Building 20 - Federal Center
Denver 25, Colorado

November 26, 1962

Memorandum

To: George C. Selfridge, Chief
Division of Field Operations, OME
Washington 25, D. C.

From: Acting Field Officer, OME, Region III

Subject: OME-6251 (Beryl-Columbite)
Lester R. Cox, d.b.a. Cox Exploration Company
(Green-Reybal Claim Group)
Taos County, New Mexico
REPORT OF EXAMINATION

Enclosed are the original and two copies of the Report of Examination by T. M. Romslo, mining engineer, on the subject property.

Mr. Romslo found that the proposed exploration cannot be expected to result in a significant discovery of beryllium or columbite minerals and he recommends that the application be denied. I concur in this recommendation.

Hugh M. Cummors

Attachments

HMC/lm
cc Div. of Mineral Resources
OME-6251
Chron

UNITED STATES
DEPARTMENT OF THE INTERIOR
STEWART L. UDALL, SECRETARY

OFFICE OF MINERALS EXPLORATION

REPORT OF EXAMINATION
REGION III

OME-6251

LESTER R. COX, d.b.a.
COX EXPLORATION COMPANY

Owen-Roybal Claim Group

Taos County, New Mexico

Beryl-Columbite

Examination Report

By

T. M. Romalo, Mining Engineer
Bureau of Mines

November 1962

ONE-6251

LESTER R. COX, d.b.a. COX EXPLORATION COMPANY

Owen-Roybal Claim Group

Taos County, New Mexico

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OME-6251
LESTER R. COX, d.b.a. COX EXPLORATION COMPANY
Owen-Roybal Claim Group
Taos County, New Mexico

INTRODUCTION, SUMMARY, AND CONCLUSIONS

Mr. Lester R. Cox, d.b.a. Cox Exploration Company, applied for Government financial aid to explore for beryllium, columbium, and tantalum minerals within the Owen-Roybal mining claims, Nos. 26 to 53, Taos County, New Mexico. The Office of Minerals Exploration received the application and assigned it docket number OME-6251, May 5, 1962. The application was reviewed and found incomplete. To avoid further delay after the Applicant failed to furnish all requested information, the incomplete application was referred to the Region III Field Office for a field examination if necessary, and recommendations, August 28, 1962.

The proposed exploration would be initiated after completion of an access road and a geological survey of the project area. Exploratory work would be done at four sites and would consist of 400 feet of drifting, 2950 feet of diamond drilling, and the excavation of 500 cubic feet of pegmatite. The project would cost an estimated total $59,500.00.

The field investigations were made by T. M. Romslo, mining engineer U. S. Bureau of Mines, October 3, 1962. He was accompanied by the Applicant and Mr. Ernestino Arellano, one of the owners of the property. Four pegmatite dikes, one of which has been partially explored by the Owen's mine, were examined, and beryl crystals reportedly recovered from the pegmatite were inspected.

The pegmatite dikes intrude schist near its contact with granite. They are composed mainly of quartz, feldspars, and mica, which, in variable proportions, are present in an aggregate that appears to fill the dikes except in the area explored by the Owen's mine. At the Owen's mine, the principal minerals are arranged in well-defined zones. The wall zones are composed of an aggregate of quartz, feldspars, and mica, and the intervening zone is composed principally of feldspars. About 1300 pounds of beryl crystals were recovered from an estimated 370 tons of pegmatite mined. Most of the beryl crystals were reportedly found in feldspars near the lower wall zone. Minor amounts of spessartite and columbite-tantalite were observed but were not recovered. Beryl observed in place was confined to a small crystal in the pegmatite dike of the proposed open-pit operation.

The field investigations indicate that the proposed exploration cannot be expected to result in a significant discovery of beryllium or columbium minerals. It is therefore, recommended that the application be denied.

LOCATION, ACCESSIBILITY, AND PHYSICAL FEATURES

The Owen-Roybal group of mining claims, Nos. 26 to 53, is in Secs. 33 and 34, T.23N., R.11E., New Mexico principal meridian, Picuris District, Taos County, N. Mex. (figs. 1 and 2). The claims are about 2 miles west of Chamisal, a village on State Highway No. 76.

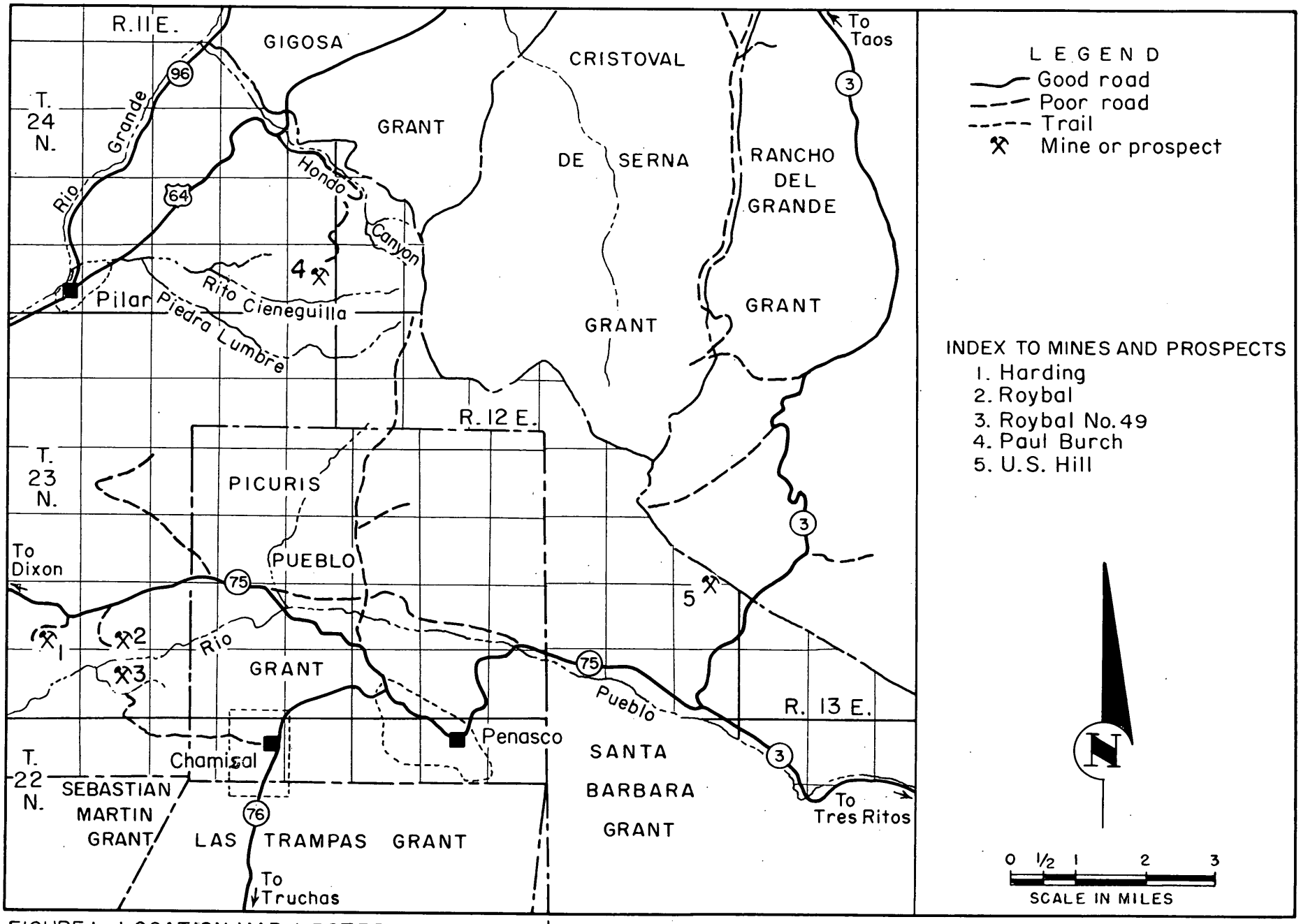
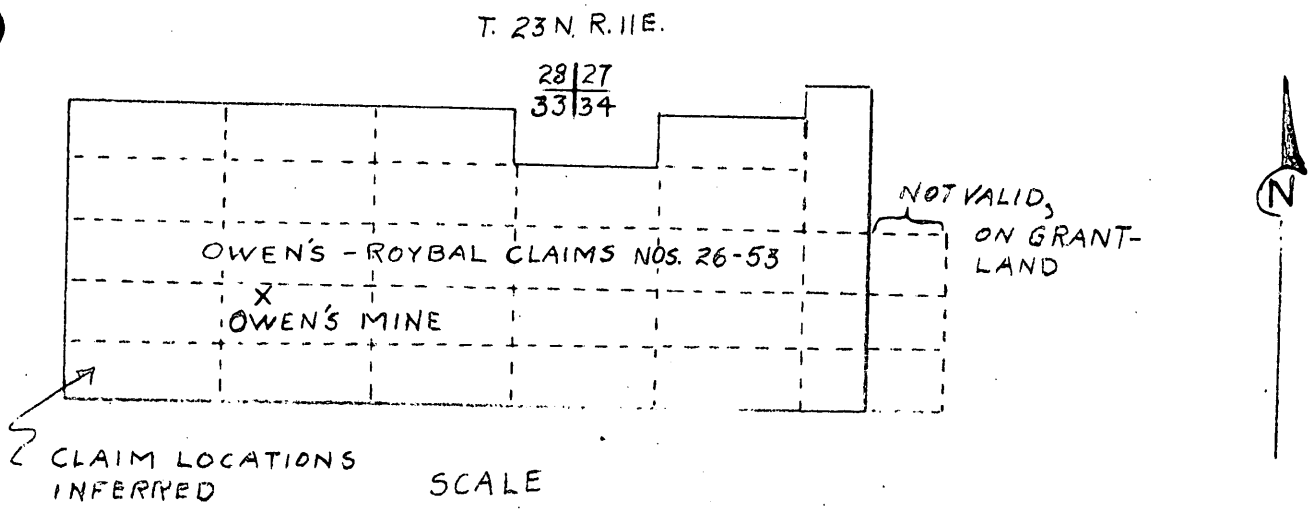
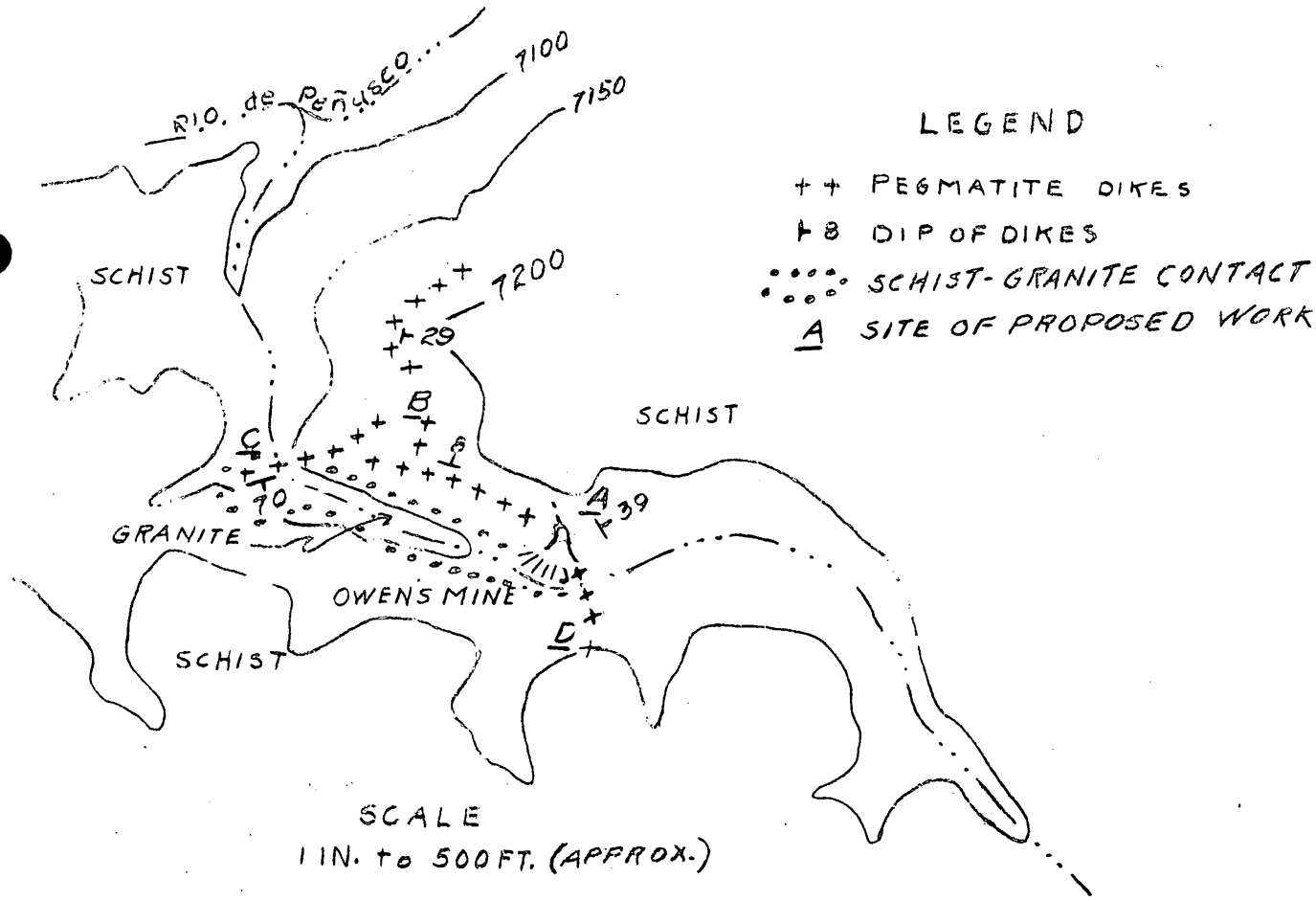


FIGURE 1.- LOCATION MAP, LESTER R. COX, OWEN'S-ROYBAL CLAIM GROUP, TAOS COUNTY, N.MEX. OME-6251 (BERYLIUM-COLUMBIUM).





BASE: APPLICANT'S SKETCHES

FIG. 2 CLAIM AND GEOLOGICAL MAP, LESTER R. COX, OWEN'S-ROYBAL CLAIM GROUP, TAOS COUNTY, N. MEX. GME-6251 (Beryllium-Columbium)

The Owen's mine, referred to as the Roybal No. 49 in the U. S. Bureau of Mines I.C. 8012,[1] is in the area of proposed exploration. It may be reached from Chamisal by traveling northwestward 3.5 miles over unimproved Forest Service roads and a recently completed access road that terminates within a few hundred feet of the mine. Local inquiry as to access to the mine is recommended.

The claims are at an average altitude of about 7,150 feet in a rugged area near the western end of a mountainous spur that extends eastward about 16 miles to the Sangre de Cristo Mountains. Minor canyons extend through the area to the Rio de Penasco, an intermittent stream, that flows westward to the Rio Grande River. Proposed exploration is confined to a narrow belt along the steep northeasterly slope of a minor canyon.

The climate is normally moderate. Winters too severe for year round mining operations are rare.

Vegetation consists mainly of Pinon pine, which is used locally for firewood. It grows profusely except in canyons where some Ponderosa pine is found.

HISTORY AND PRODUCTION

The Owen-Roybal mining claims, Nos. 26 to 53, were located in 1955-56 by Ernestino Arellano and others of Chamisal and Penasco, New Mexico. Unknown persons had previously dug shallow test pits

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1/ Redmon, D. E., Reconnaissance of Selected Pegmatite Districts in North-Central New Mexico, U.S.B.M. I.C. 8013, pp 65 and 66, 1961.

in some of the pegmatite bodies in the area, but probably produced little or no ore of any kind.

Since the claims were located, mining operations have been confined to one of the pegmatite bodies that crop out on claim No. 49. In 1956-57 the owners reportedly recovered 1,000 pounds of beryl from an estimated 220 tons of open-pit mined pegmatite. No additional mining was done until 1960-61, when they enlarged the pit, and from the pit drove a 26-foot long adit. About 300 pounds of beryl was reportedly recovered from the estimated 170 tons of pegmatite mined. Subsequent operations, consisting of a minor amount of exploratory work and the construction of an access road, have been carried out by Lester R. Cox, the applicant.

EXTENT AND OWNERSHIP OF THE PROPERTY

The property consists of a group of 28 unpatented lode mining claims, the Owen-Roybal Nos. 26 to 53 (fig. 2). The claims are owned by A. A. Owen and Rubye Owen, his wife, of Penasco, N. Mex. and Ernestino Arellano, and Frances Arellano, his wife, and Agustin Arellano, widowed, of Chamisal, New Mex.

The applicant, Lester R. Cox, d.b.a. Cox Exploration, Rural Route No. 1, Fredonia, Kansas, acquired the property from the owners by a Mining lease dated June 25, 1962.

GEOLOGY AND ORE DEPOSITS

Rocks underlying the applicant's property are of Precambrian age (fig. 2). They consist mainly of metasedimentary rocks including

quartzites, phyllites and schists, and Embudo granite of the quartz-microcline-albite-biotite type. The metasedimentary rocks frequently enclose dikes of course-grained pegmatite, similar in a mineral assortment to the Embudo granite.

In the area of proposed exploration, four pegmatite dikes ranging from 250 feet to 500 feet long and 3 feet to 20 feet thick, crop out boldly along the floor and a steep slope of a minor canyon. The northwesterly trending dike explored by the Owen's mine and the northeasterly trending dike of the proposed working site C are in close proximity to the granite exposed in the canyon floor. These dikes intrude separate areas of sheared and metamorphosed schist, and roughly parallel the attitude of the principal shears. The intervening westerly-trending dike and the other northeasterly trending dike intrude areas of relatively unaltered and fractured schist. These dikes appear to roughly parallel the attitude of the schist intruded.

The principal minerals present in each of the four pegmatite dikes are quartz, albite, microcline, and muscovite. They are present in variable proportions in an aggregate that appears to persist throughout the dikes except in the area explored by the Owen's mine. At the Owen's mine, the principal minerals are arranged in well-defined zones. Wall zones at the upper and lower contacts of the pegmatite and schist, range in thickness from three feet to five feet and are composed of an aggregate of quartz, feldspars, and mica. The intervening zone ranges in thickness from about six feet to eight feet and is composed mainly of white

feldspars with albite as the dominant mineral. Masses of white quartz two feet to three feet in diameter are sparsely distributed in the white feldspars. No beryl was observed in place, but some of the pale-blue to almost colorless euhedral beryl crystals reportedly recovered from the deposit were inspected. The beryl crystals inspected range in diameter from three inches to 10 inches. The 10-inch crystal weighs an estimated 30 pounds. The crystals reportedly were found sparsely distributed throughout the feldspars but were found most frequently in feldspars near the lower wall zone. The beryl content of the mined portion of the dike, based on the recovery of an estimated 1300 pounds of beryl from an estimated 370 tons of pegmatite, is about 0.18 percent.

Minor accessory minerals that reportedly were found during the mining operation, but which were not recovered, are spessartite and columbite-tantalite. The writer found neither of these minerals in place, and found only one millimeter-size piece of columbite in the mine-dump rock.

The only beryl observed in place by the writer, was a crystal, about two inches in diameter. The beryl crystal occurs in the pegmatite dike at proposed work site C.

PROPOSED EXPLORATORY PROJECT

The proposed project would involve the construction of a more suitable access road, and the completion of a geological survey prior to initiation of the exploratory operations. The total cost

of the road and survey is an estimated $4,125.00. The exploratory work would be done in four areas, sites A, B, C, and D shown on figure 2. The existing adit at site A would be extended northwestward 200 feet. At site B, a 200-foot drift would be driven and 1700 feet of diamond drilling in 11 holes would be done. An estimated 500 cubic yards of pegmatite would be excavated at site C, and 1250 feet of diamond drilling in 5 holes would be done at site D. The exploratory work would cost an estimated total $55,125.00.

Mr. Daniel B. Harley, the Applicant's consulting geologist, considers the pegmatite dikes on the Owen-Roybal property to be identical in origin and genetically related to those of the Harding mine area, because they have the same mineral assortment as the Embudo granite. Based on a possibly generally accepted concept regarding the formation of the pegmatite dikes, he believes that mineral concentrations of like character to those at the Harding mine could occur on the Owen-Roybal property if the structural relationships of the pegmatites were the same. Having reportedly found the same favorable geological structures on the Owen-Roybal property, he concludes that the zones localized by the structures could contain mineral concentrations similar to those at the Harding mine. On this basis, the pegmatite dike explored by the Owen's mine would be expected to have well-defined zones containing spodumene, lepidolite, microlite, tantalite-columbite, and beryl in sufficient quantity to constitute ores of lithium, tantalum, and

beryl. Actually, the Owen mine dike is like the Harding dike in that they have well-designed zones, but they are different in respect to the mineral present and the extent and degree of mineralization.

CONCLUSIONS AND RECOMMENDATION

The field investigations indicate that the proposed exploration cannot be expected to result in a significant discovery of beryllium or columbium minerals. The amount of these minerals found in the only exposed favorable zone is too small to be of possible economic interest. Also, there is no reason to believe the minerals would occur more highly concentrated or in greater amounts in other favorable zones that could be present. It is therefore recommended that the application be denied.