85-473- 13759.

GEOLOGICAL BRANCH
ASSESSMENT REPORT

13,759

REPORT ON

GEOPHYSICAL, GEOCHEMICAL AND GEOLOGICAL SURVEYS

5/86

ON THE

CHINA & LU-LINDA GROUPS

CHINA	1234 (5)
GRIZZLY	1239 (5)
JENNY	636 (11)
LINDA 1	454 (5)
LINDA 2	455 (5)
LUCY 2	373 (5)
LUCY 3	374 (5)

ALBERNI & NANAIMO MINING DIVISIONS

N.T.S. 92F/2

49°10'N 124°40'W

Owners : Westmin Resources Ltd., Vancouver, B.C.
Nexus Resources Corp., Vancouver, B.C.

Operator : Noranda Exploration Company, Limited
(no personal liability)
Vancouver, B.C.

Submitted by: R. Wilson, Project Geologist
L. Bradish, Division Geophysicist

Date : July, 1985

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1.0 INTRODUCTION

During the third week of April 1985 geological, geochemical, and geophysical surveys were conducted on a section of the China/Grizzly and Lu-Linda groups 12 km SE of Port Alberni in the Alberni and Nanaimo Mining Divisions, Vancouver Island, B.C. The project is part of a joint venture agreement between Westmin Resources Ltd, "Westmin", MacMillan Bloedel Limited, "MB". and Noranda Exploration Company, Limited (no personal liability), "Noranda". The survey is a follow-up of a Questor airborne E.M. survey conducted by Noranda in 1983.

The present survey was conducted on both the China-Grizzly group and Lu-Linda group and this report describes the work conducted on both groups.

The survey area is underlain by Sicker Group volcanics, as regionally mapped by Muller and Carson (1969). No outcrops were found within the grid area although talus float seen was andesitic (crystal) tuffs and lapilli breccia.

Two airborne E.M. surveys, (Questor Input and Geoterrex E.M.) detected 1 and 2 channel E.M. responses in the grid area. I.P., magnetometer and limited Pulse E.M. surveys conducted over the responses detected a zone of low resistivity in the valley bottom corresponding to the airborne anomalies flanked by high resistivity valley walls. Airphoto interpretation indicates the gridded area to be at the intersection of two crosscutting fault systems. The source of the low resistivity zone as defined by the airborne E.M., I.P. and PEM surveys appears therefore to be caused by water saturated high porosity rock within the fault system.

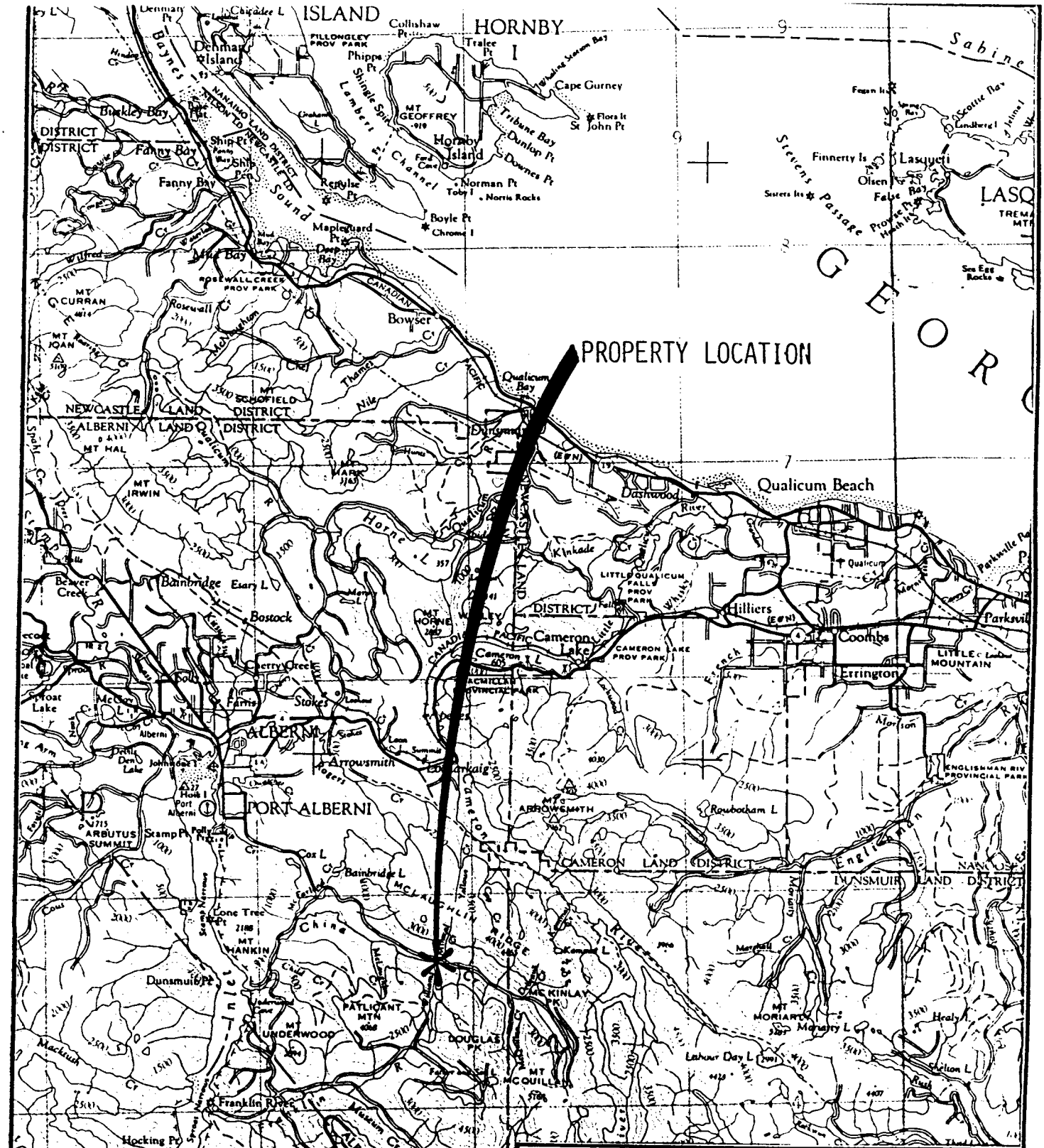
Several gold/arsenic soil geochemical anomalies from along the bank of Mineral Creek are likely related to past placer Au workings and an 8-stamp mill built along the creek. The origin of the gold may be from an Au-bearing quartz vein formerly worked by Consolidated Alberni (Vancouver Island Gold Mines) further up Mineral Creek.

All geophysical anomalies have been adequately explained and further geophysical work on this ground should be directed toward the area of the historical gold showings. Further soil geochemical sampling of the area surrounding the anomalous Au-As results is recommended to determine if the anomalies were caused by bedrock sources or contamination from historical placer and milling operations.

1.1 Location and Access

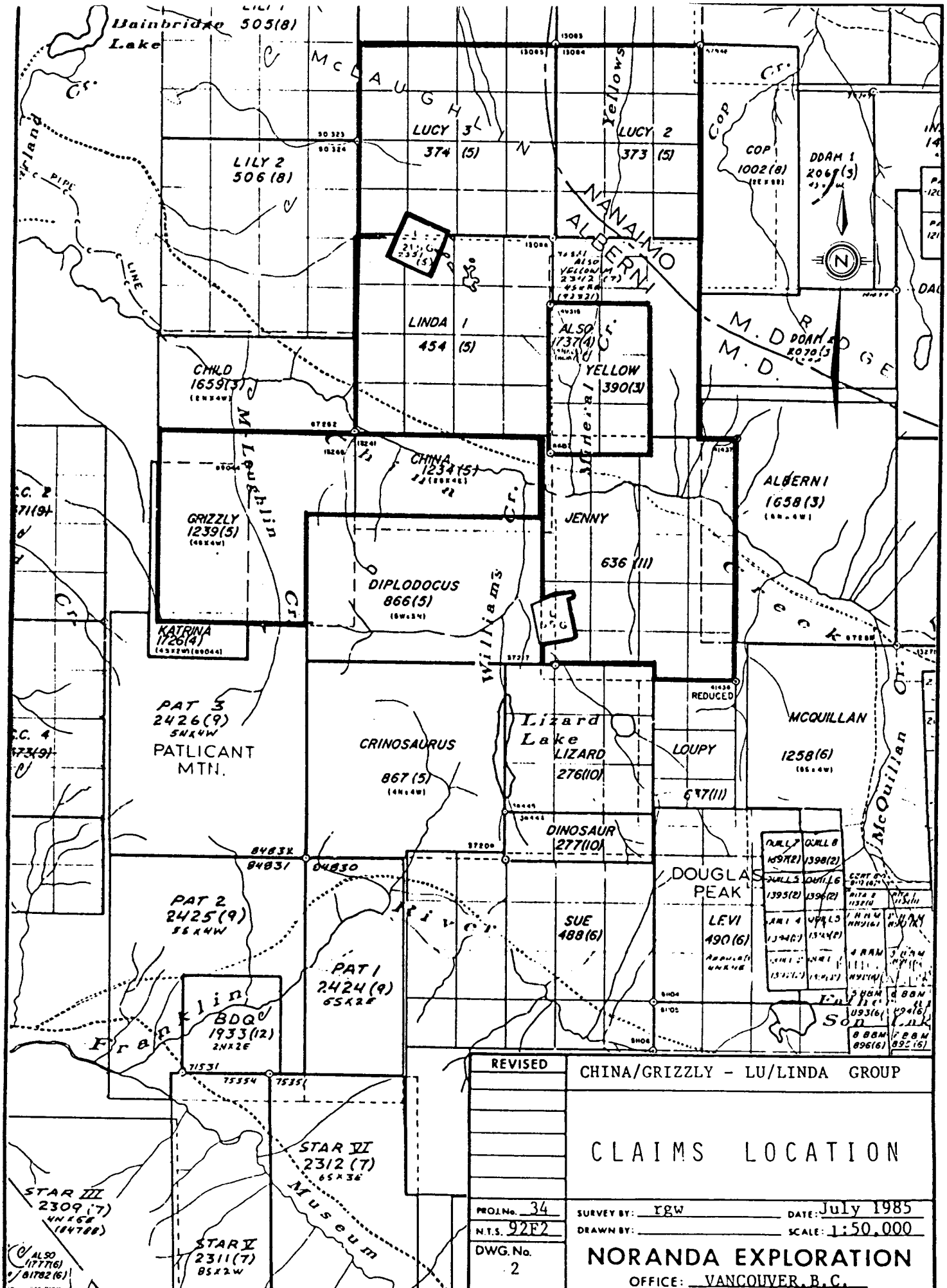
The China and Lu-Linda groups are located 12 km S.E. of Port Alberni on China Creek at the intersections of Mineral and Williams Creeks, (Figure 1).

From Port Alberni access is via the Franklin Camp, Cameron and China Creek main roads, (Figure 2) to the centre of the claims. Driving time to the properties from Port Alberni is approximately 30 minutes.



REVISED	CHINA/GRIZZLY - LU/LINDA GROUP
	LOCATION MAP
PROJ. No. 34	SURVEY BY: rgw DATE: July 1985
N.T.S. 92F2,7	DRAWN BY: SCALE: 1:250,000
DWG. No. 1	NORANDA EXPLORATION
	OFFICE: VANCOUVER, B.C.

VANCAL 11927


Bainbridge Lake
LILY 1
505(8)
LILY 2
506(8)
LUCY 3
374 (5)
LUCY 2
373 (5)
COP
1002(8)
DDAM 1
2067(3)
LINDA 1
454 (5)
ALSO
737(4)
YELLOW
390(3)
CHILD
1659(3)
CHINA
1234(5)
GRIZZLY
1239(5)
JENNY
636 (11)
ALBERNI
1658(3)
DIPLODOCUS
866(5)
KATRINA
1726(4)
PAT 3
2426(9)
5NX4W
PATLICANT
MTN.
CRINOSAURUS
867(5)
Lizard Lake
LIZARD
276(10)
LOUPY
677(11)
MCQUILLAN
1258(6)
DINOSAUR
277(10)
DOUGLAS
PEAK
LEVI
490(6)
SUE
488(6)
PAT 2
2425(9)
5SX4W
PAT 1
2424(9)
6SX2E
Franklin
BDQ
1933(12)
2NX2E
STAR VI
2312(7)
6SX3E
STAR III
2309(7)
4NX6E
STAR V
2311(7)
8SX2W
Museum
McQuillan Cr.
Williams Cr.
McLaughlin Cr.
Yellows Cr.
NAWAINO
ALBERNI
M.D.
REVISED
CHINA/GRIZZLY - LU/LINDA GROUP
CLAIMS LOCATION
PROJ.No. 34
N.T.S. 92F2
DWG. No. 2
SURVEY BY: rgw
DRAWN BY:
DATE: July 1985
SCALE: 1:50,000
NORANDA EXPLORATION
OFFICE: VANCOUVER, B.C.
VANCAL 11927

1.2 Topography and Physiography

The China and Lu-Linda groups lie within the Vancouver Island Ranges section of the Vancouver Island Mountains subdivision of the Insular Mountains physiographic zone.

The claim groups are situated in the China Creek valley between McLaughlin Ridge and Patlicant Mountain - Douglas Peak. The claim groups are bisected by Williams and Mineral Creeks.

The present survey was conducted in the China Creek valley, a steep ($30+^{o}$) sided, narrow but relatively flat bottomed NE-SW trending glacial valley. The elevation at the intersection of China and Williams - Mineral Creeks is 350 m (1,148').

The valley bottom in the grid areas has been completely logged and is now covered by a 40+ year old juvenile forest consisting of balsam, hemlock, cedar and fir. Ground growth is mainly silal and other low shrubs which generally do not hamper traversing.

1.3 Previous Work

The earliest recorded work in this area was by Chinese placer miners who worked China and adjacent creeks from 1862 to the 1890's when the creek was staked for hydraulic leases. Prospecting during the 1890's discovered several gold-quartz veins including one on Mineral Creek belonging to Consolidated Alberni. An eight stamp mill was built on Mineral Creek from which two clean-ups were made.

In 1933 Vancouver Island Gold Mines Limited explored the Consolidated Alberni veins and built a 35-ton pilot mill in 1936. Operation difficulties caused cancellation of all work that same year.

Since 1973 many assessment reports have been filed for this general area and the reader is referred to the assessment report index map of 92F for assessment report numbers and general work location.

The Lu-Linda claims were staked by Westmin Resources in 1979 and the China-Grizzly claims were staked by McQuillan Gold (B/S Brent Shorn) in May of 1981. In October of 1982 McQuillan Gold and Christian Petroleum amalgamated to form Nexus Resource Corp.

Regional geology and geochemistry has been completed on the Westmin ground and physical surveys, being trail construction, was completed on the Nexus ground.

The present survey was conducted as part of a joint venture between Westmin, McMillan Bloedel and Noranda which includes an agreement between Westmin and Nexus Resource Corp.

1.4 Owner - Operator

The Lu-Linda group, being:

Claim Name	Record #	Units	Mining Div.	Record Date	Expiry
Jenny	636 (11)	20	Alberni	Nov. 13, 1979	1985
Linda 1	454 (5)	16	Alberni	May 2, 1979	1986
Linda 2	455 (5)	12	Alberni	May 2, 1979	1986
Lucy 2	373 (5)	12	Nanaimo	May 2, 1979	1986
Lucy 3	374 (5)	16	Nanaimo	May 2, 1979	1986

is owned by:

Westmin Resources Limited,
Suite 904, Four Bentall Centre
1055 Dunsmuir Street,
P.O. Box 49066, Bentall Centre,
Vancouver, B.C.
V7X 1C4

under their district office at:

P.O. Box 8000
Campbell River, B.C.
V9W 5E2

The China-Grizzly group, being:

Claim Name	Record #	Units	Mining Div.	Record Date	Expiry
China	1234 (5)	8	Alberni	May 14, 1981	1986
Grizzly	1239 (5)	16	Alberni	May 26, 1981	1986

is owned by:

Nexus Resource Corp
1002 - 475 Howe Street,
Vancouver, B.C.

The current operator is:

Noranda Exploration Company, Limited,
P.O. Box 2380,
Vancouver, B.C.
V6B 3T5

1.5 Economic Potential

The China/Grizzly - Lu/Linda groups lie within the Sicker Group volcanic belt. The Sicker is the host geological group for the Buttle Lake massive sulphide ore deposit which is currently being mined by Westmin Resources. Although the minesite is 80 km to the north-west, similar stratigraphic sequences are found in the Port Alberni area including the two groups. Thus overall geological potential for the groups remains good although no geophysical drill targets were indicated by the present survey.

2.0 SUMMARY OF WORK DONE

2.1 Line Cutting

A grid was established to provide control for the present surveys. Three crosslines at azimuth 030° and a central baseline at 120° were located by hip chain, compass and flagging using logging roads and Cop Creek as control points. A total of 3.525 line km of grid was placed.

2.2 Geology

Geological mapping along grid lines was attempted but no outcrop and only limited talus was found. Therefore a geologic map has not been produced.

2.3 Geochemistry

A geochemical survey which consisted of soil and rock chip sampling was completed during the survey. The total number of samples are listed below:

Soils: 137 samples analyzed for Cu,Mo,Zn,Pb,Ag,Au,As.

2.4 Geophysics

Induced Polarization (I.P.), Pulse Electromagnetics (PEM), and magnetometer (mag) surveys were conducted on the China Creek Grid as listed below:

I.P.	:	2.425	line kilometers
PEM	:	.825	line kilometers
MAG	:	3.525	line kilometers

2.5 Claims Worked

The above mentioned surveys were conducted on the eastern edge of the China claim and the eastern edge of the Jenny claim.

2.6 Personnel

Geological - geochemical surveys were supervised and conducted by R. Wilson and assisted by geologists J. McDonald and G. Gill. Geophysical surveys were conducted by geophysical supervisor K. Lillie, geophysicist B. Kirby, assisted by N. McDonald, and supervised by Division Geophysicist L. Bradish.

3.0 DETAILED TECHNICAL DATA

3.1 Geology

3.1.1 Regional Geology

The China/Grizzly - Lu-Linda area has been mapped by J.E. Muller and J.T. Carson (G.S.C. Paper 68-50) with revisions by J.E. Muller (G.S.C. Paper 79-30) to be underlain by Devonian and/or older Nitnat $\pm$ Myra Formations of the Sicker Group rocks. The Sicker Group consists of the basal Nitnat Formation, middle Myra Formation and upper sediment sill unit or Buttle Lake Formation.

The following descriptions are in part after and in part condensed from J.E. Muller's paper on the Sicker Group, G.S.C. Paper 79-30; The Paleozoic Sicker Group of Vancouver Island, British Columbia, (1980). The reader is referred to this paper for fuller, more concise descriptions of the Sicker Group rocks.

The Nitnat Formation, which is predominantly basic volcanic rocks, and underlies the majority of the Jenny claim, is the oldest member of the Sicker Group. It is mainly basaltic flows, flow-breccias, tuffs and rarely pillowed. The rocks are described as "metabasaltic lavas, pillowed or agglomeratic, commonly with large conspicuous uralitized (actinolite pseudomorph of diopside) pyroxene phenocrysts and amygdules of quartz and dark green minerals; minor massive to banded tuff".

Metamorphism is generally lower greenschist facies to occasionally amphibolite grade (near intrusions). The most common alteration assemblage is epidote - actinolite - chlorite - albite. The Nitnat volcanics are shear folded with steeply dipping axial planes and foliated and lineated metamorphic fabrics. Alignment of fibrous and platy minerals are seen parallel to the plane of foliation.

The base of the Nitnat Formation is not well known but is thought to be gabbroic rocks that partly intrude and underlie it. The thickness of the Nitnat is estimated to be around 2,000 m.

The Myra Formation, which is a thick succession of basic to rhyodacitic bedded volcanic and sedimentary rocks, overlies the Nitnat with possible minor unconformity and is the second oldest member of the Sicker Group. Minor sections of the Myra may underlie the China claim.

The Myra Formation can be divided into four stratigraphic sections. The base of the Myra is defined as being the first appearance of bedded volcaniclastic rocks. The basal section is maroon and green volcaniclastic

greywacke, grit and breccia which displays a crude layering. Occasionally this section contains lenses, layers and fragments of jasper. The maroon and green breccia is succeeded by a section of widely banded basaltic tuff and breccia which may be reworked volcanics. These tuffs and breccias are overlain by light and dark thinly banded petitic albite-trachyte tuff and argillite that appear to be graded greywacke-argillite turbidite sequences. The uppermost section of the Myra is a thick bedded, medium grained albite-trachyte tuff and breccia.

The Myra Formation is the host for the Buttle Lake Kuroko type massive sulphide deposit and is estimated to be between 750 to 1000 m thick in the area of the survey, namely the Cameron River Valley.

The two uppermost divisions of the Sicker Group are not exposed on the survey area. They are the Sediment-Sill unit and the Buttle Lake Formation. The main rocks of the uppermost divisions are limestones and clastic sediments of argillite, siltstone, chert, greywacke and calcarenite plus or minus intruded sills of plagioclase diabase.

Sections containing calcareous beds with or without interbedded argillite and greywacke are called Buttle Lake Formation. Sections of interbedded argillite and siltstone without the carbonate but interlayered with basic sills are called the Sediment-Sill unit.

The exact stratigraphic sequence and relationship of these two divisions is not well understood except to say that one or the other generally overlies the Myra Formation and forms the top of the Sicker Group sequence.

The structure of the Sicker Group has not been studied in detail but involves asymmetric folding, normal to transcurrent faulting and repeated intrusions. Following a middle to late Paleozoic Formation, major folding and dynamothermal metamorphism occurred with plutonism during the Jurassic. Major faulting in the Tertiary affected not only the Sicker Group but also the over lying Triassic Vancouver Group volcanics and Upper Cretaceous Nanaimo Group sediments. Intrusive activity occurred during the Devonian, late Triassic, early Jurassic, and early Tertiary times.

3.1.2 Local Geology

No outcrop was found along grid lines or China Main logging road hence a geologic map could not be constructed.

Minor talus seen near the south end of L.506+00N was of andesitic (crystal) tuff and lapilli breccia composition.

The Geological Survey of Canada has mapped Williams-Mineral Creeks to be the location of a N.N.W. trending fault placing Nitnat Formation (underlying the majority of the Lu-Linda group) in fault contact with Myra Formation (underlying the north half of the China-Grizzly group) (Figure 3). The Myra Formation is shown to be in unconformable contact to the south with Karmutsen Formation which underlies the south half of the China-Grizzly group.

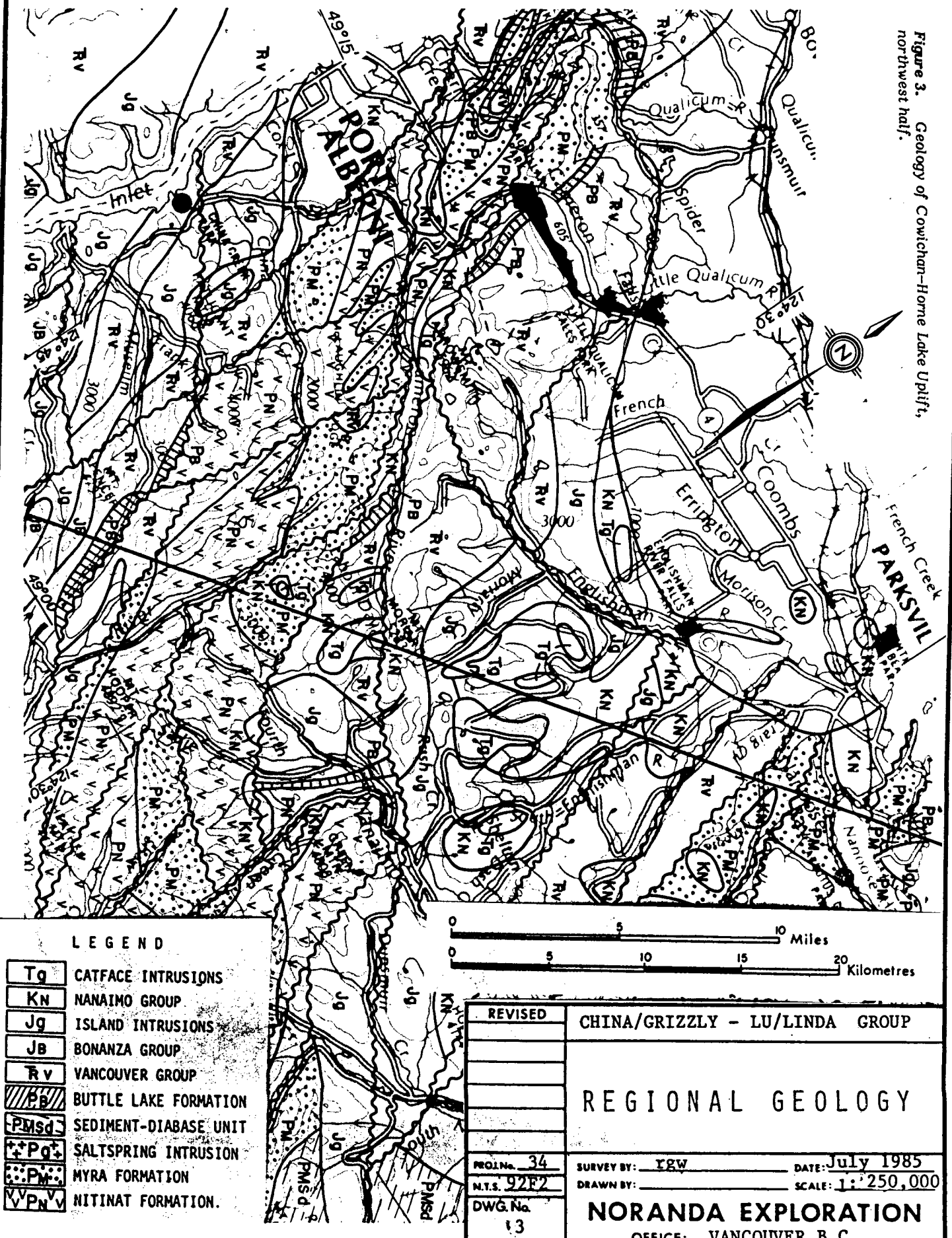


Figure 3. Geology of Cowichan–Horne Lake Uplift, northwest half.

3.2 Geochemistry

3.2.1 Purpose

Soil geochemical sampling along grid lines was completed to compliment the geophysical and geological surveys. The aim was to identify anomalous zones of soil geochemical values which might be related to anomalous geophysical responses.

3.2.2 Techniques

Both soil and rock samples were collected during the geochemical survey. B horizon soil samples were collected from 25 cm deep (average) mattock dug holes and placed in brown Kraft bags. These soil bags were partly air dried prior to being packed for shipment. Rock samples were either collected as whole grab samples or as rock chip samples across a measured width and placed in 6 mil poly bags for shipment.

A total of 137 soil samples were collected on the China Creek grid and sent for analysis to Noranda's geochemical laboratory at 1050 Davie Street, in Vancouver, B.C.

3.2.3 Results

All soil samples were analyzed for Cu, Zn, Pb, Ag, As, and Au (Figures 4,5,6). The results were given statistical analysis using standard statistical mathematical formulae, Diagram 1. It is recognized that small population, n=137 combined with the 2 to possibly 3 underlying rock types reduces the effectiveness of such treatment and the cutoff values are meant to be used as a guide only.

The following table is a summary of the statistical treatment including calculations of background, threshold, weakly anomalous and strongly anomalous limits.

Arithmetic Statistic		Cu (ppm)	Zn (ppm)	Pb (ppm)	Ag (ppm)	As (ppm)	Au (ppb)
Mean	$\bar{M}$	58.50	81.40	6.50	.35	94.00	71.40
Standard Deviation	σ	28.00	33.49	20.46	.226	108.48	231.48
Background	$\bar{M}$	58.50	81.40	6.50	.350	94.00	71.40
Threshold	$\bar{M}+1\sigma$	86.50	114.89	26.96	.576	202.48	302.88
Weakly Anomalous	$\bar{M}+2\sigma$	114.50	148.38	47.42	.813	310.96	534.36
Strongly Anomalous	$\bar{M}+3\sigma$	142.50	181.87	67.88	1.039	419.44	765.84

Copper values do not show any strongly anomalous results nor any clustering of higher values except on L.500+00N from 499+00 to 499+50E where a higher background would be expected if the ground is underlain by Karmutsen volcanics. Relationships between the various elements will be discussed under section 3.3.4 - Interpretation.

CHINA CREEK GRID

SUMMARY STATISTICS

	CU1A	ZN1A	AG1A	PB1A	AS1A	AU1E
NUMBER OF ANALYSES	137	137	137	137	137	137
LOWEST VALUE	8	26	.2	2	6	10
HIGHEST VALUE	140	290	1.4	160	570	2400
MEAN (LOG)	51.7	76.6	.31	2.8	52.9	21.8
STAND. DEV. (LOG)	.227	.144	.222	.366	.467	.519
MEAN (ARITH)	58.5	81.4	.35	6.5	94.0	71.4
STAND. DEV. (ARITH)	28.00	33.49	.226	20.46	108.48	231.48

Zinc values are not strongly anomalous with only two results above 200 ppm. Both values are on L.506+00E at 497+00N (200 ppm) and 498+50N (290 ppm) and are not considered significant results.

Lead values are at background except for two strongly anomalous and three weakly anomalous singleton results. The strongly anomalous values are on L.500+00E at 497+00N (160 pm) and 50+00N (160 ppm). The weakly anomalous values are on L.500+00E at 503+25N (40 ppm) and on L.506+00E at 497+75N (40 ppm) and 499+25N (48 pm). Although the results are interesting, a lack of surrounding anomalous values reduces the significance of these anomalies.

Silver values are within normal background limits with a few exceptions. Anomalous values are found on L.497+00E from 502+75N to 503+75N (1.0 - 1.2 ppm). The highest silver value (1.4 ppm) is interestingly at the same location as the highest lead value (160 ppm) at L.500+00E, 497+00N).

Arsenic values show the strongest range of anomalous results with several clusterings of higher values. Clusters occur on L.497+00E from 500+50N to 501+50N (100 - 270 ppm) and 502+50N to 504+00N (100 - 570 ppm); L.502+00E from 499+50N to 501+00N (170 - 360 ppm) and 502+00N to 503+00N (120 - 400 ppm); and L.506+00E from 497+25N to 498+25N (120 - 400 ppm), 499+25N to 501+50N (200 - 360 ppm).

Gold values show several clusterings of high results including the widest range of values. Clusters occur on L.497+00E from 501+25N to 502+25N (20 - 90 ppb); L.500+00E from 498+50N to 499+75N (20 - 230 ppb), 500+50N to 502+75N (20 - 90 ppb), and 504+00N to 505+00N (20 - 500 ppb); L.502+00E from 499+50N to 504+00N (20 - 2400 ppb) including a strong zone from 499+50N to 501+75N (150 - 2400 ppb). Several other smaller clusters are generally lower in value but are still of geochemical interest.

3.2.4 Discussion of Results

Multielement clustering of higher values is not a common feature of the geochemical sampling. The best correlation occurs between As and Au on Line 502+00E from 499+50N to 501+00N and 502+25N to 503+00N. This line, which occurs along the bank of Mineral Creek is at the possible location of historical placer workings or a later mill site of Consolidated Alberni (Vancouver Island Gold Mines). Further geochemical sampling in this area would be required to determine if the anomalies are due to contamination or true bedrock sources.

A minor correlation between Cu and Au occurs on L.500+00E from 499+00N to 499+50N, and a loosely tied 4, 3, 2 and 1 element correlation cluster of anomalous Cu, Ag, As occurs on L.497+00E from 502+50N to 504+00N.

Follow-up of these three areas by further sampling may be warranted in conjunction with future work in this area. A few other singleton two element correlations are not considered significant and follow-up of these are thought to be of lower priority.

Line to line correlation of results is not considered feasible due to the wide line separations. Infil line sampling may determine if individual anomalies are significant.

3.3 Geophysics

3.3.1 Induced Polarization System

The I.P. surveys employed Frequency Domain equipment and utilized the dipole-dipole array. The equipment manufactured by Phoenix Geophysics (Willowdale, Ontario) consisted of the IPV[1] receiver, IPT[1] transmitter and the MG2 2000 watt generator. Specific field parameters are as follows:

Dipole Array	:	dipole-dipole
Spacing "a"	:	25 m
Separations "n"	:	1, 2 and 3
Frequencies	:	0.25 & 4.0 Hz

3.3.2 Pulse E.M. system

The Pulse E.M. system was manufactured by Crone Geophysics of Ontario. This transient time domain E.M. system measures at eight discrete time intervals the time derivative of the secondary magnetic field which is generated by the induced current flow following the application of a strong primary E.M. pulse. The survey parameters were:

Loop size	:	13 meters
Coil separation	:	75 meters
Timebase	:	10 ms
Synchronization	:	radio link
Reading Interval	:	25 meters

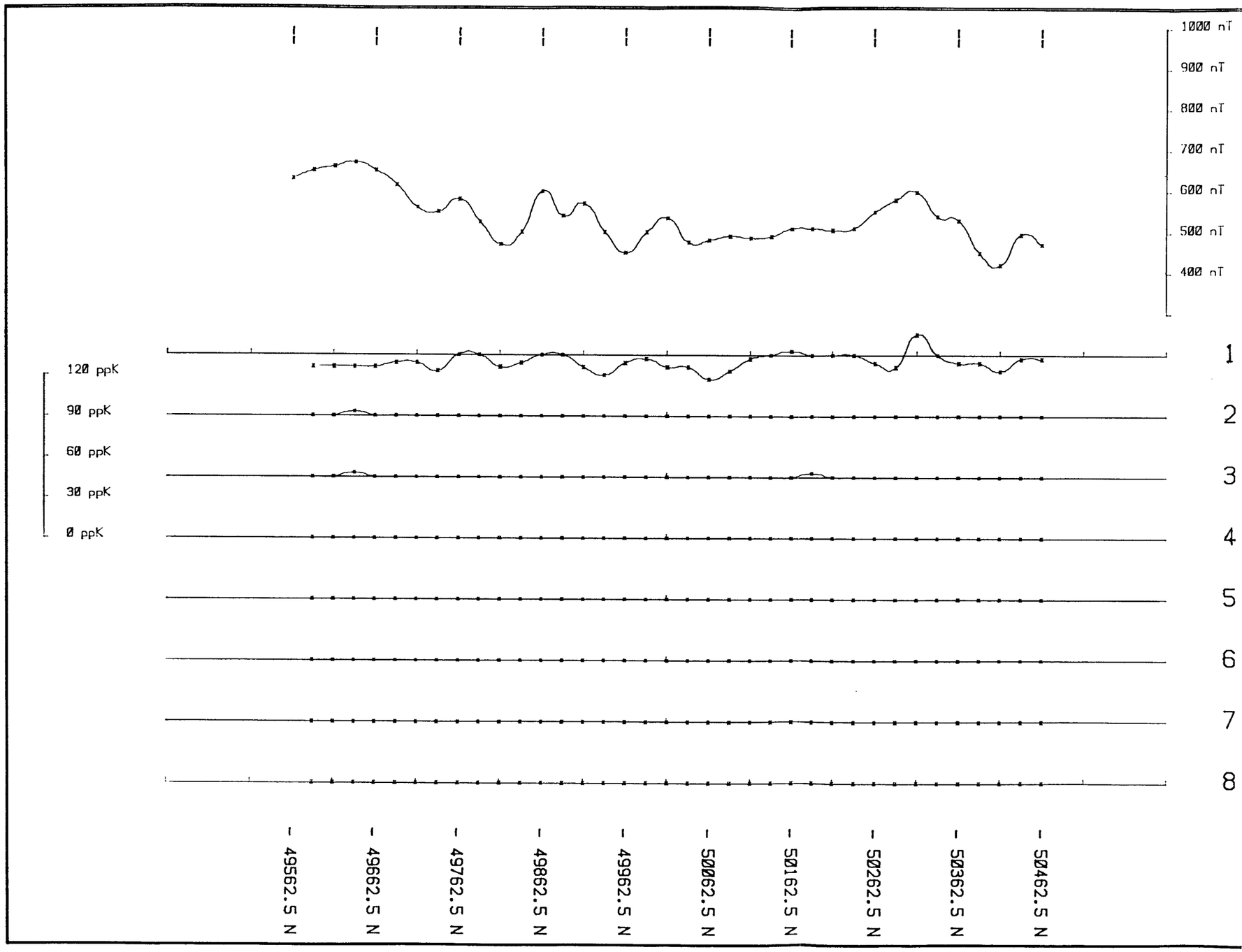
3.3.3 G.836 Magnetometer System

"UNIMAG" G.836 Proton Precission magnetometers manufactured by Exploranium Geometrics of Ontario were also utilized on this programme. The Total Field measurement is read with a resolution of 10 gammas and all values recorded on grids were corrected for diurnal and day to day variations while single recon line data was generally left uncorrected. Correction values were determined from repeat readings taken by an automatic recording base station. All readings were recorded at 25 meter intervals.

3.3.4 Discussion of Results

The Questor INPUT survey detected a collection of 1 and 2 channel E.M. responses over the vicinity of this four line grid. I.P. and magnetometer surveys were completed over this grid with a single line of Pulse E.M. being carried out on Line 50000E.

The four lines of I.P. recorded a consistent line to line signature with the Frequency Effect and resistivity data sets. The resistivity data has defined a pronounced low resistivity package (12 - 200 ohm-meters) located within the vicinity of the creek/valley bottom. This zone appears to be the source of the INPUT E.M. anomaly particularly considering the high resistivity values (> 2,000 ohm-meters) recorded on both flanks of the resistivity anomaly.



MAGNETOMETER SURVEY

DATUM : 55500 nT
INSTR : UNIMAG
SCALE : 1:100 nT

PEM SURVEY

Tx LOOP : 13 M
TIMEBASE : 10 mS.

100 50 0 100 200

CHINA CREEK

PEM SURVEY

LINE : 50000E

FILE B:WM341.PEM PROJECT 34

SCALE : 1:5000 DATE : 4/26/85
SURVEY BY : KL/BK N.T.S : 92F2

NORANDA EXPLORATION

The Percent Frequency Effect within the resistivity low are significantly lower (0% to 1%) than the background readings recorded (1 1/2% to 2%) within the high resistivity units.

The PEM survey on Line 50000E did not record any source of bedrock conductivity. The profile (Diagram 2) for the channel 1 data is somewhat "noisy" and may in part be reflecting the low resistivity unit.

The source of this low resistivity zone as recorded by the Airborne E.M. survey, I.P. and PEM surveys appears to be caused by water saturated high porosity rock. Observation from the airphoto mosaic and topographic maps shows the survey area to be at the intersection point of two major crosscutting faults.

The geophysical data gathered to date has not detected any response of economic interest. Further support for this area must be based at this stage of work on a geological concept.

4.0 SUMMARY AND CONCLUSIONS

No outcrop was discovered within the gridded area but regional mapping by the G.S.C. indicates the survey area to be underlain by Sicker Group Nitnat and Myra Formations and possibly Vancouver Group Karmutsen Formation. A few Au-As soil geochemical anomalies are of interest but at the present time it is not clear if these anomalies are due to contamination of the soils or due to true bedrock sources.

No geophysical anomalies of apparent economic interest were found by the I.P., PEM or MAG surveys. A zone of low resistivity corresponding to a suspected fault zone under China Creek was the cause of the airborne Questor INPUT and Geoterrex E.M. anomalies.

REFERENCES

Muller, J.E. and Carson, D.J.T. — Geology and Mineral Deposits of Alberni Map Area, British Columbia (92F). Geological Survey of Canada Paper 68-50, 1969.

Muller, J.E. — The Paleozoic Sicker Group of Vancouver Island, British Columbia. Geological Survey of Canada Paper 79-30, 1980.

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APPENDIX I

ANALYTICAL METHOD DESCRIPTIONS FOR

GEOCHEMICAL ASSESSMENT REPORTS

ANALYTICAL METHOD DESCRIPTIONS FOR GEOCHEMICAL ASSESSMENT REPORTS

The methods listed are presently applied to analyse geological materials by the Noranda Geochemical Laboratory at Vancouver.

Preparation of Samples

Sediments and soils are dried at approximately 80°C and sieved with a 80 mesh nylon screen. The -80 mesh (0.18 mm) fraction is used for geochemical analysis.

Rock specimens are pulverized to -120 mesh (0.13 mm). Heavy mineral fractions (panned samples * from constant volume), are analysed in its entirety, when it is to be determined for gold without further sample preparation.

Analysis of Samples

Decomposition of a 0.200 g sample is done with concentrated perchloric and nitric acid (3:1), digested for 5 hours at reflux temperature. Pulps of rock or core are weighed out at 0.4 g and chemical quantities are doubled relative to the above noted method for digestion.

The concentrations of Ag, Cd, Co, Cu, Fe, Mn, Mo, Ni, Pb, V and Zn can be determined directly from the digest (dissolution) with a conventional atomic absorption spectrometric procedure. A Varian-Techtron, Model AA-5 or Model AA-475 is used to measure elemental concentrations.

Elements Requiring Specific Decomposition Method:

Antimony - Sb: 0.2 g sample is attacked with 3.3 ml of 6% tartaric acid, 1.5 ml conc. hydrochloric acid and 0.5 ml of conc. nitric acid, then heated in a water bath for 3 hours at 95°C. Sb is determined directly from the dissolution with an AA-475 equipped with electrodeless discharge lamp (EDL).

Arsenic - As: 0.2 - 0.3 g sample is digested with 1.5 ml of perchloric 70% and 0.5 ml of conc. nitric acid. A Varian AA-475 equipped with an As-EDL is used to measure arsenic content in the digest.

Barium - Ba: 0.1 g sample digested overnight with conc. perchloric, nitric and hydrofluoric acid; Potassium chloride added to prevent ionization. Atomic absorption using a nitrous oxide-acetylene flame determines Ba from the aqueous solution.

Bismuth - Bi: 0.2 g - 0.3 g is digested with 2.0 ml of perchloric 70% and 1.0 ml of conc. nitric acid. Bismuth is determined directly from the digest with an AA-475 complete with EDL.

Gold - Au: 10.0 g sample is digested with aqua regia(1 part nitric and 3 parts hydrochloric acid). Gold is extracted with MIBK from the aqueous solution. AA is used to determine Au.

Magnesium - Mg: 0.05 - 0.10 g sample is digested with 4 ml perchloric/nitric acid (3:1). An aliquot is taken to reduce the concentration to within the

range of atomic absorption. The AA-475 with the use of a nitrous oxide flame determines Mg from the aqueous solution.

Tungsten - W: 1.0 g sample sintered with a carbonate flux and thereafter leached with water. The leachate is treated with potassium thiocyanate. The yellow tungsten thiocyanate is extracted into tri-n-butyl phosphate. This permits colourimetric comparison with standards to measure tungsten concentration.

Uranium - U: An aliquot from a perchloric-nitric decomposition, usually from the multi-element digestion, is buffered. The aqueous solution is exposed to laser light, and the luminescence of the uranyl ion is quantitatively measured on the UA-3 (Scintrex).

* N.B. If additional elemental determinations are required on panned samples, state this at the time of sample submission. Requests after gold determinations would be futile.

LOWEST VALUES REPORTED IN PPM

Ag - 0.2	Mn - 20	Zn - 1	Au - 0.01
Cd - 0.2	Mo - 1	Sb - 1	W - 2
Co - 1	Ni - 1	As - 1	U - 0.1
Cu - 1	Pb - 1	Ba - 10	
Fe - 100	V - 10	Bi - 1	

EJvL/ie
March 14, 1984

APPENDIX II

STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS
****

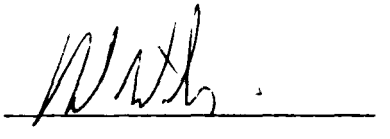
I, Robert G. Wilson of 3328 West 15th. Avenue, City of Vancouver, Province of British Columbia, do hereby certify that:

1. I have been employed as a Project Geologist for Noranda Exploration Company, Limited (no personal liability) since 1983 to the present.

2. I graduated from the University of British Columbia in 1976 with a B.Sc degree in geology.

3. I have worked in mineral exploration since 1973 and have practiced my profession as a geologist since 1976.

4. I am a member of the Geological Association of Canada (Cordillera Division)



R. Wilson
Project Geologist

STATEMENT OF QUALIFICATIONS
****

I, Lyndon Bradish of Vancouver, Province of British Columbia, do hereby certify that:

1. I am a Geophysicist residing at 1826 Trutch Street, Vancouver B.C.

2. I am a graduate of the University of British Columbia with a B.Sc. (geophysics).

3. I am a member in good standing of the Society of Exploration Geophysicists, Canadian Institute of Mining and the Prospector's and Developer's Association.

4. I presently hold the position of Division Geophysicist with Noranda Exploration Company, Limited and have been in their employ since 1973.

L. Bradish
Division Geophysicist

APPENDIX III

STATEMENT OF COSTS

NORANDA EXPLORATION COMPANY, LIMITED

STATEMENT OF COST

PROJECT MACBLO-WESMIN - China, Lu-Linda Group DATE July 1985

TYPE OF REPORT Geochemical, Geophysical & Linecutting

a) Wages:

No. of Days	48			
Rate per Day	$ 152.16			
Dates From:	April 1985			
Total Wages	48	×	$ 152.16	7,303.82

b) Food and Accomodation:

No of days	48			
Rate per day	$ 50.00			
Dates From:	April 1985			
Total Cost	48	×	$ 50.00	2,160.00

c) Transportation:

No of days	24			
Rate per day	$ 100.00			
Dates From:	April 1985			
Total Cost	24	X	$ 100.00	2,400.00

d) Instrument Rental:

Type of Instrument	Magnetometer G.836			
No of days	2			
Rate per day	$ 75.00			
Dates From:	April 1985			
Total Cost	2	X	$ 75.00	150.00
Type of Instrument	Pulse EM			
No of days	2			
Rate per day	$ 290.00			
Dates From:	April 1985			
Total Cost	1	X	$ 290.00	290.00
Type of Insturment	Phoenix IP V1 & IP T1			
No. of Days	7			
Rate Per Day	$190.00			
Date From:	April 1985			
Total Cost	7	X	190.00	1,330.00

f)	Analysis (See attached schedule)	1,150.80
g)	Cost of preparation of Report	
	Author	200.00
	Drafting	200.00
	Typing	200.00
h)	Other: Contractor	
Total Cost		$15,348.62

e) Unit costs for	Geophysics	
No of days	9	
No of units	6.775 L Km	
Unit costs	1,364.66 / L Km	
Total Cost	6.775 x 1,364.66	9,245.60
Unit Costs For	Geochem	
No. of Days	3	
No. of Units	137 Samples	
Unit Cost	15.02 / Sample	
Total Cost	173 X 15.02	2,057.28
Unit Costs For	Linecutting	
No. of Days	10	
No. of Units	3.525 L Km	
Unit Cost	1,147.73 / L Km	
Total Cost	3,525 X 1,147.73	4,045.74
Total		$15,348.62

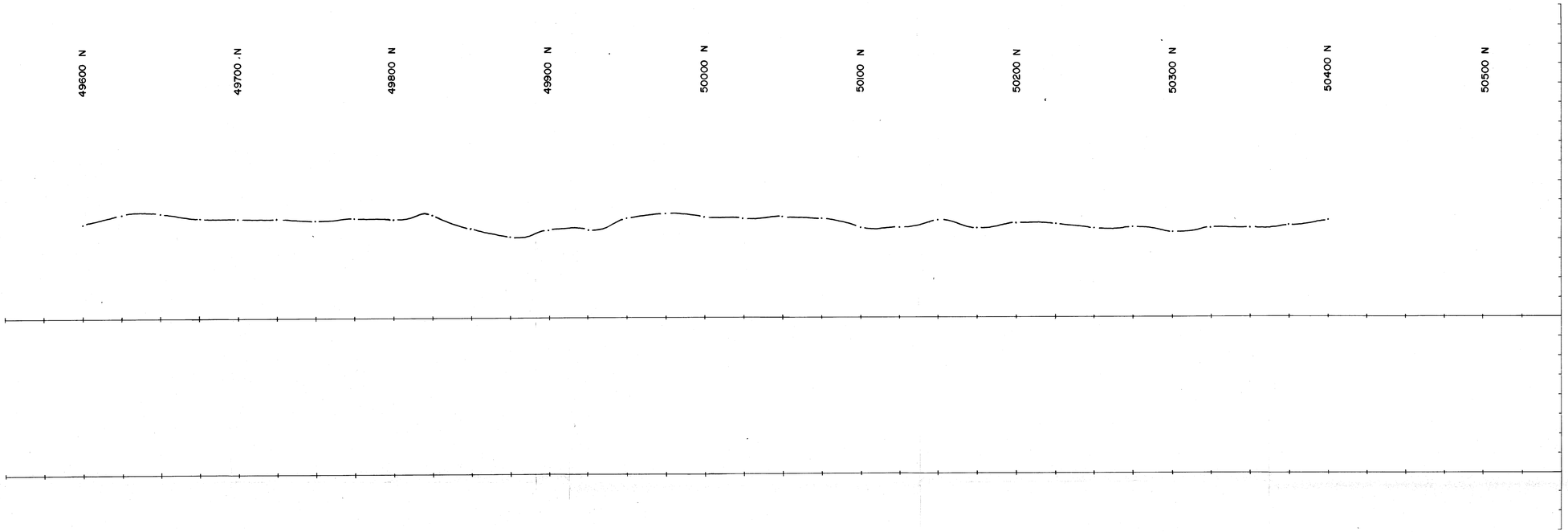
NORANDA EXPLORATION COMPANY, LIMITED

(WESTERN DIVISION)

DETAILS OF ANALYSES COSTS

PROJECT: MACBLO-WESMIN - China - Lu Linda Group

ELEMENT	NO. OF DETERMINATIONS	COST PER DETERMINATION	TOTAL
Cu	137	1.60	219.20
Zn	137	.60	82.20
Pb	137	.60	82.20
Ag	137	.60	82.20
As	137	1.50	205.50
Au	137	3,50	479.50
			$1,150.80



MAG. LEGEND

INSTRUMENT	:	Unimag
FIELD MEASUREMENT	:	Total
DATUM	:	55,500 nt
PROFILE SCALE	:	1 cm. = 100 nt
SURVEY DATE	:	April / 85
OPERATOR	:	K. Lillie

H.L.E.M. LEGEND

INSTRUMENT	:	SE-88
COIL SPACING	:	
FREQUENCY	:	Low .—.— 337 Hz Med. .—.— 1012 Hz High ----- 3037 Hz
INTEGRATION TIME	:	16 sec.
REF FREQUENCY	:	112 Hz
PROFILE SCALE	:	1 cm. = %
SURVEY DATE	:	
OPERATOR	:	

GEOLOGICAL BRANCH
ASSESSMENT REPORT

13,759

I.P. LEGEND

ARRAY	:	Dipole - Dipole
FREQUENCY	:	.25 Hz & 4.0 Hz
a	:	25 m
CONTOUR MULTIPLES	:	1.0, 1.5, 3.0, 5.0, 7.5
ρa/2πa	:	In units of Ωm.
SURVEY DATE	:	April / 85
OPERATOR	:	P.E. Walcott & Assoc.
Rx	:	Phoenix 1 PV-1
Tx	:	Phoenix 1 PT-1

REVISED

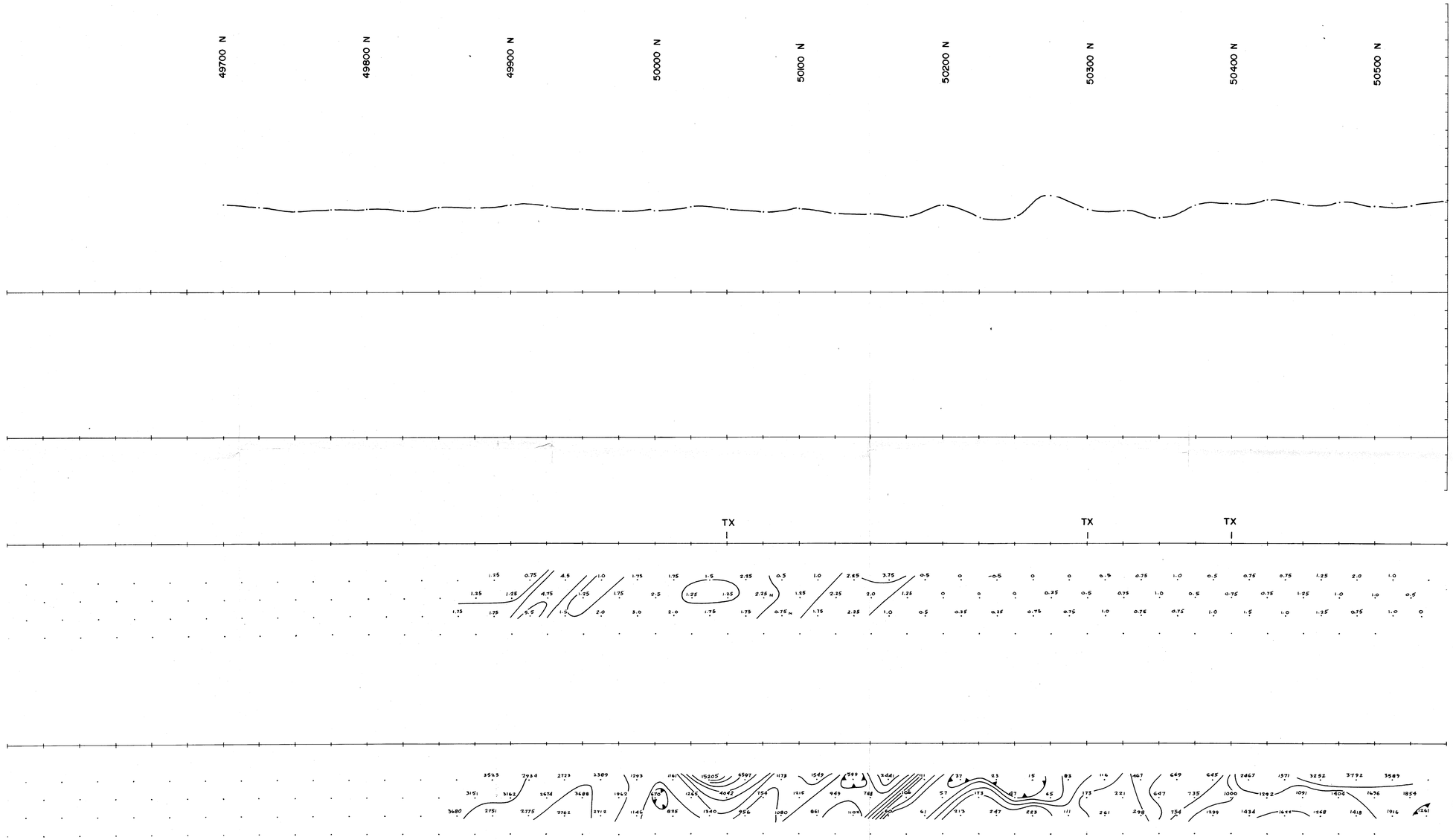
WESTMIN - M.B. J.V.

CHINA CREEK AREA
LINE 50200 E
GEOCOMPILATION

PROJ. No. 34
N.T.S. 92 F/2
DWG. No. 9

SURVEY BY: ..... DATE: May / 85
DRAWN BY: (traced) - W.M.R. SCALE: 1:2500

NORANDA EXPLORATION
OFFICE: Vancouver



MAG. LEGEND

INSTRUMENT	: Unimag
FIELD MEASUREMENT	: Total
DATUM	: 55,500 nt
PROFILE SCALE	: 1 cm. = 100 nt
SURVEY DATE	: April / 85
OPERATOR	: K. Lillie

H.L.E.M. LEGEND

INSTRUMENT	: SE-88
COIL SPACING	:
FREQUENCY	: Low ——— 337 Hz Med. – – – 1012 Hz High - - - - 3037 Hz
INTEGRATION TIME	: 16 sec.
REF FREQUENCY	: 112 Hz
PROFILE SCALE	: 1 cm. = %
SURVEY DATE	:
OPERATOR	:

GEOLOGICAL BRANCH
ASSESSMENT REPORT

13,759

I.P. LEGEND

ARRAY	: Dipole - Dipole
FREQUENCY	: .25 Hz & 4.0 Hz
a	: 25 m
CONTOUR MULTIPLES	: 1.0, 1.5, 3.0, 5.0, 7.5
ρa/2π	: in units of Ωm.
SURVEY DATE	: April / 85
OPERATOR	: P.E. Walcott & Assoc.
Rx	: Phoenix I PV-1
Tx	: Phoenix I PT-1

REVISED

WESTMIN - M.B. J.V.

CHINA CREEK AREA
LINE 50600 E

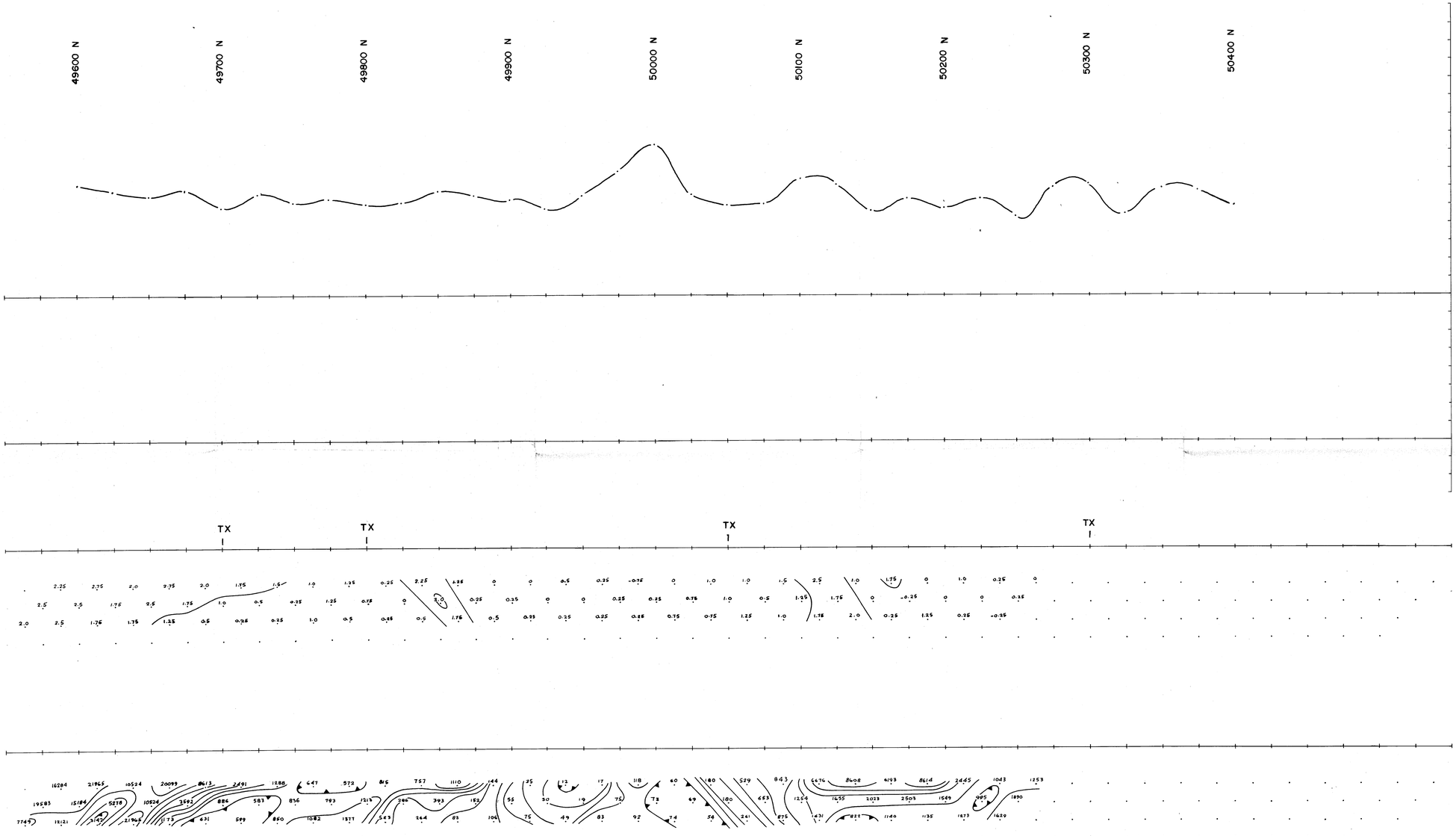
GEOCOMPILATION

PROJ. No. 34
N.T.S. 92 F/2
DWG. No. 10

SURVEY BY: ..... DATE: May / 85
DRAWN BY: (traced) - W.M.R. SCALE: 1:2500

NORANDA EXPLORATION

OFFICE: Vancouver



MAG. LEGEND

INSTRUMENT	:	Unimag
FIELD MEASUREMENT	:	Total
DATUM	:	55,500 nt
PROFILE SCALE	:	1 cm. = 100 nt
SURVEY DATE	:	April /85
OPERATOR	:	K. Lillie

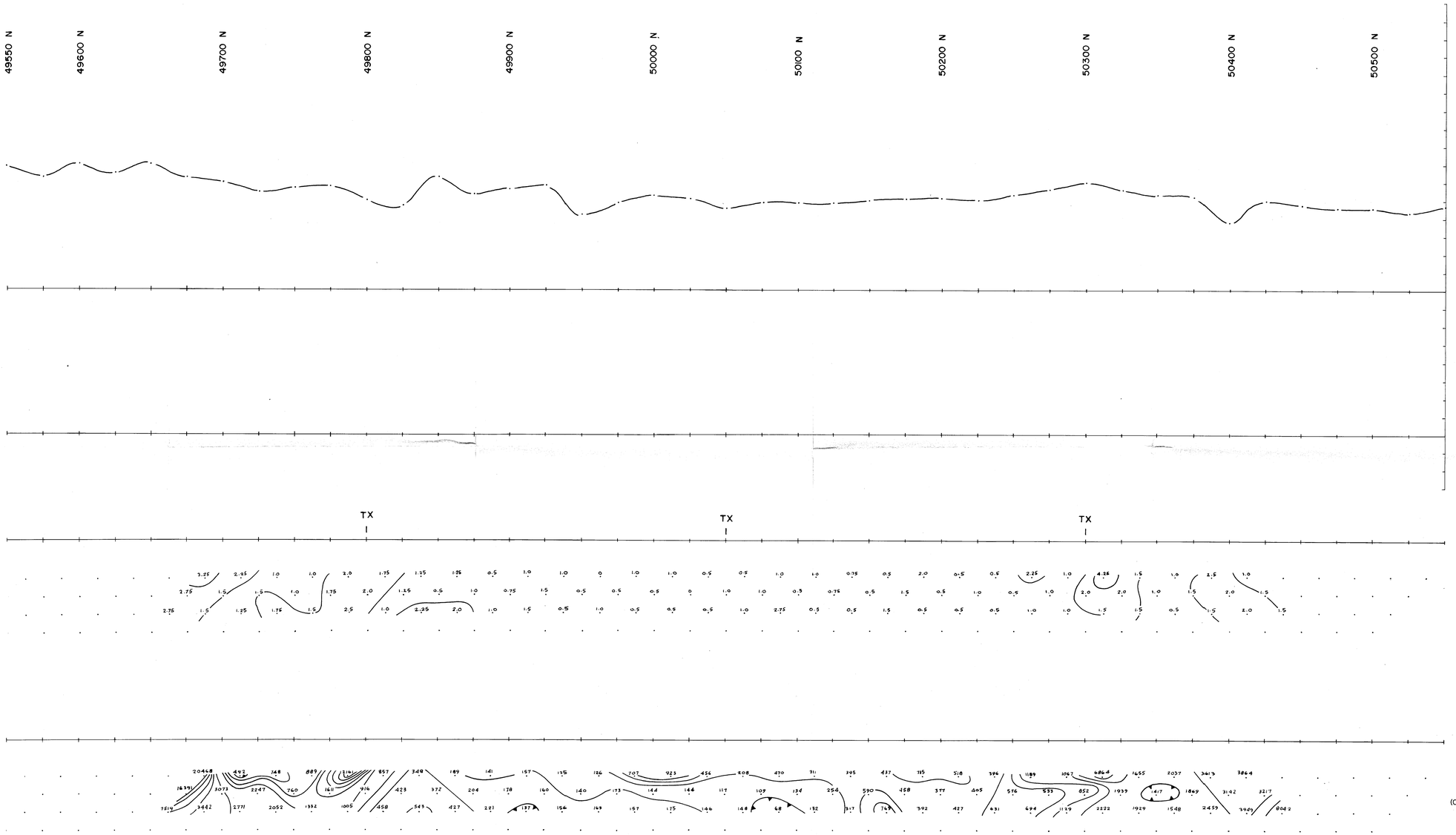
H.L.E.M. LEGEND

INSTRUMENT	:	SE-88
COIL SPACING	:	
FREQUENCY	:	Low ——— 337 Hz Med. ——— 1012 Hz High ----- 3037 Hz
INTEGRATION TIME	:	16 sec.
REF FREQUENCY	:	112 Hz
PROFILE SCALE	:	1 cm. = %
SURVEY DATE	:	
OPERATOR	:	

I.P. LEGEND

ARRAY	:	Dipole - Dipole
FREQUENCY	:	.25 Hz 84.0Hz
a	:	25 m
CONTOUR MULTIPLES	:	1.0, 1.5, 3.0, 5.0, 7.5
ρa/2π	:	In units of Ωm.
SURVEY DATE	:	April /85
OPERATOR	:	P.E. Walcott & Assoc.
Rx	:	Phoenix 1 PV-1
Tx	:	Phoenix 1 PT-1

REVISED	WESTMIN - M.B. J.V.
	CHINA CREEK AREA
	LINE 49700 E.
	GEOCOMPILATION
PROJ. No. 34	SURVEY BY: DATE: May /85
N.T.S. 92 F/2	DRAWN BY: (traced) - W.M.R. SCALE: 1:2500
DWG. No. 7	NORANDA EXPLORATION
	OFFICE: Vancouver



MAG. LEGEND

INSTRUMENT	:	Unimag
FIELD MEASUREMENT	:	Total
DATUM	:	55,500 nt
PROFILE SCALE	:	1 cm. = 100 nt
SURVEY DATE	:	April / 85
OPERATOR	:	K. Lillie

H.L.E.M. LEGEND

INSTRUMENT	:	SE-88
COIL SPACING	:	
FREQUENCY	:	Low -·-·-: 337 Hz Med. -·-·-: 1012 Hz High ----: 3037 Hz
INTEGRATION TIME	:	16 sec.
REF FREQUENCY	:	112 Hz
PROFILE SCALE	:	1 cm. = %
SURVEY DATE	:	
OPERATOR	:	

GEOLOGICAL BRANCH
ASSESSMENT REPORT

13,759

I.P. LEGEND

ARRAY	:	Dipole - Dipole
FREQUENCY	:	.25 Hz 8.40 Hz
a	:	25 m
CONTOUR MULTIPLES	:	1.0, 1.5, 3.0, 5.0, 7.5
Ra/2h	:	In units of Ωm.
SURVEY DATE	:	April / 85
OPERATOR	:	P.E. Walcott & Assoc.
Rx	:	Phoenix 1 PV-1
Tx	:	Phoenix 1 PT-1

REVISED

WESTMIN - M.B. J.V.

CHINA CREEK AREA
LINE 50000 E.
GEOCOMPILATION

PROJ. No. 34
N.T.S. 92 F/2
DWG. No. 8

SURVEY BY: ..... DATE: May / 85
DRAWN BY: (traced) - W.M.R. SCALE: 1:2500

NORANDA EXPLORATION
OFFICE: Vancouver

LINDA 2 CLAIM

LINDA 1 CLAIM

JENNY CLAIM

CHINA CLAIM

DIPLODOCUS CLAIM

L.C.P. YELLOW

L.497+00E

L.500+00E

L.502+00E

L.506+00E

0 500+00N

CHINA CREEK

MAIN ROAD

China Creek

Mineral Creek

Williams Creek

DUCK MAIN ROAD

900 800 700 600 500 400 300 1200 1100 1000

N

GEOLOGICAL BRANCH
ASSESSMENT REPORT

13,759

SCALE
1:5000

Metres 100 0 100 200 300 400 500 Metres

LEGEND

As in ppm

Au in ppb

ALBERNI LAND DISTRICT: BK 83

GCI 51152

REVISED

WESTMIN-M.B. J.V.

CHINA CREEK
(CAMERON DIVISION)
SOIL GEOCHEM - Au & As

PROJ. No. 3134
N.T.S. 92F/2
DWG. No. 4

SURVEY BY:
DRAWN BY:
DATE: May/85
SCALE: 1:5000

NORANDA EXPLORATION
OFFICE: Vancouver

VANCAL - 8203

ALBERNI LAND DISTRICT: BK 83

GCI 51152

REVISED

WESTMIN-M.B. J.V.

CHINA CREEK
(CAMERON DIVISION)

SOIL GEOCHEM - Cu & Zn

PROJ. No. 3134
N.T.S. 92F/2
DWG. No. 5

SURVEY BY:
DRAWN BY:
DATE: May/85
SCALE: 1:5000

NORANDA EXPLORATION
OFFICE: Vancouver

VANCAL - 8923

GEOLOGICAL BRANCH
ASSESSMENT REPORT

13,759

SCALE
1:5000

Metres 100 0 100 200 300 400 500 Metres

LEGEND

Pb in ppm

Ag in ppm

ALBERNI LAND DISTRICT: BK 83 GCI 51152

REVISED

WESTMIN-M.B. J.V.

CHINA CREEK
(CAMERON DIVISION)

SOIL GEOCHEM - Pb & Ag

PROJ. No. 3134
N.T.S. 92F/2
DWG. No. 6

SURVEY BY: DATE: May/85
DRAWN BY: BJ Butler SCALE: 1:5000

NORANDA EXPLORATION
OFFICE: Vancouver