Location/Identification

MINFILE Number: 082M 173

Name(s): **TRIDENT MOUNTAIN**
VOID, LEGS, ADAMANT, SWORDFISH

Status: Developed Prospect

Regions: British Columbia

BCGS Map: 082M100

NTS Map: 082M16E

Latitude: 51 54 20 N

Longitude: 118 09 04 W

Elevation: 1980 metres

Location Accuracy: Within 1KM

Mining Division: Golden, Revelstoke

Electoral District: Columbia River-Revelstoke

Resource District: Selkirk Natural Resource District

UTM Zone: 11 (NAD 83)

Northing: 5751160

Easting: 420811

Comments: Main stock (Geological Survey of Canada Map 12-1964 and Paper 64-32, p. 14).

Mineral Occurrence

Commodities: Nepheline Syenite, Feldspar, Rare Earths, Niobium, Molybdenum

Minerals
Significant: Nepheline, Microcline, Albite, Molybdenite
Associated: Biotite, Ilmenite, Sodalite, Cancrinite, Calcite, Apatite, Sphene, Pyrochlore, Tourmaline, Allanite,
Mineralization Age: Unknown

Deposit
Character: Massive, Concordant
Classification: Magmatic, Industrial Min., Pegmatite
Type: R13: Nepheline syenite, O02: Rare element pegmatite - NYF family
Dimension: 3000x700x0 metres

Host Rock

Dominant Host Rock: Plutonic

Stratigraphic Age	Group	Formation	Igneous/Metamorphic/Other
Hadrynian	Horsethief Creek	Undefined Formation	------
Devonian-Mississipp.	------	------	Unnamed/Unknown Informal

Isotopic Age	Dating Method	Material Dated
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380 Ma	Uranium/Lead	Zircon

Lithology: Nepheline Syenite, Gneiss, Pelitic Schist, Psammitic Schist, Biotite Muscovite Gneiss, Granitic Gneiss, Pegmatitic Syenite
Sill

Comments: Dating age from Open File 1987-17.

Geological Setting

Tectonic Belt: Omineca

Physiographic Area: Selkirk Mountains

Terrane: Ancestral North America

Metamorphic Type: Regional

Inventory

Ore Zone: SOUTHWEST

Year: 2022

Category: Assay/analysis

Report On: N

NI 43-101: N

Sample Type: Grab

Commodity	Grade
Rare Earths	1.301 per cent

Comments: A grab sample (KMADR006) from the Void zone

Reference: Assessment Report 40800

Ore Zone: SOUTHWEST
Year: 2011
Category: Assay/analysis
Report On: N
NI 43-101: N

Sample Type: Rock

Commodity	Grade
Molybdenum	0.02 per cent
Niobium	0.036 per cent
Rare Earths	0.683 per cent

Comments: Twenty-one rock samples were collected from the Void, Legs and Swordfish target areas, located on the upper western slopes of Trident Mountain and approximately 800 to 1600 metres southwest of the plotted location of the Trident Mountain mineral occurrence, yielded an average of 0.683 per cent total rare earth elements, 0.036 per cent niobium and 0.02 per cent molybdenum with maximum values of 5.066 per cent total rare earth elements, 0.172 per cent niobium and greater than 0.2 per cent molybdenum.

Reference: Assessment Report 32655

Ore Zone: SAMPLE
Year: 2010
Category: Assay/analysis
Report On: N
NI 43-101: N

Sample Type: Grab

Commodity	Grade
Niobium	1.971 per cent
Rare Earths	0.099 per cent

Comments: sample (10-TR-38-3) taken from an approximately 100 to 200 metres thick syenitic succession in the occurrence area

Reference: Assessment Report 31861

Ore Zone: TRIDENT MOUNTAIN
Year: 1989
Category: Inferred
Report On: Y
Quantity: 330,750,000 tonnes
NI 43-101: N

Commodity	Grade
Nepheline Syenite	100.0000 per cent

Comments: Reserves estimated to a depth of 75 metres.

Reference: F. Reyes, personal communication, 1991.

Capsule Geology

The Trident Mountain occurrence is located on the northwest slopes of Trident Mountain, approximately 85 kilometres northeast of Revelstoke.

Regionally, the area is underlain by fine clastic sedimentary rocks (mudstone, siltstone, shale) and metamorphic rocks of the Neoproterozoic

Horsethief Creek Group.

The area surrounding Trident Peak consists of a light-coloured banded nepheline syenite body. The syenites were emplaced circa 380 Ma (uranium-lead isotope date from zircons, Open File 1991-10) and intrude psammitic and kyanite-bearing pelitic schists of the Hadrynian Horsethief Creek Group. Nepheline syenite gneiss occurs as a concordant lenticular mass at Trident Mountain.

The nepheline syenite-gneiss occurs in the core of an undulating, recumbent nappe forming a lenticular body, diminishing in thickness to the northwest and southeast. The syenite gneisses are concordant with the hostrocks. The rock is white to grey, medium (1 to 5 millimetres) to coarse (greater than 5 millimetres) grained and consists of microcline, albite and nepheline with minor biotite, ilmenite, sodalite, cancrinite, calcite, apatite, sphene, pyrochlore and zircon (Open File 1987-17). The composition of three samples collected is:

Major oxides	Weight (per cent)
SiO2	55.59 to 63.70
Al2O3	20.73 to 24.69
Fe2O3	0.17 to 0.59
CaO	0.56 to 1.20
Na2O	8.16 to 8.39
K2O	3.12 to 8.22

A 20-kilogram sample, sent to CANMET, was crushed and passed through a magnetic separator with the following results:

Mesh	Magnetic concentrate (Weight in per cent)	Nonmagnetic concentrate (Weight in per cent)
-10 + 35	4.1	67.7
-35 + 100	1.3	19.8
-100	0.5	6.6

Analyses of the nonmagnetic concentrate are:

Major oxides	-10 + 35 mesh (Weight in per cent)	-35 + 100 mesh (Weight in per cent)	-100 mesh (Weight in per cent)
SiO2	56.6	58.0	62.0
Al2O3	16.8	17.3	18.5
Fe2O3	0.07	0.03	0.10
CaO	0.75	0.76	0.95
Na2O	6.11	5.79	5.63
K2O	7.59	8.05	8.31

Processing results indicate that the nepheline syenite is low in magnetic impurities, has a high recovery rate of nonmagnetic materials and has, therefore, a very good potential to produce commercial grade nepheline syenite. Processing indicates that a product brightness of 85 per cent can be obtained.

Samples tested are comparable to nepheline syenite currently imported into western Canada from Ontario. Geological mapping by Pell (Open File 1987-17) has documented large lenticular bodies of nepheline syenite over a distance of 7 kilometres at Trident Mountain. This large body has excellent potential to contain nepheline syenite similar to the samples tested. The samples tested were from float located approximately 2 kilometres north of Trident Mountain peak. Preliminary processing data indicates that a product of 85 per cent brightness can be obtained (McVey. H, 1988, Mineral Development Agreement, Report 4).

At the mouth of Trident Creek, which drains the area, placer uranium, thorium and niobium has been recorded (see MINFILE 082M 077).

In 2010, a float pyroxenite boulder, taken from the west side of Bigmouth Creek at approximately 1100 metres elevation, yielded 2.388 per cent total rare earth elements and 0.011 per cent niobium, whereas a sample (10-TR-38-3) taken from an approximately 100- to 200-metre thick syenitic succession in the occurrence area assayed 0.099 per cent total rare earth elements and 1.971 per cent niobium (Assessment Report 31861). Also at this time, a float carbonatite boulder sample (JBTDR011), from the occurrence area, yielded 0.260 per cent total rare earth elements and 0.008 per cent niobium (Assessment Report 31861).

In 2011, twenty-one rock samples were collected from the Void, Legs and Swordfish target areas, located on the upper western slopes of Trident Mountain, approximately 800 to 1600 metres southwest of the plotted location of the Trident Mountain mineral occurrence. These target areas comprise an area of predominantly dip-slope parallel syenite sheets, in contact with biotite-muscovite gneiss and/or granitic gneiss. The area includes a continuous exposure, greater than 150 metres long, of a 5- to 15-metre thick pegmatitic syenite sill containing significant accessory tourmaline and allanite, with lesser monazite and zircon. The 21 samples yielded an average of 0.683 per cent total rare earth elements, 0.036 per cent niobium and 0.02 per cent molybdenum with maximum values of 5.066 per cent total rare earth elements, 0.172 per cent niobium and greater than 0.2 per cent molybdenum (Assessment Report 32655).

In 2022, a grab sample (KMADR006) from the Void zone yielded 1.301 per cent total rare earth elements (Assessment Report 40800).

Work History

The nepheline syenite occurrence is believed to have first been identified by F.T. Russell in 1956. In 1987, the area was sampled by the BC Geological Survey.

In 2006, a program of air photo structural analysis interpretation was completed on the area as the Trident Claim. The following year, Future Metals Inc. conducted a program of prospecting and soil sampling on the area immediately west of the occurrence as the Esc claim. In 2010, Cazador Resources Ltd. completed a program of prospecting and geochemical (rock and silt) sampling on the Trident property. The following year, Cazador Resources Ltd. conducted a further program of geological mapping, geochemical (rock and silt) sampling and a 1939.9 line-kilometre airborne magnetic and scintillometer survey on the Kin-Trident property.

In 2022 and 2024, Eagle Plains Resources Ltd. conducted programs of geological mapping and geochemical (rock and silt) sampling on the area as part of the Adamant property

Bibliography

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Date Coded:	1985/07/24	**Coded By:**	BC Geological Survey (BCGS)	**Field Check:**	N
Date Revised:	2026/02/10	**Revised By:**	Karl A. Flower (KAF)	**Field Check:**	N