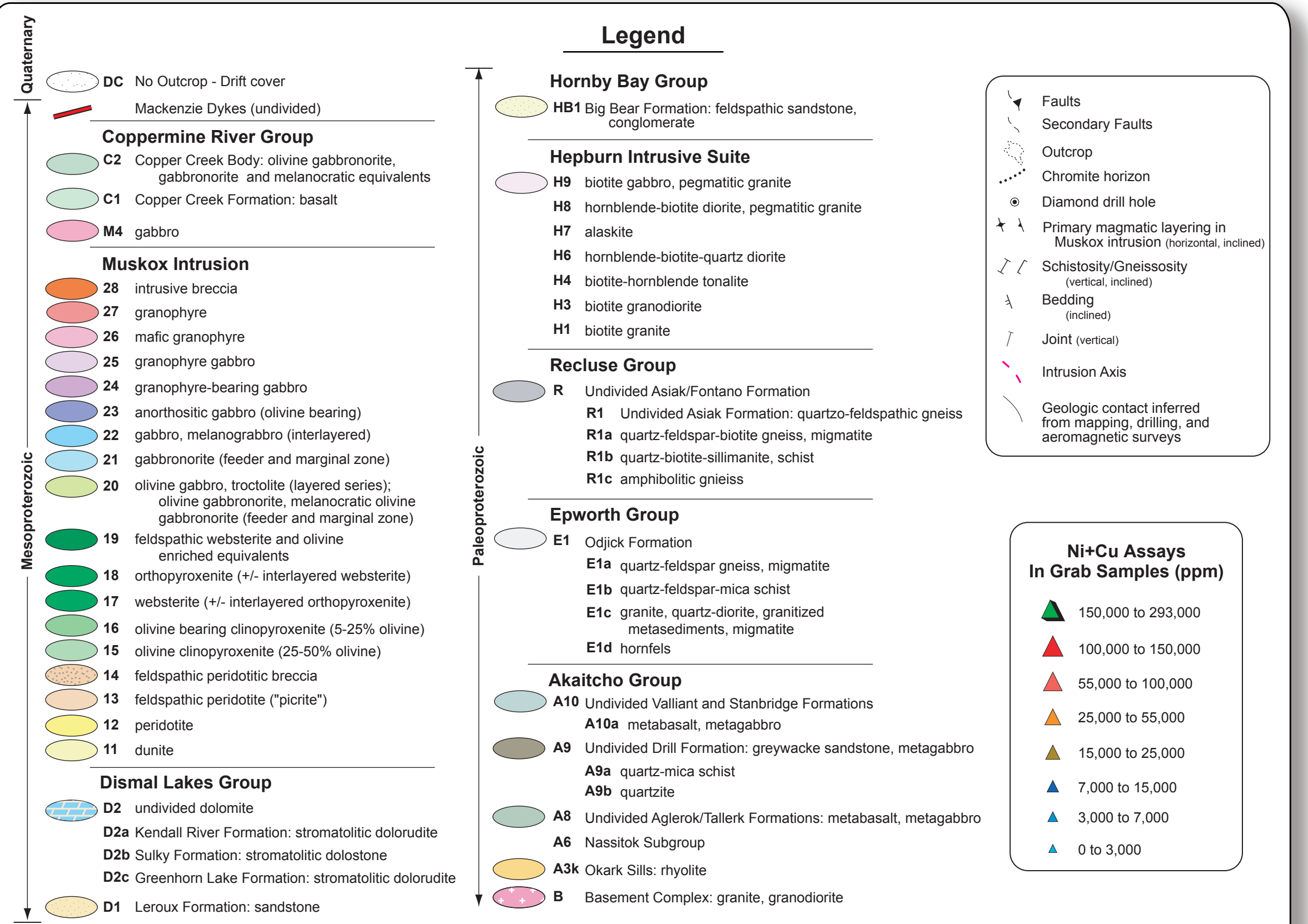


Geological Survey of Canada
Commission Géologique du Canada

**GEOLOGY OF THE
MUSKOX INTRUSION
and Associated Ni + Cu Occurrences
Open File 4881**

by : Larry Hubert, GSC, Ottawa and Muskox Minerals Limited



Explanatory Notes

This map represents a new synthesis and compilation of the Geology of the Muskox Intrusion and Associated Ni+Cu Occurrences. The new GIS map is the product of a collaborative research program between Muskox Minerals Ltd. and the Geological Survey of Canada. Since the discovery of the intrusion in 1956 by H. Vuori of the Canadian Nickel Company (NICO) a number of outstanding mapping programs have taken place on the Muskox intrusion; however, knowledge and availability of some of these maps has only been made recently and incorporated into this project. The authors would like to acknowledge the major contribution made by the pioneering mapping programs of the Canadian Nickel Company (NICO) and later programs of the Geological Survey of Canada (Smith 1961; Smith et al., 1967), and Equinox Resources Ltd. and International Platinum Corp. (1986-89) towards the development of this new map and GIS product.

Although the prevailing geology of the intrusion north of the Coppermine River has not changed significantly from that of Smith et al., 1967 (Map 1213A) a number of new features have been introduced and others updated to be current as of 2004. Map 1213A was found to be an excellent representation of the geology of the Muskox intrusion; however, it proved to be sufficiently inaccurate in its location to meet the demands of a modern exploration program which utilized accurate GPS surveying and geophysical mapping data. Therefore, a new cartographic project was undertaken employing modern, high precision GPS surveying and topographic bases, as well as all sources of pertinent mineral exploration information dating back to the discovery of the intrusion. Geographically distinct features on these earlier maps, and the location of old diamond drill collars were GPS surveyed in the field to aid in the accuracy of the new map. Apart from Smith's archived original map sheets, which were considerably more detailed than the final publication version (Map 1213A), an invaluable source of similar, and in some cases more detailed geological maps came from a sequence of fourteen original field map sheets generously provided by INICO. These maps span the length of the main intrusion north of the Coppermine River. This map information as well as detailed maps from the records of Equinox Resources Ltd. (1986, 1988, 1989) formed the framework for the new map. In areas of glacial overburden further details defining the intrusive contact, cumulative stratigraphic lithologies and continuity, and faulting were interpreted from the aeromagnetic signatures based on a high precision airborne geophysical survey conducted over the intrusion in 1998 at 200m and in some areas 100m line spacing. Additional geological information was also obtained from the records of 240 diamond drill holes scattered throughout the map area.

Lithological nomenclature employed in the legend for mafic and ultramafic rocks of the Muskox intrusion is essentially the same as that of Smith et al., 1967; however, the rock name "hornblende gabbro" has been replaced by gabbro and "picrite" by felspathic peridotite. The Paleoproterozoic countryrock legend nomenclature has been adopted from Hoffman 1984; Baragar and Donaldson, 1973, and replaces Smith's "Metasedimentary", "Metavolcanic" and "Granitic" Rocks and Hornby Bay Group divisions, respectively. The Mesoproterozoic Coppermine River Group legend nomenclature has been modified from Baragar and Donaldson, 1973.

The base hydrological outlines were digitized from 1:50K National Topographic maps and detailed georeferenced airphoto coverage of the area. Elevation contours over and proximal the intrusion were derived from laser altimeter readings collected during the airborne geophysical survey, whereas those of the more distal areas have been obtained from digitized topographic map contours.

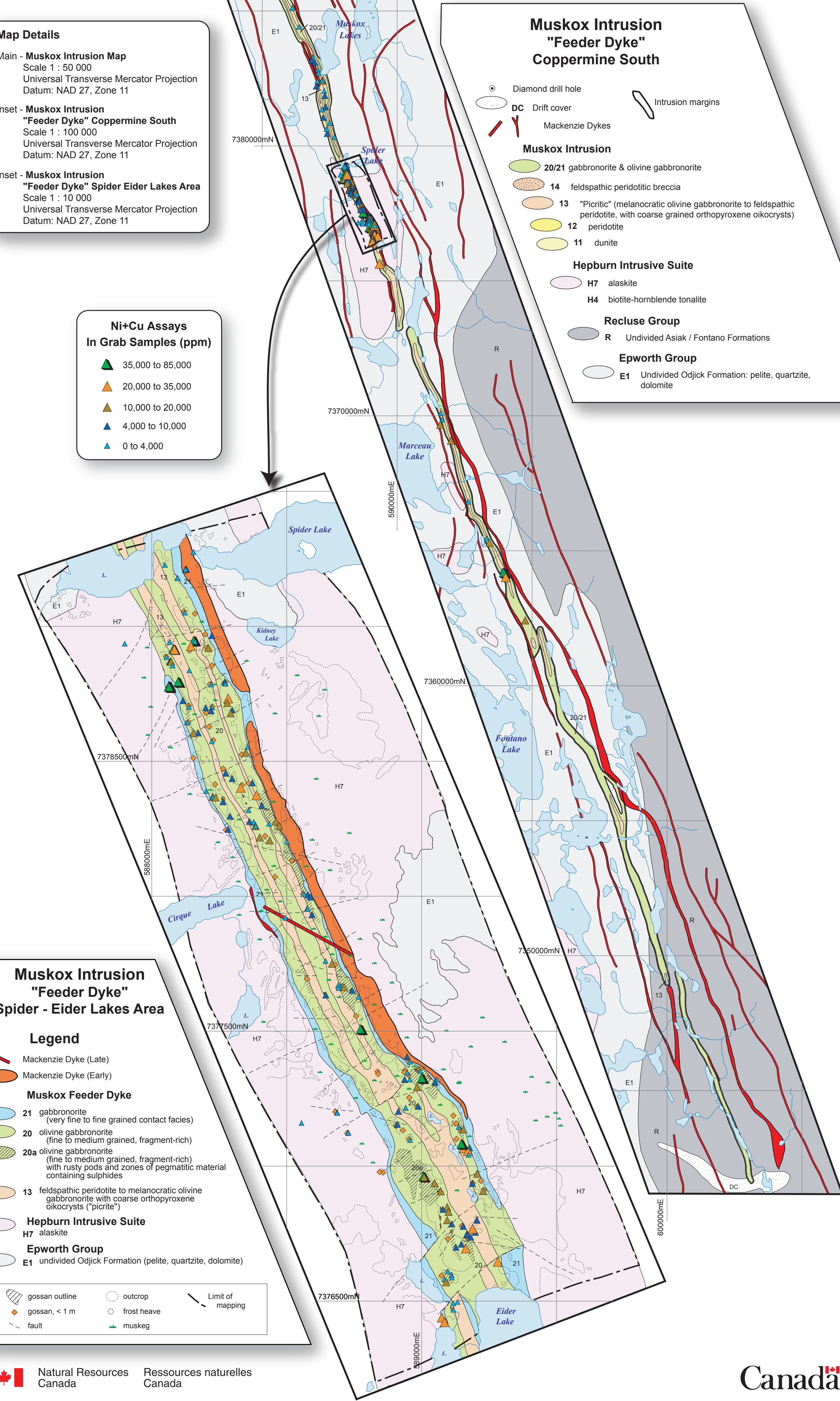
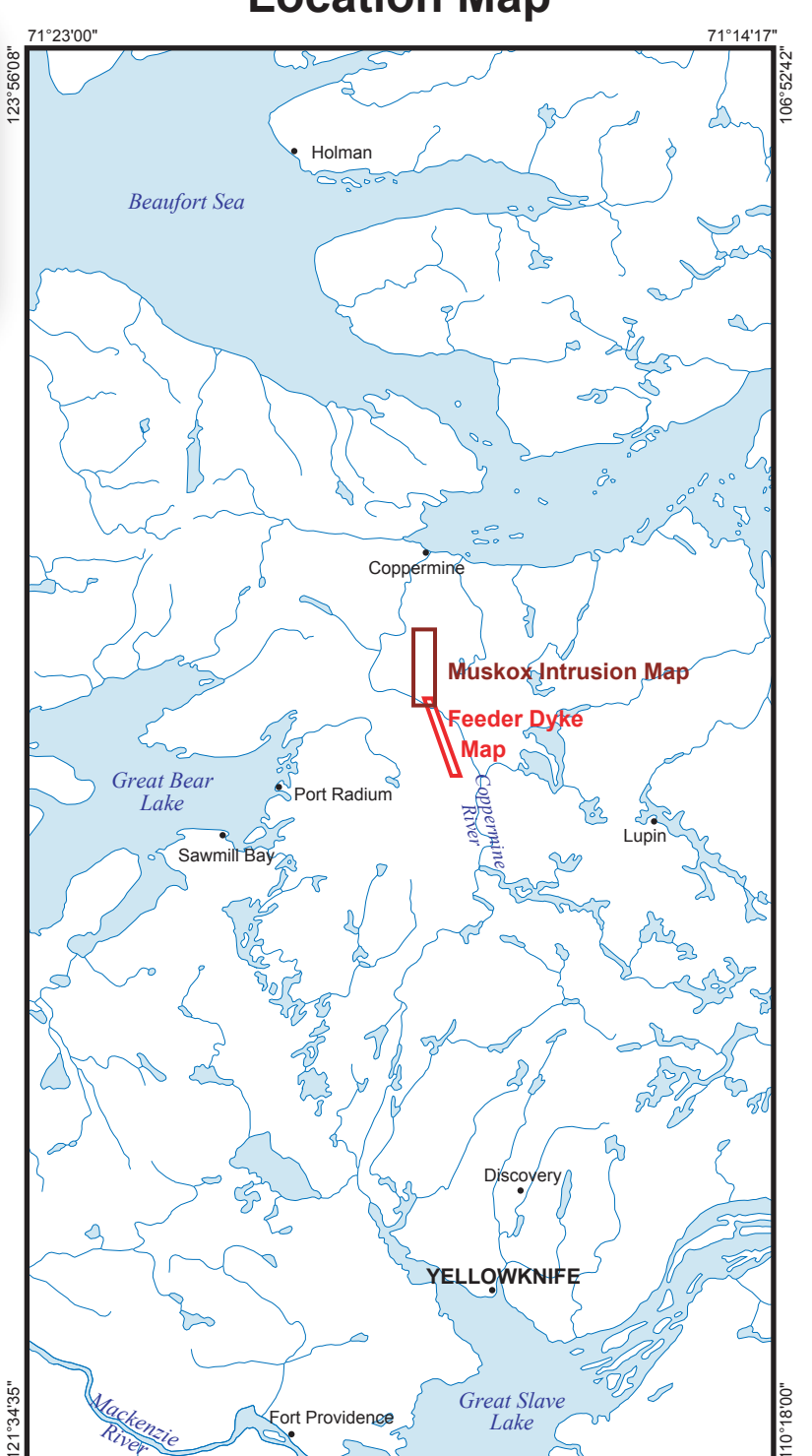
The Muskox intrusion maps "Feeder Dyke" Coppermine South and Spider-Elder Lakes Area represent the regional geology of the feeder dyke and detailed geology of this body in the Spider-Elder Lakes area, respectively. The regional map has been modified from that of Smith et al., 1967 (Map 1214A) and Hoffman 1984 (Map 1576A), whereas the Spider-Elder Lakes map is based on mapping of L. Hubert and Equinox Resources Ltd.

Ni+Cu mineral occurrences represents a database compiled from the records of Equinox Resources Ltd., International Platinum Corp., Muskox Minerals Ltd., and L. Hubert.

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Smith, C.H., Irvine, T.N. and Findlay, D.C.: 1967, Geological maps of the Muskox intrusion, Geological Survey of Canada, Maps 1213A and 1214A.

Location Map



Map Details
Main - Muskox Intrusion Map
Scale 1 : 50 000
Universal Transverse Mercator Projection
Datum: NAD 27, Zone 11
Inset - Muskox Intrusion
"Feeder Dyke" Coppermine South
Scale 1 : 100 000
Universal Transverse Mercator Projection
Datum: NAD 27, Zone 11
Inset - Muskox Intrusion
"Feeder Dyke" Spider Elder Lakes Area
Scale 1 : 10 000
Universal Transverse Mercator Projection
Datum: NAD 27, Zone 11

**Ni+Cu Assays
In Grab Samples (ppm)**
35,000 to 85,000
20,000 to 35,000
10,000 to 20,000
4,000 to 10,000
0 to 4,000

**Muskox Intrusion
"Feeder Dyke"
Coppermine South**
Legend
Diamond drill hole
DC Drift cover
Mackenzie Dykes
Muskox Intrusion
2021 gabbro and olivine gabbro
14 felspathic peridotite breccia
13 "Picritic" (melanocratic olivine gabbro to felspathic peridotite, with coarse grained orthopyroxene olivine)
12 peridotite
11 dunite
Hepburn Intrusive Suite
H7 alaskite
H4 biotite-hornblende tonalite
Recluse Group
R Undivided Asak / Fontano Formations
Epworth Group
E1 Undivided Odjick Formation: pelite, quartzite, dolomite

**Muskox Intrusion
"Feeder Dyke"
Spider - Elder Lakes Area**
Legend
Mackenzie Dyke (Late)
Mackenzie Dyke (Early)
Muskox Feeder Dyke
21 gabbro
20 olivine gabbro
20a olivine gabbro (fine to medium grained, fragment-rich)
13 felspathic peridotite to melanocratic olivine gabbro with coarse orthopyroxene olivine
Hepburn Intrusive Suite
H7 alaskite
Epworth Group
E1 Undivided Odjick Formation: pelite, quartzite, dolomite
gossan outline
gossan, < 1 m
frost heave
musang
Limit of mapping