



MINFILE Detail Report
BC Geological Survey
Ministry of Energy, Mines and Petroleum Resources

Location/Identification

MINFILE Number: 104P 024 **National Mineral Inventory Number:** 104P7 Be1

Name(s): CASSIAR BERYL
HORSERANCH RANGE, MRX

Status: Prospect **Mining Division:** Liard

Regions: British Columbia **Electoral District:** Stikine

BCGS Map: 104P036 **Resource District:** Skeena Stikine Natural Resource District

NTS Map: 104P07W **UTM Zone:** 09 (NAD 83)

Latitude: 59 20 59 N **Northing:** 6579004

Longitude: 128 51 26 W **Easting:** 508120

Elevation: 1480 metres

Location Accuracy: Within 1KM

Comments: Located 9 kilometres east of Rapid River in the Horseranch Range, 85 kilometres south of Watson Lake, Yukon Territory, and 116 kilometres northeast of the community of Dease Lake (Assessment Report 28030).

Mineral Occurrence

Commodities: Beryl, Gemstones

Minerals

Significant:	Beryl
Associated:	Quartz, Feldspar, Muscovite, Tourmaline, Garnet
Mineralization Age:	Unknown

Deposit

Character:	Vein, Disseminated
Classification:	Pegmatite
Type:	O: PEGMATITE

Host Rock

Dominant Host Rock: Plutonic

Stratigraphic Age	Group	Formation	Igneous/Metamorphic/Other
Upper Proterozoic	Ingenika	-----	-----
Lower Cambrian	Atan	-----	-----
Paleozoic	Sandpile	-----	-----
Cambrian-Ordovician	Kechika	-----	-----
Eocene	-----	-----	Ultramafic Intrusions

Isotopic Age	Dating Method	Material Dated
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Lithology: Pegmatite, Quartzite, Mica Schist, Pegmatite Dike, Ultramafic, Granite Dike

Geological Setting

Tectonic Belt: Omineca **Physiographic Area:** Liard Lowland

Terrane: Cassiar

Metamorphic Type: Regional

Inventory

No inventory data

Capsule Geology

The Cassiar Beryl occurrence is located 9 kilometres east of Rapid River in the Horseranch Range, 85 kilometres South of Watson Lake, Yukon, and 116 kilometres northeast of the community of Dease Lake.

The Cassiar Beryl occurrence is underlain by rocks of the Upper Proterozoic Ingenika Group, Lower Cambrian Atan Group and Ordovician to Lower Devonian Sandpile Group. The Ingenika Group consists mostly of medium- to high-grade metamorphic-grade (garnet to sillimanite-orthoclase grade) schists, quartzites, marble and minor orthogneiss. The overlying Atan Group consists mainly of quartzite. The Cambrian to Ordovician Kechika Group is composed mainly of chloritic phyllite and schists and the Sandpile Group of dolostones and dolomitic limestones. The igneous rocks in the Horseranch Range consist of mid-Cretaceous and Eocene granitic dikes, pegmatite, ultramafic and mafic rocks. Granitic dikes occur in the Ingenika Group. Ultramafic and mafic rocks are exposed as undeformed bodies in the Ingenika and Kechika groups and as mylonitized to undeformed bodies in the mylonite zones. A mylonite zone, trending roughly 325 degrees, is interpreted to be a Riedel shear or splay of the Cretaceous dextral-slip Kechika fault.

Pegmatite dikes, commonly parallel to foliation, intrude quartzites and mica schists in a zone 750 metres wide and 5 kilometres long. The pegmatites are composed of feldspar, quartz, muscovite, lesser amounts of tourmaline and garnet, and minor pale green beryl. Pegmatites are rarely zoned, with muscovite-tourmaline-rich margins and quartz-rich cores. Beryl occurs as hexagonal prisms 0.5 to 1.0 centimetres across and 1 to 2 centimetres long. Overall average beryllium content of the pegmatite was visually estimated to be less than 0.1 per cent (Minister of Mines Annual Report 1955, pages 9, 10).

In the showing area, the field relationships between felsic dikes and ultramafic rocks relative to mylonitization are important criteria for beryl exploration. The ultramafics form sharp contacts with the surrounding rocks, and it is not clear whether the porphyritic, biotite-bearing ultramafic complex is a sliver of a single body or part of a larger underlying mass.

Most of the beryls at the showing are found in coarse-grained blocks of granite dike and pegmatite in talus slopes of the Camp Creek valley that were probably derived from local dikes. Beryl is observed in zoned pegmatites as well as in fine- to medium-grained homogenous granitic dikes. Beryls have not been observed in foliated dikes. Beryl crystals are pale blue to pale watery green in colour, translucent and vitreous lustre. Rare crystals of beryl are colourless and transparent. Individual beryl crystals vary in size from 0.1 to 5.0 centimetres in length (along the C axis of the hexagonal crystal) and from 0.1 to 3.0 centimetres in width (along the a1, a2 and a3 axes of the hexagonal crystal). In some locations, approximately 5 per cent of the granite/pegmatite is composed of beryl crystals (Assessment Report 28030).

In the 1990s, the Cassiar Beryl property was worked by Esmeralda Exploration International Inc. Work carried out by B. Wilson led to the cutting of several pale-blue beryl gems, the largest stone having a weight of 0.94 carat.

In 1997, Esmeralda Exploration Intl. conducted a sediment sampling program at Horseranch Range to explore the potential for emeralds and platinum group element mineralization. A total of 39 samples weighing approximately 4 kilograms each were collected. Chromium values ranged from a low of 45 parts per million (sample 97SH-106) to a high of 167 parts per million (sample 97SH-012), within the statistical norm for chromium concentrations in generalized igneous rocks (Assessment Report 25525a). No emerald or platinum group element targets are presently inferred at Horseranch Range.

In 2005, A. Kikauka conducted geological mapping and rock specimen sampling at Cassiar Beryl. A total of 10 rock specimens weighing between 1 and 2.5 kilograms were collected from subcrop and large talus boulders. Beryl was observed in two of the samples, via hand lens and confirmed in thin section.

Bibliography

- EMPR AR *1955-9,10
- EMPR ASS RPT 25453, 25525, *28030
- EMPR FIELDWORK 1987, pp. 254-260; 1988, pp. 347-351
- EMPR OF 1996-11
- EMPR PF (McDougall, J.J. (1954): Exploration and Prospecting Possibilities, Yukon and Northern British Columbia; Einar Hagen, Field Notes and Letters, 1954)
- EMPR PFD 20273, 20274, 884079
- GSC EC GEOL *23, p. 57
- GSC MAP *1110A
- GSC MEM *319, p. 17

GSC OF 2779
GSC P *60-21, pp. 7-9

Date Coded:	1985/07/24	Coded By:	BC Geological Survey (BCGS)	Field Check:	N
Date Revised:	2023/05/12	Revised By:	Nicole Barlow (NB)	Field Check:	N