BRITISH COLUMBIA
PROSPECTORS ASSISTANCE PROGRAM
MINISTRY OF ENERGY AND MINES
GEOLOGICAL SURVEY BRANCH

PROGRAM YEAR:	1994/95
REPORT #:	PAP 94-58
NAME:	LYNN GREXTON

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BRITISH COLUMBIA
PROSPECTORS ASSISTANCE PROGRAM
PROSPECTING REPORT FORM (continued)

B. TECHNICAL REPORT

- One technical report to be completed for each project area
- Refer to Program Requirements/Regulations, section 15, 16 and 17
- If work was performed on claims a copy of the applicable assessment report may be submitted in lieu of the supporting data (see section 16) required with this TECHNICAL REPORT

Name P. Lynn Grexton Reference Number 94-95-P197

LOCATION/COMMODITIES

Project Area (as listed in Part A.) DaVinci-CacheCreek Minfile No. if applicable Nil

Location of Project Area NTS 92I/13E Lat 50°49 Long 121°37'

Description of Location and Access via Hwy 99N 40 minutes west from Cache Creek to small dirt road heading N from Hat Creek Rd Junction

Main Commodities Searched For Au Cu Pb Zn

Known Mineral Occurrences in Project Area Limestone

WORK PERFORMED

1. Conventional Prospecting (area) 4.25 km²
2. Geological Mapping (hectares/scale) 42.5 1:125,000
3. Geochemical (type and no. of samples) Rock, Silt, Pan Con. 45, 8, 3
4. Geophysical (type and line km) Mag 24.4, VLF 15.4
5. Physical Work (type and amount) Grid Const. 25.1 km; Staking 14 units
6. Drilling (no. holes, size, depth in m, total m) Nil
7. Other (specify)

SIGNIFICANT RESULTS (if any)

Commodities Hg, Cu, Zn Bi, Sb, As Claim Name DaVinci 1

Location (show on map) Lat Long Elevation

Best assay/sample type See Report

Description of mineralization, host rocks, anomalies

See Report.

Supporting data must be submitted with this TECHNICAL REPORT.

Prospecting Grant

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DAVINCI PROPERTY

(DaVinci 1 to 12)

GROUND MAGNETICS, ELECTROMAGNETICS, GEOLOGY AND GEOCHEMISTRY

Latitude: 50°49'

Longitude: 121°37' W

N.T.S. 92I/13E

KAMLOOPS MINING DIVISION
British Columbia

P.L. Grexton

Vancouver, B.C.
November 1994

SUMMARY

The DaVinci Property is located in the Marble Range, 36 km west of Cache Creek, B.C. on N.T.S. map sheet 92I/13E. Claims cover a forested area of low, rounded ridges and gently slopes. Road access to the claims is available from Highway 99N via a narrow dirt road.

DaVinci is within the Cache Creek Terrane and is primarily underlain by limestone with local, narrow interbedded chert. Poorly exposed outcrops of intermediate volcanics and greenstone were found at several locals. Regionally, this assemblage forms a broad, northwest trending belt bounded by strong, north-northwest faults. Claims protect a 3 x 5 km, subcircular regional aeromagnetic anomaly of +400 gammas above background which is postulated to indicate an intrusive body at depth. There is no record of previous exploration of this target. Historical records report gold assays in excess of one ounce per ton in quartz and jasper veins found at the base of the Marble Range, west of Clinton. In this area, a large portion of the Cache Creek Terrane has been removed from mineral exploration by a recent land use decision. Despite the very high mineral potential of this belt, additional areas are under consideration for alienation, including the DaVinci Property.

Comprising 61 contiguous units, the claims protect an area deemed to have excellent potential for hosting base and precious metal mineralization related to epithermal, mesothermal and/or contact metasomatic mineralizing processes.

Between June 11 and October 2, 199~~9~~4, the writer spent 32.5 days on the property. Work consisted of 25.1 line km of grid construction, the completion of 24.4 and 15.4 line km of magnetic and electromagnetic surveying respectively and the collection of 55 rock samples and 4 silt samples. Samples were analysed for Au by atomic absorption and 32 other elements by I.C.P. Geochemical analyses were completed on 27 rock samples for Hg and on 29 rock samples for Te. An additional 14 claim units were staked to protect areas of potential mineralization and to secure road access which could be lost in the pending land use decision.

Evidence of silicification is present in all rock types as minor quartz stringers, fracture fillings and boxworks. Intense, pervasive silicification and fine brecciation was found in several samples. An outcrop of jasperoid was located on the newly acquired claims on the eastern portion of the property. Pervasive, weak sericitization/saussuratization occurs within andesite feldspar porphyry. Minor amounts of pyrite and hematite occur locally.

Magnetic surveying has outlined an anomaly indicative of a magnetic body roughly 2 km in diameter and at a depth in excess of one km. On the western half of the property a number of volcanic (?) bodies, 25 to 100m wide and +600m long have been identified. The noisy electromagnetic response for the survey area is more typical of shales than carbonate rocks, Majority of weaker conductors may represent small shears/faults. Causes of deeper and stronger electromagnetic anomalies remain unknown.

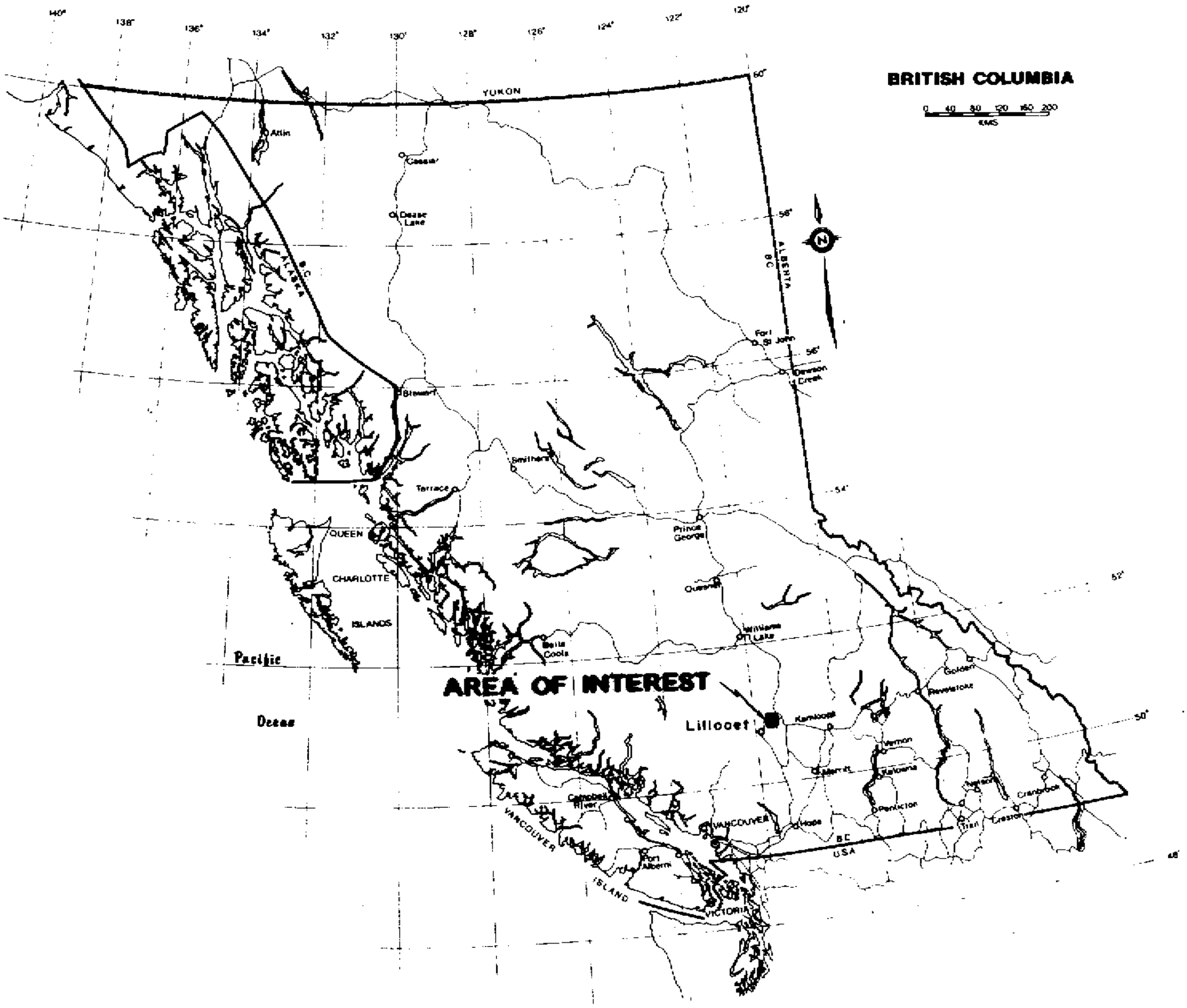
Despite the absence of Au, lithogeochemical response over the claim area is highly favourable of an epithermal mineralizing system. Most of the 27 samples tested for Hg, returned weakly to moderately anomalous values. Three samples have greater that 1100 ppb Hg with a maximum of 2400 ppb. Other maximum values encountered include 201 ppm Zn, 80 ppm Cu, 87 ppm As, 18 ppm Sb, 16 ppm Bi and 13 ppm W.

CONCLUSIONS

1. Magnetic surveying has confirmed the presence of a sizable magnetic body beneath the claim area. A number of volcanic bodies of 25 to 100m width are indicated to be present on the west half of the property.
2. Electromagnetic surveying has detected numerous shallow, fault/shear structures. Source of stronger and/or deeper anomalies remain unknown. Directional trends of the anomalies cannot be determined due to insufficient survey coverage.
3. *The occurrence of jasperoid and widespread silicification are positive indication* of hydrothermal activity.
4. Lithogeochemistry indicates strongly anomalous Hg to be present in a variety of rock types. Significant As, Bi, Sb and W values were detected. Anomalous Cu, Pb and Zn occurrences are less widespread.
5. Gold was not detected in any samples collected during the 1994 work.
6. Results of this follow-up investigation further substantiate the excellent potential for the presence of base and precious metal mineralization related to epithermal, mesothermal and/or contact metasomatic processes.

RECOMMENDATIONS

1. Detailed infill magnetic and electromagnetic surveying should be completed on EW lines at a maximum line spacing of 100m.
2. Prospecting and mapping should be completed on infill grid lines.
3. Multidirectional electrical survey methods should be used to aid in identifying areas of more intense silicification.
4. No work should be considered until the issue of land use and tenure has been resolved.



DAVINCI PROPERTY **LOCATION MAP**

FIGURE 1

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LOCATION AND ACCESS

Centred on latitude 50°49'N and longitude 120°37'W, the DaVinci property is located immediately east of the Pavilion Lime Plant, 36 km west of Cache Creek, B.C. It is in the Kamloops Mining Division on N.T.S. map sheet 92I/13E.

Access to the western portion of the claims is possible via a 4 km dirt road which heads north from Highway 99N near the Hat Creek Road junction. A similar road could allow easy access to the eastern portion of the property provided permission for such access can be obtained from local land owners. Under dry conditions the roads are passable with two wheel drive. See Figures 1 and 2 for location. Travel time from Cache Creek is about 40 minutes.

TOPOGRAPHY, VEGETATION AND GLACIATION

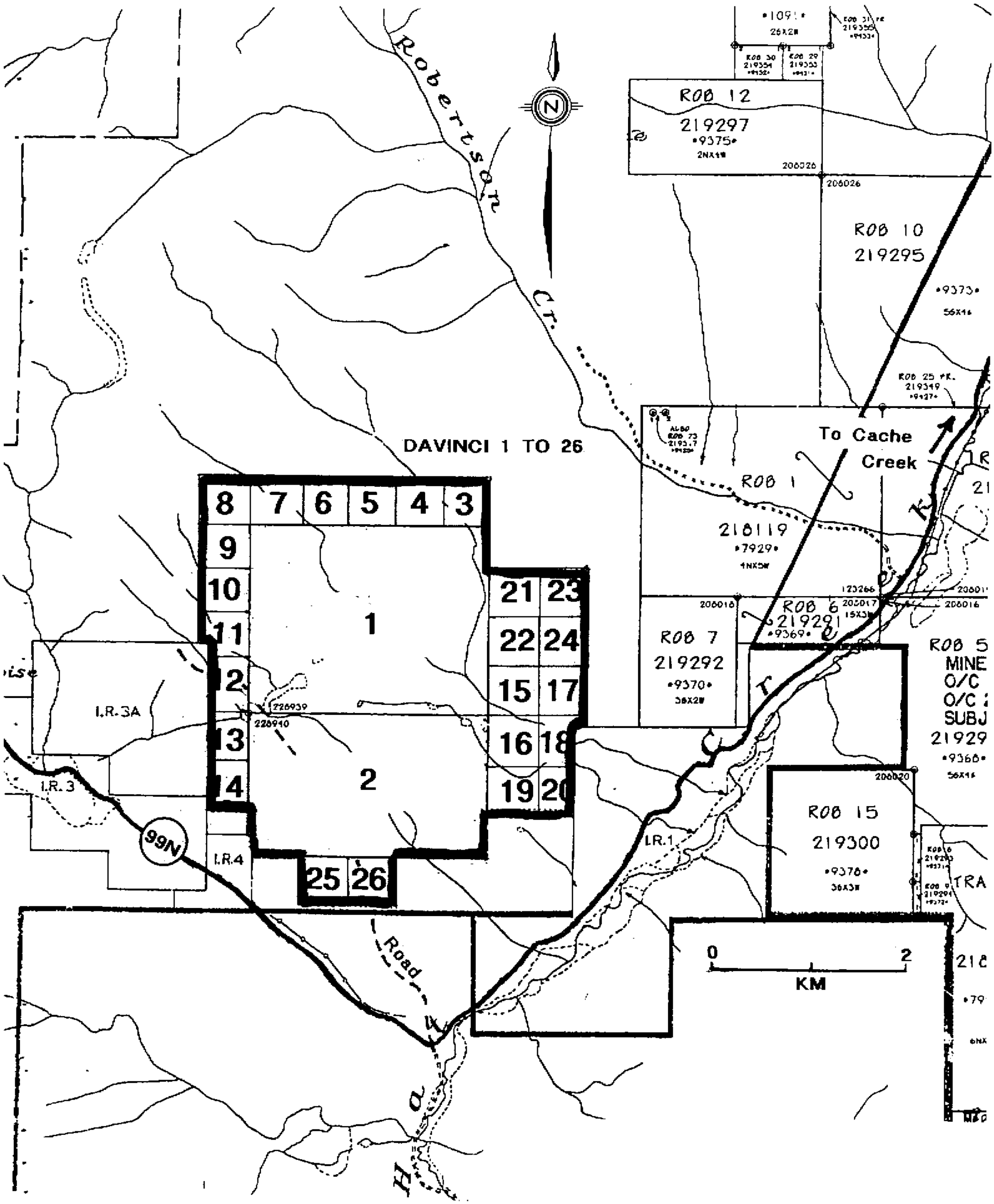
Claims cover an area of low, rounded hills and fairly gentle slopes. Steeper hillsides and small cliffs occur locally. A mixed forest of pine, spruce and poplar predominate. Vegetation density varies from open grassy areas with widely spaced pine to a very dense tangle of willow or fir. Charred remains of stumps and logs indicate that a portion of the property burned more than 50 years ago. In the southeast portion of the claim area is evidence of a more recent fire. Property elevations range from 1097 to 1615 m asl (3600 to 5300 feet asl). Two Spring Creek traverses the eastern portion of DaVinci 1. Several other drainages on the property appear to flow intermittently depending on the season. The area is typically very dry.

Government maps indicate ice movement through the area was from northwest to southeast. About 75% of the property is covered by glacial debris.

CLAIM DATA

The property comprises 2 four post and 12 two post claims totalling 47 contiguous units. An additional 14 two post claims were staked in September and October in order to secure ground with good mineral potential and to guarantee availability of access which may be lost due to an impending land use decision. Claim statistics are presented below. Locations are shown on Figures 1 and 2. Claim affidavits are in Appendix I.

Name	Tenure #	Dimension	Units	Staked	Expeires	Owner
DaVinci 1	318812	4N x 5E	20	18 06 93	18 06 97	Grexton
DaVinci 2	318813	3S x 5E	15	18 06 93	18 06 97	Grexton
DaVinci 3	330418	-	1	14 09 94	14 08 96	Grexton
DaVinci 4	330419	-	1	14 08 94	14 08 96	Grexton
DaVinci 5	330420	-	1	14 08 94	14 08 96	Grexton
DaVinci 6	330421	-	1	15 08 94	15 08 96	Grexton
DaVinci 7	330422	-	1	15 08 94	15 08 96	Grexton
DaVinci 8	330423	-	1	15 08 94	15 08 96	Grexton
DaVinci 9	330424	-	1	15 08 94	15 08 96	Grexton
DaVinci 10	330425	-	1	15 08 94	15 08 96	Grexton
DaVinci 11	330426	-	1	15 08 94	15 08 96	Grexton
DaVinci 12	330427	-	1	16 08 94	16 08 96	Grexton
DaVinci 13	331206	-	1	24 09 94	24 09 95	Grexton
DaVinci 14	331207	-	1	24 09 94	24 09 95	Grexton
DaVinci 15	331208	-	1	01 10 94	01 10 95	Grexton
DaVinci 16	331209	-	1	01 10 94	01 10 95	Grexton
DaVinci 17	331210	-	1	01 10 94	01 10 95	Grexton
DaVinci 18	331211	-	1	01 10 94	01 10 95	Grexton
DaVinci 19	331212	-	1	01 10 94	01 10 95	Grexton
DaVinci 20	331213	-	1	01 10 94	01 10 95	Grexton
DaVinci 21	331214	-	1	02 10 94	02 10 95	Grexton
DaVinci 22	331215	-	1	02 10 94	02 10 95	Grexton
DaVinci 23	331216	-	1	02 10 94	02 10 95	Grexton
DaVinci 24	331217	-	1	02 10 94	02 10 95	Grexton
DaVinci 25	331218	-	1	02 10 94	02 10 95	Grexton
DaVinci 26	331219	-	1	02 10 94	02 10 95	Grexton



92I/13E

DAVINCI PROPERTY **CLAIM MAP**

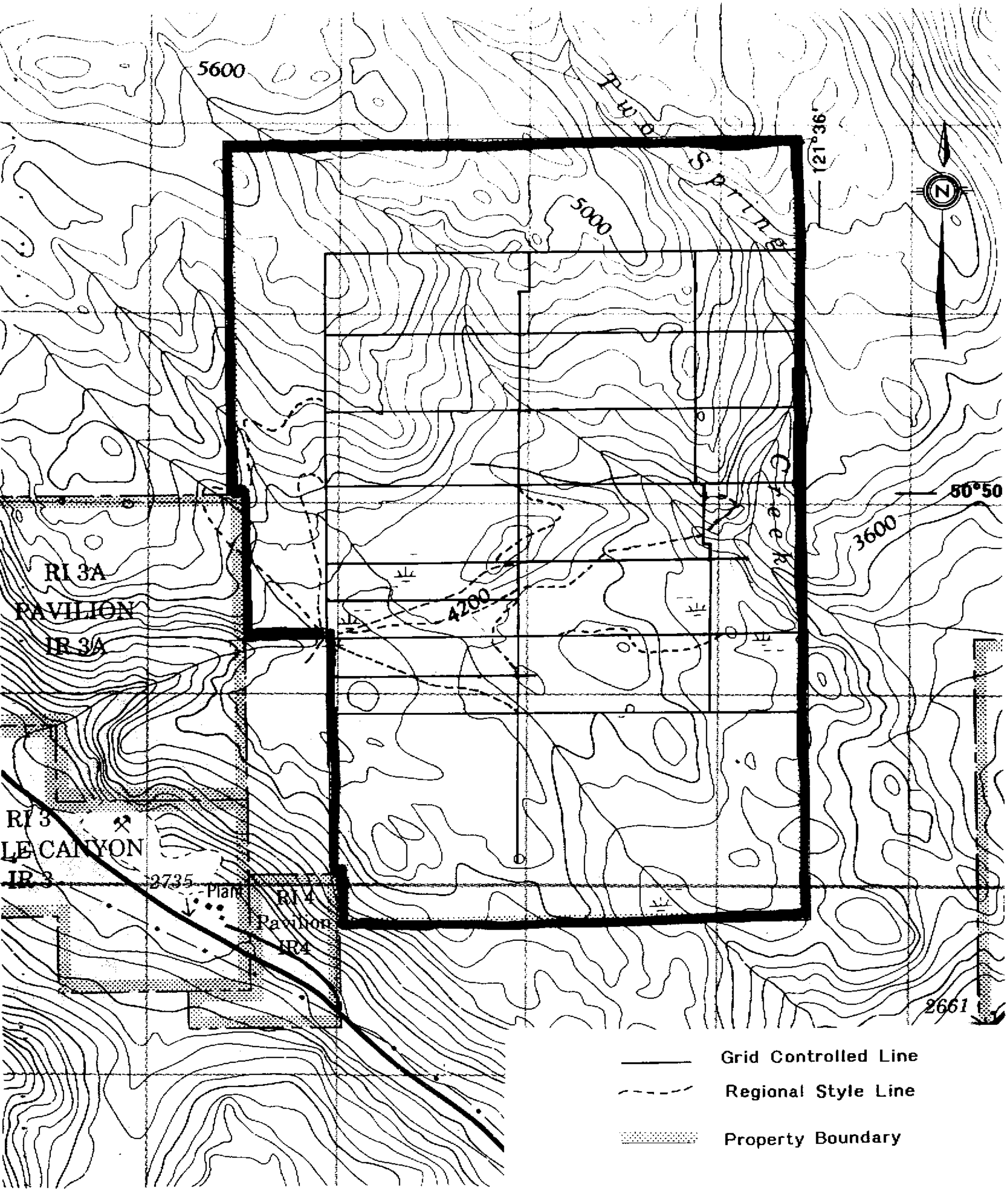
FIGURE 2

1994 PROGRAM II

Purpose of the program was to continue looking for evidence of intrusive activity and alteration related to hydrothermal processes, to verify the presence of a magnetic body beneath the claim area and to identify structural features which may have tapped mineralizing fluids at depth. This program was a continuation of the preliminary evaluation completed in June 1994.

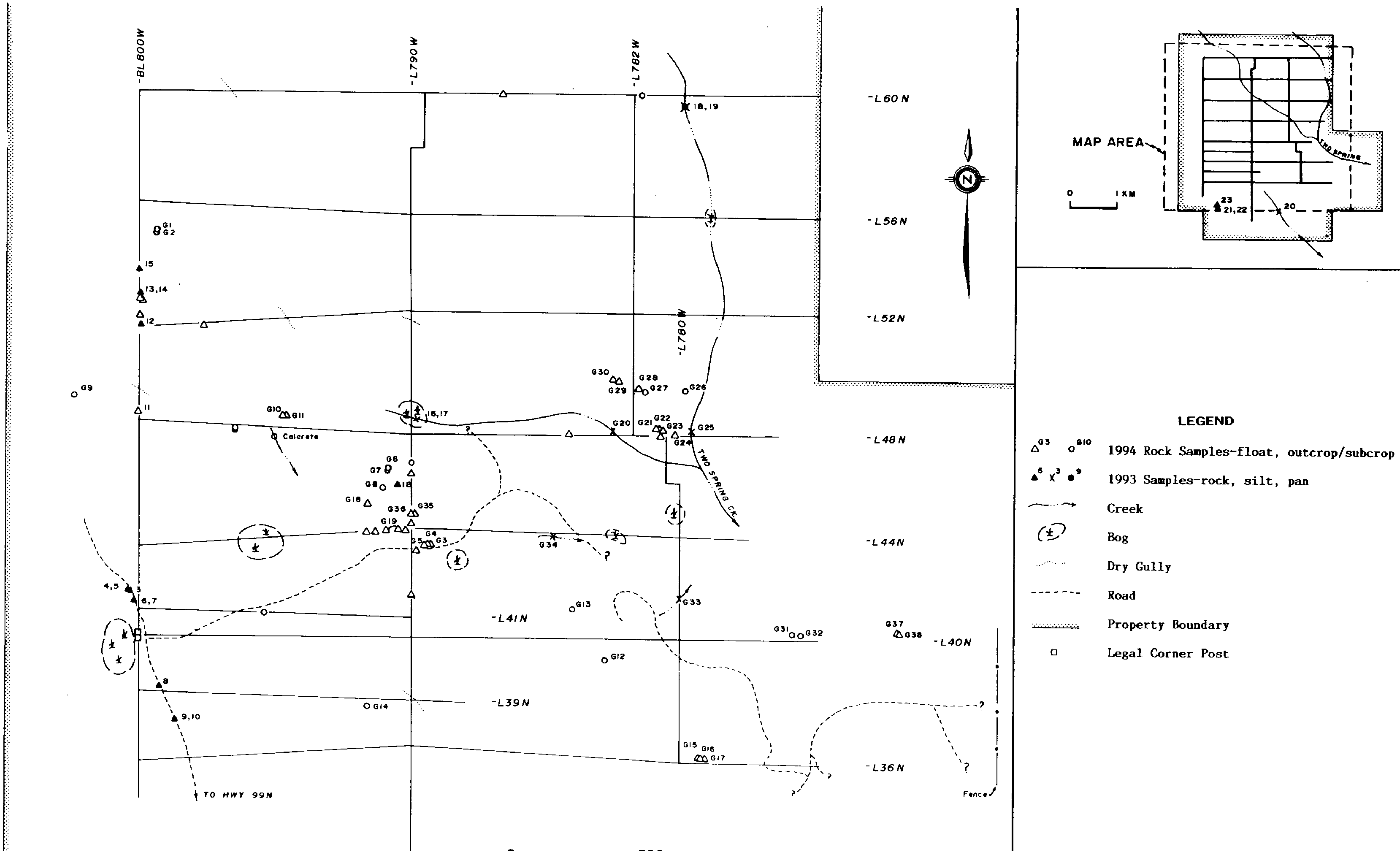
Between August 1 and September 24, the writer spent 26 days on the property. Grid coverage was increased to 25.1 km. Roughly 16 km of flagged, picketed and slope corrected lines were constructed using a compass and hipchain. Rock exposures encountered were given a cursory examination. A total of 31 rock and 4 silt samples were collected. All samples were analysed for Au by atomic absorption and 31 other elements by ICP at Rossbacher Laboratory, Burnaby, B.C. In addition, geochemical analyses were completed on 27 samples to determine Hg content and on 29 samples for Te. Certificates of Analysis, methods and detection limits are in Appendix II. Rock sample descriptions are in Appendix III. Traverse lines and sample locations are shown on Figures 3 and 4.

Following grid construction, ground magnetic and electromagnetic surveys were completed over 24 line km and 15 line km respectively. Geophysical field data, corrections and methodoloy are in Appendix IV and V.



DAVINCI PROPERTY **TRAVERSE MAP**

FIGURE 3



DAVINCI PROPERTY

SAMPLE LOCATIONS

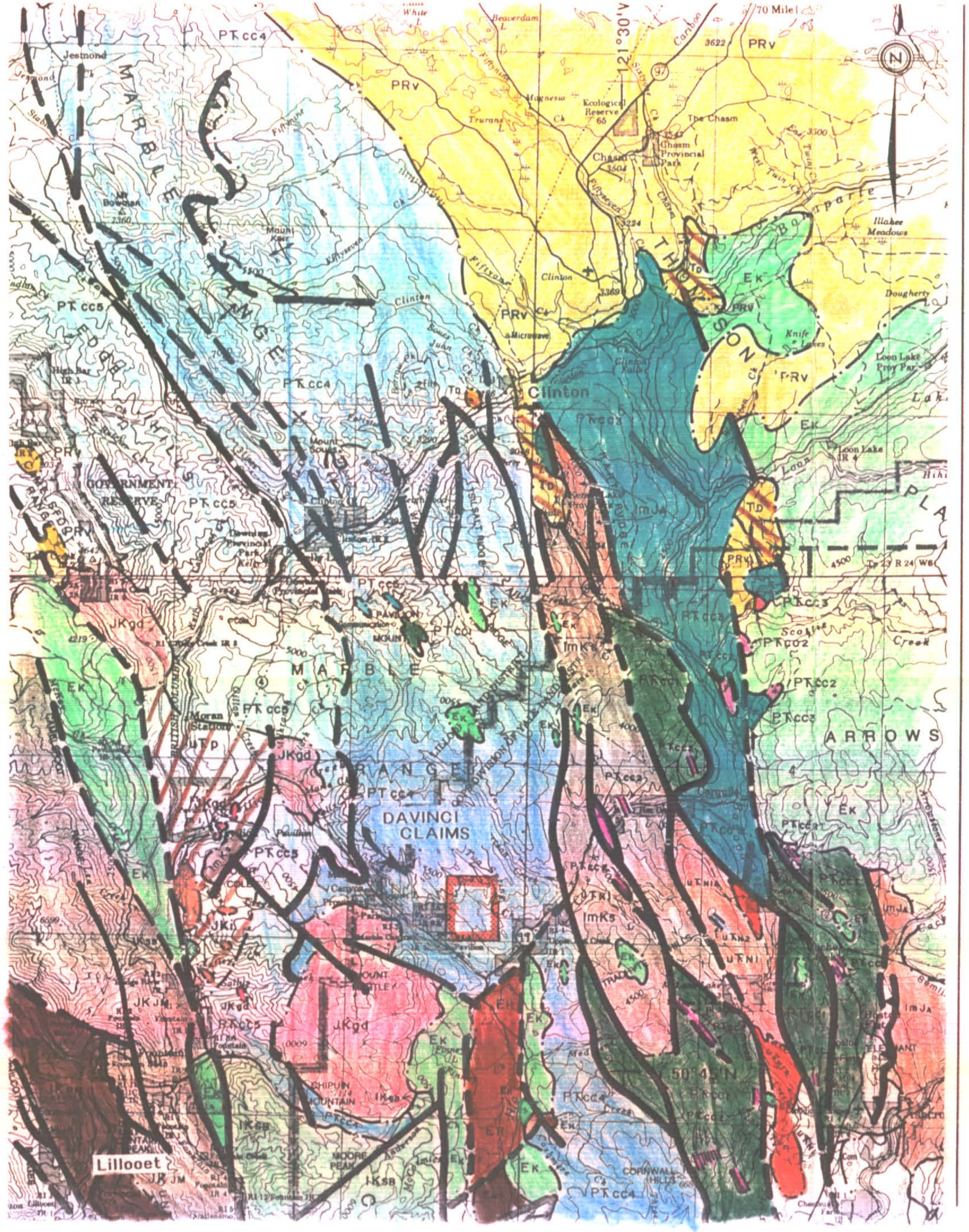
FIGURE 4

REGIONAL GEOLOGY (G.S.C. O.F. 980, MAP 1278A)

According to government maps, the DaVinci property is in the Cache Creek Terrane and is underlain by Cache Creek Gp. limestone with local, thin bedded carbonate, argillite, tuff and lesser basalt and chert. North of Highway 99N, this assemblage forms a northwest trending belt that is 10 to +20 km wide and is bounded by strong north-northwest faults. West of this central limestone belt is a similar belt of Cache Creek Gp. chert, argillite and phyllite with minor greenstone and limestone. Cretaceous and Tertiary age clastic rocks and Quaternary plateau lavas occur to the east. Within the central belt of limestone are small occurrences of similar age mafic rocks and Tertiary age Kamloops Gp. volcanics. South of Highway 99N, bedrock geology becomes more complex. The central limestone belt becomes less regular and is disrupted by the Jurassic-Cretaceous age Mt. Martley Stock of granodiorite to quartz monzonite composition. Linear belts of Cretaceous-Tertiary age volcanic and sedimentary rocks and Cache Creek Gp. mafic rocks are present. West of the central limestone, Jurassic-Cretaceous age stocks of diorite to q~~a~~uartz monzonite composition occur.

Large scale northwest trending faults dominate the region. Smaller scale northwest and northeasterly trending faults occur locally. South of Highway 99N, two of these smaller scale faults disrupt the central limestone belt, the Mt. Martley Stock and appear to truncate occurrences of Tertiary age volcanics and sedimentary rocks. North of Clinton, anticlinal structures are evidence of regional folding within the central limestone belt. Regional geology is shown on Figure 6.

Government aeromagnetic maps indicate a large, positive,thumbprint anomaly to be present over Cache Creek limestone on the DaVinci property. The anomaly is 400 gammas over background and covers an area of 3x5 km. Aeromagnetic response over the small diorite-quartz monzonite stocks appears as moderate to strong, positive, subcircular anomalies. The Mt. Martley Stock occurring southwest of the DaVinci anomaly, has a unique signature of low magnetic response. Small bodies of Tertiary age volcanics produce moderate to strong, subcircular anomalies with fairly steep gradiants. Ultramafic bodies commonly occurring along regional scale faults, typically produce intense, positive anomalies which are elongated in a northwest direction. Regional aeromagnetic response is shown on Figure 6.



LEGEND

QUATERNARY

PRv	Basalt, plateau lavas

TERTIARY

TD	Shale, sandstone, tuff, conglomerate, breccia (DEADMAN RIVER FM.)
EK	KAMLOOPS GP. - Mafic-acid volcanic breccia, tuff; local sandstone, conglomerate, shale
EH	Sandstone, conglomerate, shale, coal (HAT CREEK BEDS)

CRETACEOUS

ImKs	Conglomerate, sandstone, minor shale, coal
IKss	SPENCES RIVER GP. - Intermediate-acid volcanic rocks, volcaniclastics, sandstone, shale, local conglomera
IKJM	JACKASS MTN. GP. - Sandstone, conglomerate

JURASSIC & CRETACEOUS

JKRM	RELAY MTN. GP. - Argillite, siltstone, sandstone, conglomerate
JKgd	MT. MARTLEY STOCK and similar granitic rocks - Granodiorite, quartz monzonite
JKi	Diorite, quartz diorite
ImJA	Argillite, siltstone, sandstone, conglomerate, minor carbonate

TRIASSIC & JURASSIC

$u\bar{T}_{N1}$	NICOLA GP. - Basic-acidic, mainly volcaniclastic rocks, intercalate argillite
$u\bar{T}_{N1A}$	- Acid flows
$u\bar{T}_{N2}$	- Carbonate
$u\bar{T}p$	Argillite, volcanic sandstone; local tuff, carbonate (PAVILION BEDS), possibly correlative to $u\bar{T}_{N1}$

PENNSYLVANIAN TO TRIASSIC

$P\bar{T}cc_1$	CACHE CREEK COMPLEX - Basalt, diabase, gabbro
$P\bar{T}cc_2$	- Ultramafic, mainly serpentinite
$P\bar{T}cc_3$	- Melange (chert, argillite; blocks of chert, greenstone, ultramafics, local acid vo
$P\bar{T}cc_4$	- Limestone, local thin bedded carbonate, argillite, tuff; local basalt, chert
$P\bar{T}cc_5$	- Chert, argillite, phyllite, minor greenstone, limestone

—·—	Geological contact
▬ ▬	Fault

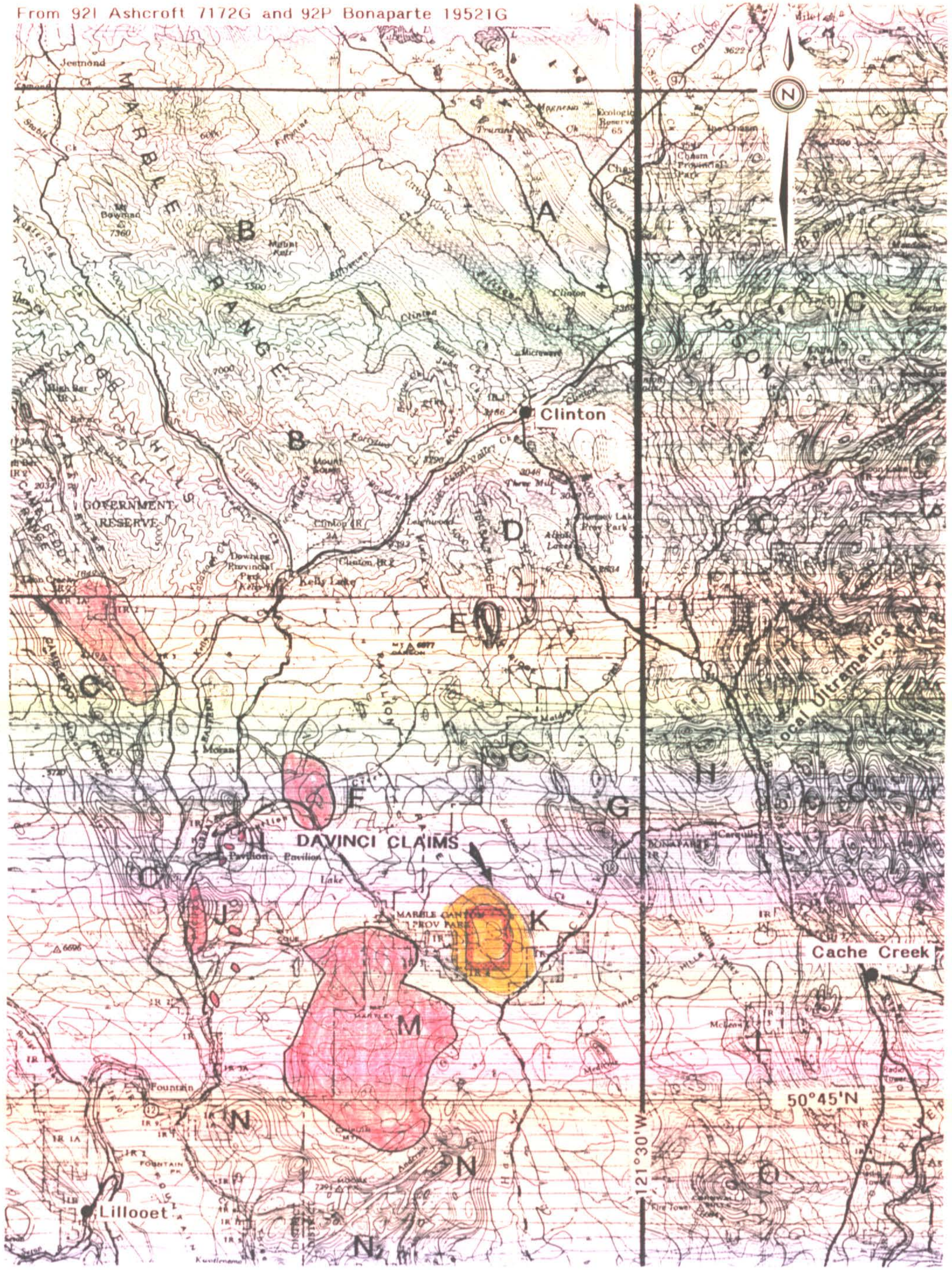
From GSC O.F. 980 & Bonaparte River Map 1278A

0 5 10
KM

DAVINCI PROPERTY **REGIONAL GEOLOGY**

FIGURE 5

From 92I Ashcroft 7172G and 92P Bonaparte 19521G



PROBABLE SOURCE OF MAGNETIC ANOMALIES

ANOMALY

A - Quaternary basalt, plateau lavas PRv

B - Local mafic volcanic rocks

C - Mafic-acidic volcanic rocks Eκ

D - UNKNOWN, Possible local intermediate-mafic volcanic rocks Eκ, PT̄cc1

E - Mafic volcanic rocks, possible ultramafic rocks Eκ, PT̄cc1,2

F - Granodiorite-quartz monzonite stock JKgd

G - UNKNOWN, Possible ultramafic rocks along fault

H - Mafic volcanic and ultramafic rocks PT̄cc2

I - Granodiorite-quart monzonite as small stocks and/or local volcanic rocks JKgd, uT

J - Diorite-quartz diorite stock JKi

K - UNKNOWN, Likely buried intrusion of diorite-quartz monzonite composition

L - UNKNOWN, Likely minor ultramafic rocks along fault in mafic volcanic rocks PT̄cc2

M - Mt. Martley Stock, granodiorite-quartz monzonite JKgd

N - Intermediate-acid volcanic rocks lKsB

O - Ultramafic rocks (dyke swarm) PT̄cc2

▨ Intrusive rocks - Granodiorite-quartz monzonite, Diorite-quartz diorite

KM
0 5 10

DAVINCI PROPERTY **AEROMAGNETIC MA**

FIGURE

PROPERTY GEOLOGY

Majority of bedrock exposure comprise crypto-coarsely crystalline, dolomitic, ankeritic and/or silty limestone. The carbonate commonly occurs along broad, low lying ridges. Weathered surfaces vary from light grey to dark grey and from being strongly fractured and highly blocky to smooth and well rounded. Colour variation of fresh surfaces include buff, brown, light to very dark grey and pinkish to orangish. Black carbonaceous material is occasionally present to a maximum of 20%, as irregular masses and disseminations. Fusilinids are present in local dark grey-black outcrops east of Two Springs Creek (L48N).

Locally the carbonate is finely laminated and interbedded with chert. Majority of these discontinuous chert beds, lenses and pods are less than 3 cm wide and were observed to a maximum of 15 cm wide. Colour of the chert is light grey to black. Carbonate breccia with chert or carbonate fragments occurs at several locals as beds of less than 5 cm to +1.5 m thick and as discontinuous lenses. Breccias vary from clast to matrix supported.

Poorly exposed outcrops of mafic to intermediate volcanics were found in areas of recessive weathering. On the east half of the property, these exposures tend to be dark green, massive, nonmagnetic andesite-basalt. Moderate and strongly magnetic varieties are more restricted in occurrence. Moderate to intense foliation is well developed in some outcrops. The stronger foliation is typically associated with faulting. Less intensely developed foliation may represent a primary flow texture. Field evidence suggests these volcanics represent narrow, discontinuous beds which are interbedded with carbonate. On the western portion of the claims, medium to dark green, massive and feldspar porphyrytic, moderately magnetic andesite is present. Exposures are commonly massive but a fine foliation is moderately well developed locally. Calcareous, dacitic tuff-subvolcanic (?) material was noted as lenses of up to 3.5 cm wide near 40+50N/784W.

Estimates of bedding thickness in the carbonate range from a few cm to +5 m thick. Strike is dominantly northwesterly. Dips are moderate to steep in either direction. Small, parasitic folds were observed at two locals. Minimum width estimates for the volcanics range from 1 to 10 m for eastern exposures and up to 20 m on the west half of the property. Field evidence indicates that the area has been subjected to strong folding and faulting under conditions of low pressure, resulting in widespread brittle fracture patterns and variable folding. Slickensides in the vicinity of 790W/40N and 780W/46N, indicate the latest movement to be in a north-south direction. Property geology is plotted on Figure 7.

MINERALIZATION AND ALTERATION

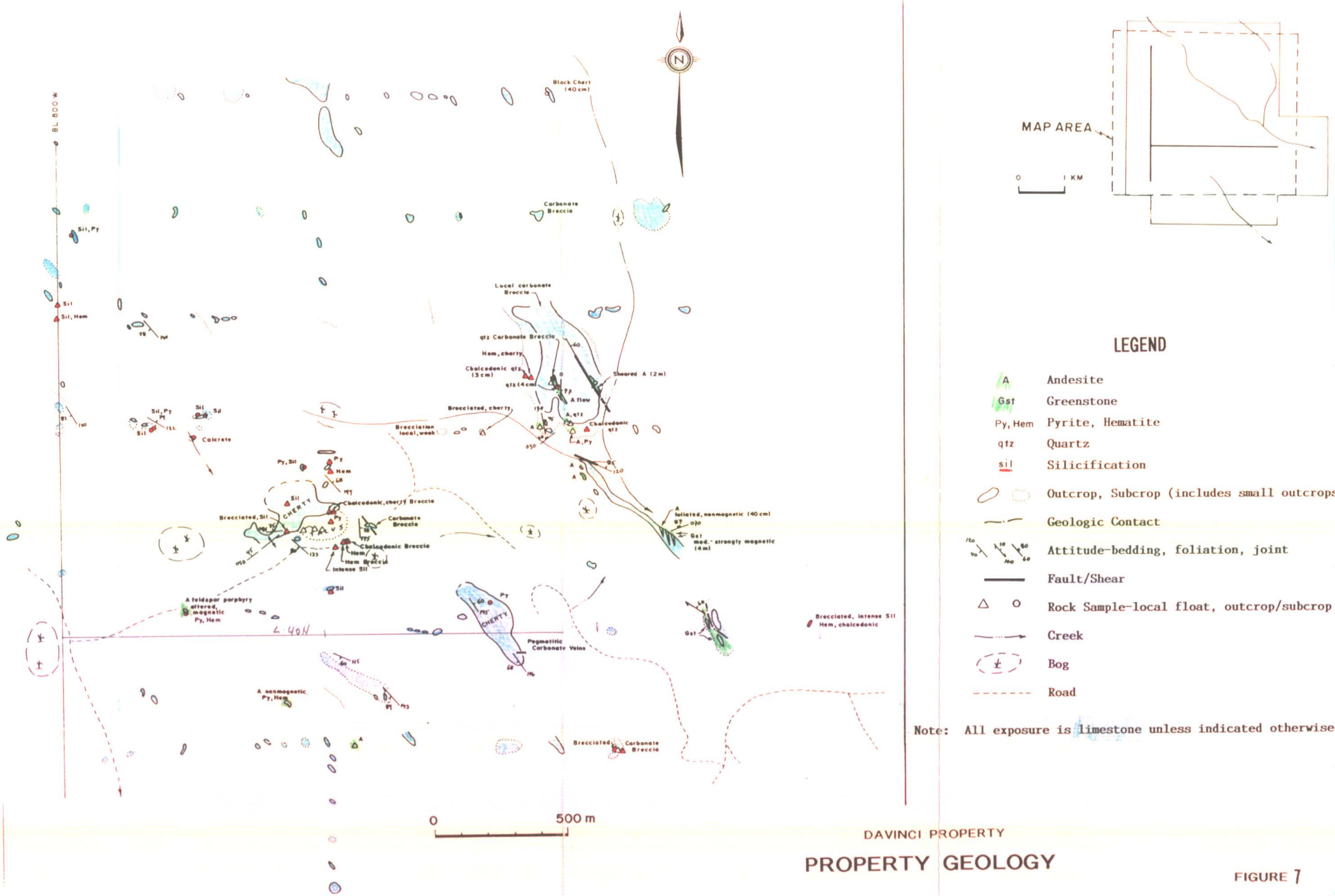
Evidence of silicification is present in all rock types as clear, grey and milky quartz in discontinuous stringers, fracture fillings and boxworks. Pervasive silica flooding is less common. A sample of local float (78992W/4323N) appears to be intensely and finely brecciated by silica flooding. It is almost entirely replaced by quartz and has a minimum width of 40 cm. During the staking of DaVinci 18 and 19, a small (2 m^2) outcrop of intensely brecciated, silicified, hematitic limestone (jasperoid) was found near 40N/720W. Matrix supported, light to dark grey chert breccia with fragments of chert and/or limestone was found in talus and subcrop. Minor occurrences of hematitic chert breccia having a characteristic brick red colour occur in talus. Within volcanic rocks, evidence of silicification is limited to the eastern half of the property.

Sparse carbonate stringers and fracture fillings are ubiquitous. Pegmatitic calcite veining is common in portions of the large carbonate outcrop along L40N near 784W. One 25 cm wide pegmatitic vein with chert fragments is exposed for several metres and strikes east-west with a steep southerly (?) dip.

Within marblized limestone talus at 48N/781W, possible calcsilicate development may be indicated by the presence of pale green fibrous masses of rudimentary actinolite (?). An odd apple green, scaly mineral (chlorite ?) was also noted in marble talus at this local.

Pervasive, weak sericitization/saussuratization occurs within andesite feldspar porphyry.

Within chert and silicified carbonate, trace amounts of pyrite occur locally as fine, anhedral, strongly oxidized masses and disseminations. Hematite was found in minor amounts in several samples. Both pyrite and hematite often show an association with fine fractures. In most exposures of volcanics, disseminations of fine grained pyrite was found. Within the porphrytic andesite, the pyrite generally appears to be fracture related. Aphanitic, massive hematite is present in the matrix of the porphyry in varying amounts up to 8%.



Note: All exposure is limestone unless indicated otherwise

DAVINCI PROPERTY

PROPERTY GEOLOGY

FIGURE 7

GEOCHEMISTRY

A total of 72 rock, 8 silt and 3 pan concentrate samples have been collected from the property since the area was first examined in 1993. Geochemical response for Cu, Zn, Au, As, Sb, Bi, Hg, Mn and W are plotted on Figures 8a to 8g.

A weak enhancement of basemetals is present in five samples of volcanic rocks. Values range from 60 to 201 ppm Zn with or without 54 to 84 ppm Cu. Basemetal content of three (cherty)carbonate samples are slightly above crustal averages with 28 ppm Zn accompanied by 21 ppm Cu and 17 and 21 ppm Cu present. Lead is geochemically interesting in nine carbonate samples with values ranging from 11 to 20 ppm. Samples of jasperoid ran 49 and 42 ppm Cu. The higher Cu value was accompanied by 12 ppm Mo and 29 ppm Zn. Crustal averages for limestone are 25 ppm Zn, 15 ppm Cu, 8 ppm Pb and 1 ppm Mo. Mobilities of Cu and Zn are low in alkaline environments while Pb is characteristically immobile. Molybdenum exhibits high mobility under alkaline conditions.

Most of the 27 samples selected for Hg analysis returned weakly to moderately anomalous values. Majority of samples submitted contained pyrite and/or evidence of silicification. The highest values detected were from volcanic rocks. Values range from 260 to 2400 ppb Hg and four of the five samples have greater than 699 ppb Hg. Samples of cherty limestone typically ran 50 to 120 ppb. Two samples of chert and chert breccia yielded 40 and 80 ppb Hg respectively. Several samples of silicified limestone returned values of 80, 140 and 820 ppb. A sample of cherty limestone with strong to intense hematite-limonite-manganese fracture filings ran 440 ppb Hg. Jasperoid samples ran weakly anomalous Hg of 50 and 60 ppb.

Moderately to strongly anomalous As is present in seven (±cherty) carbonate samples. Values range from 25 to 70 ppm As. Three samples of chalcedonic quartz talus returned 45 to 87 ppm As. The highest value of 96 ppm was in a 1993 sample of brick red hematite breccia occurring as angular float in talus. This sample is of uncertain origin. Enhanced As is present in two samples of pyritic volcanics with a maximum of 37 ppm As.

Eight samples of cherty limestone returned significant values of Sb ranging from 6 to 12 ppm. Brecciated and/or silicified limestone lacking chert ran 5 to 18 ppm Sb in five samples. Pyritic and/or silicified volcanics returned 5 to 12 ppm Sb in three samples.

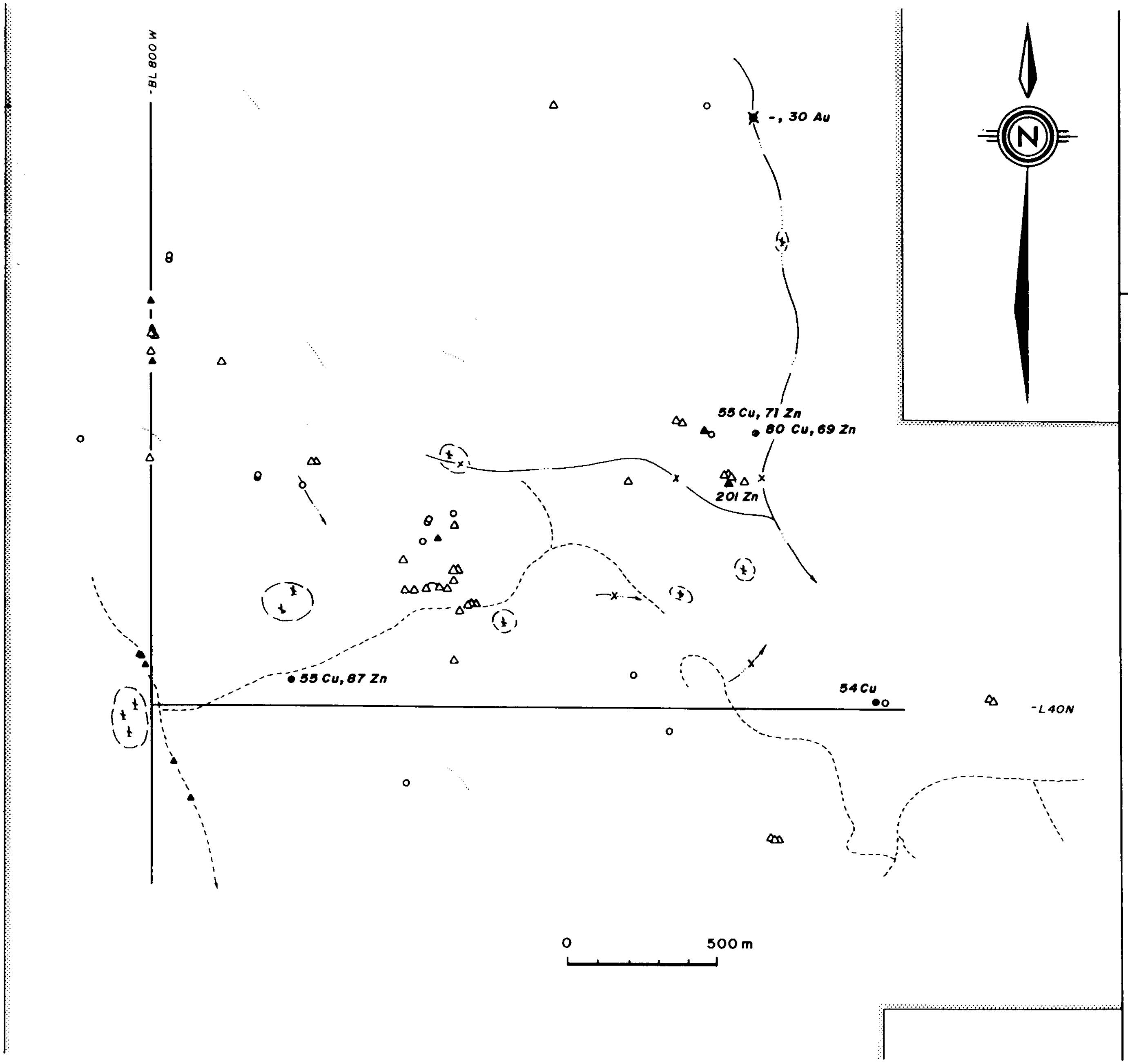
Twenty five samples yielded geochemically interesting Bi with values ranging from 5 to 16 ppm. Nine samples have greater than 10 ppm Bi and 5 ran greater than 14 ppm. Higher Bi values are associated with cherty limestone including brecciated and unbrecciated varieties. Silicified and/or chalcedonic material exhibit a weaker erratic Bi enhancement. Significant Bi was not detected in jasperoid samples.

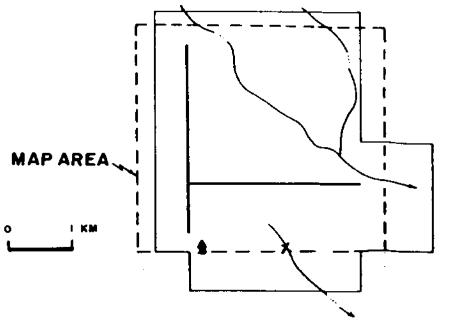
Brecciated (±cherty) limestone returned anomalous values of W in ten samples of 6 to 18 ppm. Three samples of chalcedonic quartz talus ran 5, 10 and 11 ppm W. Two samples of altered volcanics yielded 8 and 13 ppm W .

Geochemcial response of Ag is consistently low with a maximum of 0.8 ppm in four samples of (cherty) carbonate.

Government records indicate 70 ppm Te was detected in material described as siliceous stringers in limestone float collected from the Kay property, north of the DaVinci claims. Since the geological setting is similar to the DaVinci property, twentynine silicified and cherty limestone samples were analysed for Te. Nothing of interest was detected. All but four samples were at or near the detection limit of 0.1 ppm Te. Four samples had 0.2 ppm Te accompanied by 5 to 16 ppm Bi.

Two silt samples from the small creek draining the central portion of DaVinci 1 returned significant Mn of 570 and 1116 ppm. Samples of volcanics returned 502 to 1276 ppm Mn in four samples. Two samples of cherty limestone and chert breccia ran 1040 ppm and 985 ppm Mn respectively. Jasperoid returned values of 733 and 795 ppm Mn. Geochemical enhancement due to scavenging by Mn and/or Fe oxides does not appear to be significant.





LEGEND

△ x ○ 1994 Samples-float, outcrop/subcrop, silt

▲ x ● 1993 Samples-rock, silt, pan

Creek

Bog

Dry Gully

Road

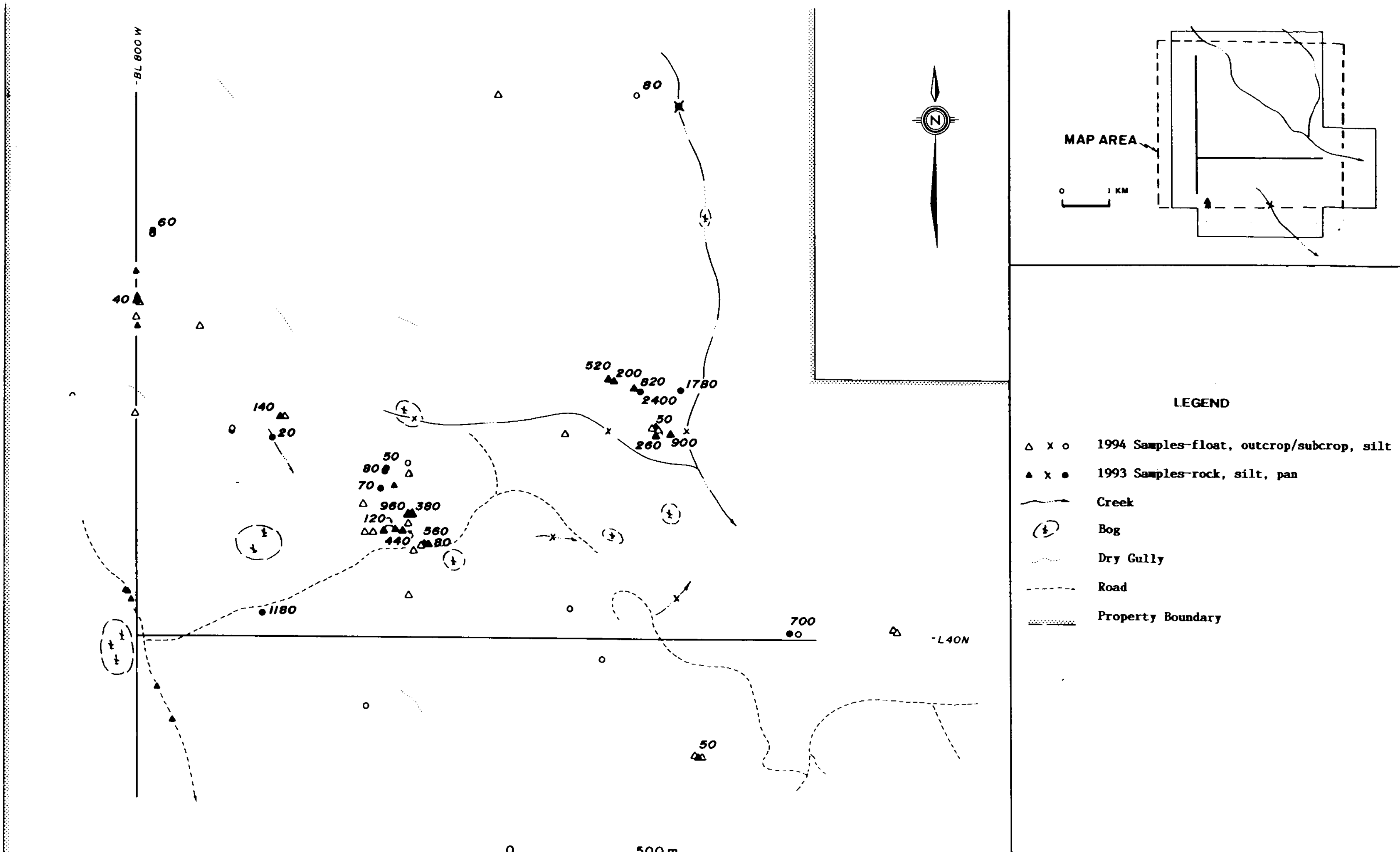
Property Boundary

Only values of > 5 ppb Au, 49 ppm Cu and 49 ppm Zn are shown.

DAVINCI PROPERTY

GEOCHEMISTRY
Cu (ppm) Zn (ppm) Au (ppb)

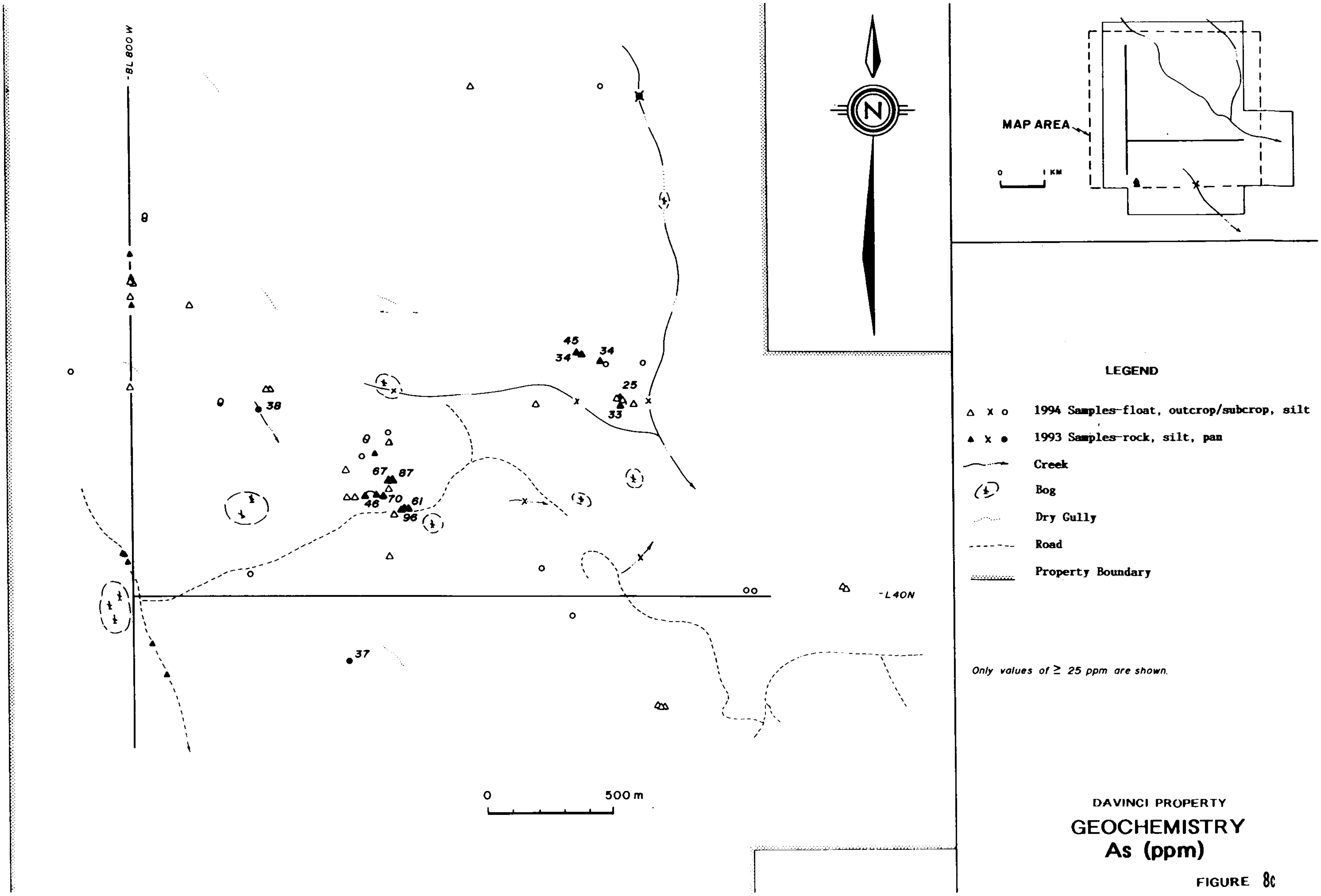
FIGURE 8a



DAVINCI PROPERTY

GEOCHEMISTRY
Hg (ppb)

FIGURE 8b

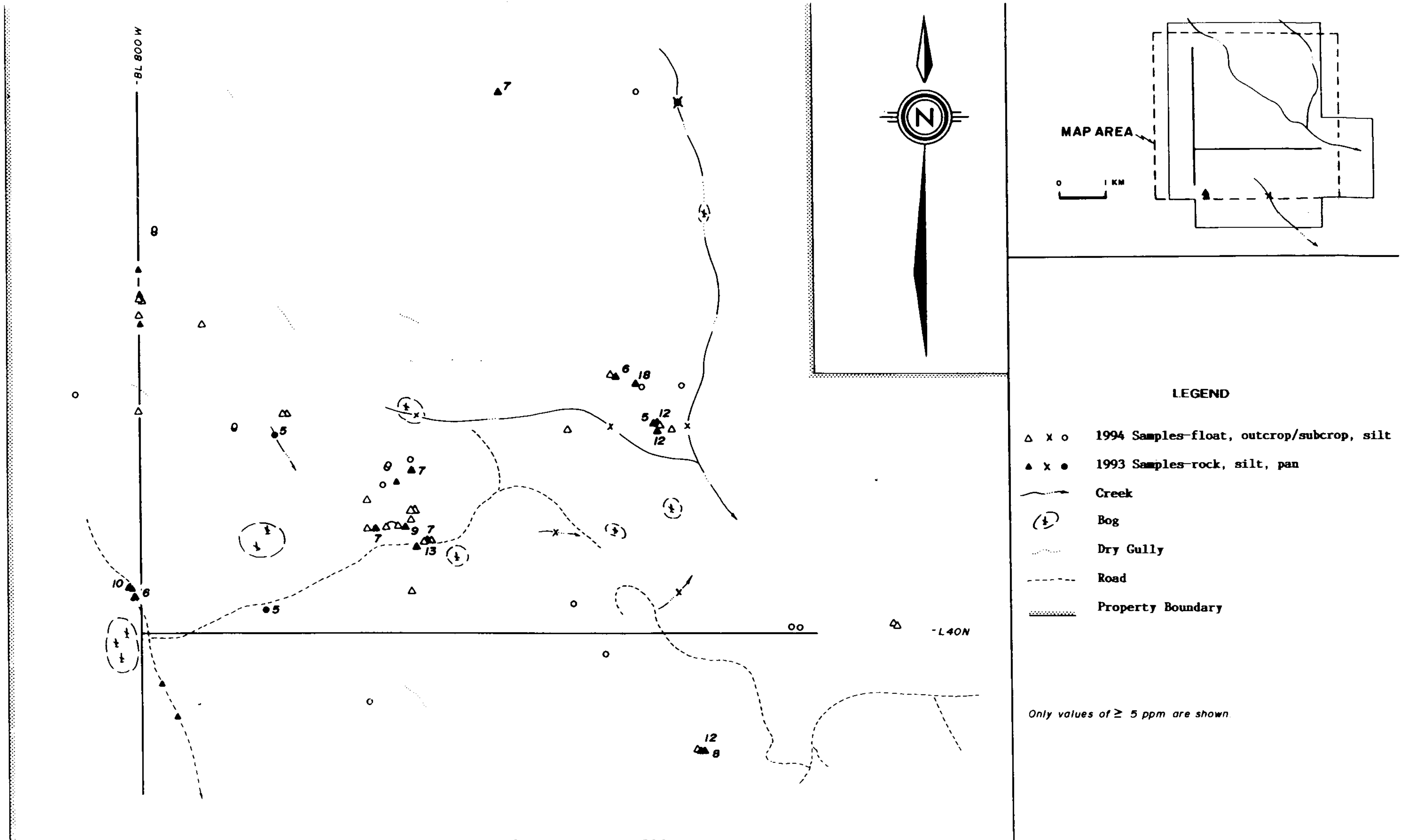


Only values of ≥ 25 ppm are shown.

DAVINCI PROPERTY

GEOCHEMISTRY
As (ppm)

FIGURE 8c

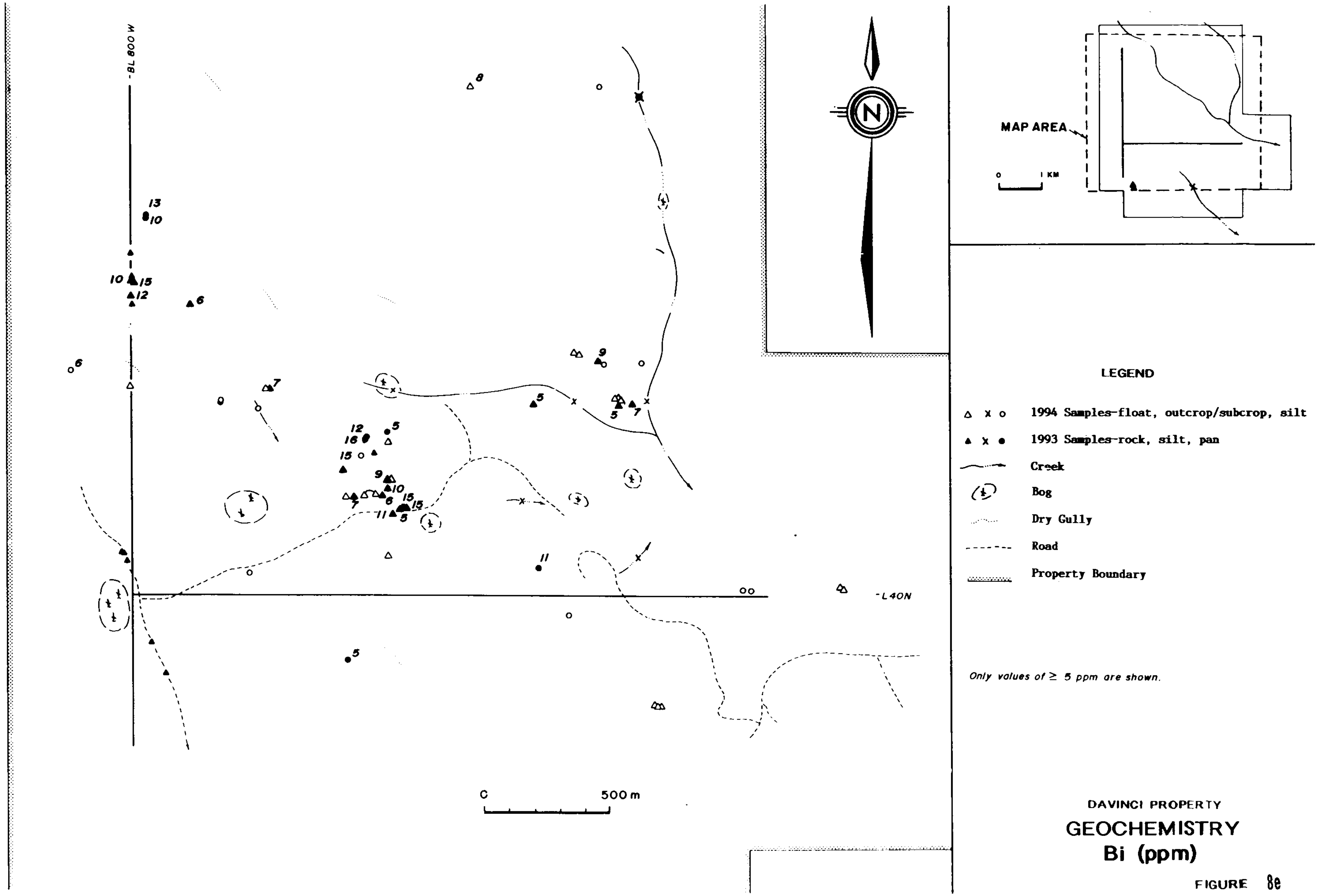


DAVINCI PROPERTY

GEOCHEMISTRY

Sb (ppm)

FIGURE 8d

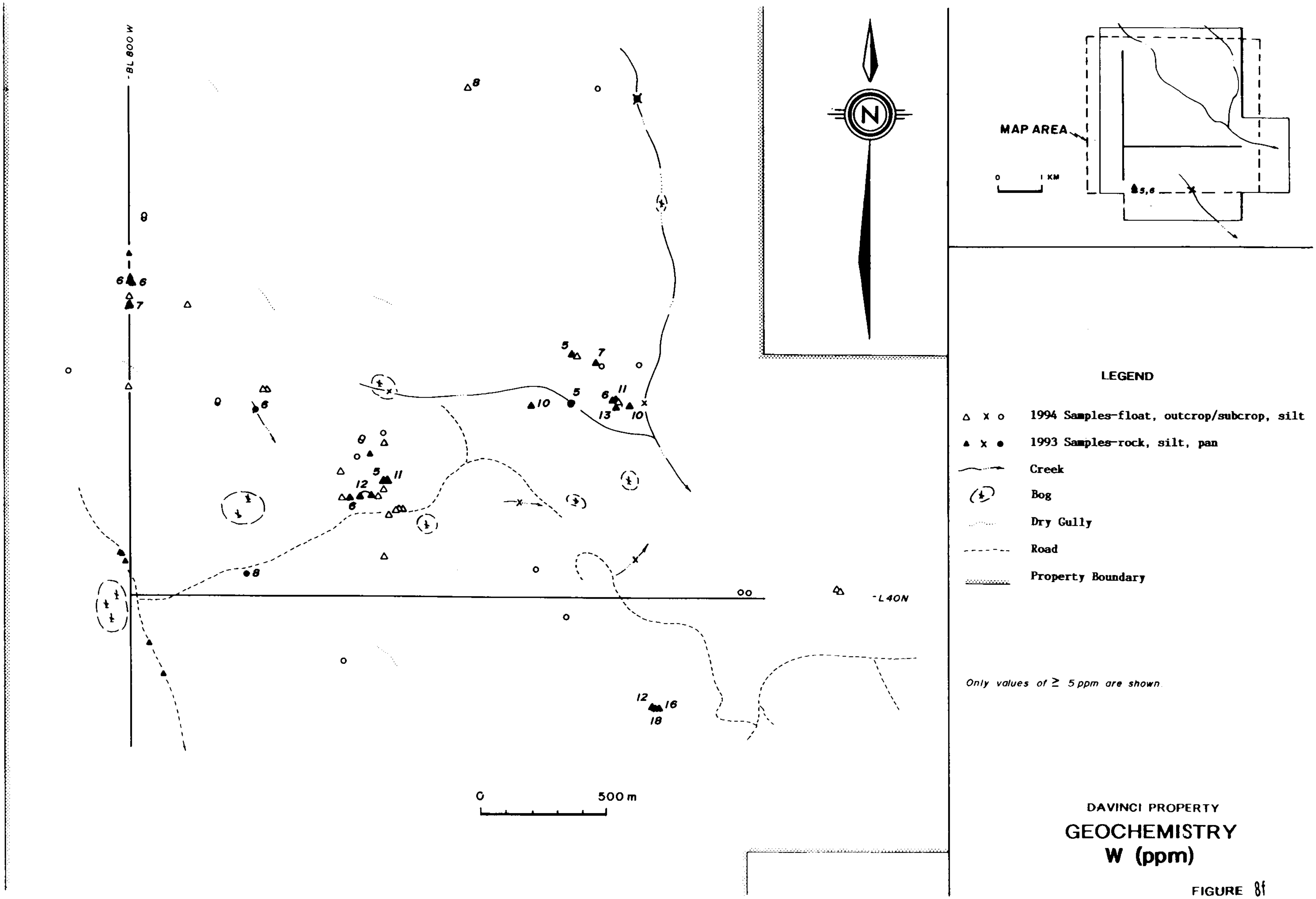


DAVINCI PROPERTY

GEOCHEMISTRY

Bi (ppm)

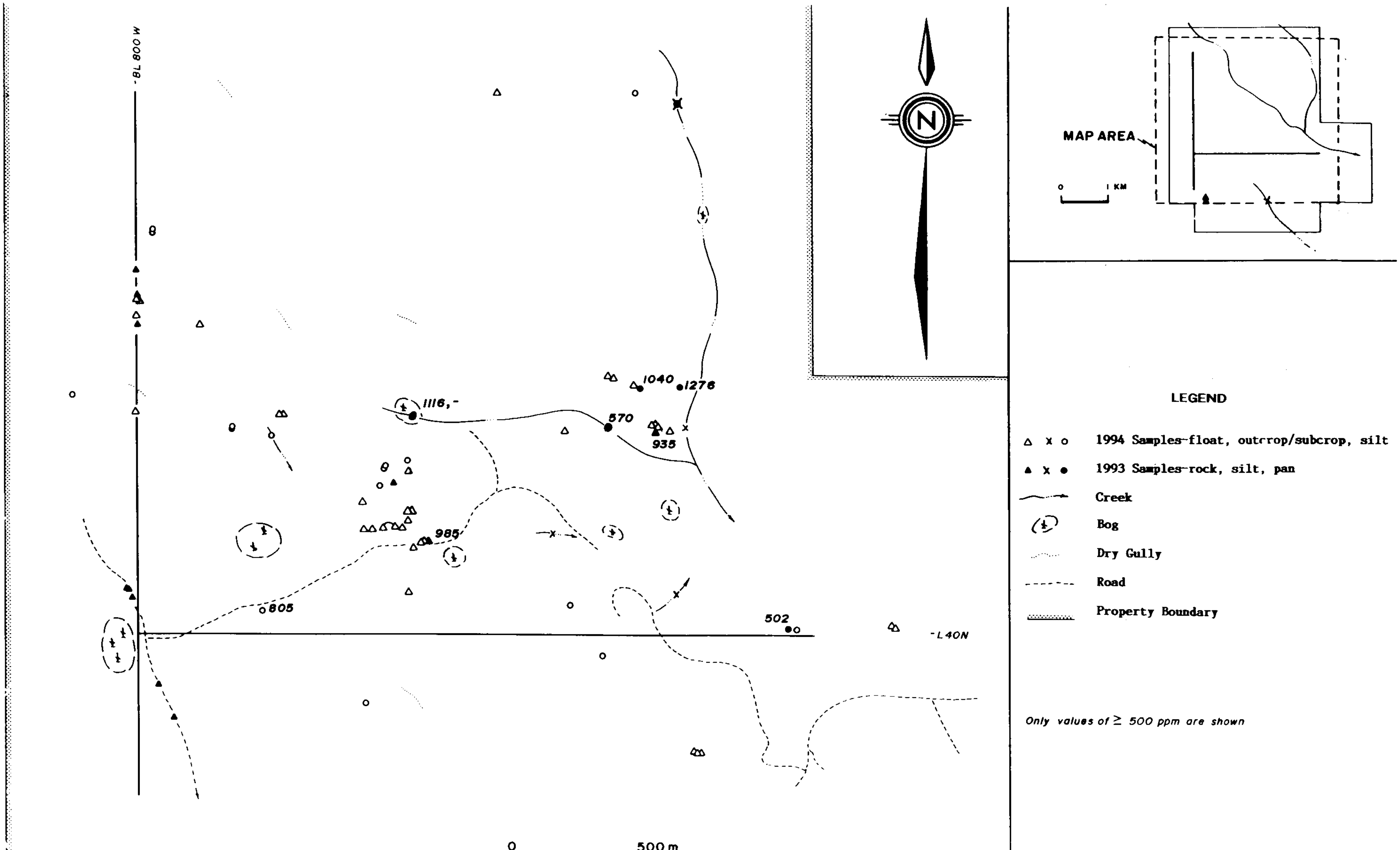
FIGURE 8e



DAVINCI PROPERTY

GEOCHEMISTRY
W (ppm)

FIGURE 8f



DAVINCI PROPERTY

GEOCHEMISTRY
Mn (ppm)

FIGURE 8g

GEOPHYSICS

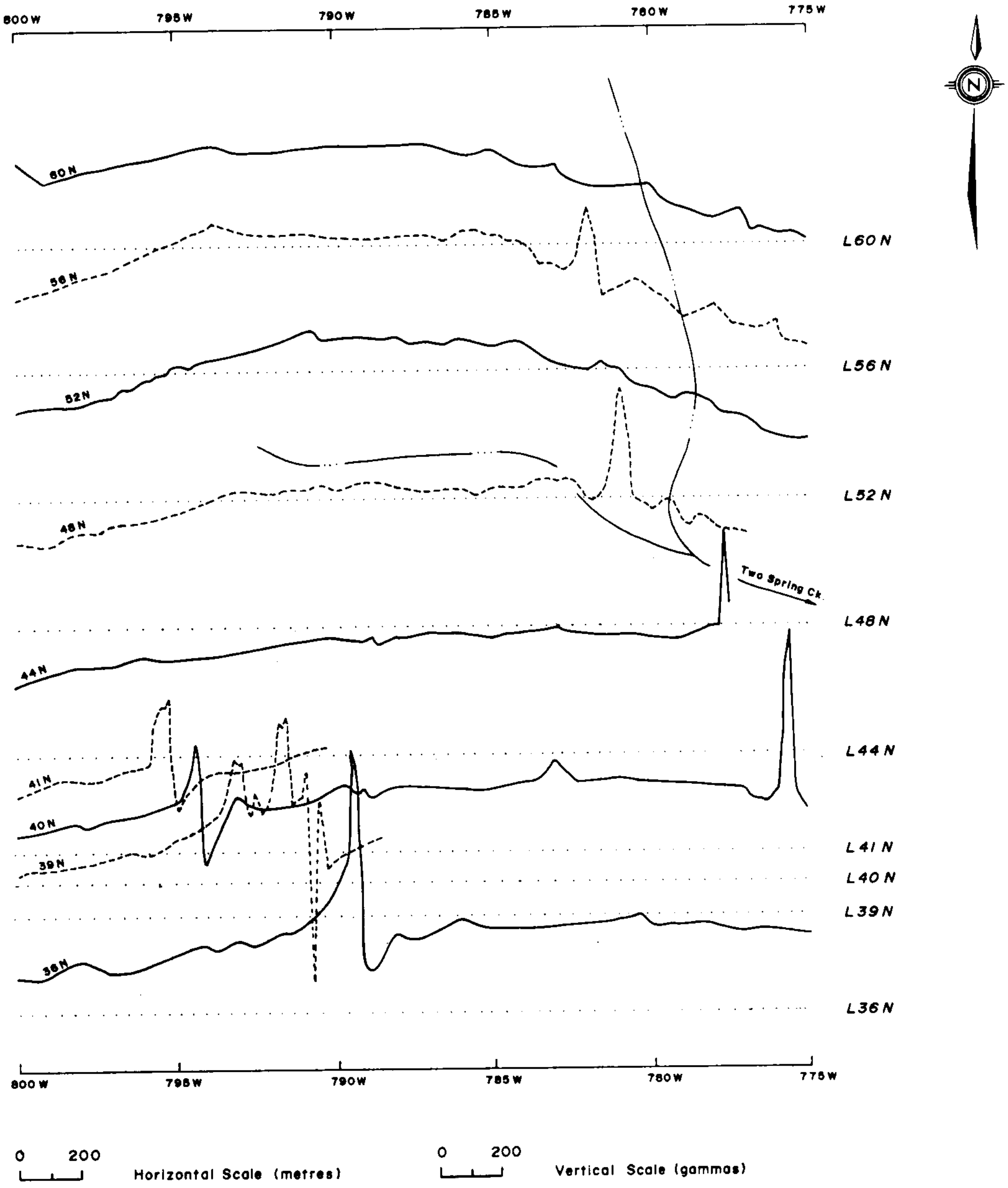
Magnetic Surveying

A total of 24.4 line km of ground magnetic orientation surveying was completed along nine EW lines spaced 400 m apart and two NS lines spaced 1000m apart. Purpose of the survey was to better define the causative source of the large thumbprint aeromagnetic anomaly appearing on government maps.

The instrument used was a Scintrex MP-2 Proton Procession Magnetometer with a total field accuracy of ±1 gamma. It was set at a base level of 55000 gammas to give the best operating range for the area. The sensor was mounted on a 1.5 m aluminum staff. Readings were taken at 50 to 100 m intervals with interstation readings down to 12.5 m as dictated by strong magnetic variation of greater than 50 gammas. Variations in topography were measured along the survey lines. Accuracy of the altimeter was ±1.5 m. A "base station" reading was taken at 40N/799+50W each day prior to starting magnetic surveying and upon completion of the days traverse. Raw survey results and details concerning instrumentation are in Appendix IV.

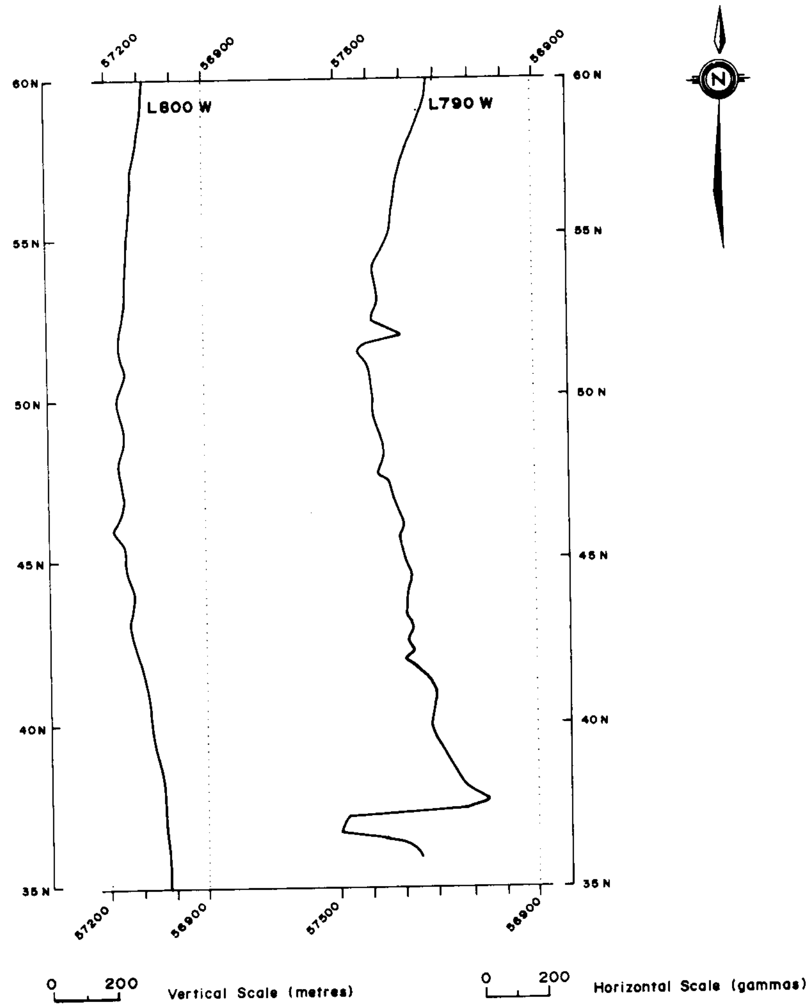
Diurnal variation was found to be negligible. Sunspot activity was reportedly in a period of quiescence. Given this lack of solar magnetic interference, survey data was normalized by using a linear correction factor for variation over the entire survey period and adjusted in a similar manner for "base station" variation occurring over each day. Corrected survey readings and methods along with individual line profiles are in Appendix IV.

Summary results of the survey are plotted as profiles on Figures 9a and b. Figure 9c is a contoured plan view. Magnetic surveying has confirmed the presence of a magnetic source at depth. Response for L52N to L60N indicates the causative source is in the order of two km in diameter and at a depth in excess of one km. Known occurrences of volcanic rocks appear as sharp spikes in the magnetic signature on the eastern portion of the property. The multiple, sharply spiked profiles of L36N to L41N is interpreted to represent a number of narrow volcanic bodies which strike northwest to southeast for +600m. These volcanics are 25 to 100m wide and dip moderately to steeply southwest. Additional surveying as infill lines and more closely spaced readings are required to provide better definition of current anomalies and the small blips appearing along most of the profiles.



DAVINCI PROPERTY **EW MAGNETIC PROFILE SUMMARY**

FIGURE 9a



DAVINCI PROPERTY

NS MAGNETIC PROFILE SUMMARY

FIGURE 9b

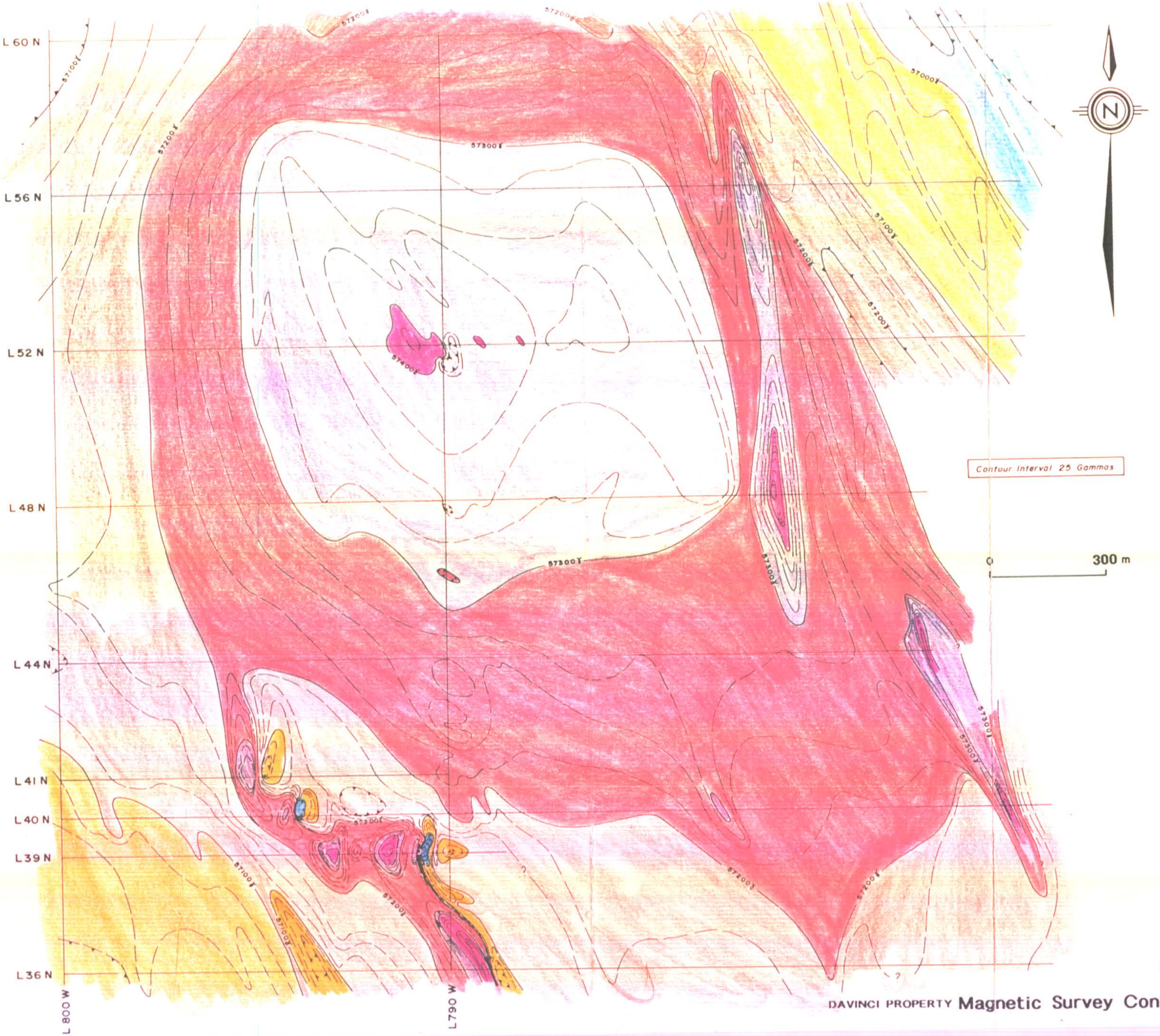


FIGURE 9c

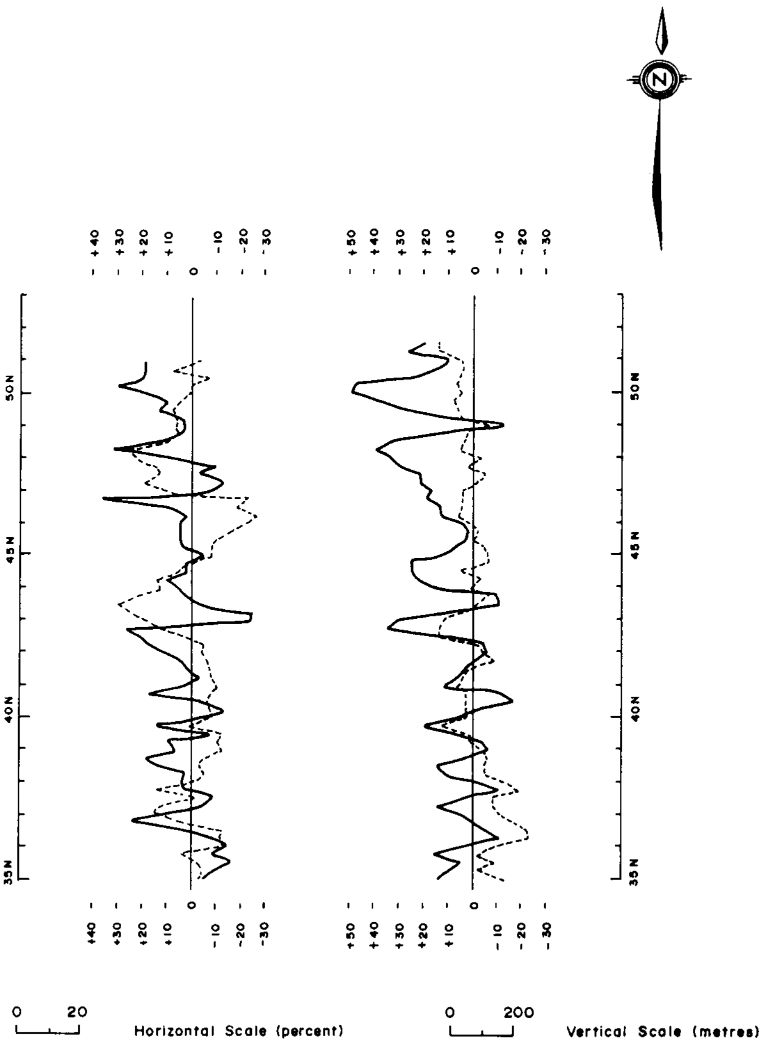
DAVINCI PROPERTY **Magnetic Survey Contour Plot**

VLF Survey:

A total of 15.4 line km of electromagnetic orientation surveying was completed along five EW lines spaced 400m apart and two NS lines spaced 1000m apart. Readings were taken at 25m intervals. Purpose of the survey was to detect fault structures which may have tapped ore bearing fluids at depth. The instrument used was a Geonics EM-16 with an in-phase sensitivity of ±150% and a quad-phase sensitivity of ±405. Accuracy of the instrument is ±1%. Two VLF transmitters were used- Cutler Maine, operating at 24.0 kHz for the NS lines and Jim Creek, Washington operating at 24.8 kHz, for EW lines. Survey data and details concerning instrumentation are in Appendix V .

Results are plotted as summary profiles on Figures 10a and 10b. Figure 10c is a contoured Fraser Filtered data plot. Signal strength for the Cutler, Maine transmitter was weak and field data was inconsistent. Consequently NS lines are not included in the Fraser Filter plot.

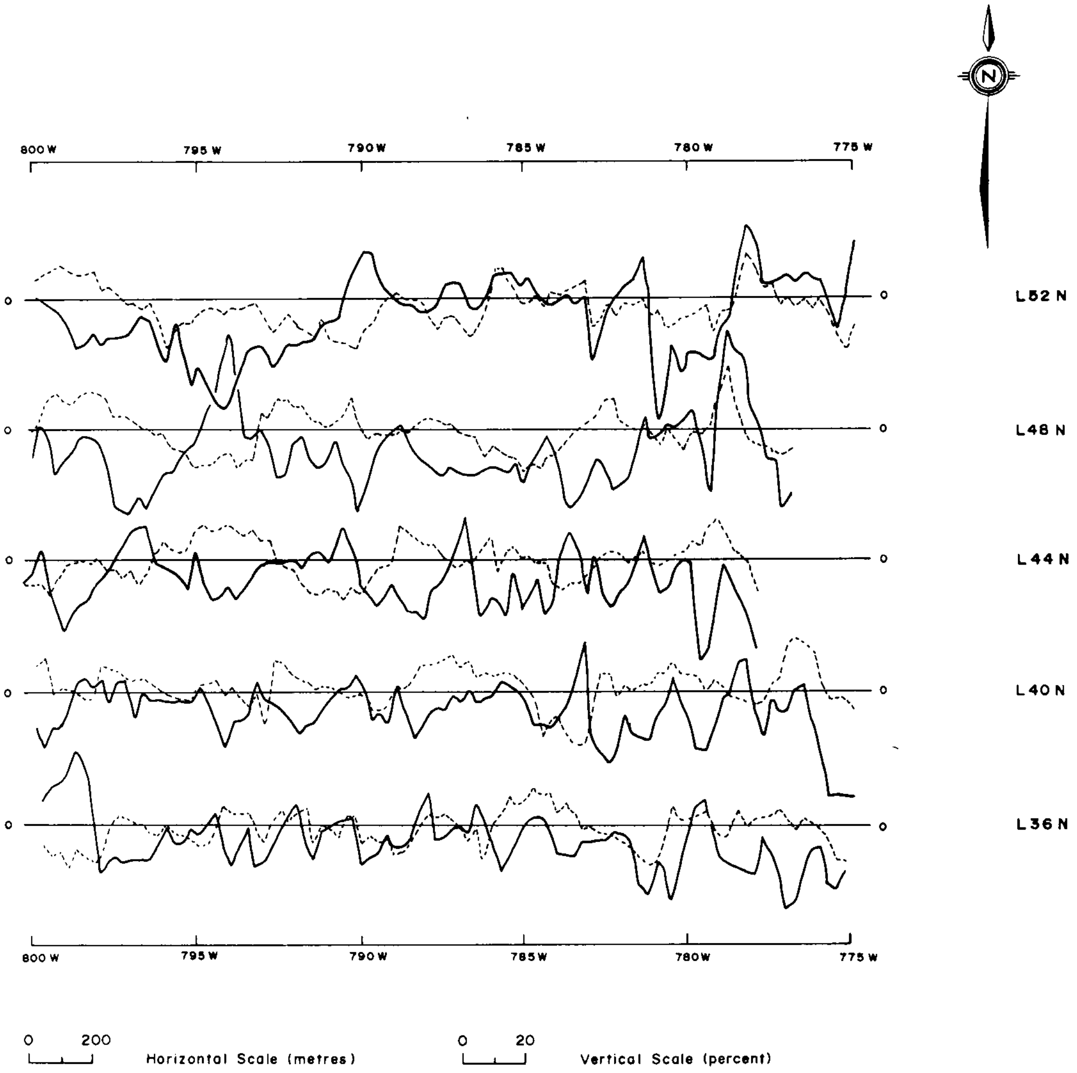
The noisy electromagnetic response for the survey area is more typical of surveys over shales rather than carbonate rocks. Majority of the weaker conductors may represent small shear/fault structures. Causes of deeper and stronger anomalies are not known. Fraser Filtered data appear to indicate a number of northerly trending, narrow weak and strong conductors transecting the survey area. This data set was contoured with a northwestern bias which represents the dominant structural trend of the region. Insufficient data is available to indicate real trends. Infill surveying is required to better define the anomalies and trends.



DAVINCI PROPERTY

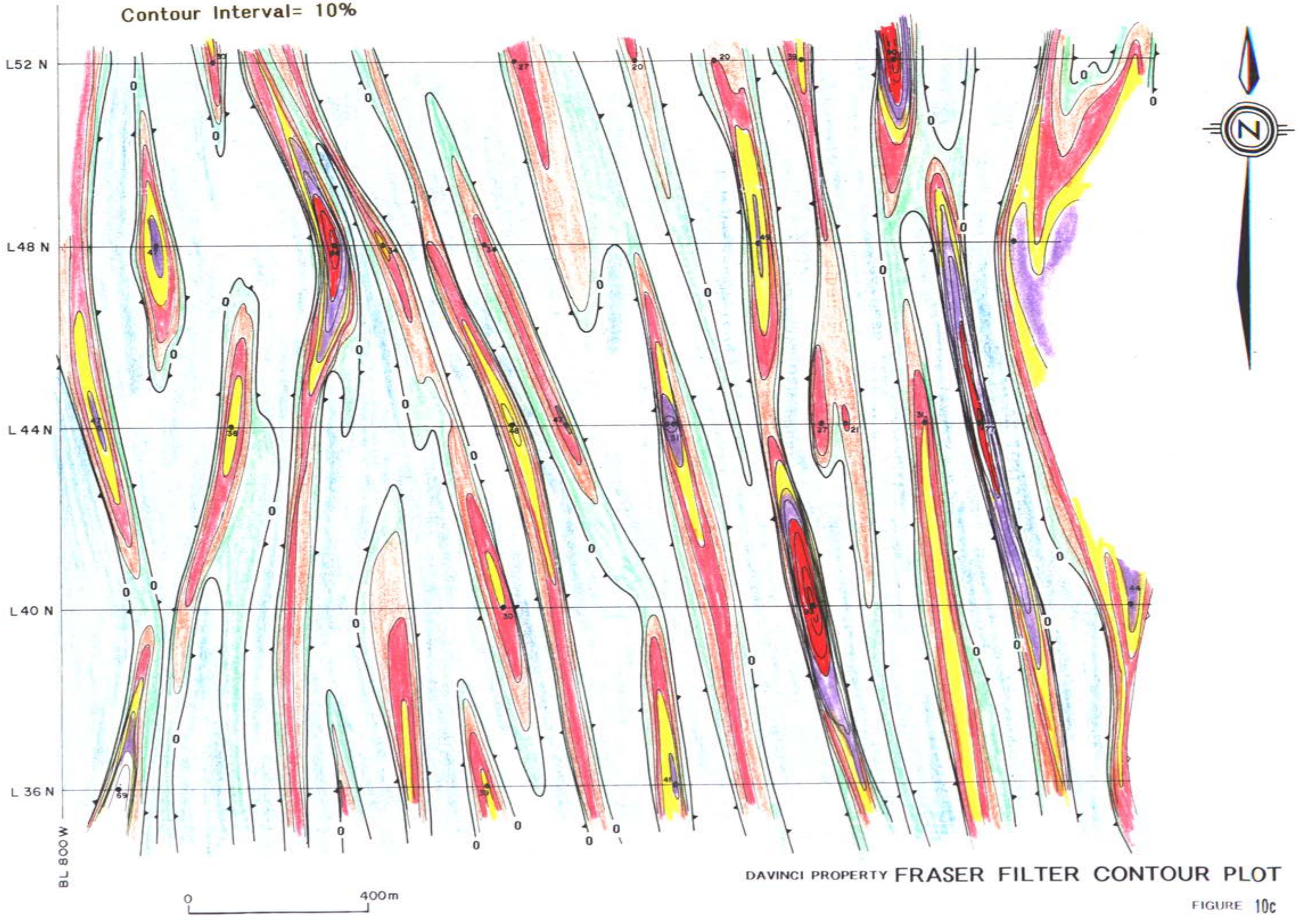
NS VLF-EM PROFILE SUMMARY

FIGURE 10a



DAVINCI PROPERTY **EW VLF-EM PROFILE SUMMARY**

FIGURE 10b



DAVINCI PROPERTY **FRASER FILTER CONTOUR PLOT**

FIGURE 10c

BIBLIOGRAPHY

B.C. Energy, Mines & Petroleum Resources: AR 19313 Kay M.C., Discovery Consultants, Oct. 1989

AR ? DaVinci M.C., P.L. Grexton, July 1994

Geological Survey of Canada: Aeromagnetic Map 7172G, 92I Ashcroft (1:250,000)

: Open File 980

: Map 1278A 92P Bonaparte River (1:250,000)

Minister of Mines Annual Report: 1898, page 1099

LILLOOET DISTRICT.

Report by F. Soues, Gold Commissioner.

The total ascertained yield of gold from the District is $35,512, a decrease of $4,328 as compared with the previous year. Mr. A. W. Smith, of Lillooet, was the largest buyer, and reports to me "that he has bought, during the year $18,200. Year by year the amount is less, the quartz mining being the cause of a portion of this falling off. Had the miners paid as much attention to placer mining during the season as some have done during the past two months, the returns would have been very different, as those who were forced to resort to placer mining late in the season, to get something to winter on, made an excellent showing for the time they worked on the South Fork of Bridge River and Cadwallader Creek, showing that the large decrease in the yield, is not that there is no more gold, but is caused by miners not devoting their attention to placer mining the same as they did formerly."

Placer Mining.

This class of mining throughout the District has been greatly neglected, and, as Mr. Smith points out, this is due to so much attention being paid to quartz prospecting.

Fraser River last spring, and again this Fall, was very low, giving ample opportunity to the itinerant Indian and Chinese, and I have no doubt that the greater portion of Mr. Smith's purchases were from these sources.

Quartz Mining.

A large number of mineral claims (455) have been located during the year, and it is safe to say that only a small percentage of them will ever see any attempt at development. The greater portion of these have been located on Bridge River and its tributaries. Some 32 locations have been made on the base of the Marble Mountains, about 8 or 10 miles north-west from Clinton. With one exception, there has been no development work done on any of them. Assays, I am informed, have been had from surface croppings as high as $30 per ton. Samples from different ledges, which I have seen, may be described as jasper quartz, dark gray quartz with hematite and quartz with associated pyrolusite and manganite.

Nearly 200 locations have been made on Bridge River and tributaries during the season. Considerable development has been made on some of them, but repeated applications to the managers have failed to furnish me with details. I understand that machinery is spoken of for some of them, but to what extent I do not know.

McGillivray Creek.

A discovery of gold-bearing quartz has been made on McGillivray Creek, which falls into Anderson Lake from the north. Mr. F. Brett, one of the locators, reports on it as follows:—"The ledge is well situated for economic working at an elevation of about 3,000 feet above sea level. The vein does not outcrop, being covered by vegetation and detritus. The mountain side on which it is situated is very steep, at an angle of 30°, and admits of tunnelling directly on the vein on all the claims. The vein is a true fissure, averaging about 16 feet in width, vertical, with walls of schistose matter. The vein structure is laminated, and showing 'ribbon rock,' but the chief value appears to be in a hard vitreous quartz. A tunnel is now in 150 feet, showing a continuous ore-body. Assays give good gold values. Facilities for placing machinery on the ground are excellent. The claims are situated about 2½ miles from the mouth of the creek, and at an elevation of about 2,200 feet above Anderson Lake."

SUMMARY OF GEOCHEMICAL CHARCTERISTICS

ELEMENT	ABUNDANCE (PPM)						MOBILITY				PH	ADSORPTION			MECHANICAL TRANSPORT	OTHER
							ENVIRONMENT									
							Oxidizing									
	Mafic	Intermed.	Felsic	Shale	Black Shale	Limestone	Acid	Alkaline	Gley	Sulfide Reducing	Hydrolysis	On Fe Oxides	On Mn Oxides	On Clay		
Cu	100	30	10	50	70-150	15	High	Low	-	Low	5.5	X	X	X		Also adsorption on organics.
Pb	5	15	20	20	20-70	8	Low	Low-Immob	Low	Immob	6.0				X	
Zn	100	60	40	100	300-1000	25	High	Low	High in reducing gley	Immob	7.0	X	X	X		Low mobility in carbonate terranes. Adsoption on organics.
Mo	1	1	2	3	10	1	Low	High		Low						Mobility restricted by Pb, Fe and carbonate.
As	2	2	1.5	15	-	2.5	Fair	Fair	Fair			X		X		
Sb	0.2	0.2	0.2	1	-	0.2	Low	Low	Low	Low		X	X			Adsorption of spring orfice
Ag	0.1	0.07	0.04	0.05	<1-5	1	Slight	Immob	Slight	Immob		X	X			
W	1	2	2	2	-	0.5	Immob	Slight	Immob	Immob			X		X	
Ni	150	20	0.5	70	50-200	12	Good	Immob	Good in reducing gley	Immob	6.7	X	X			Also adsorption on organics
Co	50	10	1	20	10-20	4	Good	Low			6.8	X	X Strong	X		
Hg	0.08	0.08	0.08	0.5	-	0.05	Low	Low	Low	Low					X	Also adsorption on organics.
U	0.6	3	4.8	4	3-1350	2	High	High				X		X		Also adsorption on organics. Surface waters ave. 0.4 ppb .
F	400	500	735	740	-	330	High	High	High	High						Ca barrier, precipitates as fluorite. Surface waters ave. 100 .
Mn	850-1500	330-750	500-3100 (syenite)	150-600	-	500	High	Low	?	?						
Ba	250	500	600	700	300-700	100	Low	Low	Low	Low				X		
Bi	0.15	-	0.1	-	-	-	Very Low	Very Low	Very Low	Very Low		X				Readily precipitated as basic carbonate.
Te	0.001	0.001	0.001	0.01	-	-	Very Low	Very Low	Very Low	Very Low					X	
Nb	20	20	20	20	-	0.3	Low	Low	Low	Low					X Only	
Ce	35	40	46	50	-	10	Low	Low	Low	Low	2.7	X		X	X	Associated with fluorine.
La	6.1	31	55	16-66	-	9-23	Low	Immob	Immob	Immob					X	Soluble only under acidic conditions.
Sn	1	2	3	4	<1	4	Very Low-Immob	Very Low-Immob	Very Low-Immob	Very Low-Immob					X	
Li	10	25	30	60	-	20	Good	Poorer	Good	Good			X	X		

From "Introduction To Exploration Geochemistry", Levinson; "Handbook Of Geochemistry", Wedep

APPENDIX II

Certificates of Analysis, Methods and Detection Limits

ROSSBACHER LABORATORY LTD.

CERTIFICATE OF ANALYSIS

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VANCOUVER, B.C.

Project: Davinchi
Type of Analysis: ICP

Certificate: 94144
Invoice: 50211
Date Entered: 94-07-08
File Name: GRE94144
Page No.: 1

PRE FIX	SAMPLE NAME	PPM MO	PPM CU	PPM PB	PPM ZN	PPM AG	PPM NI	PPM CO	PPM MN	% FE	PPM AS	PPM AU	PPM HG	PPM SR	PPM CD	PPM SB	PPM BI	PPM V	% CA	% P	PPM LA	PPM CR	% MG	PPM BA	% TI	% AL	% NA	% K	% SI	PPM W	PPM BE	PPB AU AA
A1	D94G-1R	1	10	2	6	0.3	3	2	60	0.09	8	ND	ND	308	1	1	13	3	17.17	0.01	18	34	0.09	1	0.01	0.09	0.01	0.08	0.01	1	1	5
A1	D94G-2R	1	9	5	6	0.4	2	1	77	0.11	10	ND	ND	188	1	1	10	3	13.93	0.01	7	48	0.07	1	0.01	0.07	0.01	0.05	0.01	1	1	5
A1	D94G-3R	2	15	7	12	0.3	8	2	985	0.73	12	ND	ND	83	1	1	15	6	6.53	0.03	7	123	0.04	19	0.01	0.04	0.01	0.04	0.01	1	1	5
A1	D94G-4R	3	13	5	20	0.2	16	3	132	1.78	61	ND	ND	63	1	7	15	38	5.54	0.04	7	87	0.03	120	0.01	0.04	0.01	0.03	0.01	1	1	5
A1	D94G-5R	4	10	3	8	0.3	11	1	237	1.90	96	ND	ND	19	1	13	5	17	0.32	0.04	3	155	0.02	348	0.01	0.01	0.01	0.02	0.01	1	1	5
A1	D94G-6R	1	12	3	11	0.4	5	2	140	0.21	9	ND	ND	72	1	1	12	5	13.47	0.06	12	69	0.05	18	0.01	0.05	0.01	0.03	0.01	1	1	5
A1	D94G-7R	1	11	10	7	0.2	2	1	119	0.19	3	ND	ND	45	1	1	16	4	6.33	0.03	7	82	0.03	28	0.01	0.02	0.01	0.02	0.01	1	1	5
A1	D94G-8R	2	12	6	4	0.4	2	1	135	0.21	5	ND	ND	110	1	1	15	4	7.55	0.02	19	107	0.04	21	0.01	0.02	0.01	0.02	0.01	1	1	5
A1	D94G-9R	1	15	1	1	0.4	2	1	95	0.11	8	ND	ND	139	1	1	6	1	18.35	0.01	5	28	0.08	1	0.01	0.04	0.01	0.02	0.01	1	1	5
A1	D94G-10R	2	22	1	3	0.4	5	2	95	0.14	4	ND	ND	93	1	1	1	5	15.44	0.01	1	18	7.46	15	0.01	0.04	0.01	0.01	0.01	1	1	5
A1	D94G-11R	3	15	5	21	0.3	5	1	55	0.16	8	ND	ND	81	1	1	7	7	13.02	0.01	1	14	6.71	11	0.01	0.08	0.01	0.01	0.01	1	1	5
A1	D94G-12R	1	12	12	13	0.3	4	2	230	0.08	7	ND	ND	274	1	1	1	4	29.79	0.01	1	7	0.36	1	0.01	0.14	0.01	0.05	0.01	1	1	5
A1	D94G-13R	1	8	4	7	0.4	5	1	76	0.16	6	ND	ND	339	1	1	11	5	14.85	0.01	12	66	0.11	26	0.01	0.10	0.01	0.05	0.01	1	1	5
A1	RF52N 797.56W	1	13	2	1	0.6	7	1	84	0.12	10	ND	ND	65	1	1	6	5	11.15	0.03	1	35	5.78	13	0.01	0.07	0.01	0.02	0.01	1	1	5
A1	RF789+92W 43+23N	2	9	14	3	0.5	4	1	147	0.20	16	ND	ND	41	1	1	11	6	6.33	0.02	1	79	3.58	21	0.01	0.05	0.01	0.02	0.01	1	1	5
A1	RF790W 41+58N	1	14	6	2	0.4	3	2	38	0.06	4	ND	ND	165	1	1	1	3	21.93	0.01	1	4	5.80	1	0.01	0.08	0.01	0.01	0.01	1	1	5
A1	RF790W 4605N	1	14	4	20	0.5	6	3	95	0.21	9	ND	ND	60	1	1	5	7	9.94	0.02	1	55	5.23	16	0.01	0.07	0.01	0.03	0.01	1	1	5
A1	RF800W 51+96N	2	7	1	8	0.4	4	1	159	0.24	7	ND	ND	169	1	1	12	4	8.35	0.01	13	70	0.17	18	0.01	0.06	0.01	0.06	0.01	1	1	5
A1	RF800W 52+30N	1	8	3	10	0.4	4	2	85	0.14	15	ND	ND	219	1	1	10	3	14.72	0.01	12	48	0.08	7	0.01	0.06	0.01	0.01	0.01	1	1	5
A1	RF800W 52+32N	1	6	5	12	0.4	6	1	128	0.18	4	ND	ND	84	1	1	15	4	7.84	0.03	14	80	0.04	31	0.01	0.06	0.01	0.04	0.01	1	1	5
A1	RO 4897N 796+66W	1	13	2	10	0.3	4	3	51	0.10	13	ND	ND	598	1	1	1	5	28.06	0.01	1	8	0.19	1	0.01	0.12	0.01	0.06	0.01	1	1	5
A1	RS 790W 4640N	1	11	3	7	0.4	3	2	31	0.05	6	ND	ND	445	1	1	1	1	27.62	0.01	12	9	0.14	1	0.01	0.08	0.01	0.01	0.01	1	1	5
A1	RT 48N 796+66W	2	11	2	4	0.4	3	3	60	0.10	8	ND	ND	296	1	1	1	5	25.03	0.01	4	21	0.16	1	0.01	0.10	0.01	0.05	0.01	1	1	5
A1	RT 790W 4423N	1	7	1	13	0.3	4	1	100	0.21	7	ND	ND	143	1	1	10	7	10.33	0.05	12	87	0.05	9	0.01	0.07	0.01	0.06	0.01	1	1	5

CERTIFIED BY :

ROSSBACHER LABORATORY LTD.

CERTIFICATE OF ANALYSIS

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VANCOUVER, B.C.

Project: Da Vinci
Type of Analysis: ICP

Certificate: 94209
Invoice: 50280
Date Entered: 94-09-09
File Name: GRE94209.I
Page No.: 1

PRE FIX	SAMPLE NAME	PPM MO	PPM CU	PPM PB	PPM ZN	PPM AG	PPM NI	PPM CO	PPM MN	% FE	PPM AS	PPM U	PPM AU	PPM HG	PPM SR	PPM CD	PPM SB	PPM BI	PPM V	% CA	% P	PPM LA	PPM CR	% MG	PPM BA	% TI	% AL	% NA	% K	% SI	PPM W	PPM BE	PPB AU AA
A1	D94G-14R	3	14	11	11	0.2	1	1	254	0.23	37	5	ND	ND	105	1	2	5	2	30.14	0.01	4	3	0.25	36	0.01	0.06	0.05	0.02	0.01	1	1	5
A1	D94G-15RT	4	19	2	2	0.1	3	1	124	0.11	20	5	ND	ND	98	1	4	2	3	20.29	0.01	2	2	8.23	46	0.01	0.06	0.07	0.03	0.01	12	1	5
A1	D94G-16RT	4	19	2	2	0.3	4	3	68	0.10	20	5	ND	ND	106	1	12	1	4	19.51	0.01	2	1	8.82	56	0.01	0.04	0.07	0.02	0.01	18	1	5
A1	D94G-17RT	4	18	3	2	0.4	3	3	93	0.07	24	5	ND	ND	116	1	8	1	4	19.85	0.01	3	1	8.51	69	0.01	0.01	0.07	0.03	0.01	16	1	5
A1	D94G-18RT	2	8	4	11	0.2	3	4	111	0.20	15	5	ND	ND	82	1	1	1	3	8.72	0.12	12	79	0.35	41	0.01	0.01	0.02	0.02	0.01	1	1	5
A1	D94G-19RT	4	11	18	9	0.6	4	2	99	0.17	46	5	ND	ND	351	1	1	1	1	15.58	0.01	3	38	0.15	27	0.01	0.01	0.03	0.10	0.01	12	1	5
L	D94G-20L	3	17	9	47	0.1	5	4	570	0.36	18	5	ND	ND	162	1	1	1	6	23.51	0.04	2	9	0.46	340	0.01	0.20	0.05	0.02	0.01	5	1	5
A1	D94G-21R	2	21	4	24	0.2	11	12	273	1.87	12	5	ND	ND	246	1	5	2	26	6.62	0.02	2	82	0.92	32	0.01	1.19	0.02	0.06	0.01	6	1	5
A1	D94G-22R	3	15	15	16	0.2	1	2	62	0.11	25	5	ND	ND	156	1	12	1	2	33.81	0.01	2	11	0.17	24	0.01	0.06	0.06	0.02	0.01	11	1	5
A1	D94G-23RT	2	14	11	12	0.1	1	2	37	0.04	17	5	ND	ND	116	1	2	1	1	34.50	0.01	1	9	0.20	25	0.01	0.01	0.06	0.01	0.01	1	2	5
A1	D94G-24RT	4	9	20	34	0.1	5	1	81	1.58	22	5	ND	ND	50	1	1	7	116	17.39	0.02	1	45	0.05	29	0.01	0.09	0.03	0.01	0.01	10	1	5
L	D94G-25L	2	35	11	27	0.1	12	1	111	0.30	12	5	ND	ND	150	1	1	1	5	24.42	0.03	2	20	0.44	208	0.01	0.29	0.05	0.01	0.01	1	1	5
A1	D94G-26R	2	80	5	69	0.2	47	34	1276	5.94	14	5	ND	ND	101	1	1	1	109	8.19	0.10	6	120	2.48	79	0.05	3.97	0.05	0.40	0.01	1	1	5
A1	D94G-27R	2	55	2	71	0.3	19	26	1041	4.85	23	5	ND	ND	285	1	1	1	120	5.73	0.13	5	55	1.34	56	0.65	2.80	0.04	0.08	0.01	1	2	5
A1	D94G-28R	3	10	7	24	0.3	14	3	223	0.54	34	5	ND	ND	29	1	18	9	18	2.99	0.05	1	80	1.29	280	0.03	0.15	0.01	0.04	0.01	7	1	5
A1	D94G-29R	3	13	20	10	0.1	1	3	155	0.45	34	5	ND	ND	72	1	6	3	6	17.49	0.02	1	33	0.50	39	0.02	0.14	0.03	0.01	0.01	5	1	5
A1	D94G-30R	4	7	9	15	0.2	8	2	186	2.98	45	5	ND	ND	24	1	1	1	16	7.64	0.02	1	84	0.04	48	0.01	0.01	0.02	0.01	0.01	1	1	5
A1	D94G-31R	3	54	11	58	0.2	12	24	502	5.21	23	5	ND	ND	41	1	4	1	125	2.71	0.20	8	19	1.26	489	0.72	2.60	0.06	0.16	0.01	4	2	5
A1	D94G-32R	3	18	9	17	0.1	3	1	155	0.26	9	5	ND	ND	66	1	1	1	1	20.33	0.01	1	8	7.19	51	0.03	0.14	0.06	0.02	0.01	2	1	5
L	D94G-33L	3	16	9	47	0.1	33	1	118	0.09	21	5	ND	ND	176	1	1	1	1	23.20	0.08	1	27	0.71	280	0.01	0.09	0.05	0.03	0.01	4	1	5
L	D94G-34L	2	14	6	25	0.1	12	1	314	0.35	18	5	ND	ND	161	1	1	3	8	16.38	0.06	1	32	0.38	286	0.01	0.31	0.04	0.06	0.01	4	1	5
A1	D94G-35R	3	11	12	24	0.1	12	1	192	0.51	87	5	ND	ND	108	1	1	1	9	11.95	0.02	9	60	0.09	78	0.01	0.12	0.02	0.02	0.01	11	1	5
A1	D94G-36R	3	17	4	31	0.1	19	1	136	1.50	67	5	ND	ND	20	1	4	9	39	0.79	0.03	11	122	0.08	238	0.01	0.03	0.01	0.03	0.01	5	1	5
A1	CALCRETE	2	13	10	32	0.1	4	1	81	0.09	38	5	ND	ND	134	1	5	4	2	32.69	0.01	2	6	0.26	161	0.01	0.10	0.05	0.02	0.01	6	1	5
A1	R0L41N/795W	3	55	4	87	0.2	28	32	805	4.93	22	5	ND	ND	61	1	5	1	96	3.64	0.16	6	50	1.79	69	0.56	3.24	0.08	0.16	0.01	8	1	5
A1	RT44N/79011W	3	13	8	23	0.1	12	4	192	0.74	70	5	ND	ND	312	1	9	6	14	15.43	0.01	11	45	0.16	252	0.03	0.23	0.03	0.03	0.01	3	1	5
A1	RT44N/79155	2	4	6	13	0.2	8	2	149	0.27	22	5	ND	ND	75	1	7	7	5	2.24	0.01	2	125	0.02	28	0.01	0.01	0.01	0.02	0.01	6	1	5
A1	RTL44N/79203W	1	6	1	11	0.1	6	2	136	0.20	3	5	ND	ND	193	1	1	4	3	6.92	0.01	4	78	0.05	44	0.01	0.01	0.01	0.01	0.01	1	1	5
A1	RT48N/781W	5	51	18	201	0.3	20	37	935	8.01	33	5	ND	ND	38	2	12	5	123	1.65	0.26	24	25	2.28	92	0.31	3.38	0.08	0.08	0.02	13	2	5
A1	RF48N/78448W	3	11	8	21	0.1	3	3	155	0.42	14	5	ND	ND	57	1	4	5	1	20.25	0.01	4	26	0.16	53	0.01	0.17	0.04	0.02	0.01	10	1	5
A1	RO60N/78155W	2	8	1	8	0.1	8	1	87	0.17	2	5	ND	ND	36	1	1	1	3	6.93	0.01	1	71	2.65	25	0.01	0.06	0.02	0.01	0.01	1	1	5
A1	RF60N/78658W	2	7	5	16	0.3	6	1	105	0.22	20	5	ND	ND	41	1	7	8	5	3.80	0.01	5	113	0.14	21	0.01	0.06	0.01	0.01	0.01	8	1	5

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ROSSBACHER LABORATORY LTD.

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British Columbia, Can. V5B 3N1
Ph:(604)299-6910 Fax:299-6252

CERTIFICATE OF ANALYSIS

To : LYNN GREXTON
920 EAST 28 th AVE.
VANCOUVER, B.C.

Project: Da Vinci

Type of Analysis: ICP

Certificate: 94244

Invoice: 50280

Date Entered: 94-10-17

File Name: GRE94244.I

Page No.: 1

PRE FIX	SAMPLE NAME	PPM MO	PPM CU	PPM PB	PPM ZN	PPM AG	PPM NI	PPM CO	PPM MN	% FE	PPM AS	PPM HG	PPM SR	PPM CD	PPM SB	PPM BI	PPM V	% CA	% P	PPM LA	PPM CR	% MG	PPM BA	% TI	% AL	% NA	% K	% SI	PPM W	PPM BE	PPB HG AA	PPB AU AA
A1	D94G 37R	2	42	6	21	0.1	11	4	763	0.56	10	ND	3	1	2	2	10	0.24	0.03	7	174	0.03	164	0.01	0.07	0.01	0.12	0.01	1	1	50	5
A1	D94G 38R	12	39	6	29	0.1	14	6	795	0.65	13	ND	3	1	1	2	10	0.22	0.03	4	272	0.02	169	0.01	0.04	0.01	0.18	0.01	1	1	60	5

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CERTIFICATE OF ANALYSIS

To : LYNN GREXTON
920 EAST 28 th AVE.
VANCOUVER, B.C.

Project: DAVINCI
Type of Analysis: ICP

Certificate: 93076
Invoice: 40133
Date Entered: 93-06-22
File Name: GRE93076.I
Page No.: 1

PRE FIX	SAMPLE NAME	PPM MO	PPM CU	PPM PB	PPM ZN	PPM AG	PPM NI	PPM CO	PPM MN	% FE	PPM AS	PPM AU	PPM HG	PPM SR	PPM CD	PPM SB	PPM BI	PPM V	% CA	% P	PPM LA	PPM CR	% MG	PPM BA	% TI	% AL	% NA	% K	% SI	PPM W	PPM BE	PPB AU AA	DH
L	93AG-1L	1	28	1	67	0.2	21	1	210	1.01	2	ND	ND	271	1	1	1	19	10.63	0.09	7	22	0.88	220	0.03	0.78	0.05	0.14	0.01	1	1	5	8.2
PC	93AG-2P	1	15	1	41	0.4	15	2	198	1.05	2	ND	ND	143	1	1	1	23	9.95	0.05	8	21	1.89	88	0.06	0.55	0.05	0.10	0.01	1	1	60	
A	93AG-3R	1	9	3	8	0.8	5	1	67	0.21	4	ND	ND	40	1	2	1	2	5.95	0.01	3	128	0.39	18	0.01	0.05	0.02	0.04	0.01	1	1	5	
A	93AG-4R	1	16	1	13	0.2	8	1	192	0.19	2	ND	ND	62	1	1	1	5	12.41	0.01	14	67	3.17	42	0.01	0.07	0.05	0.04	0.01	1	1	5	
A	93AG-5R	2	11	11	16	0.4	9	2	163	0.37	22	ND	ND	16	1	10	1	8	2.46	0.10	4	166	0.51	459	0.01	0.04	0.01	0.03	0.01	2	1	5	
A	93AG-6R	2	11	5	16	0.8	9	1	163	0.30	7	ND	ND	18	1	6	1	4	5.48	0.05	4	118	0.87	38	0.01	0.12	0.02	0.03	0.01	1	1	5	
A	93AG-7R	1	10	1	10	0.6	5	1	90	0.19	2	ND	ND	104	1	1	1	2	7.44	0.01	9	71	0.08	20	0.01	0.05	0.02	0.05	0.01	1	1	5	
A	93AG-8R	1	16	1	23	0.2	6	1	149	0.21	2	ND	ND	57	1	1	1	2	8.72	0.15	4	99	4.26	23	0.01	0.04	0.04	0.06	0.01	1	1	5	
A	93AG-9R	1	12	1	13	0.2	7	1	96	0.19	2	ND	ND	93	1	1	1	5	8.84	0.01	6	57	0.14	23	0.01	0.06	0.02	0.04	0.01	1	1	5	
A	93AG-10R	1	10	3	13	0.8	5	1	143	0.31	2	ND	ND	20	1	1	1	5	6.99	0.04	5	90	0.05	17	0.01	0.06	0.02	0.05	0.01	1	1	5	

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CERTIFICATE OF ANALYSIS

To : LYNN GREXTON
920 EAST 28 th AVE.
VANCOUVER, B.C.

Project: Da Vinci
Type of Analysis: Geochemical

Certificate: 94244 a
Invoice: 50280
Date Entered: 94-10-19
File Name: GRE94144.A
Page No.: 1

PRE FIX	SAMPLE NAME	PPB Hg	PPM Te
P	94G - 1R	60	0.1
P	94G - 3R	80	0.1
P	94G - 4R	560	0.1
P	94G - 6R	50	<0.1
P	94G - 7R	80	0.2
P	94G - 8R	70	<0.1
P	94G - 10R	140	0.1
P	RF 800W 5232N	40	0.1
P	94G - 16R	50	0.1
P	94G - 19R	120	0.1
P	94G - 22R	50	0.1
P	94G - 24R	900	0.2
P	94G - 26R	1780	<0.1
P	94G - 27R	2400	0.2
P	94G - 28R	820	0.1
P	94G - 29R	200	0.2
P	94G - 30R	520	0.1
P	94G - 31R	700	0.1
P	94G - 35R	380	<0.1
P	94G - 36R	960	0.1
P	CALCRETE	20	<0.1
P	RO 41N 795W	1180	<0.1
P	RT 44N 79011W	440	0.1
P	RT 48N 781W	260	0.1
P	RT 60N 78658W	80	0.1
P	D 94G - 13R	-	<0.1
P	RF78992W-4323N	-	<0.1
P	RF 790W 41+58N	-	<0.1
P	RT 44N/79155 W	-	0.1

CERTIFIED BY :

ROSSBACHER LABORATORY LTD.

CERTIFICATE OF ANALYSIS

2225 Springer Ave., Burnaby,
British Columbia, Can. V5B 3N1
Ph:(604)299-6910 Fax:299-6252

To : LYNN GREXTON
920 EAST 28 th AVE.
VANCOUVER, B.C.
Project: Alchemy-DaVinci
Type of Analysis: ICP

Certificate: 93088
Invoice: 40133
Date Entered: 93-06-24
File Name: GRE93088.I
Page No.: 1

PRE FIX	SAMPLE NAME	PPM MO	PPM CU	PPM PB	PPM ZN	PPM AG	PPM NI	PPM CO	PPM MN	% FE	PPM AS	PPM AU	PPM HG	PPM SR	PPM CD	PPM SB	PPM BI	PPM V	% CA	% P	PPM LA	PPM CR	% MG	PPM BA	% TI	% AL	% NA	% K	% SI	PPM W	PPM BE	PPB AU AA	pH
A	93AG-11R	1	21	1	28	0.2	8	1	131	0.12	2	ND	ND	86	1	1	1	6	13.91	0.02	1	6	9.48	16	0.01	0.07	0.04	0.01	0.01	1	1	10	
A	93AG-12R	2	6	9	9	0.4	5	1	114	0.25	10	ND	ND	73	1	1	2	5	4.87	0.01	8	131	0.25	51	0.01	0.06	0.01	0.04	0.01	7	1	5	
A	93AG-13R	1	6	6	13	0.4	4	1	64	0.16	9	ND	ND	87	1	1	3	3	5.16	0.02	12	121	0.06	24	0.01	0.06	0.01	0.03	0.01	6	1	5	
A	93AG-14R	1	4	6	13	0.2	6	1	105	0.28	8	ND	ND	21	1	1	2	9	1.45	0.05	22	190	0.03	48	0.01	0.12	0.01	0.11	0.01	6	1	5	
A	93AG-15R	1	8	6	9	0.6	6	1	82	0.16	5	ND	ND	226	1	1	3	3	9.30	0.01	8	96	0.06	33	0.01	0.05	0.01	0.04	0.01	4	1	5	
L	93AG-16L	1	15	4	25	0.6	11	1	1116	0.82	8	ND	ND	157	1	1	1	21	16.30	0.05	2	17	0.51	289	0.02	0.25	0.02	0.06	0.01	1	1	5	8.3
PC	93AG-17P	1	13	5	27	0.8	15	1	341	1.02	2	ND	ND	178	1	1	3	28	13.51	0.06	7	20	1.69	80	0.08	0.48	0.02	0.08	0.01	1	1	5	
R	93AG-18R	1	16	3	21	0.2	6	1	230	0.16	2	ND	ND	59	1	1	1	13	13.57	0.04	2	22	5.26	52	0.01	0.10	0.02	0.04	0.01	1	1	5	
L	93AG-18L	1	13	1	8	0.4	4	1	90	0.10	2	ND	ND	84	1	1	1	6	18.15	0.04	1	5	0.34	133	0.01	0.14	0.02	0.02	0.01	1	1	5	8.5
PC	93AG-19P	1	12	1	5	0.2	4	1	79	0.09	2	ND	ND	89	1	1	1	3	20.07	0.03	1	3	0.24	126	0.01	0.12	0.02	0.02	0.01	1	1	30	
L	93AG-20L	1	14	1	8	0.2	4	1	175	0.11	2	ND	ND	385	1	1	1	2	19.83	0.03	2	2	0.59	207	0.01	0.13	0.04	0.02	0.01	1	1	5	8.9
R	93AG-21R	1	8	6	7	0.2	5	1	134	0.25	7	ND	ND	43	1	1	1	4	4.65	0.01	8	105	0.05	17	0.01	0.05	0.01	0.04	0.01	6	1	5	
R	93AG-22R	1	6	5	9	0.2	4	1	73	0.15	5	ND	ND	70	1	1	1	15	6.84	0.01	11	116	0.08	13	0.01	0.06	0.01	0.02	0.01	5	1	5	
R	93AG-23R	1	17	1	13	0.2	4	1	288	0.11	2	ND	ND	276	1	1	1	10	21.41	0.17	39	38	0.11	38	0.01	0.11	0.01	0.04	0.01	1	1	5	

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Rossbacher Laboratory Ltd.
GEOCHEMICAL ANALYSTS & ASSAYERS

2225 S. SPRINGER AVE.,
BURNABY, B.C.
CANADA
TELEPHONE: 299-6910
AREA CODE: 604

METHODS OF ANALYSIS, 1990

GEOCHEMICAL:

Gold: 10 Grams of -80 mesh soil, or -100 mesh pulverized silt or rock sample is roasted at 550 °C, and digested with Aqua Regia. The dissolved Gold is then extracted with Methyl Isobutyl Ketone, and the resulting solution analysed using Atomic Absorption spectroscopy.

Multi Element ICP: 0.5 Grams of sample is digested with a 3-1-2 dilute Aqua Regia mixture, and analysed using Inductively Coupled Plasma Spectroscopy.

ASSAY:

Gold (A.A.): 30 gram -100 mesh#) sample is roasted at 550 °C and digested with Nitric Acid, followed by a double digestion with Aqua Regia. The resulting solution is extracted using Methyl Isobutyl Ketone, and analysed using Atomic Absorption Spectroscopy.

Gold (F.A.): 15 or 30 gram -100 mesh sample is fused using standard Fire Assay fluxes, the resulting Au/Ag/Lead button is cupelled, and the Au/Ag bead analysed using Atomic Absorption, or a Gravimetric finish.

Various Elements:

Silver - 3.0 to 6.0 grams is digested with Aqua Regia, taken to dryness, and dissolved in 25 % HCl.
Copper - 0.5 to 2.0 grams is digested with HNO_3-HCl-$HClO_4$ mixture , taken to $HClO_4$ fumes, and dissolved in 10 % $HClO_4$.
Lead - 0.5 to 2.0 grams is digested with HNO_3-$HClO_4$, taken to dryness, and dissolved in 50% HNO_3.
Zinc - 0.5 grams is digested with HNO_3-$HClO_4$-HCl mix, taken to $HClO_4$ fumes, dissolved in H_2O,or HNO_3.

Each solution is subsequently analysed for the required element by Atomic Absorption Spectroscopy.

Jan. 1990.

GEOCHEMICAL ANALYTICAL METHODS CURRENTLY IN USE AT ROSSBACHER LABORATORY LTD.

A. SAMPLE PREPARATION

1. **Geochem. Soil and Silt:**
   Samples are dried and sifted to minus 80 Mesh, through stainless steel or nylon screens.

2. **Geochem. Rock:**
   Samples are dried, crushed to minus 1/4 inch, split, and pulverized to minus 100 mesh.

B. METHODS OF ANALYSIS

1. **Multi element: (Mo, Cu, Ni, Co, Mn, Fe, Ag, Zn, Pb, Cd, As):**
   0.50 Gram sample is digested for four hours with a 15:85 mixture of Nitric-Perchloric acid. The resulting extract is analyzed by Atomic Absorbtion spectroscopy, using Background Correction where appropriate.

2. **Antimony:**
   0.50 Gram sample is fused with Ammonium Iodide and dissolved. The resulting solution is extracted into TOPO/MIBK and analyzed by Atomic Absorbtion spectroscopy.

3. **Arsenic: (Generation Method)**
   0.25 Gram sample is digested with Nitric-Perchloric acid. Arsenic from the solution is converted to arsine, which in turn reacts with silver D.D.C. The resulting solution is analyzed by colorimetry.

4. **Barium:**
   0.20 Gram sample is repeatedly digested with $HClO_4$-HNO_3 and HF. The solution is analyzed by atomic absorbtion spectroscopy.

5. **Biogeochemical:**
   Samples are dried and ashed at 550°C. The resulting ash analyzed as in *1, Multielement Analysis.

6. **Bismuth:**
   0.50 Gram sample is digested with Nitric acid. The The solution is analysed by Atomic absorbtion spectroscopy.

METHODS OF ANALYSIS (CONT'D)

7. **Chromium:**
0.25 Gram sample is fused with Sodium Peroxide. The solution is analyzed by atomic absorbtion spectroscopy.

8. **Fluorine:**
0.50 Gram sample is fused with Carbonate Flux, and dissolved. The solution is analysed for Fluorine by use of an Ion Selective Electrode.

9. **Gold AR/AAS:**
10.0 Gram sample is roasted at 550°C and dissolved in Aqua Regia. The resulting solution is subjected to a MIBK extraction, and the extract is analzed for Gold using Atomic Absorbtion spectroscopy.

9A **Gold FA:**
10.0 Gram sample is fused with appropriate fluxes, and the resulting lead button is cupelled to produce a gold/silver bead. The bead is dissolved in Aqua Regia and analyzed for gold by AAS.

10. **Mercury:**
1.00 Gram sample is digested with Nitric and Sulfuric acids. The solution if analyzed by Atomic Absorbtion spectroscopy, using a cold vapor generation technique.

11. **Partial Extraction and Fe/Mn oxides:**
0.50 Gram sample is extracted using one of the following: hot or cold 0.5 N. HCl, 2.5% E.D.T.A., Ammonium citrate, or other selected organic acids. The solution is analyzed by use of Atomic Absorbtion spectroscopy.

12. **pH:**
An aqueous suspension of soil, or silt is prepared, and its pH is measured by use of a pH meter.

13. **Rapid Silicate Analysis:**
0.10 Gram sample is fused with Lithium Metaborate, and dissolved in HNO_3. The solution is analyzed by Atomic Absorbtion for SiO_2, Al_2O_3, Fe_2O_3, MgO, CaO, Na_2O, K_2O, TiO_2, TiO_2, P_2O_5, and MnO.

14. **Tin:**
0.50 Gram sample is sublimated by fusion with Ammonium Iodide, and dissolved. The resulting solution is extracted into TOPO/MIBK and analysed by atomic absorbtion spectroscopy.

15. **Tungsten:**
1.00 Gram sample is sintered with a carbonate flux, and dissolved. The resulting extract is analyzed colormetrically, after reduction with Stannous Chloride, by use of Potassium Thiocyanate.

16. **ICP :**
0.5 Gram sample is digested with Aqua Regia, and analyzed using a JOBIN YVON MODEL JY 32 1987 ICP Emission Spectrophotometer for Ag, Al, As, Au, B, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Hg, La, Mg, Mo, Mn, Ni, P, Pb, Sb, Si, Sr, Ti, U, V, W, Zn.

TRACE LEVEL GEOCHEMICAL ANALYSIS

A. ATOMIC ABSORPTION MULTI ELEMENT PACKAGE.

Digestion by $HClO_4$ / HNO_3, or Aqua Regia.
First element $2.25
Subsequent element $0.75

ELEMENT	DETECTION LIMIT	UPPER LIMIT
Arsenic	2 ppm	1.0%
Copper	1 ppm	1.0%
Molybdenum	1 ppm	1.0%
* Lead	2 ppm	1.0%
Zinc	1 ppm	1.0%
* Silver	0.1 ppm	20 ppm
Nickel	2 ppm	1.0%
Cobalt	2 ppm	1.0%
* Cadmium	0.2 ppm	1.0%
Manganese	5 ppm	1.0%
Iron	5 ppm	10.0%
Chromium	2 ppm	0.1%

* Background correction applied.

B. ICP MULTI ELEMENT PACKAGE.

a. Digestion by Aqua Regia
6 elements $5.00
12 elements $6.00
All elements $7.00

b. Digestion by $HClO_4$ / HNO_3 / HF mixture
(Total)
24 elements $12.00

* Aluminum	0.01%	* Magnesium	0.01%
Antimony	5 ppm	Manganese	1 ppm
Arsenic	3 ppm	Mercury	3 ppm
* Barium	1 ppm	Molybdenum	1 ppm
* Beryllium	1 ppm	Nickel	1 ppm
Bismuth	3 ppm	Phosphorus	0.001%
* Boron	1 ppm	* Silicon	0.001%
Cadmium	0.5 ppm	* Sodium	0.01%
* Calcium	0.01%	* Strontium	1 ppm
* Chromium	1 ppm	* Titanium	0.01%
Cobalt	1 ppm	* Tungsten	3 ppm
Copper	1 ppm	Uranium	10 ppm
Iron	0.01%	Silver	0.2 ppm
Gold	3 ppm	Vanadium	1 ppm
* Lanthanum	1 ppm	Zinc	1 ppm
Lead	*2 ppm*		

Elements for which the digestion is possibly incomplete are marked with an asterisk.

C. NOBEL METALS GEOCHEMICAL ANALYSIS.

Gold, Aqua Regia / AA Finish	5 ppb	$4.75
Gold, Fire Assay / AA Finish	5 ppb	$7.25
Gold & Platinum & Palladium, Fire Assay / AA Finish,	2 ppb, 15 ppb, 2 ppb	$15.00

D. SPECIFIC ELEMENTS.

ELEMENT	DETECTION LIMIT	UPPER LIMIT	PRICE
Antimony	1 ppm	0.1%	$4.00
Arsenic	1 ppm	1.0%	4.00
Barium	10 ppm	1.0%	4.50
Beryllium	0.1 ppm	0.1%	5.00
Bismuth	2 ppm	0.1%	4.00
Chromium	5 ppm	1.0%	4.50
Fluorine	10 ppm	1.0%	5.00
Lithium	1 ppm	1.0%	4.50
L.O.I.	0.01%	100%	4.00
Mercury	10 ppb	0.01%	2.75
Rubidium	1 ppm	1.0%	5.00
Selenium	1 ppm	0.1%	5.00
Strontium	1 ppm	1.0%	4.50
Sulfur	0.1%	100%	7.00
Tellurium	0.1 ppm	0.1%	6.00
Thallium	0.5 ppm	0.1%	5.00
Tin	2 ppm	0.1%	4.25
Tungsten	2 ppm	0.1%	4.25

E. PH ANALYSIS.

Soil, Silt and Water $4.00

F. SPECIFIC GRAVITY.

$4.50

DISCOUNT POLICIES

All prices are on an individual basis, discounts may be negotiated f

APPENDIX III

Rock Sample Descriptions

ROCK SAMPLES

DAVINCI 1994

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① WEAK ② MODERATE ③ STRONG ④ INTENSE (1) indicates number - eg one "vein"

ATTITUDE: 1. CONTACT 2. BEDDING 3. FOLIATION 4. CLEAVAGE 5. FAULT 6. SHEAR 7. FRACTURE 8. VEIN 9. DYKE 10.

SAMPLE DESCRIPTION	TYPE						m		MAIN MINERALS %							ALTERATION									OXIDES					ATTITUDE	VEINS							METALLIC MINERALS %								GOLD	ANALYSES				
TRAVERSE SAMPLES - D94G SERIES	FLOAT/TALUS	LOCAL	OUTCROP/SUB.	COMPOSITE	CHIP	GRAB	LENGTH	WIDTH	Quartz	Feldspar	(Plagioclase)	Hornblende	Biotite	Chlorite	Carbonate	GENERAL	CHLORITE	EPIDOTE	CARBONATE	SILICA	POTASSIUM	CLAY	SERICITE	BLEACHED	"LIMONITE"	MANGANESE	MALACHITE	Hematite	Magnetite %		STRINGERS	VEIN	STOCKWORK	TYPE	AMOUNT	WIDTH (m)	LENGTH (m)	Pyrite	Pyrrhotite	Chalcopyrite	Galena	Sphalerite	Arsenopyrite	Molybdenite	TOTAL		Au ppb	Ag ppm	Cu ppm	ppm	ppm
# 1R Cherty Limestone - chert lt-dk gy, black & brownish lenses ē masses, within lt gy limestone, cut by finely crystalline dolomitic hairline fracture fillings, minor airline milky crypto q fracture fillings tension? fractures; 2-5% add apple # green scaley masses appear to be fracture related, pyrite as rare v. fine diss grain.			O			X																			1	1							X	Q	1	0,5 mm		X													
#2R Chert - veins & laminae in Limestone; buff-grey, shallow dip to NE, weakly irregular ē sharp margins -no duplicate			O			X		2-10 cm																																											
# 3R Cherty-chalcedonic Breccia - small blds & cobbles, frags of chert & Limestone; q as milky massive to grey & chalcedonic 10-15%, weakly develope slickensides on some surfaces, weak fine vugs ue to carbonate leaching; # 3 rocks over 2m² area ~100 m E of 790W/43+25N	T			X		X																			1			1																							
# 4R Chert - rough weathering red to dk grey, massive to weakly laminated with laminations fine irregular masses of carbonate ocally weathered out leaving fine ngula vugs, 10rx along 8m, max 20cm	T			X		X																			2			2																							
# 5R Hematite Breccia - 30% aphanitic hematite & jasper atrix; fragments brownish-greenish grey chert 1mm to 2cm, local nfilling of chalcedony ē colloform botryoidal textures 2.5mm; local yellowish [illegible]; 15 m W of G4R	T					X																																													

COMMENTS: G3R - duplicate not wholly representative of sample

ROCK SAMPLES

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① WEAK ② MODERATE ③ STRONG ④ INTENSE (1) Indicates number - eg one "vein"

SAMPLE DESCRIPTION	TYPE						m		MAIN MINERALS %							ALTERATION									OXIDES				ATTITUDE	VEINS							METALLIC MINERALS %								GOLD	ANALYSES				
	FLOAT/TALUS	LOCAL	OUTCROP/SUB.	COMPOSITE	CHIP	GRAB	LENGTH	WIDTH	Quartz	Feldspar	(Plagioclase)	Hornblende	Biotite	Chlorite	Carbonate	GENERAL	CHLORITE	EPIDOTE	CARBONATE	SILICA	POTASSIUM	CLAY	SERICITE	BLEACHED	"LIMONITE"	MANGANESE	MALACHITE	Magnetite %	1. CONTACT 2. BEDDING 3. FOLIATION 4. CLEAVAGE 5. FAULT 6. SHEAR 7. FRACTURE 8. VEIN 9. DYKE 10.	STRINGERS	VEIN	STOCKWORK	TYPE	AMOUNT	WIDTH (m)	LENGTH (m)	Pyrite	Pyrrhotite	Chalcopyrite	Galena	Sphalerite	Arsenopyrite	Molybdenite	TOTAL		Au ppb	Ag ppm	Cu ppm	ppm	ppm
6R Cherty Limestone - rough weathering ly, c̄ Felsic ? subvolc ? cutting & ridizing it ?, locally c̄ fine bx'n c̄ arb matrix dk gy to near black anitic, massive as lenses & pods mod-strong sil mass Limestone rite fract. related c̄ carb.; calcareous fract common; v. fine, hairline to 2mm and intergranular possible felsic subvolc - 30% limentary dk gn-blackish, anhedral ains set in dk gn-brownish liceous matrix; weathers med / to brownish - nonmagnetic			O		x	x														x					x												tr													
7R Felsic Subvolc? - v. dk gy to blackish, equivalent to sample -790W/4640N but rudimentary rains more distinct; anhedral iliceous with interstitial carbonate 0%); py rare, v fine; sparse rb fracture fillings; same otc as 6R			O		x	x																															x													
8R Cherty Limestone - poorly osed, locally c̄ bx'n of chert c̄ carb trix; possible local flow texture parent in chert; as 3.5cm wide ses/layers/veins; also primary /chert bx'd with carb matrix rb hairline fract fillings common irregular; weathers dk gy angularly rough; nonmagnetic			O		x	x																																												
9R LIMESTONE with 3.5 cm wide siliceous vein/lense? ssibly graded chert-carbonate rizon; mass, med dk gy for cm then finely vuggy, brownish -silica mix; distinct to somewhat adational contact with mass lt gy limestone; siliceous-carb horizon weakly folded - broad; slickensides rallel to fold axis & at slight ∠ lower chert surface; carb with ale green? mass aph agg.	T		S			x																																												

COMMENTS:

ROCK SAMPLES

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① WEAK ② MODERATE ③ STRONG ④ INTENSE (1) indicates number - eg one "vein"

SAMPLE DESCRIPTION	TYPE: FLOAT/TALUS	LOCAL	OUTCROP/SUB.	COMPOSITE	CHIP	GRAB	m: LENGTH	WIDTH	MAIN MINERALS %: Quartz	Feldspar	(Plagioclase)	Hornblende	Biotite	Chlorite	Carbonate	ALTERATION: GENERAL	CHLORITE	EPIDOTE	CARBONATE	SILICA	POTASSIUM	CLAY	SERICITE	BLEACHED	OXIDES: "LIMONITE"	MANGANESE	MALACHITE	Magnetite %	ATTITUDE: 1. CONTACT 2. BEDDING 3. FOLIATION 4. CLEAVAGE 5. FAULT 6. SHEAR 7. FRACTURE 8. VEIN 9. DYKE 10.	VEINS: STRINGERS	VEIN	STOCKWORK	TYPE	AMOUNT	WIDTH (m)	LENGTH (m)	METALLIC MINERALS %: Pyrite	Pyrrhotite	Chalcopyrite	Galena	Sphalerite	Arsenopyrite	Molybdenite	TOTAL	GOLD	ANALYSES: Au ppb	Ag ppm	Cu ppm	ppm	ppm
#10R Felsic Subvolc? Silicified Carb? s alt?, finely bx'd, weak sil w erv. carb? interstitial to q & feld? sentially agg. as anhedral-subhedral ht & clear crystals?; remnant carb xwork; lt. brownish buff on rough eathered surfaces; creamy-pinkish t on fresh; v. finely bx'd & flooded by clear & wht & pinkish crypto -); 2 rocks highly angular	F	x				x																																														
#11R Subvolc? Silicified Carb? similar to 10R but c̄ distinct nk & salmon colour, more massive, rains indistinct; with white & minor lear masses of q (10%); strong x'r, fine & coarse matrix; q-carb ith w-s hem (C/or Mn?) as v. fine t diss grains & pinkish/red xide stain; weathers strong but inely irregular c̄ irregular boxwork; regular hairline fract of black inknown, mass, aph material C?) & discontinuous tension ashes; likely from within 500 m	F	?				X																																														
#12R PEGMATITIC CARBONATE Vein - coarse decussate aggregate calcite reyish; weakly sinuous with minor chert fragments, hosted by limestone																													090/SteepS		X		cal	1	.25	5														
#13R Quartz-Carbonate Lenses - in cherty limestone, 3 cm wide max ace py as strong-intensely rusty bs; milky quartz; weakly coarsely aggy (carb. leaching)		X	S			X																															X															
#																																																				

COMMENTS:

ROCK SAMPLES

DAVINCI 1994

① WEAK ② MODERATE ③ STRONG ④ INTENSE (1) Indicates number- eg one "vein"

ATTITUDE: 1. CONTACT 2. BEDDING 3. FOLIATION 4. CLEAVAGE 5. FAULT 6. SHEAR 7. FRACTURE 8. VEIN 9. DYKE 10.

SAMPLE DESCRIPTION GRID SAMPLES	TYPE: FLOAT/TALUS	LOCAL	OUTCROP/SUB.	COMPOSITE	CHIP	GRAB	m: LENGTH	WIDTH	MAIN MINERALS %: Quartz	Feldspar	(Plagioclase)	Hornblende	Biotite	Chlorite	Carbonate	ALTERATION: GENERAL	CHLORITE	EPIDOTE	CARBONATE	SILICA	POTASSIUM	CLAY	SERICITE	BLEACHED	OXIDES: "LIMONITE"	MANGANESE	MALACHITE	Magnetite %	Hematite	ATTITUDE	VEINS: STRINGERS	VEIN	STOCKWORK	TYPE	AMOUNT	WIDTH (m)	LENGTH (m)	METALLIC MINERALS %: Pyrite	Pyrrhotite	Chalcopyrite	Galena	Sphalerite	Arsenopyrite	Molybdenite	TOTAL	GOLD	ANALYSES: Au ppb	Ag ppm	Cu ppm	ppm	ppm
# RF 789+92W/43+23N Altered Brecciated Limestone v.i. ltgy-brownish, locally with mod. developed boxwork, anhedral to euhedral white feld <1mm to 3mm set in siliceous brownish-greyish matrix; feld exhibit brecciation & carb # alteration; veins wht-creamy quartz of several generations; 2-3 % aphanitic irregular black masses related to fine fract; local v. fine crackle appearance; q veins & stringers vary from sharp to very gradational boundaries # - varies from c alt. c only crowded remnants of broken eld c multistage q fract to w alt; eld ± broken in dk brown matrix veining locally chalcedonic; 1 med bld fairly local - talus? trace v fg diss m rusty pyrite	F	?				X		40 cm min		35						2			1	3					1						X	X	X	Q	2	max 4cm		tr													
# RL 790W/4640N Felsic SubVolc? - rudimentary dark crystals as gradational mass vein? /lens in gy mass Limestone; py intensely rusty & limonite common on fract surfaces; carb fract fillings wht, max mm, cut by "bleached" fract; 25% # carb matrix, becomes softer with more carb. -1 large cobble	F	X				X																			X													X													
# RT 790W/4605N Altered Carbonate or Felsite - weathers finely rough strong lichen cover, fresh surface mottled pinkish buffy grey; v.fg; vw xd subhedral feld, to 2.5 mm; w-m t (carb?); g matrix; 5% diss hem/py & ± fg; from within 1km of source	F					X																							X																						
# RT 790W/44+23N Carbonate-Chert Breccia - with chert frags, mod patchy limonite blebs on fract surfaces c carb fract fillings; chert frags m-dk gy angular to subangular max ~3cm; weathers finely pitted, rough, brownish gy	7					X																			X													X													

COMMENTS:

RT 790W/4423N - possibly less alt. equivalent to 93-11, 94-10 & RF 52N/79756W

ROCK SAMPLES

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① WEAK ② MODERATE ③ STRONG ④ INTENSE (1) indicates number - eg one "vein"

SAMPLE DESCRIPTION	TYPE						m		MAIN MINERALS %							ALTERATION									OXIDES					ATTITUDE	VEINS							METALLIC MINERALS %									ANALYSES				
GRID SAMPLES	FLOAT/TALUS	LOCAL	OUTCROP/SUB.	COMPOSITE	CHIP	GRAB	LENGTH	WIDTH	Quartz	Feldspar	(Plagioclase)	Hornblende	Biotite	Chlorite	Carbonate	GENERAL	CHLORITE	EPIDOTE	CARBONATE	SILICA	POTASSIUM	CLAY	SERICITE	BLEACHED	LIMONITE*	MANGANESE	MALACHITE	Hematite	Magnetite %	1. CONTACT 2. BEDDING 3. FOLIATION 4. CLEAVAGE 5. FAULT 6. SHEAR 7. FRACTURE 8. VEIN 9. DYKE 10.	STRINGERS	VEIN	STOCKWORK	TYPE	AMOUNT	WIDTH (m)	LENGTH (m)	Pyrite	Pyrrhotite	Chalcopyrite	Galena	Sphalerite	Arsenopyrite	Molybdenite	TOTAL	GOLD	Au ppb	Ag ppm	Cu ppm	ppm	ppm
RF 800W/51+96N # Quartz-carbonate Breccia - ngular, rough weathering dk gy & wht; milky weakly drusy, most massive crypto; carb. finely crystalline & assive crypto; and q as fine fract. llings related to larger matrix & veinlets # angular vugs & fract. on surface from carb leaching; frags of chert gy to blk & limestone <2mm to 3cm; oxides fracture related 3 cobbles	F	?		X		X																			1			1																							
# RF 800W/52+30N - Silicified ? Limestone ? - weathers lt gy to ear wht coarsely laminated, fresh rface buff-wht-gy-creamy ightly irregular laminations & fine nres; silica/carbonate mix; local idense of weak brecciation 6rx # over 5X10 m area	T	X		X		X														4					1																										
# RF 800W/52+32N Brecciated Cherty Limestone (?) - very ough surface, little matrix, finely xld, chert & limestone - trace unknown apple green caley mineral as in 94G1R	F	X				X																			1																										
# RF 790W/41+58N SILICIFIDE BRECCIATED LIMESTONE brownish - greyish smooth - finely ugh weathering silty limestone egular siliceous boxwork apparent weathered surface; fresh surface ottled wht-gy-blk-creamy; dolomitic # fracture-related alteration v fine crystal coatings "intergranular" atings & fracture-fillings of carbonate possibly rebrecciated silicified erbre; fine irregular masses of ck-organics?; minor fine coatings botryoidal carb. coatings in some vugs	F	x		x		x													1	2																															

COMMENTS: 2 small angular - subangular bld.

ROCK SAMPLES

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① WEAK ② MODERATE ③ STRONG ④ INTENSE (1) indicates number - eg one "vein"

SAMPLE DESCRIPTION	TYPE: FLOAT/TALUS	LOCAL	OUTCROP/SUB.	COMPOSITE	CHIP	GRAB	m: LENGTH	WIDTH	MAIN MINERALS %: Quartz	Feldspar	(Plagioclase)	Hornblende	Biotite	Chlorite	Carbonate	ALTERATION: GENERAL	CHLORITE	EPIDOTE	CARBONATE	SILICA	POTASSIUM	CLAY	SERICITE	BLEACHED	OXIDES: "LIMONITE"	MANGANESE	MALACHITE	Magnetite %	ATTITUDE: 1. CONTACT 2. BEDDING 3. FOLIATION 4. CLEAVAGE 5. FAULT 6. SHEAR 7. FRACTURE 8. VEIN 9. DYKE 10.	VEINS: STRINGERS	VEIN	STOCKWORK	TYPE	AMOUNT	WIDTH (m)	LENGTH (m)	METALLIC MINERALS %: Pyrite	Pyrrhotite	Chalcopyrite	Galena	Sphalerite	Arsenopyrite	Molybdenite	TOTAL	GOLD	ANALYSES: Au ppb	Ag ppm	Cu ppm	ppm	ppm	p
GRID SAMPLES																																																				
RT 4BN/79666W LIMESTONE w carb wht-brownish & creamy tuk; c̄ local wht mass to mg yxtalline; lenses appear related fract c̄ carb but some are rupted by carb fract fillings; max 6mm; py rare vfg, strong rusty in carb fract fill.; sparse q. ; several cobbles	T					x																															x															
RO 4897N/79666W Quartz - laminae/veinlets in Limestone ally c̄ coarse strong rusty agg. py(?) not common; q str/veins not follow beds; milky wht & cally greenish, max ~0,5cm een(?) appears to be q chl:carb mix?			O		x	x																							② 302/70 RHR																							
RF52N/79756W - Limestone? - similar to "fetid" Limestone" f 1993 Samples G11; siliceous bx'd carb q matrix shows e discont. bx'n; 15% black ikly dendritic?; buff to creamy eathers finely rough with vuggy boxwork = Less alt equivalent to G10 & 11 ?	F					x																																														

COMMENTS:

ROCK SAMPLES

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① WEAK ② MODERATE ③ STRONG ④ INTENSE (1) indicates number - eg one "vein"

SAMPLE DESCRIPTION	TYPE						m		MAIN MINERALS %													ALTERATION									OXIDES						ATTITUDE	VEINS							METALLIC MINERALS %												ANALYSES					
D94 G SERIES	FLOAT/TALUS	LOCAL	OUTCROP/SUB.	COMPOSITE	CHIP	GRAB	LENGTH	WIDTH	Quartz	Feldspar	(Plagioclase)	Hornblende	Biotite		Chlorite		Carbonate	CHERT				GENERAL	CHLORITE	EPIDOTE	CARBONATE	SILICA	POTASSIUM	CLAY	SERICITE	BLEACHED	"LIMONITE"	MANGANESE	MALACHITE		Magnetite %	HEMATITE	1. CONTACT 2. BEDDING 3. FOLIATION 4. CLEAVAGE 5. FAULT 6. SHEAR 7. FRACTURE 8. VEIN 9. DYKE 10.	STRINGERS	VEIN	STOCKWORK	TYPE	AMOUNT	WIDTH (m)	LENGTH (m)	Pyrite	Pyrrhotite	Chalcopyrite	Galena	Sphalerite	Arsenopyrite	Molybdenite				TOTAL	GOLD	Au ppb	Ag ppm	Cu ppm	ppm	ppm	p
# 14R himy horizon in Andesite - Basalt; gy brownish c̄ ankeritic 3minae bands & patches; w. v. fine ?- lim. & hem as v. minor iss (<1%); varies mass to v. fine ystalline appearence (actually = float on otc ??)			O		X	X									X																														X																	
# 15R Brecciated Limestone black (?) matrix hairline fract. tockwork 16m 335° from L36N/779W	T	X	S			x											x																							x	chl	1-2																				
# 16R Carbonate Breccia - finely brecciated (?) limestone/volc? ne grained "granular" brownish frags, atrix creamy, aphanitic, locally sty (ankeritic?) 49m @ 335° rom L36N/779W	T	X	S			X											X																																													
# 17R Cherty Limey Mudstone? buff - white massive, minor v. fine hairline tension gashes of lear carb; crowded subgranular exture v fine grained; massive ossible equivalent to R790W/4323N	T	X	S			x																																																							
# 18R Chert Breccia - dk gy - blk chert mod bx'd; matrix chert, local vugs c̄ nil matrix; w lim on fract, nor carb. hairline fract fillings buff lt brownish - ankerite (?) 30m W of ridgetop ~791+50W	F	L	S			X											x	X																																											
# 19R Cherty Limestone & Chert; dk gy - blk - brownish chert c̄ m fract.; trace to w hem &/or onite along fract, local lenses/laminae nds of calcite; from 790+43 to 91W on L44N (no duplicate) rocks	T		x			x												X													x					x																									
# 21R Milky Bull Quartz - in andesite; minor carb, coarsely rystalline, mass c̄ irreg masses & nses of i chl host; some evidence bx'n of host, talus upslope from 48N/781W, several cobbles	T					x			X																																																					

COMMENTS: G20 = SILT

ROCK SAMPLES

DAVINCI 1994

Page 2 of 5

① WEAK ② MODERATE ③ STRONG ④ INTENSE (1) Indicates number - eg one "vein"

SAMPLE DESCRIPTION	TYPE						m		MAIN MINERALS %								ALTERATION									OXIDES					ATTITUDE	VEINS							METALLIC MINERALS %								GOLD	ANALYSES				
D94G SERIES	FLOAT/TALUS	LOCAL	OUTCROP/SUB.	COMPOSITE	CHIP	GRAB	LENGTH	WIDTH	Quartz	Feldspar	(Plagioclase)	Hornblende	Biotite	Chlorite	Carbonate	CHERT	GENERAL	CHLORITE	EPIDOTE	CARBONATE	SILICA	POTASSIUM	CLAY	SERICITE	BLEACHED	"LIMONITE"	MANGANESE	MALACHITE	Magnetite %	HEMATITE	1. CONTACT 2. BEDDING 3. FOLIATION 4. CLEAVAGE 5. FAULT 6. SHEAR 7. FRACTURE 8. VEIN 9. DYKE 10.	STRINGERS	VEIN	STOCKWORK	TYPE	AMOUNT	WIDTH (m)	LENGTH (m)	Pyrite	Pyrrhotite	Chalcopyrite	Galena	Sphalerite	Arsenopyrite	Molybdenite	TOTAL	GOLD	Au ppb	Ag ppm	Cu ppm	ppm	ppm
#22R Amphibole - Chlorite development in Lst - possible remolite/actinolite; apple green ubfibrous; may be chl but too hard reen similar to that of chromium nicas; 1 small bld upslope from 48N/781	T					x									x																																						
#23R ALTERED LIMESTONE - fine granular texture; appears to be w-m alt, distinct foliation may indicate rudimentary trem or magnesite, 1 small bld; upslope from 48N/781W	T					x																																															
#G24R Chalcedonic Quartz c̄ orange rust, minor wht-gy carb; evidence of open space filling; locally fine intergrowths f q; odd circular pits 1/2cm ~48N/780+57W; 3 small talus; host appears to be Lst	T					x			x																																												
#G26R SHEARED ANDESITE - strong chlorite, weak rusted mix imonite/carbonate on foliation urface, in contact c̄ Marblized Lst to S, grey Lst to N; nonmagnetic			O		X	X	60 cm							X												x					6. 335/60																						
#27R Milky Bull Quartz - 1 to 4 cm wide Milky, mass discont, hosted by Andesite flow - nil sulfides No. SPLIT			X			X			X																																												
#28R QUARTZ-CARB Bx - rusty silicified frags strongly dolo/ank some inkish matrix carb & dominantly dk gy silica, minor fine vugs, matrix upported, frags < 4mm; weathers highly regular surface, 1 rock 15cm	F	X				X											2				2																																
#G29 Hematitic Cherty Limestone silica as irreg stringers & masses appearing to be at <'s to primary silty/cherty layers; host brownish creamy dolo. Lst 6 small cobbles	T					X									X															5																							

COMMENTS: G25R = SILT

ROCK SAMPLES

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① WEAK ② MODERATE ③ STRONG ④ INTENSE (1) indicates number- eg one "vein"

ATTITUDE: 1. CONTACT 2. BEDDING 3. FOLIATION 4. CLEAVAGE 5. FAULT 6. SHEAR 7. FRACTURE 8. VEIN 9. DYKE 10.

SAMPLE DESCRIPTION D94G SERIES	TYPE: FLOAT/TALUS	LOCAL	OUTCROP/SUB.	COMPOSITE	CHIP	GRAB	m: LENGTH	WIDTH	MAIN MINERALS %: Quartz	Feldspar	(Plagioclase)	Hornblende	Biotite	Chlorite	Carbonate	ALTERATION: GENERAL	CHLORITE	EPIDOTE	CARBONATE	SILICA	POTASSIUM	CLAY	SERICITE	BLEACHED
#30R Chalcedonic Veins – intensely rusty quartz rich veins, vuggy open space filling; lt gy, brownish c̄ clear quartz v. fine crystalline massive & crypto/chalcedonic; strong nk? + lim + Mn + w hem surface coatings, 3 small rocks highly ∠	T					x																		
# 31R SHEARED ANDESITE – med green wk to mod sheared wk to well foliated py v. fg diss; Mn, chlorite, carb & possible quartz along hairline fractured; overall weakly altered fracturefillings sparse			O			x										1	x		x					
#32R FRACTURED LIMESTONE – mod to strongly fractured, dry bx'n c̄ yellowish ochre on fracture planes – likely carb alteration ie Fe or organic material	T		O		x	x																		
#35R Chalcedonic Quartz Vein/Bx in silty lst, up to 2.5 cm wide st, clean, lt-m gy crypto q; fine host fragments & alt matrix upported, locally q as botryoidal uggy coatings; coarse paddy limonite st siltychlcty lst, m gy-brownish # in talus above 44N/790W,	T					x			x						x									
#36R Cherty Bx – s rusty coated, similar in appearance to G35R but lacking vuggy coatings & easily recognisable fragments – same horizon	T					x			x															
#																								

SAMPLE	OXIDES: "LIMONITE"	-MANGANESE	MALACHITE	Magnetite %	Hematite	ATTITUDE	VEINS: STRINGERS	VEIN	STOCKWORK	TYPE	AMOUNT	WIDTH (m)	LENGTH (m)	METALLIC MINERALS %: Pyrite	Pyrrhotite	Chalcopyrite	Galena	Sphalerite	Arsenopyrite	Molybdenite	TOTAL	GOLD	ANALYSES: Au ppb	Ag ppm	Cu ppm	ppm	ppm
#30R	x	x			X					x	-	3 cm	?														
#31R		x				3, 305/60 RHR								tr													
#32R																											
#35R	1	1																									
#36R	2	1																									
#																											

COMMENTS: G33 = SILT
G34 = SILT

ROCK SAMPLES

DAVINCI 1994

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① WEAK ② MODERATE ③ STRONG ④ INTENSE ( ) indicates number - eg one "vein"

SAMPLE DESCRIPTION	TYPE: FLOAT/TALUS	LOCAL	OUTCROP/SUB.	COMPOSITE	CHIP	GRAB	m: LENGTH	WIDTH	MAIN MINERALS %: Quartz	Feldspar	(Plagioclase)	Hornblende	Biotite		Chlorite		Carbonate	CHERT			
# RO 60N/78155 Black Chert layer in Limestone			O		x	x		30 cm										x			
# CALCRETE – from headwaters of small creek; nondescript creamy- buff-brown; highly vuggy-boxwork ppears to have v. little Fe present timated at 100 m W along slope rum L48 /794+50W			O		x	x															
# 60N/78658W Cherty Limestone dk grey, brownish red chert, str. discont sparse, milky, aphanitic massive c̄ sharp - distinct margins nil sulfides	F	x				x		40 cm										x			
# 44N/79155W Cherty Limestone dk gy - blk & minor hematitic chert, ace py? hem, v grains often ong v. fine irreg. fracts., lenses laminae of white-buff; 15 m slope to lst/chert cliff; 2 cobbles NO SPLIT)	T				x													x			
# 44N/79203W Cherty Limestone mod bx'd; carb & milky wht q matrix; chert dk gy - medgy - blk; spotty minor v lim/hem mix?; 1 large cobble	T				x													x			
# 48N/78448W - Cherty Limestone c̄ carbonate & ? hairline fract llings; carb str. reddish-pinkish- rown; lt gy bx'd weathered appearance hert as pods?/layers? whitish-ltgy -m well fract; 1 rock 15 cm	F				x												x	x			
# 48N/781W Pyritic Andesite s-i rusty fracture surfaces; patchy ocal m-s perv. sil., commonly w bx'd roughout, v. fine hairlike stkwk + v fg anhedral diss, nonmagn med gy green on fresh	T				x		20 cm														

SAMPLE	ALTERATION: GENERAL	CHLORITE	EPIDOTE	CARBONATE	SILICA	POTASSIUM	CLAY	SERICITE	BLEACHED	OXIDES: "LIMONITE"	MANGANESE	MALACHITE		Magnetite %	HEMATITE	ATTITUDE: 1. CONTACT 2. BEDDING 3. FOLIATION 4. CLEAVAGE 5. FAULT 6. SHEAR 7. FRACTURE 8. VEIN 9. DYKE 10.	VEINS: STRINGERS	VEIN	STOCKWORK	TYPE	AMOUNT	WIDTH (m)	LENGTH (m)	METALLIC MINERALS %: Pyrite	Pyrrhotite	Chalcopyrite	Galena	Sphalerite	Arsenopyrite	Molybdenite				TOTAL	GOLD	ANALYSES: Au ppb	Ag ppm	Cu ppm	ppm	ppm	p
RO 60N/78155																																										
CALCRETE																																										
60N/78658W																	x			Q	W	0.5 cm																				
44N/79155W															x									?																		
44N/79203W										?					?			x		Q carb																						
48N/78448W																																										
48N/781W	1			x																				5																		

COMMENTS:

ROCK SAMPLES

DAVINCI 1994

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① WEAK ② MODERATE ③ STRONG ④ INTENSE (1) indicates number- eg one "vein"

SAMPLE DESCRIPTION	TYPE Float/Talus	TYPE Local	TYPE Outcrop/Sub.	TYPE Composite	TYPE Chip	TYPE Grab	m Length	m Width
# 41N/795W ANDESITE FELDSPAR PORPHYRY - feldspar show w-m ervasive alteration; minor chl, carb fracture fillings; locally c̄ fine all brassy py, anhedral, fine-vfg isseminated & in fractures; mafic phenocrysts c̄ hornblende & ? augite, mod magnetic			X			X		
# 44N/79011W CherTY LIMESTONE strong to intense hematite/ankerite/ limonite/Mn mix on fract surfaces, overall weak rusty c̄ hem bx, locally varies to ankeritic?/limonitic? bx; bx'n ranges vague to strongly apparent	T					X		
#								
#								
#								
#								
#								

Sample	Quartz	Feldspar	(Plagioclase)	Hornblende	Biotite	Mafics	Chlorite	Carbonate
# 41N/795W		40				15 20		
# 44N/79011W								
#								
#								
#								
#								
#								

Sample	ALTERATION General	Chlorite	Epidote	Carbonate	Silica	Potassium	Clay	Sericite	Bleached
# 41N/795W	1	X						X	
# 44N/79011W				X					
#									
#									
#									
#									
#									

Sample	OXIDES "Limonite"	Manganese	Malachite	Hematite	Magnetite %	ATTITUDE 1. Contact 2. Bedding 3. Foliation 4. Cleavage 5. Fault 6. Shear 7. Fracture 8. Vein 9. Dyke 10.
# 41N/795W						
# 44N/79011W	X	X		X		
#						
#						
#						
#						
#						

Sample	VEINS Stringers	Vein	Stockwork	Type	Amount	Width (m)	Length (m)
# 41N/795W							
# 44N/79011W							
#							
#							
#							
#							
#							

Sample	METALLIC MINERALS % Pyrite	Pyrrhotite	Chalcopyrite	Galena	Sphalerite	Arsenopyrite	Molybdenite	Total	GOLD	ANALYSES Au ppb	Ag ppm	Cu ppm	ppm	ppm
# 41N/795W	tr													
# 44N/79011W														
#														
#														
#														
#														
#														

COMMENTS:

ROCK SAMPLES DAVINCI 1993

① WEAK ② MODERATE ③ STRONG ④ INTENSE (1) indicates number- eg one "vein"

SAMPLE DESCRIPTION	TYPE						m		MAIN MINERALS %							ALTERATION									OXIDES				ATTITUDE	VEINS							METALLIC MINERALS %								GOLD	ANALYSES				
1993 AG SERIES	FLOAT/TALUS	LOCAL	OUTCROP/SUB.	COMPOSITE	CHIP	GRAB	LENGTH	WIDTH	Quartz	Feldspar	(Plagioclase)	Hornblende	Biotite	Chlorite	Carbonate	GENERAL	CHLORITE	EPIDOTE	CARBONATE	SILICA	POTASSIUM	CLAY	SERICITE	BLEACHED	"LIMONITE"	MANGANESE	MALACHITE	Magnetite %	1. CONTACT 2. BEDDING 3. FOLIATION 4. CLEAVAGE 5. FAULT 6. SHEAR 7. FRACTURE 8. VEIN 9. DYKE 10.	STRINGERS	VEIN	STOCKWORK	TYPE	AMOUNT	WIDTH (m)	LENGTH (m)	Pyrite	Pyrrhotite	Chalcopyrite	Galena	Sphalerite	Arsenopyrite	Molybdenite	TOTAL		Au ppb	Ag ppm	Cu ppm	ppm	ppm
# 3R Chert/Chalcedonic Quartz -m-dk gy, mass chert/chalcedonic q (v finely crystalline calc) & strong calc hairline fract; also dk gy mass limestone c̄ dk gy indistinct masses; may represent i sil' bst or cherty bst; locally distinct-vague flow # lines; v. minor elongated masses of possible lt. gn masses serp nonmagn., nil sulfides/metallics several small blds/cobbles	F	x				x																																												
# 4R Chert & Limestone - irregularly interlaminated/globby lst/chert; lst gy-pinkish-buff-dk reddish, mass locally c̄ chert/chalcedonic fine ension gashes; chert dk-med eddish-purplish-brownish-wht, rypto/chalcedonic, locally c̄ v. fine # drusy fract fillings; 1 med bld.	F					x																																													
# 5R Chert & Limestone - similar to G4R but lst. med-strongly veathered, fine-coarse boxwork hert - dk gy to blk, w-m bx'd cut by lt-red chalcedonic str/vns ppears as alteration zone, pervasive along original fract. boxwork # remnants = silty sections noncalc, brownish; spotty dk orange rust & brn rust	F	x				x																																													
# 6R Chert & Limestone - interlam. & globby mix; gy-wht chert, m to strongly bx'd by parallel, q str & il along fine fract; q crypto ht-clear, mass; remnant small lobs of lst; strongly weathered out in some sections .. creating a																																																			

COMMENTS: boxwork, nonmagn, nil sulfides, one small bld/large cobble

ROCK SAMPLES

DAVINCI 1993

① WEAK ② MODERATE ③ STRONG ④ INTENSE (1) indicates number - eg one "vein"

SAMPLE DESCRIPTION	TYPE						m		MAIN MINERALS %							ALTERATION									OXIDES				ATTITUDE	VEINS							METALLIC MINERALS %								GOLD	ANALYSES				
1993 SAMPLES	FLOAT/TALUS	LOCAL	OUTCROP/SUB.	COMPOSITE	CHIP	GRAB	LENGTH	WIDTH	Quartz	Feldspar	(Plagioclase)	Hornblende	Biotite	Chlorite	Carbonate	GENERAL	CHLORITE	EPIDOTE	CARBONATE	SILICA	POTASSIUM	CLAY	SERICITE	BLEACHED	"LIMONITE"	MANGANESE	MALACHITE	Magnetite %	1. CONTACT 2. BEDDING 3. FOLIATION 4. CLEAVAGE 5. FAULT 6. SHEAR 7. FRACTURE 8. VEIN 9. DYKE 10.	STRINGERS	VEIN	STOCKWORK	TYPE	AMOUNT	WIDTH (m)	LENGTH (m)	Pyrite	Pyrrhotite	Chalcopyrite	Galena	Sphalerite	Arsenopyrite	Molybdenite	TOTAL	GOLD	Au ppb	Ag ppm	Cu ppm	ppm	ppm
# 7R Cherty Limestone - lt carb brn on weathered sface, chert/chalcedony c̄ v finely rystalline dominated limestone mix; reddish-near maroon/gy/wht orange brn cherty mix; orange brn near strong v fine fract c̄ carb; # colour variation except for gy & wht appears fract-related	F	x				x																																												
# 8R Limestone/Chert - globby lst chert v. dk gy, local patchy wht; indistinct fine frags?; margins c̄ lst are highly & finely irregular; minor Fe carb/limonite fract fill; local evidence of recryst. of lst., fg c̄ many flashing faces" decussate, 0 to 3 cm away from margin	F	X				x																																												
# 9R Limestone/Chert - gy to reddish lst mixed c̄ wht-buff gy to reddish chert; represents sil lst? milky, vuggy, somewhat rotted looking q vn? max 1.5 cm wide, nil sulfides local faint spotty lt. orange rust as fine/small patches.	F	x				x																																												
# 10R CHERT - red, v. small cobbles, v. angular; v fine irreg indistinct layering/banding of clear & wht q; lenses & vugs some c̄ remnant carb; locally 45% carb; ninor fract fillings & vugs c̄ (wht) clear rypto & drusy q; 5 v. small rocks	F	x				x																																												
# 11R FETID 'ALTERED' LIMESTONE globby masses Ank c̄ finely crystalline mass cal; s pinkish weathering=Mn 0-45% blk carbonaceous? fetid masses & lenses, blotches, pods, patches; fetid only when freshly broken; fresh surface blk, yellow, lt. brown & buff	T					X																																												
# 12R CARBONATE Bx - carb matrix frags of blk, gy & red chert, blk & gy dominate; rare spotty limonite, rare dk red hematite seams	F					X		15cm min																																										

COMMENTS:

ROCK SAMPLES

DAVINCI 1993

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① WEAK ② MODERATE ③ STRONG ④ INTENSE (1) indicates number- of the "vein"

SAMPLE DESCRIPTION	TYPE						m		MAIN MINERALS %							ALTERATION									OXIDES				ATTITUDE	VEINS							METALLIC MINERALS %								GOLD	ANALYSES				
1993 SAMPLES	FLOAT/TALUS	LOCAL	OUTCROP/SUB.	COMPOSITE	CHIP	GRAB	LENGTH	WIDTH	Quartz	Feldspar	(Plagioclase)	Hornblende	Biotite	Chlorite	Carbonate	GENERAL	CHLORITE	EPIDOTE	CARBONATE	SILICA	POTASSIUM	CLAY	SERICITE	BLEACHED	"LIMONITE"	MANGANESE	MALACHITE	Magnetite %	1. CONTACT 2. BEDDING 3. FOLIATION 4. CLEAVAGE 5. FAULT 6. SHEAR 7. FRACTURE 8. VEIN 9. DYKE 10.	STRINGERS	VEIN	STOCKWORK	TYPE	AMOUNT	WIDTH (m)	LENGTH (m)	Pyrite	Pyrrhotite	Chalcopyrite	Galena	Sphalerite	Arsenopyrite	Molybdenite	TOTAL	GOLD	Au ppb	Ag ppm	Cu ppm	ppm	ppm
# 13R CHERTY QUARTZ - v.dk gy & wht; local fine banding/laminae? minor fine angular v.dk gy frags; fine irreg. mass orange rust to reddish rust appears along fine fract; salmon coloured irreg stained; 10-15% cal 5 rx over 2m²	T					x																																													
# 14R CHERT - dominantly m-dk gy chert c̄ lesser lt.gy much lesser wht - med fract & irregular to angular lenses c̄ remnant carbonate; mod red rusty brn & hematitic looking rust commonly perv. surface coating spots & blotches 6 rx over 2m²	T					x																																													
# 15R BRECCIATED CHERTY LIMESTONE banded cherty limestone, locally bx'd & recemented c̄ carbonate matrix; weathers w-strong rough irregular, med gy; cementation often incomplete leaving angular, irreg. vugs			O			x																																													
# 18R CARBONATE BRECCIA - angular bld, strongly developed boxwork; yellowish buff c̄ local areas of strong boxwork, rare orange rusty: v.fg angular vugs (former sulfides?); matrix in part v finely crystalline wht & clear q; habit/texture suggests possible flooding after dissolution of carbonate fragments.	F	x				x																																													
#																																																			
# 21R CHERT - buff, smooth-w rough, weakly fract; fresh, mixed colouration brnish gy dominates c̄ wht blotchy dark red; possibly dk gy chert frags, later fract. filled with patchy carb; 1 angular cobble	F					x																																													
# 22 BANDED CHERT - buff-lt gy-bluish gy; well fract patchy layer: ±4cm thick varies to mass c̄ vague laminae/banding Mass, blue gy, gnish-yellowish gy; spotty frags, v.dk gy, ± sporadic Cu oxide coating → groundwater, lt-dk red orange brn rust along irreg fract, 1 rock.	T					x																																													

COMMENTS:

ROCK SAMPLES

DAVINCI 1993

Page 4 of 4

① WEAK ② MODERATE ③ STRONG ④ INTENSE (1) Indicates number- eg one "vein"

	TYPE						m		MAIN MINERALS %							ALTERATION									OXIDES				ATTITUDE	VEINS							METALLIC MINERALS %									ANALYSES				
SAMPLE DESCRIPTION	FLOAT/TALUS	LOCAL	OUTCROP/SUB.	COMPOSITE	CHIP	GRAB	LENGTH	WIDTH	Quartz	Feldspar	(Plagioclase)	Hornblende	Biotite	Chlorite	Carbonate	GENERAL	CHLORITE	EPIDOTE	CARBONATE	SILICA	POTASSIUM	CLAY	SERICITE	BLEACHED	"LIMONITE"	MANGANESE	MALACHITE	Magnetite %	1. CONTACT 2. BEDDING 3. FOLIATION 4. CLEAVAGE 5. FAULT 6. SHEAR 7. FRACTURE 8. VEIN 9. DYKE 10.	STRINGERS	VEIN	STOCKWORK	TYPE	AMOUNT	WIDTH (m)	LENGTH (m)	Pyrite	Pyrrhotite	Chalcopyrite	Galena	Sphalerite	Arsenopyrite	Molybdenite	TOTAL	GOLD	Au ppb	Ag ppm	Cu ppm	ppm	ppm
# 23R TUFF? - buff-lt bluishgy silty limestone or limey tuff? vague remnant foliation? ⇒ felted texture; irregular, elongated? masses gy chert & red chert ⇒ hem; diss spotty intense rust spots to 2mm tend to be fract assoc., locally 3mm not abundant; 1 rock	F					x																																												
#																																																		
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COMMENTS:

APPENDIX IV

Magnetic Survey Data, Methods and Instrumentation

MAGNETIC SURVEY DATA

DATE Aug. 17 1994
OPERATOR L.Grexton
INSTRUMENT Scintrex MP2
BASE STATION 11:05AM 57077
4:36PM 57092

PROPERTY DAVINCI
NTS 93I/13E

LOCATION	Time	Reading	Correction	Corrected Reading	Topography	LOCATION	Time	Reading	Correction	Corrected Reading	Topography
BL800W						L36N					
40N	11:09	57062	+9	57071	1286	782W	1259	57166	+5	57171	1219
39N	11:13	044	+9	053	1290	781W	1:06	57178	+4	182	1158
38N	11:16	024	+9	034	1305	78025W	1:09	206	+4	210	1140
37N	11:19	020	+9	029	1305	780W	1:11	188	+4	192	1146
36N	11:24	57006	+9	015	1323	77975W	1:13	163	+4	167	1147
L36N	11:28	56996	+9	005	1323	77950W	1:14	167	+4	171	1147
35N	11:30	57004	+8	012	1317	779W	1:15	171	+4	175	1140
						778W	1:19	175	+4	179	1109
L36N						777W	1:21	149	+4	153	1103
800W	1132	57002	+8	57010	1323	77675W	1:22	156	+4	160	1103
799W	11:34	910	+8	018	1323	776W	1:27	150	+4	154	1100
798W	11:35	058	+8	066	1305	775W	1:32	142	+3	145	1109
797W	11:40	019	+8	027	1311						
796W	11:45	031	+8	039	1286	L40N					
79550W	11:48	050	+8	058	1292	779W	2:04	57224	+2	57224	1170
795W	11:50	076	+8	084	1274	Repeat	2:23	215	+2		
794W	11:55	106	+8	114	1262	Repeat	3:05	213			
79350W	11:54	088	+8	096	1256	778W	2:25	211	+2	213	1146
793W	11:59	117	+8	125	1264	777W	2:28	205	+2	207	1134
79250W	12:01	099	+7	106		77675W	2:30	167	0	167	
792W	12:04	122	+7	129	1280	77650W	2:32	166	0	166	1146
79150W	12:05	139	+7	146		77625W	2:34	164	0	164	1147
791W	12:06	157	+7	164	1268	776W	2:35	187	0	187	1152
79050W	12:11	188	+7	195		Repeat	2:51	190	0		
790W	12:13	244	+7	251	1244	77591W	2:50	296	0	296	
78975W	12:20	307	+7	314		77582W	2:48	382	0	382	
78950W	12:22	376	+7	383		77575W	2:47	589	0	589	1164
78925W	12:24	727	+7	734		Repeat	2:37	584	0		
78912W	12:25	580*	+7	613		77567W	2:49	698	0	698	
Repeat	12:28	632	+7			77550W	2:38	232	0	232	
789W	12:26	058	+7	065	1231	77525W	2:39	158	0	158	1158
78889W	12:30	034	+5	039	1285	775W	2:41	125	0	125	
78850	12:32	125	+5	139	1219	780W	3:08	223	-1	222	
788W		144	+5	149	1213	781W	3:10	238	-1	237	1158
78750W	12:35	125	+5	130		78225W	3:19	229	-1	228	1177
787W	12:39	136	+5	141	1219	783W	3:22	302	-1	301	1189
78650W		156	+5	161		78350W	3:25	231	-1	230	1213
786W	12:44	184	+5	189	1189	784W	3:35	223	-2	221	1250
785W	12:48	156	+5	161	1201	785W	3:36	203	-2	201	1256
784W	12:51	160	+5	165	1219	786W	3:38	208	-2	206	1262
783W	1255	162	+5	167	1244	787W	3:42	207	-2	205	1250

All readings in gammas.
Elevations in m a.s.l.

COMMENTS:

* VALUES AVERAGED FOR PLOTTING

MAGNETIC SURVEY DATA

DATE Aug. 17 1994
OPERATOR L.Grexton
INSTRUMENT Scintrex MP2
BASE STATION

PROPERTY DAVINCI
NTS 93I/13E

LOCATION	Time	Reading	Correction	Corrected Reading	Topography	LOCATION	Time	Reading	Correction	Corrected Reading	Topography
L40N											
788W	3:45	57211	-2	57209	1244						
78825W	3:47	202	-2	202	1241						
78850W	3:49	188	-2	186	1237						
78875W	3:50	176	-2	174	1244						
789W	3:52	204	-2	202	1245						
78925W	3:53	188	-2	186	1245						
78950W	3:54	221	-2	219	1244						
790W	3:56	205	-2	203	1245						
79050W	4:00	178	-4	174	1245						
791W	4:02	168	-4	164	1247						
792W	4:04	148	-4	144	1244						
79250W	4:06	147	-4	143	1241						
793W	4:08	185	-4	181	1244						
79325W	4:10	137	-4	133	1250						
79350W	4:13	075	-4	071	1262						
79375W	4:14	032	-4	028	1266						
794W	4:15	56952*	-4	56958	1268						
79412W	4:18	57251*	-4	57247							
79425W	4:19	57359*	-4	57354							
79437W	4:20	57273	-5	57268							
79450W	4:21	237	-5	232							
79475W	4:22	270	-5	265							
795W	4:23	251	-5	246							
796W	4:25	129	-5	124							
797W	4:30	115	-5	110							
79775W	4:35	084	-5	079							
799W	–	–	–								
800W	4:38	070	-5	065							

All readings in gammas.
Elevations in m a.s.l.

COMMENTS:

* Reading verified (repeatable)

MAGNETIC SURVEY DATA

DATE Aug. 18 1994
OPERATOR L.Grexton
INSTRUMENT Scintrex MP2
BASE STATION 8:00AM 57079
8:20AM 57079
4:59 PM 57085

PROPERTY DAVINCI
NTS 931/13E

LOCATION	Time	Reading	Correction	Corrected Reading	Topography	LOCATION	Time	Reading	Correction	Corrected Reading	Topography
L790W						L790W					
36N	8:50	57250	+7	57257		52N	10:19	57290	+6	57296	1286
3625N	–	264	+7	271							
3650N	8:53	305	+7	312	1240	L52N					
3675N	–	492	+7	499	1240	790W	10:20	57393	+6	57399	
37N	8:54	483	+7	490	1240	Repeat	10:25	57394	+6		
3725N	–	471	+7	478		78950W	–	393	+6	399	1286
3750N	9:02	113	+7	120	1219	789W	10:35	395	+6	401	1286
3775N	9:04	041	+7	048	1213	78850W	–	382	+6	389	
38N	9:05	087	+7	094	1219	788W	10:40	396	+6	402	1305
3825N	9:07	113	+7	120	1231	78750W		368	+6	374	
3850N	9:08	130	+7	137	1232	787W	10:43	374	+6	380	1298
3875N	9:09	140	+7	147	1244	78650W	10:44	368	+6	374	1274
39N	9:11	158	+7	165	1244	786W	10:46	384	+6	390	1274
3950N	9:13	184	+7	191	1244	785W	10:49	364	+6	370	1274
40N	9:15	214	+7	221		784W	10:52	371	+6	377	1311
41N	9:19	199	+7	206	1219	78350W	10.50	335	+6	341	1317
4150N	9:21	213	+7	220	1231	783W	10:57	302	+6	308	1335
42N	9:23	289	+7	296	1231	78250W	11:00	288	+5	293	1359
4225N	–	265	+7	272		782W	11:02	277	+5	282	1360
4250N	9:25	280	+7	287	1237	L782W	11:10	288	+5	293	1317
43N	9:28	264	+7	271	1237	78150W	11:12	310	+5	315	
4375N	9:31	287	+7	294	1250	78125W	11:14	294	+5	299	1311
44N	9:32	278	+7	285	1256	781W	–	292	+5	297	
4450N	9:39	267	+7	274	1305	78050W	11:17	240	+5	245	1298
45N	9:43	287	+7	294	1323	780W	11:20	220	+5	225	1274
4575N	9:45	304	+7	311	1329	77925W	11:25	189	+5	194	1219
46N	–	292	+7	298	1347	779W	11:27	209	+5	214	1195
4650N	9:49	302	+7	309		77850W	11:40	197	+5	202	1170
47N	9:54	322	+7	329	1305	778W	11:42	174	+5	179	1195
L48N	9:56	331	+7	338	1280	77775W	11:43	144	+5	149	1207
4750N	–	337	+7	341		77725W	11:45	146	+5	151	
4775N	9:59	372	+7	379	1244	777W	–	131	+5	135	1225
48N	10:02	362	+6	368	1244	77650W	11:47	098	+5	103	1237
4825N	–	356	+6	362		776W	–	088	+5	093	1244
4875N	–	356	+6	362		77550W	11:50	070	+5	075	1240
49N	10:07	366	+6	372	1250	775W	11:52	052	+5	057	1231
4950N	–	381	+6	387	1262						
50N		381	+6	387	1274	L48N					
51N	10:13	392	+6	398	1274	777W	12:07	57182	+4	57186	1164
5150N	10:16	426	+6	432	1271	77750W	12:09	189	+4	193	1167
5175N	–	408	+6	414	1274	778W	12:11	205	+4	209	1195

All readings in gammas.
Elevations in m a.s.l.

COMMENTS:

MAGNETIC SURVEY DATA

DATE Aug. 18 1994
OPERATOR L.Grexton
INSTRUMENT Scintrex MP2
BASE STATION

PROPERTY DAVINCI
NTS 931/13E

LOCATION	Time	Reading	Correction	Corrected Reading	Topography	LOCATION	Time	Reading	Correction	Corrected Reading	Topography
L48N						L44N					
778 (Repeat)	12:35	57207	+4			788W	2:41	57270	+3	57273	1244
77825W	12:37	230	+4	234	1189	78750W	–	268	+3	271	
77850W	12:39	239	+4	243	1170	787W	2:42	278	+3	281	1225
77875W	12:40	210	+4	214	1146	786W	2:46	281	+3	284	1207
779W	12:41	222	+4	226	1134	785W	2:49	268	+3	271	1201
77925W	12:42	276	+4	280	1109	78450W	2:53	278	+3	281	1201
77950W	–	289	+4	293	1109	784W	2:55	279	+3	282	1189
780W	12:47	252	+4	256	1109	783W	2:59	294	+3	297	1172
78025W	12:50	277	+4	281	1134	78250W	3:01	279	+3	282	
78050W	12:51	293	+4	307	1140	782W	3:03	277	+3	280	
78062W	–	380	+4	384		781W	3:06	270	+3	273	1177
78075W	12:55	474	+4	478	1146	780W	3:10	267	+3	270	1164
78088W	12:57	589	+4	593		78050W	3:11	273	+3	276	
781W	12:59	637	+4	641	1146	779W	3:18	255	+3	258	1164
78112W	–	485	+4	489		77850W	3:19	278	+3	281	1165
78125W	1:03	385	+4	389	1164	778W	–	300	+3	303	
78150W	1:06	326	+4	330	1189	77775W	–	298	+3	301	
78175W	–	290	+4	299	1213	77762W	–	594	+3	597	335 AVERAGE
782W	1:09	294	+4	298	1184	77775W	3:24	366	+3	369	
78225W	1:11	338	+4	342	1184	790W	4:00	268	+2	270	
78250W	–	354	+4	358		791W	4:15	261	+2	263	1274
783W	1:15	348	+4	352	1170	792W	4:20	240	+2	242	1329
78350W	1:19	353	+4	357	1184	793W	4:22	223	+2	225	1317
784W	1:22	332	+4	336	1201	794W	4:24	211	+2	213	1292
78450W	1:25	331	+4	335	1219	795W	4:28	201	+2	203	1274
785W	1:33	329	+4	333	1244	796W	4:31	212	+2	214	
78550	1:35	313	+4	314	1280	797W	4:34	177	+2	179	1280
786W	1:41	324	+4	328	1298	798W	4:37	183	+2	185	1292
78650W	–	322	+4	326	1305	799W	4:40	155	+2	157	1305
787W	–	321	+4	325		800W	4:46	117	+2	119	1311
78750W	1:45	328	+4	332	1298						
788W	1:49	330	+4	334	1292	BL800W					
78850W	1:51	349	+4	354	1274	43N		57132	+2	57134	
789W	1:54	347	+4	351	1280	42N		105	+1	106	1296
L790W	1:58	325	+4	329	1305	41N		079	+1	080	
						40N		079	+1	080	
L44N											
790W	2:28	57269	+3	57272							
789W	2:33	254	+3	257	1244						
78875	2:35	271	+3	274							
78850	2:39	246	+3	249							

All readings in gammas.
Elevations in m a.s.l.

COMMENTS:
L48N/793+75W 57299 Corrected +2 ⇒ 57301

MAGNETIC SURVEY DATA

DATE Aug. 19 1994
OPERATOR L.Grexton
INSTRUMENT Scintrex MP2
BASE STATION 8:00 AM 57086
5:35PM 57088

PROPERTY DAVINCI NTS 931/13E

LOCATION	Time	Reading	Correction	Corrected Reading	Topography	LOCATION	Time	Reading	Correction	Corrected Reading	Topography
L800W						L78950W					
41N	8:30	57076	0	57076		59N	11:19	57248	0	57248	
L44N	8:42	57116	0	116							
44N	8:46	120	0	120	1317	L60N					
45N	8:50	149	0	149	1317	789W	11:22	57218	0	218	
4550N	–	147	0	147	1311	Repeat	11:30	218	0		
46N	8:54	187	0	187		788W	–	222	0	222	1469
4650N	–	160	0	160		787W	11:40	226	0	226	1487
47N	8:56	152	0	152	1329	786W	11:43	191	0	191	1523
48N	9:03	172	0	172	1372	78550W	11:45	194	0	194	1524
49N	9:07	150	0	150	1353	785W	11:47	206	0	206	1505
50N	9:15	174	0	174	1426	78450W	11:49	182	0	182	1487
5150N	–	159	0	159		784W	11:51	149	0	149	1469
51N	9:20	146	0	146	1469	78350W	11:53	150	0	150	1445
L52N	9:30	168	0	168	1487	783W	11:58	162	0	162	1420
52N	9:35	160	0	160	1523	78275W	–	129	0	129	
53N	9:42	147	0	147		78250W	12:02	108	0	108	1390
54N	9:45	146	0	146		78225W	–	103	0	103	
55N	9:49	137	0	137		782W	–	–			
56N	9:52	128	0	128		78175W	12:05	092	0	092	1378
57N	9:55	121	0	121		78150W	12:08	093	0	093	1359
58N	9:57	104	0	104		781W	–	085	0	085	
59N	10:01	088	0	088		78050W	–	089	0	089	
60N	10:05	083	0	083		780W	12:12	096	0	096	1323
						77950W	–	038	0	038	1298
L60N						779W	12:30	016	0	016	1329
799W	10:28	57107	0	57107		778W	12:33	56984	0	56984	1341
798W	10:30	138	0	138	1523	777W	12:35	57019	0	57019	1335
79750W	–	148	0	148	1517	Repeat	12:49	57021	0		
797W	10:34	155	0	155	1511	77675W	–	56943	0	56943	
796W	10:40	176	0	176	1499	77650W	–	56955	0	56955	
795W	10:45	196	0	196	1511	77625W	–	56945	0	56945	
79450W	–	211	0	211	1493	776W	12:38	56938	0	56938	1329
794W	10:52	219	0	219	1499	77550W	12:40	56936	0	56936	
793W	1058	199	0	199		775W	12:42	56920	0	56920	1329
792W	11:01	203	0	203	1523						
791W	11:03	215	0	215	1517	L56N					
790W	11:09	220	0	220	1523	775W	1:00	56979	0	56979	1262
						77575W	–	56985	0	56995	
L78950W						776W	1:04	57056	0	57056	1274
60N	11:16	215	0	215	1505	77650W	–	57031	0	57031	
5925N	11:20	225	0	225	1499	777W	1:07	57040	0	57040	1271

All readings in gammas.
Elevations in m a.s.l.

COMMENTS: L60N/800W 57079 +0 Correction

MAGNETIC SURVEY DATA

DATE Aug. 19 1994
OPERATOR L.Grexton
INSTRUMENT Scintrex MP2
BASE STATION

PROPERTY DAVINCI NTS 931/13E

LOCATION	Time	Reading	Correction	Corrected Reading	Topography	LOCATION	Time	Reading	Correction	Corrected Reading	Topography
L56N						L56N					
777W	1:28	57042	0	57042	1271	791W	3:43	57336	-2	57334	1439
77750W	1:34	049	0	049	1256	79150W		334	-2	332	
778W	1:37	109	0	109	1225	792W	3:45	333	-2	331	1445
77825W	–	091	0	091		79250W		338	-2	336	
779W	1:41	070	0	070	1219	793W	3:49	348	-2	346	1451
77950W	1:46	125	0	125	1219	79375W	3:53	368	-2	366	1402
780W	1:51	151	0	151	1262	794W	3:56	355	-2	353	1408
78050W	1:57	188	0	188	1292	79450W	4:00	334	-2	332	1433
781W	2:00	163	0	163	1311	795W	4:05	305	-2	303	1469
78150W	2:03	135	0	135	1329	79550W	4:08	292	-2	290	1481
78175W	2:08	328	0	328		796W	4:12	269	-2	267	1517
782W	2:10	420	0	420	1347	79650W	4:16	239	-2	237	1542
78225W	–	327	0	327	1365	797W	4:20	221	-2	219	1573
78237W	–	238	0	238		798W	4:25	191	-2	189	1603
78250W	2:14	227	0	227	1384	799W	4:30	161	-2	159	1633
78262W	–	221	0	221		L800W	4:33	132	-2	130	1646
78275W	2:16	214	0	214	1395						
783W	2:18	232	0	232	1365	BL800W					
78325W	–	238	0	238	1359	51N	4:50	57147	-2	57145	
78350W	2:22	237	0	237	1365	47N	5:04	57147	-2	145	
78375W	2:23	285	0	285	1359						
784W	–	296	0	296							
78425W	2:25	314	0	314	1354						
78450W	–	307	0	307	1360						
78475W	2:29	332	0	332	1365						
785W	2:30	326	0	326	1365						
Repeat	2:43	326	0								
78550W	–	345	0	345							
786W	2:47	343	0	343	1372						
78650W	–	314	0	314							
787W	–	329	0	329	1390						
788W	2:52	326	0	326	1390						
789W	2:55	318	0	318	1396						
790W	2:59	322	0	322	1426						
L790W	3:00	322	0	322							
L790W											
56N	3:06	57326	0	57326	1433						
57N	3:10	309	0	309	1457						
58N	3:14	280	0	280	1493						
55N	3:22	341	0	341	1414						

All readings in gammas.
Elevations in m a.s.l.

COMMENTS: L56N/799+50W 57148
L56N/BL800W 1646 m asl

MAGNETIC SURVEY DATA

DATE Aug. 24/1994
OPERATOR L.Grexton
INSTRUMENT Scintrex MP2
BASE STATION 7:30AM 57090
11:00AM 57063
105 PM 57062

PROPERTY DAVINCI NTS 93I/13E

LOCATION	Time	Reading	Correction	Corrected Reading	Topography	LOCATION	Time	Reading	Correction	Corrected Reading	Topography
BL800W						L39N					
38N	11:12	57003	+28	57031		790W		56972	+28		
L38N						L790W					
800W	11:15	57000	+28	57028		3750N		57079	+28	57107	
79950		57018	+28	046	1308						
799W	11:18	021	+28	049	1323	L39N					
79850W		028	+28	056		79025	12:01	57017	+29	046	
798W	11:21	035	+28	063	1323	790W		047	+29	076	
79750W		047	+28	075		78950W		073	+29	102	1231
797W	11:23	052	+28	080	1311	789W		098	+29	127	1237
79650W		073	+28	101	1305	78850W	12:08	120	+29	149	
796W	11:25	065	+28	093	1298						
79550W	11:28	080	+28	108	1286						
79525W	11:29	094	+28	122	1289	L41N					
795W		112	+28	140	1277	L790W	12:20	57214	+29	57243	
79450W	11:34	136	+28	164	1268	790W	12:25	192	+29	221	1244
794W	11:35	166	+28	194	1262	79050W		190	+29	219	
79375W		189	+28	217	—	791W	1229	172	+29	201	1262
79350W	11:37	230	+28	258	1259	79150W		152	+29	181	
79337W		274	+28	302		792W	12:32	145	+29	174	1268
79325W		344	+28	372		79250W		130	+29	159	
79312W		373	+28	399		793W	12:34	125	+29	154	1274
793W	11:40	359	+28	387	1244	79350W		126	+29	155	
79287W		259	+28	387		794W		097	+29	126	1280
79275W		233	+28	261		79450W		57055	+29	57084	
79262W		188	+28	216		79475W		56999	+29	57028	
79250W	11:42	167	+28	295	1250	79487W	12:40	57161	+29	57190	1286
79225W		197	+28	225		795W		364	+29	393	
79212W		210	+28	238		79512W		334	+29	363	
792W	1145	259	+28	287	1253	79525W		333	+29	362	
79187W		365	+28	393		79537W		313	+29	342	
79175W		483	+28	511		79550W		241	+29	270	
79162W		473	+28	501		79562W		157	+29	186	
79150W	1148	499	+28	527	1253	79575W		146	+29	175	
79137W		330	+28	358	1253	796W	12:45	142	+29	171	1292
79125W		228	+28	256		79650W		132	+29	161	
791W		253	+28	281	1274	797W	1249	107	+29	136	1292
79087W		57345	+28	373		79750W		097	+29	126	
79075W	11:52	56663	+28	56691	1268	798W	1254	101	+29	130	1286
79062W	11:56	56848	+28	56876		79850W		105	+29	134	
79050W		57240	+28	57268		799W	-	-	-		

All readings in gammas.
Elevations in m a.s.l.

COMMENTS:

MAGNETIC SURVEY DATA

DATE Aug. 20 1994
OPERATOR L.Grexton
INSTRUMENT Scintrex MP2
BASE STATION 8:00AM 57084
8:20AM 57086
12:20 57068

PROPERTY DAVINCI NTS 93I/13E

LOCATION	Time	Reading	Correction	Corrected Reading	Topography	LOCATION	Time	Reading	Correction	Corrected Reading	Topography
BL800W	9:10	57167	+5	57172		L48N					
52N	9:20	164	+5	169		79050W		57330	+13	57343	
						791W	11:11	316	+13	329	1274
L52N						79150W		314	+13	327	
799W	9:22	57183	+5	57188	1493	792W	11:15	304	+13	317	1268
79850W		187	+5	192	1511	79250W		310	+13	323	
798W	9:24	184	+5	189	1517	793W		313	+13	326	1296
79725W		209	+5	214	1517	794W		278	+13	291	
797W	9:29	211	+5	216	1517	79450W	11:25	260	+13	273	1335
79675W		234	+5	239	1499	795W		244	+13	257	1329
79650W		231	+7	238	1481	79550W	11:30	228	+15	243	1347
796W	9:33	265	+7	272	1445	796W		215	+15	230	1372
79575W		269	+7	276		79650W	11:32	206	+15	221	
79550W	9:40	286	+7	293	1420	797W	11:34	192	+15	217	1372
79525W		283	+7	290		79750W		184	+15	199	
79512W		298	+7	305		798W	11:43	181	+15	196	1378
795W	9:42	313	+7	320	1402	79850W		164	+15	179	
79475W		318	+7	325		799W	11:46	144	+15	159	1378
79450W	9:47	301	+7	308	1384	79950W		146	+15	161	
79425W		320	+7	327	1384	800W	11:50	146	+15	161	1384
79350W		329	+7	336	1391						
793W		341	+7	348	1335						
79250W	9:55	361	+7	368	1317						
792W	9:57	373	+7	380	1317						
79150W	9:59	393	+7	400	1305						
791W		412	+9	421	1286						
79075W		420	+9	429							
79050W		391	+9	400							
79025W		392	+9	401							
790W		386	+9	395	1286						
Repeat		384	+9	393	1286						
L790W											
5250N	10:20	57386	+9	57395							
53N	10:25	365	+9	374	1353						
5350N		365	+11	376							
54N		377	+11	388	1378						
5425N	10:40	369	+11	380	1384						
L48N											
790W	1058	57316	+11	57327							
Repeat	11:05	316	+13								

All readings in gammas.
Elevations in m a.s.l.

COMMENTS: L48N/793+75W 57299 +13γ ⇒ 57312γ
L52N/794W 57320 +7γ ⇒ 57327γ
L52/800W 57165 +5γ ⇒ 57170γ

* AT L48N/790W
CABLE BROKE & WAS REPAIRED

MAGNETIC SURVEY DATA

DATE Aug. 24 1994
OPERATOR L.Grexton
INSTRUMENT Scintrex MP2
BASE STATION

PROPERTY DAVINCI NTS 931/13E

LOCATION	Time	Reading	Correction	Corrected Reading	Topography	LOCATION	Time	Reading	Correction	Corrected Reading	Topography
L39N											
799W	–	–									
79950W	1259	57064	+29	57093							
800W	1:01	57043	+29	072							

All readings in gammas.
Elevations in m a.s.l.

COMMENTS:

MAGNETIC SURVEY DATA

DATE Aug. 25 1994
OPERATOR L.Grexton
INSTRUMENT Scintrex MP2
BASE STATION 7:30 AM 57085

PROPERTY DAVINCI NTS 931/13E

LOCATION	Time	Reading	Correction	Corrected Reading	Topography	LOCATION	Time	Reading	Correction	Corrected Reading	Topography
HILLTOP											
N OF HAT	7:13	56956	+1	56957							
CREEK ROAD											
1.5KM E											
ON N SIDE	756	56842	+1	56843							
HWY 99N											
1.75KM W											
ON N SIDE	8:05	56902*	+1	56903							
HWY 99N											
2.5KMW	8:08	56873*	+1	56874							
2.7km W	8:15	56888*	+1	56889							

All readings in gammas.
Elevations in m a.s.l.

COMMENTS:

* Likely Interference - Hydrolines

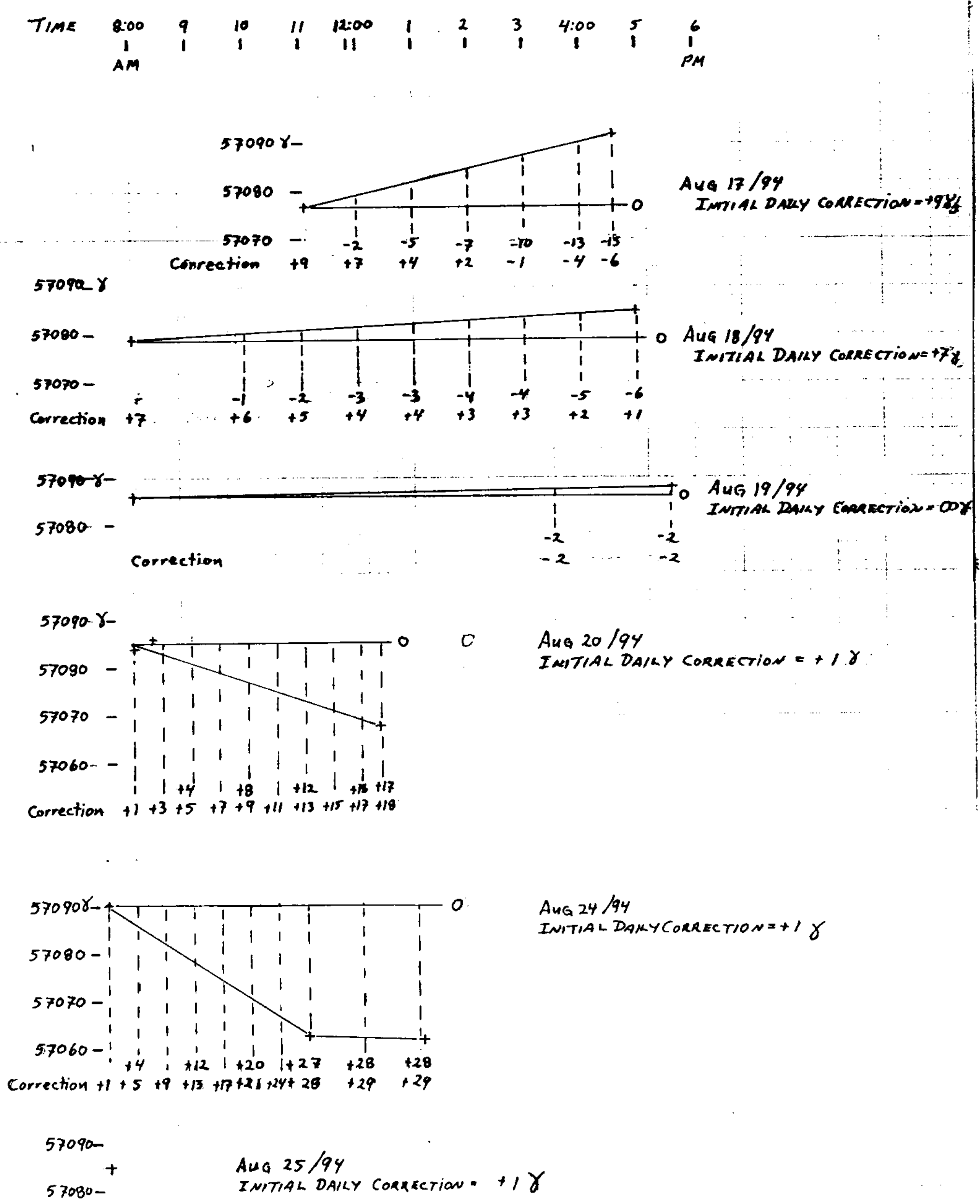
BASE STATION INITIAL DAILY CORRECTION

Assigned Base Station Value= 57086 gammas

Base Station Readings

Aug 17/94	57077 gammas	Correction Required = +9 gammas
Aug 18/94	57079 gammas	Correction Required = +7 gammas
Aug 19/94	57086 gammas	Correction Required = 0
Aug 20/94	57085 gammas	Correction Required = +1 gamma
Aug 24/94	57090 gammas	Correction Required = -4 gamma
Aug 25/94	57085 gammas	Correction Required = +1 gamma

DIURNAL CORRECTION



Aug 17/94
INITIAL DAILY CORRECTION = +9γ

Aug 18/94
INITIAL DAILY CORRECTION = +7γ

Aug 19/94
INITIAL DAILY CORRECTION = 0γ

Aug 20/94
INITIAL DAILY CORRECTION = + 1 γ

Aug 24/94
INITIAL DAILY CORRECTION = +1 γ

Aug 25/94
INITIAL DAILY CORRECTION = +1 γ

MP-2

Portable Proton Precession
Magnetometer

767 700
February 82

1.0 General Information

1.1 Introduction

The MP-2 is a portable proton precession magnetometer. Such instruments utilize the phenomenon of nuclear magnetic resonance to measure the flux density of the total mangetic field.

The MP-2 Sensor consists of a chamber filled with a proton rich fluid such as kerosene enclosed within two wire wound coils. When a current is passed through these coils for a short period of time, a magnetic field is set up which aligns the spinning protons. When this polarizing current is abruptly switched off, the protons begin to precess around the earth's magnetic field and eventually realign with it. This precession induces a small, exponentially decaying, AC signal in the sensor coils whose frequency is proportional to the flux of the ambient magnetic field (23.4874 gammas/Hz). This frequency is measured by the signal processing electronics of the MP-2, converted to a gamma value and presented on the digital display.

The MP-2 is designed for portable magnetic surveying. As no levelling is required, a rapid survey is possible to a high accuracy anywhere on the earth. An optional external battery kit converts the instrument easily for winter use. The sensor is either staff mounted, or carried in a backpack. Two separate attachment joints orient the sensor for either polar or equatorial use.

Coupled with a module into which the MP-2 is easily inserted, the magnetometer can be used as a base station unit for continuous analogue or digital recording. The entire unit of MP-2 and module is called the MBS-2 Magnetic Base Station. Full information on the MBS-2, shown in Figure 1, is available from Scintrex.

The carrying case is designed to serve as a shipping or storage container and should contain the following items:

1 console
1 sensor with cable
1 staff (in lid)
1 harness
1 manual
8 alkaline batteries
8 carbon-zinc batteries
1 spare sensor cable

Optional:
External Battery Kit consisting of:
2 battery cables
1 battery case

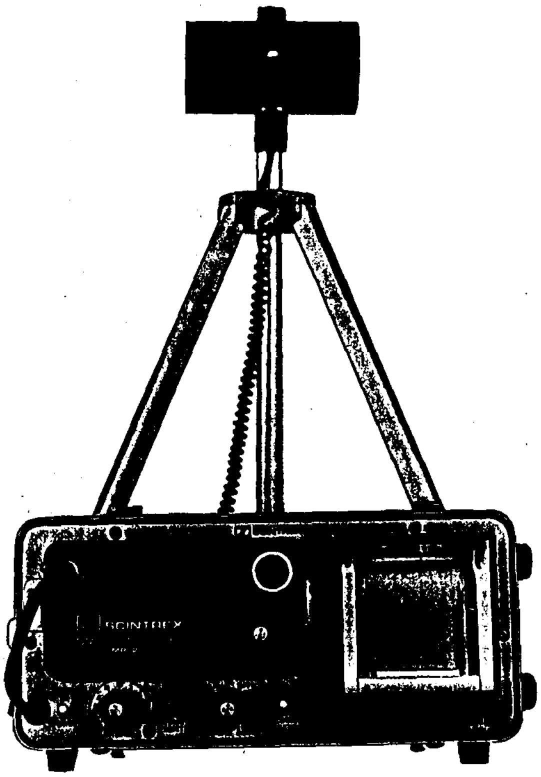


Figure 1
MP-2 with module forming the MBS-2 Base Station Magnetometer

1.2 Magnetic Environment

Figure 2 is a map of the total intensity of the earth's magnet field in kilogammas (kγ). Comparison of the magnitude of these values with those on the Range Switch of the MP-2 indicates th the instrument has a world wide range. The contours on Figure 2 are, however, undisturbed background values which might be altered considerably by localized magnetic bodies. This should be considered when selecting the proper Range Switch setting after entering an unknown area.

Superimposed on the map are two dashed horizontal lines marked ±45°. These are the contours of 45° inclination of the total field. It should be remembered that toward the poles the strongest component of the earth's field is vertical, while between the lines, in equatorial regions, the horizontal component is most important. These facts will be of importance when setting up the instrument as outlined in Section 3.2.

For accurate measurements, the sensor has to be exposed to a "clean" magnetic environment. Objects carried by the operator such as metal parts on clothing, knives, or pencils are frequently magnetic and can severely affect the results, especially when the sensor is carried in the backpack.

To establish if an object is magnetic, the sensor is set up in a stationary position and the readings compared first with the object removed and then with the object in the position with respect to the sensor in which it is to be carried. Various orientations of the object should be tried as certain positions may not affect the reading. Small objects such as a screwdriver, file etc. can give anomalies ranging between 5 and 150 gammas when they are placed within 1 m of the sensor. Large objects such as an automobile or an iron fence could give anomalies between 40 and 2000 gammas when within 10m of the sensor.

1.3 The Magnetic Method

The magnetic method of applied geophysics consists of measuring accurately the resultant magnetic field of the earth's magnetism acting on rock formations having different magnetic properties and configurations. The resultant field is the vector sum of induced and remanent magnetism. Thus, there are three factors, excluding geometrical factors, which determine the magnetic field at any particular locality. These are the strength of the earth's magnetic field, the magnetic susceptibilities of the rocks present and their remanent magnetism.

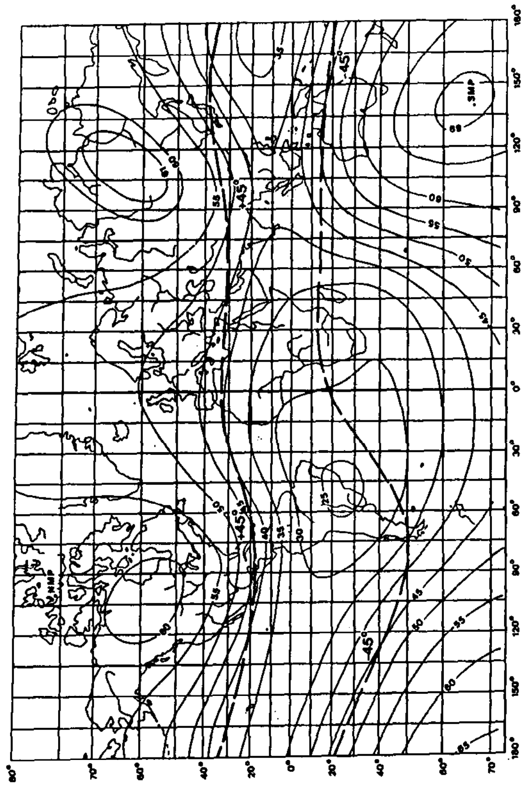


Figure 2
Total magnetic intensity in kilogammas with contours of 45° inclination. In the northern hemisphere, the total field direction is considered to be downwards (positive) and in the southern hemisphere, to be upwards (negative).

The earth's magnetic field can be represented to a close approximation as the field due to a bar magnet situated near the center of the earth. Both the polarity and the orientation of this bar magnet are variable.

The flux lines of the geomagnetic field are vertical at the north and south magnetic poles where the strength is approximately 63,000 γ. In the equatorial region, the field is horizontal and its strength is approximately 30,000 γ. The geomagnetic field is variable in both space and time. The spatial variation has magnitude and direction components and these must be taken into account when magnetic measurements are taken over large areas.

The short term temporal variation is perhaps more troublesome. Significant variations in the earth's magnetic field may occur within periods of seconds, minutes and hours. There are also long term variations extending over months, years and millions of years, but these secular variations can be neglected in magnetic surveys. The magnitude of the short term variations is extremely variable and in the case of sudden magnetic storms, may reach several hundred gammas. This means that in magnetically active areas, it may be necessary to take continuous readings of the geomagnetic field with a base station magnetometer such as the MBS-2, while the magnetic survey is being done. An alternative field procedure is to make periodic repeat measurements at convenient traverse points.

The intensity of magnetization induced in rocks by the geomagnetic field F is given by:

$$\vec{I}_1 = k\vec{F}$$

where $\vec{I}_1$ is the induced magnetization in cgs units

k is the volume magnetic susceptibility

$\vec{F}$ is the strength of the geomagnetic field

For most materials, k is very much less than 1. If k is negative, the body is said to be diamagnetic. Examples are quartz, marble, graphite and rock salt. If k is positive, but very small, the body is said to be paramagnetic, examples of which are gneiss, pegmatite, dolomite and syenite. If k is positive and the body is strongly magnetic, it is said to be ferromagnetic, for example, magnetite (k ≈ 0.3).

The susceptibilities of rocks is mostly determined by their magnetite content since this mineral is so strongly magnetic and so widely distributed in the various rock types.

The remanent magnetization of rocks depends both on their composition and their previous history. Whereas the induced magnetization is always parallel (or, rarely, anti-parallel) to the direction of the geomagnetic field, the natural remanent magnetization may bear no relation whatsoever to the present direction and intensity of the earth's field. The remanent magnetization is related to the direction of the earth's field at the time the rocks were last magnetized. Movement of the body through folding etc. and the chemical history since the previous magnetization are additional factors which affect the magnitude and direction of the remanent magnetic vector.

Thus, the resultant magnetization M of a rock is given by:

$$\vec{M} = \vec{M}_n + k\vec{F}$$

where $\vec{M}_n$ is the natural remanent magnetization. $\vec{F}$ is a vector which can be completely specified by its horizontal ($\vec{H}$) and vertical ($\vec{Z}$) components and by the declination (D) from true north. Similarly, $\vec{M}_n$ is specified when its magnitude and direction are known. Thus, considerably simplification results if $\vec{M}_n = 0$, whereupon M merely reduces to $k\vec{F}$. In the early days of magnetic prospecting, it was usually assumed that there was no remanent magnetization. However, it has now been established that both igneous and sedimentary rocks possess remanent magnetization, and that the phenomenon is a widespread one.

1.4 Applications of the MP-2

Basic Geological Mapping

Readings taken with the MP-2 are normally presented as profiles and/or as contoured maps. These are now routinely used as integral parts of geological mapping programs. Qualitative interpretation of these maps and profiles assists in the identification of rocks, in mapping their distribution, in indicating sub-surface plutons and in revealing structural features such as faults. Quantitative interpretation provides depths to basement, dip and strike of dike-like features and estimates of magnetic susceptibility.

Mining Exploration

The MP-2 is an excellent instrument to use in exploring for certain types of iron deposits which can be strongly ferromagnetic. Under some circumstances, the grade and tonnage of the deposit may be estimated.

In other cases, an anomalous magnetic field may arise from ore bodies containing metals such as nickel, chrome and asbestos, since these bodies often have magnetic pyrrhotite or magnetite as accessory minerals.

Iron Objects

Iron objects hidden from view will nevertheless have an associated magnetic field, the strength of which will depend on the size of the object and the depth of burial. A lightweight, sensitive instrument such as the MP-2 can be used to find such objects.

Archaeological Exploration

This is an extension of the use of the MP-2 to find iron objects. At some archaeological sites the contrast in magnetic properties between cultural features (iron tools, bricks, pottery, etc.) and the surrounding medium is sufficient to produce a magnetic effect that is detectable with a sensitive instrument. Such features as buried walls, pathways, entrances, fire-pits, etc. have all been detected and mapped by portable magnetometers.

2.0 Specifications

The MP-2 has the following specifications:

Resolution	1 gamma
Total Field Accuracy	±1 gamma over full operating range
Range	20,000 to 100,000 gammas in 25 overlapping steps.
Internal Measuring Program	A reading appears 1.5 seconds after depression of the Operate Switch and remains displayed for 2.2 seconds for a total of 3.7 seconds per single reading. Recycling feature permits automatic repetitive readings at 3.7 second intervals.
External Trigger	External trigger input permits use of sampling intervals longer than 3.7 seconds.
Display	5 digit LED (light emitting diode) readout displaying total magnetic field in gammas or normalized battery voltage.
Data Output	Multiplied precession frequency and gate time outputs for base station recording using interfacing optionally available from Scintrex.
Gradient Tolerance	Up to 5000 gammas/meter.
Power Source	8 alkaline "D" cells provide up to 25,000 readings at 25°C under reasonable signal/noise conditions (less at lower temperatures). Premium carbon-zinc cells provide about 40% of this number.
Sensor	Omnidirectional, shielded, noise-cancelling dual coil, optimized for high gradient tolerance.
Harness	Complete for operation with staff or back pack sensor.
Operating Temperature Range	-35°C to +60°C
Size	Console, with batteries: 80 x 160 x 250 mm Sensor: 80 x 150 mm Staff: 30 x 1550 mm (extended) 30 x 660 mm (collapsed)
Weights	Console, with batteries: 1.8 kg Sensor: 1.3 kg Staff: 0.6 kg

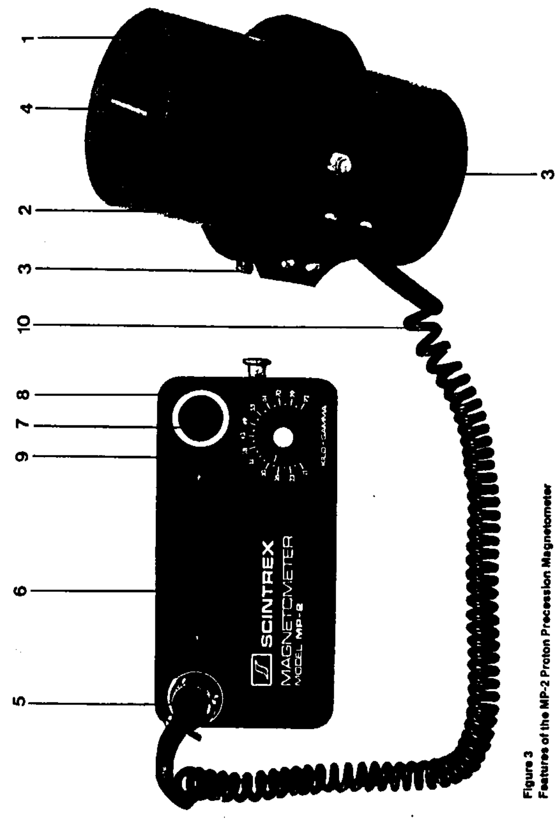


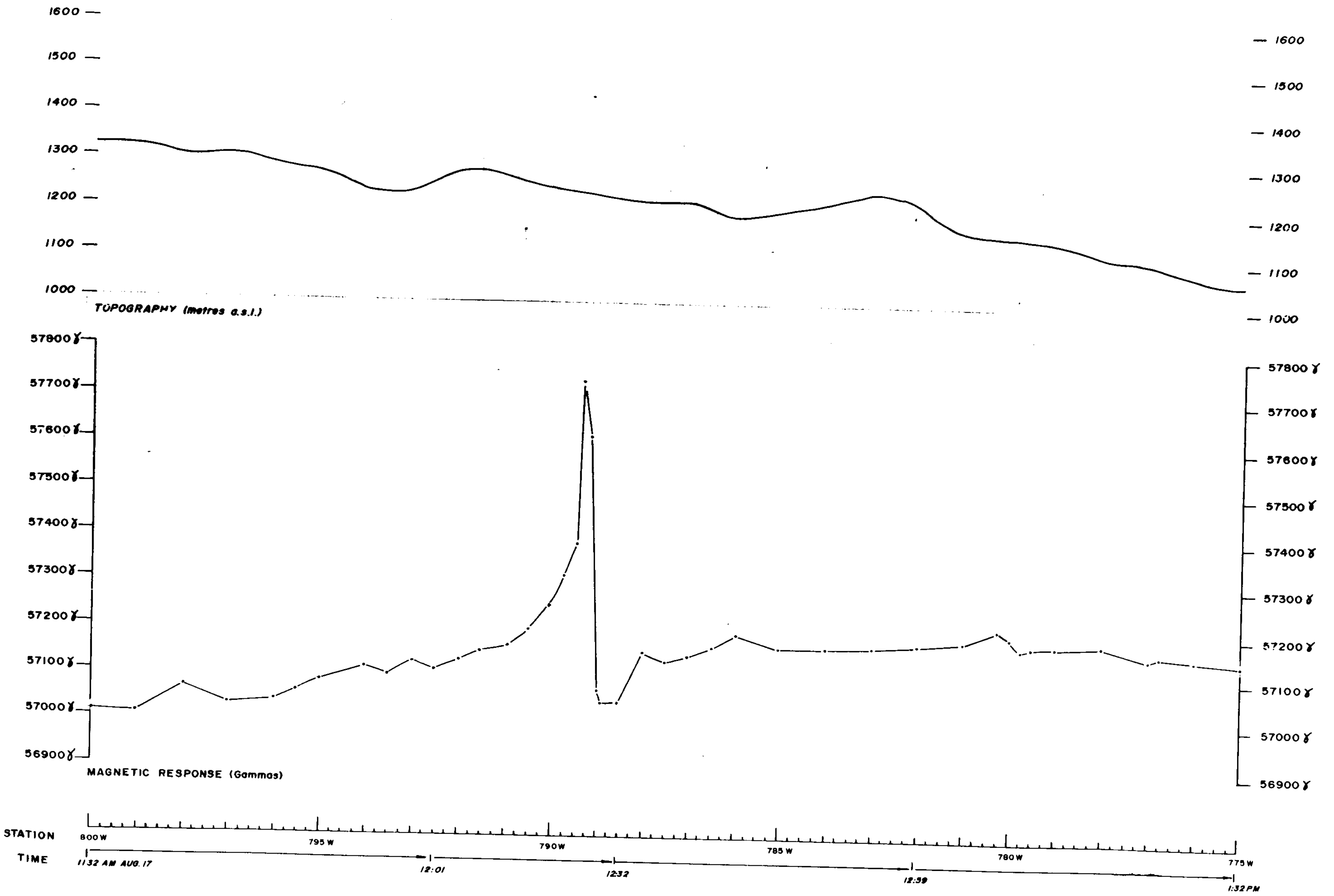
Figure 3
Features of the MP-2 Proton Precession Magnetometer

3.0 Operating Instructions

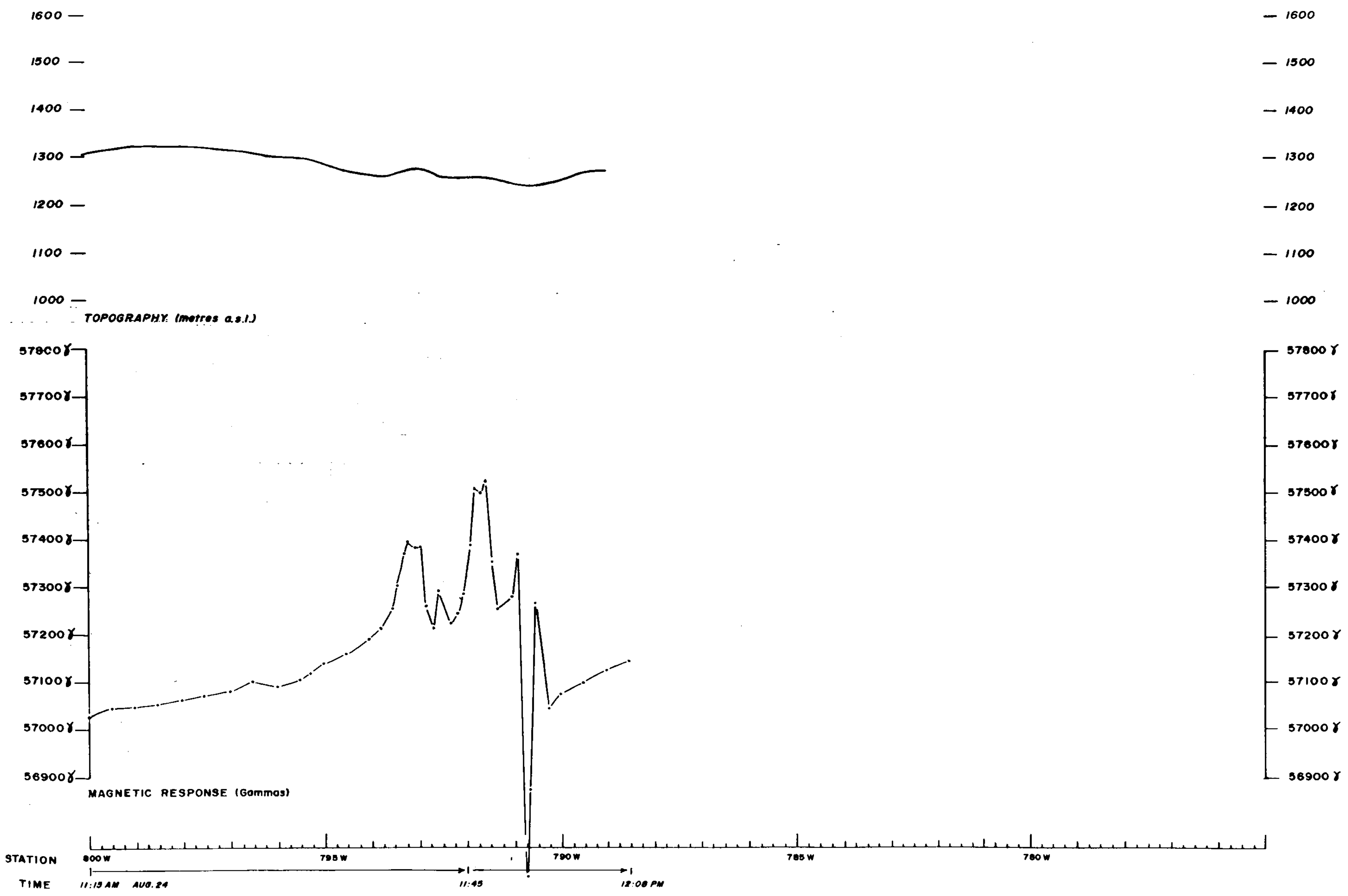
3.1 Instrument Description

The numbers in brackets refer to the features of the MP-2 shown in Figures 3, 4, and 5.

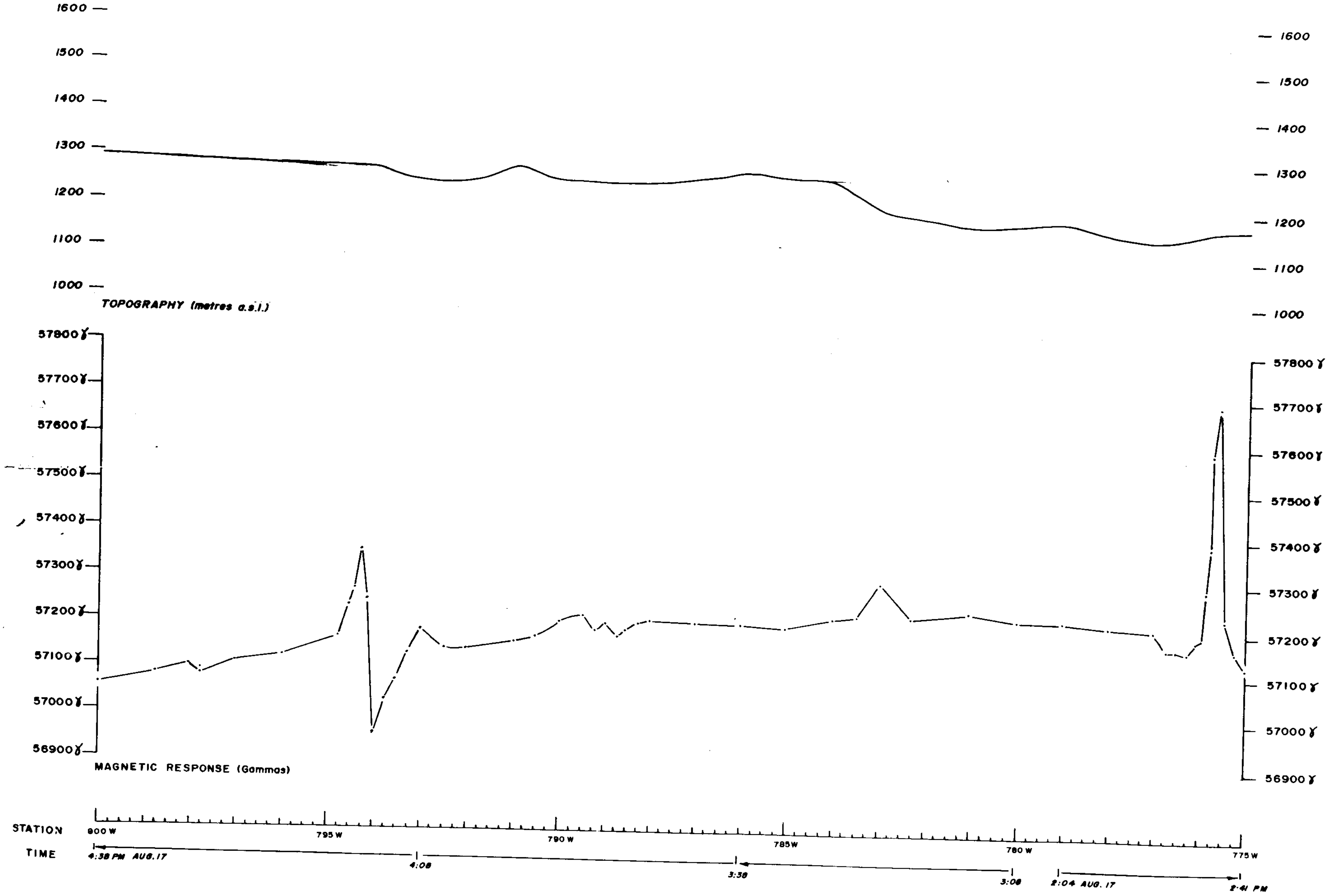
(1) Sensor: Shielded, noise cancelling, dual coil type.



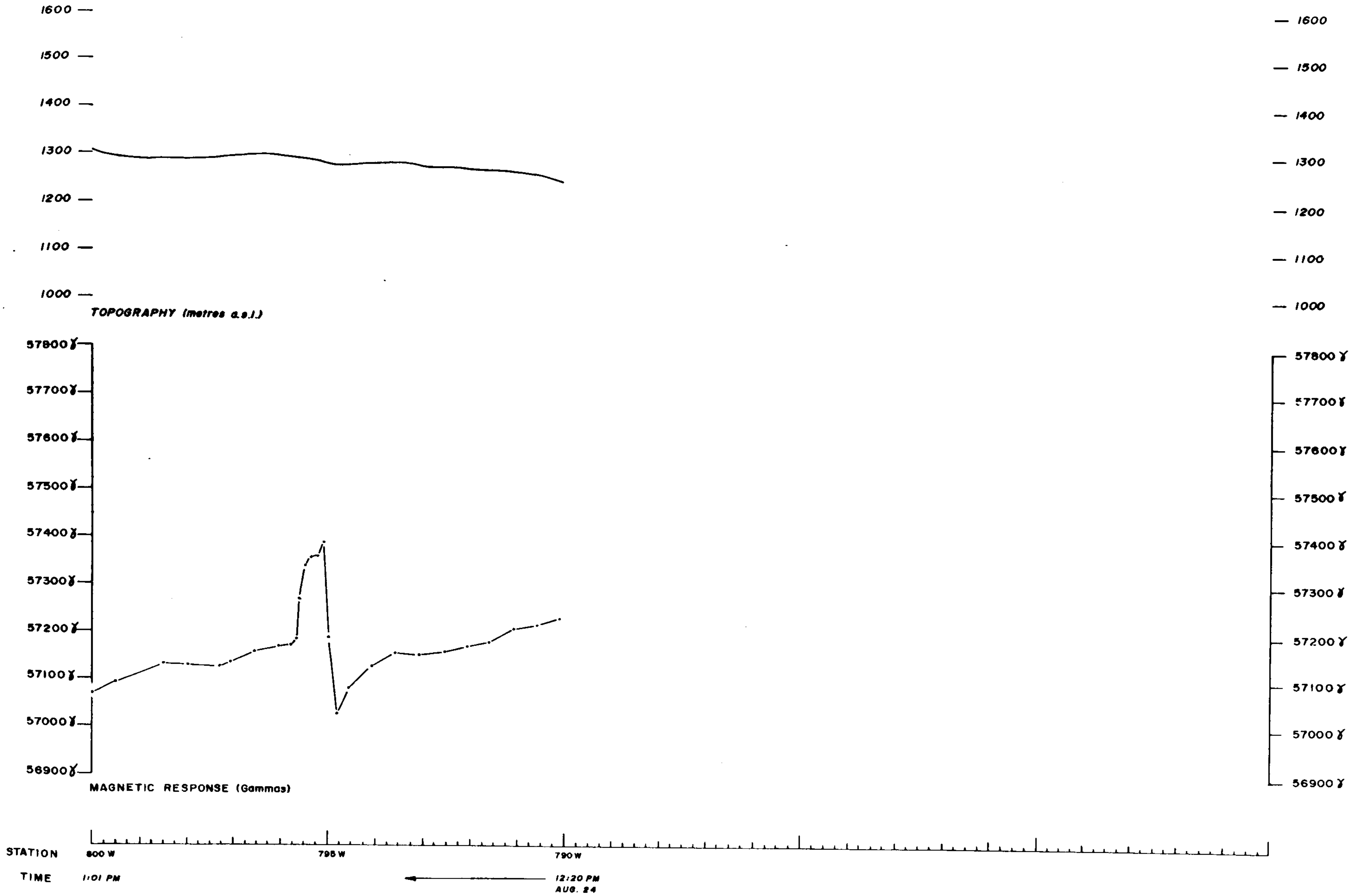
DAVINCI PROPERTY **Magnetic Survey-Line 36 N** FIGURE 9d



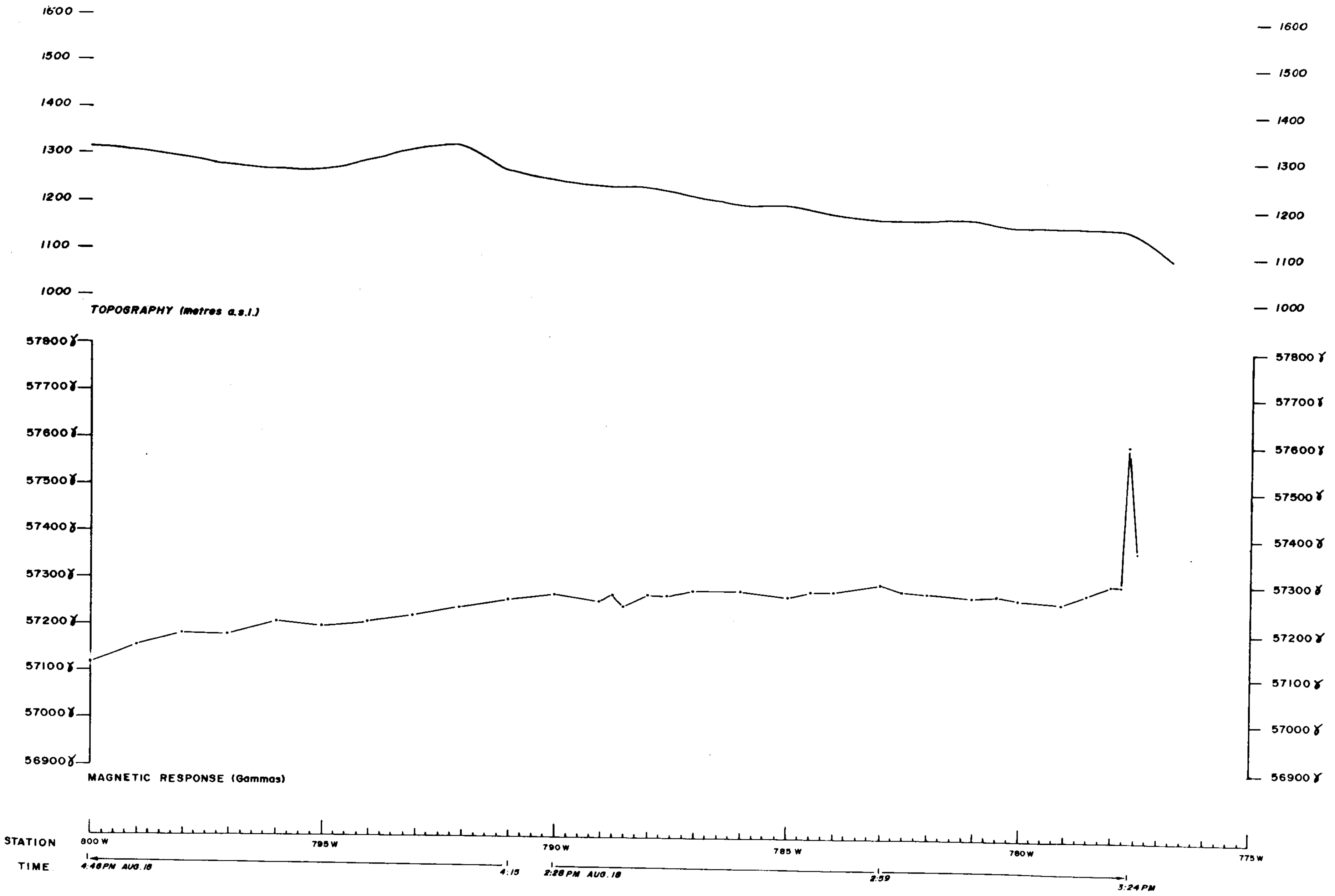
DAVINCI PROPERTY **Magnetic Survey-Line 39 N** FIGURE 9e



DAVINCI PROPERTY **Magnetic Survey-Line 40 N** FIGURE 9f

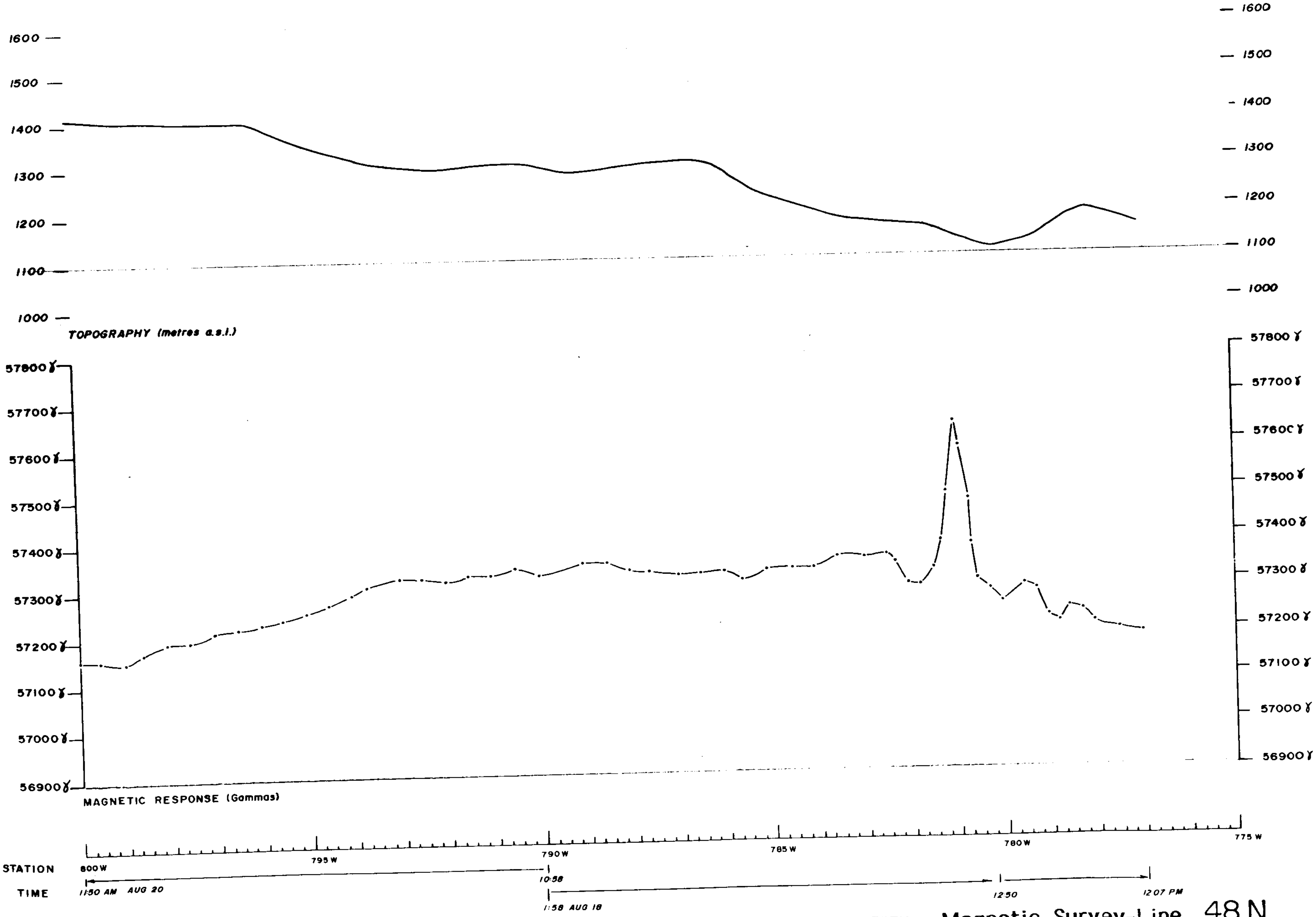


DAVINCI PROPERTY **Magnetic Survey-Line 41N** FIGURE 9g

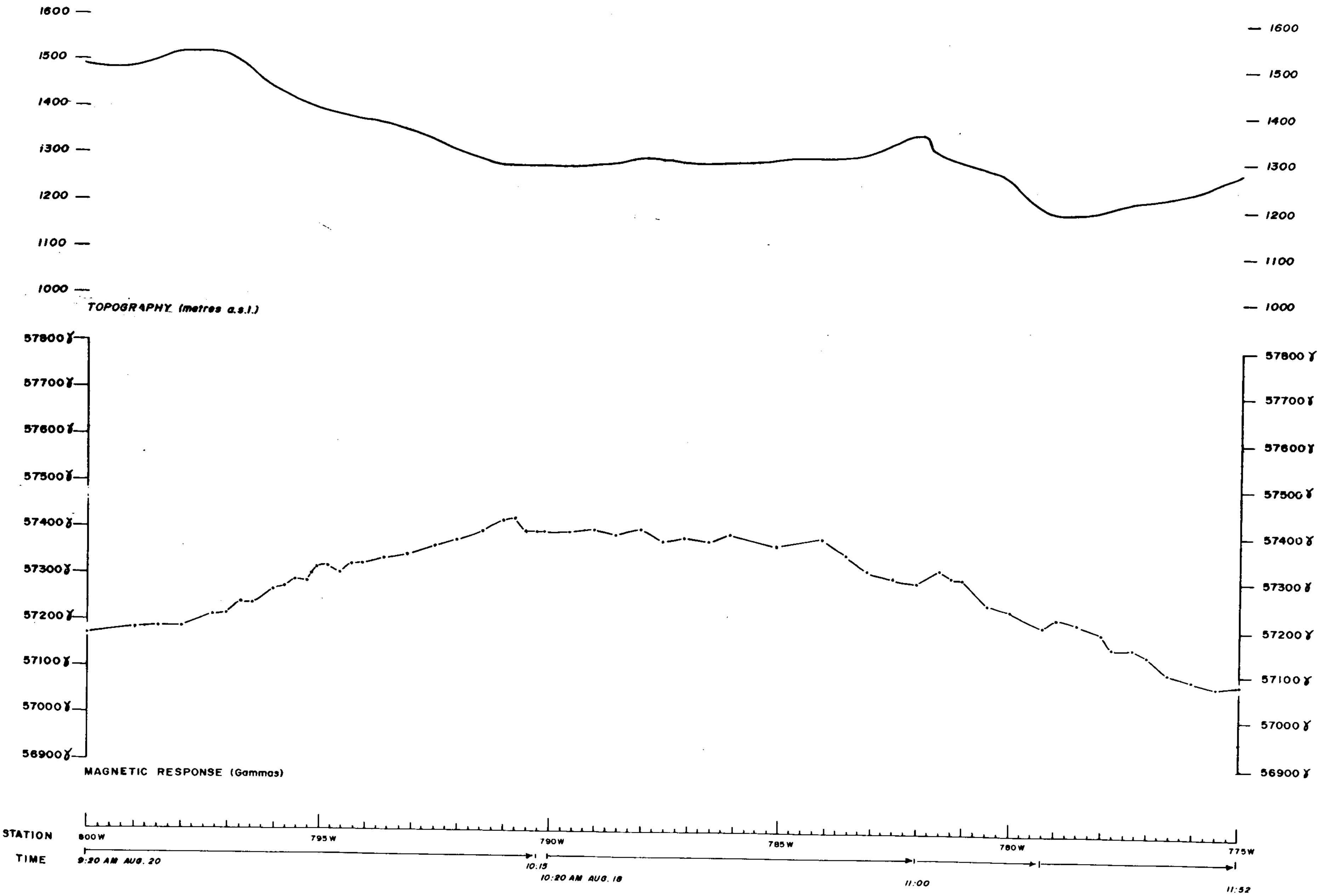


DAVINCI PROPERTY Magnetic Survey-Line 44N

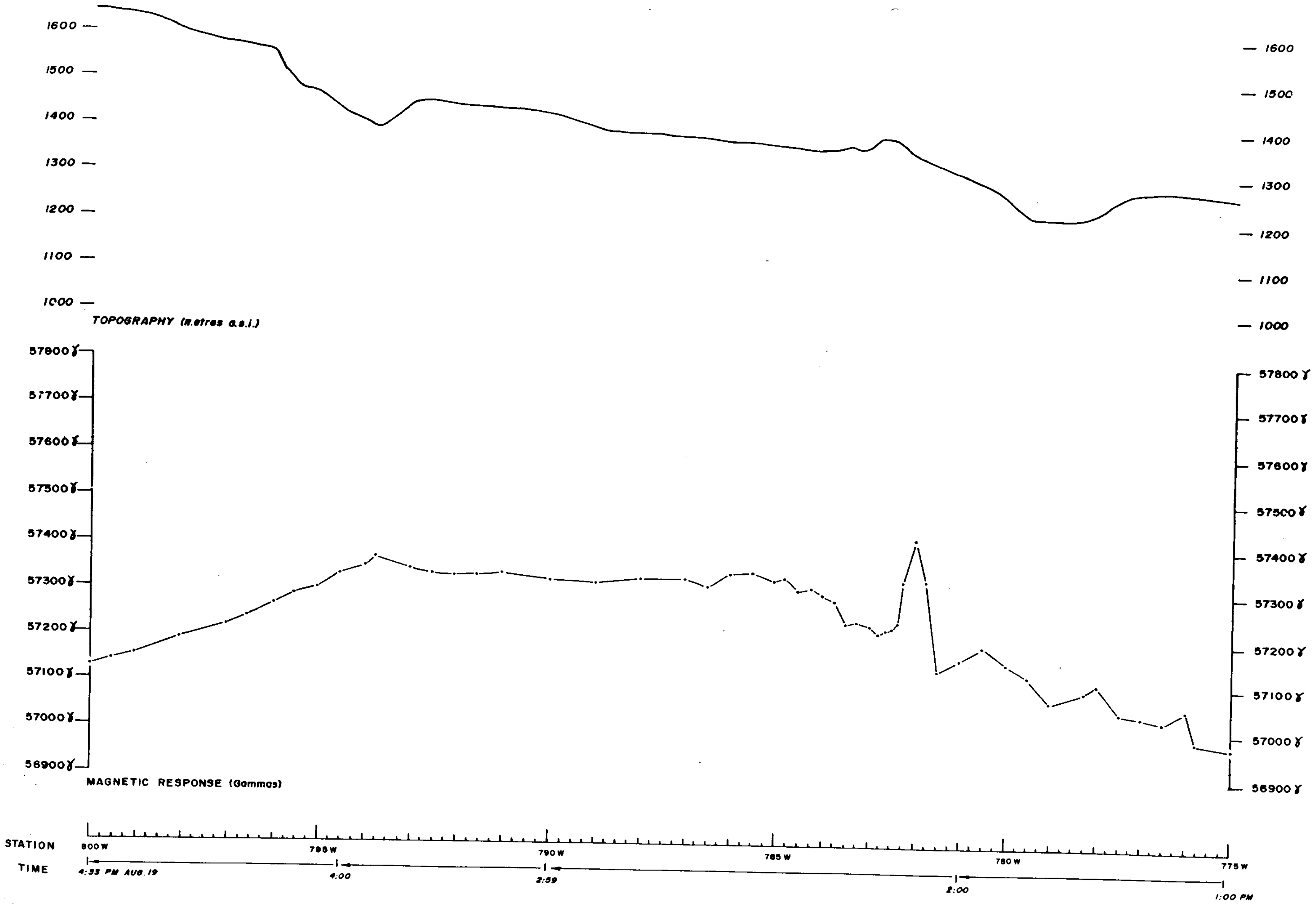
FIGURE 9h



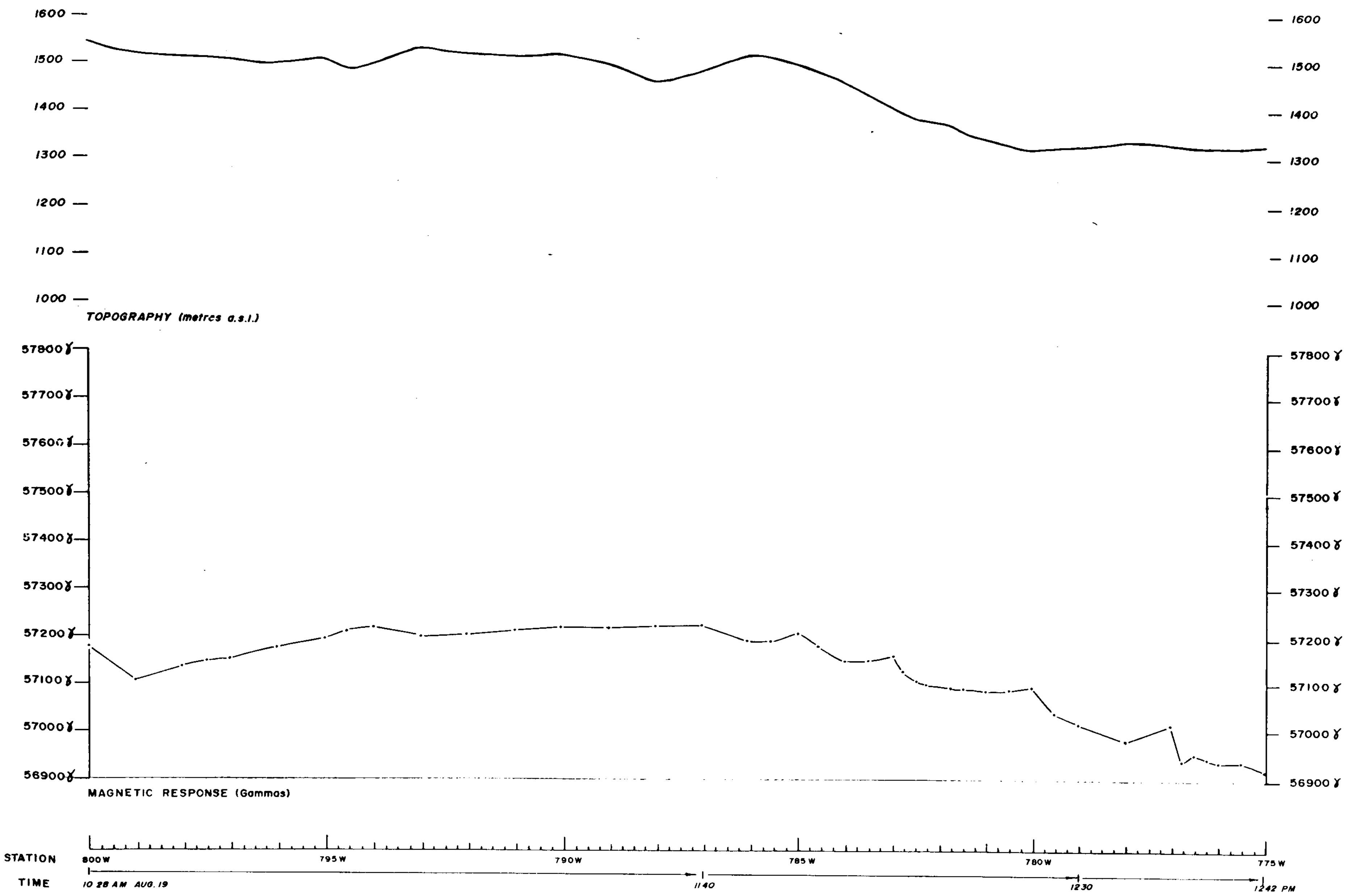
DAVINCI PROPERTY **Magnetic Survey-Line 48 N** FIGURE 9i



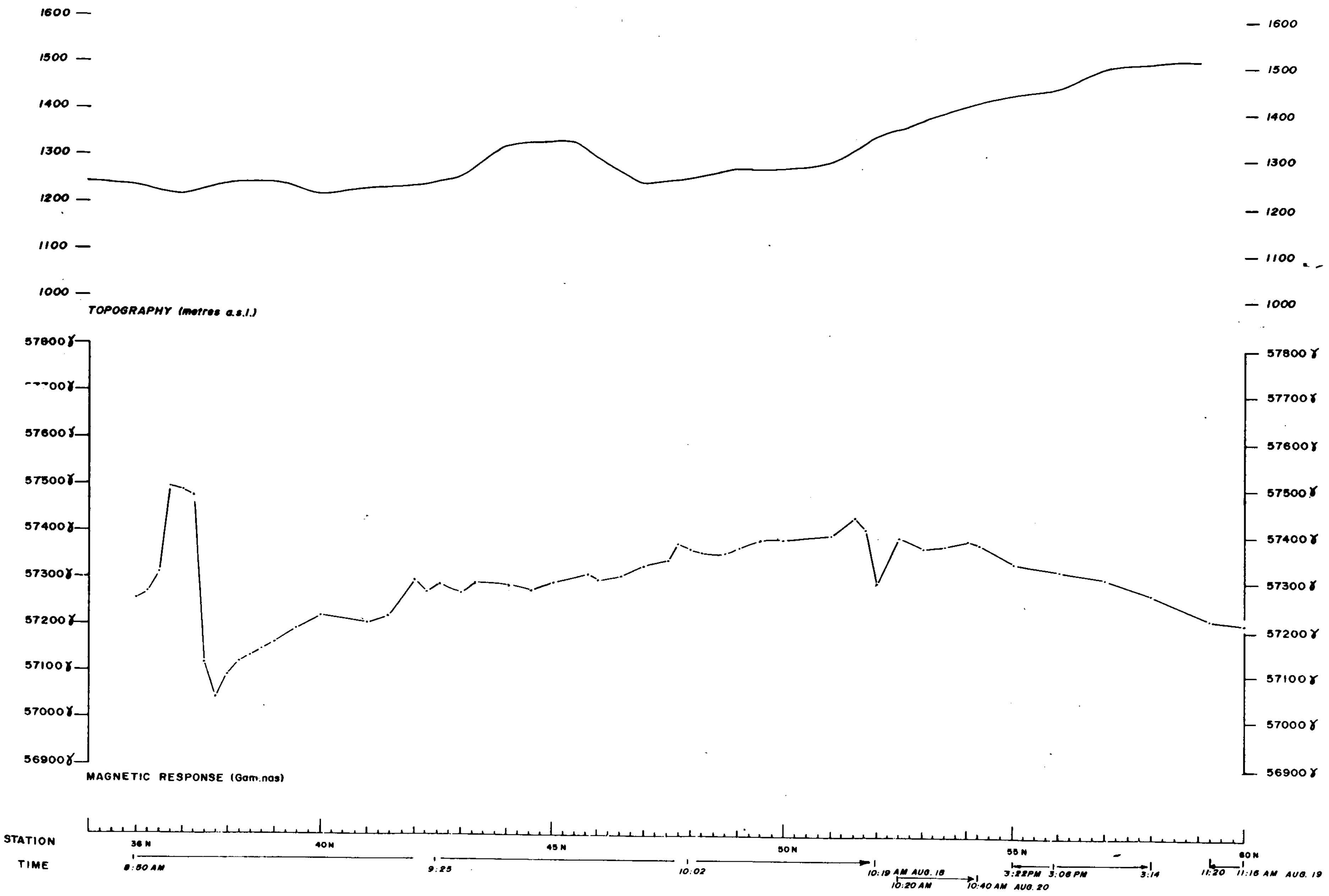
DAVINCI PROPERTY **Magnetic Survey-Line 52N** FIGURE 9j



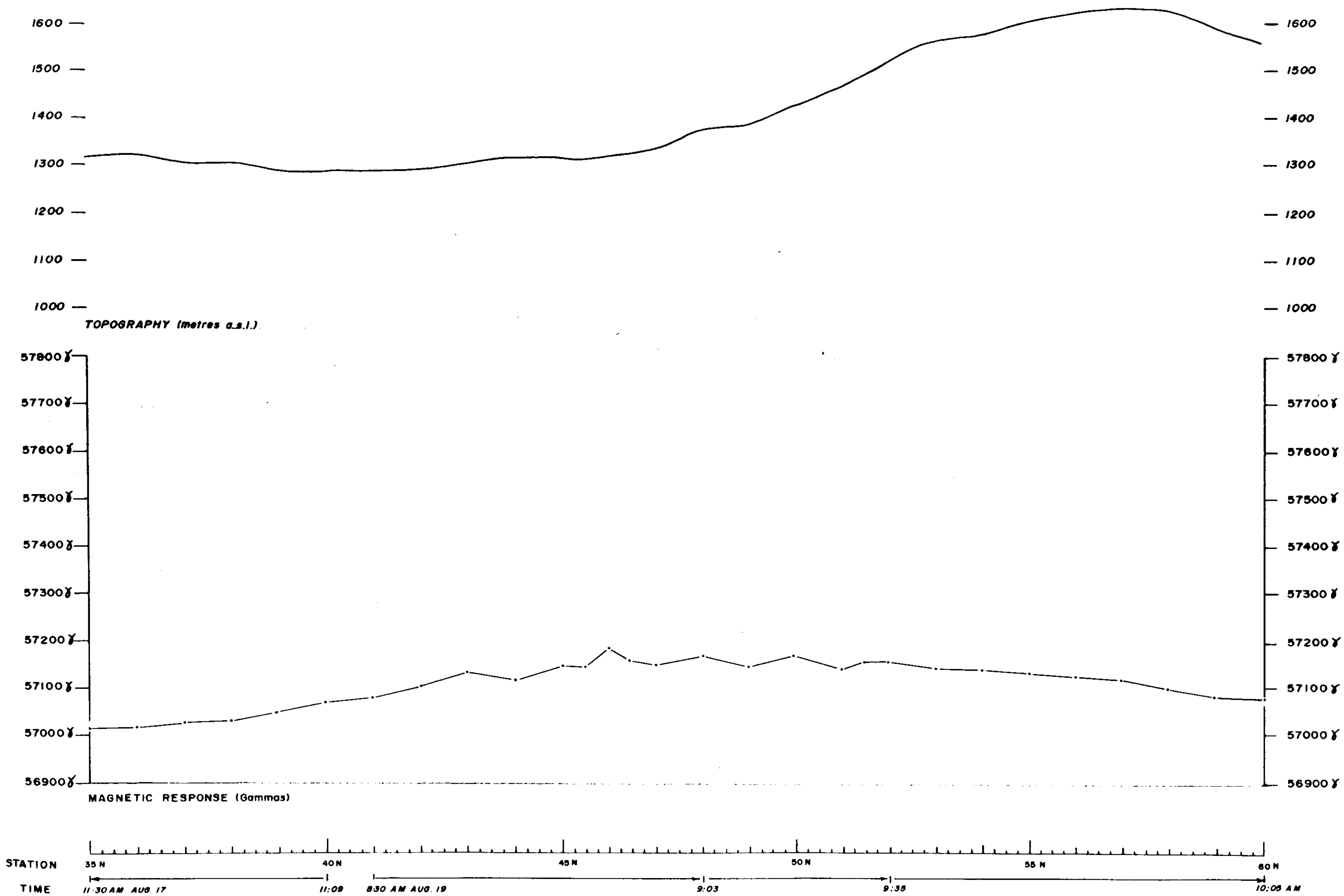
DAVINCI PROPERTY **Magnetic Survey-Line 56 N** FIGURE 9k



DAVINCI PROPERTY Magnetic Survey-Line 60N FIGURE 91



DAVINCI PROPERTY Magnetic Survey-Line 790W FIGURE 9m



DAVINCI PROPERTY **Magnetic Survey-Line 800 W** FIGURE 9n

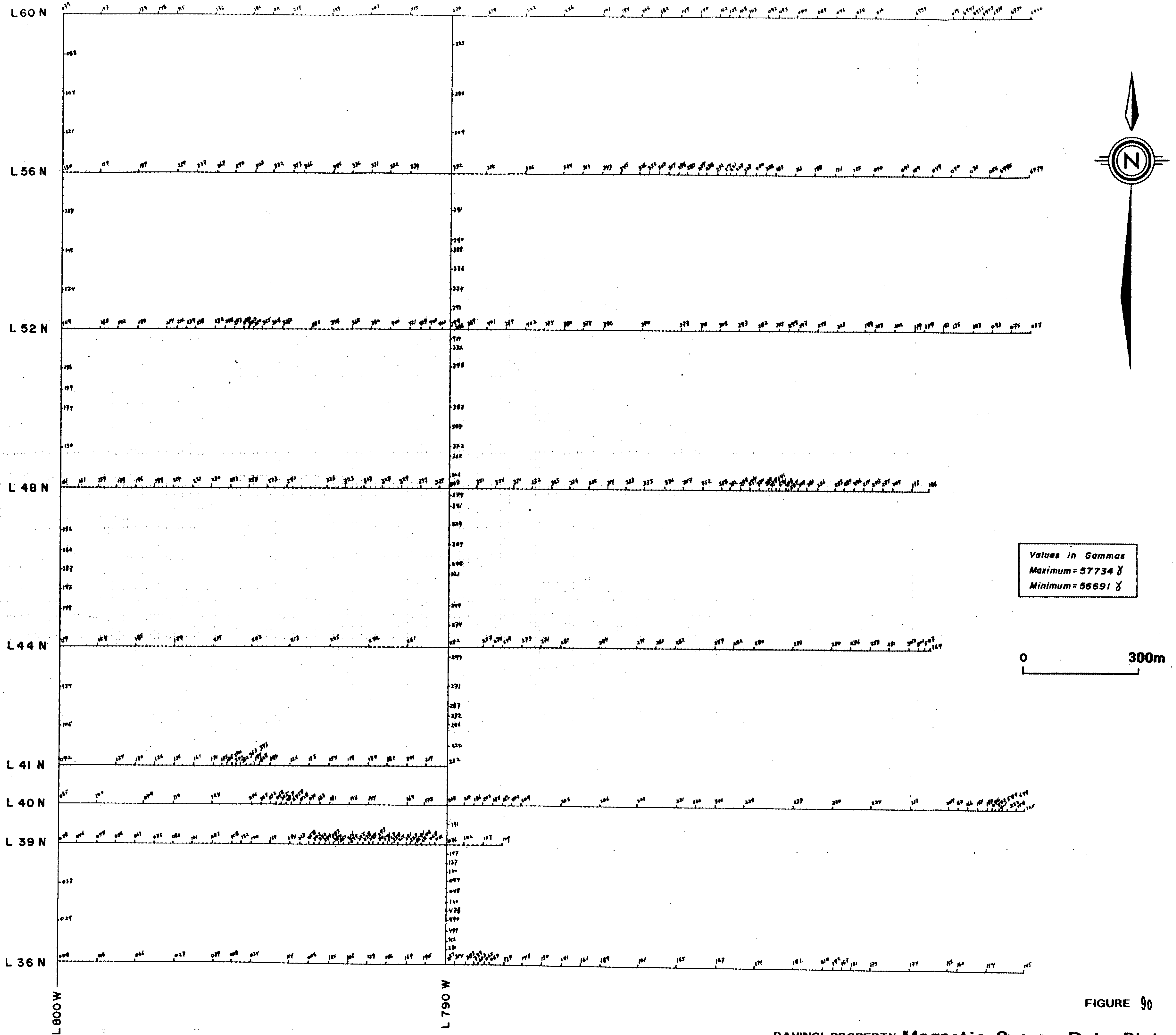


FIGURE 90

DAVINCI PROPERTY Magnetic Survey Data Plot

APPENDIX V

VLF Survey Data, Methods and Instrumentation

VLF SURVEY DATA

PROPERTY DAVINCI
NTS 93I/13E

DATE Aug 21, 23 1994
OPERATOR L. GREXTON
INSTRUMENT EM-16
STATION CUTLER MAINE
DIRECTION OF FIRST NULL EAST
READINGS LOOKING NORTH

LOCATION	In Phase	QUAD	Slope	LOCATION	In Phase	QUAD	Slope
ß 800W /40 N	-1	+3	SEE	ß 800 W/50+25N	+27	+14	
4025	0	+3	MAG	L52 INTERCEPT	+26	+8	
4050	-16	+3	DATA	5150	+20	+14	
4075	-10	+3					
4187	+1	+1		3975N	+20	+13	
41N	+12	+6		3950	+5	+1	
4125	+6	+4		3925	-4	+1	
4150	+3	+2		39N	-6	-3	
4175	-1	-8		3875	+5	-6	
42	-4	-1		3850	+15	-5	
4250	+10	+14		3825	+11	-5	
4275	+34	+14		38N	-2	-13	
43N	+30	+12		3775	-10	+18	
L44N INTERCEPT	+3	+1		3750	+3	-8	
4325	+8	+4		3725	+15	-8	
4350	-10	-2		37N	+5	-11	
4375	-8	-5		3675	0	-17	
44N	+14	0		3650	-5	-22	
4425	+23	-2		3625	-10	-22	
4450	+28	+5		36N	+2	-10	
4475	+28	-6		3575	+16	-2	
45N	+12	-5		3550	+5	-8	
4525	+7	-4		3525	+10	-2	
4550	+3	0		35N	+14	-12	
4575	+2	-2					
46N	+5	+2					
4625	+13	+6					
4650	+14	+5					
4675	+19	+4					
47N	+27	+4					
4725	+22	-2					
4750	+22	-4					
4775	+30	+2					
48N	+34	-2					
4825	+40	+5					
4850	+34	+4					
4875	+11	+3					
49N	-12	-6					
4925	+15	+5					
4950	+28	+7					
4975	+38	+8					
50N	+50	+5					

COMMENTS: AT 49N Sharp ditch - NW trending winding gully
Aug 23 READING 40N InPhase +5, Quad. +3
[illegible] WEAK MAKING READING DIFFICULT

VLF SURVEY DATA

PROPERTY DAVINCI
NTS

DATE Aug 21 1994
OPERATOR L. GREXTON
INSTRUMENT EM-16
STATION SEATTLE
DIRECTION OF FIRST NULL SOUTH
READINGS LOOKING EAST

LOCATION	In Phase	QUAD	Slope	LOCATION	In Phase	QUAD	Slo
L52N /ß 800W	+1	+8		L52N /789W	-2	+2	
799+25	-6	+14		78875	-4	0	
799	-11	-14		78850	-3	0	
79875	-20	+10		78825	-6	-2	
79850	-19	+10		788W	-6	-8	
79825	-14	+11		78775	-3	-13	
798W	-19	+4		78750	+5	-8	
79775	-16	+5		78725	+6	-10	
79750	-16	+2		787W	+5	-12	
79725	-15	-2		78675	-4	-16	
797N	-12	-2		78650	-5	-12	
79675	-7	-4		78625	0	-4	
79650	-9	-2		786W	+10	+11	
79625	-20	-10		78575	+10	+11	
796N	-26	-20		78550	+10	+4	
79575	-10	-12		78525	+5	-2	
79550	-22	-10		785W	+8	-2	
79525	-35	-10		78475	+3	+1	
795N	-28	-6		78450	-2	-3	
79475	-34	-4		78425	-3	+2	
79450	-43	-4		784W	-1	+1	
79425	-45	-6		78375	+1	+3	
794W	-41	-4		78350	-2	+5	
79375	-30	-4		78325	0	+7	
79350	-22	-3		783W	-26	-12	
79325	-19	-2		78275	-15	-9	
793N	-20	-6		78250	-4	-4	
79275	-28	-14		78225	+1	-7	
79250	-24	-10		782W	+4	-3	
79225	-19	-7		78175	+7	-3	CLIF EDG
792	-18	-12		78150	+16	-1	
79175	-18	-13		78125	+1	-8	
79150	-17	-16		78112	-32	-8	
79125	-11	-10		781W	-41	-8	
791N	-9	-17		78075	-50	-5	
79025	-6	-18		78050	-40	-12	
79050	+3	-19		78025	-30	-9	
79075	+14	-21		780W	-23	-8	
790	+19	-13		77975	-23	-6	
78975	+18	-10		77950	-25	-4	
78950	+7	-4		77925	-25	-14	
78925	+3	0		779W	-12	-6	

COMMENTS:

VLF SURVEY DATA

DATE Aug 21 1994

OPERATOR L. Grexton

INSTRUMENT

STATION

DIRECTION OF FIRST NULL

PROPERTY Davinci NTS

LOCATION	In Phase	QUAD	Slope	LOCATION	In Phase	QUAD	Slope
L52N/778+75W	-8	-5					
77850	+10	+2	Wedge of Creek				
77825	+29	+18					
778	+21	+12					
77775	+6	+4					
77750	+6	+6					
77725	+7	-3					
777W	+9	0					
77675	+6	-4					
77650	+10	-1					
77625	+8	-4					
776W	+7	-1					
77575	-2	-7					
77550	-14	-17					
77525	+3	-22					
775W	+23	-11					

COMMENTS:

PAGE 3 OF 13

VLF SURVEY DATA

DATE Aug 21, 22, 23 199

OPERATOR L. Grexton

INSTRUMENT EM-16

STATION Seattle

DIRECTION OF FIRST NULL South

Readings looking East

PROPERTY Davinci NTS

LOCATION	In Phase	QUAD	Slope	LOCATION	In Phase	QUAD	Sl
L48N/776+75W	-24	-8		78725	-16	+2	
777W	-31	-10		78750	-19	+2	
77725	-12	-7		78775	-17	+4	
77750	-2	-7		788W	-14	+4	
77775	+2	-6		78825	-11	+2	
778W	+13	-4		78850	-6	-1	
77825	+30	+3		78875	+1	-1	
77850	+33	+12		789W	-1	-3	
77875	+40	+20		78925	-4	-3	
779W	+8	+12		78950	-10	-2	
77925	-25	+2		78975	-21	-4	
77950	-7	-2		L790W Intercept	-28	-4	
77975	+8	-1		790W	-34	+4	
780W	+3	-9		79025	-22	+12	
78025	+1	-4		79050	-15	+5	
78050	+2	0		79075	-5	+3	
78075	-2	-6		791W	-14	+1	
781W	-4	-2		79125	-16	+3	
78125	+5	+2		79150	-13	+4	
78150	-8	0		79175	-3	+9	
78175	-19	+1		792W	-6	+9	
782W	-23	+4		79225	-19	+12	
78225	-25	+12		79250	-20	+12	
78250	-16	+12		79275	-5	+5	
78275	-12	+6		793W	0	-6	
783W	-22	+2		79325	-14	-13	
78325	-28	+1		79350	-14	-13	
78350	-32	-2		79375	+18	-15	
78375	-29	-5		794W	+38	-10	
784W	-9	-11		79425	+26	-11	
Aug 22 784W	-10	-12		79450	+12	-14	
78425	-3	-12		79475	+4	-15	
78450	-6	-16		795W	-6	-16	
78475	-13	-14		79525	-8	-11	
785W	-22	-17		79550	-13	-9	
78525	-14	-12		79575	-18	-8	
78550	-17	-11		796W	-19	-2	
78575	—	—		79625	-25	-2	
786W	-16	-7		79650	-33	0	
78625	-17	-4		79675	-28	+1	
78650	-19	-3		797W	-35	+4	
787W	-18	-1		79725	-34	+5	

COMMENTS: Stopped 784W due to thunderstorm
Station 786+75W does not exist - 25 m from 786+50W to 787W

PAGE 4 OF 13

VLF SURVEY DATA

DATE Aug 23 1994
OPERATOR L. Grexton
INSTRUMENT EM-16
STATION Seattle
DIRECTION OF FIRST NULL South
Readings Looking East

PROPERTY Davinci NTS

LOCATION	In Phase	QUAD	Slope	LOCATION	In Phase	QUAD	Slope
L48N / 79750W	-32	+5					
79775	-14	+12					
798W	-5	+14					
79825	-4	+15					
79850	-4	+14					
79875	-10	+10					
799W	-14	+11					
79925	-19	+14					
79950	-6	+12					
79975	+1	+2					
800W	-12	-1					

COMMENTS:

PAGE 5 OF 13

VLF SURVEY DATA

DATE Aug 22 1994
OPERATOR L. Grexton
INSTRUMENT EM-16
STATION Seattle
DIRECTION OF FIRST NULL South
Readings Looking East

PROPERTY Davinci NTS

LOCATION	In Phase	QUAD	Slope	LOCATION	In Phase	QUAD	Slope
L44N / 800W	-9	-10		78950	—	—	
79975	-6	-10		78925	-19	-4	
79950	+4	-10		789W	-10	-2	
79925	-8	-14		78875	-11	0	
799W	-22	-8		78850	-47	+14	
79875	-29	-3		78825	-21	+12	
79850	-22	-1		788W	-21	+9	
79825	-18	0		78775	-24	+6	
798W	-16	-1		78750	-12	+6	
79775	-9	0		78725	-10	+3	
79750	-6	-4		787W	-3	0	
79725	-1	-4		78675	+6	-3	
797W	+5	-7		78650	+17	0	
79675	+12	-5		78625	-5	0	
79650	+13	-10		786W	-23	+4	
79625	+14	-6		78575	-16	+9	
796W	-1	+3		78550	-18	+5	
79575	-8	+7		78525	-23	+3	
79550	-4	+5		785W	-6	+5	
79525	-7	+3		78475	-20	+1	
795W	-12	+4		78450	-15	+1	
79475	+3	+12		78425	-8	-1	
79450	-10	+14		784W	-22	-8	
79425	-16	+12		78375	-17	-10	
794W	-15	+13		78350	+3	-12	
79375	-11	+14		78325	+11	-10	
79350	-16	+12		783W	+3	-10	
79325	-12	+10		78275	-14	-7	
793W	-7	+12		78250	+1	-2	
79275	-2	+8		78225	-15	+1	
79250	-1	+8		782W	-19	+3	
79225	+2	+3		78175	-14	+2	
792W	-1	-1		78150	-11	-1	
79175	0	-4		78125	-2	0	
79150	-3	-10		781W	+9	+3	
79125	+2	-13		78075	-3	-1	
791W	-13	-14		78050	-14	-2	
79075	-1	-12		78025	-11	0	
79050	+4	-13		780W	-3	+2	
79025	+13	-16		77975	0	+3	
790W	+5	-12		77950	-1	+7	
78975	-11	-14		77925	-41	+6	

COMMENTS:

PAGE 6 OF 13

VLF SURVEY DATA

DATE Aug 22 1994
OPERATOR
INSTRUMENT
STATION
DIRECTION OF FIRST NULL

PROPERTY DaVinci
NTS

LOCATION	In Phase	QUAD	Slope	LOCATION	In Phase	QUAD	Slope
L44N/779W	-37	+13					
77875	-14	+16					
77850	-2	+13					
77825	-9	+5					
778W	-16	0					
77775	-24	-2					
77750	-36	-13					

COMMENTS: At 777+50W - upper edge of cliff

PAGE 7 OF 13

VLF SURVEY DATA

DATE Aug 23 1994
OPERATOR L. Grexton
INSTRUMENT EM 16
STATION Seattle
DIRECTION OF FIRST NULL South
Readings Looking East

PROPERTY DaVinci
NTS

LOCATION	In Phase	QUAD	Slope	LOCATION	In Phase	QUAD	Slop
L40N/800W	-15	+10		78950	-10	-8	
79975	-23	+13		78925	-13	-7	
79950	-15	-2		789W	+1	+2	
79925	-15	0		78875	-8	+1	
799W	CAMP			78850	-20	+4	
79875	+3	-1		78825	-16	+10	
79850	+5	-3		798W	-10	+10	
79825	+1	-3		78775	-7	+11	
798W	+4	+10		78750	-8	+13	
79775	-5	+9		78725	-2	+14	
79750	+4	+8		787W	-5	+10	
79725	+4	+6		78675	0	+12	
797W	-11	+4		78650	-5	+6	
79675	-1	+5		78625	-3	+7	
79650	-4	+3		786W	-2	+6	
79625	-3	0		78575	+4	+7	
796W	-4	-2		78550	+2	+7	
79575	—	—		78525	0	+5	
79550	-4	-3		785W	-5	+1	
79525	-5	-4		78475	-14	-3	
795W	+2	+2		78450	-14	-6	
79475	-5	+3		78425	-15	-12	
79450	-12	+4		784W	-12	-10	
79425	-23	-1		78375	-5	-18	
794W	-13	+1		Downslope { 78350	+6	-22	
79375	-12	-3		{ 78325	+20	-22	
79350	-9	-6		783W	-18	-12	
79325	+4	-1		78275	-25	+7	
793W	-4	-13		78250	-30	+7	
79275	-5	-12		78225	-24	-2	
79250	-8	+12		782W	-10	+2	
79225	-13	+7		78175	-18	0	
792W	-17	+5		78150	-19	+2	
79175	-14	+4		78125	-20	+2	
79150	-13	+1		781W	-10	+7	
79125	-7	+2		78075	-5	+5	
791W	-3	+1		78050	+5	+11	
79075	+1	0		78025	-6	+7	
79050	+1	-2		780W	-12	+7	
79025	+6	-2		77975	-24	+6	
790W	+2	-2		77950	-24	0	
78975	-12	-8		77925	-15	+4	

COMMENTS:
AM Reading 790W InPhase +1, Quad -1

PAGE 8 OF 1

VLF SURVEY DATA

PROPERTY DAVINCI

NTS

DATE Aug 23 1994

OPERATOR

INSTRUMENT

STATION

DIRECTION OF FIRST NULL

LOCATION	In Phase	QUAD	Slope	LOCATION	In Phase	QUAD	Slope
L40N/779W	-3	+2					
77875	-2	-2					
77850	+11	-3					
77825	+13	-4					
778W	-9	-6					
77775	-19	-5					
77750	-4	+3					
77725	-9	+6					
777W	-9	+19					
77675	0	+21					
77650	+2	+18					
77625	-13	+16					
776W	-17	+13					
77575	-29	+6					
77550	-43	-3					
77525	-43	-3					
775W	-43	-7					

COMMENTS:

VLF SURVEY DATA

PROPERTY DaVinci

NTS

DATE Aug 23 1994

OPERATOR L. GREXTON

INSTRUMENT EM-16

STATION SEATTLE

DIRECTION OF FIRST NULL South

READINGS FACING EAST

LOCATION	In Phase	QUAD	Slope	LOCATION	In Phase	QUAD	Slop
L36N/775W	-18	-14		78550W	-19	+3	
77525	-26	-14		78575	-7	0	
77550	-24	-6		786W	+3	-14	
77575	-9	-2		78625	+8	-2	
776W	-10	+1		78650	-4	-6	
77625	-20	+2		78675	0	-1	
77650	-31	-2		787W	-2	+2	
77675	-34	+2		78725	-5	+4	
777W	-22	+6		78750	-6	+3	
77725	-13	+4		78775	+13	+4	
77750	-5	+3		788W	+5	-1	
77775	-20	+2		78825	-5	-6	
778W	-19	0		78850	-8	-11	
77825	-18	+6		78875	-9	-12	
77850	-16	-3		789W	-4	-6	
77875	-14	-6		78925	-13	-7	
779W	-1	0		78950	-13	-5	
77925	+10	+5		78975	-16	-7	
77950	+7	+4		790W	+3	+4	
77975	-5	+3		79025	+3	+4	
780W	-15	+2		79050	+1	-5	
78025	-30	+7		79075	-1	-2	
78050	-17	-8		791W	-3	0	
78075	-15	-15		79125	-13	-7	
781W	-28	-16		79150	-9	+7	
78125	-25	-13		79175	+8	+5	
78150	-8	-9		792W	+3	+2	
78175	-4	-8		79225	-2	+6	
782W	-3	-5		79250	-8	+1	
78225	-6	-4		79275	-15	-7	
78250	-6	-4		793W	-17	-1	
78275	-6	-1		79325	-1	+5	
783W	-7	-1		79350	-9	+5	
78325	-12	+4		79375	-17	+5	
78350	-12	+8		794W	-11	+8	
78375	-12	+5		79425	+5	-2	
784W	0	+12		79450	0	-8	
78475	+3	+12		79475	-4	-8	
78450	+3	+14		795W	-2	-6	
78425	+1	+10		79525	-7	-4	
785W	-8	+8		79550	-7	-3	
78525	-12	+10		79575	-1	0	

COMMENTS:

VLF SURVEY DATA

PROPERTY Davinci NTS

DATE Aug 23 1994
OPERATOR
INSTRUMENT
STATION
DIRECTION OF FIRST NULL

LOCATION	In Phase	QUAD	Slope	LOCATION	In Phase	QUAD	Slope
L36N/796W	-8	-4					
79625	-14	-3					
79650	-14	0					
79675	-14	+1					
797W	-15	+3					
79725	-13	+4					
79750	-15	0					
79775	-19	-13					
798W	+4	-15					
79825	+24	-12					
79850	+30	-10					
79875	+21	-17					
799W	+17	-11					
79925	+15	-12					
79950	+10	-8					
Baseline Intersected							
at 799+60W							

COMMENTS:

VLF SURVEY DATA

PROPERTY Davinci NTS

DATE Aug 22, 23 1994
OPERATOR L. Grexton
INSTRUMENT EM-16
STATION Cutler Maine
DIRECTION OF FIRST NULL East
Readings Looking North

LOCATION	In Phase	QUAD	Slope	LOCATION	In Phase	QUAD	Slope
L790W/36N	-5	-3		4650N	+4	-9	
3625	-10	-4		4675	–	–	
3650	-16	-2		47N	+5	-22	
3675	-8	+4		4725	+3	-26	
37N	-14	-14		4750	+10	-19	
3725	-8	-12		4775	+36	-22	
3750	+4	-12		3m E of Creek 48N	-6	+7	
3775	+24	+5		4825	-13	+19	
Broad NW Gully 38N	+7	+15		4850	-3	+13	
3825	-5	+13		4875	-10	+14	
3850	-9	-1		49N	+8	+22	
3875	+3	+14		4925	+31	+25	
39N	+4	-1		4950	+15	+11	
3925	+3	-5		4975	+4	+5	
3950	+13	-3		50N	+3	+6	
3975	+18	-5		5025	+4	+6	
40N	+7	-12		5050	+13	+7	
4025	+10	-10		5075	+10	+5	
4050	-7	-12		51N	+15	+1	
4075	+14	+1		5125	+29	0	
41N	-7	-8		5150	+19	-7	
4125	-13	-7		5175	+15	-7	
4150	-4	-6		52N	+15	-3	
4175	+17	-8					
42N	+4	-10					
4225	-3	-8					
4250	+2	-7					
4275	+4	-6					
43N	+10	-4					
4325	+17	-4					
4350	+20	+2					
4375	+24	+12					
44N	-24	+19					
4425	-24	+25					
4450	-3	+30					
4475	+2	+23					
45N	+5	+13					
4525	+10	+14					
4550	+2	+6					
4575	+2	+2					
46N	-5	-9					
4625	+3	-9					

COMMENTS:

VLF SURVEY DATA

PROPERTY ____________ NTS ______

DATE ____________
OPERATOR ____________
INSTRUMENT ____________
STATION ____________
DIRECTION OF FIRST NULL ____________

LOCATION	In Phase	QUAD	Slope	LOCATION	In Phase	QUAD	Slope
LINES SURVEYED AUG 1994							
B800W/35N to 5250N			1,750km				
L790W/36N to 52N			1,600				
L36N /800W to 775W			2,500				
L40N /800W to 775W			2,500				
L44N /800W to 77750W			2,250				
L48N /800W to 77675W			2,325				
L52N/800W to 775 W			2,500				
		Total	14,925				

COMMENTS:

EM16 SPECIFICATIONS

MEASURED QUANTITY	Inphase and quad-phase components of vertical magnetic field as a percentage of horizontal primary field. (i.e. tangent of the tilt angle and ellipticity).
SENSITIVITY	Inphase: ±150% Quad-phase: ± 40%
RESOLUTION	±1%
OUTPUT	Nulling by audio tone. Inphase indication from mechanical inclinometer and quad-phase from a graduated dial.
OPERATING FREQUENCY	15-25 kHz VLF Radio Band. Station selection done by means of plug-in units.
OPERATOR CONTROLS	ON/OFF switch, battery test push button, station selector switch, audio volume control, quadrature dial, inclinometer.
POWER SUPPLY	6 disposable 'AA' cells.
DIMENSIONS	42 x 14 x 9cm
WEIGHT	Instrument: 1.6 kg Shipping: 5.5 kg

GEONICS LIMITED
1745 Meyerside Dr. Unit 8 Mississauga, Ontario Canada L5T 1C5
Tel. (416) 676-9580
Telex 06-968688
Cables: Geonics

OPERATING MANUAL
for
EM16 VLF-EM

Revised June, 1983

VLF STATION INFORMATION

The following list of plug-ins are the standard plug-in crystals provided with the EM16 for the various areas listed throughout the world.

STATION	FREQUENCY	LOCATION	CO-ORDINATES	KW
EUROPE				
NAA	~~17.8~~ 24.0	Cutler, Maine	67W17-44N39	1000
GBR	16.0	Rugby, England	01W11-52N22	750
FUO	15.1	Bordeaux, France	00W48-44N65	500
JXZ	16.4	Helgeland, Norway	13E01-66N25	350
UMS	17.1	Moscow, Russia	37E01-55N49	1000
NORTH AMERICA East				
NAA	~~17.8~~ 24.0	Cutler, Maine	67W17-44N39	1000
NLK	24.8	Seattle, Washington	121W55-48N12	125
NSS	21.4	Annapolis, Maryland	76W27-38N59	400
GBR	16.0	Rugby, England	01W11-52N22	750
NORTH AMERICA Central				
NAA	~~17.8~~ 24.0	Cutler, Maine	67W17-44N39	1000
NLK	24.8	Seattle, Washington	121W55-48N12	125
NSS	21.4	Annapolis, Maryland	76W27-38N59	400
(Westcoast & Alaska)				
NAA	~~17.8~~ 24.0	Cutler, Maine	67W17-44N39	1000
NLK	24.8	Seattle, Washington	121W55-48N12	125
NSS	21.4	Annapolis, Maryland	76W27-38N59	400
NPM	23.4	Lualualei, Hawaii	158W09-21N25	600
(Mexico)				
NPM	23.4	Lualualei, Hawaii	158W09-21N25	600
NAA	17.8	Cutler, Maine	67W17-44N39	1000
NLK	24.8	Seattle, Washington	121W55-48N12	125
SOUTH AMERICA (North only)				
NAA	~~17.8~~ 24.0	Cutler, Maine	67W17-44N39	1000
JAPAN				
NDT	17.4	Yosami, Japan	137E01-34N58	50
NWC	22.3	N.W. Cape, Australia	114E09-21S47	1000
AUSTRALIA				
NWC	22.3	N.W. Cape, Qustralia	114E09-21S47	1000
NDT (10%) Noise	17.4	Yosami, Japan	137E01-34N58	50
ASIA (East)				
NDT	17.4	Yosami, Japan	137E01-34N58	50
NWC	22.3	N.W. Cape, Australia	114E09-21S47	1000
UMS	17.1	Moscow, Russia	37E01-55N49	1000

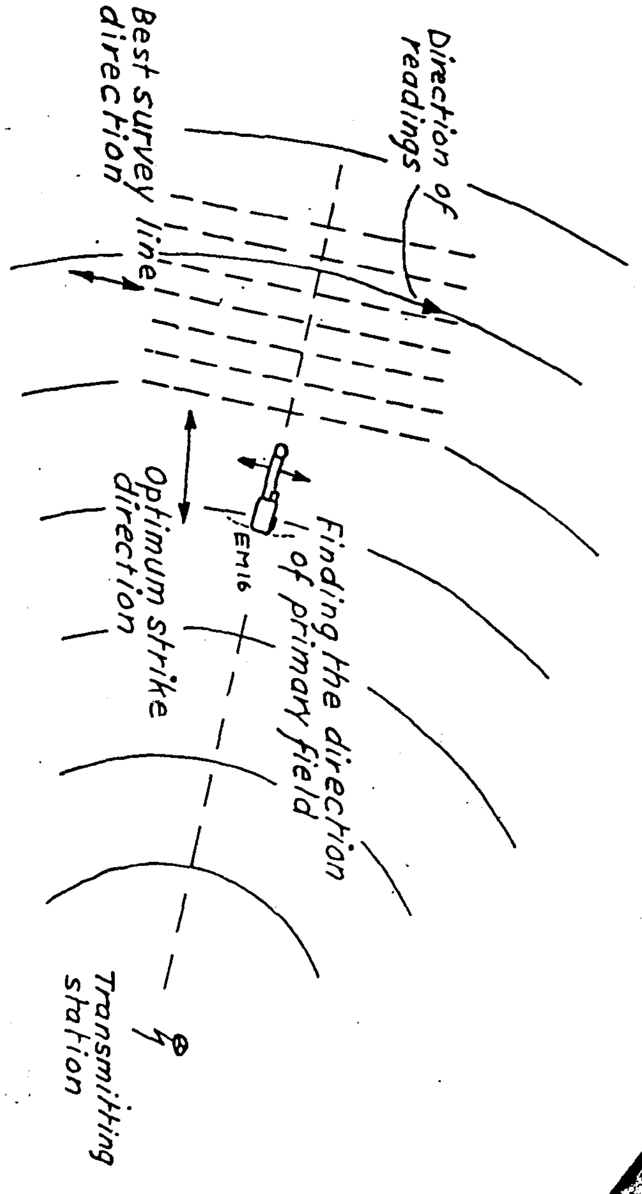


FIG. 3

Planning of survey

(1) Open both eyes.

(2) Aim the hairline along the slope to the next station to about your eye level height above ground.

(3) Read on the left scale directly the distance necessary to measure along the slope to advance 100 (ft) horizontally.

We feel that this will make your reconnaissance work easier. The outside scale on the inclinometer is calibrated in degrees just in case you have use for it.

PLOTTING THE RESULTS

For easy interpretation of the results, it is good practice to plot the actual curves directly on the survey line map using suitable scales for the percentage readings. (Fig.15) The horizontal scale should be the same as your other maps on the area for convenience.

A more convenient form of this data is easily achieved by transforming the zero-crossings into peaks by means of a simple numerical filtering technique. This technique is described by D.C. Fraser in his paper "Contouring of VLF-EM Data", Geophysics, Vol. 34, No. 6. (December 1969)pp958-967. A reprint of this paper is included in this manual for the convenience of the user.

This simple data manipulation procedure which can be implemented in the field produces VLF-EM data which can be contoured and as such provides a significant advantage in the evaluation of this data.

FIELD PROCEDURE

Orientation & Taking a Reading

The direction of the survey lines should be selected approximately along the lines of the primary magnetic field, at right angles to the direction to the station being used. Before starting the survey, the instrument can be used to orient oneself in that respect. By turning the instrument sideways, the signal is minimum when the instrument is pointing towards the station, thus indicating that the magnetic field is at right angles to the receiving coil inside the handle.(Fig.11). ✓

To take a reading, first orient the reference coil (in the lower end of the handle) along the magnetic lines.(Fig.12) Swing the instrument back and forth for minimum sound intensity in the speaker. Use the volume control to set the sound level for comfortable listening. Then use your left hand to adjust the quadrature component dial on the front left corner of the instrument to further minimize the sound. After finding the minimum signal strength on both adjustments, read the inclinometer by looking into the small lens. Also, mark down the quadrature reading.

While travelling to the next location you can, if you wish, keep the instrument in operating position. If fast changes in the readings occur, you might take extra stations to pinpoint accurately the details of anomaly.

The dials inside the inclinometer are calibrated in positive and negative percentages. If the instrument is facing 180° from the original direction of travel, the polarities of the readings will be reversed. Therefore, in the same area take the readings always facing in the same direction even when travelling in opposite way along the lines.

The lower end of the handle, will as a rule, point towards the conductor. (Figs.13 & 14) The instrument is so calibrated that when approaching the conductor, the angles are positive in the in-phase component. Turn always in the same direction for readings and mark all this on your notes, maps, etc.

THE INCLINOMETER DIALS

The right-hand scale is the in-phase percentage(ie. Hs/Hp as a percentage). This percentage is in fact the tangent of the dip angle. To compute the dip angle simply take the arctangent of the percentage reading divided by 100. See the conversion graph on the following page.

The left-hand scale is the secant of the slope of the ground surface. You can use it to "calculate" your distance to the next station along the slope of the terrain.

DAVINCI PROPERTY **VLF EW Profiles L36N, L40N & L44N**

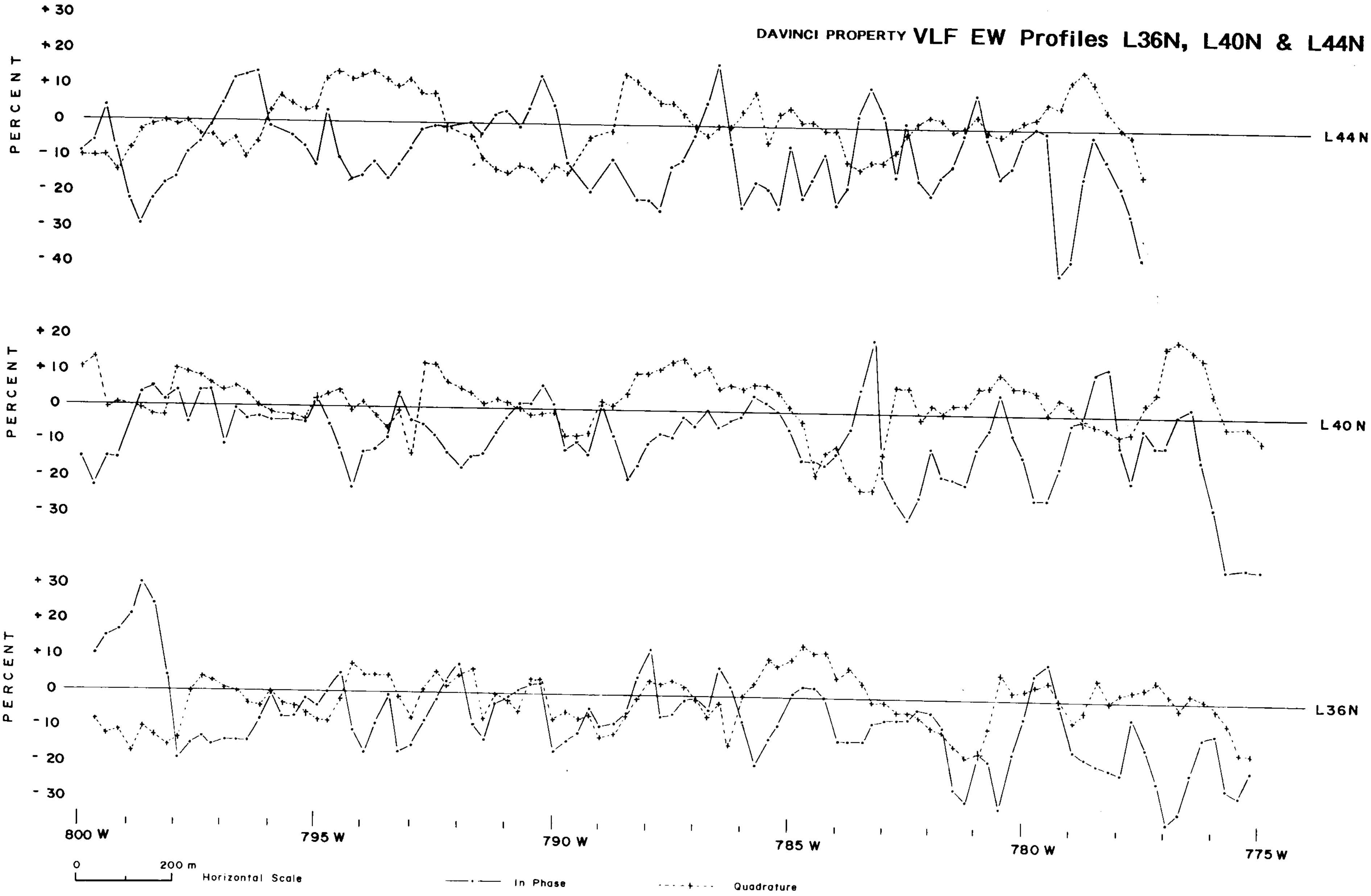


FIGURE 10d

DAVINCI PROPERTY **VLF EW Profiles L48N & L52N**

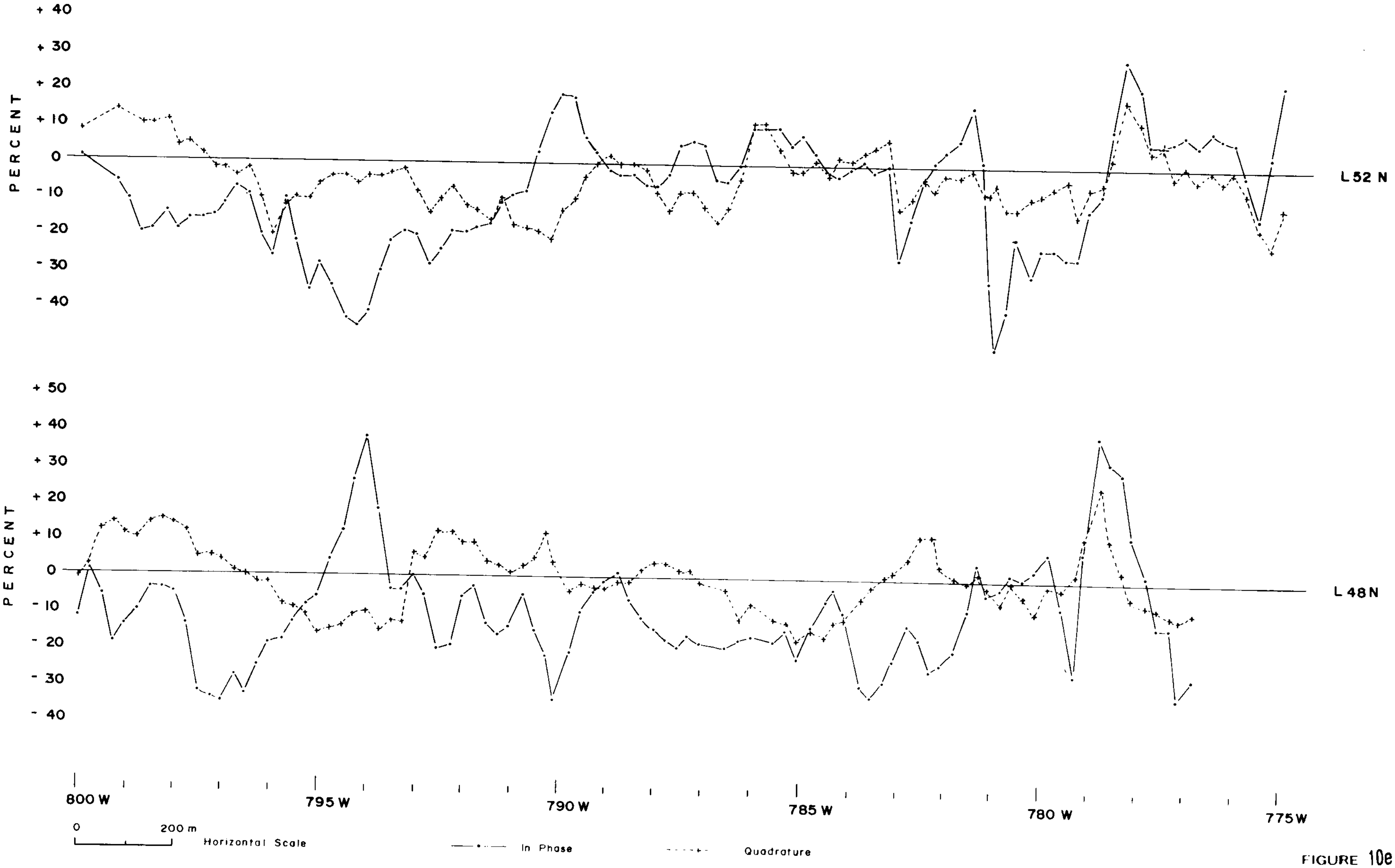


FIGURE 10e

DAVINCI PROPERTY VLF NS Profiles L790W & L800W

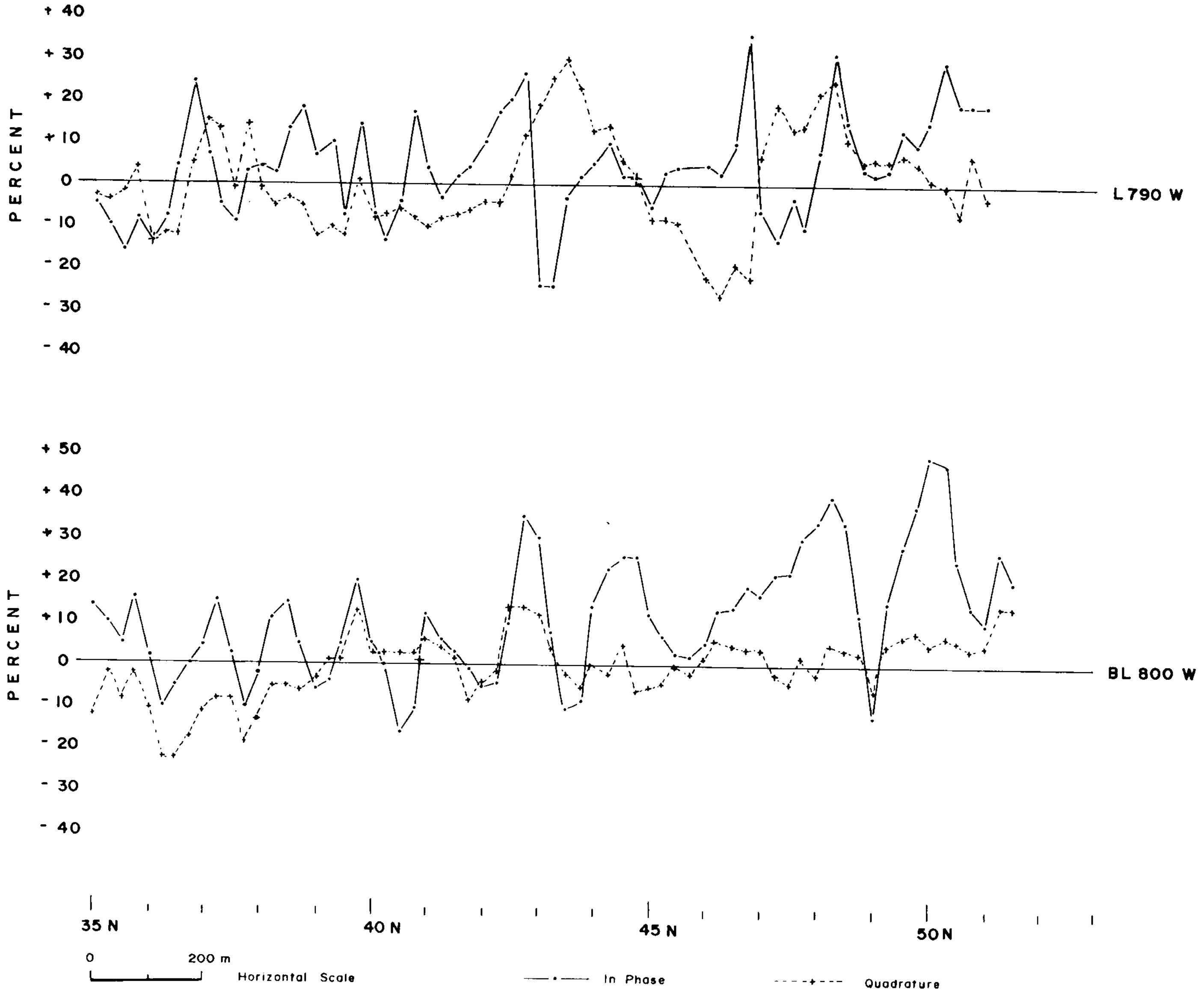
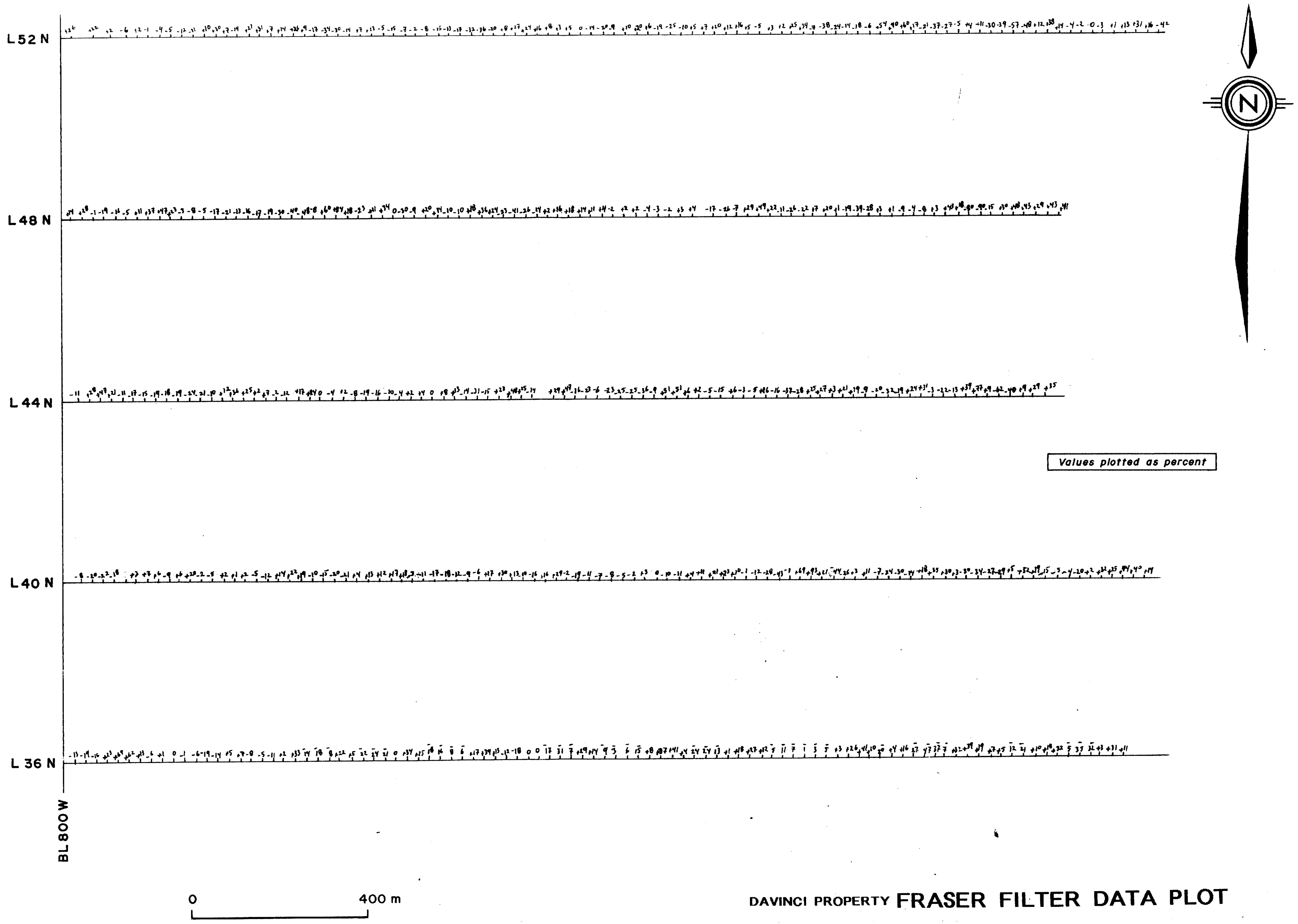


FIGURE 10f



DAVINCI PROPERTY **FRASER FILTER DATA PLOT**

FIGURE 10g

APPENDIX VII

Statement of Qualifications

Statement of Qualifications

I, Lynn Grexton, graduated from the University of Waterloo, Waterloo, Ontario with an Honours Applied Bachelor of Science Degree, Earth Science major, in May 1980. I have worked as an exploration geologist for major companies and consulting firms in the Canadian Cordillera since that time. I have a direct interest of 100% in the DaVinci mineral claims discussed in this report.

Vancouver, British Columbia
November 30, 1994

Lynn Grexton, Geologist