

NAME OF PROPERTY

BLACK DIAMOND (REXSPAR)

OBJECT LOCATED - Black Diamond (BD) Zone (on Lot 5387).

UNCERTAINTY IN METRES 200. Lat. 51°33'35" Long. 119°54'40"

Mining Division Kamloops District Kamloops

County Township or Parish

Lot Concession or Range

Sec Tp. R.

OWNER OR OPERATOR AND ADDRESS

DESCRIPTION OF DEPOSIT

The rocks at and near the property are shown on Map 48-1963 as being Permian or Earlier metasediments.

"The ridge on which the deposits were found consists mostly of trachyte, underlain by sericite schist, quartz-sericite schist and argillaceous rocks. To the west of the workings sericite schist occurs above and below the trachytic member, and these in turn are overlain by andesite. All the rocks have been folded, the sedimentary rocks in particular have become schistose, and the more competent rocks are fractured and faulted. The radioactive zones appear to have been displaced by faults. The general strike of the schistosity near the main deposits is northeast, with dips about 30°NW. According to Joubin and James (1956) both primary and secondary structural controls have influenced the deposition of the ore minerals. They consider that depositional structures in the trachytic series exercised a primary control because 'only the darker-coloured tuff beds usually found in the upper section of the trachytic series have been selectively replaced to form ore. These tuff beds are irregular in detail and to some extent lenticular, probably associated minerals or products of value - Thorium, ~~columbium~~, rare earths, see Card 2

HISTORY OF EXPLORATION AND DEVELOPMENT

The property is located at approximately 4,000 feet elevation on Foghorn Creek 2½ miles south of Birch Island. Four radioactive zones have been outlined on the Black Diamond No. 1 and No. 2, Rex 12 and 20, and Jane 7 and 9 Fractions, Lots 5388, 5387, 5402, 5397, 5480, and 5481, respectively. The 'A' zone outcrops at about the 4,400 foot elevation near the crest of the ridge on the east side of Foghorn Creek. The 'B' zone, on Rex 20 claim, is located approximately 1,500 feet northwest of the 'A' zone; the 'BD' zone, on Black Diamond No. 2 claim, is located about 1,600 feet west of the 'A' zone; the 'F' zone, on Jane Fr., is located about 1,500 feet southwest of the 'BD' zone.

Much of this ground was held as part of the Smuggler property (82 M/12, PB 2) during the 1920's and prospected for lead-zinc showings. Subsequent activity was directed towards an adjacent fluorite deposit (82 M/12, FSP 1). Twenty-six located claims were held in 1949 by T.A.E. Sjoquist and Associates, of Kamloops. Samples of fluorite sent out for examination at this time revealed their radioactive content and the presence of uranium mineralization was confirmed in 1950.

Rexspar Uranium & Metals Mining Co. Limited was incorporated in May 1951 to acquire the property from prospector E.H. Kellner, and T.A.E. Sjoquist. Prospecting, trenching and bulk sampling were carried out during the year. Early in 1952 the company purchased the Black Diamond Nos. 1 and 2 claims from Robert Johnson and staked some 64 adjacent claims.

In November 1953 a contract was let to drive an adit to explore the 'BD' zone; about 1,000 feet of adit was completed, along with considerable diamond drilling. In December 1954 an adit at elevation 3,840 feet was begun on the east side of the ridge to explore the 'A' zone. Some 1,100 feet of crosscuts, drifts, and raises were driven and 10,486 feet of diamond drilling carried out. Additional diamond drilling in 1957 included 961 feet in 5 holes on the 'A' zone, 8,663 feet in 63 holes on the 'B' zone, 2,458 feet in 20 holes on the 'BD' zone, and 1,223 feet in 5 holes on the 'F' zone. An agreement for sale of uranium precipitates was negotiated. Preparatory work was see Card 2

HISTORY OF PRODUCTION

REFERENCES

Lang, A.H.; Griffith, J.W.; Steacy, H.R.; Canadian Deposits of Uranium and Thorium; Economic Geology Series No. 16 (Second Edition), pp. 205-207, Geol. Surv. of Canada, 1962. +

Reports of Minister of Mines, British Columbia: 1953, p. 101; 1954, pp. 108-110 ++; 1955, p. 38; 1957, p. 31.

Geology, Exploration and Mining; British Columbia Dept. of Mines: 1969, p. 229; 1973, p. 117; 1975, p. E 58; 1976, p. E 73.

Mineral Policy Sector; Corporation Files: "Consolidated Rexspar Minerals & Chemicals Limited"; "Denison Mines Limited".

Mines Branch, Ottawa; Investigations in Ore Dressing and Metallurgy; 1952, Rept. SR 125/52; 1954, Rept. SR 246/54; 1957, Rept. MD 3185.

Geological Fieldwork, British Columbia Dept. of Mines: 1977, p. 19.

Preto, V.A.; Setting and Genesis of Uranium Mineralization at Rexspar; CIM Bulletin, December 1978, pp. 82-88.

Exploration in British Columbia; BCDM: 1980, p. 144.

Geology in British Columbia; BCDM: 1977-1981, p. 44.

Uranium Deposits of Canada, CIM Special Volume 33, p. 305, 1986.

MAP REFERENCES

Map 48-1963, Adams Lake, (Geol.), Sc. 1":4 miles.

Generalized geology of the Rexspar property, Fig. 2, CIM Bull., Dec. 1978, p. 83.

Map 82 M/12 W, Vavenby, (Topo.), Sc. 1:50,000.

Geology of the Rexspar Area, Sc. 1.6 cm:1 km, Figure 18, accomp. Geology in British Columbia 1977-1981.

REMARKS

Comp./Rev. By	DMacR	DMacR	DMacR	DMacR			
Date	06-76	09-81	12-86	05-88			

NAME OF PROPERTY

BLACK DIAMOND (REXSPAR)

DESCRIPTION OF DEPOSIT (continued)

owing to depositional conditions. Other minor irregularities may be caused by contemporary sills or flows interrupting or lifting the unconsolidated tuffs'. Secondary structural control in the form of 'shearing parallel to the bedding appears to have exerted some control on mineral deposition, as evidenced by: presence of brecciated fluorite cemented by later fluorite, presence of mineralization only where the characteristic mica has been deformed and recrystallized, marked elongation of pyroclastic fragments parallel to the mineralized layers, layered distribution of pyrite and brecciation of the outer edges of barren trachyte in the tuff layers. The evidence suggests that shearing in the trachytic rocks was concentrated in the weaker tuff beds and that this movement combined with favourable chemical conditions to localize the ore'.

The precise classification of the radioactive deposits on this property is indefinite. They appear to be of high-temperature replacement or metasomatic origin.

Joubin and James reported (1956) that radioactivity had been found only in the trachytic member, which is composed of a layered complex of light coloured porphyritic feldspathic tuffs, breccias and flows. These rocks show various degrees of sericitization, albitization and carbonatization. The principal radioactive zones are dark layers in the trachytic member. The principal radioactive minerals uraninite and uranothorite are finely disseminated in parts of the trachytic member in which biotite, sericite, pyrite and fluorite are abundant. Other radioactive minerals that have been reported are uranothorianite, pitchblende, bastnaesite, torbernite and metatorbernite.

The 'A' zone is a flat-dipping lens that outcrops near the crest of a high ridge between Foghorn and Holt Creeks. It averages 20 feet in thickness and has been traced along strike for about 600 feet. It appears to pinch out at a slope depth of about 300 feet. Mineralogical work done on a bulk sample at the Mines Branch showed that the principal radioactive mineral in this zone is uraninite, closely associated with rutile.

The BD or Black Diamond zone Surface diamond drilling and about 1,000 feet of adit tunnel outlined a flat-dipping lens with a strike length of about 450 feet, dip-slope length of about 300 feet, and an average thickness of 50 feet. In this zone the radioactivity appears to be mainly associated with
see reverse Card 2

HISTORY OF EXPLORATION AND DEVELOPMENT (continued)

done during 1956-57 for construction of a treatment plant and for open pit and underground mining. Difficulties in arranging additional financing prevented further activity.

The company name was changed in 1959 to Rexspar Minerals & Chemicals Limited and in June 1967 to Consolidated Rexspar Minerals & Chemicals Limited. Late in 1968 an agreement was reached whereby Denison Mines Limited could earn an interest by providing funds for further development of the property. Exploration work by Denison in 1969 included 145 line-miles of scintillometer survey and 18 line-miles of radon survey. A further 63.2 line-miles of scintillometer survey was carried out in 1970 over the Active claim group. Kerr Addison Mines Limited under a joint venture agreement with Denison Mines in 1973 carried out diamond drilling in various areas of the property.

Denison Mines as of December 31, 1974, held a 48.9% interest in Consolidated Rexspar. Work to that date indicated reserves of 1,561,000 tons averaging 1.76 lbs. U₃O₈ per ton. (Ref. Financial Post Card - Supplement - Jan. 1975). Work during 1975-76 included 470.6 metres of surface diamond drilling in 15 holes on the mineralized zones. Combined reserves for the A, B, and BD zones were estimated at 1,114,158 tonnes grading 0.773 kilograms U₃O₈ per tonne (Preto, V.A. in CIM Bulletin, Dec. 1978, p. 82). In February 1980 the Provincial Government placed a seven year moratorium on uranium exploration and mining.

A geochemical water quality survey was carried out in 1979-80. The seven year moratorium ended in February 1987.

Consolidated Rexspar in September 1987 sold the property to Gold Ventures Limited.

DESCRIPTION OF DEPOSIT (continued)

uraniothorite, associated with rutile." (Lang, Griffith, Steacy, 1962).

A chip sample taken along 110 feet of adit wall in the Black Diamond workings assayed: Uranium oxide, 0.12%; thorium oxide, 0.10%; niobium, 0.03%; yttrium, lanthanum, trace.