GENERAL GEOLOGIC APPRAISAL

KEYSTONE PROPERTY, ROBERTS MINING DISTRICT

EUREKA COUNTY, NEVADA

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Aug., 1970

LAMB & BROUSSEAU
P. O. BOX 143
VALLEJO, CALIFORNIA 94590

Lamb and Brousseau (claim holders).
~~1003 Georgia Street~~ P.O. Box 148
Vallejo, Calif. 94590

Keystone Property, Nevada. (Cu, Pb, Zn, Ag).

Summary, conclusions, recommendations. -- The Keystone property consists of 32 unpatented lode claims located in the Keystone window in the Roberts Mining District, Eureka County, Nevada. The claims are situated in T24N, R48E, secs. 21, 22, 26, 27, and are held by Messrs Lamb and Brousseau. Three years sporadic production from the nearby Keystone Mine has yielded 114 tons of ore valued at about $6,500 in Cu, Pb, Zn, Ag. The ore-bodies containing primary sulfides are associated with tactites in an intrusive contact zone between granodiorite and limestone. Mineralization is of the contact metamorphic replacement type. Some past work has been performed on the property but is inconclusive.

"Hidden" ore-bodies might exist within the intrusive contact zone which possibility should be explored by a medium size corporation.

Attachments: A, B, C, D, E, E1, F, F1, G, H, I.

Note: "Keystone property" in text shall mean Lamb/Brousseau claims.

Keystone Property

Scope. -- The Keystone property was submitted by Mr. L. A. Lamb to the writer for a general geologic appraisal based on a brief examination and a study of past data. A detailed sampling program was intended, but due to limited time only a small portion of the property was sampled. The minerals of interest are Cu, Pb, Zn, Ag.

Location and Accessibility. -- The Keystone property is located in the Roberts Mining District, Eureka County, Nevada, sections 21, 22, 26, 27, T24N, R48E. The property lies some 50 miles south of Beowawe almost on Nevada State Highway 21, paved and in good condition to the Cortez Mines from which point it continues as a dirt road, also in good condition for about 19 miles to the property (see Attachment A).

The nearest railway depot is at Beowawe. Power may be obtained from the Cortez Gold Mines, operated by Amex, some 19 miles to the north of the property. The nearest source of "large" quantities of water is the Walti Hot Springs, owned by the Walti Ranch, 1½ miles south of the property, (see Attachment A). Arrangements can undoubtedly be made with the owners to draw water from their reservoirs should such a need arise.

Physical Features. -- The claims are situated in the Simpson Park Mountains consisting of relatively steep hills with a local relief of about 1200 feet. Vegetation varies from sagebrush covering the "flat" on the western portion of the claims to fir trees and shrubs on the hill slopes. The overall landscape of the region is typical of basin-and-range topography.

Property and Ownership. -- The property comprises about 32 unpatented lode claims held by Lamb and Brousseau Company, ~~2002 Georgia Street~~ P.O. Box 148, Vallejo, California, 94590 (see Attachment B).

A branched access road has been bulldozed on the property to facilitate exploration and vehicle entry.

Keystone Property

An abandoned shaft and a few small abandoned workings as well as drill hole sites exist on the property which was partially drilled in 1967 (see Attachment B).

Both Mr. N. A. Lamb and Mr. J. Brousseau are agreed on negotiating terms for their claims.

History. -- The only productive property in the district was the Keystone Mine just north of the Lamb/Brousseau Sidney claims (see Attachments B and C). The mine was apparently discovered in 1870 by Roberts and Tucker and is now owned by Mr. E. Schroeder of Crescent Valley, Nevada. A mill was erected about 1910, and after operating for a short period it was abandoned and finally dismantled.

Full records of production are unknown except for the years 1948, 1949, and 1962. The total amount of ore produced during these 3 years was 114 tons which yielded 417 ozs. Ag, 17,900 lbs. Pb, 1400 lbs. Cu, 19,800 lbs. Zn, valued at a total of approximately $6,500.00.

In the past several years interest in the district has been generated by a number of mining companies of which Newmont Exploration Ltd. undertook a drilling program on the Lamb/Brousseau and adjacent properties in 1967. A total of six rotary holes were drilled of which 3 are located on the Lamb/Brousseau claims (see Attachment B). It would seem from the drill logs (see Attachments D, E, E1, F, F1) that the search for metals was confined to Au, Ag, for which assay results were very poor and for which cuttings were not obtained in certain instances.

A series of 5 samples were apparently collected from the property by Dayton Consolidated Mines Company of Carson City, Nevada, in 1965. The exact locations and type of samples taken are not known, although the assay sheet does indicate "outcrop". The results of the assays show significant values for Ag, Cu, Pb, (see Attachment G).

Keystone Property

General Geology. -- The Simpson Park Mountains, situated between the Cortez Mountains to the northwest and the Roberts Mountains to the east, are made up largely of shale, chert, and quartzite assigned to the Vinini Formation and to unnamed Ordovician and Silurian units. Volcanic and pyroclastic rocks underlie much of the northern and southern parts of the range.

The Keystone window, exposing Devonian limestone, is intruded by a stock composed largely of granodiorite. The latter is medium to dark grey and medium grained with phenocrysts of plagioclase, quartz, hornblende, and biotite. The hornblende is altered to chlorite and epidote and locally is replaced by biotite. The age of the stock is unknown (see Attachment H). The Devonian limestone is relatively hard, blue-grey, coarse, crystalline, and dolomitic in a few places. The Ordovician units consist of fine-grained shales and cherts, light brown to "rusty" in places and show evidence of leaching (see General Geologic Map, Attachment H).

Structurally the rocks, extending for about 8 miles south of the Keystone window, are apparently folded into northward striking anticlines and synclines superposed on westward dipping beds. Locally around the Keystone window area faulting and folding remain yet to be studied in detail.

Mineralization. -- The ore deposits in the Keystone area lie within a contact zone of the granodiorite and Devonian limestone. Mineralization is of the contact metamorphic replacement type where sphalerite, galena, pyrite, and chalcopyrite occur as the primary ore minerals. The "ore-bodies", the nature of which has been studied in the Keystone Mine, occur as lenticular pods in tactite. Whether or not there is any relationship between structural trends and tactite bodies in this particular environment has not been established.

Reports indicate that galena is argentiferous towards the surface

and that copper ore has been found at depths of 25 feet. It is an interesting coincidence that the surface samples taken from outcrops (possibly tactite outcrops) by Dayton Consolidated Mines show good values for Ag, and also for Pb, Cu, (see Attachment G). Samples taken from surface tactite outcrops and from dump material by the writer also show some relatively significant assay results with highest values being 8.0 ozs. Ag, 0.46% Cu, 2.0% Pb, and 6.0% Zn, (see Attachment I for description and results, and Attachment B for location of samples LB-1 to LB-5). The chief visible minerals observed at the tactite outcrops by the writer were varying amounts of sphalerite, galena, chalcopyrite, and some bornite. Several tests with acid also indicated the presence of pitch-limonite.

Local sources of information report that the Mountain Copper Company had turned up a zinc anomaly on the granodiorite-limestone contact through geochemical prospecting in 1964.

No metallic minerals were observed by the writer in the granodiorite, limestone, and shales. Sample no. LB-5, taken from the granodiorite, assayed 8ppm Mo, and 0.024% Cu.

Summary, conclusions. -- The Lamb/Brousseau property and vicinity is situated in a favorable geologic setting which offers a potential for mineral exploration. Mineralization is associated with tactite bodies. The only significant tactite bodies carrying primary sulfides were discovered in the Keystone Mine which was undoubtedly initiated by prospectors who discovered surface outcroppings in 1870. Much of the work carried out to date both on the Lamb/Brousseau and adjacent properties appears to have been somewhat inconclusive. There seems to be very little knowledge concerning the distribution of the tactite bodies i.e. how are they associated with faulting and folding ? Is there a relationship between them and structural trends as a whole?

Keystone Property

The best values obtained from geochemical sampling are for Cu, Ag, Pb, Zn. Samples from past exploratory work were only assayed for Au, Ag, possibly indicative of an exclusive search for micron gold.

It is possible that more tactite bodies exist close to the intrusive contact zone which has not been explored.

Any estimates of ore reserves would be no more than a wild guess without significant data obtainable from exploration.

Recommendations. -- Since the Keystone Mine has been the only operating mine in the Keystone window, and in the region for that matter, it would be of interest to consider the possibilities of discovering "hidden" ore-bodies which might exist around the intrusive contact zone. It is conceivable that such ore-bodies could collectively lead to a relatively large volume economic mining development.

An exploration program geared towards obtaining conclusive information should be undertaken.

Such a program should include the following sequences of operations:

a) Detailed mapping of surface mineralized outcrops.

b) Aerial photogeologic mapping i.e. interpretation of aerial photos from which detailed structural maps can be drawn up.

c) Geochemical sampling i.e. assay maps.

d) IP geophysics.

e) Correlation and assimilation of data obtained from a) through d).

f) Drilling program on the merits of the results from the foregoing; perhaps 2 or 3 deep (1,000') diamond drill holes, at least one drilled into mountain side at an incline in order to determine any lateral spread of mineralization. (NE Nevada, Bx footage cost is about $6.50 per foot.)

Keystone Property

The Keystone window presents a good exploration target area and warrants such a program which could be initiated by a medium size corporation.

W. Frank Faron
Consulting Geologist

References: Nevada B.M. Bull. 64.
USGS Open File Rep. by R. J. Roberts 1964.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Pacific Mineral Resources Branch
345 Middlefield Road
Menlo Park, California 94025

November 2, 1972

Mr. Norman A. Lamb
1002 Georgia Street
Vallejo, California 94590

Dear Norman:

This summer you asked me to send to you information on aerial photographs for the Keystone and Tenabo areas. Aerial photos are available for both areas.

Keystone area - black & white photos

Coverage: sections 22, 23, 24, 25, 26, 27, 34, 35, 36; T.24N., R.48E. Agency for which photos were taken: B.L.M.
Scale: 1:15,840
Pertinent data for identifying photos when ordering:
Area RCA 6, can 52, container no. 422267
Flight 2, photos 14, 15, 16, 17
" 3, " 15, 16, 17, 18, 19
" 4, " 15, 16, 17, 18, 19 Flight lines are E-W

Order from:
Pacific Region Engineer
U.S. Geological Survey
345 Middlefield Road
Menlo Park, California 94025

Cost: $1.25 per contact print.

Remarks: These are the most recent photos (1969's) of the Keystone area that I learned about. Strangely, BLM photos for Nevada may be purchased from the U.S.G.S. in Menlo Park. They are the only non-U.S.G.S. photos sold by the Survey. If you order them, be certain to state that you want BLM photos.

Tenabo - black & white photos

Coverage: See enclosed topo map, which shows the area covered in photo 6-77, and the eastern edge of several other photos in the same flight. Additional coverage of the adjacent area to the north would require photos 17 through 20 of roll 22; and for the area adjacent on the south, photos 91 through 94 of roll 6.
Agency for which photos were taken: Soil Conservation Service
Scale: 1:20,000
Pertinent data for identifying photos when ordering:
Aerial photos, symbol DRK, Lander County, Nevada
Roll 6, prints 75, 76, 77, 78

Order from:
Soil Conservation Service
Cartographic Division
Federal Center Bldg.
Hyattsville, Maryland 20781

Remarks: You will have to write to the Soil Conservation Service for information on costs. Probably it is about $1.25 for contact prints. Enlargements are available. The 1:15,840 enlargements are the photos I use for mapping in the Shoshone Range. The only disadvantage to these S.C.S. photos is that they were taken in 1952. Newer photos are not available.

The man who can give me information on colored aerial photos for Tenabo will be out of town for at least another week. I will send you facts about them when he returns.

Soil Conservation Service photos at 1:20,000 scale, taken in 1954 are also available for the Keystone area. If you would prefer these to the BLM photos, let me know.

You asked about the age of the granitic stock at Keystone. It is 33 million years and is therefore Oligocene in age.

I was pleased to have had an opportunity to see you this summer, and I look forward to discussing the history of the Tenabo area sometime.

Sincerely yours,

C. T. Wrucke

Enclosures

Attachment C

[redacted]