# PLACER DEVELOPMENT LIMITED

Summary Report
on the
1981 Exploration Program
on the April Property
Lyell Island

Queen Charlotte Islands, B.C.
N.T.S. 103-B-12

W.S. Pentland

March 29th, 1982

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## APPENDIX



Maps (in pocket)

Introduction:

In January 1981 an additional 541 units were staked on Lyell Island in the Queen Charlotte Islands in response to the interesting gold values found by diamond drilling in late 1980 on the April 3 claim. An exploration program was organized for 1981 to evaluate the known showing and the new claims as outlined below:

1. Evaluation of the new claims by reconnaissance mapping and stream, soil and rock sampling. This program was divided between Placer Development Limited and J.M.T. Services Corp. with the latter group covering the ground from the southwest corner of Takalley Cove southward to the entrance to Beresford Inlet. The remaining ground was examined by Placer personnel.

2. A total of 2025 metres of NQWL drilling in 13 holes was completed in the area of the 1980 drill holes. The core was split and assayed for Au, Ag and As.

The results of the above noted programs are described in the following reports:

1. Geological and Geochemical Report on the April and Glitter Mineral Claims by W.S. Pentland, January 1982.

2. Diamond Drilling Report on the April 3 Mineral Claim. By W.S. Pentland, December 1981.

3. Reconnaissance Geochem Survey. April #28-28 Mineral Claims. By J.S. Christie, February 1982.

4. Follow-up Report on Geochem Survey April #1 and #5 Mineral Claims. By J.S. Christie, February, 1982.

The present memo summarizes the results of the 1981 program and presents recommendations for future exploration. In addition the results of various subsidiary investigations are noted with the available data being included in the appendix.

CONCLUSIONS AND RECOMMENDATIONS: (See Figure 13)

PART I:

1. The reconnaissance sampling program done by J.M.T. Services Corp. and Placer Development has indicated several areas warranting further work. It is recommended that a program of mapping and soil sampling be done on these areas.

2. J.M.T. Services Corp. completed a detailed soil grid on area "H" located 2 kms south of Takalley Cove. Several relatively narrow linear zones anomalous for Au were outlined. A program of magnetometer, VLF-EM and possibly Induced Polarization surveys in conjunction with limited hand trenching is recommended.

The total cost of the programs outlined above is estimated at $90,000. The field work would be completed in May-June 1982.

PART II: (See Figure 3)

Diamond drilling has indicated a potential mineralized zone at the southeast end of the drilled area. This zone is open to the east and northeast. While the controls on the mineralization are not known to date the most likely possibility to exist is a small tonnage high grade orebody.

It should be noted that the computer evaluation by B. Barde on the diamond drilling data (see Appendix VI) further emphasized that the zone noted above holds the best potential for exploration. The study indicated two populations of gold and arsenic with the one population containing the higher gold values being located at the southeast end of the drill area.

It is recommended that a minimum of 3 holes be drilled in the area. It is suggested that one hole be drilled to depth (300 meter min.) to check for the Kunga limestone. The Kunga normally overlies the Karmutsen volcanics and could be a favourable host.

This program should be held in obeyance until the results of the Part I recommendation are obtained as additional drill targets may be found. The cost of the proposed drilling is estimated at $180,000.

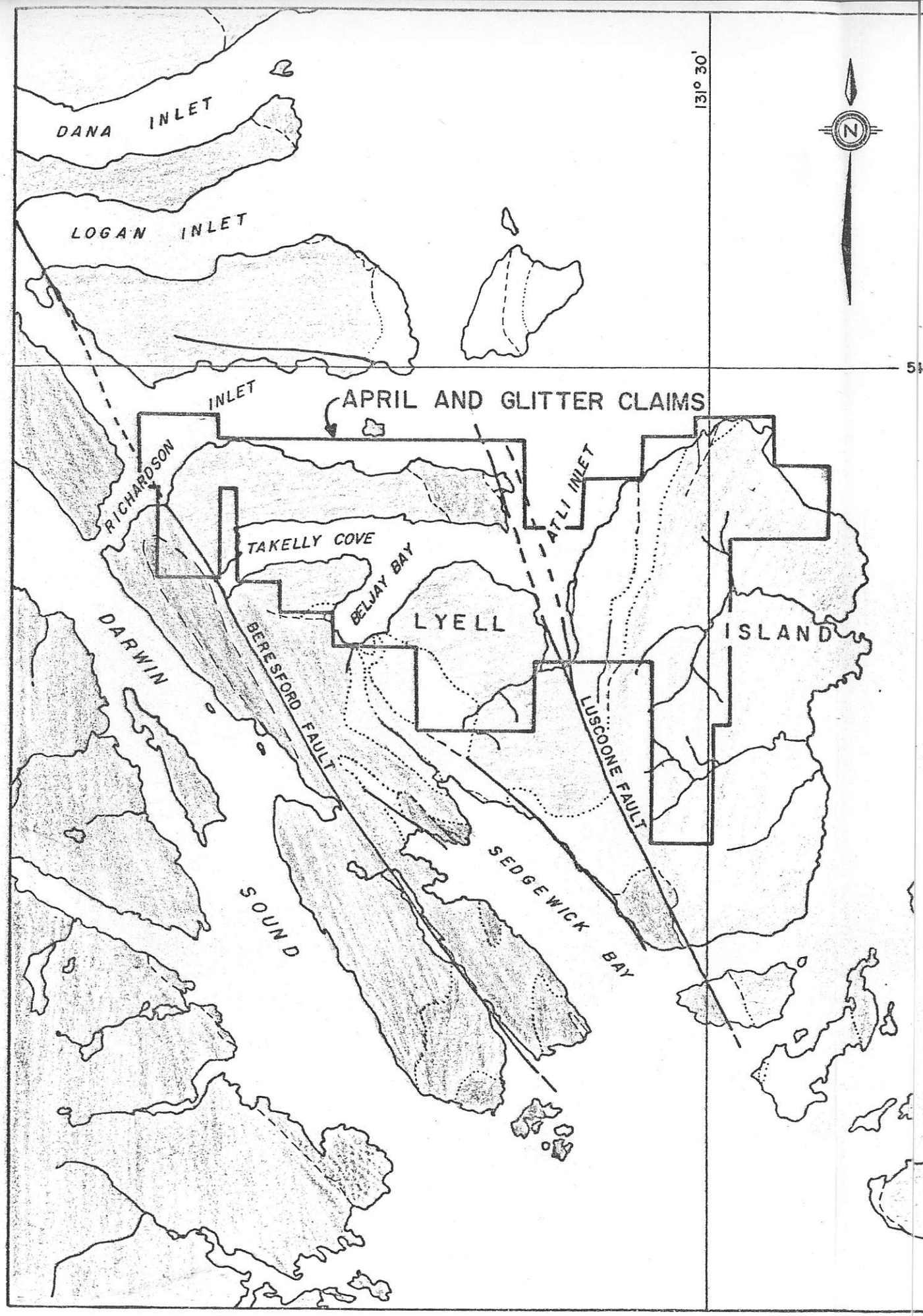
GEOLOGY: (See Figure 3)

REF: Bulletin 54
Geology of the Queen Charlotte Islands, B.C.
By A. Sutherland Brown, 1968.
B.C. Dept. of Mines

The area of primary interest is the western side of Lyell Island extending from Richardson Inlet southeastward to the end of Beresford Inlet. The main rock units in this area are as follows:

1. Karmutsen greenstones - Triassic age. Mostly flows and pillow lavas with chlorite and epidote.

2. Kunga limestone and argillite - L. Jurassic age. Overlies the Karmutsen.




## LEGEND

- KARMUTSEN FORMATION – BASIC VOLCANICS
- KUNGA FORMATION - ARGILLITE, LIMESTONE
- YAKOUN FORMATION – ANDESITE AGGLOMERATE, FLOWS AND SEDIMENTS
- LONGARM FORMATION – SEDIMENTS
- MASSET FORMATION – ACID VOLCANICS
- POST-TECTONIC PLUTONS: QTZ. MONZONITE, GRANITE, GRANODIORITE, QTZ. DIORITE.
- SYNTECTONIC PLUTONS: HORNBLENDE DIORITE, QTZ. DIORITE.
- MIGMATITE: MIXED HORNBLENDE DIORITE AND AMPHIBOLITE

NOTE: FROM BULLETIN 54, B.C. DEPT. OF MINES BY A. SUTHERLAND - BROWN, 1968.

FIGURE 3

PLACER DEVELOPMENT LIMITED

# GENERAL GEOLOGY OF LYELL ISLAND QUEEN CHARLOTTE ISLANDS

SCALE 1: 125,000

0 5,000 10,000

METRES

DEC. 1981. W.S.P. (J.S.)

3. Masset volcanics - Tertiary age. Mainly rhyolite to dacite ash to lapilli tuffs with some andesitic tuffs.

4. Intrusives:
   a. Syntectonic plutons - mainly diorites. Jurassic age. Tend to be elongated in a northwesterly direction and controlled by major faults.
   b. Post tectonic plutons - diorites. Cretaceous and Tertiary age.
   c. Porphyritic rhyolite dykes
   d. Andesite dikes

The major structural feature is the Beresford fault, which is a branch of the Rennel-Luscoone fault. The Beresford strikes northwest-southeast through the area of interest and in the section from Richardson Inlet to Takelley Cove marks the contact between the Karmutsen and Masset Formations.

Most of the area of interest is underlain by the Karmutsen formation. The Kunga limestone is found only intermittently and is not regarded as important for mineralization at this time. The Masset lies to the east of the Beresford fault as noted above and also forms most of the Beljay peninsula.

A previously unmapped elongated diorite pluton occurs in the Karmutsen along the west side of the Beresford fault for a distance of approximately 3 kms. Diorite dikes were noted in the Masset formation on the shore of Richardson Inlet and in DDH 81-15.

There are apparently two host situations for mineralization:

1. Karmutsen greenstones. Information on areas of interest in the Karmutsen is somewhat limited at this time due to the reconnaissance nature of the work to date and limited outcrop. The anomalous gold appears to be associated with zones of shearing with chloritization, patchy silica and pyrite, quartz veinlets and stringers carrying 1-4% pyrite.

2. Masset rhyolite lapilli tuffs. The formation has been variably flooded with silica and fairly widespread quartz veinlets. Pyrite is widespread and occasionally abundant being up to 15-20%. It occurs as disseminations, stringers and breccia filling.

RECONNAISSANCE SAMPLING RESULTS (See Figure 13)

Several areas anomalous for gold have been indicated by the reconnaissance sampling program. The majority of these areas are located in a northwest-southeast trend along the western side of Lyell Island. They are in the vicinity of the Beresford fault and mainly in Karmutsen Formation volcanics. The major exceptions to this is a zone on Richardson Passage extending from the area of diamond drilling northeastward to Skudas Point and situated in the Masset rhyolites.

A more advanced phase of sampling was done by J.M.T, Services Corp. on an area 1.5 kms south of Takelley Cove and first found in 1979. A 50 m x 25 m grid was established and mapped and soil sampled. The samples were assayed for Au and As.

The area is underlain by Karmutsen greenstone intruded by diorite dikes and small stocks. Rhyolite dikes were noted in two locations. There are several south to southeast trending gold anomalies up to 150 m long and 50 m wide. The maximum gold values in the soils were over 100 ppb.

Arsenic values are low with only two small areas considered to be anomalous. These areas did not correspond with the gold anomalies.

DIAMOND DRILLING RESULTS (See Figure 8)

A total of 13 holes were drilled in 1981 of which 12 were located over a strike length of 300 meters of the main rhyolite zone beside Richardson Inlet. Six of the 12 holes returned intersections up to 12 meters carrying in excess of 2 gms/t. gold with the highest value being 20 gms/t. gold over 3 meters.

The latter intersection occurred in DDH 81-17 in the vicinity of DDH 80-5 which contained 17 gms/t. Au over 6 meters. Both holes are located at the southeast end of the area drilled and along with lower grade intersections in the nearby holes 81-7 and 81-8, indicate a potential ore zone open to the east and northeast on the north side of the creek.

The gold occurs in rhyolite fragmental-lapilli tuffs which form a northwest-southeast striking zone believed to be a large lens structure. At the northwest end the zone is 25 meters thick and vertical. At the southeast end near the creek, which appears to mark the site of an east-southeast striking fault, the zone has thickened to 100 meters and is dipping to the northeast. The dip appears to be flattening at depth.

The core contains several sections of heavy quartz flooding as well as fairly widespread quartz microveining and the occasional quartz vein up to several centimeters in width. Pyrite occurs as disseminations, stringers and massive interfragment filling.

The surface expression of the rhyolite has suffered considerable disruption along the creek. It reappears on the south side of the creek approximately 500 meters to the southeast.

Limited microscope work has indicated that most of the Au is associated with pyrite and that there is more than one stage of pyrite. Computer studies have failed to show any correlation between the various types of quartz and pyrite which have been logged in the core.

Computer studies on the relationships of Au, Ag and As have shown that there are two generations of mineralization with the phase or generation containing the higher gold values occuring in the area of the holes noted above, i.e., at the southeast end of the drilled area.

GEOPHYSICS (See Figure 10)

Four test lines were run across the rhyolite zone using a proton magnetometer and a VLF-EM. The lines were oriented both east-west and north-south. The VLF-EM gave no conclusive results even over the apparent fault zone in the main creek. No further work appears warranted using this method.

The magnetic test lines appeared to be reflecting the underlying geology so a small grid of six lines at 40 meter intervals was established crossing the main rhyolite zone. The readings were taken at 10 meter intervals. The results outline a 600 - 800$\gamma$ "low" over the rhyolite zone and a 1200 $\gamma$ zone over the hanging wall andesite tuffs. A second linear "high" of lies to the northwest apparently reflecting the andesitic rocks mapped in that area.

While additional magnetometer work would provide greater detail it does not appear justified at this time.

HEAVY METALS SAMPLING RESULTS (See Appendix I)

A total of 16 heavy mineral stream samples were collected on Lyell Island. (See appendix for report by H. Goddard) Unfortunately many of the separations contained insufficient material to permit an analysis. Included in this category were samples HM1 and HM16 from the creeks draining both to the north and the south of the main showing.

The results that were acquired are quite low with weakly anomalous Au values occurring in creeks draining into Skudas Bay and Beljay Bay. The latter drains an area in which UMEX recently conducted a diamond drilling program.

Locations HM1 and HM16 will be re-sampled during the 1982 program.

RESULTS OF TRACE ELEMENTS ANALYSIS (See Figure 12)

Lithogeochemical analyses were run for 10 elements on all the samples from DDH80-5. The purpose was to determine if there were elements associated with Au and Ag which would provide a broader target and thus assist in the exploration for the gold.

The elements checked for were As, Sb, Hg, Th, K, Mo, Zn, Cu, Pb and Sn. The obvious associations are arsenic and antimony which ran approximately 5x background in the vicinity of the high gold and silver values. Mercury and thalluim indicate a rough correlation being 3 x 4x background in the vicinity of the gold. However, the "noise" level is too high to permit their use as reliable pathfinders. The remaining elements indicate no correlation with gold.

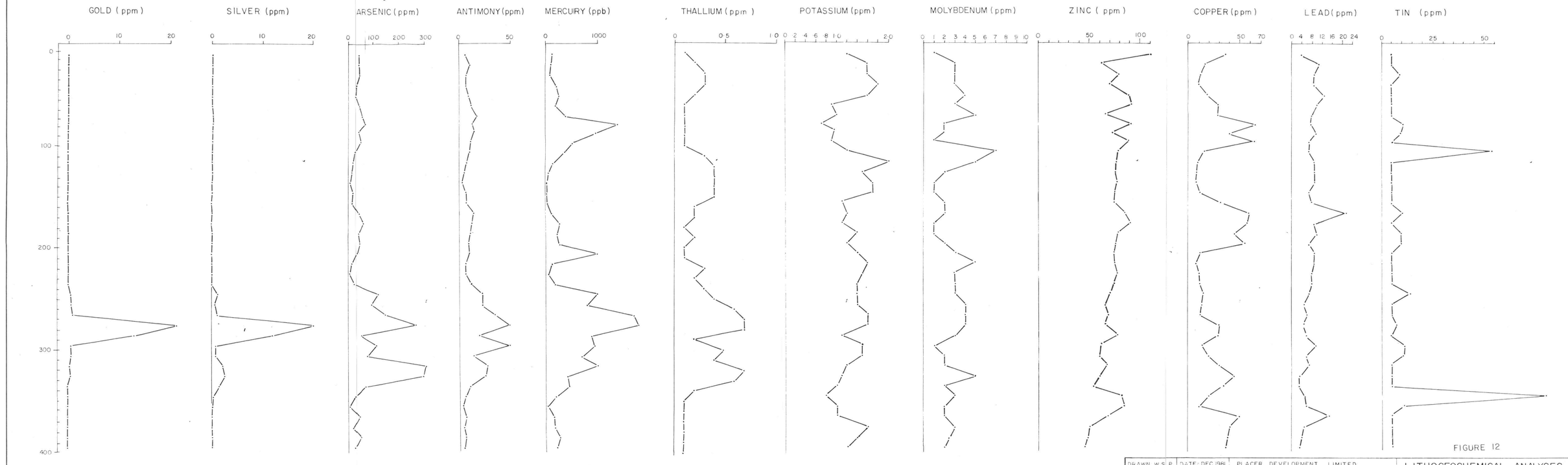



FIGURE 12

| | | | |
|---|---|---|---|
| DRAWN W.S.P. | DATE: DEC 1981 | PLACER DEVELOPMENT LIMITED | LITHOGEOCHEMICAL ANALYSES D.D. HOLE # 5 |
| TRACED J.S. | NTS 93 B 12 | QUEEN CHARLOTTE ISLANDS | |
| VERTICAL | SCALE 1" = 50' | APRIL PROPERTY | FILE NO. |

RESULTS OF MICROSCOPE STUDY ON POLISHED GRAIN MOUNTS (See Appendix II)

A microscope study on polished grain mounts was conducted by S.W. Campbell. (See appendix for memo dated January 22, 1982). The polished grain mounts were of flotation concentrate, flotation tailing and leached flotation concentrate from gold bearing samples in DDH 80-5.

A total of 40 grains of gold were observed varying in size from 1$\mu$ to a maximum of 6 x 15$\mu$. Six of the grains were free but spatially close to pyrite. The remaining 34 grains of gold were in pyrite or on grain boundaries between pyrite and chalcopyrite.

METALLURGICAL TEST RESULTS FOR GOLD RECOVERY (See Appendix III)

The Placer Development Limited Research Center conducted metallurgical tests for gold recovery on high grade material from DDH 80-5. (See appendix - Memo to B. Wilson from B. Marchant, July 14, 1981).

Two procedures were used; direct cyanidation and cyanidation of a flotation concentrate. The recoveries were 91% and 95% respectively on calculated feeds of 30.5% g/t Au and 36 g/T. Au.

RESULTS OF SELECTED SAMPLING (See appendix IV)

Several sample intervals which carried high gold values were re-sampled in an attempt to localize the source. In most cases the rock was a fragmental-lapilli rhyolite tuff but in two cases sediment and andesite dikes formed part of the sample interval. These sections as well as alteration and gouge zones were sampled separately.

# PLACER DEVELOPMENT LIMITED

MEMORANDUM:

TO: File V-168 DATE: March 15th, 1982

FROM: B. Barde

RE: EVALUATION OF GEOCHEMICAL & GEOLOGICAL DIAMOND DRILL DATA, APRIL PROPERTY

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Introduction:

In 1980 and 1981, 18 diamond drill holes were completed on the April 3 mineral claim located on Lyell Island in the Queen Charlotte Islands. A systematic evaluation of geochemical and geological data from the core has been done. A total of 117, three meter samples of rhyolite fragmental - lapilli tuff (RNFF) which had been analized for Au, Ag and As were used. It had been noted that the gold values were almost completely restricted to the RNFF. A rigorous but simple statistical approach was used as an evaluation procedure.

Conclusions & Applications to Exploration:

This simple statistical study of assays and geological data shows that:

(1) The best gold mineralization is hosted by rhyolite fragmental-lapilli tuff (RNFF).

(2) There are two distinct populations of Au, Ag/As as shown by the scatter plots. These occur in two separate zones. The one population contains lower gold values.

(3) It appears that the zone of higher gold concentration dips and thickens to the ENE of DDH81-8.

(4) The characteristic Au/As and Ag/As in the zone of gold concentration already defined can be used to evaluate the potential of new showings.

(5) We cannot utilize the presence of any kind of pyrite or quartz for outlining higher concentrations of gold.

...2/

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DATA EVALUATION PROCEDURE:

The general procedure for creation of each of the foregoing data groups involved:

(1) Coding and editing information from the geolog for holes 1-18, with transformation of the G and H scales for pyrite and quartz. "H" is the style of occurrence and "G" is an estimation of amount.

(2) Production of histograms

(3) Production of probability plot for raw and log transformed data.

(4) Production of scatter plots of log transformed data.

(5) Drawing of sections showing distributions of various sub-populations for each element in each data group.

(6) Interpretation (See Table 2 for procedural path)

RESULTS & INTERPRETATION:

A summary of means for raw geochemical data for different rock types is given in Table 1. This indicates the occurrence of gold in a specific lithology; in this case the rhyolite fragmental lapilli tuff (RNFF). The statistical study is restricted to this rock type.

Probability graphs of all variables were examined in detail. Ag, Au and As can be interpreted as the combination of two lognormal populations. One of these graphs is reproduced as Figure 1. We selected threshold values using the method of Sinclair (1981). The threshold has been used as a basis for contouring the raw data on the sections. The contouring has defined a zone of gold concentration and is shown on Fig. 2 and 3.

Scatter plots of As/Au and As/Ag can be respectively interpreted as the combination of 2 and 3 populations. The graphs are reproduced in figure 4 and 5. The elements of these populations have been plotted on the sections (fig. 2 and 3).

TABLE 1

| | Ag | Au | As |
|---|---|---|---|
| RNFF | .32 | .42 | 68.51 |
| RNTF | .09 | .22 | 34.10 |
| DRLF | .10 | .20 | |

...3/

Population 2 for As/Au and Pop 2 for As/Ag are coincident with the zone of high Au concentration outlined by contouring the above.

The scatter plot of Ag/Au is shown as Figure 6 and has a correlation coeff of .72.

Scatter plots of disseminated pyrite/Au, disseminated and fracture filling pyrite/Au, breccia filling pyrite/Au and quartz in micro-veins /Au have been constructed. Two of these plots are reproduced as figure 7 and 8 and show a good correlation between disseminated and fracture filling pyrite and gold; correlation coeff. = .54

The correlation between pyrite in breccia filling and gold is weaker with a correlation coeff. = .32

We plotted the elements contained in the polygones on the section. The distribution of the Py-Au association and qtz./Au association do not correlate with the zone of high Au.

B. Barde

BB/cs
Attachment

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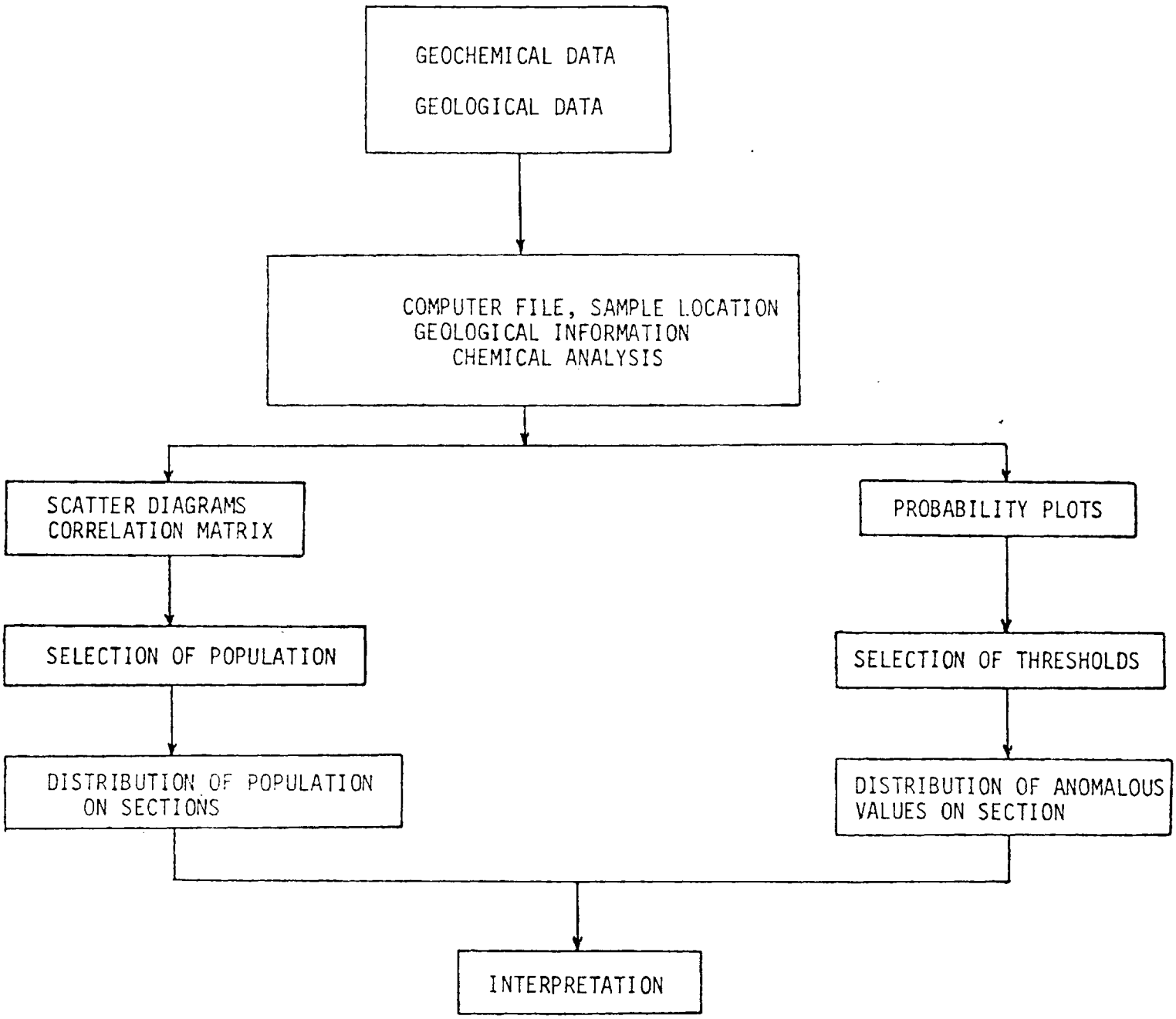
Mailing Address: P.O. Box 49430, Bentall Postal Station, Vancouver, B.C., Canada V7X 1P2

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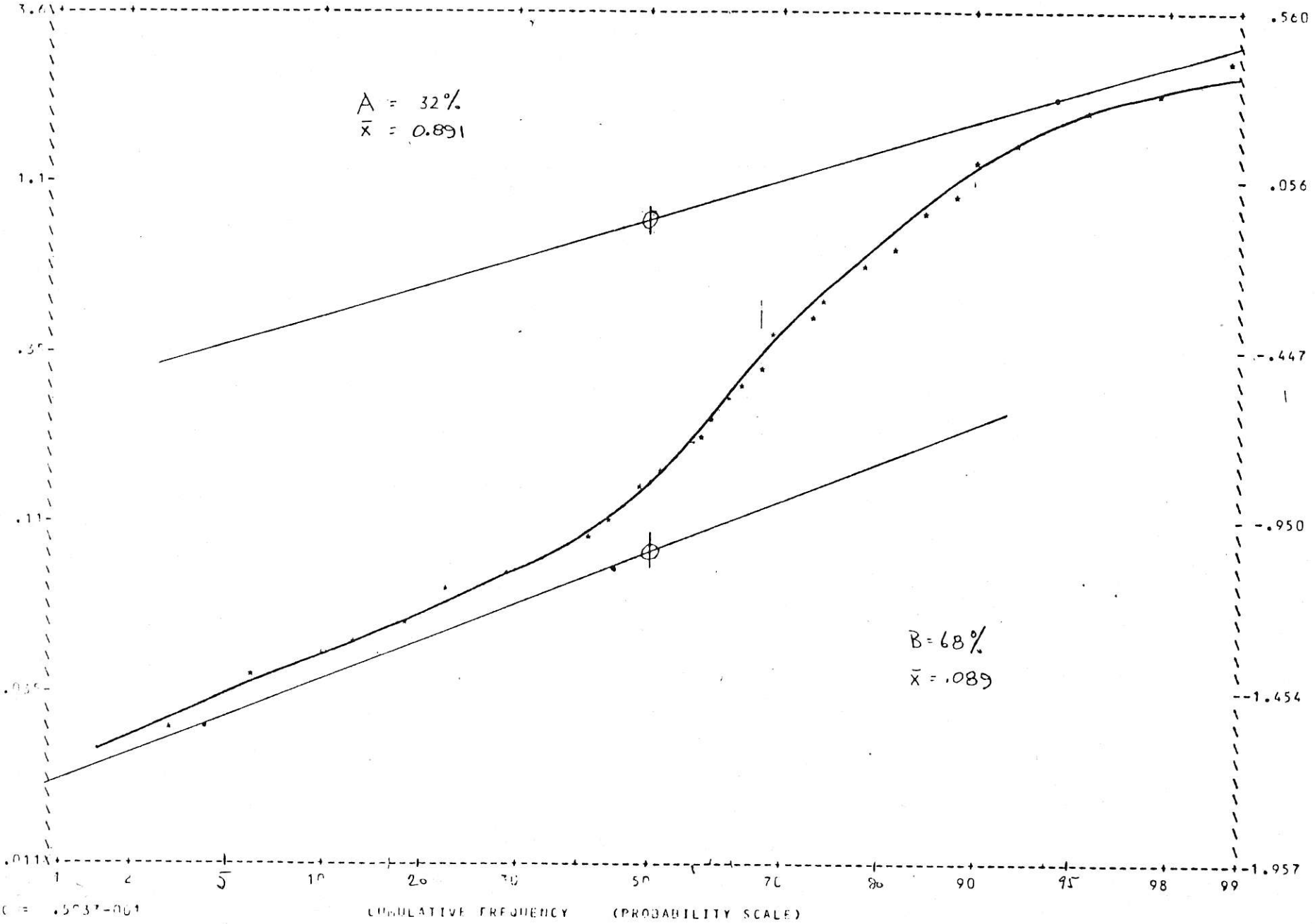
Mailing Address: P.O. Box 49330, Bentall Postal Station, Vancouver, B.C., Canada V7X 1P1

ROBABILITY PLOT FOR: LYELL AU IN KNEE

FIG. 1

NUMBER OF VALUES IN Y-RANGE = 91 MIN = -1.523 MAX = .5263 MEAN = -.6987 STD DEV = .5243



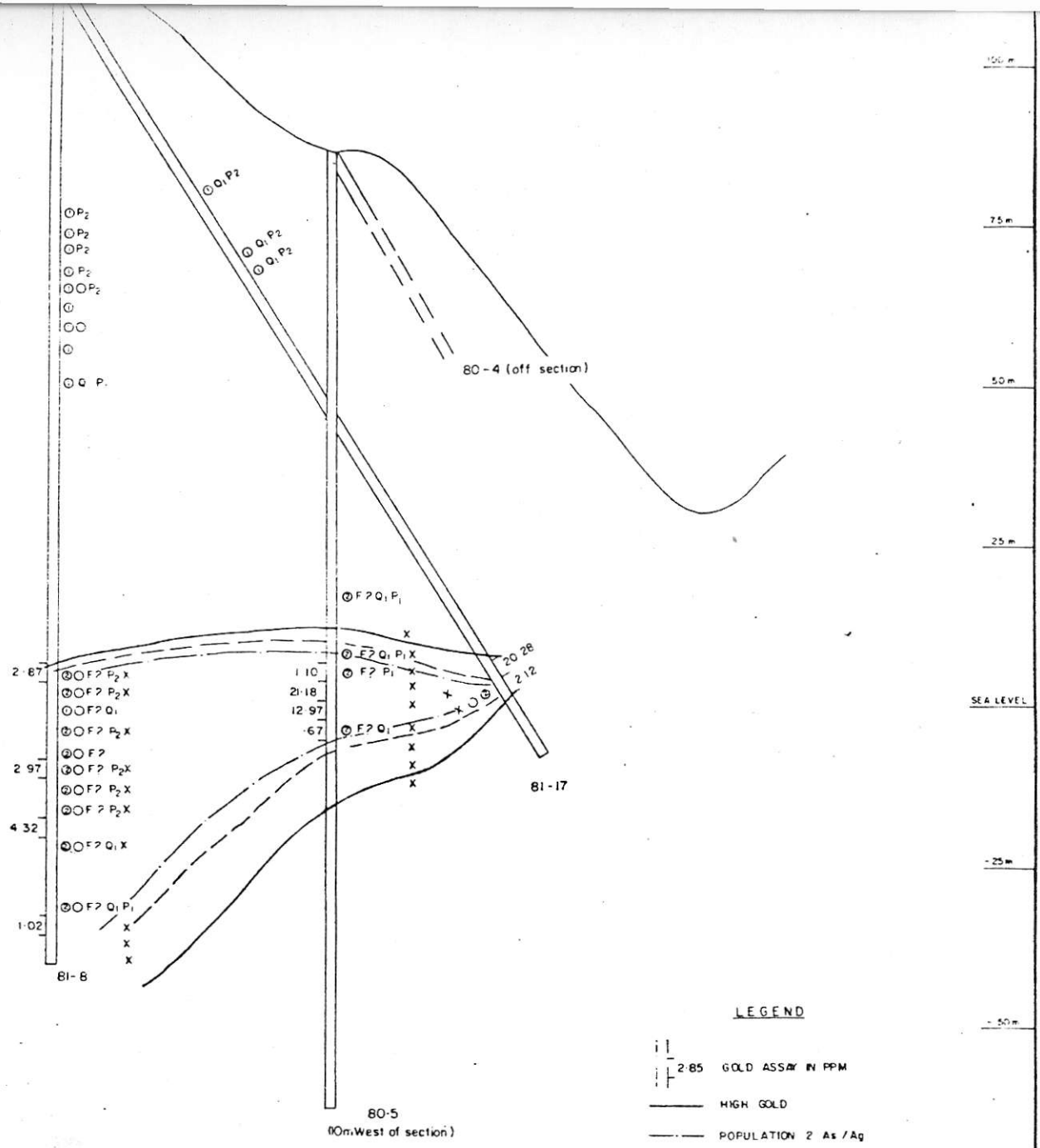
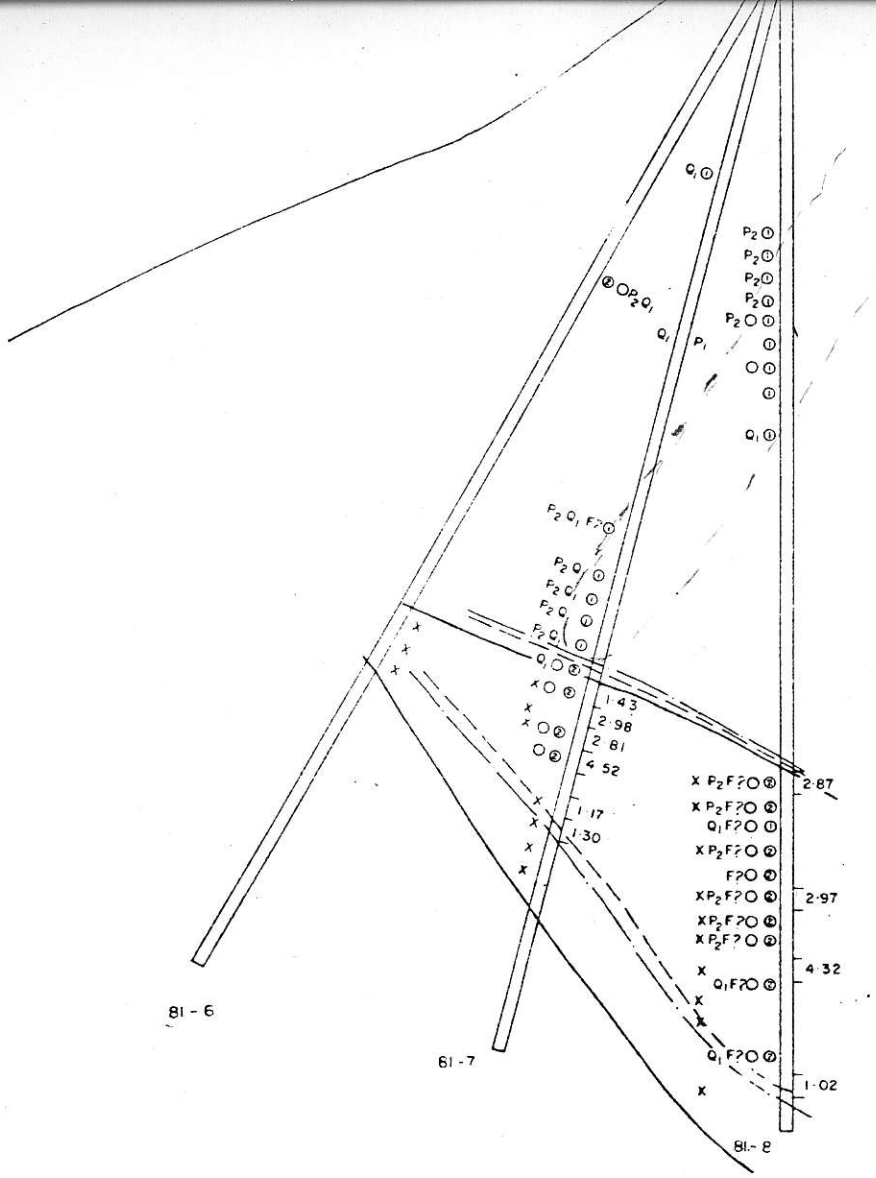



FIGURE 2

| | | | |
|---|---|---|---|
| DRAWN W.S.P. | SCALE 1:500 | PLACER DEVELOPMENT LIMITED | DISTRIBUTION OF GOLD AND SILVER POPULATIONS SECTION AZIMUTH 175° |
| TRACED J.S. | DATE JAN 1982 | QUEEN CHARLOTTE ISLANDS | |
| | | APRIL PROPERTY | FILE NO 82-01-V168-1B- |




LEGEND

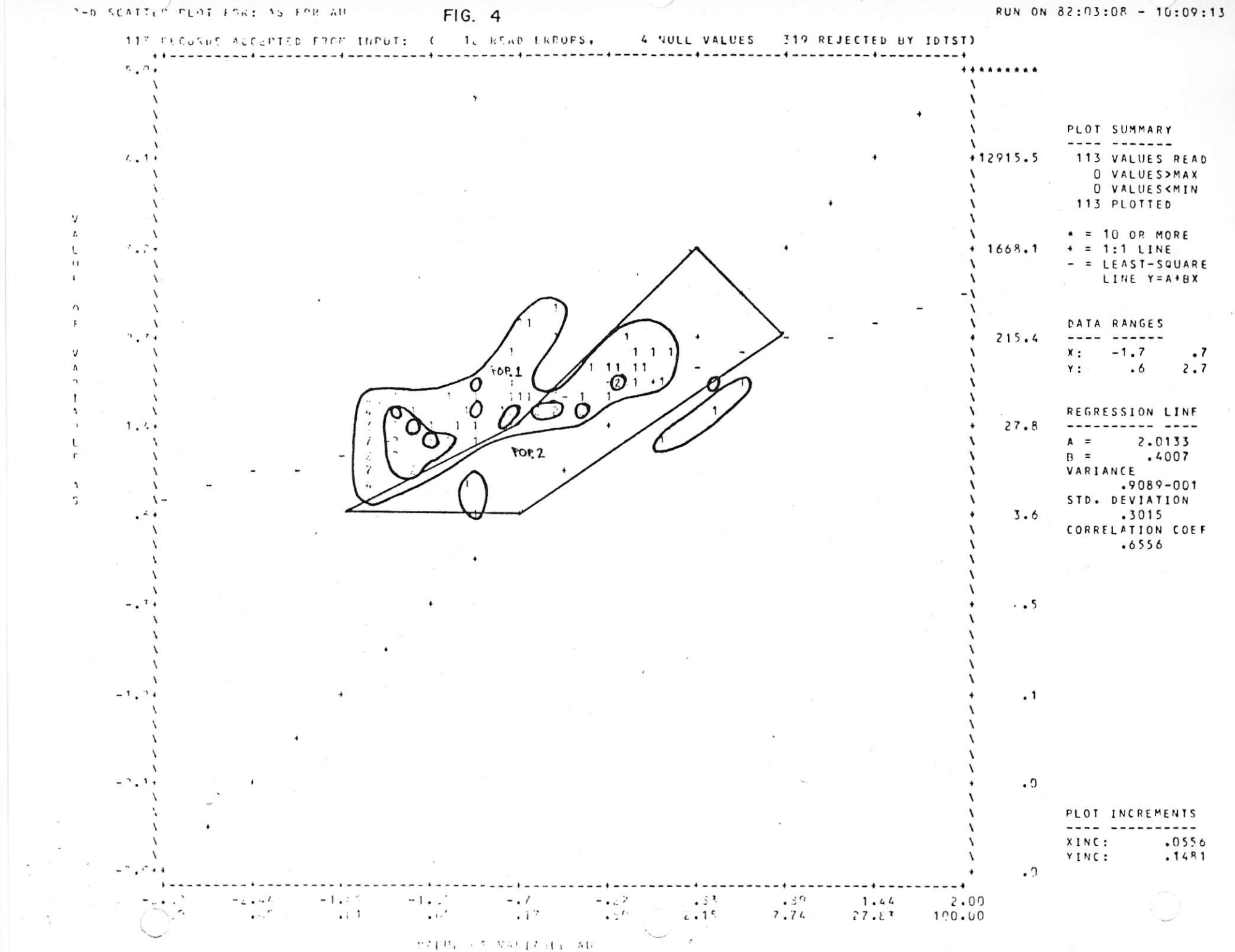
| | |
|---|---|
| 2·85 | GOLD ASSAY IN PPM |
| ——— | HIGH GOLD |
| —·—·— | POPULATION 2 As / Ag |
| — — — | POPULATION 2 As / Au |
| X | HIGH GOLD |
| $P_1$ | DISSEMINATED PYRITE |
| $P_2$ | DISSEMINATED PYRITE AND PYRITE IN MICROVEINS |
| $Q_1$ | QUARTZ IN MICROVEINS OR AS FRACTURE FILLING |
| F ? | QUARTZ FLOODING |
| ① | GOLD POPULATION 1+3 |
| ② | GOLD POPULATION 2 |
| O | SILVER POPULATION 2 |

0 10 20 30 40 50
METRES

FIGURE 3

| | | | |
|---|---|---|---|
| DRAWN W S P | SCALE 1 500 | PLACER DEVELOPMENT LIMITED | DISTRIBUTION OF GOLD AND SILVER POPULATIONS SECTION AZIMUTH 235° |
| TRACED J S | DATE JAN 1982 | QUEEN CHARLOTTE ISLANDS | |
| | | APRIL PROPERTY | FILE NO 82-01-V168-1B- |

FIG. 4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0 VALUES<MIN
113 PLOTTED
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+ = 1:1 LINE
- = LEAST-SQUARE LINE Y=A+BX
DATA RANGES
X: -1.7 .7
Y: .6 2.7
REGRESSION LINE
A = 2.0133
B = .4007
VARIANCE .9089-001
STD. DEVIATION .3015
CORRELATION COEF .6556
PLOT INCREMENTS
XINC: .0556
YINC: .1481
FOR.1
FOR.2
12915.5
1668.1
215.4
27.8
3.6
.5
.1
.0
.0
2.00
100.00

2-D SCATTER PLOT FOR: AS FOR AG

FIG.5

RUN ON 82:03:02 - 16:31:09

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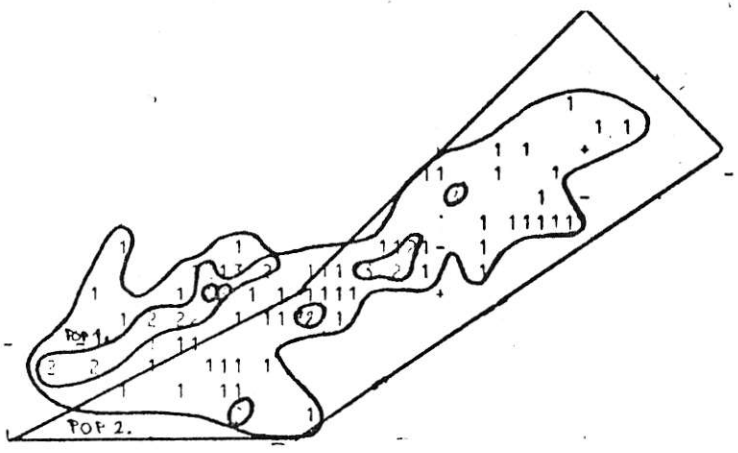


VALUES OF VARIABLE AS

VALUE OF VARIABLE AG

PLOT SUMMARY

101 VALUES READ
0 VALUES>MAX
0 VALUES<MIN
101 PLOTTED

* = 10 OR MORE
+ = 1:1 LINE
- = LEAST-SQUARE LINE Y=A+BX

DATA RANGES

X: -3.0 .5
Y: .8 2.7

REGRESSION LINE

A = 1.9215
B = .4058
VARIANCE .1098
STD. DEVIATION .3313
CORRELATION COEF .6291

PLOT INCREMENTS

XINC: .0556
YINC: .1481

SCATTER PLOT : AG FOR AH

FIG. 6

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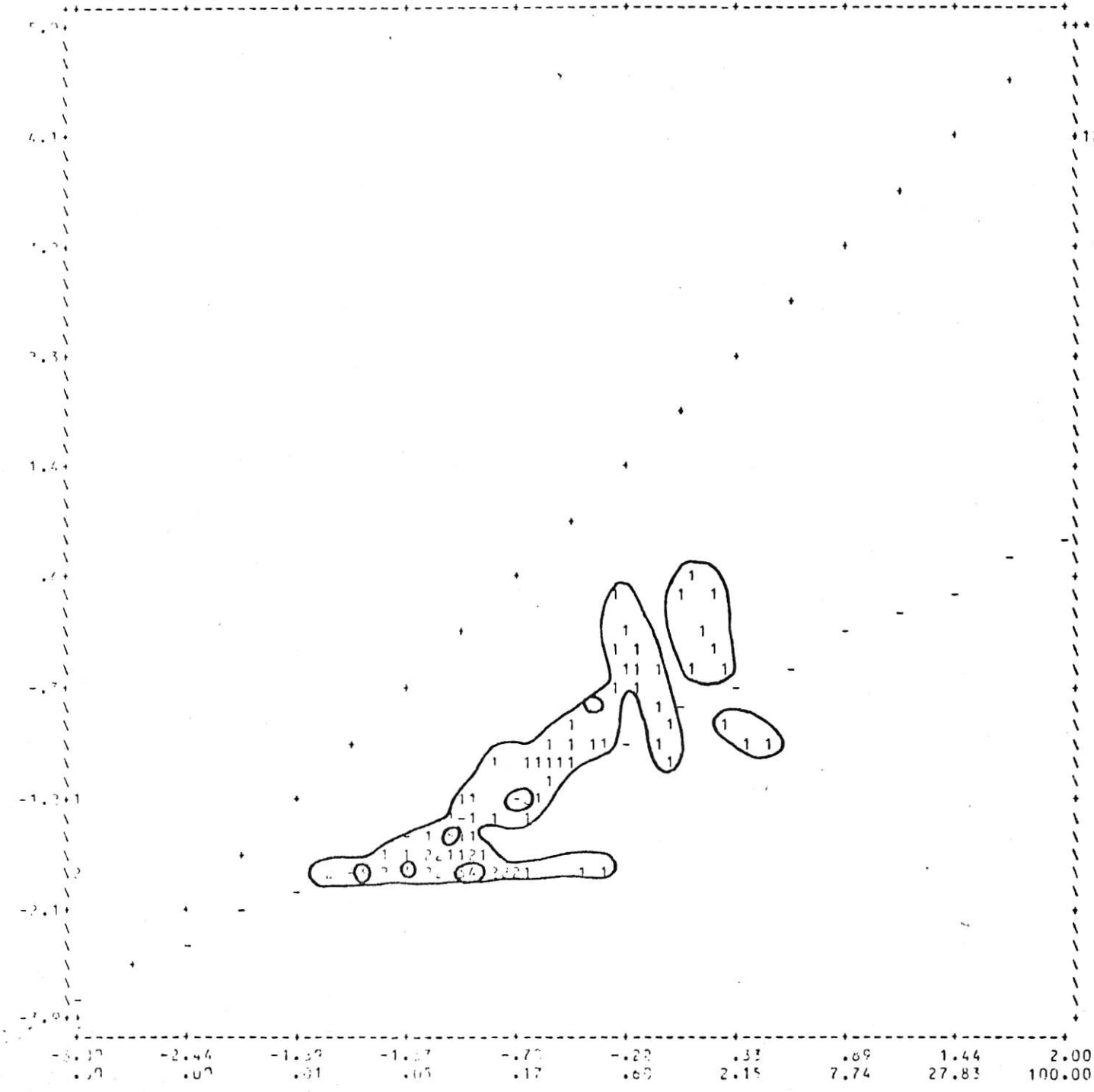



VALUE OF VARIABLE AH

PLOT SUMMARY

98 VALUES READ
0 VALUES>MAX
0 VALUES<MIN
98 PLOTTED

* = 10 OR MORE
+ = 1:1 LINE
- = LEAST-SQUARE LINE Y=A+BX

DATA RANGES

| | | |
|---|---|---|
| X: | -3.0 | .5 |
| Y: | -1.7 | .7 |

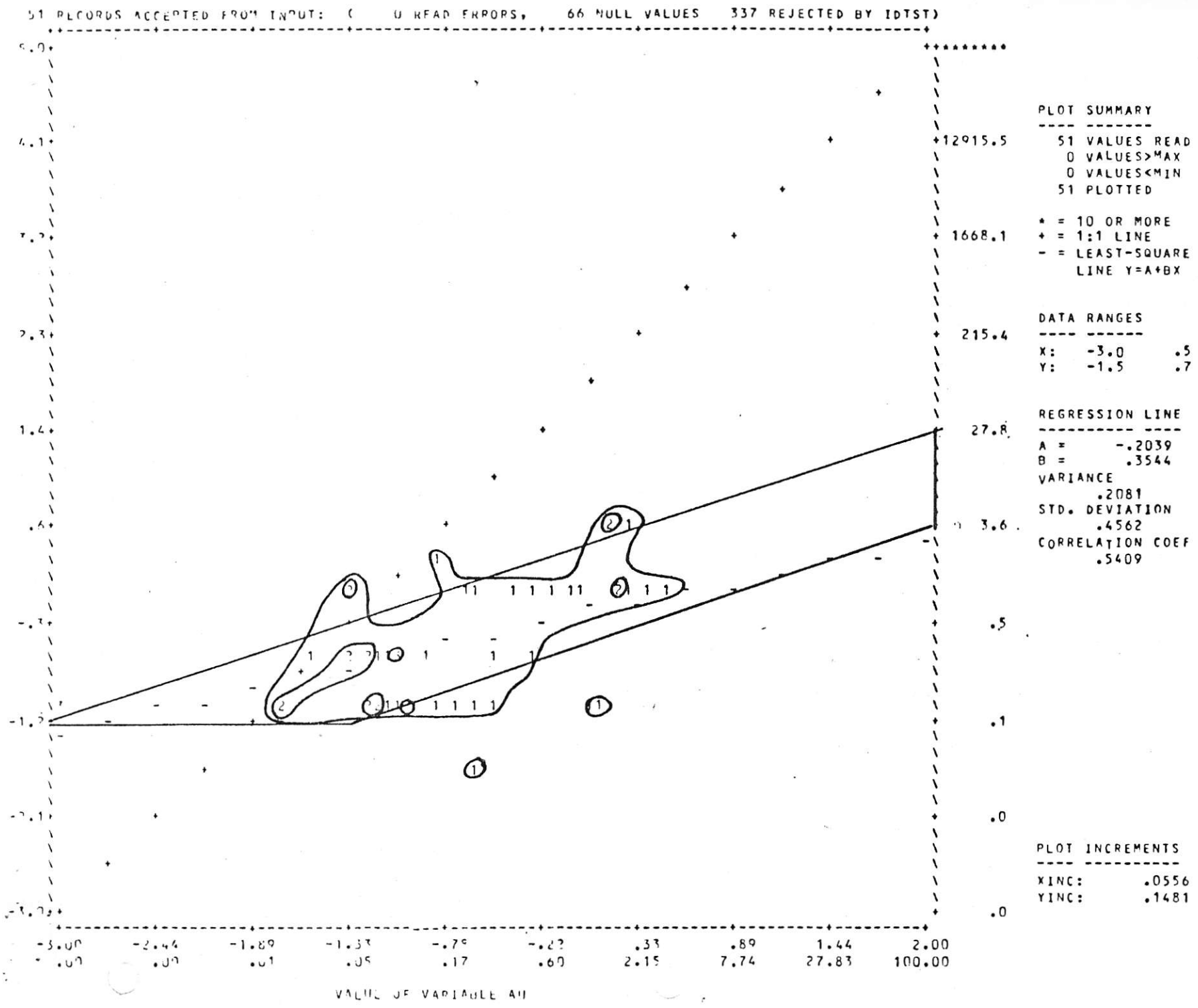
REGRESSION LINE

A = -.5217
B = .7322
VARIANCE .2103
STD. DEVIATION .4585
CORRELATION COEF .7249

PLOT INCREMENTS

XINC: .0556
YINC: .1481

FIG. 7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51 PLOTTED
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- = LEAST-SQUARE LINE Y=A+BX
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Y: -1.5 .7
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CORRELATION COEF
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PLOT INCREMENTS
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YINC: .1481
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.0
.0
4.1
2.3
1.4
.6
-.3
-1.3
-2.1
-3.0
-3.00
-2.44
-1.89
-1.33
-.78
-.22
.33
.89
1.44
2.00
.00
.00
.01
.05
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.60
2.15
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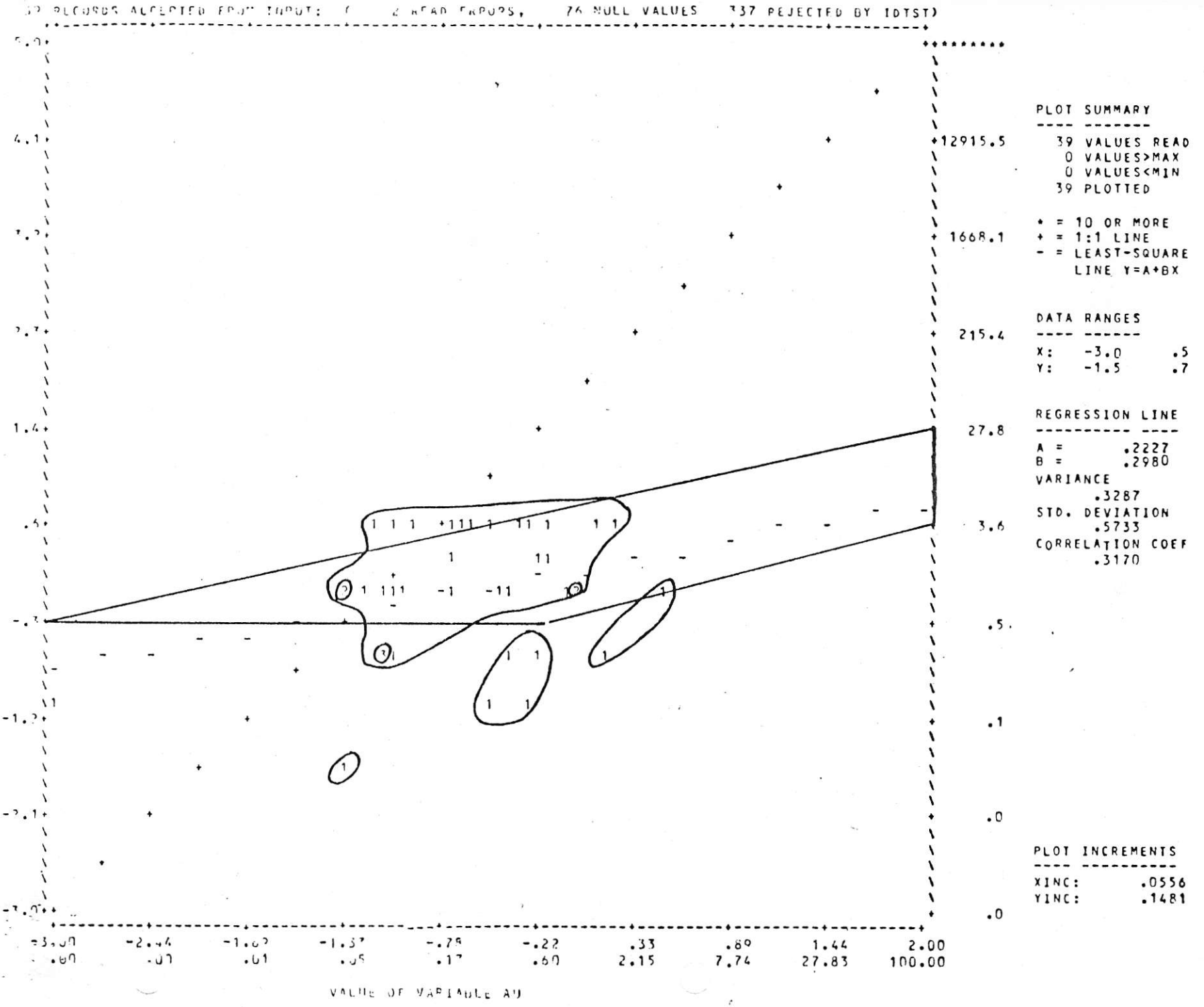
27.83
100.00
VALUE OF VARIABLE AU

FIG. 8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0 VALUES>MAX
0 VALUES<MIN
39 PLOTTED
* = 10 OR MORE
+ = 1:1 LINE
- = LEAST-SQUARE LINE Y=A+BX
DATA RANGES
X: -3.0 .5
Y: -1.5 .7
REGRESSION LINE
A = .2227
B = .2980
VARIANCE .3287
STD. DEVIATION .5733
CORRELATION COEF .3170
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XINC: .0556
YINC: .1481
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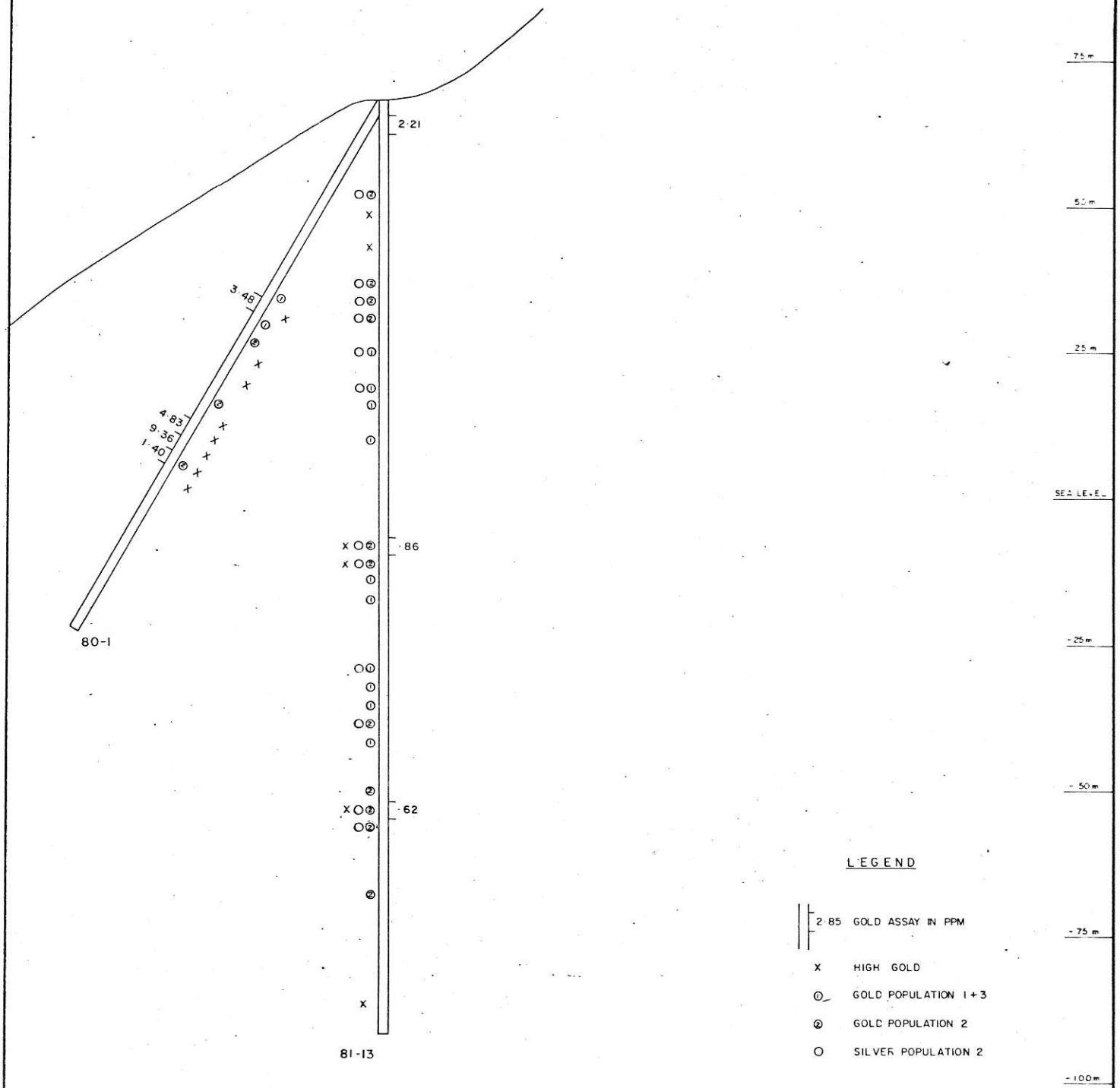
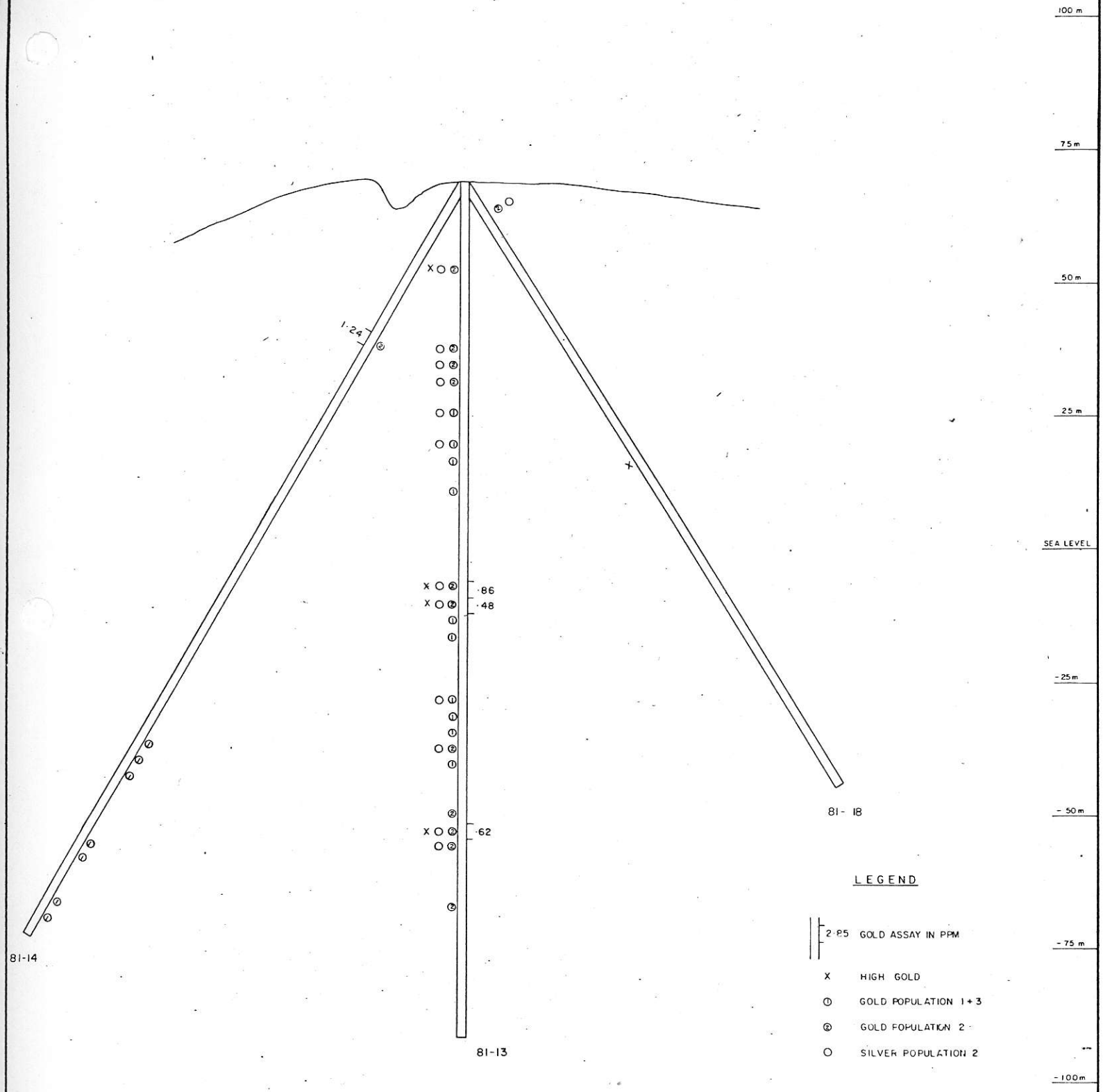
1668.1
215.4
27.8
3.6
.5
.1
.0
.0
4.1
1.4
.6
-1.2
-3.00 -2.44 -1.89 -1.33 -.78 -.22 .33 .89 1.44 2.00
.00 .01 .06 .12 .17 .60 2.15 7.74 27.83 100.00
VALUE OF VARIABLE A0




FIGURE

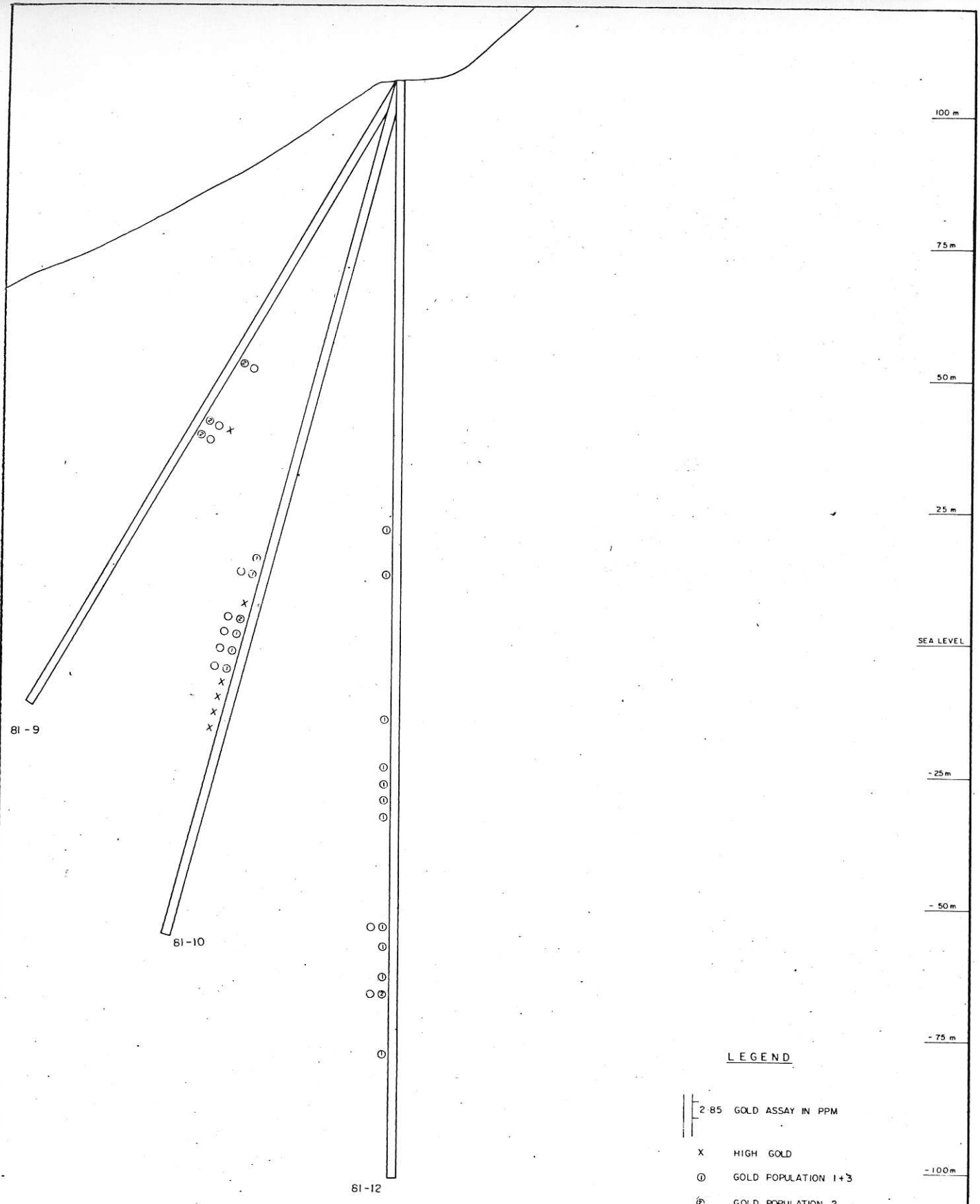
| | | | |
|---|---|---|---|
| DRAWN W S P | SCALE 1 500 | PLACER DEVELOPMENT LIMITED | DISTRIBUTION OF GOLD AND SILVER POPULATIONS SECTION AZIMUTH 270° |
| TRACED J S | DATE JAN 1982 | QUEEN CHARLOTTE ISLANDS | |
| | | APRIL PROPERTY | FILE NO 82-01-V168-1B- |




0 10 20 30 40 50
METRES

FIGURE

| | | | |
|---|---|---|---|
| DRAWN W S P | SCALE 1 500 | PLACER DEVELOPMENT LIMITED | DISTRIBUTION OF GOLD AND SILVER POPULATIONS SECTION AZIMUTH 355° |
| TRACED J S | DATE JAN 1982 | QUEEN CHARLOTTE ISLANDS APRIL PROPERTY | FILE NO 82-01-V168-1B- |




LEGEND

2·85 GOLD ASSAY IN PPM

X HIGH GOLD

① GOLD POPULATION 1+3

② GOLD POPULATION 2

O SILVER POPULATION 2

0 10 20 30 40 50
METRES

FIGURE

| | | | |
|---|---|---|---|
| DRAWN W S P | SCALE 1 500 | PLACER DEVELOPMENT LIMITED | DISTRIBUTION OF GOLD AND SILVER POPULATIONS SECTION AZIMUTH 235° |
| TRACED J S | DATE JAN 1982 | QUEEN CHARLOTTE ISLANDS APRIL PROPERTY | FILE NO. 82-01-V168-18- |
| | | | |

# PLACER DEVELOPMENT LIMITED

MEMORANDUM:

TO: W.S. Pentland DATE: 20 February 1982

FROM: H.R. Goddard FILE: 103 B 12/E

RE: LYELL ISLAND HEAVY MINERAL STREAM SAMPLES:

---

During the latter part of July 1981 16 Heavy mineral stream samples were taken: HM I to HM 16.

The samples were sent to C.F. Fipke's lab in Kelowna, B.C. for screening and separation. The products from Fipke were then sent to Placer's Lab in Vancouver for analyses.

Three of the samples closest to the 1981 drill program were used for orientation: HM1, HM 6 and HM 16. Each of these samples were screened as follows: -20 + 35, -35 +60, -60 + 150, -150 + 200, -200, -400 light and organic. Each of these fractions were then separated as follows: IN, IP, HM, HP, HPN and HNN. A total of 35 products were received for each sample. Each product was analyzed for Au, Ag and As where sufficient sample permitted.

The results of the Fipke orientation were disappointing. It was expected that gold would appear in the HNN separate. However not enough "heavies" were found in nearly all fractions of this separate to make up the weight need for analyses.

Because of this fact and the results of the analyses which were able to be done, the remaining samples were processed as follows: -35 + 60 and -60 + 150 fractions, and HM, HP and HN separates.

Maps showing sample location and assay results, Fipke's work sheets and Placer's computer printout of analyses, and the geology of each sample site are enclosed, also an explanation of the Fipke HM sampling method.

H.R. Goddard

HRG/pf

Enclosures

## LYELL ISLAND HEAVY MINERAL SAMPLES

### GEOLOGICAL ENVIRONMENT

HM 1 - Masset Formation: subaerial basalt flows and
HM 2 breccias, rhyolite ash flows, lesser dacite.
HM 5 HM I in contact with Karmutsen Formation.
HM 7
HM 8
HM 9
HM 10

HM 6 - Karmutsen Formation: basalt massive flows,
HM 11 pillow lavas, pillow breccia and tuff, related
HM 13 sills, minor inter lava limestones, volcanic
HM 14 sandstone and shale, amphibolitized equivalents.
HM 15
HM 16 HM 13 on contact with Masset Formation.

HM 12 - Undivided limestone in contact with Karmutsen Formation.

HM 4 - Yakoun Formation: porphyritic andesite agglomerate and flows calareous scaraceous lapilli tuff, volcanic sandstone and conglomerate, minor tuffaceous shale, coal. In contact with Masset Formation

HM 3 - Kunga Formation: Massive grey limestone, flaggy black limestone, flaggy black argillite, also Yakoun Formation

DATE: 20 February 1982

FILE: 103 B 12/E

# THE FIPKE HEAVY MINERAL SAMPLING METHOD

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A 10 Kg - 20 mesh sample of Stream Sediment gravels is collected at each site.

The samples are double-bagged in 13"x20" plastic bags, numbered and sent to Fipkes lab for further processing.

Fipkes method typically involves the following parameters:

Mesh sizes
- -20 +35
- -35 +60
- -60 +150
- -150 + 200
- -200

S.G.S.
- H = Heavy S.G. 3.0
- I = Intermediate S.G. 2.8 - 3.0
- L = Light

Magnetic susceptibilities
- M=Magnetic
- P=Paramagnetic
- N=Non Magnetic, sometimes broken into 2 - as follows:
- PN = Slightly para magnetic
- NN = Total Non magnetic

Eg: IN = Intermediate Non Magnetic
HNN = Heavy Total Non Magnetic etc.

REMARKS: PLEASE DISTRIBUTE RESULTS TO: H. GODDARD ✓ B. PENTLAND
T. DOUGLAS I. THOMSON
S. TENNANT/R. SHKLANKA

AU & AS RESULTS ARE FROM NUCLEAR ACTIVATION.

STANDARD ANALYSIS METHODS USED BY PDL GEOCHEM LAB ARE LISTED BELOW:
ALL RESULTS EXPRESSED AS INDICATED IN UNITS COLUMN BELOW
ANY EXCEPTIONS FOR THIS PROJECT ARE NOTED ABOVE

REMARKS: INTERNAL LAB STANDARDS HAVE BEEN INCLUDED FOR REFERENCE.
SAMPLE NUMBERS FOLLOWED BY * ARE DUPLICATE ANALYSES.

| | UNITS | WT.G | ATTACK USED | TIME | RANGE | METHOD |
|---|---|---|---|---|---|---|
| MO | PPM | 0.5 | C HCLO4/HNO3 | 4HRS | 1-1000 | ATOMIC ABSORPTION |
| CU | PPM | 0.5 | C HCLO4/HNO3 | 4HRS | 2-4000 | ATOMIC ABSORPTION |
| ZN | PPM | 0.5 | C HCLO4/HNO3 | 4HRS | 2-3000 | ATOMIC ABSORPTION |
| PB | PPM | 0.5 | C HCLO4/HNO3 | 4HRS | 2-3000 | A.A. BACKGROUND COR. |
| CD | PPM | 0.5 | C HCLO4/HNO3 | 4HRS | 0.2-200 | A.A. BACKGROUND COR. |
| NI | PPM | 0.5 | C HCLO4/HNO3 | 4HRS | 2-2000 | ATOMIC ABSORPTION |
| CO | PPM | 0.5 | C HCLO4/HNO3 | 4HRS | 2-2000 | ATOMIC ABSORPTION |
| AG1 | PPM | 0.5 | C HCLO4/HNO3 | 4HRS | 0.2-20 | A.A. BACKGROUND COR |
| AG2 | PPM | 0.5 | C HNO3 | 2HRS | 0.02-4.00 | A.A. SOLVENT EXTRACT |
| AU | PPM | 3.0 | C HBR/BR | 12HRS | 0.02-4.00 | A.A. SOLVENT EXTRACT |
| U | PPM | 0.25 | DIL HNO3 | 2HRS | 1.0-1000 | FLUORIMETRY SOLV. EX. |
| V | PPM | 0.5 | C HF/HCLO4/HNO3/HCL | 6HRS | 5-1000 | ATOMIC ABSORPTION |
| W | PPM | 1.0 | C HF/HNO3/HCL/H2SO4 | 4HRS | 5-500 | A.A. SOLVENT EXTRACT. |
| F | PPM | 0.25 | NA2CO3/KNO3 FUSION | 30MIN | 40-4000 | SPECIFIC ION ELECTODE |
| AS | PPM | 0.5 | C HCLO4/HNO3 | 4HRS | 1-1000 | A.A. HYDRIDE GENERATOR |
| SB | PPM | 0.5 | C HCLO4/HNO3 | 4HRS | 2-1000 | A.A. HYDRIDE GENERATOR |
| BI | PPM | 0.5 | C HCLO4/HNO3 | 4HRS | 2-2000 | ATOMIC ABSORPTION |
| MN | PPM | 0.5 | C HCLO4/HNO3 | 4HRS | 2-3000 | ATOMIC ABSORPTION |
| FE | % | 0.5 | C HF/HCLO4/HNO3/HCL | 6HRS | 0.02-20% | ATOMIC ABSORPTION |
| HG | PPB | 0.5 | DIL HNO3 | 2HRS | 5-2000PPB | A.A. COLD VAPOR GEN. |
| BA | % | 0.5 | C HF/HI/OXALIC | 4HRS | 0.02-20% | ATOMIC ABSORPTION |
| NA | % | 0.5 | C HF/HCLO4/HNO3/HCL | 6HRS | 0.2 -20% | ATOMIC ABSORPTION |
| K | % | 0.5 | C HF/HCLO4/HNO3/HCL | 6HRS | 0.2 -20% | ATOMIC ABSORPTION |
| CA | % | 0.5 | C HF/HCLO4/HNO3/HCL | 6HRS | 0.02-20% | ATOMIC ABSORPTION |
| SR | PPM | 0.5 | C HF/HCLO4/HNO3/HCL | 6HRS | 10-2000 | ATOMIC ABSORPTION |
| MG | % | 0.5 | C HF/HCLO4/HNO3/HCL | 6HRS | 0.2-20% | ATOMIC ABSORPTION |
| SN | PPM | 1.0 | NH4I FUSION | 15MIN | 5-500 | A.A. SOLVENT EXTRACT. |
| LOI | % | 1.0 | ASH 600 DEG C | 2HRS | 0.02-99% | WEIGH RESDUE |

LIST OF GEOCHEMICAL DATA FROM VENTURE TO W. PENTLAND

103B 12E

| SAMPLE | FRACTION | PROJECT | AG | AU | AS |
|---|---|---|---|---|---|
| HM 1 | - 20+ 35HM | 1177 | <0.2 | NSS | 6 |
| HM 1 | - 20+ 35HNN | 1177 | NSS | NSS | NSS |
| HM 1 | - 20+ 35HP | 1177 | 0.2 | NSS | 36 |
| HM 1 | - 20+ 35HPN | 1177 | NSS | NSS | NSS |
| HM 1 | - 20+ 35IM | 1177 | NSS | NSS | NSS |
| HM 1 | - 20+ 35IN | 1177 | <0.2 | 0.02 | 13 |
| HM 1 | - 20+ 35IP | 1177 | <0.2 | <0.02 | 14 |
| HM 1 | - 35+ 60HM | 1177 | <0.2 | NSS | <1 |
| HM 1 | - 35+ 60HNN | 1177 | NSS | NSS | NSS |
| HM 1 | - 35+ 60HP | 1177 | 1.5 | NSS | 66 |
| HM 1 | - 35+ 60HPN | 1177 | NSS | NSS | NSS |
| HM 1 | - 35+ 60IM | 1177 | NSS | NSS | NSS |
| HM 1 | - 35+ 60IN | 1177 | <0.2 | NSS | 8 |
| HM 1 | - 35+ 60IP | 1177 | <0.2 | 0.02 | 11 |
| HM 1 | - 60+150HM | 1177 | <0.2 | NSS | 1 |
| HM 1 | - 60+150HNN | 1177 | NSS | NSS | NSS |
| HM 1 | - 60+150HP | 1177 | 0.3 | 0.07 | 66 |
| HM 1 | - 60+150HPN | 1177 | 0.8 | NSS | 76 |
| HM 1 | - 60+150IM | 1177 | NSS | NSS | NSS |
| HM 1 | - 60+150IN | 1177 | <0.2 | NSS | 10 |
| HM 1 | - 60+150IP | 1177 | <0.2 | 0.02 | 16 |
| HM 1 | -150+200HM | 1177 | NSS | NSS | NSS |
| HM 1 | -150+200HN | 1177 | NSS | NSS | NSS |
| HM 1 | -150+200HP | 1177 | 0.7 | NSS | 66 |
| HM 1 | -150+200IM | 1177 | NSS | NSS | NSS |
| HM 1 | -150+200IN | 1177 | NSS | NSS | NSS |
| HM 1 | -150+200IP | 1177 | <0.2 | NSS | 26 |
| HM 1 | -200HM | 1177 | NSS | NSS | NSS |
| HM 1 | -200HNN | 1177 | NSS | NSS | NSS |
| HM 1 | -200HP | 1177 | 0.4 | NSS | 34 |
| HM 1 | -200IM | 1177 | NSS | NSS | NSS |
| HM 1 | -200IN | 1177 | <0.2 | NSS | 9 |
| HM 1 | -200IP | 1177 | <0.2 | NSS | 46 |
| HM 1 | 400L | 1177 | <0.2 | 0.10 | 20 |
| HM 1 | ORG | 1177 | <0.2 | 0.05 | 13 |
| HM 6 | - 20+ 35HM | 1177 | NSS | NSS | NSS |
| HM 6 | - 20+ 35HNN | 1177 | NSS | NSS | NSS |
| HM 6 | - 20+ 35HP | 1177 | <0.2 | NSS | 12 |
| HM 6 | - 20+ 35HPN | 1177 | NSS | NSS | NSS |
| HM 6 | - 20+ 35IM | 1177 | NSS | NSS | NSS |
| HM 6 | - 20+ 35IN | 1177 | <0.2 | NSS | 2 |
| HM 6 | - 20+ 35IP | 1177 | <0.2 | <0.02 | 2 |
| HM 6 | - 35+ 60HM | 1177 | <0.2 | NSS | 1 |
| HM 6 | - 35+ 60HNN | 1177 | NSS | NSS | NSS |
| HM 6 | - 35+ 60HP | 1177 | <0.2 | 0.05 | 10 |
| HM 6 | - 35+ 60HPN | 1177 | NSS | NSS | NSS |
| HM 6 | - 35+ 60IM | 1177 | NSS | NSS | NSS |
| HM 6 | - 35+ 60IN | 1177 | <0.2 | NSS | 2 |
| HM 6 | - 35+ 60IP | 1177 | <0.2 | <0.02 | 3 |
| HM 6 | - 60+150HM | 1177 | <0.2 | NSS | 1 |
| HM 6 | - 60+150HNN | 1177 | NSS | NSS | NSS |
| HM 6 | - 60+150HP | 1177 | <0.2 | <0.02 | 9 |
| HM 6 | - 60+150HPN | 1177 | NSS | NSS | NSS |
| HM 6 | - 60+150IM | 1177 | NSS | NSS | NSS |
| HM 6 | - 60+150IN | 1177 | <0.2 | NSS | 2 |
| HM 6 | - 60+150IP | 1177 | <0.2 | <0.02 | 3 |
| HM 6 | -150+200HM | 1177 | NSS | NSS | NSS |
| HM 6 | -150+200HN | 1177 | NSS | NSS | NSS |
| HM 6 | -150+200HP | 1177 | NSS | NSS | NSS |

LIST OF GEOCHEMICAL DATA FROM VENTURE 168  H. GODDARD

| SAMPLE | FRACTION | PROJECT | AU | AS |
|---|---|---|---|---|
| HM 2 | - 35+ 60HN | 1229 | <0.02 | 50 |
| HM 2 | - 35+ 60HP | 1229 | <0.02 | 150 |
| HM 2 | - 60+150HN | 1229 | <0.02 | 35 |
| HM 2 | - 60+150HP | 1229 | <0.02 | 64 |
| HM10 | - 35+ 60HN | 1229 | 0.04 | 300 |
| HM10 | - 35+ 60HP | 1229 | 0.12 | 340 |
| HM10 | - 60+150HN | 1229 | <0.02 | 200 |
| HM10 | - 60+150HP | 1229 | 0.05 | 270 |
| test | STD AS | 1229 | | 36 |
| test | STD AU | 1229 | 1.30 | |

END OF LISTING -  10 RECORDS PRINTED
GCLIST RUN AT: 16:43:59  CPU USED:  .03 SECONDS

| SAMPLE | FRACTION | PROJECT | AU | AS |
|---|---|---|---|---|
| HM 3 | - 35+ 60HM | 1228 | NSS | NSS |
| HM 3 | - 35+ 60HN | 1228 | <0.02 | 12 |
| HM 3 | - 35+ 60HP | 1228 | NSS | NSS |
| HM 3 | - 60+150HM | 1228 | NSS | NSS |
| HM 3 | - 60+150HN | 1228 | <0.02 | 16 |
| HM 3 | - 60+150HP | 1228 | <0.02 | 14 |
| HM 4 | - 35+ 60HM | 1228 | NSS | NSS |
| HM 4 | - 35+ 60HN | 1228 | <0.02 | 28 |
| HM 4 | - 35+ 60HP | 1228 | <0.02 | 100 |
| HM 4 | - 60+150HM | 1228 | NSS | NSS |
| HM 4 | - 60+150HN | 1228 | <0.02 | 24 |
| HM 4 | - 60+150HP | 1228 | <0.02 | 92 |
| HM 5 | - 35+ 60HM | 1228 | NSS | NSS |
| HM 5 | - 35+ 60HN | 1228 | <0.02 | 16 |
| HM 5 | - 35+ 60HP | 1228 | <0.02 | 53 |
| HM 5 | - 60+150HM | 1228 | NSS | NSS |
| HM 5 | - 60+150HN | 1228 | <0.02 | 20 |
| HM 5 | - 60+150HP | 1228 | <0.02 | 46 |
| HM 7 | - 35+ 60HM | 1228 | NSS | NSS |
| HM 7 | - 35+ 60HN | 1228 | <0.02 | 40 |
| HM 7 | - 35+ 60HP | 1228 | <0.02 | 250 |
| HM 7 | - 60+150HM | 1228 | NSS | NSS |
| HM 7 | - 60+150HN | 1228 | NSS | NSS |
| HM 7 | - 60+150HP | 1228 | <0.02 | 170 |
| HM 8 | - 35+ 60HM | 1228 | NSS | NSS |
| HM 8 | - 35+ 60HN | 1228 | <0.02 | 41 |
| HM 8 | - 35+ 60HP | 1228 | <0.02 | 26 |
| HM 8 | - 60+150HM | 1228 | NSS | NSS |
| HM 8 | - 60+150HN | 1228 | <0.02 | 59 |
| HM 8 | - 60+150HP | 1228 | <0.02 | 25 |
| HM 9 | - 35+ 60HM | 1228 | NSS | NSS |
| HM 9 | - 35+ 60HN | 1228 | 0.16 | 120 |
| HM 9 | - 35+ 60HP | 1228 | 0.19 | 98 |
| HM 9 | - 60+150HM | 1228 | NSS | NSS |
| HM 9 | - 60+150HN | 1228 | 0.16 | 120 |
| HM 9 | - 60+150HP | 1228 | 0.07 | 73 |
| HM11 | - 35+ 60HM | 1228 | NSS | NSS |
| HM11 | - 35+ 60HN | 1228 | <0.02 | 20 |
| HM11 | - 35+ 60HP | 1228 | <0.02 | 48 |
| HM11 | - 60+150HM | 1228 | NSS | NSS |
| HM11 | - 60+150HN | 1228 | <0.02 | 74 |
| HM11 | - 60+150HP | 1228 | <0.02 | 64 |
| HM12 | - 35+ 60HM | 1228 | NSS | NSS |
| HM12 | - 35+ 60HN | 1228 | NSS | NSS |
| HM12 | - 35+ 60HP | 1228 | 0.21 | 480 |
| HM12 | - 60+150HM | 1228 | NSS | NSS |
| HM12 | - 60+150HN | 1228 | NSS | NSS |
| HM12 | - 60+150HP | 1228 | 0.19 | 450 |
| HM13 | - 35+ 60HM | 1228 | NSS | NSS |
| HM13 | - 35+ 60HN | 1228 | <0.02 | 41 |
| HM13 | - 35+ 60HN* | 1228 | <0.02 | 39 |
| HM13 | - 35+ 60HP | 1228 | <0.02 | 80 |
| HM13 | - 60+150HM | 1228 | NSS | NSS |
| HM13 | - 60+150HN | 1228 | <0.02 | 35 |
| HM13 | - 60+150HP | 1228 | <0.02 | 73 |
| HM14 | - 35+ 60HM | 1228 | NSS | NSS |
| HM14 | - 35+ 60HN | 1228 | <0.02 | 54 |
| HM14 | - 35+ 60HP | 1228 | 0.05 | 81 |
| HM14 | - 60+150HM | 1228 | NSS | NSS |
| HM14 | - 60+150HN | 1228 | <0.02 | 50 |

| SAMPLE | FRACTION | PROJECT | AG | AL | AS |
|---|---|---|---|---|---|
| HM 6 | -150+200IN | 1177 | <0.2 | NSS | 1 |
| HM 6 | -150+200IP | 1177 | NSS | NSS | NSS |
| HM 6 | -200HM | 1177 | NSS | NSS | NSS |
| HM 6 | -200HN | 1177 | NSS | NSS | NSS |
| HM 6 | -200HP | 1177 | NSS | NSS | NSS |
| HM 6 | -200IM | 1177 | NSS | NSS | NSS |
| HM 6 | -200IN | 1177 | <0.2 | NSS | 1 |
| HM 6 | -200IP | 1177 | <0.2 | NSS | 3 |
| HM 6 | 400L | 1177 | <0.2 | <0.02 | 3 |
| HM 6 | ORG | 1177 | <0.2 | <0.02 | 2 |
| HM16 | - 20+ 35HM | 1177 | <0.2 | NSS | 1 |
| HM16 | - 20+ 35HNN | 1177 | NSS | NSS | NSS |
| HM16 | - 20+ 35HP | 1177 | <0.2 | NSS | 46 |
| HM16 | - 20+ 35HPN | 1177 | <0.2 | <0.02 | 9 |
| HM16 | - 20+ 35IM | 1177 | NSS | NSS | NSS |
| HM16 | - 20+ 35IN | 1177 | <0.2 | <0.02 | 5 |
| HM16 | - 20+ 35IP | 1177 | <0.2 | <0.02 | 6 |
| HM16 | - 35+ 60HM | 1177 | <0.2 | NSS | 3 |
| HM16 | - 35+ 60HNN | 1177 | NSS | NSS | NSS |
| HM16 | - 35+ 60HP | 1177 | 0.4 | 0.03 | 46 |
| HM16 | - 35+ 60HPN | 1177 | <0.2 | NSS | 10 |
| HM16 | - 35+ 60IM | 1177 | NSS | NSS | NSS |
| HM16 | - 35+ 60IN | 1177 | <0.2 | <0.02 | 7 |
| HM16 | - 35+ 60IP | 1177 | <0.2 | <0.02 | 7 |
| HM16 | - 60+150HM | 1177 | <0.2 | <0.02 | 1 |
| HM16 | - 60+150HNN | 1177 | NSS | NSS | NSS |
| HM16 | - 60+150HP | 1177 | 0.6 | <0.02 | 36 |
| HM16 | - 60+150HPN | 1177 | <0.2 | NSS | 12 |
| HM16 | - 60+150IM | 1177 | NSS | NSS | NSS |
| HM16 | - 60+150IN | 1177 | <0.2 | <0.02 | 6 |
| HM16 | - 60+150IP | 1177 | <0.2 | <0.02 | 9 |
| HM16 | -150+200HM | 1177 | NSS | NSS | NSS |
| HM16 | -150+200HN | 1177 | NSS | NSS | NSS |
| HM16 | -150+200HP | 1177 | 0.7 | NSS | 46 |
| HM16 | -150+200IM | 1177 | NSS | NSS | NSS |
| HM16 | -150+200IN | 1177 | NSS | NSS | NSS |
| HM16 | -150+200IP | 1177 | <0.2 | NSS | 12 |
| HM16 | -200HM | 1177 | NSS | NSS | NSS |
| HM16 | -200HN | 1177 | NSS | NSS | NSS |
| HM16 | -200HP | 1177 | NSS | NSS | NSS |
| HM16 | -200IM | 1177 | NSS | NSS | NSS |
| HM16 | -200IN | 1177 | NSS | NSS | NSS |
| HM16 | -200IP | 1177 | 0.2 | NSS | 16 |
| HM16 | 400L | 1177 | <0.2 | <0.02 | 17 |
| HM16 | ORG | 1177 | <0.2 | <0.02 | 6 |
| test | STD A | 1177 | 0.6 | | |
| test | STD A | 1177 | 0.4 | | |
| test | STD ASX | 1177 | | | 15 |
| test | STD ASX | 1177 | | | 15 |
| test | STD AL | 1177 | | 1.03 | |

END OF LISTING - 110 RECORDS PRINTED
GCLIST RUN AT: 09:57:45 CPU USED: 2.67 SECONDS

LIST OF GEOCHEMICAL DATA FROM VENTURE 16  H. GODDARD, W.

| SAMPLE | FRACTION | PROJECT | AU | AS |
|---|---|---|---|---|
| HM14 | - 60+150HP | 1228 | <0.02 | 90 |
| HM15 | - 35+ 60HM | 1228 | NSS | NSS |
| HM15 | - 35+ 60HN | 1228 | <0.02 | 10 |
| HM15 | - 35+ 60HP | 1228 | <0.02 | 110 |
| HM15 | - 60+150HM | 1228 | NSS | NSS |
| HM15 | - 60+150HN | 1228 | <0.02 | 8 |
| HM15 | - 60+150HP | 1228 | 0.04 | 120 |
| test | STD ASX | 1228 | | 37 |
| test | STD ASX | 1228 | | 40 |
| test | STD AU | 1228 | 1.50 | |
| test | STD AU | 1228 | 1.20 | |

END OF LISTING -  71 RECORDS PRINTED
GCLIST RUN AT: 08:33:01  CPU USED:  .14 SECONDS

V16

G. MINERAL RESEARCH LIMITED
80 COLUMN DATA SHEET

| | | WEIGHT. GMS. | Avg |
|---|---|---|---|
| HM#1-103B12E | -20+35IP | 21.28 | |
| | -20+35IN | 3.42 | 24.7 |
| | -20+35HM | 0.83 | |
| | -20+35HP | 2.23 | |
| | -20+35HPN | 0.27 | 2.51 |
| | -20+35HNN | 0.01 | |
| | -35+60IP | 13.67 | |
| | -35+60IN | 1.67 | 15.34 |
| | -35+60HM | 2.03 | |
| | -35+60HP | 2.54 | |
| | -35+60HPN | 0.46 | 3.04 |
| | -35+60HNN | 0.04 | |
| | -60+150IP | 6.86 | |
| | -60+150IN | 1.24 | 8.08 |
| | -60+150HM | 2.20 | |
| | -60+150HP | 3.44 | |
| | -60+150HPN | 0.68 | 4.20 |
| | -60+150HNN | 0.08 | |
| | -150+200IP | 0.78 | |
| | -150+200IN | 0.20 | 0.98 |

AUTHOR _____

DATE Aug. 1

| | | WEIGHT. GMS. | |
|---|---|---|---|
| HM#1-103.B12E | -150+200HM | 018 | |
| | -150+200HP | 060 | |
| | -150+200HN | <001 | |
| | | | |
| | | | |
| | -200IP | 115 | 2.87 |
| | -200IN | 067 | |
| | -200HM | 008 | |
| | -200HP | 054 | |
| | -200HN | 007 | |
| | | | |
| | | | |
| | 400L | 612 | |
| | | | |
| | ORG | 20593 | |

AUTHOR _____ DATE _____

CF MINERAL RESEARCH LIMITED

80 COLUMN DATA SHEET

V16

| | | WEIGHT. GMS. | |
|---|---|---|---|
| HM#6-103B12E | -20+35IP | 1.015 | 12.26 |
| | -20+35IN | 2.11 | |
| | -20+35HM | 036 | |
| | -20+35HP | 19.2 | 2.09 |
| | -20+35HPN | 012 | |
| | -20+35HNN | 003 | |
| | -35+60IP | 1.058 | 12.67 |
| | -35+60IN | 2.09 | |
| | -35+60HM | 1.18 | |
| | -35+60HP | 3.10 | 3.53 |
| | -35+60HPN | 028 | |
| | -35+60HNN | 015 | |
| | -60+150IP | 661 | 9.18 |
| | -60+150IN | 2.57 | |
| | -60+150HM | 153 | |
| | -60+150HP | 330 | 3.87 |
| | -60+150HPN | 032 | |
| | -60+150HNN | 025 | |
| | -150+200IP | 036 | 0.92 |
| | -150+200IN | 056 | |

AUTHOR _____

DATE Aug 6

MINERAL RESEARCH LIMITED

80 COLUMN DATA SHEET

| | | WEIGHT. GMS. | |
|---|---|---|---|
| HM#6 - 103 B12E | -150+200HM | 0.15 | |
| | -150+200HP | 0.41 | |
| | -150+200HN | 0.12 | |
| | -200IP | 0.59 | 1.26 |
| | -200IN | 0.67 | |
| | -200HM | 0.09 | |
| | -200HP | 0.23 | |
| | -200HN | 0.04 | |
| | 400L | | |
| | ORG | 13.686 | |

AUTHOR _____ DATE _____

V16.8

G. MINERAL RESEARCH LIMITED
80 COLUMN DATA SHEET

| | | WEIGHT. GMS. | |
|---|---|---|---|
| HM#16-103.B12E | -20+35IP | 3.281 | |
| | -20+35IN | .943 | 42.74 |
| | -20+35HM | .091 | |
| | -20+35HP | .720 | |
| | -20+35HPN | .132 | 8.54 |
| | -20+35HNN | .002 | |
| | | | |
| | | | |
| | -35+60IP | 2.305 | |
| | -35+60IN | .495 | 28.00 |
| | -35+60HM | .203 | |
| | -35+60HP | .823 | |
| | -35+60HPN | .122 | 9.45 |
| | -35+60HNN | .008 | |
| | | | |
| | | | |
| | -60+150IP | 1.382 | |
| | -60+150IN | .297 | 16.79 |
| | -60+150HM | .342 | |
| | -60+150HP | .968 | |
| | -60+150HPN | .181 | 11.70 |
| | -60+150HNN | .021 | |
| | | | |
| | | | |
| | -150+200IP | .098 | |
| | -150+200IN | .034 | 1.32 |

AUTHOR _____ DATE Aug.

CF. MINERAL RESEARCH LIMITED

80 COLUMN DATA SHEET

| | | WEIGHT. GMS. |
|---|---|---|
| HM#1.6-103B12E | -150+200HM | 027 |
| | -150+200HP | 1.06 |
| | -150+200HN | 013 |
| | | |
| | | |
| | -200IP | 067 |
| | -200IN | 040 |
| | -200HM | 011 |
| | -200HP | 066 |
| | -200HN | 017 |
| | | |
| | | |
| | 400L | 914 |
| | | |
| | ORG | 35891 |

AUTHOR _____ DATE _____

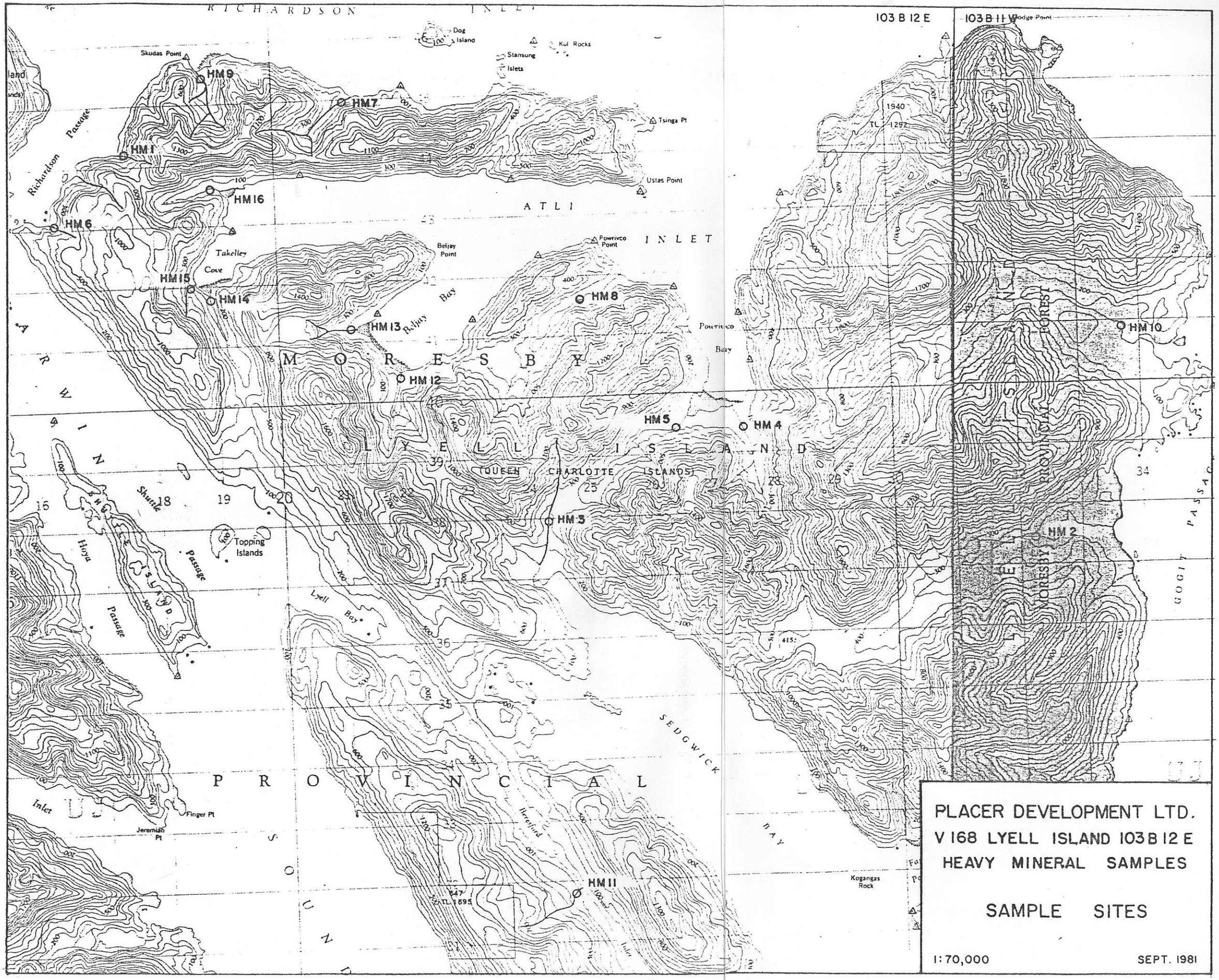
PLACER DEVELOPMENT V168 1 of 3

103 B 12E

| SAMPLE | WEIGHT-GMS | | SAMPLE | WEIGHT-GMS. |
|---|---|---|---|---|
| HM 2 | | | HM 5 | |
| -35+60 HM | 0.03 | | -35+60 HM | 0.21 |
| HP | 6.12 | | HP | 5.91 |
| HN | 4.23 | | HN | 2.10 |
| | | | | |
| -60+150 HM | 0.35 | | -60+150 HM | 1.03 |
| HP | 12.75 | | HP | 14.26 |
| HN | 3.28 | | HN | 4.16 |
| | | | | |
| | | | | |
| HM 3 | | | HM 7 | |
| -35+60 HM | 0.05 | | -35+60 HM | 0.53 |
| HP | 11.11 | | HP | 3.27 |
| HN | 4.29 | | HN | 0.65 |
| | | | | |
| -60+150 HM | 0.50 | | -60+150 HM | 0.65 |
| HP | 54.41 | | HP | 2.64 |
| HN | 15.30 | | HN | 0.29 |
| | | | | |
| | | | | |
| HM 4 | | | HM 8 | |
| -35+60 HM | 0.19 | | -35+60 HM | 0.31 |
| HP | 16.66 | | HP | 17.11 |
| HN | 8.40 | | HN | 15.16 |
| | | | | |
| -60+150 HM | 0.12 | | -60+150 HM | <0.01 |
| HP | 5.58 | | HP | 4.68 |
| HN | 8.00 | | HN | 2.22 |

| SAMPLE | WEIGHT-GMS | | SAMPLE | WEIGHT-GMS |
|---|---|---|---|---|
| HM 9 | | | HM 12 | |
| -35+60 HM | 3.07 | | -35+60 HM | 0.44 |
| HP | 6.88 | | HP | 6.08 |
| HN | 1.98 | | HN | 0.27 |
| | | | | |
| -60+150 HM | 2.37 | | -60+150 HM | 0.53 |
| HP | 5.61 | | HP | 1.31 |
| HN | 1.10 | | HN | 0.27 |
| | | | | |
| | | | | |
| HM 10 | | | HM 13 | |
| -35+60 HM | 0.90 | | -35+60 HM | 0.86 |
| HP | 5.05 | | HP | 136.15 |
| HN | 6.27 | | HN | 118.69 |
| | | | | |
| -60+150 HM | 1.75 | | -60+150 HM | 1.11 |
| HP | 12.51 | | HP | 65.38 |
| HN | 2.96 | | HN | 77.02 |
| | | | | |
| | | | | |
| HM 11 | | | HM 14 | |
| -35+60 HM | 0.07 | | -35+60 HM | 0.47 |
| HP | 3.43 | | HP | 6.28 |
| HN | 1.44 | | HN | 1.37 |
| | | | | |
| -60+150 HM | 0.44 | | -60+150 HM | 0.36 |
| HP | 2.53 | | HP | 4.64 |
| HN | 1.61 | | HN | 0.95 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

| SAMPLE | WEIGHT-GMS | | SAMPLE | WEIGHT-GMS |
|---|---|---|---|---|
| HM 15 | | | HM | |
| -35+60 HM | 2.42 | | -35+60 HM | |
| HP | 13.79 | | HP | |
| HN | 6.32 | | HN | |
| | | | | |
| -60+150 HM | 8.26 | | -60+150 HM | |
| HP | 32.55 | | HP | |
| HN | 15.64 | | HN | |
| | | | | |
| | | | | |
| HM | | | HM | |
| -35+60 HM | | | -35+60 HM | |
| HP | | | HP | |
| HN | | | HN | |
| | | | | |
| -60+150 HM | | | -60+150 HM | |
| HP | | | HP | |
| HN | | | HN | |
| | | | | |
| | | | | |
| HM | | | HM | |
| -35+60 HM | | | -35+60 HM | |
| HP | | | HP | |
| HN | | | HN | |
| | | | | |
| -60+150 HM | | | -60+150 HM | |
| HP | | | HP | |
| HN | | | HN | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |



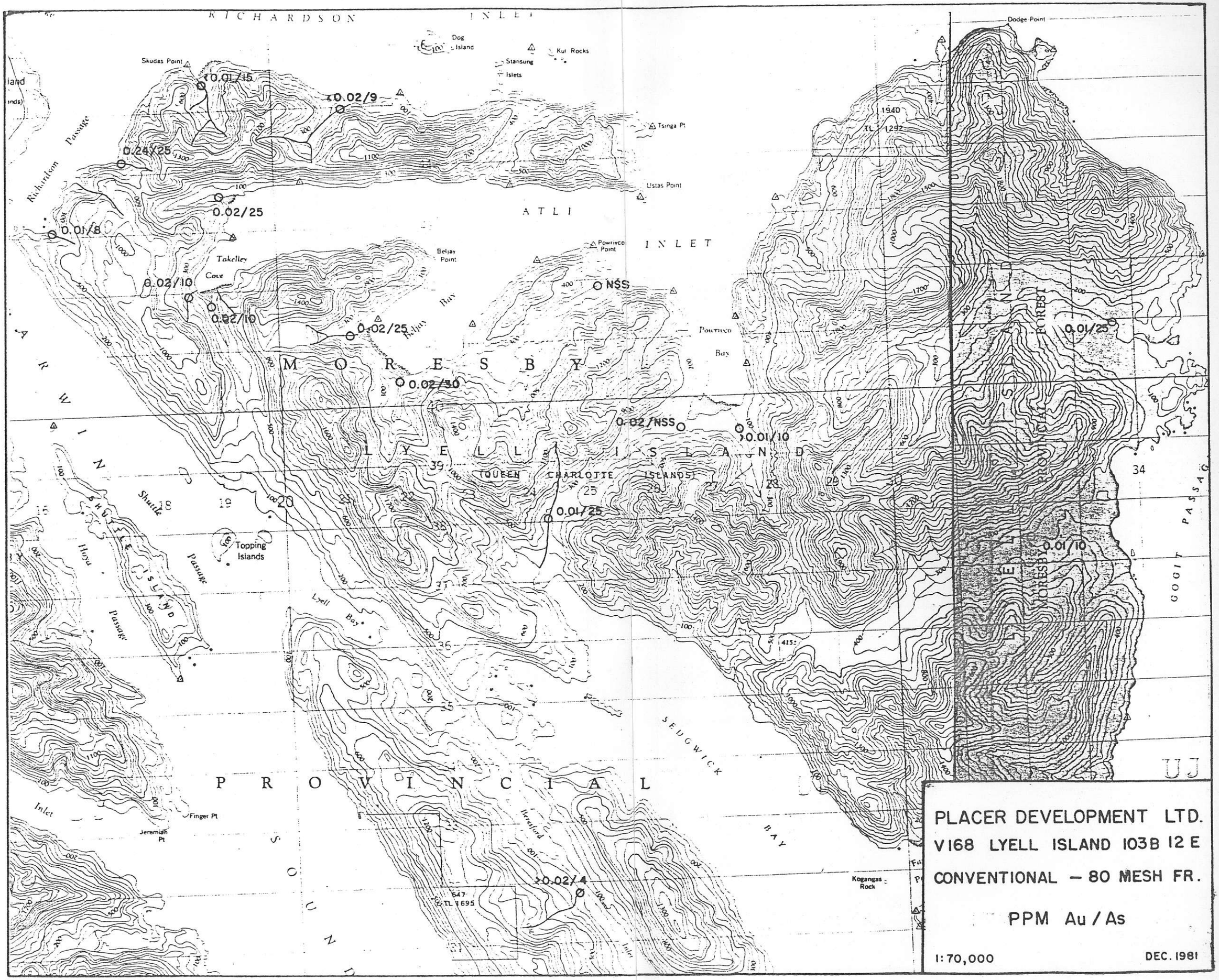

PLACER DEVELOPMENT LTD.

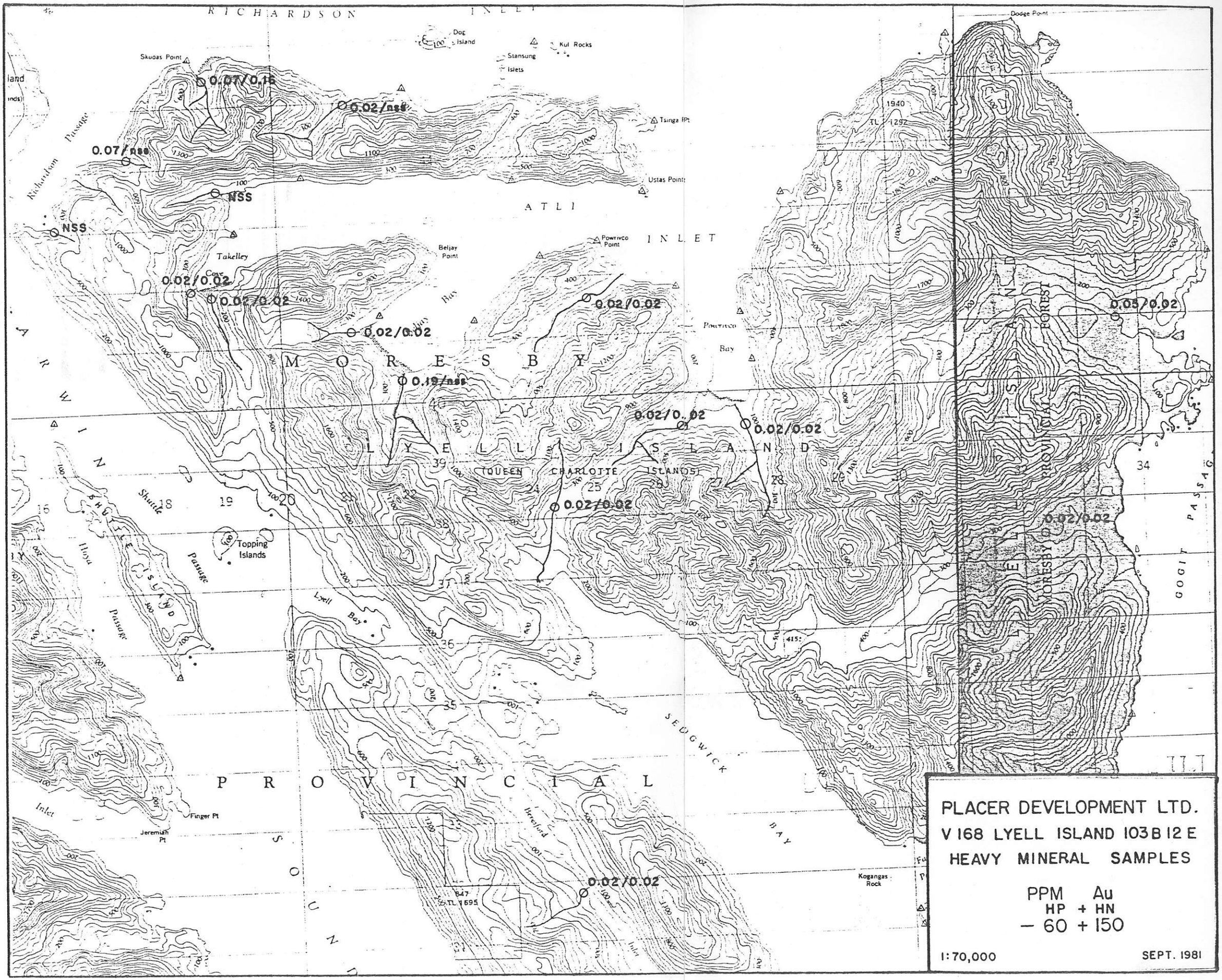
V 168 LYELL ISLAND 103 B 12 E

HEAVY MINERAL SAMPLES

SAMPLE SITES

1:70,000 SEPT. 1981

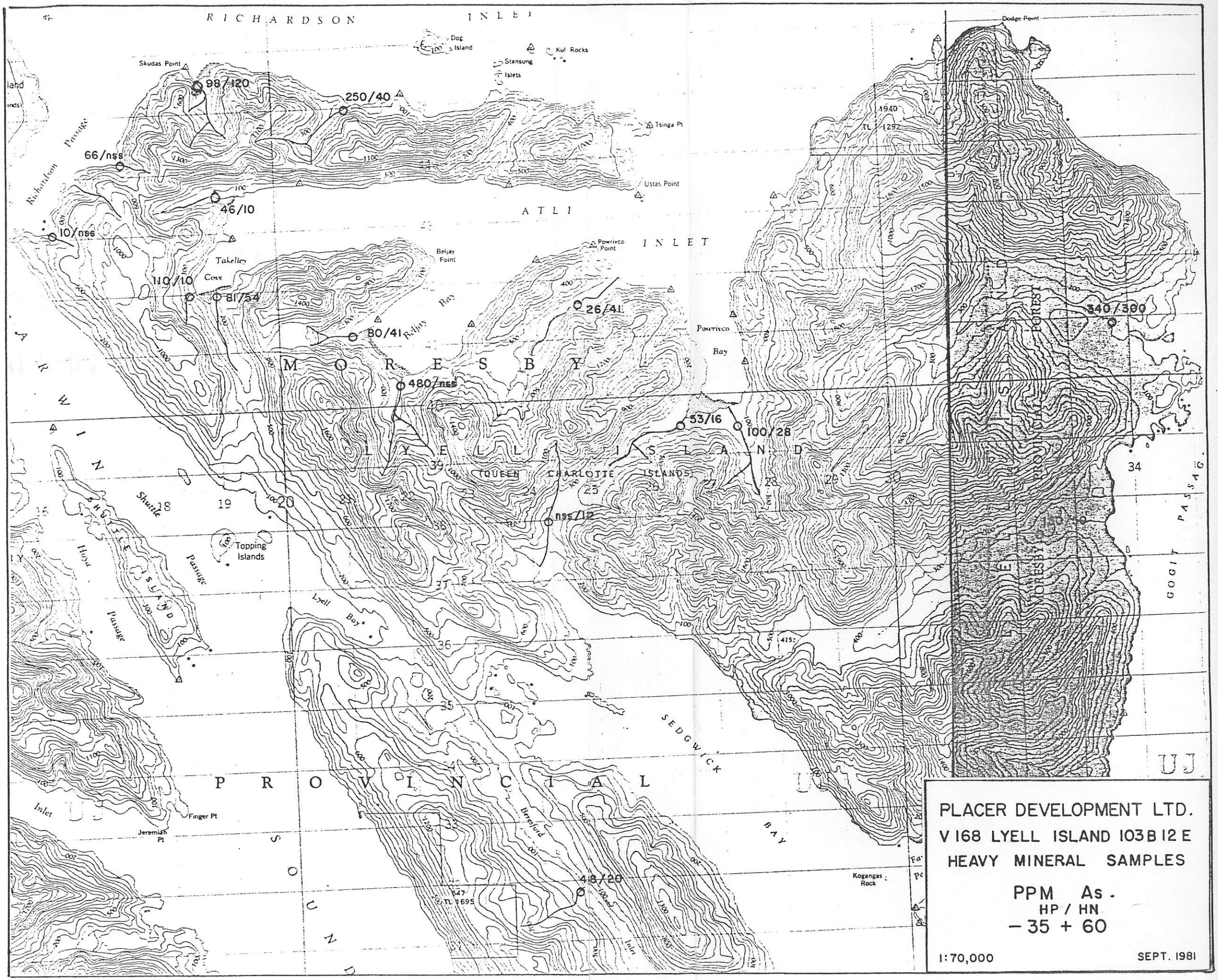

RICHARDSON INLET
Dog Island
Kul Rocks
Stansung Islets
Skudas Point
Tsinga Pt
Ustas Point
Dodge Point
1940
TL 1292
Richardson Passage
0.01/15
0.02/9
0.24/25
0.02/25
0.01/8
ATLI INLET
Takelley Cove
Beljay Point
Powrivco Point
0.02/10
0.02/10
0.02/25
NSS
Powrivco Bay
MORESBY
0.02/30
0.02/NSS
0.01/10
ARGONAUT
LYELL ISLAND
QUEEN CHARLOTTE ISLANDS
0.01/25
Shuttle
Topping Islands
SHUTTLE ISLAND
Hoya Passage
Passage
Lyell Bay
MORESBY ISLAND
0.01/10
GOGIT PASSAGE
SEDGWICK
PROVINCIAL
Inlet
Finger Pt
Jeremiah Pt
SOUND
Hereford Inlet
BAY
>0.02/4
647
TL 1695
Kogangas Rock
PLACER DEVELOPMENT LTD.
V168 LYELL ISLAND 103B 12 E
CONVENTIONAL – 80 MESH FR.
PPM Au / As
1:70,000
DEC. 1981

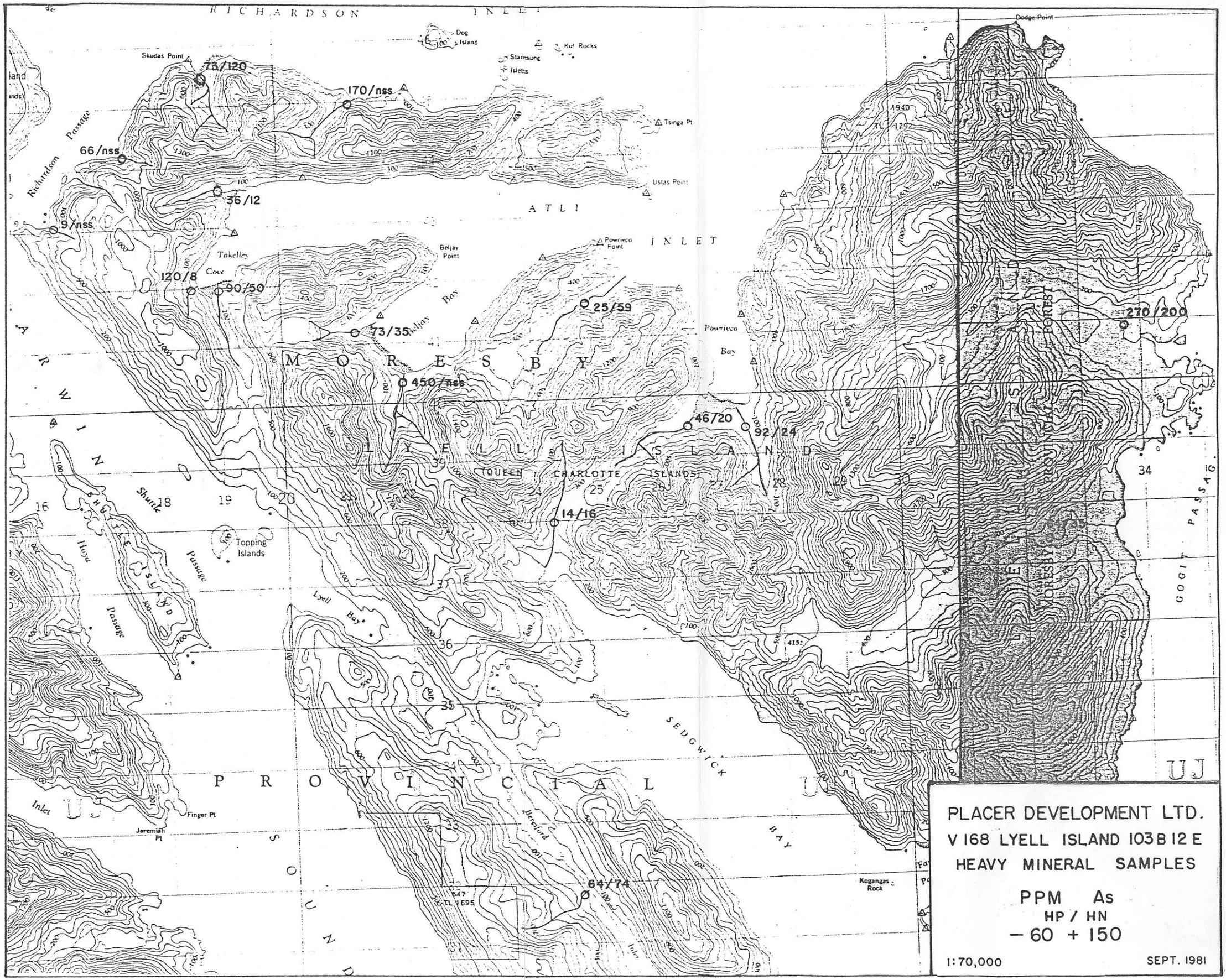



PLACER DEVELOPMENT LTD.
V 168 LYELL ISLAND 103 B 12 E
HEAVY MINERAL SAMPLES

PPM Au
HP + HN
– 60 + 150

1:70,000 SEPT. 1981


RICHARDSON INLET
Dog Island
Kul Rocks
Stansung Islets
Skudas Point
98/120
250/40
Tsinga Pt
66/nss
Richardson Passage
46/10
Ustas Point
10/nss
ATLI
Powrivco Point
INLET
Takelley Cove
Beljay Point
110/10
81/54
Bay
26/41
80/41
Beljay
Powrivco Bay
MORESBY
480/nss
ARWIN
LYELL ISLAND
53/16
100/28
QUEEN CHARLOTTE ISLANDS
nss/12
Dodge Point
1940
TL 1292
340/300
MORESBY PASSAGE
Topping Islands
Shuttle
Hoya Passage
Lyell Bay
SEDGWICK
PROVINCIAL
SOUND
BAY
Inlet
Finger Pt
Jeremiah Pt
Bereford
48/20
TL 1695
Kogangas Rock
GOGIT PASSAGE
UJ
PLACER DEVELOPMENT LTD.
V 168 LYELL ISLAND 103B 12 E
HEAVY MINERAL SAMPLES
PPM As.
HP / HN
– 35 + 60
1:70,000
SEPT. 1981




PLACER DEVELOPMENT LTD.

V 168 LYELL ISLAND 103 B 12 E

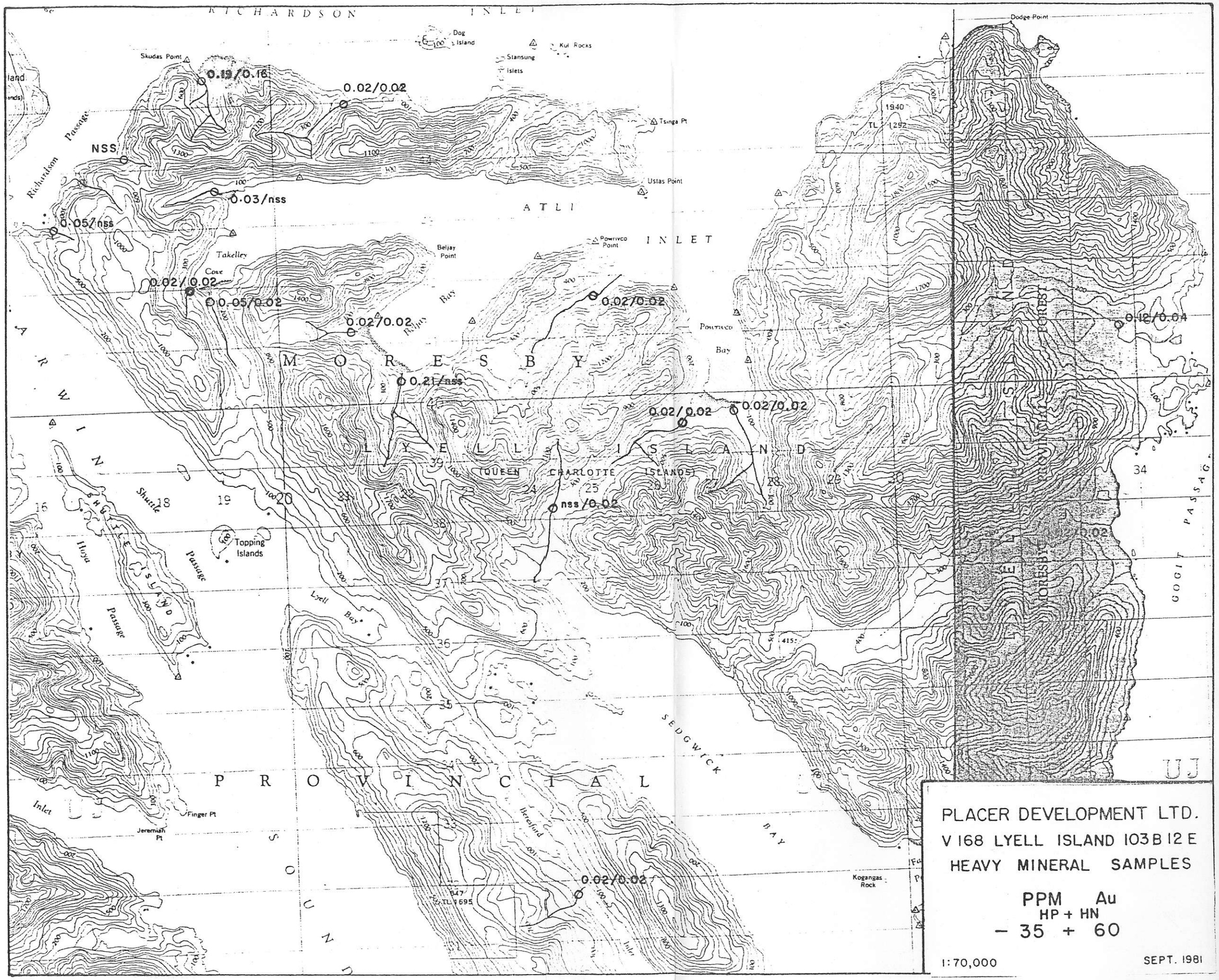
HEAVY MINERAL SAMPLES

PPM As

HP / HN

– 60 + 150

1:70,000 SEPT. 1981




PLACER DEVELOPMENT LTD.

V 168 LYELL ISLAND 103B 12 E

HEAVY MINERAL SAMPLES

PPM Au

HP + HN

− 35 + 60

1:70,000

SEPT. 1981

# PLACER DEVELOPMENT LIMITED

January 22, 1982.

MEMO TO: FILE & W.S. Pentland

FROM : S.W. Campbell

RE : OCCURRENCE OF GOLD IN POLISHED GRAIN MOUNTS OF FLOTATION CONCENTRATE, FLOTATION TAILING, AND LEACHED FLOTATION CONCENTRATE FROM THE APRIL PROPERTY, QUEEN CHARLOTTE ISLANDS

---

Polished grain mounts were prepared from the following samples:

| LABEL | SAMPLE DESCRIPTION | ORIGIN | g/t AU | g/t AG |
|---|---|---|---|---|
| AV-1 | Flotation Concentrate | 80C 1785 | 200 | 135 |
| AV-2 | Flotation Tailing | 80C 1785 | 0.68 | 1.5 |
| AV-3 | Superpanner Concentrate | 80C 1785 | - | - |
| AV-4 | Superpanner Tailing | 80C 1785 | - | - |
| AV-5 | Leached Flotation Concentrate | 80C1784 | 7.15 | 23 |

The flotation concentrate represents 6.5% weight recovery and 95.3% gold recovery. The superpanner concentrate represents 1.2% of the feed weight. The leached flotation concentrate is from previous testwork.

Two polished grain mounts from AV-1 and one each from AV-2 and AV-5 were examined microscopically. The grain mounts were examined systematically on a detailed grid pattern of increments <(1mm by 1mm). The results appear in Table 1 and are summarized below.

| SAMPLE | Number of EXAMPLES | TYPE OF OCCURRENCE |
|---|---|---|
| Flotation concentrate | 6 | Free gold. |
| | 12 | 1 to 4$\mu$ blebs in pyrite. |
| | 8 | Larger, rounded to irregular-shaped blebs in pyrite. |
| | 6 | Gold at or near grain boundary between pyrite and chalcopyrite. |
| Flotation tailing | 1 | 1$\mu$ bleb in pyrite. |
| Leached flotation concentrate | 7 | 1 to 2$\mu$ blebs in pyrite. |

Sue W. Campbell

1600 - 1055 Dunsmuir Street, Vancouver, B.C. (604) 682-7082 Telex 04-55181
Mailing Address: P.O. Box 49420, Bentall Postal Station, Vancouver, B.C., Canada V7X 1P1

TABLE 1

| GRAIN MOUNT | TYPE OF OCCURRENCE | NUMBER OF EXAMPLES SEEN | SIZE OF GRAINS (μ) | DESCRIPTION OF GOLD OCCURRENCES |
|---|---|---|---|---|
| AV-1 (a) (Reported in preliminary memo, dated Jan. 13/82) | 1. Freegold. | 2 | 2 by 6 and 4 by 7. | Somewhat oval-shaped grains spatially close to pyrite grains. |
| | 2. Blebs in pyrite. | 5 | Generally 1, but up to 3. | Rounded to oval-shaped blebs of gold included in pyrite, in some case along cleavage planes. |
| | 3. Irregular-shaped grains in pyrite. | 5 | Generally 3 to 5; one grain is 4 by 12. | These larger, irregular shaped grains occur within pyrite grains, in some cases obviously related to cleavage planes. |
| | 4. Gold associated with pyrite/ chalcopyrite. | 2 | 5 to 10 | (a) Grains of gold, generally oval-shaped, occurring at the grain boundary between pyrite and chalcopyrite. |
| | | 3 | 6 by 15<br>3 by 5<br>1 by 3 | (b) Grains of gold, rounded to irregular-shaped, occurring very near the grain boundary between pyrite and chalcopyrite. |
| AV-1 (b) | 1. Freegold. | 4 | 3 to 5; One is 4 x 15. | Equant to elongate grains spatially close to pyrite. |
| | 2. Blebs in pyrite. | 7 | Generally 1, but up to 4. | (a) Small, rounded to oval-shaped blebs included in pyrite grain |
| | | 3 | 4 to 10, averaging 5 to 6. | (b) Larger, generally rounded blebs of gold within and along the edges of pyrite grains |
| | 3. Gold associated with pyrite/ chalcopyrite. | 1 | 3 by 11. | Irregular-shaped grain at grain boundary, between pyrite and chalcopyrite. |
| 2 | 1. Bleb in pyrite. | 1 | 1. | Rounded bleb of gold in pyrite. |
| AV-5 | 1. Blebs in pyrite. | 7 | 1 to 2. | Rounded to oval-shaped blebs in pyrite, in some cases along |

Tintland

# PLACER DEVELOPMENT LIMITED
## RESEARCH CENTRE

MEMO TO: B. Wilson DATE: July 14, 1981

FROM: B. Marchant

SUBJECT: April Venture 168

---

Introduction:

Two samples, approximately 3 Kg each, were received at the Research Centre designated:

April Venture 168 - 80C 1784
80C 1785

Sample 80C 1784 was used to show gold recovery and loss by direct cyanidation and by cyanidation of the flotation concentrate. Sample 80C 1785 was saved pending further testwork as required.

Approximately 1000 grams of 80C 1784 was ground in a laboratory rod mill to 80% passing 150μm. The ground product was diluted to 30% solids with fresh water. The pulp was bottle roll leached for 24 hours in the presence of 1000 g/t NaCN and 2000 g/t CaO. The resultant pregnant leach solution was assayed for gold and silver concentration. The leach residue was washed and assayed for gold, silver, copper, iron, sulfur, lead, arsenic, and antimony.

PBM:ojt

.... /2

An additional 1000 gram sample of 80C 1784 was ground to 80% passing 150µm in the presence of 100 g/t $CuSO_4$ and 50 g/t Aerofloat 242. The ground product was diluted to 25% solids with fresh water. The pulp was conditioned with 50 g/t Potassium Amyl Xanthate for 1 minute. Dowfroth 250C achieved a stable froth and rougher flotation was carried out for 5 minutes. A second addition of 50 g/t P.A.X. was followed by 5 minutes flotation.

The flotation concentrate was transferred to a nalgene container and bottle roll leached for 24 hours. The leached concentrate residue was washed and assayed for the same elements as the cyanide residue discussed above. The pregnant leach solution was assayed for gold and silver.

The rougher flotation tailing was assayed for the same elements as both leach residues.

Results:

Figure 1 shows a summary of the two test procedures. Detailed leach data is attached. It is apparent that similar gold extraction occurred with each flowsheet. Flotation recovery could be improved through cleaning/scavenging stages and gold dissolution by cyanidation could be increased with extended leach durations.

Detailed elemental analysis of the test products showed the following:

TABLE 1 - Detailed Product Analysis

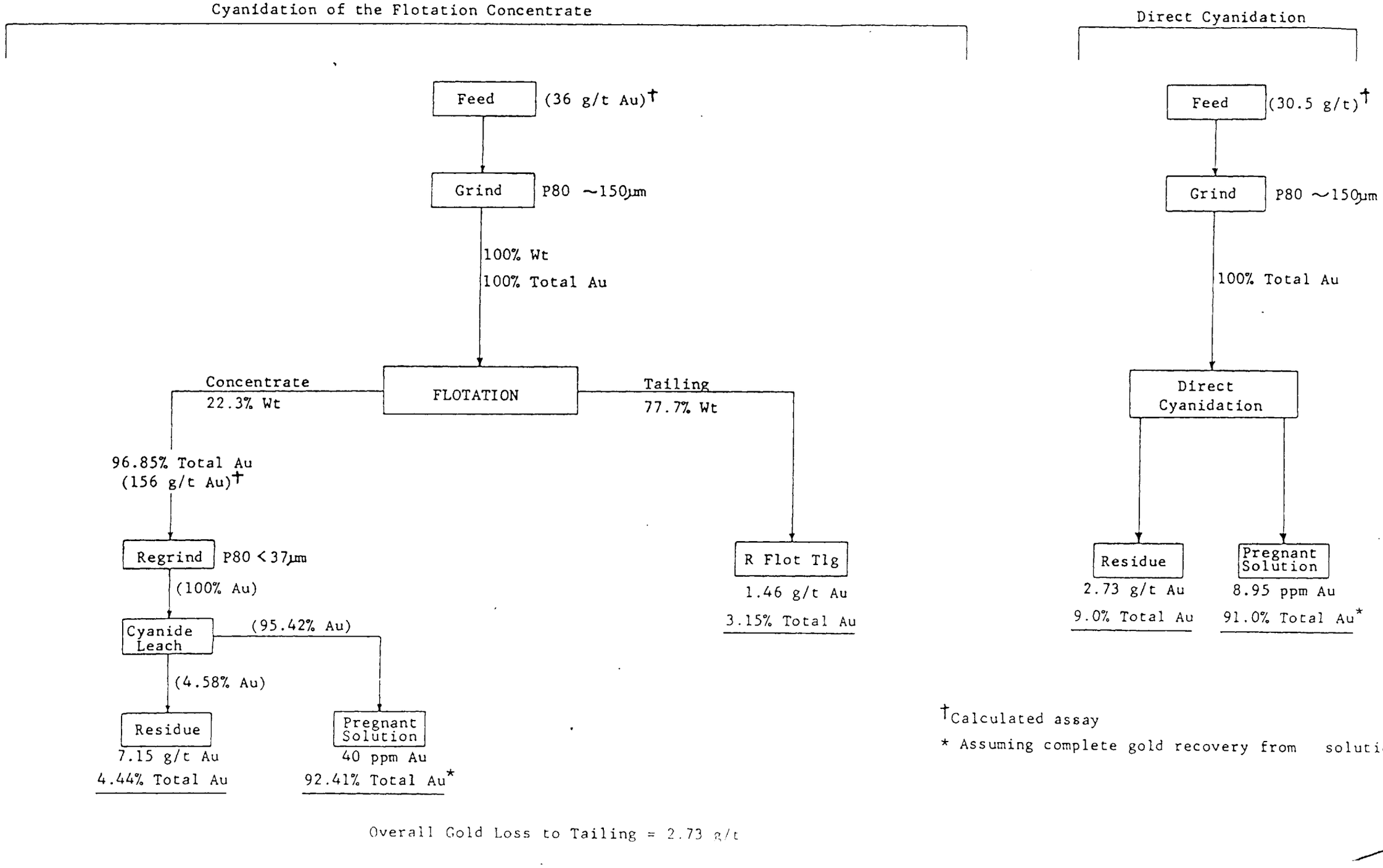
| Product | Au (ppm) | Ag (ppm) | Cu % | Fe % | S % | Pb % | As % | Sb % |
|---|---|---|---|---|---|---|---|---|
| Leached Conc. Residue | 7.15 | 23.0 | 0.02 | 9.53 | 8.90 | <0.01 | 0.12 | <0.01 |
| R. Flot. Tlg. | 1.46 | 2.5 | 0.01 | 1.86 | 0.39 | <0.01 | 0.01 | <0.01 |
| Direct Cyanide Residue | 2.73 | 7.0 | 0.01 | 3.44 | 2.30 | <0.01 | 0.038 | <0.01 |

B. Marchant

PBM:ojt

cc: D.A. Knight
W.S. Pentland

FIGURE 1 - Gold Recovery




†Calculated assay

* Assuming complete gold recovery from solution

Overall Gold Loss to Tailing = 2.73 g/t

V-168 April

Assay Results for Selected Samples

| Sample | Hole | Meterage | Au | Ag | As | Remarks |
|---|---|---|---|---|---|---|
| 69842 | 7 | 102-105 | 2.98 | 2.26 | 48 | Lapilli to Frag. rhyolite - brecciated |
| 70686 | 7 | 103.68-103.93 | 0.15 | 0.4 | 30 | Gougy section in RNFF. |
| 69844 | 7 | 108-111 | 4.52 | 1.30 | 104 | Lapilli to Frag. rhyolite - Brecciated |
| 70687 | 7 | 108-109.5 | 2.20 | 0.20 | 31 | Partially alt. RNFF |
| 70685 | 7 | 109.5-111 | 35.56 | 4.90 | 32 | Altered, gougy W. 20% clay |
| 69901 | 8 | 132-135 | 4.32 | 7.00 | 100 | |
| 70683 | 8 | 132-133.05 | 8.77 | 2.30 | 25 | V. gougy RNFF w. some heavy Py. |
| 70682 | 8 | 133.05-133.64 | 0.09 | 0.20 | 23 | V.F.G. Sed? Some Py. |
| 70680 | 8 | 133.64-133.90 | 0.32 | 0.20 | 29 | Gougy lapilli to frag. rhyolite. |
| 70681 | 8 | 133.90-134.25 | 0.64 | 1.7 | 30 | Dk. Gy. V.F.G. Sed? Py. (Qtz./carb. strs.) |
| 70684 | 8 | 134.25-135 | 1.12 | 0.4 | 30 | Brecciated RNFF. Alt. - not gougy. |
| C1784 | 5 | 82.54-85.58 | 21.18 | | 265 | RNFF breccia |
| 70710 | 5 | " - " | 16.1 | 7.0 | 98 | RNFF breccia |
| C1785 | 5 | 85.58-88.63 | 12.97 | | 50 | RNFF breccia & andesite dike |
| 70711 | 5 | 85.58-85.85<br>87.78-88.63 | 5.00 | 3.5 | 5 | RNFF breccia |
| 70712 | 5 | 85.85-87.78 | 0.02 | 0.20 | 4 | Andesite dike. |

W.S. Pentland

PLACER RESEARCH CENTRE
CYANIDE LEACH DATA

DATE:

SAMPLE DESCRIPTION: APRIL VENTURE 168
REMARKS: Direct Cyanidation(A) and Cyanidation of the Flotation Concentrate(B)

| Sample Label | | A | B | [3] | [4] | [5] | [6] | [7] | [8] |
|---|---|---|---|---|---|---|---|---|---|
| LEACH DATA: | | | | | | | | | |
| 80% Passing (um) | | 150 | 37 | | | | | | |
| Time (h) | | 24 | 24 | | | | | | |
| Natural pH | | | | | | | | | |
| pH after CaO | | 11.4 | 11.1 | | | | | | |
| Final pH | | 11.3 | 10.9 | | | | | | |
| NaCN Addition (g) | | .9 | .5 | | | | | | |
| CaO Addition (g) | | 2 | 1 | | | | | | |
| LEACH RESULTS: | | | | | | | | | |
| Solution Volume (mL) | | 3000 | 805.6 | | | | | | |
| Residue Weight (g) | | 968.2 | 216.3 | | | | | | |
| Titration NaCN | | | | | | | | | |
| Titration CaO | | | | | | | | | |
| Reducing Power | | | | | | | | | |
| NaCN Consumption (g/t) | | -- | -- | | | | | | |
| CaO Consumption (g/t) | | -- | -- | | | | | | |
| Sol'n Assay | ppm | 8.95 | 40 | | | | | | |
| Carbon Assay | ug | 0 | 0 | | | | | | |
| Residue Assay | ppm | 2.73 | 7.15 | | | | | | |
| Calc.Head Assay | | 30.46 | 156.13 | | | | | | |
| % Recovery | | 91.04 | 95.42 | | | | | | |

# PLACER DEVELOPMENT LIMITED

MEMORANDUM:

TO: File V-168 APRIL DATE: March 18th, 1982

FROM: Bruno Barde

RE: CHECK ASSAYING RESULTS ON DRILL CORE

---

The final results for a series of check assays on April drill core have been received. The present program was initiated when earlier checks gave unsatisfactory results.

A total of 29 samples from the 1981 diamond drilling program and generally containing in excess of 1 ppm Au were selected for the test.

Procedure:

1. Sample reject put through the crusher for the second time.

2. Two splits taken from the re-crushed reject and pulverized.

3. The two sample splits were sent to Placer Development and General Testing for fire assaying.

4. The sample assayed by Placer Development was sent to Chemex for another fire assay. Similarly the General Testing sample pulp was sent to Placer Development.

The results are shown on Table 1 (attached). Means and standard deviation of the three different laboratories are given in Table 2 (attached).

Placer versus Placer:

Fig. 1 shows a very good correlation. Corr. coef. = .98

This good correlation permits us to take Placer Laboratory as reference. We ran a T-test P, which proves that the difference between the sets of analyses is not significant. See Table 3.

...2/

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Chemex versus Placer:

Figure 2 shows us that Chemex has a tendency to report higher values than Placer. Ian Thomson sees two possible explanations:

1. Chemex uses different standards than Placer.
2. Chemex uses an extraction technique which extracts more gold. The erratic values could be a mechanical problem of samples handling or a problem in the sample (nugget effect).

The T-test P proves that the difference between the two laboratories is not significant see Table 4.

General versus Placer:

Figure 3 shows us that General has a problem under 1.5 ppm. The laboratory over-estimate the assays especially in the lower gold values.

Above 1.5 General is reporting much the same values as Placer with a slight overestimate. Ian Thomson sees a possibility of a change of reading scale around 1.5 ppm or a standard problem. The T-test P proves that the difference between the laboratories is significant. (See Table 5)

Conclusions and Recommendations:

This study proves that:

1. We can be quite confident in the Placer Development Laboratory for gold fire assays between 0.4 and 10. ppm, but there should be a check on the standards or their extraction procedure to see if they are not underestimating their gold assays.

2. Chemex fire assays are acceptable although they seem to have some minor analytical problems.

3. General has analytical problems especially in samples containing less than 1.50 ppm.

B. Barde

BB/cs
Attachments

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```
@ED,U ASSAYS.
ED 16R1-THU-03/18/82-14:49:42-(0,1)
EDIT
0:
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TABLE 1

| | SPLIT "A" | | SPLIT "B" | |
|---|---|---|---|---|
| | ******** | | ********* | |
| SAMPLE | PLACER | CHEMEX | GENERAL | PLACER |
| 69841 | 1.76 | 2.12 | 2.39 | 1.85 |
| 69842 | 1.09 | 1.71 | 1.71 | 1.23 |
| 69843 | 2.63 | 3.35 | 1.16 | 2.10 |
| 69844 | 8.14 | 7.87 | 9.22 | 8.45 |
| 69845 | 0.23 | 0.34 | 0.41 | 0.13 |
| 69846 | 3.49 | 1.43 | 1.78 | 2.33 |
| 69847 | 0.96 | 0.68 | 1.37 | 0.89 |
| 69893 | 2.00 | 1.37 | 1.57 | 1.83 |
| 69898 | 3.23 | 2.12 | 3.79 | 3.00 |
| 69901 | 3.08 | 3.08 | 3.08 | 3.00 |
| 69902 | 1.05 | 1.16 | 0.96 | 1.13 |
| 69906 | 0.94 | 0.41 | 1.50 | 0.81 |
| 69907 | 0.90 | 0.68 | 1.02 | 0.81 |
| 70621 | 9.15 | 9.45 | 9.46 | 9.60 |
| 70622 | 2.89 | 2.67 | 3.50 | 2.48 |
| 70627 | 1.24 | 1.84 | 1.99 | 1.05 |
| 70646 | 2.81 | 3.22 | 3.77 | 2.58 |
| 68707 | 0.68 | 0.82 | 1.06 | 0.59 |
| 68708 | 1.13 | 1.91 | 2.06 | 1.96 |
| 68714 | 0.64 | 1.02 | 1.44 | 0.55 |
| 69715 | 0.98 | 1.50 | 1.64 | 0.93 |
| 68793 | 1.91 | 1.78 | 2.60 | 1.98 |
| 68854 | 1.20 | 1.57 | 2.31 | 1.35 |
| 68855 | 0.86 | 1.43 | 1.57 | 0.93 |
| 68860 | 0.68 | 1.37 | 2.54 | 0.64 |
| 68867 | 0.86 | 1.84 | 1.57 | 0.74 |
| 68868 | 3.26 | 4.79 | 7.70 | 4.09 |
| 69869 | 6.90 | 6.64 | 8.23 | 6.39 |

```
EOF:36
0:
LINES:36 ASCII
```

TABLE 2

| | MEAN | STD. DEVIATION |
|---|---|---|
| Placer 1 | 2.27 | 2.26 |
| Chemex | 2.39 | 2.21 |
| General | 2.88 | 2.55 |
| Placer 2 | | |

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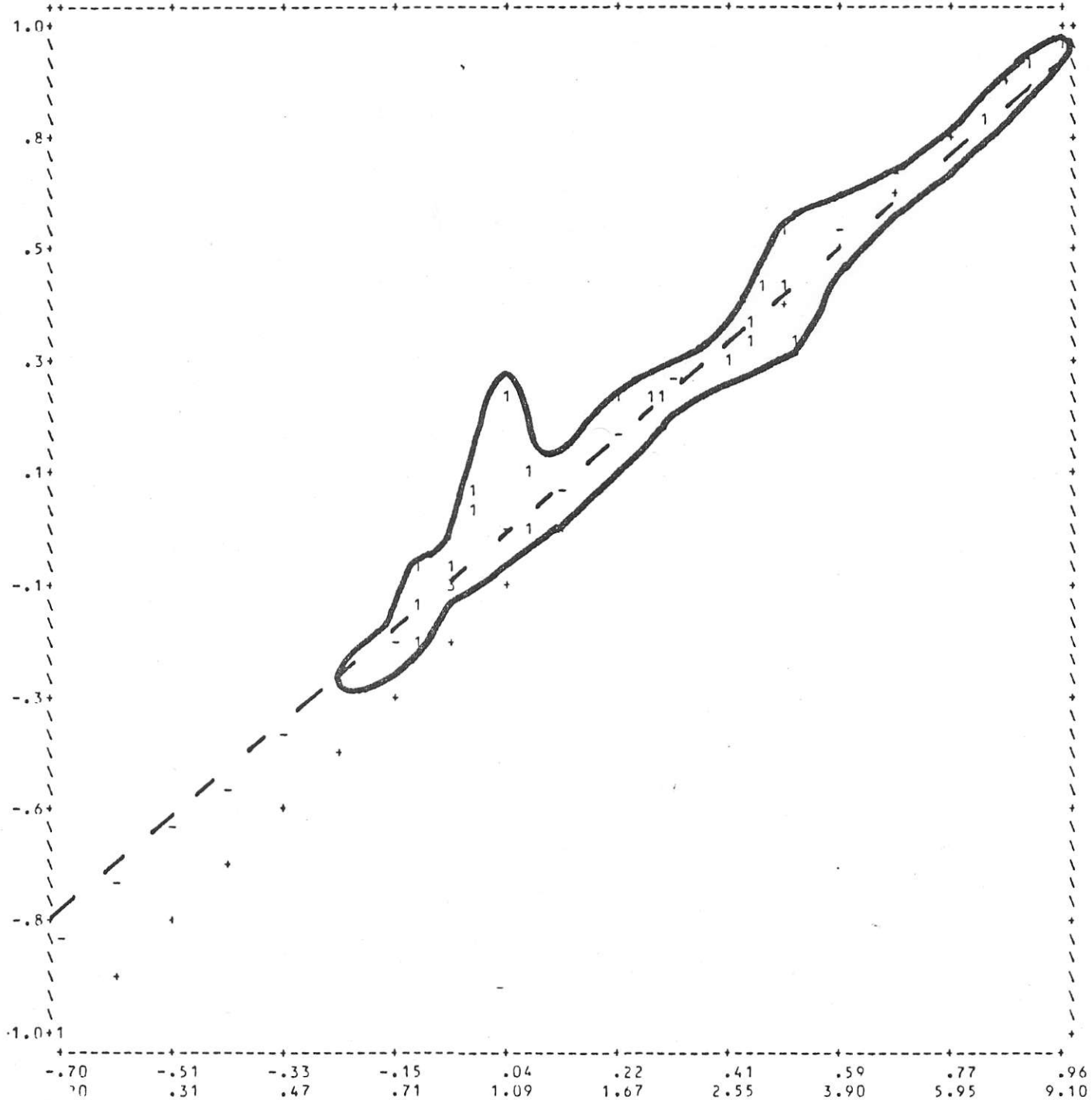
SCATTER PLOT FOR: PLACER FOR PLACER

Fig. 1

RUN ON 82:03:16 - 14:50:24

28 RECORDS ACCEPTED FROM INPUT: ( 0 READ ERRORS, 0 NULL VALUES 0 REJECTED BY IDTST)




PLOT SUMMARY

28 VALUES READ
0 VALUES>MAX
0 VALUES<MIN
28 PLOTTED

* = 10 OR MORE
\+ = 1:1 LINE
\- = LEAST-SQUARE LINE Y=A+BX

DATA RANGES

| | | |
|---|---|---|
| X: | -.7 | 1.0 |
| Y: | -1.0 | 1.0 |

REGRESSION LINE

A = -.0408
B = 1.0699
VARIANCE .8631-002
STD. DEVIATION .9290-001
CORRELATION COEF .9755

PLOT INCREMENTS

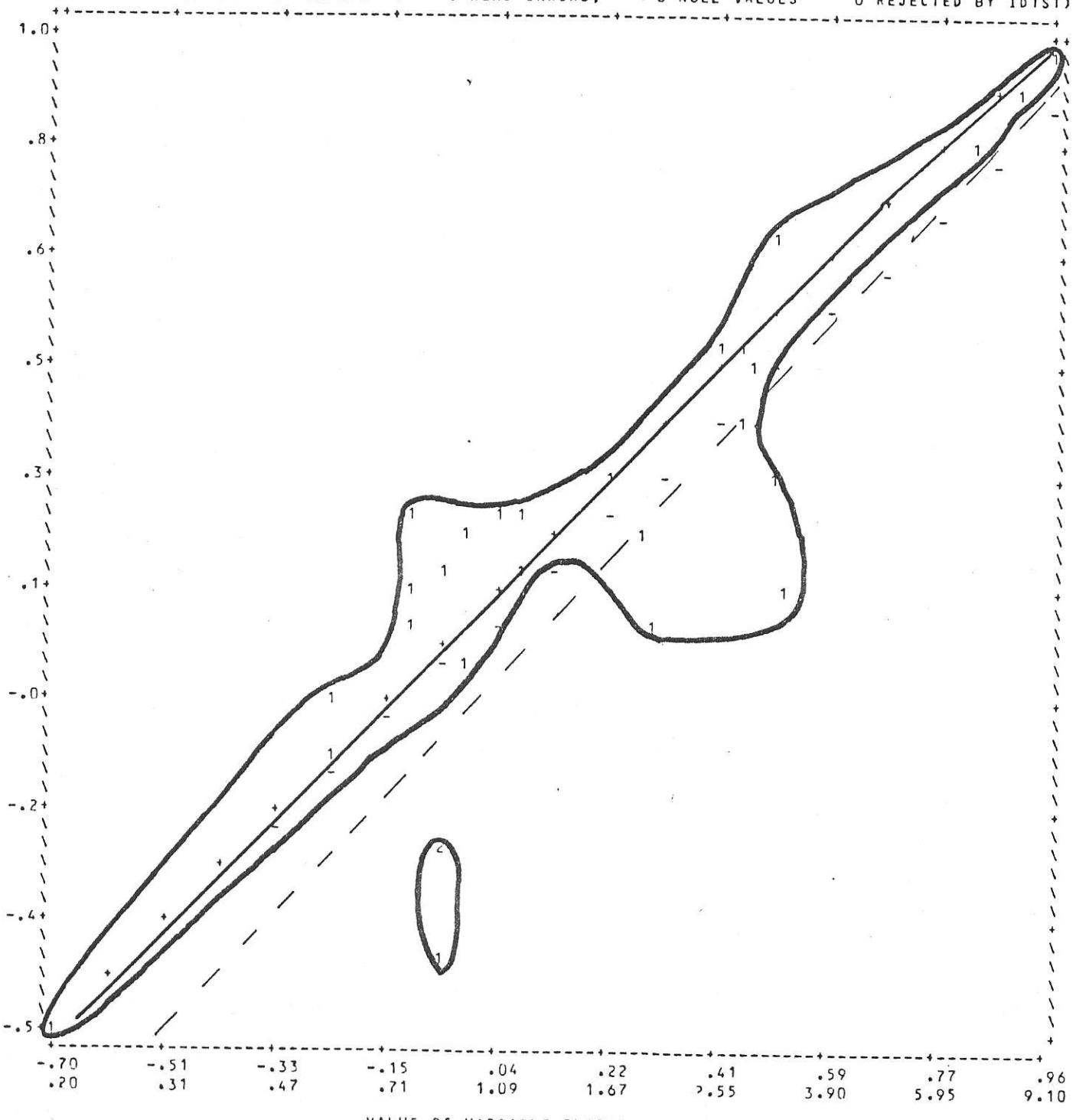
XINC: .0184
YINC: .0367

2-D SCATTER PLOT FOR: CHEMEX FOR PLACER

Fig. 2

RUN ON 82:03:16 - 11:08:28

28 RECORDS ACCEPTED FROM INPUT: ( 0 READ ERRORS, 0 NULL VALUES 0 REJECTED BY IDTST)




9.4

6.4

4.4

3.0

2.0

1.4

.9

.6

.4

.3

PLOT SUMMARY

28 VALUES READ
0 VALUES>MAX
0 VALUES<MIN
28 PLOTTED

* = 10 OR MORE
\+ = 1:1 LINE
\- = LEAST-SQUARE LINE Y=A+BX

DATA RANGES

| | | |
|---|---|---|
| X: | -.7 | 1.0 |
| Y: | -.5 | 1.0 |

REGRESSION LINE

A = .0768
B = .8233
VARIANCE .3119-001
STD. DEVIATION .1766
CORRELATION COEF .8734

PLOT INCREMENTS

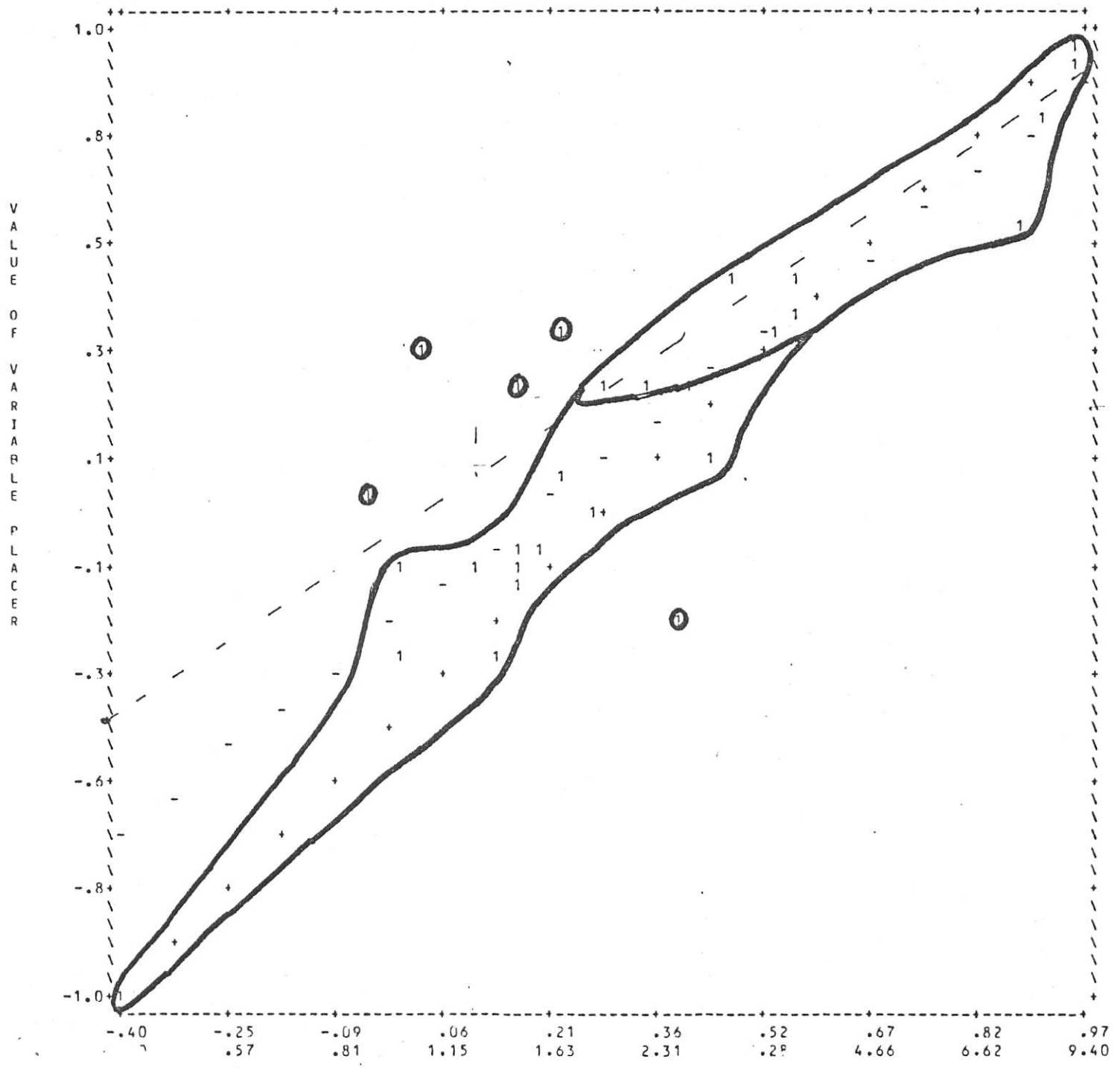
XINC: .0184
YINC: .0277

2-D SCATTER PLOT FOR: PLACER FOR GENERAL

Fig. 3.

RUN ON 82:03:16 - 11:08:28

28 RECORDS ACCEPTED FROM INPUT: ( 0 READ ERRORS, 0 NULL VALUES 0 REJECTED BY IDTST)




PLOT SUMMARY

28 VALUES READ
0 VALUES>MAX
0 VALUES<MIN
28 PLOTTED

* = 10 OR MORE
\+ = 1:1 LINE
\- = LEAST-SQUARE LINE Y=A+BX

DATA RANGES

| | | |
|---|---|---|
| X: | -.4 | 1.0 |
| Y: | -1.0 | 1.0 |

REGRESSION LINE

A = -.2040
B = 1.1130
VARIANCE .4182-001
STD. DEVIATION .2045
CORRELATION COEF .8747

PLOT INCREMENTS

XINC: .0152
YINC: .0367

TABLE 3.

***LOG ANALYSIS *** t-testp PLACER VS PLACER ASSAYS

NO. OF PAIRS : 27 MEAN DIFF : .0291 ST. DEV. OF DIFF. : .0962

T-VALUE IS : 1.5717 WITH 26 D.F. WHEN A DIFF. OF : .000 IS TESTED

THE PROBABILITY ASSOCIATED WITH A T-VALUE WITH ABSOLUTE VALUE 1.5717

IN THE TWO TAILS OF THE T-DISTRIBUTION IS : .1281

ACCEPT THE HYPOTHESIS THAT THE DIFFERENCE BETWEEN THE SAMPLE SETS IS .000
****** AT THE .05 CONFIDENCE LEVEL

***LOG ANALYSIS *** t-testp GENERAL VS CHEMEX ASSAYS

NO. OF PAIRS : 26 MEAN DIFF : .1012 ST. DEV. OF DIFF. : .1846

T-VALUE IS : 2.7959 WITH 25 D.F. WHEN A DIFF. OF : .000 IS TESTED

THE PROBABILITY ASSOCIATED WITH A T-VALUE WITH ABSOLUTE VALUE 2.7959

IN THE TWO TAILS OF THE T-DISTRIBUTION IS : .0098

REJECT THE HYPOTHESIS THAT THE DIFFERENCE BETWEEN THE SAMPLE SETS IS .000
****** AT THE .05 CONFIDENCE LEVEL

## TABLE 4.

***LOG ANALYSIS *** t-testp CHEMEX VS PLACER ASSAYS

NO. OF PAIRS : 27 MEAN DIFF : -.0436 ST. DEV. OF DIFF. : .1892

T-VALUE IS : -1.1979 WITH 26 D.F. WHEN A DIFF. OF : .000 IS TESTED

THE PROBABILITY ASSOCIATED WITH A T-VALUE WITH ABSOLUTE VALUE 1.1979

IN THE TWO TAILS OF THE T-DISTRIBUTION IS : .2418

ACCEPT THE HYPOTHESIS THAT THE DIFFERENCE BETWEEN THE SAMPLE SETS IS .000
****** AT THE .05 CONFIDENCE LEVEL

## TABLE 5.

***LOG ANALYSIS *** t-testp GENERAL VS PLACER ASSAYS

NO. OF PAIRS : 26 MEAN DIFF : .1780 ST. DEV. OF DIFF. : .2072

T-VALUE IS : 4.3798 WITH 25 D.F. WHEN A DIFF. OF : .000 IS TESTED

THE PROBABILITY ASSOCIATED WITH A T-VALUE WITH ABSOLUTE VALUE 4.3798

IN THE TWO TAILS OF THE T-DISTRIBUTION IS : .0002

REJECT THE HYPOTHESIS THAT THE DIFFERENCE BETWEEN THE SAMPLE SETS IS .000
****** AT THE .05 CONFIDENCE LEVEL