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Assessment Report  
of  
Preliminary Lithogeochemical Survey  
for the  
Carr - Wilkie Property  
Larder Lake Mining Division  
Ontario

August 4, 1983  
Timmins, Ontario

D.R. Fyke, Ph.D.

**RECEIVED**  
AUG 10 1983  
MINING LANDS SECTION

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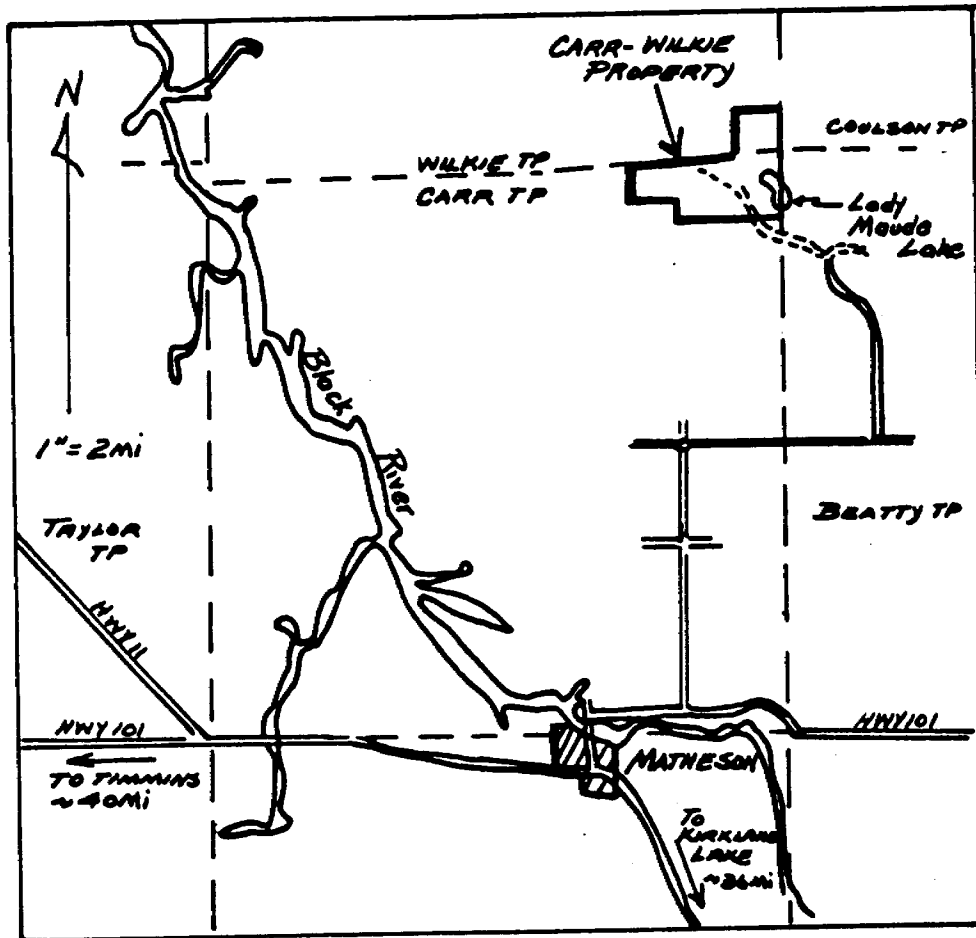
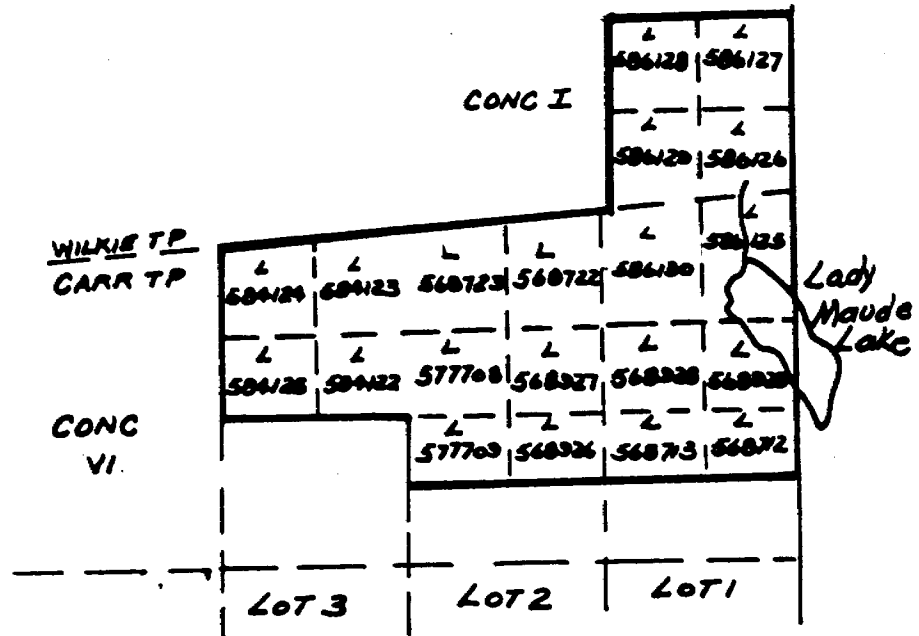


Fig 1 - Location of Carr-Wilkie claim group



Location of individual claims on Carr-Wilkie property

## Introduction

This report covers a preliminary lithogeochemical survey carried out over three claims in northeast Carr Township (Figure 1). The claims form part of a larger property consisting of 20 contiguous claims; sixteen are situated in the northeast corner of Carr Township and four in the southeast corner of Wilkie Township. Both Carr and Wilkie Townships are within the District of Timiskaming, Larder Lake Mining Division.

The samples submitted for lithogeochemical analysis and described herein were obtained by D.R. Pyke on June 12, 1983, prior to detailed geological mapping of the property.

## Access

Access to the general area is good, as Highway 101 passes along the southern boundary of Carr and Beatty Townships. A dirt bush road traverses part of the claim group and extends northwest from an all-weather concession road approximately one mile to the southeast, in Beatty Township.

## Previous Work

The area was first mapped by Knight et al, in 1919, as part of the Abitibi - Nighthawk gold area regional survey. In 1945, the Carr Township area was mapped by Prest (1951)

at a scale of one inch to 1000 feet. During the same summer, the easterly adjoining township of Beatty was mapped by Satterly and Armstrong (1947).

The property was first held by the Carlo Mining Syndicate, who opened up a number of trenches on very short, but high grade gold-bearing ore shoots (File T-132)\*. None of the actual values obtained from the showing are reported.

In 1944, the Carlo property, as well as an extensive area of land to the west, was acquired by Wilcarr Mines Limited. A magnetic (Askania magnetometer) survey of the property was carried out by Wilcarr Mines during the period June, 1944 - November, 1944 (File T-132)\*. During this time, the property was grid mapped at a scale of 1 inch to 200 feet. The survey was fundamental in delineating the Pipestone Fault near the Carr-Wilkie Township boundary, and also outlined a considerable number of magnetic anomalies on the property (File T-132)\*..

During the periods June, 1944 - January, 1945 and May, 1945 - November, 1945, Wilcarr Mines drilled 39 diamond drill holes mostly put down along the sedimentary-volcanic contact and the fault zone (File T-132)\*. Fourteen of the holes, totalling 5202 feet, were drilled on the property now held by Comstate. Holes 1 to 8 were short holes, drilled under the veins exposed at the Carlo showing. Although quartz veins and carbonatized and silicified lavas were intersected, gold values were low, the best intersection being 0.07 ounces of gold per ton over

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\*Ontario Geological Survey, Assessment Files, Timmins, Ontario

2.5 feet. From the remaining drilling on the property, the best assay was 0.25 ounces of gold per ton over 0.3 feet.

Since acquiring the claim group in 1980, Comstate Resources has conducted geochemical (humus sampling) and basal till sampling surveys on portions of the property, as well as magnetic and electromagnetic (VLF) surveys over the entire claim group.

### Glacial Geology

Outcrop is extremely sparse in the area, accounting for less than one percent of the township. The area is essentially flat lying, being extensively covered by glacial deposits of sand and clay. A clay plain, which runs across the northeast corner of Carr Township and into the southwest corner of Beatty Township, covers the southern portion of the claim group (Prest, 1951).

### General Geology

Two major east-west trending sub-parallel fault zones, the Pipestone and Destor-Forcupine Faults, traverse the area. They enclose a group of largely turbiditic sediments, tentatively interpreted to be in an anticlinal structure (Prest, 1951). Bounding the sedimentary sequence to the north and south are mafic to ultramafic rocks. The contact between the sediments and mafic volcanics is roughly coincident with the fault zone on either side of the sedimentary succession (Figure 2)

Small stocks of syenite and granite were emplaced in close proximity to the fault zones, some of which contain

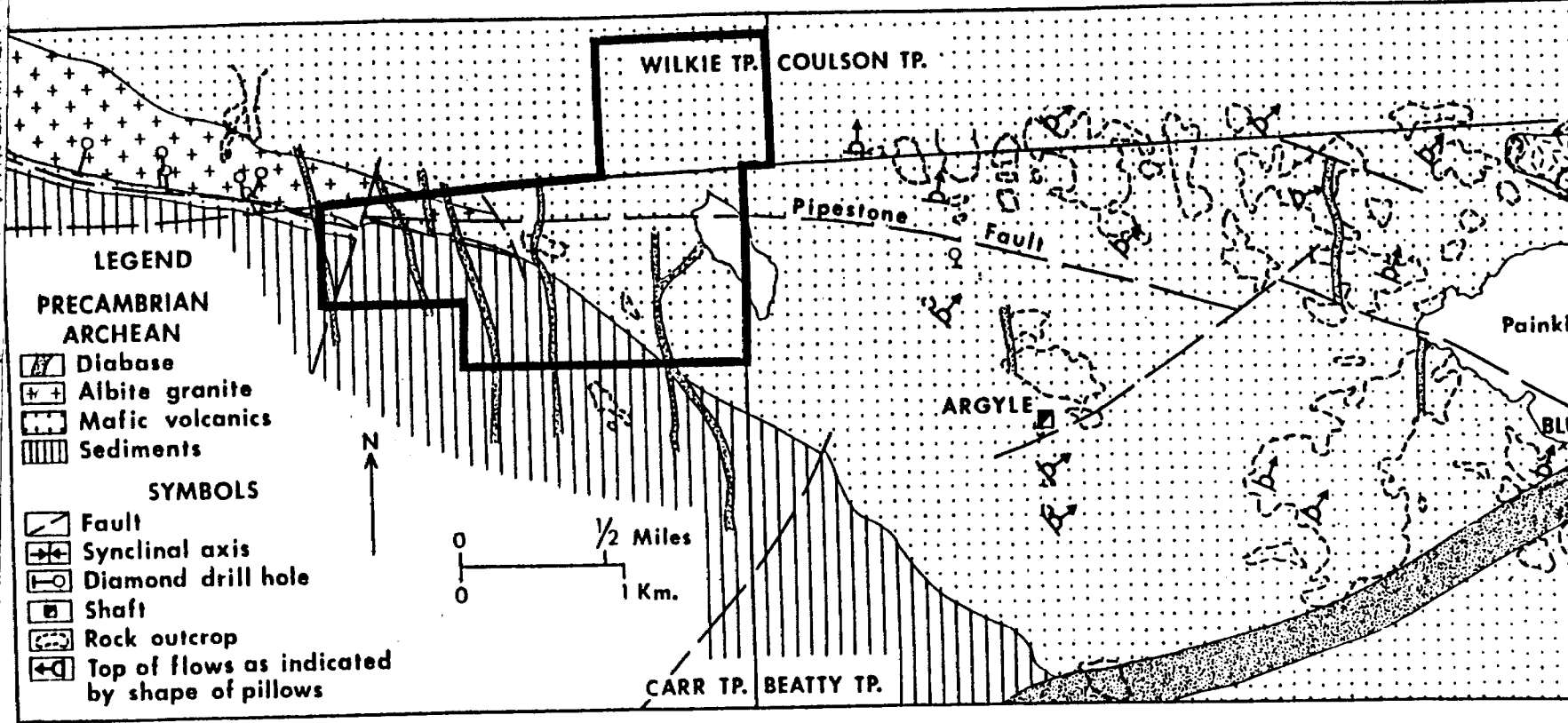


Figure 2 - General geology in vicinity of the Carr-Wilkie property. Modified after Prest (1951) and, Satterly and Armstrong

gold-bearing veins, suggestive of analagous situations occurring within the Kirkland Lake gold camp.

Alteration, predominantly in the form of carbonatization and serpentization, are features common to both fault zones; in addition, carbonatization is locally pervasive in the surrounding sedimentary and volcanic rocks.

Cross faults and diabase dikes, trending north and northeast, occur commonly in the area.

#### Property Geology

The claim group straddles a conformable north facing volcanic-sedimentary contact (Prest,1951)(Figure 3). Outcrop is sparse, and consists of variably carbonatized basaltic flows and one isolated outcrop of turbiditic sediments. Quartz veining is evident in the outcrop area of the original Carlo showing, where a number of trenches have been blasted and part of the overburden has been removed by a bulldozer. The showing consisted of a number of easterly trending mineralized quartz veins cutting the large outcrop of mafic volcanic rocks situated in Lot 2, Concession 6 of Carr Township. The volcanics are considerably altered (carbonatized) in the vicinity of the showing, and minor (2 to 4 percent) disseminated pyrite is common. The vein mineralogy consists of quartz, with lesser carbonate, pyrite and minor amounts of chalcopyrite and gold (Prest,1951).

A major fault, the Pipestone Fault, which is north of and sub-parallel to the Destor-Porcupine Fault, traverses the



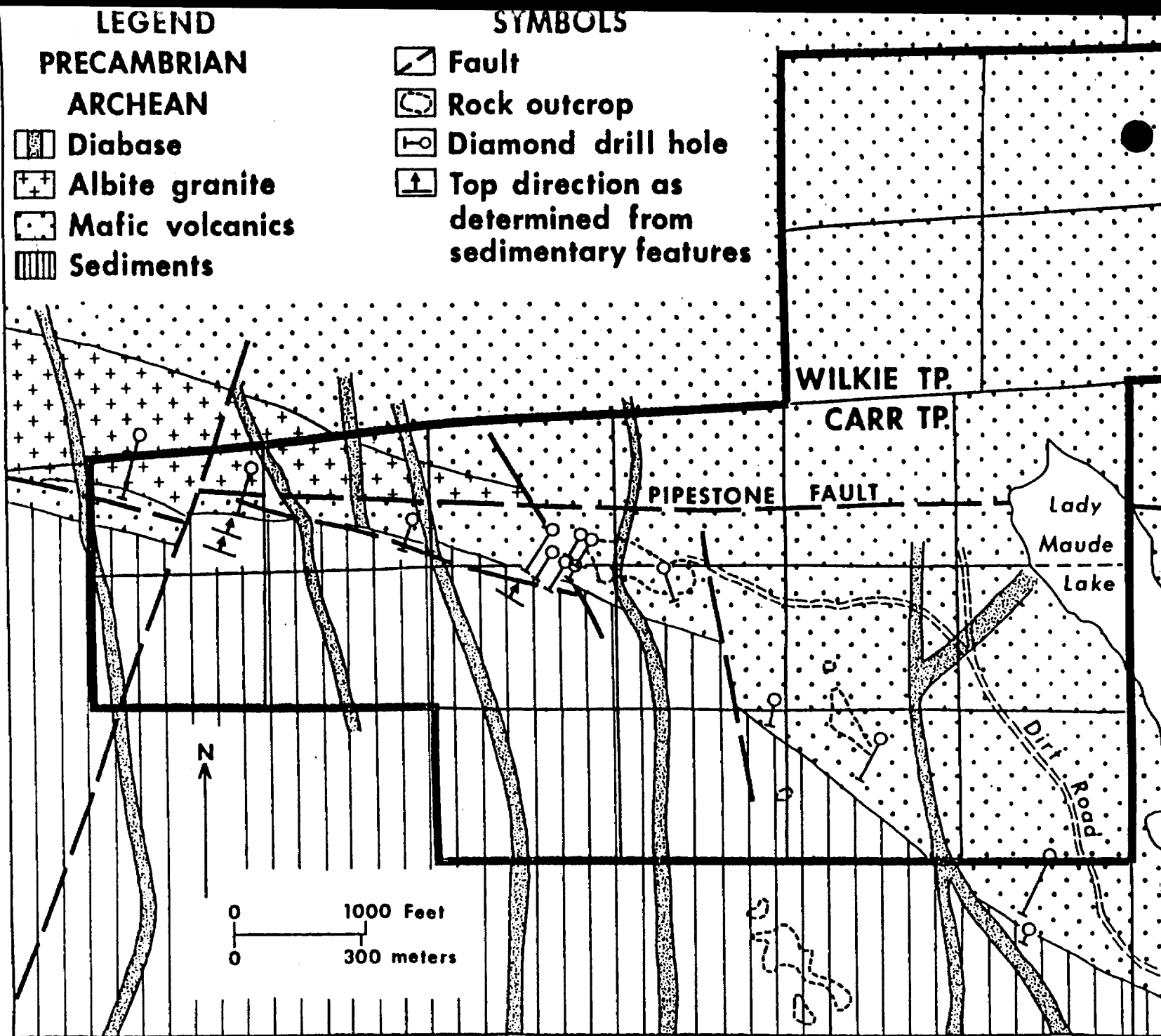


Figure 3 - Geology of Carr-Wilkie property. After Prest (1951)

property in an east-west direction and passes north of the Carlo showing (Figure 3). The fault is situated proximal to the volcanic-sedimentary contact (Prest,1951), and intersects the contact at the western margin of the property. Local drag folding near the fault zone is indicated by the Wilcarr drilling (File T-132)\*.

The eastern extremity of a small stock of albite granite extends into the northwest portion of the claim group (Prest, 1951). A number of Late Precambrian north-trending diabase dikes traverse the property and a Middle Precambrian northeast striking diabase dike extends south and east of the property.

Geophysical work of Wilcarr Mines Limited (File T-132)\* delineated a strong, north trending cross fault east of the Carlo showing; there is a 700 foot right lateral displacement along the fault. It was recommended by Wilcarr Mines that considerable drilling should be done in the vicinity of the fault (File T-132)\*. However, there has only been one reported drill hole put down in proximity to this fault; the rocks intersected in this hole were described as showing "more alteration than any other drilled during the entire campaign carried out this year" (File T-132),p.10).

#### Purpose of Survey

The purpose of this preliminary lithogeochemical survey is twofold: 1) to establish the chemical affinity of the mafic volcanic sequence underlying the northern three-quarters of the property, and 2) to examine the nature and extent of

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\* Ontario Geological Survey, Assessment Files, Timmins, Ont.

alteration occurring within this sequence, with particular attention being given to variations in whole rock element chemistry between relatively unaltered and visibly altered samples.

More extensive lithogeochemical sampling will be carried out during detailed geological mapping of the property, to augment this preliminary data.

### Survey Procedure

Representative lithogeochemical samples were obtained from selected volcanic rock outcrop areas on the property. The samples consisted of fresh rock chips from which all weathered surfaces were carefully removed. Sample size varied from 200 to 400 grams. All sample locations were tied into a cut and chained grid covering the property.

The samples were subsequently shipped to X-Ray Assay Laboratories, Don Mills, Ontario. Samples were analyzed as follows:

	<u>Method</u>	<u>Detection Limit</u>
Whole Rock Majors (%)	XRF	0.010
Whole Rock Minors (PPM)	XRF	10.000
Au (oz/ton)	FA	0.001
Ni (%)	XRF	0.010
Cu (%)	XRF	0.010
Zn (%)	XRF	0.010
As (%)	XRF	0.010
Sb (%)	XRF	0.010

XRF = X-Ray Fluorescence Method

FA = Fire Assay Method

## Survey Results

Hand specimen descriptions for the samples analyzed are given in Table 1 and sample locations are shown on Figure 4. Whole rock analysis and assay results are presented in Tables 2 and 3. Ternary and bivariate plots of selected elements are displayed in Figures 5 to 10.

The composition of all the volcanic outcrops sampled on the property corresponds to that of a high iron (Fe) tholeiite\*\* as shown on the Jensen Cation Plot (Figure 5) and the A.F.M. Diagram (Figure 6). The tholeiitic affinity of the volcanics is further confirmed from the bivariate plots of wt. % Al<sub>2</sub>O<sub>3</sub> vs. FeO/(FeO + MgO) (Figure 7), and wt. % TiO<sub>2</sub> vs. wt. % SiO<sub>2</sub> (Figure 8). The tholeiitic basalt and komatiitic fields shown on Figures 7 and 8 are those outlined by Arndt et al (1977) for the volcanic and hypabyssal rocks of Munro Township, located six miles east of the present survey area. The spread in silica values for the samples analyzed is somewhat anomalous when compared to the tholeiitic basalt field outlined on Figure 8. Samples P-22-83 and P-25-83, containing over 54 wt.% (anhydrous) SiO<sub>2</sub>, are believed to be silica enriched.

An unusual feature of the volcanic rocks underlying this property is their relatively light colouration. In general, high iron tholeiites are medium to dark green to black in colour; however, five of the samples obtained during the present

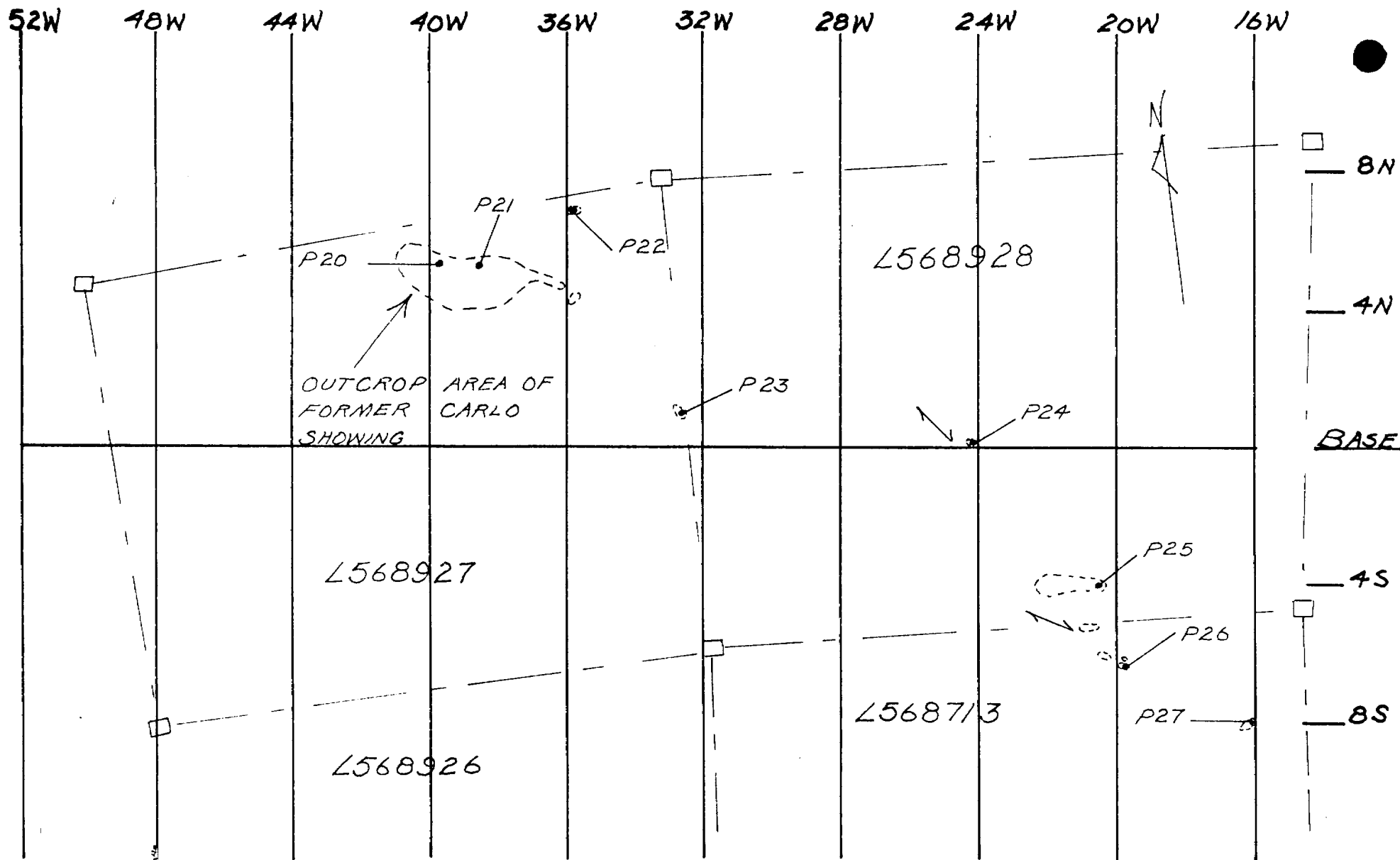
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\*\* High-iron tholeiites characteristically contain 12-18 wt% Fe<sub>2</sub>O<sub>3</sub> (anhydrous), have iron/magnesium ratios greater than 2/1, titanium values are generally greater than 1 wt%, and Al<sub>2</sub>O<sub>3</sub> wt. % (anhydrous) is commonly less than 15% (Pyke, 1982)

Table 1

Hand Specimen Descriptions

- I-20-83: Massive basalt, medium grey fresh surface. Weak carbonatization as pervasive and as veinlets.
- I-21-83: Basalt, buff to orange-brown weathered surface. Medium grey-green fresh surface.
- F-22-83: Partially to almost wholly carbonatized basalt. Orange-brown weathered surface, crystalline greyish-white fresh surface.
- F-23-83: Well foliated, medium grey to green-grey fresh surface basalt. Buff orange weathered surface. Possible mafic fragmental.
- F-24-83: Magnesium basalt, tholeiitic, well foliated, medium grey-green fresh surface. Lite buff brown weathered surface.
- I-25-83: Magnesium tholeiite, pillowed, vesicular. Medium to lite grey. Pillow tops south?
- F-26-83: Iron tholeiite, vesicular, minor carbonate. Generally non-pillowed, but one pillowed rim observed?
- F-27-83: Magnesium tholeiite, pillowed, vesicular. Lite grey.



- outcrop area
- claim post
- claim boundary
- foliation
- P20 sample location

FIGURE 4: Location of samples for which whole rock chemical analyses were determined for the Carr property.

W. H. H. H.

Table 2

Whole Rock Analyses - Carr-Wilkie Samples

	<u>P-20-83</u>	<u>P-21-83</u>	<u>P-22-83</u>	<u>P-23-83</u>
SiO <sub>2</sub>	43.5	44.6	50.3	48.4
Al <sub>2</sub> O <sub>3</sub>	13.0	14.0	12.5	12.9
CaO	8.37	7.39	2.00	5.39
MgO	5.40	5.09	7.64	5.94
Na <sub>2</sub> O	1.77	3.13	0.04	2.89
K <sub>2</sub> O	0.03	0.10	0.03	0.07
Fe <sub>2</sub> O <sub>3</sub>	16.1	14.7	17.6	13.5
MnO	0.26	0.21	0.29	0.28
TiO <sub>2</sub>	1.53	1.63	1.43	1.63
P <sub>2</sub> O <sub>5</sub>	0.13	0.15	0.13	0.13
Cr <sub>2</sub> O <sub>3</sub>	0.01	0.01	0.01	0.01
L.O.I.	9.62	8.47	7.39	8.08
<u>Total</u>	99.8	99.5	99.4	99.3
Rb	<10	<10	10	10
Sr	50	70	10	80
Zr	70	100	90	90
Ba	60	60	80	80

Table (cont.)

	<u>P-24-83</u>	<u>P-25-83</u>	<u>P-26-87</u>	<u>P-27-87</u>
SiO <sub>2</sub>	43.0	49.5	46.0	49.2
Al <sub>2</sub> O <sub>3</sub>	12.7	13.2	12.6	13.4
CaO	9.54	7.86	8.14	7.79
MgO	5.67	4.27	5.28	5.49
Na <sub>2</sub> O	2.12	3.66	2.53	2.79
K <sub>2</sub> O	0.01	0.02	0.03	0.31
Fe <sub>2</sub> O <sub>3</sub>	13.5	10.7	14.0	15.5
MnO	0.29	0.26	0.32	0.28
TiO <sub>2</sub>	1.82	1.65	1.71	1.48
P <sub>2</sub> O <sub>5</sub>	0.16	0.14	0.19	0.11
Cr <sub>2</sub> O <sub>3</sub>	0.00	0.01	0.02	0.00
L.O.I.	10.5	8.54	8.54	2.77
<u>Total</u>	99.4	99.8	99.5	99.1
Rb	<10	10	10	<10
Sr	100	90	80	80
Zr	110	80	140	70
Ba	50	40	50	180



Table 3

Assay Results - Carr-Wilkie Samples

	<u>Au Oz/ton</u>	<u>Ni %</u>	<u>Cu %</u>	<u>Zn %</u>
P-20-83	Nil	Nil	Trace	0.01
P-21-83	Nil	Nil	Nil	0.01
P-22-83	Trace	Nil	0.03	0.13
P-23-83	0.008	Nil	0.01	0.01
P-24-83	Nil	Nil	0.01	0.01
P-25-83	Nil	Nil	0.01	0.01
P-26-83	0.002	Nil	Trace	0.01
P-27-83	0.004	Nil	0.01	0.01

survey (Table 1), were classified in the field as Magnesium-rich tholeiites, exhibiting fresh surface colourations ranging from lite grey to medium grey-green.

Figures 9 and 10 illustrate variations in selected major elements for the samples analyzed. In Figure 9, loss on ignition (L.O.I.) percentages were used as a rough estimate of the degree of alteration (chloritization or carbonatization) of the samples.

The majority of the samples analyzed show relatively minor variations in MgO, Fe<sub>2</sub>O<sub>3</sub> and CaO content when plotted against wt. % SiO<sub>2</sub> (Figure 9). No significant correlation appears to exist between variations in L.O.I. and the major elements plotted. Samples F-25-83 and I-22-83, exhibiting the most marked major element oxide variations, also contain the highest measured weight percentages of SiO<sub>2</sub>. Sample F-22-83 represents an extensively carbonatized iron tholeiite (see Table 1). Fe<sub>2</sub>O<sub>3</sub> and MgO contents of this sample are fairly high, whereas CaO and Na<sub>2</sub>O contents (Figure 10) are considerably lower than those of the other samples. Copper and zinc percentages analyzed from this sample are also significantly higher (Table 3).

These results perhaps represent a two-stage alteration process: 1) hydration of primary ferromagnesium minerals and albitization of primary feldspars, followed by 2) carbonatization of hydrated volcanics, resulting in the formation of iron-magnesium carbonates and a corresponding loss of sodium.

Sample F-25-83 contains relatively low Fe<sub>2</sub>O<sub>3</sub>, MgO and TiO<sub>2</sub>, in conjunction with slight enrichment in sodium.

Figure ● Jenson Cation Plot  
of Carr-Wilkie Samples.

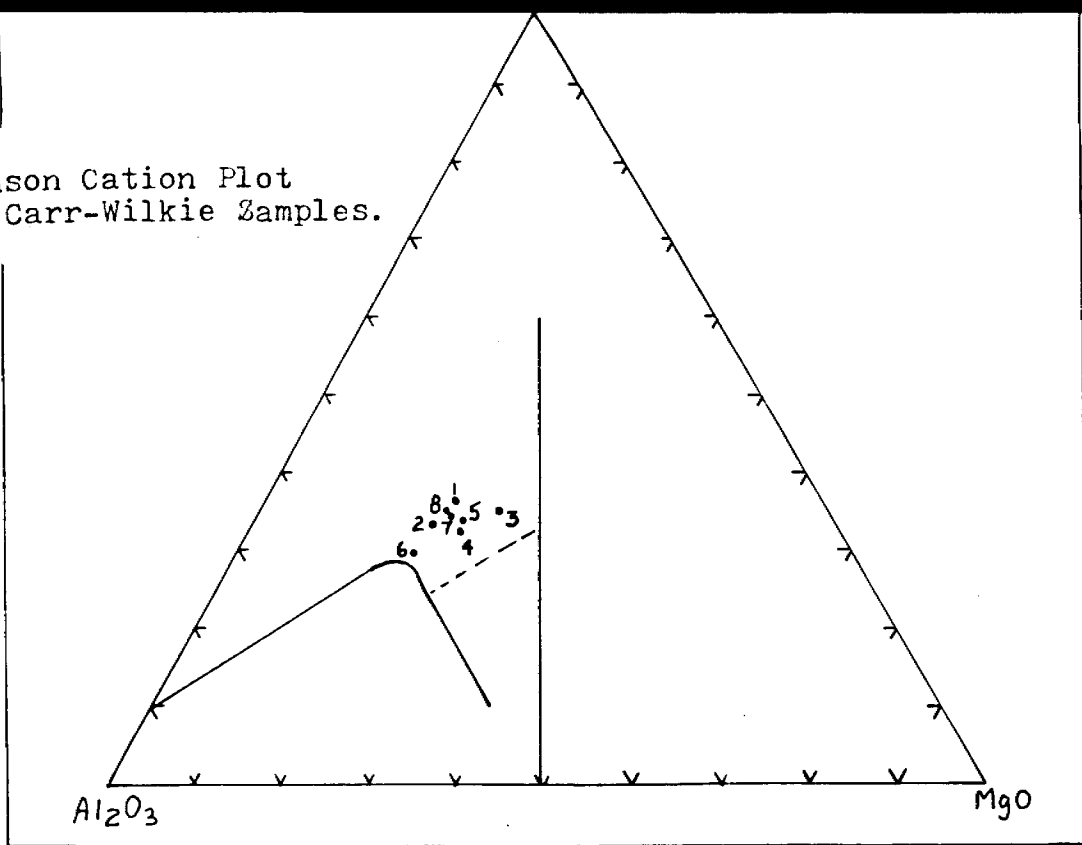
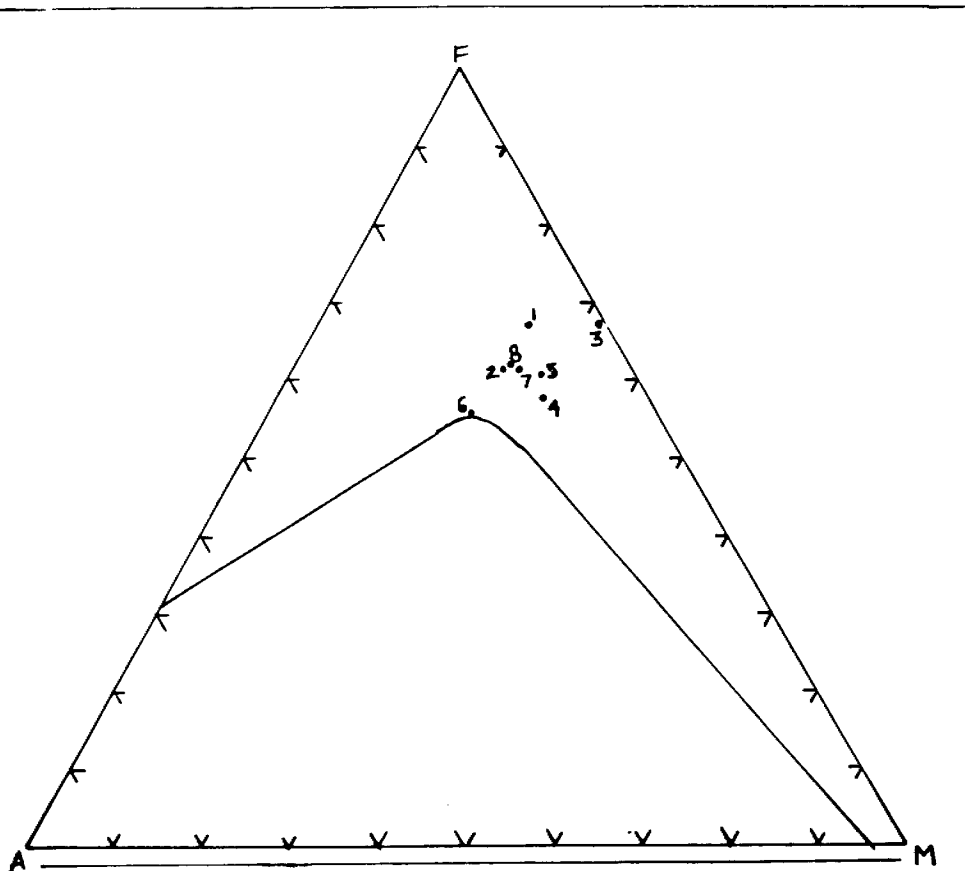
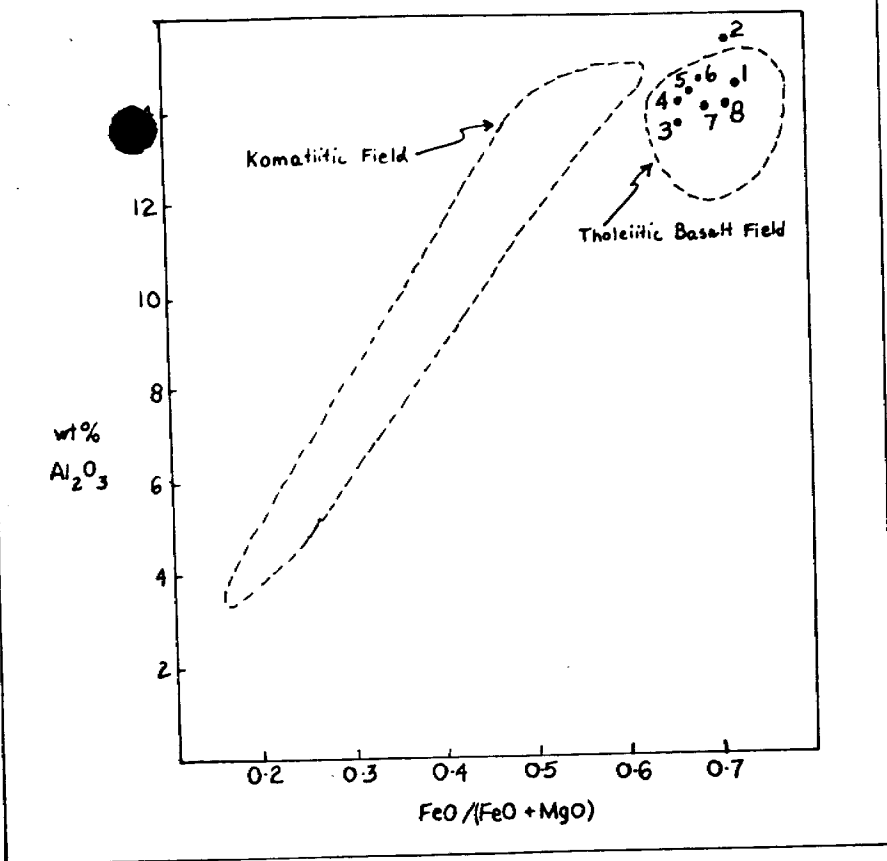


Figure 6: A - F - M Plot of Carr-Wilkie Samples.  
(A=Na<sub>2</sub>O + K<sub>2</sub>O; Fe=FeO + 0.8998 Fe<sub>2</sub>O<sub>3</sub>; M=MgO, all in weight % anhydrous).



Sample Numbers

1. P-20-83
2. P-21-83
3. P-22-83
4. P-23-83
5. P-24-83
6. P-25-83
7. P-26-83
8. P-27-83



Sample Numbers

- 1. P-20-83
- 2. P-21-83
- 3. P-22-83
- 4. P-23-83
- 5. P-24-83
- 6. P-25-83
- 7. P-26-83
- 8. P-27-83

Figure 7: Bivariate Plot of wt % Al<sub>2</sub>O<sub>3</sub> vs. FeO/(FeO+MgO), for Carr-Wilkie Samples.  
 (Wt% of oxides are anhydrous values. FeO=Fe<sub>2</sub>O<sub>3</sub> x 0.8998)

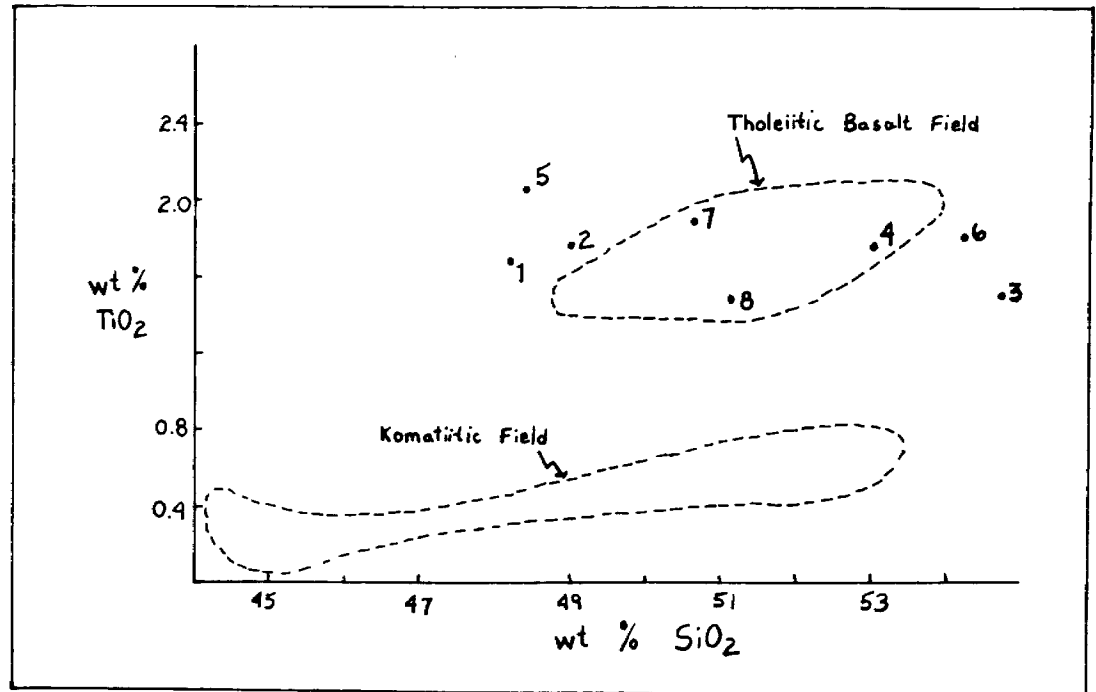


Figure 8: Bivariate Plot of wt% TiO<sub>2</sub> vs. wt% SiO<sub>2</sub> for Carr-Wilkie Samples.  
 (Wt % of oxides are anhydrous values).

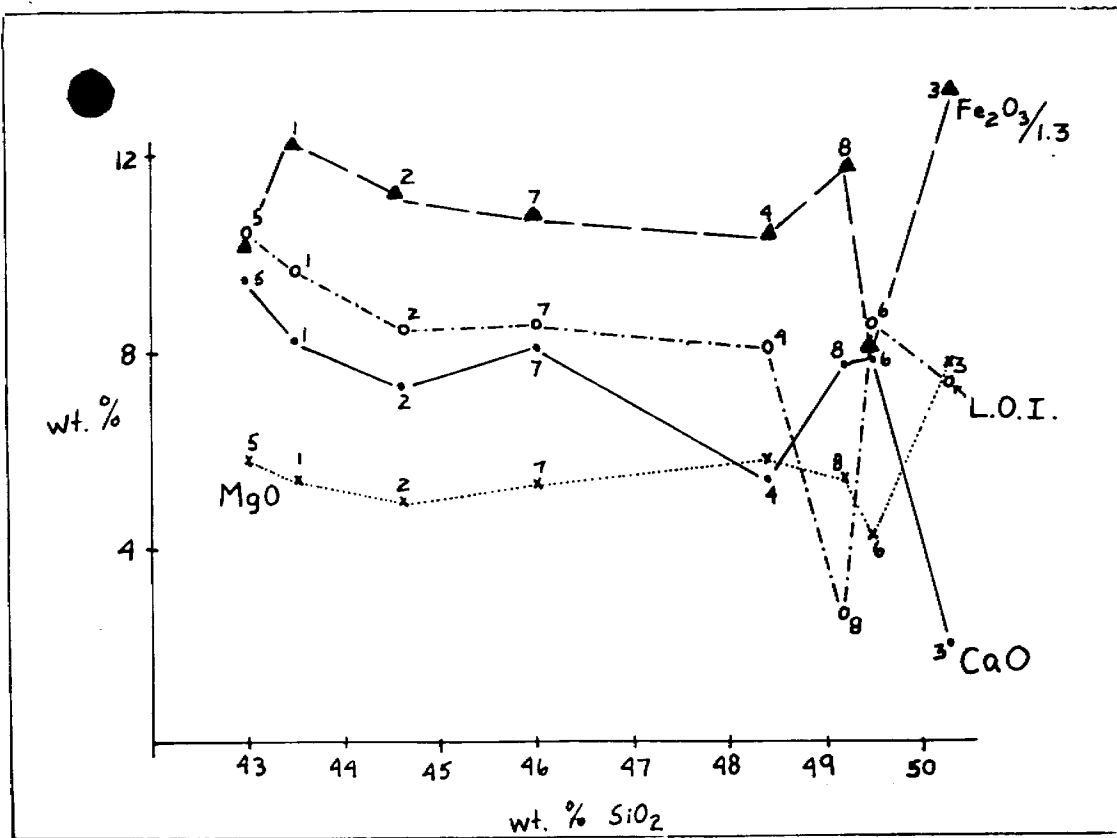
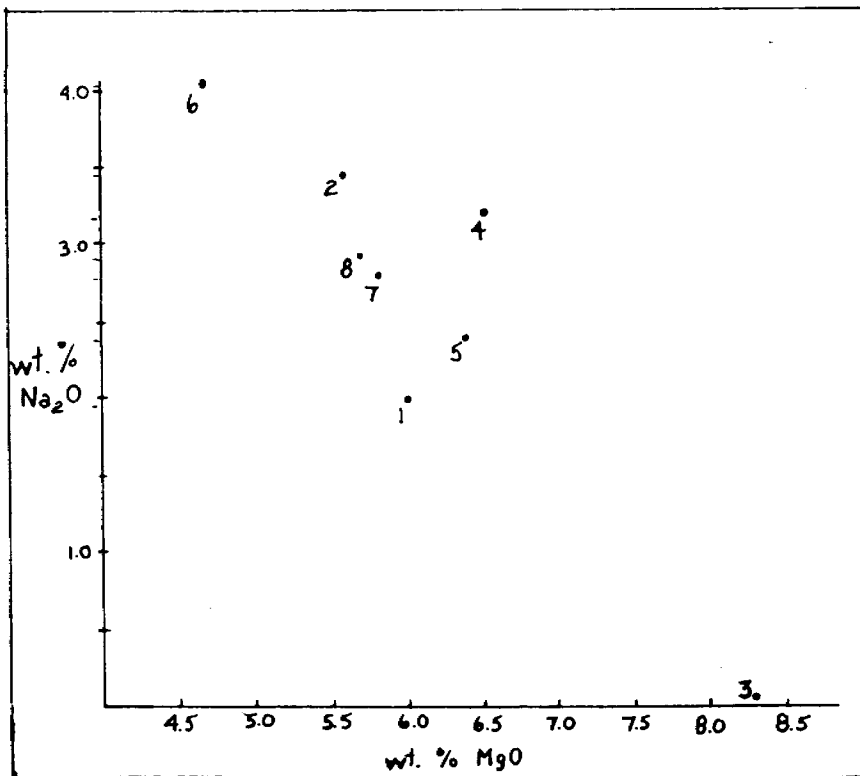


Figure 9: Bivariate Plots of Wt. %'s of MgO, CaO, Fe<sub>2</sub>O<sub>3</sub>/1.3, and Loss on Ignition vs. wt. % SiO<sub>2</sub>  
(Oxide values are hydrous)



Sample Numbers

- 1. P-20-83
- 2. P-21-83
- 3. P-22-83
- 4. P-23-83
- 5. P-24-83
- 6. P-25-83
- 7. P-26-83
- 8. P-27-83

Figure 10: Bivariate Plot of wt. % Na<sub>2</sub>O vs. wt. % MgO for Carr-Wilkie Samples.  
(Oxide values are anhydrous).

### Conclusions and Recommendations

The volcanic rocks underlying the Carr-Wilkie Township property are classified geochemically as high-iron tholeiitic basalts and are therefore unusual in their light grey-green colouration. The majority of samples analyzed show very little variation in Fe<sub>2</sub>O<sub>3</sub>, MgO and CaO anhydrous weight percentages. No correlation appears to exist between L.O.I. percentages and major oxide variations. The most extensively altered samples are believed to be P-22-83 and P-25-83, which exhibit the highest wt. % SiO<sub>2</sub> values and more pronounced major element variations. Sample P-22-83 represents a highly carbonatized basalt which has perhaps undergone several stages of alteration. Sample P-25-83 displays slightly higher Na<sub>2</sub>O and relatively low Fe<sub>2</sub>O<sub>3</sub> and MgO. The geochemical variation exhibited by this sample is poorly understood.

Further litho-geochemical sampling is recommended for the volcanic outcrops on the property. Petrographic study of thin sections cut from every sample geochemically analyzed is strongly recommended in order to further examine the nature and extent of alteration occurring within this volcanic sequence.

Geological and geophysical survey results should be examined in conjunction with geochemical data. Special attention should be paid to outlining zones of structural weakness and/or pervasive alteration.

References

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Scale 1 inch to 1,000 feet.

Certificate

I, D.R. Pyke, submit this document to certify that the following statements are, to the best of my knowledge, true and correct:

1. That I supervised the geochemical survey conducted on June 12, 1983 on the Carr-Wilkie Property.
2. That I am the author of the corresponding assessment report entitled: "Assessment Report of Preliminary Lithochemical Survey for the Carr-Wilkie Property, Larder Lake Mining Division, Ontario".
3. That I have received the following university degrees in geology:

B.Sc. - University of Saskatchewan	1959
M.Sc. - University of Saskatchewan	1961
Ph.D. - McGill University, Quebec	1967
4. That I have been working as a geologist in the general Timmins - Kirkland Lake area for 16 years, and I am familiar with the geology of the area under consideration.

Respectfully submitted,

D.R. Pyke, Ph.D.



Assessment Work Breakdown

1. Expenditure Credits for Lithochemical survey  
(see Technical data statement)

8 fresh rock chip samples prepared for geochemical analysis, at \$2.75 per sample ..... \$22.00

8 fresh rock chip samples analyzed for the following elements:

Whole rock major and minor elements:  
at \$ 27.50 per sample .....\$220.00

Gold, at \$7.00 per sample .....\$56.00

Nickel, at \$7.00 per sample .....\$56.00

Copper, at \$6.00 per sample .....\$48.00

Zinc, at \$7.00 per sample .....\$56.00

Arsenic, at \$9.50 per sample .....\$76.00

Antimony, at \$9.00 per sample .....\$72.00

Barium, at \$5.50 per sample .....\$44.00

Total expenditure \$650.00

Assessment Credits - one day's work for each \$15 expended. Total number of assessment credits obtained for analyses .....43.33 days

Number of expenditure credits credited per claim,  
(six claims (6) to be credited) ..... 7.2 days /claim

2. Assessment credits earned for total 8-hr. technical days (see Assessment Work Breakdown Statement) .....15.75 days

Number of Technical credits credited per claim,  
(six claims (6) to be credited) ..... 2.62 days/claim

Total number of assessment credits per claim  
earned from this survey work ..... 9.82 days  
per claim

Submitted by D.R. Pyke for purposes of obtaining assessment work credits for mining claims L. 568712, L. 568713, L. 568926, L. 568928, L. 568929, L. 577709, comprising a portion of the Carr-Wilkie Property.

# XRAL

## X-RAY ASSAY LABORATORIES LIMITED

1885 LESLIE STREET • DON MILLS ONTARIO M3B 3J4 • (416) 445-5755

COPY TO:

### SAME

INVOICE TO:

D. R. PYKE & ASSOCIATES  
ATTN: D. R. PYKE  
P. O. BOX 1163  
TIMMINS, ONTARIO  
P4N 7H9

SUBMITTED TO:

D. R. PYKE & ASSOCIATES  
ATTN: D. R. PYKE  
P. O. BOX 1163  
TIMMINS, ONTARIO  
P4N 7H9

CUSTOMER NO. 754

INVOICE NO.	INVOICE DATE	WORK ORDER NO.	DATE SUBMITTED
18115	06-JUL-83	13766	16-JUN-83

TERMS NET 30 DAYS  
1.5% PER MONTH INTEREST ON ACCOUNT OVER 30 DAYS

QUANTITY		DESCRIPTION METHOD		UNIT PRICE		AMOUNT
1 BOX		SELF		TORONTO		
1.	8	WHOLE ROCK <21		6, 0, 0, 0, 0	27.50	220.00
2.	16	AU	FA	10, 7, 0, 0, 0	7.00	112.00
3.	16	NI %	XRF	5, 0, 0, 0, 0	7.00	112.00
4.	16	CU %	XRF	5, 0, 0, 0, 0	6.00	96.00
5.	16	ZN %	XRF	5, 0, 0, 0, 0	7.00	112.00
6.	16	AS %	XRF	5, 9, 0, 0, 0	9.50	152.00
7.	8	MO %	XRF	5, 0, 0, 0, 0	8.00	64.00
8.	16	SB %	XRF	5, 0, 0, 0, 0	9.00	144.00
9.	8	BA FPM	XRF	6, 0, 0, 0, 0	5.50	44.00
10.	16	PREPARATION ROCK		1, 0, 0, 0, 0	2.75	44.00
<b>SUB-TOTAL</b>						<b>\$ 1100.00</b>
MISC. CHARGES		SHIPPING CHARGES		CUSTOM BROKERAGE		
OTHER						

TRIPPLICATE COPY

TOTAL

CANADIAN FUNDS

\$ 1100.00

# XRAL

# X-RAY ASSAY LABORATORIES LIMITED

1885 LESLIE STREET • DON MILLS ONTARIO M3B 3J4 • (416) 445-5755

COPY TO

INVOICE TO

D. E. FINE & ASSOCIATES  
 ATTN: D. E. FINE  
 P.O. BOX 1163  
 TORONTO ONTARIO  
 CANADA

FILE # 2.5741

SUBMITTED TO

D. E. FINE & ASSOCIATES  
 ATTN: D. E. FINE  
 P.O. BOX 1163  
 TORONTO ONTARIO  
 CANADA

CUSTOMER NO 754

INVOICE NO.	INVOICE DATE	WORK ORDER NO.	DATE SUBMITTED
18115	06-JUL-83	13766	10-JUN-83

TERMS

TERMS NET 30 DAYS  
 1.5% PER MONTH INTEREST ON ACCOUNT OVER 30 DAYS

CLIENTS P.O. NO.	CLIENT PROJECT NO.	TYPE OF SAMPLES SUBMITTED
		ROCK

NO. OF PKGS	SHIPPED VIA	WAY BILL NO.	SHIPPED FROM
1 EC	SELF		TORONTO

QUANTITY	DESCRIPTION METHOD	XRAL CODE	UNIT COST	AMOUNT
1	WHOLE ROCK (2)	6 0 0 0 0	220.00	220.00
2	AD FE	10 0 0 0 0	7.00	14.00
1	MSA ZRF	5 0 0 0 0	7.00	7.00
4	ESM XRF	5 0 0 0 0	6.00	24.00
5	ESM ZRF	5 0 0 0 0	7.00	35.00
1	ESM ZRF	5 0 0 0 0	9.50	9.50
1	ESM ZRF	5 0 0 0 0	6.00	6.00
1	ESM ZRF	5 0 0 0 0	9.00	9.00
1	ESM ZRF	5 0 0 0 0	5.50	5.50
10	ESM ZRF	1 0 0 0 0	2.75	27.50

*This is to certify that our invoice #18115 has been paid in full.*

**X-RAY ASSAY LABORATORIES LTD.**

*[Signature]*  
 Chief Accountant  
 Oct 13/83

**RECEIVED**

OCT 13 1983

MINING LANDS SECTION

SUB-TOTAL \$ 1100.00

MISC CHARGES	SHIPPING CHARGES	CUSTOM BROKERAGE	TELEX	MINIMUM CHARGES
OTHER				SURCHARGE - RUSH SERVICE

OFFICE COPY

**TOTAL** IN **CANADIAN FUNDS** \$ 1100.00



Recorded Holder	D.R. PYKE
Township or Area	CARR TOWNSHIP

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
<b>Geophysical</b> Electromagnetic _____ days Magnetometer _____ days Radiometric _____ days Induced polarization _____ days Other _____ days  Section 77 (19) See "Mining Claims Assessed" column  Geological _____ days Geochemical _____ days  Man days <input type="checkbox"/> Airborne <input type="checkbox"/> Special provision <input type="checkbox"/> Ground <input type="checkbox"/>  <input type="checkbox"/> Credits have been reduced because of partial coverage of claims.  <input type="checkbox"/> Credits have been reduced because of corrections to work dates and figures of applicant.	\$487.00 spent on assaying rock sample taken from Mining Claims L 568713, L 568927-28  32.5 days credit allowed which may be grouped in accordance with Section 76(6) of the Mining Act.

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

**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:



Ministry of Natural Resources

File \_\_\_\_\_

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) Lithochemical (rock samples)  
Township or Area Carr Township  
Claim Holder(s) D.R. Pyke, 31 Delair Cr.,  
Thornhill, Ontario  
Survey Company Comstate Resources Ltd.  
Author of Report D.R. Pyke  
Address of Author 31 Delair Cr., Thornhill, Ontario  
Covering Dates of Survey June 12, 1983 - August 4, 1983  
(linecutting to office)  
Total Miles of Line Cut \_\_\_\_\_

MINING CLAIMS TRAVERSED  
List numerically

L. 568712  
(prefix) (number)  
L. 568713  
L. 568926  
L. 568928  
L. 568929  
L. 577709

If space insufficient, attach list

<u>SPECIAL PROVISIONS</u> <u>CREDITS REQUESTED</u>	DAYS per claim
ENTER 40 days (includes line cutting) for first survey.	Geophysical
	-Electromagnetic _____
	-Magnetometer _____
	-Radiometric _____
	-Other _____
ENTER 20 days for each additional survey using same grid.	Geological _____
	Geochemical _____

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

Magnetometer \_\_\_\_\_ Electromagnetic \_\_\_\_\_ Radiometric \_\_\_\_\_  
(enter days per claim)

DATE: Aug 4/83 SIGNATURE: [Signature]  
Author of Report or Agent

Res. Geol. \_\_\_\_\_ Qualifications \_\_\_\_\_

Previous Surveys

File No.	Type	Date	Claim Holder

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AUG 10 1983

MINING LANDS SECTION

TOTAL CLAIMS 6



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 L 568713, L. 568927, L. 568928

Total Number of Samples 8

Type of Sample Rock sample-fresh chips  
(Nature of Material)

Average Sample Weight 200 - 400 grams

Method of Collection Sampled with 3 lb. sledge

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 \_\_\_\_\_

Rock samples were broken into chips, with all weathered surfaces being removed. Samples crushed at X-Ray Labs to less than 100 mesh

General \_\_\_\_\_

ANALYTICAL METHODS

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

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

Others Gold - oz/ton; whole rock major and minor elements - wt. %  
Field Analysis (\_\_\_\_\_ tests)

Extraction Method \_\_\_\_\_

Analytical Method \_\_\_\_\_

Reagents Used \_\_\_\_\_

Field Laboratory Analysis

No. (\_\_\_\_\_ tests)

Extraction Method \_\_\_\_\_

Analytical Method \_\_\_\_\_

Reagents Used ~~8 samples analyzed for whole rock major and minor elements~~

Commercial Laboratory (plus above listed)

Name of Laboratory X-Ray Assay Laboratories

Extraction Method -----

Analytical Method X-Ray Fluorescence and Fire assay (gold)

Reagents Used \_\_\_\_\_

General 8 lithogeochemical samples were analyzed for whole rock major and minor elements, nickel, copper, zinc, arsenic, antimony and barium by X-Ray Fluorescence method, and for gold by fire assay method. Samples were analyzed at X-Ray Assay Laboratories, 1885 Leslie St., Don Mills, Ontario.

1. Type of Survey Lithochemical

2. Township or Area Carr Township

3. Numbers of Mining Claims Traversed by Survey L 568713, L 568927, L 568928

4. Number of Miles of Line Cut \_\_\_\_\_ Flown \_\_\_\_\_

\*5. Number of Stations Established \_\_\_\_\_

\*6. Make and type of Instrument Used \_\_\_\_\_

\*7. Scale Constant or Sensitivity \_\_\_\_\_

\*8. Frequency Used and Power Output \_\_\_\_\_

9. Summary of Assessment Credits (details on reverse side)

Total 8 hour Technical Days (Include Consultants, Draughting etc.) 2.25 days

Total 8 hour Line-Cutting Days \_\_\_\_\_

Calculation

$$\frac{2.25}{\text{Technical}} \times 7 = \frac{15.75}{\text{Line-cutting}} + \frac{\text{----}}{\text{Line-cutting}} = \frac{15.75}{\text{Line-cutting}} \div \frac{6}{\text{Number of claims}} = \frac{2.62}{\text{Assessment credits per claim}}$$

The dates listed on this form represent working time spent entirely within the limits of the above listed claims  Check

If otherwise, please explain \_\_\_\_\_

Dated: Aug 4/83

Signed: W R Tyke

- Note: (A) \* Complete only if applicable.  
 (B) Complete list of names, addresses and dates on reverse side.  
 (C) Submit separate breakdown for each type of survey.  
 (D) Submit in duplicate.

2.5741

157

1983 12 09

2.5741

Mr. George J. Koleszar  
Mining Recorder  
Ministry of Natural Resources  
4 Government Road East  
P.O. Box 984  
Kirkland Lake, Ontario  
P2N 1A2

Dear Sir:

RE: Assaying submitted under Section 77(19) of the  
Mining Act RSO 1980, on Mining Claims L 568713  
et al in the Township of Carr

---

The enclosed statement of assessment work credits for  
assaying expenditures has been approved as of the above  
date.

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

Yours very truly,

E.F. Anderson  
Director  
Land Management Branch

Whitney Block, Room 6643  
Queen's Park  
Toronto, Ontario  
M7A 1W3  
Phone: (416) 965-1380

D. Kinvig:mc

cc: D.R. Pyke  
P.O. Box 1163  
Timmins, Ontario  
P4N 7H9

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

cc: Resident Geologist  
Kirkland Lake, Ontario

157

September 6, 1983

2.5741

D.R. Pyke  
P.O. Box 1163  
Timmins, Ontario  
P4N 7H9

Dear Sir:

RE: Geochemical Analysis expenditures submitted on Mining  
Claims L 568713 et al in the Township of Carr

---

Please provide signed receipts or cancelled cheques for \$487.00  
as proof of expenditures in order that the work credits for  
assay costs may be assessed.

For further information, please contact Mr. F.W. Matthews at  
(416)965-1380.

Yours very truly,

E.F. Anderson  
Director  
Land Management Branch

Whitney Block, Room 6450  
Queen's Park  
Toronto, Ontario  
M7A 1W3  
Phone: (416)965-1380

D. Kinvig:mc

cc: Mining Recorder  
Kirkland Lake, Ontario

*Aug 83*

Mining Lands Comments

*- report not signed*  
*- need receipts*  
*- location map does not agree with report of work - most claims are located in Carr Twp. & work was done in Carr.*

To: Geophysics

Comments

Approved     Wish to see again with corrections    Date    Signature

To: Geology - Expenditures *C. Kusma*

Comments

Approved     Wish to see again with corrections    Date *Aug 24/83*    Signature *C Kusma*

To: Geochemistry

Comments

*L.D.*

Approved     Wish to see again with corrections    Date    Signature

To: Mining Lands Section, Room 6462, Whitney Block. (Tel: 5-1380)

157

2.5741

1983 08 12

Mr. George J. Koleszar  
Mining Recorder  
Ministry of Natural Resources  
4 Government Road East  
P.O. Box 984  
Kirkland Lake, Ontario  
P2N 1A2

Dear Sir:

We have received data for Assaying submitted under  
Section 77(19) of the Mining Act R.S.O. 1980 for Mining Claims  
L 568712 et al in the Township of Carr.

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

Yours very truly,

E.F. Anderson  
Director  
Land Management Branch

Whitney Block, Room 6450  
Queen's Park  
Toronto, Ontario  
M7A 1W3  
Phone: (416)965-1380

A. Barr:mc

cc: Dr. D.R. Pyke  
P.O. Box 1163  
Timmins, Ontario  
P4N 7H9

D.R. Pyke and Associates Inc.

157 Burbank Drive  
Willowdale, Ontario  
M2K 1N9  
Telephone (416) 221-6210  
705-264-1037

P.O. Box 1163  
TIMMINS, ONT  
CANADA

LAND MANAGEMENT BRANCH  
MINISTRY NATURAL RESOURCES  
ROOM 6450  
WHITNEY BLOCK  
QUEENS PARK  
TORONTO, ONTARIO  
M7A 1W3

AUGUST 8, 1983

Re: Assessment Report for 6 MINING CLAIMS  
(L568712, L568713, L568926, L568928,  
L568929, L577709) in Carr Township

---

Enclosed are 2 copies of an assessment  
report for a litho geochemical survey for  
6 mining claims in Carr Township.

**RECEIVED**  
AUG 10 1983  
MINING LANDS SECTION

Sincerely  
D.R. Pyke