



31L01NE0004 63.4507 MARIA

010

PRELIMINARY REPORT
ON
GEOLOGY, DIAMOND DRILLING AND TRENCHING
ON
BISSET CREEK GRAPHITE PROPERTY
(TAGLIAMONTE PROPERTY)
MARIA TOWNSHIP, ONTARIO
NTS 31L/1E
LAT. 46° 08' N. LONG. 78° 04'
FOR
PRINCETON RESOURCES CORPORATION

BY
UWE SCHMIDT, B.Sc.
NORTHWEST GEOLOGICAL CONSULTING LTD.
JAN. 30, 1985

1. SUMMARY AND RECOMMENDATIONS

The Bisset Creek graphite property of Princeton Resources Corporation is located in Maria Township, Ontario approximately 300 km north-northeast of Toronto. A program of mapping, trenching, sampling and diamond drilling was carried out in November and December, 1984. This work, although a preliminary evaluation of the property, outlined significant tonnages of potentially economic graphite mineralization in Middle Precambrian quartzofeldspathic gneisses.

A 15 ton bulk sample was taken from one surface zone and 40 samples were taken from five trenches. These, along with the drill core, were shipped to Sudbury for testing.

A two phased exploration program, beginning with line cutting, geological mapping, geophysical test surveys and diamond drilling is recommended. Further diamond drilling is recommended in a second phase, contingent on favourable first phase results. The two exploration phases are estimated to cost a total of \$178,090.00.

Respectfully submitted,



Uwe Schmidt, B.Sc.



31L01NE0004 63.4507 MARIA

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TABLE OF CONTENTS

	PAGE
1. Summary and Recommendations	1
2. Introduction	2
3. Property, Location and Access	3
4. Physiography	4
5. History	5
6. Summary of Work Carried Out	5
7. Regional Geology	7
8. Property Geology	8
9. Mineralization	10
10. Discussion	12
11. Conclusions	13
12. Properties of Graphite	14
13. Graphite Markets	16
14. Summary of Expenditure	19
15. Estimate of Cost	20
16. References	22

APPENDICES

- Appendix A Certificate of Qualifications
- Appendix B Diamond Drill Core Logs

LIST OF ILLUSTRATIONS

FIGURE	TITLE	SCALE	FOLLOWING PAGE
1	Location	1:7,500,000	3
2	Property Location	1:50,000	3
3	Claim Map	1:25,000	3
4	Regional Geology	1:63,360	7
5	Geology	1:2,500	In Pocket
6	Trench and Drill Hole Location	1:500	In Pocket
7	DDH 84-1,84-2 Cross-Section	1:500	10
8	DDH 84-3 Cross-Section	1:500	10
9	DDH 84-4,84-5,84-6,84-7 Cross-Section	1:500	11

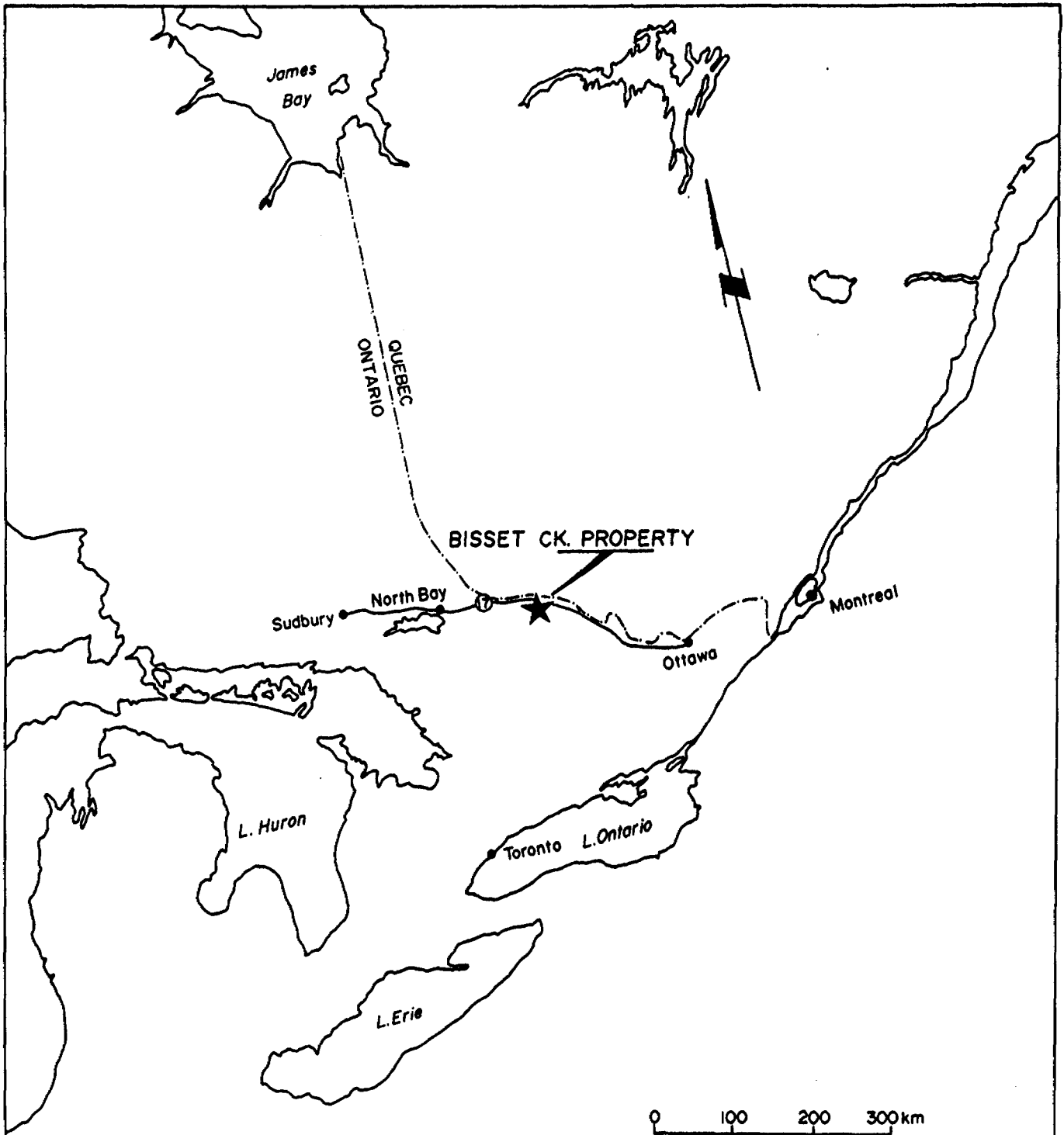
2. INTRODUCTION

In November, 1984, the writer was commissioned by Princeton Resources Corporation of Vancouver to carry out and supervise the preliminary phases of exploration of the company's Bisset Creek Graphite Property, in Maria Township, Ontario. The writer spent from Nov. 9 to Dec. 5 on the property. Geological mapping, surveying, trenching, sampling and diamond drilling were carried out in this period. A total of 1,041 ft. (317 m) of BQ diameter core was drilled in 7 holes. Forty trench samples were taken along 5 new trenches and a 15 ton bulk sample was taken from a previously known surface high grade zone.

Assay results from the trench samples are expected in the near future. The diamond drill core was shipped to Sudbury for further logging, sampling and assaying. Further milling, assay and recovery tests are also planned for the bulk sample.

The work to date, although considered at this stage to be a preliminary assessment, has outlined significant tonnages of graphitic rocks which appear to be of economic flake size and grade. This tonnage includes the extension of previously known surface occurrences and the discovery of a new higher grade zone which does not come to surface.

This report describes the work carried out, results available at this time, and includes an overview of the



PRINCETON RESOURCES CORPORATION			
BISSET CREEK PROPERTY		MARIA TWP, ONTARIO	
LOCATION			
<i>NORTHWEST GEOLOGICAL CONSULTING LTD. to accompany a report by U.Schmidt, Jan. 1985</i>			
SCALE	DATE	N.T.S.	FIG. NO
1:7,500,000	Jan. '85	31L / 1E	1

graphite industry because it is a commodity which is not as widely known as base and precious metals.

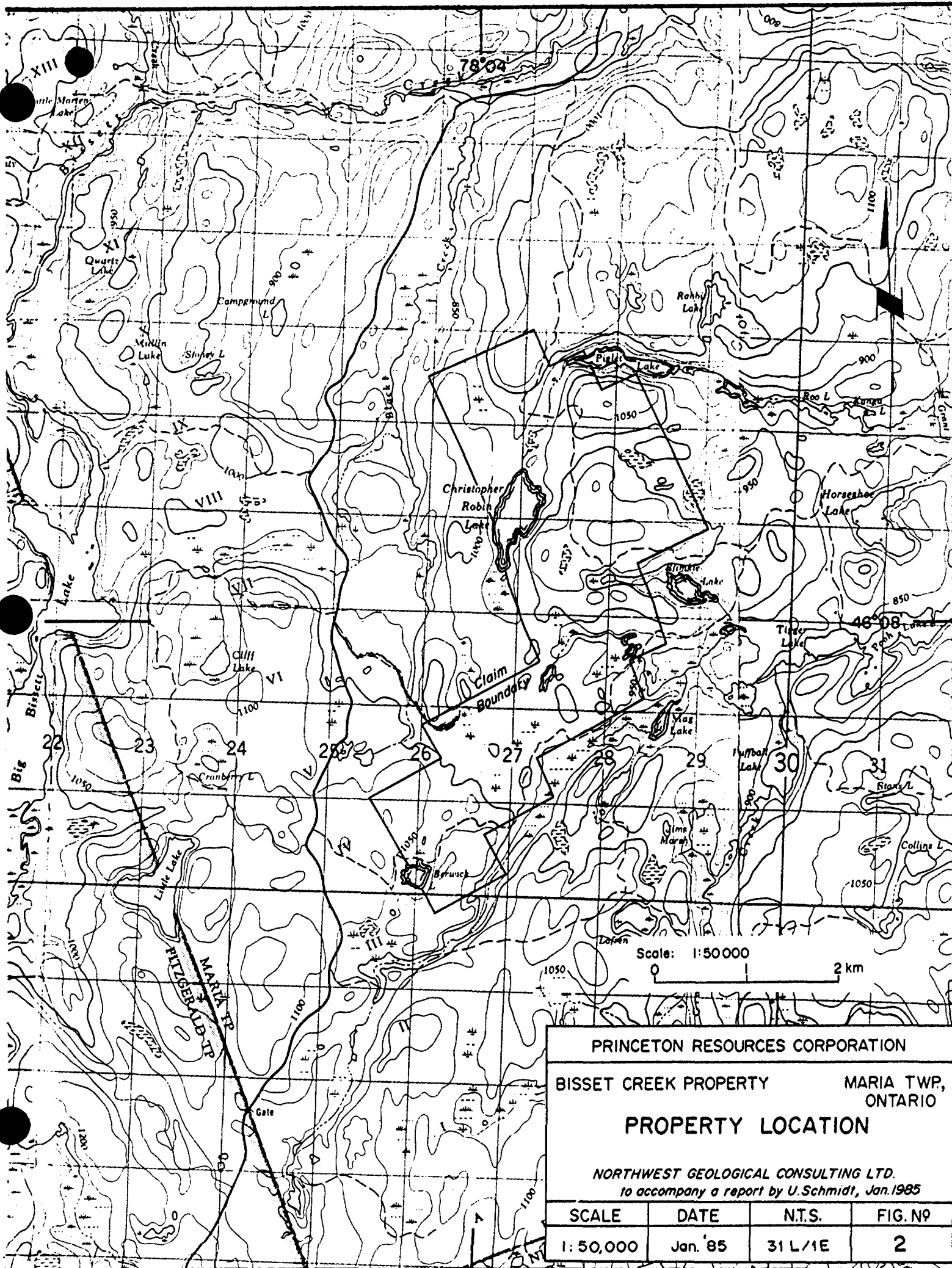
3. PROPERTY, LOCATION AND ACCESS

The Bisset Creek property of Princeton Resources Corporation is located in Maria Township, northern Ontario, approximately 300 km north-northeast of Toronto. The property consists of 48 contiguous unpatented mining claims the details of which are as follows:

CLAIM NUMBER	NO. OF CLAIMS	EXPIRY DATES
777267-777274	8	Oct. 1985
830694-830701	8	Nov. 1985
608361-608366	6	Dec. 1985
608367-608376	10	Dec. 1985
608302-608306	5	Nov. 1985
608346-608347	2	Nov. 1985
608348-608350	3	Dec. 1985
800885-800890	6	Jan. 1986
	====	
TOTAL	48	

The property is located south of the Trans Canada Highway (Highway 17), approximately 53 km east of the town of Mattawa. The property is accessible by motor vehicle via the Trans Canada Highway which along this section connects North Bay and Ottawa.

The turn-off from highway 17 onto the Bisset Creek road is located 2 km east of the village of Bisset Creek. This gravel surfaced forestry haulage road heads south from the highway. The dirt road to the claims joins the Bisset Creek road and heads east, approximately 13 km south of the



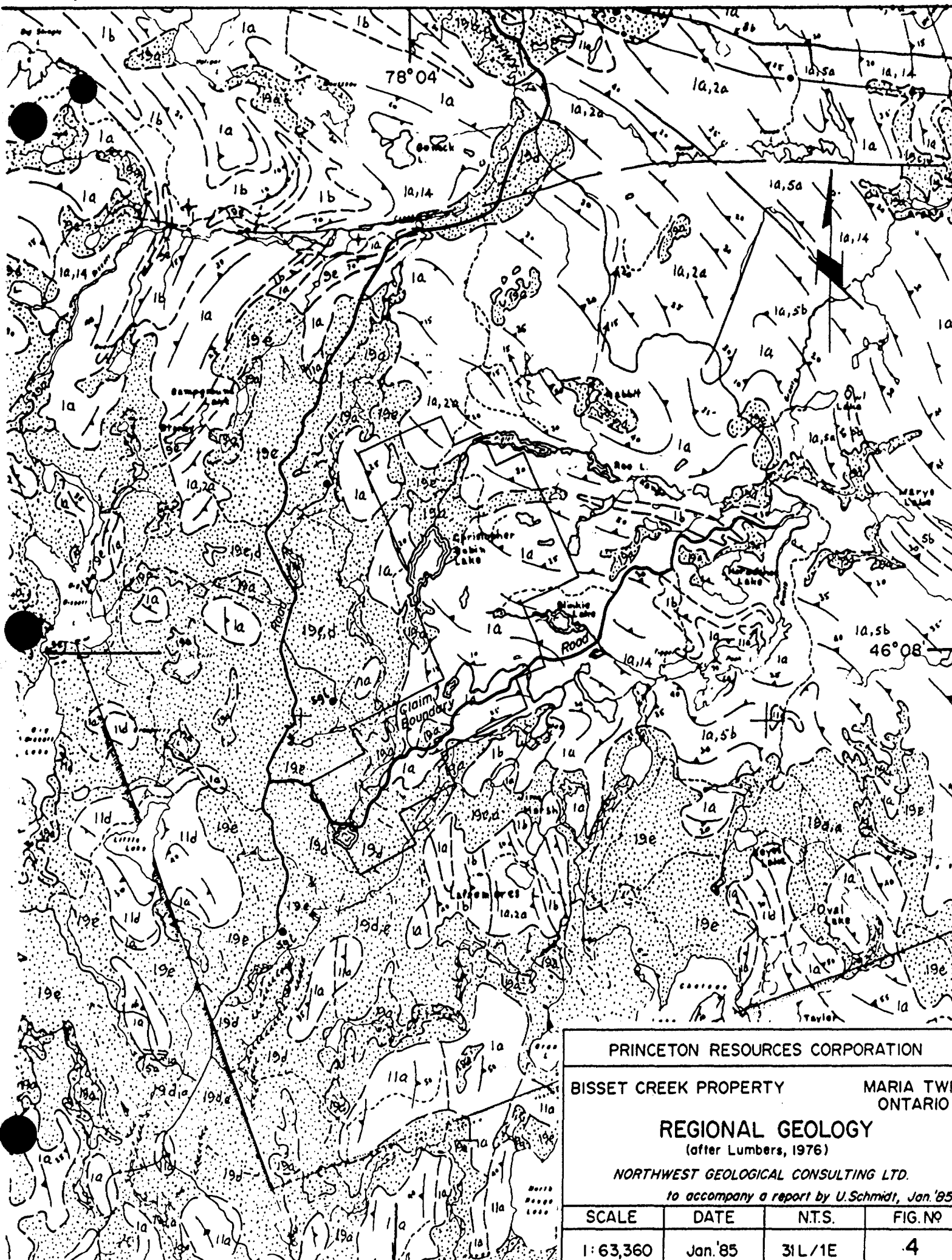
PRINCETON RESOURCES CORPORATION

BISSET CREEK PROPERTY MARIA TWP,
ONTARIO

PROPERTY LOCATION

*NORTHWEST GEOLOGICAL CONSULTING LTD.
to accompany a report by U. Schmidt, Jan. 1985*

SCALE	DATE	N.T.S.	FIG. NO
1: 50,000	Jan. 85	31 L/1E	2



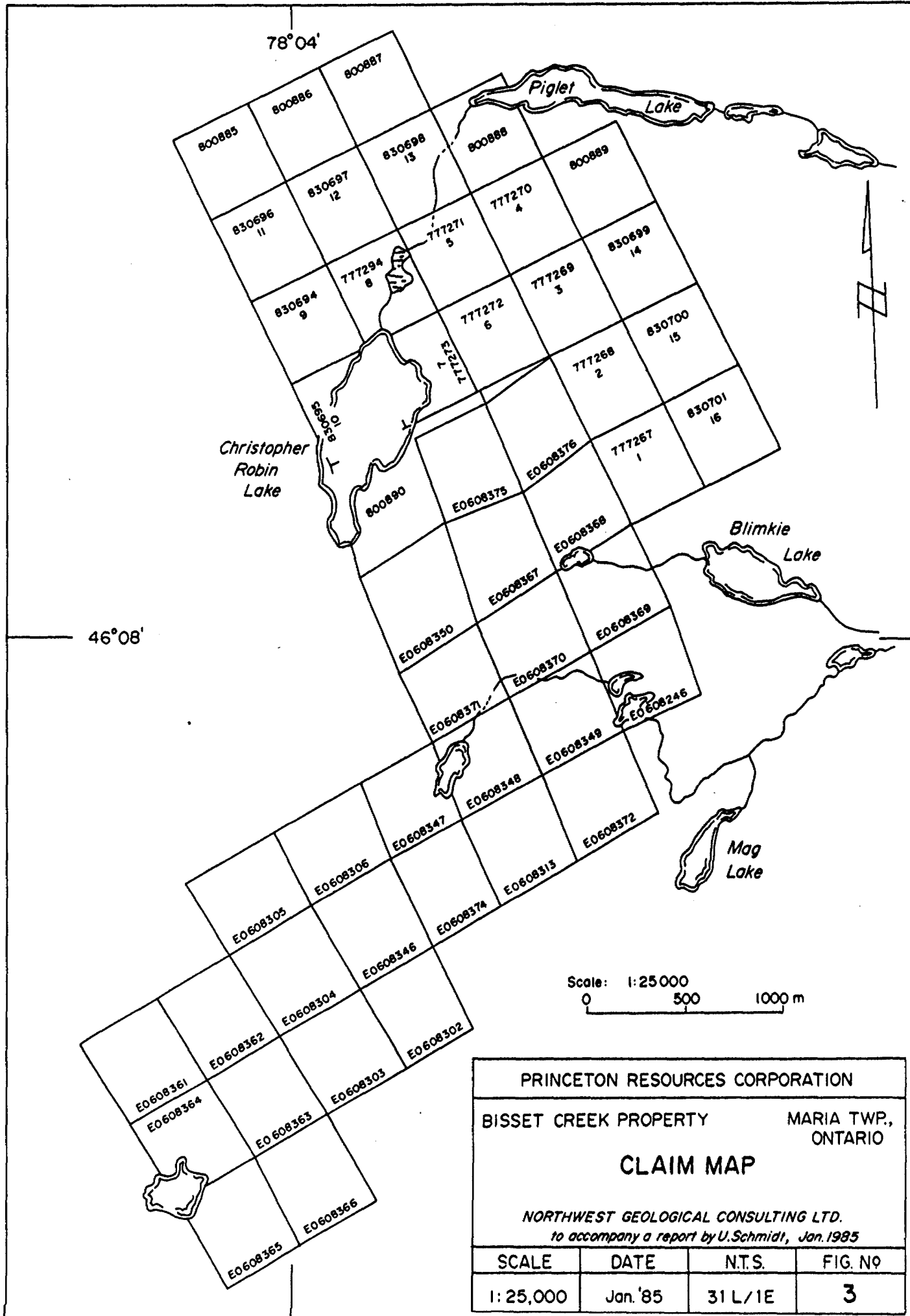
PRINCETON RESOURCES CORPORATION

BISSET CREEK PROPERTY MARIA TWP,
ONTARIO

REGIONAL GEOLOGY
(after Lumbers, 1976)

NORTHWEST GEOLOGICAL CONSULTING LTD.
to accompany a report by U.Schmidt, Jan '85

SCALE	DATE	N.T.S.	FIG. NO
1:63,360	Jan '85	31L/1E	4



Scale: 1:25000
 0 500 1000 m

PRINCETON RESOURCES CORPORATION			
BISSET CREEK PROPERTY		MARIA TWP., ONTARIO	
CLAIM MAP			
NORTHWEST GEOLOGICAL CONSULTING LTD. to accompany a report by U. Schmidt, Jan. 1985			
SCALE	DATE	N.T.S.	FIG. NO
1:25,000	Jan. '85	31 L/1E	3

highway. This winding bush road crosses the property boundary 2 km from the Bisset Creek road, then traverses the claims in a northeasterly direction. From the eastern limit of the property the road continues in a northerly direction and connects back to the Bisset Creek road.

In addition to good access, the property is located near the C.P.R. railway line, power transmission lines and a natural gas pipeline, all of which lie south of and parallel to the Trans Canada Highway.

4. PHYSIOGRAPHY

The property covers a series of rolling hills covered by a mixed forest of conifers and hardwoods. Elevations on the property range from 900 (275 m) to 1050 ft. (320 m) and represent a local height of land.

Rock exposure is generally limited to road cuts, ridge crests and breaks in slope. Soil cover is variable and characterized as sandy glaciofluvial deposits over ridge areas and thicker deposits of glacial stream and lake sediments at lower elevations. Low lying areas tend to be swampy and covered by a moderately thick growth of stunted cedar and swamp grasses.

Areas of hard resistant gneissic rocks have the least soil cover and are often barren. Graphite bearing areas occur in recessive weathering areas but are identified by red brown soil colouration and commonly by the presence of

graphite flakes in the soil.

5. HISTORY

The property was first staked by F. Tagliamonte and associates in 1980. Donegal Resources Ltd. optioned the property in the same year, carried out a magnetometer survey, limited trenching and dropped the option in the same year. Hartford Resources Ltd. acquired the claims in 1981 and in 1982 carried out a program of line cutting, VLF-EM surveying and trenching. D. G. Innes, consulting geologist, examined and reported on the property in the same year. In 1983 Hartford extended the claim block. In 1984 Princeton Resources Corporation acquired 100% interest in the property through its acquisition of Hartford Resources Ltd. Princeton Resources carried out a program of geological mapping, trenching, sampling and diamond drilling under the writer's supervision in November and December, 1984.

6. SUMMARY OF WORK CARRIED OUT

Work described in this report was supervised or carried out by the writer from the period of Nov. 9 to Dec. 5, 1984. The program began with a reconnaissance of the property, road and grid line surveys. This was followed by geological mapping, trenching, trench sampling, bulk sampling and diamond drilling.

An existing grid in the central area of the property

was surveyed by "hip-chain" and compass methods. This grid was originally cut at a line spacing of 300 ft. For the purposes of the present work, the grid lines were renumbered sequentially at even intervals but do not represent 100 m intervals. Stations were reestablished along the lines at 25 metre intervals. Considerable errors in line bearings were detected which made it impractical to use the grid for geological mapping. In cases where grid lines were employed for mapping, loop traverses were run to known points.

Trenching was carried out from Nov. 16 to 22, 1984. A track mounted backhoe, compressed air drilling and blasting were utilized by a two man trenching crew. Five trenches having a total length of 285 metres were excavated and blasted. A total of 40 samples weighing approximately 25 kg each were taken. Trenches averaged 1 to 2 metres in width and ranged in depth from .5 to 2 metres. Trenches and sample sites are located on fig. 5 and 6 accompanying this report. The prefix T84 is used on these drawings to distinguish the current work from previous trenching which is identified with the prefix T.

Diamond drilling was carried out on the property during the period of Nov. 28 to Dec. 5, 1984. Seven BQ drill holes were completed during this period with a total footage of 1041 ft. (317 m). Diamond drill core was logged in the field and shipped to Sudbury for storage. Drill logs are presented in cross-section on fig. 7 to 9 and a copy of the drill logs is appended to this report.

The writer was unable to log the lower portion of the last diamond drill hole (DDH 84-7) because the core and drilling equipment had been packed for shipment prior to his arrival on the property. Completion of the core logging, splitting and analyses of all graphitic sections are planned in the near future.

In addition to the trenching and diamond drilling, a bulk sample weighing in excess of 15 tons was taken from a high grade surface zone near Trench T84-5 in the northeast area of the property. This sample was shipped to Sudbury for milling tests and assay.

7. REGIONAL GEOLOGY

The Bisset Creek property lies within the Ontario Gneiss Segment of the Grenville Structural Province of the Canadian Shield. This area is characterized by quartzofeldspathic gneisses which have undergone upper amphibolite facies grade of regional metamorphism with metamorphic temperatures estimated to have reached the 600-700° C range. The Ontario Gneiss Segment is distinguished from other areas of the same belt by having northwesterly dominant foliation and structural trends.

Mapping by the ODM (Lumbers, 1976) indicates that the property and the surrounding area are underlain predominantly by Middle Precambrian metasedimentary rocks. These are, coarse and medium grained, biotite-K-feldspar-

quartz-plagioclase gneisses which are the high grade metamorphic equivalents of impure sandstone, arkose and argillite. These highly deformed and recrystallized rocks have been folded into northwest trending, northeast dipping recumbent folds which are refolded by large broad open folds. Greater than 10% of the rocks are composed of remobilized quartz and feldspar migmatite.

The graphite found on the Bisset Creek property is hosted by unit 1a of Lumbers, 1976. This unit has been further sub-divided by the writer, for the purposes of property scale mapping, into a graphitic and a non-graphitic unit.

8. PROPERTY GEOLOGY

The property is predominantly underlain by middle Precambrian aged meta-sedimentary rocks of unit 1a. Coarse granitic pegmatite dykes and sills occur in some areas. These were assigned to unit 14 of late Precambrian Age. Lamprophyre dykes and minor quartz veining were found associated with an east-west vertical fault zone which cuts trenches T84-1 and T84-2. Their size is too small to include in the 1:2,500 mapping.

Unit 1a was sub-divided for mapping purposes into 1aG; graphitic gneiss and 1aB; barren gneiss. Unit 1aG has been outlined in a generally northeast trending belt of recessive weathering outcrops which straddle the property's access

road. This unit is exposed along road cuts, hill tops and breaks in slope. It consists of red-brown to pale yellow-brown weathering biotite-quartz-feldspathic gneiss. Graphite and pyrite occur throughout this unit. Graphite occurs in concentrations which range from 1 to 15% by volume and a flake size which ranges from 1 to 6 mm in diameter. Pyrite occurs in concentrations ranging from 1 to 5% but is rarely observed in outcrop because of weathering. It is the weathering of pyrite which gives this unit its colouration and recessive friable character. A fresh surface of unit 1aG is rarely observed on surface. In drill core the unit is pale to medium grey in colour.

Unit 1aB, barren gneiss is a pale to medium grey resistant weathering unit. Bodies of 1aB often occur as steep-sided outcrops. In general this unit is darker, contains more mafics and commonly contains garnet. Garnets are less common in the graphitic gneissic unit.

The structural and metamorphic fabric is highly variable over distances of 1 km or more. However on a smaller scale, over distances of up to several hundred metres the picture is much simpler. This is well demonstrated by the three geological cross sections (fig 7-9).

9. MINERALIZATION

The southwestern area of the property is divided into North and South zones, separated by an east-west trending vertical fault. Diamond drill holes 84-1 and 84-2 show that the South zone consists of two moderately east dipping graphitic horizons separated by a 9 metre thick band of barren gneiss.

A 20 metre thickness of graphitic gneiss with a graphite content ranging from 5 to 10% by volume was intersected in DDH 84-2. Grades of 15 to 20% were encountered within that interval in 4 horizons of less than 1.5 metre thickness.

The surface projection of this zone was exposed in trench T84-3 where graphite of similar grade was exposed over a true thickness of 12 metres.

A 37 metre thick section of graphitic gneiss was encountered in DDH 84-1. Grades in this hole were similar to those encountered in DDH 84-2.

A moderately northeast dipping zone of graphitic gneiss has been outlined by surface trenching and one diamond drill hole in the North zone. A cross-section of this zone is presented on fig. 8. Diamond drill hole 84-3 intersected an interval of 35 metres of graphitic gneiss with ranges in grade from 5 to 15% graphite. About one-half of this interval is estimated to grade from 5 to 10% while the other

half is estimated to range from 10 to 15%. Five narrow horizons within this interval are estimated to grade higher than 15%.

The surface expression of this zone was exposed in trench T84-4 where seven samples were taken over a true thickness of 12 metres.

Higher grades were encountered in drill holes in the Northeast zone. A section through this zone (fig. 9) outlines a new discovery of higher grade graphitic gneiss which underlies a well mineralized surface showing. Graphite was encountered over the entire hole in DDH 84-4 and DDH 84-5. DDH 84-6 was mineralized for its entire length with the exception of a narrow barren horizon encountered at the bottom of the hole. This may be the top of a barren gneiss horizon.

DDH 84-7 was not completely logged but grades comparable with holes to the east were encountered in the upper third, logged portion.

The higher grade graphite horizon in the Northeast Zone has been outlined by three holes and remains open in all directions. This graphitic horizon has a thickness of about 30 metres. The graphite content is estimated to range from 10-20% over that interval. Minor dilution is caused by intrusive sills and dykes. The sectional view of the zone suggests a slight increase in elevation of the zone toward the northeast.

The previously explored surface exposure of the

- LEGEND -
(after Lumbers, 1976, Ontario Division of Mines)

Pleistocene and Recent

- 19 Glaciofluvial and lacustrine deposits

Late Precambrian

- 11 Monsonitic to Granitic intrusive rocks.
- 14 Granitic pegmatite dykes

Middle to Late Precambrian

- 5 Calc-silicate and garnetiferous gneiss

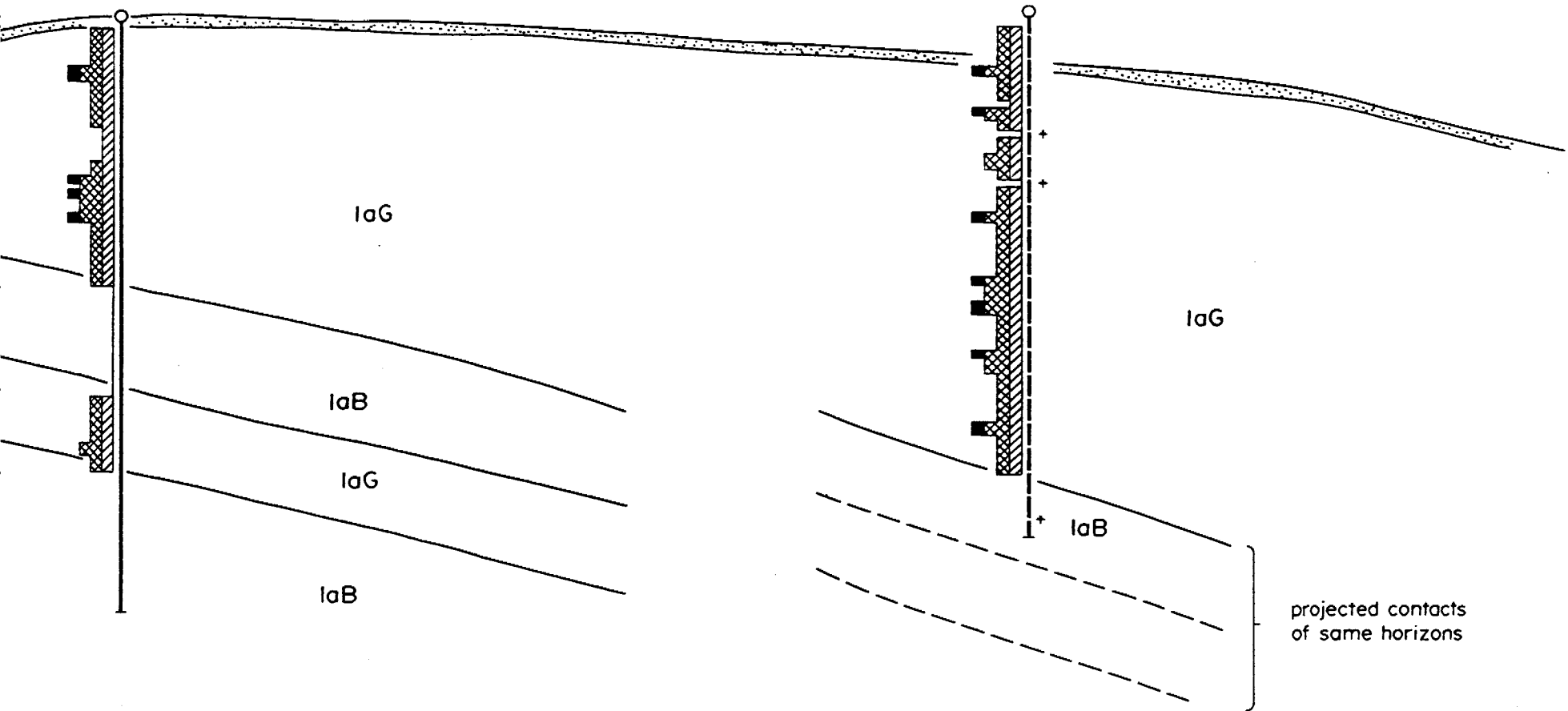
Middle Precambrian

- 1 Migmatitic Biotite Gneiss
(impure meta-sandstone)
- 1a Medium grained biotite-K-feldspar-quartz-plagioclase gneiss
- 1b Coarse grained biotite-K-feldspar-quartz-plagioclase gneiss

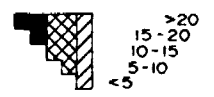
A' EAST

DDH 84-2
(163')
50m

DDH 84-1 (projected South 62m)
(143')
44m

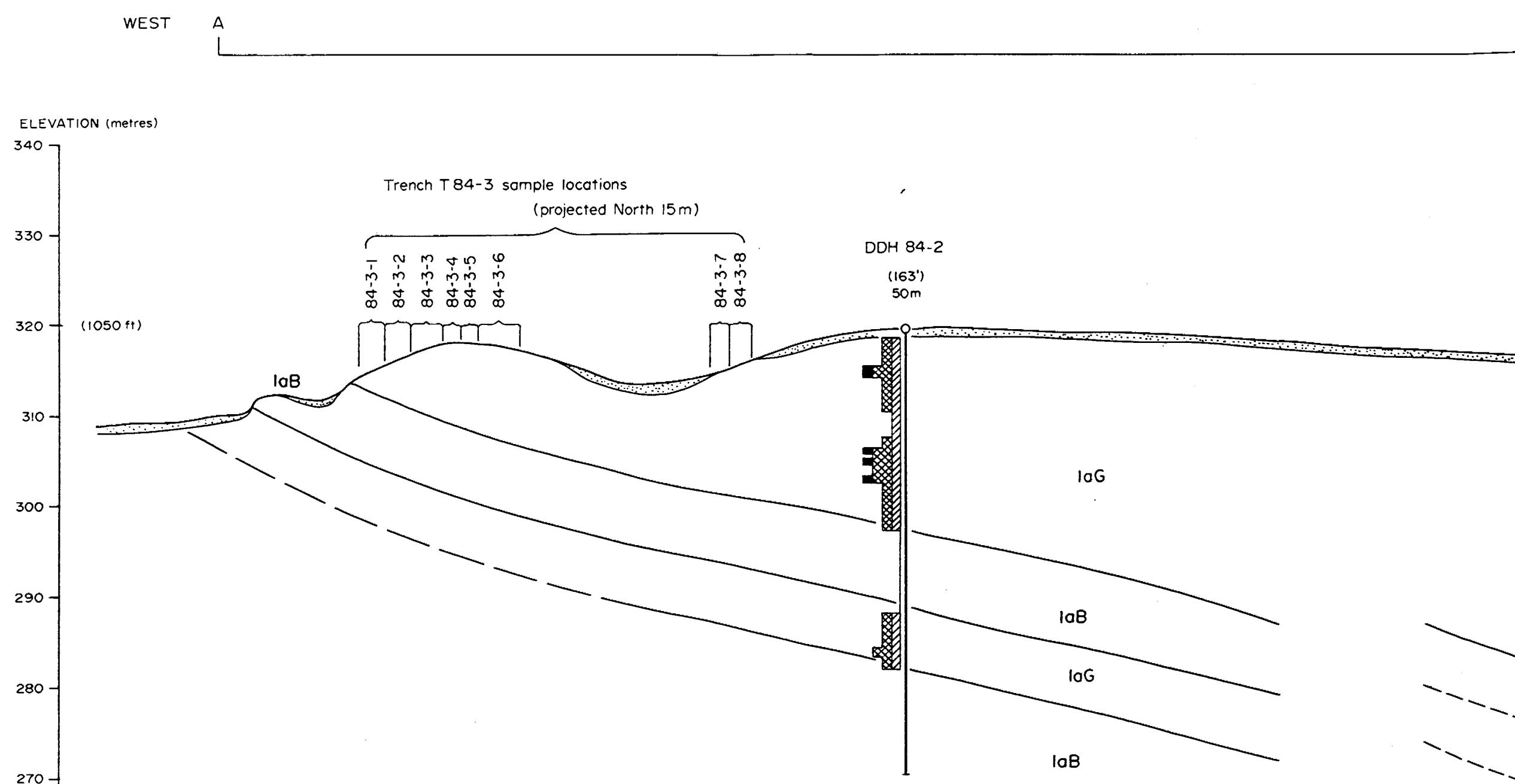


KEY



Visual estimate of
graphite content,
in % volume

PRINCETON RESOURCES CORPORATION			
BISSET CREEK PROPERTY		MARIA TWP, ONTARIO	
CROSS SECTION			
DDH 84-1, 84-2			
<i>NORTHWEST GEOLOGICAL CONSULTING LTD.</i>			
<i>to accompany a report by U. Schmidt, Jan '85</i>			
SCALE	DATE	N.T.S.	FIG. No
1:500	Jan '85	31L / 1E	7



ELEVATION (metres)

340
330
320 (1050 ft)
310
300
290
280
270
260

Trench T 84-3 sample locations
(projected North 15 m)

84-3-1
84-3-2
84-3-3
84-3-4
84-3-5
84-3-6
84-3-7
84-3-8

DDH 84-2
(163')
50m

IaB

IaG

IaB

IaG

IaB

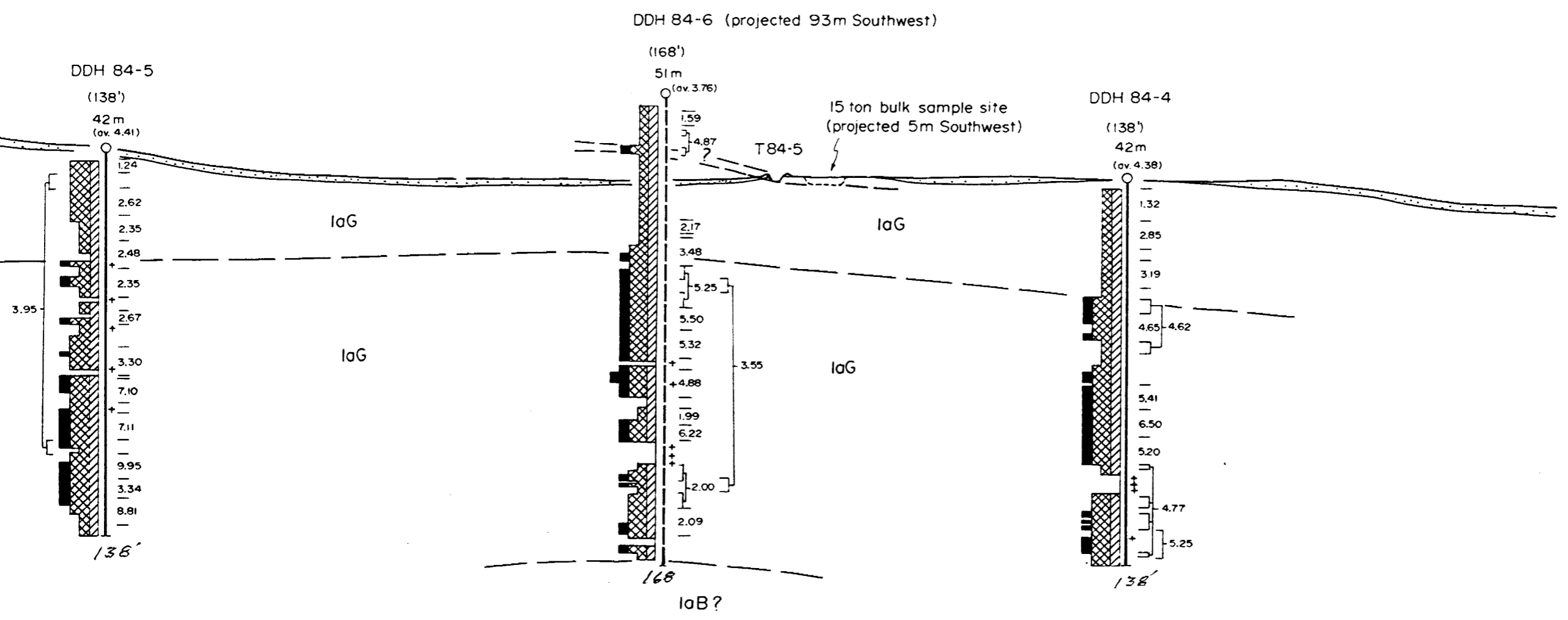
LEGEND

- IaG *Graphitic gneiss*
- IaB *Barren gneiss*
- Geological boundary: defined, inferred, interpreted*
- Vertical diamond drill hole:
in section, projected*
- Dyke or sill*

KEY

- >20*
 - 15-20*
 - 10-15*
 - 5-10*
 - <5*
- Visual estimate of
graphite content,
in % volume

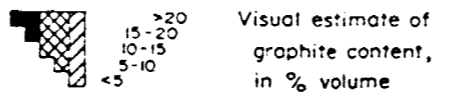
C' SOUTHEAST



LEGEND

- Graphitic gneiss
- Barren gneiss
- Geological boundary: defined, inferred, interpreted
- Vertical diamond drill hole: in section, projected
- Dyke or sill
- % graphite recovered by flotation (by weight) (trench and drill hole)

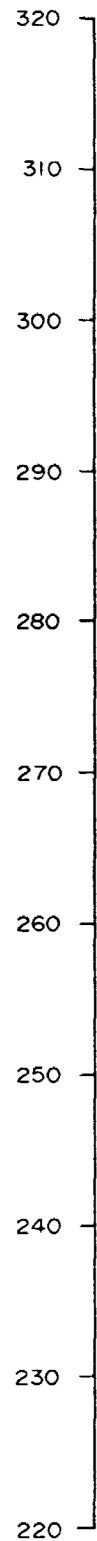
KEY



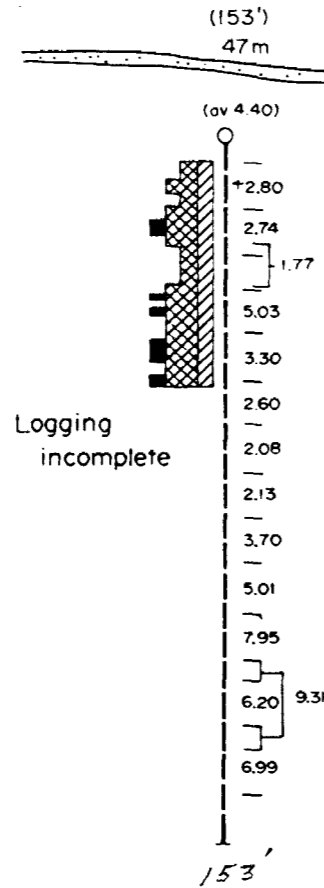
PRINCETON RESOURCES CORPORATION			
BISSET CREEK PROPERTY		MARIA TWP., ONTARIO	
CROSS SECTION			
DDH 84-4, 84-5, 84-6, 84-7			
NORTHWEST GEOLOGICAL CONSULTING LTD. to accompany a report by U. Schmidt, Jan. '85			
SCALE	DATE	N.T.S.	FIG. NO
1:500	Jan. '85	31L / 1E	9

NORTHWEST C

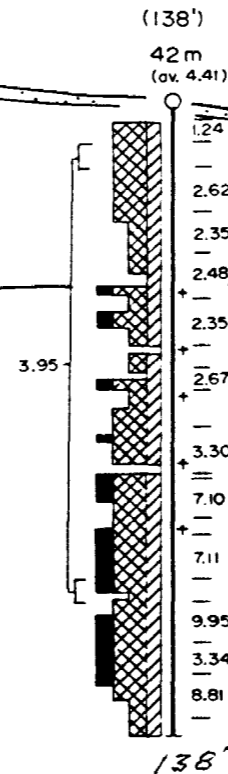
ELEVATION (metres)
(1050 ft)



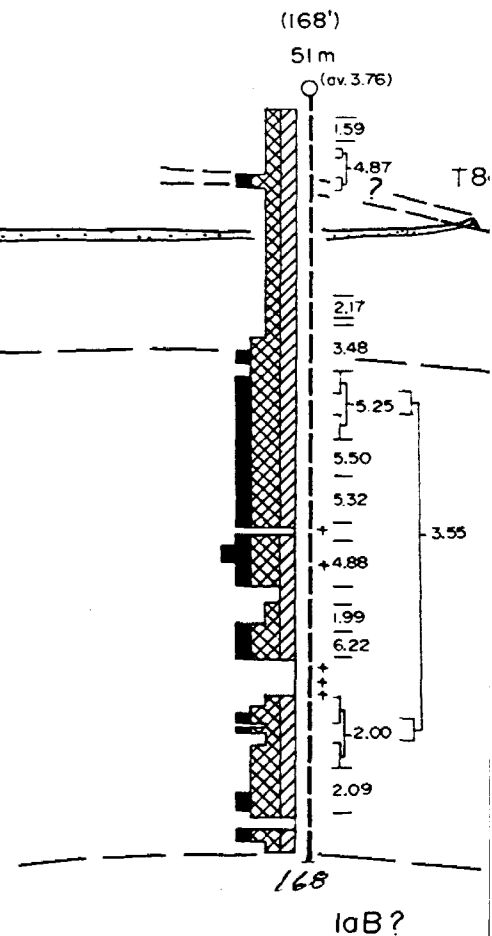
DDH 84-7 (projected 36m Northeast)



DDH 84-5



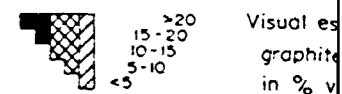
DDH 84-6 (projec



LEGEND

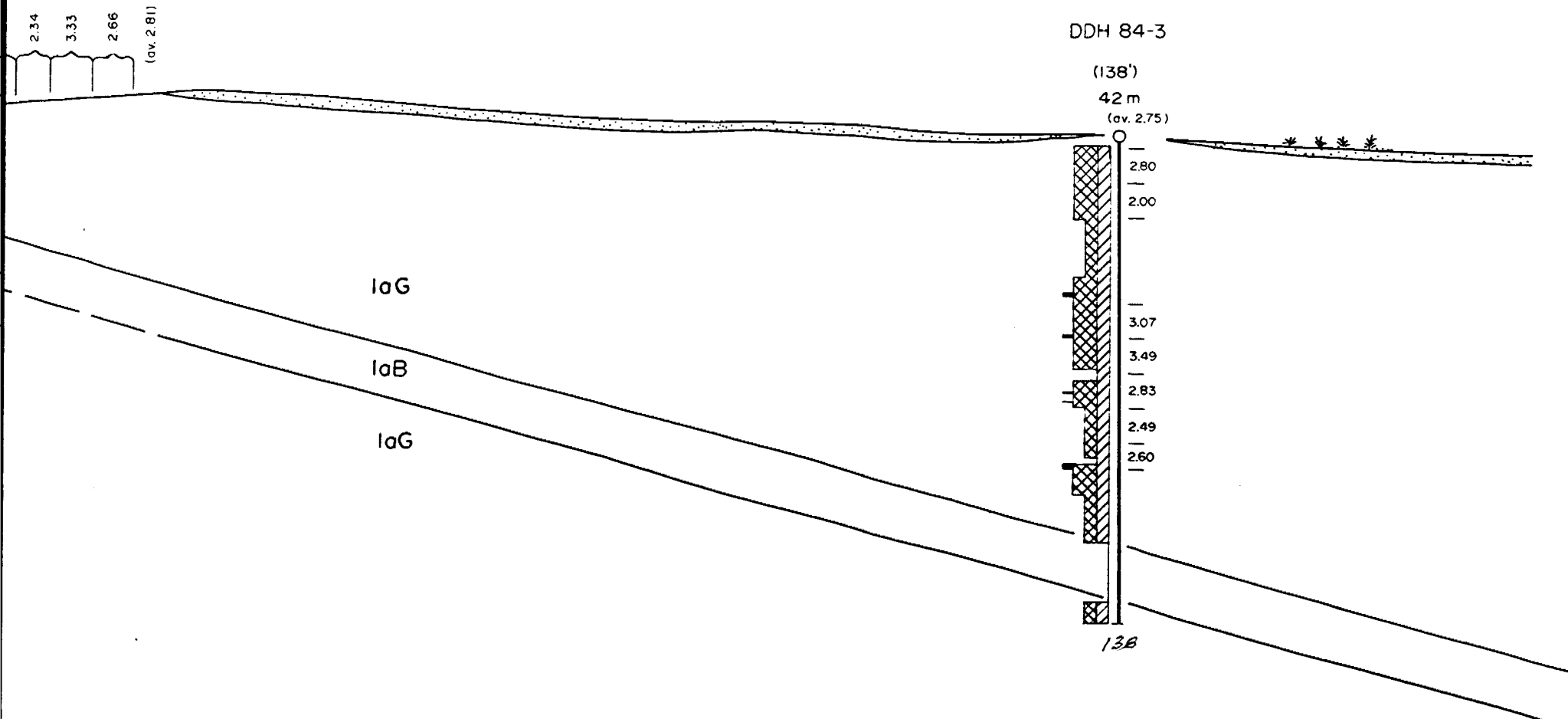
- laG Graphitic gneiss
- laB Barren gneiss
- Geological boundary: defined, inferred, interpreted
- Vertical diamond drill hole: in section, projected
- Dyke or sill
- 2.18 % graphite recovered by flotation (by weight) (trench and drill hole)
- 2.85

KEY



B' NORTHEAST

ations (projected from S.E.)



KEY



Visual estimate of
graphite content,
in % volume

PRINCETON RESOURCES CORPORATION

BISSET CREEK PROPERTY

MARIA TWP,
ONTARIO

CROSS SECTION
DDH 84-3

NORTHWEST GEOLOGICAL CONSULTING LTD.
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SCALE	DATE	N.T.S.	FIG. NO
1:500	Jan. '85	31L / 1E	8

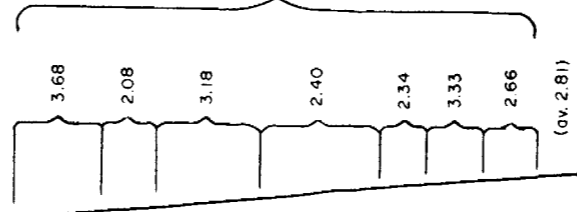
SOUTHWEST

B

ELEVATION (metres)

330
320 (1050 ft)
310
300
290
280
270
260
250
240
230

Trench T84-4 sample locations (projected from S.E.)

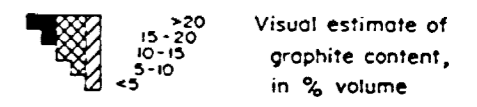


1aG
1aB
1aG

LEGEND

- 1aG Graphitic gneiss
- 1aB Barren gneiss
- Geological boundary: defined, inferred, interpreted
- Vertical diamond drill hole: in section, projected
- Dyke or sill
- % graphite recovered by flotation (by weight) (trench and drill hole)

KEY



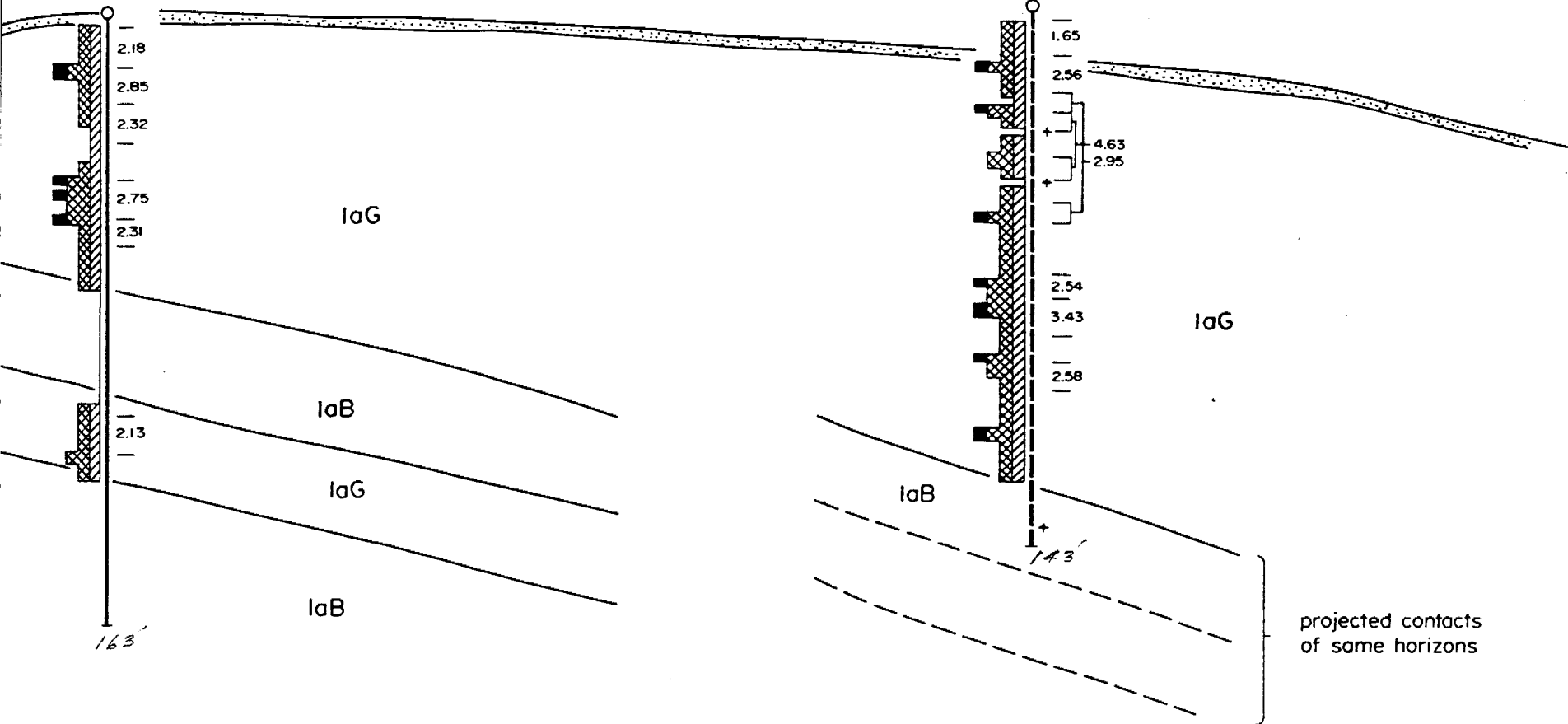
A' EAST

DDH 84-2

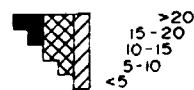
(163')
50m
(av. 2.42)

DDH 84-1 (projected South 62m)

(143')
44m
(av. 2.91)



KEY

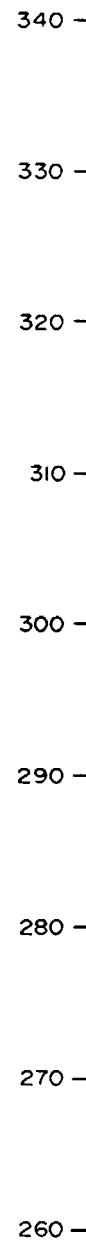


Visual estimate of
graphite content,
in % volume

PRINCETON RESOURCES CORPORATION			
BISSET CREEK PROPERTY		MARIA TWP, ONTARIO	
CROSS SECTION			
DDH 84-1, 84-2			
NORTHWEST GEOLOGICAL CONSULTING LTD. to accompany a report by U. Schmidt, Jan. '85			
SCALE	DATE	N.T.S.	FIG. No
1:500	Jan. '85	31L / 1E	7

WEST A

ELEVATION (metres)

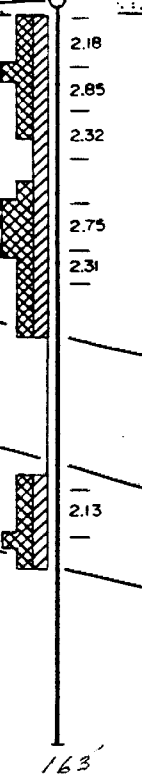


Trench T 84-3 sample locations
(projected North 15 m)



DDH 84-2

(163')
50m
(av. 2.42)



1aB

1aG

1aB

1aG

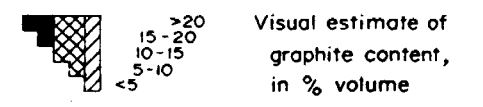
1aB

1aB

LEGEND

- 1aG Graphitic gneiss
- 1aB Barren gneiss
- Geological boundary: defined, inferred, interpreted
- Vertical diamond drill hole: in section, projected
- Dyke or sill
- 2.18 % graphite recovered by flotation (by weight)
2.85 (trench and drill hole)

KEY



Northeast Zone was further explored by an east-west trench (T84-5). This trench revealed a broadly folded high grade graphitic horizon interlayered with lower grade and barren horizons. Drilling also suggests a limited thickness potential for this horizon and indicates a possible correlation with a 1 metre thick high grade horizon near the top of DDH 84-6. Adjacent holes also suggest that the zone has been largely removed by erosion.

Graphite flake size in all the drill core ranged from 1 to 6 mm. The most common flake size is 2 to 3 mm in diameter. No correlation of flake size and grade was observed. The largest flakes were found to occur adjacent to migmatitic quartz and feldspar segregations. Unfortunately the presence of these segregations tends to dilute the grade.

10. DISCUSSION

Estimates of grade reported here are based on visual estimates of graphite concentration reported in % by volume. The relatively low specific gravity of graphite, combined with the difficulty of estimating platy minerals in segregated host rocks is expected to produce lower analytical results. Field estimates, however, are likely to be a reasonable approximation of grade and probably are a better indicator of the relative grade among the drill holes.

Preliminary estimates of the tonnage potential of the three zones suggest that the Northeast Zone has the best potential for outlining economic grades and tonnages. This zone, if squared-off in east-west and north-south directions through DDH 84-4, 5 and 6, contains an estimated 1 million tonnes of graphitic gneiss with grades visually estimated to range from 10 to 20%. This horizon has an average thickness of 30 metres and lies at depths of 12 to 15 metres below surface.

The North-South zones in the southwest map area also have a conservatively estimated combined tonnage potential of 1 million tonnes. Although continuously mineralized, these are lower grade zones and their future development is dependent on favourable drill core assays.

11. CONCLUSIONS

Exploration to date on the Bisset Creek property has outlined significant deposits of graphite in two areas of the property. Visual estimates of grade in drill core suggest that the Northeast Zone has the potential to contain economic grade and tonnage. This assessment is contingent on favourable assay results, mill tests and analyses of trace element content. The geological potential for extending the zone is excellent.

In addition to the Northeast Zone, a conservatively estimated 1 million tonnes of lower grade graphitic gneiss

has been outlined in the North-South Zones and a large area within the property boundary remains unexplored.

12. PROPERTIES OF GRAPHITE

Graphite is a soft, crystalline form of carbon which has many unique properties that make it a desired product in many applications. The term graphite includes a variety of structural types both on a macroscopic and microscopic scale. These variations in structure affect the mineral's physical and chemical characteristics and therefore its application.

Graphite can be naturally occurring or produced synthetically from coal, petroleum byproducts or from natural graphite. World production is around 2 million tonnes annually. Of this, about one quarter is natural graphite. There is little overlap in applications of the two varieties. High energy costs involved in manufacturing synthetic graphite make it unlikely that this product will compete effectively in natural graphite applications.

Although graphite is crystalline, it is a commonly accepted practice in the industry to restrict this term to varieties of flake graphite which are visible to the unaided eye.

Natural graphite occurs in bedded, vein and contact metamorphic deposits. Each deposit has a product with unique physical and chemical characteristics.

Amorphous graphite is a term used to describe cryptocrystalline varieties. The three most commonly used commercial terms for the mineral are crystalline flake, crystalline lump and amorphous lump.

The principal impurities in natural graphite are other minerals from the enclosing schistose host rocks. These are quartz, mica, feldspar, and clay.

In general, coarse flake graphite from bedded deposits is preferred in most natural graphite applications because vein and contact metamorphic deposits are likely to contain higher and variable concentrations of impurities.

The softness, low specific gravity, perfect basal cleavage and resulting slippery character make it ideal for metal manufacturing. Its refractory nature and immunity to most corrosive reagents make it an ideal product for use in the metallurgical and chemical industries. The largest use of graphite is in foundry facings, crucibles and mold facing applications.

Graphite is a common mineral but rarely occurs in economic concentrations. The major producers of natural graphite are China, the Soviet Union, India, Mexico, North and South Korea, Austria, Czechoslovakia, Madagascar, West Germany, Norway and Sri Lanka. World production in 1982 totalled 535,000 tonnes.

13. GRAPHITE MARKETS

Graphite has traditionally been produced in a relatively few developing countries. Political stability, reliability of supply and financial considerations are becoming important factors in its markets. The most noticeable effect has been the end producers swing to using graphite from a variety of origins (Robbins, 1984).

Graphite prices are usually based on a negotiated price between producer, agent and user. Although prices are important, reliability of supply and product performance may outweigh pricing considerations.

Present uses of graphite are:

- crucibles
- graphite bonded magnesia refractory bricks and graphite alumina applications in steel making
- foundry facings
- recarburiser in steel making
- mechanical seals and gaskets
- lubricants
- electrodes
- electric motor brushes
- dry batteries
- moderator in atomic reactors
- brake linings
- conductive coatings
- additive to paint, explosives, fertilizers and chemicals
- alloy with metal for bearings

One of the fastest growing applications has been in graphite-magnesia refractory bricks. Consumption of graphite in this area is tied to the modernization of the steel making industry. The trend from conventional to

electric arc furnaces is continuing and is expected to produce continued expansion in the graphite-magnesia refractories market.

The increased use of manufactured graphite fibre composites in structural applications in the aircraft and construction industries may also have a beneficial effect on natural graphite consumption because a large portion of natural graphite production is consumed as a raw material for synthetic graphite products.

Future commercial and military applications are expected to grow in areas of high temperature applications where graphite's high temperature strength, thermal and electrical conductivity, corrosion and thermal shock resistance have no competition.

Prices paid to producers, as reported in the June, 1984 issue of Industrial Minerals, ranged from US\$ 494 to \$1,140 per tonne for four size ranges of Madagascar flake. Two grades of Brazilian flake ranged from US\$ 420 to \$2,250 per tonne and three Sri Lankan lump and powder grades ranged from US\$ 180 to \$1,250 per tonne.

In 1983 (the most recent data available) the U.S.A. consumed 38,000 tons of natural graphite. Consumers are located primarily in the northeastern Great Lakes region. The main uses were estimated to be: raising carbon content in steel, 26%; refractories, 21%; dressings and molds in foundry operations, 13%; lubricants, 8%; brake linings, 7%; crucibles, 7%; and other; 18%. Of this consumption

crystalline flake accounted for 15% by quantity and 26% by value. Flake graphite was imported from Brazil, Madagascar and China. The U.S. Bureau of Mines predicts an annual demand increase of 3% per year for natural graphite through 1990.

14. SUMMARY OF EXPENDITURE

Unaudited expenditures up to Dec. 31, 1984 on the Bissett Creek property by Princeton Resources Corporation are as follows:

Assessment Work	\$ 11,864.56
Drilling	15,901.00
Geological Report	5,399.30
Maps	104.73
Supervision	9,019.72
Travel and Accommodation	5,033.12

TOTAL	\$ 47,322.43

15. ESTIMATE OF COST

PHASE 1

Line Cutting	\$ 5,000
Geophysical test surveys	1,500
Geological mapping	7,500
Diamond drilling, 2000 ft. BQ	36,000
Assay and Analyses	10,000
Supervision and core logging	5,000
Transportation, Communication & Shipping	4,500
Room & Board	2,600
Consumables	500
	=====
	\$ 72,600
Contingency 10%	7,260
	=====
TOTAL	\$ 79,860

PHASE II

Diamond Drilling 3,000 ft. BQ	\$	54,000
Road Improvement		5,000
Assay and analyses		15,000
Supervision and core logging		8,500
Transportation, communication and shipping		4,500
Room & Board		1,800
Consumables		500
		=====
	\$	89,300
Contingency 10%		8,930
		=====
Total Phase II	\$	98,230
plus Total Phase I	\$	79,860
		=====
PROGRAM TOTAL	\$	178,909

16. REFERENCES

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APPENDIX A

CERTIFICATE OF QUALIFICATIONS

I, Uwe Schmidt, of 656 Foresthill Place, Port Moody, B.C. do hereby declare:

- (1) I am a 1971 graduate of the University of British Columbia with a B.Sc. degree in Geology.
- (2) I have practiced my profession continuously since graduation.
- (3) I have managed various mineral exploration projects in the Yukon Territory, British Columbia and Ontario over the past 13 years.
- (4) This report is based on field work carried out by me or under my supervision and on selected publications and reports.
- (5) I have no interest nor do I expect to receive any interest, direct or indirect, in the securities or properties of Princeton Resources Corporation.
- (6) I consent to the inclusion of this report in a Prospectus or Statement of Material Facts.

January 30, 1985
Vancouver, B.C

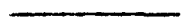


Uwe Schmidt, B.Sc.

APPENDIX B

DIAMOND DRILL CORE LOG
-LEGEND-

GEOLOGICAL BOUNDARIES



MAJOR



MINOR



GNEISSOSITY: ANGLE TO CORE AXIS



JOINT: ANGLE TO CORE AXIS



FAULT



DYKE OR SILL



15-20% GRAPHITE by volume

Box No.

CORE BOX NUMBER

DIAMOND DRILL CORE LOG

DDH HOLE 84-1 PAGE 1 OF 2

PROJECT BISSET CR. CLAIM GROUP _____ CORE SIZE BQ
 STARTED 84, 11, 29 FINISHED 84, 11, 30 TOTAL DEPTH 143 FT.
 LOCATION _____ COLLAR ELEVATION 1050'
 ANGLE -90° AZIMUTH _____ LOGGED BY U. SUMMIDT

FOOTAGE	DESCRIPTION	VISUAL ESTIMATE ASSAYS AND ANALYSES		
		% VOL. GRAPHITE	FLAKE SIZE IN mm	% VOL. PYRITE
	CASING			
Box 1 10	Unit 1aG <u>GRAPHITIC GNEISS</u> MED. GRAY TO GREY-GREEN, MED. → COARSE GRAINED BIOTITE - FELDSPAR - QUARTZ GNEISS — WITH ALTERNATING BANDS OF MICA & FELDSPAR-QUARTZ 1 → 2 cm THICK — BIOTITE BANDS ARE CHLORITIC, GRAPHITIC & PYRITIC	5-10%		2-5
20		15-20	7-10	10 2-5
Box 2 30	— INCREASE IN PINK & PALE GREEN MIGMATITIC BANDS RESULTING IN LIGHTER COLOUR — MIGMATITIC BANDS // FOLIATION	15-20	1-4	5-10
40		10-15		5-10
Box 3 50	3 1/2 FT. OF PINKISH FELD.-QTZ-BIOT.PEGMATITE	5		TR.
60	— CORE IS A PALER GREY GREEN COLOUR BECAUSE OF INCREASE IN QTZ AND PEGMATITE BANDS — MORE CHLORITIZED THAN ABOVE, PRODUCING A GREY TO OLIVE GREEN COLOUR	5-10	2-3	5
Box 4 70		10-15		5-10
80	— MED → DARK GREY, CHLORITIZED BIOT.-FELD.-QTZ. GNEISS	5-10	2-3	5-10
		10-15		5-10

DIAMOND DRILL CORE LOG

HOLE 84-1

PAGE 2 OF 2

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES		
		% GRAPHITE	GRAIN SIZE μ m	% PYRITE
80	MED. → DARK GREY BIOT-FELD-QTZ GNEISS	15-20	2-4	5-10
Box 5		↓		↓
90	MED. → GREY-GREEN CHLORITIC, FELDSPAR-QTZ. GNEISS - INTER BANDED QTZ. & FELDSPAR SEGREGATIONS	5-10	2-3	5
		↓	↓	↓
		15-20	2-5	5-10
		72° 10-15	2-4	
		↓		
100		5-10		5
Box 6		↓		
		15		
		10-15		5-10
		↓	↓	↓
		15-20	2-4	5-10
		5-10		
			2-4	5
120	LEUCOCRATIC FELDSPATHIC-BIOT. GNEISS - CHLORITIC, PASCALY TO GREY-GREEN	5		5-10
Box 7		↓		↓
	MED → FINE GRAINED FELD. QUARTZ GNEISS GRAPHITE ENDS	5-10		↓
				↓
130	UNIT 1a B BARREN GNEISS - MELANO CRATIC BIOT.-GARNET-FELD-QTZ. GNEISS INTER BANDED 2 /cm THICK QTZ. & FELDSPAR BANDS 72° →			
140	PINK & GREY-GREEN, BIOT.-FELD-QTZ. PEGMATITE →			
Box 8				
	COARSE GRAINED BIOT.-GARNET FELDSPAR-QUARTZ GNEISS			
	END OF HOLE			
150				
160				

DIAMOND DRILL CORE LOG

DDH HOLE 84-2 PAGE 1 OF 2

PROJECT BISSET 4K. CLAIM GROUP _____ CORE SIZE BQ
 STARTED 84, 11, 30 FINISHED 84, 12, 01 TOTAL DEPTH 163 FT.
 LOCATION 1m N. OF L3N-1+20E COLLAR ELEVATION 1040'
 ANGLE -90° AZIMUTH _____ LOGGED BY U. SCHMIOT

FOOTAGE	DESCRIPTION	VISUAL ESTIMATE ASSAYS AND ANALYSES		
		% VOL GRAPHITE	FLAKE SIZE IN MM	% VOL PYRITE
	CASING			
Box 1 10	UNIT 1aG GRAPHITIC GNEISS - GRAPHITIC & PYRITIC - MED. - GREY BIOT. - FELD. - QTZ. GNEISS ± 1-2 CM INTER BANDS OF BIOT. & QTZ & FELDSPAR - MICAS ARE CHLORITIZED, GIVING A GREY-GREEN COLOUR	5-10	2-4	5
		15-20	2-5	5
20	- OCCASIONAL COARSER PINKISH FELD. - QTZ BANDS ALSO PYRITE ALONG FRACTURES IN SOME AREAS	5-10	2-3 1-2 ↓ 2-3	510
Box 2 30	COARSE GRAPHITE FLAKES OCCUR AT THE BOUNDARIES OF QTZ & FELDSPAR BANDS	+	↓	
40		4-5	1-2	5
Box 3 50	PALE TO MED. GREY TO GREY-GREEN, CHLORITIZED GRAPHITIC, PYRITIC BIOT. - FELD. - QTZ GNEISS	5-10		
		15-20	2-4	5-10
		10-15		
		15-20		
		15-20		
60		5-10	1-2	5-10
Box 4 70				
	GRADATIONAL CONTACT			
80	UNIT 1aB BARREN GNEISS MED. - DARK GREY BANDED, BIOT. - GARNET - QUARTZ FELDSPATHIC GNEISS, PINK GARNETS 1-3MM DIAM., PYRITIC ± OCCASIONAL GRAPHITE FLAKE	TR		5

DIAMOND DRILL CORE LOG

HOLE 84-2

PAGE 2 OF 2

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES		
		GRAIN SIZE	FLAKE SIZE	% FLAKE
80	BARREN GNEISS CONTINUED			
80-90	- WITH 1-2 CM QUARTZ FELDSPATHIC BANDS - MINOR PINK POTASSIC ALTERATION ALONG MINOR LINE FRACTURES - PINK FELDSPAR - QTZ BIOT. PEGMATITE		mm	
90-100	- DARK GREY BIOT. - GARNET. QUARTZ FELDSPATHIC GNEISS WITH PINK 1-2 CM QUARTZ FELDSPATHIC INTERBANDS			
100	GRADATIONAL CONTACT			
100-110	UNIT 1a G GRAPHITIC GNEISS			
110-120	- MED. GREY TO GREY GREEN CHLORITIC BIOT. QUARTZ FELDSPATHIC GNEISS 1-2 CM THICK SALMON PINK FELDSPATHIC BANDS	5-10	1-3	5-10
120-125	- MED. TO DARK GREY FINE GRAINED GRAPHITIC BIOT. QTZ. FELDSPATHIC GNEISS	10-15	1-3	10
125-130	PALE GREY-GREEN CHLORITIC QTZ-FELDSPATHIC GNEISS, STRONGLY CHLORITIZED	5-10		5
130-135	MED. TO DARK GREY BIOT QUARTZ FELDSPATHIC GNEISS			5
135-140	PALE PINK, SPOTTED, BIOT. - GARNET QTZ - FELDSPATHIC GNEISS PINK GARNET WEAK GNEISSOSITY			
140-145	DARK GREY, BANDED, BIOT GARNET, QTZ - FELDSPATHIC GNEISS	TR.	1-3	5
145-150	GRADATIONAL PALE PINK BIOT - GARNET QUARTZ FELDSPATHIC GNEISS			
150-155	BIOT. FELDSP. QTZ. PEGMATITE			
155-160	MED. DARK, PINK, BIOT GNEISS			
160-165	PINK LEUCOCATIC BIOT. QUARTZ FELDSPATHIC GNEISS			
165	END OF HOLE			

78° ↖

MILKY QTZ. QTZ. VEN.

75° ↖

20° ↖

60° ↖

DIAMOND DRILL CORE LOG

HOLE B4-3 PAGE 1 OF 2

PROJECT BISSET CK. CLAIM GROUP _____ CORE SIZE BQ
 STARTED 84,12,01 FINISHED 84,12,02 TOTAL DEPTH 138 FT
 LOCATION _____ COLLAR ELEVATION 1090'
 ANGLE -90° AZIMUTH _____ LOGGED BY H. SCHMIDT

VISUAL ESTIMATE
 ASSAYS AND ANALYSES
 % VOL GRAPHITE FLAKE SIZE % PYRITE

FOOTAGE	DESCRIPTION	% VOL GRAPHITE	FLAKE SIZE	% PYRITE
	CASING			
Box 1	UNIT 1A G GRAPHITIC GNEISS	10-15	1-3	5-10
10	- WHITE AND GREY-GREEN INTERBANDED, CHLORITIC, GRAPHITIC, PYRITIC, BIOT. QUARTZ/FELDSPATHIC GNEISS WITH 1-2 CM INTERBANDS OF QTZ-FELDSPAR	↓ 10	↓	↓ 5
20		↓	↓	↓
Box 2	SILICEOUS BANDS INCREASING	6-10	1-3	5
30		↓	↓	↓
40		↓	↓	↓
Box 3	PALE GREY-GREEN, INTERBANDED, CHLORITIZED, BIOTITE-QUARTZ/FELDSPATHIC GNEISS, WITH INTERMITTENT GARNET BEARING HORIZONS	10-15		5-10
50		↓ 15	↓	↓ 5-10
60		↓ 15-20	↓	↓
Box 4		5-10		
70		↓ 15	↓	↓
80		↓ 5-10	↓	↓ 5
Box 5				

MINOR GARNET 73° ↙

BIOT. GARNET →

75° ↙
 BI 15-20

DIAMOND DRILL CORE LOG

HOLE 84-4 PAGE 1 OF 2

PROJECT BISSET CR. CLAIM GROUP _____ CORE SIZE BQ
 STARTED 84, 12, 02 FINISHED 84, 12, 02 TOTAL DEPTH 138 FT
 LOCATION _____ COLLAR ELEVATION 1,000'
 ANGLE -90° AZIMUTH _____ LOGGED BY U. SCHMIDT

VISUAL ESTIMATE
 ASSAYS AND ANALYSES

FOOTAGE	DESCRIPTION	VISUAL ESTIMATE ASSAYS AND ANALYSES		
		% VOL GRAPHITE	FLAKE SIZE IN MM	% Pyrites
	CASING			
Box 1 10	UNIT 1 a G GRAPHITIC GNEISS WEATHERED - MED. GREY TO GREY OLIVE GREEN, GRAPHITIC, PYRITIC BIOT. QTZ. FELDSPATHIC GNEISS WITH 1-2 CM QTZ FELDSPAR AND MICA INTER BANDS PALE PINKISH K-SPIN IN FELDSPAR BANDS MED. GRAINED QUARTZO FELDSPATHIC INTER BANDS	5-10	1-2	5-10
20	QTZ. FELD. MIGMATITIC BAND			
30	BRIGHT GREEN MICA?			
40				
Box 3 50	SLIGHTLY DARKER VARIETY OF ABOVE UNIT AND MORE GRAPHITIC THAN ABOVE	15-20	1-3	
60	GREENER, MORE CHLORITIC VARIETY OF UNIT WHITE & GREEN LAMINATED DARKER VARIETY OF SAME UNIT GREEN & WHITE INTER BANDED VARIETY OF UNIT, - MORE SILICEOUS WITH 1-2 CM PALE PINK FELDSPAR QTZ. INTER BANDS	10-15 15-20 5-10		
Box 4 70	DARKER VARIETY OF SAME UNIT	10-15		
	BIOT.-GARNET BIOT.-GARNET	15-20		5-10
	1 CM THICK PALE GREEN FELDSPATHIC INTERBANDS	10-15		
80		15-20		5-10

DIAMOND DRILL CORE LOG

HOLE B4-4 PAGE 2 OF 2

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES	
		% GRAPH FLAKE	% PYRITE
30		15-20	5-10
Box 5	DARK GREY THINLY LAMINATED VARIETY OF 1G6 MED. GRAINED BIOT-GARNET GNEISS	10-15 15-20	1-2 1-3
90	THINLY LAMINATED GRAPHITIC UNIT GRADING TO MOTTLED TEXTURE	10-15 15-20	1-2
100	THINLY LAMINATED TEXTURE		
Box 6	BIOT-GARNET QUARTZ FELDSPATHIC GNEISS INTERBANDED QUARTZ BANDS INCREASING IN FREQUENCY	5-10	
110	DARK GREEN AMPHOPHYRE DIKE - CONTACTS 20° TO CORE AXIS - DARK GREEN AND WHITE PNEUMOCYSTS		
	DARK GREY THINLY LAMINATED VARIETY OF 1G6	15	5-10
120	PINK & GREEN QTZ-FELDS PEGMATITE CONTACT W GNEISSORITY	15-20	5-10
Box 7		15-20 10-15 15-20	
	MED GREY AND PALE GREEN INTERBANDED COARSE GRAINED BIOT GARNET, QTZO FELDSPATHIC GNEISS.	10-15 15-20	10-15
130		10-15	10-15
	MED. GREY THINLY LAMINATED BIOT. QTZOFELD. GNEISS		
140	END OF HOLE		
150			

DIAMOND DRILL CORE LOG

HOLE 84-5 PAGE 1 OF 2

PROJECT BISSET CR. CLAIM GROUP _____ CORE SIZE BQ
 STARTED 84,12,02 FINISHED 84,12,03 TOTAL DEPTH 138'
 LOCATION _____ COLLAR ELEVATION 1010'
 ANGLE -90° AZIMUTH _____ LOGGED BY U. SCHMIDT

VISUAL ESTIMATE
 ASSAYS AND ANALYSES
 TO VOL. GRAPHITE PLACE SIZE

FOOTAGE	DESCRIPTION	TO VOL. GRAPHITE	PLACE SIZE	ANALYSES
	CASING			
Box 1 10	UNIT 1a G GRAPHITIC GNEISS MED → DARK GREY BANDED, BIOT. - QTZO FELDSPATHIC GNEISS - GRAPHITIC, PYRITIC, CHLORITIC, WITH INTERMITTENT INTER BANDS OF PINK QTZ AND FELDSPAR	10-15	1-3	5-10
Box 2 30	OCCASIONAL INTER BANDS OF COARSE GRANITIC MIGMATITE	5-10		5
Box 3 50	BIOT-QTZ-FGLD. PEG & PYRITE PALE GREY-GREEN, THINLY LAMINATED, CHLORITIC GRAPHITIC GNEISS	5-10 15-20 5-10 15-20 5-10		
Box 4 60	COARSE BIOT. QTZ-FELDSPAR PEG. GNEISSOSITY -MED. → DARK GREY, CHLORITIC, INTERBANDED, GRAPHITIC QUARTZO FELDSPATHIC GNEISS	5-10 10-15 5-10 15 5-10	1-3	5-10
70	COARSE PINK & GREY GREEN QTZ-FELD. PEGMATITE	5-10 10-15 15-20		
80				

DIAMOND DRILL CORE LOG

HOLE 81-5

PAGE 2 OF 2

ASSAYS AND ANALYSES
% GRANITE FLOW SIZE % PYRITE

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES	% GRANITE	FLOW SIZE	% PYRITE
85	GRAPHITIC GNEISS CONTINUED DARK GREY THINLY LAMINATED, CHLORITIC, GRAPHITIC QUARTZO-FELDSPATHIC GNEISS, WITH 1-2 CM INTERBANDS OF QTZ-FELDSPAR.	PEGMATITE + +	15-20		1-3
90	COARSER BIOT.-GARNET - QUARTZO-FELDSPATHIC GNEISS WITH 1-2 CM QTZ-FELDSPAR INTERBANDS		10-15		
	THINLY LAMINATED DARK GREY BIOT.-GRAPHITIC GNEISS		15-20	1-3	5-10
100 Box 6	PINK FELDSPATHIC ALTERATION IN FRACTURES AND MATRIX	PEGMATITE	5-10 10-15		
110	FAULT, ATTITUDE UNKNOWN		15-20		
120 Box 7	POTASSIC ALTERATION, ASSOCIATED WITH FAULT AND CARBONATE VEINING		10-15		
130	COARSE, INTERBANDSED BIOT. GARNET-QTZO-FELD. GNEISS		5-10		
140	END OF HOLE				
150					

DIAMOND DRILL CORE LOG

HOLE 84-6 PAGE 1 OF 2

PROJECT BISSET CK CLAIM GROUP _____ CORE SIZE BQ

STARTED 84,12,03 FINISHED 84,12,04 TOTAL DEPTH 168'

LOCATION _____ COLLAR ELEVATION 1030'

ANGLE -90° AZIMUTH _____ LOGGED BY U. SUMMIOT

VISUAL ESTIMATE
ASSAYS AND ANALYSES

FOOTAGE	DESCRIPTION	VISUAL ESTIMATE ASSAYS AND ANALYSES		
		% VOL GRAPHITE	FLAKE SIZE	% PYRITE
	CASING			
Box 1	UNIT 1 a G ₁ GRAPHITIC GNEISS	5-10	1-4	5-10
10	GREY AND WHITE INTERBANDED, CHLORITIC, PYLITIC, GRAPHITIC BIOT-QUARTZ-FELDSPATHIC GNEISS, WITH 1-2 CM THICK QUARTZ-FELDSPAR SEGREGATIONS			
20		15-20	1-2	v
Box 2	PRYTIC BIOT-QTZ-FELD. PRGMATITE			
30	PALE GREY-GREEN, THINLY LAMINATED, CHLORITIC, BIOT QUARTZ FELDSPATHIC GNEISS WITH 1-2 CM INTERBANDS OF QTZ & FELDSPAR - MINOR GARNET	5-10	1-2	5-10
40			1-3	
Box 3				
50				
60	MED GREY VARIETY OF GRAPHITIC GNEISS LESS CHLORITIC THAN ABOVE, GENERALLY THINLY LAMINATED, WITH MINOR COARSE SECTIONS	10-15		
Box 4		15-20		
70		10-15		
80		15-20		
	FAULT			

DIAMOND DRILL CORE LOG

HOLE 84-6

PAGE 2 OF 2

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES		
		GRAPHITE	Pyrite %	% Pyrite
80 Box 5	GRAPHITIC GNEISS CONTINUED MED GREY THINLY LAMINATED TO MOTTLED TEXTURED GRAPHITIC, QTZ-FELDSPATHIC GNEISS	15-20	1-3	5-10
90				
100 Box 6	BIOT. QTZ. FELD. PEG. GRADE DILUTED BY MIGMATITE BANDS →	15-20 20%		15-20
110	DARK GREY & WHITE LAMINATED, PYRITIC, GRAPHITIC, BIOT GARNET GNEISS, SIMILAR TO BARREN GNEISS UNIT	5-10 TR. 10-15 5-10		
120 Box 7	MOTTLED TO THINLY LAMINATED, DARK GREY GRAPHITIC GNEISS	15-20	1-3	
130	PINK & GREY BIOT. - QTZ - FELDSPATH PEGMATITE			
140 Box 8	DARK GREY INTERBANDED, BIOT - GARNET - QTZ - FELD GNEISS	5-10 10-15 15-20 5-10 15-20	1-3	5-10
150	GREY-GREEN THINLY LAMINATED CHLORITIC BIOT. - QUARTZ - FELDSPATHIC GNEISS	5-10 10-15	1-2	5
160 Box 9	BIOTITE - GARNET QUARTZ FELDSPATHIC SCHIST GREY-GREEN THINLY LAMINATED GRAPHITIC GNEISS	15-20 5-10	1-2	5
170	1aB? BLACK & WHITE INTERBANDED BARREN QUARTZ FELDSPATHIC GNEISS GARNETIFEROUS END OF HOLE			
180				

DIAMOND DRILL CORE LOG

HOLE 84-7 PAGE 1 OF 2

PROJECT BISSET CK. CLAIM GROUP _____ CORE SIZE BQ

STARTED 84, 12, 04 FINISHED 84, 12, 04 TOTAL DEPTH 153'

LOCATION _____ COLLAR ELEVATION 1020'

ANGLE -90° AZIMUTH _____ LOGGED BY H. SCHMIOT

VISUAL ESTIMATE
ASSAYS AND ANALYSES
% VOL. GRAPHITE FLAKE SIZE % PYRITE

FOOTAGE	DESCRIPTION	% VOL. GRAPHITE	FLAKE SIZE	% PYRITE
	CASING			
Box 1	UNIT 1a G GRAPHITIC GNEISS	5-10	1-2	5-10
10	PALE TO MEDIUM GREY-GREEN, LAMINATED CHLORITIC BIOT. QUARTZO-FELDSPATHIC GNEISS WITH 1-2 CM INTERBANDS OF QTZ. & FELDSPAL	10-15	1-3	5-10
		5-10		
		10-15		
20		15-20		
Box 2	GARNET-BIOT. GNEISS	10-15		
		5-10		
30		10-15		
		15-20		
40	GREY-GREEN BANDED GRAPHITIC GNEISS WITH INTERMITTENT 2-4 CM THICK COARSE GRAINED GRANITIC GNEISS BANDS	10-15		
		15-20		
		10-15		
50		15-20		
Box 3	DARK GREY BIOT - QUARTZO-FELDSPATHIC GNEISS	10-15		
		15-20		
60	MED GREY-GREEN INTER BANDED CHLORITIC QTZO-FELDSPATHIC GNEISS	10-15		
70	LOGGING INCOMPLETE			

A B S T R A C T

Laboratory tests were conducted on several samples of graphite core from Maria Township, Ontario. The average recovery of the ore was 3.58% recovered graphite by weight.

The results show that 51.20% of the graphite in the concentrate was retained on the 35 mesh screen, and 92.66% of the 65 mesh screen.

Concentrates sent to Technical Service Laboratories in Toronto, Ontario, for analysis of carbon content resulted in an average of 78.40% carbon in the rougher concentrates, and 90.80% carbon in the final cleaner concentrates.

I N T R O D U C T I O N

A total of 70 separate samples were split from Diamond Drill Hole nos. 1 through 7.

The graphite was concentrated by means of flotation in order to obtain an estimated graphite ore grade and actual flake size.

S U M M A R Y

1. GENERAL

The flotation tests were conducted in the investigation using a flowsheet which included a jaw crusher and pulverizer grind, followed by Rougher flotation. The Rougher Concentrate was then briefly reground in a ball mill and sent to Cleaner Cells. The initial emphasis in the investigation was to improve flake graphite recovery and grade without decreasing the flake size.

Additional tests were planned to improve the rougher concentrates in the cleaner cells. However because of small amounts of concentrates we had to work with our final product is very minimal, but what we do have, 1st cleaner concentrate, at approximately 84% L.O.I., will be enclosed with the report.

2. SAMPLE PREPARATION

The sample was crushed to -1 inch using a jaw crusher and subsequently screened to +100 mesh. The +20 mesh fraction was pulverized and re-screened until approximately 20% or less of 20 mesh remained. The latter step may have been repeated several times in order to achieve a grind suited to the ore. The -100 mesh fraction was discarded, and a screen analysis was carried out on the -10 mesh, +100 mesh ore.

3. FLOTATION

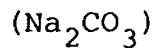
All samples to be floated weighed 2000.00 grams with the exception of sample nos. 5138, 5151, 5153, 5161, 5163, 5164, 5165, 5167 and 5168; where not enough sample was available. Their results have been converted to 2000.00 g feeds for comparison purposes only.

All flotation tests were conducted in a similar manner with soda ash, kerosene and pine oil as reagents. At the completion of each flotation test, a rougher concentrate was collected, dried and then screened to +100 mesh. The estimated percent graphite of the core samples provided from each hole was calculated by concentrate recovery.

4. REAGENTS

Common Name: _____ Amounts Used:

SODIUM CARBONATE



3.00 lbs./ton

- used to bring pH up
to a suitable level
(9.50 - 10.50).

KEROSENE

- used as primary frother

.30 lbs./ton

PINE OIL (70%)

- used as a secondary
frother for some samples

.10 lbs./ton

C O N C L U S I O N

The test results were extremely good in terms of the percent recovery of high quality flake graphite. The small amounts of Cleaner Concentrate, however, restricted optimization of the final cleaner concentrate. Our 1st stage of cleaner concentrate was upgraded to approximately 84.0% + graphite, but it was very difficult to achieve a large amount of the final concentrate.

With large scale equipment, more final cleaner concentrate would be produced, therefore allowing a greater amount recovered for further testwork.

RESPECTFULLY SUBMITTED,

Pierrette C. Prince

Diane A. Riengnette

PORTO METAL MILLS LTD.

Pierrette C. Prince
Diane A. Riengnette
GEO-CHEMICAL TECHNICIANS

S U M M A R Y O F R E S U L T S

Table No. 1 on pages 8 to 11 will show the recoveries by weight along with footages and sample numbers. Following this, on pages 12 to 81, will be all screen analyses on the pulverized ore and the concentrates.

Pages 82 - 83 are the assays done on the samples sent to Technical Service Laboratories and Lakefield Research. Some assay reports were not received through the mail in time to be enclosed in the reports, therefore we used our own reports to show the results, and when they are received, they will be forwarded to Princeton Resources Corporation.

TABLE #1
R E S U L T S

LAB SAMPLE NO.	D.D. HOLE #	FOOTAGE	% RECOVERED GRAPHITE BY WEIGHT
5148	1	4' - 13'	1.65%
5149	1	13' - 23'	2.56%
5104	1	23' - 28', 52' - 57'	2.95%
5150	1	28' - 33', 40' - 46'	4.63%
5151	1	71' - 77'	2.54%
5120	1	77' - 87'	3.43%
5121	1	91' - 101'	2.58%

	average		2.91%
5152	2	4' - 14'	2.18%
5122	2	14' - 24'	2.85%
5123	2	24' - 34'	2.32%
5105	2	44' - 54'	2.75%
5153	2	54' - 58'	2.31%
5124	2	106' - 116'	2.13%

	average		2.42%
5154	3	3' - 13'	2.80%
5106	3	13' - 23'	2.00%
5125	3	47' - 57'	3.07%
5126	3	57' - 67'	3.49%
5127	3	67' - 77'	2.83%
5128	3	77' - 87'	2.49%
5155	3	87' - 94'	2.60%

	average		2.75%

LAB SAMPLE NO.	D.D. HOLE #	FOOTAGE	% RECOVERED GRAPHITE BY WEIGHT
5156	4	4' - 15'	1.32%
5115	4	15' - 25'	2.85%
5157	4	29' - 39'	3.19%
5158	4	43' - 48' 58' - 62'	4.62%
5116	4	48' - 58'	4.65%
5159	4	73' - 82'	5.41%
5117	4	82' - 92'	6.50%
5107	4	92' - 102'	5.20%
5118	4	125' - 135'	5.25%
5160	4	102' - 103', 113' - 117', 119' - 125', 133' - 134'	4.77%

		average	4.38%
5161	5	4' - 9'	1.24%
5108	5	9' - 14', 104' - 109'	3.95%
5129	5	14' - 24'	2.62%
5162	5	24' - 33'	2.35%
5163	5	33' - 43'	2.48%
5164	5	43' - 53'	2.35%
5165	5	58' - 63'	2.67%
5166	5	71' - 81'	3.30%
5136	5	82' - 91'	7.10%
5130	5	94' - 104'	7.11%
5137	5	109' - 119'	9.95%
5138	5	119' - 124'	3.21%

LAB SAMPLE NO.	D.D. HOLE #	FOOTAGE	% RECOVERED GRAPHITE BY WEIGHT
5131	5	124' - 134'	8.81%

average.....			4.41%
5167	6	6' - 11'	1.59%
5168	6	12.5' - 14', 19' - 22'	4.87%
5169	6	45' - 50'	2.17%
5132	6	51' - 61'	3.48%
5133	6	61' - 66', 71' - 76'	5.25%
5170	6	76' - 84'	5.50%
5109	6	65' - 70', 136' - 141'	3.55%
5134	6	84' - 94'	5.32%
5135	6	98' - 108'	4.88%
5171	6	112' - 118'	1.99%
5172	6	118' - 123'	6.22%
5173	6	132' - 137', 142' - 147'	2.00%
5174	6	147' - 157'	2.05%

average.....			3.76%
5139	7	6' - 16'	2.80%
5140	7	16' - 26'	2.74%
5141	7	23' - 33'	1.77%
5111	7	33' - 43'	5.03%
5112	7	43' - 53'	3.30%
5113	7	53' - 63'	2.60%

LAB SAMPLE NO.	D.D. HOLE #	FOOTAGE	% RECOVERED GRAPHITE BY WEIGHT
5142	7	63' - 73'	2.08%
5143	7	73' - 83'	2.13%
5144	7	83' - 93'	3.70%
5145	7	93' - 104'	5.01%
5114	7	104' - 114'	7.95%
5146	7	114' - 118', 128' - 133'	9.31%
5110	7	118' - 128'	6.20%
5147	7	133' - 143'	6.99%

average			4.40%

- CHEMICAL RESEARCH AND ANALYSIS
- CONTRACT LABORATORIES

TECHNICAL SERVICE LABORATORIES

DIVISION OF BURGNER TECHNICAL ENTERPRISES LIMITED

1301 FEWSTER DRIVE, MISSISSAUGA, ONT. L4W 1A2

TELEPHONE: (416) 625-1544
TELEX 06-960215

CERTIFICATE OF ANALYSIS

SAMPLE(S) FROM

Erana Mines Limited
106 Fielding Rd.
Lively Ontario
POM 2E0

REPORT No.
T9283-1

ATTN Pierrette Prince

Inv# 27829
P.O. /

SAMPLE(S) OF

GRAPHITE CONCENTRATES

	Loss on Ignition %	Carbon (C) %	% Ash
#1 Final Cleaner Conc.	90.8	90.81	9.16
#5184 Graphite Rougher Concentrate	78.3	78.39	21.60
#5185 Graphite Rougher Concentrate	74.1	74.16	25.77

Samples, Pulps and Rejects discarded after two months

DATE Feb. 28/85

SIGNED *P. Prince*





LAKEFIELD RESEARCH

A DIVISION OF FALCONBRIDGE LIMITED

P.O. Box 430, 185 Concession St., Lakefield, Ontario, Can. K0L 2H0
Phone: (705) 652-3341 Telex No. 06 962842

CERTIFICATE OF ANALYSIS

FROM: Erana Mines Limited,
106 Fielding Road,
Lively, Ontario POM 2E0

Date: March 11, 1985

Received: March 1, 1985

Our Reference No.: 8525122

Your Reference No.: _____

Invoice No.: 20680

Samples submitted to us show results as follows:

Sample No.	% L.O.I.	% C(G)
5184A	78.2	-
5184B	83.1	80.6
5211B	83.9	-

To: Erana Mines (2)

SIGNED K.W. Sarbutt

MANAGER
K.W. Sarbutt, Chief Project Engineer

NOTE: Rejects will be discarded after 6 months.

TECHNICAL SERVICE LABORATORIES

DIVISION OF BURGNER TECHNICAL ENTERPRISES LIMITED

1301 FEWSTER DRIVE, MISSISSAUGA, ONT. L4W 1A2

TELEPHONE: (416) 625-1544

TELEX 06-960215

CERTIFICATE OF ANALYSIS

SAMPLE(S) FROM

Erana Mines Limited
106 Fielding Rd.
Lively Ontario
PO# 2E0

ATTn

Pierrette Prince

REPORT No.

T9106-1

SAMPLE(S) OF

GRAPHITE CONCENTRATE

Inv# 27702

P.O. /

Total Carbon by Loss on Ignition & Total Carbon by Leco Combustion &

Graphite Concentrate

78.15

78.66

Samples, Pulps and Rejects discarded after two months

DATE Feb. 13/85

SIGNED *[Signature]*



- CHEMICAL RESEARCH AND ANALYSIS
- CONTRACT LABORATORIES

TECHNICAL SERVICE LABORATORIES

DIVISION OF BURGNER TECHNICAL ENTERPRISES LIMITED

1301 FEWSTER DRIVE, MISSISSAUGA, ONT. L4W 1A2

TELEPHONE: (416) 625-1544

TELEX 06-960215

CERTIFICATE OF ANALYSIS

SAMPLE(S) FROM

Erana Mines Limited
106 Fielding Rd.
Lively Ontario
POM 2E0

ATTn Diane Rienguette

SAMPLE(S) OF

REPORT No.

T1022-1

Inv# 28540

P.O. /

Loss on Ignition
(LOI) %

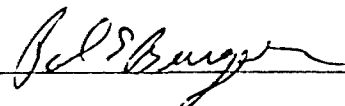
Sample #2

70.38

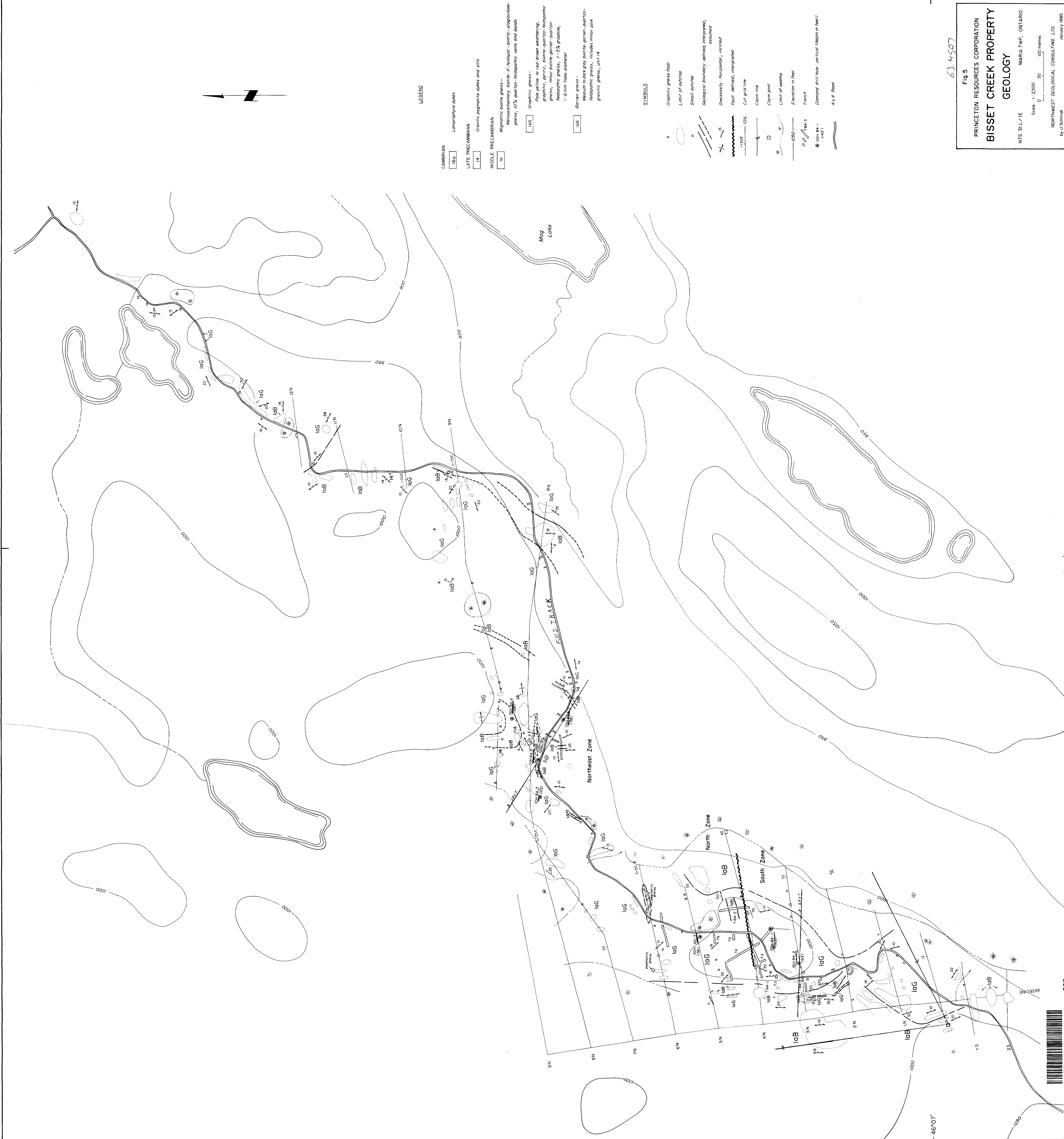
Samples, Pulps and Rejects discarded after two months

DATE May 14/85

SIGNED



For any enquiries on this report, please contact Customer Service Department - Edith Anzil



LEGEND

- CAMBRIAN**
 laG Laminar dykes
- LATE PRECAMBRIAN**
 laC Granitic gneiss
 laB Granitic gneiss with quartzite
- MIDDLE PRECAMBRIAN**
 laD Metasedimentary, biotite-K-feldspar-quartz-plagioclase-gneiss, 10% quartzite-feldspathic veins and bands
- laE** Graphitic gneiss - Pale yellow to red-brown weathering, graphitic, prismatic, biotite-quartz-feldspathic gneiss, minor biotite-garnet-quartzite-feldspathic gneiss, 1-5% graphite, 1-6mm flake diameter
- laF** Barren gneiss - Medium to dark grey biotite-garnet-quartzite-feldspathic gneiss, includes minor siliceous gneiss, unit 14

SYMBOLS

- x Graphitic gneiss floor
 o Limit of outcrop
 o Small outcrop
 Geological boundary defined, interpreted, assumed
 Geomorphology: horizontal, inclined
 Fault: defined, interpreted
 Contour line
 Claim line
 Claim post
 Limit of swamp
 Elevation in feet
 Trench
 Diamond drill hole: vertical (depth in feet)
 4 x 4 Road

63.4507

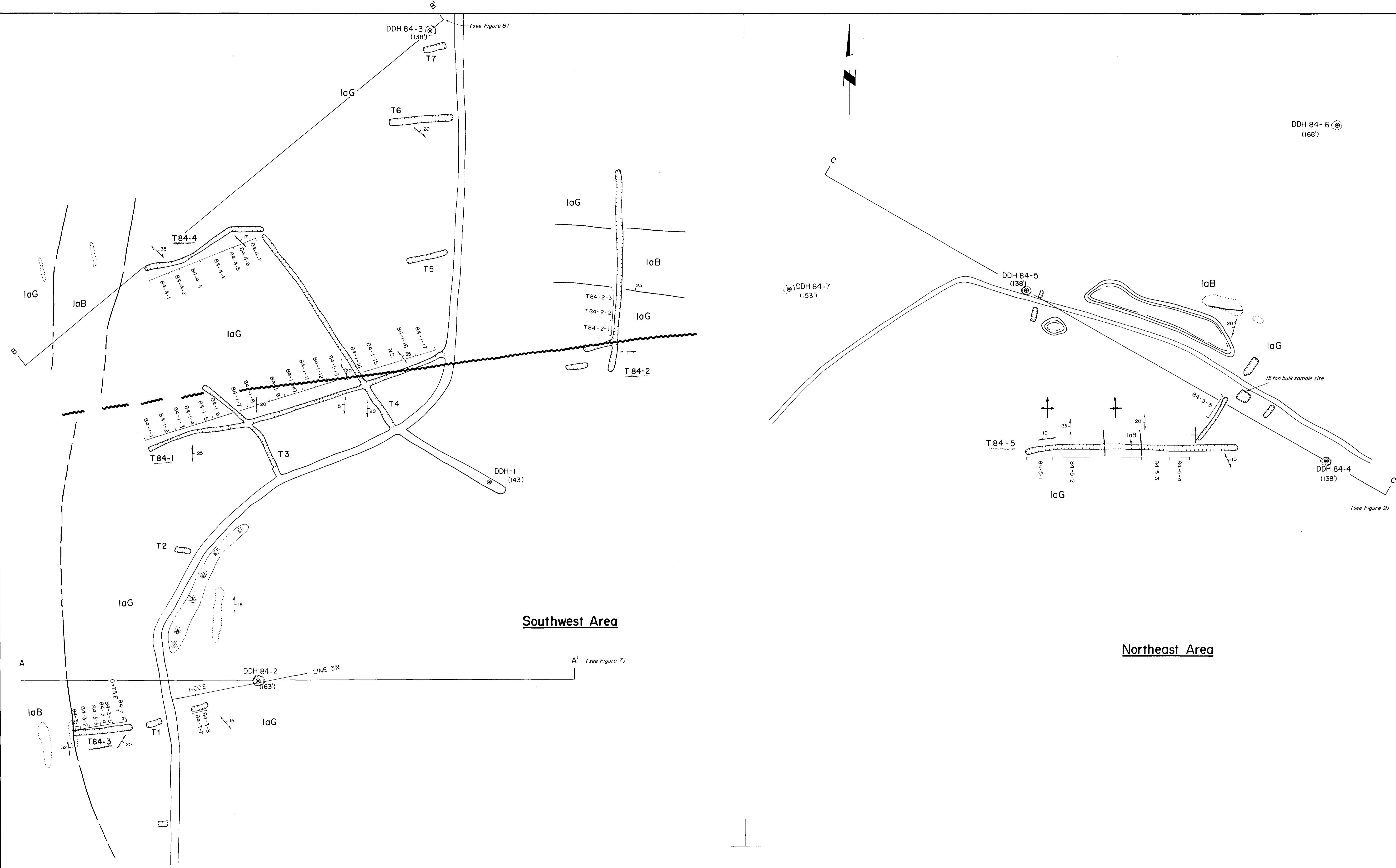
Fig. 5
PRINCETON RESOURCES CORPORATION
BISSET CREEK PROPERTY
GEOLOGY
 NTS 31/L/1E MARIA TWP., ONTARIO
 Scale 1:2,500
 0 50 100 metres
 NORTHWEST GEOLOGICAL CONSULTING LTD.
 by U. Schmidt
 January 1985





LEGEND

- CAMBRIAN
 - 16a Lamprophyre dykes
- LATE PRECAMBRIAN
 - 14 Granitic pegmatite dykes and sills, includes weakly segregative which are probably older
- MIDDLE PRECAMBRIAN
 - 1a Migmatic biotite gneiss - Metasedimentary biotite-K-feldspar-quartz-pl gneiss, 10% quartz-feldspathic veins and bands
 - 1aG Graphitic gneiss - Fine yellow to red-brown weathering, porphy, biotite-quartz-feldspathic gneiss, minor biotite-garnet-quartz-feldspar 1-5% graphite, 1-6mm flake diam.
 - 1aB₁ Transitional barren gneiss - Quartz- and muscovite-rich variety of gneiss, may contain minor graphitic
 - 1aB Barren gneiss - Medium to dark grey biotite-garnet-feldspathic gneiss, includes minor granitic gneiss, and 14



Southwest Area

Northeast Area

- LEGEND**
- IaG Graphitic gneiss
 - IaB Barren gneiss
 - Limit of outcrop
 - Geological boundary: defined, interpreted
 - Fault: defined, projected
 - Gneissosity: inclined, horizontal
 - Synclinal, anticlinal axis
 - DDH 84-1 (143) Diamond drill hole, vertical (depth in feet)
 - T 84-1 Trench
 - T 84-1-1 Trench sample site
 - N.S. No sample

63.4507

Fig. 6

PRINCETON RESOURCES CORPORATION
BISSET CREEK PROPERTY
**TRENCH and DRILL HOLE
LOCATION**

NTS 31L/1E MARIA TWP., ONTARIO

Scale 1:500

0 10 20 30 40 metres

NORTHWEST GEOLOGICAL CONSULTING LTD.
by U. Schmidt January 1985





- SYMBOLS**
- * Graphite visible in soil
 - x Graphitic gneiss float
 - Limit of outcrop
 - Limit of sub-outcrop
 - Small outcrop
 - Geological boundary: defined, interpreted, assumed
 - Antiform, synform
 - Foliation: inclined, vertical
 - Gneissosity: horizontal, inclined, vertical
 - Fault: defined, interpreted
 - Cut grid line (metric)
 - Claim line
 - Claim post
 - Swamp
 - Pond or lake
 - Elevation in feet
 - Trench
 - Diamond drill hole: vertical (depth in feet)
 - 4x4 Road
 - Watercourse
 - Area of 1989 Field Work

LEGEND

- CAMBRIAN**
- 16a Lamprophyre dykes
- LATE PRECAMBRIAN**
- 14 Granitic pegmatite dykes and sills; includes weakly deformed pegmatites which are probably older
- MIDDLE PRECAMBRIAN**
- 1a Migmatitic biotite gneiss - Metasedimentary biotite-K-feldspar-quartz-plagioclase-gneiss, 10% quartz-feldspathic veins and bands
 - 1aG Graphitic gneiss - Pale yellow to red-brown weathering, graphitic, pyritic, biotite-quartz-feldspathic gneiss, minor biotite-garnet-quartz-feldspathic gneiss, 1-5% graphite, 1-6mm flake diameter
 - 1aB Transitional barren gneiss - Quartz- and muscovite-rich variety of barren gneiss, may contain minor graphite
 - 1aB Barren gneiss - Medium to dark grey biotite-garnet-quartz-feldspathic gneiss, includes minor pink granitic gneiss, unit 14

63.4507

Fig. 5

PRINCETON RESOURCES CORPORATION
BISSET CREEK PROPERTY
GEOLOGY

NTS. 31 L/1E MARIA TWP., ONTARIO

Scale 1:2500
0 50 100 metres

NORTHWEST GEOLOGICAL CONSULTING LTD.
June 1985