

NAME OF PROPERTY

MONARCH and KICKING HORSE
(BLACK PRINCE and COUVERAPEE)

OBJECT LOCATED -Symbols on Map 82 N (MT).

UNCERTAINTY IN METERS
-200.

Monarch:	51°24'48"	Lat.	116°26'00"	Long.
Kicking Horse:	51°25'30"	Lat.	116°26'45"	Long.

Mining Division Golden

District Kootenay

In Yoho National Park

County

Township or Parish

Lots 551, 2813

Concession or Range

Sec

Tp.

R.

OWNER OR OPERATOR AND ADDRESS

DESCRIPTION OF DEPOSIT

The Monarch and Kicking Horse workings lie on the east limb of a gentle anticline, the axis of which strikes about north 25° west and pitches northward at a small angle. The deposits occur in Middle Cambrian dolomitic limestones of the Cathedral Formation, at or near the base of a prominent dolomitic alteration zone which is partly brecciated. This zone is 4,000 to 4,500 feet long and up to 400 feet thick. The rocks are fissured by a major, nearly vertical fissure which strikes south 10° east; there is a series of cross-fissures which strike nearly east and west.

The West Monarch ore body was 1,760 feet long, 158 feet wide and an average of 19 feet thick. About 300,000 tons was mined from it. The East Monarch ore body is parallel and similar in general character to the West Monarch. A number of bodies occur en echelon over an explored length of 23,000 feet. This zone

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Associated minerals or products of value - Lead, silver, cadmium.

HISTORY OF EXPLORATION AND DEVELOPMENT

These mines are situated along the Kicking Horse River, about two and a half miles east of Field. The Kicking Horse deposit is at 5,000 feet elevation on Mount Field on the north side of the river and the East and West Monarch deposits are at elevations of 5,120 and 5,320 feet, respectively, on Mount Stephan on the south side of the river. The property includes two Crown-granted claims, the Monarch (Lot 551), Crown-granted to George de Wolf in 1893 and the St. Etienne (Lot 2813), as well as the Kicking Horse and other claims aggregating some two square miles.

The Monarch deposit was discovered in 1884 during the construction of the Canadian Pacific Railway and was mined sporadically by various operators for a number of years. In 1888 it was purchased by the British Columbia Smelting Company, Limited, incorporated in September of that year. They did about 370 feet of underground work and shipped 600 tons of ore to a smelter in Vancouver. In 1890 about 1,500 tons were shipped to Revelstoke. The mine was closed the following year and not opened again until 1900 when 67 tons were shipped to Trail and San Francisco. The Canadian Concentrating and Smelting Company, Limited, incorporated in 1906, leased the property and shipped nine carloads of ore to Toronto and Trail. In 1909 the property was taken over by the Mount Stephan Mining Syndicate which later formed Mt. Stephan Mines, Limited, in 1912. They completed a new approach to the old workings which consisted of a 335-foot adit followed by a 475-foot raise, then a 210-foot adit followed by a 190-foot raise. A 500-foot gravity tramway was installed between the new entrance and the railway track and a mill was opened in May 1912. About 2,000 tons of ore were treated before operations were suspended in 1913 due to financial problems. In 1915 Great Western Mines Development Company, Limited (whose name was changed in 1916 to Mineral Recovery Company, Limited), took over the property but the mine was again closed in 1916 due to financial problems.

The Couverapee property, about 700 feet west of Monarch, was owned in 1916 by Mr. W.D. Adkins who shipped nearly 300 tons before the Couverapee Mining Co. Limited was formed in 1918. The company shipped another 776 tons of ore, concen-

see Card 2

Mineral Resources Branch, Department of Energy, Mines and Resources, Ottawa

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HISTORY OF PRODUCTION

Between 1888 and 1953, 813,277 tons of ore were mined from these deposits. From this 807,052 ounces of silver, 101,863,443 pounds of lead, 157,115,568 pounds of zinc and 58,450 pounds of cadmium were recovered.

MAP REFERENCES

- Map 142 A, Field, (Geol. and Topo.), Sc. 1":2 miles, accompanying Memoir 55.
- Fig. 7, Plan of underground workings of the Monarch Mine, p. 183 of Summery Report, 1911, Geol. Surv. of Canada.
- Plan of Monarch Mine, Sc. 1":200 feet, opposite p. 289 in 1929 Report to Minister of Mines.
- Fig. 2, Sketch of Mount Field, accompanying Goranson, 1937.
- Map 82 N (MI), Preliminary Mineral Inventory Map, Sc. 1:250,000, B.C. Dept. of Mines and Petroleum Resources.
- Map 82 N/8 W, Lake Louise, (Topo.), Sc. 1:50,000.

REMARKS

Comp./Rev. By		DMacR					
Date	11-73	11-78					

REFERENCES

- +++Hedley, M.S.; Monarch and Kicking Horse (Base Metals Mining Corporation, Limited); Reports of Minister of Mines, British Columbia, 1949, pp. 205-208.
- ++O'Grady, B.T.; Monarch and Kicking Horse; Reports of Minister of Mines, British Columbia, 1929, pp. 285-290.
- +Goranson, E.A.; Geology of the Monarch and Kicking Horse Ore Deposits, British Columbia; Economic Geology, Vol. 32, 1937, pp. 471-493.
- Reports of Minister of Mines, British Columbia: 1888, p. 311; 1890, pp. 370, 372; 1891, p. 570; 1893, p. 1082; 1896, p. 556; 1899, p. 594; 1900, p. 803; 1906, p. 134; 1907, p. 89; 1908, pp. 88, 246; 1909, pp. 97-98; 1910, pp. 92, 243; 1911, p. 126; 1912, pp. 139-140; 1913, pp. 115, 419; 1914, p. 235; 1915, pp. 80-82, 327, 444; 1916, pp. 188, 428, 516; 1917, pp. 144, 176, 447; 1918, pp. 152-153; 1919, p. 113; 1920, p. 108; 1921, p. 123; 1922, p. 182; 1924, p. 180; 1925, pp. 220-221; 1926, p. 237; 1927, p. 264; 1928, pp. 274-275; 1929, pp. 285-290; 1930, pp. 230-232; 1931, p. 138; 1933, pp. 199-200; 1934, pp. A-25, 29; 1935, pp. A-27, 30, E1, G-53; 1936, p. E-51; 1937, p. E-53; 1938, p. E-27; 1939, p. 97; 1940, pp. 25, 82-83; 1941, pp. A-25, 76-77; 1942, pp. 27, 74-75; 1943, pp. 75-76; 1944, pp. 40, 42, 74-75; 1945, pp. 43, 111; 1946, pp. 35, 173; 1947, p. 177; 1948, pp. 152-153; 1949, pp. 205-208; 1950, pp. 157-158; 1951, pp. 40, 191-192; 1952, pp. 43, 204-205; 1953, p. 45; 1954, pp. 151-152; 1957, p. 65; Index 3, p. 206.
- Mineral Policy Sector; Corporation Files: "Couverapee Mining Company, Limited"; "Base Metals Mining Corporation Limited".
- Mineral Policy Sector; Commodity Files: MC-167-21-2-5.
- Allan, J.A.; Geology of the Field Map-Area, B.C. and Alberta; Memoir 55, pp. 215-222, Geol. Surv. of Canada, 1914.
- Allan, J.A.; Ice River District, British Columbia; Summary Report, 1910, pp. 142-143, Geol. Surv. of Canada.
- Allan, J.A.; Geology of the Field Map-Area, Yoho Park, B.C.; Summary Report, 1911, pp. 182-184, Geol. Surv. of Canada.

see reverse Card 2

NAME OF PROPERTY

MONARCH and KICKING HORSE
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DESCRIPTION OF DEPOSIT (continued)

has produced more than 200,000 tons. The Kicking Horse ore bodies appear to line up with those of the Monarch. The No. 1 zone is 580 feet long, 40 feet wide and 15 feet thick; the No. 2 zone is 1,400 feet long and has an irregular outline.

Mineralization consists of galena, sphalerite and pyrite. The grade is variable in all the orebodies. Lead is more localized than zinc, and the end limits of the bodies tend to be more zincy than average. The Monarch mine has contained a higher percentage of lead than the Kicking Horse. The richest orebody was the West Monarch which averaged 1.7 ounces of silver per ton, 10.5% lead and 12.5% zinc. The No. 1 Kicking Horse averaged about 13% zinc and little lead. The silver content is variable and does not follow the lead assay, although it is associated with lead rather than with zinc.

HISTORY OF EXPLORATION AND DEVELOPMENT (continued)

trating it at the Monarch mill. The workings consisted of one large pillared stope with some crosscutting and drifting. In 1919 there was litigation regarding boundaries between the owners of the Couverapee and Monarch properties. A survey proved that the Couverapee was within the Monarch holdings and the two properties were amalgamated under the management of Mr. Adkins. The Couverapee and the original Monarch mine became known as the West and East Monarch, respectively. Sporadic shipments were made in the following years.

The Kicking Horse Mine was originally known as the Black Prince claim, prospected around 1910 by Mr. W.T. Oke who drove a 70-foot adit. In the autumn of 1925, Pacific Mines, Petroleum and Development Co. Limited acquired both the Monarch and Kicking Horse Mines. In 1926 a 700-foot incline raise was built to join the East and West Monarch workings. The company's activities on the property were suspended in 1927.

In 1928, Goldfield Consolidated Mines, Ltd., through the agency of Mr. F.R. Eichelberger of San Francisco, acquired the property. Substantial interests were also acquired by the Mining Corporation of Canada. An exploration programme was conducted which included about 1,300 feet of underground work on the Monarch and 1,000 feet on the Kicking Horse. In February 1929, Base Metals Mining Corporation Limited, representing joint interests, was formed to operate the mines, with Mr. Eichelberger as manager. Control of the company was held by Goldfield Consolidated Mines, Ltd. A 300-ton capacity concentrator was built with aerial tramways installed to connect it with the mines. This company operated the property until 1952. Approximately 80,000 tons of ore were mined although at no time did the reserve apparently amount to more than 20,000 tons. The exploration and development programme, amounting to almost 200,000 feet of underground work and about 50,000 feet of diamond drilling, disclosed further orebodies as the mining continued. The mill, which was brought into production in 1929 was closed the following year but reopened again in 1933, operating until the end of 1935 when reserves were largely depleted. Milling was resumed in December 1940 but was suspended during the first six months of 1944 when the Monarch power

REFERENCES (continued)

- Allan, J.A.; Rocky Mountain Section, Between Banff, Alberta and Golden, British Columbia, along the Canadian Pacific Railway; Summary Report, 1912, pp. 175-176, Geol. Surv. of Canada.
- Mines Branch, Ottawa; Investigations in Ore Dressing and Metallurgy, 1925, Rept. 670, pp. 56-58 (No. 232).
- Canadian Mines Handbook, 1953; Base Metals Mining Corporation Limited, p. 18.
- Ney, C.S.; Monarch and Kicking Horse Mines, Field, B.C.; Alberta Society of Petroleum Geologists Guidebook of Banff-Golden-Radium, 9th Field Conference, pp. 119-136, 1954.
- Brown, W.L.; Monarch and Kicking Horse Mines; Can. Int. Min. Met., Symposium on Structural Geology of Canadian Ore Deposits, pp. 231-237, 1948.
- Evans, T.L., Campbell, F.A., Krouse, T.R.; A Reconnaissance Study of Some Western Canadian Lead-Zinc Deposits; Economic Geology, Vol. 63, No. 4, 1968, pp. 349-358.

HISTORY OF EXPLORATION AND DEVELOPMENT (continued)

plant was destroyed by fire. Milling resumed in the summer of 1946 and, except for a strike in the summer of 1947, continued until the mine closed in 1952; the mill equipment was shipped to Cowichan Lake in 1957. Reserves on May 31, 1952 (quoted in the Canadian Mines Handbook, 1953), amounted to 31,360 tons at 0.21% lead and 8.2% zinc.

Reserves at time of closing were reported at 30,000 tons (indicated) averaging 7.4% zinc (Canadian Mines Handbook, 1954, p. 18).