ARCHER, CATHRO
& ASSOCIATES (1981) LIMITED
CONSULTING GEOLOGICAL ENGINEERS

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VANCOUVER, B.C. V6B 1L8 (604) 688-2568

REPORT ON

DRILLING PROGRAM

ANTONIUK PROPERTY

MT. FREEGOLD, Y.T.

Mayflower	Lease 2751
Donalda 1	Lease 2773
Donalda 2	Lease 2774
Donalda 3	Lease 2775
Donalda 7	Lease 2779
Donalda 9	Lease 2781
Donalda 13	Lease 2782
Nat 1-29	YA86843-YA86871
Nat 30F-33F	YA93013-YA93016
Peggy 1F-4F	YA95146-YA95149
Peggy 5F	YA96268

Latitude 62°16'N; Longitude 137°06'W; NTS 115I/6

Whitehorse Mining District

EIP Designation Number 86-205 025

NORDAC MINING CORPORATION

PERMIAN RESOURCES LTD.

R.J. Cathro, B.A.Sc., P.Eng. C.A. Main, B.Sc.

November, 1986

Work done between May 26 and August 28, 1986

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SUMMARY AND RECOMMENDATIONS

The 1986 exploration program conducted on the Antoniuk deposit consisted of 22 NQ and 2 HQ diamond drill holes totalling 2189 m (7189 feet). Holes were drilled on 60 m (200 feet) centres to an average depth of 91 m (300 feet). Drill core was sampled in approximately 3.1 m (10 feet) intervals and assayed for gold at Chemex Labs, North Vancouver, B.C. The program was managed by C.A. Main and R.J. Cathro of Archer, Cathro & Associates (1981) Limited on behalf of Nordac Mining Corporation and Permian Resources Ltd.

After incorporation of the 1986 assays with earlier results, the data was reviewed by E.S. Holt, P.Eng., who calculated the following drill-indicated open pittable reserves:

(A) 0.5 gram/tonne cutoff

Category	Tonnes	Grade (g/t)	Cumulative gm Gold	Waste /Ore Ratio
OXIDE	2,622,000	0.99	2,596,000	0.28
SULPHIDE	1,094,000	1.50	1,641,000	2.20
COMBINED	3,716,000	1.14	4,236,000	0.85

(B) 0.7 gram/tonne cutoff

OXIDE	1,892,000	1.14	2,257,000	0.78
SULPHIDE	1,069,000	1.52	1,625,000	2.28
COMBINED	2,961,000	1.28	3,790,000	1.32

In addition to the drill-indicated reserves reviewed by Holt, the property contains inferred reserves of 1,300,000 tonnes that lie outside the area tested with drilling. Exploration potential also exists for additional oxide mineralization peripheral to the Antoniuk deposit and a substantial tonnage of sulphide mineralization below the drill-indicated reserves.

Metallurgical testing of mineralized material and a preliminary feasibility study, which is currently in progress at Witteck Development Inc., Mississauga, Ontario, will be completed by year end and reported on separately by Witteck.

The next phase of exploration should be directed toward the following objectives:

1. perform sampling to identify and increase indicated reserves within the main Antoniuk deposit. This will require 150 hours of bulldozer trenching and 1500 m (5000 feet) of drilling in 17 short holes, at a budgeted cost of $250,000;
2. bulk sample surface material to determine if there is loss of recovered gold in near surface drill holes. This will require 250 hours of excavator trenching at a budgeted cost of $50,000; and,
3. mine and process from 10,000 to 20,000 tonnes of ore on a test heap leach pad. The design and budgeting of this test leach pad is dependent on the conclusions and recommendations contained in the Witteck report. At a gold price of over $400 U.S. per ounce, it may be possible to recover the major portion of the cost from sales of recovered gold.

This recommended program does not include drill exploration of targets peripheral to the known reserves. This work has a lower priority and will depend upon successful continued exploration of the known reserves.

Opportunities for acquiring or developing additional reserves of similar mineralization in close proximity to the Antoniuk deposit should be aggressively pursued.

Respectfully submitted,

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

R.J. Cathro, B.A.Sc., P.Eng.

C.A. Main, B.Sc.

INTRODUCTION

The Antoniuk Property covers an oxidized heap leach gold target that was acquired by Archer, Cathro & Associates (1981) Limited through option and staking in March, 1985. The option was assigned to Nordac Mining Corporation and was explored with trench and drill sampling and preliminary metallurgical testing later in the year in a joint venture with Permian Resources Ltd.

The 1986 program consisted of grid diamond drilling to serve as the basis of mineral reserve calculations, and to provide samples of deeper mineralization for metallurgical testing. The program, which cost approximately $440,000, was planned and managed by Archer, Cathro & Associates (1981) Limited. C.A. Main served as project manager and was assisted by geologist J.L. Duke, who logged the drill core.

PROPERTY

The Antoniuk Property consists of seven surveyed and leased claims, which are held under an option agreement dated March 12, 1985 with Discovery Mines Ltd. of Toronto, and 38 adjoining mineral claims which were acquired by staking during 1985 and 1986 and are part of the same agreement. Claim details are listed below.

Surveyed and Leased Claims

Name	Lease Number	Expiry Date
Mayflower	2751	March 19, 2001
Donalda 1	2773	March 19, 2001
Donalda 2	2774	March 19, 2001
Donalda 3	2775	March 19, 2001
Donalda 7	2779	March 19, 2001
Donalda 9	2781	March 19, 2001
Donalda 13	2782	March 19, 2001

Mineral Claims

Nat 1-29	YA86843-YA86871	June 5, 1988
Nat 30F-33F	YA93013-YA93016	August 12, 1988
Peggy 1F-4F	YA95146-YA95149	July 14, 1987
Peggy 5F	YA96268	September 19, 1987

LOCATION AND ACCESS

The Antoniuk Property is situated on Mt. Freegold, which lies at the southeast end of the Dawson Range (see Figures 1 and 2 on the following pages) 40 miles (65 km) by all-weather road northwest of Carmacks, Y.T. It is located at latitude 62°16'N and longitude 137°06'W within NTS claim sheet 115I/6.

The 1986 program was conducted from a new permanent campsite situated 700 m (0.4 mile) east of the former LaForma Mine and 900 m (0.6 mile) west of the Carmacks Road turnoff. Travel between camp and the deposit was by means of 4x4 truck.

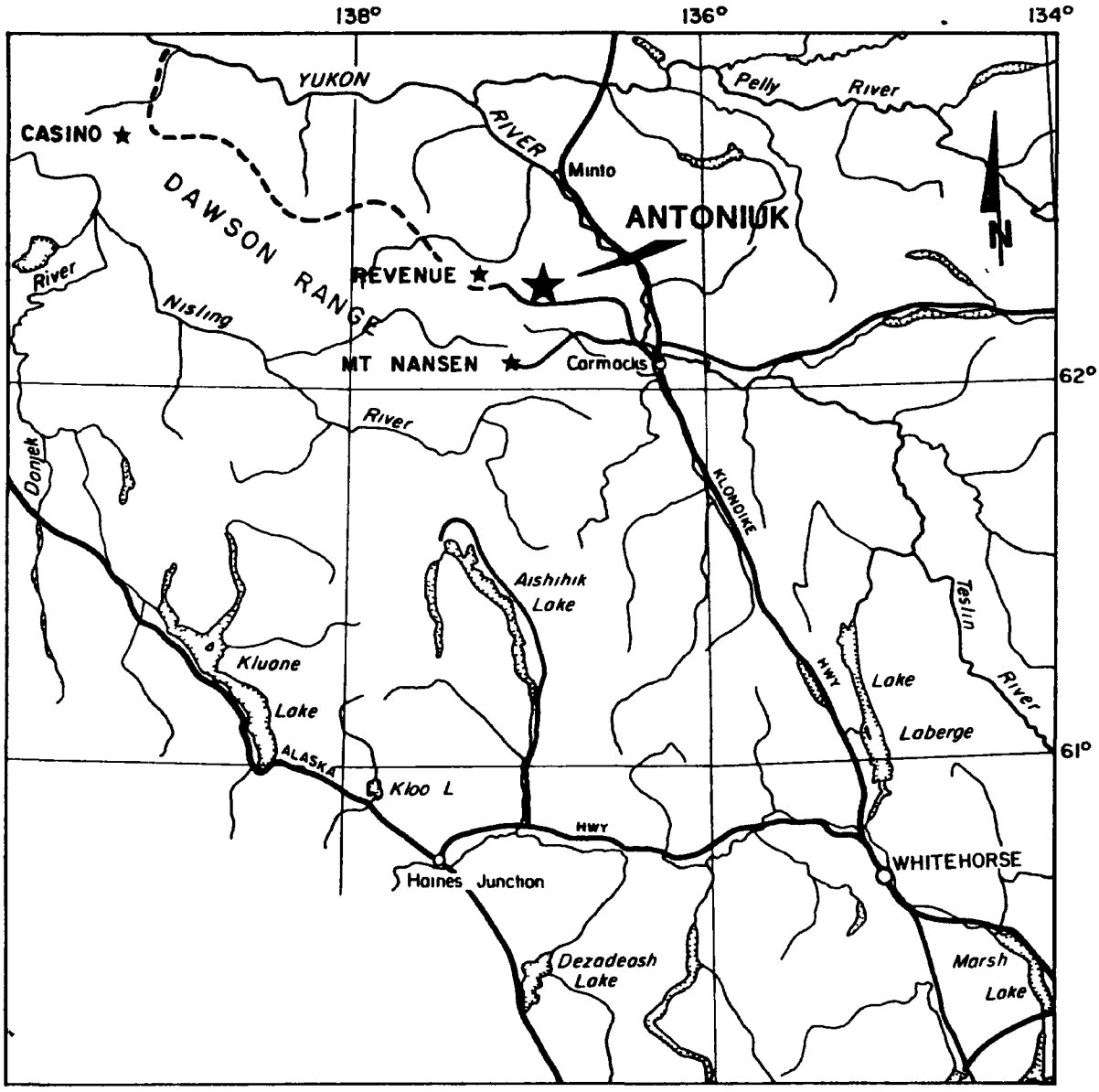


Figure 1

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

GENERAL LOCATION MAP

ANTONIUK PROPERTY

MOUNT FREEGOLD , Y.T.

NORDAC MINING CORPORATION
PERMIAN RESOURCES LTD.

SCALE – 1:2,000,000

20 0 10 20 40 60 80 Km

10 0 10 20 30 40 50 Miles

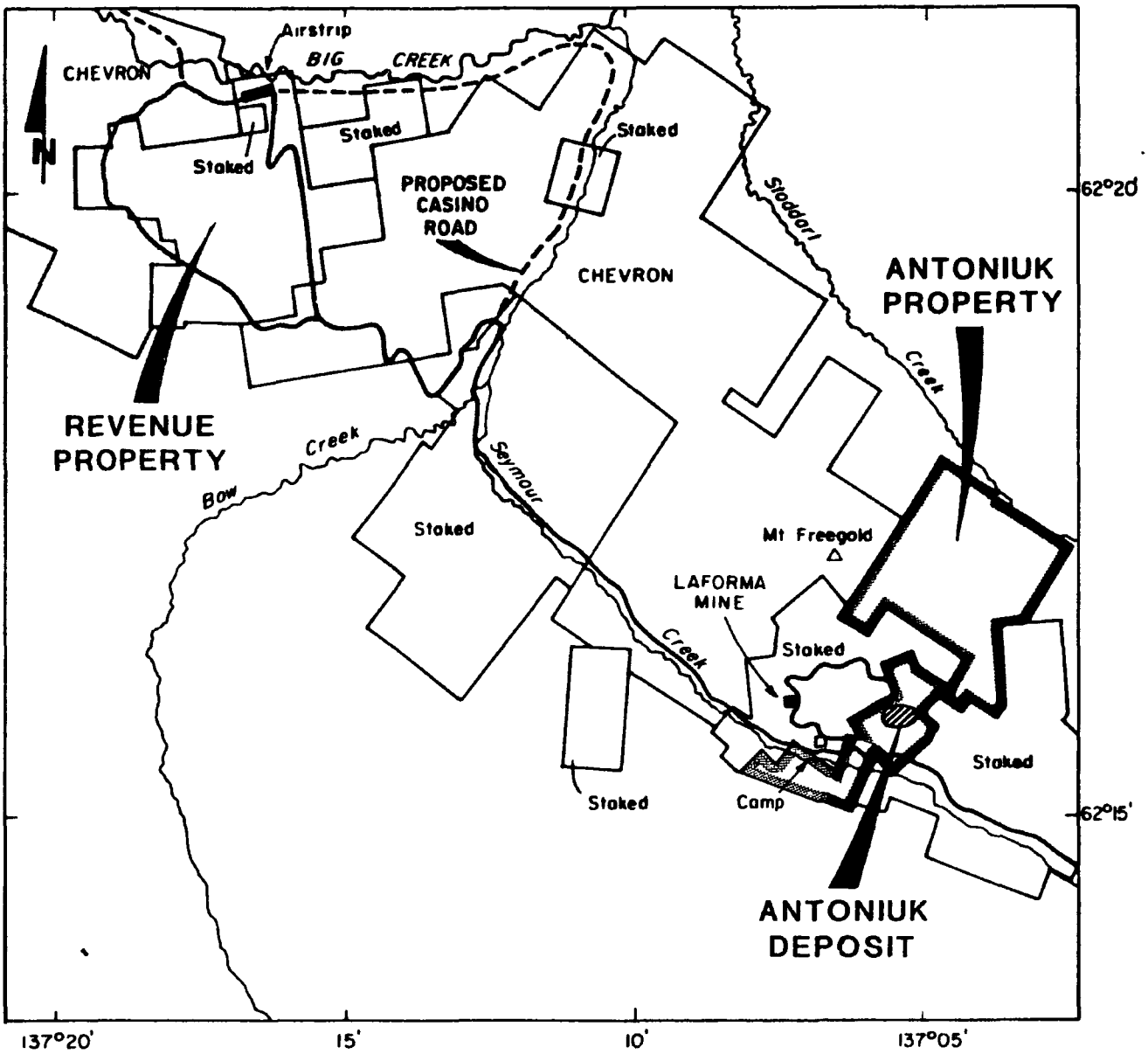


Figure 2

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

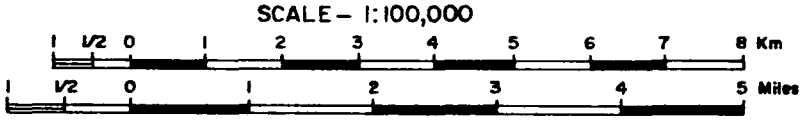
PROPERTY LOCATION MAP

ANTONIUK PROPERTY

MOUNT FREEGOLD, Y.T.

NORDAC MINING CORPORATION
PERMIAN RESOURCES LTD.

SCALE – 1:100,000



HISTORY AND PREVIOUS WORK

The Antoniuk Property has a long work history extending back to 1931, when it was first located by Afe Brown and George Fairclough during the staking rush triggered by P.F. (Fred) Guder's discovery of gold veins near the northwest end of Mt. Freegold in 1930. After the initial claims lapsed, they were restaked as the Mayflower and Donalda claims in November, 1939.

Exploration between 1931 and 1974 was directed towards gold-bearing quartz veins resembling the G-3 vein at the LaForma Mine. It included four adits between 7 to 45 m (25 to 150 feet) long, 10 diamond drill holes ($\pm$ 300 m) and approximately 50 hand trenches and 40 bulldozer trenches to bedrock, most of which was performed on the Rambler Vein. This early exploration gave disappointing results.

Commencing in 1974, Discovery Mines Ltd. performed a mapping and geochemical sampling program over the claims under the direction of Terry Antoniuk. That survey outlined a strong gold-arsenic anomaly in soil overlying what is now called the Antoniuk deposit. Subsequent exploration included further detailed mapping and soil sampling, geophysical surveys and 10 diamond drill holes (1393 m or 4571 feet) in 1975 and 10 diamond drill holes (1193 m or 3914 feet) in 1981. The 1981 work, which was managed by Archer, Cathro, was financed by Arctic Red Resources Corp. under a brief option and was performed in conjunction with a larger program of exploration that covered the remainder of the Discovery Mines Ltd. claims on Mt. Freegold, including the LaForma Mine. Arctic Red's interest in the Antoniuk portion of the option was terminated in 1982.

Exploration work performed on the Antoniuk Property prior to 1983

outlined low grade gold values within a gold-arsenic soil anomaly extending about 500 m (1650 feet) by 300 m (1000 feet) that is associated with poorly exposed porphyritic and brecciated intrusive rocks.

In 1985, exploration rights to the Antoniuk property were acquired by Archer, Cathro & Associates (1981) Limited and assigned to Nordac Mining Corporation and Permian Resources Ltd. Later that year, a program of systematic bulldozer trenching provided bedrock exposure for rock sampling and mapping. About 4950 m (16,250 feet) of trench length was excavated within an area approximately 1300 m (4300 feet) long by 400 m (1300 feet) wide. Some 1050 channel samples collected in 4.6 m (15 foot) intervals from ripper furrows along the trench floor or from rock ribs along the trench wall were shipped to Chemex Labs, North Vancouver for fire assay. In addition, eight rotary percussion holes totalling 607 m (1990 feet) were drilled within four of the better grade zones outlined by trenching.

Preliminary metallurgical testing was also undertaken in 1985. Following initial column leach tests performed on surface material and rotary percussion drill cuttings by Coastech Research Inc., North Vancouver, metallurgical and engineering studies were commenced later in the year by Witteck Development Inc., Mississauga, Ontario on four uncrushed bulk samples of surface material weighing approximately 5 tonnes (5.5 tons). Additionally, eleven bottle roll tests, followed by one column leach test, on 1985 drill cuttings were used to determine the effect of depth of oxidation on leachability.

The results of the 1985 work were summarized in two reports by R.J. Cathro and J.T. Dennett, one dated December 20, 1985 on the seven leased claims and the other dated February 1986 on the Nat 1-33 claims.

1986 PROGRAM

In 1986, 22 NQ and 2 HQ holes were drilled under contract by E. Caron Drilling Ltd. of Whitehorse to systematically test the mineralized area outlined by previous bulldozer trenching. Two of the initial holes were drilled with a vertical orientation but it was concluded after studying the core that fracturing is more commonly steep dipping and that inclined drill holes would provide more representative samples. The remaining 20 NQ holes were drilled at -50° toward grid west (azimuth 320°), usually to depths of 91 m (300 feet). Two vertical HQ holes were then drilled to 61 m (200 feet) in order to provide material for metallurgical testing of oxidized, partially oxidized and unoxidized mineralization.

Exploration drill holes were measured for recovery and then split longitudinally. One-half was stored in labelled boxes in core racks at the Antoniuk camp. The other split half was sampled in intervals that averaged 3.05 m (10 feet) but were shortened where necessary to take account of significant changes in rock type, mineralization or recovery. Core samples were shipped by truck to Whitehorse and then by air to Chemex Labs, North Vancouver, where a one assay ton portion was prepared for fire assay (gravimetric finish) by primary and secondary jaw crushing, tertiary cone crushing, ring pulverizing and screening to -140 mesh. All assays were reported in metric units. All rock sample splits and rejects are permanently stored at Chemex.

TABLE ONE - 1986 DRILL STATISTICS
ANTONIUK DEPOSIT, MT. FREEGOLD, YUKON

DDH HOLE NUMBER	COORDINATE	SIZE	AZIMUTH (°)	DIP (°)	LENGTH (FEET/M)	OVERBURDEN DEPTH (FEET/M)	1986 DATE STARTED/ COMPLETED
86-1	20N/0E	NQ	Vert.	-90	300/ 91.4	.0/ 0	June 6/ 8
86-2	20N/0E	NQ	330	-50	350/106.7	0.0/ 0	June 6/ 8
86-3	20N/2W	NQ	Vert.	-90	300/ 91.4	6.0/ 1.83	June 8/ 9
86-4	18N/2W	NQ	330	-50	300/ 91.4	6.0/ 1.82	June 9/11
86-5	18N/0E	NQ	330	-50	300/ 91.4	0.0/ 0	June 11/12
86-6	18N/2E	NQ	330	-50	338/103.0	0.0/ 0	June 12/14
86-7	20N/2E	NQ	330	-50	300/ 91.4	6.0/ 1.82	June 14/15
86-8	22N/0E	NQ	330	-50	300/ 91.4	0.0/ 0	June 15/16
86-9	22N/2W	NQ	330	-50	300/ 91.4	6.0/ 1.83	June 17/18
86-10	24N/0E	NQ	330	-50	300/ 91.4	0.0/ 0	June 18/19
86-11	24N/2E	NQ	330	-50	300/ 91.4	0.0/ 0	June 19/21
86-12	24N/5E	NQ	330	-50	348/106.1	35.0/10.50	June 21/23
86-13	26N/2E	NQ	330	-50	300/ 91.4	0.0/ 0	June 23/25
86-14	26N/4E	NQ	330	-50	300/ 91.4	0.0/ 0	June 26/27
86-15	26N/6E	NQ	330	-50	300/ 91.4	0.0/ 0	June 27/28
86-16	16N/4E	NQ	330	-50	300/ 91.4	0.0/ 0	June 29/30
86-17	18N/4E	NQ	330	-50	300/ 91.4	0.0/ 0	June 30/ July 1
86-18	16N/2E	NQ	330	-50	300/ 91.4	0.0/ 0	July 1/ 2
86-19	22N/5E	NQ	330	-50	350/106.7	11.0/ 3.4	July 3/ 4
86-20	22N/2E	NQ	330	-50	300/ 91.4	8.0/ 2.44	July 5/ 6
86-21	18N/1E	HQ	Vert.	-90	200/ 61.0	4.0/ 1.22	July 23/24
86-22	18N/2E	NQ	150	-50	300/ 91.4	0.0/ 0	July 24/25
86-23	24N/4E	NQ	150	-50	296/ 90.2	10.0/ 3.05	July 26/27
86-24	24N/4E	HQ	Vert.	-90	200/ 61.0	11.0/ 3.35	July 27/28
TOTAL					7182/2189.1		

Metallurgical holes were initially divided into alternate intervals approximately 10 cm (4 inch) long. One set was processed and assayed in the same fashion as exploration holes. The other set was divided into oxidized, partially oxidized (transition) and unoxidized (hypogene) categories and shipped to Witteck for metallurgical testing. The intervals represented by these metallurgical samples range from 5.5 m (18 feet) up to 28.2 m (92.5 feet).

GEOLOGY AND MINERALIZATION

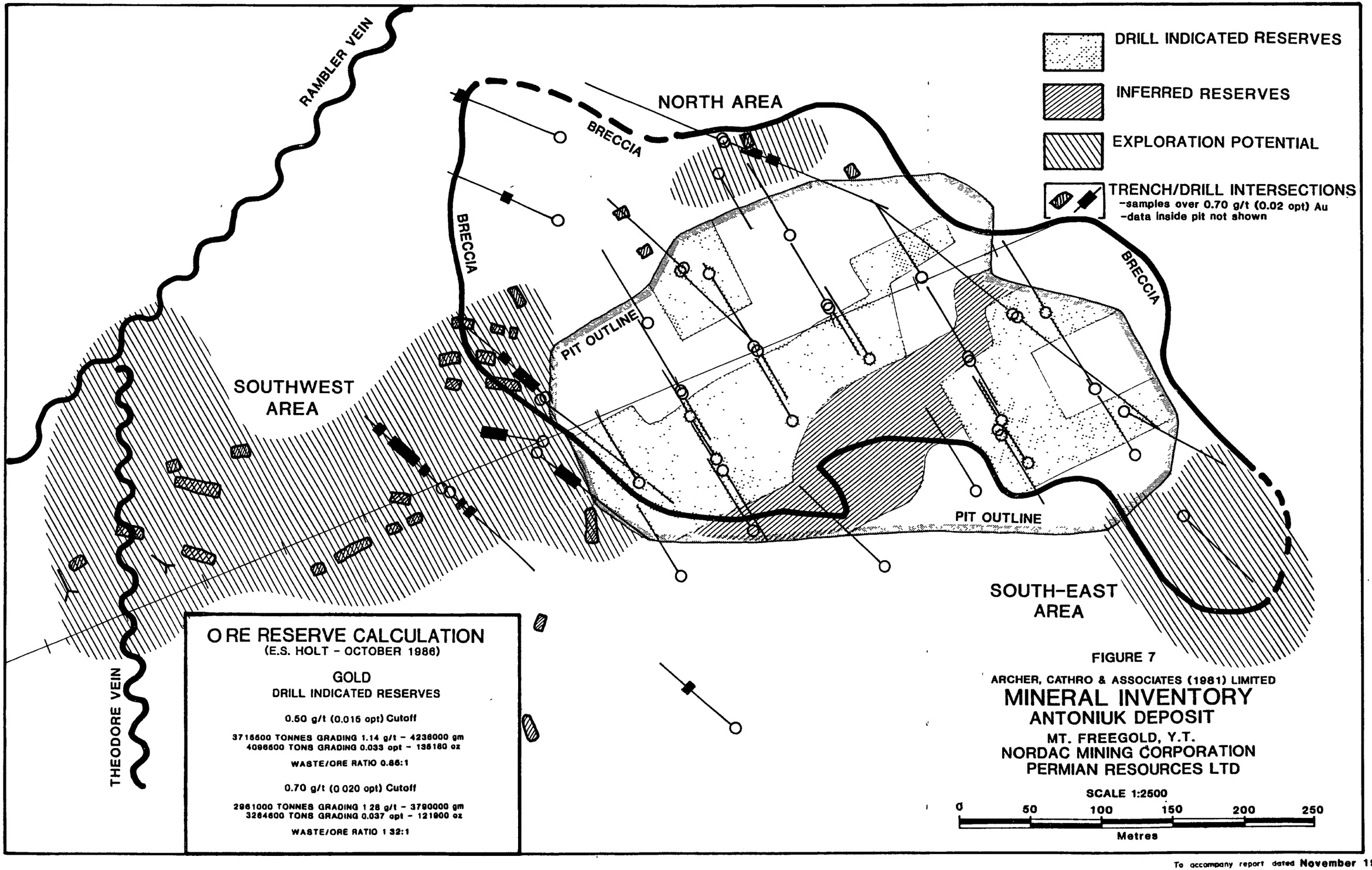
The geology of the Antoniuk deposit is shown in plan on Figure 3 and in section on Figures 5A to 5F. The 1985 and 1986 trenching and drilling has outlined a crudely elliptical, plug-like diatreme of heterolithic breccia, the outline of which is shown on Figures 3 and 4. This breccia body cuts an igneous complex near the centre of a geochemical gold-arsenic soil anomaly. The breccia fragments are composed of porphyry, porphyritic rhyodacite, syenite and granodiorite, all of which outcrop nearby. The breccia is interpreted to be of intrusive, subvolcanic origin, roughly coeval with Mid-Cretaceous Mount Nansen Group porphyry dykes and fine-grained intrusive rocks of rhyodacite composition that are common on Mt. Freegold. It is noteworthy that this is the only such breccia body presently identified on Mt. Freegold.

The axis of the breccia body trends west-northwest, roughly parallel to major regional faults such as the Pal Fault and Camp Fault, which lie 700 and 900 m (2300 and 3000 feet) to the south. On the northeast side of the breccia body, quartz porphyry and quartz-feldspar porphyry dykes are abundant. They commonly trend northeast, subparallel to a series of weak faults as well as the Rambler Vein, which lies just west of the breccia body, and the G-3 (LaForma) Vein, which lies a farther 800 m (2600 feet) west. On the southwest side of the breccia body, porphyritic rocks are uncommon and the small dykes that are present tend to strike north. This suggests that the diatreme may have intruded along a zone of structural dislocation that also exerted some control on the emplacement of the porphyry bodies.

The gold-bearing zones at Antoniuk occur within or adjacent to the diatreme, in altered and brecciated rock that is usually heterolithic but occasionally homoclastic (porphyry or granodiorite). Fracturing is pervasive although no well defined mineralized vein structures have been recognized.

Weathering has removed most traces of sulphide mineralization from surface rocks, leaving only occasional disseminated pyrite and limonitic staining. Mineralogical studies of the oxide material by Witteck have shown that gold occurs as free particles within limonite and hence probably had an original affinity with sulphides. Although quartz veins are not abundant, thin limonitic fractures are common and some of these contain quartz or carbonate veinlets.

Within the unoxidized hypogene zone, the principal sulphide mineral is pyrite, which occurs both as disseminations and within thin quartz veinlets. Heterolithic breccia is the main host, containing up to 3% pyrite. Small amounts of arsenopyrite and trace amounts of chalcopyrite are also present. Logs of 1975 and 1981 drill holes noted the presence of occasional patches of other sulphides, including stibnite, bornite, galena, sphalerite, and molybdenite. Of these, bornite was the only sulphide observed in 1986. Silver values increase toward the southeast end of the breccia body ("Southeast Area" on Figure 7 on the following page) and may be related to rare occurrences of copper sulphides (chalcocite and bornite) and sulfosalts (tetrahedrite?). Individual drill intersections from this area assay up to 90 g/t (2.58 opt) silver over 1.5 m (5 feet).



ORE RESERVE CALCULATION
(E.S. HOLT - OCTOBER 1986)

GOLD
DRILL INDICATED RESERVES

0.50 g/t (0.015 opt) Cutoff

3715500 TONNES GRADING 1.14 g/t - 4236000 gm
4096500 TONS GRADING 0.033 opt - 135160 oz

WASTE/ORE RATIO 0.66:1

0.70 g/t (0.020 opt) Cutoff

2961000 TONNES GRADING 1.28 g/t - 3790000 gm
3264600 TONS GRADING 0.037 opt - 121900 oz

WASTE/ORE RATIO 1.32:1

FIGURE 7

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

MINERAL INVENTORY
ANTONIUK DEPOSIT
MT. FREEGOLD, Y.T.
NORDAC MINING CORPORATION
PERMIAN RESOURCES LTD

SCALE 1:2500

0 50 100 150 200 250
Metres

To accompany report dated November 1986

METALLURGICAL TESTING

An extensive series of cyanide leach column tests is presently underway at Witteck on material from the Antoniuk deposit. This study is being financed by the Canada Centre for Mining and Energy Technology (CANMET), a branch within the Federal Department of Energy, Mines and Resources. This program includes tests on oxidized surface mineralization ranging in size from uncrushed to minus 2 cm (3/4 inch), as well as tests of oxidized to unoxidized HQ size drill core crushed to minus 4 cm (1-1/2 inch). The results of these tests will form the basis of a preliminary feasibility study that will be prepared by Witteck before the end of 1986.

MINERAL INVENTORY

A calculation made at the end of 1985 from surface rock trench assays, eight rotary percussion drill holes, and two 1975 diamond drill holes in two separate blocks resulted in the following inferred reserves to a depth of 61 m (200 feet):

TABLE 2
1985 MINERAL INVENTORY - ANTONIUK DEPOSIT

Cutoff g/t (opt)	Ore Tonnes (Tons)	Grade g/t (opt)	Cumulative Gold - gm (ozs)	Waste/ Ore
0.34 (0.010)	5,063,000 (5,582,000)	1.17 (0.034)	5,996,000 (192,000)	1.5
0.50 (0.015)	3,781,000 (4,169,000)	1.44 (0.042)	5,481,000 (176,000)	3.3
0.70 (0.020)	2,645,000 (2,916,000	1.82 (0.053)	4,820,000 (155,000)	3.5
0.86 (0.025)	2,137,000 (2,356,000)	2.06 (0.060)	4,389,000 (141,000)	3.9
1.03 (0.030)	1,689,000 (1,862,000	2.37 (0.069)	3,994,000 (128,000)	5.0

* conversion factors: 1 ton = .907 tonne
1 ounce/ton = 34.286 g/tonne
1 oz = 31.19 gm.
s.g. of 2.4 = 13.35 cu ft/ton
s.g. of 2.6 = 12.32 cu ft/ton

After incorporating the 1986 drill assays with earlier results, the data was reviewed by E.S. Holt, P.Eng., who independently calculated the following drill-indicated, open pittable reserves. Holt's September 25, 1986 report is attached as Appendix I and vertical sections showing the raw assay data used by Holt are included as Figures 6A to 6F.

TABLE 3
DRILL-INDICATED, OPEN PITTABLE RESERVES
ANTONIUK DEPOSIT - SEPTEMBER, 1986
E.S. Holt, P.Eng.

0.5 g/t (0.015 opt) cutoff

Category	Ore Tonnes (Tons)	Grade g/t (opt)	Cumulative Gold - gm (ozs)	Waste Tonnes (Tons)	Waste /Ore
OXIDE	2,622,000 (2,891,000)	0.99 (0.029)	2,596,000 (83,500)	741,000 (809,000)	0.28
SULPHIDE	1,094,000 (1,206,000)	1.50 (0.044)	1,641,000 (52,800)	2,405,000 (2,653,000)	2.20
COMBINED	3,716,000 (4,097,000)	1.14 (0.033)	4,236,000 (136,200)	3,147,000 (3,482,000)	0.85

0.7 g/t (0.020 opt) cutoff

OXIDE	1,892,000 (2,086,000)	1.14 (0.033)	2,257,000 (69,400)	1,470,000 (1,627,000)	0.78
SULPHIDE	1,069,000 (1,178,600)	1.52 (0.044)	1,625,000 (52,300)	2,430,000 (2,687,000)	2.28
COMBINED	2,961,000 (3,264,600)	1.28 (0.037)	3,790,000 (121,900)	3,901,000 (4,309,000)	1.32

In his report (Page 7), Holt classified these as probable (i.e. drill-indicated) reserves, with a significant portion bordering on the proven category. Additional sampling and more geological data is required to upgrade the probable reserves into a proven (measured) category. This could best be achieved through continued bulldozer trenching and selected diamond drilling.

Holt's calculations were based on assumed specific gravities of 2.4 for oxidized material and 2.6 for unoxidized. To calculate ore/waste ratios, he used a preliminary pit design that was prepared by Archer, Cathro within the following criteria:

a) 6.9 m (22.5 feet) wide berms, 7.6 m (25 feet) high benches and a minimum of 6° inclined exit were used; (Geotechnical study will be required to determine if these are optimum parameters.)

b) optimization of pit shape with respect to topography was not attempted although the designated outlines are considered to be good preliminary estimates;

c) two separate pits were outlined (called "West Pit" and "East Pit") and each was designed for cutoff grades of both 0.50 and 0.70 g/t (0.015 and 0.020 opt). Pit slopes were optimized for both configurations; and,

d) Archer, Cathro categorized pit material as oxide, transition, or unoxidized, based on a visual estimate of the oxidized condition of sulphides in drill core. It was assumed that oxide and transition material would leach equally well and they were included together in an "Oxide Pit". Sulphide material, on the other hand, was included in a "Sulphide Pit" and calculated separately.

FURTHER EXPLORATION

Adjacent to the drill-indicated reserve blocks calculated by Holt, which were discussed earlier, there is potential for additional reserves within mineralized zones that have not received sufficient drilling to merit inclusion in the drill-indicated category. The portion within the preliminary pit is considered to be in the inferred reserve category as it was in the 1985 mineral inventory. The balance is too poorly sampled at this time to be designated as more than a zone of prime exploration potential. A simplified compilation showing the location of these inferred reserves and potential reserve blocks is presented on Figure 7 following page 12.

Five programs of exploration are recommended as follows (in order of priority).

1. Diamond Drilling - Inferred Reserves

The highest priority should be assigned to exploration of the inferred reserve block. This is a zone within the provisional pit that has not been drilled and was therefore designated as waste in Holt's calculations. The limited trench sampling over this block generally carried low values but the terrain is steep and sample quality was poor. Because the block lies so close to mineralized zones outlined by drilling, its potential is considered promising. A breakdown of the inferred reserves by section, with the amount of drilling needed for exploration, is tabulated below:

TABLE 4
INFERRED RESERVES WITHIN PRELIMINARY PIT
ANTONIUK DEPOSIT

Section	Tonnes	Diamond Drill Holes (Number/Length)
16N	50,000	1/40 m (130 feet)
18N	110,000	2/160 m (525 feet)
20N	380,000	4/290 m (955 feet)
22N	640,000	4/400 m (1310 feet)
24N	50,000	3/290 m (955 feet)
26N	65,000	3/240 m (800 feet)
TOTAL	1,295,000	

A list of the diamond drill holes required to sample these inferred reserves is given in Appendix II.

2) Trenching

About 1000 m (3300 feet) of trenching, which would require 150 bulldozer hours with a Caterpillar D7E bulldozer with ripper, is needed to locate and sample northwest-trending structures that appear to occur between and parallel to the present trenches. This work would help determine the distribution of known mineralization, as well as explore for additional inferred reserves. The proposed trenching would be oriented northeasterly at right angles to most of the existing trenches.

3) Bulk Sampling

The upper portion of several diamond and rotary percussion drill holes gave a poor correlation with adjacent trench samples. In most cases, the trench samples gave better values than the drill core; for example:

Location		Average		Average
Section	Coordinate	value (g/t)	Coincident Drill Hole	grade (g/t)
18N	2E	1.0	86-22	0.10
20N	2W	1.10	86-03	0.87
22N	2E	0.85	86-20	0.42
24N	4E	2.30,5.00,3.00	85-08R, 86-24, 86-23	1.03,4.11,0.70
26N	5E	1.95	75-23	0.83

Less commonly, drill holes gave better gold values than the overlying trench samples:

22N	0E	0.21	86-08	0.95
26N	2E	0.24,0.58	86-13, 75-05	0.93,1.65

It seems quite likely that some gold has been lost from the drill samples collected from the intensely-weathered, upper portion of the oxide zone since gold occurs mainly with the friable oxide minerals along fractures. Trenching to a depth of 7 to 10 m would provide a more reliable estimate of the true grade of the surface material and show whether the discrepancy is caused by a loss of gold from the core samples or by surface enrichment in the trenches due to weathering. This bulk sampling would be most successfully accomplished using a Caterpillar 225 or 235 excavator.

Holt described the matter of grade variations in his report (page 9) and noted that the best quality samples consistently gave the highest values. For example, trench assays are generally higher than the HQ drill core assays, which tend to be higher, in turn, than NQ drill core assays and assays from rotary percussion cuttings. He stated that his calculated reserves are possibly biased on the low side because of this grade discrepancy and that detailed investigation is warranted. Since Holt's reserve calculations include the lower values as well as the higher values, bulk sampling of the lower valued material could improve the calculated grade of this near-surface

material. If the near-surface zones have the same grade as the overlying trenches or adjacent drill hole intercepts, Archer, Cathro estimates that the average grade of the total oxide reserves would increase by at least 10%.

4) Test Pad

Holt's report outlined over 80,000 tonnes of surface material along Trench 24N that grades over 3.0 g/t (0.088 opt) Au. Initial testing has indicated that this material should be easily leachable (+80% recovery). If 20,000 tonnes of this material was processed on a test pad as part of the feasibility study, it would provide valuable data concerning mining costs and leachability. With a 70% recovery the project would provide 42 kg (1230 oz) of gold to offset construction costs. The source of material for the test pad is located on a ridge top and would require no waste removal.

5) Diamond Drilling - Peripheral Exploration

As shown on Figure 7, good exploration potential exists in three areas peripheral to the preliminary pit. These areas contain scattered trench and drill hole assays exceeding 0.7 g/t (0.02 opt) but have not been explored systematically enough to allow calculation of an inferred reserve. Exploration of these areas should be deferred until after the completion of the work outlined above.

a) Southwest Area (Theodore Vein)

The largest of these areas, which lies downhill from the provisional open pit, contains over 25 sampled intervals with values exceeding 0.70 g/t Au (0.02 opt). These range up to 1.92 g/t Au (0.056 opt) over 13.7 m (45 feet) in a trench over the Theodore vein and 2.33 g/t Au (0.068 opt) over 22.56 m (74 feet) in drill hole 75-22. Oxidation is not expected to penetrate as deeply as it does higher on the mountainside.

b) Southeast Area

The most easterly drill holes (81-01 and 75-23) intersected a highly favourable host rock consisting of intensely altered heterolithic breccia. Unfortunately, these holes did not produce any significant gold assays although, as mentioned on page 11, they do carry significant silver assays. Since the best gold values on the property occur in similarly altered rocks along the breccia contact 200 m to the west, it is felt that the remainder of the breccia contact in this area should be tested. Oxidation appears to extend to depths of at least 75 m (250 ft).

c) North Area

Several drill and trench intersections occurring in this area appear to be related to minor structures that may be associated with the breccia contact. These warrant further investigation because the North Area is situated close to the top of the ridge where oxidation could extend over 60 m (200 ft) deep.

APPENDIX I

RESERVE ESTIMATE BY E.S. HOLT, P.Eng.
September 25, 1986

RESERVE ESTIMATE

ANTONIUK GOLD DEPOSIT

MOUNT FREEGOLD, YUKON TERRITORY

September 25, 1986

Prepared by

HOLT ENGINEERING LTD.

TABLE OF CONTENTS

RESERVE ESTIMATE

INTRODUCTION

At the request of Mr. Robert Cathro, President of Archer, Cathro & Associates (1981) Limited, Holt Engineering Ltd. has carried out an independent reserve calculation for the Antoniuk gold deposit.

The project is at an intermediate stage of development following surface exploration, rotary and diamond drilling on sections spaced at 61 metre intervals and extensive surface trenching and sampling, but preceeding advanced metallurgical testing, definition drilling and related grade confirmation bulk sampling.

The reserve estimate is based on exploration results provided by Archer, Cathro & Associates which included drill sections, assay data, geologic interpretations and a preliminary pit design. Our assignment did not include certification of the accuracy of the information provided. However, it can be stated that the assaying, exploration work and preliminary engineering were all carried out by reputable firms or individuals experienced in the mineral industry. During the course of our independent calculation we did not encounter data which we considered to be unreliable.

The reserve estimate is based on our analysis of the data provided to us. We have not examined the property, however we are familiar with comparable bulk type gold deposits and with open pit reserve calculations in particular.

SUMMARY

The presently outlined reserves are based on 4950 metres of surface sampling, 607 metres of rotary drilling and 4775 metres of diamond drilling. The reserves are categorized into oxide and sulphide components which correspond with a geologic transformation resulting in different metallurgical characteristics.

The tonnage and grade estimates at two selected cut-off grades are summarized as follows:

Category	Tonnes Ore	Grams Au/t	Tonnes Waste	Strip Ratio
Oxide .7 Cutoff	1,892,400	1.14	1,470,900	0.78:1
Oxide .5 Cutoff	2,621,900	0.99	741,400	0.28:1
Sulphide .7 Cutoff	1,068,000	1.52	2,430,300	2.28:1
Sulphide .5 Cutoff	1,093,600	1.50	2,405,300	2.20:1
Combined .7 Cutoff	2,961,000	1.28	3,901,200	1.32:1
Combined .5 Cutoff	3,715,500	1.14	3,146,700	0.85:1
Diluted .7 Cutoff	3,260,000	1.19	3,602,200	1.11:1
Diluted .5 Cutoff	4,087,000	1.06	2,775,200	0.68:1

The reserves outlined above are MINEABLE RESERVES; that is, they are contained within the limits of trial open pits which adhere to normal open pit mining constraints.

It must be emphasized that the reserve grade and tonnage should not be regarded as precise measurements of quantity, tenor and distribution. They are, however, our best estimate based on the presently available data. Sufficient continuity has been demonstrated to afford a reasonably high level of confidence in

the overall metal content, but the position of those reserves within the deposit is less precise. In this regard, the estimates are considered appropriate for preliminary economic projections, but require refinement before detailed production scheduling can proceed with the desired level of confidence.

The present uncertainty regarding the configuration of the ore/waste boundaries effectively dictates that the bulk of the reserves be categorized as PROBABLE. The primary ingredient required to conform with a proven classification is increased geologic evidence that specific projections can be made with confidence.

The potential to expand the reserves and/or locate a high grade core are both realistic possibilities. Further potential to enhance the reserves lies in the need for a careful analysis of some conflicting results. They could represent a bias which has failed to reflect the true gold content of the ore.

RESERVE CALCULATION DETAIL

The reserve estimates presented in this report were compiled from six drill sections spaced at 61 metre intervals through the deposit. Geologic and assay data were available from a number of sources:

Trenching

1985 - 4950 lineal metres (1050 samples)

Diamond Drilling

1975 - 10 BQ holes - 1393 metres
1981 - 10 NQ holes - 1193 metres
1986 - 22 NQ holes - 2067 metres
1986 - 2 HQ holes - 122 metres

Rotary Drilling

1985 - 8 holes - 607 metres

Geochemical Soil Sampling

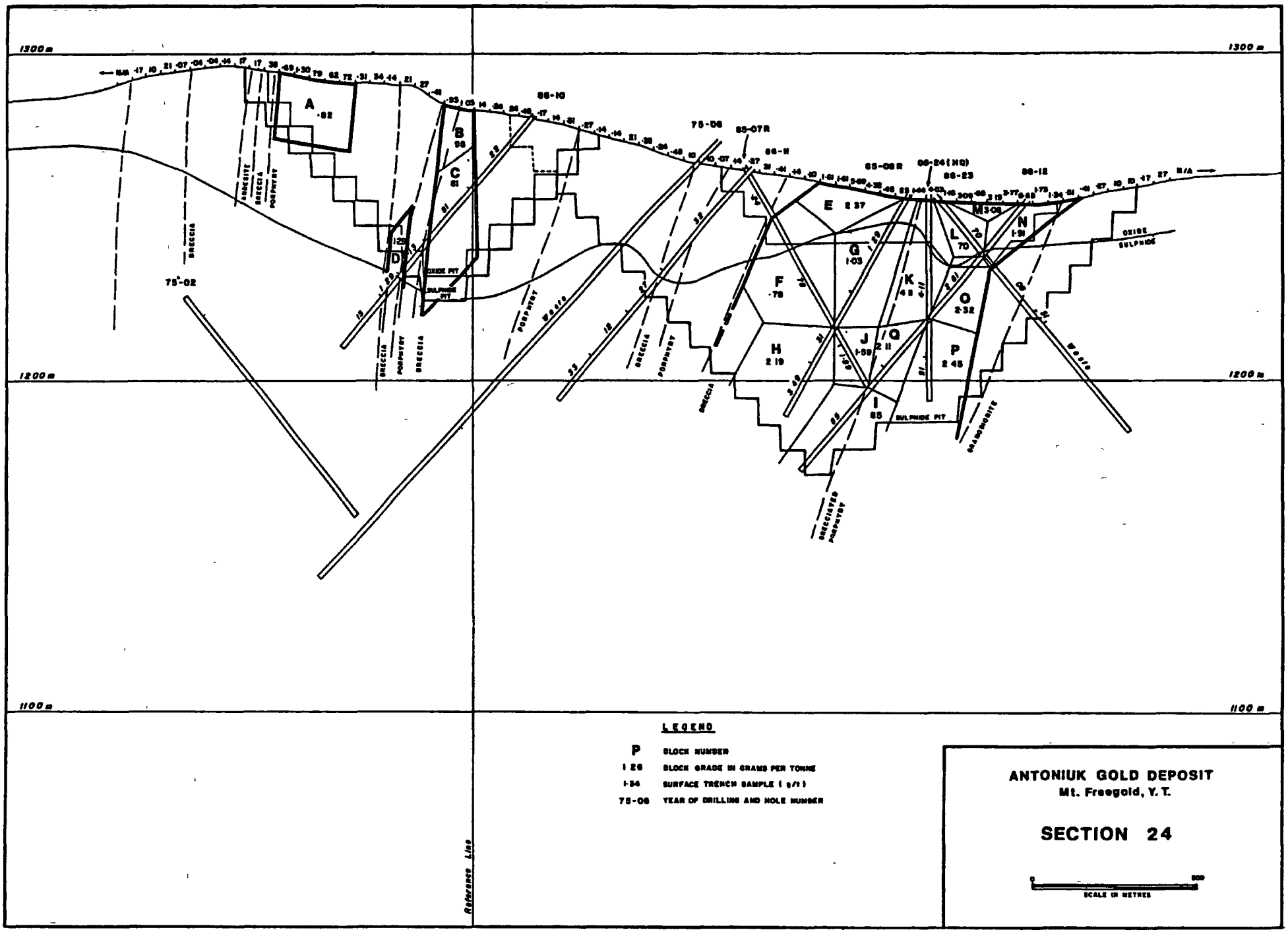
500 x 300m anomaly

The reserve estimates were prepared using standard engineering techniques. Reserve blocks were outlined on drill sections by using all available assay data, together with known geologic trends. Tonnages were calculated by planimetering block areas on section and projecting the ore or waste one half the distance to adjacent sections. Tonnage factors used were:

Oxide ore & Waste: 2.4 tonnes per cubic metre
Sulphide ore & Waste: 2.6 tonnes per cubic metre

Ore projections on section were limited to a maximum of 20 metres from assay data points.

Trial pit designs provided by Archer, Cathro were utilized to determine mineable reserves and waste to ore strip ratios. The


1300 m
1200 m
1100 m
A .82
B 98
C 2.2
D 1.25
E 2.37
F .78
G 1.03
H 2.19
I .85
J 1.59
K 4.8
L .70
M 3.08
N 1.31
O 2.32
P 2.45
Q 2.11
75-02
75-06
75-07R
86-10
86-11
86-08R
86-24(NG)
86-23
86-12
OXIDE PIT
SULPHIDE PIT
BRECCIA
PORPHYRY
ANDESITE
GRANODIORITE
SHEARED PORPHYRY
OXIDE
SULPHIDE
Reference Line
LEGEND
P BLOCK NUMBER
1.25 BLOCK GRADE IN GRAMS PER TONNE
1-34 SURFACE TRENCH SAMPLE (g/t)
75-06 YEAR OF DRILLING AND HOLE NUMBER
ANTONIUK GOLD DEPOSIT
Mt. Freegold, Y.T.
SECTION 24
SCALE IN METRES

designs were based on an assumed 45 degree pit slope. Detailed pit planning to provide for ramps, minimum working areas and end slopes invariably increase the waste to ore ratios by a modest amount.

The geologic contact between oxide and sulphide material was also provided by Archer, Cathro. Their project geologist utilized drill core data and related geologic knowledge to determine the anticipated boundary. Although the contact is currently difficult to predict, the two rock types have characteristic visual features which should result in reasonably accurate pit sorting.

The drawing on the preceeding page is a reasonably typical drill section and is provided to illustrate the general geologic setting, the sampling density, the drill hole orientations, the individual reserve block grades, the pit outlines and the general reserve calculation method. Individual block tonnage and grade data is provided as an appendix to this report.

As will be noted, the estimated metal content of adjacent reserve blocks often varies considerably. While this lack of continuity indicates a need for some caution with regard to individual block grades, the somewhat erratic metal distribution found in the Antoniuk deposit is not untypical of gold deposits in general and, in fact, is less erratic than some exploited deposits which lived up to overall reserve estimate expectations.

RESERVE CLASSIFICATION

The terminology used in classifying mineral reserves is often a controversial subject. Many authorities have, however, agreed upon and defined certain terminology that provides relative dependibility of information. Based on these guidelines, the reserve classifications are defined as follows:

(1) Proven

Proven reserves are material for which tonnage is computed from dimensions revealed in outcrops, trenches, workings and drill holes and for which the grade is computed from the results of detailed sampling. The sites of inspection, sampling and measurements are so closely spaced and the geologic character is defined so well that the size, shape, and mineral content are well established. The computed tonnage and grade are judged to be accurate within limits which are stated, and no such limit is judged to differ from the computed tonnage or grade by more than 20 percent.

(2) Probable Reserves

Probable reserves or resources are material for which tonnage and grade are computed partly from specific measurements, samples or production data and partly from projection for a reasonable distance on geologic evidence. The sites available for inspection, measurement, and sampling are too widely spaced or otherwise inappropriately spaced to outline the ore completely or establish its grade throughout.

Based on the somewhat rigid reserve classification outlined above, a significant portion of the reserves currently classed as "Probable" border on qualifying as "Proven". This is particularly true in the immediate vicinity of the surface trenches where geologic observations, measurements and detailed sampling have all

been undertakien and, to a lesser extent, in the central area of the east pit where the deposit's continuity is more predictable.

Fill-in drilling is not expected to significantly alter the overall tonnage and grade estimates; however, it is expected to modify the configuration of individual ore shoots. Based in part on this factor, it is proposed that a reasonably high degree of confidence is appropriate for the total predicted tonnage and grade within the pit; however, due to erratic metal distribution known to occur in the Antoniuk deposit, local discrepancies should be expected. In this regard, the estimates for reserve blocks on an individual basis should not be regarded as precise. Any discrepancies would, however, be compensating, with the result that confidence in the grade estimate increases as the population of reserve blocks increase.

The reserves primarily require improved geologic knowledge of the deposit, particularly regarding metal distribution patterns and geologic controls, to improve their status to the "Proven" category. A carefully executed check sampling program would also contribute to an increased confidence level.

The Antoniuk deposit is a potential heap leach project and as such may not warrant the detailed documentation of reserves normally required for Canadian gold deposits. Some heap leach projects commence production with very modest capital outlays and consequently do not justify major expenditures on the reserves.

In my opinion, some improvement in the confidence level is required, particularly in the vicinity of the initial pit. However, a major definition drilling program is probably not warranted unless major capital expenditures are anticipated.

Although the mineralization is somewhat erratic, examination of continuity both along strike and down dip has revealed that there is a reasonable degree of consistency. Although boundaries

between ore and waste blocks are not accurately defined at present, there is justification for assuming that pit sorting will meet with some success.

Mining dilution is provided at two stages of the reserve calculation:

1. Internal low grade assays were not excluded from block grades, and
2. A 10% dilution factor was added to the overall reserves.

The grade applied to the 10% dilution factor was 0.23 grams per tonne which is the average grade of all of the waste samples adjacent to ore blocks.

High grade assays have not been cut. With few exceptions, the assays are within the range expected to occur in a bulk type gold deposit.

Careful analysis of the sampling data indicates that a possible bias on the low side may exist. Higher quality samples generally tend to indicate higher grade than adjacent low quality samples. Cases in point are:

1. The upper, low recovery, sections of many diamond drill holes indicated lower grade than adjacent surface sampling,
2. Rotary drilling results tend to be lower grade than diamond drilling, and
3. The large size HQ diamond drill holes, on average provided higher grade samples than the adjacent smaller size core and rotary drill holes.

It must be emphasized that the above mentioned observations are

not entirely consistent and within an erratic deposit could be simply coincidental. However, if a modest improvement in reserve grade is critical to the success of the project, then this is an area that warrants detailed investigation.

Respectfully submitted,

Edward S. Holt, P.Eng.

APPENDIX

OXIDE RESERVE SUMMARY

Category	Section	Tonnes	Grams Au/tonne
Oxide >.7 cutoff	16N	192,500	0.83
	18N	441,600	1.44
	20N	441,400	1.08
	22N	292,100	0.82
	24N	342,900	1.33
	26N	181,900	1.00
	TOTAL	1,892,400	1.14
Oxide <.7>.5	16N	35,500	0.66
	18N	86,000	0.57
	20N	213,400	0.53
	22N	307,900	0.62
	24N	-	-
	26N	86,700	0.63
	TOTAL	729,500	0.59
TOTAL >.5		2,621,900	0.99
Oxide Pit	16N	276,000	
	18N	775,200	
	20N	854,600	
	22N	686,300	
	24N	669,000	
	26N	102,200	
	TOTAL	3,363,300	

SULPHIDE RESERVE SUMMARY

Category	Section	Tonnes	Grams Au/tonne
Sulphide >.7 cutoff	16N	800	0.72
	18N	179,200	0.96
	20N	111,700	0.95
	22N	130,900	1.13
	24N	646,000	1.85
	26N	-	-
	TOTAL	1,068,600	1.52
Sulphide <.7 >.5	16N	-	-
	18N	4,000	0.59
	20N	17,800	0.53
	22N	1,200	0.64
	24N	-	-
	26N	2,000	0.63
	TOTAL	25,000	0.55
Total >.5		1,093,600	1.50
Sulphide Pit	16N	-	
	18N	232,000	
	20N	87,400	
	22N	1,115,000	
	24N	1,287,400	
	26N	777,100	
	TOTAL	3,498,900	

SECTION 16N

CATEGORY	BLOCK	PLANIMETER READING	METRIC TONNES	GRAMS AU
Oxide +.7	A	3.7	13,500	1.42
	C	31.0	113,500	0.72
	D	17.9	65,500	0.90
			192,500	0.83
Oxide +.5	B	9.7	35,500	0.66
Sulphide +.7	C	0.2	800	0.72
Oxide Pit		75.4	276,000	

SECTION 18N

Category	Block	Planimeter Reading	Metric Tonnes	Grams Au
Oxide +.7	A	16.5	60,400	1.23
	B	1.4	5,100	2.23
	C	11.5	42,100	1.04
	D	1.2	4,400	0.91
	E	6.2	22,700	1.80
	G	24.0	87,900	0.73
	I	10.9	39,900	2.08
	J	2.0	7,300	1.42
	K	19.1	69,900	2.00
	M	20.2	73,900	1.67
	O	4.1	13,800	1.34
			441,600	1.44
Oxide +.5	E	11.4	41,700	0.59
	L	9.5	34,800	0.55
	N	2.6	9,500	0.57
			86,000	0.57
Sulphide +.7	A	2.3	9,100	1.23
	D	18.7	74,100	0.91
	G	17.8	70,600	0.73
	H	5.4	21,400	1.55
	K	1.0	4,000	2.00
			179,200	0.96
Sulphide +.5	F	1.0	4,000	0.59
Oxide Pit		211.8	775,200	
Sulphide Pit		58.5	232,000	

SECTION 20N

Category	Block	Planimeter Reading	Metric Tonnes	Grams Au
Oxide +.7	B	23.9	87,500	0.87
	C	10.5	38,400	1.68
	D	18.8	68,800	0.91
	E	15.4	56,400	1.18
	F	4.7	17,200	1.35
	H	15.8	57,800	0.96
	I	26.0	95,200	1.19
	J	5.5	20,100	0.82
			441,400	1.08
Oxide +.5	A	6.7	24,500	0.57
	K	44.1	161,400	0.52
	L	7.5	27,500	0.57
			213,400	0.53
Sulphide +.7	D	4.1	16,200	0.91
	E	2.5	9,900	1.18
	F	4.6	18,200	1.35
	G	5.1	20,200	0.82
	J	11.4	45,200	0.82
	B	0.5	2,000	0.87
			111,700	0.95
Sulphide +.5	M	4.5	17,800	0.53
Oxide Pit		233.5	854,600	
Sulphide Pit		97.7	87,400	

SECTION 22N

Category	Block	Planimeter Reading	Metric Tonnes	Grams Au
Oxide +.7	B	10.2	37,300	0.95
	C	38.7	141,600	0.71
	D	12.7	46,500	0.85
	F	7.5	27,500	0.72
	G	10.7	39,200	1.14
			292,100	0.82
Oxide +.5	A	44.5	162,900	0.64
	E	21.0	76,900	0.69
	H	18.6	68,100	0.51
			307,900	0.62
Sulphide +.7	F	0.5	2,000	0.72
	G	32.5	128,900	1.14
			130,900	1.13
Sulphide +.5	A	0.3	1,200	0.64
Oxide Pit		187.5	686,300	
Sulphide Pit		281.2	1,115,000	

SECTION 24N

Category	Block	Planimeter Reading	Metric Tonnes	Grams Au
Oxide +.7gm	A	18.5	67,700	0.82
	B	6.6	24,200	0.98
	C	20.8	76,100	0.81
	D	1.8	6,600	1.29
	E	9.6	35,100	2.39
	F	9.2	33,700	0.78
	G	3.8	13,900	1.03
	K	4.9	17,900	4.11
	L	7.0	25,600	0.70
	M	2.3	8,400	3.08
	N	9.2	33,700	1.91
			342,900	1.33
Oxide +.5	Nil			
Sulphide +.7	C	0.2	800	0.81
	F	23.2	92,000	0.78
	G	21.2	84,100	1.03
	H	30.7	121,800	2.19
	I	19.1	75,700	0.85
	J	8.6	34,100	1.59
	K	14.0	55,500	4.11
	N	0.6	2,400	1.91
	O	13.0	51,500	2.32
	P	21.4	84,900	2.45
	Q	10.9	43,200	2.11
			646,000	1.85
Oxide Pit		182.8	669,000	
Sulphide Pit		324.7	1,287,400	

SECTION 26N

Category	Block	Planimeter Reading	Metric Tonnes	Grams Au
Oxide +.7 gm	A	19.4	71,000	0.97
	C	16.3	59,700	1.10
	D	14.0	51,200	0.92
			181,900	1.00
Oxide +.5	B	23.7	86,700	0.63
Sulphide +.5	B	0.5	2,000	0.63
Oxide Pit		25.8	102,200	
Sulphide Pit		196.0	777,100	

APPENDIX II

RECOMMENDED EXPLORATION DIAMOND DRILL HOLES

APPENDIX II

RECOMMENDED EXPLORATION DIAMOND DRILL HOLES - ANTONIUK DEPOSIT

DRILL HOLE	SECTION	METRES FROM REFERENCE LINE	AZIMUTH (°)	DIP (°)	LENGTH (M)	LENGTH (FEET)
(1)	16N	40E	150	-50	40	130
(2)	18N	30E	150	-50	108	360
(3)	18N	100E	150	-50	50	165
(4)	20N	30W	330	-50	76	250
(5)	20N	40E	330	-50	40	130
(6)	20N	45E	150	-50	125	410
(7)	20N	110E	150	-50	50	165
(8)	22N	35W	150	-50	108	360
(9)	22N	115E	150	-50	108	360
(10)	22N	60E	150	-50	108	360
(11)	22N	115E	150	-50	76	250
(12)	24N	60W	150	-50	107	350
(13)	24N	50E	150	-60	125	410
(14)	24N	200E	240	-50	61	200
(15)	26N	50E	240	-50	61	200
(16)	26N	150E	150	-50	91	300
(17)	26N	250E	240	-50	91	300
					1433	4700

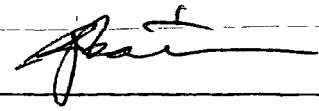
APPENDIX III

STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

I, Robert J. Cathro, with business addresses in Whitehorse, Yukon Territory and Vancouver, British Columbia, and residential address in West Vancouver, British Columbia, do hereby declare:

1. I am a 1959 graduate of the University of British Columbia in geological engineering.
2. I have been engaged in geological engineering for over twenty years, the past seventeen of which have been as a consultant.
3. I am a registered professional engineer in British Columbia and in Yukon Territory.
4. I have supervised the work described in this report.



Robert J. Cathro, B.A.Sc., P.Eng.

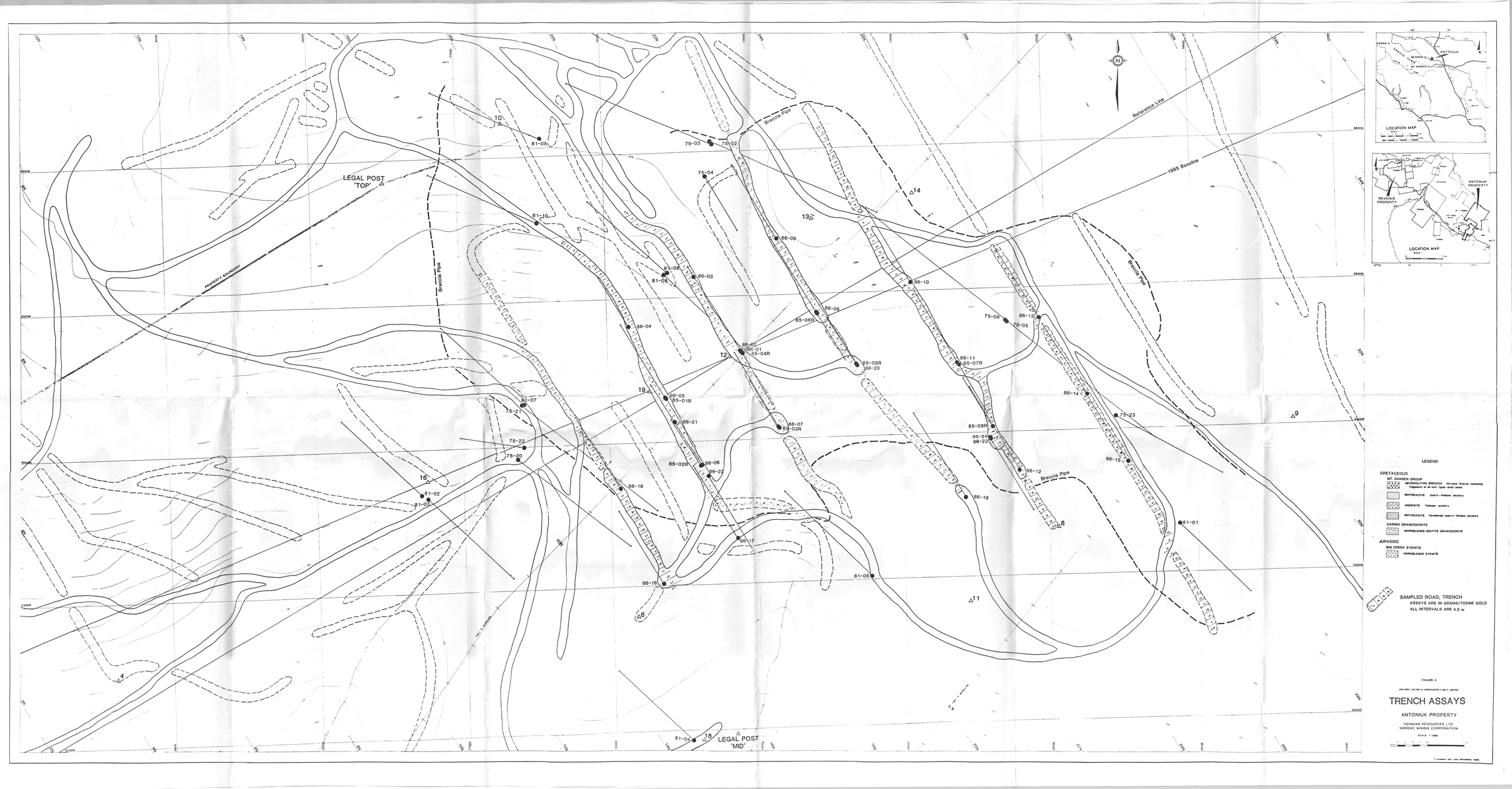
STATEMENT OF QUALIFICATIONS

I, Charles A. Main, geologist, with business addresses in Whitehorse, Yukon Territory and Vancouver, British Columbia and residential address in Vancouver, British Columbia, hereby certify that:

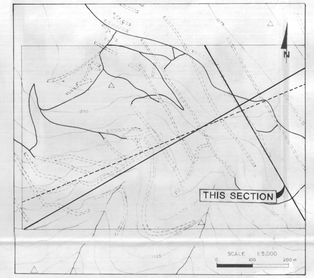
1. I graduated from the University of British Columbia in 1971 with a B.Sc. majoring in Geological Sciences and Chemistry.
2. I have been actively engaged as a geologist in mineral exploration since 1971 and as a partner of Archer, Cathro & Associates (1981) Limited since June 1, 1981.
3. I have personally participated in or supervised the field work reported herein.

Charles A. Main, B.Sc.


Breccia Pipe
Breccia Pipe
Breccia Pipe
Breccia Pipe
REFERENCE LINE
1985 BASELINE
N
LOCATION MAP
ANTONIUK
CASINO
REVENUE
MT. WARREN
ANTONIUK PROPERTY
REVENUE PROPERTY
LEGEND
FAULT
INTENSE ALTERATION (FAULT GOUGED) ZONE
DIATREME BOUNDARY
ROAD OR BULLDOZER TRENCH
BULLDOZER TRENCH
CRETACEOUS
MT. TI NSEN GROUP
HETEROLITHIC BRECCIA Intrusive breccia containing fragments of all rock types noted below
RHYODACITE Quartz - feldspar porphyry
ANDESITE Feldspar porphyry
RHYODACITE Hornblende - quartz - feldspar porphyry
CASINO GRANODIORITE
HORNBLENDE-BIOTITE GRANODIORITE
JURASSIC
BIG CREEK SYENITE
HORNBLENDE SYENITE
DRILL HOLES
1979
1981
1983 (percussion)
1986
FIGURE 3
ARCHER, CATHRO & ASSOCIATES (1981) LIMITED
GEOLOGY
ANTONIUK PROPERTY
PERMIAN RESOURCES LTD.
NORDAC MINING CORPORATION
SCALE 1:1000
November 1986


LEGAL POST 'TOP'
LEGAL POST 'MID'
PROPERTY BOUNDARY
Breccia Pipe
Reference Line
1985 Baseline
LOCATION MAP
ANTONIUK PROPERTY
REVENUE PROPERTY
LEGEND
CRETACEOUS
MT. RANSEN GROUP
HETEROLITHIC BRECCIA Intrusive breccia containing fragments of all rock types listed below
RHYODACITE Quartz - feldspar porphyry
ANDESITE Feldspar porphyry
RHYODACITE Hornblende - quartz - feldspar porphyry
CASINO GRANODIORITE
HORNBLENDE-BIOTITE GRANODIORITE
JURASSIC
BIG CREEK SYENITE
HORNBLENDE SYENITE
SAMPLED ROAD, TRENCH
ASSAYS ARE IN GRAMS/TONNE GOLD
ALL INTERVALS ARE 4.5 m
FIGURE 4
ARCHER, CATHRO & ASSOCIATES (1981) LIMITED
TRENCH ASSAYS
ANTONIUK PROPERTY
PERMIAN RESOURCES LTD.
NORDAC MINING CORPORATION
SCALE 1:1000

Facing Northeast



LEGEND

CRETACEOUS

MT. NANSEN GROUP

- **HETEROLITHIC BRECCIA** Intrusive Breccia containing fragments of all rock types noted below
- **RHYODACITE** Quartz-feldspar porphyry
- **ANDESITE** Feldspar porphyry
- **RHYODACITE** Hornblende-quartz-feldspar porphyry

CASINO GRANODIORITE

- **HORNBLENDE-BIOTITE GRANODIORITE**

JURASSIC

BIG CREEK SYENITE

- **HORNBLENDE SYENITE**

FIGURE 5E

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

DRILLSECTION 24N - GEOLOGY

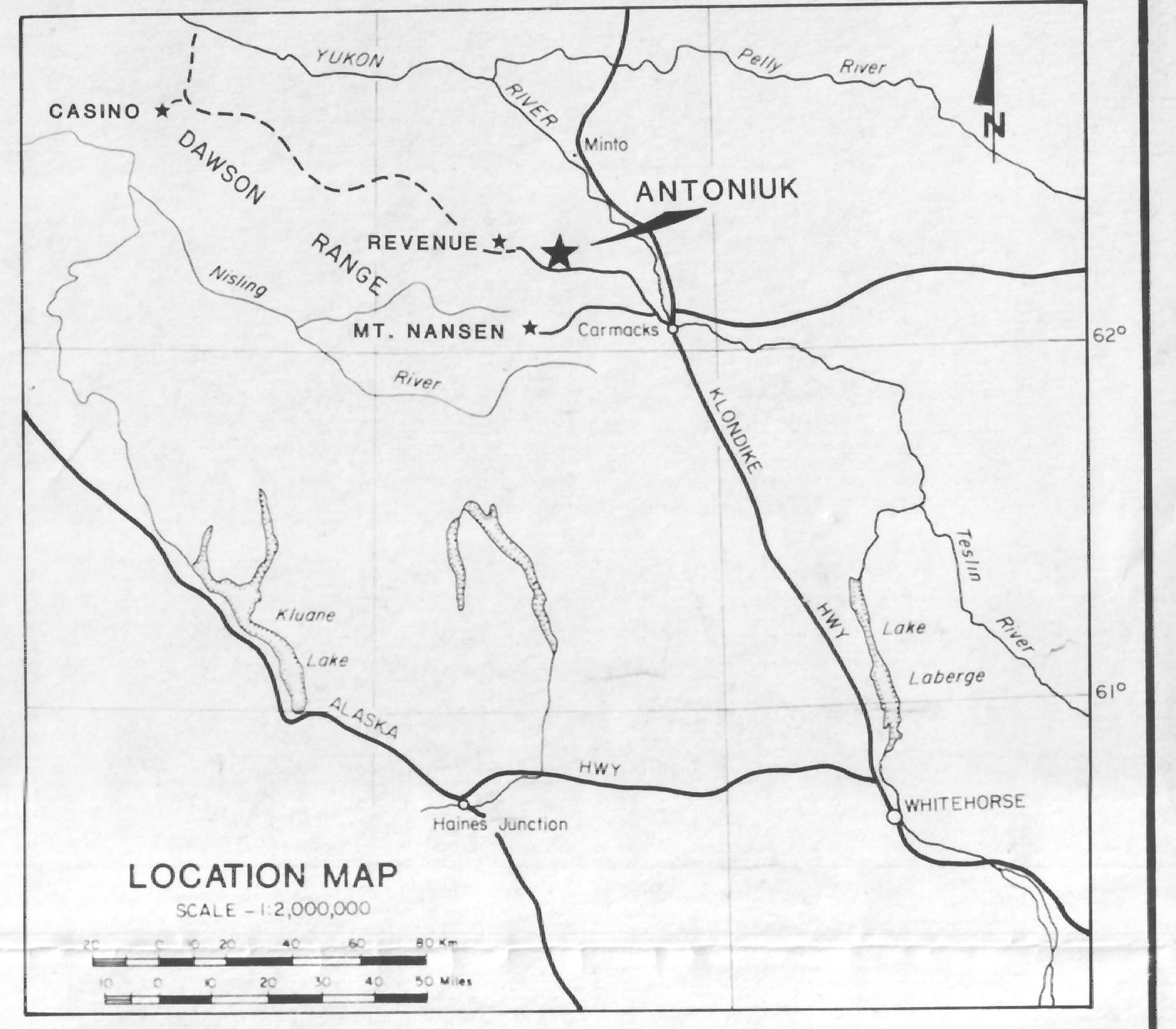
ANTONIUK PROPERTY

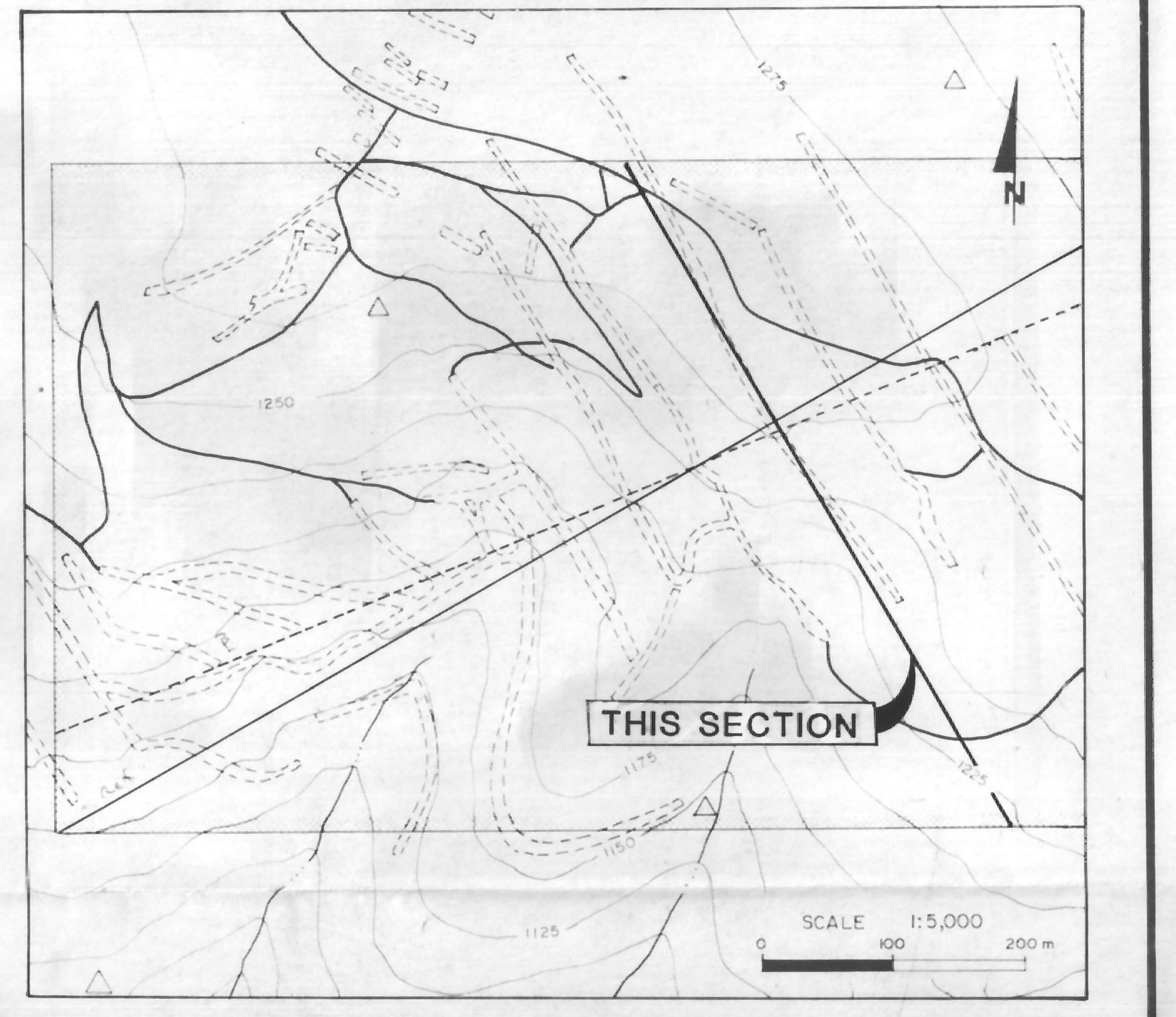
PERMIAN RESOURCES LTD.
NORDAC MINING CORPORATION

SCALE 1:500

0 5 10 15 20 25 30 35 40 45 50 Metres

To accompany report dated **November 1986**





LEGEND

CRETACEOUS

MT. NANSEN GROUP

- HETEROLITHIC BRECCIA — Intrusive Breccia containing fragments of all rock types noted below
- RHYODACITE — Quartz-feldspar porphyry
- ANDESITE — Feldspar porphyry
- RHYODACITE — Hornblende-quartz-feldspar porphyry

CASINO GRANODIORITE

- HORNBLENDE-BIOTITE GRANODIORITE

JURASSIC

BIG CREEK SYENITE

- HORNBLENDE SYENITE

FIGURE 5D

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

DRILL SECTION 22N – GEOLOGY

ANTONIUK PROPERTY

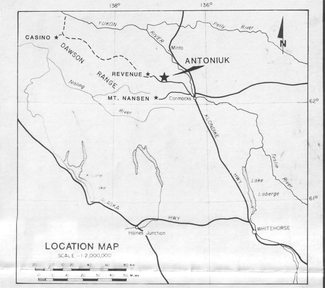
PERMIAN RESOURCES LTD.
NORDAC MINING CORPORATION

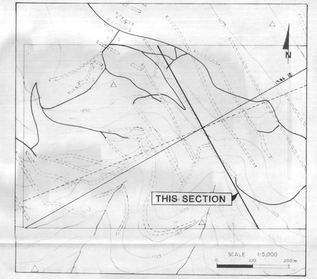
SCALE 1:500

0 5 10 15 20 25 30 35 40 45 50 Metres

To accompany report dated November 1986

Facing Northeast





LEGEND

CRETACEOUS

MT. NANSEN GROUP

- **HETEROLITHIC BRECCIA** Intrusive Breccia containing fragments of all rock types noted below
- **RHYODACITE** Quartz-feldspar porphyry
- **ANDESITE** Feldspar porphyry
- **RHYODACITE** Hornblende-quartz-feldspar porphyry

CASINO GRANODIORITE

- **HORNBLENDE-BIOTITE GRANODIORITE**

JURASSIC

BIG CREEK SYENITE

- **HORNBLENDE SYENITE**

FIGURE 5C

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

DRILL SECTION 20N - GEOLOGY

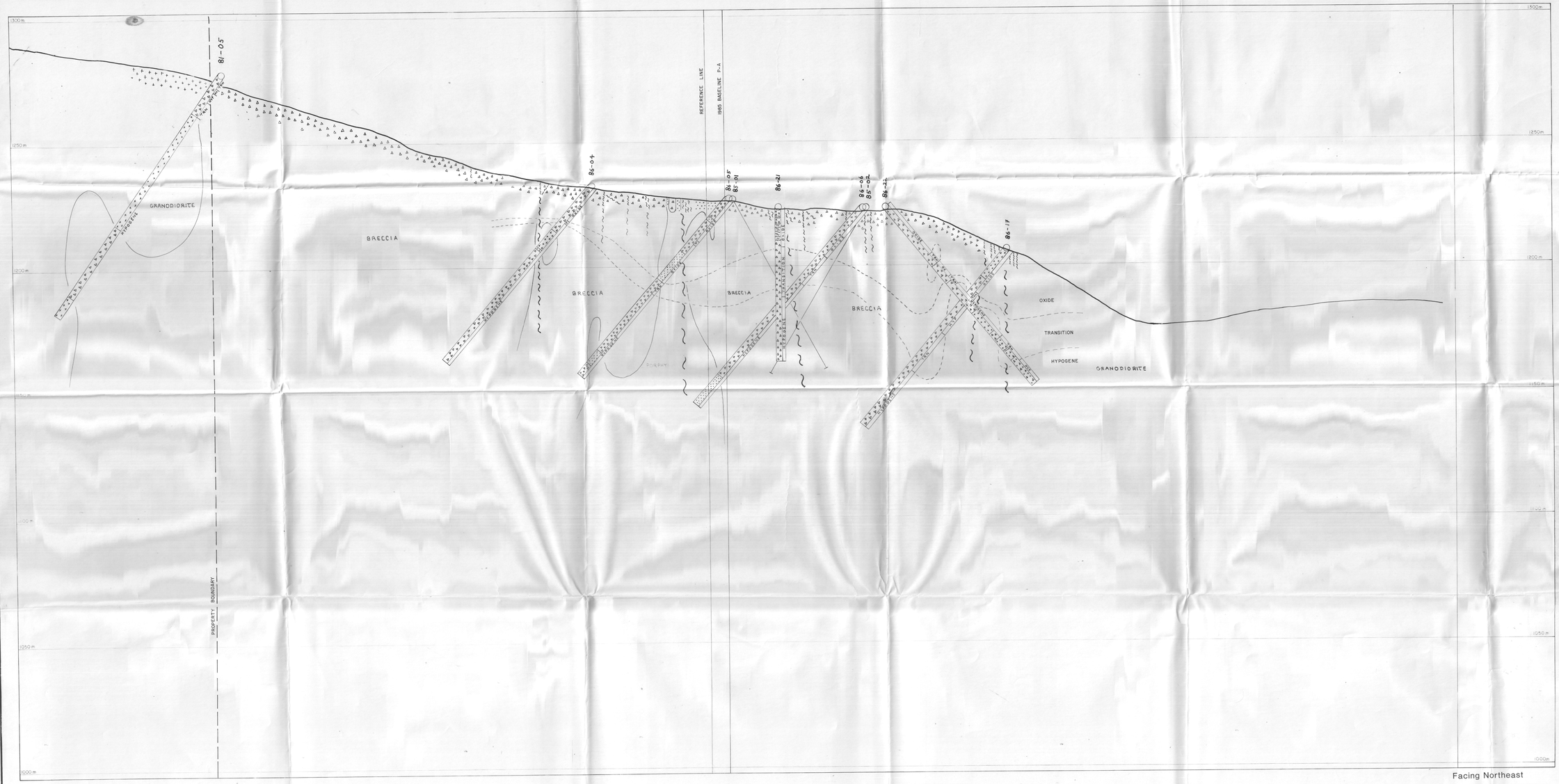
ANTONIUK PROPERTY

PERMIAN RESOURCES LTD.
NORDAC MINING CORPORATION

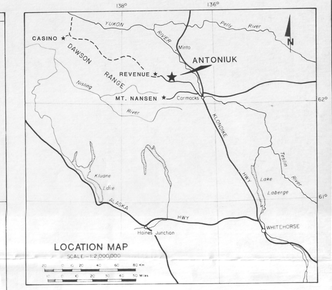
SCALE 1:500

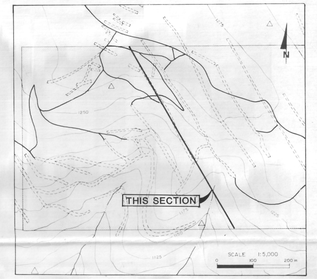
0 5 10 15 20 25 30 35 40 45 50 Metres

To accompany report dated **November 1986**



Facing Northeast





LEGEND

CRETACEOUS

MT. NANSEN GROUP

- HETEROLITHIC BRECCIA Intrusive Breccia containing fragments of all rock types noted below
- RHYODACITE Quartz-feldspar porphyry
- ANDESITE Feldspar porphyry
- RHYODACITE Hornblende-quartz-feldspar porphyry

CASINO GRANODIORITE

- HORNBLENDE-BIOTITE GRANODIORITE

JURASSIC

BIG CREEK SYENITE

- HORNBLENDE SYENITE

FIGURE 5B

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

DRILL SECTION 18N - GEOLOGY

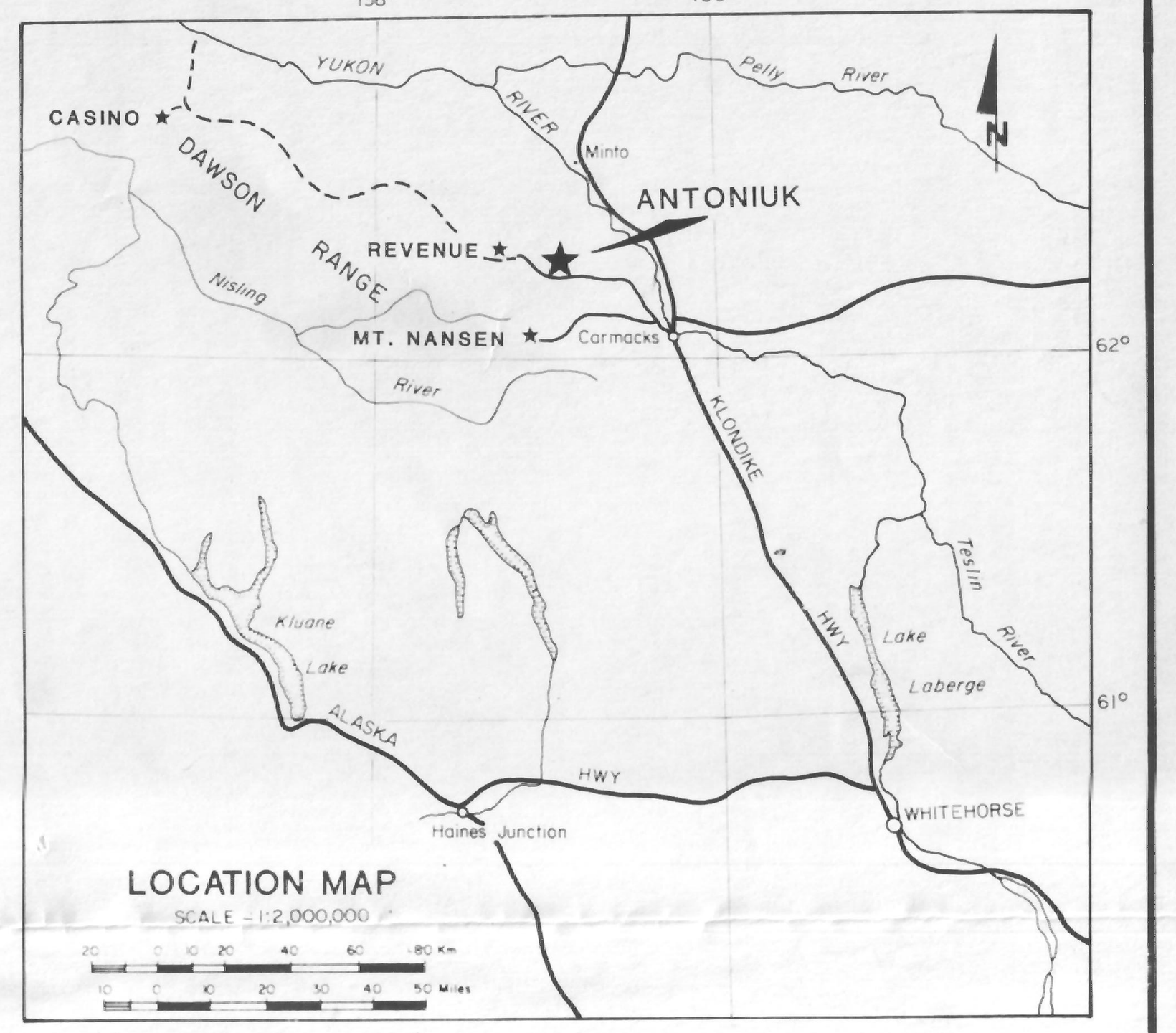
ANTONIUK PROPERTY

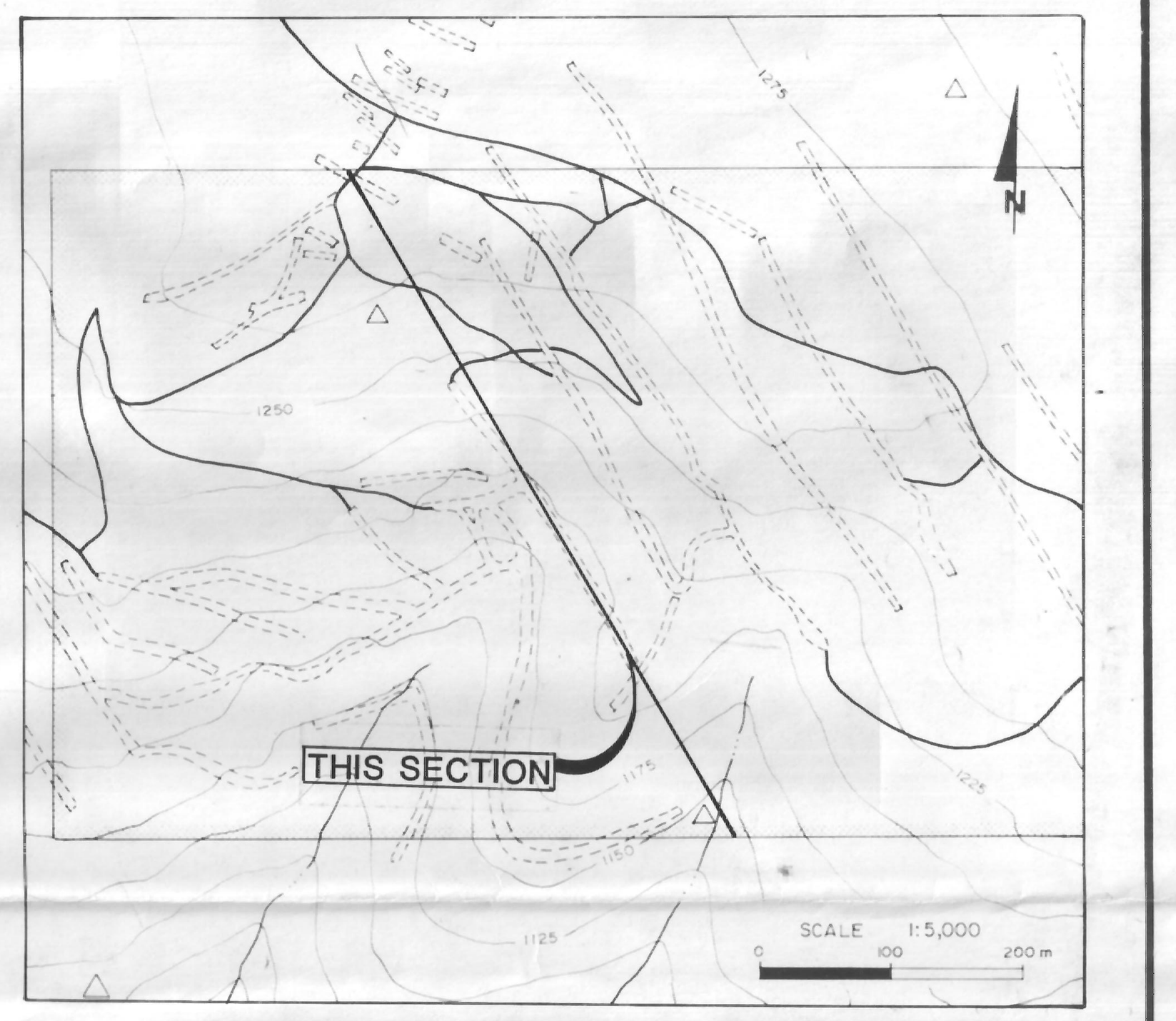
PERMIAN RESOURCES LTD.
NORDAC MINING CORPORATION

SCALE 1:500

0 5 10 15 20 25 30 35 40 45 50 Metres

To accompany report dated November 1986





LEGEND

CRETACEOUS

MT. NANSEN GROUP

- HETEROLITHIC BRECCIA Intrusive Breccia containing fragments of all rock types noted below
- RHYODACITE Quartz-feldspar porphyry
- ANDESITE Feldspar porphyry
- RHYODACITE Hornblende-quartz-feldspar porphyry

CASINO GRANODIORITE

- HORNBLENDE-BIOTITE GRANODIORITE

JURASSIC

BIG CREEK SYENITE

- HORNBLENDE SYENITE

FIGURE 5A

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

DRILL SECTION 16N - GEOLOGY

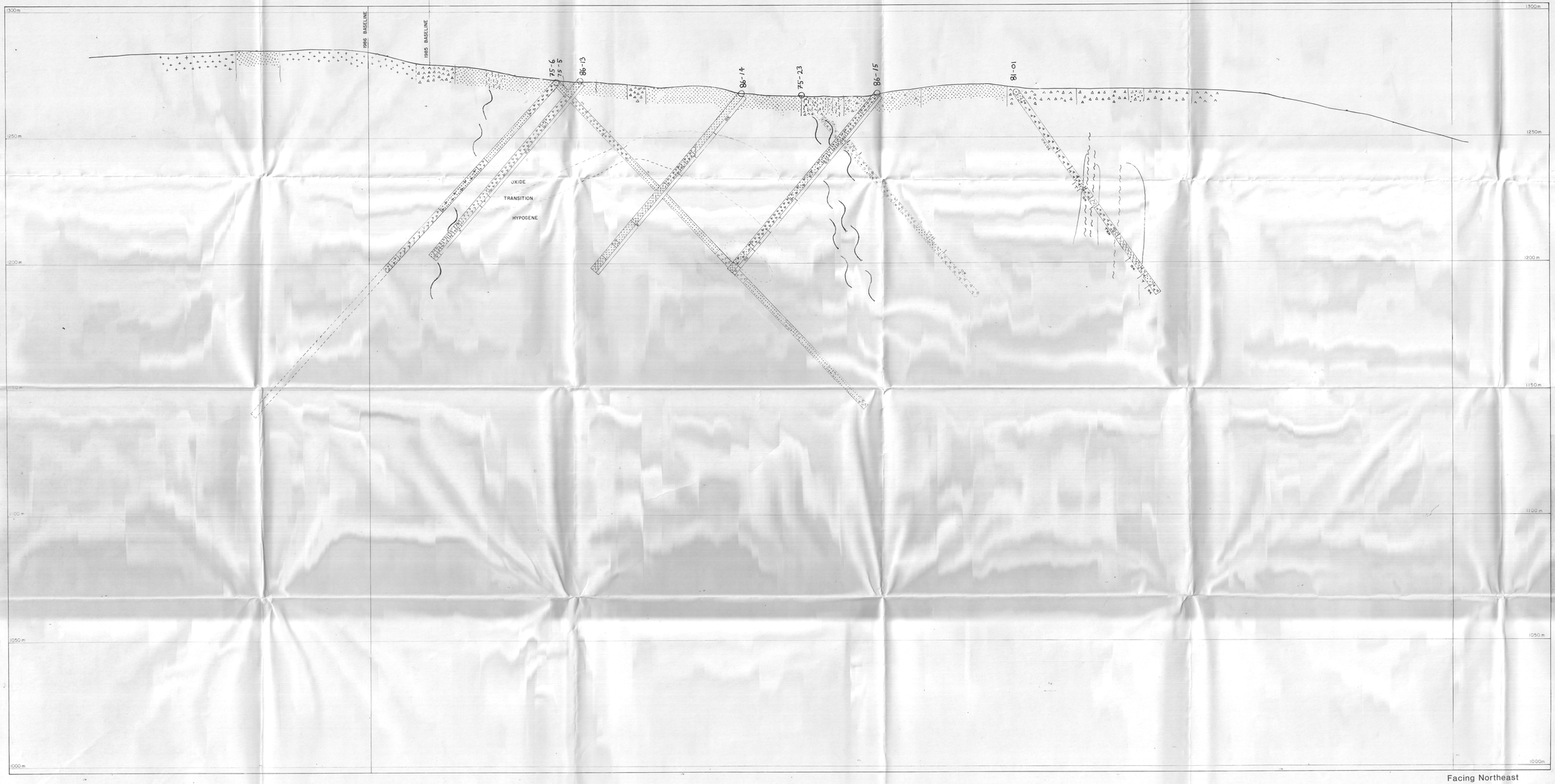
ANTONIUK PROPERTY

PERMIAN RESOURCES LTD.
NORDAC MINING CORPORATION

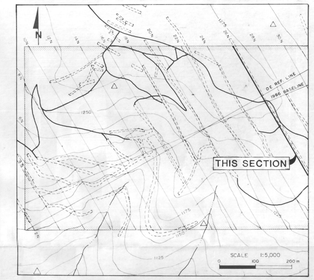
SCALE 1:500

0 5 10 15 20 25 30 35 40 45 50 Metres

To accompany report dated November 1986



Facing Northeast



LEGEND

CRETACEOUS

MT. NANSEN GROUP

- HETEROLITHIC BRECCIA Intrusive Breccia containing fragments of all rock types noted below
- RHYODACITE Quartz - feldspar porphyry
- ANDESITE Feldspar porphyry
- RHYODACITE Hornblende - quartz - feldspar porphyry

CASINO GRANODIORITE

- HORNBLENDE-BIOTITE GRANODIORITE

JURASSIC

BIG CREEK SYENITE

- HORNBLENDE SYENITE

FIGURE 5F

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

DRILL SECTION 26N - GEOLOGY

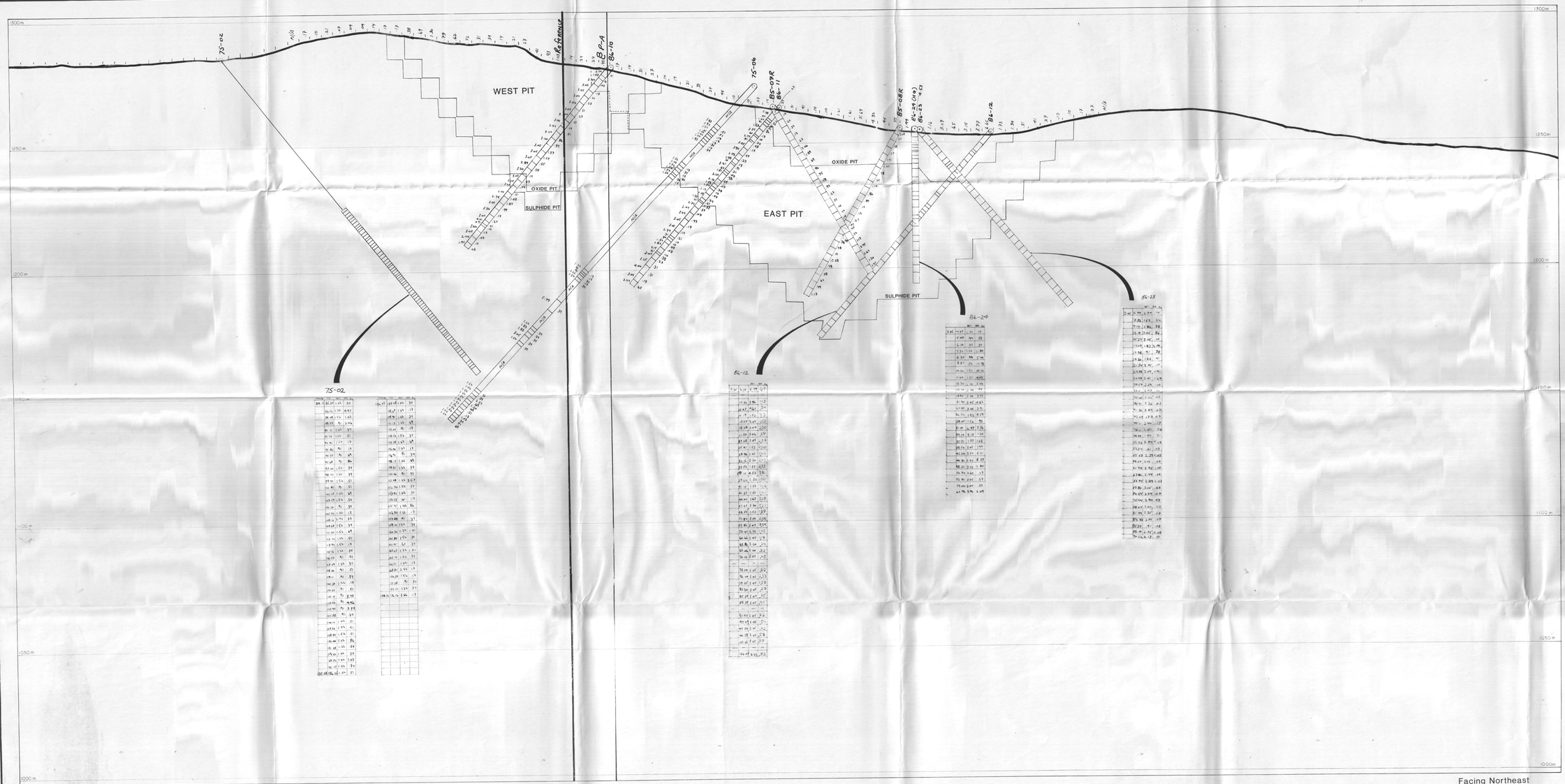
ANTONIUK PROPERTY

PERMIAN RESOURCES LTD.
NORDAC MINING CORPORATION

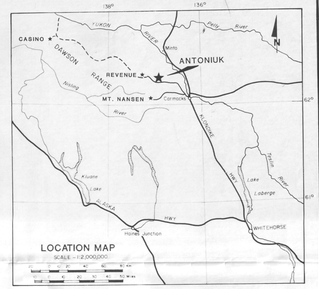
SCALE 1:500

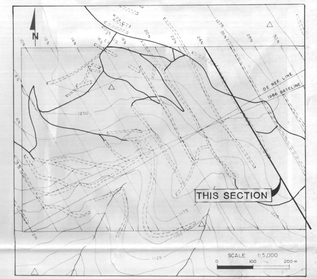
0 5 10 15 20 25 30 35 40 45 50 Metres

To accompany report dated November 1986



Facing Northeast





LEGEND

DRILL CORE SAMPLE,
Interval as marked (in meters)
Assays in grams/tonne

TRENCH SAMPLE,
4.5 Meter Interval
Assays in grams/tonne

FIGURE 6E

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

DRILL SECTION 24N - ASSAYS

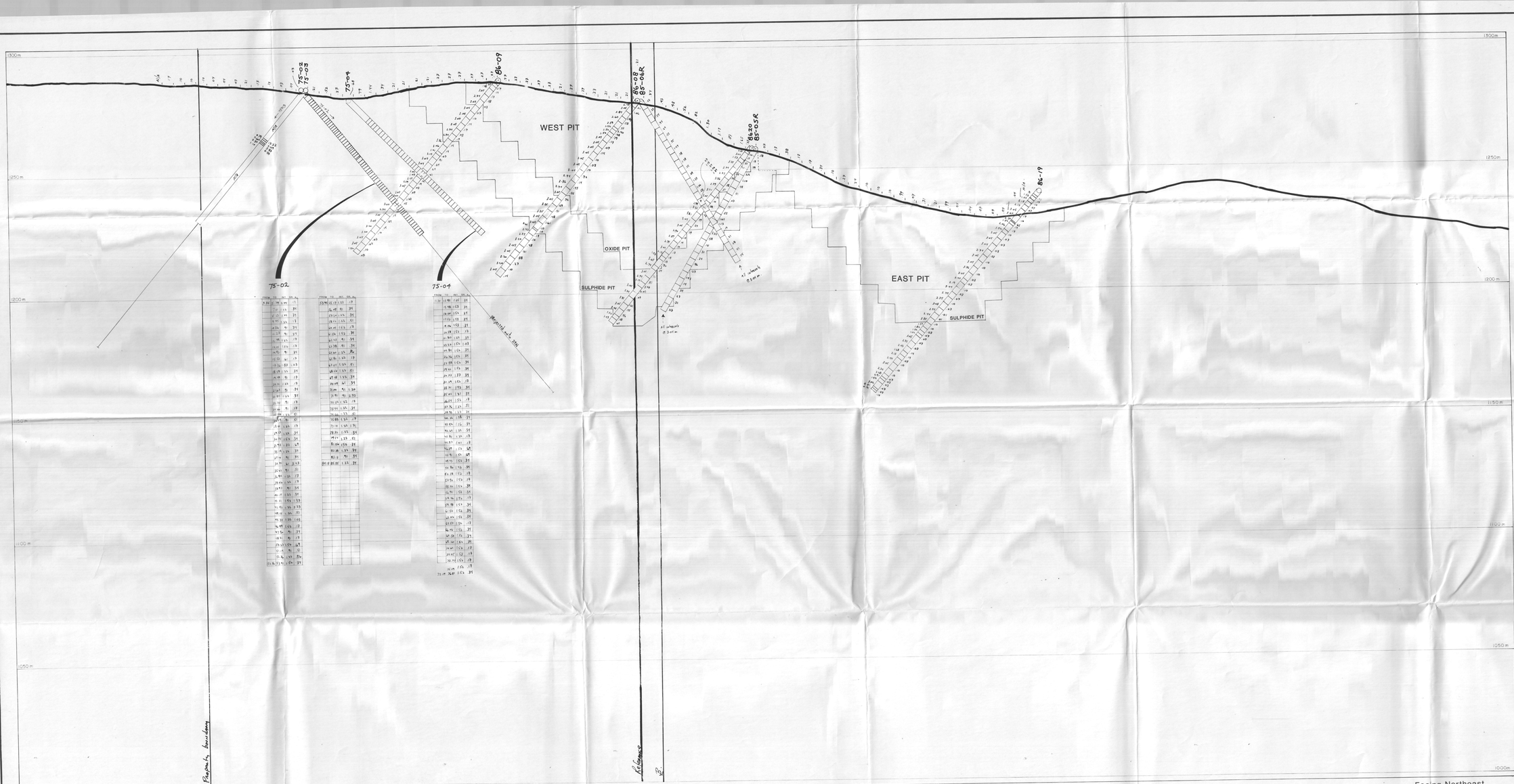
ANTONIUK PROPERTY

PERMIAN RESOURCES LTD.
NORDAC MINING CORPORATION

SCALE 1:500

0 5 10 15 20 25 30 35 40 45 50 Metres

To accompany report dated **November 1986**



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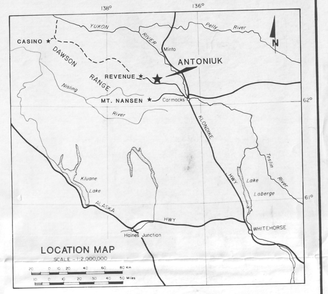
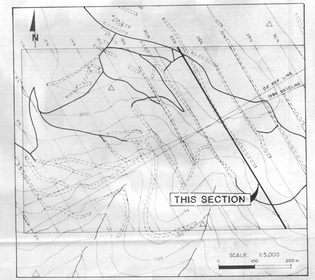




LEGEND

DRILL CORE SAMPLE,
Interval as marked (in meters)
Assays in grams/tonne

TRENCH SAMPLE,
4.5 Meter Interval
Assays in grams/tonne

FIGURE 6D

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

DRILL SECTION 22N – ASSAYS

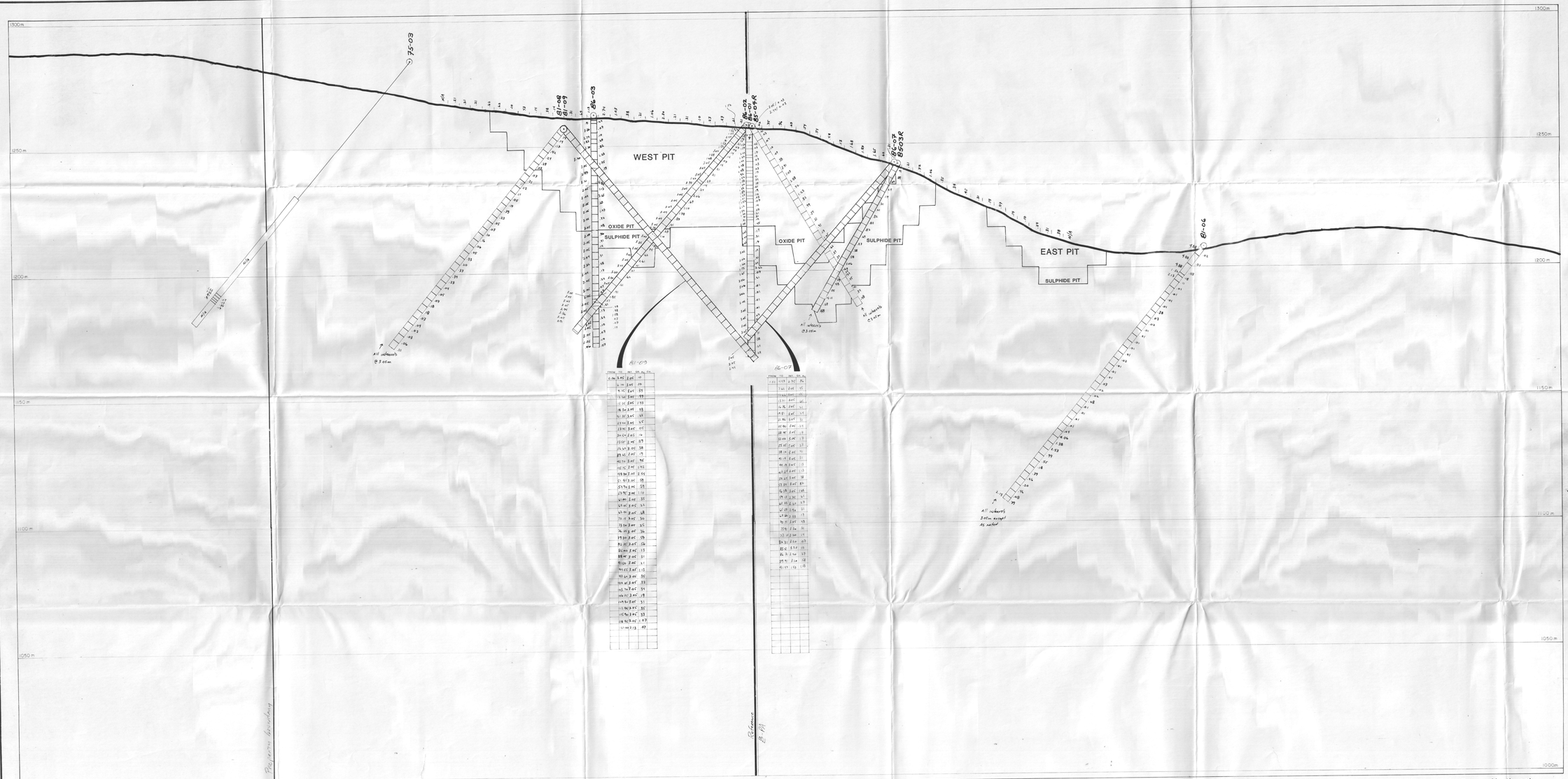
ANTONIUK PROPERTY

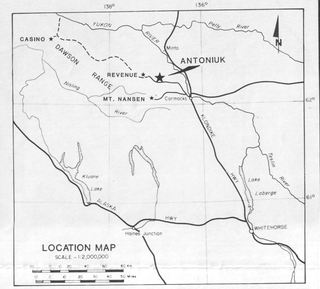
PERMIAN RESOURCES LTD.
NORDAC MINING CORPORATION

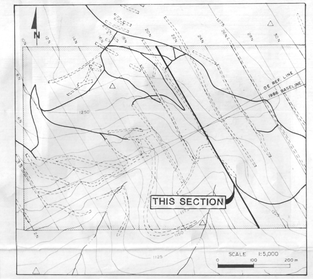
SCALE 1:500

0 5 10 15 20 25 30 35 40 45 50 Metres

To accompany report dated November 1986







LEGEND

DRILL CORE SAMPLE,
Interval as marked (in meters)
Assays in grams/tonne

TRENCH SAMPLE,
4.5 Meter Interval
Assays in grams/tonne

FIGURE 6C

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

DRILL SECTION 20N – ASSAYS

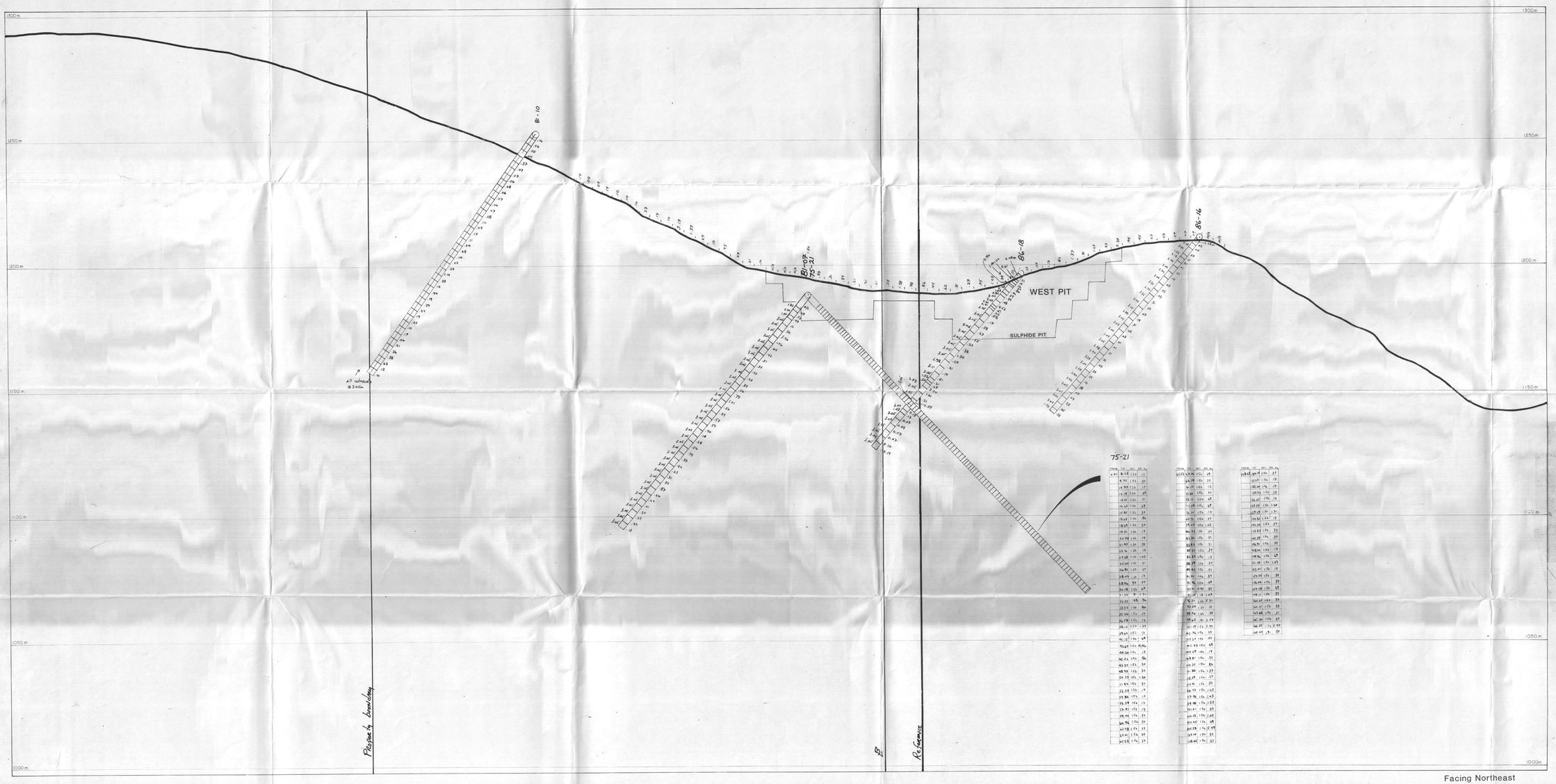
ANTONIUK PROPERTY

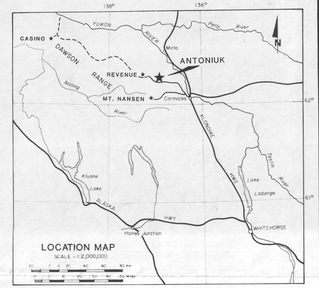
PERMIAN RESOURCES LTD.
NORDAC MINING CORPORATION

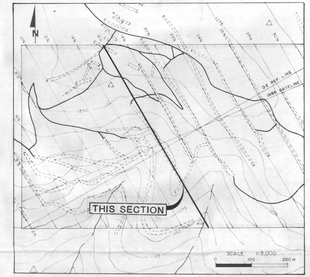
SCALE 1:500

0 5 10 15 20 25 30 35 40 45 50 Metres

To accompany report dated November 1986







LEGEND

DRILL CORE SAMPLE,
Interval as marked (in meters)
Assays in grams/tonne

TRENCH SAMPLE,
4.5 Meter Interval
Assays in grams/tonne

FIGURE 6A

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

DRILL SECTION 16N - ASSAYS

ANTONIUK PROPERTY

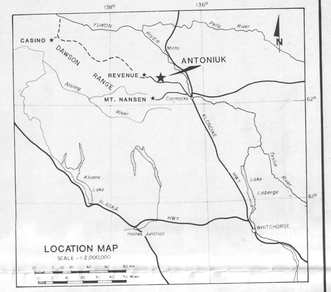
PERMIAN RESOURCES LTD.
NORDAC MINING CORPORATION

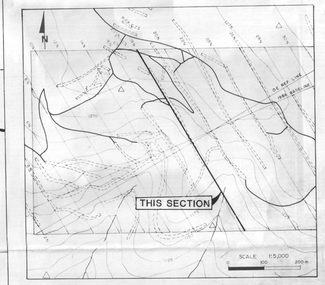
SCALE 1:500

0 5 10 15 20 25 30 35 40 45 50 Metres

To accompany Report dated November 1986

Facing Northeast





LEGEND

DRILL CORE SAMPLE,
Interval as marked (in meters)
Assays in grams/tonne

TRENCH SAMPLE,
4.5 Meter Interval
Assays in grams/tonne

FIGURE 6B

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

DRILL SECTION 18N – ASSAYS

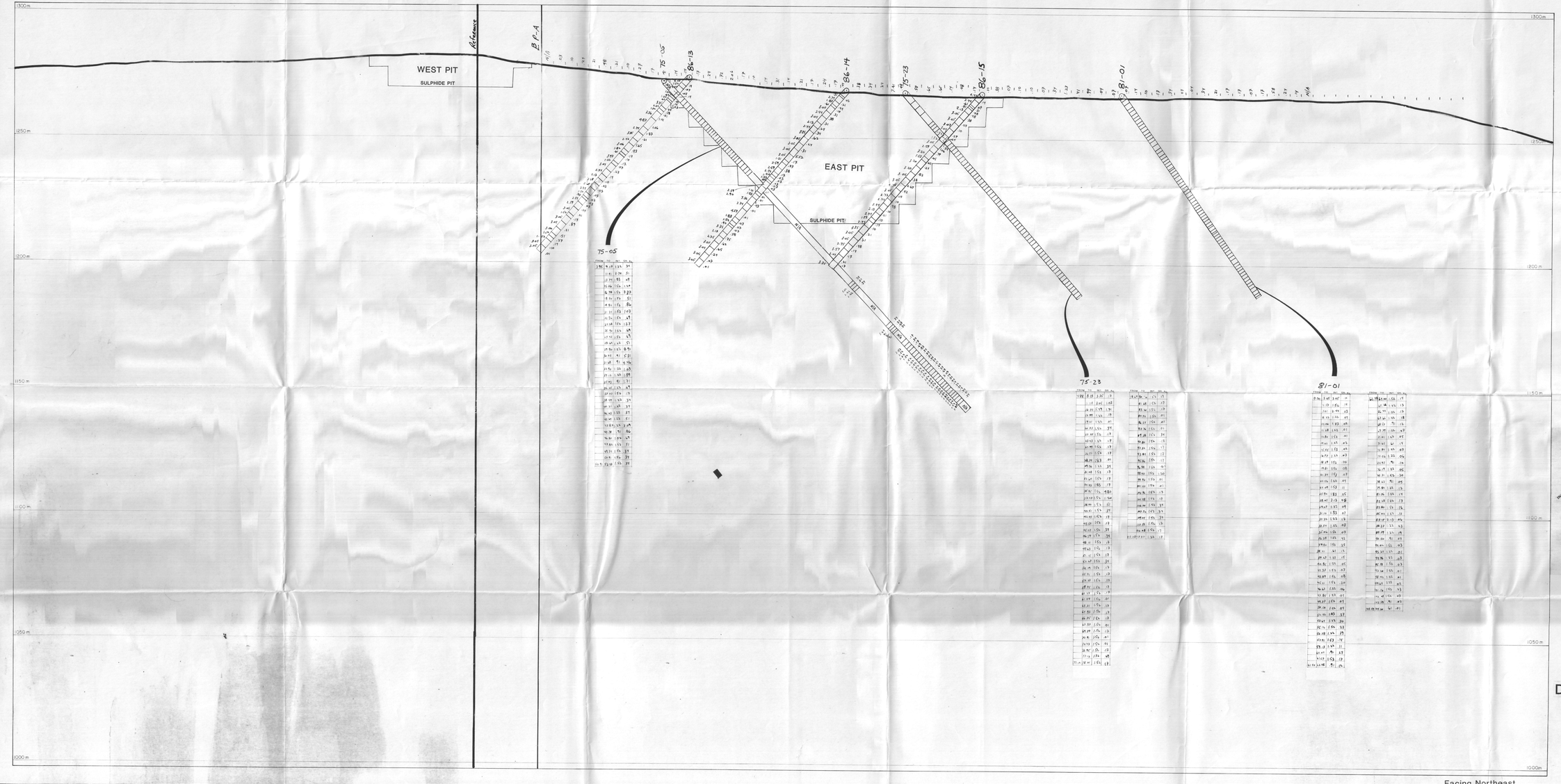
ANTONIUK PROPERTY

PERMIAN RESOURCES LTD.
NORDAC MINING CORPORATION

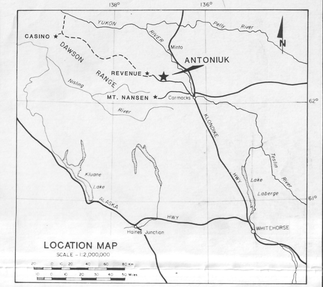
SCALE 1:500

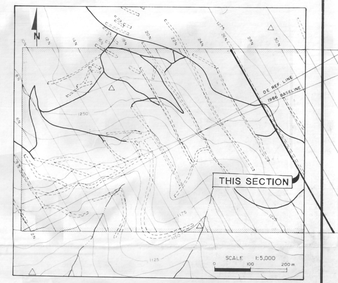
0 5 10 15 20 25 30 35 40 45 50 Metres

To accompany report dated **November 1986**



Facing Northeast





LEGEND

DRILL CORE SAMPLE,
Interval as marked (in meters)
Assays in grams/tonne

TRENCH SAMPLE,
4.5 Meter Interval
Assays in grams/tonne

FIGURE 6F

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

DRILL SECTION 26N – ASSAYS

ANTONIUK PROPERTY

PERMIAN RESOURCES LTD.
NORDAC MINING CORPORATION

SCALE 1:500
0 5 10 15 20 25 30 35 40 45 50 Metres

To accompany report dated November 1986

D.D.H. GEOMANAGEMENT LTD. 86-025

REPORT

ON THE

1985 EXPLORATION PROGRAM CONDUCTED

ON THE ANTONIUK PROPERTY, MOUNT FREEGOLD AREA,

YUKON TERRITORY

FOR

PERMIAN RESOURCES LTD.
203–1285 West Pender Street
Vancouver, B.C.
V6E 4B1

By

D.A. HOWARD, M. Sc., P. Eng.

Property Location
62° 16' N., 137° 05' W.
N.T.S. 115-I-6
Yukon Territory

27 November 1985

422 - 470 Granville Street, Vancouver, B.C. Canada V6C 1V5 • Telephone (604) 681-4413

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SUMMARY

The Permian Resources Ltd. Mount Freegold property held under option from Archer, Cathro & Associates (1981) Limited consists of 7 leased claims located on the southern flank of Mount Freegold which is located 45 kilometres northwest of Carmacks, Yukon Territory (62°16'N, 137°05'W).

The property is underlain by coarse grained hornblende syenite which is successively intruded by a Jurassic unfoliated hornblende granodiorite, a porphyritic granite, a Tertiary complex multiphase feldpsar porphyry stock and a younger Tertiary andesite dyke set.

Soil geochemical and geophysical surveys conducted over the area during 1974 and 1980-81 by Discovery Mines Ltd. and Arctic Red Resources Corp. respectively outlined a large gold-arsenic anomaly in the vicinity of the complex multi-phase feldspar porphyry stock. Diamond drill programs in 1975 and 1981 totalling 7,737 feet (2,358 metres) in 17 holes partially defined a number (at least 7) of gold bearing zones within the gold-arsenic anomaly that were associated with brecciated portions of the feldspar porphyry stock and to a lesser degree, with the enclosing syenite and granodiorites where brecciation has taken place.

A tabulation of diamond drill holes from the 1975 and 1981 programs shows 25 mineralized intersections in 15 holes that range in width from 5 feet (1.52 metres) to 120 feet (36.58 metres) with a weighted average grade of 0.042 ounces per ton gold. Minor silver values are also present. The range of gold assays (all by fire assay) is from 0.005 to 0.77 ounces gold per ton over sample intervals of 3 to 10 feet (1-3 metres).

Extensive trenching and 610 metres (2000 feet) of percussion drilling (8 holes) completed during 1985 further defined the distribution, extent and grade of the mineralized zones. The gold mineralized zones appear to have a northerly strike with some variation and a near vertical dip. The gold zones appear to be associated with and sometimes bound by north trending shear or breccia zones. The width of each zone is variable, but appears to range between 5 metres (15 feet) and 46 metres (150 feet) true width. The widths may be wider in some cases where the strike direction is not defined.

In order to show the heap leach gold potential of the property, a small area containing the most contiguous higher grade mineralized sections (greater than 0.020 ounces gold per ton) was defined and a mineral inventory calculated (not to be confused with ore reserves) to be 21,120 tons per vertical foot. The average grade based on all assays (trench and percussion drilling) within the area defined for the Mineral Inventory is 0.027 ounces gold per ton (no cut-off). For comparative purposes, the average grade of the percussion drill samples is 0.029 ounces gold per ton (no cut-off). With a cut-off of 0.020 ounces gold per ton, the higher grade intersection from the percussion drilling (6 holes only - P-1 through P-6) averaged 0.043 ounces gold per ton, which is the same value obtained from the average of all the higher grade intercepts from the trenching.

When P-7 and P-8 are included in the above, the average grade raises to 0.048 ounces gold per ton. The area containing holes P-7 and P-8 is only partially tested, but appears to have a good size and grade potential as can be seen from Trench 24 North which contains one intersection of 73 metres (240 feet) averaging 0.076 ounces gold per ton.

In conclusion, a mineralized zone has been partially defined by trenching and drilling. A portion of the mineralized zone contains a mineral inventory of 21,120 tons per vertical foot with an indicated average grade of 0.027 ounces gold per ton. Within the mineral inventory area, there are higher grade vertical dipping sections with widths of 5 - 46 metres which are associated with grades of 0.040 to 0.045 ounces gold per ton. Further evaluation is warranted to define grade and tonnage of the near surface mineralization. A grid drilling program coupled with metallurgical testing has been recommended. The estimated cost of this program is $327,000.00.

INTRODUCTION

The firm of D.D.H. Geomanagement Ltd. was initially retained in May, 1985 by Permian Resources Ltd. to evaluate the exploration and heap leach potential of the near surface gold mineralization on its Antoniuk property (previously called Mount Freegold property) in the Mt. Freegold area of the Yukon.

This initial assignment was accomplished by reviewing several reports which included drill logs, geology, geochemical and geophysical maps which were originally compiled for Arctic Red Resources Corp. by Archer, Cathro & Associates Ltd., who were under contract to Arctic Red prior to optioning the property themselves from Discovery

FIGURE I

PERMIAN RESOURCES LTD.

ANTONIUK PROJECT

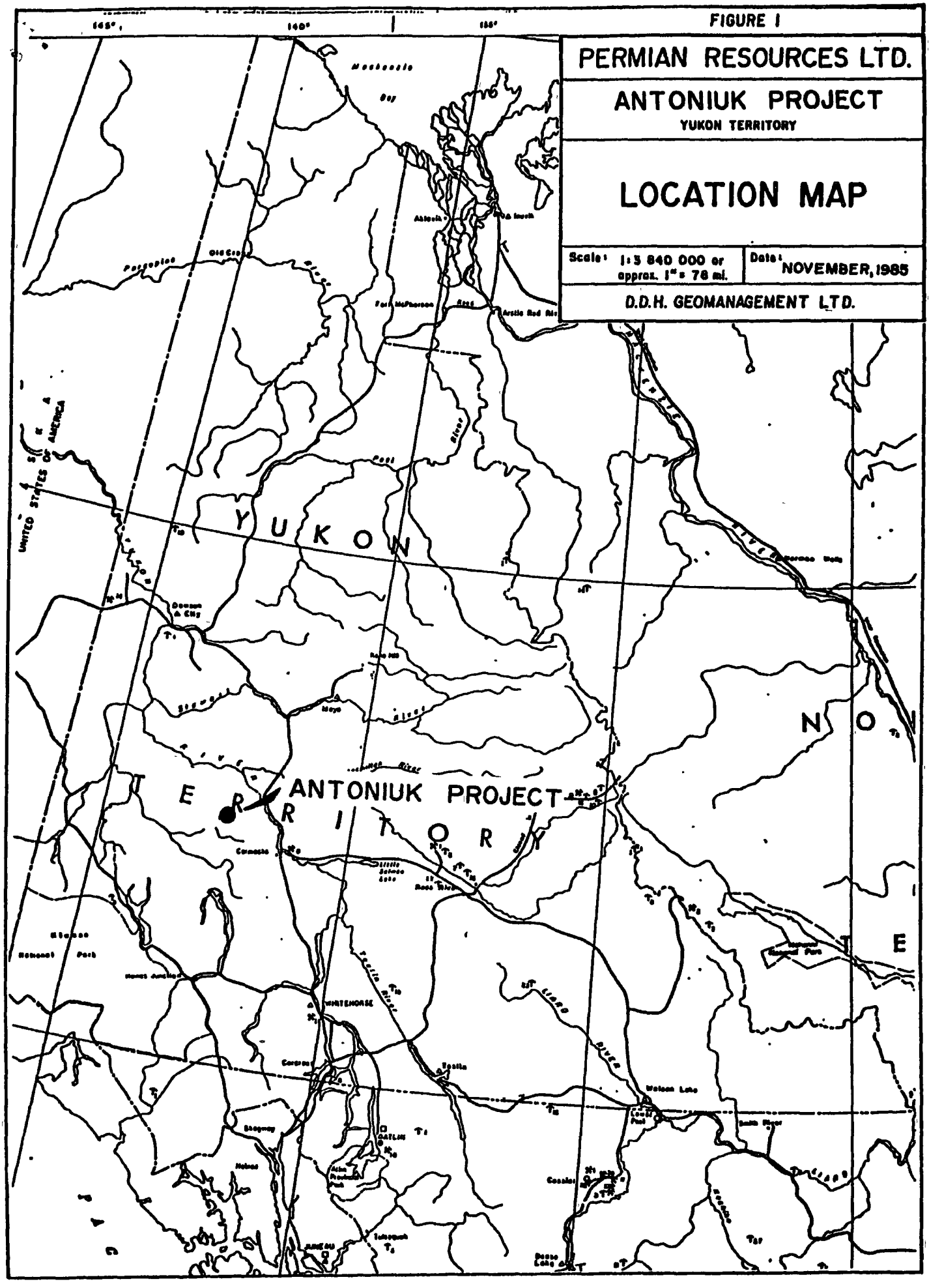
YUKON TERRITORY

LOCATION MAP

Scale: 1:3 840 000 or approx. 1" = 78 mi.

Date: NOVEMBER, 1985

D.D.H. GEOMANAGEMENT LTD.



Mines Ltd. Additional information was available to the writer from personal data obtained by the writer during several years of working on adjoining properties (Granite Mountain, 1966-67; Tinta Hill, 1967, 1981-82).

A report by the writer for Permian Resources Ltd. recommending a $200,000.00 program of trenching and percussion drilling was submitted on June 10, 1985. During the 1985 field season, the recommended work program was carried out under the management of Archer, Cathro & Associates (1981) Limited. The present report is based on the results of the 1985 work program and a property examination by the writer on August 10 and 11, 1985.

Some of the contents of this report will be reproduced from the June 10, 1985 report particularly those sections covering the status of things that do not change, i.e. location, history, etc.

PROPERTY AND TITLE

The Permian Resources Ltd. Antoniuk property (Figures 1 and 2) is held under an option agreement dated May 7, 1985 from Archer, Cathro & Associates (1981) Limited who, in turn, hold the property under option from Discovery Mines Ltd. (Discovery Mines Ltd. is controlled by Rayrock Resources Ltd.). The Antoniuk property consists of seven (7) claims which were surveyed and which have been taken to 21 year lease, and 34 located mineral claims and fractions which were acquired by staking during 1985 as listed below. Assessment work completed during 1985 will be used to extend the expiry date of the Nat claim for another 4 or 5 years.

Leased Claim Name	Lease Number	Expiry Date
Mayflower	790	March 19, 2001
Donalda 1	812	"
Donalda 2	813	"
Donalda 3	814	"
Donalda 7	818	"
Donalda 9	820	"
Donalda 13	821	"

Mineral Claims	Claim No.	Expiry Date
Nat 1-29	YA86843-YA86871	June 5, 1986
Nat 30F-33F	YA93013-YA93016	August 12, 1986

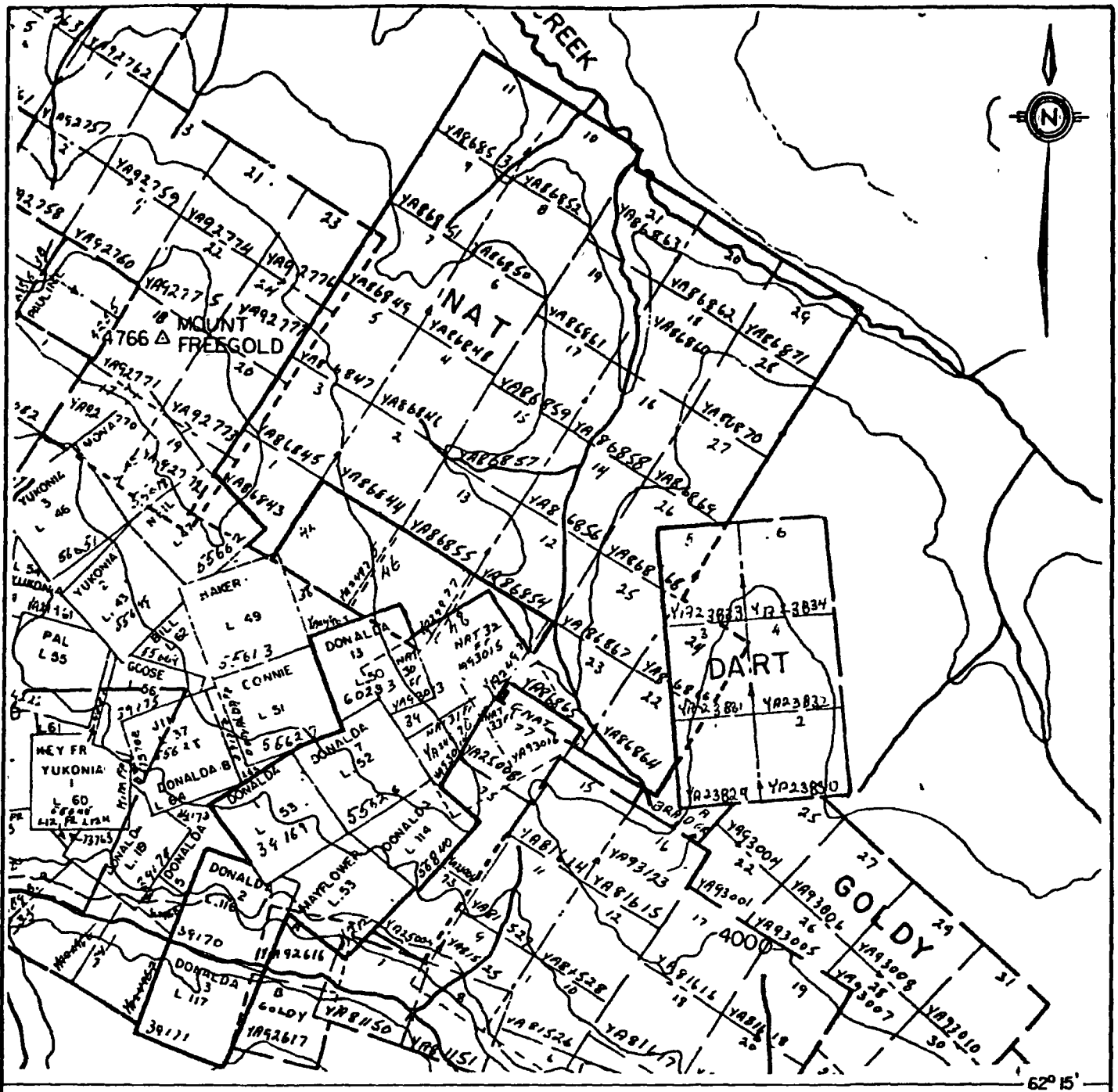


FIGURE 2

PERMIAN RESOURCES LTD.	
ANTONIUK PROJECT YUKON TERRITORY	
CLAIM MAP MODIFIED FROM CLAIM SHEET 115-1-6	
Scale: 1: 31 680 or 1" = 1/2 mi.	Date: NOVEMBER, 1985
D.D.H. GEOMANAGEMENT LTD.	

LOCATION, ACCESS, TOPOGRAPHY AND CLIMATE

The Permian Resources Ltd. Antoniuk property is located 45 kilometres (28 miles) northwest of Carmacks, Yukon at 62° 16'N, 137° 05'W on the southeast flank of Mount Freegold (claim map sheet 115-I-6).

Access to the property is via a well maintained (summer only) gravel road that starts at Carmacks, Yukon Territory, a distance of 64 kilometres (40 miles).

Topography in the area is subdued with minimum rock exposure, which is typical of the unglaciated Dawson Range. South-facing slopes are normally free of permafrost, at least in areas that are well drained. Elevations on the property range from 944 metres (3,100 feet) to 1,280 metres (4,200 feet).

Temperature and precipitation records are not available for the property, but from records of other locations in the same general area it can be demonstrated that there is at least a 5 month period when the daily mean temperature does not drop below the freezing point.

HISTORY

Mr. P.F. Guder is credited with the discovery of lode gold in the Mount Freegold area in 1930. His discovery caused a stampede during the period 1930-31 when over 100 claims were staked in the area (Bostock, 1936). After the initial flurry, activity waned until the winter of 1934-35 when N.A. Timmins Corporation acquired most of the claims, built a winter road and began development on the Laforma group (portion of adjoining claims to the Permian property) only to abandon its holdings in the spring of 1935 (Bostock, 1956).

The various properties continued to change hands with minor development and some mining until the main claim group (Permian option contains 7 claims which are part of the original larger property) was acquired by Ormsby Mines Ltd. (later reorganized into Discovery Mines Ltd.) (Archer, 1980). Discovery Mines Ltd. developed the G-3 vein, constructed a mill and processed 9,538 tons of "ore" in the period 1963-1966 when the operation was forced to close. No further work was done on the property

until 1974 when Discovery Mines Ltd. conducted a soil geochemical survey over the property and discovered the broad gold-arsenic anomaly over the quartz-feldspar porphyry complex which underlies the present Permian Resources Ltd. property. In 1975, 9 diamond drill holes (4,169 feet) were drilled on the anomaly by Discovery Mines Ltd.

In May 1980, Arctic Red Resources Corp. optioned the entire Discovery Mines Ltd. holdings in the Mount Freegold area. During the period 1980-81, Arctic Red Resources Ltd. conducted a program of soil sampling, geophysical surveying, geologic mapping and diamond drilled 9 holes totalling 1,087 (3,568 feet) over the portion of the property now held by Permain Resources Ltd. Arctic Red Resources Corp. dropped its option (date unknown) on the block of claims now held by Permian Resources Ltd., but retained the adjoining claims.

REGIONAL GEOLOGY

Geologic mapping (Figure 3) by Bostock (1936) and Tempelman-Kluit (1984) show the Mt. Freegold area to be structurally very complex. The oldest rocks exposed in the area are metasediments and the Jurassic Big Creek Syenite (Templeman-Kluit, 1984). The coarse grained syenite is gradational with the foliated hornblende granodiorite phase of the Klotassin Batholith which forms the core of the Dawson Range (Templeman-Kluit, 1974). Locally, the coarse grained syenite appears to cut the foliated hornblende granodiorite (Archer and Carne, 1981).

The foliated hornblende granodiorite is intruded by an unfoliated hornblende granodiorite and other related granitic rocks of Jurassic age. The above intrusive/metamorphic package has been intruded by small dykes and stocks of feldspar porphyry and quartz-feldspar porphyry of Eocene age.

Basalt, andesite and felsite tuffs unconformably overlie the older rocks elsewhere in the district.

Gold mineralization appears for the most part to be associated with the early Tertiary intrusive event including the gold mineralization on the Permian Resources Ltd. option.

FIGURE 3

PERMIAN RESOURCES LTD.

ANTONIUK PROJECT

YUKON TERRITORY

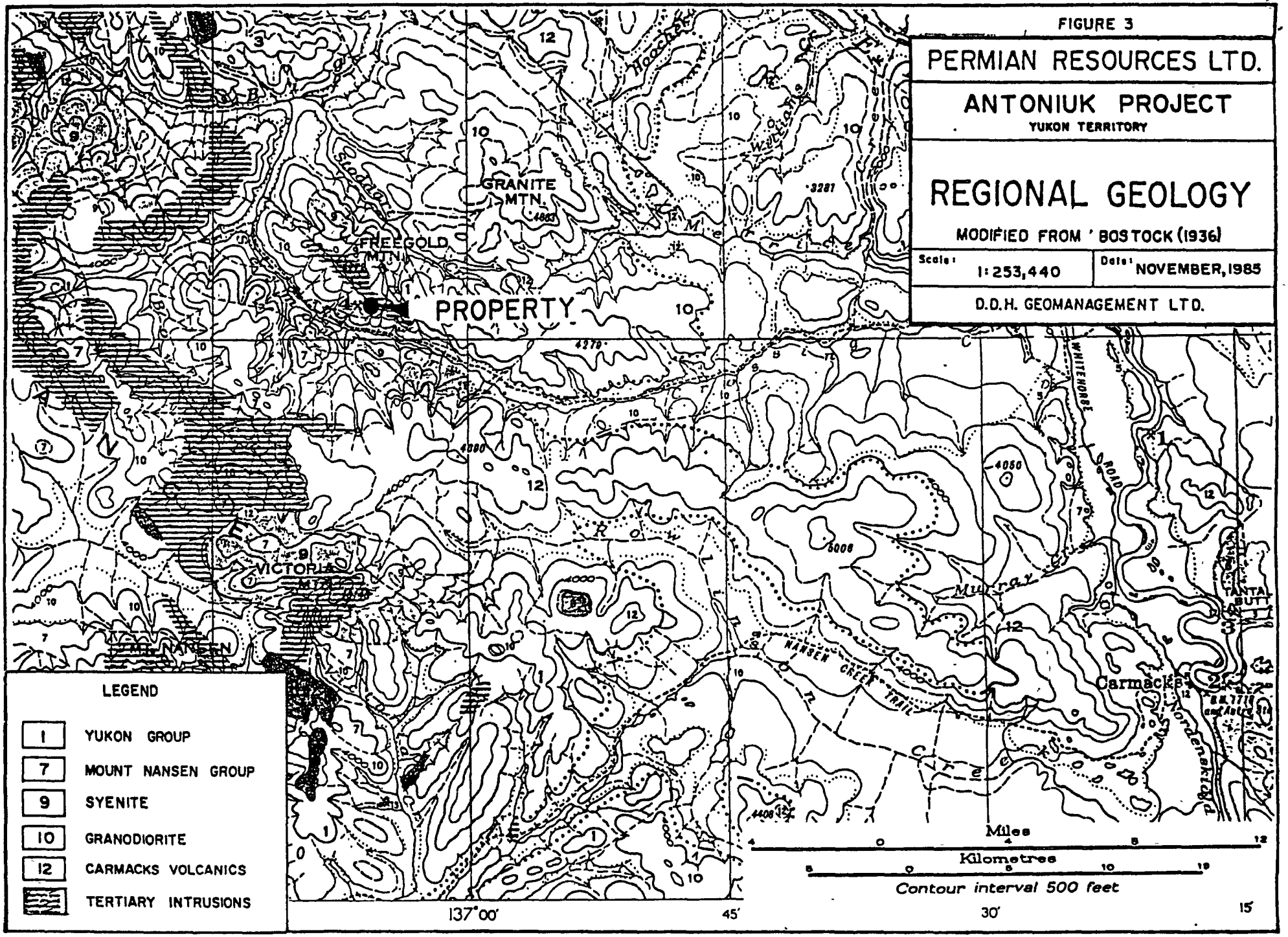
REGIONAL GEOLOGY

MODIFIED FROM ' BOSTOCK (1936)

Scale: 1:253,440

Date: NOVEMBER, 1985

D.D.H. GEOMANAGEMENT LTD.



Major northwest trending faults with associated north to northeast trending cross faults are fairly common in the district. The main gold veins in the Freegold district (G-3, Rambler) are associated with the cross structures.

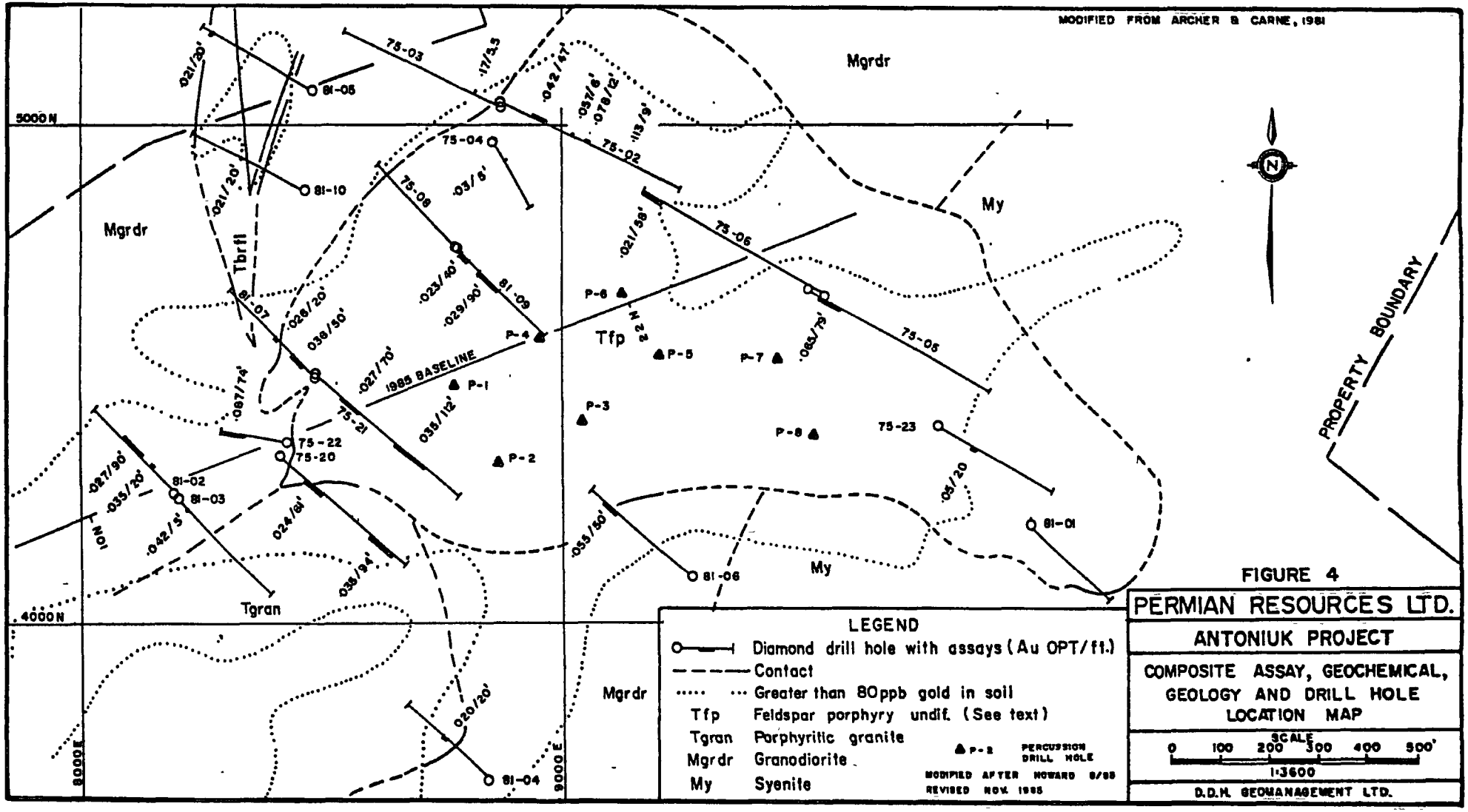
PROPERTY GEOLOGY

The Permain Resources Ltd. Mt. Freegold property is underlain by coarse grained hornblende syenite (My) which is intruded by Jurassic unfoliated hornblende granodiorite (Mgrdr). Both rock types have been intruded by a Tertiary complex multi-phase feldspar porphyry (Tfp) intrusions (both dykes and a stock) of varying compositions (Figure 4). The main Tertiary intrusion forms a triangular shaped stock with maximum north-south dimension of 396 metres (1,300 feet) and maximum east-west dimension of 488 metres (1,600 feet). Contacts between the porphyry complex and the enclosing rocks are brecciated as are the contacts between varying phases within the complex.

Detailed geologic mapping by Archer, Cathro (1981) Limited, based on limited outcrops, float and drill hole projections, identified 6 distinct rock types associated with the Tertiary porphyry complex. The internal rock type details are omitted from the writer's geologic map (Figure 4) because of scale, but are listed as follows because there appear to a positive correlation between rock types and the presence of gold mineralization. The composition of the Tertiary feldspar porphyry stock (Figure 4) is as follows:

Rock Type (Feldspar Porphyry Complex Tfp) - Brief Description of diagnostic characteristics:

1) Felsite (TFLST) - Light coloured, very fine grained
2) Brecciated Felsite (TBRFL) - Developed near contacts, contains fragments of granodiorite and syenite
3) Quartz Porphyry (TPPQZ) - 1-5% fine grained quartz phenocrysts
4) Feldspar Porphyry (TPPFL) - fine grained euhedral feldspar phenocrysts
5) Feldspar-Quartz Porphyry (TPPFQ) - dark green colour
6) Quartz-Feldspar-Biotite-Hornblende Porphyry (TQFBX) - quartz feldspar, biotite, and hornblende phenocrysts


MODIFIED FROM ARCHER & CARNE, 1981
5000N
4000N
8000E
9000E
Mgrdr
My
Tbrfl
Tfp
Tgran
1985 BASELINE
PROPERTY BOUNDARY
81-01
81-02
81-03
81-04
81-05
81-06
81-07
81-08
81-09
81-10
75-02
75-03
75-04
75-05
75-06
75-20
75-21
75-22
75-23
P-1
P-2
P-3
P-4
P-5
P-6
P-7
P-8
.021/20'
.171/33
.042/47'
.057/6'
.078/12'
.113/19'
.03/5'
.021/38'
.023/40'
.029/30'
.026/20'
.038/50'
.027/70'
.087/74'
.035/112'
.083/75'
.027/90'
.035/20'
.042/5'
.024/61'
.035/94'
.055/50'
.05/20
.020/20'
N10W
N22W
LEGEND
Diamond drill hole with assays (Au OPT/ft.)
Contact
Greater than 80ppb gold in soil
Tfp Feldspar porphyry undif. (See text)
Tgran Porphyritic granite
Mgrdr Granodiorite
My Syenite
P-2 PERCUSSION DRILL HOLE
MODIFIED AFTER HOWARD 8/85
REVISED NOV. 1985
FIGURE 4
PERMIAN RESOURCES LTD.
ANTONIUK PROJECT
COMPOSITE ASSAY, GEOCHEMICAL, GEOLOGY AND DRILL HOLE LOCATION MAP
SCALE
0 100 200 300 400 500'
1:3600
D.D.H. GEOMANAGEMENT LTD.

The brecciated felsite (unit 2 above) is the host rock for slightly less than 50 percent of the mineralized drill intersections (see Table 1). Detailed mapping in 1985 may change this percentage. (Data not available for this report.)

A porphyritic granite (Tgran) was included in the above list of rock types associated with the Tertiary complex by Archer, Cathro (1981) Limited, but from map relationships (see Figure 4) and knowledge of a similar rock type elsewhere in the area, it is the writer's opinion that the porphyritic granite is a phase of the unfoliated hornblende granodiorite and therefore much older.

Dark green andesite dykes of the Mount Nansen group intrude most of the older rock units and are sometimes mineralized in part.

The compilation of the 1985 geologic mapping is not included in this report because field data is still being evaluated. Prior studies of the diamond drilling and geologic mapping were inconclusive in determining the attitude of the mineralized intersections. It was previously suggested (Howard, 1985) that the apparent major structural direction controlling mineralization was northeast with a possible north-south component.

During the writer's field examination in August, 1985 the trenching was nearly complete and some trench assays had been received. By correlating assay results with their location in Trench No. 18N it appeared that the higher grade gold mineralization was bounded on both sides by a fault/breccia zone trending N 10 E - vertical. Similar structures were noted in other trenches, but were not always associated with higher grade mineralization. A comparison of higher grade (greater than 0.020 ounces per ton gold) intersections on the percussion drill sections and surface assays seems to indicate that the mineralized zones are essentially vertical.

The fault/breccia zones were commonly bleached (moderate intense alteration), but contained very little gouge. Limonite content in the mineralized area is variable and appears to be related to rock type. Disseminated pyrite is quite common in the area particularly in the granodiorite and within the core of larger feldspar porphyry fragments.

Brecciation in the mineralized zone is quite variable on a small scale, but the entire mineralized zone may be a macro-breccia, i.e. very large blocks.

TABLE 1

MINERALIZED INTERVAL SUMMARY

Hole No.	Collar Elev.	Bearing	Dip	From	To	Major Rock Type	Alteration	Structure	Gold oz/t	Silver oz/t	Gold Range From	Gold Range To	Interval Width	Au x W
R-75-02	4220	115	-45	101	148	TBRFL	mod. kaol	slight breccia	0.042	0.125	0.005	0.18	47	1.974
				230	236	TBRFL	minor argillic	breccia	0.057	0.09	0.035	0.08	6	0.342
				279.5	292	TBRFL	minor kaolin	breccia/fault	0.078	0.113	0.03	0.105	12.5	0.975
				398	407	TFLST	mod. argillic	—	0.113	0.10	0.10	0.13	9	1.017
R-75-03	4219	295	-45	93.9	99.4	TPPQZ	intense kaol.	breccia	0.17	0.15	0.02	0.39	5.5	0.935
R-75-04	4211	150	-55	70	75	TBRFL	minor kaol	breccia	0.03	0.10	0.03	0.03	5	0.15
R-75-05	4187	130	-45	40	119	TBRSY/ANDS	intense kaol	breccia	0.065	0.33	0.015	0.26	79	5.135
R-75-06	4185	310	-45	550	608	TBRFL	intense kaol	breccia	0.021	0.13	0.01	0.065	58	1.218
R-75-20	3833	130	-50	116	177	KGRAN	mod. kaol	—	0.024	0.057	0.005	0.16	61	1.464
				383	477	KGRAN	intense kaol	—	0.035	0.09	0.05	0.18	94	3.290
R-75-21	3906	130	-45	95	165	TBRGD	mod. kaol	breccia	0.027	.06	.005	.05	70	1.89
	3906	130	-45	300	412	TBRGD/BREL	mod. prop.	breccia	0.035	.089	0.01	0.155	112	3.920
R-75-22	3833	280	-45	128	202	TGRDR	minor argillic	near contact	0.087	0.116	0.005	0.77	74	6.438
R-75-23	4169	120	-45	13	133	TBRFL	mod. kaol	breccia	0.05	1.39	0.01	0.14	20	3.500
AR81-01	4172	135	-50			TFLST		no values >0.015					-	
AR81-02	3829	315	-50	100	120	TGRDR	minor argillic	—	0.035	0.03	0.005	0.091	20	0.700
				155	245	TGRDR	mod. inten. kaol	—	0.027	0.038	0.007	0.046	90	2.43
AR81-03	3829	135	-50	40	45	TGRDR	minor kaol		0.042	0.007	0.42	0.042	5	0.201
AR81-04	4202	315	-50	180	200	TGRAN	mod. kaol		0.020	0.016	0.013	0.027	20	0.400
AR81-05	4020	295	-50	360	380	TBRFL	mod. kaol	breccia/contact	0.021	0.084	0.014	0.028	20	0.420
AR81-06	3987	315	-50	310	360	TBRFL	prop/argillic	breccia/fault	0.055	0.079	0.016	0.118	50	2.750
AR81-07	3907	315	-50	50	100	TBRFL/FLST	mod. kaol	breccia/contact	0.036	0.032	0.012	0.100	50	1.800
				160	180	TBRGD	minor kaol	breccia/contact	0.026	0.033	0.023	0.029	20	0.520
AR81-08	4127	315	-50					no values >0.015					-	
AR81-09	4127	135	-50	20	60	TBRFL	mod. kaol	breccia	0.023	0.042	0.01	0.041	40	0.920
				100	190	TBRFL	minor kaol	breccia	0.029	0.075	0.003	0.074	90	2.610
AR81-10	4125	295	-50	230	250	TBRFL	intense argillic	breccia	0.021	0.004	0.01	0.033	20	0.420
													1078	45.028

Weighted Average Gold Content - 0.042 OPT

MINERALIZATION

Gold mineralization occurs as free gold (at least locally) in association with pyrite, stibnite, jamesonite, arsenopyrite and unidentified sulfosalt minerals, although this combination of sulphides is not always present at every location. Based on the diamond drilling, the high sulphide (2-5 percent) zones which contain gold, are usually associated with quartz vein stockworks in breccia zones near or at contacts between the various rock units. The vein quartz is commonly vuggy and range in width from less than 5 mm to 300 mm (12 inches). Disseminated pyrite and/or arsenopyrite is common in most rock types, but does not always contain gold mineralization. Limonite is commonly developed to below 200 feet (61 metres) throughout the area although sulphides are usually always present.

Hydrothermal alteration varies in intensity and type in the mineralized zones and does not appear to be a good guide to gold content. Table 1 summarized the various correlations between rock types, alteration, structure and gold content in the 1975 and 1981 diamond drill holes. Based on the 1975 and 1981 diamond drilling, the average weighted gold content of all mineralized intersections is 0.042 ounces per ton with a range of values from 0.005 ounces per ton to 0.77 ounces per ton. The mineralized intervals ranged from 5 to 120 feet (1.52 to 36.6 metres) and have an average width of 43 feet (13.1 metres).

A total of 27 trenches dug during the 1985 field season were sampled at 15 foot (4.6 metre) intervals. The composited gold assay results greater than 0.020 ounces per ton are shown on Figure 5. The weighted average grade of all mineralized intersections greater than 0.020 ounces per ton from all the trenches is 0.043 ounces gold per ton.

Eight 250 foot (76.2 metre) percussion holes (see Figures 6, 7, 8 & 9) were drilled in the trenched area. The weighted average gold assay grade of all the higher grade mineralized sections (10 feet sample interval - 3 metres) greater than 0.020 ounces per ton is 0.048 ounces per ton. (Based on 76 out of 200 samples.) The weighted average grade of all drill samples is 0.029 ounces gold per ton.

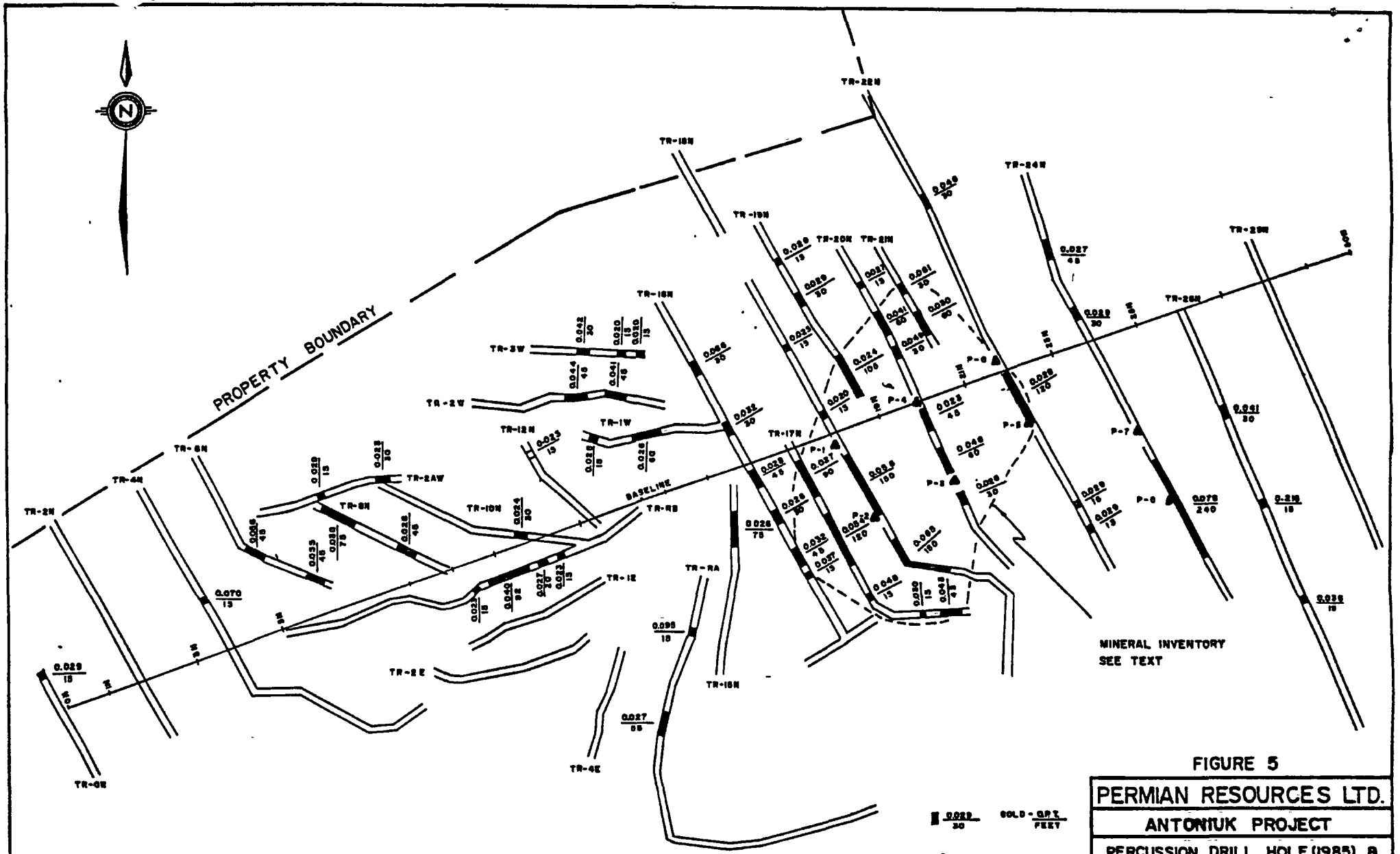


FIGURE 5

PERMIAN RESOURCES LTD.

ANTONIUK PROJECT

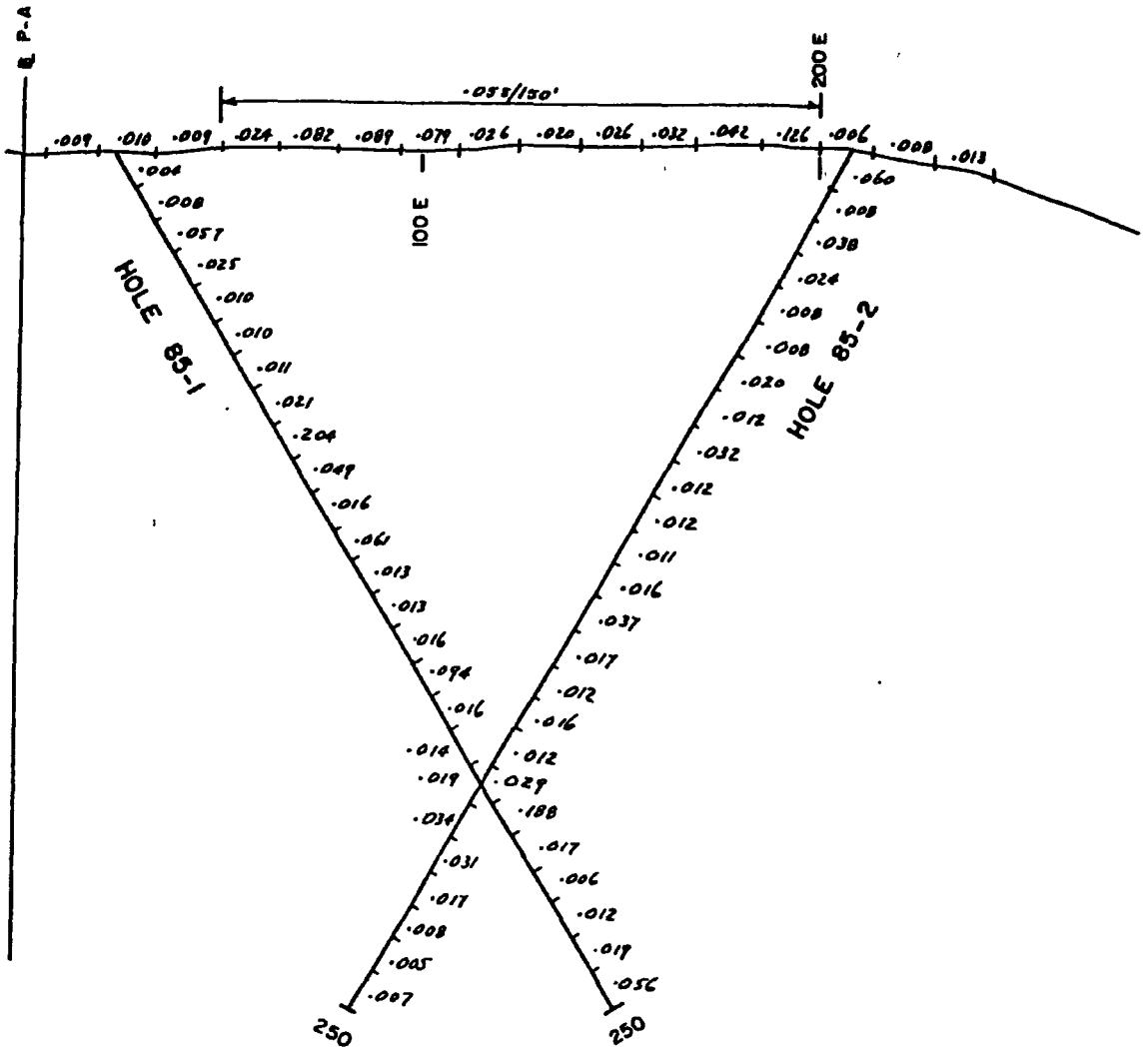
PERCUSSION DRILL HOLE (1985) & TRENCH LOCATION MAP WITH COMPOSITE ASSAYS

SCALE

0 100 200 300 400 500 Ft.

1:3600

D.D.H. GEOMANAGEMENT LTD.



0 50 100 Feet

SCALE 1:600
MODIFIED FROM ORIGINIAL

Assays in oz/ton Au by fire assay
at Chemex Labs, Vancouver

INCLUDED BY PERMISSION

FIGURE 6

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

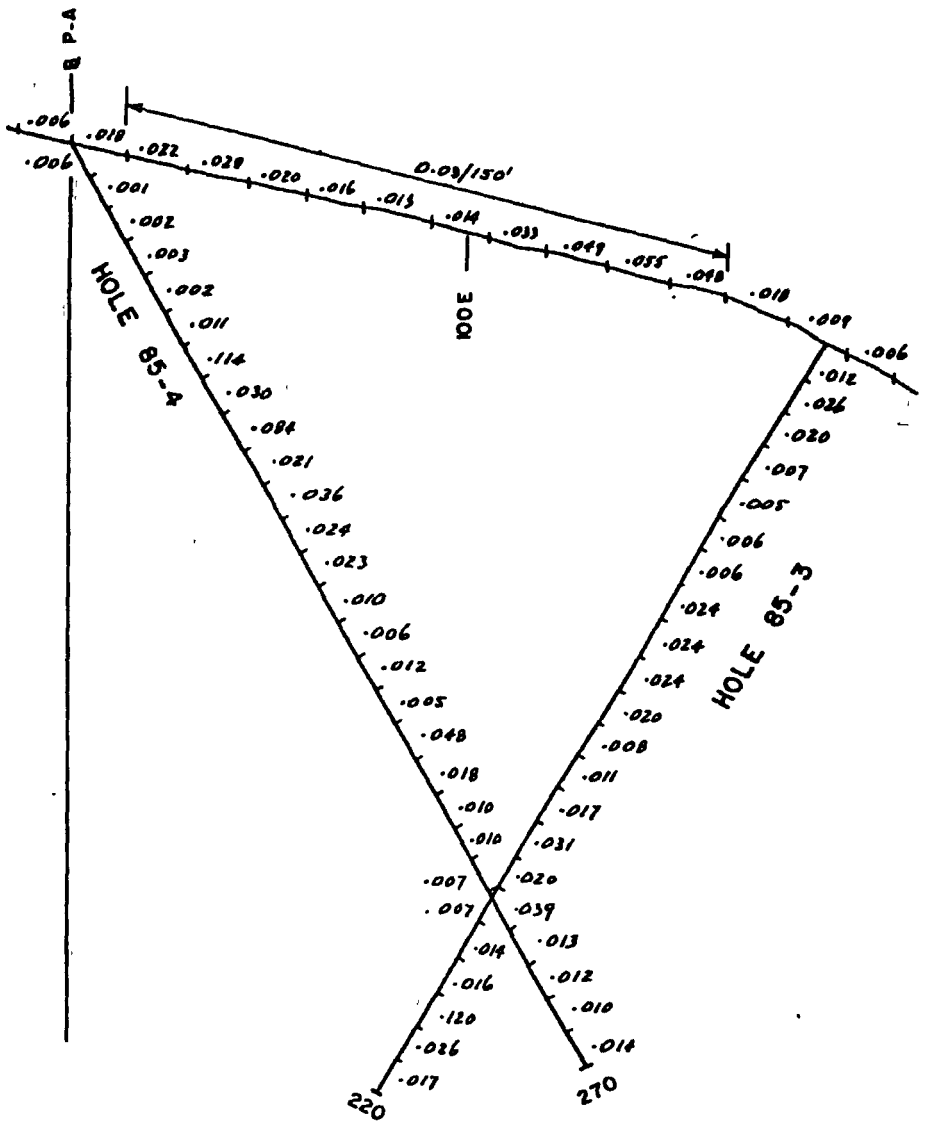
VERTICAL CROSS-SECTION

HOLES 85-1 & 85-2

TRENCH 18N

ANTONIUK DEPOSIT- MT. FREEGOLD, Y.T.
PERMIAN JOINT VENTURE

August, 1985



0 50 100 Feet

SCALE 1:600
MODIFIED FROM ORIGINIAL

Assays in oz/ton Au by fire assay
at Chemex Labs, Vancouver
INCLUDED BY PERMISSION

FIGURE 7

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

VERTICAL CROSS-SECTION

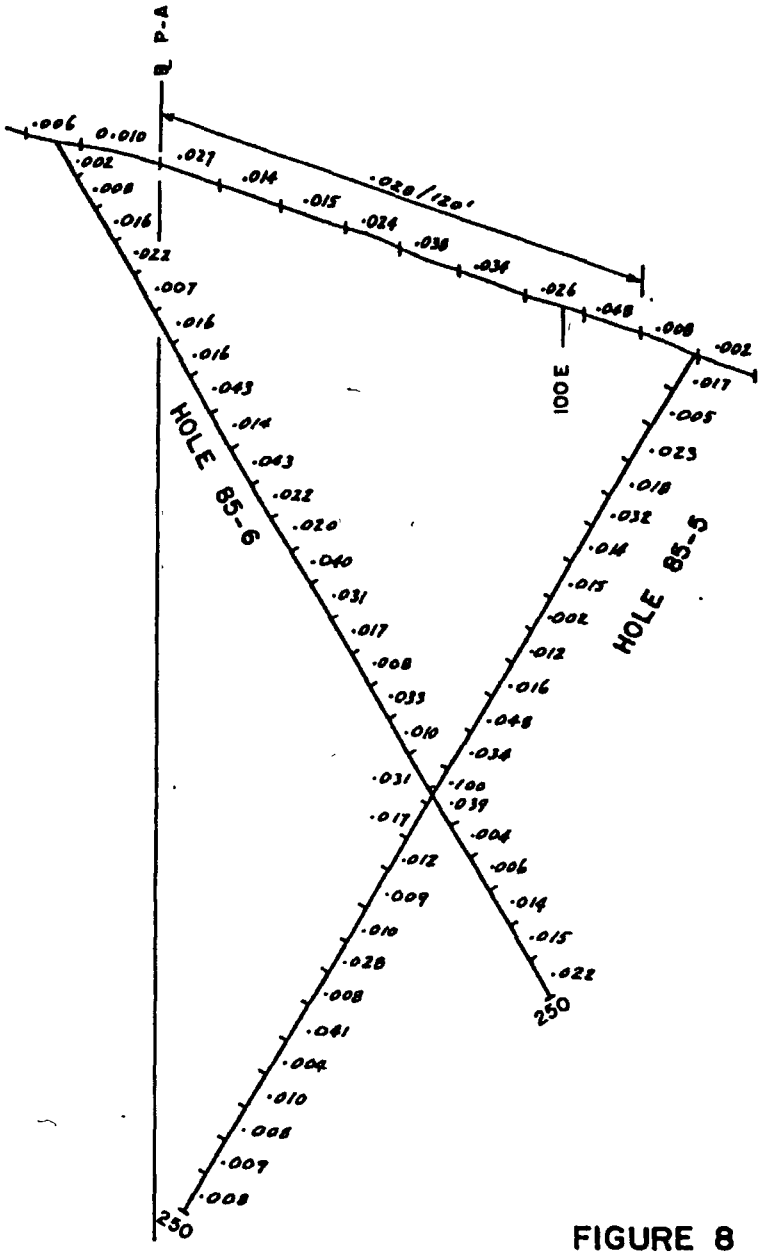
HOLES 85-3 & 85-4

TRENCH 20N

ANTONIUK DEPOSIT - MT. FREEGOLD, Y.T.

PERMIAN JOINT VENTURE

August, 1985



0 50 100 Feet

SCALE 1:600
MODIFIED FROM ORIGINIAL

Assays in oz/ton Au by fire assay
at Chemex Labs, Vancouver

INCLUDED BY PERMISSION

FIGURE 8

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

VERTICAL CROSS-SECTION

HOLES 85-5 & 85-6

TRENCH 22N

ANTONIUK DEPOSIT - MT FREEGOLD, Y.T.
PERMIAN JOINT VENTURE

August, 1985

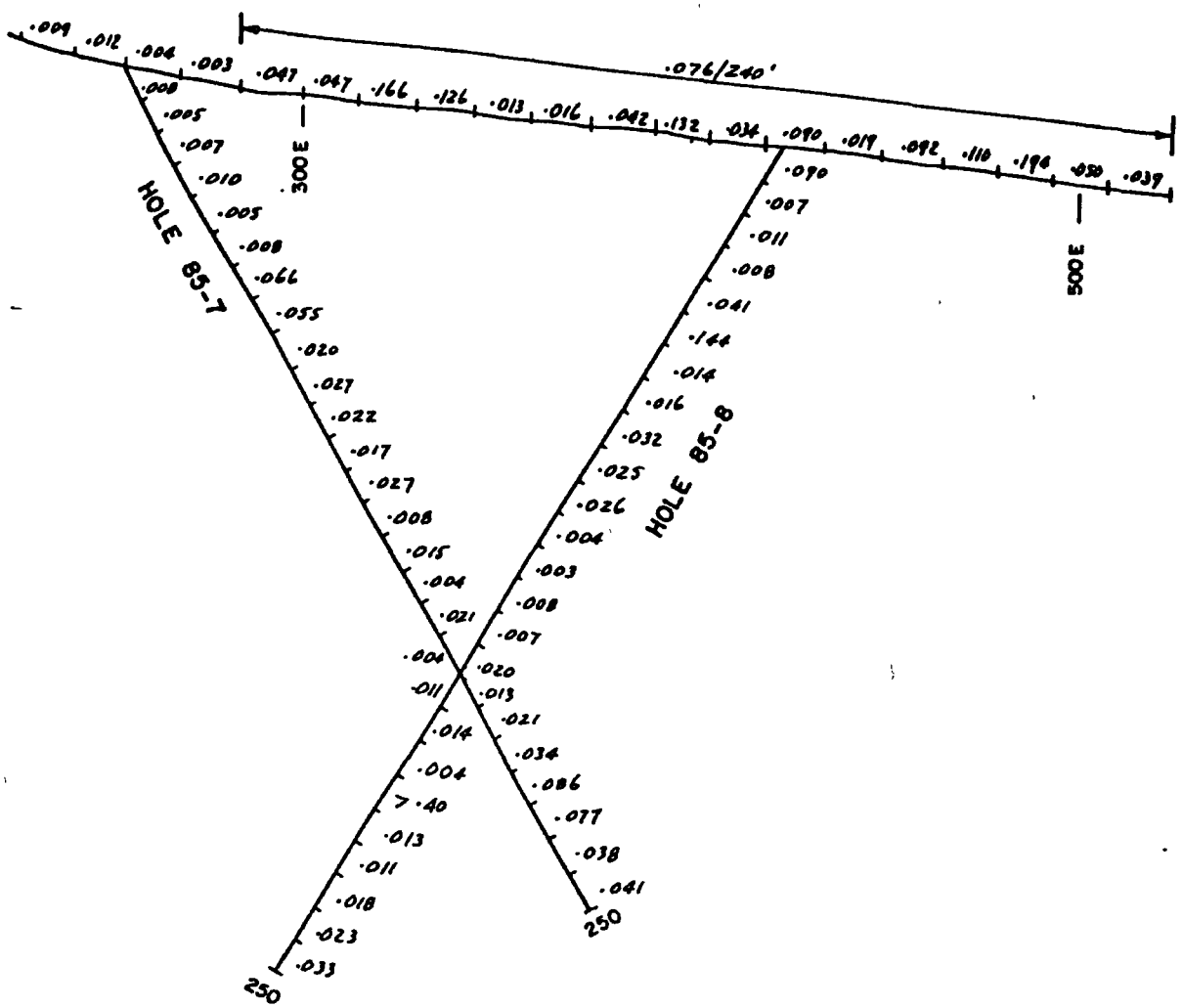


FIGURE 9

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

VERTICAL CROSS-SECTION

HOLES 85-7 & 85-8

TRENCH 24N

ANTONIUK DEPOSIT - MT. FREEGOLD, Y.T.
PERMIAN JOINT VENTURE

August, 1985

0 50 100 Feet

SCALE 1:600
MODIFIED FROM ORIGINIAL

Assays in oz/ton Au by fire assay
at Chemex Labs, Vancouver
INCLUDED BY PERMISSION

A comparison of the trench assays, percussion drill hole assays and 1975 & 1981 diamond drill assays from the plus 0.020 ounce per ton gold mineralized zones show that the average values obtained are very close, i.e. 0.043 vs. 0.048 vs. 0.042 respectively.

A comparison of Figures 4 and 5 will show the high correlation between the higher grade gold intersections in the diamond drilling and in the trenches. It also confirms the vertical nature and northerly trend of the mineralization.

MINERAL INVENTORY

The level of assay information on the Antoniuk property in the writer's opinion is sufficient to be able to make a few general statements on the expected average grade and the tonnage potential of the property. The mineral inventory as described below should not be confused with any type of ore reserve. The purpose of a mineral inventory is to give an early indication of the potential of the deposit and to act as an aid in determining what future exploration work will be required to prove up an economic orebody.

The method used to calculate the mineral inventory of the Antoniuk property consisted of defining the outline of the best contiguous surface mineralization (see Figure 5 for surface area used) and then defining an estimate of the average grade of material one would expect to find within the outlined area. The outlined area contains 264,000 square feet (feet used because of scale of map), which translates into 21,120 tons per vertical foot using a tonnage factor of 12.5 cubic feet per ton. The area contained in the mineral inventory is by no means the total extent of the mineralized area.

The average grade is determined by taking all of the weighted assays from the trenches and percussion drill holes (P-1 through P-6) within the outlined area is 0.027 ounces gold per ton. In the writer's opinion, the average grade as determined by drilling is a much better estimate of the true grade because the human element is further removed, therefore the 0.029 ounces gold per ton is the prefered value.

CONCLUSIONS AND RECOMMENDATIONS

Widespread diamond drilling of a large scale gold-arsenic soil geochemical anomaly that overlies a Tertiary porphyry complex in 1975 and 1981 has partially defined 7 or more linear gold bearing zones. The mineralized zones as defined by diamond drilling range in width from 1.5 metres (5 feet) to 36.6 (120 feet) with a weighted average grade of 0.042 ounces per ton gold with some silver (averages not calculated). The 1985 exploration program of trenching and percussion drilling confirmed the near surface presence of gold mineralization that the earlier diamond drilling had shown at depth, as well as showing that it is much more widespread and the mineralized zones are wider than indicated by the diamond drilling. The grades obtained from the percussion drilling and trenching compare favorably with those from the diamond drilling.

It is the writer's opinion that the amount of assay data available is sufficient to establish that the average grade within the indicated area is in the 0.027 to 0.029 range. The drill density is not sufficient to establish any tonnage potential except in very general terms nor is it sufficient to establish a grade distribution.

The widths of the better mineralization, plus the fact that the mineralized zones appear to be vertical suggest that some degree of selective mining could be used, thus raising the mining grade.

The tonnage potential outlined in the text (21,120 tons per vertical foot) was included only as a guide for further exploration. It showed that with the indicated average grade that the size of the deposit outlined to date is sufficient to warrant further exploration to define a heap leach gold operation. Therefore, it is recommended that a Phase II program consisting of percussion drilling on a 200 foot grid pattern, further metallurgical testing and trenching be instituted. The drilling to be done using inclined holes on an east or west bearing. The recommended program should provide enough data for establishing the grade distribution which is needed for a pre-feasibility study.

ESTIMATED COST OF PROGRAM WORK PROGRAM

Phase II

Percussion drilling (reverse circulation) 40 - 250' holes (76.2 m) 3048 metres @ $45.00/metre	$ 137,160.00
Assaying 1500 samples @ $15.00/sample	22,500.00
Trenching, road building and drill site preparation Bulldozer, D7E or larger 200 hrs @ $120/hr, including fuel and operator	24,000.00
Labour requirements (2 month operation) Sample crew - 2 @ $3000/man/month Geologist - 1 @ $5000/man/month Assistant Geologist - 1 @ $3500/man/month	23,000.00
Camp operation - includes cook's wages 600 man days @ $60.00/man day	36,000.00
Transportation Includes air travel, 4x4 truck rental, freight and Whitehorse expediting	10,000.00
Supervision and final report writing	20,000.00
Metallurgical testing	25,000.00
Sub-Total	297,660.00
10% Contingency	29,766.00
Total Phase II	$ 327,426.00
Say	$ 327,000.00

Respectfully submitted,

D.A. Howard, M.Sc., P. Eng.
D.D.H. GEOMANAGEMENT LTD.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
DAVID A. HOWARD

CERTIFICATION

I, David A. Howard, of the City of Vancouver, Province of British Columbia, hereby certify as follows:

1. I am a geologist residing at 9040 Glenallan Gate, Richmond, B.C., with an office at 422 - 470 Granville Street, Vancouver, B.C.

2. I am a registered Professional Engineer of the Province of British Columbia. I graduated from Montana State University in 1964 and from the University of Washington in 1967.

3. I have practised my profession continuously since June, 1966.

4. The information contained in this report is derived from data contained in company files, government publications, a field examination of the property on August 10 and 11, 1985, and a total of 3 field seasons working on adjoining properties (1966, 1967, 1981).

5. I have no interest, direct or indirect in Permian Resources Ltd. property or in the securities of Permian Resources Ltd. or its affiliates, nor do I expect to receive any.

6. I consent to the use of this report in or in connection with the Prospectus, or in a statement of material facts relating to the raising of funds for this project.

Dated at Vancouver, B.C., this 27th day of November, 1985.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
DAVID A. HOWARD

David A. Howard, M.Sc., P.Eng.

REFERENCES

Archer, A.R., 1980, Final Report 1980 Freegold Project - Mount Freegold Area, Yukon; internal report addressed to Arctic Resources Corp. by Archer, Cathro & Associates Limited.

Archer, A.R. and Carne, R.C., 1981, Final Repot for Freegold Project; internal report addressed to Arctic Red Resources Corp. by Archer, Cathro & Associates Ltd.

Archer, A.R. and Cathro, R.J., 1985, Various in-house maps and sections generated for the Antoniuk project.

Bostock, H.S., 1936, Carmack District Yukon; Geol. Survey of Canada, Mem. 189, 67 p.

Tempelman-Kluit, D.J., 1984, Geology, Laberge (105E) and Carmacks (115I), Yukon Territory; Geol. Survey Canada, O.F. 1101.

Tempelman-Kluit, D.J., 1974, Reconnaissance geology of Aishihik Lake, Snag and part of Stewart River map-areas, west-central Yukon; Geol. Survey of Canada, Paper 73-41.