

EXPLORATIONEASTERN DISTRICTYEO PROPERTY1979 REPORT OF WORKFEBRUARY, 1980J.S. OLVER1. SUMMARY

The Yeo property, situated 100km. SW of Timmins, consisting of 23 claims, was explored by geological mapping, a magnetometer survey and rock sampling, in October 1979 to trace and assess the gold potential of an iron formation on the property. No significant Au values were found.

2. INTRODUCTIONA. Location and Access

The Yeo property is situated at Lat.  $47^{\circ}35'$ , Long.  $81^{\circ}59'$  on Schist Lake, approximately 25km. SW of Gogama, Ont. and 100km. SW of Timmins, Ont. The N.T.S. co-ordinates are 41/0-9. The property is accessible by float plane from Gogama. Logging roads owned by E.D. Smith & Co. Ltd. come within 6000' of the west border of the property. Cominco's Asp property borders Yeo on the western side.

B. Ownership

The Yeo property consists of 23 unpatented mining claims;

Nos. P 472960,61,64-69. P 472973-77. P52077-286.

Subject to a Grubstake Agreement with N.E. Andersen of P.O. Box 227, Thornbury, Ont. Cominco holds a 80% interest and N.E. Andersen 20%.

C. Objectives

Geological mapping and a magnetometer survey were done to accurately delineate a band of iron formation which outcrops on the property. This same iron formation continues to the west on the Asp property where it carries scattered Au values. Delineating and sampling the iron formation were the main objectives.

D. Previous Explorationi) Pre-Cominco Work.

H.C. Laird of the O.D.M. describes the first mapping of the area in "The Geology of the Three Ducks Lake" in Vol. XLI Part III 1932. The assessment files have only two reports on the area. The first by W. Gerrie of Swastika, Ontario in 1950 reports on the western quarter of the Yeo property. He reports no interesting gold values on the property. The second report is T-2151 dated June 10, 1939 titled Cousins - Scott group. It shows 3 trench locations on the Yeo property but is very vague on assay results.

ii) Cominco Work

The ground was acquired under the Grubstake Agreement with N.E. Andersen in July 1978. In October 1978, J.D. Charlton of Cominco Ltd. made a brief property examination. He sampled and reported on the iron formation in the neighbouring Asp property.

3. EXPLORATION

Geophysics

Linecutting and a magnetometer survey was carried out by GEOEX Ltd. of Timmins, Ont. over the entire property between August 16 and September 25, 1979. A Scintrex MP-2 Proton Magnetometer was used. The mag map accompanies this report. The strong anomalies (1000<sup>γ</sup>- 25000<sup>γ</sup>) located on lines 24E, 72E, 80E and 84E are coincident with observed magnetic diabase dykes. Generally all anomalies trend east-west reflecting the strike of the strata. A mafic magnetic tuff which underlies the iron formation is reflected by a magnetic anomaly.

4. GEOLOGY

A. Regional Setting

According to Laird (1932) the area is underlain by an extensive east-west trending belt of Timiskaming sedimentary rocks called the RIDOUT series composed of conglomerate, greywacke, arkose, argillite, quartzite, sericite schist, mica hornblende schist and banded iron formation. This unit is flanked on the north and south by two belts of mafic metavolcanics each about 1½ miles thick. These units are surrounded by large areas of granite and gneiss.

B. Local Geology

The property itself although described by Laird as consisting of Timiskaming sedimentary rocks shows considerable evidence that many, if not most, of the rocks are volcanic; both pyroclastic and flows. Generally the map area consists of a mixture of felsic, intermediate and mafic tuffs with a predominate 90-100° schistosity dipping 80° N to near vertical. Towards the west boundary of the property lapilli tuffs, lapillistones and pyroclastic breccias occur. They range in composition from mafic to felsic. A large irregular massive mafic gabbroic intrusion occurs principally in the centre of the property south of Schist Lake but continues to a lesser extent to both east and west boundaries. An oxide-sulphide-silicate-carbonate facies iron formation is irregularly traceable for a distance of 10,000'. This iron formation is over 100' thick at the western end of the property but soon narrows to less than 15' thick within 500' of the western boundary. It is thought to be under Schist Lake between lines 24E and 64E where it seems to bifurcate. From line 63E to 92E the iron formation is less than 10' thick and outcrops intermittently. Massive and pillowed mafic flows outcrop in the northern third of the property. Within these flows coarse ground feldspar-quartz porphyries occur. Irregular small magnetic diabase dykes were seen throughout the property.

C. Rocktypes

The mafic tuffs generally weather medium to dark green to dark grey. They are invariably layered. The layers ranging from .5mm to 10mm of alternating fine-grained dark green, light green and rusty material. Chlorite content is high and most are carbonated. Pyrite is commonly present as finely disseminated cubes from trace values up to 1%. Layering is well developed but often wavy to strongly crenulated due to deformation.

Intermediate to felsic tuffs weather grey-brown to medium to light grey. They vary from very hard to very friable. They are well layered. Layers range from .5mm - 1cm of fine-grained light to medium green siliceous material. Thin rusty layers are common. These rocks are mostly quartz and sericite. A distinctive blue amphibole is developed in the tuffs in the south central position of the property. These rocks are commonly carbonated. Pyrite occurs as disseminations and small cubes in amounts up to 1%.

Medium to coarse fragmental pyroclastic occur in the western third of the property. These lapilli tuffs, lapillistones and lapilli breccias occur in irregular lenses of variable thickness. Contacts were visible appear to be gradational. These polymictic rocks consist mainly of volcanic fragments which are well rounded and appear bouldered. The matrix of these rocks are thinly layered similar to the tuffs described above.

On the SW corner of the property a siliceous pillowed unit outcrops and is mapped as andesite. This rock is light greyish green to dark grey on a fresh surface with flattened wisps or aligned patches 1cm x 2mm of chlorite. This distinctive rock appears to be a felsic tuff but an adjacent outcrop on the Asp property shows distinctive pillows up to 6' long. Fragments of this pillowed unit are found in the lapilli breccia outcropping immediately to the north of the pillowed andesite indicating tops are to the north.

The intrusive gabbroic unit is a medium grained, light to medium green massive rock with characteristic irregular epidote splotches. This rock is hard, non-magnetic and quite often carbonated and commonly has 1-2mm irregular epidote green veinlets. It is resistant to weathering and occurs in prominent rounded outcrops. Pyrite in amounts up to 1% occurs as disseminations and small cubes. Quite often the periphery of these intrusion grades into a dark green schistose rock resembling the mafic tuffs mapped elsewhere on the property. I believe this is a result of contact metasomatism of the existing tuffs by the intruding gabbro.

The oxide-sulphide-silicate-carbonate facies iron formation outcrops intermittently across the property. From line 0 to 5+00E it is best exposed and is 110' thick. The formation varies considerably over and across its strike. The major variant is the pyrite content. Pyrite occurs in massive thin (to 1cm) cross cutting veinlets. Veinlets parallel to bedding are less common. Overall pyrite occurs in minor quantities. Most of the iron formation is made up of alternating beds of sugary chert, maroon coloured iron carbonate and to a lesser extent green silicate. The chert and iron carbonate beds are frequently autobrecciated. The angular 1cm. x 10cm. slabs of chert are surrounded by the iron carbonate. Rare massive magnetite bands up to 3cm. in thickness were seen associated with the chert. Most of the iron formation was non-magnetic. Pyrite, arsenopyrite & pyrrhotite are the main sulphides present.

The iron formation thins to at 15' thickness between lines 5E and 6E. The formation possibly has been faulted along its strike length and the northern portion has been displaced downwards and is now covered by overburden. This narrow iron formation outcrops intermittently to line 20E where apparently it disappears into the lake. It appears again between lines 64 and 70E where it is very thin (less than 10') and is seen to bifurcate. The only other outcropping of the iron formation is between lines 92E and 94E where 3 thin 4'-8' thick outcrops occur.

Across the entire northern 1/4 to 1/3 of the property massive and pillowed mafic flows occur. They are fine grained, medium to dark green in color and are hard. They weather out in very bulbous or rounded outcrops. Random cracks occur throughout. Definite pillow salvages and intraflow scars were seen. Tops are to the north. These rocks also display irregular thin 2-4mm epidote green veinlets similar to the gabbroic intrusion. They contain less than 1% disseminated pyrite. They are non-magnetic and are carbonated.

Within these flows and also occurring within the tuffs to the south of the flows are coarse grained quartz-feldspar porphyries. They are hard and weather pink-buff. The angular phenocrysts of pink feldspar and glassy white quartz (both to 2cm in size) occur in a medium grained feldspar-rich matrix with up to 10% carbonate. Disseminated pyrite occurs in amounts less than 1.0%.

The youngest rocks on the property are diabase dykes. They are massive and weather grey-buff. They are medium to coarse grained, show ophilitic texture and are very magnetic. They are commonly oriented N-S but were not traceable over large distances. They contain disseminated pyrite.

D. Metamorphism

The metamorphic grade in this area is the upper greenschist facies.

E. Structure

The strata on this property has been folded to a near vertical position striking between 90° and 110° and dipping from 80°N to a vertical attitude. Pillow facing directions and the occurrence of distinct fragments of pillowed andesite in the overlying lapilli breccia indicate tops are to the north.

The main schistosity is coincident with the bedding. A second schistosity is commonly seen but is less distinct and difficult to measure. The best evaluation of this second schistosity is 80°/80°N.

One major fault is shown on the map which follows the regional trend.

5. GEOCHEMISTRY

Most outcrops on the property were sampled for analysis. Representative samples of each rock type were assayed and the results are shown below:-

<u>Rock Type</u>	<u>Samples Assayed</u>	<u>Au ppb</u>	<u>Cu ppm</u>	<u>Zn ppm</u>
Felsic Tuffs	22	3.4	14	35
Intermediate Tuffs	4	2	69	27
Iron Formation	21	2.8	69	35
Gabbroic Intrusion	1	1	63	18
Volcanic Flows	13	2.5	109	24
Qtz. Feld. Porphyries	7	1.8	7	27
Diabase	1	1	-	96

In most locations the iron formation, where found had been previously trenched. In each case a chip sample was taken across the strike of the unit. Also grab samples were taken of the formation with high pyrite concentrations. The results are plotted on the map. The 21 samples assayed ranged from 1 ppb Au to 220 ppb Au with an average value of 21 ppb Au. The highest value of 220 ppb was taken on line 20E, the second highest value of 200 ppb Au was from line 94E. The third highest value was 90 ppb Au. (NOTE: 36,300 ppb = 1 oz/ton). The gold assays are by neutron activation.

6. FINANCE

Salaries	\$3,450
Transportation	2,140
Supplies & Services	580
Assays	516
Tenure	1,000
Linecutting	3,338
Geophysics	1,039
	<u>\$12,063</u>

7. CONCLUSIONS

From the 1979 mapping this property is a sequence of volcanic pyroclastic rocks, intruded by a large gabbroic body. An oxide-sulphide-silicate-carbonate facies iron formation is traceable across most of the property.

This iron formation is 110' thick at the western boundary but decreases in thickness quickly at line 5E and disappears into Schist Lake at line 10E. It reappears from the lake at line 64E. It's thickness here is definitely less than 15' and is intermittently exposed up to line 92E where it disappears. No significant Au concentrations were found by sampling the iron formation. The highest assay was 220 ppb Au. Much of the iron formation is under Schist Lake and although E.M. could delineate it only drilling could test its gold potential.

8. ATTACHMENTS

Plate 1 - Yeo Property Geology  
Plate 2 - " " Magnetometer Survey

10. REFERENCES

H.C. Laird, O.D.M. Vol. XLI, Part III, 1932.  
E.S. Barnett, Cominco Ltd. 1979 Asp Year-End Report.

Submitted by: J.S. Oliver  
J.S. Oliver  
Geologist  
Exploration, E.D. *(not in the Qualification part)*

Endorsed by: W.M. Little  
W.M. Little  
Senior Geologist  
Exploration, E.D. *(Qualification: 2.2682)*

2.3238

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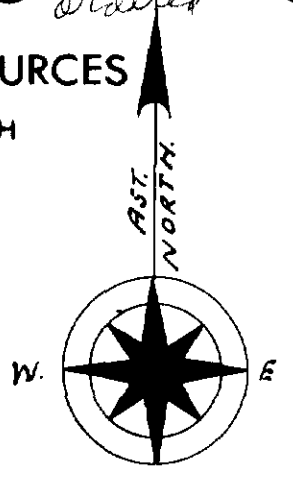
# PLAN OF YEO TWP.

FORCUPINE MINING DIVISION.

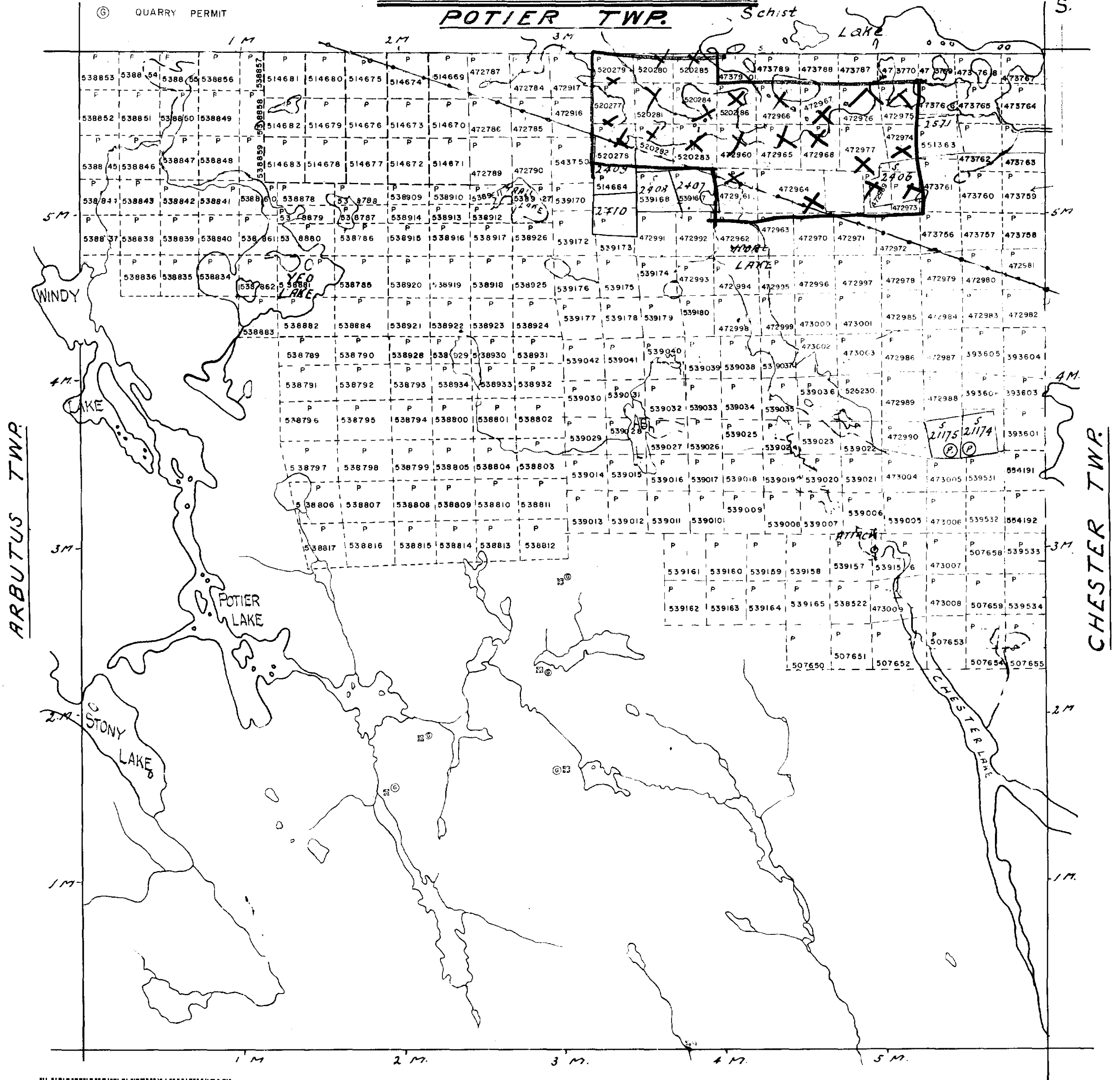
DISTRICT OF SUDBURY

Scale: 40 chains to an inch.

POTIER TWP.

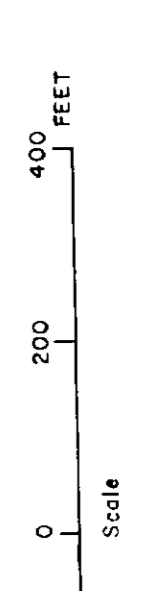


QUARRY PERMIT



SMUTS TWP

YEO TWP



Instrument: GOMTES, HP-2, VECTOR MAP  
 Control: International Geophysical Survey  
 Operating Date: 04.18.04.1979  
 Scale: 1"=100'

