Ministry of Energy, Mines and Petroleum Resources
GEOLOGICAL SURVEY BRANCH

001040

MINFILE

NEW ☐ REVISION ☐ MODIFIED ☒

IDENTIFICATION

MINFILE NO. 082ESE091 NAT'L MINERAL INV. NO. 082E1 Ni1

CANMINDEX NO.

NAME(S)
1. Mastadon (L.2384S) (2)
2. Castle Mountain Nickel (1)
3. Mammoth (L.2385S)
4. Dominion (L.2386S)
5. Pan (L.2387S)
6. Canyon (L.2390S)
7. Mastodon

STATUS: ☐ SHOWing ☐ PROSpect ☒ DEveloped PRospect ☐ O ☐ U PRODucer ☐ O ☐ U PAst PRoducer

LOCATION:

NTS MAP: 082E01E

BC MAP:

MINING DIVISION: GRWD Greenwood

UTM ZONE: 11 NORTHING: 5428925 EASTING: 414175

LATITUDE: ° ' " LONGITUDE: ° ' "

ELEVATION: 0960 (metres)

LOCATION CERTAINTY: ☒ within 500 m ☐ 2 within 1 km ☐ 3 within 5 km

Comment on Identity: Adit and open cuts, 4.75 kilometres south-southeast from the southern tip of Christina Lake, on the southwestern slope of Castle Mountain.

EMPR PF (Maps, plans, sections)

MINERAL OCCURRENCE

COMMODITIES: NI ~~AG~~ FE CR ~~AU~~ ~~CU~~ ~~PB~~ ~~ZN~~ ~~AG~~ CU MG PT

MINERALOGY:

SIGNIFICANT Minerals: MGNT PYRT PNLD PYTT MLRT CRMT HZLD CLCP BRUC

Comment: (3) (1) (2) (4)

ASSOCIATED Minerals: SRPN MGNT PYRT PYTT

Comment: Mineralization is disseminated throughout host rock.

ALTERATION Minerals: (1) SRPN (5) QRTZ (3) CARB (2) TALC (4) CLRT

Comment:

ALTERATION Type: SERP QZCA CLOR

DEPOSIT CHARACTER

01	Vein	08	Stratabound
02	Stockwork	09	Stratiform
03	Breccia	10	Concordant
04	Pipe	11	Discordant
05	Unconsolidated	12	Massive
(2) ☒	Podiform	(1) ☒	Disseminated
07	Layered	**	Unknown

DEPOSIT CLASSIFICATION

01	Replacement	11	Skarn
02	Magmatic	12	Pegmatite
03	Volcanogenic	13	Placer
04	Sedimentary	14	Precipitate
05	Syngenetic	15	Exhalative
06	Epigenetic	16	Diatreme
(2) ☒	Hydrothermal	17	Epithermal
08	Residual	18	Mesothermal
(1) ☒	Porphyry	19	Fossil Fuel
10	Igneous-contact	**	Unknown

AGE OF MINERALIZATION: ~~PRE~~ ISOTOPIC AGE:

MATERIAL DATED: DATING METHOD:

SHAPE OF DEPOSIT: 1 Regular 2 Tabular 3 Cylindrical 4 Bladed 5 Irregular

SHAPE MODIFIER: 1 Folded 2 Faulted 3 Fractured 4 Sheared 5 Other

DEPOSIT DIMENSION: X X (metres)

ATTITUDE: STRIKE/DIP TREND/PLUNGE

Comment:

DATE CODED: Y M D CODED BY FIELD CHECKED ☐ YES ☐ NO

Y 89 M 05 D 18 REVISED BY GO ☐ YES ☒ NO

MINFILE NO. 082ESE091

HB-936

HOST ROCK

DOMINANT HOST ROCK: [1] Sedimentary [3] Volcanic [5] Metaplutonic [7] Metamorphic [X] Plutonic [4] Metasedimentary [6] Metavolcanic

FORMAL HOST:

1. Group: 343 Rossland Group — Formation: *** undefined
   Strat-Age: 231 Upper Triassic — Isotopic Age:
   Dating Method: — Material Dated:
2. Group: 365 Anarchist Group — Formation: *** ~~Unnamed/unknown~~ undefined
   Strat-Age: 329 Pennsylvanian-Mississippian — Isotopic Age:
   Dating Method: — Material Dated:

INFORMAL HOST:

1. Igneous/Metamorphic/Other: — Name: 283 Nelson Plutonic Rocks
   Strat-Age: 224 Middle Jurassic — Isotopic Age:
   Dating Method: — Material Dated:
2. Igneous/Metamorphic/Other: — Name: 390 Unnamed/unknown
   Strat-Age: *** — Isotopic Age:
   Dating Method: — Material Dated:

Comment on Host Rock: Ultramafic complex is emplaced in Rossland Group volcanic and metasedimentary rocks.

ROCK TYPE/LITHOLOGY:

MODIFIER CODE(S)			ROCK CODE	ROCK NAME
			DUNT	dunite
			GBBR	gabbro
QRTZ	FLDP	PRPR	DYKE	quartz-feldspar porphyry dyke
	QRTZ	PRPR	DYKE	quartz porphyry dyke
	DORT	PRPR	DYKE	diorite porphyry dyke
		LMPP	DYKE	lamprophyre dyke
		GRNS	BRCC	greenstone breccia
		GRNS	TUFF	greenstone tuff
		GRNS	FLOW	greenstone flow
	META	SDMN	ROCK	metasedimentary rock

GEOLOGICAL SETTING

TECTONIC BELT: [IN] INsular [CC] Coast Crystalline [IM] InterMontane [X OM] OMineca [EA] EAstern

TERRANE: 1. QN Quesnellia — 2.

PHYSIOGRAPHIC AREA: OKHL Okanagan Highland

METAMORPHISM:

TYPE: [1] Contact [X] Regional

RELATIONSHIP: [X] Pre-Mineralization [2] Syn-Mineralization [3] Post-Mineralization

GRADE:

[ZL] Zeolite	[BS] Blueschist	[MV] Med. Vol. Bituminous
[X GS] Greenschist	[EC] Eclogite	[HV] Hi Vol. Bituminous
[AM] Amphibolite	[AN] Anthracite	[SB] Sub Bituminous
[HF] Hornfels	[SA] Semi-Anthracite	[LI] Lignite
[GL] Granulite	[LV] Low Vol. Bituminous	

Geological Setting Comment: Metamorphosed Rossland Group rocks ~~host~~ host the ultramafic intrusions.

CAPSULE GEOLOGY

Regionally the area is predominantly underlain by Upper Triassic to Lower Jurassic Rossland Group massive greenstone, andesite, latite, agglomerate and volcanic breccia consisting of greenstone fragments and locally limestone clasts. Minor greywacke and minor interbedded limestone with included lenses of silicified equivalents also occur.

A wedge-shaped, Alaskan-type zoned ultramafic complex correlative to the Carboniferous or older Anarchist Group has been tectonically emplaced in Upper Triassic to Lower Jurassic chlorite and carbonate altered Rossland Group greenstone breccias, tuffs, flows and metasedimentary rocks. The Rossland Group rocks surround the ultramafic body to the west, north and northeast while foliated granites of the Middle Jurassic Nelson Plutonic Rocks outcrop to the east and southeast. The contacts with these surrounding rocks are commonly quartz-talc-carbonate altered.

The faulted and sheared ultramafic body is 1828 metres long (north-south), 1066 metres wide (east-west) and dips 38 degrees east. It is composed of variably oxidized alternating layers of serpentinized dunite and gabbro or their equivalents. The dunite and gabbro layers are intercalated with porphyritic dykes or sill-like bodies which constitute up to 30 per cent of the ultramafic rock mass. Predominant quartz-feldspar porphyry sills occur regularly throughout the ultramafic body. Crosscutting quartz porphyry dykes, diorite porphyry dykes and lamprophyre dykes are also common.

Nickeliferous magnetite and nickel sulphide minerals consisting of pentlandite, millerite and heazlewoodite are more or less uniformly distributed and disseminated throughout the ultramafic body. Nickel-bearing serpentine and nickeliferous pyrite are also common. Pentlandite is intergrown with pyrrhotite. Some chalcopyrite and brucite have also been identified. Dykes carry up to 0.19 per cent nickel as millerite, nickeliferous magnetite or heazlewoodite. Chromite generally occurs as discontinuous, small lenticular masses localized along northeast and southeast trending faults or shear zones and as irregular areas of segregated grains. An adit and underground workings explored chromite lenses which occur in the hanging wall of a strong fault which strikes northeast and dips 50 degrees southeast. In 1918 about 725 tonnes of chromite ore was shipped from these workings.

The ultramafic body becomes gabbroic at depth with dykes becoming thinner and less frequent and dunite/gabbro layering thicker. Chromite and magnetite content decreases but nickel sulphides (millerite, pentlandite) increase.

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WORK HISTORY

YEAR FROM	YEAR TO	WORK TYPE	AMOUNT (m/km/ha/No.)	COMMENT (Owner/Operator/Results)
1969	1979	DIAD		see extensive work history in EMPR GEM; EXPL

RESERVES

ORE ZONE NAME: Castle Mountain Nickel YEAR: 1972

CATEGORY: [MR] Measured Recoverable [IN] Indicated Ore [UN] Unclassified
[MG] Measured Geological [X] Inferred Ore [BA] Best Assay

SAMPLE TYPE: [CHIP] Chip [GRAB] Grab [CHNL] Channel [BULK] Bulk [DIAD] Drill Core [ROCK] Rock

CALCULATION A: QUANTITY: 354,670,000 (tonnes)

Commodity	Grade	Commodity	Grade	Commodity	Grade
Ni	0.24				

(Precious metals in grams, others in per cent)

Comment:
Reference: Property File (Steiner, R., (1972): A Summary Report on the Castle Mountain Nickel Deposit)

CALCULATION B: QUANTITY: (tonnes)

Commodity	Grade	Commodity	Grade	Commodity	Grade

(Precious metals in grams, others in per cent)

Comment:
Reference:

PRODUCTION

YEAR: ORE MINED: (tonnes) ORE MILLED: (tonnes)

Commodity	Quantity	Commodity	Quantity	Commodity	Quantity

(Precious metal quantities in grams others in kilograms)

Comment:
Reference:

BIBLIOGRAPHY

EMPR AR *1917-F199,F200; *1918-K25,K204,K205; 1919-N370; 1920-N24; 1922-N170; 1928-C236; 1931-A121,A122; 1967-234; 1968-236
EMPR GEM 1969-311,312; 1970-433; 1971-373; 1972-34; 1973-35
EMPR EXPL 1977-E12; 1978-E13; 1979-13; 1987-C14
GSC MAP 828; 6-1957; 10-1967
GSC OF 1969
GSC EC GEOL 13, p.106
GSC MEM 38, Part III, Map 82A
EMR MP CORPFILE (Northern Syndicate Ltd., Chromex Nickel Mines Ltd.)
EMR MP COMM FILE CR-301.00
CANMET IR 69-75; 70-38
EMPR ASS RPT 860, *6457, 6665, 7067, 15627
EMPR PF (*Steiner, R., (1972): A Summary Report on the Castle Mountain Nickel Deposit; *Grove, E.W., Johnson, W.M., (1975): Report on Chromex Nickel Mines Ltd. Proposal; *Miscellaneous maps, plans, sections; Peatfield, G.R., (1978): excerpt from Ph.D. Thesis, Geologic History and Metallogeny of the "Boundary District"; 082ESE General File, Steiner, R., (1977): Geological Report on Holdings of Chromex Nickel Mines)

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