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EXPLORATION OF THE BUCKHORN MICA PROMETITE MINE,
LARIMER COUNTY, COLORADO

By

W. R. Thurston

April 1950

Beryllium Examination 1

6818

Illustrations

- Plate 1. Assay plan of diamond drill hole BH-1, Buckhorn Mica pegmatite, Larimer County, Colorado.
2. Assay plan of diamond drill hole BH-2, Buckhorn Mica pegmatite, Larimer County, Colorado.
3. Assay plan of diamond drill hole BH-3, Buckhorn Mica pegmatite, Larimer County, Colorado.
4. Assay plan of diamond drill hole BH-4, Buckhorn Mica pegmatite, Larimer County, Colorado.
5. Assay plan of diamond drill hole BH-5, Buckhorn Mica pegmatite, Larimer County, Colorado.

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EXPLORATION OF THE BUCKHORN MICA PEGMATITE MINE, LARIMER COUNTY, COLORADO

By

W. R. Thurston

The Buckhorn Mica mine is in SW $\frac{1}{4}$ sec. 29, T. 7 N., R. 71 W., sixth principal meridian, in the Crystal Mountain district, Larimer County, Colorado. The mica deposit was discovered in 1894 and was mined for a short period by the Buckhorn Mica Mining and Milling Company. The property is now known as the Emerald Gem claim, and is owned by Roy Ryatt of Masonville, Colo. Past production records are not available, but it is reported that at least 180 tons of ground mica and 2 tons of beryl have been produced from this property during different periods of operation. The workings consist of three shafts, a series of shallow, more or less interconnected opencuts, and five trenches. It is reported that at a depth of about 50 feet there were drifts from one of the shafts, but all underground openings are now inaccessible.

The mine has been described by Starrett 1/ and by Hanley. 2/

1/ Starrett, D. B., Mica deposits of the United States: U. S. Geol. Survey Bull. 740, pp. 59-60, 1923.

2/ Hanley, J. B., Heinrich, E. W., and Page, L. R., Pegmatite investigations in Colorado, Wyoming, and Utah, 1942-1944: U. S. Geol. Survey Prof. Paper 227, pp. 85-90, 1950.

It was re-examined in 1947 by Thurston, as part of the U. S. Geological Survey nationwide investigation of beryllium resources. The mine was

explored by core drilling in 1945. This mine was selected for exploration because 1) surface evidence suggested that the pegmatite might contain important quantities of beryl and mica; 2) it might also contain tantalite-columbite, spodumene, and other rare minerals which would be of considerable value as byproducts of the mining of this deposit; and 3) additional scientific data might be gained from the drilling of this deposit which would contribute to the interpretation of the complex geology, thereby assisting in the understanding and projection of other pegmatites in the district and elsewhere in the country.

Five core holes, totaling 717 feet, were drilled from the north side of the deposit. The length, inclination, and elevation of the collar of each hole are shown on the sections (Plates 1 to 5). Each hole is marked on the ground by a length of 3-inch pipe penetrating the overburden to bedrock and each pipe is covered by a cap stamped with the hole number.

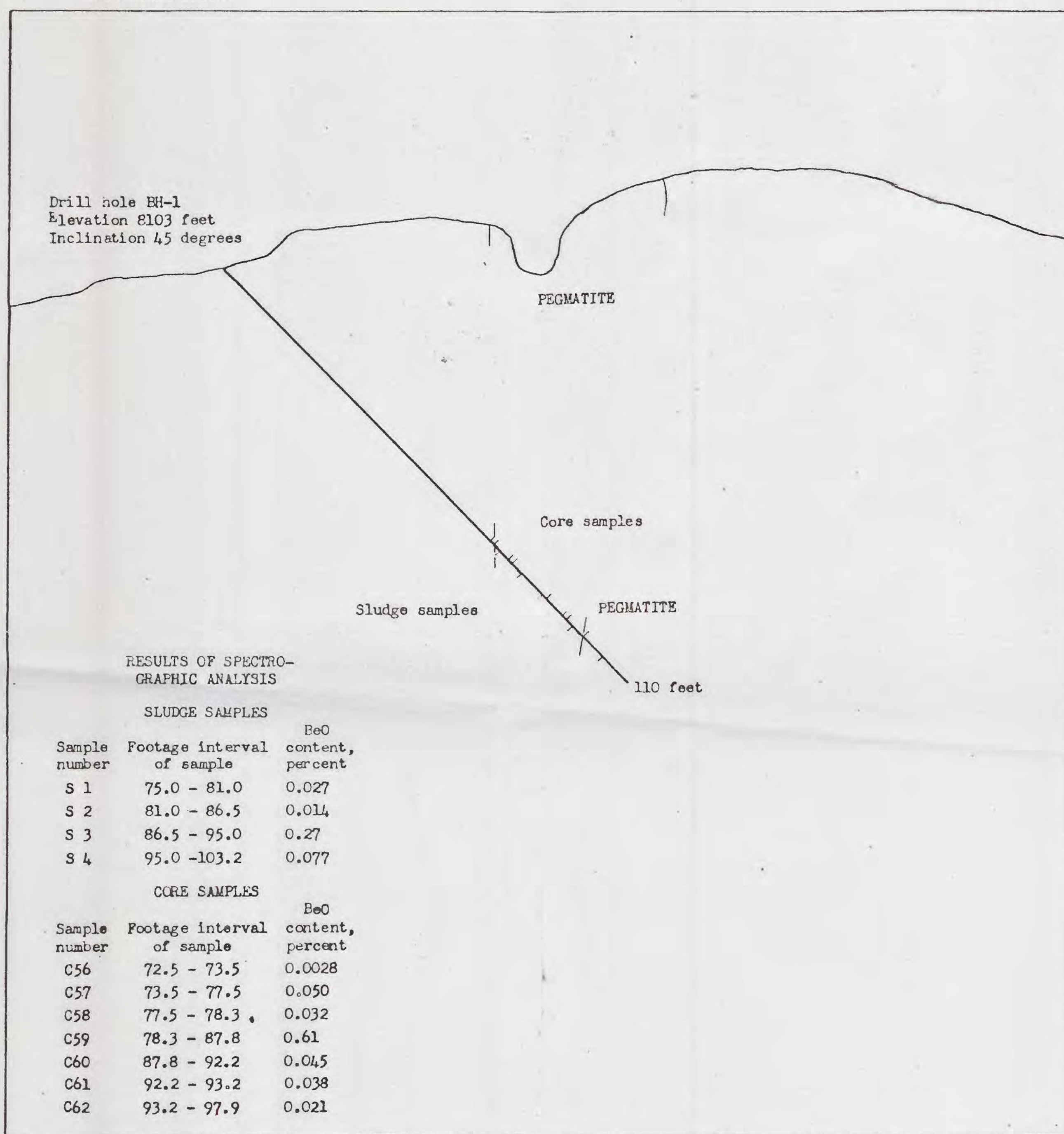
All the core recovered by drilling was split and assayed for BeO. The unused part of the core is stored in the office of the U. S. Geological Survey, Denver Federal Center. Sludge samples collected while drilling pegmatite were also cut and assayed. The core of schist wallrock was not assayed. Sludge and core samples were ground and split mechanically to meet specifications for spectrographic analysis. The footage interval for each sample, both core and sludge, is stated in the table of assays in each section (Plates 1 to 5), and

the interval is also shown graphically on the line representing the drill hole. Throughout most of the drilling the core recovery was high, but the sludge recovery was only moderate.

The omega indices of the beryl found in the Buckhorn Mica pegmatite range from about 1.576 to 1.586; assuming that the omega index of refraction of beryl is a reliable indicator of the BeO content of the mineral, the beryl of this deposit contains from about 12.4 to 12.9 percent BeO.

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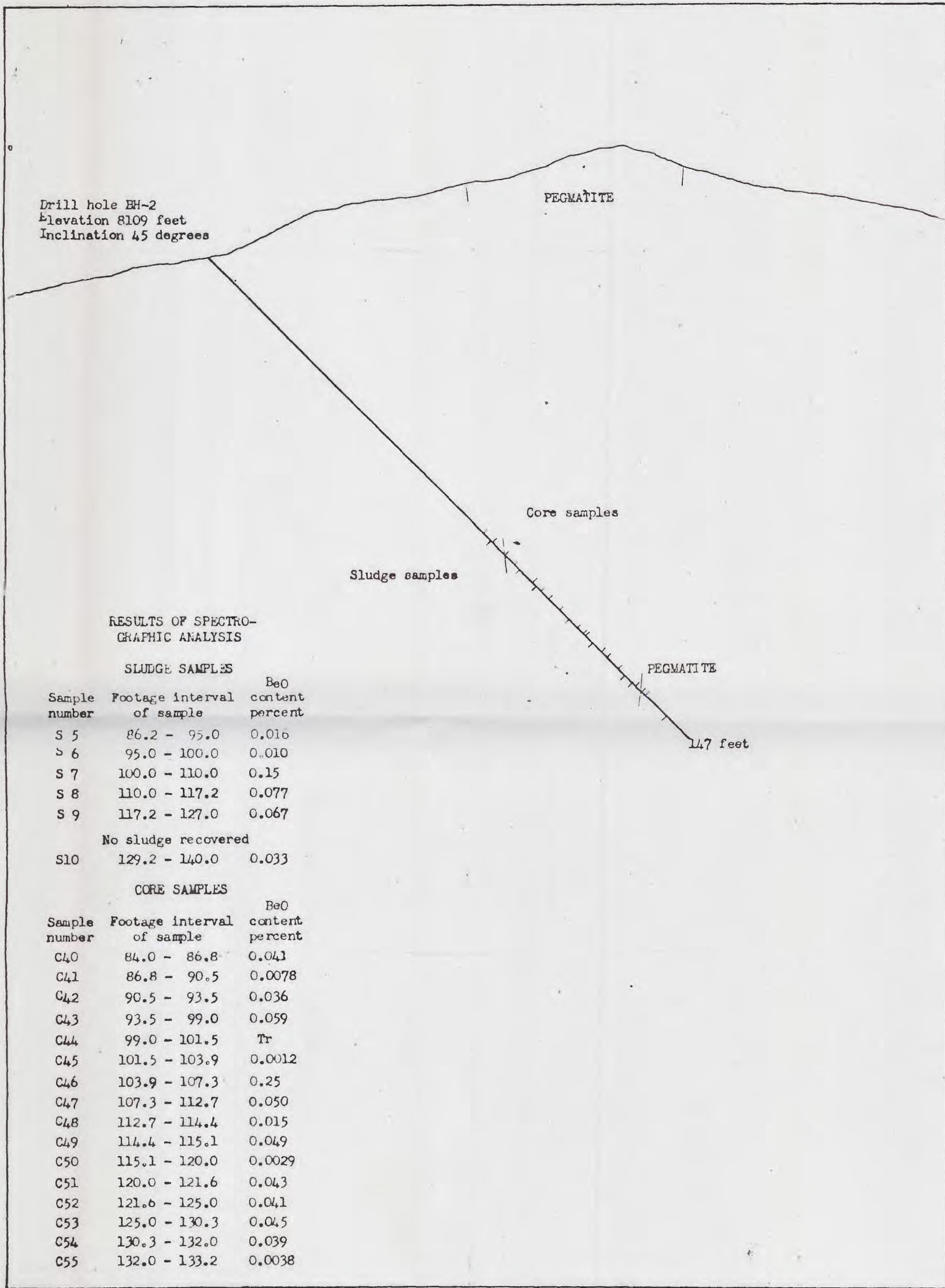
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Plate 1 ASSAY PLAN OF DIAMOND DRILL HOLE BH-1, RUCKHORN MICA PEGMATITE MINE, LARIMER COUNTY, COLORADO

SCALE
0 20 40 60 feet



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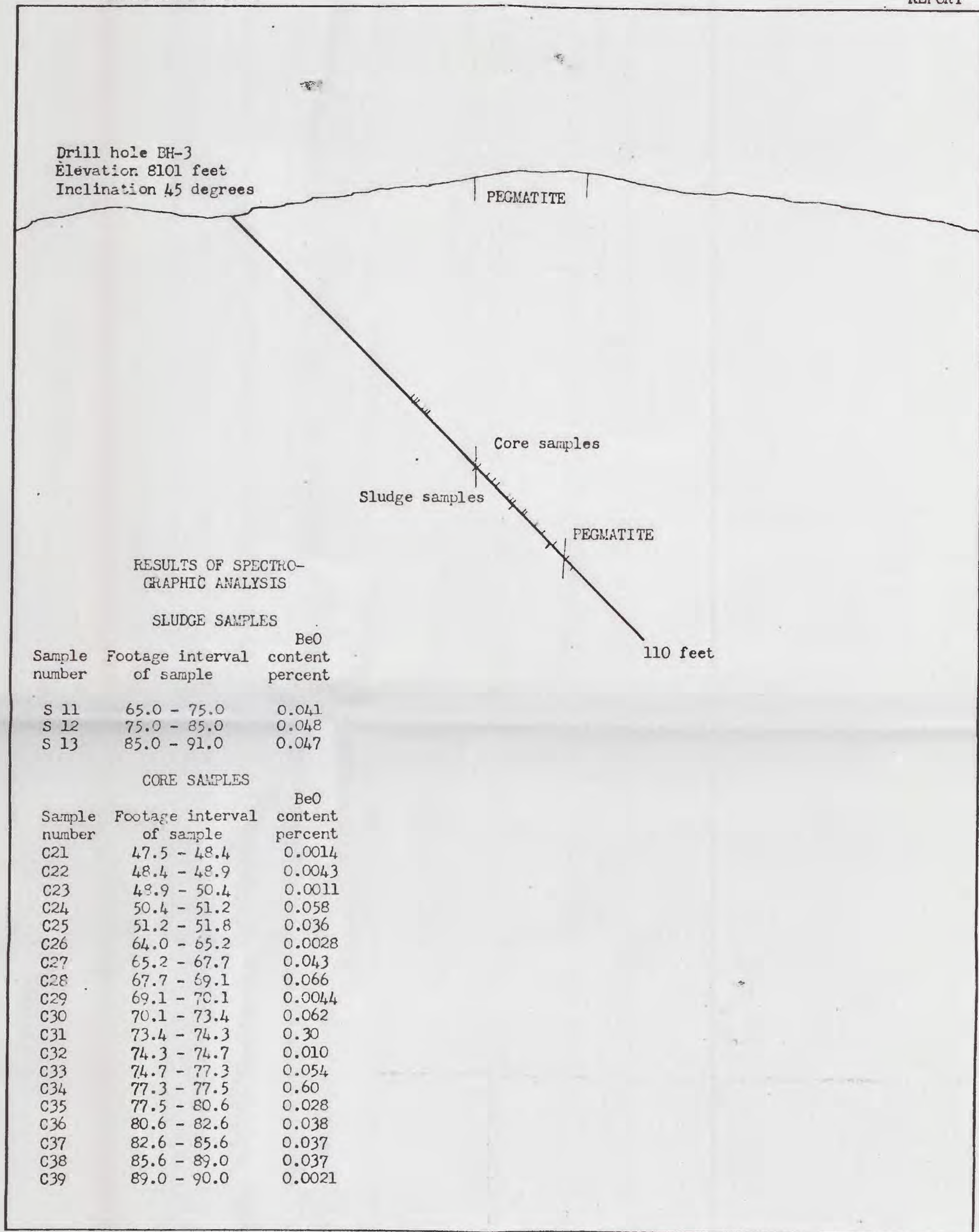
Plate 2 ASSAY PLAN OF DIAMOND DRILL HOLE BH-2, BUCKHORN MICA PEGMATITE MINE, LARIMER COUNTY, COLORADO

SCALE

0 20 40 60 feet

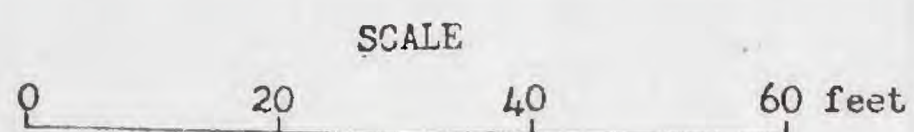
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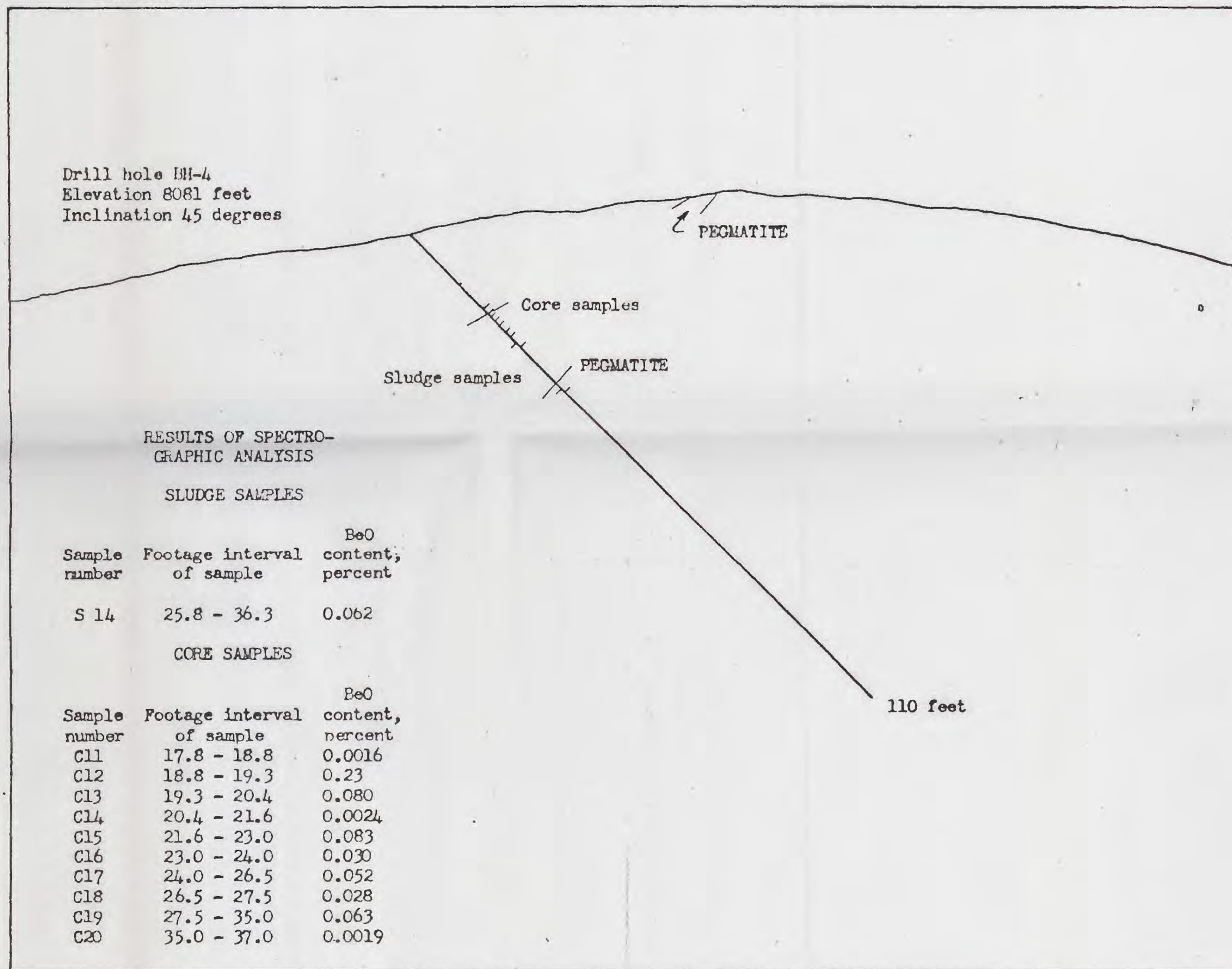
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Plate 3 ASSAY PLAN OF DIAMOND DRILL HOLE BH-3, BUCKHORN MICA PEGMATITE MINE, LARIMER COUNTY, COLORADO



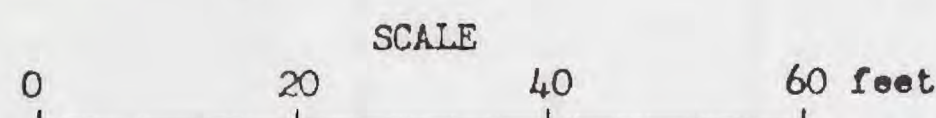
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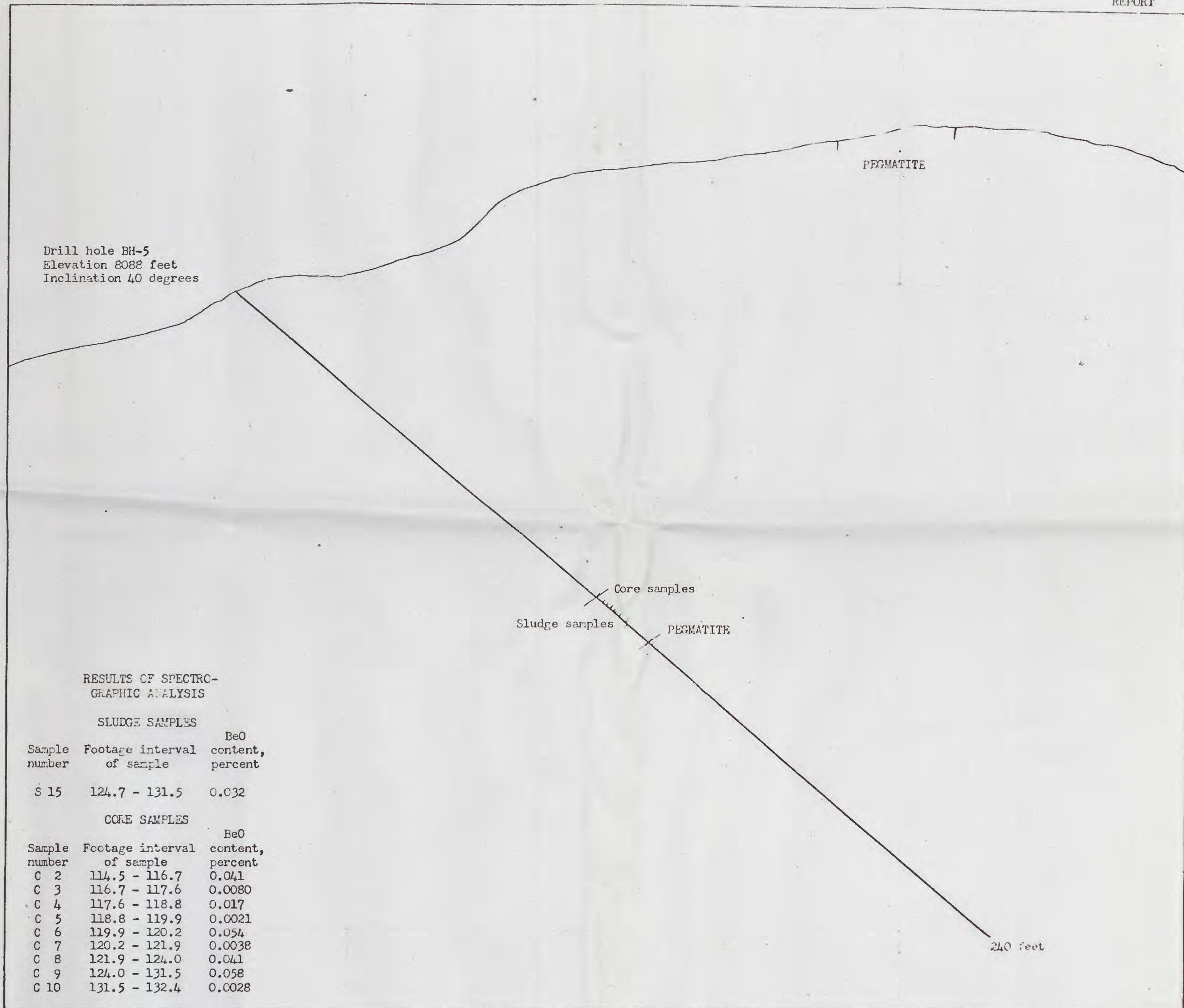
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Plate 4 ASSAY PLAN OF DIAMOND DRILL HOLE BH-4, BUCKHORN MICA PEGMATITE MINE, LARIMER COUNTY, COLORADO





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Plate 5 ASSAY PLAN OF DIAMOND DRILL HOLE BH-5, BUCKHORN MICA PEGMATITE MINE, LARIMER COUNTY, COLORADO

