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REPORT ON

GEOLOGIC MAPPING AND MAGNETIC SURVEY

IN THE WERNER LAKE AREA,

NORTHWESTERN ONTARIO

January 25, 1993
Beausejour, Manitoba

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INTRODUCTION

This report outlines the results of a program of prospecting, geologic mapping and magnetic surveying within portions of two blocks of claims in the Werner Lake area of northwestern Ontario. Geologic mapping and prospecting were undertaken within the east block of 9 claims, while a small magnetic survey was completed on the west block of 14 claims.

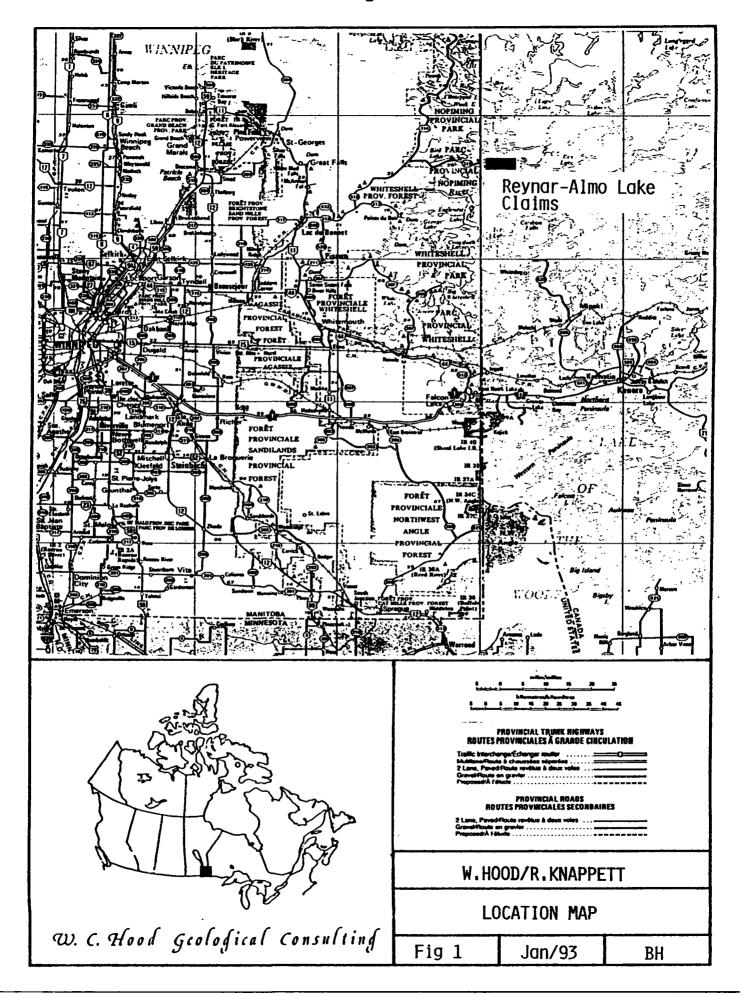
The area of this project lies directly along strike from a number of cobalt and nickel-copper-platinum prospects and past-producing mines. Several companies have undertaken programs of geophysics and drilling over portions of the property since the 1950's.

LOCATION, ACCESS AND PHYSIOGRAPHY

The property is located in the Werner Lake district of northwestern Ontario near the Manitoba border, immediately east of the Bird River greenstone belt. The property is situated 150 km northeast of Winnipeg and 85 km north-northwest of Kenora (Fig.1).

Access to the property is via Manitoba provincial road #315 and the Werner Lake mine road, which extends through the property. Since closure of the Werner Lake mine, the road has been blocked at the Manitoba-Ontario border, necessitating skidoo, ATV or canoe access for the last 10 km to the property. Aircraft charters are available from Lac du Bonnet, about 70 km (43 mi) to the southwest, or from Kenora.

The property is situated in typical Precambrian terrain with local relief generally less than 50 meters (165 feet). Outcrop is very abundant in this area, forming rolling hills interspersed with swamp and glacial drift. A low-lying topographic lineament, generally flanked by steep cliffs, marks the location of the main east-west trending fault structure that extends through the center of the property.



CLAIM STATUS

The property consists of 23 claims in two blocks (Fig.2). The east block, consisting of 9 claims, numbered 1144602 through 1144610, covers prospective ground between the Norpax nickel-copper deposit to the west and Falconbridge's Werner Lake cobalt property to the east. The west block consists of 14 claims, numbered 1124149 through 1124152, 1125460 and 1125461, 1126989 through 1126994, and 1144615 and 1144616 tied on west of the Norpax lease group.

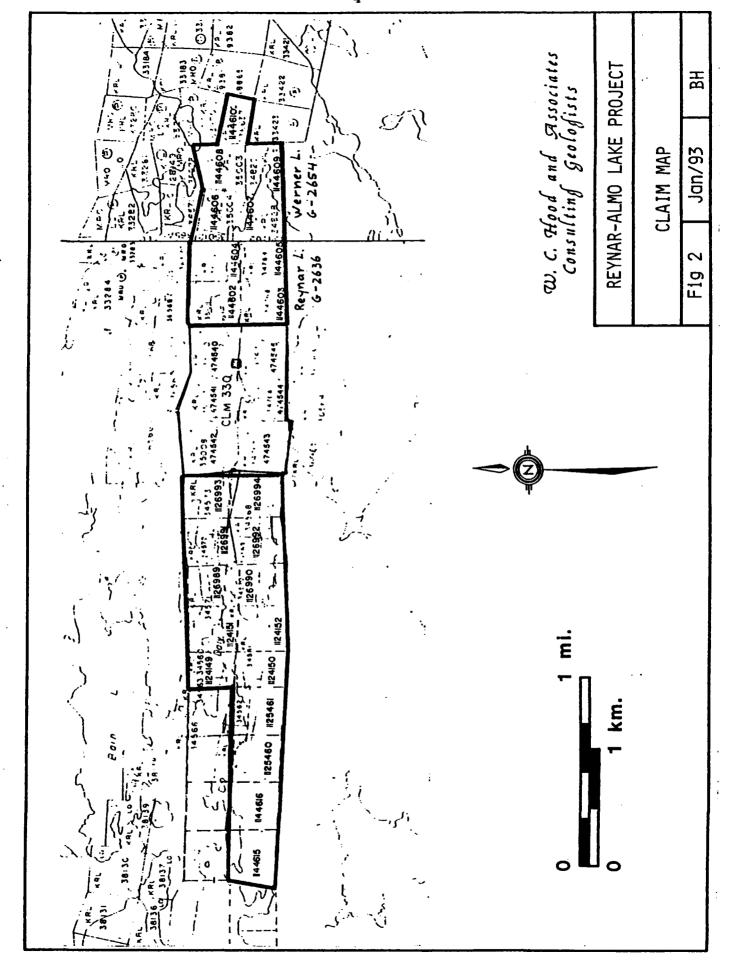
The claims are presently in good standing to March 20, 1993, though this date should be extended when work discussed in this report is filed for assessment. The property is held by Rod Knappett of Eldorado, Ontario and William Hood of Beausejour, Manitoba.

HISTORY

The Werner Lake area has been intermittently explored since about 1920 and hosts two past-producing mines and a number of properties in lesser stages of development. A compilation map (Map I - back pocket) has been prepared, showing the main zones of previous work in the west half of the Werner Lake belt, between Reynar Lake and Werner Lake.

Cobalt mineralization was discovered near the west end of Werner Lake (immediately east of the Hood-Knappett property) in 1920 by M. Carlson. Work in this area was prompted by nickel-copper discoveries several years prior in the Bird River and Maskwa Lake areas of Manitoba, immediately to the west.

Carlson's showing was acquired by Kenora Prospectors and and Miners Ltd. who undertook mapping, trenching and sampling. In 1932, 70 tons of ore containing about 20,000 pounds of cobalt was shipped by air from the property. From 1942 until 1944, the Government of Canada's Metals Reserve Company leased the property



and produced concentrates containing 123,386 pounds of cobalt, with accompanying nickel and copper values. 1

In 1942, prospectors discovered nickel-copper mineralization near the present site of the Werner Lake Mine, between Werner and Gordon Lakes. This prompted exploration in the area by several companies through the 1940's and 1950's. Nickel Mining and Smelting Corp. outlined reserves of 1,071,846 tons grading 1.62% nickel, 0.68% copper plus platinum-palladium values and placed the property into production in 1962. The mine was operated until 1972 by Nickel Mining and Smelting Corp. and successor companies, Metal Mines Ltd. and Consolidated Canadian Faraday Ltd.

Prospectors C. Alcock and A. Mosher located three occurrences of nickel-copper mineralization in 1953 along the main Werner Lake fault structure between Almo Lake to Daly Lake. These showings lie primarily within the Hood-Knappett claims. Grab samples indicated moderate nickel and copper values.

The Alcock-Mosher claims were optioned to Selco Exploration Co. Ltd. who undertook an extensive program of magnetic geophysics, trenching, sampling and drilling in 1953 and 1954. Several showings, labelled A through G on Map I, were located and explored.

Selco's showing A lies near the west end of the east block of claims. Chip samples ranged up to 0.90% nickel and 0.58% copper over 5 feet, but two drill holes returned low values. The B and C showings lie near the east end of the west block of claims at the west end of Almo Lake. Selco drilled three holes on these showings, with the best result being 0.72% nickel and 0.50% copper across 16.5 feet, including 1.61% nickel and 1.21% copper over 5 feet. Other showings within the west block of claims toward Daly and Reynar Lakes returned modest results but were not drilled by Selco. The best drill hole in this Selco program was DDH#3, at the present site of the Norpax deposit, returning 2.41% nickel over 3.5 feet.²

In 1955, Norpax Oils and Mines Ltd. undertook a program of diamond drilling and underground development at Almo Lake.

Approximately 40 drill holes were completed on the A, B, C and D showings within the Hood-Knappett claims though results were not included in the assessment files. Norpax Oils and Mines eventually

concentrated drilling and underground development on the zone between the east and west blocks of the Hood-Knappett claims, where in 1958 they reported reserves of just over 1,000,000 tons grading 1.26% nickel and 0.94% copper across an average width of 18.9 feet.

Consolidated Bellekeno Mines Ltd. completed a self-potential survey and 10 drill holes on the main fault structure at the west end of the west block of the Hood-Knappett claims south of Reynar Lake in 1955. No assays were included in the drill logs filed for assessment, but the July 5, 1956 issue of Northern Miner reported that the best result was 3.7% copper across 2.0 feet in hole #9.4

Consolidated Manitoba Mines Ltd. acquired a large block of claims in 1970, extending across Almo, Daly and Reynar Lakes. This block included the Norpax deposit and the present east and west claim blocks held by Hood-Knappett. A systematic program of VLF-EM and magnetic geophysics was completed, identifying a number of untested anomalies, but no followup was undertaken. 5

In 1975, Consolidated Canadian Faraday Ltd. completed a small magnetic survey which covered portions of the Hood-Knappett east and west block of claims flanking the Norpax property. 6

W. Hood and R. Knappett staked the east and west blocks of claims in 1991. W. Hood completed a small program of geologic mapping on the east block and magnetic geophysics on the west block in 1992.

REGIONAL GEOLOGY AND MINERALIZATION

The Reynar-Almo Lake property of W. Hood and R. Knappett lies along the Werner Lake fault structure which extends easterly from the Archean Bird River greenstone belt of the Superior Province in the Precambrian Shield. In this area, the fault appears to separate a sedimentary gneiss terrain to the north from a large tonalite/granodiorite intrusive to the south (Fig.3).

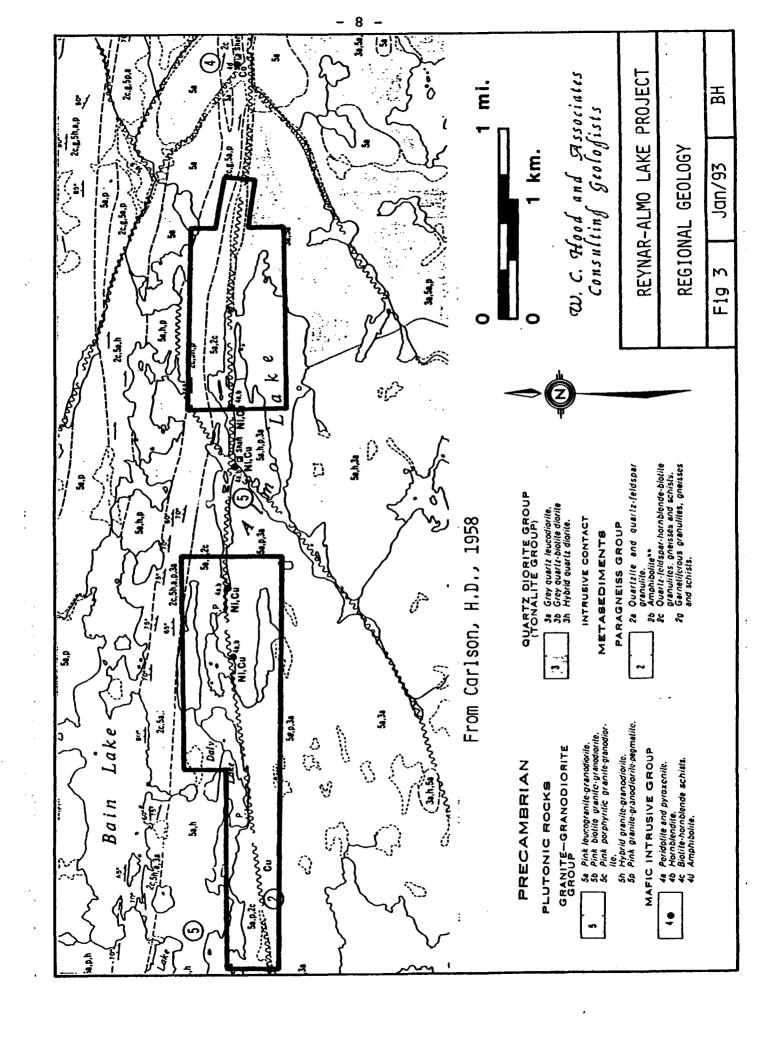
The Werner Lake fault system is a major structure, which is marked by a strong topographic lineament, and has been a locus for ultramafic intrusions in a large number of locations along its length. It is believed that these ultramafic rocks represent the remnants of a feeder system to the Bird River Sill, an extensive ultramafic intrusive that is exposed in the Bird River and Cat Lake areas to the west.

Sedimentary gneisses, which underlay the area north of the main fault structure, consist mainly of layered biotite-amphibole schist interspersed with bands of white granite and granodiorite. These lithologies have been frequently intruded by pink granite which is locally megacrystic or pegmatitic.

South of the main fault structure, the rocks consist mainly of foliated to gneissic tonalite, granodiorite and granite. 7

Copper, nickel, cobalt and platinum mineralization are closely associated with peridotite sills and plugs along the main Werner Lake fault structure. Two different styles of ore mineralization occur: 1) disseminated low-grade deposits up to 30 meters (100 feet) thick associated with peridotite plugs and 2) narrow high-grade bands, lenses and stringers parallel to the fault structure.

The cobalt property lying immediately west of Werner Lake occurs along a distinctive garnetiferous gneiss horizon that lies about 150 meters (500 feet) north of the main Werner Lake fault. This mineralization is believed to have been localized by a strong,



northwest-southeast trending cross fault.

WORK PROGRAM - 1992

During October, 1992 approximately two weeks were spent working on the east block of claims in the area between Almo Lake and the Falconbridge cobalt property lease group to the east. An east-west flagged baseline was installed from 00 Baseline at the #1 post of claim K.1144610 to 1110W at the shore of Almo Lake. Flagged lines averaging 250 meters in length, were run at 50 meter spacing with 25 meter flag intervals to cover the zone from the sough edge of the topographic lineament hosting the main Werner Lake fault to just north of the garnetiferous gneiss horizon which hosts the mineralization on the adjacent Falconbridge cobalt property. Prospecting and detailed geologic mapping at a scale of 1:1000 was completed from 0W to 700W.

Work on the west block of claims was deferred until
December, 1992 when ice thickness was sufficient to allow installation
of a flagged baseline and cross lines across lakes and creeks that
underlie much of the Werner Lake fault zone. The baseline was
started from 00W at the #1 post of k.1126994 and run west of 800W.
Cross lines were run at 50 meter spacings with 25 meter flag intervals
across the main Werner Lake lineament. A magnetic survey with 5
meter station spacings, has been completed to 200W and will be
continued this winter.

The work that has been completed to date is intended to be the first phase of a systematic program of prospecting, detailed geologic mapping and magnetic geophysics, concentrated along the Werner Lake fault zone. This work will be followed up with geochemical sampling of soil and overburden in prospective areas in order to delineate drill targets.

EAST CLAIM BLOCK - GEOLOGIC MAPPING

Geologic mapping of the Werner Lake fault zone and a parallel garnetiferous gneiss horizon was completed at a scale of 1:1,000 from 0W to 700W (Map II - back pocket). The sedimentary gneisses, intrusive sills and structural fabric in the map area all trend about 100° azimuth and dip steep north. Rocks in the area have been metamorphosed to amphibolite facies, resulting in development of layered sedimentary gneisses that are intruded by frequent granite sills.

The geology of the map area is dominated by a major regional fault, the Werner Lake fault, which underlies a 50 meter wide topographic lineament that is often flanked by steep cliffs. This fault zone is centered at about 180S on line 0W but swings up to about 060S on line 700W. Heavily mylonitized rocks are exposed near 080S on lines 650W and 700W. A late, northeast-southwest trending cross fault has been interpreted at line 300W.

North of the Werner Lake fault the dominant lithology is a grey weathering, layered sedimentary gneiss. Biotite-amphibole schist is typically interlayered with a white granite to granodiorite leucosome which generally constitutes about 25% of the rock. This package has been intruded by sills of pink granite that range from fine-grained to megacrystic or pegmatitic. The proportions of schist, white to grey granite to granodiorite, and pink granite vary considerably, resulting in the interpretation of units on Map II.

A distinctive garnetiferous gneiss horizon was mapped from about 060S on line 0W to about 100N on line 700W. This unit is typically about 15 meters wide and locally rusty weathering. Garnet content ranges from 10% to 40%, often forming coarse euhedral crystals up to two centimeters in size. On the adjacent Falconbridge property to the east, this unit hosts peridotite intrusion with cobalt mineralization. Several trenches were mapped between line 0W and 200 W, but only minor chalcopyrite mineralization was noted.

The Werner Lake fault zone appears to separate sedimentary geneisses to the north from a large intrusive batholith to the south. Outcrops south of the fault generally consisted of white to grey weathering, foliated to gneissic tonalite. Minor pink granite, granodiorite and schist remnants were also noted locally.

A series of narrow, medium grained gabbro dikes were located along the south edge of the Werner Lake lineament, apparently splaying out of the fault zone. The location of these dikes suggests that the fault zone has been a locus for mafic intrusion.

A narrow dike or small pipe of peridotite was located at the edge of an outcrop near 530W/020N.

WEST CLAIM BLOCK - MAGNETIC SURVEY

Detailed magnetic surveying was commenced on the west claim block during December, 1992 but only a few lines had been completed at the time of preparation of this report (Fig.4). Due to the narrow widths of mineralization in some locations along the Werner Lake fault system, readings are being taken at 5 meter spacings.

Only one significant magnetic anomaly has been indicated to date, that being centered on line 150W near 010N. Previous work has indicated the presence of peridotite near this anomaly along the south flank of the lineament. Followup work will be required.

CONCLUSIONS AND RECOMMENDATIONS

Work to date has confirmed that detailed geologic mapping and magnetic surveying, followed up with geochemical sampling should be an effective means of delineating drill targets along the Werner Lake fault zone.

Geologic mapping on the east block of claims has confirmed the extension of a distinctive garnetiferous gneiss horizon, which hosts cobalt mineralization on an adjacent property, across the Hood-Knappett property. Detailed magnetic surveying should be undertaken across this horizon to determine whether unexposed peridotite intrusions, possibly hosting nickel-copper or cobalt mineralization, may be present.

Geologic mapping of the Werner Lake fault zone on the east block of claims has confirmed the presence of a strong mylonitized zone. Other than sever gabbro dikes along the south flank of the lineament, no evidence of ultramafic rocks was noted. A detailed magnetic survey should be extended across this zone, however, to relocate several untested magnetic anomalies from a previous survey.

Detailed magnetic surveying on the west block of claims has located one anomaly which is believed to be associated with peridotite intrusion. Several untested magnetic anomalies indicated in previous surveys should be relocated and evaluated for drilling.

Detailed magnetic surveying should be continued along the full extent of the Werner Lake fault zone in order to delineate all potential peridotite intrusions. This work will need to be undertaken during winter because of lakes, creeks and swamps along the Werner Lake fault. Geologic mapping at a scale of 1:1000 is useful for evaluating magnetic anomalies, as well as determining any structural or lithologic controls on mineralization. Geochemical sampling of soil and overburden at promising anomalies or showings should be utilized as a final screen prior to drilling.



January 25, 1993

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