93-#659 — # 11313

GEOLOGICAL BRANCH
ASSESSMENT REPORT

# 11,313

# part 1 of 2

N.T.S. Mapsheet 104B/10W
130°52E, 56°35'N

Geological, Geochemical and Geophysical Report on the Central Claim Block, Snippaker Creek Area, Liard Mining Division.

| | |
|---|---|
| Gossan 18 | 252S (9) |
| Gossan 19 | 2526 (9) |
| Gossan 20 | 2527 (9) |
| Central | 2904 (8) |

Owner: Chris Graf

Operator: Onaping Resources Ltd.

B.V. Hall

October 10, 1983

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## APPENDICES

## 1. Introduction

At the request of C.E. Page, Chief Geologist for Onaping Resources Ltd. and R. Nemis, President of Central Crude Ltd. an exploration program was conducted on the central claim group.

CENTRAL CLAIM GROUP
(grouping notice filed September 28, 1983)

| Claim | Record Number | Starting Date |
|---|---|---|
| Gossan 18 | 2525 (9) | Sept. 29, 1983 |
| Gossan 19 | 2526 (9) | Sept. 29, 1983 |
| Gossan 20 | 2527 (9) | Sept. 29, 1983 |
| Central | 2904 (8) | Aug. 18, 1983 |

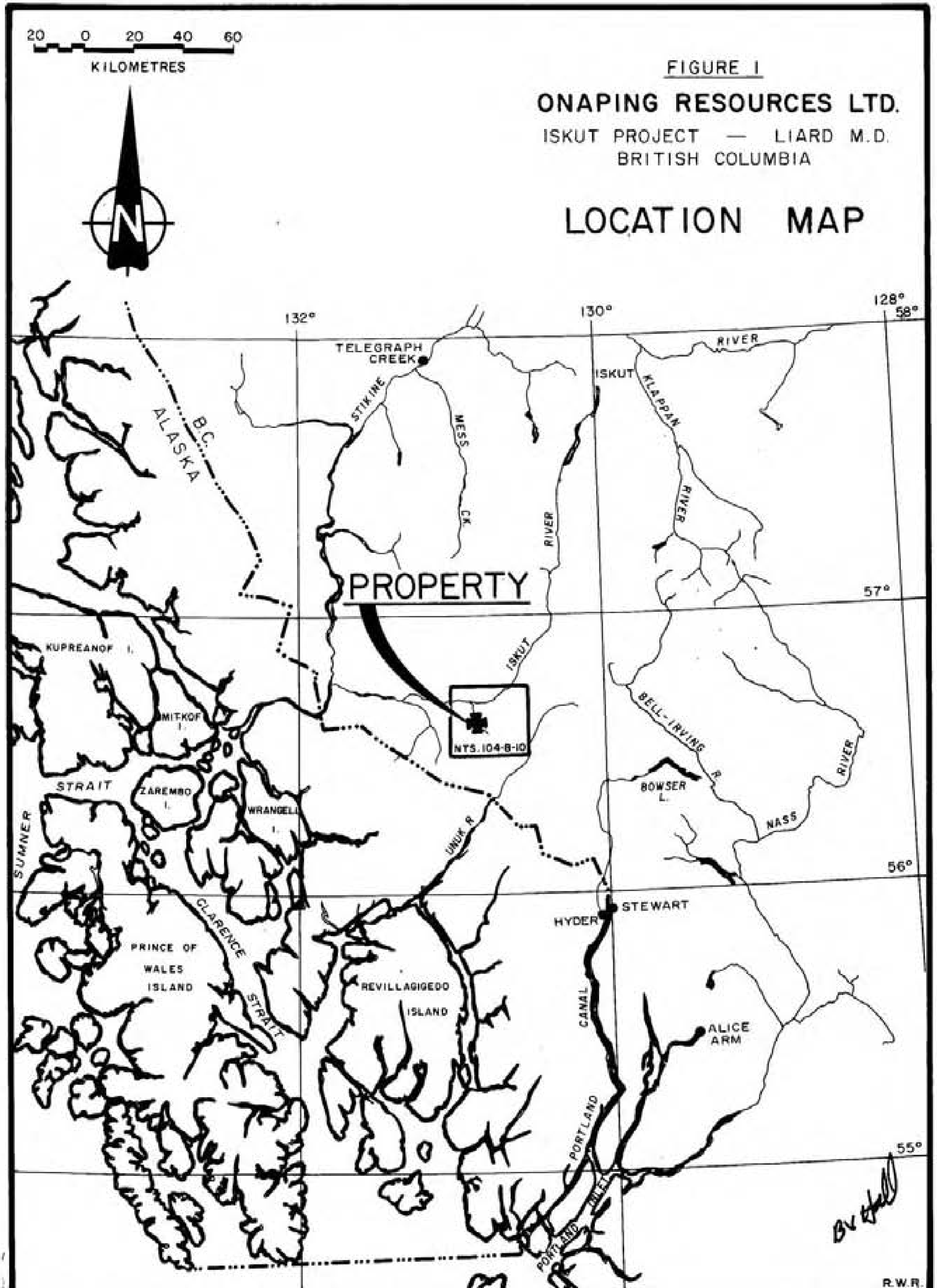
The program consisted of geological mapping, prospecting, soil geochemistry, stream geochemistry, ground magnetometer and EM-16 surveys, and covered all the claims of the central claim group. Approximately 34 km of flagged grid lines were established at a line spacing of 200m with an additional 5.4 km at intervals of 100 and 50 metres. Prospecting and geological mapping using base maps prepared at a scale 1:5,000 covered the bulk of the claim block (18 $km^2$). Coverage for the magnetometer and EM-16 included only the lines spaced at 200m (34 km). For the soil sampling a total of 786 samples were taken at intervals of 100, 25 and 10 metres. In addition, 43 rock samples were taken over areas of possible mineralization and 19 heavy mineral stream sediment samples were taken from most major drainages of the claim block. The data was compiled on a 1:5,000 scale orthophoto map prepared by McElhanney Surveying which covered a total area of 43.5 $km^2$.

At present the central claim group is under option from the owner, Chris Graf of the Alpha Syndicate to Central Crude Ltd. of 436 Adelaide St. W., Toronto, Ontario. The operator for the exploration work was Onaping Resources Ltd., Suite 916 - 111 Richmond St. W., Toronto, Ontario.

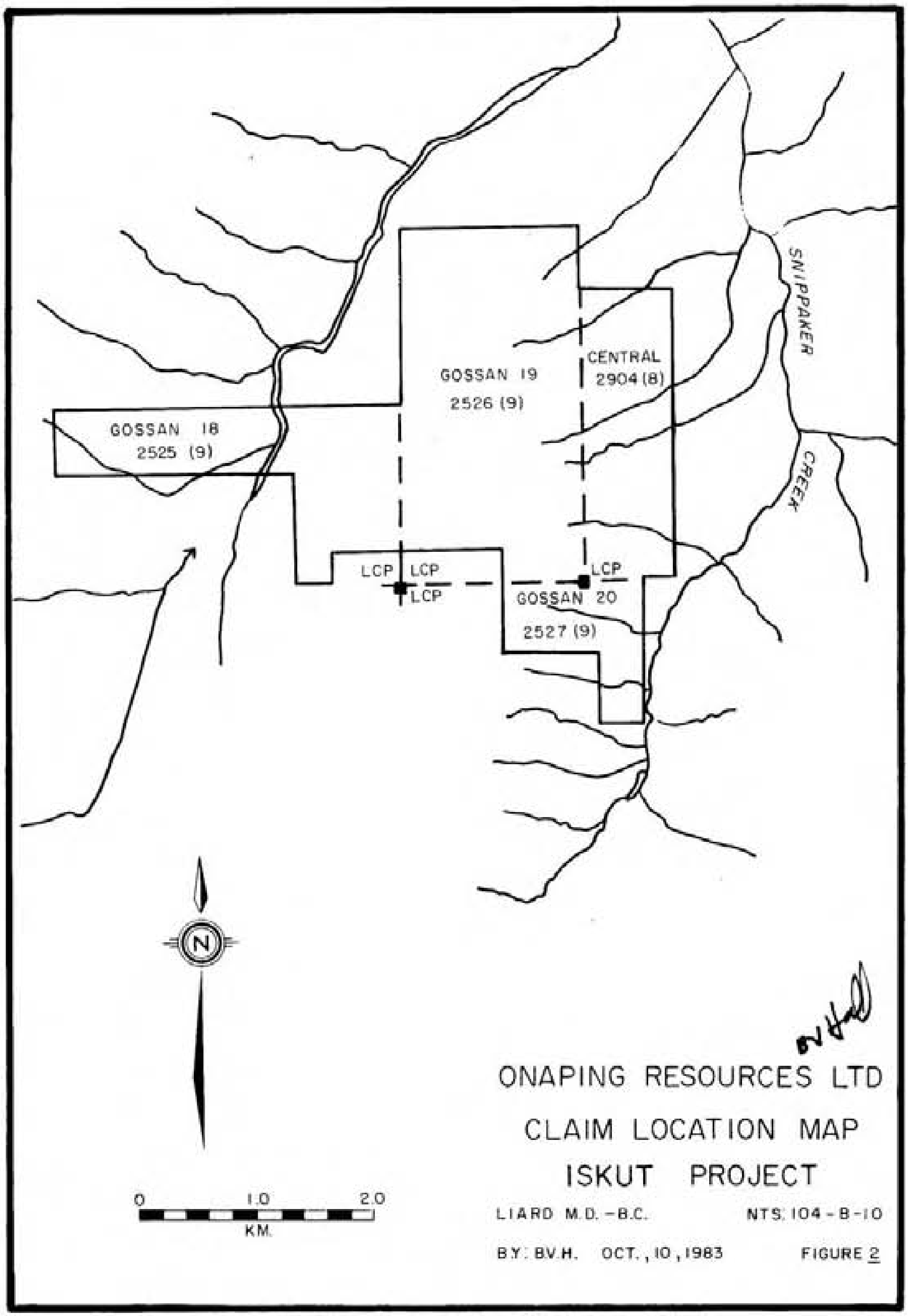
## 2. Location and Access

The claim group is located immediately south of Snippaker Creek on N.T.S. mapsheet 104B/10W ($131^{o}52'$, $56^{o}35'$). (Figs. 1 and 2). This is roughly located between the Unuk and Iskut Rivers of northwestern British Columbia. Stewart, the nearest town lies approximately 90 km due south of the property, and Wrangell, Alaska 130 km to the west.

Access to the property was by helicopter stationed at the Snippaker airstrip, 7½ kilometers to the southwest. Scheduled fixed wing service between the Snippaker airstrip and Terrace was maintained by Trans Provincial Airways in Terrace.



20 0 20 40 60
KILOMETRES
FIGURE I
ONAPING RESOURCES LTD.
ISKUT PROJECT — LIARD M.D.
BRITISH COLUMBIA
LOCATION MAP
N
132°
130°
128°
58°
57°
56°
55°
TELEGRAPH CREEK
STIKINE
MESS CK.
ISKUT
KLAPPAN
RIVER
RIVER
RIVER
B.C.
ALASKA
PROPERTY
ISKUT
NTS. 104-B-10
KUPREANOF I.
MITKOF I.
STRAIT
ZAREMBO I.
WRANGELL I.
SUMNER
BELL-IRVING R.
BOWSER L.
NASS
RIVER
UNUK R.
STEWART
HYDER
PRINCE OF WALES ISLAND
CLARENCE STRAIT
REVILLAGIGEDO ISLAND
CANAL
PORTLAND
ALICE ARM
PORTLAND INLET
R.W.R.




ONAPING RESOURCES LTD
CLAIM LOCATION MAP
ISKUT PROJECT
LIARD M.D. - B.C. NTS: 104 - B - 10
BY: BV.H. OCT., 10, 1983 FIGURE 2

3. Exploration History

The first hardrock mineral exploration along the Iskut and Unuk Rivers took place during the years 1898 to 1903 by latecomers of the Klondike gold rush. In 1906 the Iskut Mining Company was formed by prospectors Busby and Bronson who staked a number of small showings in the Johnny Mountain area. In 1929 prospectors working for Cominco staked a large block of claims surrounding those of the Iskut Mining Company. The next record of exploration work was by Hudson Bay Mining and Smelting in 1954. At this time the Pickaxe showing of the present Reg claims was prospected and drilled.

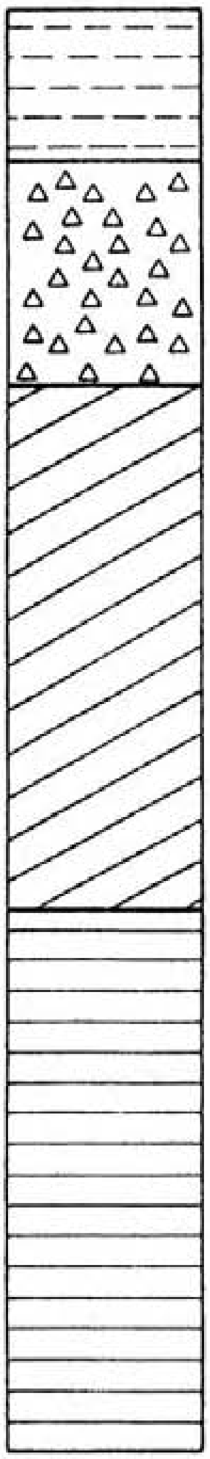
During the porphyry copper boom of the early 1960's, the exploration activity in the area increased significantly. As a result of this activity Great Plains Development staked the Tami and Kim claims, of which the Tami claims is partially covered by the present central claim group. Between 1971 and 1976 a considerable amount of exploration work was performed on the Tami claims consisting of line cutting, geological mapping, prospecting, and soil sampling (McInnis, 1972; Visagie, 1974; Garnatt et al, 1975). During the course of this work a number of anomolous areas were outlined by the soil geochemistry, plus several showings located. With exception of the skarn mineralization located at L31E 82+50N all the areas of interest were situated south of the present central claim group.

To complete the exploration history, in 1982 Chris Graf of the Alpha Syndicate staked to Gosson 18, 19 and 20 claims following a news release by Skyline Resources Ltd.

## 4. Regional Geology

Regional mapping by the Geological Survey of Canada in 1935 (Map 311A) and 1957 (Map 9-1957) in the Snippaker Creek area indicate the presence of Mesozoic sediments and volcanics of the Takla and Hazelton Groups which have been intruded by granitic rocks of the Coast Plutonic Complex.

At present a considerable degree of confusion exists over the correct nomenclature, stratigraphic relationships and ages of the sedimentary and volcanic units. Presented in Figure 3 is a stratigraphic column compiled by geologists working for Texasgulf and Cominco for the Johnny Mountain area. Briefly this stratigraphic column shows a +700m sequence of weakly metamorphased siltstones and argillites which are considered to be pre-Triassic in age. Overlying this sequence is a +700m sequence of black shales, siltstones, greywackes and conglomerates which coarsen upward. Two corals from a limestone bed in this sequence have been dated as middle Triassic. These sediments are in turn overlain by a chaotic mixture of andesitic to rhyolitic pyroclastic and flow rocks which have been altered to varying degrees by hydrothermal alteration and greenschist metamorphism. This unit has been informally termed the Snippaker Creek Volcanics and is host to the majority of the region's mineral deposits. In addition this unit underlies the bulk of the central crude claim group.



| AGE | THICK-NESS | LITHOLOGIES | MINERAL SHOWINGS |
|---|---|---|---|
| JUR(?) | 200m | SILICEOUS ARKOSE | |
| JUR(?) | +300m | ANDESITE TO RHYOLITIC PYROCLASTICS AND FLOWS, CHERT, AND VOLCANIC SEDIMENTS | REG, INCL, TAMI, KIM, PINS, CENTRAL, WOLVERINE(?), LITTLE HILL, PYRAMID, KHYBER, PELICAN |
| mTr(?) | +700m | BLACK SHALES, SILTSTONES, GREYWACKES, AND CONGLOMERATES. | ISKUK SILVER, WOLVERINE(?), BRON |
| PRE-Tr | +700m | GREY-GREEN SILTSTONES AND BROWN ARGILLITES | |

BVHall

**JOHNNY MOUNTAIN**
**STRATIGRAPHIC SECTION**

| by: B.V. Hall (modified from L. Orsa 1974) | Date: October 10, 1983 |
|---|---|
| | Figure 3 |

Overlying the Snippaker volcanics is a 200m thick section of sedimentary rocks consisting of a well bedded, dark grey siliceous "arkose".

Regional mapping by the Geological Survey of Canada places a Triassic age on the Snippaker Creek Volcanics. However, comparing the stratigraphic sequence presented in Figure 3 with the legend of G.S.C. Map 9-1957, indicates either a Jurassic or Permian age is more appropriate. Based upon work by Grove (1973) east of the Snippaker Creek a middle to lower Jurassic age appears to be most logical. This would make the Snippaker Creek Volcanics corraletive with either the Betty Creek or Unuk River formations.

Intruding the Mesozoic strata in the Snippaker Creek area are lower to middle Jurassic plutonic rocks which range in composition from syenite to diorite. Contact metamorphism and anatexis accompanied the emplacement of some of these intrusives resulting in the formation of migmatites, gneisses and cataclasites at the border zones. In addition large zones of hydrothermal alteration are developed around some of the more potassic intrusives.

Uppermost in the stratigraphic section for the Snippaker Creek area are a number of recent cinder cones and volcanic flows consisting of olivine basalts. Hotsprings related to this volcanic event are presently active in a number of localities.

Structurally the Snippaker Creek area is relatively uncomplicated. Satellite photos show the existence of a number of large fault systems which transect the area in a northerly to northeasterly manner. Open folding has affected some portions of the Mesozoic strata with tighter folds present in the Paleozoic strata.

## 5. Property Geology

### 5.1 Structure

Structurally the geology of the claim group can be best described as a roof pendant of Snippaker Volcanics which form a cap on the underlying intrusive rocks of the Coast Plutonic Complex (Figs. 4a, b).

In general the strike of the Snippaker Volcanics strata can be subdivided into a southeasterly trending group north of the Big Gully Fault and a northeasterly trending group to the south. As indicated by changes in dip some folding has occurred, however; these folds largely appear to be "open" and of minor extent. Folding is in some cases intimately associated with some of the northeasterly trending faults which truncate the claim group. These faults appear as well defined linements on the air photographs and off set the stratigraphy. Two distinct fault sets are present, the oldest is represented by the Big Gully Fault which strikes east-west and dips steeply to the north. Displacement on this fault appears to be normal resulting in an apparent left lateral displacement of the stratigraphy. The younger set of faults strike north easterly and dip vertically. These faults appear to have largely normal displacements which result in repetitions of the stratigraphy in outcrop.

## 5.2 Stratigraphy

As mentioned previously the geology of the claim group contains components from the Snippaker Volcanics and Coast Plutonic Complex.

The Snippaker Volcanics tentatively dated as Lower to Middle Jurassic contain a variety of rock types ranging from mafic volcanic flows and pyroclastics to volcanoclastic sediments and minor chert. The dominant rock types in this package are mafic pyroclastic rocks (Jtb). Clast size varies greatly from coarse grained blocks (+ 256mm) to ash (- 2mm). Characteristically the clasts are angular to subangular and composed dominately of volcanic fragments. In most cases the clasts are self supporting, however; in a few localities (B225) large blocks were found supported in a fine grained matrix suggesting a possible lahar.

The mafic volcanic flows (Jmf) are for the most part restricted to north of the Big Gully Fault. They are dark green in colour, aphanetic, variably porphyritic (hornblende phenocrysts), variably magnetic and in some cases amygdaloidal. Petrographic study of a number of samples (Appendix A; B176, B239, B288, and G119) suggest these flows are andesitic in composition.

In one outcrop (B51) the pyroxene porphyry occurs. This rock type is dark green, very magnetitic and contains abundant medium grained phenocrysts of pyroxene. It appears to represent a volcanic flow, however the relatively coarse grain size and lack of continuity suggest it may be a dyke.

Occupying the central portion of the claim block is the feldspar porphyry (Jfp). This rock type is green in colour, medium grained, porphyritic (plagioclase, ± hornblende), and generally magnetic. Tentatively this rock type is considered to represent a subvolcanic intrusive, however it may be a coarse-grained extrusive.

The sericitic volcanic and pyroclastic unit (Jsv) represents a rock type which has been extensively altered to sericite. Relict brecia clasts and hornblende phenocrysts are visible, but for the most part the primary textures have been obliterated. Consequently this unit may contain both pyroclastic and flow rock types. Characteristically this rock type is pale green in colour and in some cases has a prominant foliation.

The felsic volcanic unit (Jfv) is pale green in colour, aphanetic and non-magnetic. In contrast to the altered flows and pyroclastics (Jsv) this rock type shows little evidence of alteration (Appendix A; B260), and may represent either a subvolcanic intrusive or felsic volcanic flow.

The volcanoclastic sediments (Jvs) occur in a broad belt immediately south of the Big Gully Fault. Characteristic of this rock type are rounded polylithic clasts which exhibit sedimentary textures such as graded bedding. Dominately the clasts are composed of either volcanic material or chert.

Minor sulphide clasts of massive sphalerite and pyrite were observed in one outcrop (G142).

The chert unit (Jch) occurs in a number of localities east of L29E. It is generally pale green in colour and well laminated. In one outcrop (B318) fine layers of magnetite were observed parallel to bedding.

The Coast Plutonic complex is represented on the claim group by four members. The oldest appears to be the granodiorite (Jgn) which is most prevalent in the western portion of the claim block. This rock type is medium to coarse grained, hornblende bearing, holocrystalline, equigranular, generally non-magnetic, and altered to varying degrees by sericite, chlorite and orthoclose.

In the eastern portion of the claim block, in contact with the quartz monzonite (Jqm) this rock type is altered and recrystallized to such a state that is impossible to distinguish from the altered volcanic rocks, hence it has been subdivided into a separate unit (Jgv). Orthoclose veins are common in this unit along with the conversion of plagioclase to sericite and, hornblende and biotite to chlorite (Appendix A; B39, B43, B50 and B356).

The younger intrusives in the claim group include the quartz monzonite (Jqm) and orthoclose porphyry (Jop). The quartz monzonite (Jqm) occurs at the eastern and western margins of the claim group. This rock type is characterized by a relatively unaltered appearance plus the presence of orthoclase in the groundmass and phenocrysts. It is relatively coarse-grained, holocrystalline, slightly porphyritic, magnetitic, hornblende and biotite bearing.

The orthoclase porphyry (Jop) occurs in the southern portion of claim group, and as a dyke-like body in the vicinity of L31E. It is characterized by large phenocrysts of orthoclase up to 2 cm long. The remainder of the rock is medium grained, holocrystalline, hornblende bearing and non-magnetic.

## 5.3 Alteration

As noted briefly in the previous chapter, hydrothermal alteration has affected most of the rock types older than the quartz monzonite (Jqm) and orthoclase porphyry. This alteration appears to be related to the quartz monzonite (Jqm) situated in the eastern portion of the claim block (Fig. 4b). The potassic alteration is the most extreme and is manifested by orthoclase veins in the altered granodiorite and volcanic rocks (Jgv). In addition, quartz and chlorite veins are also present, and the mafic minerals (biotite and hornblende) have been converted to the chlorite. This alteration assemblage does not have any significant sulphide mineralization associated with it. On the other hand the pervasive sericitic alteration prevalent in the southern portion of the claim block and the scattered zones of epidote veining does have significant veined and disseminated pyrite. These alteration patterns conform to a classic "porphyry" copper type model.

The montmorillonite alteration present in the quartz monzonite (Jqm) does not appear to be related to any mineralization. Consequently it appears to be more the product of deuteric fluids generated within the magma.

## 5.4 Mineralization

Three distinct forms of mineralization occur on the property. The most pervassive is manifested by veined and disseminated pyrite which occurs in all rock types older than the quartz monzonite (Jqm). This mineralization appears to be related to the pervassive sericitic alteration and appears akin to the pyrite halos which commonly surround porphyry copper type deposits. In a number of localities (L27E, 101 + 50N; L27E, 95N; L35E, 96N; L31E, 87N; L33E, 90N; L35E, 80N; L39E, 90N; and L39E, 97N), the pyrite content exceeds 5%. This results in many of the conspicuous gossans which characterize the property. In addition the soil geochemistry (Fig. 9a, b) indicates anomolous gold contents associated with these zones of elevated pyrite content.

Vein mineralization consisting of base metals and quartz, or barite constitute the second form of mineralization on the claim group. A barite vein averaging 5 cm in thickness was located around L41E 96 + 25E, (B366). This vein contained massive barite and assay samples failed to detect significant base or precious metal values. As for the second type of vein mineralization, one vein was found in place at L35E. 97 + 50N (G143) and a number of float samples were found. The vein encountered in outcrop G-143 averaged 4 cm in thickness and extended in excess of 50m across the Big Gully Fault.

Internally the vein was ribboned with sphalerite occupying the central portion. An assay sample (G143) indicated significantly high values in Zn, Au, Ag, Cu and Mo. The float samples located at L35E 90 + 80N consisted of galena and quartz and had the appearance of a relatively local source area.

The third and perhaps most significant type of mineralization has the overall appearance of a skarn (L31E 82 + 50N). More specifically the mineralization consists of a series of closely spaced veins of magnetite, quartz and epidote hosted in a sericitized volcanic breccia adjacent to a granodiorite. These veins are contained in a zone 5 - 7m wide and in excess of 100m long which strikes to the southeast. Associated with this zone are some of the highest Au, Ag, Cu and Mo soil anomolies on the property. Snow and talus cover are substantial in the area consequently the potential for finding more mineralization in place is quite high.

## 6. Magnetometer Survey

### 6.1 Method

A proton magnetometer survey was preformed over most of the claim group using a Unimag II provided by Exploranium Geometrics of Toronto, Ontario (Figs. 6a, b). Readings were routinely taken at 25m intervals and the data was corrected daily for diurnal drift using morning and afternoon readings from a fixed base station. Corrections were also made between days to make the complete survey internally consistent.

6.2 Results

The magnetometer survey proved to be quite useful in outlining zones of known magnetite mineralization and providing some justification for the present structural interpretation.

Partially delineated in the course of the survey were two zones of extremely high magnetism located at L31E, 109N and L31E, 82N. The first zone was found to coincide with outcrop B319, which as noted previously is a chert containing bands and laminations of magnetite. The second and most significant zone occurs in an area of very high soil geochemistry and magnetite skarn mineralization.

One other area of high magnetism occurs over a relatively large area centered about L37E, 101N. In this case the relatively high magnetism appears to be related to the quartz monzonite (Jqm) which characteristically contains up to 1% disseminated magnetite. To the north, this zone appears to be truncated by an easterly trending fault and to the south by the Big Gully Fault.

In addition, the Big Gully Fault appears to have truncated the zone of relatively high magnetism associated with the feldspar porphyry south of L27E. Faulting is also responsible for a number of other magnetic features. Examples include the sharp truncation of the magnetically high zone north of L27E, 111N by the most northerly fault and the relatively straight southern boundary of the magnetically high zone situated northeast of L39E, 89N by the most southerly fault.

## 7. VLF Electromagnetic Survey

### 7.1 Method

A VLF-EM survey was conducted over the bulk of the claim group using a Geonics EM16. Readings for both the in-phase and quadrature-phase were routinely taken at 25m intervals. However only the in-phase readings are presented in this report (Figs. 7a, b). This data (tabulated in Appendix B), was filtered before contouring using the Fraser Filter Method (Fraser, 1969).

7.2 Results

The VLF survey besides being largely an exercise in frustration did provide some useful information on the location and orientation of some of the major faults.

The Big Gully Fault showed up as a prominent east-west trending feature which ended abruptly in the vicinity of L25E, 98 + 50N, precisely where the geological map indicated the presence of a later fault. The easterly trending zone located east of L13E, 98N also appears to represent the trace of one of the earlier faults, as does the easterly trending zone situated east of L33E, 102 + 50N.

For the later northeasterly trending faults, the most northerly of these appears to be represented by features situated at L13E, 91 + 50N and L31E, 99N.

## 8. Heavy Mineral Geochemistry

### 8.1 Method

A total of 19 heavy mineral samples were collected from the major streams draining the claim group. In most cases the samples were collected from gravel bars in the active portion of the stream bed. After wet sieving to -20 mesh approximately 2 kilograms of sample was placed in plastic bags and sent to Min-En Laboratories Ltd. at 705 W 15th St., North Vancouver, B.C.

At Min-En Laboratories the samples were oven dried for two days at 95°C and sieved into a -80 mesh fraction and a -20 +80 mesh fraction. The -20 + 80 mesh fraction was then weighed on an analytical balance and ground to -80 mesh. Upon grinding the samples underwent a density separation using a heavy liquid of specific gravity 3.1. From the heavy fraction of these samples the magnetic fraction was removed and weighed. Both the -80 mesh fraction and non-magnetic heavy fraction of the -20 +80 mesh were then analysed for Cu, Pb, Zn, Ag, Mo, As and Au.

For the Au analysis 10.0 gms of sample was dissolved in 25 mls of hot Aqua-regia solution and left for approximately 3 hours to evaporate. The samples were then redissolved in 25 mls of concentrated hydrochloric acid and made up to 100 mls with distilled water. The Au was then extracted using the organic solvent MIBK and run on a Varion Tectron model 5 atomic absorption unit.

For the analyses of Cu, Pb, Zn, Ag, Mo and As, 1.0 gms of sample were dissolved in a 8 ml solution of concentrated nitric and perchloric acid for 8 hours. The solution was then diluted to 25 mls with distilled water and analysed on a Gerell-Ashe Model 9000 inductivity coupled plasma (ICP) unit. Background corrections were made for all analyses and the results compared to prepared standards.

## 8.2 Results

In general the heavy mineral samples were found to be an effective means of locating areas of possible mineralization. The most interesting sample (GR-16) was found to drain the general vicinity of the skarn mineralization located at L31E, 82 + 50N. This sample was found to be reasonably high in Au, As, Ag, Pb and Cu, many of the same elements found to be significantly high in the soil geochemistry.

Other interesting samples include GR-9 and GR-13, which were high for Au and Zn respectively. Unfortunately, neither of the drainages upstream from these samples had high soil sample geochemistry to support the high heavy mineral values.

# 9. Geochemistry

## 9.1 Method

Soil samples were collected at intervals of 100m over the bulk of the property, with detailed sampling at 25m and 10m intervals over areas of suspected mineralization. Routinely the samples were analized for Au, Ag, Cu, Mo, Pb, Zn and As except over some of the detailed grids where the results for certain elements were not anticipated to be significant.

The samples were for the most part taken from the BM or BF horizons using a grubhoe. Once collected the samples were placed in kraft high-strength paper envelopes and field dried for one week before being sent to Rossbacher Laboratory of 2225 S Springer St., Burnaby, B.C. At Rossbacher Laboratory the samples were dried overnight then sieved to -80 mesh.

For the Cu, Pb, Zn, Ag and Mo analyses a 0.5 gm portion of the -80 mesh fraction was digested for 4 hours in a hot acid attack consisting of concentrated nitric and perchloric acid. Upon digestion the sample was made up to a volume of 10 mls with distilled water and analyzed using a Varian Techtron model 1275 atomic absorption unit.

The Au analyses were performed using a 10.0 gm portion of the -80 mesh fraction which was roasted for 1-1/2 hours at 550$^{O}$C. The sample was then digested in 30 mls of hot

Aqua-regia solution and diluted to 100 mls with distilled water. Then 75 mls of the solution was extracted using the organic solvent MlBk and analized using a Varian Techtron model 1275 atomic absorption unit. Background corrections were preformed on all the atomic absorption values and the values were compared to prepared standards.

For the As analyses 0.25 gms of the -80 mesh fraction was digested in the same manner as Pb, Zn, Cu, Mo and Ag. From the diluted 10 ml solution a 5 ml aliquot was taken and diluted to 20 mls with distilled water. Then a Hydride Generation Method was used to generate arsine using 5.0 ml of concentrated hydrochloric acid and 1.0 gm of granulated zinc. The resulting solution was analysed using a Spectronic 20 colorimeter. The results were then compared to a standard curve constructed from values obtained from prepared rock standards.

For the determination of background and anomolous populations s statistical approach was used. Frequency plots were constructed on 2 cycle log-probability paper for each element using the values for the 100m sample intervals (Appendix C). By using this method statistically normal populations will plot as straight lines and points of inflection are generally considered to represent the boundaries between different populations (Sinclair, 1975). Determination of anomolous and above background populations were made by inspection of the frequency plots. In the case of Au, Ag and Mo a relatively large percentage of the data was below the analytical detection limit. Consequently these values were removed from the sample population and the "censored" data plotted.

9.2 Results

In general, background values for Au, As, Ag, Pb and Zn were found to be higher for the Snippaker Volcanics. Mo and to a lessor extent Cu on the other hand were found to be highest for the intrusive rocks.

In addition to defining bedrock geology the soil geochemistry proved to be a most effective means of locating areas of significant mineralization. During the course of the survey three areas of interest were defined.

The first is a rather large area of anomolous and above above background values for Au, Ag, and Pb. This zone is centered about L31E, 97N and extends for approximately 900m east-west and 200m north-south. In general this zone largely reflects elevated quantities of veined and disseminated pyrite in the bedrock (Fig. 4). Furthermore it was found that where the soil cover was thinnest over the mineralized outcrops the soil geochemistry was highest. Consequently the highest soil values although an indicator of mineralization did not necessarily mean better mineralization.

Partially coincident with this zone but offset to the west is a large zone of anomolous As and Zn values. Again this appears to be a reflection of bedrock concentrations of pyrite.

The second and most significant zone occurs in the vicinity of the skarn mineralization located at L31E, 82 + 50N.

This area contains a concentration of highly anomolous Cu and Ag values which attain highs of 2440 ppm and 32 ppm respectively. Anomolous values for Au, Pb and Mo accompany the high Cu and Ag values.

The third area of interest includes samples from the valley presently occupying the Big Gully Fault. Scattered anomolous values for As, Cu, Zn and Pb are present along with a spot high of 4100 ppb for Au.

## 10. Rock Geochemistry

### 10.1 Method

Rock chip samples were routinely collected over outcrops containing significant quantities of sulphide minerals or alteration assemblages. In general the samples consisted of unweathered rock and were collected using a geological hammer. The samples were placed in plastic bags and shipped to Rossbacher Laboratory of 2225 S. Springer St., Burnaby, B.C. Upon crushing and grinding the samples were analysed using the same procedure as the soil samples.

## 10.2 Results

For the most part the rock geochemistry did not reveal the presence of any significant mineralization. The most interesting sample (G143) came from a small sphalerite-quartz vein located at L35, 97 + 50N. As anticipated this sample contained very high values in Zn (14,000 ppm) and Au (2200 ppb) along with significant Ag, Cu and Mo values. Unfortunately this sample represents a vein of limited thickness and lateral extent.

Other interesting samples include B170 which is reasonably high in Au (140 ppb) and B121 which is high in Zn (2540 ppm). Surrounding both these samples were soil samples containing background values.

## 11. Conclusions and Recommendations

Based upon geology and geochemistry two areas of interest have been identified on the central claim group. The first area centered about L31E, 97N is a large area (700 x 900m) of high geochemistry and pyrite content. Potential in this area may exist for a large tonnage low grade Au deposit.

The second area of interest is located at L31E, 82 + 50N. Mineralization resembling a skarn was found in an area of very high copper and silver geochemistry. The magnetometer survey suggests this zone is much more extensive than what has been previously defined.

In conclusion the potential for defining economic mineralization on the central claim group appears good and a work program for next year is justified. This program should concentrate on the central portion of the claim group (L25E to L37E) and should consist of:

1. extending L25E, L27E and L29E to 115N and completing the soil sampling (100m stations), geological mapping, magnetometer and EM-16 surveys.
2. detailed geological mapping on areas of interest thus far defined.
3. detailed magnetometer on survey on any areas of interest.
4. approximately 18 km of induced polarization (L27E to 37E).

5. trenching, with a contingency for at least 500m of diamond drilling.

Respectfully submitted

BV Hall.

B.V. Hall, M.Sc.

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APPENDIX A

Petrographic Descriptions

B39 BL 100N 34 + 00E Granodiorite

Mottled dark and pale green rock, medium grained, panidiomorphic-granular, holocrystalline, equigranular, non-magnetic, possible orthoclose veins crosscutting rock.

| | | |
|---|---|---|
| Plagioclase | 35% | coarse to medium grained. euhedral, severely altered to sericite. |
| Quartz | 20% | medium subhedral grains. interstitial to plagioclose. |
| Hornblende | 5% | medium grained, euhedral but severely altered to chlorite. |
| Apatite | 1% | fine to medium euhedral grains. |
| Sphene | 1% | fine anhedral grains. |
| Sericite | 25% | fine grained alteration product of plagioclase. |
| Chlorite | 13% | pseudomorphing biotite and hornblende grains. |

Originally a Granodiorite, hydrothermal alteration has altered the plagioclose to sericite and, hornblende and biotite to chlorite.

B43 L36 + 50E 101 + 00N Granodiorite

Mottled dark and pale green in colour, medium grained, panidiomorphic-granular, holocrystalline, equigranular, non-magnetic.

| | | |
|---|---|---|
| Plagioclase | 35% | coarse to medium euhedral grains, severely altered to sericite, relict albite twinning. |
| Quartz | 20% | medium enhedral grains, interstitial to plagioclase. |
| Apatite | 1% | medium to fine euhedral, prismatic grains. |
| Hornblende | 5% | medium grained, severely altered to chlorite. |
| Sphene | 1% | fine anhedral grains. |
| Sericite | 20% | fine grained alteration product of plagioclase. |
| Chlorite | 9% | fine grained alteration product of hornblende or in veins. |
| Calcite | 4% | late stage veins crosscutting plagioclase. |

Originally this rock was a Granodiorite. Minor hydrothermal alteration has resulted in the formation of sericite and chlorite at the expense of plagioclase and hornblende.

B50 L37 + 45E 106 + 00N Granodiorite

Mottled dark green, pale green and pink in colour, medium grained, holocrystalline, panidiomorphic-granular, orthoclase aligned along diffuse fractures. Non-magnetic, equigranular.

| | | |
|---|---|---|
| Plagioclase | 30% | coarse euhedral grains, which are severely altered to sericite. |
| Quartz | 10% | medium to fine subhedral grains, interstial to plagioclase. |
| Orthoclase | 30% | medium anhedral grains interstitial to plagioclase and quartz, commonly associated with chlorite along fractures. |
| Apatite | 2% | medium to fine euhedral prismatic grains, commonly enclosed by quartz. |
| Sphene | 1% | fine anhedral grains |
| Sericite | 10% | fine grained alteration product of plagioclase. |
| Chlorite | 5% | pseudomorphing biotite. |
| | 8% | fine grained alteration mineral commonly found in association with orthoclase and pyrite along fractures. |
| Pyrite | 4% | fine euhedral grains commonly associated with chlorite. |

Originally this rock was a Granodiorite. Hydrothermal alteration has resulted in the introduction of orthoclase, pyrite and chlorite along fractures and the conversion of plagioclase and biotite to sericite and chlorite respectively.

B176 L21 + 20E 99 + 25N Andesite flow

Dark green in colour, aphanitic, mirolitic cavities possibly representing vesicules, magnetic.

| | | |
|---|---|---|
| Plagioclase | 60% | fine grained stubby microlites. |
| Quartz | 15% | fine grained anhedral grains in ground mass. |
| Chlorite | 5% | fine grained groundmass |
| | 10% | alteration product associated with calcite veins |
| Calcite | 5% | present in curvilinear veins commonly associated with and crosscut by chlorite. |
| Magnetite | 5% | fine anhedral grains, randomly distributed. |

Originally an Andesite, hydrothermal alteration or burial metamorphism has introduced calcite and chlorite and altered the mafic constituents to chlorite.

B232 L23 + 20E 102 + 20N Quartz-bearing Syenite.

Mottled green and white in colour, medium grained, panidiomorphic-granular, equigranular, magnetic chlorite veinlets.

| | | |
|---|---|---|
| Plagioclase | 50% | coarse euhedral grains partially altered to sericite, some relict albite twinning visible |
| Quartz | 5% | medium anhedral grains. interstial to plagioclase. |
| Apatite | 2% | medium to fine euhedral prismatic grains. |
| Sphene | 1% | fine anhedral grains. |
| Sericite | 15% | fine grained alteration product of plagioclase. |
| Chlorite | 15% | pseudomorphing biotite grains and present in alteration envelopes. |
| Orthoclase | 10% | medium anhedral grains, interstitial to plagioclase. |
| Pyrite | 1% | fine euhedral grains commonly associated with chlorite. |
| Magnetite | 1% | fine anhedral grains. |

Originally an intrusive rock, more specifically a Quartz bearing Syenite. Hydrothermal alteration has resulted in the formation of sericite at the expense of plagioclase and chlorite from biotite. In addition minor amounts of pyrite and chlorite have been introduced along fractures.

B239 L32 + 80E 111 + 75N Hornblende Andesite.

Medium green in colour, faint amygdules, very magnetic, aphanitic, holocrystalline.

| | | |
|---|---|---|
| Plagioclase | 60% | fine felted microlites, ophitic and aligned in a trachytic fashion. |
| Hornblende | 15% | fine subhedral grains in an ophitic groundmass. |
| | 10% | medium enhedral phenocrysts partially altered to chlorite. |
| Quartz | 6% | fine anhedral grains. |
| Chlorite | 7% | fine grained alteration product of hornblende. |
| Magnetite | 2% | fine enhedral grains. |

The trachytic alignment of the glagioclase microlites plus the presence of amygdules suggest this rock to be volcanic, probably as Hornblende Andesite.

B260 L33 + 50E 87 + 40N Felsic Volcanic.

Pale green in colour, aphanitic, non-magnetic, minor pyrite along fractures.

| | | |
|---|---|---|
| Plagioclase | 50% | fine grained stubby microlites |
| Quartz | 20% | fine anhedral grains interstial |
| Pyroxene | 10% | fine anhedral grains, ophitic, partially altered to chlorite. |
| Sericite | 16% | fine grains randomly distributed in groundmass. |
| Chlorite | 3% | fine grains randomly distributed in groundmass. |
| Pyrite | 2% | fine euhedral grains preferentially distributed along fractures. |

This rock appears to be of Felsic Volcanic. The relative abundance of quartz in comparison to B176, B288, and G119 plus the relatively unaltered plagioclase grains suggest that the present mineralogy is largely primary. Some hydrothermal has affected this rock resulting in an introduction of pyrite and chlorite.

B288 L33E 105 + 75N Hornblende - Andesite.

Dark green in colour, faintly amygdaloidal, holocrystalline, aphanitic, chlorite alteration along fractures.

| | | |
|---|---|---|
| Hornblende | 20% | medium-grained euhedral, ophitic randomly distributed in groundmass. |
| Plagioclase | 30% | fine-grained, ophitic, felted, randomly distributed in groundmass. |
| Quartz | 5% | fine-grained, anhedral, randomly distributed in groundmass. |
| Sericite | 10% | fine grained alteration product associated with chlorite in groundmass. |
| Chlorite | 2% | infilling amygdules |
| | 3% | alteration mineral associated with pyrite. |
| | 15% | alteration mineral found in veins associated with sericite. |
| | 10% | alteration mineral present in irregular-shaped zones. |
| Calcite | 1% | infilling vesicules. |
| Magnetite | 2% | fine anhedral grains in groundmass. |
| Pyrite | 3% | clusters of euhedral grains associated with chlorite. |

Based upon the presence of amygdules and the euhedral or rather unbroken outlines of the hornblende grains this rock appears to be volcanic in origin.

B356 L41 + 00E 99 + 00N Granodiorite

Light green in colour in minor pink patches, holocrystalline, panidiomorphic-granular, equigranular, magnetic, minor fractures.

| | | |
|---|---|---|
| Plagioclase | 40% | coarse euhedral grains severely altered to sericite. |
| Quartz | 20% | medium anhedral grains crosscut by sericite veinlets. |
| Orthoclase | 5% | medium subhedral grains, euhedral to quartz, anhedral to plagioclase, somewhat patchy distribution. |
| Apatite | 1% | fine to medium enhedral grains. |
| Sphene | 1% | fine anhedral grains. |
| Sericite | 20% | fine grained alteration product of plagioclase. |
| Chlorite | 9% | pseudomorphing, biotite grains and in alteration zones associated with pyrite. |
| Epidote | 2% | fine anhedral grains in groundmass |
| Magnetite | 1% | fine anhedral grains |
| Pyrite | 1% | fine euhedral grains commonly associated with chlorite. |

Originally an intrusive, more specifically a Granodiorite. Hydrothermal alteration has resulted in the formation of sericite from plagioclase and chlorite from biotite, plus the introduction of pyrite, chlorite, and orthoclase along fractures.

G119 L45 + 00E 95 + 00N Andesite.

Medium green in colour, aphanitic, magnetic, possible amygdules, silicified zones and epidote veins.

| | | |
|---|---|---|
| Plagioclase | 38% | fine stubby euhedral grains in ground mass crude trachytic alignment |
| | 10% | medium subhedral grains aligned roughly parallel to the long axis of the plagioclase microlites. |
| Sericite | 10% | fine grained mass present in veins surrounded by quartz. |
| Quartz | 5% | fine anhedral grains in the groundmass interstitial to plagioclase. |
| | 5% | fine grained mass surrounding sericite veins. |
| Chlorite | 10% | fine grained ground mass material. |
| | 10% | infilling amygdules. |
| Epidote | 8% | present in veins associated with chlorite and actinolite. |
| Actinolite | 3% | present in veins associated with epidote and chlorite. |
| Pyrite | 1% | fine euhedral grains associated with chlorite. |
| Magnetite | 1% | fine anhedral grains in groundmass. |

Originally an Andesite, hydrothermal alteration and/or burial metamorphism has resulted in the infilling of the amygdules by chlorite, and the formation of veins containing actinolite, epidate, chlorite and quartz.

# APPENDIX B

## BASIC VLF DATA

| Line | Station | in-phase | Quadrature | Line | Station | in-phase | Quadrature |
|---|---|---|---|---|---|---|---|
| 1E | 96 + 25 | -10 | + 4 | 5E | 97 + 50 | - 2 | + 4 |
| | 50 | -20 | + 4 | | 75 | - 2 | 0 |
| | 75 | -15 | - 4 | | 98 + 00 | 0 | 0 |
| | 97 + 00 | -15 | + 5 | | 25 | - 1 | - 2 |
| | 25 | -20 | + 4 | | 50 | - 1 | - 2 |
| | 50 | -20 | + 2 | | 75 | + 2 | - 3 |
| | 75 | -15 | + 4 | | 99 + 00 | + 2 | 0 |
| | 98 + 00 | -15 | 0 | | 25 | - 1 | + 2 |
| | 25 | -15 | - 2 | | 50 | + 1 | 0 |
| | 50 | -15 | - 4 | | 75 | + 4 | + 2 |
| | 75 | -15 | + 2 | | 100 + 00 | 0 | 0 |
| | 99 + 00 | -20 | - 8 | | | | |
| | 25 | -15 | 0 | 7E | 96 + 00 | + 2 | 0 |
| | 50 | | | | 25 | + 2 | - 3 |
| | 75 | -14 | - 4 | | 50 | + 1 | 0 |
| | 100 + 00 | -15 | + 2 | | 75 | + 1 | - 4 |
| | | | | | 97 + 00 | 0 | 0 |
| 3E | 96 + 00 | - 8 | - 4 | | 25 | + 1 | + 1 |
| | 25 | - 5 | 0 | | 50 | + 2 | + 1 |
| | 50 | - 5 | 0 | | 75 | + 2 | + 1 |
| | 75 | 0 | + 4 | | 98 + 00 | + 3 | + 1 |
| | 97 + 00 | + 1 | + 4 | | 25 | - 2 | - 1 |
| | 25 | - 6 | 0 | | 50 | - 1 | - 5 |
| | 50 | -10 | + 2 | | 75 | 0 | - 4 |
| | 75 | - 6 | 0 | | 99 + 00 | + 2 | - 2 |
| | 98 + 00 | - 9 | + 1 | | 25 | - 1 | - 1 |
| | 25 | -12 | + 2 | | 50 | - 2 | - 3 |
| | 50 | -12 | + 2 | | 75 | - 2 | - 5 |
| | 75 | -12 | + 1 | | 100 + 00 | - 2 | - 2 |
| | 99 + 00 | -13 | + 2 | | | | |
| | 25 | -10 | - 1 | 9E | 96 + 00 | + 2 | + 2 |
| | 50 | -12 | + 4 | | 25 | + 9 | 0 |
| | 75 | -11 | + 4 | | 50 | + 5 | + 2 |
| | 100 + 00 | -12 | 0 | | 75 | + 8 | 0 |
| | | | | | 97 + 00 | + 7 | 0 |
| 5E | 96 + 00 | 0 | + 6 | | 25 | + 7 | 0 |
| | 25 | + 2 | + 4 | | 50 | + 6 | + 2 |
| | 50 | 0 | 0 | | 75 | + 7 | + 2 |
| | 75 | - 2 | - 1 | | 98 + 00 | + 6 | 0 |
| | 97 + 00 | 0 | + 5 | | 25 | + 9 | + 2 |
| | 25 | - 2 | + 2 | | 50 | + 5 | + 2 |

| Line | Station | in-phase | Quadrature |
|---|---|---|---|
| 9E | 98 + 75 | + 7 | - 5 |
| | 99 + 00 | + 5 | - 4 |
| | 25 | 0 | - 3 |
| | 50 | .0 | - 3 |
| | 75 | 0 | - 1 |
| | 100 + 00 | + 3 | - 4 |
| 11E | 97 + 50 | + 2 | + 4 |
| | 75 | + 3 | + 6 |
| | 98 + 00 | + 4 | + 6 |
| | 25 | - 1 | + 1 |
| | 50 | + 3 | + 6 |
| | 75 | + 4 | +10 |
| | 99 + 00 | + 2 | + 6 |
| | 25 | 0 | + 4 |
| | 50 | + 7 | + 7 |
| | 75 | + 8 | + 6 |
| | 100 + 00 | + 5 | + 5 |
| 13E | 90 + 00 | +30 | + 4 |
| | 25 | +28 | + 2 |
| | + 50 | +25 | + 2 |
| | 75 | +30 | 0 |
| | 91 + 00 | +32 | + 6 |
| | 25 | +32 | + 4 |
| | 50 | +32 | + 2 |
| | 75 | +35 | + 6 |
| | 92 + 00 | +27 | + 2 |
| | 25 | +27 | + 2 |
| | 50 | +30 | + 4 |
| | 75 | +30 | + 4 |
| | 93 + 00 | +28 | + 2 |
| | 25 | +23 | + 5 |
| | 50 | +28 | + 3 |
| | 75 | +25 | + 5 |
| | 94 + 00 | +25 | + 9 |
| | 25 | +25 | + 9 |
| | 50 | +25 | + 8 |
| | 75 | +25 | + 4 |
| | 95 + 00 | +20 | + 8 |
| | 25 | +15 | + 1 |
| | 50 | +25 | + 4 |
| | 75 | +20 | + 3 |
| | 96 + 00 | +20 | + 4 |
| | 25 | +17 | + 4 |
| 13E | 96 + 50 | +15 | + 8 |
| | 75 | +15 | +10 |
| | 97 + 00 | +12 | + 4 |
| | 25 | +14 | + 5 |
| | 50 | +20 | + 8 |
| | 75 | +20 | +10 |
| | 98 + 00 | +20 | +12 |
| | 25 | +10 | +12 |
| | 50 | +15 | + 5 |
| | 75 | +10 | + 6 |
| | 99 + 00 | 0 | + 4 |
| | 25 | + 2 | + 2 |
| | 50 | -10 | - 5 |
| | 75 | -12 | - 6 |
| | 100 + 00 | -12 | + 2 |
| 15E | 92 + 00 | +30 | + 4 |
| | 25 | +32 | + 2 |
| | 50 | +35 | + 2 |
| | 75 | +35 | + 4 |
| | 93 + 00 | +35 | + 5 |
| | 25 | +38 | + 7 |
| | 50 | +32 | + 8 |
| | 75 | +45 | + 8 |
| | 94 + 00 | +32 | + 4 |
| | 25 | +40 | + 4 |
| | 50 | +35 | + 4 |
| | 75 | +28 | + 6 |
| | 95 + 00 | +29 | + 7 |
| | 25 | +32 | + 4 |
| | 50 | +30 | + 7 |
| | 75 | +30 | + 6 |
| | 96 + 00 | +30 | + 4 |
| | 25 | +20 | + 4 |
| | 50 | +25 | + 5 |
| | 75 | +25 | + 8 |
| | 97 + 00 | +18 | + 7 |
| | 25 | +25 | +10 |
| | 50 | +28 | +10 |
| | 75 | +25 | +10 |
| | 98 + 00 | +25 | + 6 |
| | 25 | +30 | + 8 |
| | 50 | +30 | + 8 |
| | 75 | +25 | +10 |
| | 99 + 00 | +25 | +10 |

| Line | Station | in-phase | Quadrature |
|---|---|---|---|
| 15E | 99 + 25 | + 9 | +10 |
| | 50 | +20 | + 6 |
| | 75 | +10 | + 8 |
| | 100 + 00 | + 8 | + 8 |
| 17E | 90 + 50 | +30 | + 9 |
| | 75 | +30 | + 4 |
| | 91 + 00 | +25 | − 8 |
| | 25 | +24 | − 2 |
| | 50 | +35 | 0 |
| | 75 | +30 | + 1 |
| | 92 + 00 | +32 | + 4 |
| | 25 | | |
| | 50 | | |
| | 75 | +30 | + 1 |
| | 93 + 00 | +35 | 0 |
| | 25 | +40 | + 4 |
| | 50 | +40 | + 4 |
| | 75 | +40 | + 8 |
| | 94 + 00 | +45 | +10 |
| | 25 | +43 | + 3 |
| | 50 | +40 | 0 |
| | 75 | | |
| | 95 + 00 | | |
| | 25 | +27 | − 4 |
| | 50 | +28 | − 4 |
| | 75 | +25 | − 1 |
| | 96 + 00 | +27 | − 3 |
| | 25 | +27 | − 2 |
| | 50 | +30 | + 1 |
| | 75 | +25 | − 5 |
| | 97 + 00 | +22 | − 4 |
| | 25 | +20 | − 3 |
| | 50 | +30 | + 4 |
| | 75 | +30 | 0 |
| | 98 + 00 | +30 | + 3 |
| | 25 | +30 | + 4 |
| | 50 | +20 | + 8 |
| | 75 | +23 | +10 |
| | 99 + 00 | +21 | + 1 |
| | 25 | +23 | + 8 |
| | 50 | +20 | + 5 |
| | 75 | +15 | + 2 |
| | 100 + 00 | +15 | + 4 |
| 19E | 90 + 25 | +25 | + 8 |
| | 50 | +27 | 0 |
| | 75 | +25 | + 2 |
| | 91 + 00 | +24 | + 3 |
| | 25 | +28 | + 4 |
| | 50 | +30 | + 6 |
| | 75 | +28 | + 5 |
| | 92 + 00 | +28 | 0 |
| | 25 | +25 | + 2 |
| | 50 | +27 | + 3 |
| | 75 | +30 | 0 |
| | 93 + 00 | +25 | + 4 |
| | 25 | +25 | + 2 |
| | 50 | +21 | + 1 |
| | 75 | +26 | + 1 |
| | 94 + 00 | +31 | + 2 |
| | 25 | +30 | 0 |
| | 50 | +30 | 0 |
| | 75 | +35 | + 6 |
| | 95 + 00 | +32 | 0 |
| | 25 | +32 | 0 |
| | 50 | +38 | + 4 |
| | 75 | +44 | + 8 |
| | 96 + 00 | +42 | + 8 |
| | 25 | +40 | + 5 |
| | 50 | +35 | + 1 |
| | 75 | +34 | − 3 |
| | 97 + 00 | +30 | 0 |
| | 25 | +40 | − 1 |
| | 50 | +34 | − 4 |
| | 75 | +32 | + 2 |
| | 98 + 00 | +28 | − 2 |
| 21E | 91 + 00 | +40 | +10 |
| | 25 | +35 | + 9 |
| | 50 | +35 | + 4 |
| | 75 | +34 | + 7 |
| | 92 + 00 | +30 | + 2 |
| | 25 | +30 | + 3 |
| | 50 | +30 | + 1 |
| | 75 | +28 | 0 |
| | 93 + 00 | +28 | + 1 |
| | 25 | +28 | + 4 |
| | 50 | +26 | + 3 |

| Line | Station | in-phase | Quadrature | Line | Station | in-phase | Quadrature |
|---|---|---|---|---|---|---|---|
| 21E | 93 + 75 | +27 | + 2 | 23E | 94 + 00 | +24 | - 4 |
| | 94 + 00 | +28 | + 4 | | 25 | +22 | - 2 |
| | 25 | +28 | + 7 | | 50 | +22 | - 4 |
| | 50 | +28 | + 4 | | 75 | +21 | - 1 |
| | 75 | +26 | + 2 | | 95 + 00 | +21 | - 2 |
| | 95 + 00 | +27 | + 4 | | 25 | +21 | 0 |
| | 25 | +27 | + 6 | | 50 | +25 | 0 |
| | 50 | +24 | + 8 | | 75 | +29 | + 5 |
| | 75 | +26 | + 4 | | 96 + 00 | +32 | + 8 |
| | 96 + 00 | +25 | + 4 | | 25 | +31 | + 8 |
| | 25 | +28 | + 2 | | 50 | +31 | + 7 |
| | 50 | | | | 75 | +31 | + 9 |
| | 75 | | | | 97 + 00 | +32 | + 7 |
| | 97 + 00 | +26 | + 5 | | 25 | +31 | + 7 |
| | 25 | +28 | + 4 | | 50 | +30 | + 1 |
| | 50 | +25 | + 2 | | 75 | +30 | + 1 |
| | 75 | +26 | + 4 | | 98 + 00 | +29 | + 4 |
| | 98 + 00 | +24 | 0 | | 25 | +29 | + 2 |
| | 25 | +30 | + 4 | | 50 | +26 | - 1 |
| | 50 | +35 | + 4 | | 75 | +27 | + 1 |
| | 75 | +32 | + 4 | | 99 + 00 | +27 | + 1 |
| | 99 + 00 | +35 | + 5 | | 25 | +25 | - 4 |
| | 25 | +33 | + 4 | | 50 | +25 | 0 |
| | 50 | +35 | + 6 | | 75 | +28 | 0 |
| | 75 | +44 | +10 | | 100 + 00 | +30 | + 4 |
| | 100 + 00 | +40 | +10 | | 25 | +23 | + 4 |
| | | | | | 50 | +32 | - 3 |
| 23E | 90 + 00 | +45 | 0 | | 75 | +33 | + 4 |
| | 25 | +48 | - 2 | | 101 + 00 | +38 | + 4 |
| | 50 | +43 | - 4 | | 25 | +32 | + 4 |
| | 75 | +42 | - 2 | | 50 | +33 | + 4 |
| | 91 + 00 | +38 | - 5 | | 75 | +34 | + 2 |
| | 25 | +37 | - 2 | | 102 + 00 | +36 | +12 |
| | 50 | +33 | - 2 | | 25 | +45 | + 6 |
| | 75 | +32 | - 5 | | 50 | +41 | 0 |
| | 92 + 00 | +32 | - 6 | | 75 | +42 | + 2 |
| | 25 | +30 | - 5 | | 103 + 00 | +37 | + 8 |
| | 50 | +28 | - 2 | | 25 | +40 | + 2 |
| | 75 | +26 | - 5 | | 50 | +41 | + 4 |
| | 93 + 00 | +25 | - 5 | | 75 | +38 | + 5 |
| | 25 | +24 | - 7 | | 104 + 00 | +42 | 0 |
| | 50 | +25 | - 5 | | | | |
| | 75 | +24 | 0 | | | | |

| Line | Station | in-phase | Quadrature |
|---|---|---|---|
| 27E | 97 + 00 | +45 | +16 |
| | 25 | +42 | +16 |
| | 50 | +40 | +18 |
| | 75 | +35 | +12 |
| | 98 + 00 | +35 | +12 |
| | 25 | +35 | +12 |
| | 50 | +30 | + 8 |
| | 75 | +30 | + 8 |
| | 99 + 00 | +25 | + 6 |
| | 25 | +25 | + 6 |
| | 50 | +25 | + 6 |
| | 75 | +20 | + 2 |
| | 100 + 00 | +20 | + 2 |
| | 25 | +15 | − 2 |
| | 50 | +15 | − 2 |
| | 75 | +15 | − 4 |
| | 101 + 00 | +15 | + 6 |
| | 25 | +18 | + 8 |
| | 50 | +25 | + 8 |
| | 75 | +25 | + 8 |
| | 102 + 00 | +30 | +12 |
| | 25 | +30 | + 8 |
| | 50 | +30 | + 8 |
| | 75 | +28 | +16 |
| | 103 + 00 | +25 | +10 |
| | 25 | +25 | +14 |
| | 50 | | |
| | 75 | +25 | +12 |
| | 104 + 00 | +25 | + 8 |
| 29E | 90 + 00 | −25 | − 8 |
| | 25 | −20 | − 8 |
| | 50 | −20 | − 4 |
| | 75 | −20 | − 4 |
| | 91 + 00 | −15 | + 2 |
| | 25 | −15 | + 2 |
| | 50 | − 8 | +10 |
| | 75 | − 5 | 0 |
| | 92 + 00 | + 5 | 0 |
| | 25 | + 5 | + 6 |
| | 50 | + 2 | + 8 |
| | 75 | + 5 | 0 |

| Line | Station | in-phase | Quadrature |
|---|---|---|---|
| 29E | 93 + 00 | + 5 | 0 |
| | 25 | + 3 | 0 |
| | 50 | + 2 | − 6 |
| | 75 | + 1 | −10 |
| | 94 + 00 | 0 | −10 |
| | 25 | + 2 | −18 |
| | 50 | + 5 | −12 |
| | 75 | 0 | −14 |
| | 95 + 00 | 0 | −16 |
| | 25 | + 5 | −10 |
| | 50 | 0 | − 6 |
| | 75 | +18 | − 6 |
| | 90 + 00 | +18 | − 6 |
| | 25 | +20 | − 4 |
| | 50 | +20 | −12 |
| | 75 | +20 | − 6 |
| | 97 + 00 | +20 | − 8 |
| | 25 | +15 | −10 |
| | 50 | +15 | − 6 |
| | 75 | +20 | 0 |
| | 98 + 00 | +20 | − 2 |
| | 25 | +20 | − 6 |
| | 50 | +20 | − 8 |
| | 75 | +20 | − 4 |
| | 99 + 00 | +20 | −10 |
| | 25 | +12 | −18 |
| | 50 | + 5 | −20 |
| | 75 | + 5 | −12 |
| | 100 + 00 | + 5 | −16 |
| | 25 | + 5 | −12 |
| | 50 | + 5 | − 6 |
| | 75 | + 5 | − 8 |
| | 101 + 00 | + 5 | −12 |
| | 25 | + 5 | − 4 |
| | 50 | + 8 | − 8 |
| | 75 | +10 | − 5 |
| | 102 + 00 | +10 | − 2 |
| | 25 | +10 | − 2 |
| | 50 | +10 | + 2 |
| | 75 | +10 | + 4 |
| | 103 + 00 | +15 | + 6 |
| | 25 | +20 | +18 |
| | 50 | +20 | +12 |
| | 75 | +18 | + 5 |

| Line | Station | in-phase | Quadrature | Line | Station | in-phase | Quadrature |
|---|---|---|---|---|---|---|---|
| 29E | 101 + 00 | +18 | + 5 | 31E | 89 + 50 | -10 | - 2 |
| | | | | | 75 | -11 | 0 |
| 31E | 79 + 00 | -10 | +10 | | 90 + 00 | -15 | + 4 |
| | 25 | + 3 | + 1 | | 25 | -16 | - 1 |
| | 50 | + 1 | + 1 | | 50 | -17 | 0 |
| | 75 | 0 | + 1 | | 75 | -20 | + 2 |
| | 80 + 00 | + 4 | + 6 | | 91 + 00 | -22 | + 3 |
| | 25 | - 2 | + 4 | | 25 | -22 | - 2 |
| | 50 | - 2 | 0 | | 50 | -24 | 0 |
| | 75 | + 2 | 0 | | 75 | -23 | - 1 |
| | 81 + 00 | + 2 | 0 | | 92 + 00 | -28 | - 4 |
| | 25 | + 5 | + 4 | | 25 | -20 | 0 |
| | 50 | - 8 | 0 | | 50 | -15 | - 2 |
| | 75 | -10 | - 4 | | 75 | -10 | 0 |
| | 82 + 00 | -14 | 0 | | 93 + 00 | - 5 | 0 |
| | 25 | -15 | 0 | | 25 | - 7 | + 4 |
| | 50 | -17 | 0 | | 50 | - 4 | + 3 |
| | 75 | -12 | 0 | | 75 | + 3 | + 2 |
| | 83 + 00 | -15 | 0 | | 94 + 00 | + 7 | + 3 |
| | 25 | -17 | - 2 | | 25 | +10 | + 2 |
| | 50 | -15 | 0 | | 50 | +18 | 0 |
| | 75 | -10 | + 2 | | 75 | +17 | - 4 |
| | 84 + 00 | -10 | + 4 | | 95 + 00 | +17 | - 4 |
| | 25 | -12 | 0 | | 25 | + 7 | - 8 |
| | 50 | -10 | - 2 | | 50 | + 5 | -11 |
| | 75 | - 8 | - 2 | | 75 | +15 | - 7 |
| | 85 + 00 | - 8 | - 4 | | 96 + 00 | +15 | - 8 |
| | 25 | - 7 | - 2 | | 25 | +12 | - 4 |
| | 50 | - 7 | - 1 | | 50 | +12 | - 4 |
| | 75 | - 7 | - 2 | | 75 | +17 | - 6 |
| | 86 + 00 | - 6 | - 3 | | 97 + 00 | +15 | - 5 |
| | 25 | - 6 | - 2 | | 25 | +12 | - 7 |
| | 50 | - 7 | - 2 | | 50 | +17 | - 4 |
| | 75 | - 5 | - 2 | | 75 | +12 | - 8 |
| | 87 + 00 | - 6 | - 1 | | 98 + 00 | +12 | - 4 |
| | 25 | - 7 | - 1 | | 25 | +15 | - 6 |
| | 50 | - 5 | - 1 | | 50 | +14 | - 2 |
| | 75 | - 7 | - 2 | | 75 | + 8 | - 6 |
| | 88 + 00 | - 6 | + 2 | | 99 + 00 | +10 | - 6 |
| | 25 | - 8 | + 1 | | 25 | +10 | - 8 |
| | 50 | -10 | + 2 | | 50 | +10 | - 6 |
| | 75 | -10 | + 2 | | 75 | 0 | - 6 |
| | 89 + 00 | - 8 | + 2 | | 100 + 00 | + 5 | -12 |
| | 25 | - 9 | 0 | | 25 | + 2 | -10 |

| Line | Station | in-phase | Qua-drature | Line | Station | in-phase | Qua-drature |
|---|---|---|---|---|---|---|---|
| 31E | 100 + 50 | - 5 | - 7 | 31E | 111 + 25 | +27 | - 6 |
| | 75 | + 5 | -10 | | 50 | +20 | - 7 |
| | 101 + 00 | + 5 | - 7 | | 75 | +21 | - 5 |
| | 25 | + 6 | - 6 | | 112 + 00 | +23 | - 3 |
| | 50 | + 5 | - 5 | | 25 | +23 | - 4 |
| | 75 | + 3 | - 2 | | 50 | +25 | - 4 |
| | 102 + 00 | + 5 | - 2 | | 75 | +25 | - 6 |
| | 25 | + 7 | - 3 | | 113 + 00 | +20 | - 5 |
| | 50 | + 5 | - 5 | | 25 | +23 | - 5 |
| | 75 | + 8 | - 2 | | 50 | +21 | - 7 |
| | 103 + 00 | +10 | - 1 | | 75 | +17 | - 6 |
| | 25 | +10 | - 3 | | 114 + 00 | +18 | - 4 |
| | 50 | +14 | 0 | | 25 | +18 | - 6 |
| | 75 | +13 | - 2 | | 50 | +16 | - 6 |
| | 104 + 00 | +15 | +1 | | 75 | -17 | - 6 |
| | 25 | +13 | + 2 | | 115 + 00 | -16 | -10 |
| | 50 | +12 | 0 | | | | |
| | 75 | +15 | - 3 | 33E | 79 + 00 | -15 | +10 |
| | 105 + 00 | +10 | - 2 | | 25 | -20 | -11 |
| | 25 | +10 | - 1 | | 50 | -15 | 0 |
| | 50 | + 5 | - 3 | | 75 | -20 | - 2 |
| | 75 | + 2 | - 6 | | 80 + 00 | -10 | + 6 |
| | 106 + 00 | 0 | - 7 | | 25 | - 8 | + 4 |
| | 25 | + 1 | - 4 | | 50 | - 3 | + 8 |
| | 50 | 0 | - 2 | | 75 | - 5 | + 6 |
| | 75 | 0 | - 4 | | 81 + 00 | - 2 | + 5 |
| | 107 + 00 | + 2 | - 6 | | 25 | - 5 | + 4 |
| | 25 | + 2 | - 9 | | 50 | - 5 | + 4 |
| | 50 | + 3 | - 8 | | 75 | - 5 | + 4 |
| | 75 | + 2 | -14 | | 82 + 00 | - 5 | + 4 |
| | 108 + 00 | + 5 | -14 | | 25 | - 5 | + 4 |
| | 25 | + 6 | -10 | | 50 | - 5 | + 8 |
| | 50 | +12 | - 8 | | 75 | - 5 | + 9 |
| | 75 | +17 | -12 | | 83 + 00 | -10 | + 8 |
| | 109 + 00 | +20 | - 6 | | 25 | -15 | + 2 |
| | 25 | +14 | - 3 | | 50 | -10 | + 7 |
| | 50 | +17 | - 6 | | 75 | -15 | + 4 |
| | 75 | +20 | - 7 | | 84 + 00 | -15 | + 5 |
| | 110 + 00 | +22 | - 4 | | 25 | -15 | + 6 |
| | 25 | +20 | - 2 | | 50 | -15 | + 7 |
| | 50 | +25 | - 8 | | 75 | -20 | + 8 |
| | 75 | +23 | - 6 | | 85 + 00 | -15 | + 4 |
| | 111 + 00 | +25 | - 6 | | 25 | -23 | +11 |

| Line | Station | in-phase | Quadrature | Line | Station | in-phase | Quadrature |
|---|---|---|---|---|---|---|---|
| 33E | 85 + 50 | -15 | + 8 | 33E | 96 + 75 | +10 | - 1 |
| | 75 | - 8 | + 8 | | 97 + 00 | +12 | - 5 |
| | 86 + 00 | -10 | + 6 | | 25 | +20 | - 4 |
| | 25 | -10 | + 6 | | 50 | +24 | - 1 |
| | 50 | -10 | + 5 | | 75 | +20 | - 8 |
| | 75 | - 5 | + 5 | | 98 + 00 | +25 | -14 |
| | 87 + 00 | - 2 | + 4 | | 25 | +18 | -14 |
| | 25 | + 3 | + 3 | | 50 | -24 | +18 |
| | 50 | 0 | 0 | | 75 | -16 | 0 |
| | 75 | + 2 | + 2 | | 99 + 00 | -14 | +10 |
| | 88 + 00 | + 2 | + 1 | | 25 | - 4 | +16 |
| | 25 | + 4 | + 1 | | 50 | - 2 | +32 |
| | 50 | + 3 | - 1 | | 75 | - 1 | +32 |
| | 75 | + 4 | - 2 | | 100 + 00 | + 8 | - 9 |
| | 89 + 00 | 0 | 0 | | 25 | +10 | 0 |
| | 25 | 0 | 0 | | 50 | +12 | - 5 |
| | 50 | 0 | + 1 | | 75 | +10 | 0 |
| | 75 | + 1 | + 3 | | 101 + 00 | +10 | - 2 |
| | 90 + 00 | + 3 | + 3 | | 25 | +10 | - 8 |
| | 25 | + 5 | + 4 | | 50 | +10 | - 2 |
| | 50 | 0 | + 6 | | 75 | +12 | 0 |
| | 70 | 0 | + 5 | | 102 + 00 | +12 | + 1 |
| | 91 + 00 | 0 | + 2 | | 25 | +15 | 0 |
| | 25 | - 6 | + 1 | | 50 | +15 | 0 |
| | 50 | - 5 | + 2 | | 75 | +10 | 0 |
| | 70 | - 5 | + 2 | | 103 + 00 | + 8 | - 5 |
| | 92 + 00 | 0 | 0 | | 25 | + 6 | - 8 |
| | 25 | + 2 | - 2 | | 50 | +15 | + 3 |
| | 50 | + 1 | 0 | | 75 | +14 | + 2 |
| | 75 | - 5 | - 2 | | 104 + 00 | +15 | + 3 |
| | 93 + 00 | - 6 | + 2 | | 25 | +15 | - 4 |
| | 25 | - 4 | 0 | | 50 | +10 | 0 |
| | 50 | - 5 | + 1 | | 75 | +12 | + 2 |
| | 75 | - 5 | + 2 | | 105 + 00 | +10 | 0 |
| | 94 + 00 | - 5 | + 2 | | 25 | +10 | - 2 |
| | 25 | - 5 | + 2 | | 50 | + 8 | + 1 |
| | 50 | - 3 | + 2 | | 75 | + 8 | - 4 |
| | 75 | - 1 | + 2 | | 106 + 00 | + 4 | - 4 |
| | 95 + 00 | 0 | 0 | | 25 | + 2 | - 3 |
| | 25 | + 2 | 0 | | 50 | 0 | - 6 |
| | 50 | + 2 | 0 | | 75 | 0 | - 7 |
| | 75 | + 5 | 0 | | 107 + 00 | + 5 | - 7 |
| | 96 + 00 | + 6 | - 3 | | 25 | 0 | - 5 |
| | 25 | + 8 | - 1 | | 50 | + 6 | - 6 |
| | 50 | +10 | 0 | | 75 | + 5 | -10 |

| Line | Station | in-phase | Qua-drature |
|---|---|---|---|
| 25E | 90 + 00 | +50 | +12 |
| | 25 | +60 | +18 |
| | 50 | +65 | +10 |
| | 75 | +65 | + 8 |
| | 91 + 00 | +60 | + 2 |
| | 25 | +55 | + 4 |
| | 50 | +45 | + 4 |
| | 75 | +45 | + 2 |
| | 92 + 00 | +42 | 0 |
| | 25 | +40 | − 2 |
| | 50 | +38 | − 2 |
| | 75 | +38 | 0 |
| | 93 + 00 | +30 | + 5 |
| | 25 | +30 | + 2 |
| | 50 | +25 | − 2 |
| | 75 | +20 | − 5 |
| | 94 + 00 | +20 | − 5 |
| | 25 | +20 | + 2 |
| | 50 | +20 | + 2 |
| | 75 | +20 | − 4 |
| | 95 + 00 | +20 | − 2 |
| | 25 | +20 | + 2 |
| | 50 | +25 | + 4 |
| | 75 | +25 | + 6 |
| | 96 + 00 | +26 | + 6 |
| | 25 | +30 | + 2 |
| | 50 | +30 | + 3 |
| | 75 | +30 | + 6 |
| | 97 + 00 | +32 | + 8 |
| | 25 | +35 | + 8 |
| | 50 | +30 | + 4 |
| | 75 | +25 | +10 |
| | 98 + 00 | +26 | + 3 |
| | 25 | +25 | + 8 |
| | 50 | +25 | + 8 |
| | 75 | +25 | + 6 |
| | 99 + 00 | +24 | + 2 |
| | 25 | +22 | + 2 |
| | 50 | +20 | + 2 |
| | 75 | +20 | + 2 |
| | 100 + 00 | +24 | + 2 |
| | 25 | +25 | + 4 |
| | 50 | +26 | + 2 |
| 25E | 100 + 75 | +25 | + 4 |
| | 101 + 00 | +25 | + 2 |
| | 25 | +30 | + 2 |
| | 50 | +30 | +10 |
| | 75 | +30 | +12 |
| | 102 + 00 | +32 | +16 |
| | 25 | +35 | +16 |
| | 50 | +32 | +10 |
| | 75 | +32 | + 8 |
| | 103 + 00 | +35 | +12 |
| | 25 | +38 | + 8 |
| | 50 | +40 | + 8 |
| | 75 | +40 | +10 |
| | 104 + 00 | +42 | +12 |
| 27E | 90 + 00 | −20 | − 8 |
| | 25 | −15 | −10 |
| | 50 | −10 | − 4 |
| | 75 | +10 | + 4 |
| | 91 + 00 | +10 | + 5 |
| | 25 | +10 | + 6 |
| | 50 | +12 | + 5 |
| | 75 | +15 | − 2 |
| | 92 + 00 | +20 | − 2 |
| | 25 | +15 | − 8 |
| | 50 | +15 | −12 |
| | 75 | +15 | −12 |
| | 93 + 00 | +15 | −10 |
| | 25 | +15 | −10 |
| | 50 | +15 | − 8 |
| | 75 | +12 | −10 |
| | 94 + 00 | +15 | −12 |
| | 25 | +10 | −10 |
| | 50 | +10 | −10 |
| | 75 | +10 | − 8 |
| | 95 + 00 | +14 | − 4 |
| | 25 | +18 | − 2 |
| | 50 | +20 | − 8 |
| | 75 | +20 | − 4 |
| | 96 + 00 | +25 | − 2 |
| | 25 | +30 | + 2 |
| | 50 | +35 | + 8 |
| | 75 | +45 | +14 |

| Line | Station | in-phase | Qua-drature | Line | Station | in-phase | Qua-drature |
|---|---|---|---|---|---|---|---|
| 35E | 96 + 00 | +17 | + 5 | 35E | 107 + 00 | + 7 | - 2 |
| | 25 | +26 | - 1 | | 25 | + 7 | + 2 |
| | 50 | +26 | - 1 | | 50 | + 5 | - 4 |
| | 75 | + 9 | -11 | | 75 | + 5 | - 2 |
| | 97 + 00 | + 8 | -15 | | 108 + 00 | + 8 | - 2 |
| | 25 | | | | 25 | + 4 | - 1 |
| | 50 | + 9 | -11 | | 50 | + 4 | - 3 |
| | 75 | + 8 | -15 | | 75 | + 3 | 0 |
| | 98 + 00 | + 7 | -17 | | 109 + 00 | + 4 | 0 |
| | 25 | + 6 | -17 | | 25 | +10 | - 3 |
| | 50 | + 6 | - 8 | | 50 | + 8 | - 5 |
| | 75 | + 6 | - 9 | | 75 | + 5 | -11 |
| | 99 + 00 | + 9 | -10 | | 110 + 00 | + 6 | - 7 |
| | 25 | + 6 | - 6 | | 25 | +14 | -10 |
| | 50 | + 5 | - 8 | | 50 | +15 | - 4 |
| | 75 | + 5 | -11 | | 75 | +15 | -10 |
| | 100 + 00 | + 4 | - 7 | | 111 + 00 | +13 | - 8 |
| | 25 | +10 | - 9 | | 25 | +15 | -10 |
| | 50 | + 7 | - 8 | | 50 | +15 | -14 |
| | 75 | +10 | - 6 | | 75 | +15 | - 6 |
| | 101 + 00 | + 9 | - 8 | | 112 + 00 | +14 | -10 |
| | 25 | +14 | - 4 | | 25 | + 5 | -15 |
| | 50 | +12 | - 4 | | 50 | + 5 | - 6 |
| | 75 | +12 | - 2 | | 75 | +10 | -10 |
| | 102 + 00 | +17 | + 2 | | 113 + 00 | + 5 | -10 |
| | 25 | +15 | + 5 | | 25 | +12 | -12 |
| | 50 | +16 | + 2 | | 50 | +10 | -10 |
| | 75 | +15 | + 7 | | 75 | +10 | -10 |
| | 103 + 00 | +14 | + 4 | | 114 + 00 | +10 | - 8 |
| | 25 | + 8 | + 4 | | 25 | +15 | - 6 |
| | 50 | | | | 50 | +15 | - 6 |
| | 75 | + 8 | + 4 | | 75 | + 5 | -10 |
| | 104 + 00 | +13 | + 4 | | 115 + 00 | +12 | - 6 |
| | 25 | +12 | + 2 | | | | |
| | 50 | +12 | + 1 | 37E | 79 + 00 | -10 | +10 |
| | 75 | + 9 | + 3 | | 25 | - 7 | + 9 |
| | 105 + 00 | + 5 | - 3 | | 50 | -12 | + 5 |
| | 25 | + 5 | - 3 | | 75 | -16 | +12 |
| | 50 | + 7 | - 1 | | 80 + 00 | - 9 | +10 |
| | 75 | + 7 | + 1 | | 25 | - 8 | +11 |
| | 106 + 00 | + 6 | - 4 | | 50 | - 3 | + 6 |
| | 25 | + 3 | 0 | | 75 | - 3 | + 5 |
| | 50 | + 3 | - 3 | | 81 + 00 | - 5 | + 3 |
| | 75 | 0 | - 4 | | 25 | - 2 | + 6 |

| Line | Station | in-phase | Quadrature | Line | Station | in-phase | Quadrature |
|---|---|---|---|---|---|---|---|
| 37E | 81 + 50 | - 1 | + 8 | 37E | 92 + 50 | 0 | - 1 |
| | 75 | - 4 | +10 | | 75 | - 3 | + 1 |
| | 82 + 00 | -13 | -11 | | 93 + 00 | 0 | + 1 |
| | 25 | - 7 | + 3 | | 25 | + 2 | + 4 |
| | 50 | -10 | + 2 | | 50 | + 2 | + 2 |
| | 75 | -13 | 0 | | 75 | + 4 | + 6 |
| | 83 + 00 | -15 | + 1 | | 94 + 00 | + 3 | + 2 |
| | 25 | -11 | + 1 | | 25 | + 2 | + 5 |
| | 50 | -15 | - 2 | | 50 | + 1 | - 1 |
| | 75 | -15 | + 1 | | 75 | 0 | + 2 |
| | 84 + 00 | -10 | + 2 | | 95 + 00 | 0 | - 4 |
| | 25 | -10 | + 2 | | 25 | 0 | 0 |
| | 50 | - 9 | 0 | | 50 | + 5 | - 2 |
| | 75 | - 7 | - 1 | | 75 | + 8 | + 1 |
| | 85 + 00 | - 7 | + 1 | | 96 + 00 | +10 | + 2 |
| | 25 | -12 | + 2 | | | | |
| | 50 | - 9 | + 2 | | 100 + 00 | + 5 | - 9 |
| | 75 | - 9 | - 1 | | 25 | +12 | -10 |
| | 86 + 00 | -11 | + 2 | | 50 | +10 | - 2 |
| | 25 | - 9 | + 2 | | 75 | +14 | - 4 |
| | 50 | - 6 | + 3 | | 101 + 00 | +16 | - 2 |
| | 75 | - 6 | + 6 | | 25 | +16 | - 2 |
| | 87 + 00 | - 6 | + 4 | | 50 | +17 | - 1 |
| | 25 | - 7 | - 1 | | 75 | +18 | + 2 |
| | 50 | - 8 | + 2 | | 102 + 00 | +20 | + 3 |
| | 75 | -10 | + 1 | | 25 | +15 | + 5 |
| | 88 + 00 | - 8 | + 4 | | 50 | +16 | + 7 |
| | 25 | -11 | - 2 | | 75 | +20 | 0 |
| | 50 | - 9 | - 3 | | 103 + 00 | +17 | + 1 |
| | 75 | -10 | 0 | | 25 | +20 | + 2 |
| | 89 + 00 | - 9 | 0 | | 50 | +20 | + 5 |
| | 25 | - 6 | 0 | | 75 | +19 | + 8 |
| | 50 | - 5 | 0 | | 104 + 00 | +20 | + 7 |
| | 75 | - 3 | + 2 | | 25 | +16 | + 5 |
| | 90 + 00 | - 4 | + 3 | | 50 | +14 | + 7 |
| | 25 | - 1 | + 2 | | 75 | +12 | + 5 |
| | 50 | - 2 | - 1 | | 105 + 00 | +12 | + 2 |
| | 75 | + 1 | + 3 | | 25 | + 7 | - 2 |
| | 91 + 00 | - 2 | + 2 | | 50 | + 5 | 0 |
| | 25 | - 2 | + 1 | | 75 | + 8 | 0 |
| | 50 | - 1 | + 2 | | 106 + 00 | + 7 | + 1 |
| | 75 | - 2 | + 2 | | 25 | + 8 | + 4 |
| | 92 + 00 | - 2 | + 3 | | 50 | + 8 | + 3 |
| | 25 | 0 | - 2 | | 75 | + 8 | 0 |

| Line | Station | in-phase | Quadrature | Line | Station | in-phase | Quadrature |
|---|---|---|---|---|---|---|---|
| 33E | 108 + 00 | +10 | - 6 | 35E | 85 + 00 | -11 | +10 |
| | 25 | +10 | -10 | | 25 | -12 | + 6 |
| | 50 | +15 | -10 | | 50 | -15 | + 5 |
| | 75 | +20 | -12 | | 75 | -14 | + 2 |
| | 109 + 00 | +20 | - 8 | | 86 + 00 | -15 | + 2 |
| | 25 | +22 | -16 | | 25 | -18 | + 1 |
| | 50 | +25 | -15 | | 50 | -13 | + 3 |
| | 75 | +25 | -12 | | 75 | -14 | 0 |
| | 110 + 00 | +22 | -16 | | 87 + 00 | -15 | 0 |
| | 25 | +20 | -14 | | 25 | -11 | 0 |
| | 50 | +15 | -15 | | 50 | - 8 | + 3 |
| | 75 | +15 | -10 | | 75 | - 5 | - 1 |
| | 111 + 00 | +15 | - 6 | | 88 + 00 | - 4 | + 4 |
| | 25 | +15 | -12 | | 25 | - 3 | + 2 |
| | 50 | +15 | -15 | | 50 | - 5 | + 5 |
| | 75 | +17 | -13 | | 75 | - 2 | + 3 |
| | 112 + 00 | +15 | - 8 | | 89 + 00 | - 3 | + 1 |
| | 25 | +15 | -10 | | 25 | - 3 | + 2 |
| | 50 | +20 | -14 | | 50 | - 1 | + 4 |
| | 75 | +20 | - 5 | | 75 | - 4 | + 6 |
| | 113 + 00 | +22 | -12 | | 90 + 00 | - 8 | + 3 |
| | 25 | +25 | - 8 | | 25 | - 8 | + 2 |
| | 50 | +20 | - 8 | | 50 | - 5 | + 1 |
| | 75 | +20 | - 4 | | 75 | - 8 | + 2 |
| | 114 + 00 | +20 | - 8 | | 91 + 00 | - 8 | + 2 |
| | 25 | +20 | - 6 | | 25 | -10 | - 4 |
| | 50 | +16 | - 6 | | 50 | - 9 | 0 |
| | 75 | +17 | - 8 | | 75 | -12 | + 5 |
| | 115 + 00 | +20 | - 4 | | 92 + 00 | - 7 | 0 |
| | | | | | 25 | -11 | 0 |
| 35E | 79 + 00 | - 2 | + 6 | | 50 | - 7 | + 2 |
| | 25 | 0 | + 6 | | 75 | - 3 | + 4 |
| | 50 | 0 | + 3 | | 93 + 00 | - 3 | + 3 |
| | 75 | 0 | + 5 | | 25 | - 4 | 0 |
| | 80 + 00 | - 5 | + 6 | | 50 | - 4 | 1 |
| | 25 | 0 | + 7 | | 75 | - 4 | - 3 |
| | 50 | 0 | + 5 | | 94 + 00 | - 5 | 0 |
| | | | | | 25 | - 4 | + 1 |
| | 83 + 50 | -11 | + 5 | | 50 | - 3 | - 2 |
| | 75 | -11 | 0 | | 75 | + 2 | + 4 |
| | 84 + 00 | -12 | + 2 | | 95 + 00 | + 2 | + 3 |
| | 25 | -11 | + 2 | | 25 | + 6 | - 2 |
| | 50 | - 8 | + 4 | | 50 | + 7 | - 1 |
| | 75 | -10 | + 4 | | 75 | +10 | + 1 |

| Line | Station | in-phase | Quadrature | Line | Station | in-phase | Quadrature |
|---|---|---|---|---|---|---|---|
| 37E | 107 + 00 | +10 | - 3 | 39E | 82 + 00 | + 5 | + 5 |
| | 25 | + 9 | - 2 | | 25 | + 4 | + 4 |
| | 50 | +10 | + 3 | | 50 | + 2 | + 5 |
| | 75 | +11 | - 1 | | 75 | 0 | - 1 |
| | 108 + 00 | + 8 | - 3 | | 83 + 00 | 0 | + 1 |
| | 25 | + 5 | + 4 | | 25 | 0 | + 1 |
| | 50 | + 5 | 0 | | 50 | - 1 | + 3 |
| | 75 | + 4 | - 3 | | 75 | | |
| | 109 + 00 | +10 | - 8 | | 84 + 00 | - 2 | 0 |
| | 25 | + 2 | - 4 | | 25 | - 5 | + 3 |
| | 50 | 0 | - 5 | | 50 | - 5 | 0 |
| | 75 | + 3 | - 2 | | 75 | - 5 | + 1 |
| | 110 + 00 | +10 | + 2 | | 85 + 00 | - 7 | + 2 |
| | 25 | + 5 | 0 | | 25 | -10 | + 2 |
| | 50 | + 2 | - 2 | | 50 | - 8 | - 1 |
| | 75 | + 5 | - 1 | | 75 | - 9 | 0 |
| | 111 + 00 | + 2 | - 1 | | 86 + 00 | - 9 | + 5 |
| | 25 | + 4 | + 2 | | 25 | - 9 | + 2 |
| | 50 | + 1 | - 6 | | 50 | -12 | - 2 |
| | 75 | + 5 | - 2 | | 75 | -12 | - 2 |
| | 112 + 00 | + 6 | - 3 | | 87 + 00 | -12 | + 2 |
| | 25 | | | | 25 | -12 | 0 |
| | 50 | | | | 50 | -18 | 0 |
| | 75 | + 8 | - 6 | | 75 | -15 | + 2 |
| | 113 + 00 | + 5 | -10 | | 88 + 00 | -15 | 0 |
| | 25 | + 3 | - 8 | | 25 | -10 | - 2 |
| | 50 | 0 | - 6 | | 50 | -12 | - 2 |
| | 75 | + 4 | - 9 | | 75 | -10 | 0 |
| | 114 + 00 | + 7 | - 7 | | 89 + 00 | -10 | - 4 |
| | 25 | + 6 | - 8 | | 25 | - 6 | + 2 |
| | 50 | + 7 | - 8 | | 50 | - 3 | + 2 |
| | 75 | + 5 | -10 | | 75 | - 2 | - 6 |
| | 115 + 00 | + 2 | -10 | | 90 + 00 | + 4 | - 6 |
| | | | | | 25 | - 2 | + 5 |
| 39E | 79 + 25 | + 5 | 0 | | 50 | - 3 | + 1 |
| | 50 | + 6 | + 2 | | 75 | - 2 | + 1 |
| | 75 | + 7 | + 5 | | 91 + 00 | - 2 | - 2 |
| | 80 + 00 | +12 | + 8 | | 25 | 0 | - 2 |
| | 25 | + 5 | + 8 | | 50 | - 2 | - 2 |
| | 50 | - 4 | + 6 | | 75 | - 4 | 0 |
| | 75 | + 5 | + 5 | | 92 + 00 | - 4 | 0 |
| | 81 + 00 | - 5 | - 2 | | 25 | 0 | + 4 |
| | 25 | + 5 | + 4 | | 50 | + 3 | + 1 |
| | 50 | +10 | - 8 | | 75 | + 5 | + 3 |
| | 75 | +10 | + 7 | | 93 + 00 | +10 | - 1 |

| Line | Station | in-phase | Quadrature | Line | Station | in-phase | Quadrature |
|---|---|---|---|---|---|---|---|
| 39E | 93 + 25 | +10 | + 1 | 39E | 108 + 50 | 0 | + 5 |
| | 50 | + 5 | 0 | | 75 | - 3 | - 8 |
| | 75 | +15 | + 4 | | 109 + 00 | - 7 | -10 |
| | 94 + 00 | +20 | + 8 | | 25 | - 3 | - 1 |
| | 25 | +20 | +10 | | 50 | + 1 | + 2 |
| | 50 | +16 | +10 | | 75 | + 5 | + 1 |
| | 75 | +22 | + 9 | | 110 + 00 | + 2 | + 1 |
| | 95 + 00 | +20 | +10 | | 25 | + 5 | + 4 |
| | | | | | 50 | 0 | 0 |
| | 100 + 00 | - 4 | -24 | | 75 | 0 | - 8 |
| | 25 | 0 | -22 | | 111 + 00 | 0 | + 2 |
| | 50 | +12 | -18 | | 25 | 0 | - 5 |
| | 75 | + 5 | -10 | | 50 | 0 | - 8 |
| | 101 + 00 | + 7 | - 8 | | 75 | - 2 | - 6 |
| | 25 | + 9 | - 9 | | 112 + 00 | 0 | -10 |
| | 50 | +11 | - 9 | | 25 | + 3 | 0 |
| | 75 | + 9 | - 8 | | 50 | + 3 | 0 |
| | 102 + 00 | +15 | - 5 | | 75 | + 5 | - 2 |
| | 25 | +16 | - 5 | | 113 + 00 | +10 | + 1 |
| | 50 | +20 | - 2 | | 25 | + 8 | - 1 |
| | 75 | +22 | + 2 | | 50 | + 7 | - 2 |
| | 103 + 00 | +26 | + 6 | | 75 | + 5 | - 4 |
| | 25 | +25 | +10 | | 114 + 00 | + 5 | - 4 |
| | 50 | +25 | + 4 | | 25 | + 5 | - 2 |
| | 75 | | | | 50 | + 5 | - 4 |
| | 104 + 00 | +20 | + 5 | | 75 | + 5 | -10 |
| | 25 | +19 | 0 | | 115 + 00 | + 4 | - 8 |
| | 50 | +17 | 0 | | | | |
| | 75 | +20 | + 3 | 41E | 79 + 00 | + 6 | + 1 |
| | 105 + 00 | +18 | + 4 | | 25 | +15 | + 8 |
| | 25 | +15 | + 3 | | 50 | +12 | + 2 |
| | 50 | +15 | + 3 | | 75 | + 8 | + 2 |
| | 75 | +15 | + 4 | | 80 + 00 | +10 | - 2 |
| | 106 + 00 | +15 | 0 | | 25 | +10 | + 4 |
| | 25 | +15 | + 3 | | 50 | +10 | 0 |
| | 50 | +10 | + 4 | | 75 | +10 | - 2 |
| | 75 | | | | 81 + 00 | +20 | +18 |
| | 107 + 00 | +10 | 0 | | 25 | +12 | +12 |
| | 25 | + 5 | - 4 | | 50 | + 5 | + 4 |
| | 50 | + 5 | - 1 | | 75 | 0 | - 2 |
| | 75 | + 1 | - 1 | | 82 + 00 | 0 | - 4 |
| | 108 + 00 | + 2 | - 3 | | 25 | - 2 | - 8 |
| | 25 | + 2 | + 2 | | 50 | + 6 | -12 |

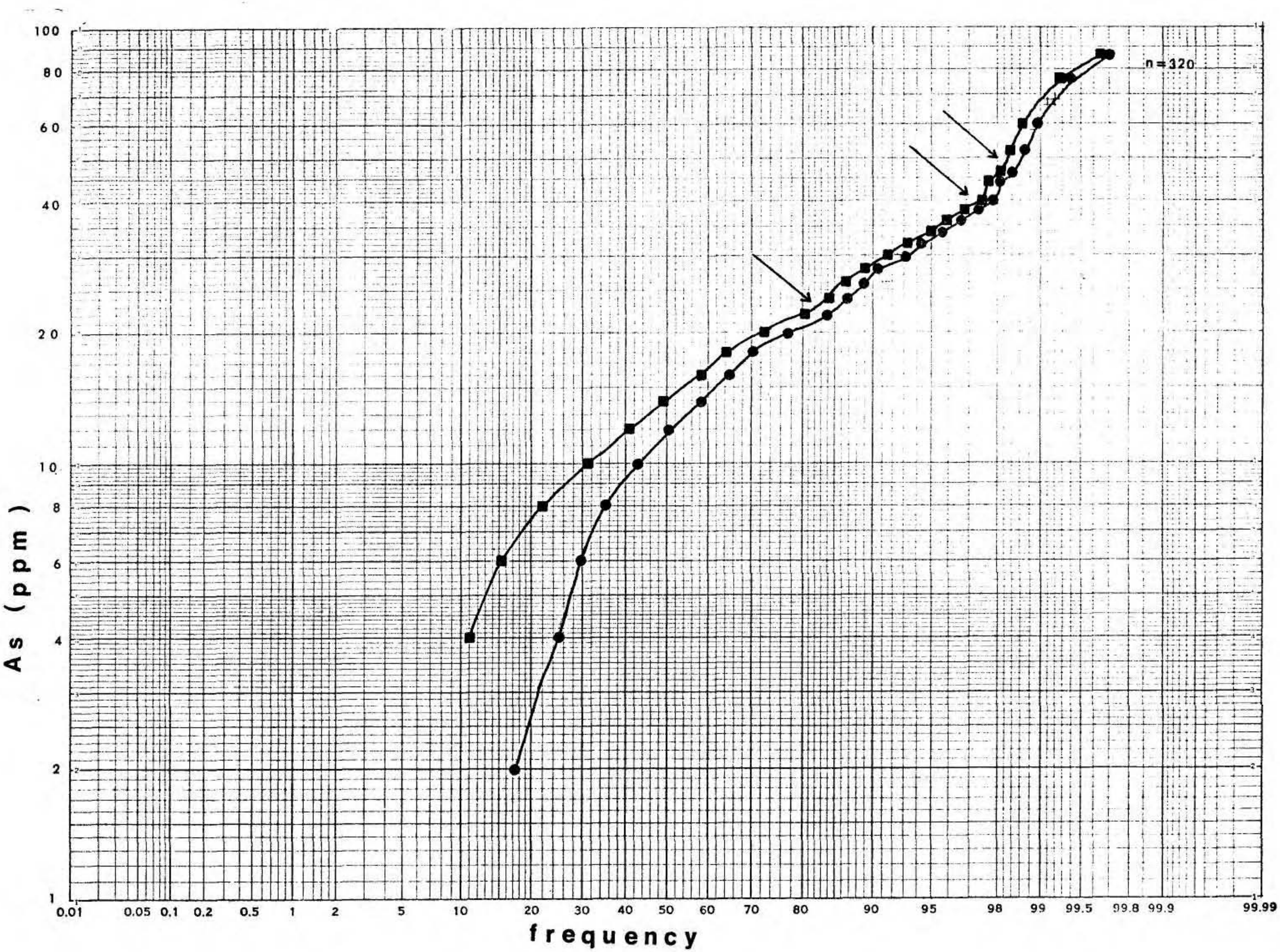
| Line | Station | in-phase | Quadrature | Line | Station | in-phase | Quadrature |
|---|---|---|---|---|---|---|---|
| 41E | 82 + 75 | +15 | +10 | 41E | 93 + 50 | + 5 | + 8 |
| | 83 + 00 | +15 | +10 | | 75 | +10 | 0 |
| | 25 | + 8 | +10 | | 94 + 00 | +10 | 0 |
| | 50 | +10 | + 2 | | 25 | +15 | + 8 |
| | 75 | + 5 | 0 | | 50 | +10 | +12 |
| | 84 + 00 | + 5 | + 2 | | 75 | +18 | +16 |
| | 25 | + 5 | 0 | | 95 + 00 | +20 | +18 |
| | 50 | 0 | 0 | | | | |
| | 75 | - 2 | 0 | | 100 + 00 | 0 | -18 |
| | 85 + 00 | 0 | - 2 | | 25 | - 2 | -19 |
| | 25 | - 3 | 0 | | 50 | + 2 | -15 |
| | 50 | 0 | 0 | | 75 | + 2 | -17 |
| | 75 | - 4 | 0 | | 101 + 00 | + 7 | -14 |
| | 86 + 00 | - 3 | + 2 | | 25 | + 8 | -11 |
| | 25 | 0 | 0 | | 50 | +12 | -10 |
| | 50 | - 4 | 0 | | 75 | +11 | - 6 |
| | 75 | - 5 | 0 | | 102 + 00 | +20 | - 8 |
| | 87 + 00 | - 5 | - 2 | | 25 | +19 | - 5 |
| | 25 | - 5 | - 2 | | 50 | | |
| | 50 | -10 | +10 | | 75 | +12 | - 4 |
| | 75 | -10 | 0 | | 103 + 00 | +21 | + 4 |
| | 88 + 00 | -10 | - 2 | | 25 | +22 | + 3 |
| | 25 | -10 | - 2 | | 50 | +25 | + 1 |
| | 50 | -10 | 0 | | 75 | +25 | + 1 |
| | 75 | -10 | - 2 | | 104 + 00 | +21 | + 2 |
| | 89 + 00 | -15 | - 2 | | 25 | +20 | 0 |
| | 25 | -10 | 0 | | 50 | +20 | - 1 |
| | 50 | - 8 | + 2 | | 75 | +19 | + 1 |
| | 75 | - 3 | + 4 | | 105 + 00 | +15 | + 1 |
| | 90 + 00 | 0 | - 4 | | 25 | +17 | 0 |
| | 25 | + 5 | 0 | | 50 | +15 | 0 |
| | 50 | + 5 | - 2 | | 75 | +15 | 0 |
| | 75 | + 4 | + 2 | | 106 + 00 | +11 | + 2 |
| | 91 + 00 | + 2 | + 4 | | 25 | +10 | + 3 |
| | 25 | + 5 | 0 | | 50 | +12 | + 1 |
| | 50 | + 4 | + 6 | | 75 | +12 | + 1 |
| | 75 | + 3 | + 3 | | 107 + 00 | +11 | + 2 |
| | 92 + 00 | 0 | 0 | | 25 | +10 | - 2 |
| | 25 | 0 | - 4 | | 50 | | |
| | 50 | + 2 | - 2 | | 75 | +10 | - 3 |
| | 75 | - 2 | - 3 | | 108 + 00 | +10 | + 3 |
| | 93 + 00 | + 6 | 0 | | 25 | +10 | + 3 |
| | 25 | + 3 | + 5 | | 50 | + 8 | - 1 |
| | | | | | 75 | + 9 | + 2 |

| Line | Station | in-phase | Quadrature | Line | Station | in-phase | Quadrature |
|---|---|---|---|---|---|---|---|
| 41E | 109 + 00 | +11 | + 3 | 43E | 84 + 50 | - 5 | - 5 |
| | 25 | +12 | 0 | | 75 | - 6 | 0 |
| | 50 | +12 | + 2 | | 85 + 00 | -15 | + 2 |
| | 75 | + 9 | + 3 | | 25 | -10 | 0 |
| | 110 + 00 | + 7 | - 4 | | 50 | -10 | + 2 |
| | 25 | + 2 | 0 | | 75 | - 5 | + 2 |
| | 50 | + 1 | + 5 | | 86 + 00 | - 8 | + 2 |
| | 75 | 0 | - 2 | | 25 | - 5 | 0 |
| | 111 + 00 | + 2 | + 5 | | 50 | - 5 | + 5 |
| | 25 | - 5 | 0 | | 75 | - 5 | 0 |
| | 50 | + 5 | - 4 | | 87 + 00 | - 5 | + 2 |
| | 75 | + 1 | - 1 | | 25 | - 5 | - 4 |
| | 112 + 00 | | | | 50 | - 5 | - 3 |
| | 25 | 0 | 0 | | 75 | - 2 | + 3 |
| | 50 | 0 | 0 | | 88 + 00 | - 3 | 0 |
| | 75 | 0 | 0 | | 25 | - 5 | + 4 |
| | 113 + 00 | 0 | 0 | | 50 | - 5 | - 3 |
| | 25 | 0 | - 2 | | 75 | - 3 | + 1 |
| | 50 | 0 | + 2 | | 89 + 00 | - 5 | - 6 |
| | 75 | 0 | + 1 | | 25 | - 5 | - 5 |
| | 114 + 00 | -15 | - 3 | | 50 | - 4 | 0 |
| | 25 | 0 | - 8 | | 75 | - 5 | + 2 |
| | 50 | + 4 | +14 | | 90 + 00 | + 5 | 0 |
| | 75 | +10 | 0 | | 25 | + 5 | - 6 |
| | 115 + 00 | +12 | - 2 | | 50 | 0 | - 2 |
| | | | | | 75 | + 2 | - 3 |
| 43E | 80 + 00 | - 1 | + 3 | | 91 + 00 | + 3 | - 5 |
| | 25 | 0 | + 4 | | 25 | 0 | - 3 |
| | 50 | 0 | + 2 | | 50 | + 5 | - 2 |
| | 75 | + 5 | + 9 | | 75 | + 8 | - 4 |
| | 81 + 00 | 0 | +10 | | 92 + 00 | + 4 | - 3 |
| | 25 | 0 | + 1 | | 25 | 0 | 0 |
| | 50 | 0 | - 1 | | 50 | - 2 | - 2 |
| | 75 | - 2 | - 1 | | 75 | - 3 | + 1 |
| | 82 + 00 | + 2 | + 3 | | 93 + 00 | - 5 | + 2 |
| | 25 | + 5 | + 4 | | 25 | - 3 | + 4 |
| | 50 | + 5 | + 3 | | 50 | - 2 | 0 |
| | 75 | + 2 | + 4 | | 75 | + 5 | - 2 |
| | 83 + 00 | - 2 | + 4 | | 94 + 00 | + 3 | - 1 |
| | 25 | 0 | + 3 | | 25 | + 4 | - 3 |
| | 50 | + 2 | + 4 | | 50 | - 2 | - 1 |
| | 75 | - 2 | + 4 | | 75 | + 6 | 0 |
| | 84 + 00 | - 5 | 0 | | 95 + 00 | + 3 | + 1 |
| | 25 | - 3 | 0 | | 102 + 00 | | |

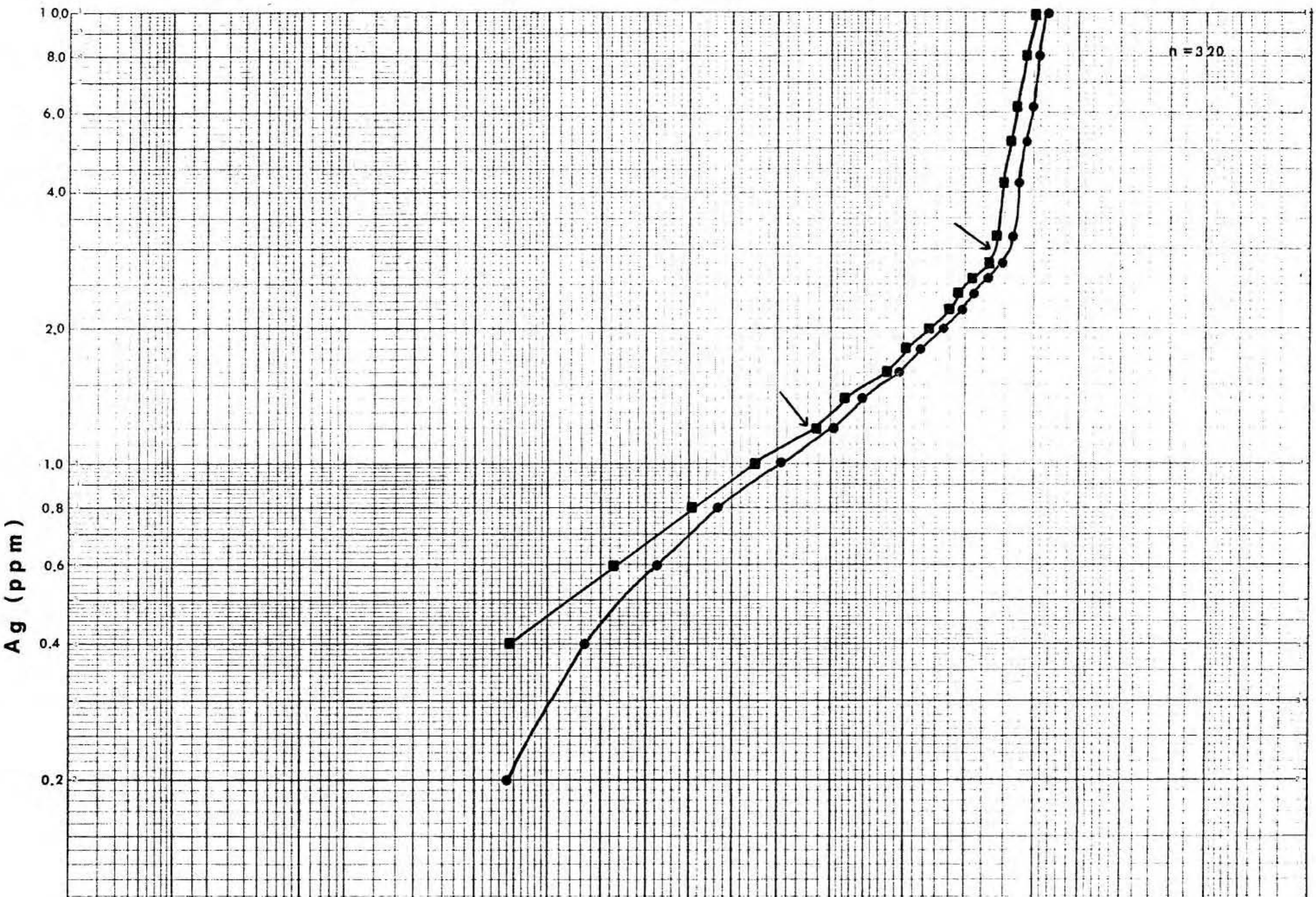
| Line | Station | in-phase | Quadrature | Line | Station | in-phase | Quadrature |
|---|---|---|---|---|---|---|---|
| 45E | 110 + 75 | +10 | + 3 | | | | |
| | 111 + 00 | + 5 | - 2 | | | | |
| | 25 | +11 | 0 | | | | |
| | 50 | + 3 | - 2 | | | | |
| | 75 | 0 | - 4 | | | | |
| | 112 + 00 | | | | | | |
| | 25 | +15 | + 6 | | | | |
| | 50 | + 8 | + 8 | | | | |
| | 75 | +10 | + 8 | | | | |
| | 113 + 00 | +10 | + 6 | | | | |
| | 25 | + 8 | 0 | | | | |
| | 50 | + 4 | + 3 | | | | |
| | 75 | + 7 | + 4 | | | | |
| | 114 + 00 | + 8 | + 3 | | | | |
| | 25 | + 8 | + 5 | | | | |
| | 50 | + 8 | + 2 | | | | |
| | 75 | + 5 | + 1 | | | | |
| | 115 + 00 | + 5 | - 2 | | | | |

# APPENDIX C

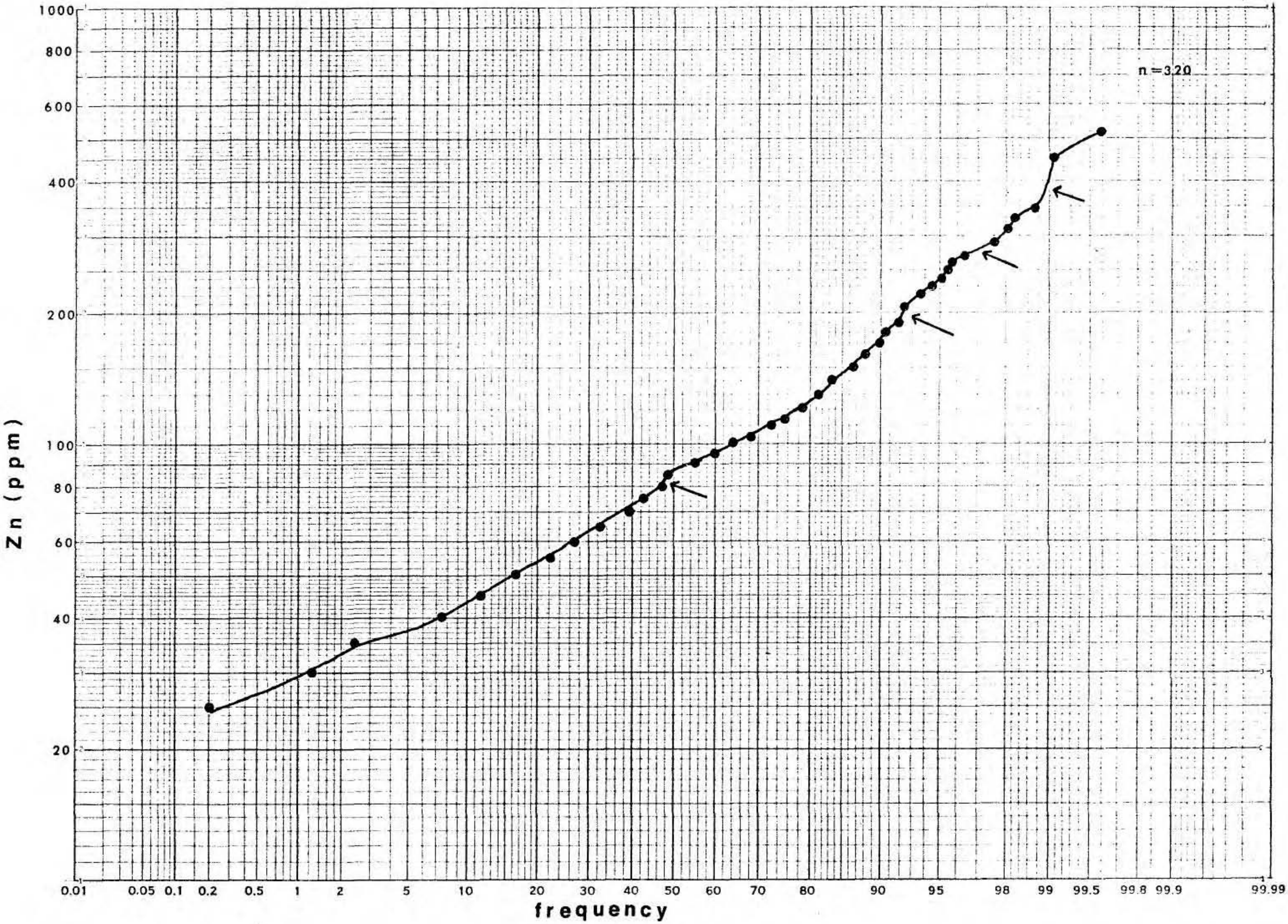
## SOIL SAMPLE HISTOGRAMS



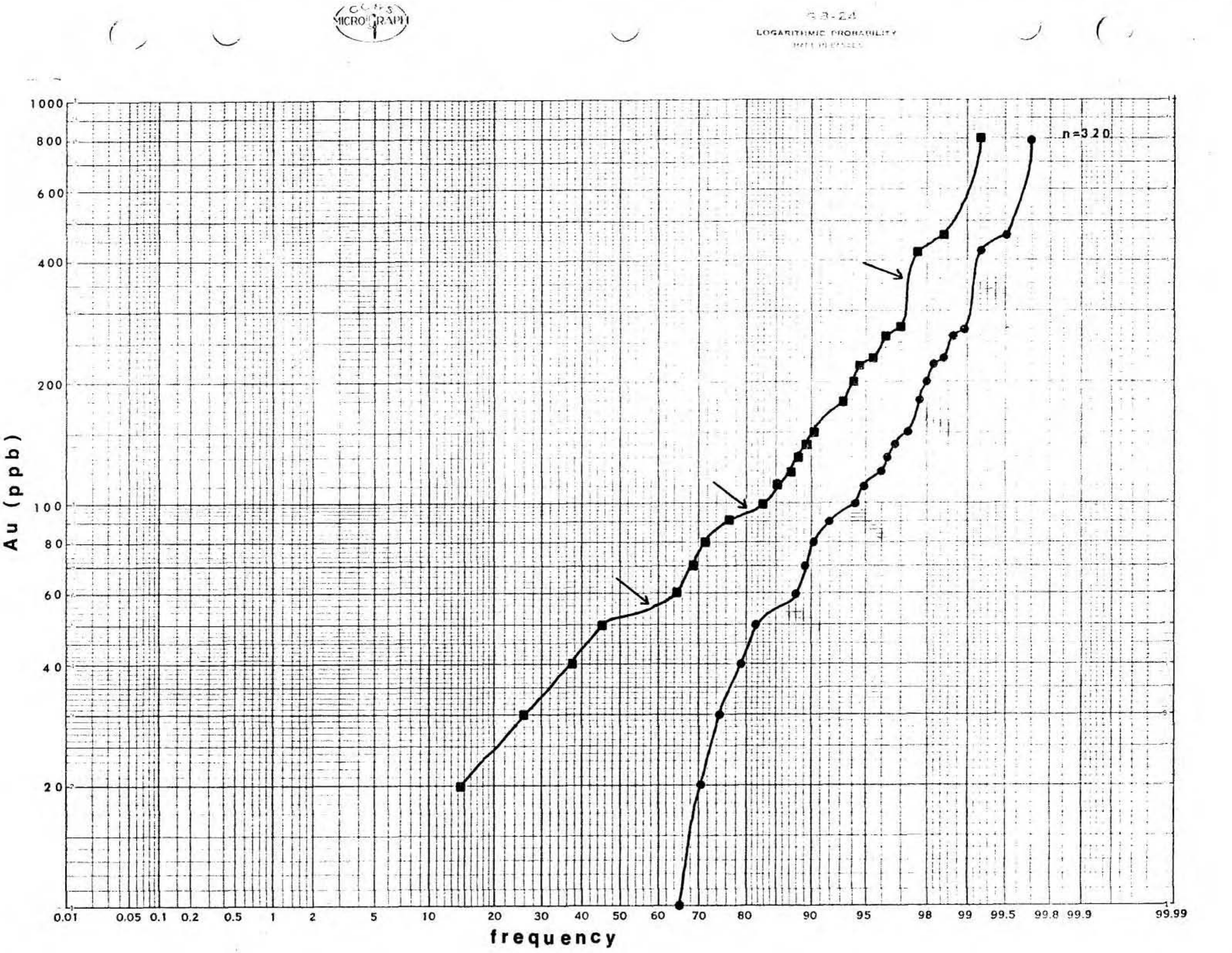
G 8-24
n = 320
As (ppm)
frequency
100
80
60
40
20
10
8
6
4
2
1
0.01
0.05
0.1
0.2
0.5
1
2
5
10
20
30
40
50
60
70
80
90
95
98
99
99.5
99.8
99.9
99.99


n = 320
Ag (ppm)
10.0
8.0
6.0
4.0
2.0
1.0
0.8
0.6
0.4
0.2
0.01
0.05
0.1
0.2
0.5
1
2
5
10
20
30
40
50
60
70
80
90
95
98
99
99.5
99.8
99.9
99.99
frequency

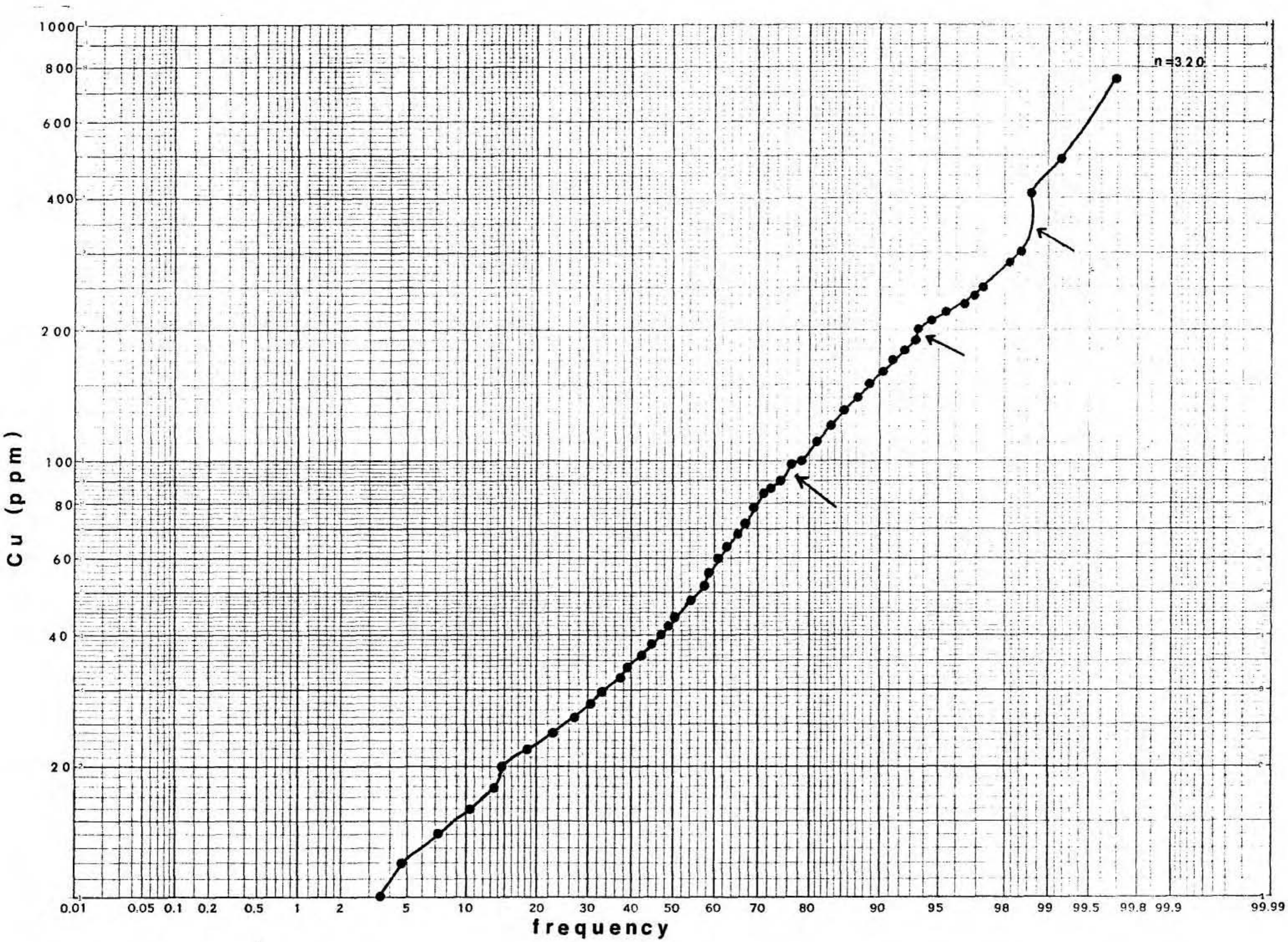
| Line | Station | in-phase | Quadrature | Line | Station | in-phase | Quadrature |
|---|---|---|---|---|---|---|---|
| 43E | 102 + 25 | +25 | - 2 | 43E | 113 + 25 | | |
| | 50 | +15 | - 8 | | 50 | | |
| | 75 | +20 | -15 | | 75 | | |
| | 103 + 00 | +10 | -10 | | 114 + 00 | | |
| | 25 | +15 | - 1 | | 25 | | |
| | 50 | +20 | -10 | | 50 | | |
| | 75 | +25 | -10 | | 75 | | |
| | 104 + 00 | +22 | -10 | | 115 + 00 | | |
| | 25 | +25 | - 5 | | | | |
| | 50 | +22 | - 5 | 45E | 102 + 00 | +15 | 0 |
| | 75 | +20 | 0 | | 25 | - 5 | - 5 |
| | 105 + 00 | +22 | -14 | | 50 | 0 | - 8 |
| | 25 | +22 | -12 | | 75 | + 5 | -10 |
| | 50 | +20 | -15 | | 103 + 00 | +12 | -12 |
| | 75 | +20 | -12 | | 25 | + 5 | - 6 |
| | 106 + 00 | | | | 50 | + 5 | - 8 |
| | 25 | +16 | -10 | | 75 | +15 | - 9 |
| | 50 | +20 | - 8 | | 104 + 00 | +15 | -10 |
| | 75 | +15 | -10 | | 25 | +10 | -10 |
| | 107 + 00 | +14 | - 9 | | 50 | +10 | - 7 |
| | 25 | +12 | - 6 | | 75 | +20 | -15 |
| | 50 | + 5 | 0 | | 105 + 00 | +15 | -20 |
| | 75 | +18 | - 1 | | 25 | +10 | -14 |
| | 108 + 00 | +22 | - 6 | | 50 | +10 | - 8 |
| | 25 | +20 | - 5 | | 75 | +15 | - 2 |
| | 50 | +15 | 0 | | 106 + 00 | +17 | - 6 |
| | 75 | +10 | - 4 | | 25 | +17 | -10 |
| | 109 + 00 | +16 | 0 | | 50 | +17 | -10 |
| | 25 | +15 | -12 | | 75 | +20 | -12 |
| | 50 | +15 | -10 | | 107 + 00 | + 5 | - 5 |
| | 75 | +12 | - 6 | | 25 | + 5 | - 9 |
| | 110 + 00 | +10 | - 6 | | 50 | + 8 | - 5 |
| | 25 | +20 | + 6 | | 75 | +15 | - 3 |
| | 50 | +10 | +10 | | 108 + 00 | +12 | - 4 |
| | 75 | 0 | - 6 | | 25 | +10 | - 6 |
| | 111 + 00 | 0 | 0 | | 50 | + 9 | 0 |
| | 25 | 0 | - 8 | | 75 | + 9 | + 2 |
| | 50 | + 2 | - 4 | | 109 + 00 | +10 | + 2 |
| | 75 | 0 | - 6 | | 25 | +10 | + 3 |
| | 112 + 00 | | | | 50 | +14 | + 5 |
| | 25 | 0 | -10 | | 75 | +15 | + 5 |
| | 50 | | | | 110 + 00 | +12 | + 2 |
| | 75 | 0 | | | 25 | +10 | + 3 |
| | 113 + 00 | | | | 50 | +15 | + 2 |

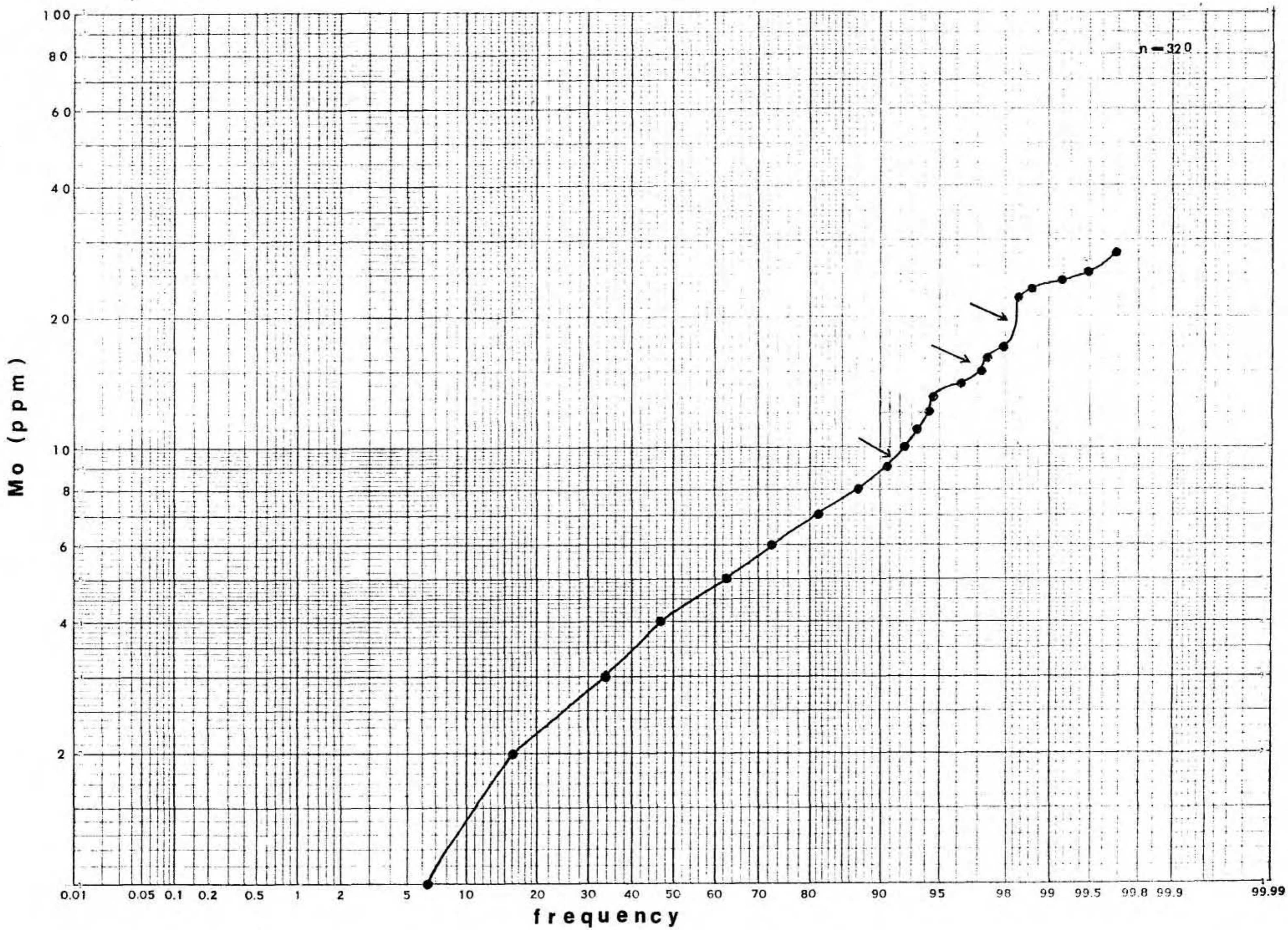


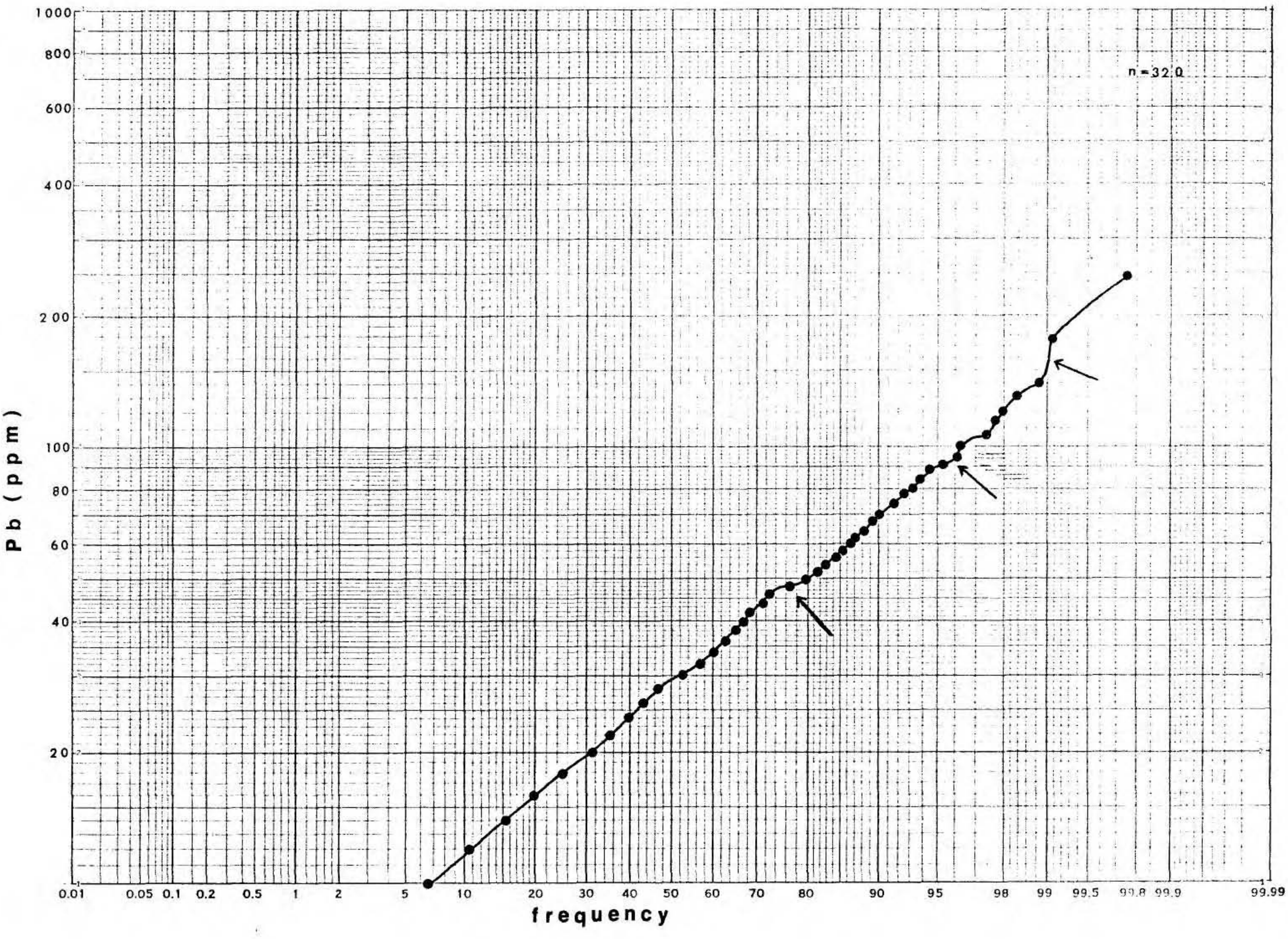
n = 320
1000
800
600
400
200
100
80
60
40
20
Zn (ppm)
0.01 0.05 0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.5 99.8 99.9 99.99
frequency



MICROGRAPH
3-24
LOGARITHMIC PROBABILITY
n=320
Au (ppb)
1000
800
600
400
200
100
80
60
40
20
0.01
0.05
0.1
0.2
0.5
1
2
5
10
20
30
40
50
60
70
80
90
95
98
99
99.5
99.8
99.9
99.99
frequency


n = 320
Cu (ppm)
1000
800
600
400
200
100
80
60
40
20
0.01
0.05
0.1
0.2
0.5
1
2
5
10
20
30
40
50
60
70
80
90
95
98
99
99.5
99.8
99.9
99.99
frequency


n = 320
Mo (ppm)
100
80
60
40
20
10
8
6
4
2
0.01
0.05
0.1
0.2
0.5
1
2
5
10
20
30
40
50
60
70
80
90
95
98
99
99.5
99.8
99.9
99.99
frequency


n = 320
Pb (ppm)
1000
800
600
400
200
100
80
60
40
20
0.01
0.05
0.1
0.2
0.5
1
2
5
10
20
30
40
50
60
70
80
90
95
98
99
99.5
99.8
99.9
99.99
frequency

## APPENDIX D

### Cost Statement

**Wages**

| | |
|---|---|
| B.V. Hall, 124 days at $127.02/day<br>May 1 to August 31, 1983<br>September 9, 1983 | $15,750.48 |
| G. Fjetland, 61 days at $68.20/day<br>June 1 to July 31, 1983 | $ 4,160.20 |
| K. Kelly, 61 days at $54.56/day<br>June 1 to July 31, 1983 | $ 3,328.16 |
| R. Watson, 61 days at $61.38/day<br>June 1 to July 31, 1983 | $ 3,744.18 |
| 5 days at $150.00/day | $ 750.00 |
| TOTAL | $27,733.02 |

**Accommodation**

| | |
|---|---|
| Sandman Inn, Terrace, B.C., 2 days at $185.26/day<br>June 8-9, 1983 B.V. Hall<br>G. Fjetland<br>R. Watson<br>K. Kelly | $ 370.52 |
| Slumber Lodge, Terrace, B.C.; 1 day at $55.18<br>August 16, 1983 B.V. Hall<br>R. Watson | 55.18 |
| TOTAL | $ 425.70 |

**Food**

| | |
|---|---|
| B.V. Hall, 46 days at $19.26/day<br>June 10 to July 21, 1983<br>August 16 - 20, 1983 | $ 885.96 |
| G. Fjetland, 41 days at $19.26/day<br>June 10 to July 21, 1983 | $ 789.66 |
| R. Watson, 46 days at $19.26/day<br>June 10 to July 21, 1983<br>August 16 - 20, 1983 | $ 885.96 |
| K. Kelly, 41 days at $19.26<br>June 10 to July 21, 1983 | $ 789.66 |
| TOTAL | $ 3,351.24 |

Field Costs

| | | |
|---|---|---|
| Lumber | | $ 668.27 |
| Fuel | | 195.27 |
| Field Equipment | | 3,626.18 |
| Office Supplies | | 876.99 |
| Truck Rental | | 130.19 |
| Truck Freight | | 479.25 |
| Expediting Service | | 847.84 |
| | TOTAL | $ 6,823.99 |

Helicopter

| | | |
|---|---|---|
| Northern Mountain Helicopters | | |
| 30.4 hours at $450/hour | | $14,040.00 |
| Fuel | | 3,167.77 |
| June 10 to July 19, 1983 | | |
| August 17 to August 19, 1983 | | |
| Frontier Helicopters | | |
| 1.8 hours at $425.00/hour | | 765.00 |
| Fuel | | 223.20 |
| September 9, 1983 | | |
| | TOTAL | $18,195.97 |

Fixed Wing

| | | | |
|---|---|---|---|
| Freight | Trans Provincial Airways | | $ 128.38 |
| | Air B.C. | | 1,666.80 |
| | Pacific Western Airlines | | 198.57 |
| | Canadian Pacific Airlines | | 51.00 |
| | | TOTAL | $ 2,044.75 |
| Personnel | Pacific Western Airlines | | $ 1,684.80 |
| | Air B.C. | | 390.40 |
| | Trans Provincial Airlines | | 390.40 |
| | | TOTAL | $ 2,465.60 |

Instrument Rental

| | | |
|---|---|---|
| EM-16; Geonics Ltd.; Mississauga, Ontario<br>30 days at $34.83/day<br>June 24 to July 24, 1983 | | $ 1,044.90 |
| Proton Magnetometer; Exploranium Geometrics;<br>Toronto, Ont. - 30 days at $39.00/day<br>June 24 to July 24, 1983 | | 1,170.00 |
| | TOTAL | $ 2,214.90 |

Assays and Analysis

| | | |
|---|---|---|
| Heavy Mineral Samples; Min-En Laboratory Ltd.; North Vancouver, B.C. | | |
| 19 samples flotation at $20.00/sample | $ | 380.00 |
| 19 samples analysed for Cu, Pb, Zn, Ag, Au, As, Mo $12.50/sample x 2 size fractions | | 475.00 |
| TOTAL | $ | 855.00 |
| Soil samples; Rossbacher Laboratory Ltd.; Burnaby, B.C. | | |
| 786 sample preparation at $0.50/sample | $ | 393.00 |
| 556 samples analysed for Cu, Pb, Zn, Ag, Mo, As, Au at $9.80/sample | | 5,448.80 |
| 75 samples analysed for Cu, Pb, Zn, Ag, Mo, Au at $6.90/sample | | 517.50 |
| 155 samples analysed for Pb, Zn, Ag, Au at $5.90/sample | | 914.50 |
| TOTAL | $ | 7,273.80 |
| Rock samples; Rossbacher Laboratory Ltd., Burnaby, B.C. | | |
| 43 sample preparation at $2.00/sample | $ | 86.00 |
| 43 samples analysed for Cu, Pb, Zn, Ag, Mo, As, Au at $9.80/sample | | 421.40 |
| TOTAL | $ | 507.40 |

Thin Section Preparation

| | | |
|---|---|---|
| Vancouver Petrographics, 10 thin sections at $8.85/section | $ | 88.50 |

Orthophoto Map

| | | |
|---|---|---|
| McElhanney Surveying and Engineering Ltd. | $ | 3,735.75 |

Report Preparation

| | | |
|---|---|---|
| R.W. Rollings, drafting | $ | 860.82 |
| Vancal Reproductions, supplies | | 59.39 |
| TOTAL | $ | 920.21 |
| GRAND TOTAL | $ | 76,635.83 |

# APPENDIX E

## STATEMENT OF QUALIFICATIONS

I, Brian V. Hall, of Vancouver, British Columbia do hereby certify that:

1. I am a geologist presently residing at #115 - 1999 Nelson Street, Vancouver, B.C., V6G 1N4.

2. I am a graduate in geology of the University of British Columbia B.Sc. (1975) and of the University of Waterloo M.Sc. (1978).

3. I have practised my profession for twelve field seasons.

4. I have no beneficial interest in the property discussed in this report nor do I expect to receive any in the future.

5. I am presently a Fellow of the Geological Association of Canada.

B V Hall

Brian V. Hall, M.Sc.
September 18, 1983

GEOLOGICAL BRANCH
ASSESSMENT REPORT
11,313
part 1 of 2
BIG GULLY FAULT
6276000N
6275000N
6274000N
6273000N
385000E
386000E
387000E
388000E
LEGEND.
Jvs VOLCANICLASTIC SEDIMENTS
Jmf MAFIC VOLCANIC FLOW
Jmp MAFIC PYROCLASTIC MATERIAL
Jsv SERICITIZED VOLCANICS & PYROCLASTICS
Jfv FELSIC VOLCANIC
Jch CHERT
Jfp FELDSPAR PORPHYRY
Jpp PYROXENE PORPHYRY
Jop ORTHOCLASE PORPHYRY
Jgn GRANODIORITE
Jqm QUARTZ MONZONITE
Jgv ALTERED VOLCANIC & GRANODIORITE
BEDDING
FOLIATION
CLEAVAGE
VEIN or DYKE
FAULT
PY PYRITE
MAG MAGNETITE
QTZ QUARTZ
BAR BARITE
EP EPIDOTE
SHEET INDEX
METRES
PRELIMINARY RECONNAISSANCE TYPE MAPPING
McElhanney
REF. No. 40061-0
McElhanney Surveying & Engineering Ltd
1166 Alberni Street Vancouver B.C., Canada
Compiled from aerial photography taken in July 1982 at an approximate scale of 1:60000
SCALE 1:5,000
CONTOUR INTERVAL 20 Metres
DATE COMPILED July 1983
SHEET NUMBER 2 OF 2
ONAPING RESOURCES LTD.
ISKUT PROJECT; GOSSAN 18,19,20 & CENTRAL CLAIM, LIARD M.D.
BRITISH COLUMBIA
GEOLOGY MAP
BY B.V. HALL
DATE: OCT., 1983
FIGURE: 4b


See SHEET 4b for legend.

SHEET INDEX 1 2

0 100 200 300 400 500 METRES

PRELIMINARY RECONNAISSANCE TYPE MAPPING
Scale and elevation datum based on limited ground control resulting in good relative but uncertain map accuracy.

McElhanney

REF No 40061-0

McElhanney Surveying & Engineering Ltd
1166 Alberni Street, Vancouver B.C., Canada

Compiled from aerial photography taken in July 1982 at an approximate scale of 1:60000

| | | | |
|---|---|---|---|
| SCALE | 1:5,000 | CONTOUR INTERVAL | 20 Metres |
| DATE COMPILED | July 1983 | SHEET NUMBER | 1 OF 2 |

ONAPING RESOURCES LTD.
ISKUT PROJECT; GOSSAN 18,19,20 & CENTRAL CLAIM, LIARD M.D.
BRITISH COLUMBIA

# GEOLOGY MAP

BY B.V. HALL
DATE: OCT., 1983

FIGURE: 4 a


| | | |
|---|---|---|
| McElhanney Surveying & Engineering Ltd. 1166 Alberni Street, Vancouver B.C., Canada | ONAPING RESOURCES LTD. ISKUT PROJECT; GOSSAN 18,19,20 & CENTRAL CLAIM, LIARD M.D. BRITISH COLUMBIA | |
| Compiled from aerial photography taken in July 1982 at an approximate scale of 1:60000 | ALTERATION & MINERALIZATION MAP | |
| SCALE 1:5,000 | CONTOUR INTERVAL 20 Metres | |
| DATE COMPILED July 1983 | SHEET NUMBER 2 OF 2 | BY B.V. HALL DATE: OCT., 1983 — FIGURE: 5b |

REF. No. 40061-0

B.V. Hall


GEOLOGICAL BRANCH
ASSESSMENT REPORT
11,313
part 1 of 2
LEGEND:
ORTHOCLASE VEINING
PERVASSIVE SERICITIZATION
EPIDOTE VEINING
PLAGIOCLASE — MONTMORILLONITE
5% PYRITE
2% PYRITE
SHEET INDEX
1
2
0 100 200 300 400 500
METRES
PRELIMINARY RECONNAISSANCE TYPE MAPPING
Scale and elevation datum based on limited ground control resulting in good relative but uncertain map accuracy.
McElhanney
REF. No. 40061-0
McElhanney Surveying & Engineering Ltd.
1166 Alberni Street, Vancouver B.C., Canada
SCALE 1:5,000
CONTOUR INTERVAL 20 Metres
DATE COMPILED July 1983
SHEET NUMBER 1 OF 2
ONAPING RESOURCES LTD.
ISKUT PROJECT; GOSSAN 18,19,20 & CENTRAL CLAIM, LIARD M.D.
BRITISH COLUMBIA
ALTERATION & MINERALIZATION MAP
BY B.V.HALL
DATE: OCT., 1983
FIGURE: 5a


GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,313
part 1 of 2

B.V. Hall

ONAPING RESOURCES LTD.
ISKUT PROJECT ; GOSSAN 18,19,20 & CENTRAL CLAIM , LIARD M.D.
BRITISH COLUMBIA

EM-16 SURVEY
FRASER FILTERED IN-PHASE DATA

BY B.V.HALL
DATE: SEPT., 1983

FIGURE: 7a


GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,313
part 1 of 2

ONAPING RESOURCES LTD.
ISKUT PROJECT ; GOSSAN 18,19,20 & CENTRAL CLAIM, LIARD M.D.
BRITISH COLUMBIA

EM-16 SURVEY
FRASER FILTERED IN-PHASE DATA

BY B.V. HALL
DATE: SEPT., 1983

FIGURE: 7b




B.V. Hall

LEGEND:

57698 MAGNETOMETER READING (GAMMA VALUE)

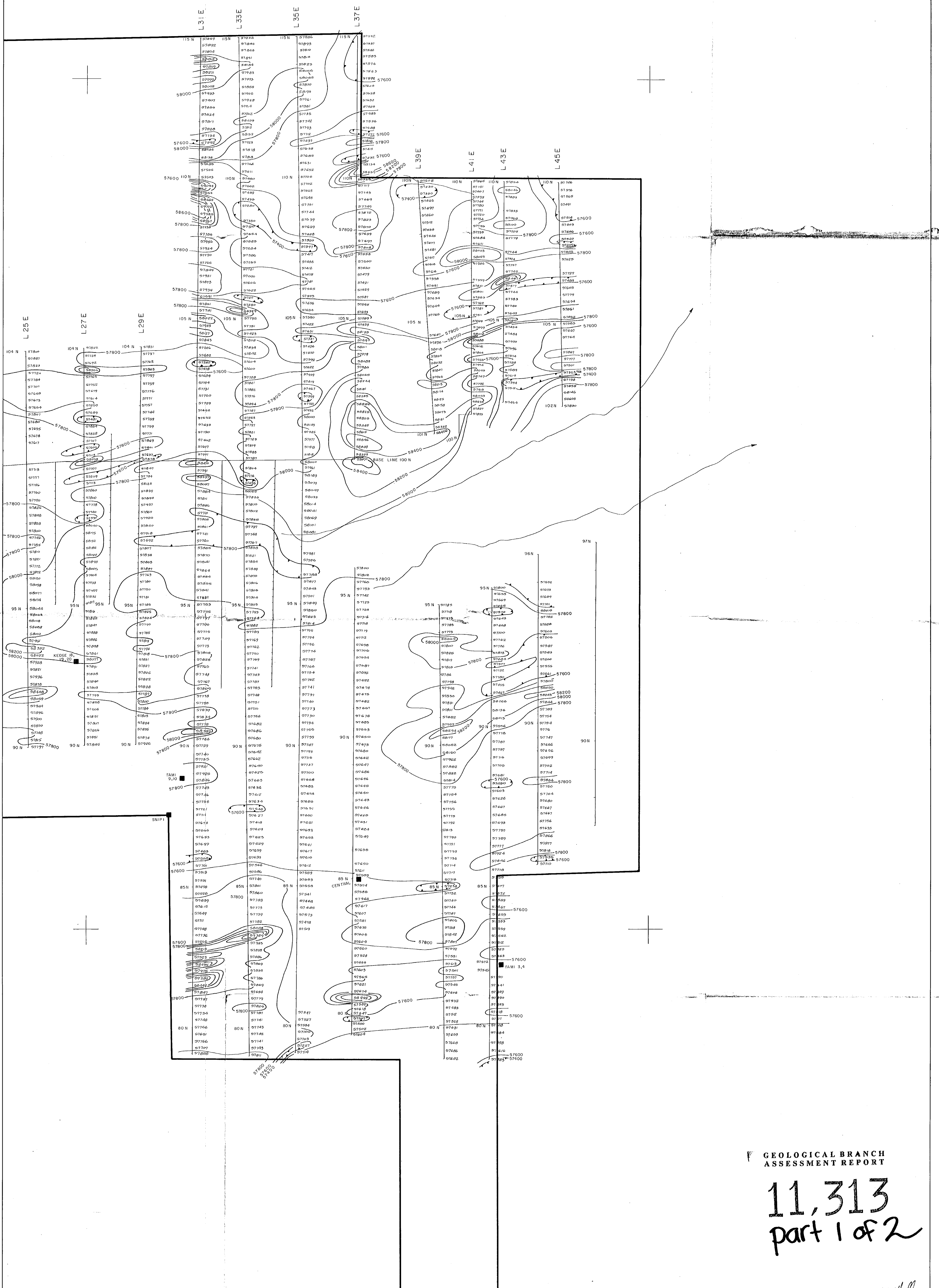
CONTOUR INTERVAL = 200 GAMMAS

ONAPING RESOURCES LTD.
ISKUT PROJECT ; GOSSAN 18,19,20 & CENTRAL CLAIM , LIARD M.D.
BRITISH COLUMBIA

# MAGNETOMETER SURVEY

BY B.V. HALL
DATE: SEPT., 1983

FIGURE: 6a




GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,313
part 1 of 2

LEGEND:

57698 MAGNETOMETER READING (GAMMA VALUE)

CONTOUR INTERVAL = 200 GAMMAS

ONAPING RESOURCES LTD.
ISKUT PROJECT ; GOSSAN 18,19,20 & CENTRAL CLAIM, LIARD M.D.
BRITISH COLUMBIA

# MAGNETOMETER SURVEY

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DATE: SEPT., 1983

FIGURE: 6b