

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
OSCAR L. CHAPMAN, SECRETARY

BUREAU OF MINERAL ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM  
REGION II -

Map 11. Mine Tax (Federal) Mine

Lincoln County, Oregon

Allen B. Griggs, Geologist  
U. S. Geological Survey

May 25, 1951

BLUE JAY (JAYBIRD) MINE

JACKSON COUNTY, OREGON

DOCKET NO. 31

COMMODITY-Antimony

By Allan B. Griggs, U. S. Geological Survey

**Recommendations:** It is recommended that the application for a loan of \$150,000 be denied as the feasibility of the method of recovery is questionable and the reserves of ore inadequate.

The strong appearance of the shear within the workings, 400 feet laterally and 180 feet vertically, the surface pitting that shows it continues an additional 600 feet along the strike, plus the favorable amount of mineralization within the shear are good evidence that from 5 to 10 times as much similar vein material (10%  $\frac{1}{2}$  Sb) as estimated could be found by further exploration. If the Bureau of Mines believes material of this grade could be mined and concentrated economically, it is recommended that further exploration be encouraged.

**APPLICANT--**R. Mead Cooley and W. H. Holloway, a partnership.

**Location--**The mine is in Jackson County, Oregon, and may be reached from Medford, Oregon, the nearest railpoint, by 24 miles of paved road up the Applegate River valley to Keyes Bridge and six miles of one-way road, the first 1.2 miles of which are macadam and the remainder bulldozed mountain road. The roads can be traveled upon the year round. The three mining claims lie in the  $\frac{NW}{4}$ ,  $\frac{NW}{4}$ , sec. 14, T. 40 S. R. 4 W. The nearest power line is at Ruch, 16 miles away.

**Ownership--**The claims are owned by E. P. Merrick of Medford, Oregon, and are under bond and lease to R. Mead Cooley and W. H. Holloway. Payment on the lease is on a royalty arrangement of 10 percent of net profits.

History and Production--The claims were located in 1939. The first shipment of ore was made in March 1942. That and all other shipments are tabulated below:

Production of the Blue Jay (Jaybird) mine

Date	Amount-short ton	Grade		Buyer
		5b	As	
3/13/42	35	48.24	0.44	Harshaw Chemical Company
6/15/42	30	44.47	0.49	" " "
4/26/43	23.48	49.89		Metals Reserve Depot, Grants Pass
8/13/43	10.65	52.80		" " "
2/21/44	12.26	41.17		" " "
5/26/44	<u>12.3</u>	<u>51.19</u>		
Total tons 123.69		Av. grade 47.6		
1949	40 /	-50		To Tacoma smelter and rejected because of low grade.

Messrs. Eagle and Jones leased the property from E. P. Merrick in 1949 and shipped a carload of ore which was rejected because of its low grade. No further development or production has been made since Eagle and Jones dropped their lease in 1949. A review of the history of the property indicates that the operation has always been marginal in character.

Description of proposal--The applicants have put in for a loan of \$150,000 to purchase mining and reduction equipment, to install equipment and to use as working capital.

Description of deposit--The deposit lies within slightly metamorphosed argillite about half a mile north of a small diorite stock. It is a replacement vein within a strong, persistent shear zone which strikes from N. 30° W. to W. and dips from 75° to the south to vertical. On the No. 3 level of the workings the vein is exposed at two places. At the west end it has been drifted upon for 165 feet where it has averaged 33 inches in width; on the east it was drifted upon for only 20 feet, where it varied from 6 to 12 inches in width. From description of the upper two levels it would seem that the vein did not average as great a thickness in them as below.

Sheared and shattered argillite, partly chloritized, makes up a large part of the vein. This has been partly replaced by quartz, stibnite, pyrite and later calcite. Stibnite occurred concentrated in discontinuous lentils, probably mostly in a coarse-grained form

where mined in the upper two levels. These varied in width up to 24 inches but averaged less than 12 inches. However, the stibnite observed at the No. 3 level occurs in small angular crystals lacking fractures and in an exceedingly fine disseminated form scattered throughout the shear zone or concentrated within silicified stringers in the vein. It is apparent from the mining on the upper levels and the mapping on the No. 3 level that the antimony content varies along the vein. The mining and mapping indicates that the rich or antimony-bearing zones occur within discontinuous sheets, but not enough sampling or exploration has been done to delineate these now exposed. On the No. 3 level, only the western 125 feet of the drifts contain vein material containing appreciable amounts of stibnite. It should be noted that the "low ore" comments on the map copied from the United States Department of Geology and Mineral Industries data indicate that no shipping grade ore (20 percent Sb) is present.

Oxidation of the stibnite has been only partial even at the grass flats, but it extends downward from the surface for from 50 to 75 feet. The coarse-grained stibnite concentrated in lenticles remained unoxidized for the most part, whereas the finer-grained material was oxidized. The secondary antimony minerals are several of the yellow oxides and the red oxide, kuznetzite. Most of the ore oxidized came from the oxidized zone.

Mine workings--The mine has been developed on three levels by 200 feet of drifts and crosscuts, and 250 feet of raises (see map). The vertical distance between the 1st and 2d levels is approximately 120 feet with a minimum 50 additional feet of back over the No. 1 level. The No. 1 level is caved at the portal, the No. 2 level 120 feet in from the portal, and the No. 3 level is open to the face.

Reserves--The property has not been developed or sampled enough to make an estimate of any measured reserves. Furthermore, it is doubted whether a valid estimate of shipping grade ore could be made based upon past production as no high-grade lenticles were observed at the No. 3 level, although some of the vein material in the west end of the drifts beyond the shear zone might be used to a plus 20 percent Sb grade. Previously 10 tons were mined and hand-sorted to produce 1 ton of shipping ore averaging a little under 20 percent Sb. The finer-grained ore in the lower tunnel would be more difficult to hand sort and would result in a lower grade product. If enough ore reserves could be developed, concentration by the usual methods would seem feasible.

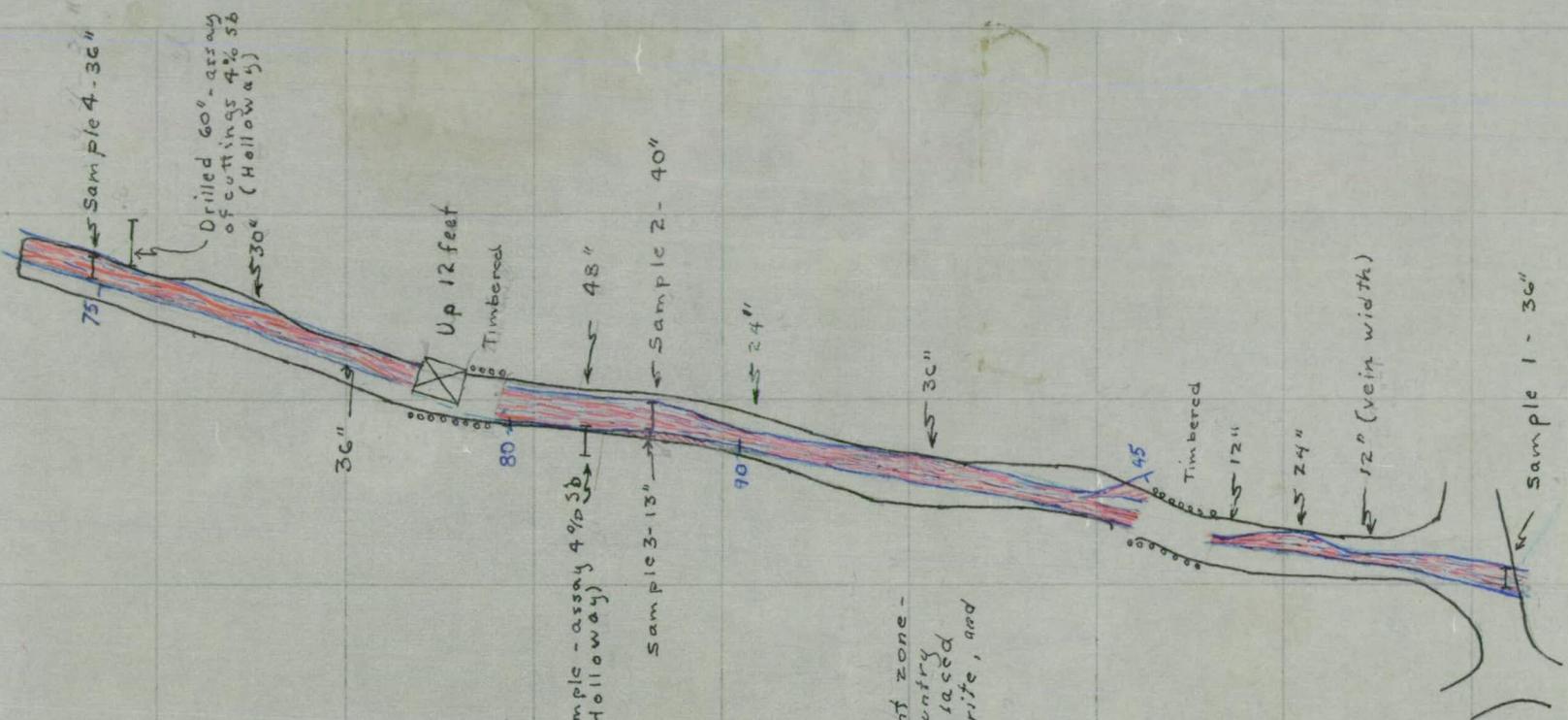
One reserves, including rejects in stopes and in dumps, are estimated at 5,000 short tons averaging 91.9 percent Zn. Approximately 2,000 tons of this reserve is oxidized material above the No. 3 level. The remainder lies between the eastern 125 feet of the No. 3 level and the No. 2 level, and between No. 1 and No. 2 level west of the stope.

Underground development has shown the vein to persist for 400 feet laterally and test pitting on the surface indicates that it continues to the west an additional 600 feet. This, plus the fact that on the No. 3 level the vein is strong, indicates that the deposit has not been fully explored laterally or at depth.

Mining and reduction methods--The applicants have done no mining at the property. They believe they can mine and reduce the ore at a cost of 10 cents per pound of metal at a rate of 5,000 lbs. of material per day. They propose to reduce the vein material with cyanide soda and recover the metal electrolytically. Rather than put in a transmission line, they would install a diesel unit to generate electricity and use an arc welding machine to transform to a low voltage direct current. Metal assaying 98.5 percent Zn has been produced experimentally by the applicants. The feasibility of this method in the simple form they propose is questioned, both as to its success and cost.

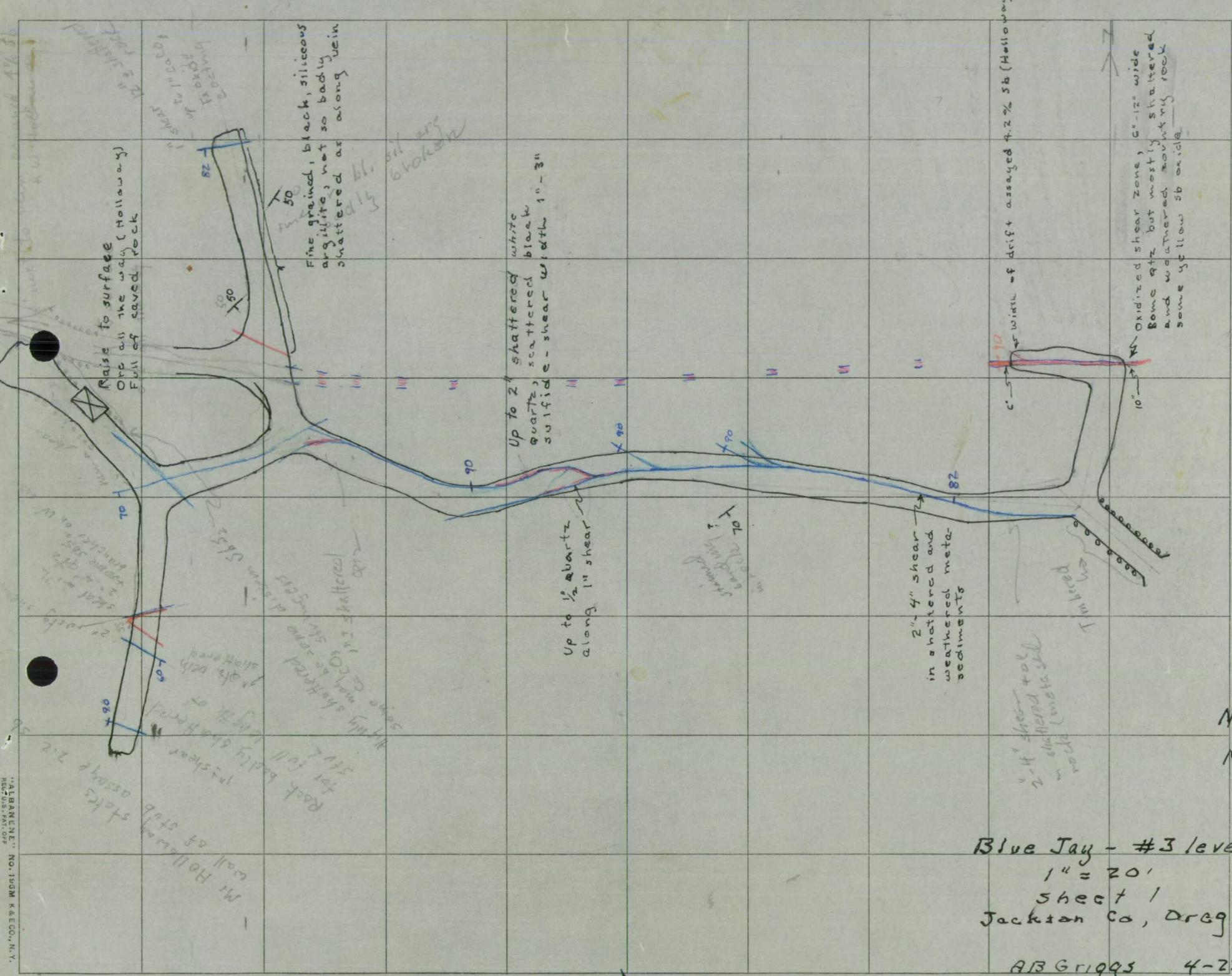
Equipment--The amount of facilities at the mine are small and consist of: a portable air compressor, make-OH, capacity 240 cu. ft. per minute; 2 drifters along vein out; a small blacksmith shop; 2-1/2 yard mine cars; 500 ft. of 1 1/2 in. rail; 500 ft. of pipe, size 1 1/2 in. to 5 in.; and an ore bunker capacity--20 tons plus or minus.

Operators--E. Head Hooley is the owner of a small grocery store in Medford, Oregon, and has had no experience in mining. W. H. Halloway has worked around mining operations the greater part of his life. He has had no formal education as a mining engineer, and should be classified as a "practical" miner and promoter. It is planned that W. H. Halloway will operate property.



Vein-sheared replacement zone -  
 consists of chloritized country  
 rock (argillite), partly replaced  
 by quartz, stibnite, pyrite, and  
 late calcite

Blue Jay #3 level  
 1" = 20'  
 Sheet 2  
 Brunton-tape survey  
 A.B. Griggs 4-23-51



Raise to surface  
Opp all the way (Holloway)  
Full of saved rock

Fine grained, black, siliceous  
argillite, not so badly  
shattered as along vein

Up to 2' shattered  
white quartz, scattered  
black sulfide-shear with 1" - 3"

Up to 1/2" quartz  
along 1" shear

2" - 4" shear  
in shattered and  
weathered meta-  
sediments

2" - 4" shear + ol  
shattered (meta-sed)

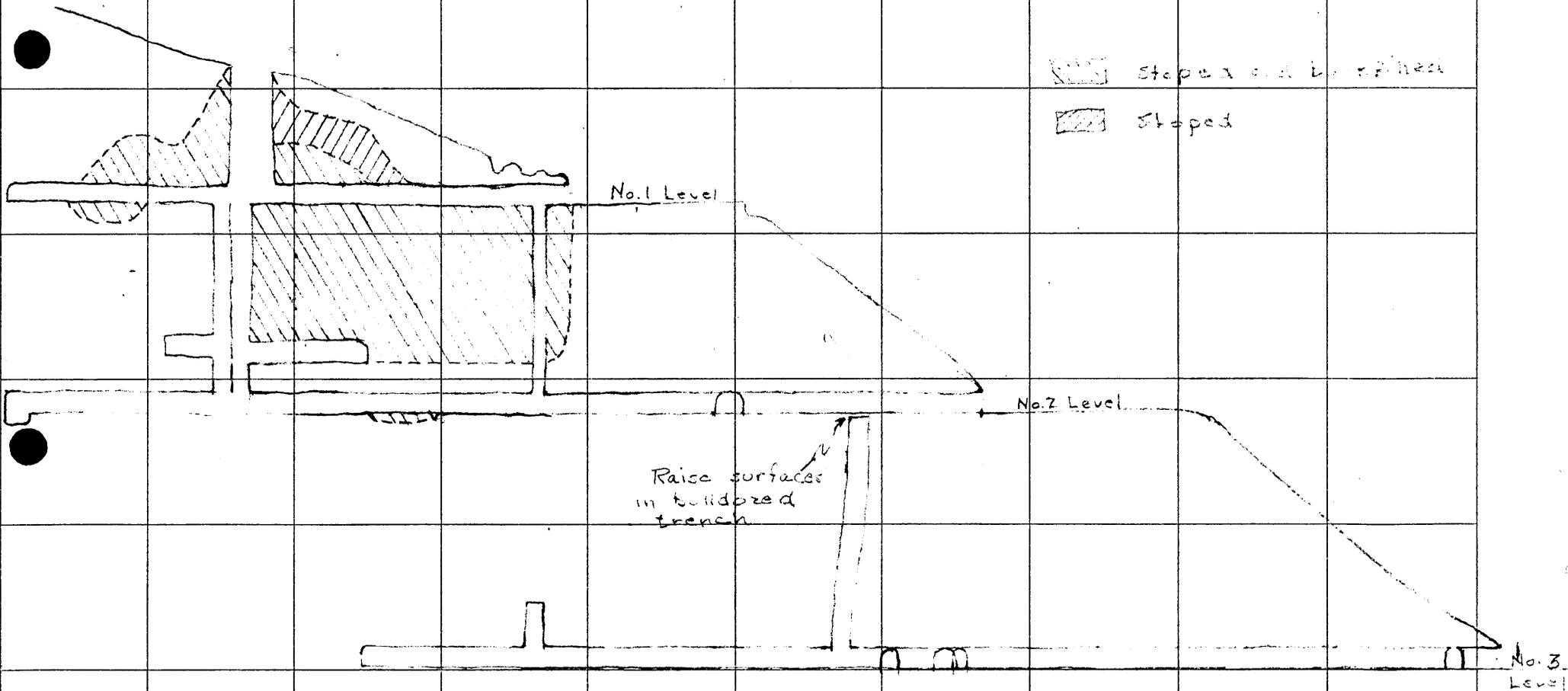
width of drift assayed 4.2% Sb (Holloway)

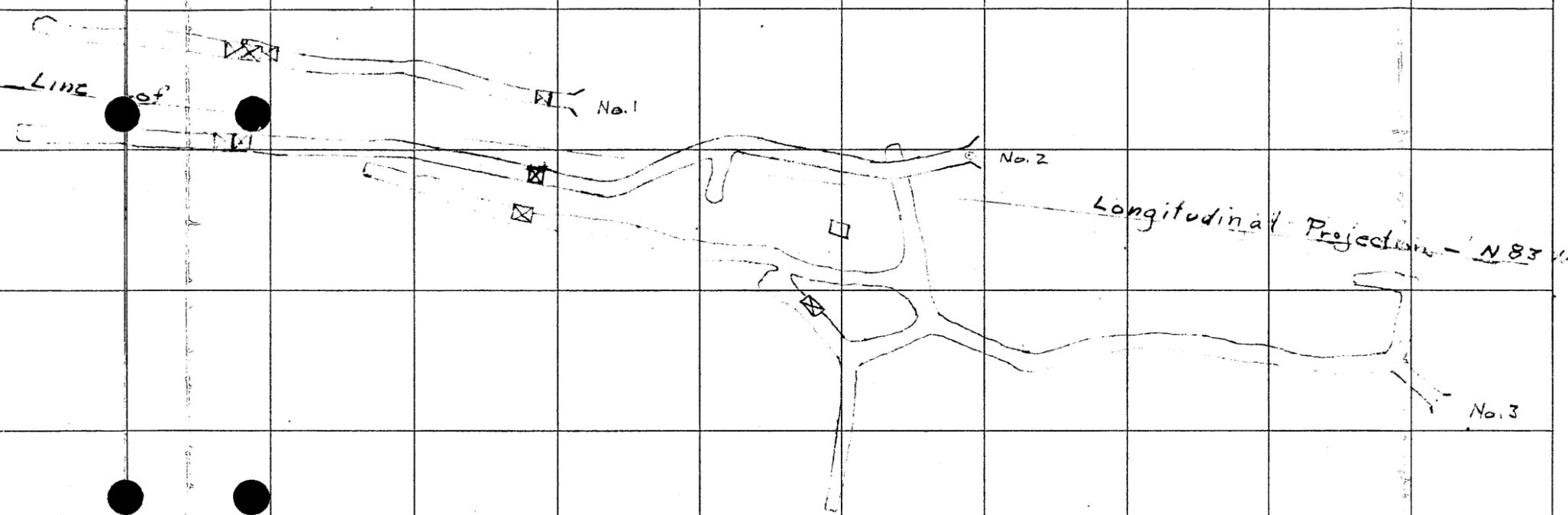
Oxidized shear zone, 6" - 12" wide  
Some Qtz but mostly shattered  
and weathered country rock  
some yellow Sb oxide

Blue Jay - #3 level  
1" = 20'  
Sheet 1  
Jackson Co, Ariz.

AB Griegs 4-23-51

Longitudinal Projection





Line of

No. 1

No. 2

Longitudinal Projection - N 83

No. 3



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY  
WASHINGTON 25, D. C.

April 13, 1951

Mr. A. E. Weissenborn  
S. 157 Howard Street  
Spokane, Washington

Dear Al:

In reply to your inquiry about the Blue Jay antimony mine, Jackson County, Oregon, Francis G. Wells furnishes the following:

Blue Jay Antimony Mine in the N. W.  $\frac{1}{4}$ , N. W.  $\frac{1}{4}$ , Sec. 14, T. 40 S.,  
R. 4 W., Jackson County, Oregon, Grants Pass Quadrangle

This property, which had not been opened up when the areal mapping of this area was done in 1938, was visited by me in the summer of 1942 and a plane table map of the property was made at that time by Fred Gros. A Brief Strategic Minerals report was submitted (copy of report attached). Last summer when I was reconnoitering the back roads, truck trails, and logging trails to see if any critical geology had been exposed since the mapping of the Grants Pass quadrangle, I drove to the property, but not having a mine light, did not enter the workings. Judging from the dumps, several hundred feet of underground work had been done since the mapping was done in 1942. Mr. Merrick told me last summer that he had leased the property and the lessor had shipped a carload of minerals to Tacoma during the preceding year (ante summer, 1950). The mineral did not meet specifications and, therefore, was discarded. The P. T. sheet (1942) is among the D. M. (displaced material). I believe that the Oregon Department of Geology and Mineral Industries has made a map more recently.

Sincerely yours,

  
Olaf N. Rove, Chief  
Mineral Deposits Branch

## JAYBIRD ANTIMONY MINE

Located in Secs. 14 and 15, T. 40 S., R. 4 W., Grants Pass Quadrangle, Applegate Mining District, Rogue River National Forest, Jackson County, Oregon.

The owners and operators are E. P. and S. J. Merrick of Medford, Oregon. The operations are listed under the Emerson-Merrick partnership.

Three claims called No. 1, No. 2, and No. 3 are located and adjoin one another.

The mine is located on the steep north side of Kinney Creek, a tributary to the Upper Applegate at a point about 2800 feet above sea level.

Water has to be hauled about 500' vertically up from the creek but could be brought around the hillside in a flume if Kinney Creek were tapped upstream slightly above the level of the mine.

Medford, Oregon, 25 miles away on the main line of the Southern Pacific Railway, is a moderately easy truck haul.

From Rush, 13 miles west of Medford, a good county-maintained dirt road continues up the Applegate Valley eight miles to Applegate Grange from which a one-way unimproved mine road continues 4 miles westward to the property.

The property was purchased in 1939 from C. W. and Louis Culy who had done only the scantiest assessment work. The Merricks began working in June of 1941 and shipped their first ore in February of this year. To date, 60 tons have been shipped. Two adits and six pits have been dug at intervals along the strike of the mineralized fissure.

The ore occurs discontinuously for 250' -- along a fissure striking almost due E-W but with 5 degrees of variance to S or N. Dip varies from vertical to 75 degrees S. The stibnite, as scattered white bladed crystals, is most prevalent in an iron oxide-stained fracture rich in white milky quartz gangue. The hanging and footwall contacts are abrupt with the country rock metasediment. The latter designation is based on relic banding observed in a piece of float on the mine dump. Megascopically it could just as well qualify as a metavolcanic with buff tan color and aphanitic texture.

Horses of quartz and metasediment inclusions recur at intervals along the fissure about which the ore may pinch out completely for a matter of a few inches or ten feet. The ore zone averages 18" in thickness, 250' in length, and has been stepped up to a height of 36' from the higher drift.

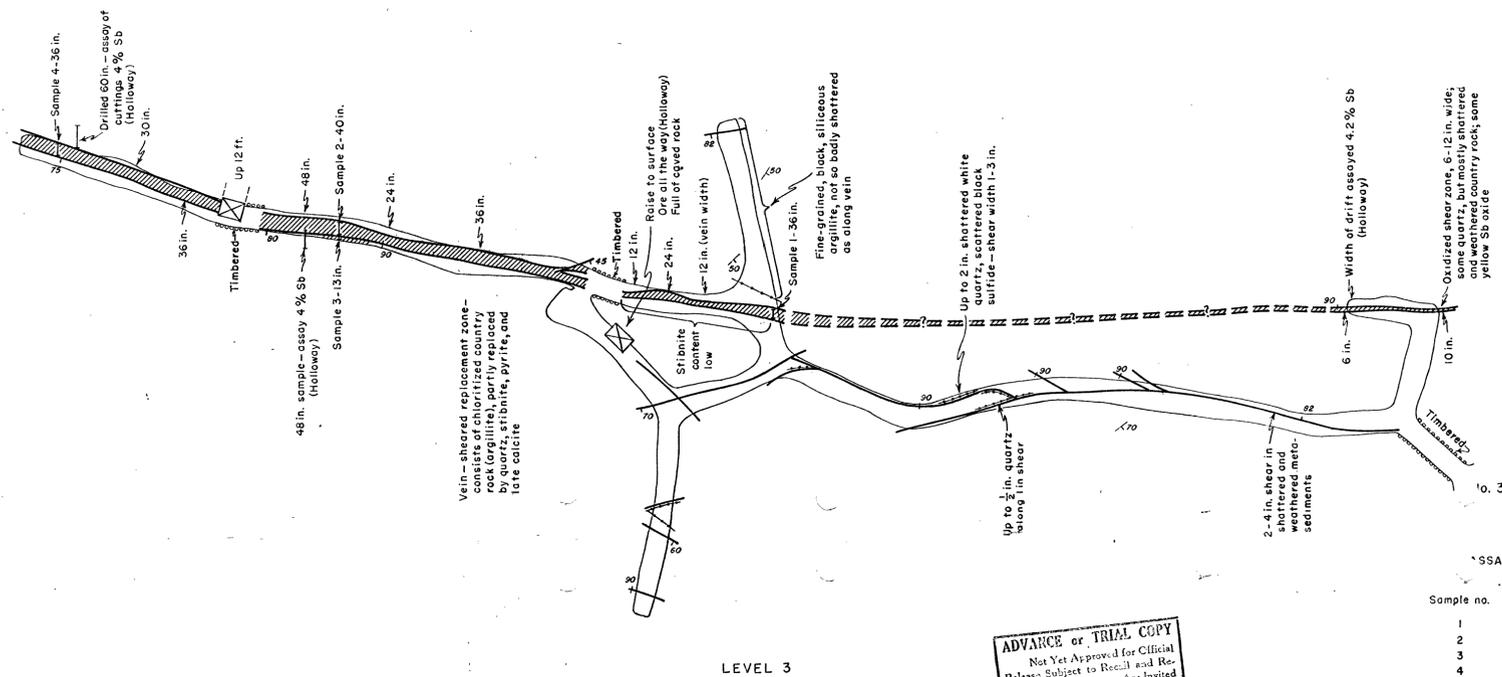
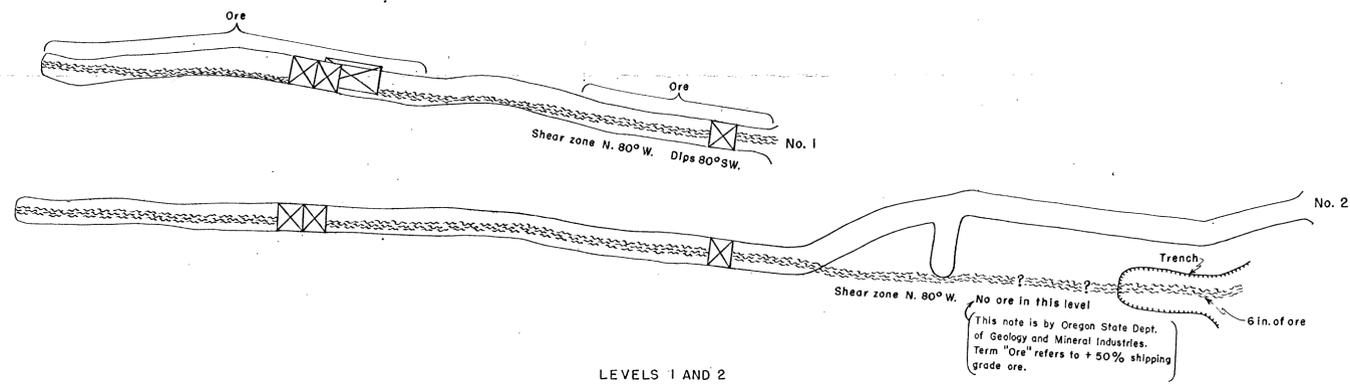
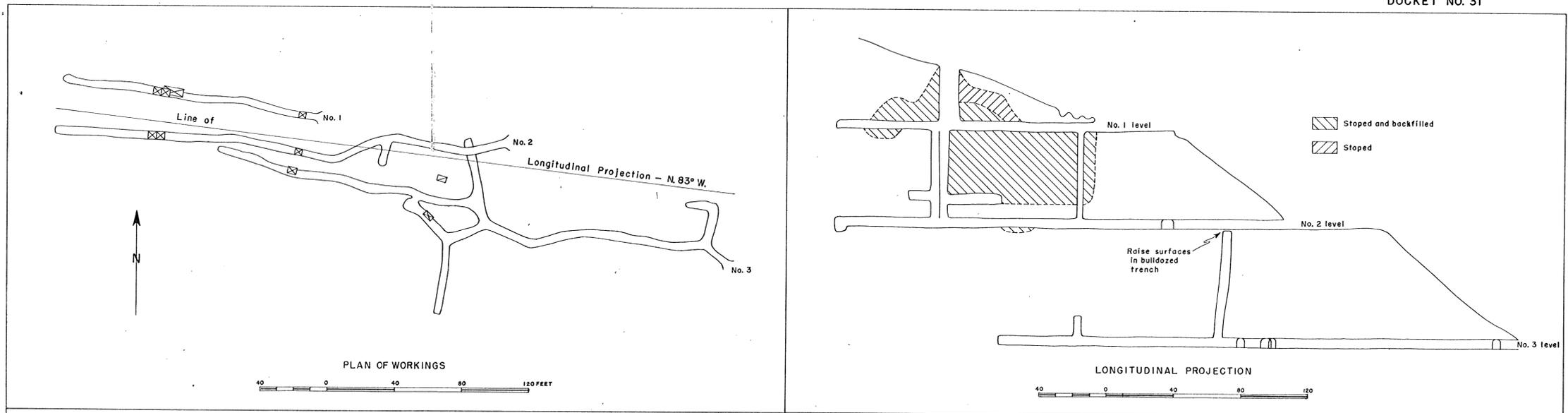
A prominent joint system strikes parallel to the fissure and is especially well shown two feet out in the footwall at the portal of the upper adit.

The Merricks are at the present time cutting a drift along the zone about fifty feet vertically below their original adit and will stop up on the ore zone.

Assuming a 100' vertical stop from the bottom of the lower adit to the top of the 36' stop in the upper drift, a length of 250', and an average width of 18", we reach a figure of 37500 cubic feet of material in the zone, of which approximately 4500 cubic feet have already been mined out.

There was no assay data.

Francis G. Wells  
August 1942



SSAYS NO. 3 LEVEL

Sample no.	% Sb	% As	% Pb	% Zn
1	3.0	1.9	0.1	<0.5
2	7.1	0.77	0.1	<0.5
3	3.0	0.46	<0.1	<0.5
4	15.1	2.3	<0.1	<0.5

Assaying by U. S. Bureau of Mines, May 1951

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Not Yet Approved for Official Release Subject to Recall and Revision. Your Comments Are Invited  
U. S. GEOLOGICAL SURVEY

GEOLOGY OF WORKINGS

Levels 1 and 2 adopted from Oregon State Department of Geology and Mineral Industries - Brunton and tape surveyed maps; Level 3, Brunton and taped map by U. S. Geological Survey