

LOG NO: <i>May 3/91</i>	RD.
ACTION:	
FILE NO:	

GEOPHYSICAL REPORT
ON THE
QUASH 1-12, 16-20, 22 and 23
MINERAL CLAIMS

SUB-RECORDER
 RECEIVED
APR 29 1991
 M.R. # \$
 VANCOUVER, B.C.

LIARD MINING DIVISION
N.T.S. 104 G/09E, 16E

Located at Co-ordinates: 130° 13' W
 57° 45' N

NORANDA EXPLORATION COMPANY, LIMITED
(NO PERSONAL LIABILITY)

BY: MIKE SAVELL
TED WONG

APRIL, 1991

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

21,259

TABLE OF CONTENTS

1.0	SUMMARY	1
2.0	INTRODUCTION	2
2.1	GENERAL REMARKS	2
2.2	LOCATION & ACCESS	2
2.3	PHYSIOGRAPHY & VEGETATION	3
2.4	CLAIM STATISTICS	4
2.5	PREVIOUS WORK	4
3.0	REGIONAL GEOLOGY	5
4.0	GEOPHYSICAL SURVEY	7
4.1	INSTRUMENTATION	7
4.2	DISCUSSION OF RESULTS	8
5.0	CONCLUSIONS	9
6.0	RECOMMENDATIONS	9

APPENDIX I	Statement of Qualifications
APPENDIX II	Statement of Costs

FIGURE 1	Location Map	1:8,000,000	2a
FIGURE 2	Claim Map	1:50,000	2b
FIGURE 3	Grid Location Map	1:10,000	in pocket
FIGURE 4	Magnetics - Profile Format	1:5,000	"
FIGURE 5	Magnetics - Contour Format	"	"
FIGURE 6	VLF-EM Survey (Tx-Cutler)	"	"
FIGURE 7	VLF-EM Survey (Tx-Seattle)	"	"

1.0 SUMMARY

The Quash 1-12, 16-19 mineral claims (Quash Creek Property) were staked in August, 1988 to secure the apparent source area of several anomalous silt samples. A brief program of stream sediment sampling, prospecting and rock chip sampling undertaken in 1989 showed the southeast area of the property to be underlain by favourable volcanic and sedimentary rocks from which rock chip samples had returned values up to 2,370 ppb Au and silts had returned values up to 205 ppm Cu, 57 ppm Pb, 214 ppm Zn, 58 ppm As, and 79 ppb Au. The Quash 20 to 23 claims were staked later to secure additional ground and possible fractions between the Quash 1-12 and 16-19 claims.

This report describes the geophysical surveys undertaken between August 15 and Sept 15, 1990 to evaluate the prospect. A total of 39.25 kilometres of ground magnetics and 18.5 kilometres of VLF-EM were surveyed.

The magnetic survey has successfully mapped lithologic contacts and structural features within the grid area. VLF-EM surveys have corroborated structural features outlined by magnetics in the northeast grid area.

A definitive geological interpretation is not possible due to scarcity of outcrop, however the marine, bimodal volcanic-sediment environment is considered a favourable setting for mineralization. Mineralization and alteration observed to date may represent the margins of a hydrothermal system. Similarities to stratigraphy of the Lower Jurassic Hazleton Group which hosts the Eskay Creek deposits provides another incentive for further exploration.

Geochemical and geophysical anomalies require further testing to confirm the presence and significance of mineralization they may be reflecting.

2.0 INTRODUCTION

2.0 GENERAL REMARKS

The Quash 1-12, 16-19 mineral claims (Quash Creek Property) were staked in August, 1988 to secure the apparent source area of several anomalous silt samples collected as part of the National Geochem Reconnaissance Survey for N.T.S. 104 G. A brief program consisting of stream sediment sampling, prospecting and rock chip sampling was undertaken in early September, 1989, following the staking of the Quash 20 and 21 claims. This work showed the southeast area of the property to be underlain by favourable volcanic and sedimentary rocks from which rock chip samples had returned values up to 2,370 ppb Au and silts had returned values up to 205 ppm Cu, 57 ppm Pb, 214 ppm Zn, 58 ppm As, and 79 ppb Au. Numerous locally derived boulders of sulphide bearing quartz-carbonate altered rocks were located on a large orange-brown soil gossan. The Quash 22 and 23 claims were staked to secure possible fractions between the Quash 1-12 and 16-19 claims. Further exploration was recommended.

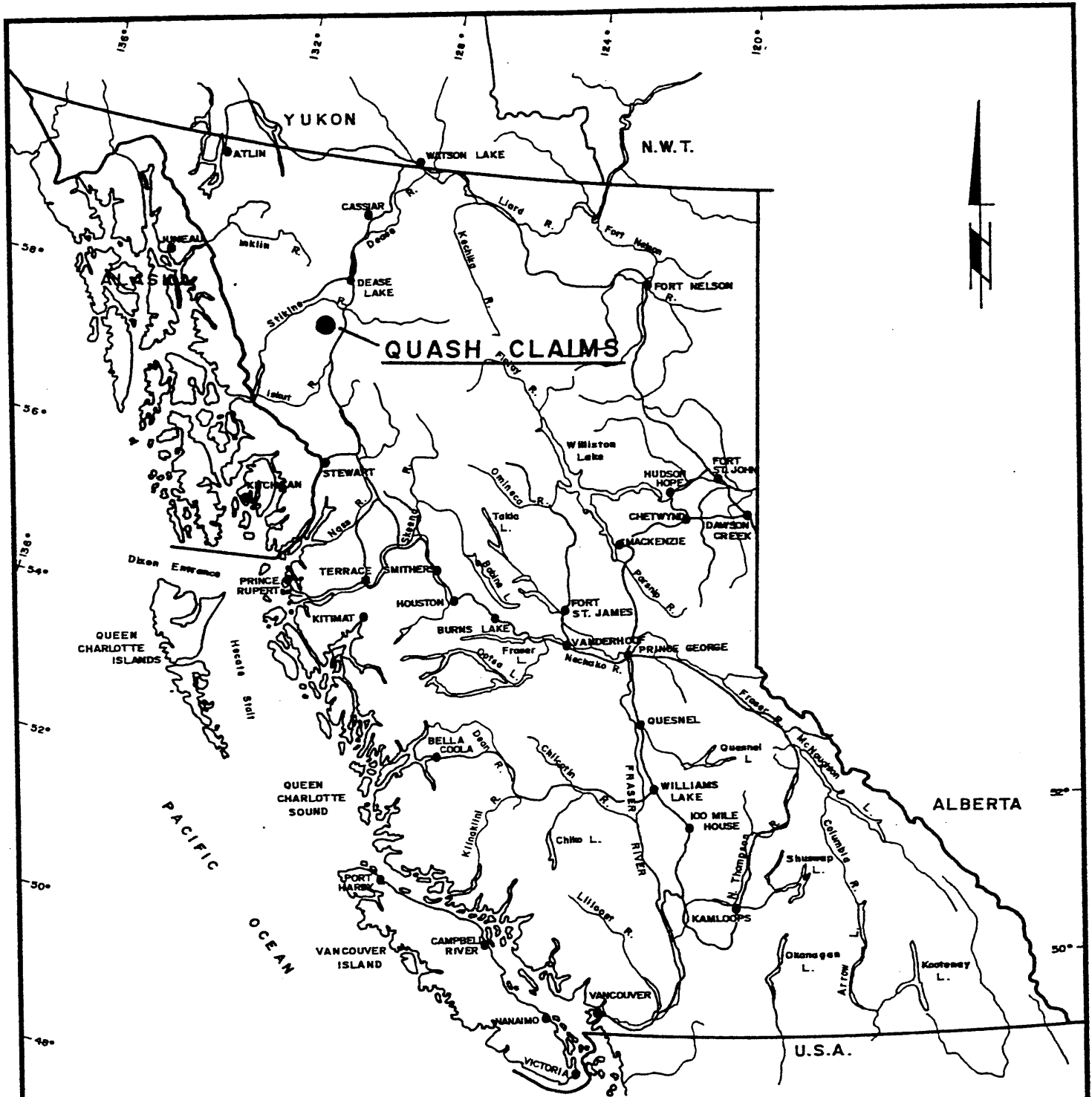
This report describes the geophysical surveys undertaken between August 15 and Sept 15, 1990 to evaluate the prospect. A total of 39.25 kilometres of ground magnetics and 18.5 kilometres of VLF-EM were surveyed. All work reported here was performed by employees of Noranda Exploration Company, Limited. The project is a joint venture of Hemlo Gold Mines and Noranda Exploration.

2.2 LOCATION & ACCESS

The property is located approximately 200 km north of Stewart, B.C., and 18 km southeast of the village of Iskut (Figure 1). Access to the property has been by helicopter chartered from Canadian Helicopter's base on the Stewart-Cassiar Highway, 15 km to the east. Accommodation was provided by a 4-man tent camp established near the centre of the grid.

2.3 PHYSIOGRAPHY & VEGETATION

The property lies on the Klastline Plateau, a dissected highland contained within the much larger Spatsizi Plateau. Elevations on the property range from about 1370 metres to 1980 metres. Except for a few prominent cliffs and small glaciers, most of the property can easily be traversed by foot.



0 100 200 KILOMETRES
SCALE: 1:8,000,000

REVISED	QUASH PROPERTY	
	LOCATION MAP	
PROJ.No. _____	SURVEY BY: <u>M. Savell</u>	DATE: <u>Nov/89</u>
N.T.S. _____	DRAWN BY: <u>S.K.B.</u>	SCALE: <u>1:8,000,000</u>
DWG.No.	NORANDA EXPLORATION	
1	OFFICE: <u>PRINCE GEORGE, B.C.</u>	

VANGAL 11927

The property lies entirely within alpine, with vegetation consisting of hardy grasses, mosses, lichens and small shrubs, typical of a high latitude, high elevation environment.

2.4 CLAIM STATISTICS

The property is comprised of sixteen 2-post claims and 4 modified grid claims as listed below and shown in Figure 2. The the claims will be in good standing until the expiry date below:

<u>NAME</u>	<u>RECORD #'S</u>	<u>UNITS</u>	<u>RECORD DATE</u>	<u>EXPIRY DATE</u>
Quash 1-12	5505-5516	12	Sept. 17, 1988	Sept. 17, 1991
Quash 16-19	5517-5520	4	Sept. 17, 1988	Sept. 17, 1991
Quash 20-21	6410-6411	28	Sept. 9, 1989	Sept. 9, 1993
Quash 22-23	7606-7607	24	July 9, 1990	July 9, 1992

All claims are owned and operated by Noranda Exploration Company, Limited (no personal liability).

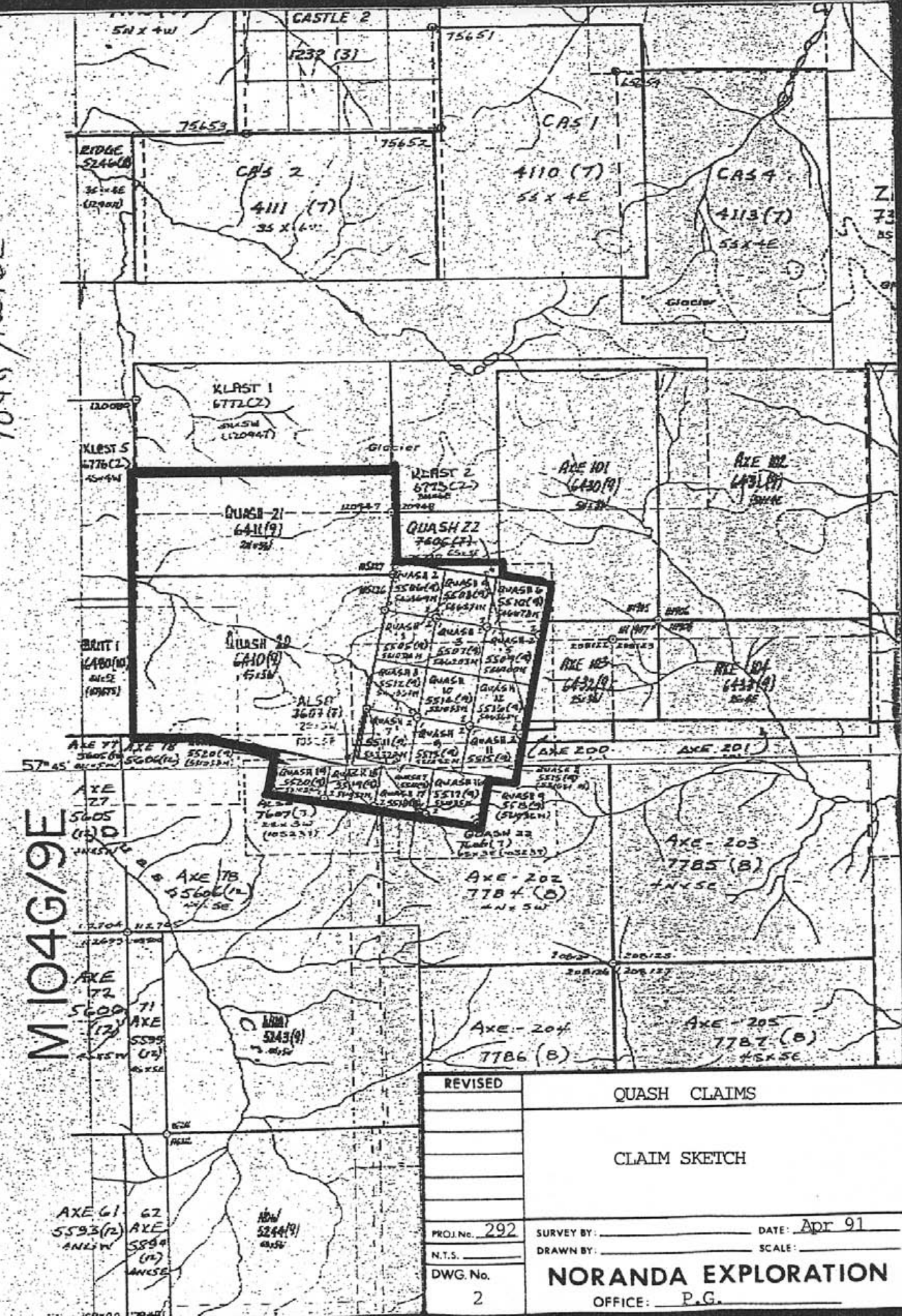
2.5 PREVIOUS WORK

There is no recorded work for the area of the Quash claims prior to acquisition by Noranda. The B.C. Mineral Inventory for N.T.S. 104 G reports several occurrences within a few kilometres of the claims including #33 (Nabs, QC, Boot - Cu, Mo), #35 (SF, Horn - Ag, Pb, Zn, Cu, Ba), #44 (AL - Cu, Au) and #76 (JO, Castle - Cu, Au). Companies known to have conducted exploration programs nearby in the past include Conwest, Amoco, Teck, Silver Standard and Tenajon Silver Corp.

The results of the 1989 surveys are reported in "Geochemical Report on the Quash 1-12, 16-19 Mineral Claims" by M. Savell for Noranda Exploration, submitted for assessment requirements. Results of the 1990 geochemical surveys have already been filed for assessment purposes.

JAN 23 '31 15:08 MINERAL TITLES VAN.
1045 / 1016E

M104G/9E



REVISED	QUASH CLAIMS	
	CLAIM SKETCH	
PROJ. No. 292	SURVEY BY: _____	DATE: Apr 91
N.T.S.	DRAWN BY: _____	SCALE: _____
DWG. No. 2	NORANDA EXPLORATION	
	OFFICE: P.G.	

3.0 REGIONAL GEOLOGY

The area lies near the western edge of the Intermontane Belt of the Canadian Cordillera, where it parallels the Coast Plutonic Complex. Recent work by both the Geological Survey of Canada and the Geological Services Branch of British Columbia provides a framework of the complex geology of this rugged area. The area includes four, unconformity bounded, tectonostratigraphic assemblages: 1) Paleozoic Stikine Assemblage; 2) Triassic-Upper Jurassic Bowser overlap assemblage; and 4) Tertiary Coast Plutonic Complex. (Anderson, 1989) This section of the Intermontane Belt forms the west limb of the "Stikine Arch," a roughly horseshoe shaped area of Upper Triassic to Jurassic stratigraphy that hosts most of the significant mineral deposits in northwest B.C. and the Toadogone gold camp.

The Paleozoic Stikine Assemblage is the oldest assemblage and contains three distinct, mainly volcanic-carbonate divisions: Early Devonian limestones and intermediate to felsic volcanics, Mississippian bioclastic limestones, and Permian fragmental volcanics and limestone. These rocks are generally highly metamorphosed and deformed.

The Triassic-Jurassic volcano-plutonic complexes (Stewart Complex) are comprised of both the Triassic Stuhini Group and the Jurassic Hazleton Group. The Stuhini consists of limestone and mafic volcanics deposited in an island arc environment. These rocks host the Snip and Johnny Mountain gold deposits. Hazleton Group rocks consist of andesitic breccias/lavas, felsic tuffs/breccias, and maroon-green volcanic sediments (siltstone, greywacke, conglomerate, and black shale) also of island arc affinity. Black shales (Eskay Creek facies) overlying felsic volcanics (Mt. Dilworth Formation) host the Eskay Creek gold deposits.

Sub-volcanic intrusions accompany most of the volcanic centres of the Mesozoic island arc complexes and range from Alaskan type ultramafics to felsic dykes. Distinctive porphyritic dykes link Upper Triassic and Lower Jurassic volcanics with their plutonic equivalents. Many of the significant mineral deposits in the Stewart Complex are found to have a close association with volcanic centres.

The Middle and Upper Jurassic Bowser Overlap Assemblage are predominantly turbidite black clastics deposited in the Bowser Basin, formed as a result of uplift to the west due to emplacement of the Coast Range Intrusives.

The Tertiary Coast Plutonic Complex consists of post-tectonic, felsic plutons. Eastward younging of strata and local zones of high strain attest to intrusion and uplift of the complex.

Tertiary to Recent subaerial volcanics cover local, low lying areas.

4.0 GEOPHYSICAL SURVEY

During late August to early September, 1990, geophysical surveys consisting of Total Field Magnetism and VLF Electromagnetics were carried out on the Quash Creek Property. The purpose of the surveys was to aid in mapping of the local geology as well as delineation of potential structural features related to possible economic mineral deposits.

The magnetism survey was carried out on the complete grid while the VLF-EM survey was carried out on a selected portion of the grid. Gridlines and coordinate labels relative to topography and claim boundaries is presented on figure 3. All surveys were carried out by Noranda personnel.

4.1 INSTRUMENTATION

MAGNETOMETER SYSTEM

The magnetometer survey utilized EDA Omni4 magnetometers with readings corrected for diurnal drift by the use of a recording magnetic base station. The EDA system records the Total Magnetic Field with an accuracy of within 1 nanoTesla. Readings were taken at 12.5 m. intervals along the survey lines.

VLF-EM SYSTEM

The VLF-EM survey utilized a Geonics EM16 VLF receiver. Transmitter stations used for the survey were NAA Cutler, Maine with a transmitting frequency of 24.0 KHz. and NLK Seattle, Washington with a transmitting frequency of 24.8 KHz.

Lines 9900E to 10500E inclusive were surveyed with Cutler while Lines 9400E, 9600E, 9800E, 10000E were surveyed using the Seattle transmitter. Cutler was more favourably oriented than Seattle with respect to survey line direction, however due to poor signal reception of Cutler, Seattle was used as an alternative transmitter station. Readings of the dip and quadrature components of the induced secondary magnetic field (measured in per-cent of the primary horizontal magnetic field) as well as the relative changes of terrain slope were manually recorded at 25 m. stations.

4.2 DISCUSSION OF RESULTS

MAGNETOMETER SURVEY

The magnetometer survey data is presented in profile and contoured map form at a scale of 1:5000 (fig. 4 and 5). Interpretation has been carried out on the contour map which shows 3 distinct magnetic susceptibility signatures along with interpreted dykes and structural features.

The first magnetic signature, T.1, found in the western part of the grid, is quite intense and sharp indicating shallow sources. Andesites have been mapped in this location which would be consistent with the magnetic signature. A very sharp magnetic break running SW - NE separates the andesites into north and south parts. This break itself appears offset by an E-W break.

Type T.2 is in sharp contact with T.1 and its low susceptibility would be consistent with sediments (argillites?). Elsewhere T.2 abuts the dyke features.

Type T.3 displays slightly higher susceptibility than T.2 and appears to underlie the dyke features which themselves appear shallow.

VLF-EM SURVEY

VLF-EM profiles for both transmitter stations are plotted separately at a scale of 1:5000 (fig. 6 and 7). Overall the topography of the surveyed lines is relatively flat although several creek ravines cross the survey lines. Because of these sharp terrain features only the strongest crossovers have been interpreted to represent valid conductors. These conductors have been compiled onto the contoured magnetic map.

In the grid's NE sector several strong continuous conductors are interpreted from the Cutler data. Because of their close association with 3 major magnetic breaks the conductors are felt to largely represent structural as opposed to massive sulphide features. Conductors interpreted from the Seattle data are not continuous however they are peripheral to the Cutler conductors.

6.0 CONCLUSIONS

The magnetic survey has successfully mapped lithologic contacts and structural features within the grid area. VLF-EM surveys have corroborated structural features outlined by magnetics in the northeast grid area.

A definitive geological interpretation is not possible due to scarcity of outcrop, however the marine, bimodal volcanic-sediment environment is considered a favourable setting for mineralization. Mineralization and alteration observed to date may represent the margins of a hydrothermal system. Similarities to stratigraphy of the Lower Jurassic Hazleton Group which hosts the Eskay Creek deposits provides another incentive for further exploration.

7.0 RECOMMENDATIONS

Geochemical and geophysical anomalies require further testing to confirm the presence and significance of mineralization they may be reflecting. Induced polarization and horizontal-loop electromagnetic surveys are recommended to better define and isolate the location of mineralization. Priority targets should then be tested by blast or excavator trenching to establish drill sites and azimuths.

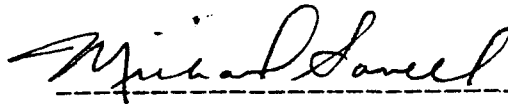
APPENDIX I
STATEMENT OF QUALIFICATIONS

APPENDIX I

STATEMENT OF QUALIFICATIONS

I, Michael J. Savell of the City of Prince George, Province of British Columbia, do certify that:

1. I am a geologist residing at 3507 Rosia Road, Prince George, British Columbia.
2. I am a graduate of Dalhousie University with a Bachelor of Science (Honors) in Geology.
3. I am a member in good standing of the Geological Association of Canada, Canadian Institute of Mining, Prospector's and Developer's Association and the B.C.-Yukon Chamber of Mines.
4. I presently hold the position of Project Geologist with Noranda Exploration Company, Limited and have been in their employ since 1980.

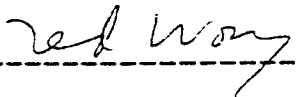


Michael J. Savell
Geologist
Noranda Exploration Company, Limited
(No Personal Liability)

STATEMENT OF QUALIFICATIONS

I, Ted Wong, of the City of Vancouver, Province of British Columbia, hereby certify that:

1. I am a geophysicist residing in Burnaby, B.C.
2. I have graduated from the University of British Columbia in 1983 with a B.Sc. in Geophysics.
3. I am a professional geophysicist, registered with the Association of Professional Engineers, Geologists and Geophysicists of Alberta. I am a licensed professional geophysicist, registered with the Association of Professional Engineers, Geologists and Geophysicists of the Northwest Territories.
4. I have practised by profession on a continual basis since 1984.
5. I have been employed by Noranda Exploration Company, Limited since September, 1989.



Ted T. Wong, P. Geoph.

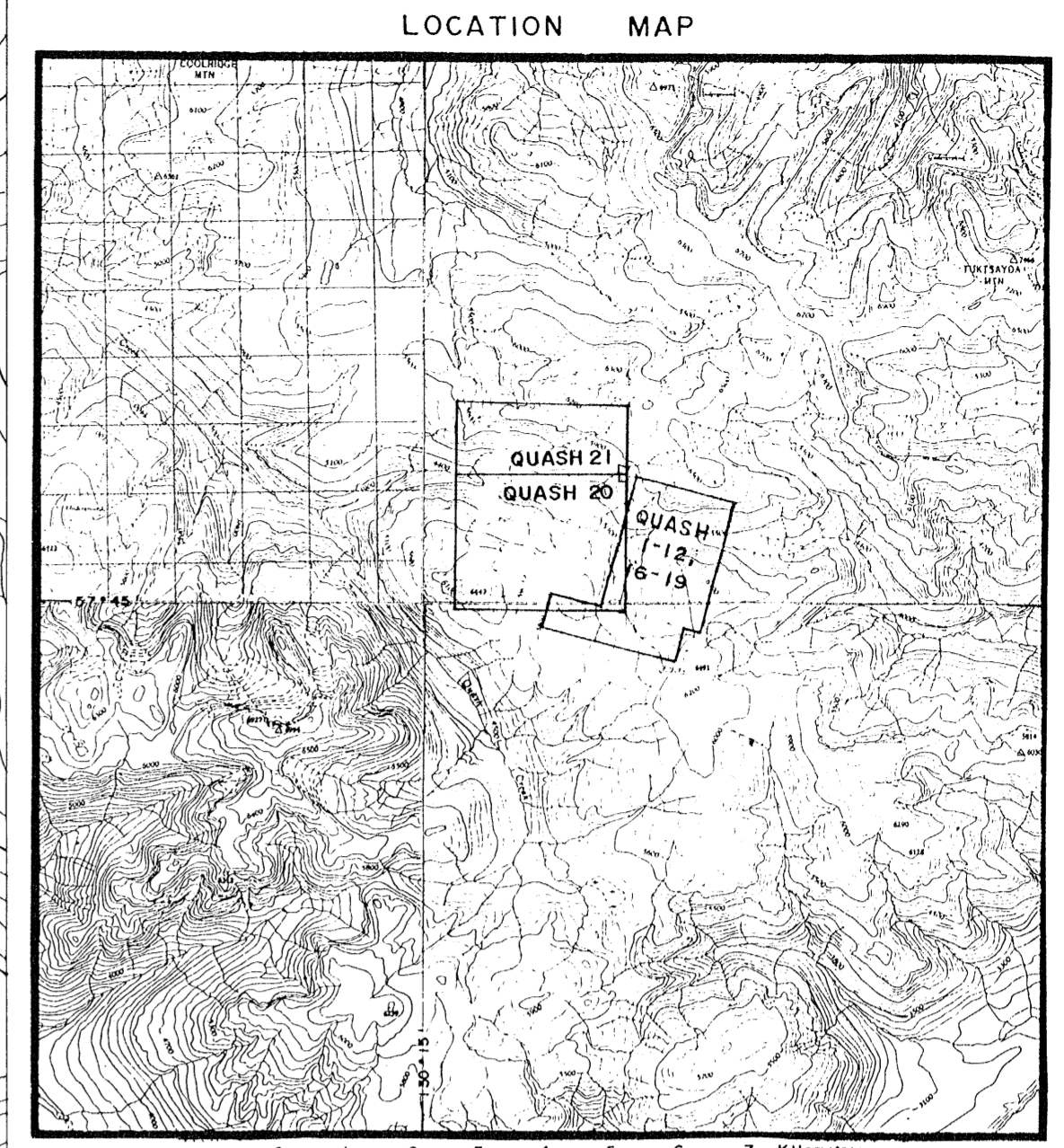
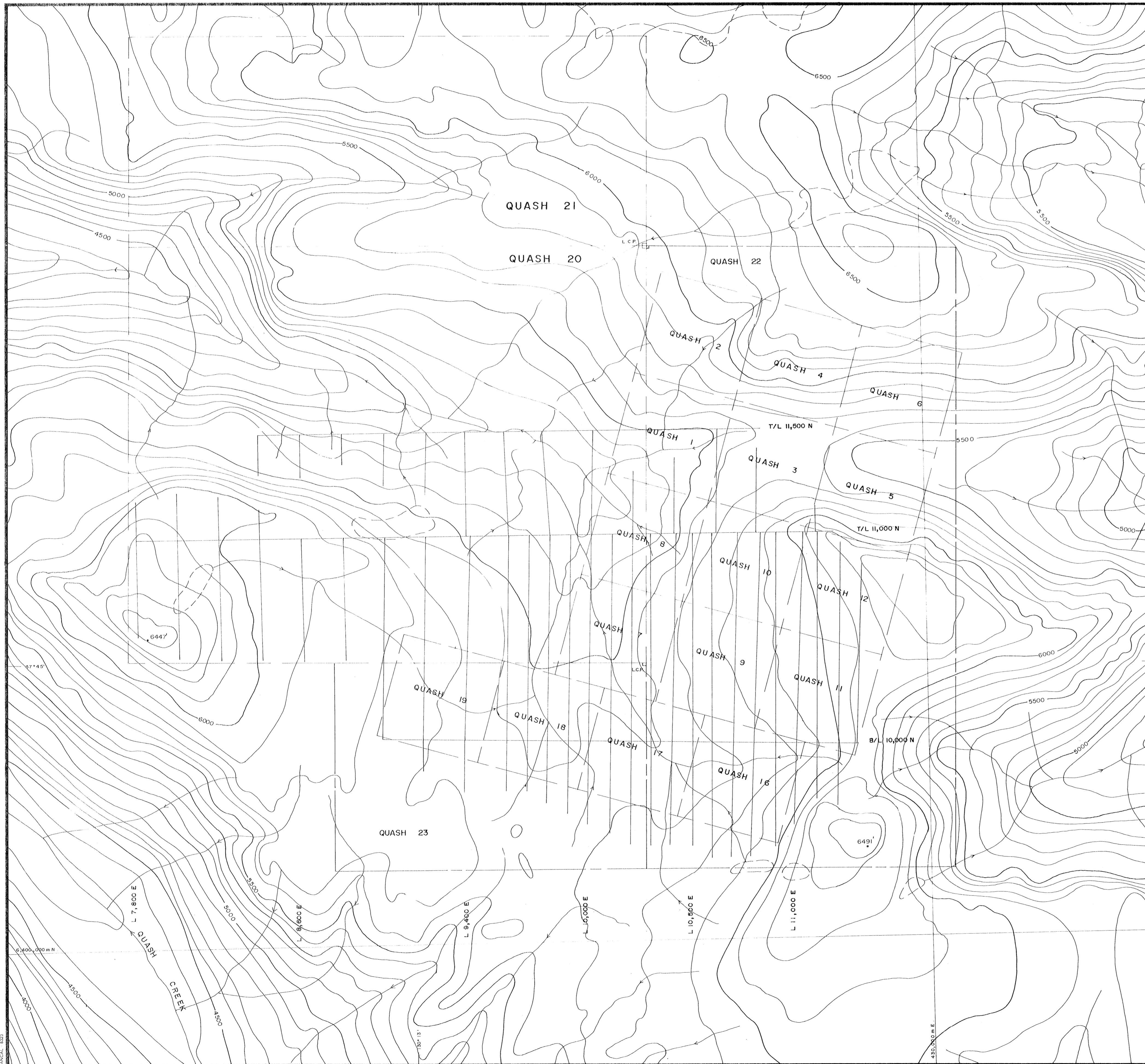
APPENDIX II

STATEMENT OF COSTS

CLAIMS: QUASH 1 to 12, 16 to 20, 22, 23
TYPE OF REPORT: GEOPHYSICAL
DATES: August 15 to September 15, 1990

1) WAGES	
Number of mandays - 18	
Cost per manday - \$ 175.00	
Total cost -	3,150.00
2) FOOD, ACCOMODATION AND SUPPLIES	
Number of days - 18	
Cost per day - \$ 51.40	
Total cost -	925.20
3) TRANSPORTATION	
Number of days - 18	
Cost per day - \$ 77.49	
Total cost -	1,394.82
4) EQUIPMENT RENTAL	
Number of days - 9	
Cost per day - \$ 100.00	
Total cost -	900.00
5) REPORT PREPARATION	
Author - \$ 250.00	
Drafting - \$ 100.00	
Typing - \$ 50.00	
Total cost -	<u>400.00</u>
TOTAL COST	\$ 6,770.02

Unit cost of mag/VLF = \$ 6,370.02/57.75 km = \$ 110.30/km



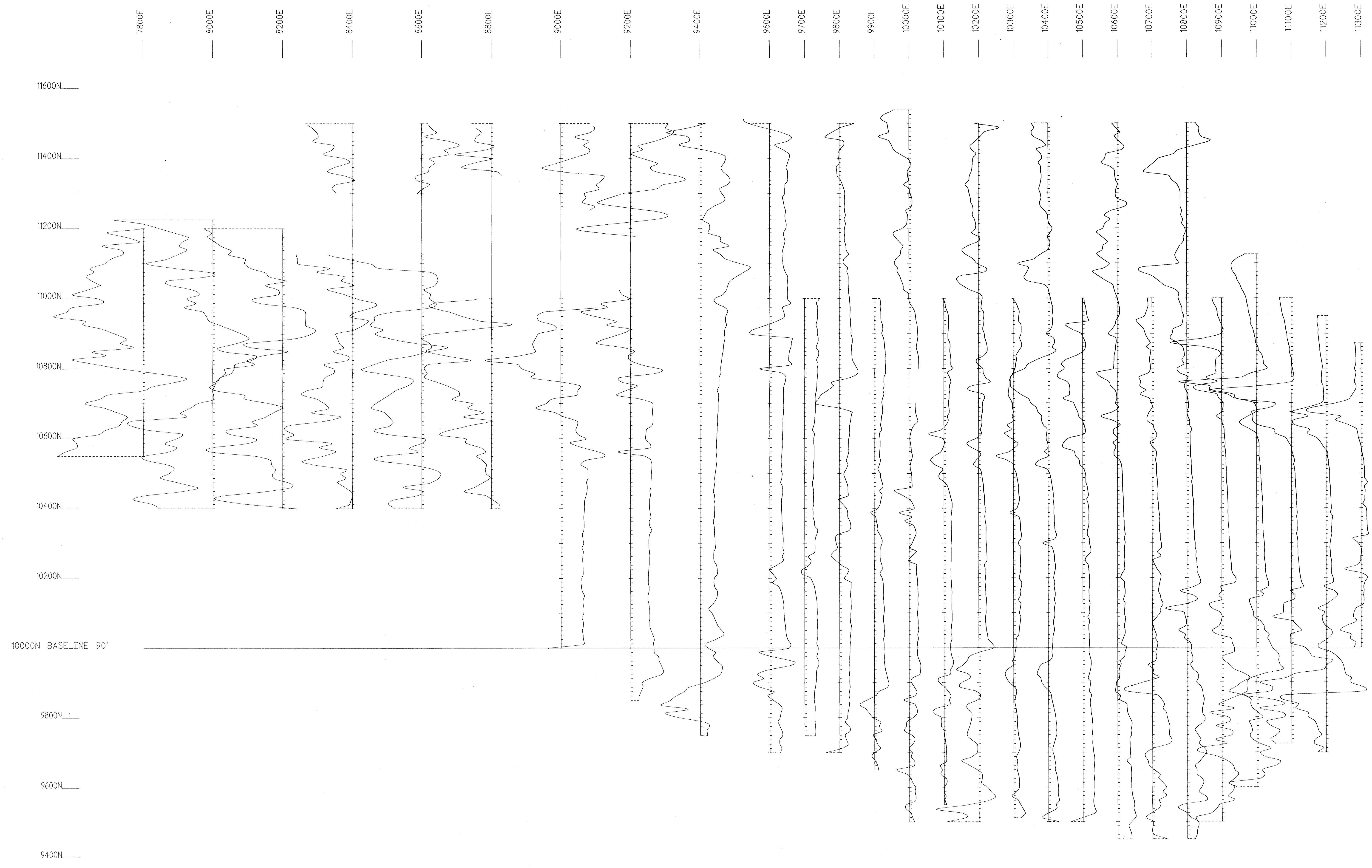
SCALE 1 : 100,000

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

21,259

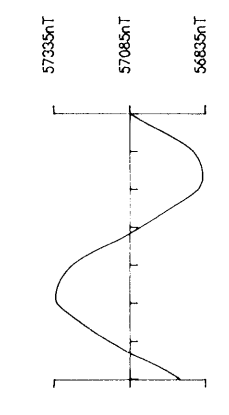
SCALE 1 : 10,000

REVISED	QUASH CREEK	
	QUASH CLAIMS 1-12, 16-21	
	GRID LOCATION MAP	
PROJ. No. 292	SURVEY BY:	DATE:
N.T.S. 1:046/9	DRAWN BY: S.K.B.	SCALE: 1 : 10,000
DWG. No.	NORANDA EXPLORATION	
FIG. 3	OFFICE: PRINCE GEORGE, B.C.	



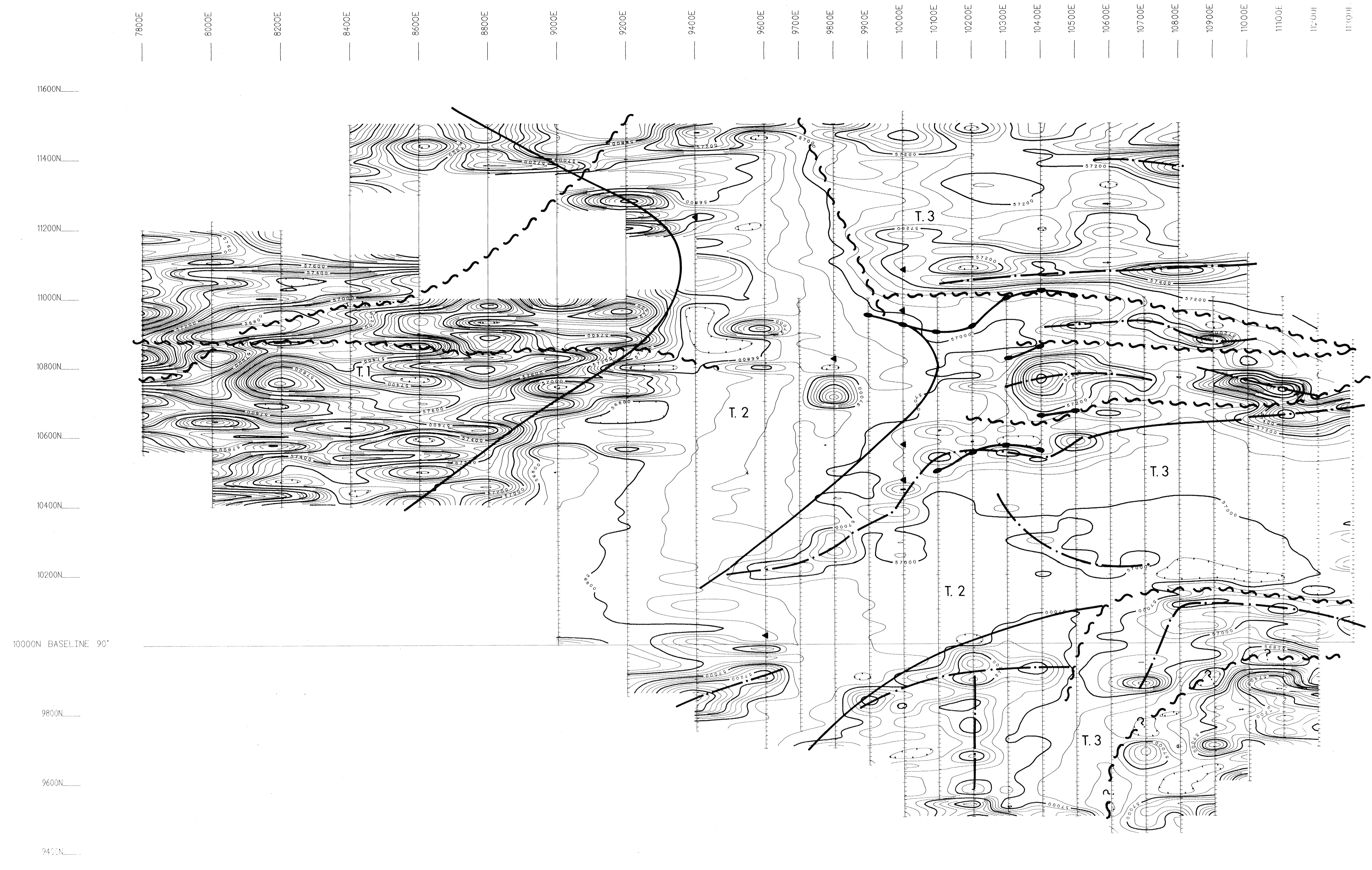
GEOLOGICAL BRANCH
ASSESSMENT REPORT

21,259



Instrument	: ODK4
Field	: TOTAL
Datum	: 0.0 nT
Contour Interval	:
Profile Scale	: 250 nT / Cm
Conductor Axis	:
100m 50m 0m 100m 200m	

QUASH	
MAGNETOMETER SURVEY	
PROJECT: QUASH CREEK PROJECT #: 292	
BASELINE AZIMUTH: 90 Deg.	
SCALE = 1 : 5000	DATE : 8/29/90
SURVEY BY : TW/CC	NTS :
FILE: M292QUA	
FIG. 4 NORANDA EXPLORATION	

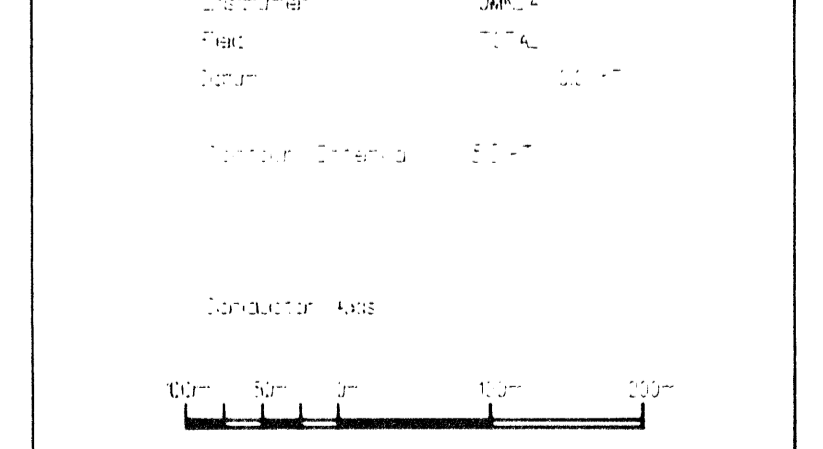


LEGEND

- Magnetic Breaks
- Magnetic Contact
- Interpreted Dikes
- Conductor Axis - Cutline
- Conductor Axis - Seattle
- T.1 Andesite
- T.2 Sediment - Argillite
- T.3 Intermediate Volcanics

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

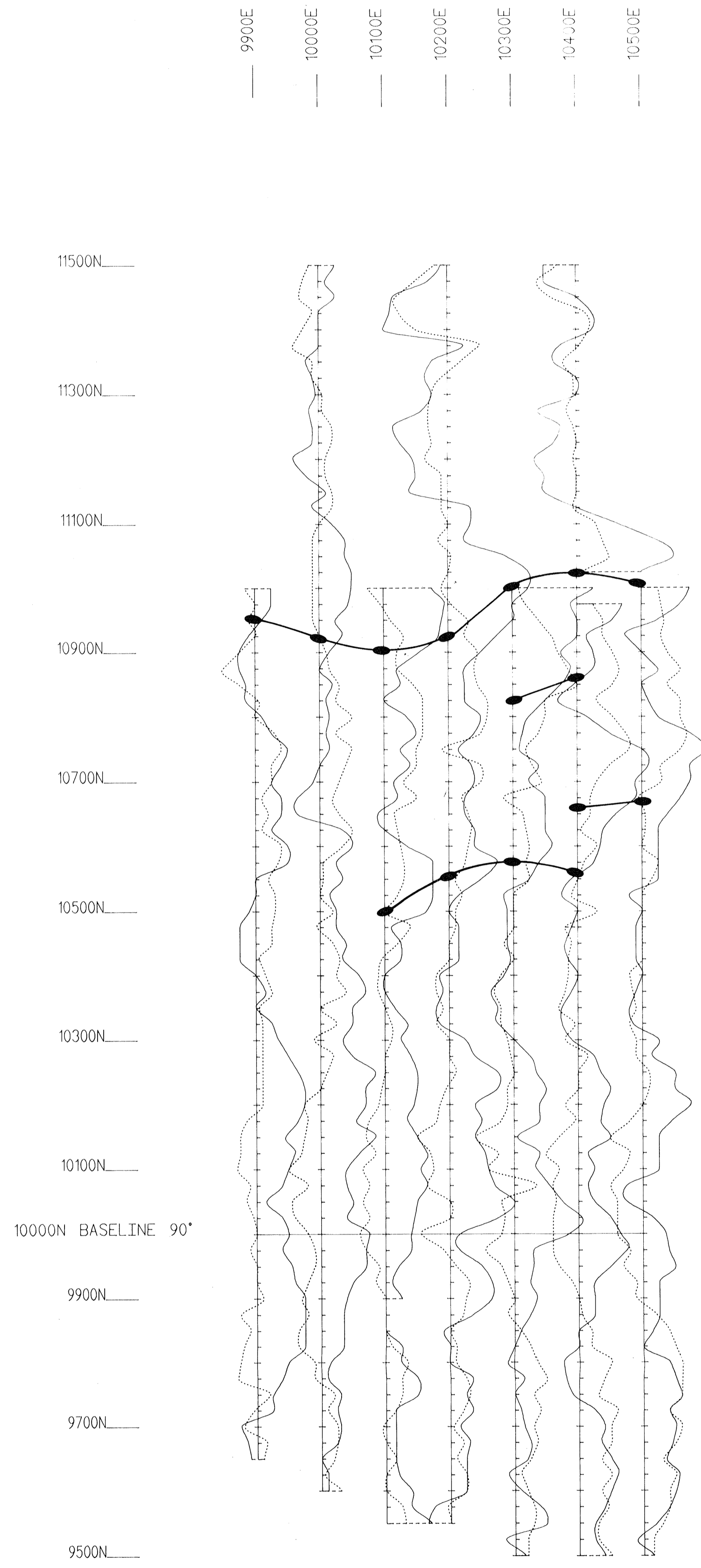
21,259



QUASH	
MAGNETOMETER SURVEY	
PROJECT: QUASH CREEK	PROJECT #: 292
BASELINE AZIMUTH: 90 Deg.	
SCALE = 1 : 5000	DATE : 8/29/90
SURVEY BY : TW/CC	NTS :
FILE: M292QUA	
FIG. 5 NORANDA EXPLORATION	

FILE: 2 New 800 of 2014 Noranda Exploration - 2014 VLF-EM Survey / GEOTECH SURVEY / NORANDA EXPLORATION

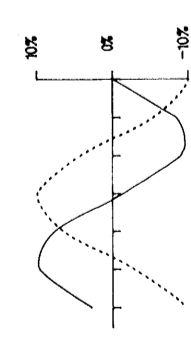
810 Deg. to NAA Cutler, Maine



Conductor Axis
**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

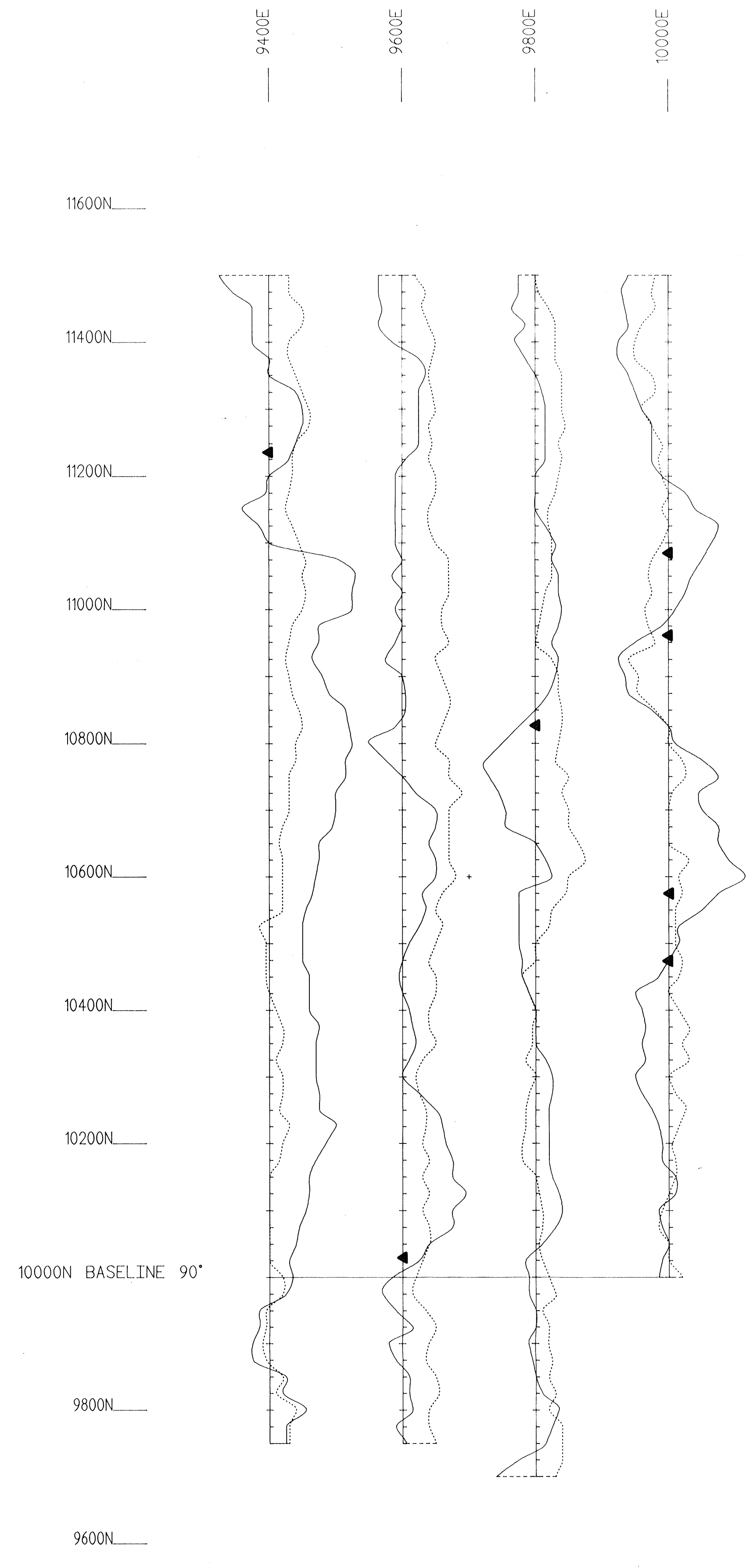
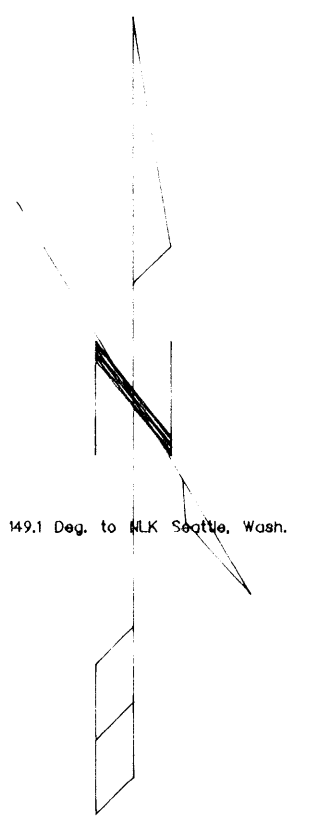
21259

Instrument : EM-16
 Vertical Scale In-phase/Quad : 1 cm = 10.0%
 Tx Location : NAA Cutler, Maine
 Contour Interval :
 In-phase :
 Quadrature :
 100m 50m 0m 100m 200m



QUASH CREEK	
VLF-EM SURVEY	
PROJECT : QUASH CREEK	PROJECT # : 292
BASELINE AZIMUTH : 90 Deg.	
SCALE = 1: 5000	DATE : 9/ 1/90
SURVEY BY : TW	NTS :
FILE: VCUTQUA	FREQ.: 24.0 KHz.
FIG. 6 NORANDA EXPLORATION	

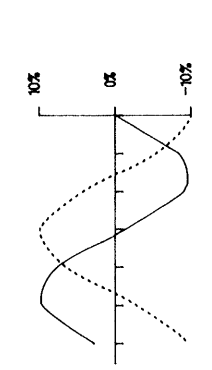
DATE: 02/11/90
FILE: VSEAQUA
PROJECT: QUASH CREEK
SHEET: 21,259



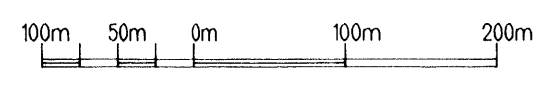
**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

21,259

▲ Conductor Axis



Instrument : EM-16
Vertical Scale Inphase/Quad : 1 cm = 10.0%
Tx Location : NLK Seattle, Wash.
Contour Interval :
In-phase : _____
Quadrature : _____



QUASH CREEK	
VLF-EM SURVEY	
PROJECT : QUASH CREEK	PROJECT # : 292
BASELINE AZIMUTH : 90 Deg.	
SCALE = 1: 5000	DATE : 9/ 1/90
SURVEY BY : TW	NTS :
FILE: VSEAQUA	FREQ.: 24.8 KHZ.
FIG. 7 NORANDA EXPLORATION	