June 6, 1951

Memorandum

To: Tom Lynn, Director, Supply Division, Defense Minerals Administration

From: DMA Field Team, Region IV

Subject: DMA Docket 9, Western Copper Co., Blackbird Group, Gila County, Arizona

We are enclosing the report on the above docket, DMA 9, in accordance with your memorandum of March 30.

The Field Team concurs with the conclusions and recommendations contained in the report.

Paul T Allsman
P. T. Allsman, Alternate

A. H. Koschmann
A. H. Koschmann

Attachments:
One copy by air mail
Two copies by regular mail

Copy to DMA Files, Koschmann, Allsman, Storms, Anderson
/cl

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

DEFENSE MINERALS ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

[illegible]-2, Bluebird Group, Western Copper Co. (Dupont)

Gila County, Arizona

FOR GOVERNMENT USE ONLY

M. J. Klaing, Consulting Mining Engineer
U. S. Bureau of Mines

B. C. Brown, Mining Engineer
U. S. Bureau of Mines

May 1951

Mining Division
Region IV

June 6, 1951

Memorandum

To: DMA Field Team, Region IV

From: Chief, Mining Division

Subject: DMA Docket 9, Western Copper Co., Bluebird Group, Gila County, Arizona.

Western Copper Co. requested a loan for the development of oxidized copper ores on the Bluebird group of claims. The claims were examined by Hale F. Peterson of the U. S. Geological Survey and due to his unfavorable report, the loan was denied. The Copper Committee suggested, however, the possibility of an exploration project.

The attached report discusses the engineering features of such a project. Exploration in August 1950 by a diamond drill hole in the approximate center of the mineralized area gave the following average grade.

0-175	-	0.43	percent copper
175-330	-	0.30	
330-445	-	0.19	

This grade is too low to justify the capital cost of a leaching plant, and the authors do not recommend encouragement to the owners for an exploration project.

I agree with their conclusions.

Paul T Allsman

P. T. Allsman

Attachments

June 1, 1951

Memorandum

To : Paul T. Allaman, Denver, Colorado

From : Chief, Arizona-New Mexico Sr., Mining Div., Region IV

Subject : Engineering Report, DMA Docket 9, Bluebird Group, Western Copper Co., Gila County, Ariz.

As requested in your recent telephone conversation and memorandum, I had Morris J. Elsing and R. C. Brown visit Globe and confer with Nels Peterson of the Geological Survey regarding the above property. All three men then visited the property and talked to the lessees.

The owner, Frank Carrow, has given a 10-year lease to other parties and has moved to Kingman.

This report has my approval.

Walter R. Stearns

CC Paul T. Allaman (11)
C. A. Anderson
DMA 9
BF

WRSterns:nlp

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

By M. J. Elsing[1] and R. C. Brown[2]

The Western Copper Co. was formed to operate the Bluebird group of 17 unpatented mining claims which adjoin the Inspiration Consolidated Copper Co. to the south. The property is about two miles west of Miami and just north of the Miami-Superior highway.

Late in 1950 this company applied to the Defense Minerals Administration for a loan to develop its property. A report by Nels P. Peterson of the Geological Survey, made early in 1951, recommended denial of this application. However, in March 1951, the Copper Branch of DMA asked the Field Team, Region IV, to revisit the property and study engineering aspects of the application. Therefore in May 1951, the writers visited the property with Peterson.

In July 1950 M. J. Elsing, one of the writers of this report, was asked by Frank Carrow, President of the Western Copper Co., to examine the prospect with a view to help raise funds in order to do some exploration. That examination was made and it was decided that the showings were not sufficiently interesting to warrant the large capital investment necessary for production. A recommendation to Carrow was that he attempt to sell the property either to the Inspiration or Miami company, preferably the former which has a leaching plant already in operation. He agreed

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1/ Consulting Mining Engineer, Bureau of Mines, Mining Division, Arizona-New Mexico Branch, Tucson, Ariz.
2/ Mining Engineer, Bureau of Mines, Mining Division, Arizona-New Mexico Branch, Tucson, Ariz.

to this and requested that P. D. I. Honeyman, general manager of Inspiration, be interviewed. Honeyman advised that his company was not interested in the property.

Subsequently, Carrow put down one churn drill hole in the center of the area recommended by Lynn Harvey, consulting engineer, as being the most favorable area. Sampling of the new hole was done by engineers of the Miami Copper Co. Assaying of each 5-foot section of the hole was done by their assay office and also by the Arizona Assay Office. The first 175 feet of the hole, which showed higher values than at greater depth, averaged 0.38 percent copper as shown by the Miami Copper Co. and 0.40 percent as reported by the Arizona Assay Office.

At present the property is under a 10-year lease to Hansen and Williams of Globe who are negotiating a sub-lease with V. B. Smith. In the next 4 months Smith intends to do some additional exploratory work with his own funds.

Since the examination of the property in 1950 Hansen has done a small amount of work with a bulldozer and has opened up a small mass of oxidized ore along a so-called mud-slip. He shipped 50 tons to the International smelter which averaged 1.66 percent copper but with an alumina content that was too high to make the ore suitable for flux.

It is believed that other small masses of ore running, perhaps, one percent can be uncovered. Any tonnage found would not be sufficient to warrant its own leaching plant at this time or at any time in the immediate future.

The Inspiration company is not interested in treating oxidized leaching ore and, therefore, it is recommended that no exploration loan be made under present conditions.

It would be wrong to say that comparatively small isolated masses of oxidized ore running 1 percent would never be workable. It would also be wrong to assume that material containing 2 pounds of copper (in large bodies), as indicated by the Western Copper Co. drilling, would never be commercial. A detailed record of this drilling, other sampling and other pertinent data is recorded herewith in the accompanying report.

Adjoining the Blackbird group there are other groups of claims which have similar showings to those on the Blackbird. One of these properties, known as the Shultze group, was sampled in 1944 by Lenny Marshall, an engineer from the Bureau of Mines. Some 180 samples were taken, probably mostly from the surface. The average of these samples is 0.33 percent copper. It is reported that the Inspiration Needles, and the Carlotta have similar showings. Apparently there is a great fringe of sub-marginal ore to the south of the Inspiration holdings. In most cases mineralization starts at or near the surface. It is all subject to mining by open pit methods with very little stripping. It is quite likely that some day material as low grade as 0.4 to 0.5 percent copper will become commercial. No doubt it will be many years before it can be mined. There seems to be little doubt that the area covered by these several

groups contains several hundred millions of tons of low-grade material. It would seem unwise to spend any money at this time in exploration but it should be kept in mind that this is a possible source of copper for future generations. All available information should be collected and documented for use when there is a real shortage of copper, and mining and metallurgical processes improve to the point where such material becomes commercial.

At some suitable time this area might be made a study by the Bureau of Mines and the Geological Survey.

DMA-9, Bluebird Group, Western Copper Co. (Copper)

Gila County, Arizona

Engineering Report

By M. J. Elsing
Consulting Mining Engineer
U. S. Bureau of Mines

B. C. Brown
Mining Engineer
U. S. Bureau of Mines

Engineering

INTRODUCTION

A lease for the development of the Bluebird group of claims belonging to the Western Copper Co. has been denied by the Defense Minerals Administration. Later, Tom Lyon, Director, Supply Division, requested the Executive Officer, Field Team, Region IV, Denver, to have the applicant interviewed to explore the possibility of his making an application for an exploration lease.

It was learned that Frank E. Carrow, President of the Western Copper Co., who made the original application, has permanently left Globe and has given a 10-year lease on the Bluebird mine to William M. Sorsen, Box 1431, Globe, Arizona and his partner, Wm. C. Williams. After having done a little work on the property the above mentioned parties are negotiating a sub-lease to V. E. Smith, 506 Patterson Building, Denver, Colo. Smith proposes to do some exploratory work within the next 4 months with his own funds.

M. J. Kleing, one of the writers of this report, made a personal examination of this property in July 1950. The present examination was made May 24, 1951 to see the results of Sorsen's work and to obtain as much information as possible regarding the recent drilling.

ACKNOWLEDGMENTS

Acknowledgments are made herewith to Nels F. Peterson, U. S. Geological Survey who accompanied the writers to the property and

gave valuable assistance and information. William W. Sorsen, present lessee, also accompanied the writers to the property, showed them the recent work, and gave them copies of the results of churn drilling and other data.

LOCATION AND ACCESSIBILITY

The Bluebird group is south of the Inspiration Consolidated Copper Co.'s property and is about 2 miles west of the western edge of the town of Miami. The southern corner of the property extends to the Miami-Superior highway from which it is easily reached. The area comprises rolling hills and gullies. Roads are easily built with little or no blasting.

OWNERSHIP AND EXTENT

As far as is known the title to the property is in the name of the Western Copper Co. The property includes 17 unpatented claims, including Bluebird No. 1 to Bluebird No. 16, and one other claim.

HISTORY AND PRODUCTION

A War Minerals Report[1], dated December 30, 1943, gives a summary of the history of the property. It says: "These holdings were first located about 1900, and in 1911 they were taken over by the Miami Copper Co. The property was drilled by this company and a small amount of underground development was carried out. They were unsuccessful in locating ore of a grade high enough to be worked at at that time and the property was abandoned.

1/ Chapman, Thos. L., Mining Engineer, U. S. Bureau of Mines, Tucson, Ariz.

"In 1921 the Blue Bird claims were located by A. E. West and T. B. West. Except for assessment work nothing was done by these owners and in 1936 the claims were again abandoned. They were then located by J. C. Anglin and M. E. West, the present owners."

The property was eventually acquired by the Western Copper Co.

Lynn Kersey, in his report accompanying Carrow's application for a lease, states "in about the year 1918 a private party, not connected with any of the local mining firms, put down some ten or twelve shallow drill holes in the larger area to the north and west of the Lake Oak Division ground of Inspiration Consolidated Copper Co. I have been able to find six of these holes on the Blue-bird ground not all within the area now considered as having possible ore."

The above facts are stated to draw attention to the possibility that a record may exist in the files of the Miami Copper Co. of the results of this early day drilling. If the Miami Copper Co. has these records it is logical to assume that the grade of the ore is sub-marginal, otherwise they would have shown some interest in acquiring the property.

There is no record of evidence of production from the property except that the new lessee, Screen, shipped 50 tons in March 1951 with an average grade of 1.66 percent copper. The shipment gave him net smelter returns of $39.60. The ore contained approximately 13 percent aluminum oxide which made it worthless as a fluxing ore.

DESCRIPTION OF THE DEPOSIT

The two most important rock formations in the area covered by the Bluebird claims are the Pinal Schist and the Schultze granite. Neither of these formations show strong alteration. The copper mineralization, consisting of malachite, azurite and chrysocolla, is in general weak, scattered and erratic. Running at an angle to the major faulting there are some so-called mud slips which usually have a rather flat dip. Serwen seemed to think that the best grade ore came from just above these slips. It is possible that these slips may have caused some local but relatively unimportant concentration of the copper values. None of these slips was continuous for any considerable length nor were they associated with ore in commercial quantities.

There is some difference of opinion as to whether the copper in the area is the result of the oxidation of primary mineralization in place or whether the present copper values are migratory in the sense that they have been leached out of the Inspiration and Miami deposits lying above and to the north. The assays of Carrow's churn drill hole are informative on this point. The sampling was done by engineers of the Miami Copper Co. and the assaying was done by their assay office as well as by the Arizona Assay office. The results of the assaying are as follows:

Western Copper Co.'s Bluebird Group

Samples were taken at 5-foot intervals in August 1950.

Sample No.	Percent Copper: Arizona Assay Office	Percent Copper: Miami Copper Co.	Percent Copper: Difference
1	0.30	0.22	0.08
2	.46	.34	.12
3	.46	.32	.14
4	.41	.30	.11
5	.25	.19	.06
6	.25	.17	.08
7	.14	.12	.02
8	.25	.17	.08
9	.34	.24	.10
10	.46	.40	.06
11	.62	.48	.14
12	.50	.36	.14
13	.35	.35	—
14	.41	.36	.05
15	.46	.42	.04
16	.77	.63	.14
17	.62	.55	.07
18	.55	.47	.08
19	.77	.70	.07
20	.83	.56	.27
21	.55	.53	.02
22	.35	.33	.02
23	.41	.27	.14
24	.62	.46	.16
25	.65	.54	.11
26	.55	.37	.18
27	.41	.36	.05
28	.50	.43	.07
29	.50	.34	.16
30	.41	.39	.02
31	.41	.33	.08
32	.62	.36	.26
33	.83	.57	.26
34	.83	.44	.39
35	.46	.34	.12

Western Copper Co.'s Bluebird Group (Cont'd)

Samples were taken at 5-feet intervals in August 1950.

Sample No.	Percent Copper: Arizona Assay Office	Percent Copper: Miami Copper Co.	Percent Copper: Difference
36	.25	.13	.12
37	.30	.20	.10
38	.30	.19	.11
39	.19	.19	—
40	.41	.33	.08
41	.41	.29	.12
42	.46	.28	.18
43	.50	.29	.21
44	.41	.27	.14
45	.41	.28	.13
46	.41	.27	.14
47	.41	.32	.09
48	.55	.33	.22
49	.46	.32	.14
50	.35	.33	.02
51	.30	.28	.02
52	.46	.21	.25
53	.20	.16	.04
54	.25	.15	.10
55	.25	.14	.11
56	.15	.17	.02
57	.35		
58	.41		
59	.35		
60	.30		
61	.35		
62	.35		
63	.30		
64	.30		
65	.15		
66	.25		
67	.20		
68	.35		
69	.25		
70	.20		
71	.20		

Western Copper Co.'s Bluebird Group (Cont'd)

Samples were taken at 5-feet intervals in August 1950.

	Percent Copper		
Sample No.	Arizona Assay Office	Miami Copper Co.	Difference
72	.15		
73	.20		
74	.10		
75	.10		
76	.30		
77	.25		
78	.25		
79	Missing		
80	.30		
81	.20		
82	.10		
83	.20		
84	.15		
85	.15		
86	.20		
87	.10		
88	.10		
89	.05		

Summary

Total depth of hole ..... 445 feet
Miami Copper Co. average for 175 feet 0.38 percent
Arizona Assay Office average for 175 feet 0.49 percent
Miami Copper Co. average, 175-330 feet 0.24 percent
Ariz. Assay Office average, 175-330 feet 0.35 percent

Whether or not the mineralization is primary makes little or no difference so far as this particular project is concerned. It is difficult to conceive how migratory solutions coming from Inspiration and Miami Copper ore bodies would descend to such depth and with such uniformity as indicated by this drilling. An inspection of the sludge of this hole might or might not show primary sulphides. The matter is only important if consideration is given to the area covered by the other groups. If the original mineralization was

primary the likelihood of a large uniform ore body might be a little better.

MINEABLE ORE RESERVES

There are no mineable ore reserves. Thomas L. Thompson estimated that 1,000,000 tons of 0.713 percent copper ore are indicated. This is not ore since Inspiration will not treat oxidized ore and there is no other possibility for treating it at the present time.

PRESENT STATUS

Exploration and Development

The property has been explored by some 12 churn drill holes which were drilled about 1910 by the Miami Copper Co. or some other company. The records of this drilling are available. When the Miami Copper Co. had the property under option they drove a short tunnel comprising 175 feet of work. Some 22 samples in this tunnel averaged 0.713 percent of oxidized copper including malachite, azurite and chrysocolla. There is some other shallow surface work including short tunnels, open cuts and pits.

In August 1950 the Western Copper Co. put down a churn drill hole to a depth of 445 feet.

MINING AND MILLING EQUIPMENT AND OTHER FACILITIES

There is no equipment or other facilities on the property.

PROJECT PROPOSAL

The applicant's proposal for a development loan was denied and the present examination was made with the idea of considering whether an exploration loan was advisable. It was learned that the property

had been leased for 10 years to Sessons and Williams of Globe, Arizona. They are now negotiating a sub-lease with V. E. Smith of Denver. In the next 4 months Smith proposes to do some exploratory work with his own funds.

CONCLUSIONS

A map showing the location of the Bluebird claims is attached to this report. This map shows the geological formations, the location of some of the old drill holes and the area which Lynn Murray considers the most favorable part of the property. It will be noted that the hole drilled in August 1950 is located at the approximate center of this area.

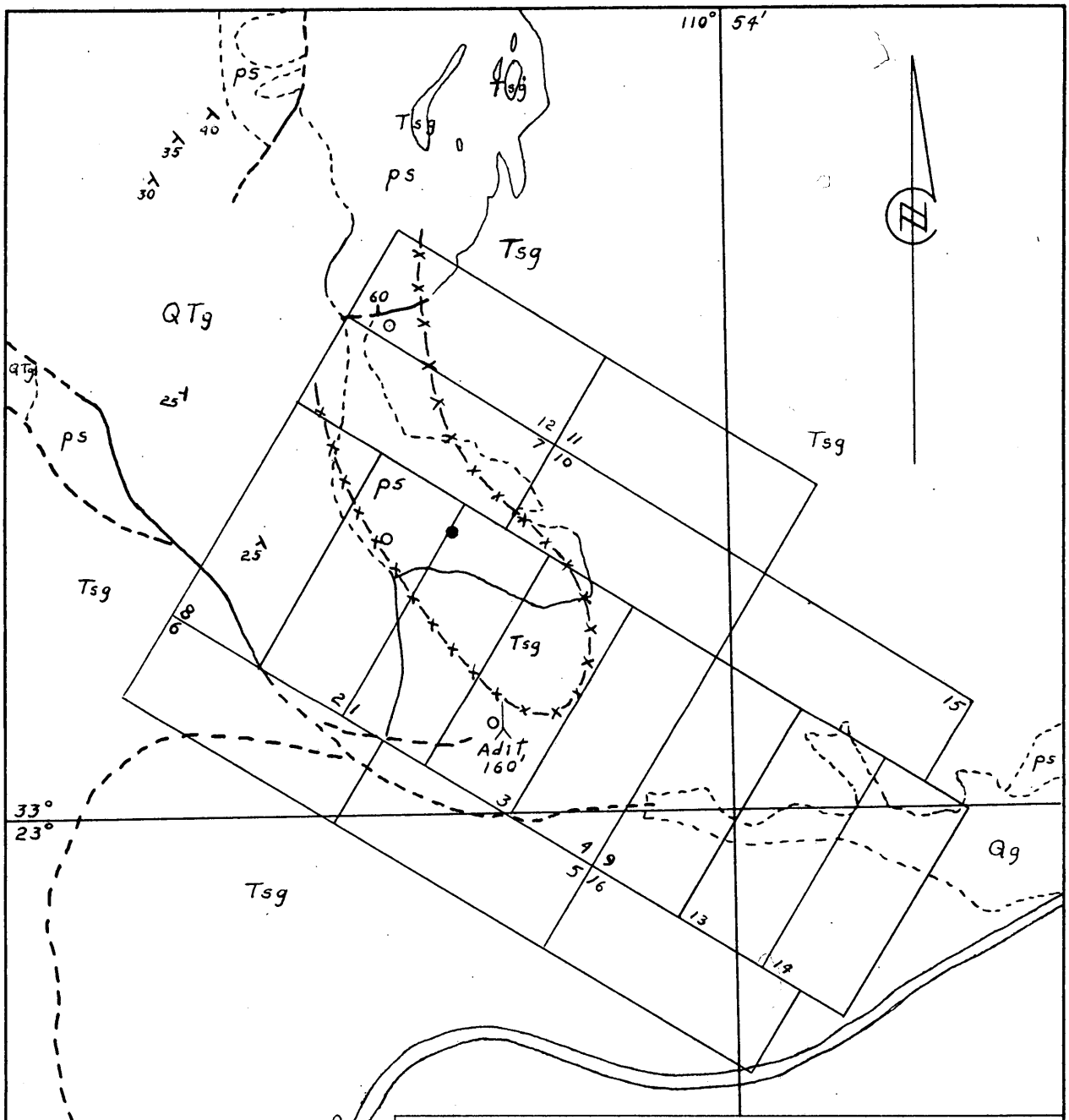
The grade of the ore in this hole is sub-marginal. The grade of the ore in the 160-foot tunnel, while higher, is still sub-marginal. There is no reason to expect that additional work will show ore of better grade.

There is a serious shortage of water in the district. The lessee expects that drilling on the property will produce a supply of some 15 gallons per minute. The source of this water is a flowing spring. Smith, the sub-lessee, proposes to get water by building a sewage disposal plant for the city of Miami when he has discovered sufficient ore to warrant the construction of a leaching plant. He believes that the water from the sewage plant and the spring will provide sufficient water for his operations.

RECOMMENDATIONS

On the basis of all of the available information it is recommended that no steps be taken to encourage the applicant to apply for an exploration lease.

It is not believed that any exploration that the sub-lessees propose to do will materially alter the situation. Under present conditions it would be advisable to await the outcome of the proposed work.



BLUE BIRD GROUP
WESTERN COPPER CO., MIAMI, ARIZ.
DMA DOCKET NO. 9

Scale: 1" = 1000' May 23, 1951

Copied from data furnished by Nels P. Peterson

SYMBOLS

Faults known	———
Faults probable	- - - - -
Boundary of formations known	—— · ——
Boundary of formations probable	- - - - - - -
Outline of Hersey's most favorable area	—x—x—x—
Formations:	
Recent gravels	Qg
Quaternary & Tertiary gravels	QTg
Tertiary Schultze granite	Tsg
Pinal schist	ps
Drill holes:	
Old — assays unknown	○
New — hole drilled August 1950	●

Figure 1

T.1N., R.14E., G.&S.R.B.L.