to date 48 ft. of shaft sinking has been done, but no drifting or raising, and that the headframe, hoist house and shops are finished. About \$7,500 gross has been expended to date on the loan.

3 men are ~~is~~ being employed on the D. M. E. A. portion of the mine activity.

Previous Operator

Owners report that Bill Allison had a 30 day option on the property last April. He reports that Mr. Allison worked for about 12 days with a bulldozer, and scraped up a stockpile of ore about 1,000 tons. This ore was of low grade, and this stockpile averaged only 3.7 %, according to the owners, Raymond Godfrey and G. T. Godfrey (d.b.a. Ace Building and Roofing Supplies). Mr. Allison is reported to have given up the option after 30 days.

Mining Operations by the Owners

Owners are now engaged in milling the ore in the stockpile, which Mr. Allison scraped up. Their mill is very small and consists of a small crusher, screens, and a ~~jam~~ jig. Very little of the ore requires crushing. Water for the milling operations is obtained from a shallow well on the property, from an earth dam, which fills up after rains, and ~~about~~ some water is hauled from Duncan.

3 men are engaged in the milling activities, and an average of 1 ton per day is milled (max. cap. about 1 1/2 ton per day), when the mill is running. From 18 to 20 tons of ore per month has been milled and ~~shipped to the Deming~~ hauled to Deming Manganese depot in operators' own truck. About 5 1/2 tons of ore is hauled each trip, at a cost of about \$8.00 per ton for hauling. (35 tons since May 15)

Operators report that the feed runs about 4 %, and that the concentrates run slightly over 40 %. In order to get a 40 % concentrate, the first concentrate obtained from the mill, has to be run through again.

Proposed Plans Operators report that they have negotiated for the use of a 600 ft. well at a ranch house 400 ft. from the mill, and that they plan on installing a pump at this well, and pump this water to the mill for use at their milling operations. Estimated cost of same about \$2400.

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
FIELD ENGINEERS REPORT

Mine Denton Mine  
(old Thurston and Hardy Mine)  
District Ash Peak Mining Dist., Greenlee Co.

Date Sept. 3, 1952.

Engineer Axel L. Johnson

Subject: Mine Report ---- Personal Inspection.

Location Section 34 --- T 7 S --- R 30 E.  
Go 12 miles west of Duncan on Highway # 70. Turn north and go north  
for about 1/2 to 3/4 mile on dirt road. Road is good.

Number of Claims 6 unpatented claims. (located in Aug. 1951 by present owners)/.

Owners Ace Building and Roofing Supplies (a partnership), owned by  
Raymond Godfrey, 620 -- N. 3rd St., Safford, Ariz. and G. T. Godfrey, of the same  
address. Note change of ownership from last report.

Operators Same as above.

Principal Minerals Manganese Ore.

Number of Men Employed 4 men part time.

Production Rate 1 ton of concentrates per day, when in operation. Lack of  
water for milling purposes prevents a steady operation.

Geology Country rocks in the vicinity consist of Tertiary lava flows-- gray to  
brownish red basalt overlain by light pink rhyolite.. No manganese is found in  
the rhyolite. The basalt is much decomposed and contain numerous shear zones. The  
manganese ores are found in these shear zones, which are from 6 to 15 ft. wide, and  
contain soft and decomposed material. In this soft and decomposed material, are  
narrow veins of manganese, varying from 1 to 6 inches in width. There are two  
distinct shear zones exposed on the property, the two zones being 1200 ft. apart,  
striking about N. 75 deg. W, almost parallel to each other, and almost vertical.  
The north shear zone can be traced for 1500 ft. in length, and the south shear zone  
for 900 ft., but the shear zones are not mineralized for the full distance, a large  
part of the shear zones having very little manganese ores for a considerable distance,  
then contain a mineralized zone with the veinlets of manganese ores, which continue  
for 100 to 200 ft., after which the shear zone is again barren. Manganese ores  
are psilomelane and pyrolusite, with psilomelane predominating. See University  
of ~~Arizona~~ Arizona Bulletin "Manganese Ore Deposits in Arizona" by Eldred D. Wilson  
and G. M. Butler----- pages 62 and 64. # 129

Ore Values 33.87 tons of ore mined by present owners and shipped direct to  
Deming manganese depot without milling ran only 12 % and was rejected by GSA.  
Operators have been concentrating their ores by jiggging, and these  
concentrates run about 42 % Manganese.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

page 2

Mine ✓ Denton Mine ✓  
(old Thurston and Hardy Mine)

Date Sept. 3, 1952.

District Ash Peak Mining Dist., Greenlee Co.

Engineer Axel L. Johnson

Subject: Mine Report ----- Personal Inspection.

Milling Facilities Owners have installed some crude milling arrangement on the property. This consists of a small jaw crusher, some screens, and a small jig. Mill is quite inefficient, a lot of the ore material going to waste in the dump. The addition of a table for treating the fines product from the jig would help to save some of ore now going to the waste dump. About 1 ton of concentrates per day can be obtained by operation of this mill.

On account of <sup>an</sup>adequate water supply, the owners can only operate this mill intermittently, when they have a supply of water. Water is obtained from a shallow well about 200 or 300 ft. away from the mill, and the waste water runs back into the well. However, the well does not produce enough water for continuous operation.

Owners have recently built an earth dam near by to collect water for milling operations. Thus far, this dam contains no water.

Present Mine Workings Most of the ore milled so far has come from the old dumps on the mine. The owners found it convenient and profitable to mine these old dumps before commencing mine operations on the veins. The dump ore is now exhausted, and the owners have begun to mill the ore from the ore veins. Owners began operations in March, and to date 44 tons of concentrates have been shipped to the Deming Manganese depot. This ore is of good grade with no penalties for impurities. Owners are now taking out some ore in an open cut on the north shear zone, and hauling same to their mill and milling it. Operations are intermittent on account of the sparse water supply for the mill.

Past History This mine was operated in 1917 and 1918 by R. V. Thurston and ✓ Joseph Hardy. These operators concentrated the ore on the site by jigging. According to the University bulleting, about 1000 tons of concentrates were produced by these operators. Several shafts are found on the property, which are now caved in and inaccessible. These shafts are said to be from 30 to 80 ft. in depth. There are also a number of open cuts, from which ore has been mined. See University of Arizona Bulletin 'Manganese Ore Deposits in Arizona' by Eldred D. Wilson and G. M. Butler ----- pages 62 to 64. \* (27)

Proposed Plans Owners have applied for a Government Exploration Loan in the amount of about \$ 45,000, for exploration work on the property. This application was sent in in July, and the owners are now awaiting work from the D. E. M. A. regarding this loan application. If the loan is granted, and the exploration work covered by the loan is completed; then the owners plan to apply for a Production Loan to take care of future mining operations, and the construction of a modern mill, and the development of water for same.

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
FIELD ENGINEERS REPORT

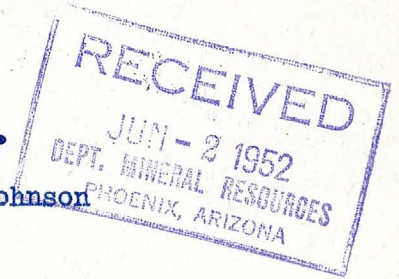
Mine Denton Mine (old Thyrston & Hardy Mine)

Date May 7, 1952.

District Ash Peak Mining Dist., Greenlee Co.

Engineer Axel L. Johnson

Subject: Present Status



References: For location and other information see report on this property under date of Dec. 10, 1951.

Owners Raymond Godfrey, 620 -- N. 3rd St., Safford, Ariz.  
and John Pospanala, Safford, Ariz.

Operators Same as above.

Metals Mined Manganese.

Men Employed 4 men.

Production Rate Have been shipping about 6 tons of concentrates per week to the Deming, N. Mex. depot. Their shipments were concentrates, which were obtained by milling the old dump on the property. Concentration was effected by jigging, and no crushing was required.

Proposed Plans Operators plan on installing a crusher, and to start mining on the ore body, and milling this ore by the same method (jigging). A production of 12 tons of crude ore is anticipated, which should yield about 5 tons of concentrates per day. This operation is expected to start very shortly after the crusher is installed.



DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Sanders Manganese Mine (now called Denton Mine)  
District Ash Peak District, Greenlee County.  
Date July 9, 1956  
Engineer Axel L. Johnson  
Subject: Present Status.

Location Section 34 -- T 7 S - R 30 E. Go 12 miles west of Duncan on Highway 770. Turn right (north) and drive north for about 3/4 mile on mine road.

Number of claims 16 unpatented claims. First 6 claims located in Aug. 1951 by Raymond Godfrey. 10 additional claims located later by Raymond Godfrey and Grant Godfrey.

Owners Raymond E. Godfrey, 521 - 3rd St., Safford, Ariz.  
Grant Godfrey, Safford, Ariz.

Operators Not in operation. Mine is idle.

Principal Minerals Manganese ores.

References See my reports on the "Denton Mine", viz:  
Dec. 10, 1951  
May 7, 1952  
Sept. 3, 1952  
July 9, 1953  
Jan. 7, 1954  
Mar. 3, 1954  
May 6, 1954  
Oct. 6, 1954  
Dec. 8, 1954  
Feb. 3, 1955  
Apr. 7, 1955  
June 8, 1955  
Dec. 8, 1955

Present Status Mine is idle. Mine has remained idle ever since it closed down about May 29, 1955. Raymond Godfrey and Grant Godfrey, as reported in my report of Dec. 8, 1955, had planned to construct a new mill at Duncan and to start mining operations shortly after Jan. 1st, 1956. However, to date, this work has not been started.

PLEASE FILE UNDER "DENTON MINE"

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Denton Mine Date Dec. 8, 1955  
District Ash Peak District -----Greenlee Co. Engineer Axel L. Johnson  
Subject: Present Status. Information from personal visit & from Raymond Godfrey, Owner.

Location Section 34 -- T 7 S - R 30 E. Go 12 miles west of Duncan on Highway # 70. Turn right (north) and go north for about 3/4 mile on mine road. Road in good shape.

Number of Claims 16 unpatented claims.

Owners Raymond Godfrey, 621 - 3rd St., Safford, Ariz. Tel. 750-J  
Grant Godfrey, Winkelman, Ariz.

Operators Operators will be the same as above, after operations start after January 1st. Former lessees, the Ash Peak Manganese Co. discontinued operations about June 1st and gave up their lease on the property. According to persons familiar with their operations, this company could not find sufficient ore to keep their HMS mill going, and the grade of ore mined and mill was of exceptionally low grade, resulting in a loss of their operations. All of their milling equipment was sold to the Black Queen Mining Co. (Lou Smith of Blythe, Calif. and Jack Stewart of Phoenix, Ariz.), who are now moving the mill equipment to Aguila, Ariz. to add to their mill at Aguila. Mr. Godfrey reports that the Ash Peak Manganese Co. shipped about \$25,000 worth of concentrates during their 5 months operation, but did not pay their royalties.

Principal Minerals Manganese ore.

Number of men employed None at present. Operations to start after Jan. 1st.

Geology and Ore Values See previous reports -----Sept. 3, 1952, March 3, 1954, and Dec. 8, 1954.

Ore in Sight and Probable Ore in Sight negligible. Probable ore uncertain. Estimate of 'Probable ore', mentioned in my report of Dec. 8, 1954, by former operators is evidently much too high.

Milling and Marketing Facilities The owners ~~expect~~ expect to start the construction of a mill to treat the ore in about 2 weeks. The mill will be located near Duncan, Ariz. at the old fluorspar mill just west of Duncan, where water is available. This mill will consist principally ~~of~~ of a scrubber (similar to a trommel screen), a classifier, and 4 jigs (3 jigs for a plus 10 mesh product and 1 jig for the minus 10 mesh product), and the necessary crushing equipment. The ore will be hauled a distance of about 12 miles to the mill. The concentrates will be shipped on the car lot program.

Present Operations The owners, Raymond Godfrey and Grant Godfrey, are at present hauling in and installing the necessary mining equipment for starting mining operations immediately after Jan. 1st.

Proposed plans Owners expect to have the mill finished in from 2 to 3 months.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Denton Mine and Mill Date June 8, 1955  
District Ash Peak Dist., Greenlee County Engineer Axel L. Johnson  
Subject: Present Status -- Personal Visit, and information from watchman.

Location. See previous reports.

For all other information, see previous reports.

Present Status. Mill and mine reported to have closed down about ten days ago. Reason given by the watchman was the failure of the company to obtain ferro-silicone media for the H. M. S. plant. Parties familiar with the operation expressed the opinion that the company has had difficulties finding sufficient ore to keep the mill going, and also that the mill heads have been exceptionally low--probably less than 2%. It is not believed, for this reason, that the company will resume operations.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Denton Mine Date April 7, 1955  
District Ash Peak District ----- Greenlee County Engineer Axel L. Johnson  
Subject: Present Status. Personal Visit and Information from Mr. Steffan, Mill Foreman.

Location See Feb. 3, Report.

Number of Claims See Feb. 3 Report.

Owners See Feb. 3 Report.

Lessees See Feb. 3 Report.

Officers Ted Biddle, P. O. Box ~~362~~ 202, Duncan, Ariz. ----- Superintendent.  
M. P. Steffan, P. O. Box 181, Duncan, Ariz. ----- Mill Foreman.

Principal Metals and Minerals Manganese ore.

Number of Men Employed 13 men -----9 at the mill -----4 in the mining operations.

Production Rate Not in full production due to breakdowns in the milling equipment. Operators started operating the mill on April 1st., and had numerous breakdowns in the old equipment which was being used in connection with the Heavy Media Separation Mill, such as the log washer, the conveyor equipment and the classifier. Planned production calls for 500 tons of ore to be run through the log washer, (which is expected to discharge 300 tons of washed ore to the HMS plant) every 24 hours. Mill will be run 3 shifts, and the mine 1 shift, and it is expected that from 15 to 20 tons of concentrates will be produced from the 500 tons of ore milled every 24 hrs.

Ore Values On account of the fact that 12 ft. wide bulldozers are being used to mine the ore found in veins 6 ft. wide and less, a lot of barren material is mined with the ore. Consequently, it is doubtful that the ore milled will average more than 2 % Manganese.

Stockpile Ore stockpile at the mill amounts to about 60 tons of concentrates.

Cost Operators are reported to have spent about \$187,000 in the erection of the mill, ~~accessories~~ accessories to the mill, pipe line and pumping equipment, and power plant.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Denton Mine

Date Feb. 3, 1955.

District Ash Peak District ----Greenlee Co.

Engineer Axel L. Johnson

Subject: Present Status. Personal Visit and information from Ted Biddle, Gen. Mgr.

Location See my report of this property under date of Dec. 8, 1954.

Number of Claims 16 unpatented claims.

Owners Ace Building and Roofing Supplies (a partnership), owned by Raymond Godfrey, 620--N. 3rd St., Safford, Ariz., and G. T. Godfrey of the same address.

Lessees Ash Peak Manganese Co., Box 368, Safford, Ariz., a partnership including the following persons: (1) C. T. Robertson, Wichita Falls, Texas; (2) Patrick Daugherty, Billings, Mont. (Jack Bartels, former partner reported as having sold out to the others.) The Ash Peak Manganese Co. has a lease with option to buy. No terms published.

Officers Ted Biddle, Box 368, Safford, Ariz. -----Gen. Mgr.

Principal Minerals Manganese ores.

Number of Men Employed 18 men. At present all on mill construction.

Production Rate No production now. Production to start about March 1st, when mill is scheduled to be finished.

Geology and Ore Values See my reports of Sept. 3, 1954, and Dec. 8, 1954.

Ore in Sight and Probable See my report of Dec. 8, 1954.

Milling and Marketing Facilities The pipe line from the Gila River has now been completed. It is 27,000 ft. long, and 4 1/2 O. D. pipe was installed. A well, 72 ft. deep was dug next to the Gila River. One pump has been installed for pumping the water, and a second pump will be installed soon. Several miles of road have been built. The heavy media separation unit, a Western Machinery Mobile Mill, has now been installed. The log washer, gyrating screens, Dorr Classifier, and sand pumps are now being installed. The company operates their own power plant for furnishing electric power. (Also see report of the mill in my report of Dec. 8, 1954).

Proposed Plans To be ready for mining and milling ore about March 1st, running the mine one shift, and the mill 3 shifts. Estimated production ----500 tons per 24 hrs. They expect to concentrate the ore to 42 to 45 % Mang. They expect eventually to sell the ore on the Car Lot Program, but will ship to Deming depot first until the grade is controlled.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Denton Mine Date Dec. 8, 1954  
District Ash Peak District ----- Greenlee Co. Engineer Axel L. Johnson  
Subject: Present Status. Information from personal visit, and from Mr. Ted Biddle, Gen. Mgr.

Location Section 34 -- T 7 S -- R 30 E. Go 12 miles ~~xxxx~~ west of Duncan on Highway #70. Turn right (north) and go north for about 3/4 mile on mine road. Road in good shape.

Number of Claims 16 unpatented claims.

Owners Ace Building and Roofing Supplies (a partnership), owned by Raymond Godfrey, 620--E. 3rd St., Safford, Ariz., and G. T. Godfrey, of the same address

Lessees Ash Peak Manganese Co., box 368, Safford, Ariz., a partnership including the following persons: (1) C. I. Robertson, Wichita Falls, Texas; (2) Patrick Daugherty, Billings, Mont.; (3) Jack Bartels, 306 -- 7th St., Safford, Ariz.

Have lease with option to buy. No terms published.

Officers Ted Biddle, box 368, Safford, Ariz. ----- General Manager.

Minerals Manganese ores.

Number of Men Employed 7 men working at the mill site on leveling and miscell. work.

Production Rate No production now. No production until the mill is finished.

Geology See my report on this property under date of Sept. 3, 1952.

Ore Values Crude ore has been running from 2 to 7 % in manganese. May average from 3 to 4 %.

Ore in Sight and Probable Ore in sight (blocked out) is very little. Mr. Biddle, Gen. Mgr. estimates the 'Possible' ore as about 125,000 tons, and the amount of 'Probable' ore as about 500,000 tons. Mr. Biddle says he is guided in these estimates by a recent report from Chas. Dunning, Consulting Engineer.

Milling and Marketing Facilities The Ash Peak Manganese Co. is now engaged in making preparations to construct a mill on the property. This mill will be a heavy media separation mill of 500 to 600 tons per day (24hr.) capacity. Water for the mill will be pumped from a well along the Gila River, and run through 32,000 ft. of 4 1/2 O.D. steel pipe from the well to the mill, with an 850 ft. static head plus an additional 800ft. of friction head.

The proposed flow sheet calls for the crude to be run through a 6 in. grizzly, and into a Log Washer, which will wash out the clay and dirt, and possibly reduce the volume of material to be treated by other methods to less than 1/2. From the log washer, the ore will be passed through a 1 inch screen, the oversize going to waste, and the undersize going to a gyratory crusher, where it will be crushed to minus 5/16 in.. From this crusher, the ore goes to the heavy ~~xxx~~ media ~~mixer~~ separation ~~unit~~ unit. The heavy media separation unit will be a Western Machinery Mobile Mill with a 7 ft. dia. cone 12 ft. high. The capacity of the unit is 360 tons per day (24hr.). Cost of unit \$40,000. Will be shipped from factory about Dec. 9.

Total cost of the mill estimated at about \$200,000, distributed about as follows:  
(1) Pipe line and pump ----- \$75,000; (2) Heavy media plant ---- \$40,000; Remainder ---- \$85,000

Proposed Plans Will try to get mill finished some time in Feb. Will strip some of the ore body while the mill is being erected, using bulldozers.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Denton Mine

Date Oct. 6, 1954

District Ash Peak Dist., Greenlee Co.

Engineer Axel L. Johnson

Subject: Present Status. Information from Raymond and Grant Godfrey.

Note:- For General Information, see my report of March 3, 1954.

New Mill Construction One new gyratory crusher, ore feeders, screens and one jig has been added to the milling equipment, and a new ore bin has been constructed since my last report of May 6, 1954. The mill now consists of a crude ore bin, feeders, gyratory crusher, screens, classifier, and 4 jigs. Max. Cap. about 10 tons per hour.

Present Operations

(1) Normal daily operation reported by operators to be 64 tons per day of low grade manganese ore mined with bull dozer and car loader, when mine is being operated. Mine is operated about 1/3 time or about 2 days per week. Mill operations and repairs or improvements is being done the remainder of the time.

(2) Average weekly ore production has been about 100 tons per week of an ore averaging about 7 %, varying from 4 to 9 %.

(3) Average production per week of concentrates has been about 7 1/2 tons of concentrates, averaging about 43 %; and of middlings about 9 tons, averaging about 22 %.

(4) Average recovery about 75 %.

Possible Future Plans Raymond Godfrey reports that they are dickering with a party, a Texas oil man, to lease the mine to him at 5 % royalty, with a down payment of \$1,500. The party, who is planning to lease and operate the mine, intends to construct his own mill on the property, a heavy media separation mill with a capacity of 25 tons per hour. Water for the milling operation would be obtained by the construction of a 4 inch pipe line from the Gila River, a distance of 5 to 6 miles. The Godfreys would then remove their old mill and move it to some other mining operation.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Denton Mine

Date May 6, 1954.

District Ash Peak District, Greenlee Co.

Engineer Axel L. Johnson

Subject: Report of Mining Operations

Note:- For General Information, see my report of March 3, 1954.

Present Operations

(1) Mr. Godfrey reports that the new proposed mill construction has not been started yet. The reason for the delay is that the new partner, Mr. Schwarz of Globe, Ariz., has not been able <sup>yet</sup> to raise the necessary finances, as per agreement, according to statement by Mr. Raymond Godfrey,

(2) Operations have now been closed down for a week for repairs on equipment.

(3) Normal daily operation, according to Mr. Godfrey, when mine is operating, is as follows:-

(a) 90 tons of manganese ore mined with help of bull dozer and car loader.

(b) Plus 3/4 inch size screened out, leaving about 78 tons of minus 3/4 inch ore, assaying about 5 % to be put through the mill. (ore values vary widely ---2 to 7 %)

(c) Concentrate obtained from same ----about 4 tons running about 43 % Mn

(d) Middlings x obtained from same ---- about 6 tons running about 22 % Mn

(e) Recovery is estimated at about 75 %.

(f) Tailings assay about 1/2 % Mn.



DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Denton Mine Date March 3, 1954  
District Ash Peak District ----Greenlee County Engineer Axel L. Johnson  
Subject: Report of Mining Operations

Location For location and general information see previous reports on this property.

Owners Change of Ownership, viz:  
Raymond Godfrey and G. T. Godfrey, ~~km~~ 620 N. 3rd St., Safford, Ariz. ----50 %  
Mark Schwarz, Globe, Ariz. -----50 %.

Operators Same as above. Raymond Godfrey, mine superintendent.

Principal Minerals Manganese ores.

Number of Men Employed 6 men

Production Rate Present rate is approximately 3 tons of concentrates per day, obtained from a crude ore, running about 4 % manganese. This rate will be maintained until the new mill is finished, which will be in about 90 days. About 35 tons crude milled daily.

Ore Values Ore averages about 4 % manganese. Concentrates run about 44 %.

Ore in Sight and Probable Not determined by operators. Operators believe that they have a tonnage of low grade manganese ore, which can be mined by open pit operations, which will keep a 200 ton mill going for several years.

Milling and Marketing Facilities

(1) Additions which have been made to the old mill to use until the new mill is finished in about 90 days, are as follows: Dorr Classifier, Wemco feeder, Vibrating Screens, Pumping Equipment, Bulldozer.

(2) New mill on which construction is being started will consist ~~fn~~ of one--2 compartment jig for coarse material, two--1 compartment jig for fine material, and, in addition the equipment, mentioned above, which has been recently added to the old mill. Capacity of the new mill will be 200 tons of ore every 8 hours, according to the operator, Mr. Godfrey. Water will be obtained from a 600 ft. well, located about 500 ft. from the mill site, supplemented from water stored by dams, and by water hauled in from outside.

# DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

## FIELD ENGINEERS REPORT

Mine Denton Mine

Date Jan. 7, 1954

District Ash Peak District --Greenlee Co.

Engineer Axel L. Johnson

Subject: Report of Mining Operations

Location For location and general information see previous report of this property under date of Sept. 3, 1952.

Present Mining Operations of Owners Owners, Ace Building and Roofing Supplies (a partnership of Raymond Godfrey and G. T. Godfrey, 620 N. 3rd St., Safford, Ariz.). Owners scrape up the manganese ore with a bulldozer into piles, and then loads this ore into trucks with a car loader. Trucks dump the ore into a pile near the mill. This ore is fed from this stockpile into the mill as required by the help of a carloader.

Two jigs are used in the milling operations. All of the ore is run through the first jig. The product from the first jig is run through a second jig, which produces the final concentrate.

About 21 tons of crude ore is jigged per day, which averages about 5 % of manganese. About 2 tons of concentrate is produced per day, which averages about 45 % of manganese. Owners report that they are getting a very good recovery in their milling operations. Production has now been stepped up to about 50 tons of concentrates per month.

### Future Plans of the Owners and Operators

(1) To install a larger mill. Plans are being made for a 50 tons mill (50 ton per 8 hr.)/ Operators plan to mine about 100 tons per day of crude ore, wash the clay out of same to about 50 tons of washed product. This 50 tons of washed product would then be run through the mill each day, from which they expect to get about 5 tons of 45 % manganese concentrate, on their lowest grade ores, up to 10 tons on their higher grade ores.

(2) Operators have leased a 600 ft. well from a neighboring ranch about 400 ft. from the mill. They have ordered a pump and piping to be installed in this well. Water from this well will be used for their milling operations.

(3) Operators have applied for a Small Business Administration Loan, according to Raymond Godfrey, part owner and operator.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Denton Mine

Date July 9, 1953.

District Ash Peak District, Greenlee Co.

Engineer Axel L. Johnson

Subject: Report of Mining Operations

References For location and general information see previous report on this property under date of Sept. 3, 1952.

Status of D. M. E. A. Loan

Owners were granted a D. M. E. A. loan on or about May 1, 1953. The gross amount of this loan was \$23,840, with 75 % of same furnished by the government. The loan called for a headframe, hoist house, shops, and mining equipment, and for the sinking of a 110 ft. shaft, 250 ft. of drifting, and not to exceed 50 ft. of raising.

Owners report that to date 48 ft. of shaft sinking has been done, but no drifting or raising, and that the headframe, hoist house and shops are finished. About \$7,500 gross has been expended to date on the loan.

3 men are being employed on the D. M. E. A. portion of the mine activity.

Previous Operator

Owners report that Bill Allison had a 30 day option on the property last April. He reports that Mr. Allison worked for about 12 days with a bulldozer, and scraped up a stockpile of ore about 1,000 tons. This ore was of low grade, and this stockpile averaged only 3.7 %, according to the owners, Raymond Godfrey and G. T. Godfrey (d.o.a. Ace Building and Roofing Supplies). Mr. Allison is reported to have given up the option after 30 days.

Mining Operations by the Owners

Owners are now engaged in milling the ore in the stockpile, which Mr. Allison scraped up. Their mill is very small and consists of a small crusher, screens, and a jig. Very little of the ore requires crushing. Water for the milling operations is obtained from a shallow well on the property, from an earth dam, which fills up after rains, and ~~about~~ some water is hauled from Duncan.

3 men are engaged in the milling activities, and an average of 1 ton per day is milled (max. cap. about 1 1/2 ton per day), when the mill is running. From 18 to 20 tons of ore per month has been milled and ~~stripped to the~~ hauled to Deming Manganese depot in operators' own truck. About 5 1/2 tons of ore is hauled each trip, at a cost of about \$8.00 per ton for hauling. (35 tons since May 1<sup>st</sup>)

Operators report that the feed runs about 4 %, and that the concentrates run slightly over 40 %. In order to get a 40 % concentrate, the first concentrate obtained from the mill, has to be run through again.

Proposed Plans Operators report that they have negotiated for the use of a 600 ft. well at a ranch house 400 ft. from the mill, and that they plan on installing a pump at this well, and pump this water to the mill for use at their milling operations. Estimated cost of same about \$2400.

**DEPARTMENT OF MINERAL RESOURCES**  
**STATE OF ARIZONA**  
**FIELD ENGINEERS REPORT**

Mine Denton Mine Date Sept. 3, 1952.  
(old Thurston and Hardy Mine)  
District Ash Peak Mining Dist., Greenlee Co. Engineer Axel L. Johnson  
Subject: Mine Report ---- Personal Inspection.

Location Section 34 --- T 7 S --- R 30 E.  
Go 12 miles west of Duncan on Highway # 70. Turn north and go north  
for about 1/2 to 3/4 mile on dirt road. Road is good.

Number of Claims 6 unpatented claims. (located in Aug. 1951 by present owners)/.

Owners Ace Building and Roofing Supplies (a partnership), owned by  
Raymond Godfrey, 620 -- N. 3rd St., Safford, Ariz. and G. T. Godfrey, of the same  
address. Note change of ownership from last report.

Operators Same as above.

Principal Minerals Manganese Ore.

Number of Men Employed 4 men part time.

Production Rate 1 ton of concentrates per day, when in operation. Lack of  
water for milling purposes prevents a steady operation.

Geology Country rocks in the vicinity consist of Tertiary lava flows-- gray to  
brownish red basalt overlain by light pink rhyolite.. No manganese is found in  
the rhyolite. The basalt is much decomposed and contain numerous shear zones. The  
manganese ores are found in these shear zones, which are from 6 to 15 ft. wide, and  
contain soft and decomposed material. In this soft and decomposed material, are  
narrow veins of manganese, varying from 1 to 6 inches in width. There are two  
distinct shear zones exposed on the property, the two zones being 1200 ft. apart,  
striking about N. 75 deg. W, almost parallel to each other, and almost vertical.  
The north shear zone can be traced for 1500 ft. in length, and the south shear zone  
for 900 ft., but the shear zones are not mineralized for the full distance, a large  
part of the shear zones having very little manganese ores for a considerable distance,  
then contain a mineralized zone with the veinlets of manganese ores, which continue  
for 100 to 200 ft., after which the shear zone is again barren. Manganese ores  
are psilomelane and pyrolusite, with psilomelane predominating. See University  
of ~~the~~ Arizona Bulletin 'Manganese Ore Deposits in Arizona' by Eldred D. Wilson  
and G. M. Butler----- pages 62 and 64.\* (2)

Ore Values 33.87 tons of ore mined by present owners and shipped direct to  
Deming manganese depot without milling ran only 12 % and was rejected by GSA.  
Operators have been concentrating their ores by jiggling, and these  
concentrates run about 42 % Manganese.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

page 2

Mine Denton Mine  
(old Thurston and Hardy Mine)  
District Ash Peak Mining Dist., Greenlee Co.

Date Sept. 3, 1952.  
Engineer Axel L. Johnson

Subject: Mine Report ----- Personal Inspection.

Milling Facilities Owners have installed some crude milling arrangement on the property. This consists of a small jaw crusher, some screens, and a small jig. Mill is quite inefficient, a lot of the ore material going to waste in the dump. The addition of a table for treating the fines product from the jig would help to save some of ore now going to the waste dump. About 1 ton of concentrates per day can be obtained by operation of this mill.

On account of <sup>an</sup> inadequate water supply, the owners can only operate this mill intermittently, when they have a supply of water. Water is obtained from a shallow well about 200 or 300 ft. away from the mill, and the waste water runs back into the well. However, the well does not produce enough water for continuous operation.

Owners have recently built an earth dam near by to collect water for milling operations. Thus far, this dam contains no water.

Present Mine Workings Most of the ore milled so far has come from the old dumps on the mine. The owners found it convenient and profitable to mine these old dumps before commencing mine operations on the veins. The dump ore is now exhausted, and the owners have begun to mill the ore from the ore veins. Owners began operations in March, and to date 4 1/2 tons of concentrates have been shipped to the Deming Manganese depot. This ore is of good grade with no penalties for impurities. Owners are now taking out some ore in an open cut on the north shear zone, and hauling same to their mill and milling it. Operations are intermittent on account of the sparse water supply for the mill.

Past History This mine was operated in 1917 and 1918 by R. V. Thurston and Joseph Hardy. These operators concentrated the ore on the site by jigging. According to the University bulleting, about 1000 tons of concentrates were produced by these operators. Several shafts are found on the property, which are now caved in and inaccessible. These shafts are said to be from 30 to 80 ft. in depth. There are also a number of open cuts, from which ore has been mined. See University of Arizona Bulletin "Manganese Ore Deposits in Arizona" by Eldred D. Wilson and G. M. Butler ----- pages 62 to 64.

Proposed Plans Owners have applied for a Government Exploration Loan in the amount of about \$ 45,000, for exploration work on the property. This application was sent in in July, and the owners are now awaiting word from the D. E. M. A. regarding this loan application. If the loan is granted, and the exploration work covered by the loan is completed; then the owners plan to apply for a Production Loan to take care of future mining operations, and the construction of a modern mill, and the development of water for same.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Denton Mine (old Thurston & Hardy Mine) Date May 7, 1952.  
District Ash Peak Mining Dist., Greenlee Co. Engineer Axel L. Johnson  
Subject: Present Status

References: For location and other information see report on this property under date of Dec. 10, 1951.

Owners Raymond Godfrey, 620 -- N. 3rd St., Safford, Ariz.  
and John Pospahala, Safford, Ariz.

Operators Same as above.

Metals Mined Manganese.

Men Employed 4 men.

Production Rate Have been shipping about 6 tons of concentrates per week to the Deming, N. Mex. depot. Their shipments were concentrates, which were obtained by milling the old dump on the property. Concentration was effected by jigging, and no crushing was required.

Proposed Plans Operators plan on installing a crusher, and to start mining on the ore body, and milling this ore by the same method (jigging). A production of 12 tons of crude ore is anticipated, which should yield about 5 tons of concentrates per day. This operation is expected to start very shortly after the crusher is installed.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

~~FIELD ENGINEERS REPORTS~~

NEWS ITEM

Mine **Denton Mine** Date **Dec. 19, 1951.**  
(old Thurston & Hardy Mine)  
District **Ash Peak Mining Dist., Greenlee County** Engineer **Axel L. Johnson**  
Subject: **News Item--- Source of Information--- Raymond Godfrey**

Location Go 9 miles west of Duncan on Highway 70. Turn south, and go south for 3 miles. Good road into the property.

Number of claims 6 unpatented claims, located in August, 1951, by Raymond Godfrey. Former owners and operators, Thurston and Hardy lost right to the claims on account of failure to perform the ~~exploration work~~ assessment work on same.

Owner s Raymond Godfrey, 620-- N. 3rd St., Safford, Arizona.  
John Pospahala, Safford, Arizona.

Operator s Same as above.

Metals Mined Manganese.

Men Employed 5 men part time. ( Time distributed between this mine and Black Rock)

Production Rate Most of the time to date has been spent on exploration and development, and, consequently, no definite rate of production is established.

Milling Facilities Operator intends to install washing and milling equipment at Safford to up-grade the ore, before he ships it to Deming, N. Mex. to the Govt. depot. Water facilities and a Dorr Classifier now on hand at the river at Safford. Needs crushing machinery and other milling equipment.

Geology Numerous veins of manganese ore from 2 inches to 6 inches wide. Has an 8 inch vein of Manganese at bottom of an 80 ft. shaft, which runs 43 to 45 % Mn. Country rock is rhyolite and basalt. For more information on the geology, see Univ. of Arizona Bulletin "Manganese Deposits in Arizona" by Eldred D. Wilson, and G. M. Butler--- pages 62 to 64

Ore Values Apparently the ore has to be hand sorted and washed to obtain a product which would average 40 %.

Old Workings and Past Production See Univ. of Ariz. Bulletin "Manganese Ore Deposits in Arizona" by Eldred D. Wilson and G. M. Butler--- pages 62 and 64. # 127

Present Operations Mostly exploration work to see how much ore can be shown up. A few tons of ore has been hauled to Safford.

Proposed Plans Continue exploration work until milling facilities are ready. Work on installation of washing and milling facilities. Operator would like to lease out the mine to some one, who would have the capital to build a large mill and mine the property on a large scale.

Remarks Mining this ore body is apt to be very costly on account of the fact that the ore stringers are so narrow that a very large amount of waste material has to be handled, and a large amount of hand sorting has to be done. Furthermore, the finer materials need to be separated by washing. Profits on the operation-problematical.