87-451 - 16176

5/88

ASSESSMENT REPORT ON MAGNETIC, ELECTROMAGNETIC, AND GRAVITY SURVEYS ON THE SCOTCH MINERAL CLAIM

Scotch Creek Area

KAMLOOPS MINING DIVISION, B.C.

NTS:	82L/13E, 82L/14W
Latitude:	50° 57' North
Longitude:	119° ~~30'~~ 29'30" West
Owner/Operator:	Brican Resources Ltd.
Authors:	K.L. Daughtry, A. Wynne
Date:	June 12, 1987

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LIST OF ILLUSTRATIONS

SUMMARY

Exploration work on the SCOTCH property since 1970 has resulted in the discovery of a stratigraphically controlled zone of sulphide mineralization parallel to the contact between metamorphosed volcanic rocks of the Eagle Bay formation and younger argillaceous limestone of the Sicamous formation. Previous geophysical surveys delineated co-incident EM and magnetic anomalies related to the sulphide zone.

The 1987 geophysical surveys delineated the geophysical targets in greater detail and tested conductors for gravity response.

Diamond drilling is now recommended to test the conductors.

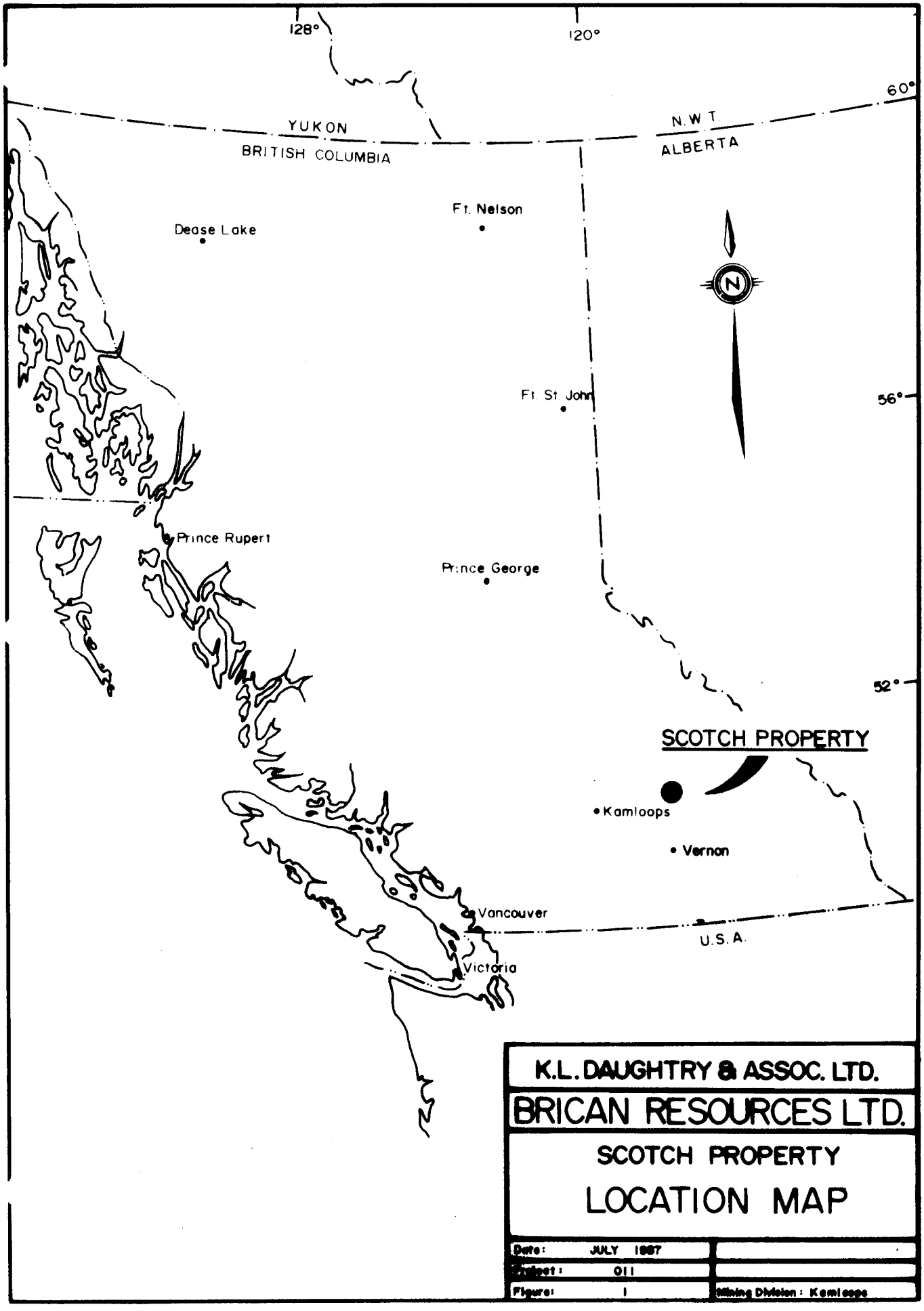
LOCATION, ACCESS, TOPOGRAPHY

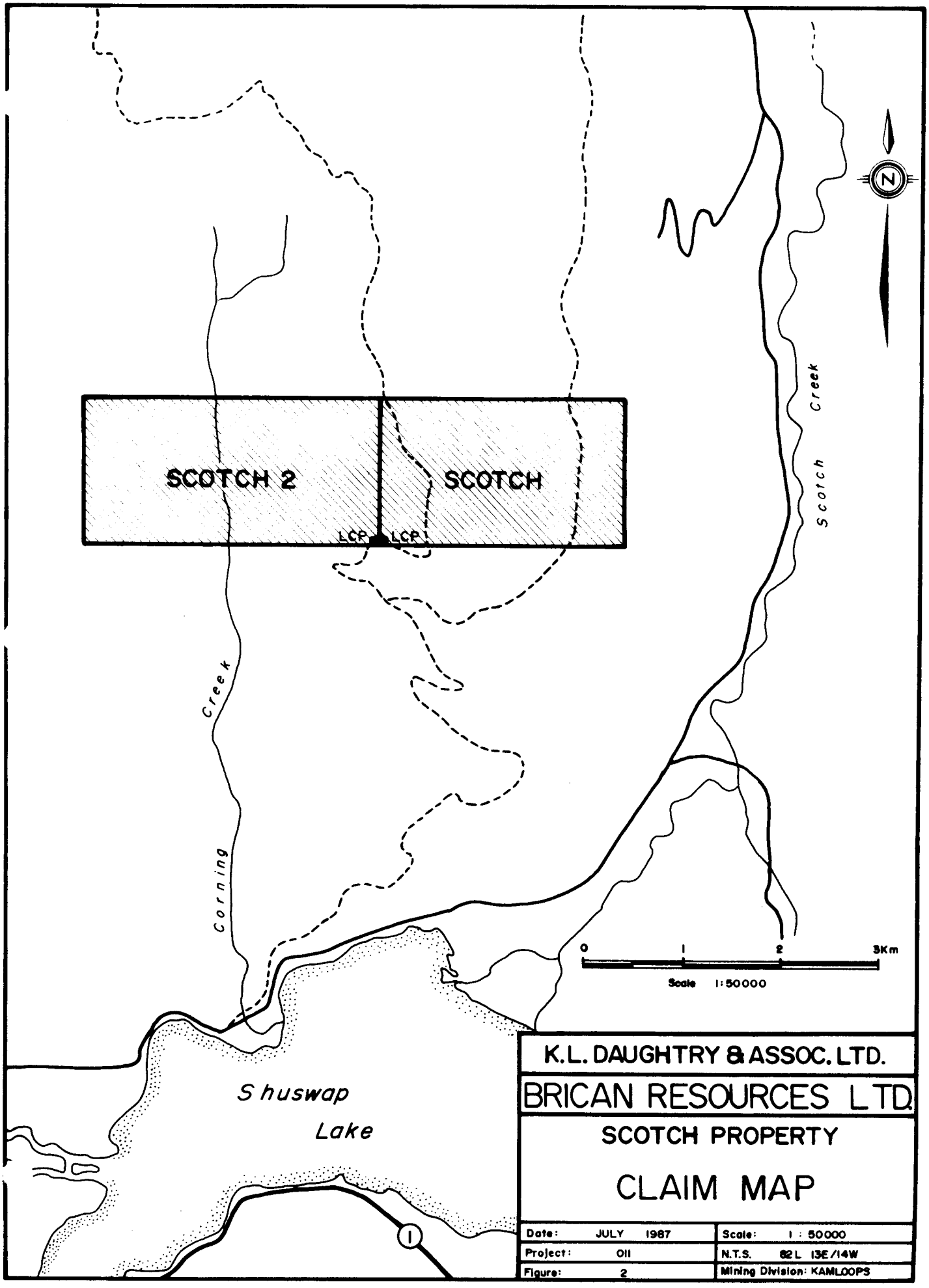
The SCOTCH claim is located east of Corning (Lee) Creek on the southerly sloping flank of the Adams Plateau west of Scotch Creek, about 4 km (2.5 mi) north of the north shore of Shuswap Lake (Figures 1 and 2). The co-ordinates of the Legal Corner Post of the SCOTCH claim are 50° 57.0' North and 119° 30.7' West. The National Topographic System reference for the claims is 82L/13E and 82L/14W. The elevation of the Legal Corner Post is 1160 m (3800 ft) a.s.l.

Kamloops is 68 km (42mi) to the southwest. Access to the property from Kamloops is via the Trans-Canada Highway east to Squilax bridge, thence easterly on the Squilax-Celista highway for 10 km (6 mi) to the mouth of Corning (Lee) Creek, thence northerly on the old Lee Creek logging road for 10 km (6 mi) to the Legal Corner Post. Several new and old logging roads and a road along the B.C. Hydro powerline provide good access to most parts of the property for standard two-wheel vehicles.

The topography on the property is generally a moderate southward slope from Adams Plateau to Shuswap Lake. Corning(Lee) Creek has incised steep northerly-trending valleys into this slope. Elevations vary from 1160 m (3800 ft) a.s.l. at the Legal Corner Post to 1340 m (4500 ft) a.s.l. at the north boundary of SCOTCH claim.

Parts of the property have been logged in recent years, parts have old burns with thick second growth vegetation and deadfall, and parts have original tall timber. The area of the property is generally free of snow from mid-may to mid-November.


128°
120°
60°
YUKON
BRITISH COLUMBIA
N.W.T.
ALBERTA
Ft. Nelson
Dease Lake
N
Ft. St. John
56°
Prince Rupert
Prince George
52°
SCOTCH PROPERTY
Kamloops
Vernon
Vancouver
U.S.A.
Victoria
K.L. DAUGHTRY & ASSOC. LTD.
BRICAN RESOURCES LTD.
SCOTCH PROPERTY
LOCATION MAP
Date: JULY 1987
Figure: 1
Mining Division: Kamloops



K.L. DAUGHTRY & ASSOC. LTD.

BRICAN RESOURCES LTD.

SCOTCH PROPERTY

CLAIM MAP

Date: JULY 1987	Scale: 1 : 50000
Project: 011	N.T.S. 82 L 13E/14W
Figure: 2	Mining Division: KAMLOOPS

PROPERTY

At the time of the work described in this report, the SCOTCH property consisted of the SCOTCH claim in the Kamloops Mining Division.

Claim	No. Units	Record No.	Owner	Expiry Date
SCOTCH	15	371	Brican Resources Ltd.	May 7,1987

The SCOTCH claim was staked by K.L. Daughtry in April 1976, and sold to Brican Resources Ltd. shortly thereafter.

HISTORY

The first record of exploration activity in the area of the SCOTCH property is a reference to the IRON POT showing on Acid(Ruby) Creek, a tributary of Scotch Creek, about 1000 m northeast of the SCOTCH claim. In the 1930 Annual Report of the B.C. Minister of Mines it is reported that two short adits were driven on a narrow zone of massive pyrrhotite with pyrite, and minor chalcopyrite. Apparently the objective was precious metal mineralization but no values were obtained on sampling.

Scotch Creek itself has had some placer gold production, about 2000 ounces being reported to date.

In the 1960's claims were staked by major companies to cover the copper showings on Nikwikwaia Creek, 7 km northwest of the SCOTCH but apparently no major exploration work was carried out.

In 1970, during the course of a regional exploration project, strong geochemical anomalies in copper and zinc were detected in stream sediments on Corning and Nikwikwaia Creeks. Follow-up prospecting resulted in the discovery of massive and disseminated stratabound pyrrhotite-pyrite-chalcopyrite-sphalerite mineralization on Nikwikwaia, Corning and Acid Creeks. The most attractive mineralization found at this stage was a 1-ton boulder of massive sulphide mineralization discovered on the east fork on Corning Creek. A grab sample of this boulder contained over 105 copper. Two hundred claims were staked to cover the potentially favourable geological setting.

In 1971, a reconnaissance scale grid was flagged out over the southern part of the claim block and soil sampling and magnetometer surveys were conducted over 41-line miles (66 Km). This work indicated the presence of 10,000-foot long magnetically anomalous copper and zinc values in soils. The magnetic anomaly appeared to lie parallel with the stratigraphy and was correlative with a sulphide-bearing sequence of phyllites. Two holes were diamond drilled to test the strongly magnetic zone and intersected sulphide bearing phyllite with varying amounts of pyrrhotite, pyrite and chalcopyrite.

K.L. Daughtry staked the SCOTCH claim to cover the magnetic anomaly in 1976 and sold the property to Brican Resources Ltd. Craigmont Mines Ltd. optioned the claim shortly afterward and subsequently staked an additional six claims, totalling 104 units, covering much of the old claim block.

Craigmont then conducted a regional airborne Dighen survey which included the ground around the SCOTCH claim. Many conductors were indicated and a strong magnetic anomaly was delineated co-incident with one of these in the area of the previously known magnetic anomaly. A ground follow-up programme was initiated in which a total of 48 line-kilometers of grid was installed. Geochemical soil, magnetometer and VLF EM-16 surveys were carried out over the entire grid. These more detailed surveys provided a more distinct delineation of anomalous zones than the 1971 work. The large anomaly on the SCOTCH claim appeared as remarkably co-incident geochemical, magnetic and electromagnetic anomalous zones. Several other attractive anomalies were discovered.

In 1977 Craigmont drilled 4 holes to test geophysical targets on the main anomalous zone. Three of these holes were drilled in the same area as the first two holes of the 1971 programme. The first two holes intersected the same sulphide zone as the previous work. The third hole intersected better copper mineralization than had previously been found in the heavy to massive sulphide zones. The fourth hole intersected the sulphide zone near the west end of the anomaly. No further work was done and the claim was returned to Brican effective September 30, 1978.

Esso Resources Canada Ltd. optioned the SCOTCH property from Brican in March 1979 and conducted further ground magnetometer and electromagnetic Max Min surveys. This work confirmed the presence of strong magnetic anomalies with a significant apparent displacement from the locations defined by Craigmont. One short hole was drilled by Esso in the western part of the SCOTCH claim to test one of the conductors. This hole intersected both sulphide mineralization and graphitic schist.

In 1983, Esso carried out geological mapping and lithogeochemical studies. The option was subsequently terminated and the claims were returned to Brican in 1984.

In 1985, Brican conducted a programme of backhoe trenching in an attempt to expose the source of the main geophysical anomaly. This trenching revealed an extensive zone of sulphide mineralization but no source of the magnetic anomaly and no strong conductor was evident.

The previous surveys were run with line spacings of at least 200 m. This lack of detail, coupled with the discrepancies in location of conductors between previous surveys, prompted Brican to undertake a more detailed magnetic survey in 1986. This work resulted in a more precise delineation of the geophysical targets.

Consequently, the detailed magnetic, electromagnetic and gravimetric surveys, which are the subject of this report, were carried out in the autumn of 1986.

REGIONAL GEOLOGY

The SCOTCH property straddles the contact between intermediate to felsic volcanic and volcaniclastic rocks of the Eagle Bay formation and argillaceous and carbonaceous limestone and calcareous argillite of the Sicamous formation. This contact trends easterly across the southern slope of the Adams Plateau from Adams Lake to Scotch Creek.

Although the Eagle Bay rocks overlie the Sicamous formation to the north of the contact, the entire sequence appears to have been overturned in this region. Consequently, the Sicamous formation is thought to be of Upper Triassic age and to conformably overlie the Paleozoic Eagle Bay formation.

Late, steep normal faults are thought to occupy many of the deeply incised valleys in the area, most notably Nikwikwaia, Corning and Scotch Creeks.

PROPERTY GEOLOGY

The SCOTCH claims are underlain by a tightly folded sequence of metavolcanic and metasedimentary rocks with a well developed foliation generally striking east-west and dipping between 25° and 50° northward. A small stock of rhyolitic quartz-eye porphyry outcrops near the southeast corner of the property and numerous rhyolite, quartz porphyry, feldspar porphyry, andesite and microdiorite dykes occur. A large pluton of intermediate composition intrudes the metamorphic rocks northeast of the property. Several north-south fault zones are believed to occur in the area, most notably in Scotch Creek and Corning Creek valleys.

The Sicamous formation, consisting predominantly of black argillaceous limestone and argillite underlies the southern part of the claims. Structurally overlying this unit is the "Lower" Eagle Bay formation, comprising chlorite phyllite, chlorite-sericite phyllite, sericite-phyllite, quartz-eye sericite and quartz-eye chloritic phyllite and minor crystal tuff, limestone, dolomite and chert. This assemblage was originally thought to be entirely metasedimentary. Later work indicated the presence of some tuffaceous horizones, and the most recent interpretation is a metamorphosed series of felsic to intermediate flows, subaqueous ash flows, crystal tuffs, tuffaceous sediments, and pelitic calcareous and cherty sediments.

The entire sequence on the property is believed to be overturned. The general north-south succession of rock types from massive andesite and dacite or rhyolite flows north of the claims, through a pyroclastic sequence and exhalite-bearing sequence to sedimentary rocks, supports this concept. Also, the contact between Sicamous and Eagle Bay rocks is known to be gradual and conformable, but the Eagle Bay lithology varies markedly at various points along the contact. This suggests that the Sicamous sediments were deposited upon an uneven surface of volcanogenic Eagle Bay rocks without an erosional break.

The bedding is seen to be parallel or sub-parallel to the foliation in some places, but the general distribution of rock types suggests a northerly dip of about 15^{o} in some parts of the property, much flatter than the dip of the foliation. The fold style is recumbent isoclinal with axes parallel to foliation. Future geological studies must anticipate the possibility of a relatively complex fold structure, further complicated by facies changes in individual lithologic units typical of a volcanogenic environment.

MINERAL OCCURRENCES

Stratabound and stratiform dispersed and massive sulphide mineralization has been discovered in several places on and near the SCOTCH property. Thicknesses of mineralized zones vary from a less than 1 metre to over 50 metres. The predominant sulphide mineral seen to date is pyrrhotite, with lesser pyrite and variable amounts of chalcopyrite and sphalerite.

Pyrrhotite occurs as disseminated grains and blebs on foliation planes, as aggregates of coarse blebs and streaks and as lenses of heavy or massive sulphide up to 3 metres thick. Pyrite is generally present as disseminated grains or in thin bands of massive sulphide up to 10 cm thick. Chalcopyrite occurs as disseminated grains on foliation planes, as coarse blebs, as paint on fractures in quartz-carbonate veins, and in heavy to massive sulphide lenses up to 3 m thick and grading up to 10% copper. The higher copper grades appear to correspond to areas of more intense fracturing.

Sphalerite has been noted in several places, usually associated with other sulphides. One occurrence of a thin stratiform band(2.5 cm) has been noted in outcrop. Galena is rarely seen, but angular float of massive galena and sphalerite has been found. The origin of this float may be remote from its present location.

Assays from drill core indicates that wide sections of sulphide-bearing rock may grade between 0.1% and 0.15% copper with traces of silver. Several heavy to massive lenses have assayed as follows:

DH #2	2.1 m	0.3% Cu		Tr Ag	Tr Au
	0.3 m	1.7% Cu		0.2 oz Ag	.01 oz Au
	0.5 m	4.7% Cu		0.5 oz Ag	.04 oz Au
DH #3	2.1 m	0.2% Cu		.02 oz Ag	Tr Au
DH SC-3	3 m	1.0% Cu	.05% Zn	.5 oz Ag	.01 oz Au
	3 m	.05% Cu	Tr Zn	.3 oz Ag	.005 oz Au
	3 m	.2% Cu	.1% Zn	.3 oz Ag	.005 oz Au
	1 m	.03% Zn	1.3% Zn	.4 oz Ag	.008 oz Au

The geological setting and nature of mineralization on the SCOTCH property is typical of the Omineca-type copper-pyrite deposits. Exploration should be directed toward discovery of two types of deposits: massive sulphides corresponding to mineralization at Rea Gold, Kutcho Creek, Goldstream River and Chu Chua Mountain, and large zones of dispersed sulphides as at Harper Creek.

GEOPHYSICAL SURVEYS

The regional aeromagnetic maps show a small magnetic high in the area of the Main Anomaly. The Dighem survey carried out by Craigmont indicates the presence of a large number of conductors apparently related to stratigraphy in the area of the SCOTCH property. Many have no co-incident magnetic anomalies and some of these are certainly due to graphitic horizons in the Sicamous formation.

The ground magnetometer surveys have delineated a 2200 m long anomaly co-incident with the geochemical anomaly related to widespread pyrrhotite mineralization in the sulphide zone near the Eagle Bay-Sicamous contact. Maximum magnetic relief in previous surveys is in the order of 4000 gammas. Several other low-order anomalies have been defined which appear to be related to stratigraphy in other parts of the property. A large anomalous area has been partially defined in the southeast corner of the SCOTCH claim. This area is thought to be underlain by Sicamous limestone and a Tertiary quartz porphyry pluton.

A 700 metre baseline was installed at azimuth 180^{o} with cross lines at 100 metre intervals. Line lengths varied from 400 to 600 metres for a total survey of 4.3 kilometers. The survey consisted of max min and magnetic coverage of the grid area. In addition, a gravity test line was run across the electromagnetic anomalies on line 4+00 E. These methods are described below.

MAX MIN

An apex Parametrics Max Min II Unit was used to carry out the survey. This is a multi frequency, horizontal loop electromagnetic induction system. The system measures the in phase and quadrature of the secondary field as a percentage of the primary field intensity.

A one hundred metre coil separation was utilized. Readings at 2 frequencies, 444H2 and 1777H2, were taken at 25 metre intervals. Coils were kept coplaner and data was slope corrected to maintain proper separation. Data is presented as profiles with conductive axis marked on the 444H2 maps.

MAGNETICS

An EDA PPM 350 Field Magnetometer and a PPM 375 base station magnetometer was utilized. This system is a micro processor controlled set of proton precession magnetometers that monitor the field and base station magnetic fields and correct for diurnal drift and magnetic activity. Readings were taken at 25 metre station intervals. Data is presented as posted contour maps.

GRAVITY

A Lacoste and Romberg model G gravimeter was used to carry out the survey.

The gravimeter measures the vertical component of the earth's gravitational acceleration.

The readings were corrected for elevation and regional density to obtain a rough bouguer reading. Corrected gravity relates to variations in subsurface rock density. The survey was used to discriminate between low density graphite and high density sulphides.

DISCUSSION AND CONCLUSIONS

The electromagnetic survey located three areas of conductivity, generally trending about 170°. Because of the close spacings of the anomalies, interpretation is inexact, however all units appear to dip north and are shallow. Conductive axes of these units are as follows.

1). Line 600E / 150-225 S
500E / 200-275 S
400E / 245-260 S
300E / 225-240 S
200E / 212 S
100E / 200 S
000E / 250 S

This conductive zone is probably a laminated zone with several conductive units contained therein. It appears to be weakly correlated with the magnetics with several flanking mag highs on the eastern lines and a low relief coincident mag high at the western edge. The gravity test at line 4+00 E rendered an inconclusive density high of about .2 mgals.

The unit appears to be a favourable target for massive sulphide exploration.

2). Line 600E / 000 S
500E / 012 S
400E / 025 S
300E / 050 S

3). Line 600E / 087 N
500E / 075 N
400E / 050 N

These conductive axes have been delineated separately, however the presence of a discrete magnetic high between the two axes may indicate a laminated zone with the indicated axis simply being the most conductive area on the boundaries of a zone. The gravity on line 4+00E indicates a density high across the zone lending support to the idea of one continuous conductor. This is a favourable geophysical target for massive sulphide exploration.

CONCLUSIONS: The combination of electromagnetics, magnetics and gravity have succeeded in delineating two favourable targets on the SCOTCH property. The presence of density highs and magnetic activity related to conductive zones reduces the likelyhood of the anomalies being caused solely by graphite.

RECOMMENDATIONS

The geophysical targets delineated by the above work should be tested by drilling.

REFERENCES

Daughtry, K.L.	1970	Report of 1970 Field Operations for Shuswap Project. Private report to Shuswap Syndicate and Derry, Michener and Booth Ltd.
—	1971	Report of 1971 Field Operations for Shuswap Project. Private report to Shuswap Syndicate and Derry, Michener and Booth Ltd.
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--	1978	Report on the Scotch Property. Private report to Brican Resources Ltd.
--	1986	Assessment Report on the Scotch Property. Kamloops Mining Div.
Fraser, D.C.	1976	Dighem Survey of Shuswap Lake Area, B.C. Private Report
Jones, A.G.	1959	Vernon Map Area, B.C.; G.S.C. Memoir 296
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--	1984	Geology and Geochemistry Report on the Scotch Claim. Assessment Report No. 12216
Okulitch, A.V.	1974	Stratigraphy and Structure of the Mount Ida Group, Vernon, Seymour Arm, Bonaparte Lake and Kettle River Map areas, British Columbia G.S.C. Paper 74-1, Part A, pp. 25-30
--	1979	Thompson-Shuswap-Okanagan G.S.C. OF 637
Stewart, A.	1979	Combined EM and Magnetometer Survey Scotch Group of Mineral Claims. Assessment Report No. 7691

--	1979	Diamond Drilling Report on the Scotch Claim Assessment Report No. 7691
Vollo, N.B.	1977	Geochemical and Diamond Drilling Report on the 82L/13 Scotch Group. Assessment Report No. 6419

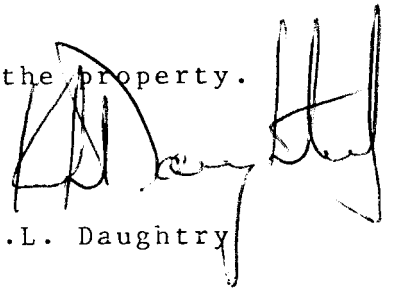
STATEMENT OF COSTS

1).	Professional Services		
	K.L. Daughtry		
	Supervision, layout, grid installation, geophysical surveys, report writing.		
	July 28-30, September 25, 29, October 5, 15, 1986; January 14, June 11-13, 1987;		
	7.5 days @ $300.00/diem		$2250.00
2).	Geophysical Survey (Max-Min), Gravity Survey		
	MWH Geophysics, Alan Wynne, Geophysicist		
	October 5, 14, 15, 1986.		
	Report Writing June, 1987.		
	2 days @ $900.00/diem		1800.00
	1 day @ $500.00/ diem		500.00
3).	Linecutting		
	R. Anctil 6 days @ $130.00/diem		
	Sept. 30, Oct. 1-5, 1986	780.00	
	S. Maltby 5 days @ $120.00/diem		
	Oct. 1-5, 1986	600.00	
	B. Emberly 5 days @ $110.00/diem		
	Oct. 1-5, 1986	550.00	
	C. Lynes 5 days @ $130.00/diem		
	Oct 1-5, 1986	650.00	
	R. Patrick 1 day @ $130.00/ diem		
	Oct 5, 1986	130.00	
	M. Daughtry 1 day @ $60.00/ diem		
	July 28, 1987	60.00	2770.00
4).	Lodging		556.40
5).	Meals		497.18
6).	Map Prints		111.37
7).	Transport		
	13 days 4x4 @ $40.00/day	520.00	
	1638 km @ .30/km	491.40	
	Gas	60.00	1171.61
		Total	$9656.55

STATEMENT OF QUALIFICATIONS

I, KENNETH L. DAUGHTRY, of R.R. #4, Vernon, British Columbia, DO HEREBY CERTIFY that:

1. I am a Consulting Geologist in mineral exploration.
2. I have been practising my profession for 23 years in Canada, the United States and Ireland.
3. I am a graduate of Carleton University, Ottawa, with a bachelor of Science degree in Geology and Chemistry.
4. I am a member of the Associations of Professional Engineers of British Columbia, Ontario, and Yukon Territory, and a Fellow of the Geological Association of Canada.
5. This report is based upon knowledge of the SCOTCH property gained from examination, mapping, surveying, sampling and drilling of the property, from the study of numerous reports on the area, and from the conduct of the work herein described.
6. I have a beneficial interest in the property.



K.L. Daughtry

Vernon, BC
June 12, 1987

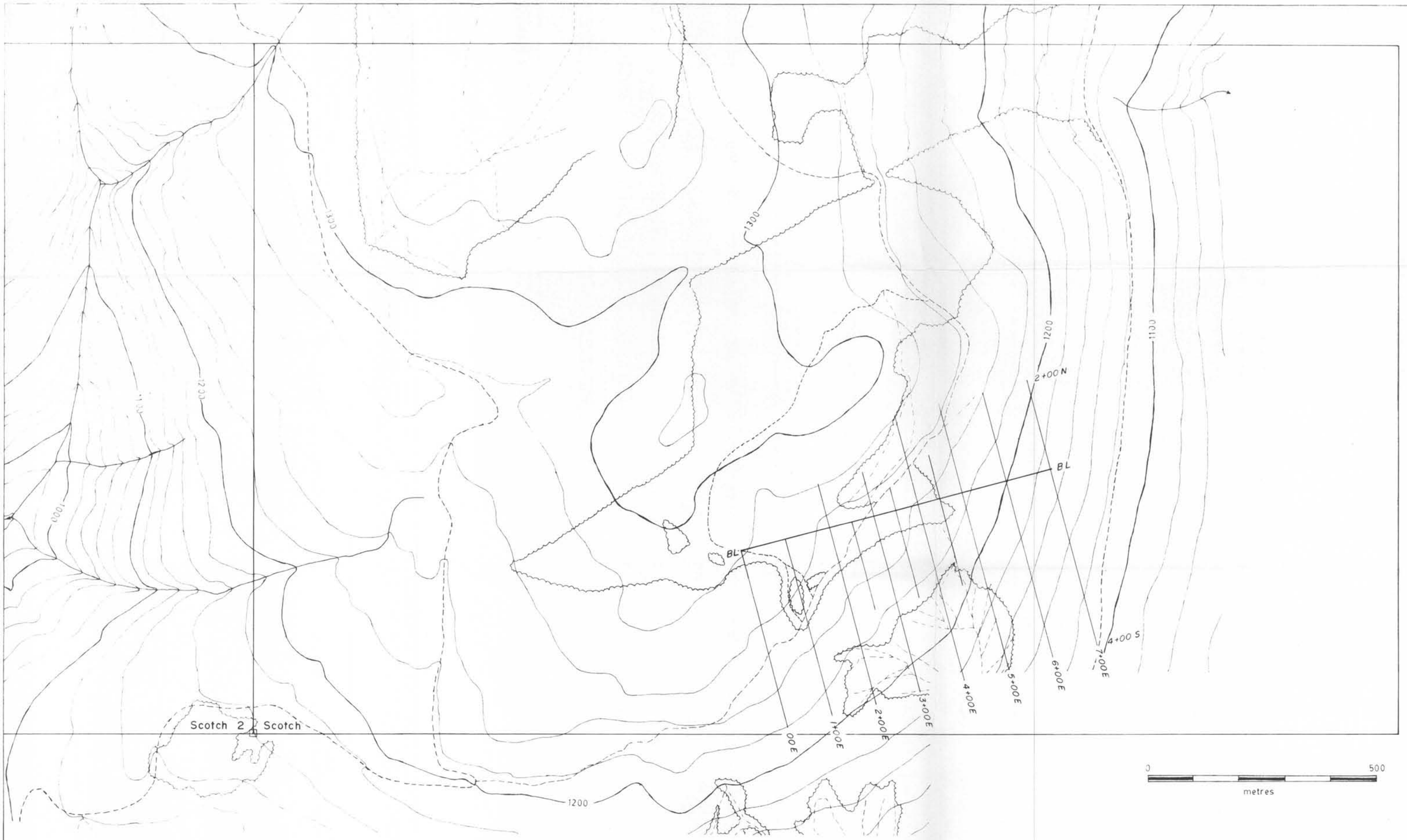
STATEMENT OF QUALIFICATIONS

I, ALAN J. WYNNE, of 8573 Eboy Terrace Sidney BC, DO HEREBY CERTIFY that:

1. I am a Consulting Geologist in mineral exploration.
2. I have been practising my profession for 11 years in North America.
3. I am a graduate of the University of British Columbia, with a Bachelor of Science in Geology and Geophysics.
4. I am a member of the Society of Exploration Geophysicists.
5. This report is based on work supervised by me.
6. I have no beneficial interest in the property.

A.J. Wynne

per.



GEOLOGICAL BRANCH
ASSESSMENT REPORT

16,176

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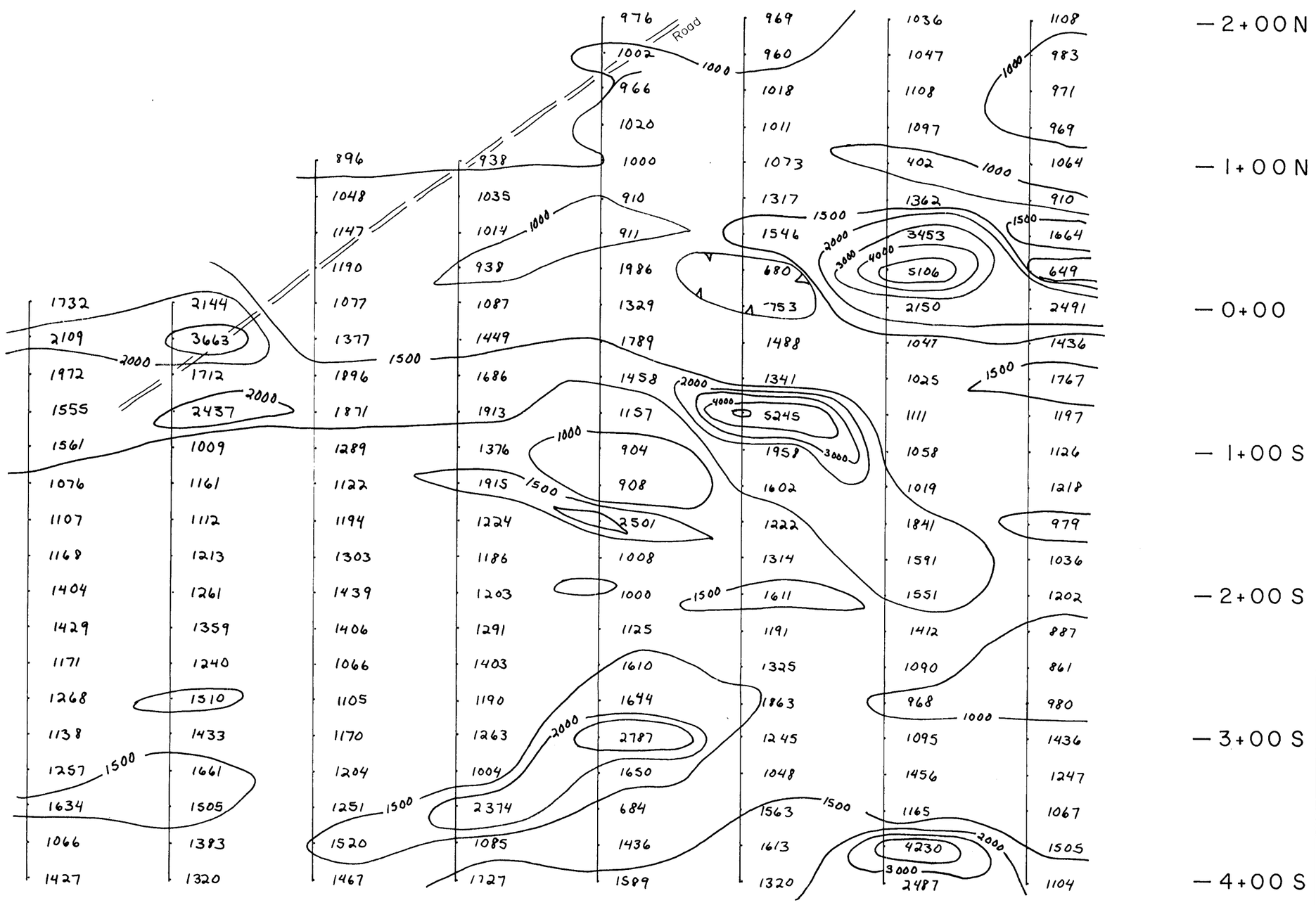
SCOTCH PROPERTY

GRID LOCATION MAP

Date July 87	Scale 1:5,000
Project Oil	Map Sheet 82 L/13E, 14W
Mining Division Kamloops	Figure 3



0 125 M

Base Value = 55000g

GEOLOGICAL BRANCH
ASSESSMENT REPORT

16,176

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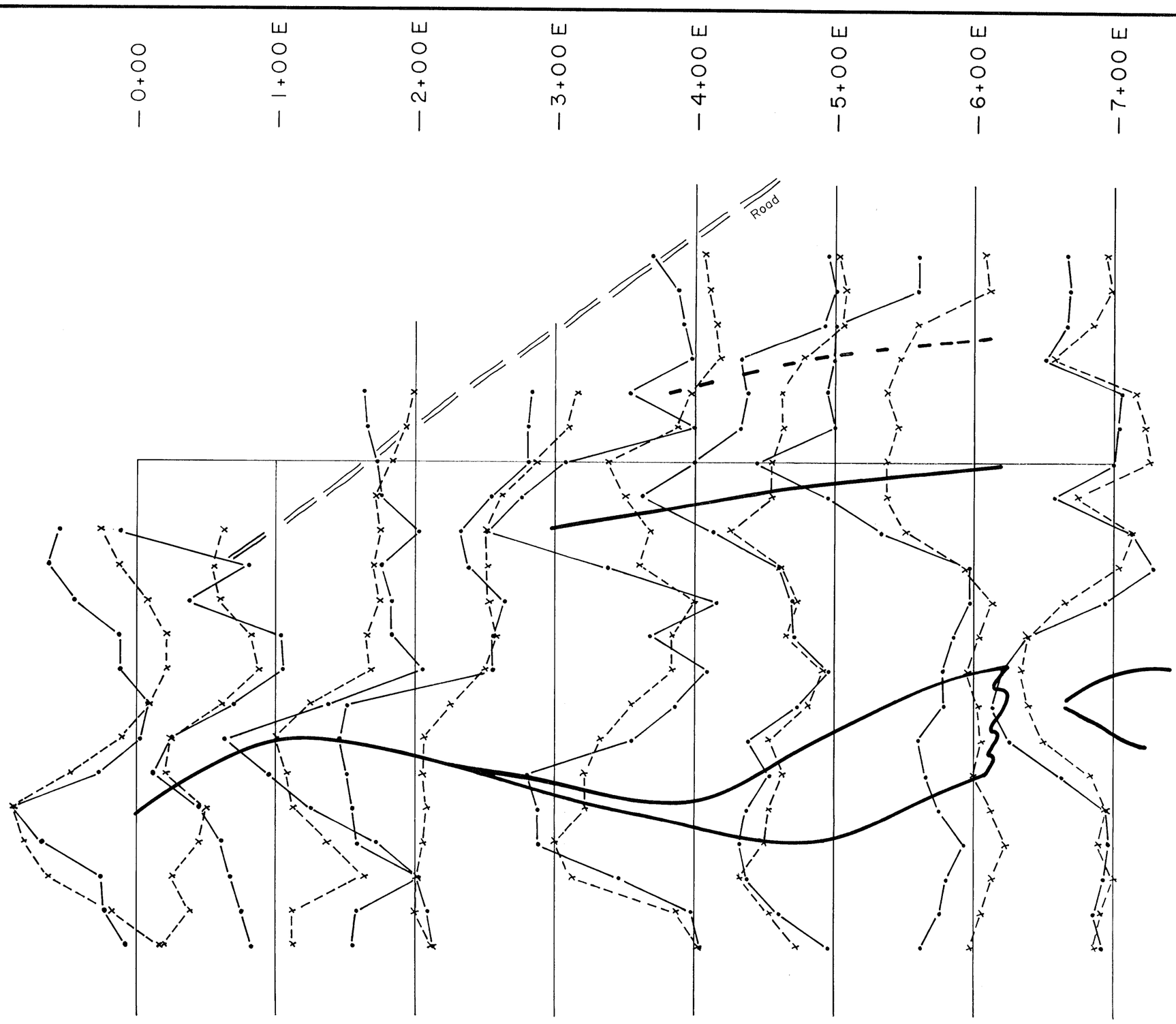
SCOTCH GRID

MAGNETICS CONTOURS

Scale: 1:2500	By: A.W., A.C.
Drawing No: 4	Date: October 1986

MWH GEOPHYSICS LTD.



•+10 % •———• IN PHASE

•0 x- - - - -x OUT PHASE

•-10 %

0 125 M

GEOLOGICAL BRANCH
ASSESSMENT REPORT

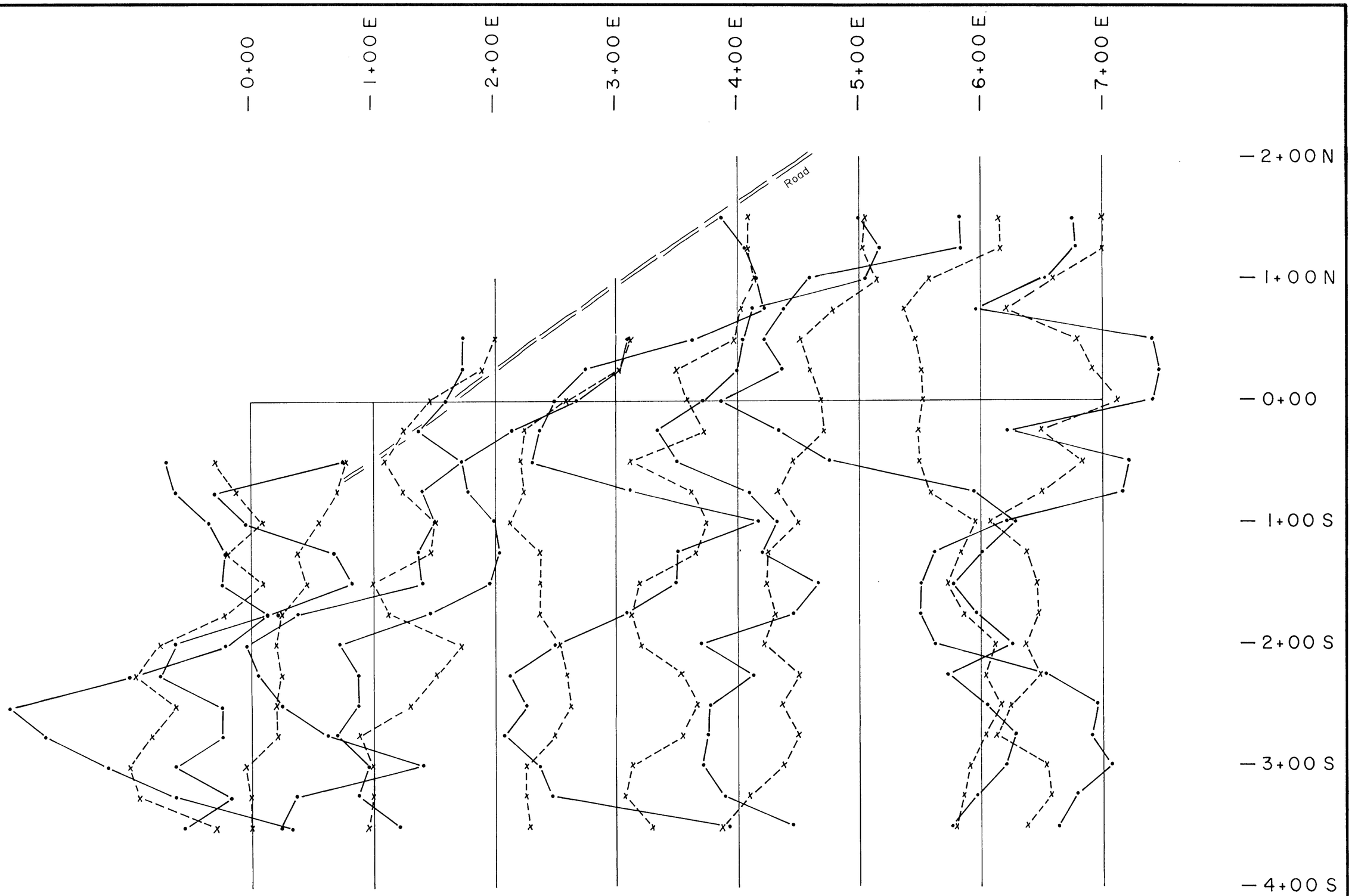
16,176

BRICAN RESOURCES LTD.

MAXMIN
444 HZ
100 M SEPARATION
SCOTCH GRID

Scale: 1:2500	By: A.W., A.C.
Drawing No: 5	Date: October 1986

MWH GEOPHYSICS LTD.



•+10 % •——• IN PHASE

• 0 x- - - - - x OUT PHASE

•-10 %

0 125 M

GEOLOGICAL BRANCH
ASSESSMENT REPORT

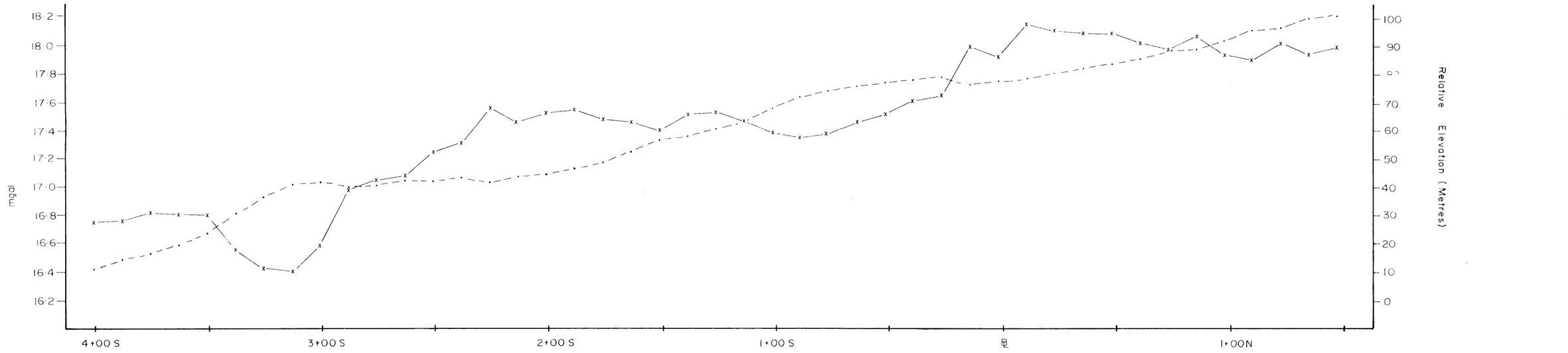
16,176

BRICAN RESOURCES LTD.

MAXMIN
1777 HZ
100 M SEPARATION
SCOTCH GRID

Scale: 1:2500	By: A.W., A.C.
Drawing No: 6	Date: October 1986

MAWII GEOPHYSICS LTD.



Regional Gradient

Gravity Profile

BOUGUER GRAVITY: LINE 4+00 E

Vertical scale: 1 cm = ·2 mgal / 1 cm = 10 metres

Horizontal scale: 1 cm = 12·5 metres

1:1250

@ 2·5 gm/cc

K.L. DAUGHTRY & ASSOC.LTD.

BRICAN RESOURCES LTD.

SCOTCH PROPERTY

GRAVITY PROFILE

Date: JULY 1987	Scale: Horz. 1:1250
Project 011	
Figure: 7	