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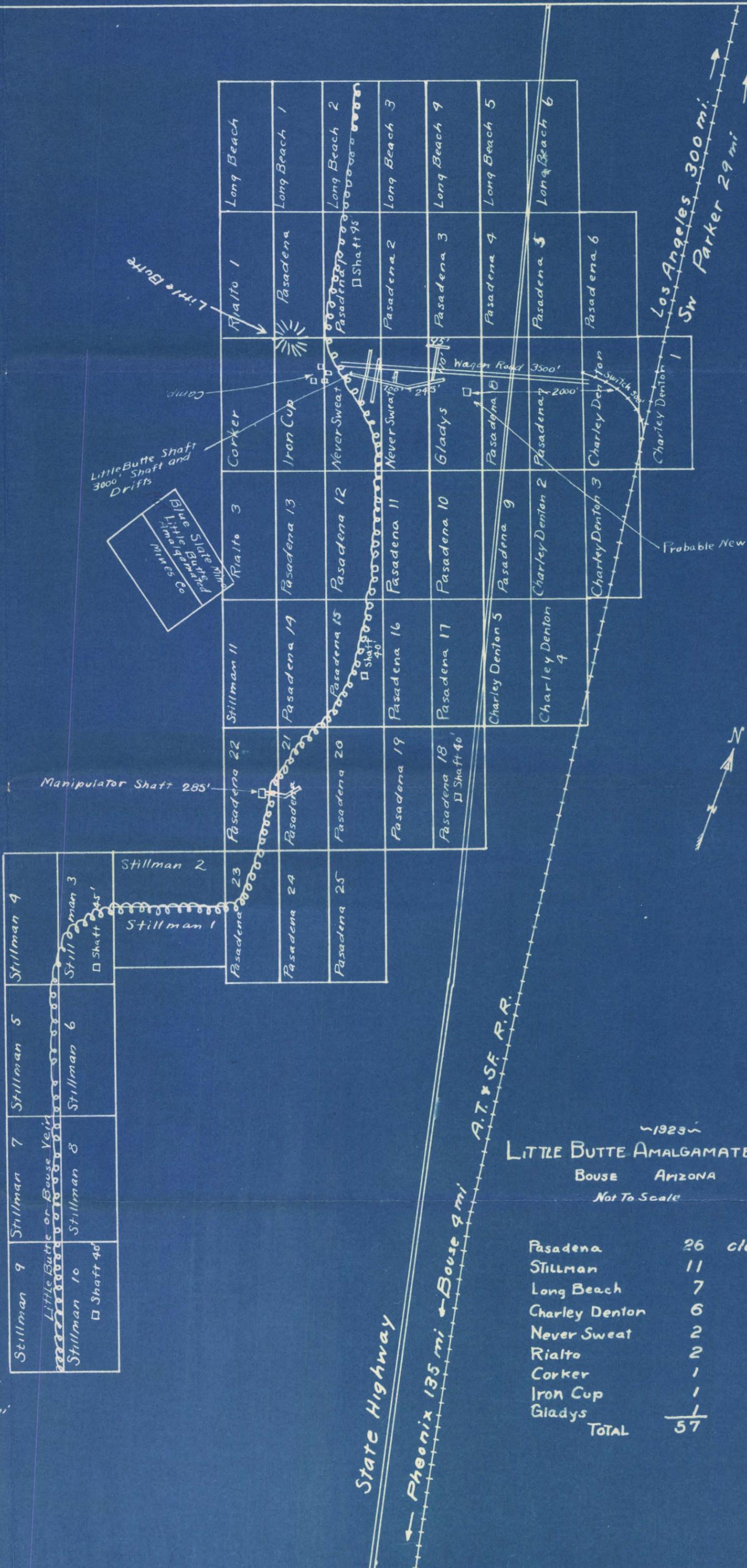
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Little Butte Shaft
3000'
Shaft and
Drifts

Blue Slate
Little Butte
Mines Co.

Los Angeles 300 mi.
Sw Parker 29 mi.

Manipulator Shaft 285'

Probable New Vertical Shaft

Mohican 1/2 mi
← Old Maid 1/2 mi
Dutchman 1/2 mi

~1923~
LITTLE BUTTE AMALGAMATED MINES CO.
BOUSE ARIZONA
Not To Scale

Pasadena	26	claims
Stillman	11	"
Long Beach	7	"
Charley Denton	6	"
Never Sweat	2	"
Rialto	2	"
Corker	1	"
Iron Cup	1	"
Gladys	1	"
TOTAL	57	1140 Acres

State Highway

Phoenix 135 mi ← Bouse 9 mi
A.T. & S.F. R.R.

L.N.

Little Bette

add & file

LITTLE BUTTE AND VICINITY

(Taken from Geological Survey Bulletin #33)
(Ore Deposits in Northern Yuma County, Arizona)

LOCATION AND DEVELOPMENT: This locality takes its name from a topographic feature in the vicinity, a small butte one-fourth mile from the shaft, which forms the extreme northern part of the Plomosa Mountains. The Little Butte prospect is situated 4 miles northwest of Bouse and approximately 1 mile south of the railroad, where the lowest foothills of the range merge into the gravel plain sloping down to Parker. The property has been prospected by different owners and several shipments have been made. At the time of the writer's visit, although a good camp had been established, developments were just being started, the incline shaft was only down a short distance,¹ and only a small amount of machinery had been installed on the property.

GEOLOGY: The area just west of Little Butte, including the small hill known by the same name, is composed mainly of a medium-grained crumbling granite which shows slight schistosity and whose principal mineral constituents are biotite, orthoclase feldspar, and quartz. The rock is not very fresh; the feldspars show kaolinization, and the whole is stained a reddish-pink by iron oxides. Small irregular masses and veins of quartz and pegmatite are found in this granite, which is also intruded by dikes of diabase which take all kinds of forms and shapes. The diabase is schistose in places and is evidently a later intrusion than the pegmatites, these being cut by it.

At the Little Butte property an area of sedimentary, probably pre-Cambrian, rocks begins. These take the form of a broad crescent striking east-west and dipping about 20 degrees S. The basal member of the series is a rough brown limestone, which is similar in many respects to that noted in various other parts of the area. Here, however, the rock is more shaly, and a large part of it consists of dark-gray and dark-green lime shale. This type of rock is continuous for about 1000 feet southwest of the shaft, where the limestone borders against granite and is evidently on top of it. Near the Little Butte shaft the outcrops of the limestone show partial and complete replacement by specularite carrying in places some copper oxide ores. Granite prevails for three-fourths mile farther southwest where there is a prominent ridge of very cherty brown to yellowish-brown limestone. Here the sediments strike N. 54° W. and

¹ The incline shaft is now (March, 1910) reported to be down 385 feet.

dip 30° SW., and these continue to the northwest, forming a low ridge in which are located the Blue Slate prospect and others. This belt of brown limestone is probably not over 1500 feet wide and is overlain on the south by rough hills of a partly brecciated flow rock which possibly represents an old rhyolite and occupies a strip of country at least 1 mile wide.

ORE DEPOSITS: There are at least two kinds of deposits in this vicinity--those in the sedimentary area and those in granite. The latter type is represented by a considerable number of steep northeast trending quartz veins which are often irregular and frequently faulted, and some of which are reported to carry gold values in appreciable quantities. A shipment is said to have been made from the Sunshine lode which brought very good returns. These quartz veins probably represent an epoch of vein formation earlier than the sedimentary series.

The Little Butte and the Blue Slate are representatives of later deposits in the sedimentary series, and these typify two distinct classes of mineralization. The Blue Slate is a fissure striking N. 60° W. and standing nearly vertically in dark-green flat-lying shales. The gangue is crushed shale; specularite and oxidized copper ores are present; and thin films of gold occur in places as a coating to the lime shale. This occurrence of gold is similar to that noted in the Moro prospect of the Clara Consolidated Company.

The Little Butte deposit represents a partial replacement of limestone by hematite, with which is associated a little oxidized copper stone by hematite, with which is associated a little oxidized copper ore and a secondary concentration of these oxides along the contact of the granite and overlying limestone. As viewed in the underground workings exposed in March, 1909 (all above the 200-foot level), the ore occurred in irregular lenticular bunches just below the contact with the overlying rock. These shoots were not very persistent and showed more in the nature of pockets than otherwise. The general strike of the contact of the two formations as exposed underground is S. 18° E., and the dip varies from 30° to 40° E. R. P. Sharpe, the superintendent of the Little Butte Consolidated Mines Company, reports¹ that the inclined shaft is down to a depth of 385 feet and that the amount of water coming in has been so great that developments below the 300-foot level have been suspended pending the arrival of heavier pumping machinery. He says that from the point where water was first encountered at 210 feet depth, the granite foot wall became highly leached and correspondingly soft, and that

¹ Personal communication by letter under date March 6, 1910.

rich bunches of oxidized copper ores were encountered at a depth of 350 feet on the incline in the granite some 25 or 30 feet away from the contact. These ores are said to carry good values in gold, as also are those developed on the 200-foot and 300-foot levels, where copper ores are practically absent. From the 200-foot level to the surface 22 cars of ore were stoped and shipped. These, Mr. Sharpe reports, averaged 7.6 per cent copper, 28.9 per cent iron, 32.4 per cent insoluble, with 2.4 ounces of silver and \$6.65 in gold to the ton. Sulphides had not been found in the workings up to the date of Mr. Sharpe's letter, March 6, 1910. Gold is reported to occur also in the hanging wall and is said to be found at distances of 20 to 30 feet away from the contact.

Specularite and quartz with a little chlorite were the principal gangue minerals noted. The ores show an intimate association of specularite, chrysocolla, and malachite, the last occurring in radial bunches scattered throughout the chrysocolla, with quartz crystals lining some of the open spaces in the ore. Thin sections of the ores show a breccia of chrysocolla and malachite, cemented by specularite. One thin section of a piece of rock taken from an outcrop of limestone about 800 feet south of the Little Butte shaft shows in banded structure the apparent contemporaneous deposition of primary specularite, quartz, and calcite or dolomite. A stratum of rock in this same locality shows beside the replacement of the limestone by hematite, small fissures in the rock filled by hematite, the mineralization appearing to have taken place at one period. The carbonate rock presents a highly chloritized appearance, but it is thought that the color is due principally to staining by iron oxides.

LITTLE BUTTE MINE.
Bouse, Arizona.

22nd. March.1929.

Mr. George M. Colvocoresses
Humboldt, Arizona.

A 3/26
29

Dear Colvocoresses;

I was pleased to get your letter of the 15th. March but I am sorry that, as yet, I can not give you any information as to who Mr T.M. Hamilton of Los Angeles is. I am writing Van Wagennen, who has had an office in the same building, to find out if he knows him..

We have found a very fair little body of ore here lately. Cut it on the 200 Level. Shipped a car ten days ago from development work that carried 11.22 % Cu. and \$ 8.00 gold. Have another car going out tomorrow. Sorry that I am not shipping to Humboldt.

I estimate this ore will go down below the 300 level at which point I believe the vein has faulted upward. Am diamond drilling to find its position.

Hope everything is coming along nicely with you. With best regards I remain

Sincerely,

Wm B Carpenter

LITTLE BUTTE MINE

1/10/40

Talk with E. C. Lane and letter from Mrs. Wenceslaw.

The mine was dropped by Carpenter when grade of ore became too low to pay,- he is said to have spent a lot of money on development.

Davis,- the former owner,- is dead and recently a man named Patton took over the mine and leased it to Merrill (one mine forman at Swansea). Patton or Merrill found a new body of very good ore and are shipping high grade (\$25.00 plus) quite steadily, said to have shipped some forty cars and opened up a lot of mill ore which should later be valuable.

Ought to be worth a visit the next time I am in that vicinity.

Notes re LITTLE BUTTE

Conference in Phoenix with Fletcher T. Merrill, Po. O. Box 338, Bouse, Arizona, on January 29th, visited mine February 2nd, 1940.

Country is granite overlain by limestone (dolomite) and slate and intruded by dikes of diabase, andesite, rhyolite, etc.

The vein probably a contact fissure strikes northeast-southwest at the shaft but further south seems to curve around to the southeast. (see map) Dip is to the east. Average width of ore, which occurs in lenses is about 5' and sometimes it swells to 8' or more.

Lime outcrops on the surface apparently crossing the formation and stained with iron oxide and workings run to contact with limestone and granite.

Shipments to date have been 31 cars, about 1600 tons, with average value (except for last three cars) of \$14.34 per ton gross.

Average analysis from Magma Smelter returns is about:-

Au.- 0.30 oz.
Ag.- 0.10 oz.
Cu.- 3.70%
Fe.-23.40
CaO- 0.50
Al₂O₃-8.00
SiO₂- 44.00
S. - none

Gold is free and not very fine and copper occurs as chrysocolla and malachite associated with much specular hematite.

Twenty two claims under lease and option for 10 years from Nov. 6, 1939. Purchase price \$100,000, Royalty 10%, minimum \$60.00 per month.

Merrill claims that the dumps will run \$9.00 per ton but believe this would only apply to a small tonnage.

Water stands a few ft. below the 200 level but it is now planned to pump out to 300 or 400, however, a heavy flow may be encountered in doing this.

Shaft is on Never Sweat #1 claim and ore might extend 2000' in either direction but apparently is cut off by lime or granite and greatest continuous length of vein probably not over 400' although there may be other shoots and other veins.

Young is a partner of Merrill and Rhodehamel has about a 5% interest.

Costs to work:

Mining - probably	-	\$3.00
Truck to R.R.		0.40
Freight (\$10-\$15 value)		3.10
Treatment		3.50
		<hr/>
		\$10.00

Smelter pays for all gold @ \$32.20. No pay for silver which has been less than 1. oz.

Copper, - deduct 8# and pay for balance at market less 2.5¢.

No bonus and no penalty.

On shipment quoted results would be as follows:

Au.	0.3 @	\$32.20	=	\$9.66
Cu.	3.7%	74#		
	less 8#	= 66# @ 9¢	=	<u>5.94</u>
				\$13.00

Net Profit \$2.60

Since it is evident that only a small profit can be expected from such operations, Merrill wants capital to develop low grade ore and erect 100 ton mill for which

he believes that the mine would make sufficient water. Total investment probably \$50,000 for even a 50 ton mill and not justified unless 50,000 tons of ore can be called positive and probable, which is not at all likely.

Mill would probably have to amalgamate and leach the copper and better than 90% of each should be recovered.

Merrill et al have now incorporated in Arizona as the Little Butte Mining Syndicate with 100,000 shares of \$1.00 par stock of which 45,000 shares will be issued to present owners of lease and 55,000 shares reserved to be issued for making capital.

First requisite is thorough sampling and survey which would cost \$1500 or more and additional ore would then have to be developed.

February 9th, 1945

Mr. Edward G. Frawley
Room 7
116 Morley Avenue
Nogales, Arizona

Re: Little Butte Mine

Dear Mr. Frawley:

Referring to our conversation concerning the above named property, I have looked up my file after returning to Phoenix. I find that I have a map of the underground workings of this mine representing a horizontal projection of same showing the drifts, crosscuts and stopes down to and including the 650' level. There is no date on this map and no assays of samples are shown.

I also have a claim map showing the 57 claims which were owned or controlled by the Little Butte Amalgamated Mining Company in 1923.

Aside from a general description of the property and the local geology I have a number of brief reports or notes made by my field engineers and others who visited the property at intervals during 1916 and '17 and again in '22 and '23 while the mine was being operated by the United Mines Company of Arizona, of which Mr. Denton was president. The engineers who examined the property in 1923 took some samples, but at that time only the workings on and above the 200 ft. level were accessible. I also have some information obtained from an engineer named Alvin B. Carpenter who was operating the property in 1923 and for some years afterwards as manager for the Little Butte Amalgamated Company.

In 1940 the property was leased to Patton and Merrill who incorporated a co-partnership as the Little Butte Mining Syndicate, and several shipments were made to smelters. In February of that year I personally visited the mine and looked over the surface conditions and some of the upper workings and made notes concerning the general conditions and future prospects, together with an outline of the exploration and development, that seemed to be quite in order to properly prove the worth of the property.

If you think that the above information would have any tangible value to you I should be glad to correspond further in reference to this matter.

Mr. Edward G. Frawley.
February 9th. 1945
Page 2

With personal regards to Mrs. Frawley and to yourself.
I hope that we may all meet again in the near future and that
everything will go well with you at Twin Buttes.

Yours very truly,

A handwritten signature in cursive script, appearing to read "L. W. ...", is written in dark ink on the right side of the page.

GMC/b

2/14/45

M E M O

re Little Butte

Has recently been examined by Merle H. Guise who thinks that the granite cuts off all ore bodies at depth of about 600' in the shaft and he probably will not go further with investigation for his client since the owner a Mrs. Adams of Los Angeles (daughter of Davis) has named a purchase price of \$60,000 payable in three years.

The present lease runs to de Lisle of Phoenix and although it stipulates that it cannot be assigned without the consent of the owner. de Lisle claims that such a provision is contrary to the Arizona Statutes. (am quite sure that he is wrong in this respect).

Last operator had a \$5000 Govt. Loan to unwater the mine but seems to have accomplished little or nothing.

Guise says that he will furnish additional information if this is desired.

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copy sub

PROPERTY Little Butte
DISTRICT Plomosa
LOCATION 5 miles West of Bouse.
OWNERS United Mines Co. of Arizona.
DATE VISITED March 24th, 1923, W. A. Harrod, J. L. White.

NOTES:

Pursuant to your request, I examined the Little Butte property on Saturday, March 24th. I was accompanied by Judge Northcutt and Mr. J. L. White whom we met at Bouse. We arrived at the mine at noon and made as careful examination of the underground workings and surface as possible, during the afternoon.

It was expected that there were three to four thousand tons of a basic gold copper ore on the property. There were about two thousand tons of material on the dump. This, however, contained an excess of insoluble. There was also considerable tonnage in the stopes, above the two hundred level, which, added to that on the dumps, would make a maximum of twenty-five hundred tons. My samples of the material on the dump contained an average of 1.23 percent copper and those taken of broken ore in the stopes averaged 0.63 percent copper. I have not received any returns on the gold content of these samples, but it is highly improbable that this would be more than four dollars per ton. My reason for this statement is that the smelter return on a carload of ore sorted from this dump showed that it carried 0.18 ounces gold per ton. Therefore, it is evident that this material could not be shipped at a profit to the owners without sorting, thereby materially decreasing the tonnage and increasing the cost of handling.

The property is located in the Plomosa Mining District, Yuma County, Arizona. It is five miles West of Bouse and one-half mile from the Bouse-Parker highway. The Santa Fe railway passes within 3000

Little Butte 2.

feet of the mine workings. The Little Butte Group is one of three contiguous groups of claims held by location, by the United Mines Company of Arizona. The three groups have a total area of six hundred acres.

It is said that several hundred tons of ore were mined from the Little Butte Mine and shipped to custom smelters. While there, I saw the smelter return from one carload of ore which was sorted and shipped from the dump. The assays on this car were as follows:-

Gold - - - - -	0.18	ozs.
Copper - - - - -	2.22	%
Iron- - - - -	27.70	%
Insoluble - - - -	46.30	%

The Little Butte ore body is in a fissure vein which strikes northwest and southeast, following the course of an eruptive zone. The eruptive consists of intrusive masses of diorite and andesite. The vein lies at the contact of the limestone hanging wall and the eruptive which forms the foot-wall. Its dip is less than forty five degrees. We were unable to go below the oxidized zona. The workings below the two hundred foot level were inaccessible on account of water. On the two hundred foot level there was some three hundred feet of drifting along the strike of the vein which was three to six feet in width. Here the copper was largely in the form of the carbonates, malachite and azurite and was in irregular masses throughout the vein matter. The mineralization has caused a partial replacement of the country rock. There was considerable specular iron in the vein matter. The gossan found on the surface and these oxidized copper minerals in the upper levels would indicate a zone of secondary enrichment below the permanent ground water level.

The mine lies at the edge of the low, rugged hills southwest of Bouse at an elevation of about six hundred feet above the Colorado River twenty miles distant. The surrounding country to the North is flat. A good road

Little Butte 3.

leads to the property and the climate is such that the mine could be worked all the year round. Ore could be hauled to the Santa Fe tracks for fifty cents per ton.

There are several buildings on the property, including an office building, laboratory, boarding house, and sleeping quarters for one hundred men. These are all in a fairly good condition.

The mine is equipped with compressor, hoist and pumping machinery but these were not in use at the time of our examination. They could be put in order at any time.

There were several stopes above the two hundred foot level. These contained a considerable tonnage of broken ore. The maps show that levels were driven on the vein 35 ft., 120 ft., 210 ft., and 310 ft. They also cut the vein at lower levels and the shaft was sunk to a total depth of 650 ft. A crosscut was being run to the vein at the 650 ft. level when the work was discontinued.

The reported assays show an increase in both the copper and gold content of the vein with depth. It is not improbable that the Little Butte would become a mine with the proper development. However, there is no ore available at present, either on the dumps or in the stopes that is of such value as to justify shipment.

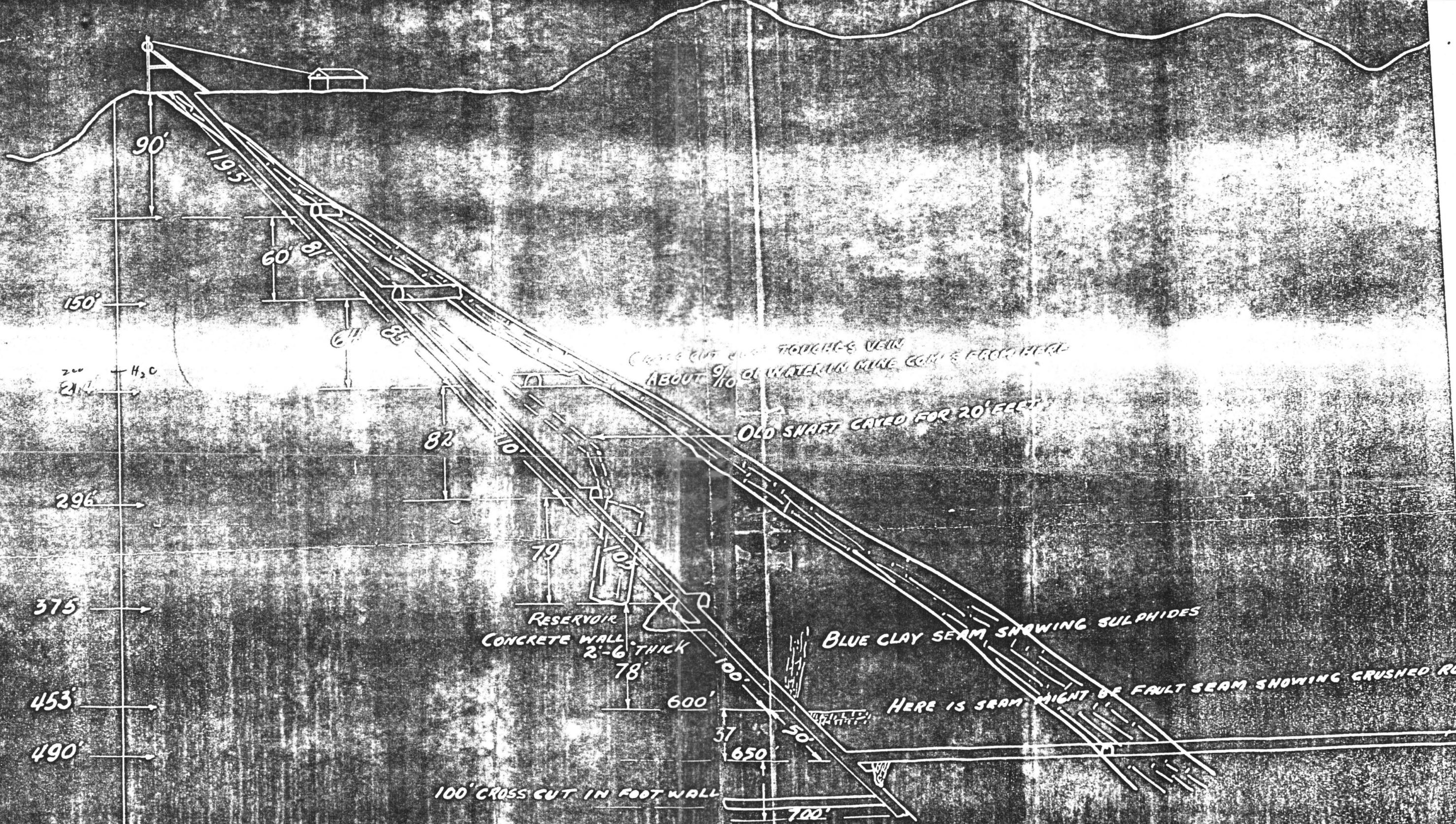
NOTE:-

<u>Samp. No.</u>	<u>Au</u>	<u>Ag</u>
1	Nil	Nil
2	"	"
3	"	"
4	"	"
5	0.09	0.05
6	Nil	Nil
7	"	"
8	"	"



District	Property	Location	Owners & Operators	Date Visited	Notes
Bouse, Arizona, (Cont'd)	Little Butte	4 $\frac{1}{2}$ miles S.W. Bouse.	United Mines Co. of Arizona, J. C. Denton, President and Manager. Un-watering and equipping.	1916 Dec. 10.	Water out to 250'. 100' more to go. Straightening track in shaft. Lime hanging wall, schist foot wall, andesite between, dip rather flat, about 50 degrees. The sedimentaries are faulted against a coarse granite. Hematite, probably secondary after specularite, common on contacts. Occasional bunches of ore close to hanging wall, consisting of quartz with copper carbonates and gold. May make chalcopyrite with depth. 300' drifting on 120' level. Small dump, which looked very lean, said by Mr. Denton to run 3% Cu. and 40% Fe. Intends to grade up copper somewhat. Denton thinks Humboldt terms are harsh. The plant is new but seems inefficient. Feb. 9, 1917: Informed that churn drill put down one hole (lost), and now drilling another.

Mudersbach	8 miles S.W. Bouse.	Excelsior G.& C.M.Co. owners. J.E.Lewis leasing and working alone with occasional help from Gus Mudersbach.	Nov. 4-5.	Contact deposit. Ore in bunches, generally in lime. Granite-gneiss basal rock cut by dikes of aplite and diabase. No. 2 shaft, in which Lewis is working, 130' deep. Levels at 50' and 100'. 50' level now in 75 feet. Has to go 25' further south to get under good outcrop. Drift at 100' only started. Another shaft 110 feet deep. Little development. Good looking prospect but price, \$250,000 appears unreasonable.
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PROFILE VIEW OF SHAFT

LITTLE BUTTE AMALGAMATED MINES CO
 BOUSE, ARIZONA
 SCALE 1" = 50'

Little Butte Mine

Horizonta Projection of Workings

Scale 1 inch = 30 feet.



Position of Fault at 650' Level
Diamond Drill Hole

Little Butte

Little Butte