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GEOLOGICAL REPORT
OF THE
COLLINGWOOD ENERGY INC. PROPERTY
SWAYZE AREA
DISTRICT OF SUDBURY

RECEIVED
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MINING LANDS SECTION

August 14, 1984
Timmins, Ontario

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Per: David R. Bell
Geological Services Inc.
Supervised by: Stephen W. Conquer, B.Sc

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** Special Note:

The initial part of this report, Section 3.0 through Section 7.4 (excepting minor alterations), was exerpted from "Geological Report of the Collingwood Energy Inc. Property, Swayze Area, District of Sudbury, Ontario." (Conquer, 1983)

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MAPS

1.0 SUMMARY

During the 1984 field season, David R. Bell Geological Services Inc. conducted a geological mapping program for Collingwood Energy Inc. on their 16 new claims, in addition to their already held 48 claim group, Swayze Area property. The project was undertaken to geologically assess the property and to determine the possibility of the existence of any economic mineralization.

The property was found to be underlain by repetitive cycles of Precambrian volcanic rocks consisting of a succession of mafic to ultramafic units overlain by rocks of intermediate to felsic composition. Gabbro and diabase plugs and sills are found to intrude these meta-volcanics which generally parallels the observed contacts that strike from 270° - 305° and dip to the north. Younging directions could not be determined due to lithology.

Anomalous mineralization of gold values have been located at two main locations on the property. These areas of interest are the Greenlaw Occurrence and the area around L8+00W at 51+80S (West Zone).

A four phase exploration program is proposed to follow the completed geological mapping project. The costs of the four phases are:

Phase I	$ 26,200.00
Phase II	29,700.00
Phase III	22,600.00
Phase IV	84,400.00
Total Proposed costs:	$ 163,300.00

2.0 INTRODUCTION

During the period from July 16, 1984 to July 25, 1984 a geological mapping program was conducted for Collingwood Energy Inc., on their Swayze Area claim group.

The purpose of this mapping program was to gain a better understanding of the local geology, for correlation with the exploration and development work of the previous ground holders (mainly Greenlaw Gold Mines Limited), as well as an aid in the planning of future exploration activities. Second, to locate and delineate any mineralized zones of possible economic interest, and last to explain anomalous airborne geophysical zones (EM, Mag) delineated during March of 1984.

3.0 PROPERTY (See Figures 2 & 3)

This geological survey covered a total of 16 unpatented mining claims which were an additive to the original 46 unpatented mining claims held by Collingwood Energy Inc., 403-595 Howe Street, Vancouver, B.C. (See Appendix 1). This report is being submitted for assessment credits by the aforementioned company.

3.1 <u>Location and Access</u> (See Figures 1, 2 & 3)

The Collingwood property is located in the vicinity of Lee Lake (Greenlaw Township) and is centered about the shaft and surface workings of Lee Gold Mines Ltd. The Collingwood extension of additional claims is mainly centered around the shaft and surface workings of Greenlaw Gold Mines Ltd. The claim group covers ground in Greenlaw, Denyes, Halcrow and Tooms Townships (Swayze Area), Porcupine Mining Division, District of Sudbury, approximately 25 miles east-southeast of Chapleau and 90 miles southwest of Timmins.

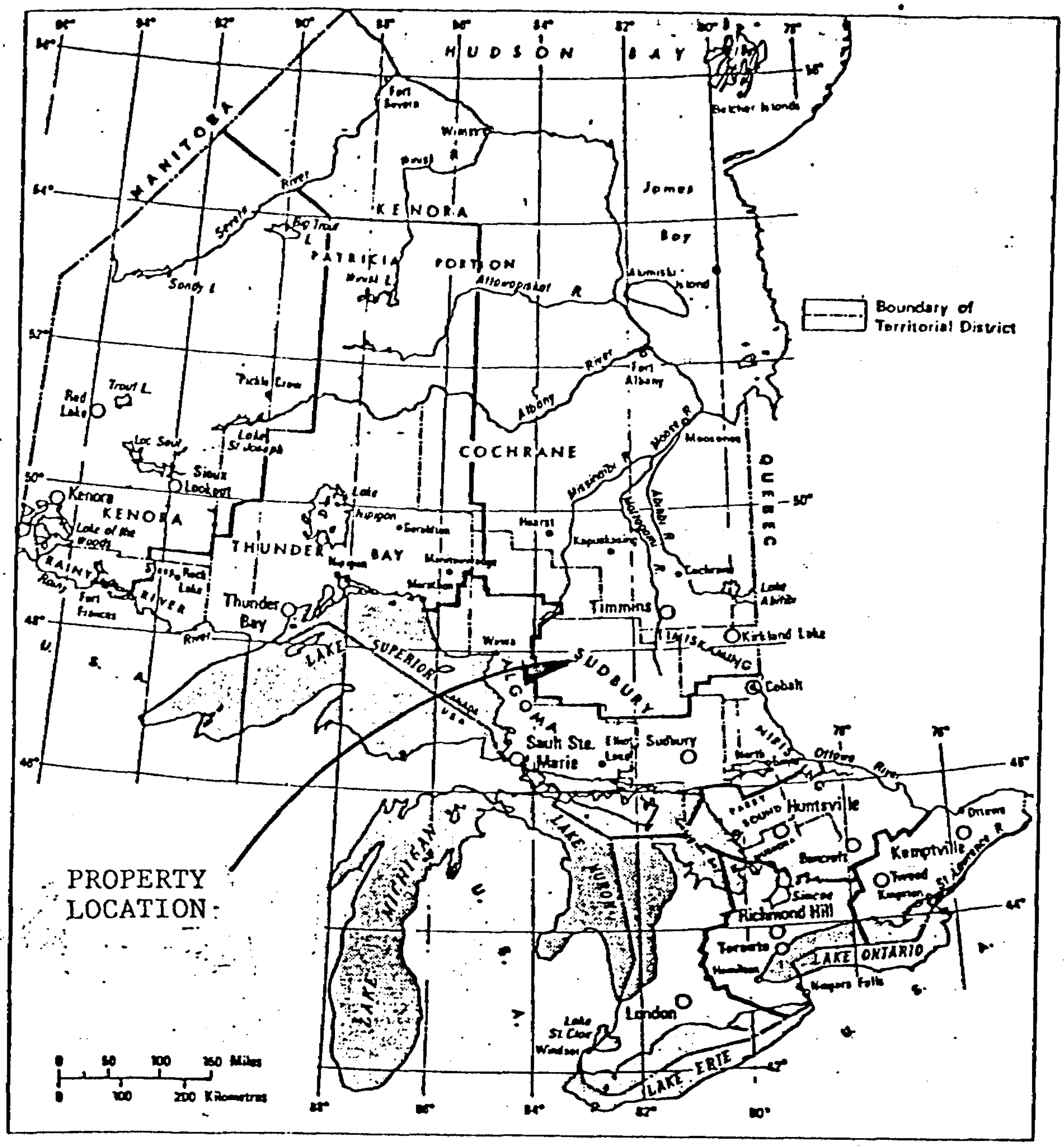


FIGURE : Approximate location of Collingwood Energy Inc. claim group

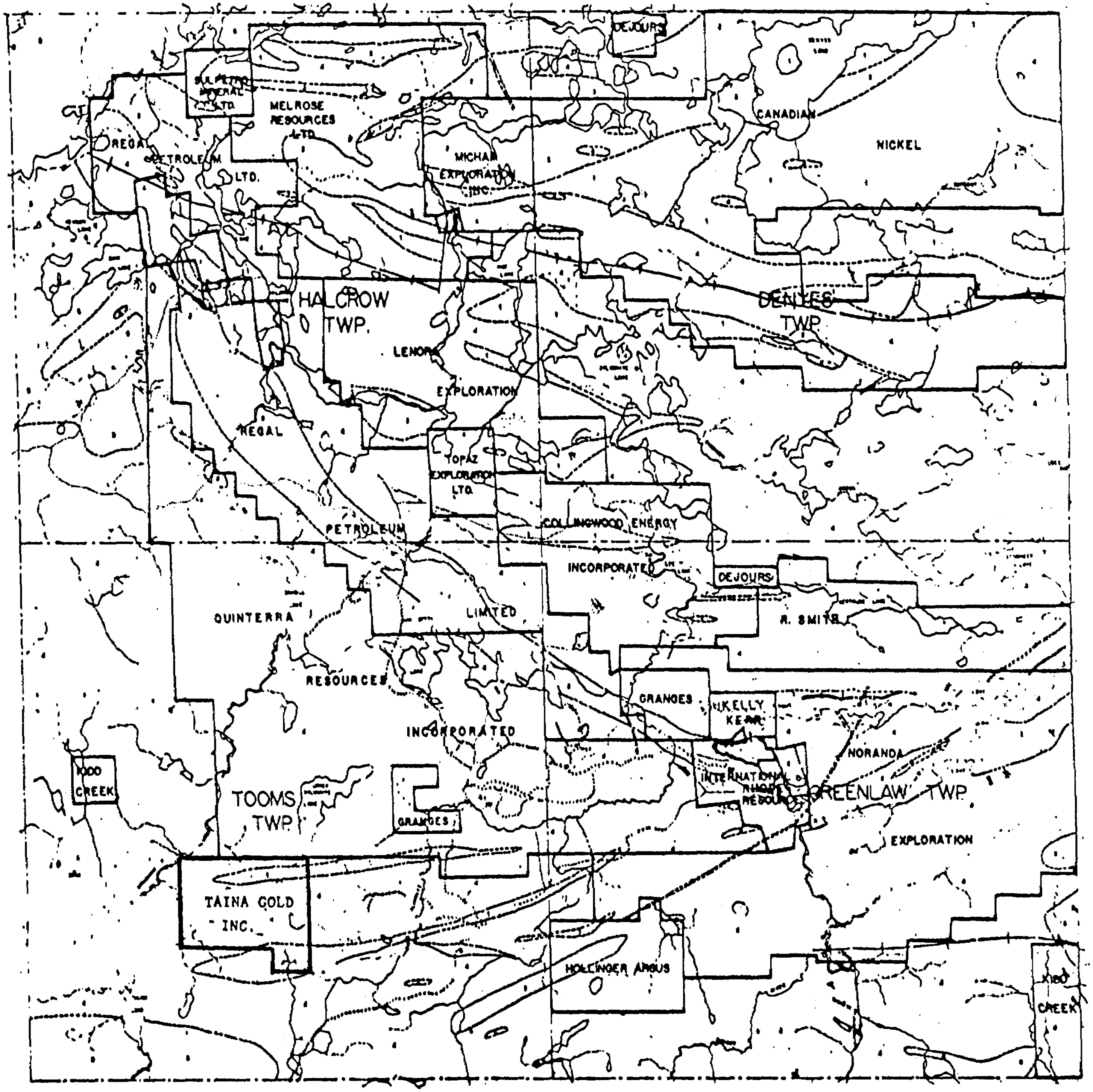
DAVID R. BELL GEOLOGICAL SERVICES INC.

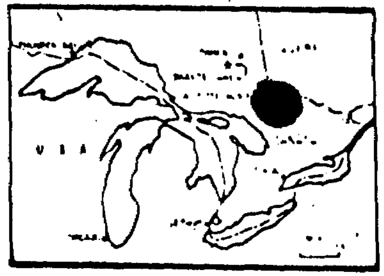
COLLINGWOOD ENERGY INC.

LOCATION MAP

DISTRICT OF SUDBURY, ONTARIO

August, 1984	Figure 1





SWAYZE GOLD BELT

PORCUPINE MINING DIVISION

ONTARIO

FIGURE 2

LEGEND

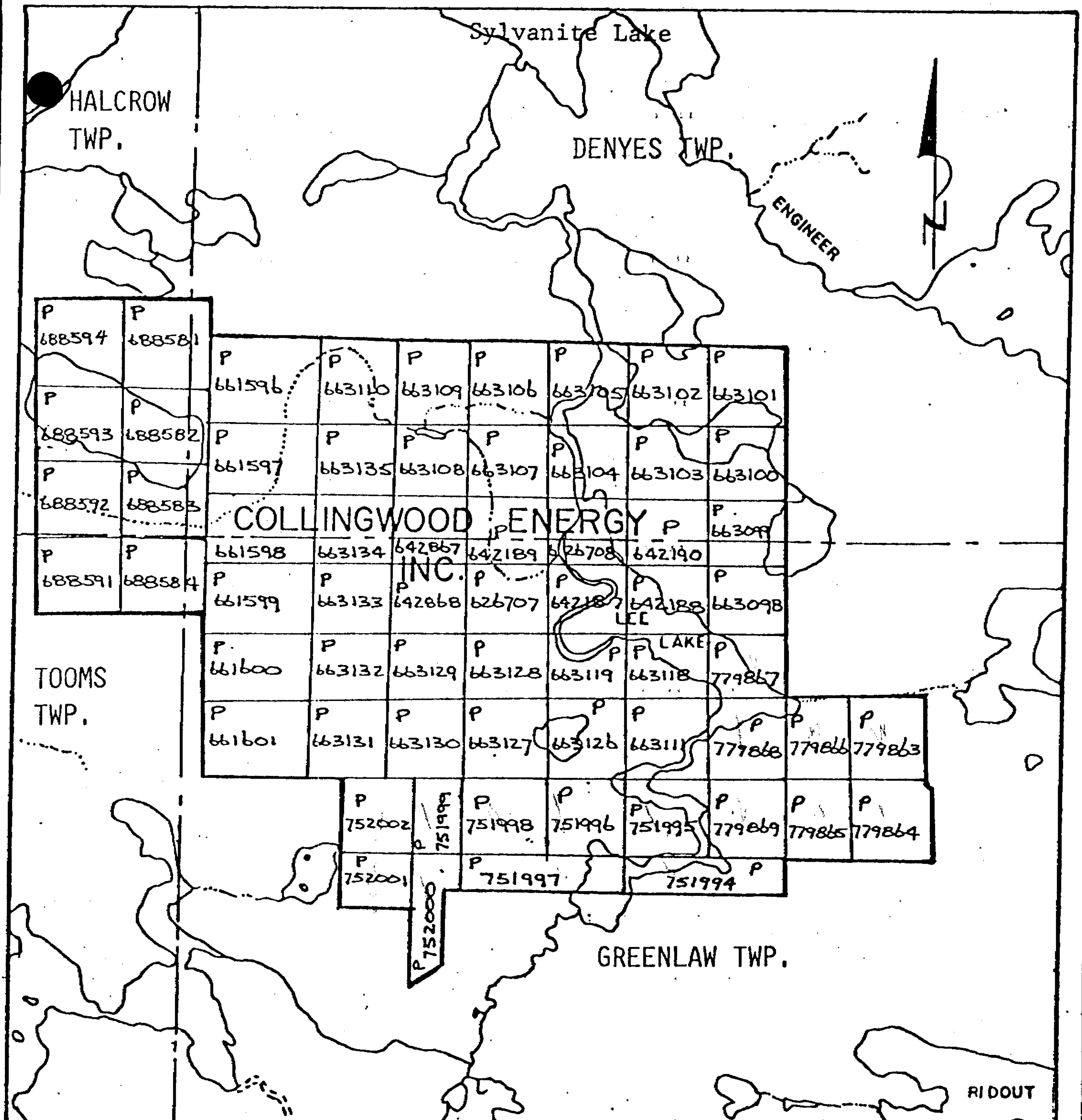
David R. Bell Geological Services Inc.

COLLINGWOOD ENERGY INC.

PROPERTY LOCATION MAP

SWAYZE AREA PROPERTY

TWP/AREA	PROVINCE
MINING DIVISION	PROJECT No.
REFERENCES	N.T.S. No.
DRAWN / DRAFTED	CHECKED
SCALE N.T.S. / DATE	SHEET No.



FROM: ODM Map No. M895 "Greenlaw"

Scale 1"=½ mile

DAVID R. BELL GEOLOGICAL SERVICES INC.
COLLINGWOOD ENERGY INC.
Claim Map Porcupine Mining Division From MNR Claim Sheets M758,M895,M906,M1159 Project #5411

August, 1984	Figure 3

Access to the property can best be achieved by float plane from both Chapleau and Ivanhoe Lake (southwest of Foleyet) or by helicopter from Timmins. As an alternate route a dry weather road runs from Kormak, on the C.P.R. line, to within 1.5 miles of the property. The final mile and a half to the property can be travelled via a tractor road.

4.0 PHYSIOGRAPHY

4.1 Topography

The topography of the Collingwood claim group can best be described as a series of west-northwest trending ridges and wet gulleys along with cedar swamps. Two open swamps are located on the property, one in the west-central portion and the other in the north-west section.

Glacial till covers most of the property, ranging from a few inches to at least 15 feet in thickness. The general ice direction on the Collingwood property can be taken as west-northwest, due to the presence of a west-northwest trending eskers that cuts across the central portion of claims P626707, P642868 and P751995.

4.2 Vegetation

A wide variety of vegetation, consisting of trees, moss, lichens and grasses, are seen across the property. In the low, poorly drained sections of the property grasses and sphagnum moss are found in abundance (open swamps), with cedar and spruce occupying other swampy sections. Heavy to sparse growths of alders are located near the streams and creeks as well as the seasonal drainage channels. In the higher, better drained areas jackpine, birch, poplar, balsam fir and spruce (bases generally less than 12 inches in diameter) are abundant with undergrowth varying from sparse to heavy. Lichens are seen on bedrock exposure, with caribou moss being found in the sandy areas.

4.3 Water

Water can be found in abundance across the claim block. Lee Lake in the east and Elvy Lake to the northwest could be used as major sources of water for any stage of development. Smaller lakes, ponds, streams and creeks could also be used for various stages of development. The eastern half of the property is drained by the Lee Lake - Sylvanite Lake system, with the western portion being drained by Elvy Lake. Both systems eventually flow into the Kinogama River to the north.

4.4 Climate

Weather variations are typical of Northern Ontario. During the spring, temperatures are moderate and consist of heavy rainfall and/or occasional snow-storms can be expected, while in the summer, temperature variations are from cool to moderate with abundant rain-fall and/or occasional snow, while the winters are extremely cold and along with extensive amounts of snowfall.

5.0 POWER AND ANCILLARY SERVICES

The nearest major power line is located at Chapleau, with minor power lines located at Kormak (10 miles south-southwest). Therefore diesel generators may be adviseable for any early stages of development.

The acquisition of food and other sundry articles can be made in either Chapleau or Timmins. While major exploration or mining goods would have to be purchases in Timmins.

6.0 HISTORY OF EXPLORATION

6.1 Regional and Swayze Area

The earliest record of work in the Swayze area, are two geological surveys, one by Parks (1900) and the other by Emmons and Thomson (1929). The Ontario Geological Survey (previously O.D.M.) has published several geological reports on this area, Furse (1932), Rickaby (1934), Laird (1935) and Donovan (1965, 1968), as well as one regional report by Thurston et al (1977). An aeromagnetic survey flown jointly by the OGS-GSC (1970), as well as a recent airborne magnetometer and VLF-EM survey flown by the OGS (1982), supply good geophysical data on a regional scale, for the Swayze area.

Numerous companies have been actively involved in the exploration for gold, in the Swayze area, since the early 1930's. A few of the more prominent companies are:

1) Kenty Gold Mines Ltd. - Swayze Township
   - 1931-1934; surface and underground work
   - 1936; 5 ton test mill installed and operated for 3 months
   - 1947-1949; No. 1 shaft dewatered, minor raising 100 ton mill installed, 1,634 feet of diamond drilling, 1,250 tons of ore hoisted
   - 1950; limited amount of work

2) Halcrow-Swayze Mines Ltd. - Halcrow Township
   - 1932-1935; Surface and underground work, installation of 25 ton pilot mill; processing 211 tons of ore extracting 38.98 oz of gold
   - 1937; minor diamond drilling
   - 1984; Regal Petroleum Ltd. - minor exploration

3) Hotstone Minerals Ltd. - Greenlaw Township
   - 1932-1945; surface exploration and diamond drilling
   - 1946-1947; surface exploration, diamond drilling, EM survey
   - 1982; Noranda Exploration Co. - extent of work unknown

6.2 Property and Vicinity

In 1932 a group of 17 claims was staked by Martin Shunsby, shortly thereafter control of this claim group was passed to Lee Gold Mines Ltd. The early exploration and development (1932-1934) consisted of surface trenching (seven trenches across 300 feet), and diamond drilling (2,000 feet in 11 holes), while underground development consisted of 250 foot shaft with 1,539 feet of lateral development on the 125 and 250 foot levels. Assay results were reported as, up to 0.10 oz Au/ton from surface samples and four of the 11 holes returned values from 0.25 to 0.64 oz Au/ton.

During 1935, Greenlee Mines Ltd. acquired the 17 claims controlled by Lee Gold Mines Ltd. as well as two claims controlled by Greenlaw Gold Mines Ltd., bringing the total to 19 claims. Whether these claims were patented by this time is unknown.

Sometime between 1935 and 1954 the size of the property was decreased to 9 patented mining claims. When in 1954 New Athona Mines Ltd. acquired all properties and interests of Greenlee Mines Ltd. Then circa 1969, the patents on New Athona's 9 claims, expired. During the intervening period from 1934 to the expiration of the patent leases in 1969, any new or additional exploration and development had not been reported.

During the early 1970's exploration activity, in the vicinity of the present claim group, increased dramatically. During 1971 Cana Exploration Consultants Ltd. undertook, electromagnetic and magnetic ground surveys, over a block of 15 claims, corresponding to the west-central portion of the present claim group. In 1972 this 15 claim block, was acquired by Greenlaw Developments Ltd., who then conducted a second set of geophysical surveys. From these surveys several anomalous EM and magnetic zones were delineated, prompting Broad Scope Developments Ltd. to option nine of Greenlaw Developments' claims.

During this same time period Broad Scope conducted EM and magnetometer surveys over their own group of 16 claims (ease half of present claim block). The results were encouraging enough such that a small diamond drilling program was initiated. This drill program consisted of four holes (totalling 1,207 feet), two of which were drilled on the Greenlaw Development option. The highest gold assay returned from this program was 0.01 oz Au/ton, across a 2.7 foot section in a rhyolite or silicified zone.

Activity in the area ceased unitl 1976 when UMEX conducted an airborne magnetometer survey over nine townships (including Greenlaw) in the Swayze Area.

As a result of this survey 222 mining claims were staked, with five of these being located in Greenlaw Township. No further work was reported, and at least these five claims were allowed to lapse.

Prior to the most recent flurry of exploration activity Granges Exploration AB (during 1977) conducted a four hole drill program, totalling 1,815 feet. The highest assay result reported was 0.95 g/t (0.028 oz Au/ton), although the results from three holes are missing. Granges' held a block of 20 claims, centered about Lee Lake and containing the ground formerly held by Lee Gold Mines Ltd.

At the present time, companies that are actively involved in exploration in this area are Sulpetro Minerals Ltd., Dejour Mines Ltd., Canadian Nickel Co. Ltd., Micham Exploration Inc., Topaz Exploration Ltd., Regal Petroleum Ltd., Noranda Exploration Ltd., Granges Exploration AB., Hollinger Argus and Kidd Creek Exploration (Conquer, 1983).

7.0 REGIONAL GEOLOGY AND STRUCTURE (see ODM Geology Map 2221)

The Collingwood property is underlain by rocks that are entirely Precambrian in age (Donovan, 1968), and are part of what has previously been called the Swayze Gold Area (Rickaby, 1934) and the Swayze "greenstone" Belt (Donovan, 1968). Thurston et al (1977) have renamed this area as the Swayze Metavolcanic-Metasedimentary Belt. This Swayze Belt comprises part of the Abitibi Subprovince, a tectonically differentiated portion of the Superior Province of the Canadian Shield.

The Swayze Belt is approximately 28 miles long and 18 miles wide, with the Collingwood claim group being located in the west-central section. The Precambrian basement rocks comprise an older assemblage of felsic to mafic metavolcanic and metasedimentary rocks, with iron formation and younger granitic, dioritic and diabasic rocks (Conquer, 1983).

7.1 Metavolcanics

The mafic to intermediate metavolcanics predominate throughout the Swayze Belt and include massive, pillowed, fragmental and porphyritic types. Occupying the central part of the Swayze Metavolcanic-Metasedimentary Belt are the felsic to intermediate metavolcanics.

These metavolcanics are seen as centers of early Precambrian felsic volcanism, with associated shallow-water shelf and continental rise volcanogenic sediments. Examples of these volcanic centers are the Denyes-Swayze Townships center and the Raney Township center. The felsic to intermediate metavolcanics include rhyolite, dacitic and trachytic pyroclastic rocks and flows, with the rhyolitic component being the most dominent.

7.2 Metasediments

Metasediments form only a small part of the Swayze "greenstone" Belt, making up no more than 10 percent of the exposed area. The rock types, found in approximate order of abundance, are greywacke, arkose, conglomerate, quartzite and argillite. The north-easterly trending zone of metasediments in Halcrow and Denyes Townships, as well as the southeasterly trending zone in Halcrow, Tooms and Greenlaw Townships mark the northern and southern boundaries, respectively, of an east-west trending synclinal structure (Donovan, 1969). Iron formations in the Swayze Belt are for the most part, thin bands intercalated with metavolcanics and usually represent oxide facies conditions of sedimentation.

7.3 Intrusive and Migmatitic Rocks

Rocks of dioritic and gabbroic composition are seen as stocks and sill like bodies of small size, that intrude the felsic to mafic metavolcanics, as well as predate the granitic rocks. The ultramafic rocks, either partially or entirely serpentinized, occur as sills, dykes and stocks by themselves and associated with the gabbros. The main occurrences of the diorites, gabbros and ultramafic rocks are in the Garnet-Cunningham -Greenlaw Townships area. Diabasic rocks occur as dykes while intruding all other rock types.

The migmatitic rocks of the area are described by Thurston et al (1977) as having the "...appearance of a mixed rock in which fragments and inclusions of metamorphosed country rock are embedded and engulfed in lighter coloured rock which has intruded and partially assimilated country rock." The granitic rocks are fine to coarse grained while ranging in composition from granite to quartz diorite, as well as having a massive to gneissic nature.

The Swayze "greenstone" Belt is surrounded by, the younger, granitic and migmatitic rocks. To the north, south, east and in part in the west these rocks are separated by an intrusive contact, while they are dominantly in fault contact to the west. To the north-west the "greenstones", to a minor extent, also lie in fault contact with the Kapuskasing Structural zone

7.4 Regional Structure

The metasediments and metavolcanics of the Swayze Belt, are generally found to be steeply dipping in fold structures. These steeply dipping fold structures are controlled by the east-west trending synclinal-anticlinal structures. The synclinal axis runs through the central portion of Halcrow, Denyes, Swayze and Dore Townships, while the anticlinal axis lies to the south in southern Swayze, Dore and Heenan Townships. Lateral faulting has caused offsets that displace the synclinal axis to the north, and give it an east-northeast trend.

The faulting, in general, has a north-westerly trend and is localized in the south-central and central portions of the Swayze Belt. The effects of the faulting are made recognizable by the obvious displacements in the metasediments and the felsic metavolcanics as well as the linear nature of the major lakes and drainage channels (Conquer, 1983).

8.0 PROPERTY GEOLOGY

The Collingwood claim group is underlain by metasedimentary and intrusive rocks of Precambrian age. The metavolcanics range in composition from ultramafic to felsic and there appears to be a cyclical nature to their formation. The metasediments are predominantly argillaceous with only one arcenaceous exposure being located during the 1983 mapping program. The metavolcanics have been intruded by gabbroic and ultramafic plugs as well as diabase dykes.

The geology of the additional Collingwood claim group mapped in 1984, appears to be the result of repeditive cycles of volcanism.

The repeditive sequence consists of mafic metavolcanics ranging from andesite to dacite in composition, with rhyolite overlying in one particular sequence. Whole rock analysis results pending will better differentiate the sequence into distince lithologic units. The thicknesses of the sequences varies increasingly to the north.

To the east of the diabase dyke, geophysically interpreted from airborne magnetometer survey and extended south from the geology of the 1983 program, the mafic metavolcanics are overlain by intermediate metavolcanics and capped by felsic metavolcanics, but to the west of the diabase dyke, no bedrock exposure was observed.

The gabbro, diabase and ultramafics (serpentinite) intrude sporadically within the volcanic pile.

Although no field evidence was observed, a north-south trending fault is inferred to exist at approximately Line 16E, as interpreted from the airborne magnetics survey. This survey is not however able to delineate between the mafic and felsic metavolcanics due to the presence of the gabbroic and ultramafic intrusions.

The porphyritic rhyolite units observed, appear to represent a series of intrusions. However, there may be more than one mode of occurrence of this phase; from (a) isolated bodies, enclosed in the mafic to intermediate metavolcanics (b) bands and lenses which are intercalated with mafic metavolcanics or (c) may grade imperceptability along strike with massive felsic metavolcanics. Finally, the porphyritic rhyolite may represent a structurally controlled, but stratigraphically controlled intrusion.

8.1 Felsic Volcanic Rocks

The felsic volcanic rocks exhibit a wide range of textures and structures, from fine-grained to porphyritic and from massive to pyroclastic. Stratification, generally a poorly-developed flow structure or tuffaceous bedding was observed in some outcrops.

The rocks vary in compostion from rhyolite to dacite and for descriptive purposes, have been divided into three main groups, massive, fragmental, and porphyritic.

Massive Rocks

The rhyolite is a fine-grained sheared whitish to buff coloured rock composed of quartz, feldspars and secondary minerals such as chlorite, sericite, epidote and carbonate. Most rhyolite outcrops have suffered carbonatization by numerous calcite stringers and disseminations. Wide composition differences from rhyolite to dacite, result in changes in colour from whitish to pinkish to greyish-green.

Associated with the massive phase are silicified rhyolite, banded rhyolite and sericite-quartz-feldspar schists all which have characteristic features.

Silicified rhyolite, was observed near the Greenlaw occurrence; where the rocks are dark-coloured. Silicified rhyolite is very hard with a dull lustre with a very dense texture and extremely hard.

Banded rhyolite, was observed in one outcrop at L26+50E/52+50S. The westhered surface displays individual bands which can be distinguished by colour differences. These vary from whitish to greyish-green and are caused by small compositional differences between bands. The banded rhyolite exhibits laminations, detected by colour changes from white to buff. These rocks, because of the laminations and dense fine-grained texture, resemble laminated chert deposits.

The sericite-quartz-feldspar schist is included in the massive phase since its origin probably was a massive rhyolite. The schist, a low grade metamorphic equivalent of acid volcanics, was observed in a trench at 36+00E/44+85S (541-000-096). The feldspars are highly sericitized and saussuritized with minor accompanying chloritization of the mafic constituents. Shear is predominante, with grain size increasing due to recrystallization as is exhibited with the quartz which reaches a grain size of up to ½" in length. The schistosity of the rocks generally trends parallel to the strike of the rock units, and because of the schistosity and alterations the sericite-quartz-feldspar schist is slightly bleached and softer then non-metamorphic equivalents.

Fragmental Rocks

Acid volcanic tuff is buff coloured, fine grained and poorly bedded. Beds vary from ¼ inch to 6 inches wide and the bedding planes are gradational. Much of the tuffaceous material is silicious, with some interbands of more mafic material. Contacts between the tuff and the enclosing host rock are usually sharp.

Porphyritic Rocks

The porphyritic rhyolite, observed in several localities is generally pinkish red to buff in colour and has small (1/8 inch diameter) euhedral to anhedral glassy to whitish quartz (augen) phenocrysts, set in a dense fine grained, light-grey to pinkish red rhyolite matrix (sample 541-000-120). The matrix is generally altered by sericitization with carbonatization. Several quartz-carbonate (Fe) vein networks were observed in the Greenlaw occurrence especially in trench 3.

8.2 Mafic to Intermediate Volcanics

The mafic to intermediate volcanic rocks consist essentially of mafic tuff and coarse grained to porphyritic rocks. Because of discontinuous outcrops it is difficult to isolate individual flows and determine to stratigraphic thickness of the volcanic piles.

Fragmental Rocks

The andesitic tuffaceous rocks observed were fine grained foliated, light to dark green in colour with the darker varities being more common. They are altered and consist of varying porportions of plagioclase, mica, hornblende, chlorite, sericite, epidote and carbonate. Banding in the tuffs is best observed on the weathered surface, where slight compositional differences stand out, whereas on fresh surfaces the beds are poorly-defined with gradational borders. The rock fragments are generally small (1/8 inch diameter) and are of the same composition as the matrix with plagioclase being the dominant mineral fragments (i.e., L20+00W/71+75S; sample 541-000-110). In the matrix, sericitization and carbonatization are common, and there are also disseminated grains of magnetite.

Coarse Grained to Porphyritic Rocks

Coarse grained gabbroic rocks were noted within the mafic to intermediate rocks which were dark green, massive and medium grained. It was difficult to distinguish between intrusive gabbro and coarse grained centers of thick mafic volcanic flows, since compositionally and texturally they were very similar. The major constituents were plagioclase, pyroxene, and biotite with minor quartz eyes, epidote and secondary chlorite and sericite. Some disseminated pyrite was also observed.

8.3 Intrusive Rocks

8.3.1 Ultramafic Intrusive Rocks

Ultramafic intrusive rocks were located in the north-eastern corner of the survey area and consist entirely of serpentinite. The equigranular texture of the rock was nearly destroyed by serpentinization, with only the outlines of a few plagioclase and amphibole crystals remaining (L34+20E/TL18+00S).

8.3.2 Late Mafic Intrusive Rocks

The diabase dykes observed were dark-green to black, massive; medium to coarse grained, and had a poorly developed ophitic texture. The main mafic minerals were pyroxenes, hornblende and biotite with minor magnetite and pyrite (L32+50E/62+50S; sample 541-000-095).

9.0 STRUCTURE

Very little structural information were obtained. Strikes and dips from foliation and shearing indicate a general northwest-southeast strike, with the units dipping approximately 70° to 80° to the north. A north-south fault observed on L16E/38+00S (Conquer, 1983) continues through the property and is geophysically inferred from airborne magnetics.

Small-scale structures observed include crenulation cleavage within the mafic metavolcanic andesitic tuff which contained plagioclase fragments. Schistosity caused by plastic deformation with associated recrystallization was observed in the felsic volcanics (sericite-quartz-feldspar schist).

10.0 MINERALIZATION

Sulphide mineralization is seen in all rock types in at least trace amounts; but sheared mafic metavolcanics are the best mineralized rock type found. All samples were assayed for gold, with a total of five samples returning anomalous values. The highest results returned were 0.227 oz/ton Au (sample 543-000-071, from L8+00W at 51+80S) and 816 ppbAu (sample 541-000-066 from an old trench at the Greenlaw showing). Most of the anomalous results are directly related to the Greenlaw showing and in the vicinity of L8W/51+80S (see Appendix 2).

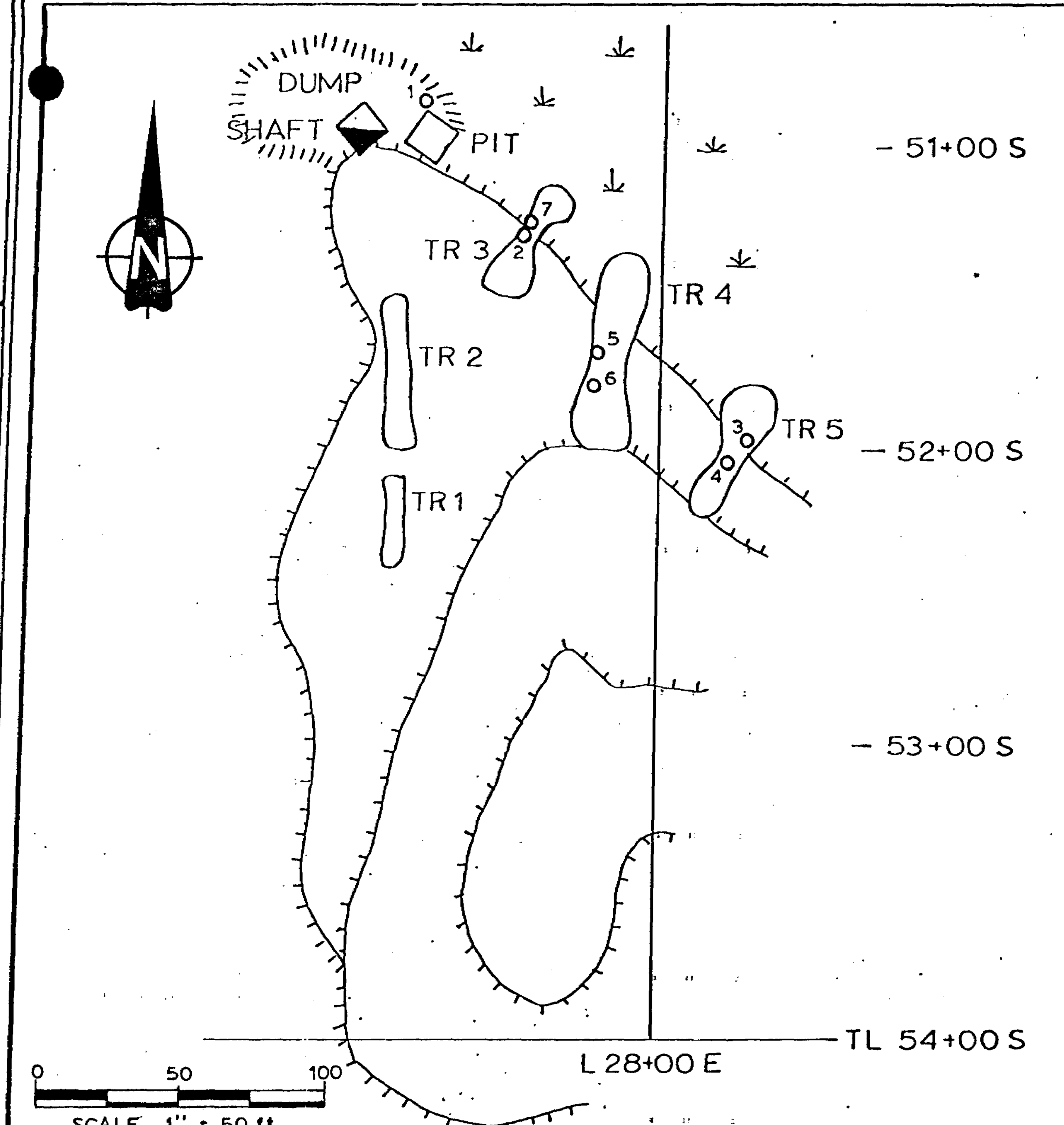
These two areas are of obvious interest and are described in detail as follows:

10.1 Greenlaw Showing

The Greenlaw showing presents itself as an area of interest not only due to the present assay results, but also due to the surface and exploratory underground work conducted by Greenlaw Gold Mines Ltd. The assay results range in values up to 816 ppb in silicified andesite on the footwall southern contact with the porphyritic rhyolite intrusion in Trench 3 (see Figure 4).

A detailed description of the showing mentioned that the footwall to the felsic porphyritic intrusion is a dark green-black, foliated andesite tuff with equigranular light brown to yellowish-green felsic fragments which constitute 5-10% of the andesite tuff by volume. The gragments are approximately ¼ inch in diameter and essentially disappear as they approach the contact zone. The andesite tuff is pervasively carbonatized but decreases with distance away from the intrusion and is dominated structurally by small-scale crenulation cleavage. The foliation and shearing indicate a northwest or northeast strike with dips 60°-65° to the north.

Adjacent stratigraphically to the north is a sheared dark, grey-black, very fine grained andesite tuff which is less than a foot wide and is slightly magnetic. Between the fine grained andesite tuff and the porphyritic rhyolite intrusion is a contace zone which varies from a few inches to approximately two feet



1 ○	541-000-075
2 ○	541-000-070
3 ○	541-000-069
4 ○	541-000-068
5 ○	541-000-067
6 ○	541-000-066
7 ○	541-000-065

COLLINGWOOD ENERGY INC

GREENLAW SHOWING

LOCATION MAP AND ASSAY PLAN

AUGUST, 1984

FIGURE 4

in width and consists of a highly silicified grey-black andesite with narrow quartz-carbonate veinlets.

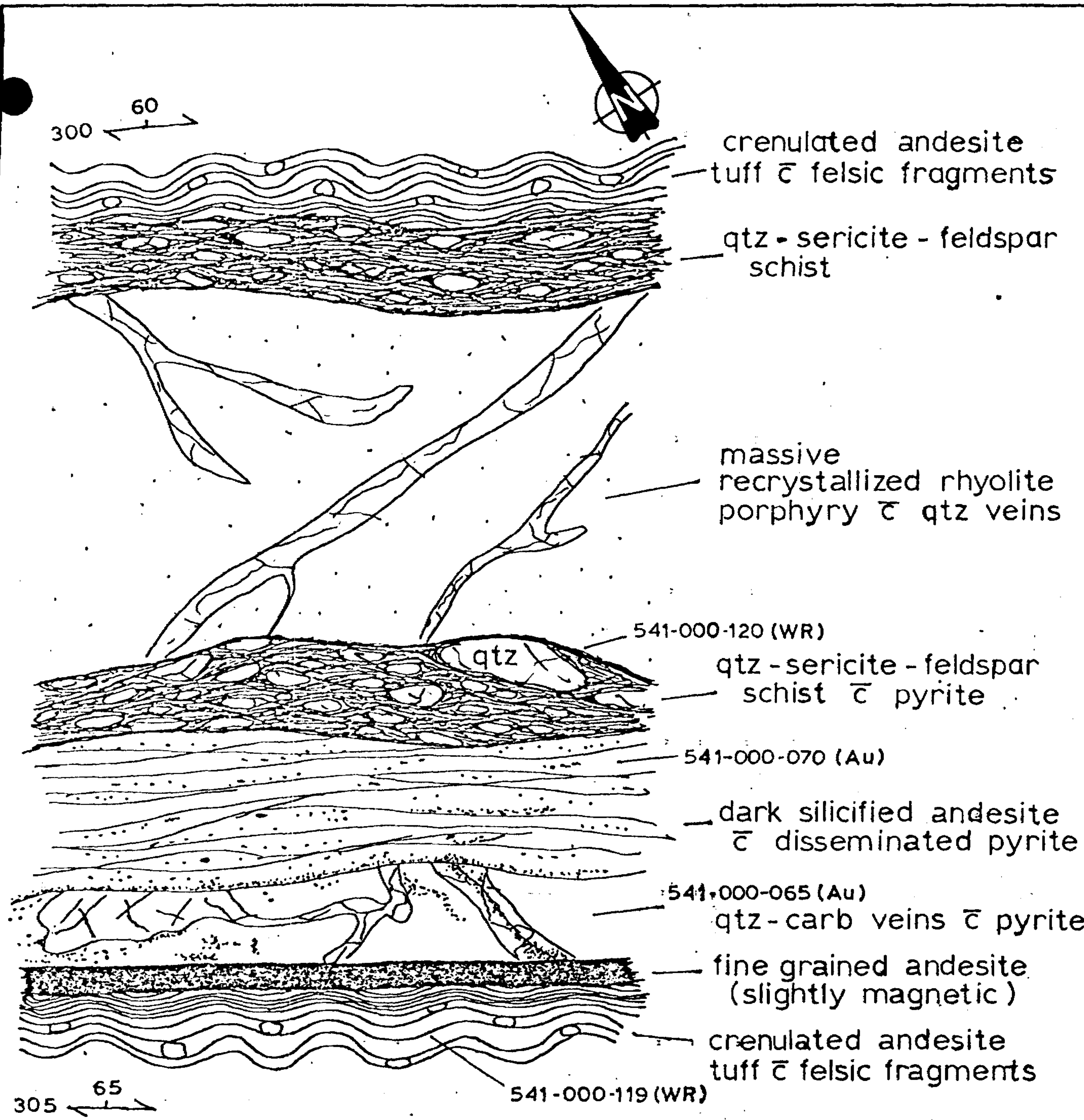
Mineralization appears to be secondary in this zone and consists of 5-7% disseminated pyrite with fine grained magnetite and/or pyrrhotite. Offshoot veinlets of quartz-Fe carbonate, also contain disseminated pyrite. The mineralization seems to be confined to this southern contact zone with the porphyritic rhyolite intrusion and may represent a chill margin(?). The highest assay, from grab sample (541-000-066), was 816 ppb Au.

The porphyritic rhyolite intrusion is highly sheared and altered at the contact to a quartz-sericite-feldspar schist. The intrusion is orange-brown near the contact and changes to a pink colour at the center which may represent compositional changes and/or potassic alteration. The central part has been recrystallized destroying the porphyritic texture and appears massive with crosscutting quartz veining up to 1 inch in width. Mineralization is confined to the sheared portion as sporatic clots of pyrite, while the massive part of the intrusion and quartz veining are barren.

The hanging wall of the intrusion consists of the quartz-sericite-feldspar schist in contact with the fragmental andesite tuff. The highly silicified andesite observed in the southern contact was absent. No mineralization was associated with this contact zone, but was highly carbonatized (refer Figure 5).

10.2 West Zone

The West Zone is located on L8+00W at 51+80S. The one assay result indicated a value of 0.277 oz/ton in a grab sample 541-000-071. This sample was obtained from a silicified and sheared porphyritic rhyolite in contact with a sheared andesite tuff.



NOT TO SCALE

COLLINGWOOD ENERGY INC
GREENLAW SHOWING (TRENCH 3)
PLAN VIEW STRATIGRAPHIC SECTION
AUGUST, 1984 | FIGURE 5

A detailed description of the zone is somewhat similar mineralogically to that of the Greenlaw showing. The southern host being a dark, green-black sheared andesite tuff which is pervasively carbonatized. The foliation and shearing indicate an east-west strike dipping 60°-65° to the north.

Adjacent stratigraphically to the north is a more highly sheared andesite tuff with quartz-Fe carbonate veinlets. This highly sheared andesite tuff is in contact with a sheared and altered portion of the porphyritic rhyolite intrusion which contains a minor amount of apple green mica (fuchsite?). The intrusion is yellow-brown and sericitic near the contact. This changes to a pink colour at the center which may represent compositional changes and/or potassic alteration. The central part of the intrusion has been recrystallized, destroying the porphyritic texture and appears massive with quartz-Fe carbonate veining near the contact up to 1 inch in width. The intrusion is therefore, very similar to that of the Greenlaw showing.

The mineralization is also similar to that of the Greenlaw in that it is concentrated in the sheared andesite tuff and porphyritic rhyolite as 2-3% disseminated pyrite and associated quartz-Fe carbonate veining.

The hanging wall of the intrusion has exactly the same mineralogy as the footwall, except for the absence of the sulphide mineralization (see Figure 6).

These observations were made at one particular large outcrop, but at two other locations similar mineralogy and mineralization were recorded at L1+50W/49+50S and L8+00E at 48+40S with assay values of (541-000-060) 516 ppb and (541-000-092) 397ppb Au respectively. These were noted in a sheared andesite tuff with quartz-Fe carbonate veining and may represent the same zone.

11.0 ALTERATION

Alteration effects have been observed across the property, but no real association between mineralization and alteration or continuous zones of alteration have been recognized. Alteration types observed in the field are carbonatization, sericitization, potassic enrichment and silicification.

In the Greenlaw and West Zone the mineralization is related to shearing and not to the alteration.

12.0 GEOPHYSICS

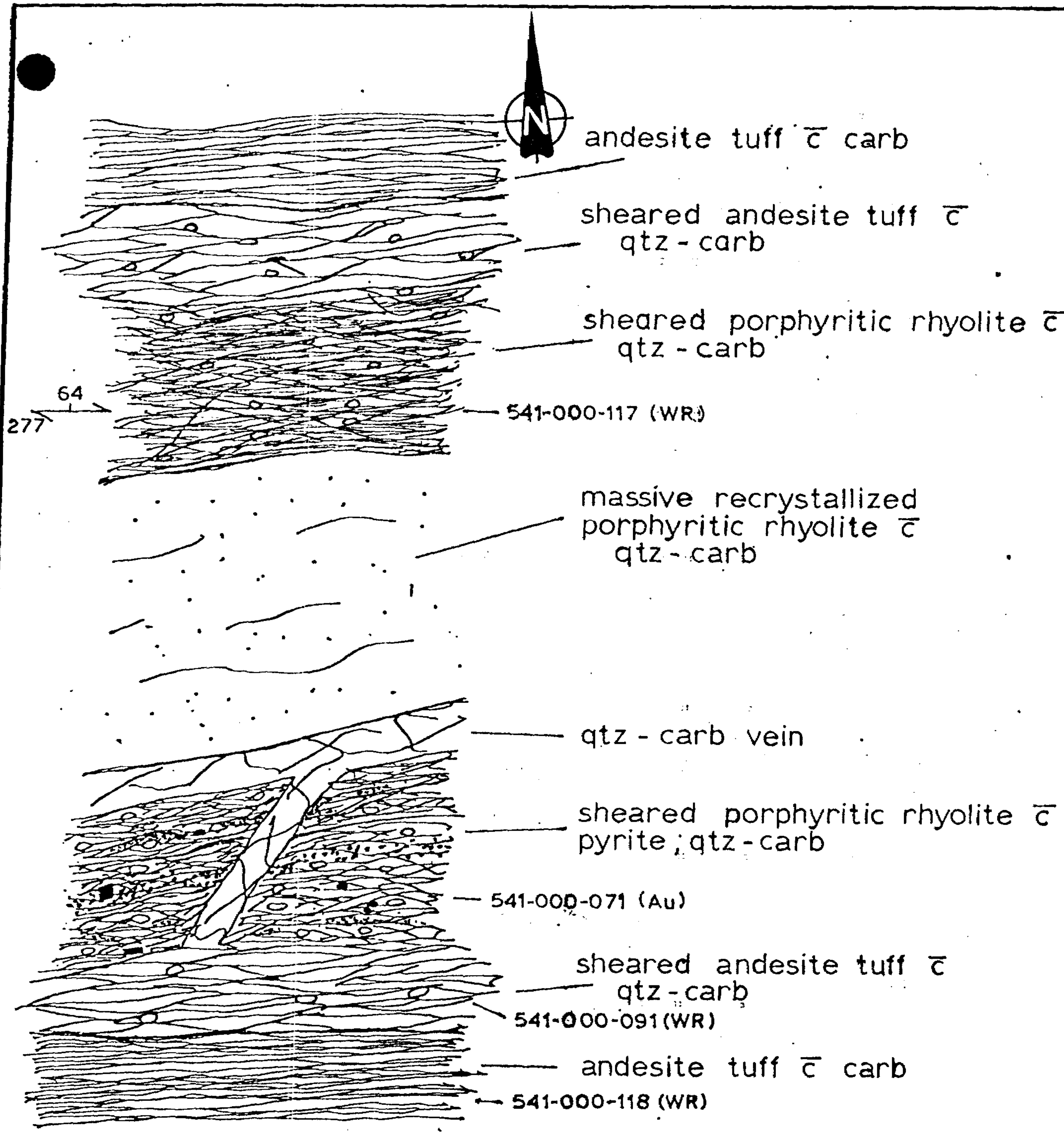
Several highly anomalous magnetic zones were delineated during the airborne geophysical survey conducted by Aerodat Ltd. of Mississauga, Ontario in March 1984. The probable cause of these zones are geophysically and geologically interpretated as a result of the mapping program.

The magnetic high striking north-south at approximately L28W and L24W has been geophysically interpretated as a diabase dyke and matches with that observed in the 1983 geological program.

A dome shaped magnetic high at approximately L12W/52S is coincident with gabbroic intrusives.

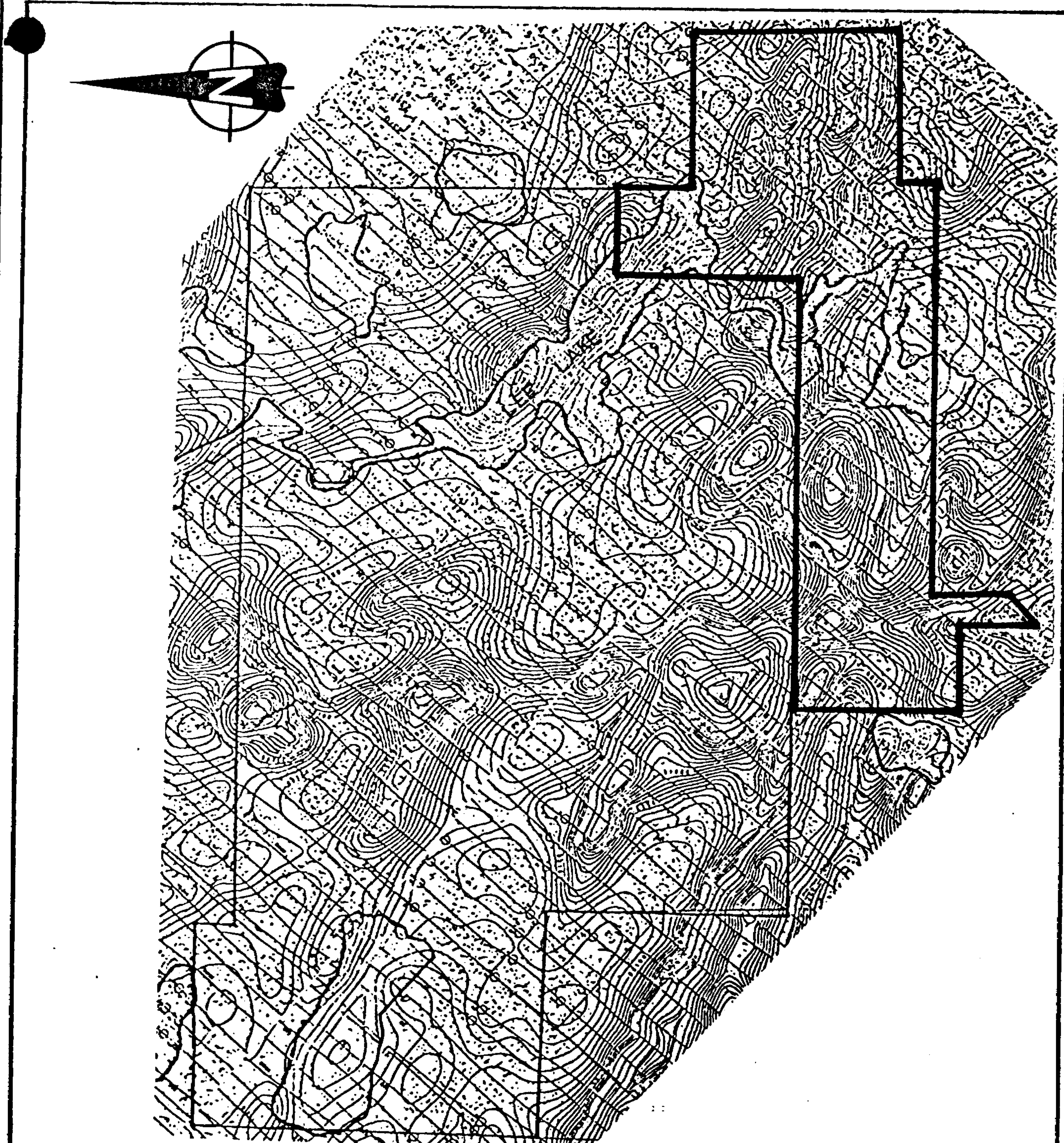
The results of the airborne VLF-EM survey indicate anomalous zones which can be explained by lake bottom sediments and swamp. Due to the lack of bedrock exposure these anomalies cannot be explained geologically (see Figure 7).

A geophysically inferred fault strikes approximately north-south at L16E which is represented by a relative magnetic depression.



NOT TO SCALE

COLLINGWOOD ENERGY INC	
WEST ZONE L 8+00 W / 51+80 S	
PLAN VIEW	
STRATIGRAPHIC SECTION	
AUGUST, 1984	FIGURE 6



SCALE 1:10,000

COLLINGWOOD ENERGY INC	
AIRBORNE ELECTROMAGNETIC SUR.	
TOTAL INTENSITY MAGNETIC SURVEY AERODAT LTD. SHEET 2	
AUGUST 1984	FIGURE 7

In the northeast corner of the survey area in claim P779867 the dome shaped magnetic high is interpretated from the geology survey to represent a serpentinized ultramafic intrusive at approximately L32E/20S.

The general east-west trending magnetic anomalies in the central part of the survey area are coincident with zones of mafic metavolcanics, with iron-rich metavolcanics being the probable cause.

13.0 GEOCHEMISTRY

Two types of geochemical sampling were conducted, since the work was initiated on the property. Rock geochemistry were utilized during the mapping program. The rock geochemistry was used to ascertain where interesting or economic mineralization was present for gold and silver. Lithogeochemistry was conducted to help differentiate between discrete lighological units, where field mapping would only define extremely broad rock units, (especially the mafic metavolcanics). A total of 49 grab samples were collected 26 samples for rock geochemistry and 23 for lithogeochemistry. The assay results for rock geochemistry and listed in Appendix 2. The lithogeochemistry results are still pending and will be later attached in addendum in this report.

14.0 CONCLUSIONS

From the 1984 mapping program, it can be concluded that the local geology is representative of repeditive cycles of volcanism, consisting of mafic metavolcanics overlain by intermediate to felsic metavolcanics and intruded by later gabbro and ultramafic plugs, as well as diabase dykes. The metavolcanics generally strike northwest-southeast and dip between 60°-80° to the north. Evidence from the 1983 geological mapping program suggests that the sequence is overturned.

The porphyritic rhyolite intrusions parallel foliation within the mafic metavolcanics and, maybe structurally controlled or represent discontinuous lenses.

Mineralization and anomalous gold values have been located in two main areas of interest and in both cases, the mineralization is related to the contact zone between the porphyritic rhyolite and the andesitic tuff metavolcanics. These two areas are the West Zone and the Greenlaw showing which present themselves for further follow-up work.

15.0 RECOMMENDATIONS

15.1 Phase I

The activities outlined in Phase I are designed to supplement the information obtained from the previously conducted geological mapping program in gaining a better understanding of the West Zone and Greenlaw Showing. Such information would be gained from a detailed ground geophysical survey and subsequent interpretation.

Such a program would include both a proton procession magnetometer and Induced Polarization surveys on two detailed grids. First, the West Zone consisting of additional cut intermediate lines at 200 feet intervals between L12+00W to L12+00E and from T143+00S to 62+00S. At 62+00S, an additional tie line would be cut for control.

Second, the Greenlaw showing consisting of additional cut intermediate lines at 200 foot intervals between L24+00E to L44+00E, from TL40+00S to 56+00S.

The magnetometer survey conducted at 50 foot station intervals would serve to delineate rock units of different magnetic susceptibility, thus allowing comparison of the responses of unexposed and exposed rocks and possible correlation of these rocks with the mineralization.

The Induced Polarization survey would be conducted over the detailed grids to delineate any response over the West Zone and Greenlaw Showing and define any possible lateral extension of the mineralization using an 'a' spacing of 100 feet and 2 'n' spacing with a closer 'a' spacing of 50 feet and 4 'n' spacing, 300 feet on either side of the zones.

15.2 Phase II

Phase II is largely dependent on the results of the activities outlined in Phase I.

A detailed geological mapping survey at 1"= 200 feet should be conducted over the West Zone to outline any further bedrock exposures and possibly delineate whether the porphyritic rhyolite intrusion is a continuous zone and correlates with the anomalous gold values located in the area.

Also, a re-evaluation of diamond drill holes G72-1, G72-2, B72-1 and B72-2 drilled by Broad Scope Development Limited, by relogging and resampling should be carried out at this time. The drill core was located during the 1984 field season approximately two miles southwest of Lee Lake.

A soil geochemistry sampling program should be conducted over both the West Zone and Greenlaw Showing detailed grids at 50 foot station intervals sampling the 'B' horizon, to delineate any correlation with possible anomalous gold values with results from the ground geophysics and detailed mapping.

15.3 Phase III

Phase III, being dependent on results of the activities outlined in Phases I and II.

A program of trenching, stripping, hydraulicking and backhoe work should be conducted with detailed sampling on the anomalous zones previously outlined to obtain a better understanding of the mineralogy and mineralization.

15.4 Phase IV

Phase IV, being dependent upon the favourable results of Phases I, II and III would consist of approximately 2,000 feet of diamond drilling. Such drilling would serve to visually examine and sample any targets as delineated by the activities of the previous phases.

16.0 COST ESTIMATES

In regards to detailed evaluation of the West Zone and the Greenlaw occurrence.

Phase I

West Zone and Greenlaw Occurrence

Linecutting

i) Linecutting Costs	
4.1 line miles @ $350./line mile	$1,435.00
ii) Transport	
Fixed Wing 544 miles @ $2./mile	1,088.00

Ground Geophysics

Survey Costs

a)	Magnetometer Survey	
	10.3 line miles @ $150/line mile	1,545.00
b)	Induced Polarization Survey	
	10.3 line miles @ $1,200./day for 11 days	13,200.00
i)	Transport	
	Fixed Wing 544 miles @ $2./mile	1,088.00
ii)	Compilation and Preparation of Field Data	
	3 days @ $300./day	900.00
iii)	Map Preparation	
	10 days @ $150./day	1,600.00
iv)	Report Preparation	
	4 days @ $300./day	1,200.00
v)	Supervision 2 days @ $500./day	1,000.00
		$23,056.00
	say	23,100.00
plus 15% contingencies	$3,458.40 say	3,400 00
Phase I total		$26,600.00

Phase II - contingent upon the results of Phase I

West Zone

Detailed Geological Program

Survey Costs

a)	Geological Mapping	
	8 days @ $460./day	3,680.00
b)	Assaying	
i)	Geochemical-60 samples @$15 ./sample	900.00
ii)	Lithogeochemical-30 samples @ $50./sample	1,500.00
c)	Equipment (Axes, hammer, mattocks, etc.) estimate	100.00
d)	Supplies (gas, oil, consummables	200.00

e)	Accommodations	
	Food - 10 days @ $20./man/day (crew of 2)	400.00
f)	Lodging (tents, camp supplies) estimate	600.00
g)	Transport	
i)	Truck - 200 miles @ $0.55/mile	110.00
ii)	Fixed Wing - 300 miles @ $2./mile	600.00
iii)	Helicopter - 2 hours @ $500./hr	1,000.00
h)	Compilation and Preparation of Field Data	
	2 days @ $400./day	800.00
i)	Map Preparation	
	4 days @ $160./day	640.00
j)	Report Preparation	
	4 days @ $300./day	1,200.00
k)	Supervision 2 days @ $500./day	1,000.00
	Subtotal $11,740.00 say	$11,800.00

West Zone and Greenlaw Occurrence

Geochemistry, estimate

a)	Soil Survey Costs	
	10 days (500 samples @ $50./ sample/day (crew of 2)	1,600.00
b)	Assaying	
	500 samples @ $15./sample	7,500.00
c)	Accommodation	
	Food - 5 days @ $20./man/day	200.00
d)	Lodging (tents, camp supplies, etc.)	200.00
e)	Transport	
	Fixed Wing 350 miles @ $2./mile	600.00
	Truck 200 miles @ $0.55/mile	110.00

f)	Compilation and Preparation of Field Data 3 days @ $300./day		900.00
g)	Map Preparation 7 days @ $160./day		1,200.00
h)	Report Preparation 3 days @ $300./day		900.00
i)	Supervision 1 day @ $500./day		500.00
	Sub-total	$13,710.00 say	$14,000.00
	Sub-totals		11,800.00
			14,000.00
			$25,800.00
	Plus 15% Contingencies	$3,870.00 say	3,900.00
			29,700.00
	Phase II Total		29,700.00

Phase III - Contingent upon the results of Phase II

West Zone and Greenlaw Occurrence

estimate

a)	Trenching, Stripping, Hydraulicking, Backhoe 10 days - all incl.	15,000.00
b)	Assaying Geochemical - 75 samples @ $15./sample	1,125.00
c)	Compilation and Preparation of Field Data 2 days @ $400./day	800.00
d)	Map Preparation 3 days @ $160./day	480.00
e)	Report Preparation 4 days @ $300./day	1,200.00

f)	Supervision			
	2 days @ $500./day			1,000.00
		$19,605.00	say	$19,600.00
	Plus 15% contingencies	$ 2,940.00	say	3,000.00
	Phase III Total			$22,000.00

Phase IV - contingent upon the results of Phase III

West Zone and Greenlaw Occurrence

a)	Diamond Drilling			
	2,000 feet @ $25./foot			50,000.00
b)	Engineering and Supervision			
	1 month @ $10,000./month			10,000.00
c)	Assaying			
	Geochemical 200 samples @ $15./sample			3,000.00
	Lithogeochemical 40 samples @ $ 0./sample			2,000.00
d)	Transportation and Supplies			4,000.00
e)	Map Preparation			
	6 days @ $160./day			960.00
f)	Report Preparation			
	8 days @ $300./day			2,400.00
g)	Supervision			
	2 days @ $500./day			1,000.00
		$73,360.00	say	$73,400.00
	Plus 15% Contingencies	$11,004.00	say	11,000.00
	Phase IV Total			$84,400.00

West Zone and Greenlaw Occurrence - Cost Estimate Totals

Phase I	$ 26,200.00
Phase II	29,700.00
Phase III	22,600.00
Phase IV	84,400.00
	$163,300.00

Total $163,300.00

Respectfully submitted,

David Gliddon

August 1, 1984
Timmins, Ontario

By: David J. Gliddon, GETY
Per: David R. Bell
Geological Services Inc.
Supervised by: Stephen W. Conquer, B.Sc

Stephen Conquer

CERTIFICATE OF QUALIFICATIONS

I, David J. Gliddon hereby certify:

1. that I am a geology technician employed by David R. Bell Geological Services Inc., Suite 4, 251 Third Ave., Timmins, Ontario

2. that I am a graduate of Cambrian College of Applied Arts and Technology, holding a Geological Engineering Technologist diploma (1976)

3. that I have been practising my profession as a technician since 1976

4. that I do not have nor do I expect to receive either directly or indirectly, any interest in this property or the securities of Collingwood Energy Inc.

David Gliddon

Timmins, Ontario
August 14, 1984

By: David Gliddon, GETY
Per: David R. Bell
Geological Services Inc.

CERTIFICATE OF QUALIFICATIONS

I, Stephen W. Conquer hereby certify:

1. that I am a geologist employed by David R. Bell Geological Services Inc., Suite 5, 251 Third Avenue, Timmins, Ontario

2. that I am a graduate of the University of Waterloo, holding a Bachelor of Science degree (1979)

3. that I have been practising my profession as a geologist since 1979

4. that I do not have nor do I expect to receive either directly or indirectly, any interest in this property or the securities of Collingwood Energy Inc.

Stephen Conquer

Timmins, Ontario
August 14, 1984

By: Stephen W. Conquer, B.Sc
Per: David R. Bell
Geological Services Inc.

APPENDIX I

UNPATENTED MINING CLAIMS

COLLINGWOOD ENERGY INC.

PERSONNEL

David Gliddon 2235 McGregor Avenue Thunder Bay F, Ontario P7C 5G6	
Stephen Conquer 578 Randall Drive Timmins, Ontario P4N 7S2	
Brian Scott R. R. #1 Frankford, Ontario K0K 2C0	July 16/84 - July 25/84
Grant Webb 1340 Erindale Drive Ottawa, Ontario K2C 2G4	July 16/84 - July 25/84
Matthew Egner 22 Elmbank Cres. Ottawa, Ontario K2G 3P6	July 16/84 - July 25/84

REFERENCES

Conquer, S.
1983

Geological Report of the Collingwood Energy Inc. Property, Swayze Area, District of Sudbury, Ontario

Donovan, J.F.
1968

Geology of Halcrow-Ridout Lakes Area; Ontario Department of Mines, G.R. 63, 45p. Accompanied by Maps 2120 and 2121, scale 1"=½ mile

Hogg, R.L. Scott
1984

Report on Combined Helicopter-borne Magnetic, Electromagnetic and VLF Survey Swayze Area, Ontario Aerodat Limited

Rickaby, H.C.
1934

Geology of the Swayze Gold Area Ontario Department of Mines, Vol. XLIII pt 3, p.1-36. Accompanied by Map 436, scale 1 inch to 1 mile

Appendix 1 - List of Collingwood Energy Inc. unpatented mining claims; Swayze area, District of Sudbury

Claim Number	Township	Date Recorded
P751994	Greenlaw	December 23, 1983
P751995	Greenlaw	December 23, 1983
P751996	Greenlaw	December 23, 1983
P751997	Greenlaw	December 23, 1983
P751998	Greenlaw	December 23, 1983
P751999	Greenlaw	December 23, 1983
P752000	Greenlaw	December 23, 1983
P752001	Greenlaw	December 23, 1983
P752002	Greenlaw	December 23, 1983
P779863	Greenlaw	December 23, 1983
P779864	Greenlaw	December 23, 1983
P779865	Greenlaw	December 23, 1983
P779866	Greenlaw	December 23, 1983
P779867	Greenlaw	December 23, 1983
P779868	Greenlaw	December 23, 1983
P779869	Greenlaw	December 23, 1983

APPENDIX 2
SAMPLE LOCATION AND ASSAY RESULT SHEETS

BELL-WHITE ANALYTICAL LABORATORIES LTD.
P.O. BOX 187, HAILEYBURY, ONTARIO TEL: 672-3107

Certificate of Analysis

NO. B799-84 DATE: August 2, 1984

SAMPLE(S) OF: Rock (26) RECEIVED: July, 1984

SAMPLE(S) FROM: David R. Bell Geological Services Inc. Project #5411

Sample No.	Gold/ppb	Gold/oz.	Silver/ppm
541-000-059	25		0.2
541-000-060	560**		0.4
-061	15		
-062	8		
-063	26		
-064	5		
-065	16		0.2
-066	816**		0.2
541-000-068	27		0.2
-069	25		0.2
541-000-070	123		0.2
-071		0.277**	
541-000-073	37		
-074	19		
-075	25		0.2
541-000-089	94		
541-000-092	397**		
541-000-096	10		0.2
-097	7		0.2
-098	8		0.2
-099	29		0.4
-100	7		0.4
541-103	4		0.2
-104	7		
-105	10		
541-111	5		

** Checked

BELL-WHITE ANALYTICAL LABORATORIES LTD.

PER

DAVID R. BELL GEOLOGICAL SERVICES INC.

251 THIRD AVE., SUITE 6
BOX 1250
TIMMINS, ONTARIO
P4N 7J5
(705) 264-4286

SAMPLE LOCATION SHEET

COMPANY: Collingwood Energy Inc. PROJECT No. 5411

TWP. (AREA): Greenlaw, Denyes, Tooms, Harker Twp. NTS: 41 O/10 41 O/15

Sample No.	Location	Footage	Length	Au ppb				Remarks
541-051	L24W 5+30S	Grab						Shear zone
541-052	L32W 9+25S	"						Reddish shear
541-053	L32W 9+00S	"						Red shear
541-054	L32W 8+00S	"						Red shear
541-055	L32W 4+35S	"						Sheared mafic
541-056	L20E 6+75S	"						Shear mafic
541-057	5+00E 14+00S	"						Qtz.carb zone
541-058	19W 8S	"						Shear
541-059	L0+00 46+30S	"						Qtz vn & carb in dac. tuff
541-060	L1+50W 49+50S	"						qtz carb veins in shrd mafic tuff (py)
541-061	L0+00 51+70S	"						qtz carb veins in dac. tuff
541-062	L0+00 57+40S	"						sheared carb. dacitic tuff
541-063	L4E 48+00S	"						qtz-carb in dacitic tuff
541-064	L4E 47+00S	"						" "
541-065	Trench 3	"						qtz-carb veins at contact between At and pR
541-066	Trench 4	"						qtz vn intrudin maf tuff 5% py
541-067	Trench 4	"						sil. contact zn betweem At-pR(p
541-068	Trench 5	"						sil.zn between At & pR (py)
541-069	Trench 5	"						same as above 5-7% py, mag.
541-070	Trench 3	"						sil.carb pR(py)
541-071	L8W 51+80S	"						zone of shearin between At & pR
541-072	TL 43S L18+00W	"						fg and. tuff (WR)
541-073	L4W 44+20S	"						contact between At & Pr carb,py
541-073	L4W 44+20S	"						" "
541-074	L12W 51+00S	"						sil fel,porph dyke Gb
541-075	shaft area Greenlaw sh.	"						con.between At & Pr. 7% py
541-076	Greenlaw sh	"	6"					quartz carb.
541-077	"	"						" "
541-078	"	"						dk,sil. rock with qtz & py

DAVID R. BELL GEOLOGICAL SERVICES INC.

251 THIRD AVE., SUITE 6
BOX 1250
TIMMINS, ONTARIO
P4N 7J5
(705) 264-4286

SAMPLE LOCATION SHEET

COMPANY: Collingwood Energy Inc. PROJECT No. 5411

TWP. (AREA): Greenlaw, Denyes, Tooms, Harker Twp. NTS: 41 0/10 41 0/15

mple No.	Location	Footage	Length	Au ppb				Remarks
541-079	Greenlaw sh	Grab						qtz ser. schis
1-080	"	"						qtz carbonate
541-081	"	"						dk. sil.rock qz str., py
1-082	"	"						" "
1-083	"	"						sil. shear
541-084	"	"						sil. rock
1-085	L34W 19S	"						mas. green-blac ultramafic
541-086	L39E 18S	"						med.gr. gabbro
1-087	L26+50E 52+50S	"						fine grained ryholitic tuff
541-088	L27E 53S	"						Gabbro
1-089	L41E 60+20S	"						shear in daciti tuff
541-090	L4E 44S	"						rhy. dacitic tuff
1-091	L8W 51+80S	"						sil.pR intrusiv in At carb & py
541-092	L8E 48+40S	"						shrd and. dac. tuff w/carb & p
1-093	L8E 44+00S	"						slightly shrd rhy tuff, carb
41-094	31+85E 43+25S	"						fine-med.graine gab.w/min.carb
541-095	32+50E 62+05S	"		SAMPLE DELETED				med.grained diabase
1-096	31+82E 54+10S	"						fol.and.w/carb and magnetite
541-097	L36E 50+00S	"						fg gab.w/qtz tourm vein
1-098	L36E 44+85S	"						qtz-ser.schist (pebbly qtzite)
541-099	L36E 44+85S	"						fg and. ash tuf 2-5% py carb.
1-100	39+70E 46+00S	"						fg and. tuff w/ carb and pyrite
541-103	39+70E 46+00S	"						highly shrd, si and tuff,qtz
								carb. vein
541-104	39+70E 46+00S	"						shrd and. tuff carbonate & py
41-105	39+70E 46+00S	"						" "
1-106	L28E 36+50S	"						shrd dac. tuff w/ carb
541-107	L20W 67+00S	"						fg gabbro
1-108	L20W 68+70S	"						fg and. tuff w/ carb
541-109	L20W 70+00S	"						shrd dac. tuff w/ carb
1-110	L20W 71+75S	"						fol.and. dac. tuff w/ carb

DAVID R. BELL GEOLOGICAL SERVICES INC.

251 THIRD AVE., SUITE 8
BOX 1250
TIMMINS, ONTARIO
P4N 7J5
(705) 264-4286

SAMPLE LOCATION SHEET

COMPANY: Collingwood Energy Inc. PROJECT No. 5411

TWP. (AREA): Greenlaw, Denyes, Tooms, Halcrow Twp. NTS: 41 0/10 41 0/15

Sample No.	Location	Footage	Length	Au ppb				Remarks
541-111	L20W 74+00S	Grab						sil.and. w/ carb and py
541-112	L0, 49 50S	"						mg gabbro
541-113	L44W 50+50S	"						" "
541-115	L0+00 44+00S	"						rhy.-dac. ash tuff
541-116	L8W 65+00S	"						fol. fg and. tuff
541-117	L8W 51+80S	"						alt. shrd pr between At & pR
541-118	L8W 51+80S	"						Unaltered host At
541-119	Greenlaw Tr #4	"						" "
541-120	Greenlaw	"						unaltered porphy. rhy

Ontario Ministry of Natural Resources

Report of Work

(Geophysical, Geological, Geochemical and Expenditures)

#183/85 #5411 #,

The Minin[g Act]

41010NW9063 2.8110 GREENLAW 900

Type of Survey(s)	Township or Area
GEOLOGY AND LINECUTTING	GREENLAW.

Claim Holder(s)	Prospector's Licence No.
COLLINS RESOURCES (COLLINGWOOD ENERGY INC)	T-1498

Address: 1550 - 609 GRANVILLE ST. P.O. BOX 10108, VANCOUVER B.C. V7Y-1C6

Survey Company	Date of Survey (from & to)	Total Miles of line Cut
DAVID R. BELL GEOLOGICAL SERVICES INC	16 Day 7 Mo. 84 Yr. / 30 Day 7 Mo. 84 Yr.	13 miles.

Name and Address of Author (of Geo-Technical report): DAVID GLIDDON c/o DAVID R. BELL GEOLOGICAL SERVICES P.O. BOX 1250, TIMMINS, ONT

Credits Requested per Each Claim in Columns at right

Special Provisions		Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	Geophysical	
	- Electromagnetic	
	- Magnetometer	
For each additional survey; using the same grid: Enter 20 days (for each)	- Radiometric	
	- Other	
	Geological	40
	Geochemical	

Man Days		Days per Claim
Complete reverse side and enter total(s) here	Geophysical	
	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other	
	Geological	
	Geochemical	

Airborne Credits		Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	
	Magnetometer	
	Radiometric	

Expenditures (excludes power stripping)

Type of Work Performed

Performed on Claim(s)

RECEIVED
MAY 10 1985
A.M. P.M.
7,8,9,10,11,12,1,2,3,4,5,6

Calculation of Expenditure Days Credits

Total Expenditures $ ÷ 15 = Total Days Credits

Instructions: Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

Date	Recorded Holder or Agent (Signature)
May 10, 1985	R.A. Bell

Mining Claims Traversed (List in numerical sequence)

Prefix	Number	Expend. Days Cr.
P	751994	
	751995	
	751996	
	751997	
	751998	
	751999	
	752000	
	752001	
	752002	
	779863	
	779864	
	779865	
	779866	
	779867	
	779868	
	779869	

RECORDED
MAY 10 1985
Receipt No. [illegible]

RECEIVED
MAY 2 1985
MINING LANDS SECTION

See revised work statement.

Total number of mining claims covered by this report of work. 16

For Office Use Only		
Total Days Cr. Recorded	Date Recorded	Mining Recorder
640	May 10/85	[signature]
	Date Approved as Recorded	Branch Director

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying	Date Certified	Certified by (Signature)
Ramune Bell, c/o DAVID R. BELL GEOLOGICAL SERVICES P.O. BOX 1250 TIMMINS, ONT. P4N 7J5	May 10/85	R.A. Bell

Mining Lands Section

File No 2.8110

Control Sheet

TYPE OF SURVEY

_____ GEOPHYSICAL

✓ GEOLOGICAL

_____ GEOCHEMICAL

_____ EXPENDITURE

MINING LANDS COMMENTS:

- Plans not signed. — O.K.

Lgd.

L.D.

Demsk.

Signature of Assessor

May 29/85

Date

1985 07 09

Your File:183/85
Our File:2.8110

Mining Recorder
Ministry of Natural Resources
60 Wilson Avenue
Timmins, Ontario
P4N 2S7

Dear Sir:

RE: Notice of Intent dated June 6, 1985
Geological Survey on Mining Claims
P 751994, et al, in Greenlaw Township

The assessment work credits, as listed with the above-mentioned Notice of Intent, have been approved as of the above date.

Please inform the recorded holder of these mining claims and so indicate on your records.

Yours sincerely,

S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone:(416)965-4888

D. Kinvig:mc

cc: Collins Resources
Collingwood Energy Inc
Vancouver, B.C.

cc: Ramune Bell
c/o David R. Bell
Geological Services
Timmins, Ontario

cc: David Gliddon
c/o David R. Bell
Geological Services
Timmins, Ontario

cc: Resident Geologist
Timmins, Ontario

cc: Mr. G.H. Ferguson
Mining & Lands Commissioner
Toronto, Ontario

Encl.

Ontario

Ministry of Natural Resources

Technical Assessment Work Credits

File	
	2.8110

Date	Mining Recorder's Report of Work No.
1985 06 06	183/85

Recorded Holder
COLLINS RESOURCES

Township or Area
GREENLAW TOWNSHIP

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	
Electromagnetic ____ days	
Magnetometer ____ days	
Radiometric ____ days	
Induced polarization ____ days	
Other ____ days	
Section 77 (19) See "Mining Claims Assessed" column	
Geological 40 days	P 751995-96 751998 to 2002 inclusive 779863 to 66 inclusive 779869
Geochemical ____ days	
Man days ☐ Airborne ☐	
Special provision ☒ Ground ☒	
☐ Credits have been reduced because of partial coverage of claims.	
☐ Credits have been reduced because of corrections to work dates and figures of applicant.	

Special credits under section 77 (16) for the following mining claims

30 DAYS GEOLOGICAL

P 751994
751997

20 DAYS GEOLOGICAL

P 779867-68

No credits have been allowed for the following mining claims

☐ not sufficiently covered by the survey ☐ Insufficient technical data filed

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical — 80; Geological — 40; Geochemical — 40; Section 77(19) — 60:

828 (83/6)

Ministry of Natural Resources

ario

June 21/85

1985 06 06

Your File: 183/85
Our File: 2.8110

Mining Recorder
Ministry of Natural Resources
60 Wilson Avenue
Timmins, Ontario
P4N 2S7

Dear Sir:

Enclosed are two copies of a Notice of Intent with statements listing a reduced rate of assessment work credits to be allowed for a technical survey. Please forward one copy to the recorded holder of the claims and retain the other. In approximately fifteen days from the above date, a final letter of approval of these credits will be sent to you. On receipt of the approval letter, you may then change the work entries on the claim record sheets.

For further information, if required, please contact Mr. R.J. Pichette at 416/965-4888.

Yours sincerely,

S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3

RDC D. Kinvig:mc

Encls.

cc: Collins Resources
Collingwood Energy Inc
Suite 1550
609 Granville Street
P.O. Box 10108
Vancouver, B.C.
V7Y 1C6

cc: David Gliddon
c/o David R. Bell Geological Services
Timmins, Ontario

cc: Ramune Bell
c/o David R. Bell Geological Services
Timmins, Ontario

cc: Mr. G.H. Ferguson
Mining & Lands Commissioner
Toronto, Ontario

Ministry of Natural Resources

Ontario

Notice of Intent

for Technical Reports

1985 06 06

2.8110/183/85

An examination of your survey report indicates that the requirements of The Ontario Mining Act have not been fully met to warrant maximum assessment work credits. This notice is merely a warning that you will not be allowed the number of assessment work days credits that you expected and also that in approximately 15 days from the above date, the mining recorder will be authorized to change the entries on his record sheets to agree with the enclosed statement. Please note that until such time as the recorder actually changes the entry on the record sheet, the status of the claim remains unchanged.

If you are of the opinion that these changes by the mining recorder will jeopardize your claims, you may during the next fifteen days apply to the Mining and Lands Commissioner for an extension of time. Abstracts should be sent with your application.

If the reduced rate of credits does not jeopardize the status of the claims then you need not seek relief from the Mining and Lands Commissioner and this Notice of Intent may be disregarded.

If your survey was submitted and assessed under the "Special Provision-Performance and Coverage" method and you are of the opinion that a re-appraisal under the "Man-days" method would result in the approval of a greater number of days credit per claim, you may, within the said fifteen day period, submit assessment work breakdowns listing the employees names, addresses and the dates and hours they worked. The new work breakdowns should be submitted direct to the Land Management Branch, Toronto. The report will be re-assessed and a new statement of credits based on actual days worked will be issued.

1985 05 21 File: 2.8110

Mining Recorder
Ministry of Natural Resources
60 Wilson Avenue
Timmins, Ontario
P4N 2S7

Dear Sir:

We received reports and maps on May 15, 1985 for a Geological Survey submitted under Special Provisions (credit for Performance and Coverage) and Data for Assaying on Mining Claims P 751994, et al, in the Township of Greenlaw.

This material will be examined and assessed and a statement of assessment work credits will be issued.

We do not have a copy of the report of work which is normally filed with your office prior to the submission of this technical data. Please forward a copy as soon as possible.

Yours sincerely,

S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone:(416)965-4888

A. Barr:mc

cc: Collins Resources
Suite 1550
609 Granville Street P.O. Box 10108
Vancouver, B.C.
V7Y 1C6

cc: David R. Bell Geological Services
251 Third Avenue
Suite 4
P.O. Box 1250
Timmins, Ontario
P4N 7J5

DAVID R. BELL GEOLOGICAL SERVICES INC.
251 THIRD AVE., SUITE 4
BOX 1250
TIMMINS, ONTARIO
P4N 7J5
(705) 264-4286
TELEX · 067-81638

REGISTERED

May 10, 1985

Mr. F. Mathews
Lands Administration Branch
Mining Lands Section
Ministry of Natural Resources
Room 6610
Whitney Block, Queen's Park
Toronto, Ontario
M7A 1W3

Dear Mr. Mathews:

Re: Collins Resources (Collingwood Energy) - Linecutting Geological Work Report, P751994 et al - Greenlaw Twp.

Enclosed are 2 copies of a geological report by David Gliddon covering the above area. The work report was filed with the Porcupine Mining Division recorder on May 10, 1985.

Please acknowledge receipt of the above reports to our office and the company.

Your assistance in the above matter is appreciated.

Sincerely yours,

R.A. Bell

R.A. Bell
Vice-President

RAB/kg

Encl.

cc N. Dragovan

File - 5411 - corresp., claims, Geol. reports

RECEIVED
MAY 15 1985
MINING LANDS SECTION

File ____________

Ministry of Natural Resources

Ontario

GEOPHYSICAL – GEOLOGICAL – GEOCHEMICAL TECHNICAL DATA STATEMENT

TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

Type of Survey(s) Geology and Linecutting

Township or Area Greenlaw

Claim Holder(s) Collins Resources
(Collingwood Energy Inc.)

Survey Company David R. Bell Geological Services Inc.

Author of Report David Gliddon

Address of Author c/o David R. Bell Geological Services
P.O. Box 1250, Timmins, Ont.

Covering Dates of Survey 16-7-84 to 30-7-84
(linecutting to office)

Total Miles of Line Cut 13

SPECIAL PROVISIONS CREDITS REQUESTED

ENTER 40 days (includes line cutting) for first survey.

ENTER 20 days for each additional survey using same grid.

	DAYS per claim
Geophysical	
–Electromagnetic	
–Magnetometer	
–Radiometric	
–Other linecutting	
Geological	40
Geochemical	

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)

Magnetometer ______ Electromagnetic ______ Radiometric ______
(enter days per claim)

DATE: May 10/85 SIGNATURE: R G Bell
Author of Report or Agent

Res. Geol. ____________ Qualifications 2.5873

Previous Surveys

File No.	Type	Date	Claim Holder

MINING CLAIMS TRAVERSED
List numerically

See attached list
(prefix) (number)

P751994 et al

If space insufficient, attach list

TOTAL CLAIMS 16

837 (5/79)

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS -- If more than one survey, specify data for each type of survey

Number of Stations ______ Number of Readings ______

Station interval ______ Line spacing ______

Profile scale ______

Contour interval ______

MAGNETIC

Instrument ______

Accuracy – Scale constant ______

Diurnal correction method ______

Base Station check-in interval (hours) ______

Base Station location and value ______

______

ELECTROMAGNETIC

Instrument ______

Coil configuration ______

Coil separation ______

Accuracy ______

Method: ☐ Fixed transmitter ☐ Shoot back ☐ In line ☐ Parallel line

Frequency ______ (specify V.L.F. station)

Parameters measured ______

GRAVITY

Instrument ______

Scale constant ______

Corrections made ______

______

Base station value and location ______

______

Elevation accuracy ______

INDUCED POLARIZATION RESISTIVITY

Instrument ______

Method ☐ Time Domain ☐ Frequency Domain

Parameters – On time ______ Frequency ______

– Off time ______ Range ______

– Delay time ______

– Integration time ______

Power ______

Electrode array ______

Electrode spacing ______

Type of electrode ______

SELF POTENTIAL

Instrument ____________________ Range ____________________

Survey Method ____________________

____

Corrections made ____________________

____

RADIOMETRIC

Instrument ____________________

Values measured ____________________

Energy windows (levels) ____________________

Height of instrument ____________________ Background Count ____________________

Size of detector ____________________

Overburden ____________________
(type, depth – include outcrop map)

OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey ____________________

Instrument ____________________

Accuracy ____________________

Parameters measured ____________________

____

Additional information (for understanding results) ____________________

____

____

AIRBORNE SURVEYS

Type of survey(s) ____________________

Instrument(s) ____________________
(specify for each type of survey)

Accuracy ____________________
(specify for each type of survey)

Aircraft used ____________________

Sensor altitude ____________________

Navigation and flight path recovery method ____________________

____

Aircraft altitude ____________________ Line Spacing ____________________

Miles flown over total area ____________________ Over claims only ____________________

GEOCHEMICAL SURVEY – PROCEDURE RECORD

Numbers of claims from which samples taken

Total Number of Samples

Type of Sample
(Nature of Material)

Average Sample Weight

Method of Collection

Soil Horizon Sampled

Horizon Development

Sample Depth

Terrain

Drainage Development

Estimated Range of Overburden Thickness

SAMPLE PREPARATION
(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis

General

ANALYTICAL METHODS

Values expressed in: per cent ☐ p. p. m. ☐ p. p. b. ☐

Cu, Pb, Zn, Ni, Co, Ag, Mo, As,-(circle)

Others

Field Analysis (tests)

Extraction Method

Analytical Method

Reagents Used

Field Laboratory Analysis

No. (tests)

Extraction Method

Analytical Method

Reagents Used

Commercial Laboratory (tests)

Name of Laboratory

Extraction Method

Analytical Method

Reagents Used

General

2.8110

	Geol.			Geol.
P.-751994	~~?~~ 1/4		752002	✓
95	~~1/4~~ ✓		779863	✓
96	✓		64	✓
97	~~1/2~~ 1/4		65	✓
98	✓		66	✓
99	✓		67	1/2
000	✓		68	1/2
752001	✓		779869	✓

D.K.

David R. Bell Geological Services Inc.

COLLINGWOOD ENERGY INC.

5411-84-3-2

SAMPLE LOCATION AND ASSAY PLAN

2810

TWP/AREA Greenlaw Township		PROVINCE Ontario
MINING DIVISION Porcupine		PROJECT No. 5411
REFERENCES ODM-Geological Report 63		N.T.S. No 41-0/15
DRAWN DJG, BS	DRAFTED DJG	CHECKED DJG
SCALE 1"=400'	DATE July, 1984	SHEET No. 1 of 1

LEGEND

PRECAMBRIAN

INTRUSIVE ROCKS
Late Mafil Intrusive Rocks

7 Diabase

INTRUSIVE CONTACT
Intermediate to Ultramafil Intrusive Rock

6c Serpentinite

INTRUSIVE CONTACT
Intermediate to Ultramafic Volcanics

4b Mafic Tuff (Andesite)
4h Diorite, Gabbro (flows or intrusions)

SEDIMENTARY ROCKS

2c Quartzite (Arkosic)

FELSIC VOLCANIC ROCKS

1b Felsic Tuff rhyolite or dacite
1d Porphyritic rhyolites

SYMBOLS

Foliation or Schistosity
Bedding
Jointing
Elevation Contours
Swamp or Bog
Geological contact (observed, assumed)
Stream
Fault (observed, assumed)
Esker
Grid Line
Outcrop
Trench
Exploration shaft
Camp location
Old Road
Claim Post and number
Claim post assumed
Claim line

TREE TYPES

Jp - Jackpine
Bir - Birch
Ced - Cedar
Pop - Poplar
Ald - Alder
Bal - Balsam

ABBREVIATIONS

p	pyrite
carb	carbonatization
qv	quartz vein
ser	sericitization
m	massive
f	foliated
sh	sheared

WHOLE ROCK TERMINOLOGY

UK - Ultramafic Komatiite
BK - Basaltic Komatiite
FT - Iron Rich Basalt
MT - High Magnesium Basalt
AT - Tholeiitic Andesite
DT - Tholeiitic Dacite
RT - Tholeiitic Rhyolite
BC - Calc-Alkaline Andesite
DC - Calc-Alkaline Dacite
RC - Calc-alkalic Rhyolite
BT - Tholeiitic Basalt
* - NOT DEFINED

David R. Bell Geological Services Inc.

COLLINGWOOD ENERGY INC.

5411-84-4-2

GEOLOGICAL
SURVEY PLAN 2.8110

TWP/AREA Greenlaw Township		PROVINCE	
MINING DIVISION Porcupine		PROJECT No.	
REFERENCES ODM Geological Report 63		N.T.S. No.	
DRAWN DJG, BS	DRAFTED DJG	CHECKED	
SCALE 1"=400'	DATE July, 1984	SHEET No.	