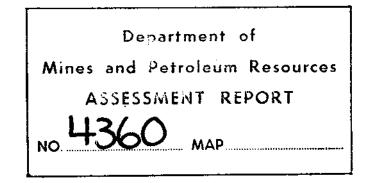
92 J /15E ,16W Lang, Royal, Jim, Lease M52 = 4-Ton, Jim No. 1 Fr.

REPORT ON INVESTIGATIONS CONDUCTED ON THE INTERNATIONAL JADE PROPERTY MARSHALL CREEK AREA, BRITISH COLUMBIA Lat. 50<sup>0</sup> 54' N., Long. 122<sup>0</sup> 54' W. FOR COMAPLEX RESOURCES INTERNATIONAL LTD. (N.P.L.) OCTOBER - DECEMBER, 1972



April 1973

Wollex Exploration Ltd. M. W. Pyke, P.Eng., G. O. LaBine.

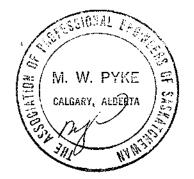
#### CERTIFICATE

I, MURRAY W. PYKE, of the City of Calgary, in the

Province of Alberta, certify as follows:

- 1. That I am a geologist residing at 401 Woodland Crescent, S.E., Calgary, Alberta.
- That I have practiced my profession continuously since being graduated in Geology, from the University of Saskatchewan, Saskatoon Campus, in the Province of Saskatchewan, B.A., 1955, M.A., 1958.
- 3. That I am registered as a Professional Engineer in the Province of Saskatchewan.
- That I may acquire an indirect interest in the property only if it reaches the production stage but that I do not beneficially own directly or indirectly any security of International Jade Ltd.
- 5. That I have continuously worked in geological and mining exploration in northern Saskatchewan and the Northwest Territories for the past fourteen years and that the accompanying report was prepared in conjunction with G. O. LaBine.

Dated at Calgary, Alberta this 6 day of APRIL, 1973.



Murray W. Ryke, B.A., M.A., P.Eng.

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### APPENDIXES

- Appendix I Notes on Topographic Map, Semi-Controlled Photo-Mosaic, Regional Structural Geologic Study, and Photogrammetric Plot of Geologic Interpretation, Marshall Creek area NTS 92-J-16, British Columbia by Robert H. Frantz, October 1972.
- Appendix II Petrographic Report, 20 Specimens from Nephrite Deposit, Marshall Creek, B.C. by G. A. Wilson December, 1972.

#### SUMMARY AND CONCLUSIONS

During the period October 3 to December 22, 1972 Wollex Exploration Ltd. conducted an exploration program on a selected group of mineral claims of the International Jade Ltd., Marshall Creek property, on behalf of Comaplex Resources International Ltd. The program consisted of an aerial photograph interpretive study, geological mapping, a petrographic study of selected samples, line cutting, magnetometer surveys, a seismic survey, an Induced Potential survey, x-ray diamond drilling, trenching and cutting of selected nephrite samples to determine quality.

The purpose of the program was (1) to locate and outline potential nephrite-bearing zones, (2) evaluate the quality and tonnage of the nephrite with respect to gem and industrial use and (3) to remove and block any nephrite that would meet the standard quality requirements.

To date in the Marshall Creek area there is only one known inplace occurrence of nephrite lode jade that would meet commercial requirements for gem and industrial quality jade. This is the open pit occurrence developed by Green Bay Exploration & Mining Ltd. The few outcrop occurrences of nephrite and several of the nephrite-bearing boulders that occur in the International Jade Ltd. property are intensely sheared and fractured and commonly altered in varying degrees to talc-schist. In addition the nature and habit of occurrence of the nephrite lode jade in the Green Bay Exploration & Mining Ltd. open pit is elliptical or pod-like in both plan and section and it is certain that other occurrences in the area are similar both in configuration and with varying relative size.

Prior to commencing the exploration program it was apparent that in the area the occurrence of minable pods and lenses of good quality nephrite lode jade is erratic and that immediate commencement of costly stripping operations with the lack of more definitive target areas would be an extreme risk. Therefore the first stage of the program was to extend known zones and locate new areas underlain by ultrabasic rocks using a combination of geological mapping, geophysical and prospecting techniques. Areas selected for coverage were the known inplace occurrences of ultrabasic rocks with which nephrite jade may probably be associated based on the occurrence of nephrite-bearing boulders. These were (1) the south half of the 4-Ton mineral claim extending east from the Green Bay Exploration & Mining Ltd. open pit to the east boundary of the claim, (2) the northern two-thirds of the Lang No. 9 and Lang No. 10 mineral claims and (3) an area covered by portions of Royal No. 3, Lang No. 13, Royal No. 2 fraction, Royal No. 2, Lang No. 14, Jim No. 33 fraction and Royal No. 1 mineral claims. The second phase of the program was to test selected ultrabasic zones by x-ray diamond drilling to determine if nephrite-bearing pod(s) were present and if they were of sufficient size to be economically extracted. The third phase entailed stripping the overburden and removing the nephrite-bearing material to determine quality.

There are presently 4 lenses or approximately 1,175 tons of nephrite lode jade exposed in the Green Bay Exploration & Mining Ltd. open pit. The serpentinite body with which these nephrite lode jade lenses are associated extends east over a distance of 250 feet into International Jade Ltd. property. This is one of several serpentinite bodies that define an east trending zone underlying the south-half of the 4-Ton mineral claim.

Due to overburden disposal and road access problems as a result of proximity to Green Bay Exploration & Mining Ltd. property line and open pit it was not possible to commence stripping operations on the serpentinite body(s) associated with the nephrite lode jade exposed in the Green Bay Exploration & Mining Ltd. open pit. Therefore the stripping operation on the serpentinite zone underlying the south half of the 4-Ton mineral claim was restricted to the southeast corner of the claim to an area where low quality nephrite had previously been discovered in outcrop by International Jade Ltd. Two benches were excavated totalling 36,665 cubic yards and a total of approximately 3,000 pounds of highly altered and sheared nephrite was removed. The quality of this material was not sufficient to meet either gem or industrial requirements.

Several boulders and a few outcrop occurrences of noncommercial sheared and altered nephrite were discover on the two other areas selected for coverage namely the Lang grid and the Royal grid.

In all cases observed to date in the Marshall Creek area the nephrite is spatially associated with the altered ultrabasic (serpentinite) intrusive rocks and occurs either (1) along the contacts between the serpentinite bodies and the surrounding host rocks or (2) within the serpentinite. In addition the nephrite also occurs along or adjacent to shear zones.

For the most part the serpentinite bodies, with or without associated nephrite, are expressed by magnetic high anomalies. Exceptions to this are two known inplace occurrences, one on the Lang grid on which there is no discernable magnetic relief, the second on the Royal grid associated with a magnetic low anomaly. The nephrite lode jade pods exposed in the Green Bay Exploration & Mining Ltd. open pit occur marginally or flanking to a magnetic high zone adjacent magnetic low zones. This is significant with respect to further exploration work on the property in that it would be expected that the less altered and sheared the serpentinite body is (thus the more original constituant magnetic present resulting in a magnetic high zone) the better the quality of possible associated nephrite.

#### RECOMMENDATIONS

It is recommended that:

1. Comaplex Resources International Ltd. enter into an option agreement with Green Exploration & Mining Ltd. to eliminate road access and overburden disposal problems in stripping and developing the area covered by Jim No. 1 fraction mineral claim and and the southwest corner of the 4-Ton mineral claim.

2. Stripping operations be conducted on the eastern extension of the Green Bay Exploration & Mining Ltd. open pit.

3. The magnetic high zones extending across the southhalf of the 4-Ton mineral claim be tested by diamond drilling to determine if nephrite lode jade is associated with the underlying serpentinite bodies.

4. Contingent upon the diamond drill results selected zones be stripped.

5. A detailed prospecting and geological mapping program be conducted over the entire property of International Jade Ltd. and Green Bay Exploration & Mining Ltd. to delineate serpentinite zones favorable to host nephrite lode jade. This phase of the program should commence over the area west of Brett Creek and the west slope of Rex Peak in the Royal claims specifically where jade float has been located associated with slide areas.

6. That detailed magnetometer surveys be conducted over areas selected on the basis of the prospecting and geological mapping program.

7. Selected magnetic high zones be diamond drilled and contingent upon the results, stripped.

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#### ESTIMATED COST OF CONTINUING PROGRAM

Rental of DH9 cat 3 months @ \$8,000.00/month \$	24,000.00
Support equipment rental for stripping and open pit operations, D-7 cat, compressor, and hose generator and welder, 3/4 ton truck, front end loader, dump truck @ \$6,000.00/month	42,000.00
Slabbing and blocking equipment - purchase of 2-36" saws and tables, 1-24" slab saw, 1-12" slab saw, 1-27' vibrator, 1, A-50 polishing unit	4,000.00
Diamond drilling 3,000' @ \$7.00/foot	21,000.00
Detailed geological mapping, prospecting line-cutting and ground magnetometer surveys, 2 geologist, 2 prospectors, 2 technicians	40,000.00
Road improvement and construction	20,000.00
Camp expansion and service	25,000.00
Engineering and consulting	20,000.00
Total estimated cost \$\$_	206,000.00

#### INTRODUCTION

General -

During the period October 3 to December 22, 1972 Wollex Exploration Ltd. conducted an exploration program on a selected group of mineral claims of the International Jade Ltd., Marshall Creek property, on behalf of Comaplex Resources International Ltd. The program consisted of an aerial photograph interpretive study, geological mapping, a petrographic study of selected samples, line cutting, magnetometer surveys, a seismic survey, an Induced Potential survey, x-ray diamond drilling, trenching and cutting of selected nephrite samples to determine quality.

The purpose of the program was (1) to locate and outline potential nephrite-bearing zones, (2) evaluate the quality and tonnage of the nephrite with respect to gem and industrial use and (3) to remove and block any nephrite that would meet with the standard quality requirements.

#### Property and Ownership

The property consists of 76 contingous claims in the Brett-Hogg Creeks area located immediately north of Marshall Creek and a group of 49 claims located 2 miles west of Brett Creek (c.f. Figure 1). Together these total 125 claims comprising an area of approximately 9,250 acres.

The claim groups lie within the Lillooet Mining Division and are plotted on mineral claim maps 92 J/15 E (M) and 92 J 16 W (M) (c.f. Figure 2).

The following is a list of the claims owned by International Jade Ltd.:

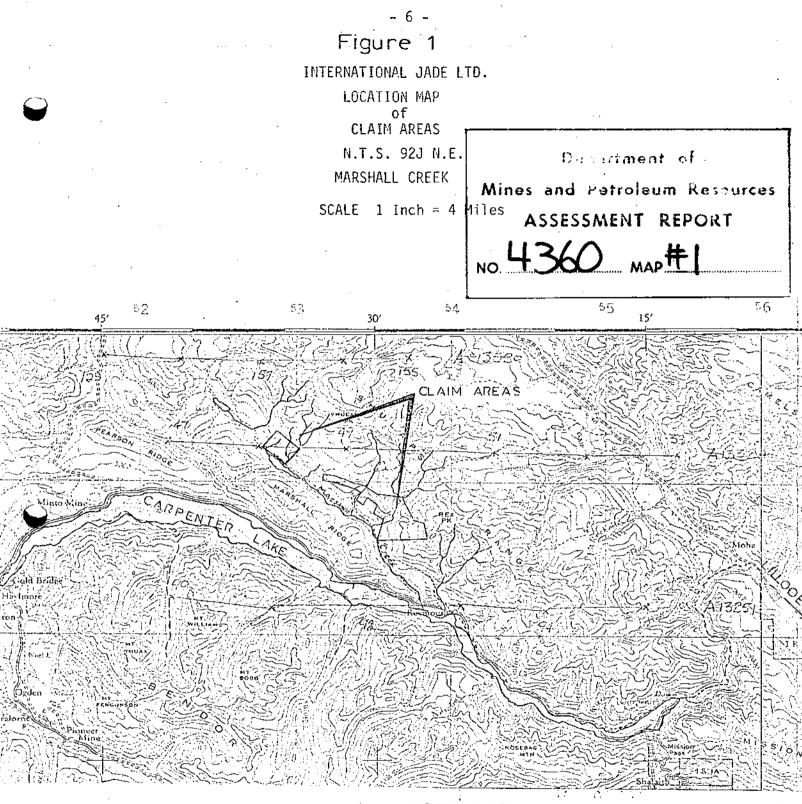
<u>Claim Name</u>

Monark Royal #1 - #2 Royal #3 Vicking 1 Vicking 11 Vicking 3 - 4 Tie 1 - 14 G.B. 21 - 23 G.B. 7 - 20 Royal #2 Fr. Royal #4 Royal #5 Roval #6 Jim #2 Fr. Jim 6 - 9 Jim 21 Fr. - 29 Jim 30 & 31 Jim 32 Fr. - 37 Fr. Jim 38 & 39 Jim 50 - 53 Jim 55 Fr. - 56 Fr. Jim 58 - 61 Jim 64 - 75 Lang # 1 - 4 Lang #5 - 8 Lang #9 - 10 Lang #11 - 12 Lang #13 - 15 Lang #16 - 23 Lang #24 Lang Frac. 1 Poppy Lee #2 - 3Poppy Lee #4 & 6

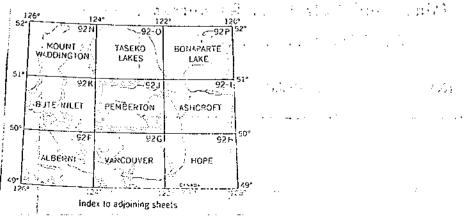
Record	<u>i No.(s</u> )
28072 28361 28389	& 62
28796 28797 28798	& 99
	to 29721 to 29785 to 29782
29832 29833 29858 30525	
30529 30544 30553	to 30532 to 30552 & 54
30626 30661 33178	to-30631 & 62 to 33181
33182 33184 33188	& 83 to 33187 to 33199
28517 28572 28640	to 28520 to 28575 to 28641
29252 29254 29914	to 29253 to 29256 to 29921
31050 31054	to 20074
31052	& 31053

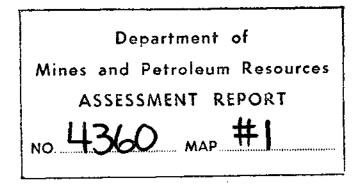
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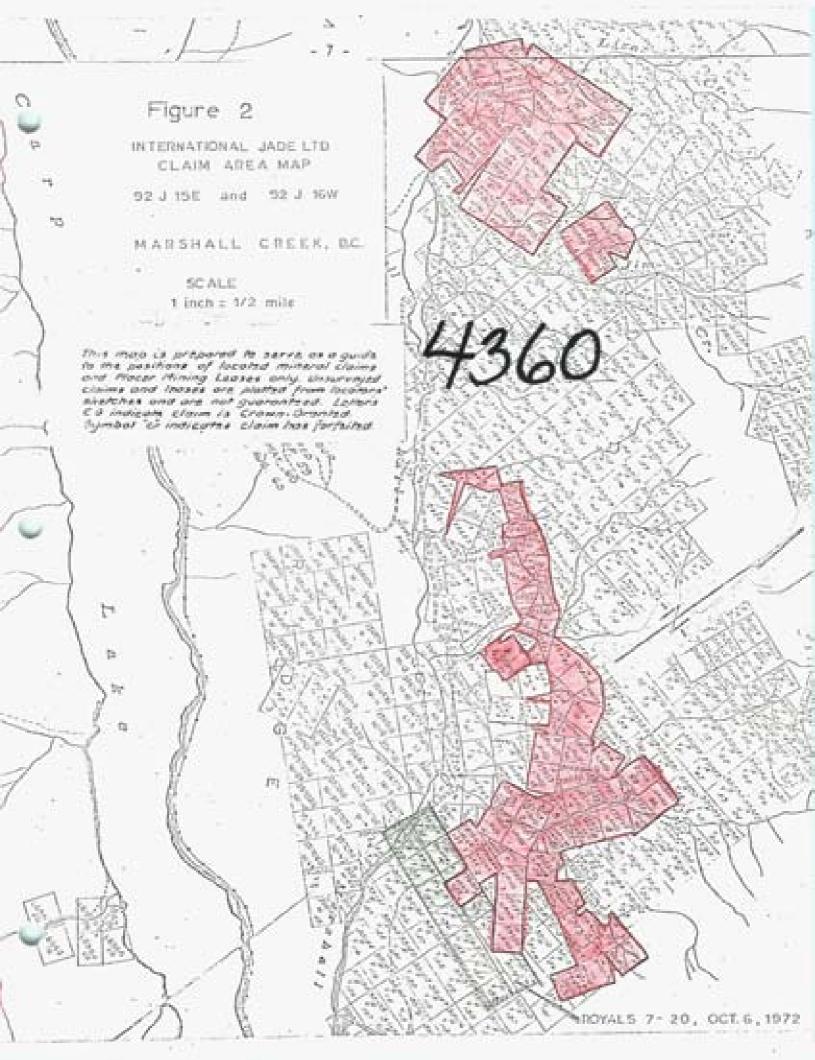
. . . .

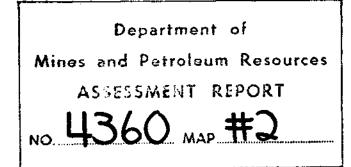


INDEX | MAP









Claim Name cont'd...

Poppy Lee #5 Lucky Lee #1 - 2 Walter #1 Poppy Lee

Mineral Lease

4-Ton and Jim No. 1 Fr.

Record No.(s) cont'd...

31051 28024 & 28025 34180 28023

M.L. 2085, M-52

In 1969 the claims comprising the group in the vicinity of Brett and Hogg Creeks were surveyed by Underhill and Underhill, Professional Engineers and B.C. Land Surveyors.

- 8 -

All of the mineral claims in the Marshall Creek area owned by International Jade Ltd. have been transferred to Comaplex Resources International Ltd. (N.P.L.) Calgary, Alberta under the terms of a memorandum of agreement dated September 30, 1972.

### Location and Access

The Marshall Creek property of International Jade Ltd. is situated 50 miles west-northwest of the southern interior town of Lillooet, British Columbia, (Figure 1). The property is accessable by the Great Eastern Railway to Lillooet, B.C., then via 45 miles of the Lillooet-Bralorne gravelled and graded, all weather road and thence via 5 miles of the Marshall Lake road.

Access to various locations on the property is presently by means of narrow switch-back roads passable only by four-wheel drive vehicles. The nature of overburden, tree cover and topography would enable a large percentage of the property to be made accessable by low cost road construction.

#### Physiography and Climate

The area is mountainous with most of the property lying on south to southwest facing slopes of the Shulaps Mountain Range. Outcrop exposure on the property is scarce constituting less than 10 percent of the area. Elevations range from 3,000 feet at Marshall Creek to approximately 5,500 feet on the Lang and the Royal group of mineral claims.

The climate in the area is relatively dry, averaging 30 - 40 inches of precipatation per year. Winter snowfall averages 2 - 3 feet at the 3,000 foot level and 4 - 5 feet at the 6,000 foot per year. Generally field work is hampered to a large degree by snow conditions during the months of December and January.

#### History of Previous Work

The Marshall Creek area was prospected for lode jade during the period 1965-1968 by Robert J. Smith. The sale of alluvical boulders of lode jade found in Marshall and Brett Creeks financed a continuing program which resulted in the discovery of inplace nephrite lode jade on Brett Creek in September, 1968. A limited amount of staking in the area had been done by R. J. Smith for Green Bay Exploration & Mining Ltd. prior to this time and several additional claims were staked following the discovery both by R. J. Smith and International Jade Ltd.

In late 1968 International Jade Ltd. entered into an option agreement with Green Bay Exploration & Mining Ltd. For a period of two years, until 1970, International Jade Ltd. conducted stripping operations and some mining of the initial discovery and prospecting on the property. During this time several tons of high quality nephrite lode jade were mined.

Following termination of the agreement in 1970 independent prospecting and limited stripping operations were conducted by Green Bay Exploration & Mining Ltd. and International Jade Ltd. on their respective properties to October, 1972. In addition during this time 20 to 50 tons of gem quality jade was mined by Green Bay Exploration & Mining Ltd. from the initial discovery pit.

In September 1968 Comaplex Resources International Ltd. entered into an agreement with International Jade Ltd. Up to this time the properties under disposition to both International Jade Ltd. and Green Bay Exploration & Mining Ltd. and the surrounding area had been subjected only to prospecting for alluvial jade boulders in hopes of tracing these back to source. There is no record that the properties were subjected to detail geological mapping or geophysical surveys in an attempt to determine structural or lithological controls for the occurrence of nephrite lode jade or to delineate areas favourable to host nephrite lode jade deposits. Therefore the intent of the program conducted by Wollex Exploration Ltd. for Comaplex Resources International Ltd. (N.P.L.) was twofold: - (1) to delineate suitable lithologic and/or structural areas favourable to host nephrite lode jade deposits and (2) to extract as much nephrite jade as possible suitable for gem and industrial use.

#### REGIONAL GEOLOGY

The Marshall Creek property of International Jade Ltd. is located on the southern flank of the Shulaps Mountain Range. The Shulaps Range is on the eastern edge of the Coast Mountains, the site of a chain of composite granodioritic batholiths. It is abount 10 miles outside the eastern margin of the main batholith, and is on the northeastern flank of a regional anticline that plunges gently northwestward with the general structural grain.

An ultrabasic intrusive body, possibly Upper Triassic, underlies most of the northern part of the Shulaps, while the remainder consists of complexly folded and faulted sedimentary and volcanic strata of pre-Upper Triassic, Upper Triassic, Jurassic, and possibly Cretaceous ages, cut by gabbro and late Mesozoic or Tertiary hypabyssal intrusives. A regional structure, the Yalakom Fault Zone, forms the eastern boundary to the range. The western boundary of the range is also the site of faults that trend northward and northwestward.

Much of the southern and western flanks of the range, in which the Marshall Creek deposits lie, are underlain by pre-Upper Triassic rocks which are lithologically similar to part of the better-known Cache Creek Group exposed east of the Shulaps area. Argillite, chert and greenstone predominate, and are accompanied by minor interlayered quartzite and limestone. The argillite has two manners of occurrence: as beds measurable in feet or hundreds of feet, and as intimate interlaminations with chert measurable in fractions of an inch. Most of the chert layers are between a fraction of an inch and four inches thick, those in the 1 to 2 inch range being most common. The chert-argillite sequences are commonly crumpled. The greenstones comprise volcanic and pyroclastick rocks, and metamorphic rocks whose extrusive origin is less evident. The metamorphic rocks vary from phyllitic grey-green to dark green, fine-grained rocks interbedded with shyllitic, argillaceous and limy strata, to less altered, aphanitic or very fine grained dark brown to dark green greenstones.

Generally south of the Shulaps ultrabasics and within the pre-Upper Triassic sequence are intrusive stocks of fine grained quartz diorite porphyry (dacite) termed the Rexmount Porphyry.

The major portion of the Shulaps Range is underlain by ultrabasic rocks consisting of peridotite, dunite, minor

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pyroxenite, and serpentinized, carbonatized, and steatitized equivalents. This intrusive mass trends northwest and extends over a distance of 20 miles and is 7 miles wide at its widest point.

A reconnaissance photogeologic study was conducted over the property area covering approximately 350 square miles (Appendix I). The interpretation shows the trend of fold axes and dominant fault fracture patterns for the area. In addition, the ultramafic intrusives (Shulaps body) have been outlined which intrude strata ranging in age from Upper Triassic to Lower Cretacious.

The reconnaissance structural interpretation suggests the presence of a large curvilinear and complexly folded structural high and adjacent structural basins. Flaning folds complicated by folded thrust faults tend to outline these features. In the basin areas these folds tend to wrap around the axial traces. In some instances these folds are overturned. Several of the prominant folds on the regional structural map disappear north of Marshall and Hogg Creek within the main project area where they become isoclinal and overturned or are translated into thrust faults and shear zones to form imbricate structure.

The majority of faults and fractures trend N  $30^{\circ}$  to N  $45^{\circ}$  W. Some N  $45^{\circ}$  E and northerly trending fractures are also present although less well expressed.

#### LOCAL GEOLOGY

The Marshall Creek property of International Jade Ltd. covers an area of approximatley 5 miles by 1 mile on the southsouthwest slopes of the Shulaps Mountain Range above Marshall Creek. The only geological map available is on a regional scale of 1" = 1 mile and only partly covers the claim area. (G.B. Leech, 1953; "Geology and Mineral Deposits of the Shulaps Range, B.C., Department of Mines, Bulletin 32).

This section on the local geology has been compiled from available published information, the results of detailed geological mapping of specific parts of the property, (Map 3.120.4.2, 3.120.4.5 and 3.120.4.7) an aerial photograph geological interpretive study (Appendix 1) and a petrographic study of 20 selected specimens (Appendix 2) collected from the area on which detailed geological mapping was conducted.

The property is predominately underlain by a Pre-Upper Triassic interlayered assemblage consisting mainly of argillaceous shale with minor amounts of limestone, arenaceous shale and chert. This sequence has been intruded by a diversified series of igneous rocks ranging in composition from serpentinite to granite. The more basic bodies are probably related to the main Shulaps Ultrabasic Complex with the more acidic bodies representing the later phases of the Shulaps intrusive rocks or the younger stages of the Coast Range Batholith. All of the rocks underlying the property have been subjected to low grade metamorphism and are composed of mineral assemblages characteristic of the Greenschist Facies.

Argillaceous shale, constituting the predominant rock type underlying the property, is fine grained, fissile, dark grey to black weathering and locally interlayered with medium to dark grey chert laminae and lenses ranging from a fraction of an inch to several tens of inches wide. Locally the argillaceous shale contains interlayered dark prangy-brown, fine grained arenaceous shale containing a relatively high percentage of well rounded quartz grains. Fine grained, dark grey to black limestone may occur as thin laminae interlayered with the shale sequence or a larger discrete mappable units several feet in width. The general strike of the sedimentary rocks is east-west with dips steep to the north or south. Where exposed in trenches and along road-cuts the contacts between the sedimentary rock and the basic-ultrabasic intrusive rocks are for the most part conformable as are the smaller acidic igneous intrusive bodies. The larger acidic igneous intrusive bodies, such as the feldspar porphyry exposed on the northern part of the claim group up Brett Creek, in part, show disconformable contact relationships with the sedimentary rocks.

The ultrabasic intrusive rocks consist mainly of black, intensely sheared, fissile serpentinite or fine grained light greyish green compact serpentinite. Both the grey and the black varieties of serpentinite exhibit varying degrees of alteration to talc and/or chlorite schist.

Two subparallel east-west striking fold axis lie within the property: a synform axis underlying the north part of the property and a corresponding antiform axis underlying the south part of the property. The most prominant set of faults or fracture zones trend north to northeast.

The nephrite jade is in all cases observed to date, directly associated with the altered (serpentinized) ultrabasic bodies and occurs as east-west trending lenses and pods either along the contact of the serpentinite with the adjacent sedimentary rocks or within the serpentinite body. The quality of the nephrite jade varies considerably from the intensely altered and sheared variety that occurs in the pit located at the southeast corner of the 4-Ton mineral claim to the gem quality material that occurs in the Green Bay Exploration & Mining Ltd. pit immediately west of the 4-Ton mineral claim.

#### RESULTS OF THE EXPLORATION PROGRAM

#### Introduction

It is generally accepted that occurrences of nephrite jade are associated with altered ultrabasic (serpentinite) intrusive rocks and occur either (1) along the contact between these altered ultabasic bodies and basic rocks (gabbro), (2) along the contact between the altered ultrabasic rock and the sedimentary or volcanic host rocks or (3) are enclosed within the altered ultrabasic rock. In addition most of the known nephrite jade deposits occur along zones of structural weakness.

To date in the Marshall Creek area there is only one known inplace occurrence of nephrite lode jade that would meet commercial requirements for gem and industrial quality jade. This is the open pit occurrence developed by Green Bay Exploration & Mining Ltd. located on Blue No. 1 and No. 2 mineral claim immediately adjacent to the west boudary of International Jade Ltd. Jim No. 1 Fraction mineral claim. The few outcrop occurrences of nephrite and several of the nephrite-bearing boulders that occur on the International Jade Ltd. property are intensely sheared and fractured and commonly altered in varying degrees to talc-chlorite schist. In addition the nature and habit of occurrence of the nephrite lode jade in the Green Bay Exploration & Mining Ltd. open pit is elliptical or pod-like in both plan and section and it is certain that other occurrences in the area are similar both in configuration and with varying relative size. This definitely is the case with the sheared and altered nephritebearing pods exposed in the pit located at the southeast corner of the 4-Ton mineral claim as well as other occurrences on the International Jade Ltd. property.

Prior to commencing the exploration program it was apparent that in the area the occurrence of minable pods and lenses of good quality nephrite lode jade is erratic and that immediate commencement of costly stripping operations with the lack of more definitive target areas would be an extreme risk. Therefore the first stage of the program was to extend known zones and locate new areas underlain by ultrabasic rocks using a combination of geological mapping, geophysical and prospecting techniques. Areas selected for coverage were the known inplace occurrence of ultrabasic rocks with which good quality nephrite lode jade was known to occur or with which nephrite jade may probably be associated based on the occurrence of nephritebearing boulders. These were (1) the south half of the 4-Ton mineral claim extending east from the Green Bay Exploration & Mining Ltd. open pit to the east boundary of the claim, (2) the northern twothirds of the Lang No. 9 and Lang No. 10 mineral claims and (3) an area covered by portions of Royal No. 3, Lang No. 13, Royal No. 2 fraction, Royal No. 2, Lang No. 14, Jim No. 33 fraction and Royal No. 1 mineral claims. The second phase of the program was to test selected ultrabasic zones by x-ray diamond drilling to determine if nephrite-bearing pod(s) were present and if they were of sufficient size to be economically extracted (note: because of poor core recovery due to blocking and fracturing of the nephrite-bearing material in the core barrel it was not possible to determine the quality of the material). The third phase entailed stripping the overburden and removing the nephrite-bearing material to determine quality.

### GEOPHYSICAL SURVEYS

#### Magnetometer Surveys

#### Introduction

A Fluxgate Magnetometer Model Mf-2 from Scintrex Ltd., was used to conduct the magnetometer surveys. The vertical component of the earth's magnetic field was read at 25 foot intervals along picketed crosslines spaced at 100 foot intervals over the 4-Ton, Lang and Royal grids. A detail survey was conducted over the pit opened on the southeast corner of the 4-Ton grid with stations spacings at 10 foot intervals along 20 foot spaced crosslines. The purpose of the survey was to extend known areas and locate other areas underlain by serpentinite.

#### The 4-Ton Grid

A magnetometer survey was conducted over the entire 4-Ton mineral claim (c.f. map 3.120.4.1 and map 3.120.4.4). A 400 foot wide east trending zone of discontinuous elliptical magnetic highs underlie the south half of the mineral claim. A 500 foot by 150 foot magnetic high is located in the northwest part of the mineral claim. Background averaging approximately 5,000 gammas with the magnetic highs ranging from 6,000 to 9,300 gammas.

On the west boundary of the mineral claim a magnetic high anomaly is coincident with the serpentinite body with which the nephrite lode jade is associated in the Green Bay Exploration & Mining Ltd. pit. The nephrite pods exposed in the pit occur marginally or flanking to the magnetic high zone in adjacent magnetic low zones.

An elliptical 8,000 gamma magnetic high anomaly underlies the southeast corner of the 4-Ton in an area in which a limited amount of stripping conducted previously by International Jade Ltd. had exposed outcrops of serpentinite. Further stripping conducted in November-December 1972 expressed two elliptical east trending pods of highly sheared and altered nephrite. One pod is located immediately north of the magnetic high anomaly and coincident with a flanking magnetic low. The second pod is located 40 feet north of the magnetic high along an east striking sheared contact with highly altered serpentinite. This sheared and altered nephrite-bearing pod is located on the south side of a magnetic low zone.

The magnetic highs are due to small amounts of magnetite in the serpentinite. The adjacent magnetic lows appear to be due to shearing of the serpentinite accompanied by carbonatization and steatitization resulting in oxidation of the constituent magnetite to hematite.

#### The Lang Grid

A sinuous east trending 600 foot by 50 foot magnetic high ranging from 6,000 to 8,600 gammas underlies the central part of the grid (c.f. map 3.120.4.5 and 3.120.4.6). No nephrite was found associated either directly of indirectly with this magnetic high zone. The remainder of the grid displays a relative flat magnetic relief.

Only one nephrite occurrence was found on the grid. This is a narrow sill-like, highly sheared and altered pod located in the road cut 650 feet north of the magnetic high zone. There is no apparent magnetic correlation associated with this occurrence.

#### The Royal Grid

The magnetic relief over the entire grid is broad and undulating with a discernable east-west trending fabric (c.f. map 3.120.4.7). No apparent magnetic high zones are indicated with the exception of a one station 8,000 gamma reading located at the extreme east side of the grid. A magnetic low zone ranging from 1,300 to 4,000 gammas trends in an easterly direction across the grid. What appears to be an inplace occurrence of highly altered and sheared nephrite occurs within this zone coincident with a reading of 1,300 gammas located in the road cut on the west part of the grid. In addition two nephrite-bearing boulders occur on the east side of the grid at the base of a slide area coincident with the east trending magnetic low zone.

#### Induced Potential Survey

An induced polarization survey was conducted over selected crosslines on Jim No. 1 fraction and the southwest part of the 4-Ton mineral claim immediately east of the Green Bay Exploration & Mining Ltd. open pit (c.f. Figure 3 and Figure 4, respectively). The purpose of the survey was to determine the spatial relationship and the position of the serptentinite lenses relative to (1) the magnetic high anomalies and (2) the nephrite lode jade lenses exposed in the Green Bay Exploration & Mining Ltd. open pit.

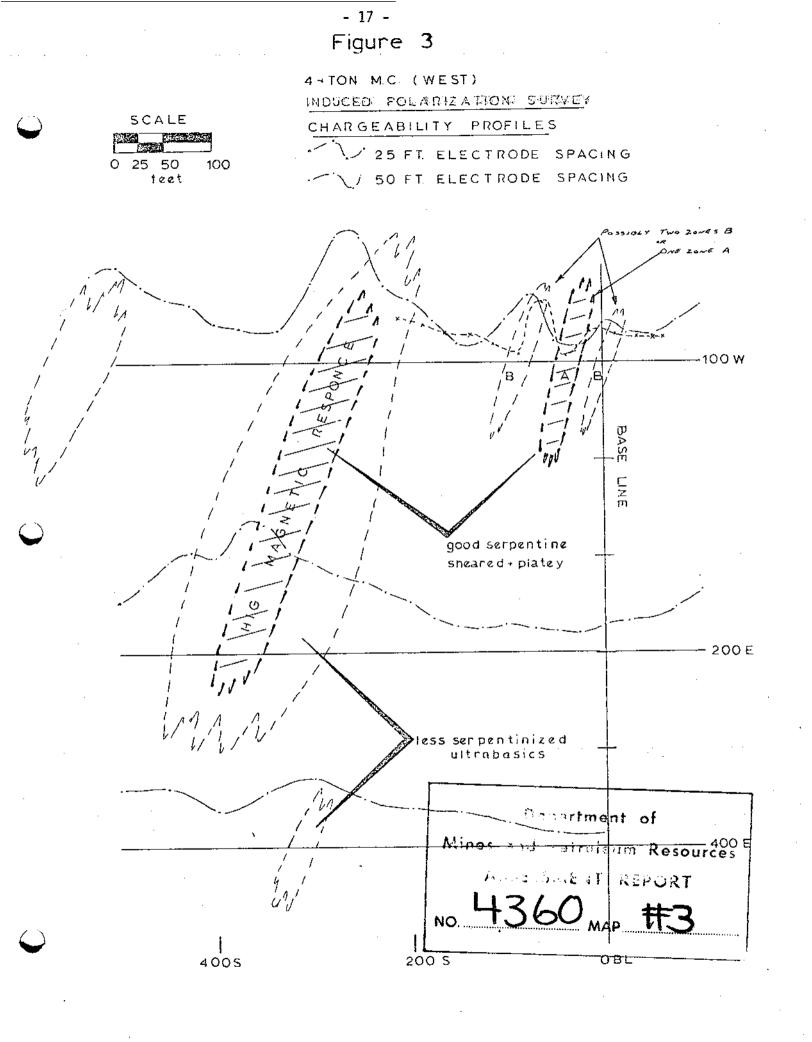
Extrapolation of the I.P. changeability profile on line 1 + 00 west to the Green Bay Exploration & Mining Ltd. open pit indicates that the nephrite lode jade pods are directly associated with the serpentinite lense(s) and either occur within or more probably, marginal to the serpentinized lenses.

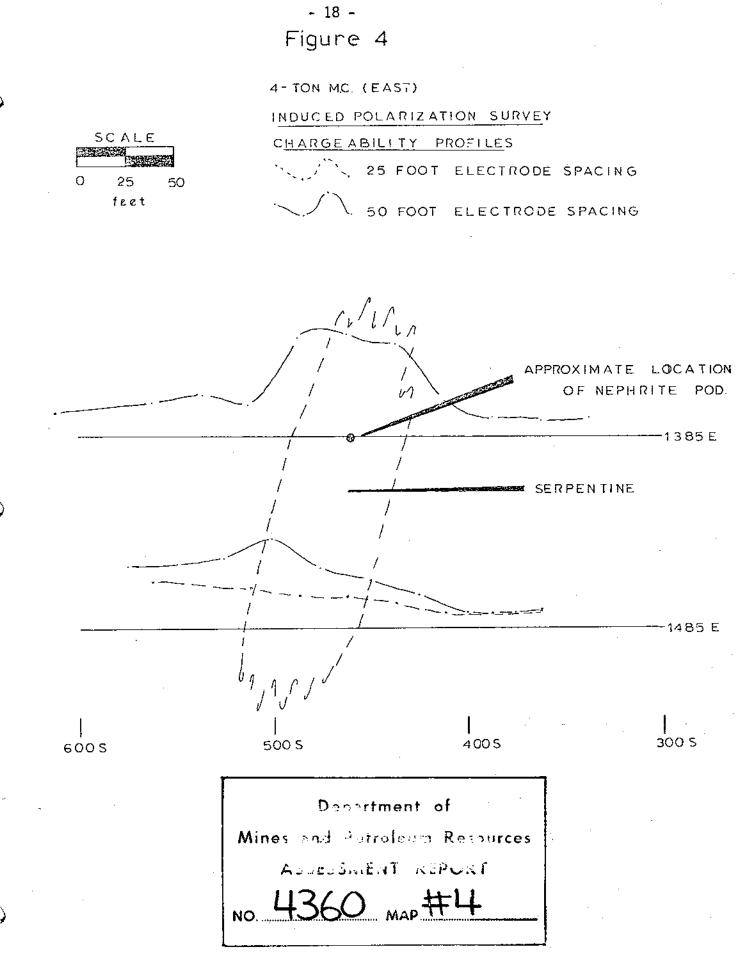
The I.P. chargeability profiles conducted over the open pit located on the southeast corner of the 4-Ton mineral claim (c.f. Figure 4) confirm the outcrop occurrence of the two pods of low grade nephrite-bearing material as one occurring within the serpentinite body and the other marginal to the serpentinite body. (c.f. maps 3.120.4.2 and 3.120.4.3).

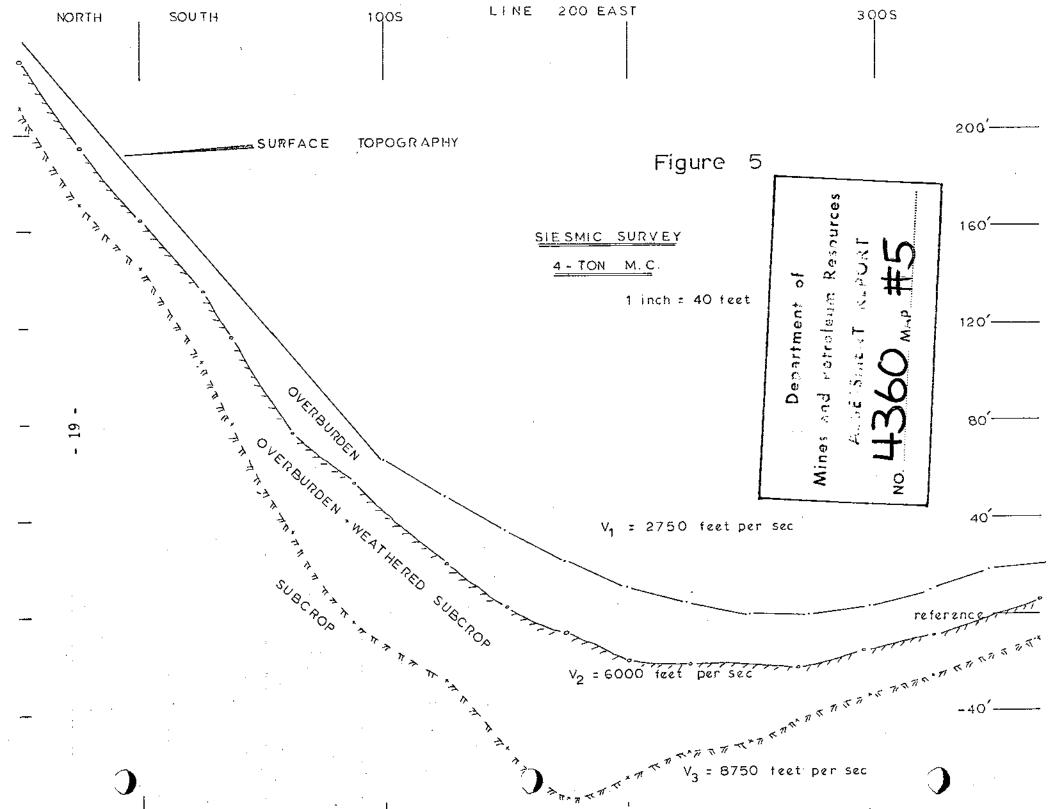
#### Seismic Survey

A seismic profile conducted on line 200 east between 100 north and 400 south on the southwest part of the 4-Ton mineral claim (c.f. Figure 5 and map 3.120.4.1) to determine the depth of overburden and nature of the subcrop overlying the serpentinite body located 400 feet southeast of the Green Bay Exploration & Mining Ltd. open pit. Prior to encoutering overburden disposal and road access problems as a result of proximity to Green Bay Exploration & Mining Ltd. property line and open pit it was initially planned to commence stripping operations on the eastern extension of the serpentinite body(s) associated with the nephrite lode jade in the Green Bay Exploration & Mining Ltd. open pit. For this program it was essential to know the depth of overburden and the weathered subcrop zone to adequately plan the x-ray diamond drill program and contingent upon these results the design of the open pit.

The results of the seismic survey indicated that both the depth of overburden and the weathered subcrop zone ranged between 30 and 40 feet.







#### TOPOGRAPHIC SURVEY

A topographic map covering the International Jade Ltd. property and surrounding area (approximately 31 square miles) was compiled on a scale of 1 inch to 1,000 feet with a contour interval of 50 feet from vertical aerial photographs on a scale of 1 inch to 1 mile (c.f. Appendix I). A corresponding semi-controlled photo-mosaic was also compiled. Up to this time the most detailed topographic map available was on a scale of 1 inch to 2 miles with a contour interval of 500 feet (Geological maps accompanying "Geology and Mineral Deposits of the Shulaps Range", Bulletin 32, B.C. Department of Mines, by G. B. Leach, 1953).

#### GEOLOGICAL MAPPING AND PROSPECTING

The three areas selected for geological mapping and/or prospecting based on outcrop occurrences of nephrite and the location of nephrite-bearing boulders were portions of the south-half of the 4-Ton mineral claim (map 3.120.4.2), Lang 9 and Lang 10 mineral claims (map 3.120.4.5) and the west part of the Royal group of mineral claims (map 3.120.4.7).

The Green Bay Exploration & Mining Ltd. open pit was mapped in detail as to date this is the only known outcrop occurrence of nephrite lode jade in the Marshall Creek area. Several pods of nephrite jade occur within a zone of black serpentinite that is exposed over a width of approximately 250 feet. The serpentinite is sheared and partly altered to a talc-chlorite schist with the direction of foliation (shearing) being subparallel to the nephrite lenses. Massive dark grey cherty argillite occurs as inclusions within the serpentinite and locally is in contact with the jade. The serpentinite lense and the nephrite jade pods trend east-west, dip vertical and plunge east at shallow angles. The pods of nephrite lode jade that have been mined or are presently exposed in the pit range from 5 to 50 feet in length and 2 to 10 feet in width. In general the quality of the jade lenses improves with depth.

There are presently four lenses of nephrite lode jade exposed in the Green Bay Exploration & Mining Ltd. open pit. The estimated tonnages based on 9 cubic feet per ton are:

Lense #1

7' x 4' x 7' 9 cu. ft.

22 tons

- 20 -

Lense #2

16' x 34' x 7'	423 tons
9 cu. ft.	723 1013

Lense #3

(a) 27' x 5' x 2'	20 +
9 cu. ft.	30 tons
(b) <u>20' x 12' x 18'</u>	480 tons
9 cu. ft.	400 20115

Lense # 4

12' x 15' x 11'	
	220 tons
9 cu. ft.	<u>1,175</u> tons

It is highly probable that a comparable tonnage of nephrite lode jade to that which is expressed in the Green Bay Exploration & Mining Ltd. open pit occurs immediately on strike to the east, in International Jade Ltd. property, associated with the on strike extension of the outlined serpentinite body.

Exposed in the open pit located on the southeast corner of the 4-Ton mineral claim (c.f. map 3.120.4.2) is an interlayered assembly of argillite, cherty argillite, limestone and sill-like bodies of dacite, striking southeast and dipping steeply to the northeast, intruded by sheared serpentinite that has been partly to wholly altered to talc schist. Two lenses of highly sheared and altered nephrite were exposed. One lense is enclosed within dark green to black highly sheared serpentinite located immediately below a roof pendant of black fillile argillite and green talc schist. The second lense is located along a sheared contact between argillite and a partly altered serpentinite.

Lang claim No.'s 9 and 10 are predominantly underlain by dark grey to black fissile argillite and cherty argillite intruded by sill-like bodies of serpentinite, gabbro and syenite porphyry (c.f. map 3.120.4.5). One highly sheared and altered outcrop of nephrite bounded by cherty argillite is exposed in the road cut.

- 21 -

Only one small outcrop occurs on the Royal grid located on the base line at line 0 and consists of highly sheared and altered nephrite, (c.f. map 3.120.4.7). The nature of the occurrence suggests that this may be a large boulder derived from a higher elevation to the east. On the east half of the grid 2 low quality nephrite-bearing boulders occur on the lower extremeties of a rock slide originating from and beyond the northeast corner of the grid.

#### DIAMOND DRILLING

A total of 50 feet of diamond drilling was conducted in the open pit located on the southeast end of the 4-Ton mineral claim using a Boyles x-ray diamond drill. All of the drilling was conducted in the immediate vicinity of the southwestern most nephrite lense (c.f. map 3.120.4.2). The purpose of this drilling was two-fold: - (1) to determine the extent of the nephrite lense, and (2) to determine the quality of the nephrite. The highly sheared nature of the nephrite lense and surrounding serpentinite resulted in very poor core recovery - this prohibiting an absolute assessment of the quality of the nephrite lense. Improved drilling techniques and equipment would be necessary to improve core recovery.

#### TRENCHING

An HD9 cat equipped with a blade and ripper was employed from November 24th to December 11th (a total of 107 hours) to excavate the open pit located on the southeast corner of the 4-Ton mineral claim (c.f. map 3.120.4.2). Two benches were cut: -

Bench # 1

200' x 35' x 40'	=	- 27,777 cubic yards
9		

Bench # 2

100' x 20' x 20' 9	=	8,888 cubic yards
TOTAL	=	<u>   36,665</u> cubic yards

A total of approximately 3,000 pounds of highly altered and sheared nephrite was removed.

#### CUTTING

Two circular 36" diamond saws were used located at the main campsite on Brett Creek. Representative samples of all nephritebearing material located during the course of the program was cut to determine the quality of the material.

#### BIBLIOGRAPHY

Marshall Creek Jade Deposit by C. R. Saunders, Vancouver B.C., 1969.

Nephrite of Siberia by Yu. N. Kolesnik, Academy of Science U.S.S.R., Siberian Division.

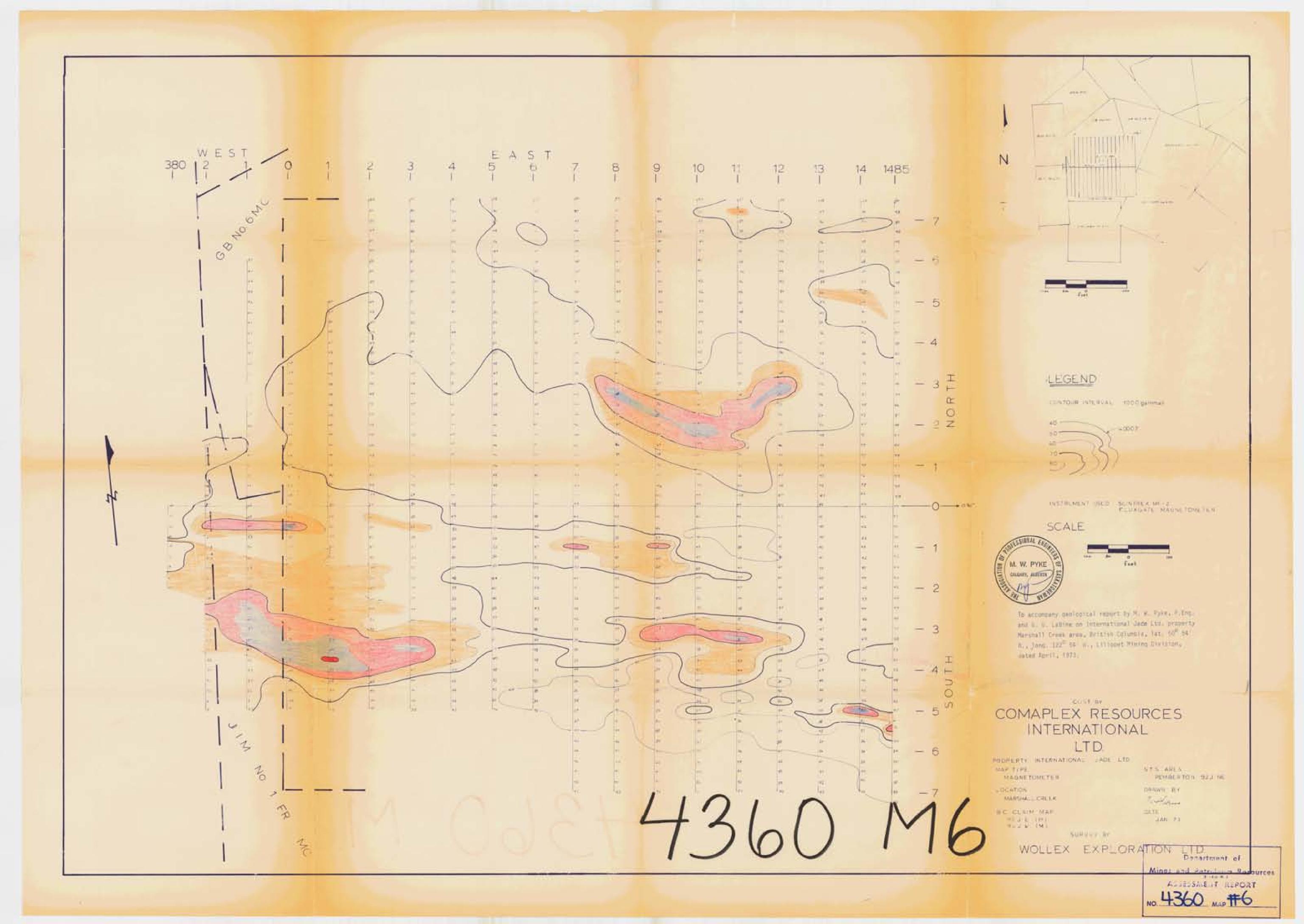
Geology and Mineral Deposits of Shulaps Range by G. B. Leech, 1953.

## OPERATING STATISTICS

CLIENT:	Comaplex Resources International Ltd. (N.P.L.)
PROJECT NUMBER:	3.120
PROPERTY:	International Jade Ltd., Marshall Creek
LOCATION:	Lillooet Mining Division
PERIOD:	October 3 to December 22, 1972

WORK ON PROPERTY:

WORK ON TROPER		Peri	iod		
Name	Function	From		To	Days
Ivan Beddows	Cat Skinner	Oct. 9	-	Oct. 31/72	23
		Nov. 1	-	Nov. 25/72	25
		Dec. 1	-	Dec. 31/72	31
		Jan. 1	-	Jan. 12/73	12
Joe McKenzie	Line	Dec. 1	-	Dec. 14/72	14
	Cutter	Nov. 7	-	Nov. 30/72	24
Joe Cook	Line	Nov. 7	~	Nov. 30/72	24
	Cutter	Dec. 1	-	Dec. 14/72	14
	_ Line	Nov. 7	-	Nov. 30/72	24
McKenzie	Cutter	Dec. 1	-	Dec. 14/72	14
Gerald LaBine	Field Manager Geophysical Operator	Oct. 1	-	Oct. 31/72	31
		Nov. 1	-	Nov. 30/72	30
		Dec. 1	-	Dec. 31/72	31
		Jan. 1	-	Jan. 31/73	31
		Feb. 1	-	Feb. 28/73	28
Jacke LaBine	Cook	Oct. 11	-	Oct. 31/72	20
		Nov. 1	-	Nov. 30/72	30
		Dec. 1	-	Dec. 17/72	17
Rod Spooner	Geologist	Oct. 1	-	Oct. 31/72	31
		Nov. 10	-	Nov. 30/72	21
		Dec. 1	-	Dec. 17/72	17
Frank Raven	Mechanic Geophysical Operator	Oct. 16	-	Oct. 31/72	16
		Nov. 1	-	Nov. 30/72	30
		Dec. 1	-	Dec. 16/72	16
		Jan. 17	-	Jan. 20/73	4
		Feb. 9	••	Feb. 15/73	71 <sub>2</sub>
M. W. Pyke	Consulting				5
	Engineer				570 <sup>1</sup> 2
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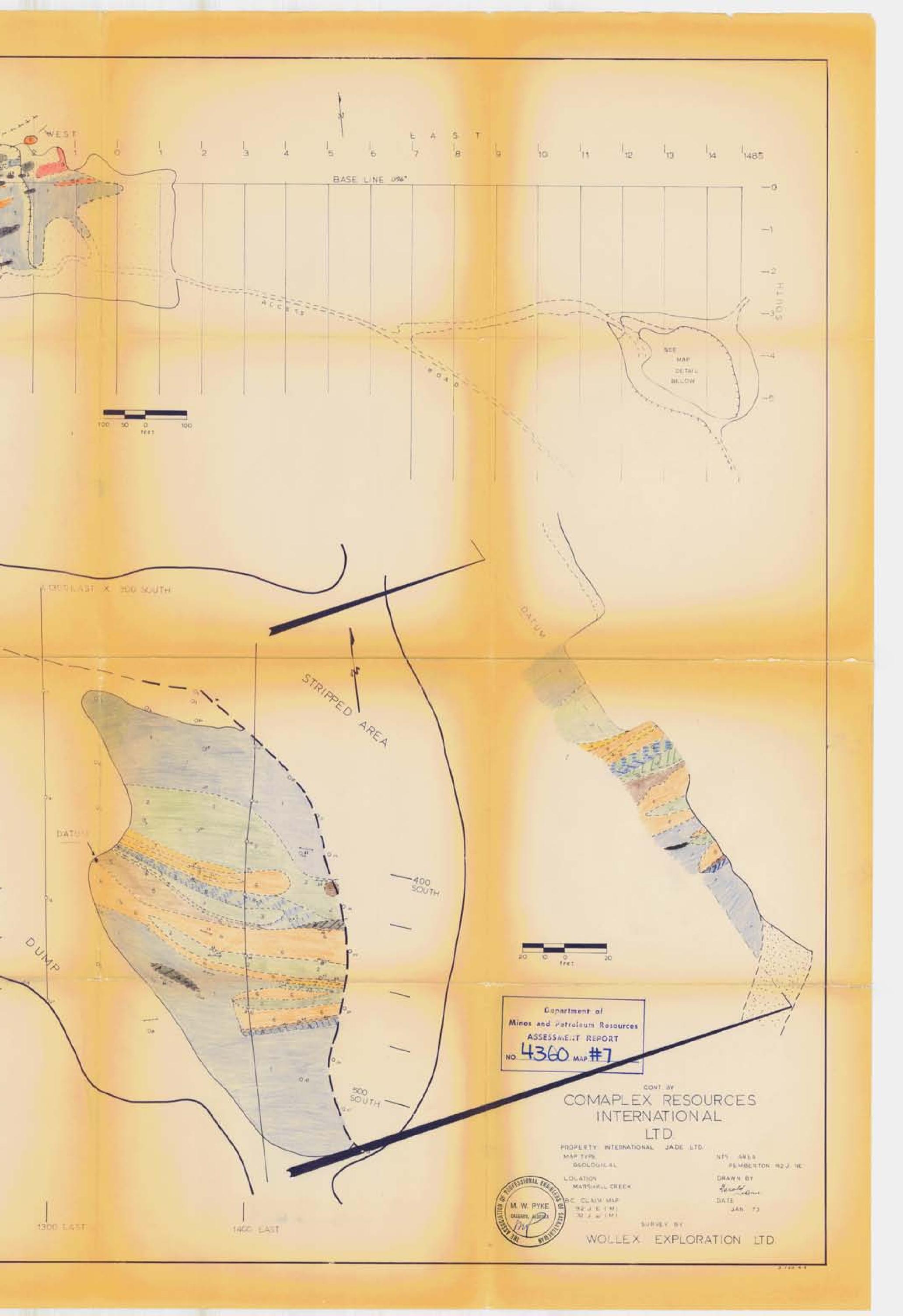
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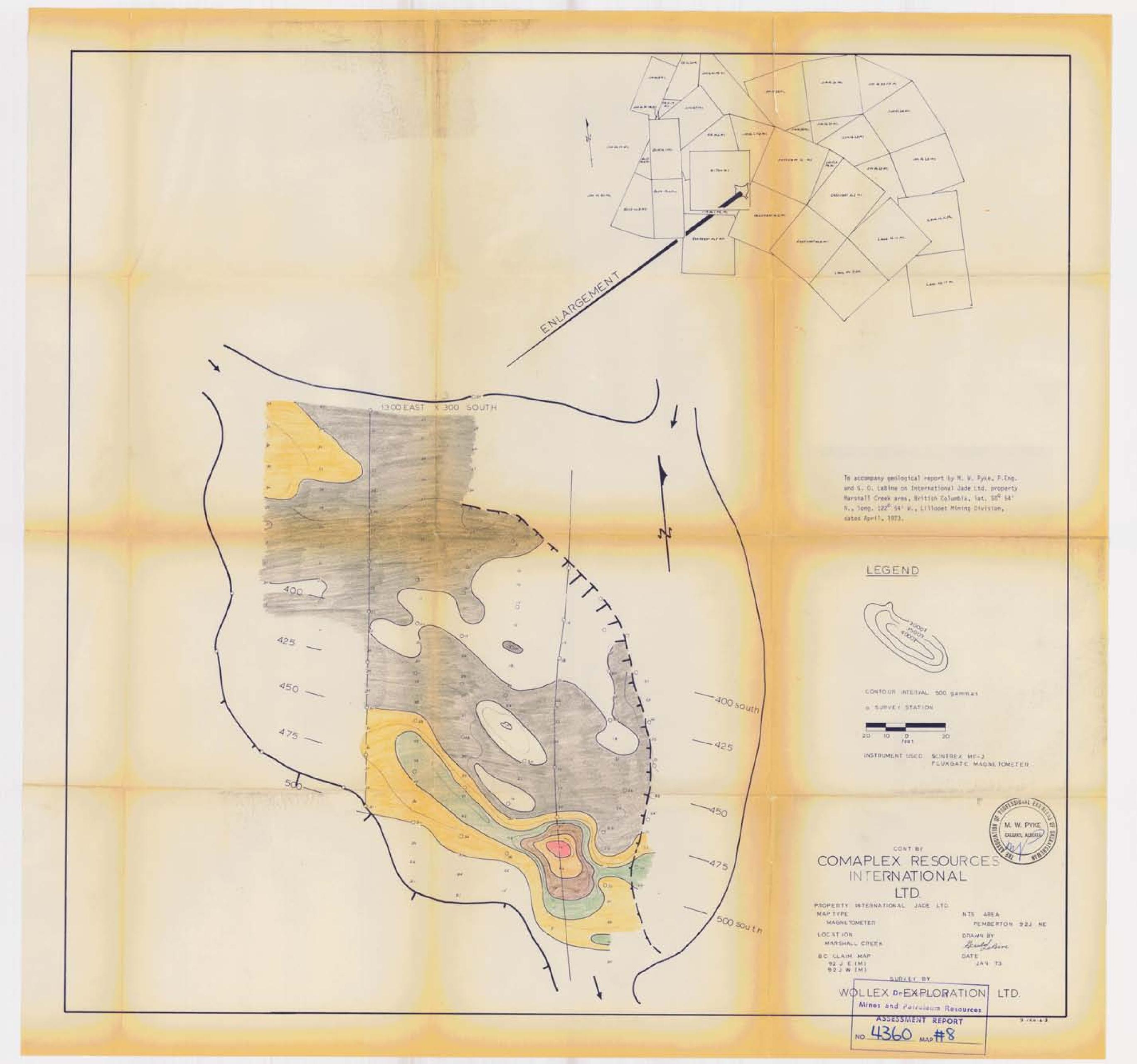
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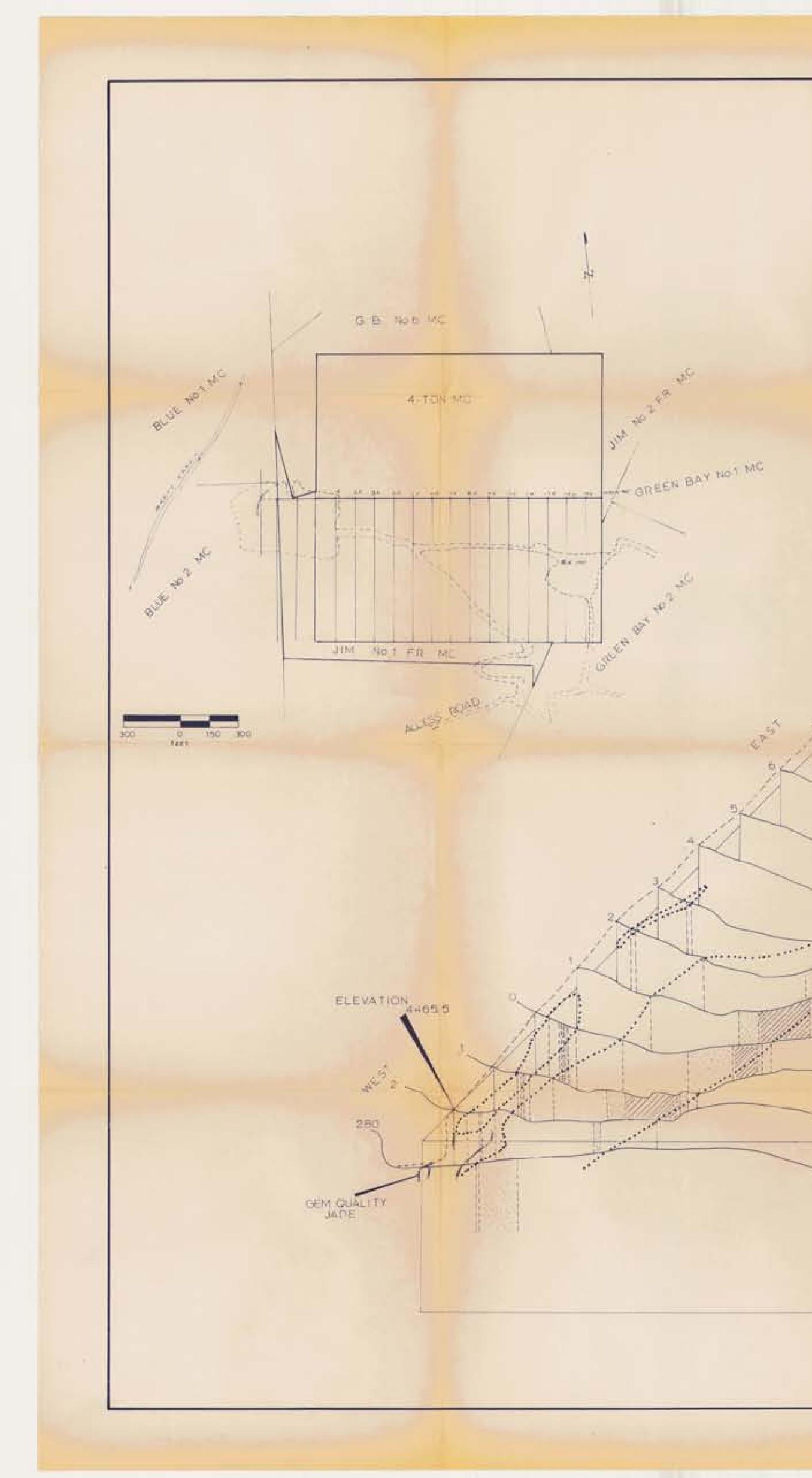
9	BLACK SERPENTINE, HOLY SHEARED , PLATY DEVALLY POLISHED	400
3	GREEN TALE SCHIST, NERY FISSILE, FINE GRAINED, REFERENCE TO AS LOW QUALITY JADE WHEN MAPIC	
1	TALC SHIST, PLATE COMPLETELY WEATHERED	
14	NEPHRITE I JADED. VERY FINE GRAINED, MOTTLED BREEN AND WHITE, USUALLY FRACTURED AND FILLED WITH CALCITE OR WOLLASTONITE	425 ~
344	NEPHRITE (JADE) 10-50 % GEN QUALITY APPLE GREEN VERY TOUCH	
з	ME TA DACITE, VERY FINE SRAINED, OLIVE ONED, FRIABLE, WEATHERED SURFACES RUSTY, OCCURS IN BULL LIKE HODIES	450
8,641	ARGILLITE.VENY HINE GRAMED RUSTY WEATHERED SURFACES, FRESH SURFACES BLACK TO DRWY, F.SSILE FRIABLE, B& CHERTYARGILLITE	
2	LITE STONE VERT THE GRAINED, RUSTY WEATHERED SUBFACES, FRESH SUBFACES	475
	SERPENTINE, UNE GRAINED . COMPACT. MEATHERED . SURFACES TALLY GREEN	
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To accompany soclupical report by H. W. Pyke, P.Eng. and G. O. Lalline on International Jade Ltd. property Marshall Creek area, Brittish Columbia, Tat. 50<sup>0</sup> 541 N., long. 122<sup>0</sup> 541 W., Etilisost Mining Division. Hated April, 1973.







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SOUTH

MAR TYPE MAGNETOMETER BAROMETRIC LOCATION HANSHALL CHEEK HC CLAM MAP

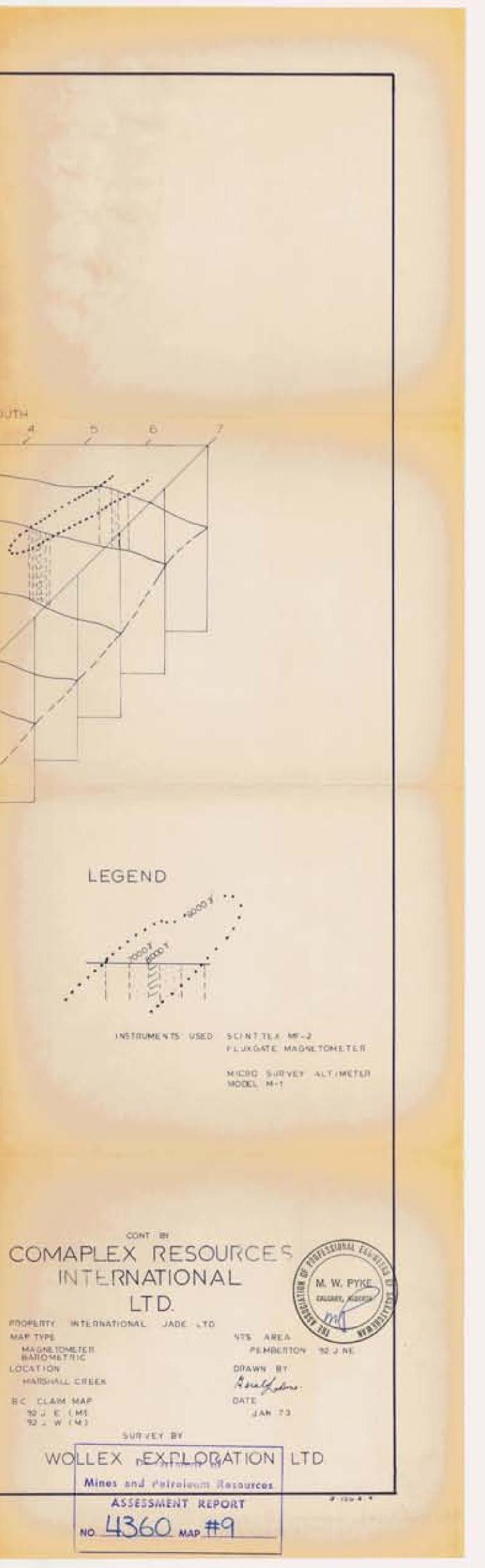
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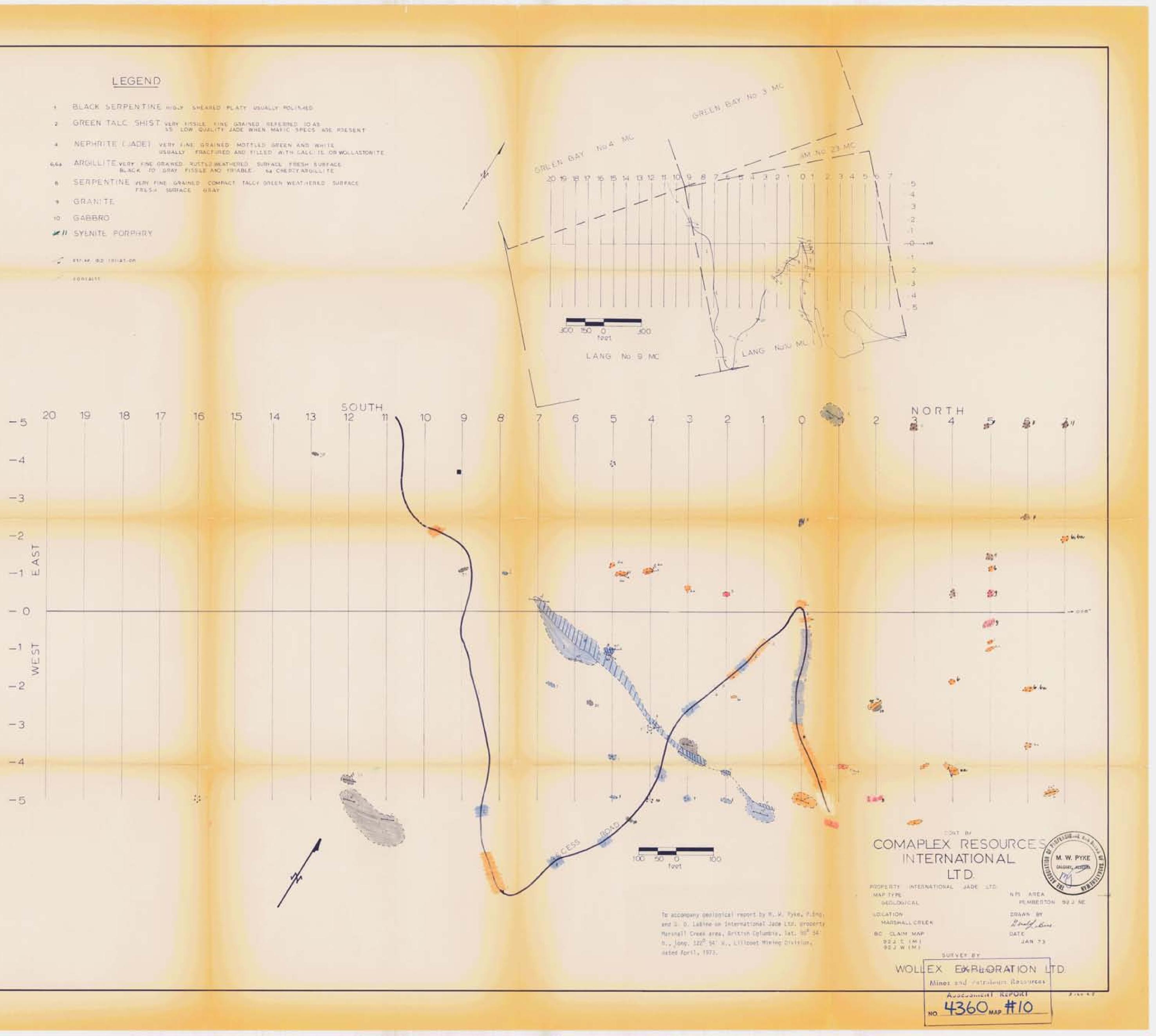
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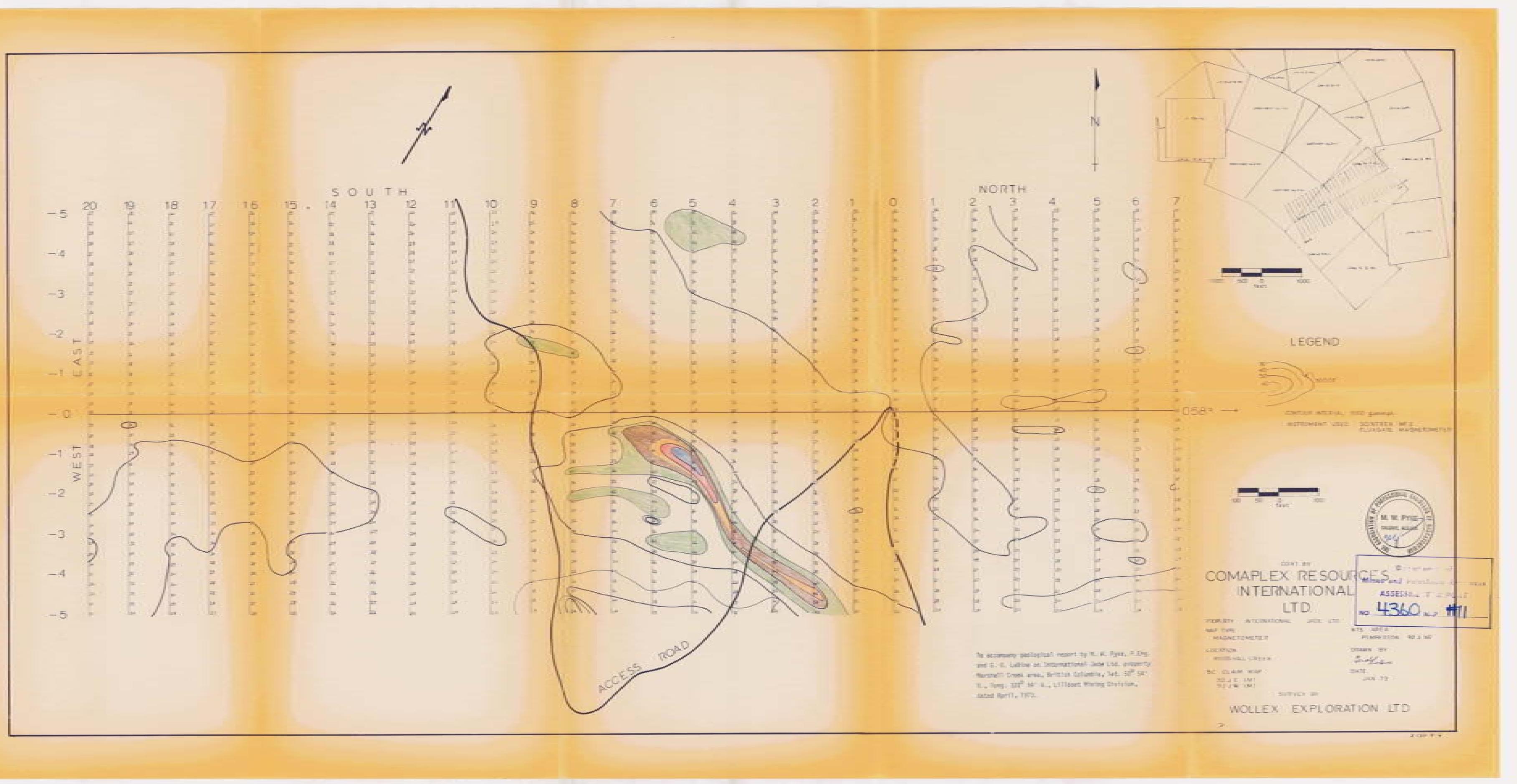
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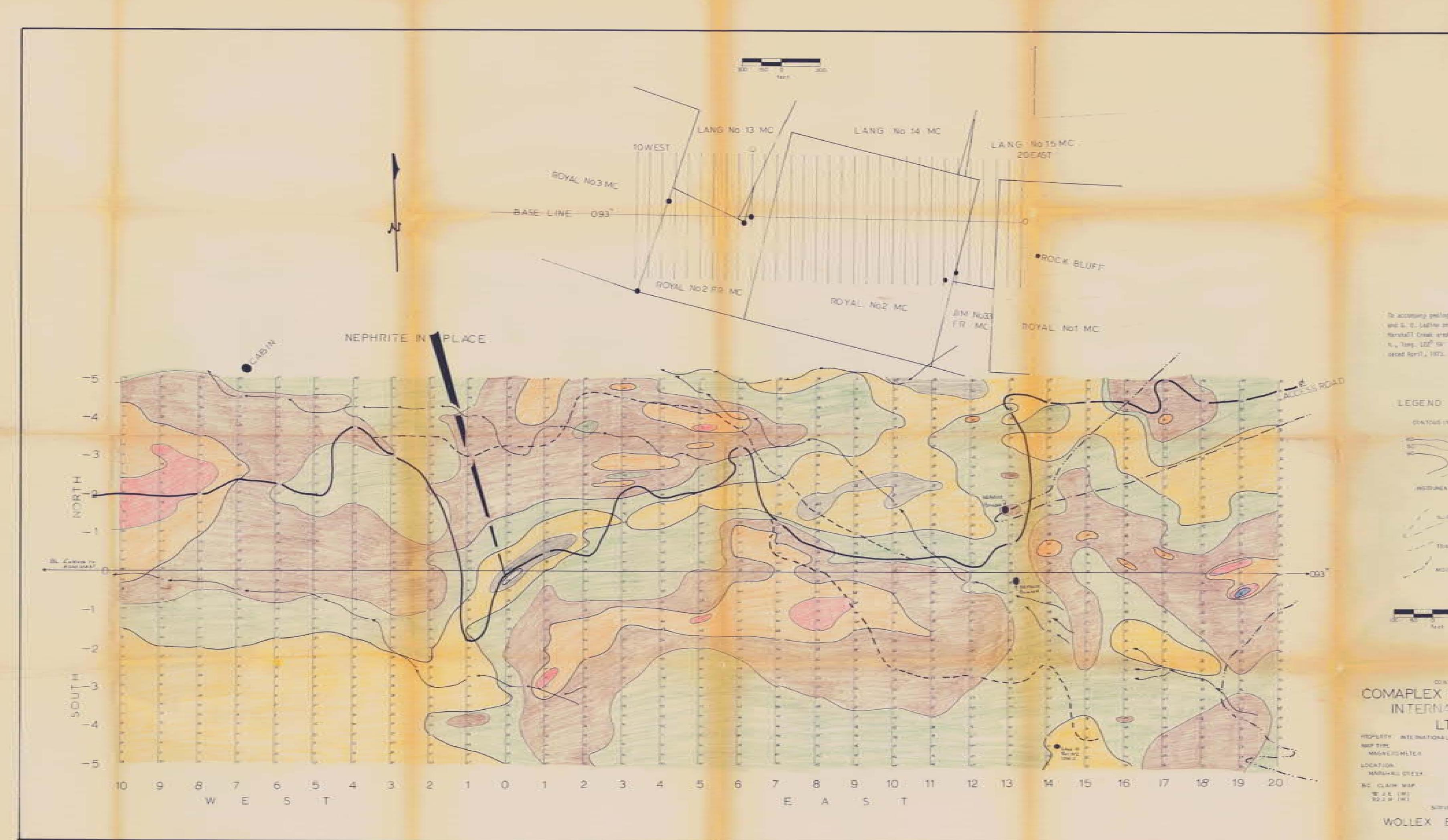
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