# GEOLOGY OF THE COOK PROPERTY

LOT 23, CONCESSION IX, CLARENDON TOWNSHIP
SOUTHEASTERN ONTARIO



ELIZABETH SHERLOCK

&

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SEPTEMBER TO OCTOBER, 1990

## SUMMARY

A program of geological mapping was conducted at the Cook Property between September 9-14, 1990. The Cook Property is located at lot 23, concession IX, Clarendon Township, Hastings County, Southeastern Ontario. Significant gold mineralization (best assay 0.2 opt Au) was found associated with quartz veining within a series of subparallel feldspar porphyry diorite dikes.

## INTRODUCTION

### LOCATION

During the period between September 9-14 a program of survey control and geological mapping was conducted at the Cook Property. The Cook Property is a gold prospect in south eastern Ontario, consisting of two claims (1091955 & 1091952) located in lot 23, concession IX Clarendon Township, Hastings County. The work was conducted by Elizabeth and Ross Sherlock.

### ACCESS

The property can be reached by travelling east from Fernleigh along the paved county road 506, approximately 3 km. At this point a gravel road heads south . Approximately 800 m along this road the # 1 post of claim 1091952 lies on the western side of the road.

## SURVEY CONTROL

During the period September 9-10 grid lines were established over the Cook Property. The lines were marked with pin flags which were latter retrieved at the completion of the project. The survey was completed using chain and compass from fixed locations. Each line was back referenced to the previous line at both the north and south boundaries. The grid lines were run approximately north south, spaced 100 m apart with stations flagged at 25 m intervals along each line. The grid lines are numbered 1 to 12 sequentially from the western margin to the eastern margin respectively.

## GEOLOGY

### REGIONAL GEOLOGY

The regional geology in the Ardoch area has been well documented by Pauk, (1981) only a brief description is given here. The Cook Property lies with the Central Metasedimentary Belt of the Grenville Province. Metavolcanics and metasediments of the Grenville Supergroup are the dominate rock types in the area. The area has been folded into a series of northeast trending antiform/synforms and metamorphosed to amphibolite facies.

### COOK PROPERTY

The Cook Property is underlain by dominantly calcareous, and dolomitic metasediments interlayered with mafic tuffs. During the geological mapping program the authors were able to distinguish 6 units;

(1) Dolomitic Marble Tuff (DMT) This unit consists of bedded dolomitic marble with mafic tuff. The dominate lithology is marble with the tuff forming small discontinuous lenses generally less than 5 cm thick. The marble is commonly in massive beds 5 to 20 cm thick. The marble is composed of dolomite, ± biotite. The mafic tuff is composed of biotite, hornblende, plagioclase feldspar, carbonate, ± muscovite.

(2) Marble Tuff (MAT) This unit consists of bedded marble with mafic tuff. The dominate lithology is the marble with the tuff forming small discontinuous lenses generally less than 2 cm thick. The marble is commonly in thin beds less than 10 cm thick and is locally strongly deformed. The marble is composed of iron carbonate, ± biotite. The mafic tuff is composed of biotite, hornblende, plagioclase feldspar, carbonate, ± muscovite.

(3) Mafic Tuff (MT) This unit consists of well foliated mafic tuff. The unit is composed of biotite, hornblend, garnet, plagioclase, ± carbonate, ± muscovite.

(4) Amphibolite (AMP) This unit consists of a course grained amphibolite. The unit is composed of hornblende porphyoblasts, plagioclase, biotite, ± muscovite.

(5) Marble (M) This unit consists of a relatively pure massive marble. The unit is composed of iron carbonate with minor biotite.

(6) Feldspar Porphyry (FP) This unit consists of a feldspar porphyritic diorite. Whole rock data (Appendix 2) obtained from two samples indicate that this unit is a diorite - monzodiorite. The unit outcrops in only three localities, and hosts all the observed mineralization. The unit is

likely a dike swarm with three or more separate dikes striking subparallel to the local geology.

The mapping program was able to outline distinct packages of the metasediments. The dolomitic marble tuff is intercalated with the mafic tuff in the north western section of the claim (1091955). The marble tuff is intercalated with the amphibolite for the south eastern section of claim (1091955) and the bulk of claim (1091952). The south eastern section of claim (1091952) is underlain by massive marble interlayered with mafic tuff, and amphibolite.

The dolomitic to calcareous marble units are the most continuous over the claim group. The mafic tuff and amphibolite are traceable and continuous for over 400 m but tended to be lensoidal.

The feldspar porphyritic diorite outcrops in only three localities. The three outcrops form a straight line making it possible to interpret the unit as a single south east trending dike. However this interpretation would require the dike to cross cut the local geology making the intrusion a late feature. Due to the deformed and altered nature of the intrusive it is the interpretation of the authors that the intrusive was emplaced after the formation of the sedimentary units but before the regional metamorphism and tectonism. This indicates that the three outcrops are likely three separate, although related, feldspar porphyritic dikes. The dikes are subparallel to the local strata.

STRUCTURAL GEOLOGY

All the units mapped during this program have been deformed. The dominate fabric orientation is north-east dipping steeply to the north-west or south-east. This fabric is dominate in the area and is seen in all the lithologies throughout the map area and is termed S1.

A second latter fabric termed S2 is identified in the western portion of the map area. The S2 orientation is north by north-east and obviously folded the S1 fabric.

Abundant micro folds are seen in all the sedimentary units but most commonly in the marble tuff. These are small wavelength folds (<10 cm) with axis trending north-east sub-parallel to the S1 direction.

ECONOMIC GEOLOGY

Quartz veins were mapped and sampled from various locations throughout the property (see map for locations). With the exception of the quartz veins hosted within the feldspar porphyry, the quartz veins are barren.

Significant gold values are obtained from the feldspar porphyry (Appendix 1). The porphyry is extensively fractured and veined with shallow dipping quartz veins. The mineralization is dominantly arsenopyrite with minor pyrite, chalcopyrite and gold.

Seven of the twenty-six assays returned gold concentration greater than 1 ppm gold (Appendix 1). One sample (C-5) was from the showing at line 7 @ 00 + 40 m east. The rest of the samples with gold values greater than 1 ppm were from the test pit area at line 10 @ 120 m + 30 m east.

## RECOMENDATIONS

The results of the geological mapping and assay results indicate that the target area for gold mineralization is the diorite dikes. Since a large area of the best potential mineralization lies under a farmers field the best approach would be a geophysical prospecting program to outline buried mineralization. The second phase of this project was a mag and VLF survey of the claims, the mag result showed no anomaly in the target area but the VLF indicated several strong anomalies beneath the field. To fully characterise these anomalies it is recommended that addition geophysical surveys be carried out. The best results would be obtained from EM or and IP survey.

In addition to geophysics a soil sampling program should be conducted over the farmers field. Since the gold mineralization is associated with aresenopyrite an arsenic anomaly would likely indicate buried mineralization.

## REFERENCES


Pauk, L.

1987:Geology of the Ardoch Area, Frontenac County, Ontario Geological Survey Report 241, 57 p. Accompanied by map 2541, scale 1:31 680

# APPENDIX 1

## ASSAY RESULTS AND SAMPLE DESCRIPTION

| SAMPLE | Au PPB | Ag PPM | Cu PPM | Pb PPM | Zn PPM | As PPM | Sb PPM |
|---|---|---|---|---|---|---|---|
| C-1 | < 1 | 0.1 | 8.2 | 4 | 3.7 | 7 | < 5 |
| C-2 | < 1 | 0.2 | 9.8 | < 2 | 7.3 | 20 | < 5 |
| C-3 | < 1 | < 0.1 | 4.4 | < 2 | 3.1 | 10 | < 5 |
| C-4 | < 1 | < 0.1 | 5.9 | < 2 | 3.7 | 54 | < 5 |
| C-5 | 1300 | 0.1 | 36.6 | 3 | 9.4 | 18500 | 10 |
| C-6 | 31 | 0.2 | 72.2 | < 2 | 64.3 | 975 | 5 |
| C-7 | 150 | 0.2 | 18.0 | < 2 | 29.3 | 3170 | 13 |
| C-8 | 54 | 0.3 | 124.0 | < 2 | 68.2 | 1710 | 9 |
| C-9 | 59 | 0.1 | 10.7 | 3 | 7.7 | 3070 | < 5 |
| C-10 | 42 | 0.2 | 40.2 | < 2 | 52.3 | 5370 | 8 |
| C-11 | 260 | 0.1 | 41.5 | < 2 | 31.5 | 4340 | 9 |
| C-12 | 6 | < 0.1 | 6.1 | < 2 | 16.0 | 1230 | < 5 |
| C-13 | 460 | 0.2 | 103.0 | < 2 | 39.6 | 10700 | 11 |
| C-14 | 68 | 0.1 | 26.6 | < 2 | 3.4 | 5860 | 5 |
| C-15 | 2100 | < 0.1 | 26.8 | < 2 | 7.1 | 9620 | 8 |
| C-16 | 12 | 0.6 | 20.6 | < 2 | 3.8 | 500 | < 2 |
| C-17 | 2 | 0.4 | 12.3 | < 2 | 2.6 | 120 | < 5 |
| C-19 | 6700 | 0.3 | 379.0 | < 2 | 29.5 | 16500 | 43 |
| C-20 | 6500 | 0.3 | 198.0 | 2 | 27.5 | 63730 | 18 |
| C-22 | 300 | 0.5 | 59.3 | < 2 | 28.4 | 5860 | 11 |
| C-23 | 2900 | 0.2 | 19.1 | 4 | 16.6 | 13400 | 16 |
| C-24 | 470 | 0.4 | 74.8 | < 2 | 33.7 | 7890 | 9 |
| C-25 | 6800 | 0.3 | 95.4 | 13 | 20.0 | 204900 | 63 |
| C-26 | 2600 | 0.3 | 51.8 | 4 | 18.1 | 11200 | 32 |
| C-27 | 6200 | 0.4 | 358.0 | 10 | 24.1 | 91600 | 49 |
| C-28 | 660 | 0.2 | 20.7 | < 2 | 36.2 | 13700 | 15 |

## COOK PROPERTY SAMPLES

| | |
|---|---|
| C - 1 | line 2 at 115 + 50m east<br>quartz vein at $48^0$ dipping $52^0$ in calcareous tuff |
| C - 2 | line 1 at 143<br>bull white quartz vein with muscovite in boulder |
| C - 3 | line 6 at 310<br>quartz vein with arsenopyrite in boulder |
| C - 4 | line 7 at 100<br>bull white quartz vein in coarse-grained tuff |
| C - 5 | line 7 at 00 + 40m east<br>trench approx. 10m north of line<br>quartz vein with arsenopyrite and pyrite in feldspar porphyry |
| C - 6 | line 6 at 00 + 25m east<br>boulder of silicified feldspar porphyry |
| C - 7 | line 7 at 00<br>trench<br>quartz vein with arsenopyrite in silicified feldspar porphyry<br>same as sample Cook #3 collected spring 1990 |
| C - 8 | line 7 at 00<br>trench<br>same as sample C - 7 |
| C - 9 | line 7 at 00<br>trench<br>quartz vein with arsenopyrite in feldspar porphyry |
| C - 10 | line 7 at 00<br>trench<br>feldspar porphyry with arsenopyrite |
| C - 11 | line 7 at 00<br>trench<br>silicified feldspar porphyry with arsenopyrite |
| C - 12 | line 7 at 00<br>trench<br>quartz and silicified feldspar porphyry with arsenopyrite |
| C - 13 | line 7 at 00 + 40m east<br>trench<br>silicified feldspar porphyry with arsenopyrite |

| | |
|---|---|
| C - 14 | line 7 at 00 + 40m east<br>trench<br>same as sample C - 5 |
| C - 15 | line 7 at 00 + 40m east<br>trench<br>quartz vein with arsenopyrite in felspar porphyry |
| C - 16 | line 12 at 243 + 40m east<br>trench<br>quartz vein in feldspar porphyry |
| C -17 | line 12 at 243 + 40m east<br>trench<br>quartz vein in feldspar porphyry |
| C - 18 | line 12 at 243 + 40m east<br>diorite |
| C - 19 | line 10 at 120 + 30m east<br>shaft<br>feldspar porphyry with arsenopyrite in shaft |
| C- 20 | line 10 at 120 + 30m east<br>shaft<br>feldspar porphyry with arsenopyrite in shaft |
| C -21 | line 10 at 120+ 30m east<br>shaft<br>feldspar porphyry from dump |
| C - 22 | line 10 at 120 + 30m east<br>shaft<br>feldspar porphyry with arsenopyrite in shaft |
| C - 23 | line 10 at 120 + 30m east<br>shaft<br>quartz vein with arsenopyrite in feldspar porphyry in shaft |
| C - 24 | line 10 at 120 + 30m east<br>shaft<br>carbonate (dolomitic) vein with arsenopyrite in feldspar porphyry from dump |
| C -25 | line 10 at 120 + 30m east<br>shaft<br>quartz vein with arsenopyrite in feldspar porphyry in shaft |
| C - 26 | line 10 at 120 + 30m east<br>same as sample C - 25 |

C -27 line 10 at 120 + 30m east
same as sample C - 25

C -28 line 10 at 120 + 30m east
feldspar porphyry with arsenopyrite and dolomitic veins from dump

XRAL

# X-RAY ASSAY LABORATORIES

A DIVISION OF SGS SUPERVISION SERVICES INC.
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## CERTIFICATE OF ANALYSIS

## REPORT 13354

TO: ROSS SHERLOCK
17 1/2 DILL STREET
KITCHENER, ONTARIO
N26 1L2

CUSTOMER No. 1833

DATE SUBMITTED
17-Sep-90

REF. FILE 8414-N2

Total Pages 5

28 ROCKS

| | METHOD | DETECTION LIMIT |
|---|---|---|
| AU PPB | FADCP | 1. |
| LI PPM | ICP | 1. |
| BE PPM | ICP | 0.5 |
| B PPM | ICP | 2. |
| WRMAJ % | WR | 0.01 |
| SC PPM | ICP | 0.1 |
| V PPM | ICP | 0.5 |
| CR PPM | ICP | 1. |
| CO PPM | ICP | 1. |
| NI PPM | ICP | 1. |
| CU PPM | ICP | 0.5 |
| CU PPM | XRF | 10. |
| ZN PPM | ICP | 0.5 |
| ZN PPM | XRF | 10. |
| AS PPM | ICP | 3. |

| | METHOD | DETECTION LIMIT |
|---|---|---|
| SE PPM | ICP | 20. |
| WRMIN PPM | WR | 10. |
| SR PPM | ICP | 0.1 |
| Y PPM | ICP | 0.1 |
| ZR PPM | ICP | 0.5 |
| MO PPM | ICP | 1. |
| AG PPM | ICP | 0.1 |
| CD PPM | ICP | 1. |
| SN PPM | ICP | 10. |
| SB PPM | ICP | 5. |
| BA PPM | ICP | 1. |
| W PPM | ICP | 10. |
| PB PPM | ICP | 2. |
| PB PPM | XRF | 10. |

*** UNLESS INSTRUCTED OTHERWISE WE WILL DISCARD PULPS 90 DAYS ***
AND REJECTS 30 DAYS FROM DATE OF THIS REPORT

DATE 05-OCT-90

CERTIFIED BY ........................
Philip Boctor, Laboratory Manager

| SAMPLE | AU PPB | LI PPM | BE PPM | B PPM | SC PPM | V PPM | CR PPM | CO PPM | NI PPM |
|---|---|---|---|---|---|---|---|---|---|
| C-1 | <1 | 7 | 0.7 | 6 | 1.2 | 8.0 | 250 | 3 | 6 |
| C-2 | <1 | 4 | <0.5 | 6 | 0.3 | 8.4 | 276 | 2 | 10 |
| C-3 | <1 | 6 | <0.5 | 6 | 1.4 | 11.9 | 195 | 2 | 6 |
| C-4 | <1 | 3 | <0.5 | 3 | 0.2 | 5.3 | 205 | 1 | 6 |
| C-5 | 1300 | 5 | <0.5 | 19 | 0.2 | 4.6 | 270 | 60 | 26 |
| C-6 | 31 | 71 | 1.5 | 4 | 13.0 | 150. | 109 | 17 | 33 |
| C-7 | 150 | 55 | 2.5 | 14 | 11.6 | 73.2 | 90 | 16 | 16 |
| C-8 | 54 | 93 | 1.9 | 13 | 18.4 | 160. | 167 | 30 | 67 |
| C-9 | 59 | 11 | 0.6 | 9 | 2.7 | 22.3 | 226 | 8 | 12 |
| C-10 | 42 | 67 | 2.2 | 12 | 17.7 | 149. | 79 | 34 | 49 |
| C-11 | 260 | 44 | 2.0 | 16 | 10.9 | 74.4 | 144 | 25 | 24 |
| C-12 | 6 | 26 | 0.8 | 4 | 3.8 | 48.8 | 196 | 9 | 23 |
| C-13 | 460 | 20 | 1.4 | 6 | 8.4 | 53.8 | 113 | 14 | 26 |
| C-14 | 68 | 2 | <0.5 | 8 | <0.1 | 3.9 | 221 | 13 | 8 |
| C-15 | 2100 | 5 | <0.5 | 12 | 0.3 | 4.7 | 236 | 17 | 98 |
| C-16 | 12 | 4 | <0.5 | <2 | 0.3 | 2.8 | 277 | 1 | 7 |
| C-17 | 2 | 3 | <0.5 | <2 | <0.1 | 1.2 | 234 | <1 | 5 |
| C-18 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| C-19 | 6700 | 26 | 1.8 | 26 | 7.7 | 182. | 61 | 101 | 77 |
| C-20 | 6500 | 23 | 2.1 | 12 | 10.6 | 131. | 73 | 69 | 70 |
| C-21 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| C-22 | 300 | 24 | 1.9 | 2 | 12.6 | 119. | 55 | 19 | 24 |
| C-23 | 2900 | 9 | 0.6 | <2 | 4.5 | 35.5 | 214 | 47 | 31 |
| C-24 | 470 | 28 | 2.1 | <2 | 13.3 | 129. | 57 | 24 | 35 |
| C-25 | 6800 | 10 | 0.7 | 2 | 2.3 | 23.1 | 168 | 108 | 154 |
| C-26 | 2600 | 5 | 1.0 | <2 | 4.3 | 21.3 | 183 | 37 | 60 |
| C-27 | 6200 | 3 | 0.8 | <2 | 2.4 | <0.5 | 185 | 52 | 107 |
| C-28 | 660 | 48 | 2.1 | 3 | 16.5 | 181. | 72 | 31 | 50 |

| SAMPLE | CU PPM | CU PPM | ZN PPM | ZN PPM | AS PPM | SE PPM | SR PPM | Y PPM | ZR PPM |
|---|---|---|---|---|---|---|---|---|---|
| C-1 | 8.2 | -- | 3.7 | -- | 7 | <20 | 9.6 | 5.6 | 1.6 |
| C-2 | 9.8 | -- | 7.3 | -- | 20 | <20 | 3.1 | 0.9 | 1.2 |
| C-3 | 4.4 | -- | 3.1 | -- | 10 | <20 | 1.1 | 3.2 | 1.1 |
| C-4 | 5.9 | -- | 3.7 | -- | 54 | <20 | 1.2 | 0.5 | 1.7 |
| C-5 | 36.6 | -- | 9.4 | -- | 18500 | <20 | 1.5 | 0.7 | 1.7 |
| C-6 | 72.2 | -- | 64.3 | -- | 975 | <20 | 217. | 10.7 | 174. |
| C-7 | 18.0 | -- | 29.3 | -- | 3170 | <20 | 398. | 18.0 | 167. |
| C-8 | 124. | -- | 68.2 | -- | 1710 | <20 | 242. | 15.8 | 150. |
| C-9 | 10.7 | -- | 7.7 | -- | 3070 | <20 | 23.8 | 3.3 | 16.5 |
| C-10 | 40.2 | -- | 52.3 | -- | 5370 | <20 | 292. | 15.6 | 163. |
| C-11 | 41.5 | -- | 31.5 | -- | 4340 | <20 | 401. | 11.9 | 178. |
| C-12 | 6.1 | -- | 16.0 | -- | 1230 | <20 | 114. | 6.5 | 88.3 |
| C-13 | 103. | -- | 39.6 | -- | 10700 | <20 | 195. | 9.6 | 62.5 |
| C-14 | 26.6 | -- | 3.4 | -- | 5860 | <20 | 1.7 | 0.1 | 1.0 |
| C-15 | 26.8 | -- | 7.1 | -- | 9620 | <20 | 1.4 | 0.3 | 1.3 |
| C-16 | 20.6 | -- | 3.8 | -- | 500 | <20 | 2.9 | <0.1 | 1.6 |
| C-17 | 12.3 | -- | 2.6 | -- | 120 | <20 | 1.4 | <0.1 | <0.5 |
| C-18 | -- | 44 | -- | 97 | -- | -- | -- | -- | -- |
| C-19 | 379. | -- | 29.5 | -- | 16500 | <20 | 176. | 6.2 | 42.2 |
| C-20 | 198. | -- | 27.5 | -- | 63730 | <20 | 212. | 11.3 | 88.6 |
| C-21 | -- | <10 | -- | 66 | -- | -- | -- | -- | -- |
| C-22 | 59.3 | -- | 28.4 | -- | 5860 | <20 | 262. | 15.7 | 125. |
| C-23 | 19.1 | -- | 16.6 | -- | 13400 | <20 | 75.6 | 5.7 | 37.0 |
| C-24 | 74.8 | -- | 33.7 | -- | 7890 | <20 | 265. | 16.4 | 147. |
| C-25 | 95.4 | -- | 20.0 | -- | 204900 | <20 | 34.5 | 2.5 | 22.9 |
| C-26 | 51.8 | -- | 18.1 | -- | 11200 | <20 | 84.6 | 4.5 | 23.8 |
| C-27 | 358. | -- | 24.1 | -- | 91600 | <20 | 44.3 | 2.4 | 3.4 |
| C-28 | 20.7 | -- | 36.2 | -- | 13700 | <20 | 336. | 17.1 | 141. |

| SAMPLE | MO PPM | AG PPM | CD PPM | SN PPM | SB PPM | BA PPM | W PPM | PB PPM | PB PPM |
|---|---|---|---|---|---|---|---|---|---|
| C-1 | 19 | 0.1 | <1 | <10 | <5 | 9 | <10 | 4 | -- |
| C-2 | 21 | 0.2 | <1 | <10 | <5 | 3 | <10 | <2 | -- |
| C-3 | 14 | <0.1 | <1 | <10 | <5 | 3 | <10 | <2 | -- |
| C-4 | 17 | <0.1 | <1 | <10 | <5 | 2 | <10 | <2 | -- |
| C-5 | 18 | 0.1 | <1 | <10 | 10 | 4 | <10 | 3 | -- |
| C-6 | 3 | 0.2 | <1 | <10 | 5 | 227 | <10 | <2 | -- |
| C-7 | 3 | 0.2 | <1 | <10 | 13 | 122 | <10 | <2 | -- |
| C-8 | 3 | 0.3 | <1 | <10 | 9 | 386 | <10 | <2 | -- |
| C-9 | 15 | 0.1 | <1 | <10 | <5 | 44 | <10 | 3 | -- |
| C-10 | 2 | 0.2 | <1 | <10 | 8 | 352 | <10 | <2 | -- |
| C-11 | 4 | 0.1 | <1 | <10 | 9 | 102 | <10 | <2 | -- |
| C-12 | 11 | <0.1 | <1 | <10 | <5 | 99 | <10 | <2 | -- |
| C-13 | 7 | 0.2 | <1 | <10 | 11 | 62 | <10 | 3 | -- |
| C-14 | 17 | 0.1 | <1 | <10 | 5 | 2 | <10 | <2 | -- |
| C-15 | 15 | <0.1 | <1 | <10 | 8 | 9 | <10 | <2 | -- |
| C-16 | 18 | 0.6 | <1 | <10 | <5 | 4 | <10 | <2 | -- |
| C-17 | 15 | 0.4 | <1 | <10 | <5 | 2 | <10 | <2 | -- |
| C-18 | -- | -- | -- | -- | -- | -- | -- | -- | <10 |
| C-19 | 2 | 0.3 | <1 | <10 | 43 | 165 | <10 | <2 | -- |
| C-20 | 1 | 0.3 | <1 | <10 | 18 | 203 | <10 | 2 | -- |
| C-21 | -- | -- | -- | -- | -- | -- | -- | -- | <10 |
| C-22 | 1 | 0.5 | <1 | <10 | 11 | 233 | <10 | <2 | -- |
| C-23 | 13 | 0.2 | <1 | <10 | 16 | 73 | <10 | 4 | -- |
| C-24 | 2 | 0.4 | <1 | <10 | 9 | 324 | <10 | <2 | -- |
| C-25 | 8 | 0.3 | <1 | <10 | 63 | 52 | <10 | 13 | -- |
| C-26 | 10 | 0.3 | <1 | <10 | 32 | 47 | <10 | 4 | -- |
| C-27 | 10 | 0.4 | <1 | <10 | 49 | 11 | <10 | 10 | -- |
| C-28 | 1 | 0.2 | <1 | <10 | 15 | 746 | <10 | <2 | -- |

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| SAMPLE \ % | SIO2 | AL2O3 | CAO | MGO | NA2O | K2O | FE2O3 | MNO | TIO2 | P2O5 | CR2O3 | LOI | SUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C-18 | 52.6 | 15.7 | 7.23 | 6.27 | 3.99 | 0.27 | 8.63 | 0.08 | 1.38 | 0.29 | 0.04 | 3.31 | 99.9 |
| C-21 | 52.0 | 18.3 | 3.69 | 4.00 | 6.01 | 1.61 | 9.22 | 0.09 | 1.42 | 0.32 | <0.01 | 2.77 | 99.6 |

XRF W.R.A. SUMS INCLUDE ALL ELEMENTS DETERMINED. FOR SUMMATION, ELEMENTS ARE CALCULATED AS OXIDES

| SAMPLE \ PPM | RB | SR | Y | ZR | NB | BA |
|---|---|---|---|---|---|---|
| C-18 | <10 | 268 | 17 | 196 | <10 | 100 |
| C-21 | 49 | 300 | 21 | 188 | <10 | 741 |

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# APPENDIX 2

## WHOLE ROCK DATA

## Rock Number- C-18

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Si02 | 52.60 | A1203 | 15.70 | Fe203 | 8.63 | FeO | 0.00 | MgO | 6.27 | CaO | 7.23 |
| Na20 | 3.99 | K20 | 0.27 | Ti02 | 1.38 | P205 | 0.29 | MnO | 0.08 | | |

Sum of Oxide Values= 96.44

### Oxide-Silica Ratios

| | |
|---|---|
| A1203/Si02 | 0.2985 |
| Fe203/Si02 | 0.1641 |
| FeO/Si02 | 0.0000 |
| MgO/Si02 | 0.1192 |
| CaO/Si02 | 0.1375 |
| Na20/Si02 | 0.0759 |
| K20/Si02 | 0.0051 |

### Oxide Alumina Ratios

| | |
|---|---|
| Fe203/A1203 | 0.5497 |
| FeO/A1203 | 0.0000 |
| MgO/A1203 | 0.3994 |
| CaO/A1203 | 0.4605 |
| Na20/A1203 | 0.2541 |
| K20/A1203 | 0.0172 |

### Other Ratios

| | | | | | |
|---|---|---|---|---|---|
| K20/Na20 | 0.0677 | | | | |
| Na20/K20 | 14.7778 | | | | |
| FeO* | 7.7670 | | | | |
| FeO*/MgO | 1.2388 | | | | |
| Na20:K20:Si02 | 7.0172 | : | 0.4749 | : | 92.5079 |
| Na20+K20:FeO:MgO | 40.4558 | : | 0.0000 | : | 59.5442 |
| A:F:M | 23.2825 | : | 42.4496 | : | 34.2679 |

### Mole Values

| | |
|---|---|
| Si | 0.8754 |
| Al | 0.1540 |
| Fe+3 | 0.0540 |
| Fe+2 | 0.0000 |
| Mg | 0.1556 |
| Ca | 0.1289 |
| Na | 0.0644 |
| K | 0.0029 |
| Ti | 0.0173 |
| P | 0.0020 |
| Mn | 0.0011 |

### Niggli Numbers

| | |
|---|---|
| AL | 27.4538 |
| FM | 37.5713 |
| C | 22.9858 |
| ALK | 11.9891 |
| SI | 156.0772 |
| K | 0.0426 |
| MG | 0.7382 |
| TI | 3.0794 |
| P | 0.3643 |

## Normative Minerals

| | |
|---|---|
| QUARTZ | 6.4599 |
| ORTHOCLASE | 1.5958 |
| ALBITE | 33.7615 |
| ANORTHITE | 24.1311 |
| DIOPSIDE | 4.1659 |
| HYPERSTHENE | 13.6859 |
| HEMATITE | 8.6298 |
| ILMENITE | 0.1711 |
| SPHENE | 3.1653 |
| APATITE | 0.6869 |

SUM= 96.4532

| | |
|---|---|
| WOLLASTONITE(DIOPSIDE) | 2.2346 |
| ENSTATITE(DIOPSIDE) | 1.9313 |
| ENSTATITE(HYPERSTHENE) | 13.6859 |

## Normative Ratios-CIPW

| | | | | |
|---|---|---|---|---|
| Q:OR:AB:AN | 9.80 : | 2.42 : | 51.19 : | 36.59 |
| OR:AB:AN | 2.68 : | 56.75 : | 40.56 | |
| Q:OR:AB | 15.45 : | 3.82 : | 80.74 | |
| Q:F:M | 7.15 : | 64.36 : | 28.49 | |

Normative Plagioclase= AN 41.68

## Petrologic Indices

| | |
|---|---|
| Alkali Index | 6.34 |
| Felsic Index | 37.08 |
| Mafic Index | 57.92 |
| Alkalinity Ratio | 1.46 |
| Basicity Index | 15.38 |
| Solidification Index | 34.27 |
| Normative Color Index | 26.65 |
| Crystallization Index | 37.89 |
| Differentiation Index | 41.82 |

## Rock Number- C-21

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Si02 | 52.00 | A1203 | 18.30 | Fe203 | 9.22 | FeO | 0.00 | MgO | 4.00 | CaO | 3.69 |
| Na20 | 6.01 | K20 | 1.61 | Ti02 | 1.42 | P205 | 0.32 | MnO | 0.09 | | |

Sum of Oxide Values= 96.66

### Oxide-Silica Ratios

| | |
|---|---|
| A1203/Si02 | 0.3519 |
| Fe203/Si02 | 0.1773 |
| FeO/Si02 | 0.0000 |
| MgO/Si02 | 0.0769 |
| CaO/Si02 | 0.0710 |
| Na20/Si02 | 0.1156 |
| K20/Si02 | 0.0310 |

### Oxide Alumina Ratios

| | |
|---|---|
| Fe203/A1203 | 0.5038 |
| FeO/A1203 | 0.0000 |
| MgO/A1203 | 0.2186 |
| CaO/A1203 | 0.2016 |
| Na20/A1203 | 0.3284 |
| K20/A1203 | 0.0880 |

### Other Ratios

| | | | | | |
|---|---|---|---|---|---|
| K20/Na20 | 0.2679 | | | | |
| Na20/K20 | 3.7329 | | | | |
| FeO* | 8.2980 | | | | |
| FeO*/MgO | 2.0745 | | | | |
| Na20:K20:Si02 | 10.0805 | : | 2.7004 | : | 87.2191 |
| Na20+K20:FeO:MgO | 65.5766 | : | 0.0000 | : | 34.4234 |
| A:F:M | 38.2569 | : | 41.6608 | : | 20.0823 |

### Mole Values

| | |
|---|---|
| Si | 0.8654 |
| Al | 0.1795 |
| Fe+3 | 0.0577 |
| Fe+2 | 0.0000 |
| Mg | 0.0992 |
| Ca | 0.0658 |
| Na | 0.0970 |
| K | 0.0171 |
| Ti | 0.0178 |
| P | 0.0023 |
| Mn | 0.0013 |

### Niggli Numbers

| | |
|---|---|
| AL | 34.6766 |
| FM | 30.5734 |
| C | 12.7125 |
| ALK | 22.0375 |
| SI | 167.2013 |
| K | 0.1499 |
| MG | 0.6271 |
| TI | 3.4337 |
| P | 0.4355 |

## Normative Minerals

| | |
|---|---|
| CORUNDUM | 0.7267 |
| ORTHOCLASE | 9.5158 |
| ALBITE | 50.8537 |
| ANORTHITE | 16.2171 |
| HYPERSTHENE | 2.9776 |
| OLIVINE | 4.8952 |
| HEMATITE | 9.2198 |
| ILMENITE | 0.1925 |
| RUTILE | 1.3187 |
| APATITE | 0.7580 |

SUM= 96.6750

| | |
|---|---|
| ENSTATITE(HYPERSTHENE) | 2.9776 |
| FORSTERITE(OLIVINE) | 4.8952 |

## Normative Ratios-CIPW

| | | | | |
|---|---|---|---|---|
| Q:OR:AB:AN | 0.00 : | 12.42 : | 66.40 : | 21.17 |
| OR:AB:AN | 12.42 : | 66.40 : | 21.17 | |
| Q:OR:AB | 0.00 : | 15.76 : | 84.24 | |

Normative Plagioclase= AN 41.68

## Petrologic Indices

| | |
|---|---|
| Alkali Index | 21.13 |
| Felsic Index | 67.37 |
| Mafic Index | 69.74 |
| Alkalinity Ratio | 2.06 |
| Basicity Index | 13.07 |
| Solidification Index | 20.08 |
| Normative Color Index | 17.29 |
| Crystallization Index | 23.20 |
| Differentiation Index | 60.37 |

THE SAMPLES HAVE BEEN CLASSIFIED AS FOLLOWS:

| ROCK NUMBER | CLASSIFICATION |
| --- | --- |
| C-18 | QUARTZ DIORITE/GABBRO/ANORTHOSITE |
| C-21 | MONZODIORITE/MONZOGABBRO |

# CERTIFICATE OF QUALIFICATIONS

I, Elizabeth Jane Sherlock, hereby certify that:

1. I reside at 17 1/2 Dill St. Kitchener, Ontario N2G 1L2

2. I am a qualified geologist holding a H.B.Sc. in geology from McMaster University (1987)

3. I have been continuously engaged in my profession since 1985.

Elizabeth Sherlock

E.J. Sherlock
October 22, 1990

# CERTIFICATE OF QUALIFICATIONS

I, Ross Lawrence Sherlock, hereby certify that:

1. I reside at 17 1/2 Dill St. Kitchener, Ontario N2G 1L2

2. I am a qualified geologist holding a H.B.Sc. in geology from McMaster University (1986), a M.Sc. in economic geology from Lakehead University (1989) and am presently a doctoral candidate in economic geology at the University of Waterloo.

3. I have been continuously engaged in my profession since 1985.

R.L. Sherlock
October 22, 1990

# MAGNETIC AND VLF SURVEY OF THE COOK PROPERTY

LOT 23, CONCESSION IX, CLARENDON TOWNSHIP
SOUTHEASTERN ONTARIO

ELIZABETH SHERLOCK

&

ROSS SHERLOCK

SEPTEMBER TO OCTOBER, 1990

## SUMMARY

A geophysical (magnetic and VLF) survey was conducted at the Cook Property between September 18-22, 1990. The Cook Property is located at lot 23, concession IX, Clarendon Township, Hastings County, Southeastern Ontario. No significant magnetic anomaly was outlined in the course of the survey. There is five VLF anomalies identified in the north- east quadrant of the claim group. These anomalies are interpreted to be caused by a series of subparallel vein swarms, or veining hosted in a feldspar porphyry intrusive. It is recommended that further work be conducted to further define the cause of the anomaly.

## Introduction

During the period between September 18 to September 21, 1990 a proton precession magnetometer and a V.L.F. survey was conducted on the Cook Property. The Cook Property is located in lot 23, concession IX, Clarendon Township, Hastings County. The purpose of the survey was to provide information about geology, covered by till and to outline potential zones of mineralization. The survey was conducted by Ross and Elizabeth Sherlock.

## ACCESS

The property can be reached by travelling east from Fernleigh along the paved county road 506, approximately 3 km. At this point a gravel road heads south . Approximately 800 m along this road the # 1 post of claim 1091952 lies on the western side of the road.

## Survey Procedure

The geophysical survey used 11 lines of a previously established grid. The lines trend north-south, roughly perpendicular to the strike of the local geology. The lines were 100 m apart with stations every 25 m along each line. When the operators felt that increased resolution was required, additional stations were chosen in the area of interest.

The equipment used was a Scintrex IGS-2, which is an integrated instrument allowing both magnetic and VLF data to be acquired from the same control panel. During the survey the magnetometer was carried on a eight foot staff to minimize noise. The operator faced the same direction for all VLF readings. For the entire survey a single operator was used for consistency.

A base station was established within the grid at line 5 @ 00 m. Readings were taken at the base station approximately every 60 minutes, with a maximum time interval of 90 minutes between readings. This enabled the operators to establish the diurnal variation in the ambient magnetic field during the survey.

During the survey the total magnetic field, the in-phase, and quadrature phase components of the vertical VLF magnetic field were measured. For the VLF survey the transmitter was Cutler, Main (NAA 24.0 kHz). This station was chosen because it provided a strong signal and the electromagnetic wave was oriented perpendicular to the geological strike.

For the interpretation, the magnetic data was corrected for diurnal drift using the base station readings, and the data was plotted as N-S profiles and as the total field on a base map which was then contoured. Both the in-phase and quadrature components of the VLF data was plotted as N-S profiles, as well as on a separate base map.

## INTERPRETATION

### MAGNETIC DATA

An area with very low magnetic field is outlined in the area of line 2 @ 100 m (Appendix 1). This occurs over the dolomitic marble and is likely due to a decrease in the tuffaceous component. This does not appear to have any economic significance.

An area with high magnetic field is outlined in the area of line 8 @ 300 m. This occurs over an area that is interpreted to be marble tuff; the high does not continue across to the adjacent lines. This is an area with no outcrop so it is not possible to assess to significance of this anomaly. But due to the discontinuous nature of this anomaly and its orientation it is not likely to be significant.

An area with high magnetic field is outlined in the area of line 10 @ 350 m. This anomaly corresponds to a mapped mafic tuff and is likely due to an increase in the magnetite content of the tuff. It does not appear to have any economic significance.

The magnetic profiles across the area of known mineralization (line 7 to 10) show no anomaly in the mineralized area. This indicates that the magnetic technique is not a valid tool to map this type of mineralization, although it is useful in outlining the mafic tuff and associated structure.

## VLF DATA

The main VLF cross over is centered on top of the swampy area occupying the center of the map. This anomaly is due to the increased conductivity of the water saturated soil and has no economic significance.

A series of five VLF cross overs are outlined in the north-east quadrant of the survey area (Appendix 2). These anomalies are subparallel to each other and to the regional strata. The largest anomaly extends from line 9 @ 65m to line 10 + 50 @ 50 m. This is a very significant anomaly since it is continuous for at lest 150 m. It is considered a real anomaly, and it is located approximately 50 m north of known gold mineralization.

To model the anomaly the tilt angle and the ellipticity for line 9 were graphed on the same profile (Appendix 2). Upon comparing this profile with a series of models in the Scintrex VLF Interpretation Manual, it matches the profile for a vein structure. It is likely that this anomaly is due to a sulphide rich vein structure. Since there is no outcrop in this area it is not possible to directly test this anomaly under the present conditions. However the geological data suggests a series of subparallel diorite dikes that host the gold mineralization occur under the VLF anomaly. It is likely that these dikes are veined and mineralized similar to the outcropping of the dike at the test pit (line 10 @ 123 + 30 m). This would give rise to the observed VLF anomalies.

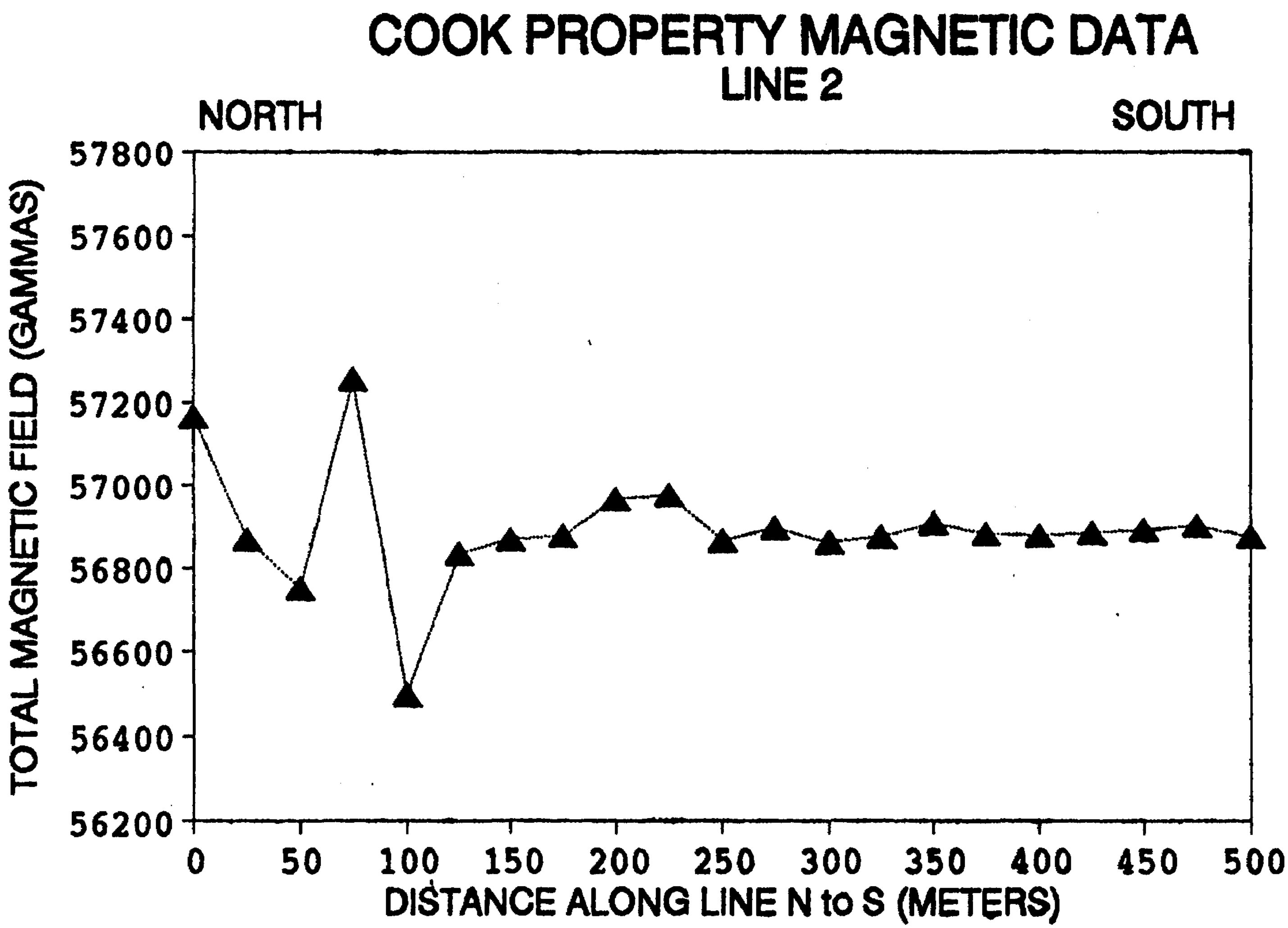
## RECOMMENDATIONS

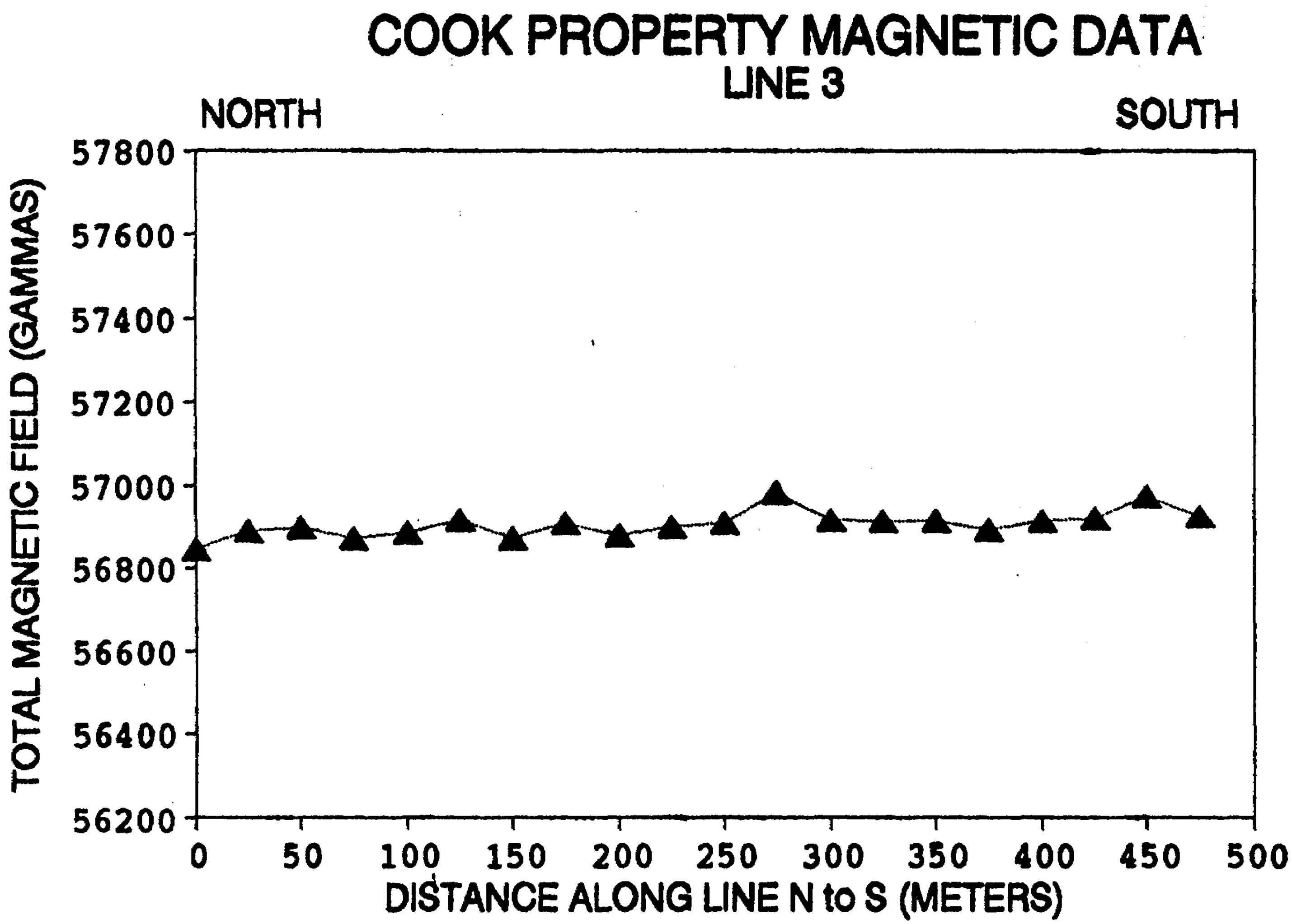
The VLF survey outlined five buried anomalies that warrent further work. Since the anomalies occur under a active farmers field, the anomalies should be further tested by non-destructive means. The best method would be a follow-up geophysical survey utilizing an EM technique or an IP survey. These techniques would better define the anomaly. The north-east quadrant of the claim group is the only area that warrants further work, so a detailed survey would be possible and yield high definition pseudosections.

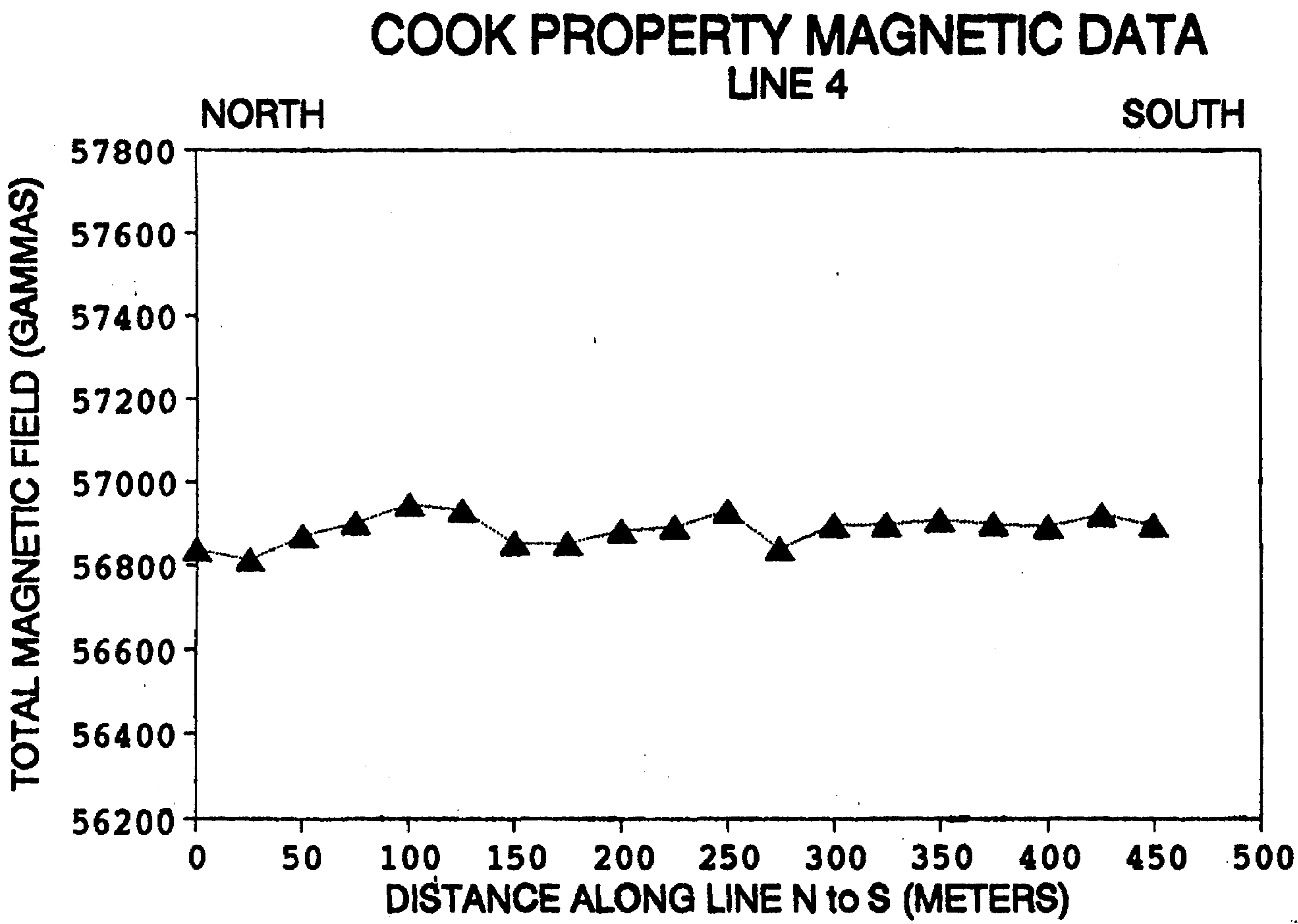
Another recommended survey is a follow-up soil survey over the anomaly. In the geological mapping program it was shown that the gold mineralization is associated with abundant arsenopyrite. This should lead to a large arsenic halo around any gold mineralization, making soil sampling a useful prospecting tool. A high definition soil survey combined with a follow-up geophysical EM survey should properly test the VLF anomaly.

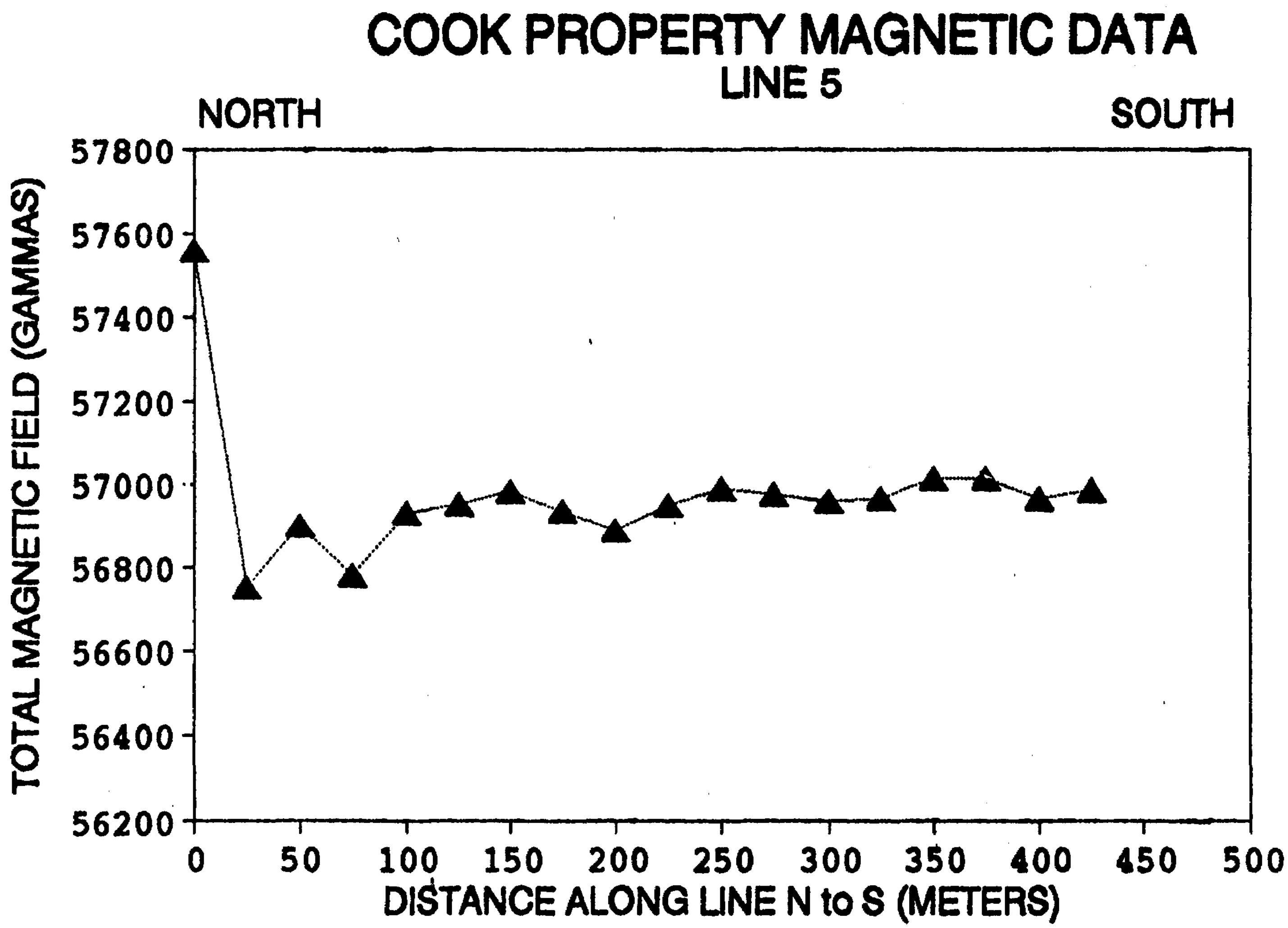
# APPENDIX 1

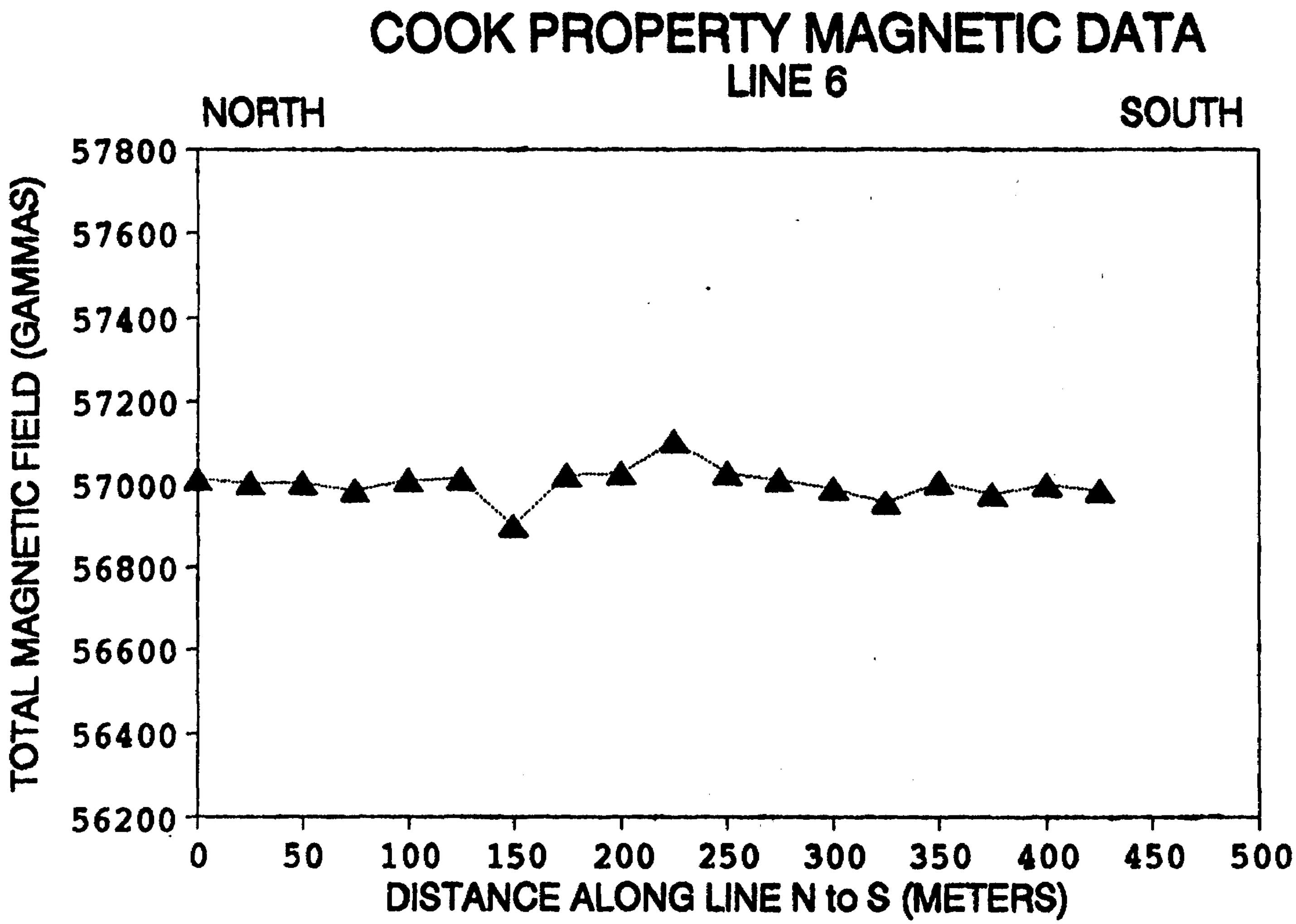
## MAGNETIC PROFILES

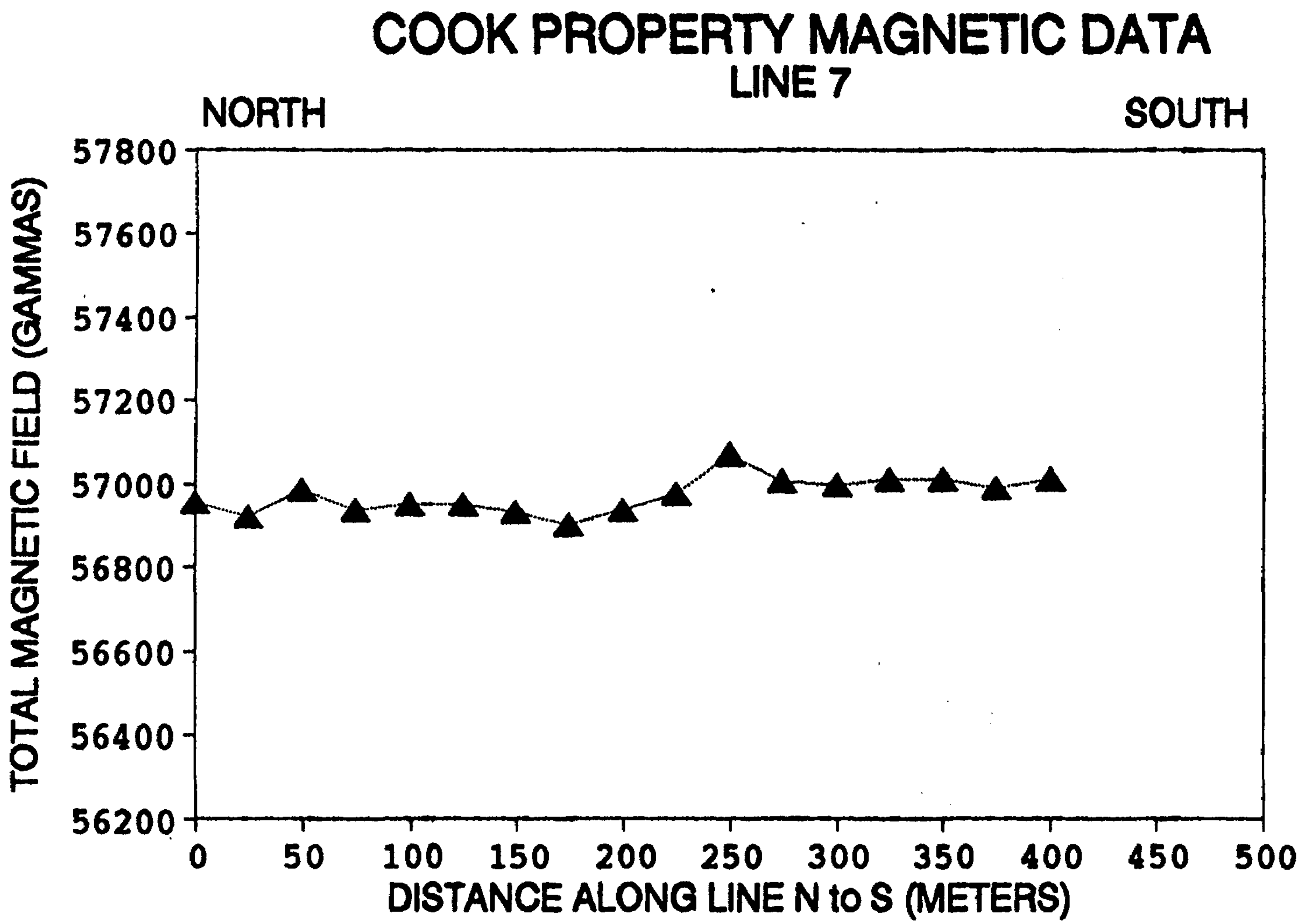

COOK PROPERTY MAGNETIC DATA
LINE 2
NORTH
SOUTH
TOTAL MAGNETIC FIELD (GAMMAS)
57800
57600
57400
57200
57000
56800
56600
56400
56200
0
50
100
150
200
250
300
350
400
450
500
DISTANCE ALONG LINE N to S (METERS)

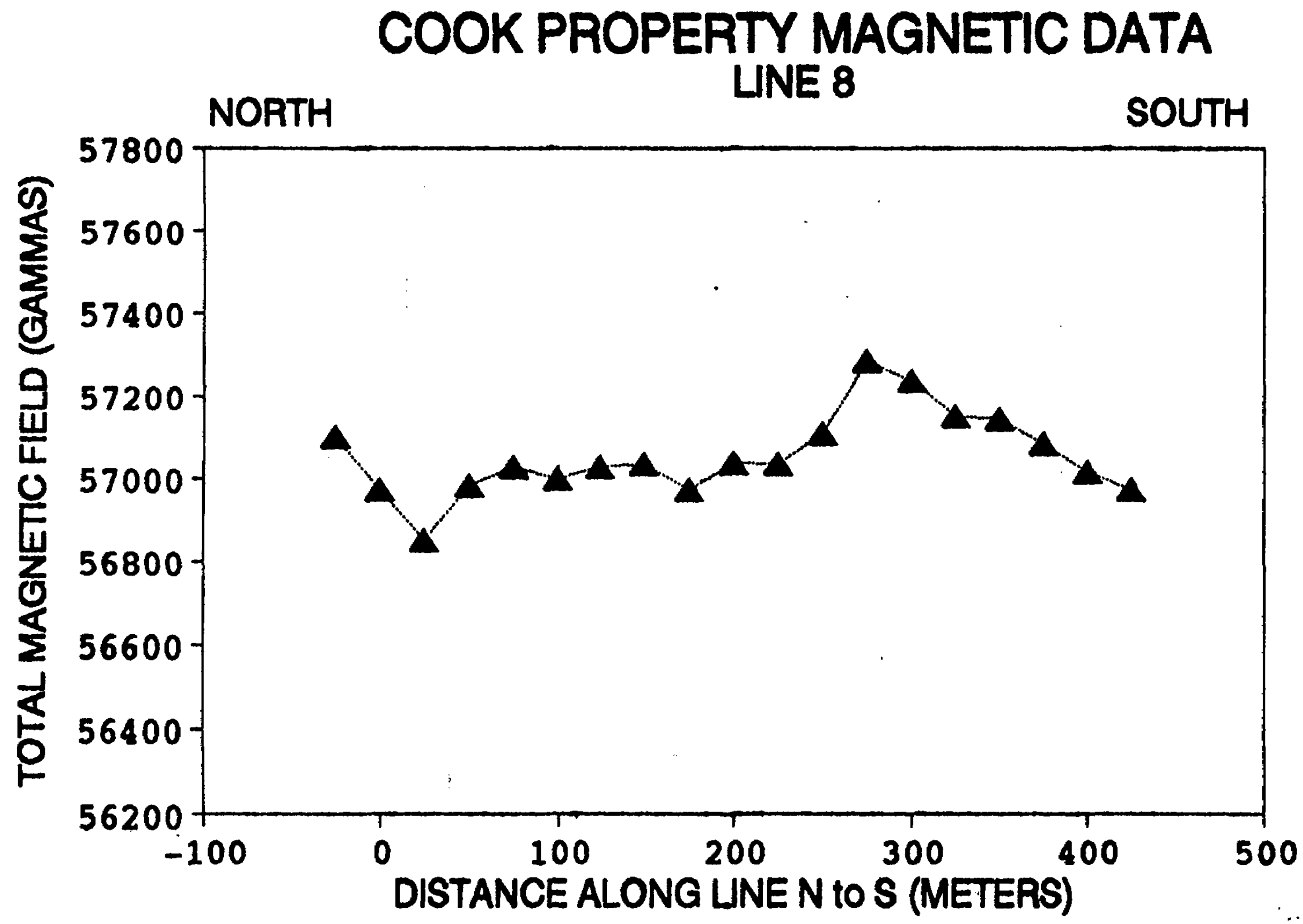

COOK PROPERTY MAGNETIC DATA
LINE 3
NORTH
SOUTH
TOTAL MAGNETIC FIELD (GAMMAS)
57800
57600
57400
57200
57000
56800
56600
56400
56200
0
50
100
150
200
250
300
350
400
450
500
DISTANCE ALONG LINE N to S (METERS)

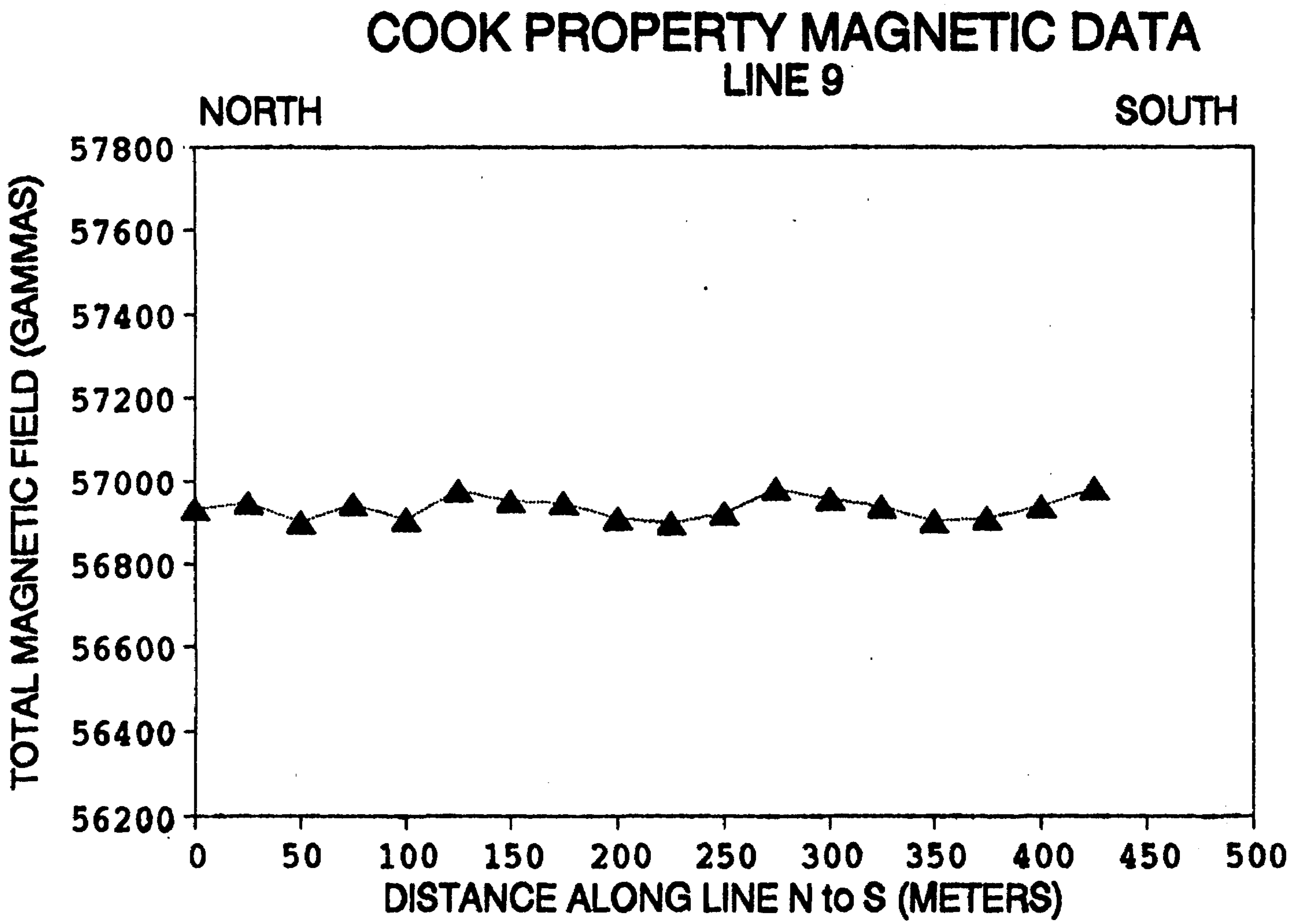

COOK PROPERTY MAGNETIC DATA
LINE 4
NORTH
SOUTH
TOTAL MAGNETIC FIELD (GAMMAS)
57800
57600
57400
57200
57000
56800
56600
56400
56200
0
50
100
150
200
250
300
350
400
450
500
DISTANCE ALONG LINE N to S (METERS)


COOK PROPERTY MAGNETIC DATA
LINE 5
NORTH
SOUTH
TOTAL MAGNETIC FIELD (GAMMAS)
57800
57600
57400
57200
57000
56800
56600
56400
56200
0
50
100
150
200
250
300
350
400
450
500
DISTANCE ALONG LINE N to S (METERS)

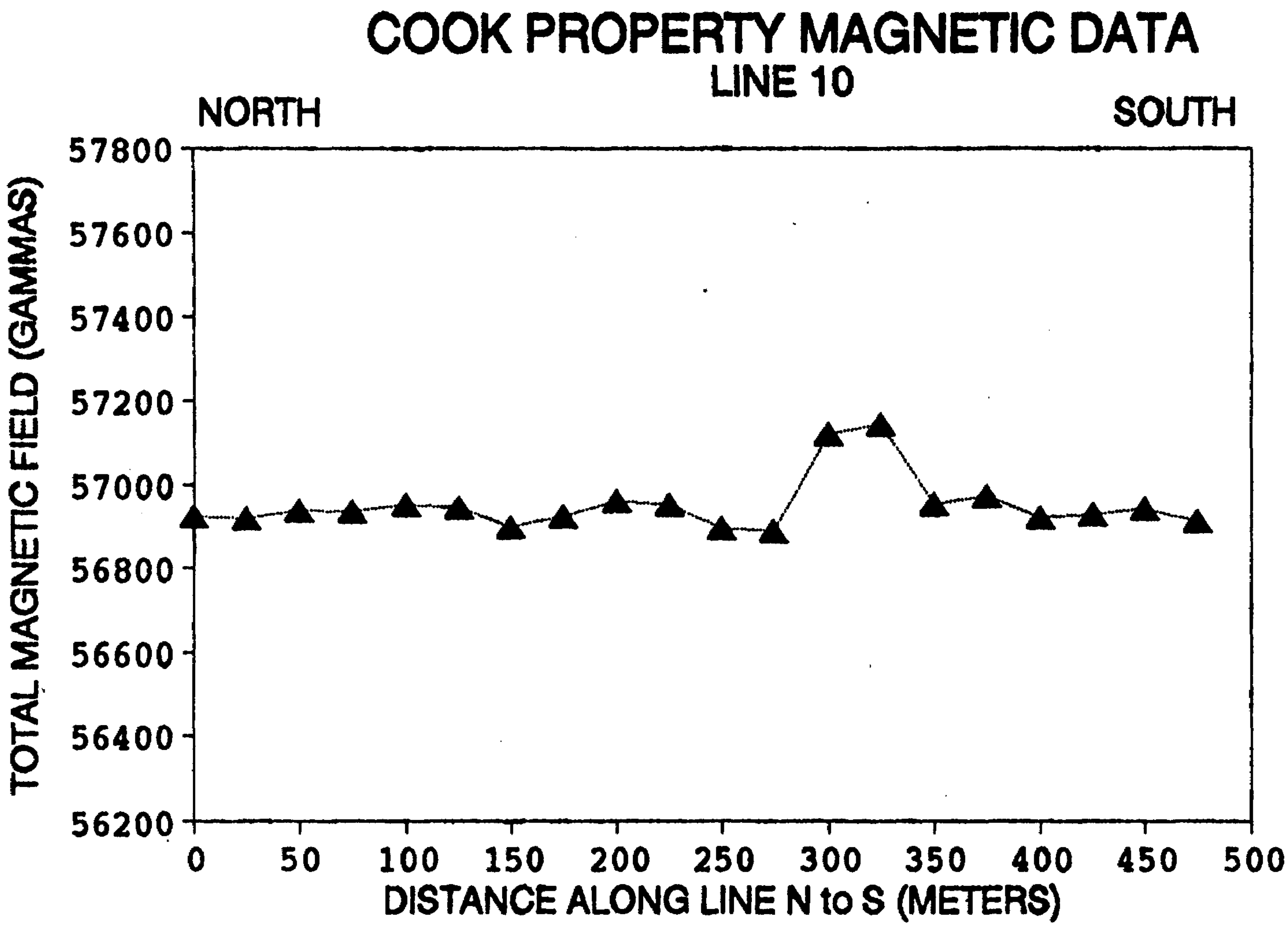

COOK PROPERTY MAGNETIC DATA
LINE 6
NORTH
SOUTH
TOTAL MAGNETIC FIELD (GAMMAS)
57800
57600
57400
57200
57000
56800
56600
56400
56200
0
50
100
150
200
250
300
350
400
450
500
DISTANCE ALONG LINE N to S (METERS)

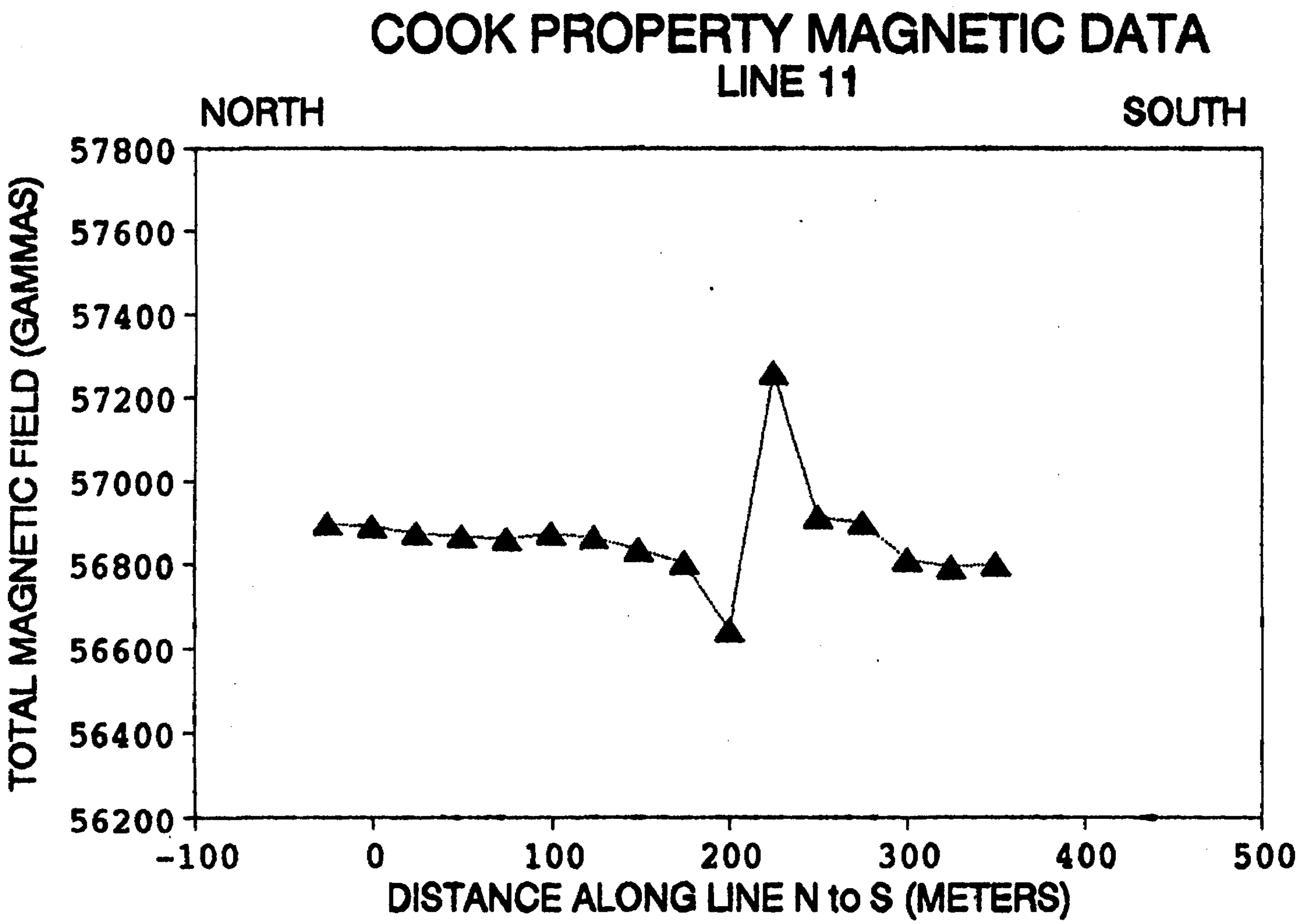

COOK PROPERTY MAGNETIC DATA
LINE 7
NORTH
SOUTH
TOTAL MAGNETIC FIELD (GAMMAS)
57800
57600
57400
57200
57000
56800
56600
56400
56200
0
50
100
150
200
250
300
350
400
450
500
DISTANCE ALONG LINE N to S (METERS)

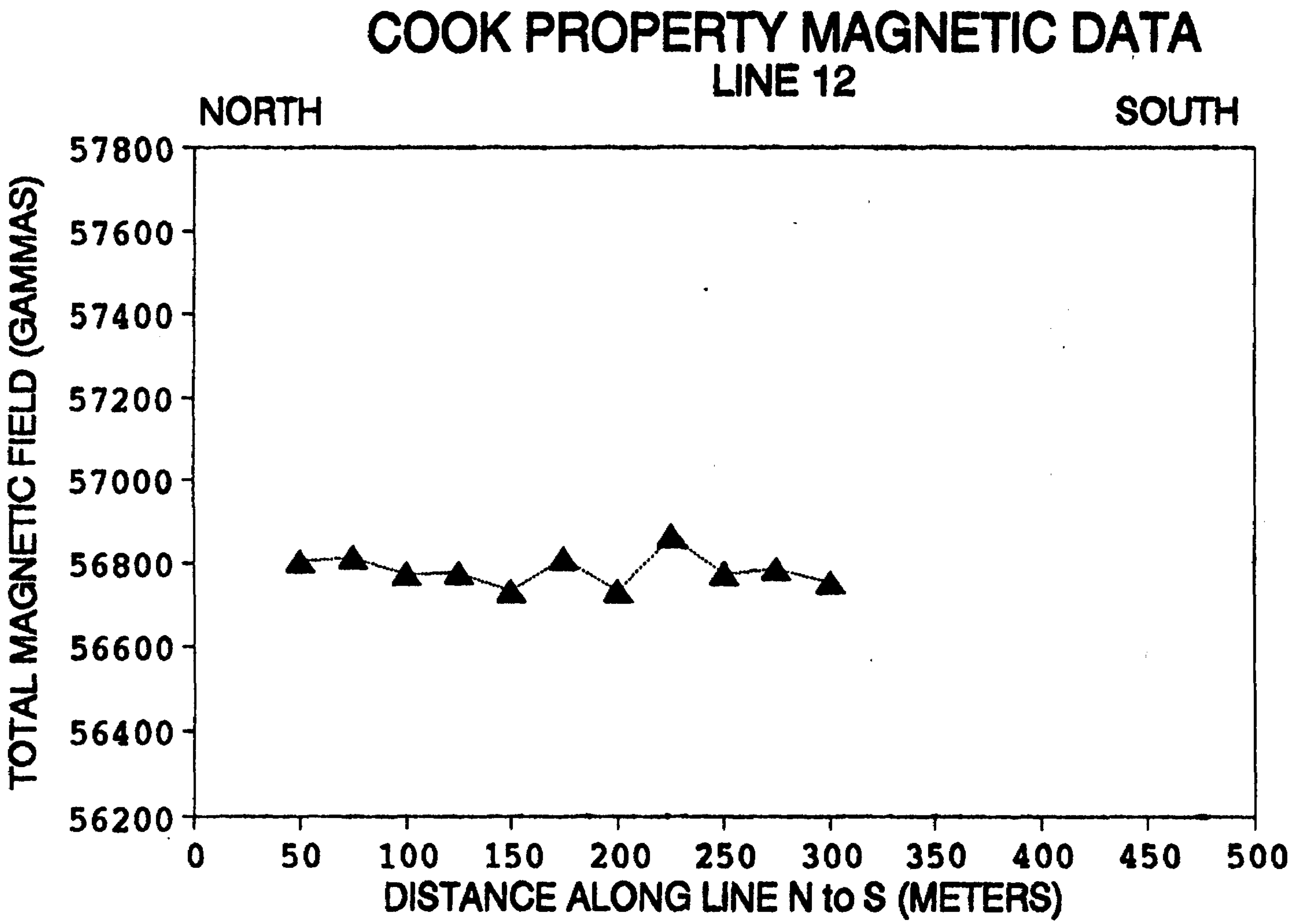

COOK PROPERTY MAGNETIC DATA
LINE 8
NORTH
SOUTH
TOTAL MAGNETIC FIELD (GAMMAS)
57800
57600
57400
57200
57000
56800
56600
56400
56200
-100
0
100
200
300
400
500
DISTANCE ALONG LINE N to S (METERS)



COOK PROPERTY MAGNETIC DATA
LINE 9
NORTH
SOUTH
TOTAL MAGNETIC FIELD (GAMMAS)
57800
57600
57400
57200
57000
56800
56600
56400
56200
0
50
100
150
200
250
300
350
400
450
500
DISTANCE ALONG LINE N to S (METERS)

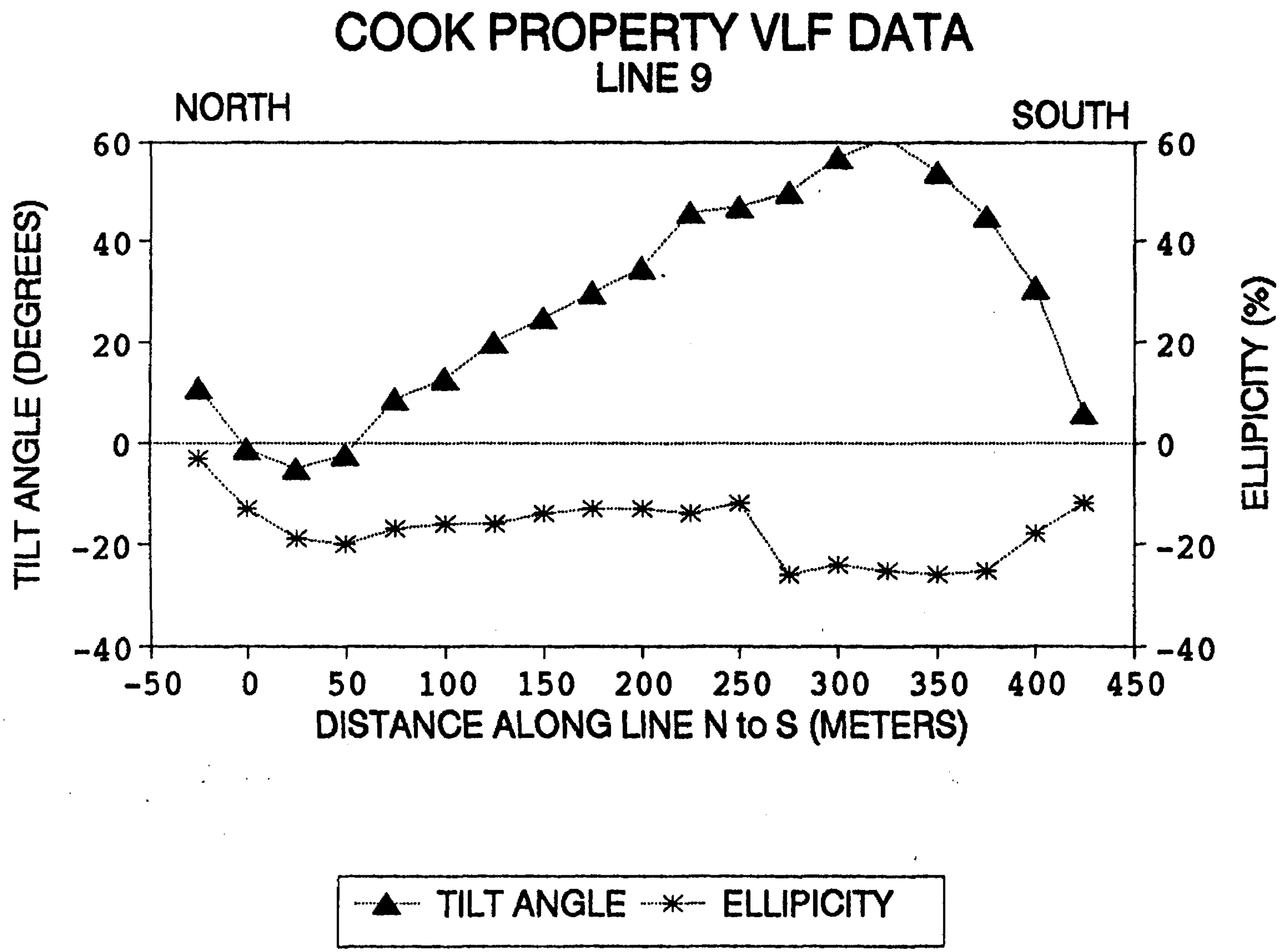

COOK PROPERTY MAGNETIC DATA
LINE 10
NORTH
SOUTH
TOTAL MAGNETIC FIELD (GAMMAS)
57800
57600
57400
57200
57000
56800
56600
56400
56200
0
50
100
150
200
250
300
350
400
450
500
DISTANCE ALONG LINE N to S (METERS)

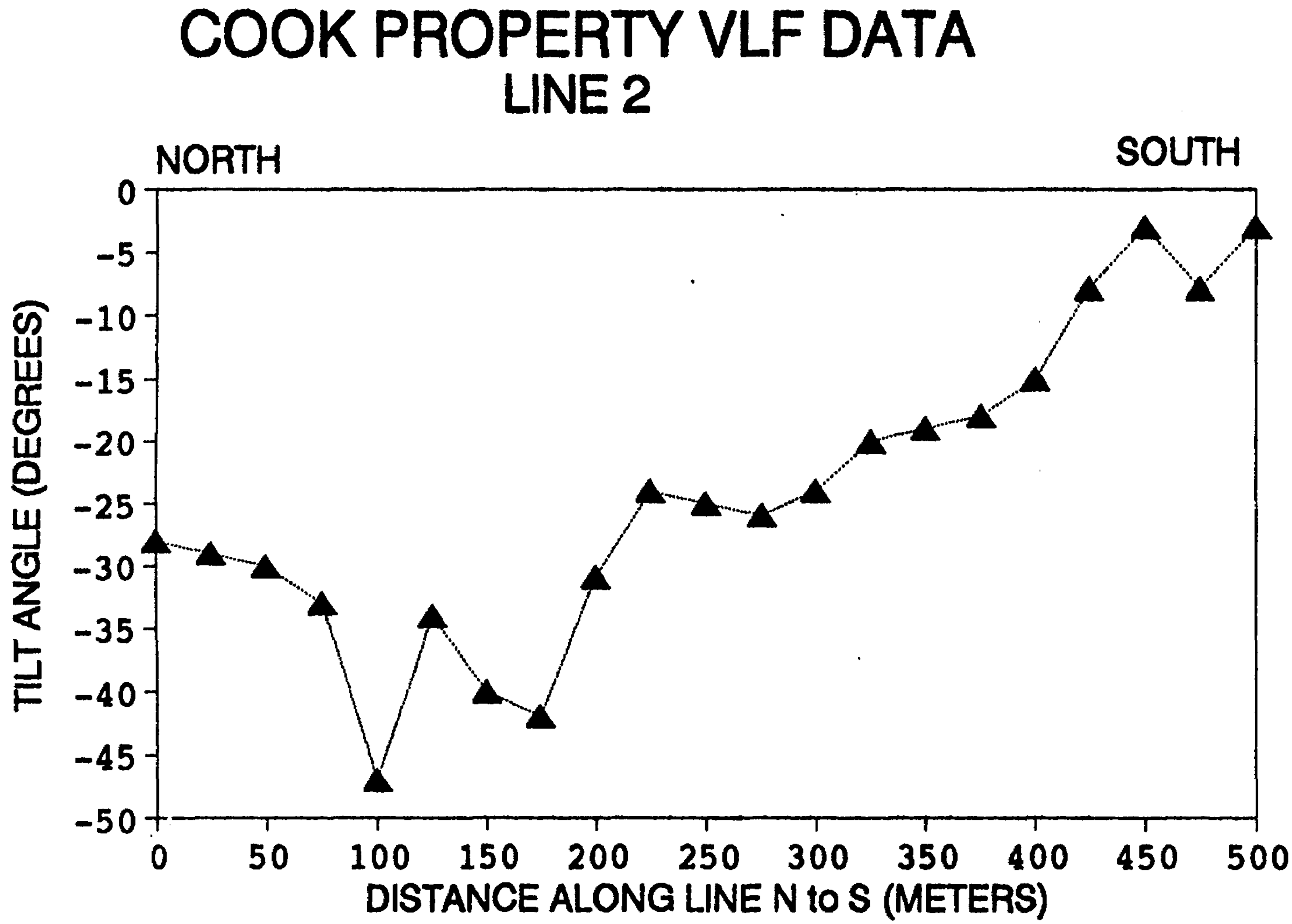

COOK PROPERTY MAGNETIC DATA
LINE 11
NORTH
SOUTH
TOTAL MAGNETIC FIELD (GAMMAS)
57800
57600
57400
57200
57000
56800
56600
56400
56200
-100
0
100
200
300
400
500
DISTANCE ALONG LINE N to S (METERS)


COOK PROPERTY MAGNETIC DATA
LINE 12
NORTH
SOUTH
TOTAL MAGNETIC FIELD (GAMMAS)
57800
57600
57400
57200
57000
56800
56600
56400
56200
0
50
100
150
200
250
300
350
400
450
500
DISTANCE ALONG LINE N to S (METERS)

# APPENDIX 2

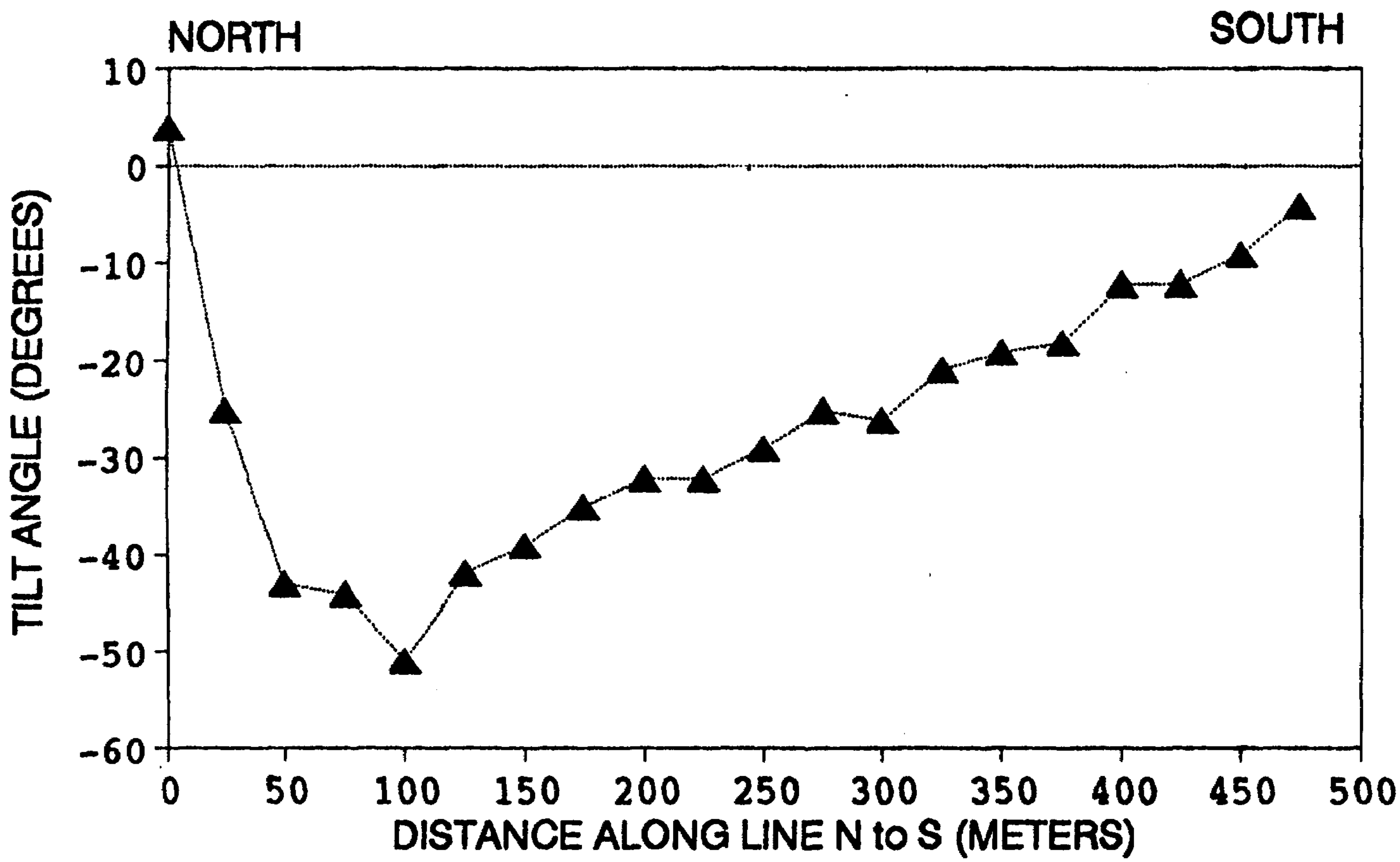
## VLF PROFILES


COOK PROPERTY VLF DATA
LINE 9
NORTH
SOUTH
TILT ANGLE (DEGREES)
ELLIPICITY (%)
60
40
20
0
-20
-40
-50
0
50
100
150
200
250
300
350
400
450
DISTANCE ALONG LINE N to S (METERS)
TILT ANGLE
ELLIPICITY

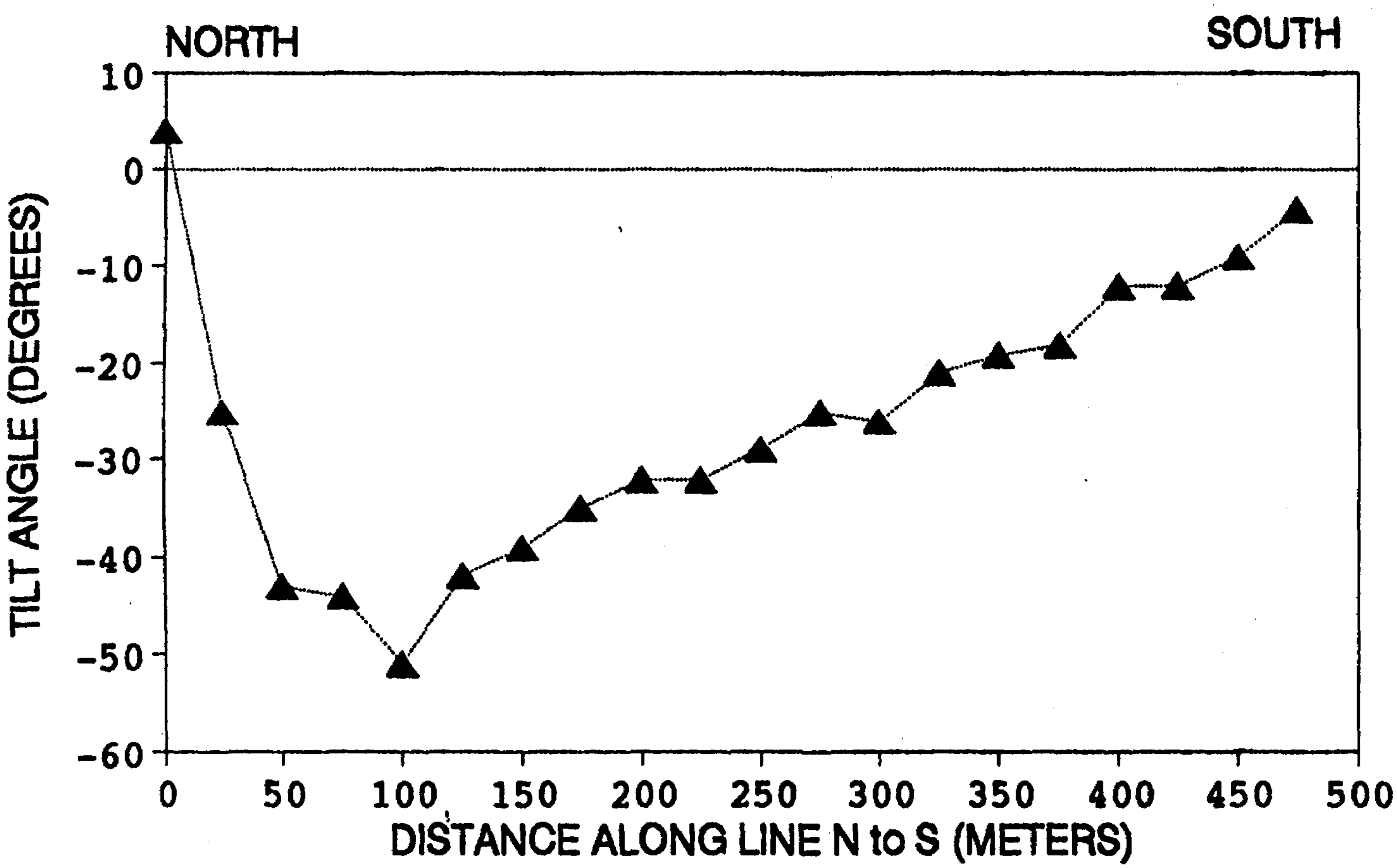


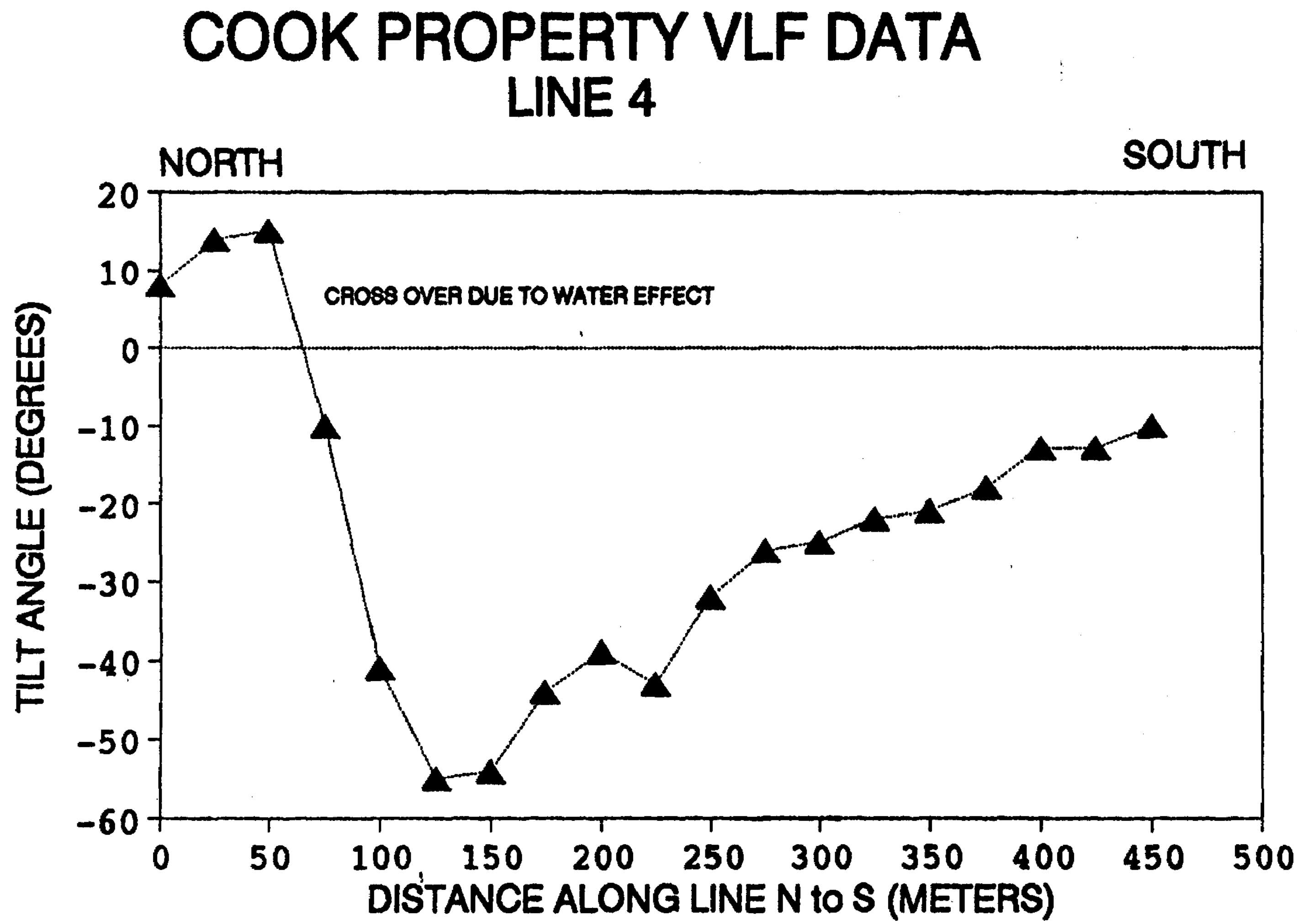
COOK PROPERTY VLF DATA
LINE 2
NORTH
SOUTH
TILT ANGLE (DEGREES)
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
0
50
100
150
200
250
300
350
400
450
500
DISTANCE ALONG LINE N to S (METERS)

# COOK PROPERTY VLF DATA
## LINE 3

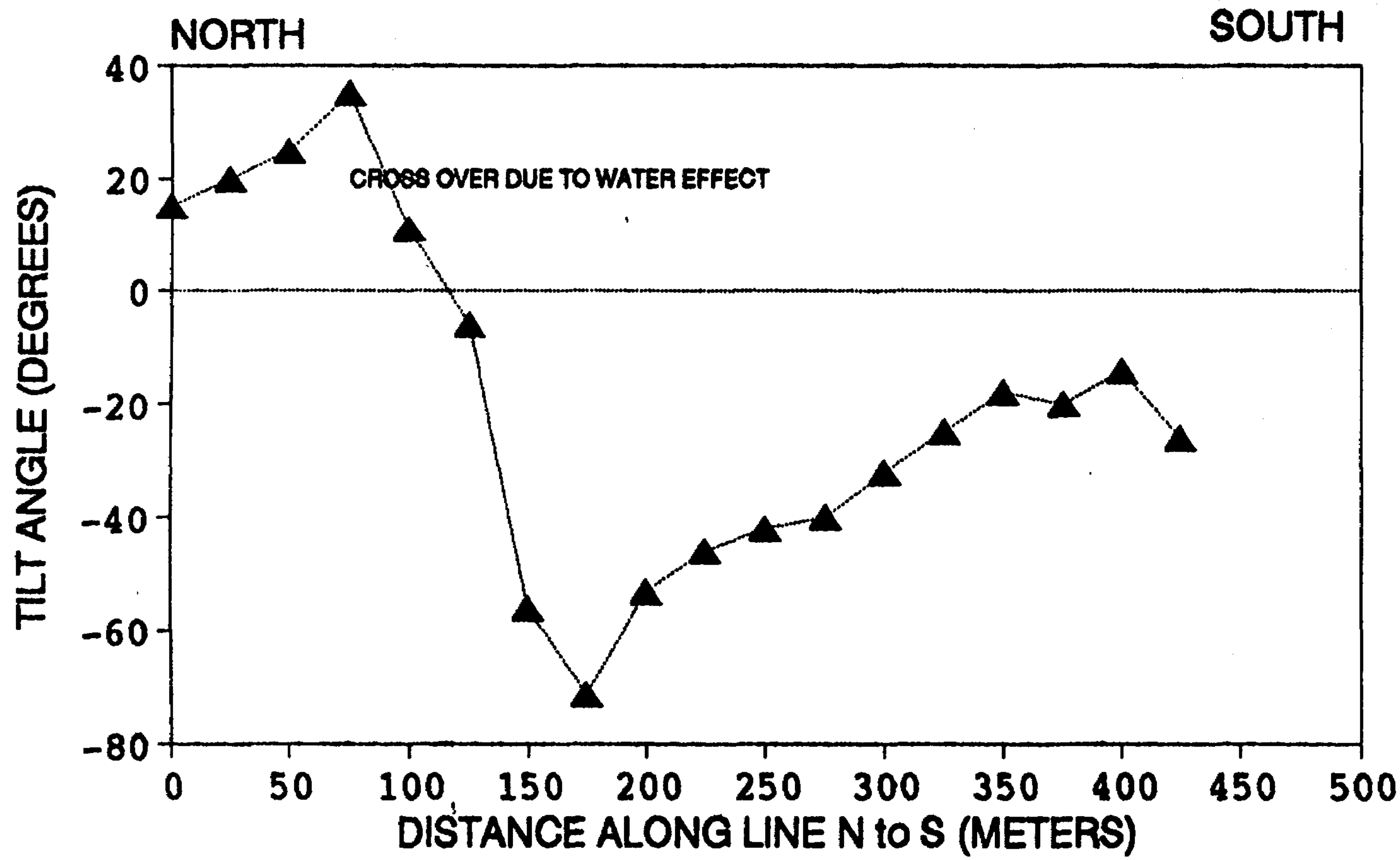


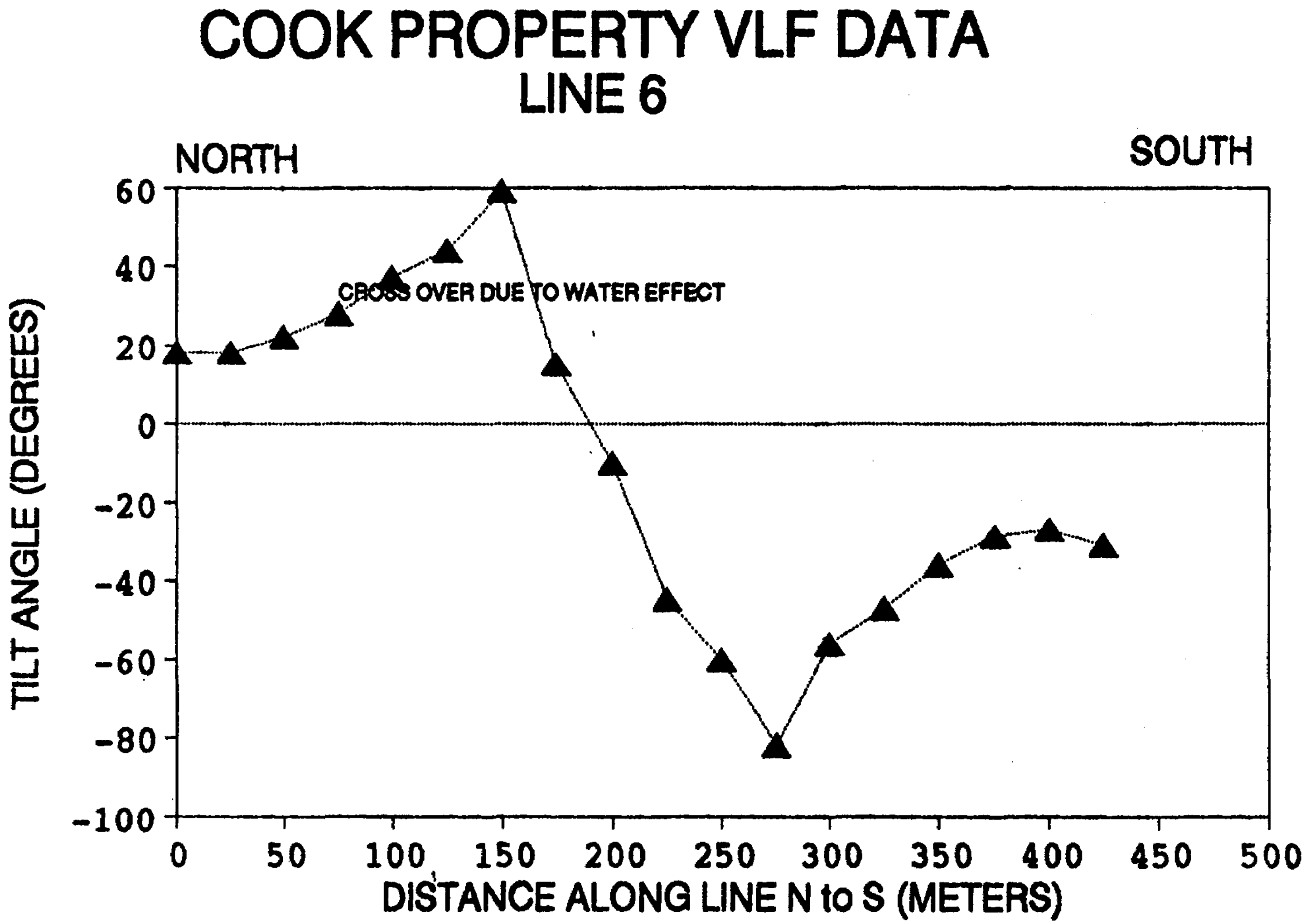
# COOK PROPERTY VLF DATA
## LINE 3

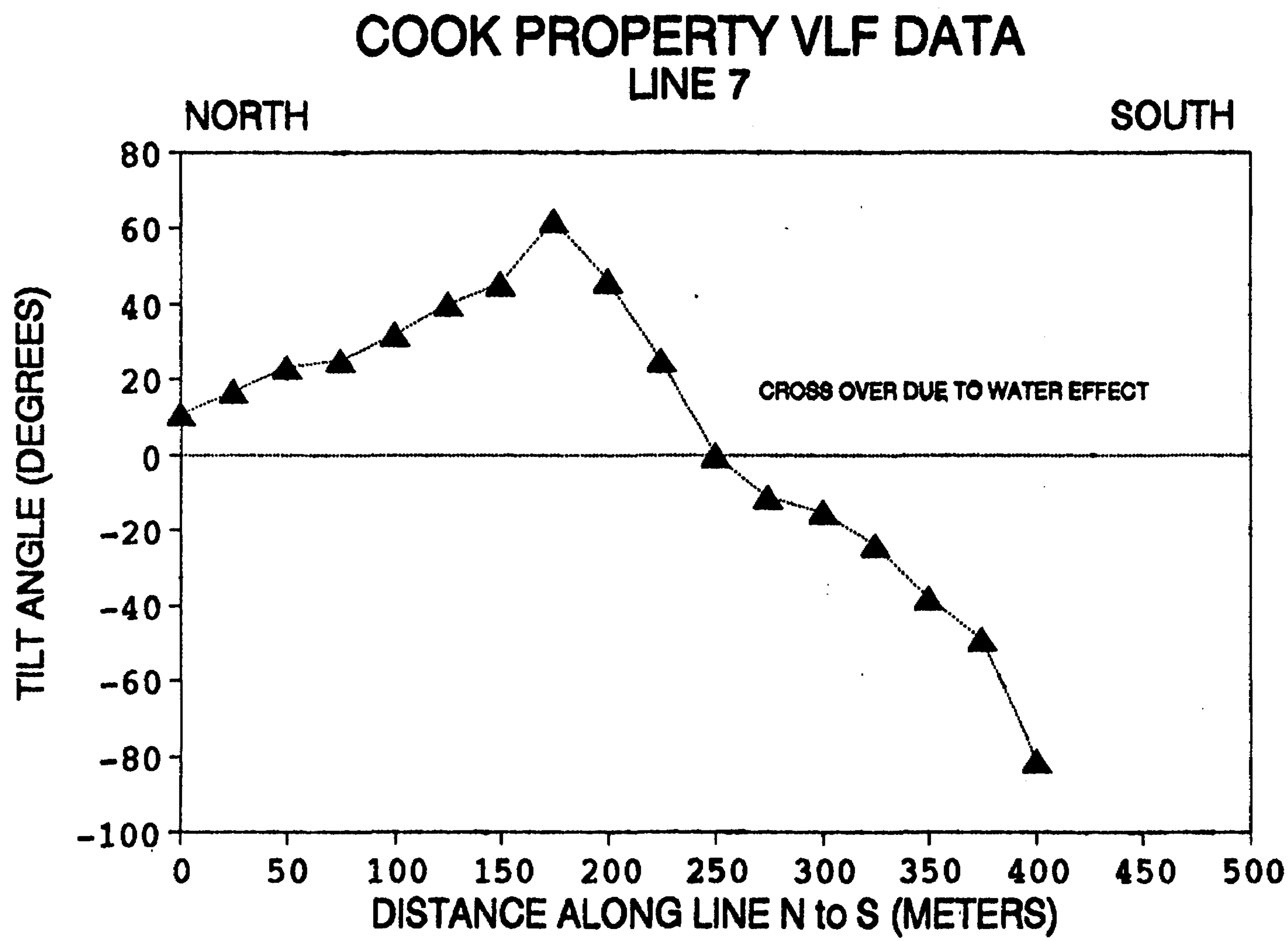


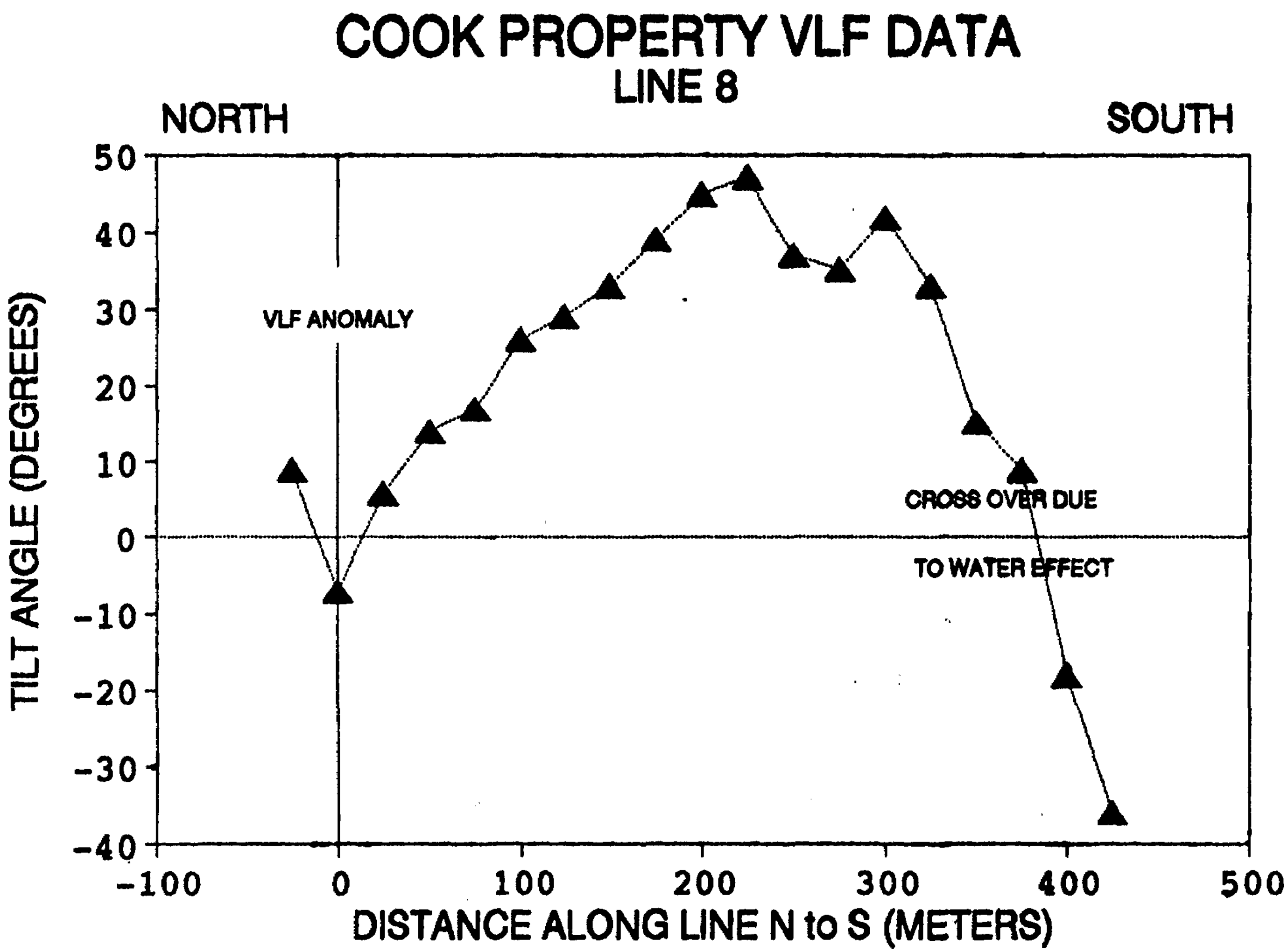

COOK PROPERTY VLF DATA
LINE 4
NORTH
SOUTH
CROSS OVER DUE TO WATER EFFECT
TILT ANGLE (DEGREES)
20
10
0
-10
-20
-30
-40
-50
-60
0
50
100
150
200
250
300
350
400
450
500
DISTANCE ALONG LINE N to S (METERS)

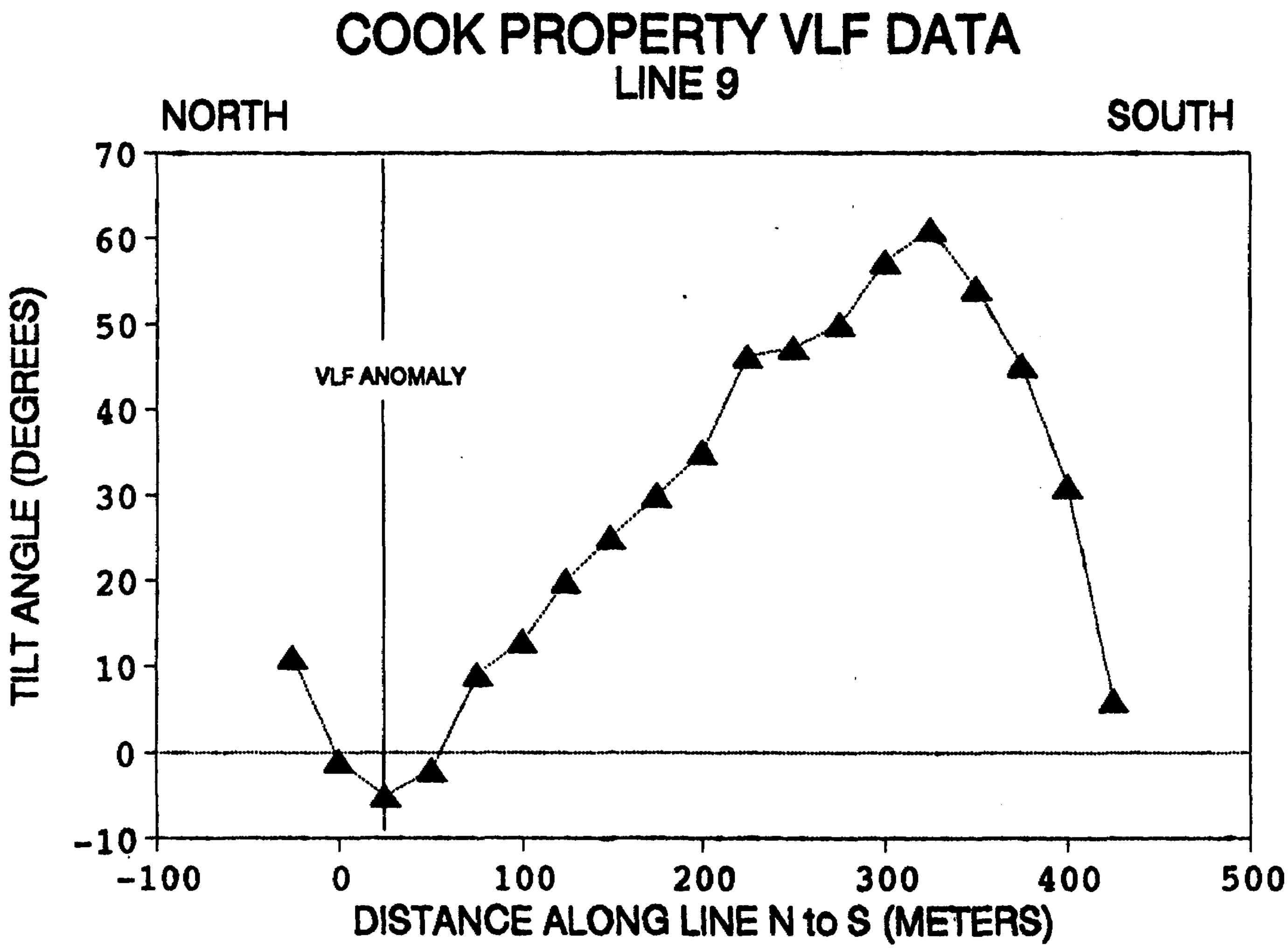
# COOK PROPERTY VLF DATA
## LINE 5

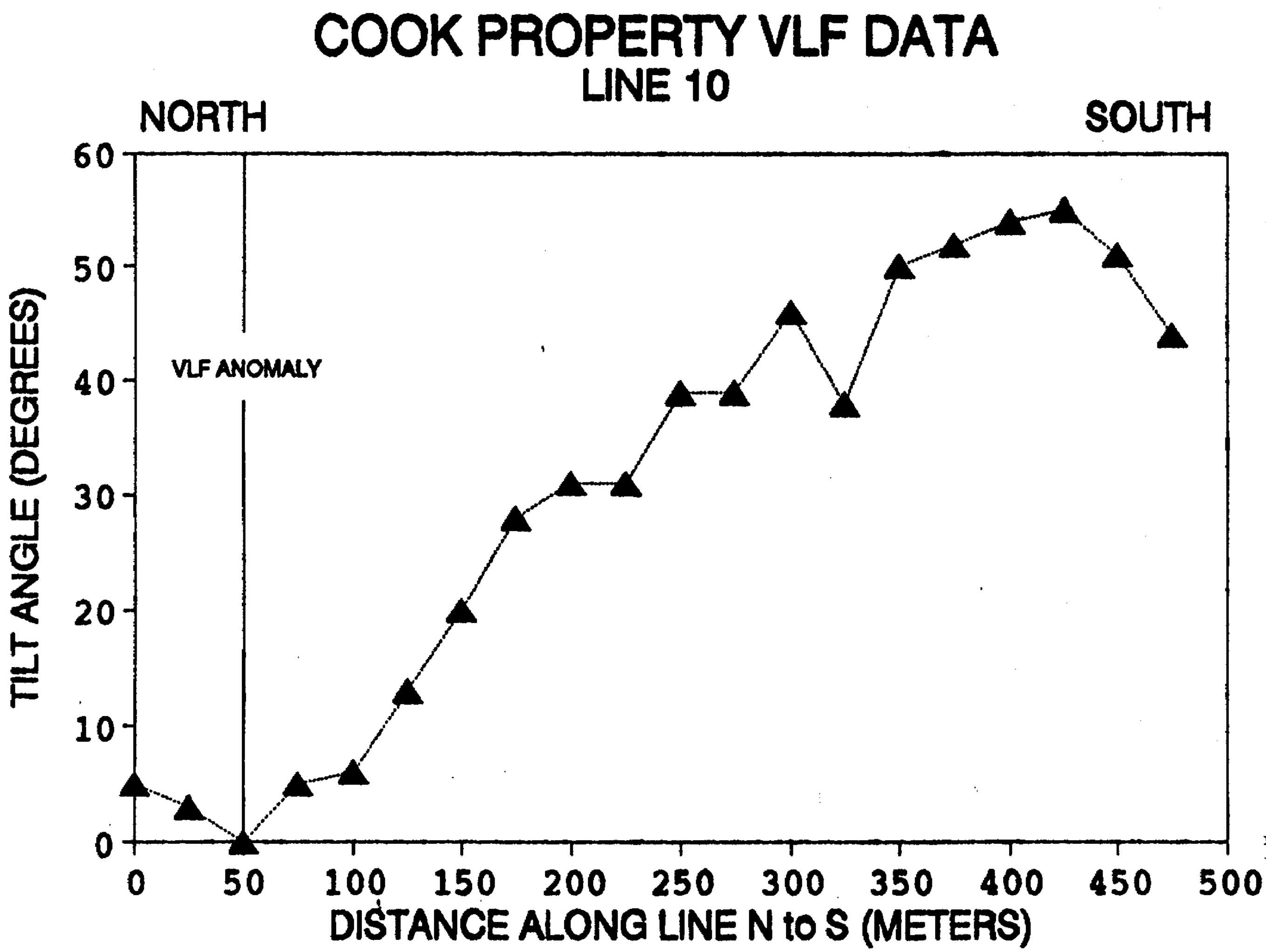



COOK PROPERTY VLF DATA
LINE 6
NORTH
SOUTH
CROSS OVER DUE TO WATER EFFECT
TILT ANGLE (DEGREES)
60
40
20
0
-20
-40
-60
-80
-100
0
50
100
150
200
250
300
350
400
450
500
DISTANCE ALONG LINE N to S (METERS)

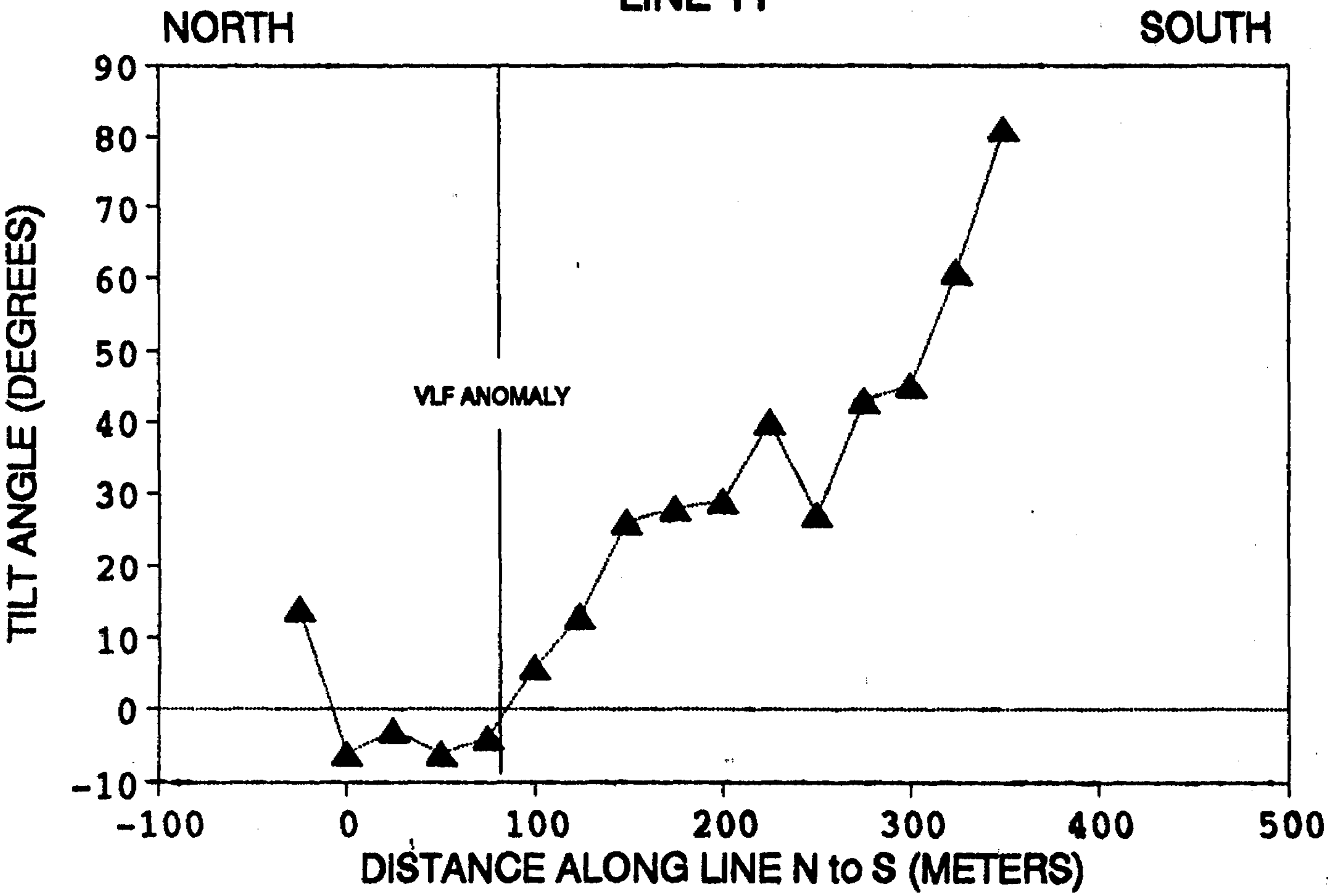

COOK PROPERTY VLF DATA
LINE 7
NORTH
SOUTH
CROSS OVER DUE TO WATER EFFECT
TILT ANGLE (DEGREES)
DISTANCE ALONG LINE N to S (METERS)
80
60
40
20
0
-20
-40
-60
-80
-100
0
50
100
150
200
250
300
350
400
450
500

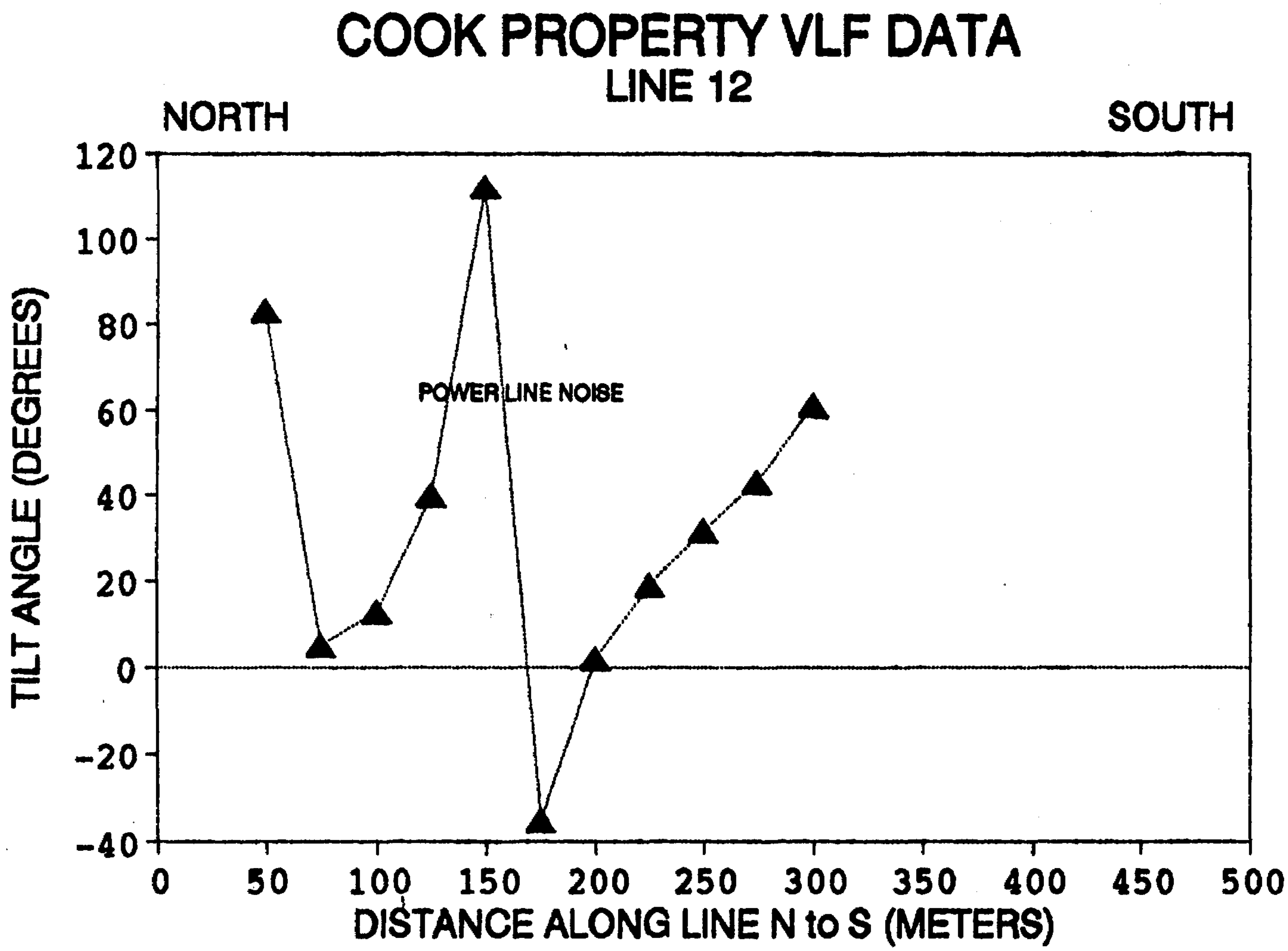

COOK PROPERTY VLF DATA
LINE 8
NORTH
SOUTH
VLF ANOMALY
CROSS OVER DUE
TO WATER EFFECT
TILT ANGLE (DEGREES)
DISTANCE ALONG LINE N to S (METERS)
50
40
30
20
10
0
-10
-20
-30
-40
-100
0
100
200
300
400
500

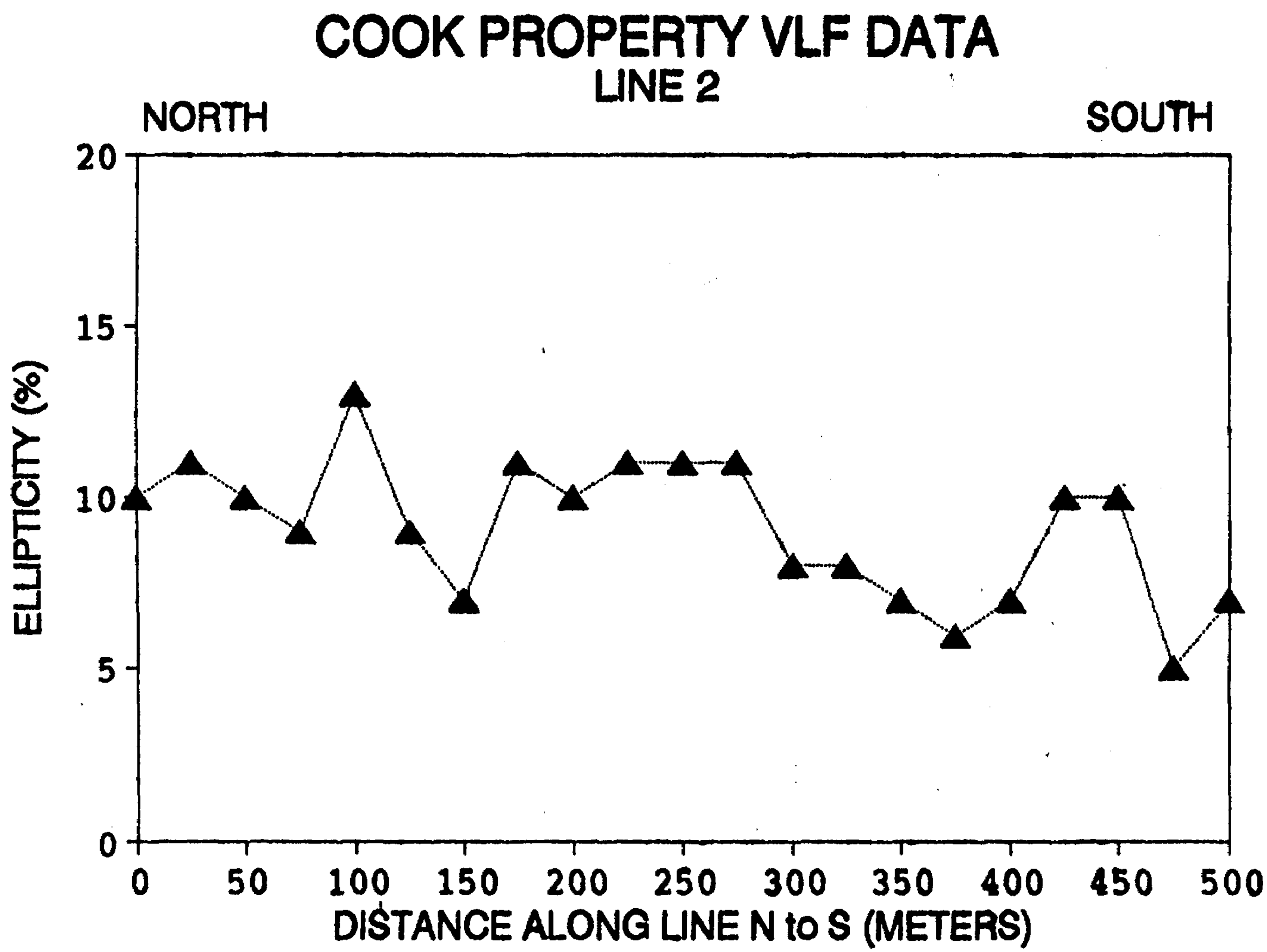

COOK PROPERTY VLF DATA
LINE 9
NORTH
SOUTH
VLF ANOMALY
TILT ANGLE (DEGREES)
70
60
50
40
30
20
10
0
-10
-100
0
100
200
300
400
500
DISTANCE ALONG LINE N to S (METERS)

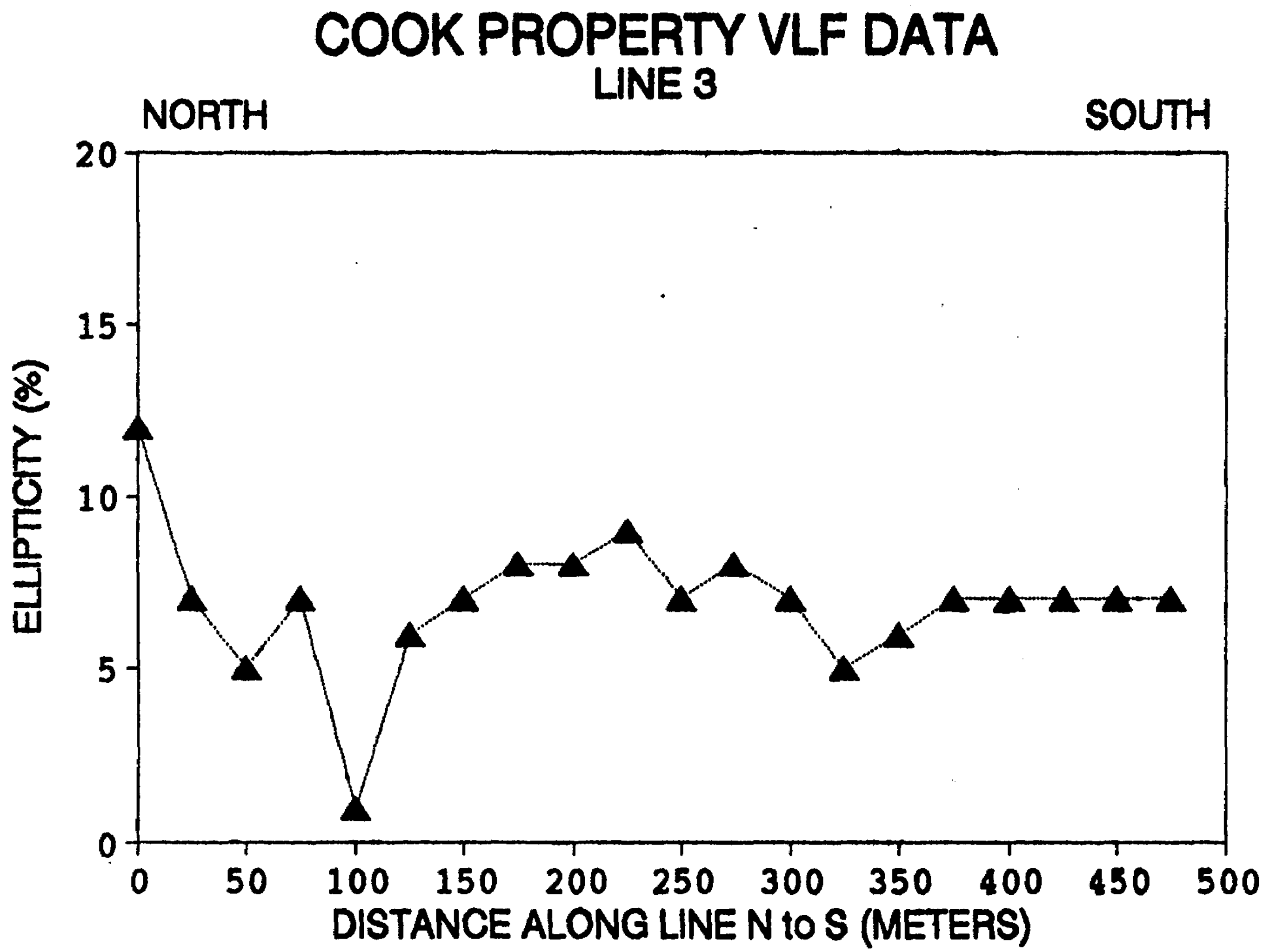

COOK PROPERTY VLF DATA
LINE 10
NORTH
SOUTH
VLF ANOMALY
TILT ANGLE (DEGREES)
0
10
20
30
40
50
60
0
50
100
150
200
250
300
350
400
450
500
DISTANCE ALONG LINE N to S (METERS)

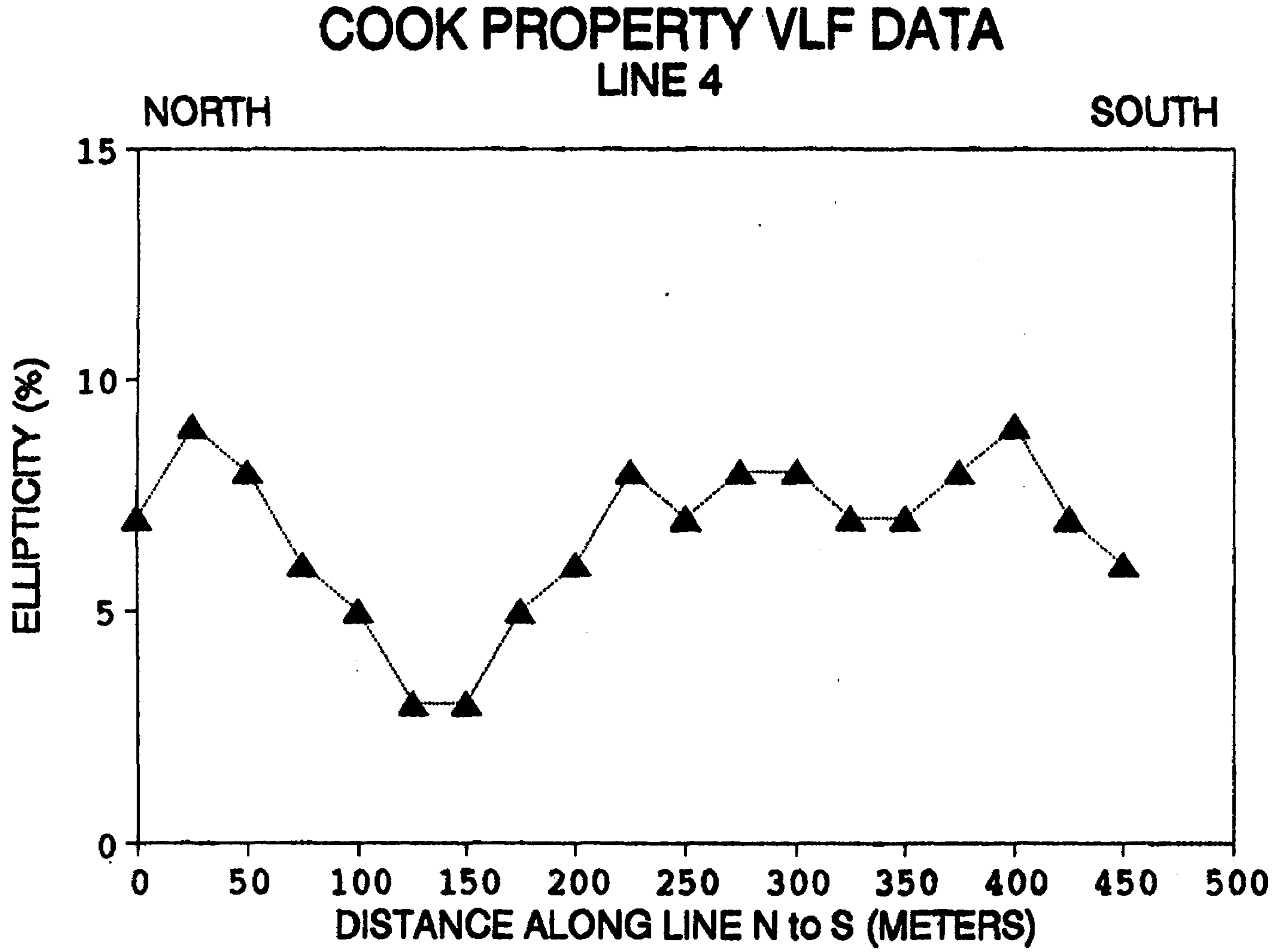
# COOK PROPERTY VLF DATA
## LINE 11



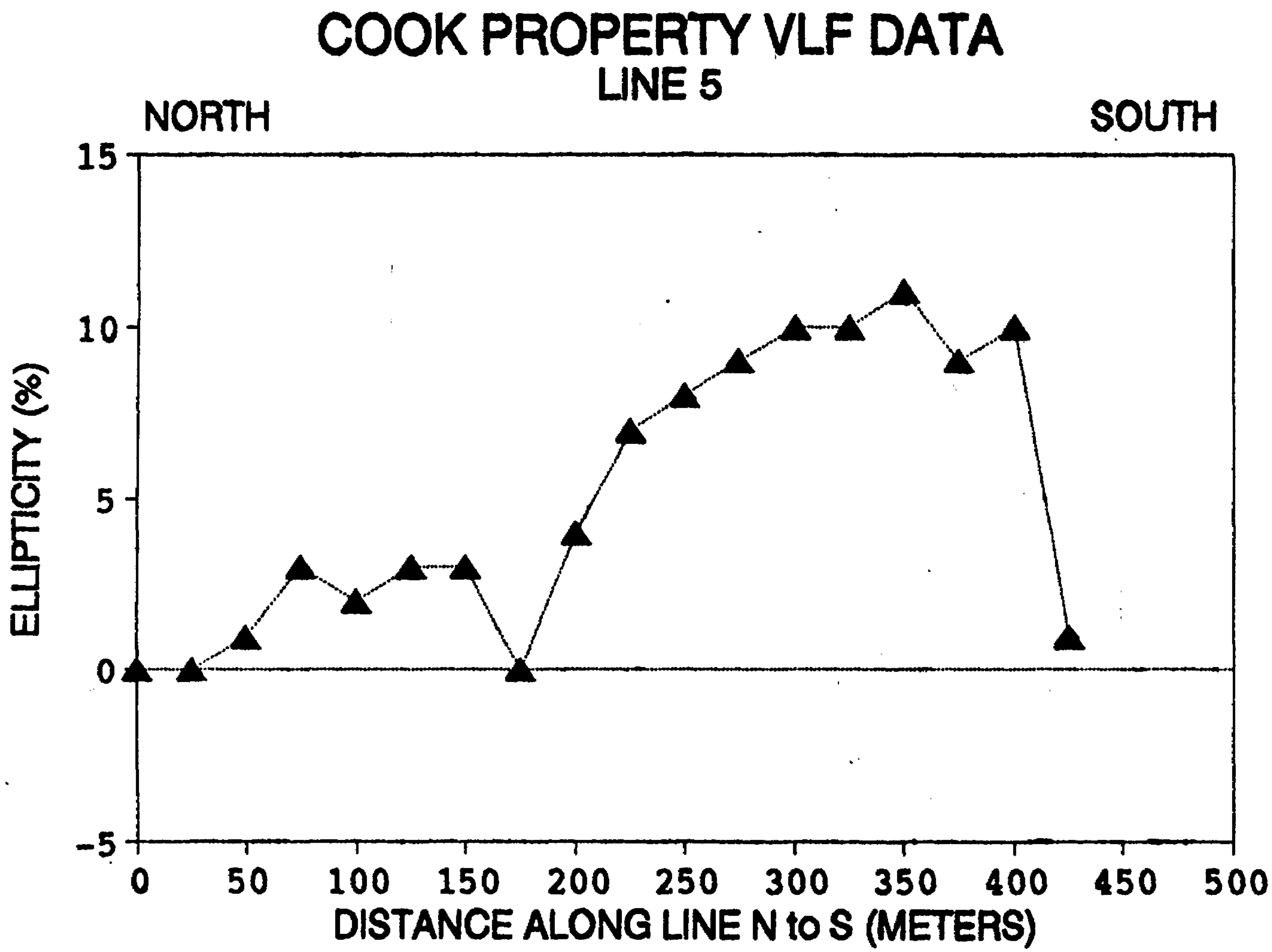

COOK PROPERTY VLF DATA
LINE 12
NORTH
SOUTH
TILT ANGLE (DEGREES)
120
100
80
60
40
20
0
-20
-40
POWER LINE NOISE
0
50
100
150
200
250
300
350
400
450
500
DISTANCE ALONG LINE N to S (METERS)

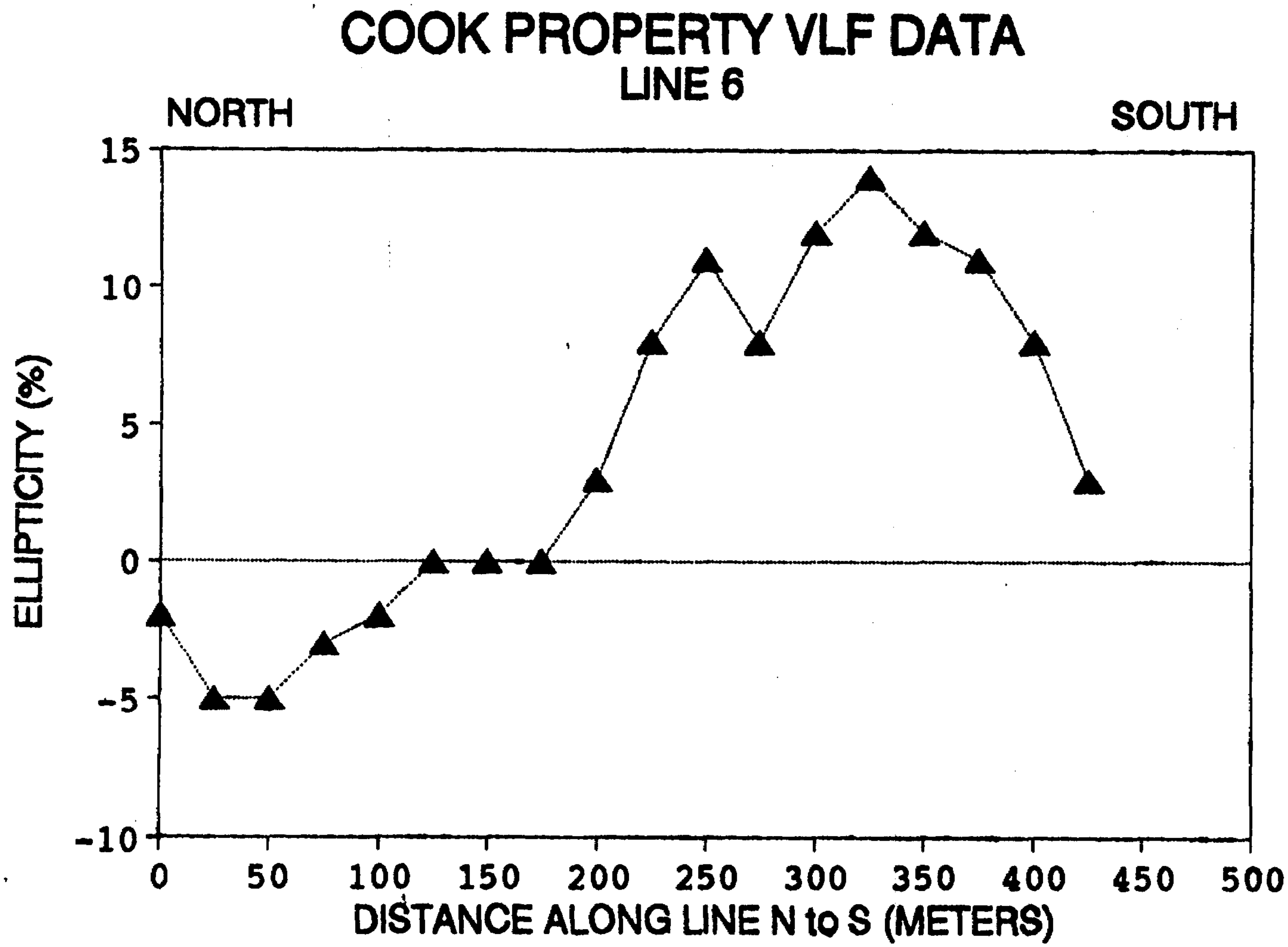

COOK PROPERTY VLF DATA
LINE 2
NORTH
SOUTH
ELLIPTICITY (%)
0
5
10
15
20
0
50
100
150
200
250
300
350
400
450
500
DISTANCE ALONG LINE N to S (METERS)

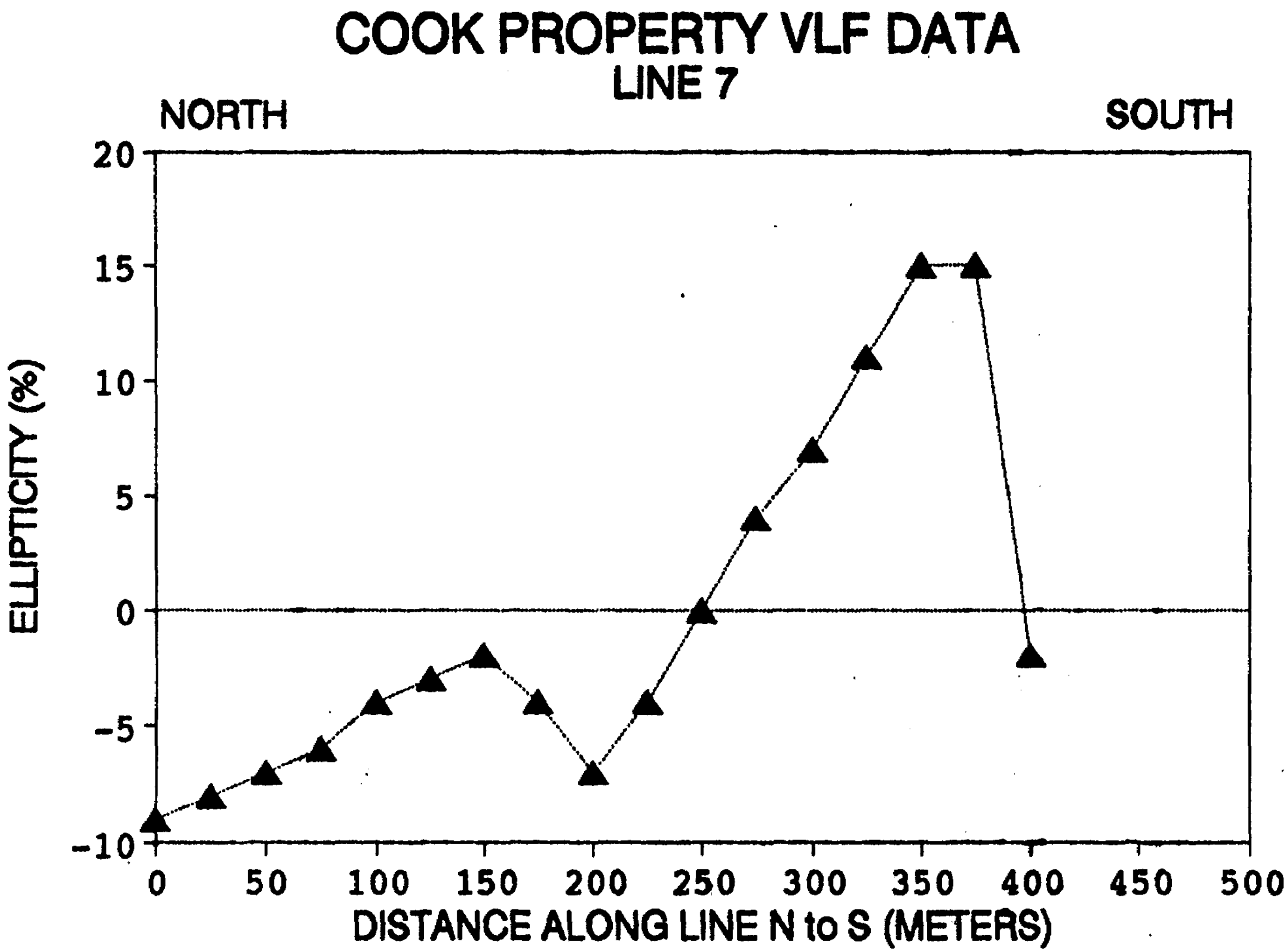

COOK PROPERTY VLF DATA
LINE 3
NORTH
SOUTH
20
15
10
5
0
ELLIPTICITY (%)
0
50
100
150
200
250
300
350
400
450
500
DISTANCE ALONG LINE N to S (METERS)



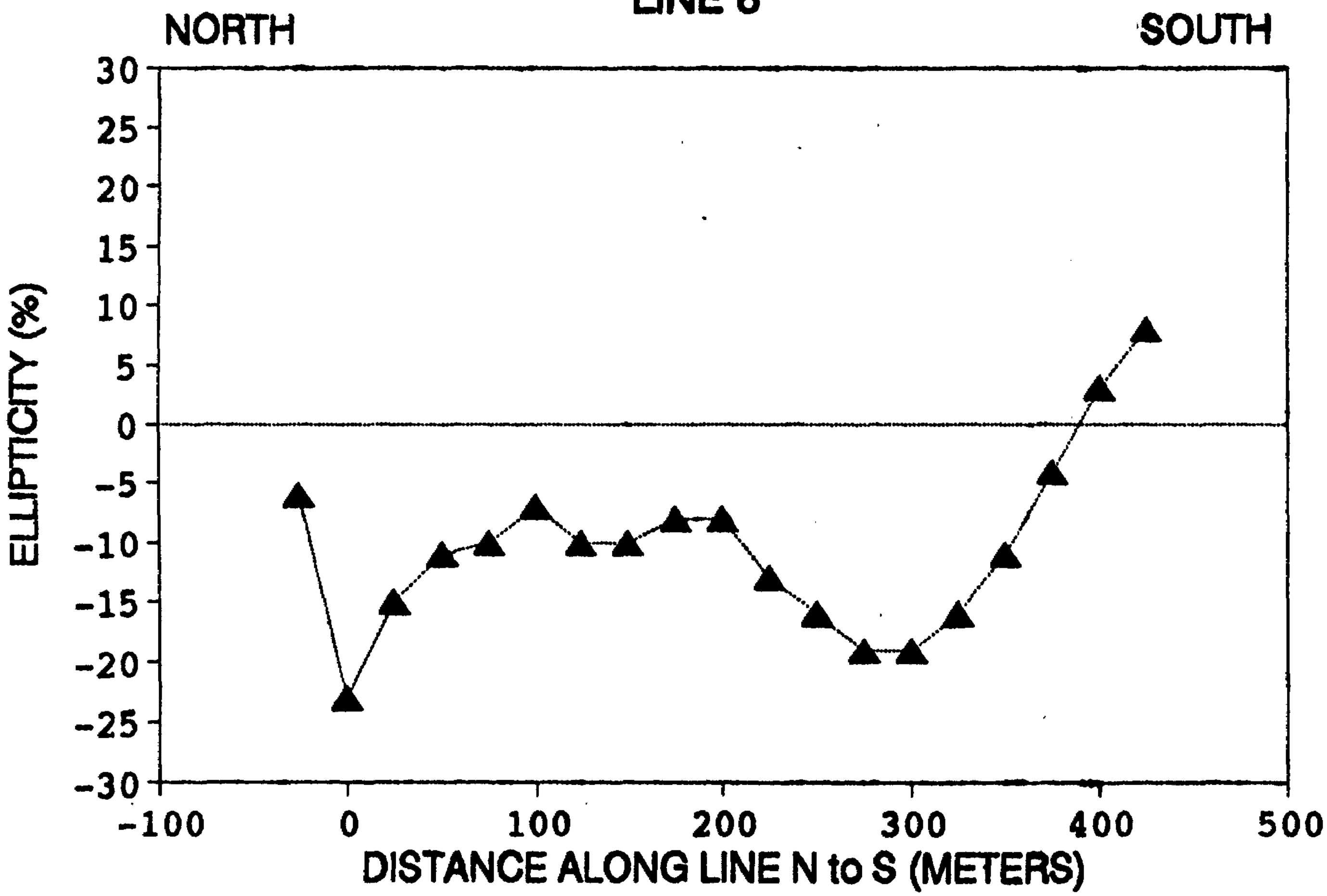
COOK PROPERTY VLF DATA
LINE 4
NORTH
SOUTH
15
10
5
0
ELLIPTICITY (%)
0
50
100
150
200
250
300
350
400
450
500
DISTANCE ALONG LINE N to S (METERS)

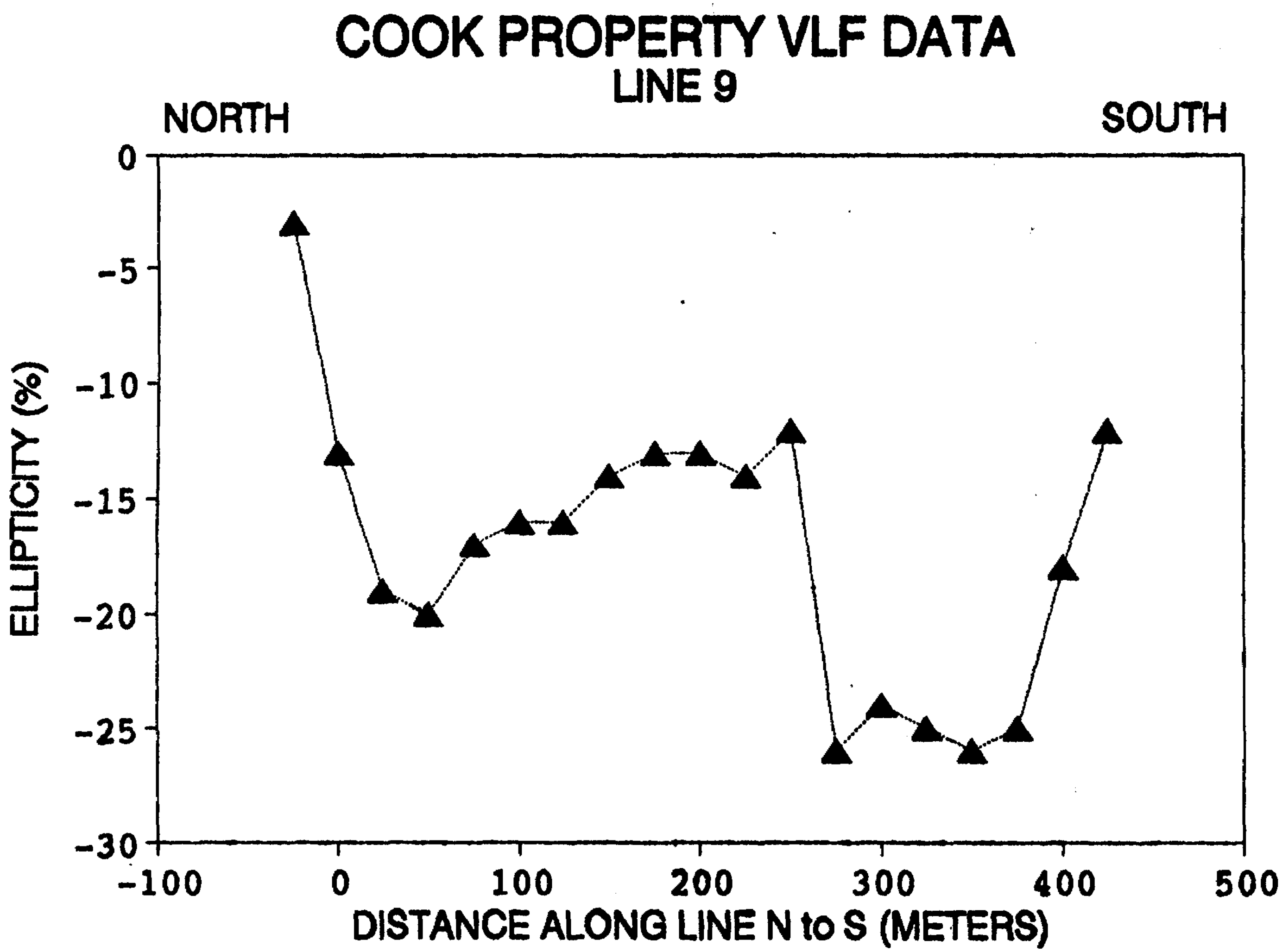

COOK PROPERTY VLF DATA
LINE 5
NORTH
SOUTH
ELLIPTICITY (%)
15
10
5
0
-5
0
50
100
150
200
250
300
350
400
450
500
DISTANCE ALONG LINE N to S (METERS)

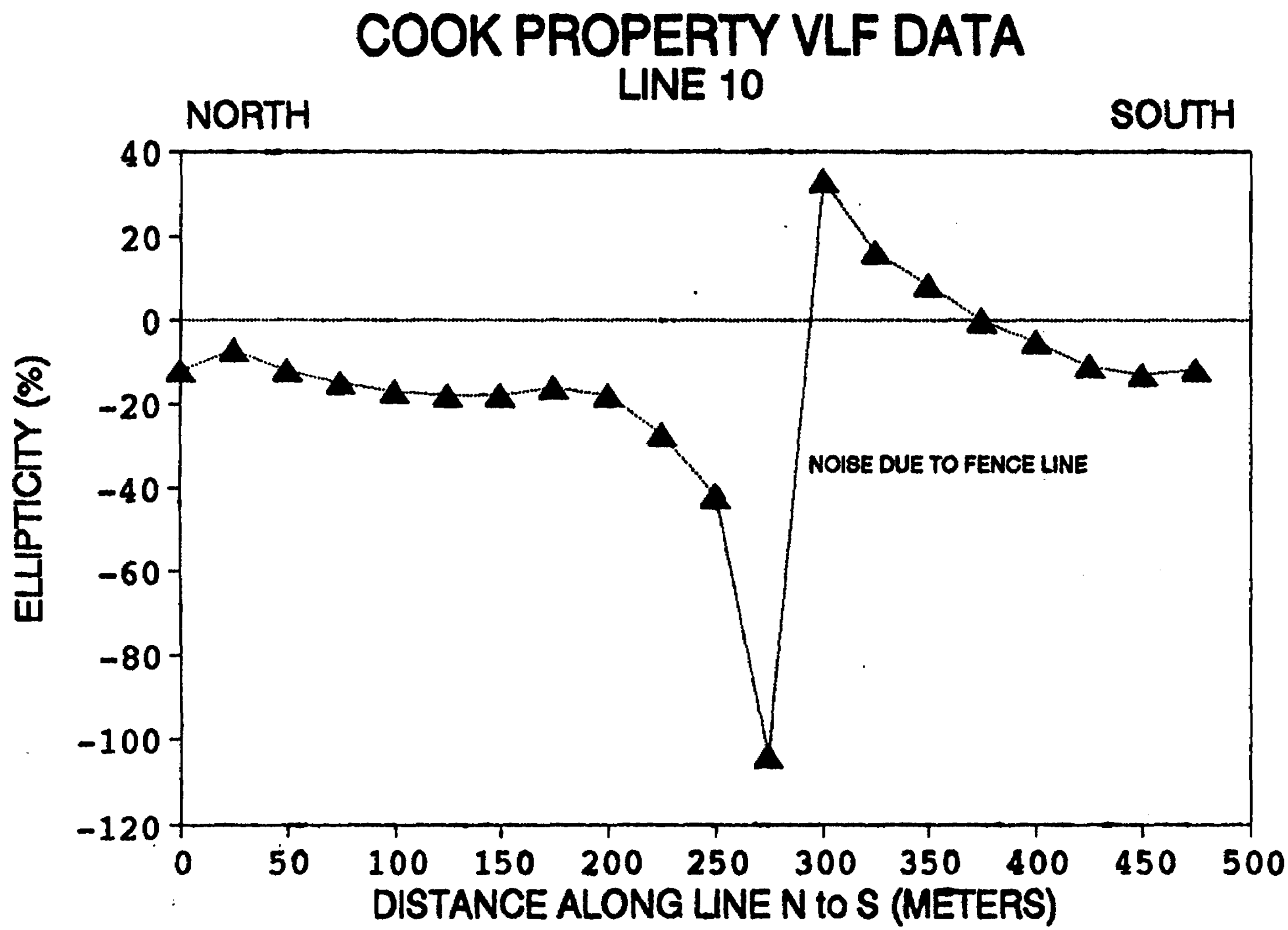

COOK PROPERTY VLF DATA
LINE 6
NORTH
SOUTH
ELLIPTICITY (%)
15
10
5
0
-5
-10
0
50
100
150
200
250
300
350
400
450
500
DISTANCE ALONG LINE N to S (METERS)

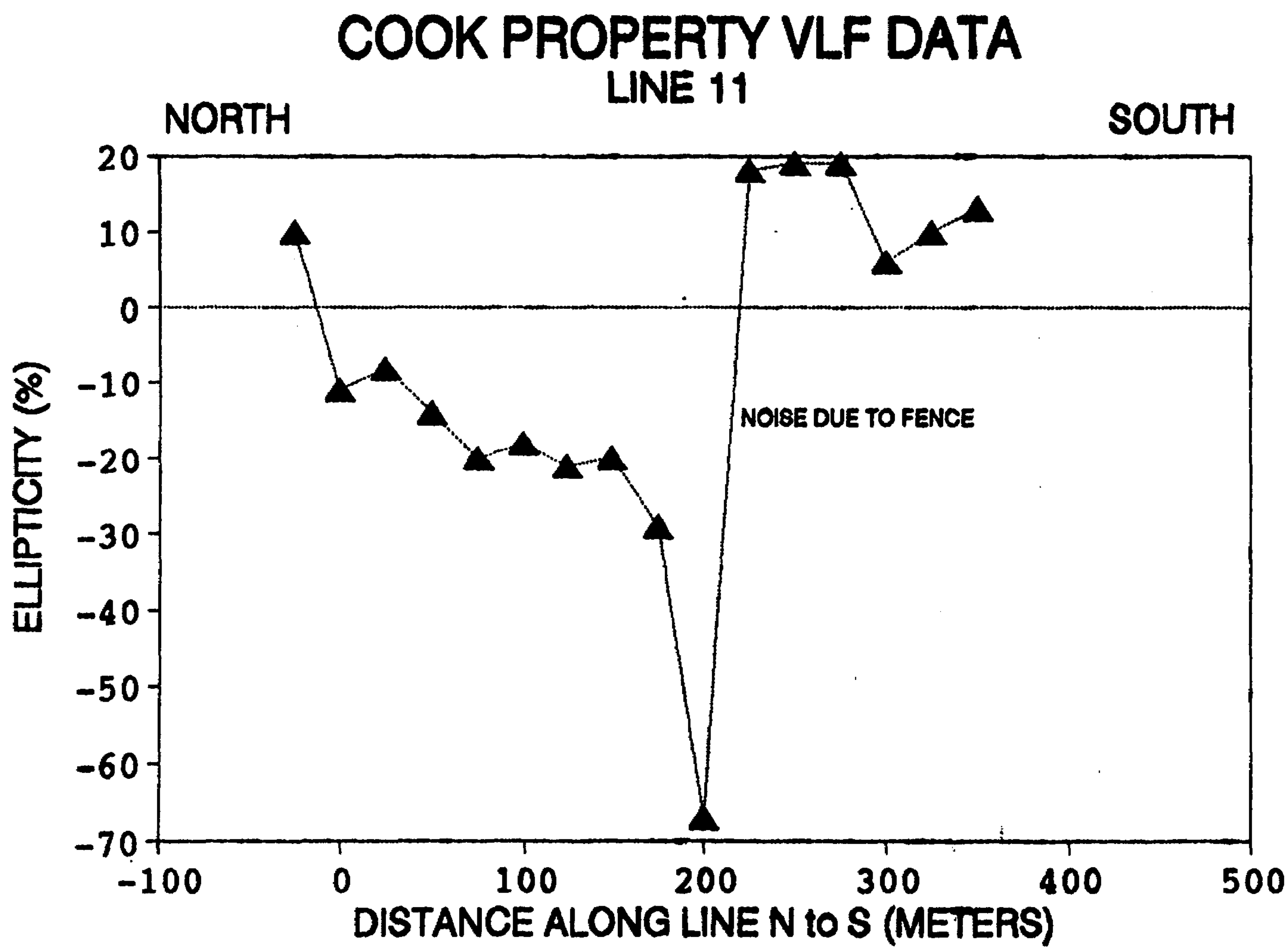

COOK PROPERTY VLF DATA
LINE 7
NORTH
SOUTH
ELLIPTICITY (%)
20
15
10
5
0
-5
-10
0
50
100
150
200
250
300
350
400
450
500
DISTANCE ALONG LINE N to S (METERS)

# COOK PROPERTY VLF DATA
## LINE 8

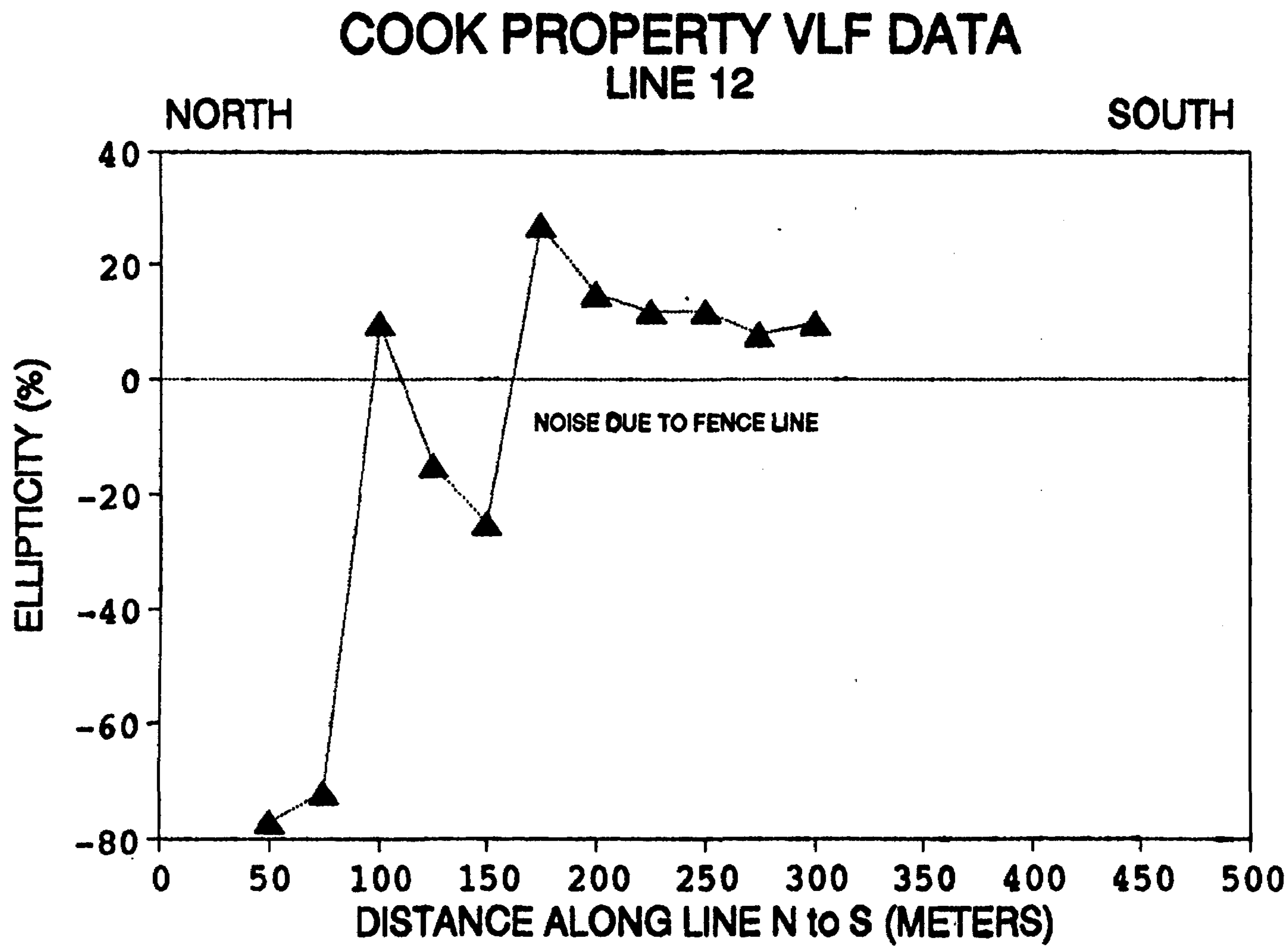



COOK PROPERTY VLF DATA
LINE 9
NORTH
SOUTH
ELLIPTICITY (%)
0
-5
-10
-15
-20
-25
-30
-100
0
100
200
300
400
500
DISTANCE ALONG LINE N to S (METERS)


COOK PROPERTY VLF DATA
LINE 10
NORTH
SOUTH
40
20
0
-20
-40
-60
-80
-100
-120
ELLIPTICITY (%)
NOISE DUE TO FENCE LINE
0
50
100
150
200
250
300
350
400
450
500
DISTANCE ALONG LINE N to S (METERS)



COOK PROPERTY VLF DATA
LINE 11
NORTH
SOUTH
20
10
0
-10
-20
-30
-40
-50
-60
-70
ELLIPTICITY (%)
NOISE DUE TO FENCE
-100
0
100
200
300
400
500
DISTANCE ALONG LINE N to S (METERS)


COOK PROPERTY VLF DATA
LINE 12
NORTH
SOUTH
ELLIPTICITY (%)
40
20
0
-20
-40
-60
-80
NOISE DUE TO FENCE LINE
0
50
100
150
200
250
300
350
400
450
500
DISTANCE ALONG LINE N to S (METERS)

# APPENDIX 3

# TABULATED DATA

# COOK PROPERTY GEOPHYSICAL DATA

## LINE 2

| DISTANCE | GAMMA | IP | Q |
|---|---|---|---|
| 0 | 57166.4 | -28 | 10 |
| 25 | 56868.3 | -29 | 11 |
| 50 | 56752.3 | -30 | 10 |
| 75 | 57253.0 | -33 | 9 |
| 100 | 56498.9 | -47 | 13 |
| 125 | 56835.9 | -34 | 9 |
| 150 | 56867.5 | -40 | 7 |
| 175 | 56879.8 | -42 | 11 |
| 200 | 56967.2 | -31 | 10 |
| 225 | 56975.5 | -24 | 11 |
| 250 | 56865.5 | -25 | 11 |
| 275 | 56896.3 | -26 | 11 |
| 300 | 56860.8 | -24 | 8 |
| 325 | 56873.2 | -20 | 8 |
| 350 | 56908.2 | -19 | 7 |
| 375 | 56883.2 | -18 | 6 |
| 400 | 56879.9 | -15 | 7 |
| 425 | 56885.1 | -8 | 10 |
| 450 | 56893.0 | -3 | 10 |
| 475 | 56900.8 | -8 | 5 |
| 500 | 56875.0 | -3 | 7 |

## LINE 3

| DISTANCE | GAMMA | IP | Q |
|---|---|---|---|
| 0 | 56844.6 | 4 | 12 |
| 25 | 56887.8 | -25 | 7 |
| 50 | 56895.1 | -43 | 5 |
| 75 | 56871.6 | -44 | 7 |
| 100 | 56883.9 | -51 | 1 |
| 125 | 56916.9 | -42 | 6 |
| 150 | 56871.0 | -39 | 7 |
| 175 | 56909.7 | -35 | 8 |
| 200 | 56878.5 | -32 | 8 |
| 225 | 56898.1 | -32 | 9 |
| 250 | 56910.1 | -29 | 7 |
| 275 | 56983.0 | -25 | 8 |
| 300 | 56914.6 | -26 | 7 |
| 325 | 56912.8 | -21 | 5 |
| 350 | 56912.3 | -19 | 6 |
| 375 | 56890.6 | -18 | 7 |
| 400 | 56912.0 | -12 | 7 |
| 425 | 56920.4 | -12 | 7 |
| 450 | 56972.5 | -9 | 7 |
| 475 | 56925.1 | -4 | 7 |

## LINE 4

| DISTANCE | GAMMA | IP | Q |
|---|---|---|---|
| 0 | 56838.4 | 8 | 7 |
| 25 | 56813.4 | 14 | 9 |
| 50 | 56870.8 | 15 | 8 |
| 75 | 56901.6 | -10 | 6 |
| 100 | 56945.3 | -41 | 5 |
| 125 | 56934.0 | -55 | 3 |
| 150 | 56850.5 | -54 | 3 |
| 175 | 56849.6 | -44 | 5 |
| 200 | 56882.3 | -39 | 6 |
| 225 | 56891.3 | -43 | 8 |
| 250 | 56928.7 | -32 | 7 |
| 275 | 56839.5 | -26 | 8 |
| 300 | 56895.9 | -25 | 8 |
| 325 | 56895.3 | -22 | 7 |
| 350 | 56908.0 | -21 | 7 |
| 375 | 56899.3 | -18 | 8 |
| 400 | 56890.2 | -13 | 9 |
| 425 | 56917.8 | -13 | 7 |
| 450 | 56896.4 | -10 | 6 |

## LINE 5

| DISTANCE | GAMMA | IP | Q |
|---|---|---|---|
| 0 | 57559.0 | 15 | 0 |
| 25 | 56754.0 | 20 | 0 |
| 50 | 56901.8 | 25 | 1 |
| 75 | 56781.1 | 35 | 3 |
| 100 | 56930.9 | 11 | 2 |
| 125 | 56951.5 | -6 | 3 |
| 150 | 56982.3 | -56 | 3 |
| 175 | 56935.3 | -71 | 0 |
| 200 | 56889.5 | -53 | 4 |
| 225 | 56948.8 | -46 | 7 |
| 250 | 56988.3 | -42 | 8 |
| 275 | 56976.5 | -40 | 9 |
| 300 | 56958.5 | -32 | 10 |
| 325 | 56965.6 | -25 | 10 |
| 350 | 57012.6 | -18 | 11 |
| 375 | 57014.7 | -20 | 9 |
| 400 | 56967.0 | -14 | 10 |
| 425 | 56985.6 | -26 | 1 |

# COOK PROPERTY GEOPHYSICAL DATA

## LINE 6

| DISTANCE | GAMMA | IP | Q |
|---|---|---|---|
| 0 | 57015.1 | 18 | -2 |
| 25 | 57003.4 | 18 | -5 |
| 50 | 57004.5 | 22 | -5 |
| 75 | 56986.5 | 28 | -3 |
| 100 | 57008.8 | 37 | -2 |
| 125 | 57014.2 | 44 | 0 |
| 150 | 56899.0 | 59 | 0 |
| 175 | 57023.4 | 15 | 0 |
| 200 | 57027.4 | -10 | 3 |
| 225 | 57104.2 | -45 | 8 |
| 250 | 57026.6 | -60 | 11 |
| 275 | 57008.9 | -82 | 8 |
| 300 | 56991.5 | -56 | 12 |
| 325 | 56957.7 | -47 | 14 |
| 350 | 57002.0 | -36 | 12 |
| 375 | 56977.1 | -29 | 11 |
| 400 | 56999.7 | -27 | 8 |
| 425 | 56985.7 | -31 | 3 |

## LINE 7

| DISTANCE | GAMMA | IP | Q |
|---|---|---|---|
| 0 | 56956.9 | 11 | -9 |
| 25 | 56919.6 | 17 | -8 |
| 50 | 56987.2 | 23 | -7 |
| 75 | 56936.6 | 25 | -6 |
| 100 | 56947.7 | 32 | -4 |
| 125 | 56949.5 | 40 | -3 |
| 150 | 56933.0 | 45 | -2 |
| 175 | 56900.6 | 62 | -4 |
| 200 | 56935.1 | 46 | -7 |
| 225 | 56976.8 | 25 | -4 |
| 250 | 57069.8 | 0 | 0 |
| 275 | 57008.1 | -11 | 4 |
| 300 | 56996.5 | -15 | 7 |
| 325 | 57011.5 | -24 | 11 |
| 350 | 57011.7 | -38 | 15 |
| 375 | 56990.9 | -49 | 15 |
| 400 | 57011.3 | -81 | -2 |

## LINE 8

| DISTANCE | GAMMA | IP | Q |
|---|---|---|---|
| -25 | 57100.9 | 9 | -6 |
| 0 | 56974.5 | -7 | -23 |
| 25 | 56851.3 | +6 | -15 |
| 50 | 56984.3 | 14 | -11 |
| 75 | 57026.0 | 17 | -10 |
| 100 | 57000.1 | 26 | -7 |
| 125 | 57028.7 | 29 | -10 |
| 150 | 57033.9 | 33 | -10 |
| 175 | 56973.8 | 39 | -8 |
| 200 | 57038.9 | 45 | -8 |
| 225 | 57032.2 | 47 | -13 |
| 250 | 57108.9 | 37 | -16 |
| 275 | 57284.3 | 35 | -19 |
| 300 | 57237.0 | 42 | -19 |
| 325 | 57150.5 | 33 | -16 |
| 350 | 57143.1 | 15 | -11 |
| 375 | 57085.4 | 9 | -4 |
| 400 | 57017.7 | -18 | 3 |
| 425 | 56974.0 | -36 | 8 |

## LINE 9

| DISTANCE | GAMMA | IP | Q |
|---|---|---|---|
| -25 | | 11 | -3 |
| 0 | 56931.2 | -1 | -13 |
| 25 | 56945.9 | -5 | -19 |
| 50 | 56900.0 | -2 | -20 |
| 75 | 56941.8 | 9 | -17 |
| 100 | 56903.9 | 13 | -16 |
| 125 | 56976.5 | 20 | -16 |
| 150 | 56947.6 | 25 | -14 |
| 175 | 56946.7 | 30 | -13 |
| 200 | 56910.0 | 35 | -13 |
| 225 | 56893.8 | 46 | -14 |
| 250 | 56917.5 | 47 | -12 |
| 275 | 56979.2 | 44 | -22 |
| 300 | 56956.4 | 50 | -26 |
| 325 | 56936.6 | 57 | -24 |
| 350 | 56903.5 | 61 | -25 |
| 375 | 56909.1 | 54 | -26 |
| 400 | 56936.2 | 45 | -25 |
| 425 | 56978.9 | 31 | -18 |

COOK PROPERTY GEOPHYSICAL DATA

LINE 10

| DISTANCE | GAMMA | IP | Q |
|---|---|---|---|
| 0 | 56926.7 | 5 | -12 |
| 25 | 56918.8 | 3 | -7 |
| 50 | 56939.5 | 0 | -12 |
| 75 | 56935.7 | 5 | -15 |
| 100 | 56951.3 | 6 | -17 |
| 125 | 56945.0 | 13 | -18 |
| 150 | 56899.3 | 20 | -18 |
| 175 | 56924.4 | 28 | -16 |
| 200 | 56964.2 | 31 | -18 |
| 225 | 56953.4 | 31 | -27 |
| 250 | 56895.4 | 39 | -42 |
| 275 | 56888.2 | 39 | -104 |
| 300 | 57118.3 | 46 | 33 |
| 325 | 57143.6 | 38 | 16 |
| 350 | 56957.5 | 50 | 8 |
| 375 | 56971.3 | 52 | 0 |
| 400 | 56923.8 | 54 | -5 |
| 425 | 56928.3 | 55 | -11 |
| 450 | 56944.1 | 51 | -13 |
| 475 | 56912.1 | 44 | -12 |

LINE 11

| DISTANCE | GAMMA | IP | Q |
|---|---|---|---|
| -25 | 56897.3 | 14 | 10 |
| 0 | 56892.2 | -6 | -11 |
| 25 | 56873.4 | -3 | -8 |
| 50 | 56869.7 | -6 | -14 |
| 75 | 56861.8 | -4 | -20 |
| 100 | 56874.7 | 6 | -18 |
| 125 | 56863.3 | 13 | -21 |
| 150 | 56835.5 | 26 | -20 |
| 175 | 56802.9 | 28 | -29 |
| 200 | 56643.3 | 29 | -67 |
| 225 | 57257.4 | 40 | 18 |
| 250 | 56913.8 | 27 | 19 |
| 275 | 56901.7 | 43 | 19 |
| 300 | 56810.6 | 45 | 6 |
| 325 | 56792.9 | 61 | 10 |
| 350 | 56799.8 | 81 | 13 |

LINE 12

| DISTANCE | GAMMA | IP | Q |
|---|---|---|---|
| 50 | 56802.7 | 83 | -77 |
| 75 | 56814.0 | 5 | -72 |
| 100 | 56774.8 | 13 | 10 |
| 125 | 56775.5 | 40 | -15 |
| 150 | 56733.5 | 112 | -25 |
| 175 | 56811.4 | -35 | 27 |
| 200 | 56734.0 | 2 | 15 |
| 225 | 56865.5 | 19 | 12 |
| 250 | 56773.7 | 32 | 12 |
| 275 | 56788.1 | 43 | 8 |
| 300 | 56754.2 | 61 | 10 |

## CERTIFICATE OF QUALIFICATIONS

I, Elizabeth Jane Sherlock, hereby certify that:

1. I reside at 17 1/2 Dill St. Kitchener, Ontario N2G 1L2

2. I am a qualified geologist holding a H.B.Sc. in geology from McMaster University (1987)

3. I have been continuously engaged in my profession since 1985.

Elizabeth Sherlock

E.J. Sherlock
October 22, 1990

## CERTIFICATE OF QUALIFICATIONS

I, Ross Lawrence Sherlock, hereby certify that:

1. I reside at 17 1/2 Dill St. Kitchener, Ontario N2G 1L2

2. I am a qualified geologist holding a H.B.Sc. in geology from McMaster University (1986), a M.Sc. in economic geology from Lakehead University (1989) and am presently a doctoral candidate in economic geology at the University of Waterloo.

3. I have been continuously engaged in my profession since 1985.

R.L. Sherlock
October 22, 1990

RES. GEO. TWEED

Ministry of Northern Development and Mines
Ontario

DOCUMENT No. W9009 • 66

31C15NW0007 2.13701 CLARENDON

900

**Mining Act**

## Report of Work
(Geophysical, Geological and Geochemical Surveys)

| Type of Survey(s) | Mining Division | Township or Area |
|---|---|---|
| MAG & VLF Geophysical + Geological | S-Ont. | Clarendon Twp M-77 |

| Recorded Holder(s) | Prospector's Licence No. |
|---|---|
| ELIZABETH SHERLOCK | A50744 |

| Address | Telephone No. |
|---|---|
| 17 1/2 Dill Street, Kitchener, Ont N2G 1L2 | (519) 745-2845 |

Survey Company: Same as above

| Name and Address of Author (of Geo-Technical Report) | Date of Survey (from & to) |
|---|---|
| same as above | 09 09 90 (Day Mo. Yr.) – 23 09 90 (Day Mo. Yr.) |

Credits Requested per Each Claim in Columns at right

| | | Days per Claim |
|---|---|---|
| **Special Provisions** | Geophysical | |
| For first survey: Enter 40 days. (This includes line cutting) | - Electromagnetic | |
| | - Magnetometer | 40 |
| For each additional survey: using the same grid: Enter 20 days (for each) | - Other VLF | 20 |
| | Geological | 20 |
| | Geochemical | |
| **Man Days** | Geophysical | |
| Complete reverse side and enter total(s) here | - Electromagnetic | |
| | - Magnetometer | |
| | - Other | |
| | Geological | |
| | Geochemical | |
| **Airborne Credits** | | Days per Claim |
| Note: Special provisions credits do not apply to Airborne Surveys. | Electromagnetic | |
| | Magnetometer | |
| | Other | |

Total miles flown over claim(s).

| Date | Recorded Holder or Agent (Signature) |
|---|---|
| Nov. 8, 1990 | Elizabeth Sherlock |

Mining Claims Traversed (List in numerical sequence)

| Mining Claim Prefix | Number | Mining Claim Prefix | Number | Mining Claim Prefix | Number |
|---|---|---|---|---|---|
| SO | 1091952 | | | | |
| SO | 1091955 | | | | |

Total number of mining claims covered by this report of work: 2

1990

MINING LANDS SECTION

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in this Report of Work, having performed the work or witnessed same during and/or after its completion and annexed report is true.

Name and Address of Person Certifying
ELIZABETH SHERLOCK
17 1/2 Dill St., Kitchener, Ont

| Telephone No. | Date | Certified By (Signature) |
|---|---|---|
| (519) 745-2845 | Nov. 8/90 | Elizabeth Sherlock |

Received Stamp

SOUTHERN ONTARIO MINING DIVISION
RECEIVED
NOV - 8 1990
AM 7 8 9 10 11 12 1 2 3 4 5 6 PM

**For Office Use Only**

| Total Days Cr. Recorded | Date Recorded | Mining Recorder |
|---|---|---|
| 160 | Nov. 8, 1990 | [signature] |
| | Date Approved as Recorded | Provincial Manager, Mining Lands |
| | Jan 23/91 | [signature] |

1362 (89/06)

# ELIZABETH JANE SHERLOCK

ADDRESS: 17 1/2 Dill Street
Kitchener, Ontario
N2G 1L2
(519) 745-2845



PERSONAL

Height 163 cm
Weight 50 kg
Birth Date 12/10/64
SIN 469 651 376

EDUCATION: McMaster University

I attended from September 1983 to May 1987, obtaining an H.B.Sc. in Geology.
Thesis Title: Sedimentology of the Viking Formation at Crystal Field, Alberta.

WORK HISTORY

**GEOLOGICAL ASSISTANT** May 14 to Aug. 31, 1990

Employer: **MINISTRY OF NORTHERN DEVELOPMENT AND MINES**
**RESIDENT GEOLOGIST OFFICE**
Supervisor: Mr. B. Feenstra (519) 661-2773
Duties: Based out of London, I assisted the Resident and Staff Geologists with their summer projects. This included the identification of abandoned gypsum mines in the Caledonia area and their associated land use hazards. I also was involved in property visits and geological mapping throughout Southwestern Ontario.

**GEOLOGICAL TECHNICIAN** Feb. 15 to April 15, 1990

Employer: **UNIVERSITY OF WATERLOO**
Supervisor: Dr. E.C. Jowett (519) 885-1211
Duties: I was responsible for the sampling of sulphides and carbonates for isotope analysis, the preparation and polishing of thin section and rock samples, drafting and data processing.

**STAFF GEOLOGIST** Nov. 1 1987 to Oct. 1, 1989

Employer: **MINISTRY OF NORTHERN DEVELOPMENT AND MINES**
**INDUSTRIAL MINERALS PROGRAM, NORTHWESTERN REGION**
Supervisor: Ms. M.C. Gerow (807) 475-1331
Duties: I assisted the industrial mineral geologist with her responsibilities. Based out of Thunder Bay, we examined and evaluated the potential of industrial mineral occurrences in Northwestern Ontario. We also provided assistance to prospectors and the general public.

Work History Continued

**RESEARCH ASSISTANT** May 1 to Sept. 1, 1987

Employer: **NATIONAL RESEARCH COUNCIL OF CANADA
INSTITUTE FOR RESEARCH IN CONSTRUCTION
BUILDING MATERIALS**
Supervisor: Dr. P. Gratten-Bellew (613) 993-0096
Duties: The project involved the preparation of zirconium oxides and the study of these oxides, and zircon samples, using x-ray diffraction methods. I also assisted with the on-going research projects dealing with aggregate and concrete.

**RESEARCH ASSISTANT** May 1 to Sept. 1, 1986

Employer: **McMASTER UNIVERSITY GEOLOGY DEPT.**
Supervisor: Dr. R. Walker (416) 525-9140
Duties: I was employed as an assistant to Dr. Walker and his graduate students at the Core Research Centre, Calgary, Alberta. My duties included core logging, photography and associated data collection. I was also responsible for the collection of data for my own B.Sc. thesis.

**JUNIOR FIELD ASSISTANT** June 1 to Sept. 1, 1985

Employer: **ONTARIO GEOLOGICAL SURVEY**
Supervisor: Mr. N. Trowell
Duties: We were mapping basaltic flows in the Matheson area. I was responsible for camp maintenance as well as drafting and traversing.

WORK RELATED SKILLS

I am familiar with both Basic and Fortran computer languages along with experience in various word processing, data base, and spreadsheet software. I also have experience in drafting, regional mapping techniques, geophysical surveys, core logging and photography. I have a valid drivers licence and I can operate a standard transmission as well as most small engines. I have valid First Aid and CPR certificates as well as extensive experience in wilderness camping. I am familiar with the Ontario Mining Act and the Aggregate Resources Act and other related legislation from my own prospecting and work experience. I am a very organized and efficient worker and am willing to travel.

References, transcripts and detailed thesis description can be furnished upon request.

# McMaster University
OFFICIAL TRANSCRIPT

**CERTIFIED CORRECT**
**JUN 04 1987**
**F. J. WALKER**

PAGE 1

**ISSUED TO STUDENT**

REF: [redacted]4840
NAME: BARR ELIZABETH JANE
DATE: 03 JUN 1987 DATE OF BIRTH: 12/10/64

BASIS OF ADMISSION

PREV INST: NORTH GRENVILLE DH YEAR: 1983
QUALIFICATION--: 83/84 GRADE 13
GRADE 13 AVG: 80.3

DEGREES GRANTED

05 JUN 1987 BSC/HON HON GEOLOGY

SCHOLARSHIPS

1986 KATAMBALA BK PRZ

SUMMARY OF ATTENDANCE

SCIENCE UNC NAT SCI 1
83/84 WINTER LVL 1 FULL TIME
SCIENCE BSC/HON HON GEOLOGY
84/85 WINTER LVL 2 FULL TIME CLEAR ADMISSION
85/86 WINTER LVL 3 FULL TIME CLEAR ADMISSION
86/87 WINTER LVL 4 FULL TIME CLEAR ADMISSION

| COURSES | | UNITS | | FINAL | DEF | IM | AREA | CATEGORY | MEDIAN |
|---|---|---|---|---|---|---|---|---|---|
| **83/84 WINTER** | | | | | | | | | |
| CHEM | 1A07 | 7 | GENERAL CHEMISTRY | B+ | | | R | | |
| GEOLOGY | 1A06 | 6 | GENERAL GEOLOGY | B | | | E | | |
| MATH | 1A06 | 6 | CALCULUS I | B | | | R | | |
| MATH | 1G06 | 6 | APPLIED ANALYSIS | A+ | | | R | | |
| PHYSICS | 1A07 | 7 | WAVE M,OPTICS,ELEC | C | | | R | | |

UNIVERSITY AVG: 8.1/32 UNITS
MAY CONTINUE.
LEVEL 1 COMPLETE

| COURSES | | UNITS | | FINAL | DEF | IM | AREA | CATEGORY | MEDIAN |
|---|---|---|---|---|---|---|---|---|---|
| **84/85 WINTER** | | | | | | | | | |
| BIOLOGY | 1A06 | 6 | ADAPT IN BIO WORLD | C+ | | | R | | (C+/.411) |
| CHEM | 2P04 | 4 | PHYSICAL CHEMISTRY | B | | | E | | (C+/..84) |
| COMP SCI | 1B03 | 3 | INT COMPUTING-SCI | A | | 2 | R | | (B-/..95) |
| GEOLOGY | 2B06 | 6 | OPT CRYST&INT PETR | A- | | | RA | | (B /..32) |
| GEOLOGY | 2C06 | 6 | EARTH HISTORY | B+ | | | RA | | (B-/..34) |
| GEOLOGY | 2D05 | 5 | STRUCTURAL GEOL 1 | B- | | | RA | | (B /..24) |
| GEOLOGY | 3E02 | 2 | FIELD CAMP | COM | | | R | FOR LV 3 | ( N/A ) |
| MATLS | 1A03 | 3 | INTRO TO MATERIALS | B | | 1 | E | | (B-/..86) |

UNIVERSITY AVG: 8.2/33 UNITS CUM AREA AVERAGE: 9.2/ 13.6 UNITS
MAY CONTINUE IN PROGRAMME.
LEVEL 2 COMPLETE



| COURSES | | UNITS | | FINAL | DEF | IM | AREA | CATEGORY | MEDIAN |
|---|---|---|---|---|---|---|---|---|---|
| **85/86 WINTER** | | | | | | | | | |
| GEOG | 2T03 | 3 | FLUVL GEOMORPHLGY | A- | | 1 | E | IN EVE | (B /..30) |
| GEOG | 2W03 | 3 | HYDROLOGY-CANADA | B+ | | 2 | E | | (B-/..40) |
| GEOLOGY | 3A03 | 3 | APP GEOPHYSICS A | B | | 1 | R | | (B-/..22) |
| GEOLOGY | 3C06 | 6 | PETROGRAPHY | B | | | RA | | (B-/..28) |
| GEOLOGY | 3D06 | 6 | PALAEONTOLOGY | B- | | | RA | | (B-/..18) |
| GEOLOGY | 3G04 | 4 | CRYSTAL & MINERAL | B+ | | 1 | RA | | (B /..26) |
| GEOLOGY | 3I03 | 3 | PLANET+LUNAR GEOL | A- | | 2 | R | | (B+/..18) |
| GEOLOGY | 3J03 | 3 | PHY PROCESS GEOL | B+ | | 2 | RA | | (B-/..10) |
| MATLS | 3D03 | 3 | THERMO-MATERIAL 1 | C+ | | 1 | R | | (B /..10) |

UNIVERSITY AVG: 8.3/34 UNITS CUM AREA AVERAGE: 8.7/ 28.8 UNITS
MAY CONTINUE IN PROGRAMME.
LEVEL COMPLETE

| COURSES | | UNITS | | FINAL | DEF | IM | AREA | CATEGORY | MEDIAN |
|---|---|---|---|---|---|---|---|---|---|
| **86/87 WINTER** | | | | | | | | | |
| GEOLOGY | 3B03 | 3 | APP GEOPHYSICS B | B- | | 1 | E | | (B-/..16) |
| GEOLOGY | 4B83 | 3 | METAMORPHIC PETROL | B | | 2 | RA | | (B /..18) |
| GEOLOGY | 4B03 | 3 | IGNEOUS PETROLOGY | B | | 1 | E | | (B /...8) |

****************CONTINUED ON NEXT PAGE**************************************

McMaster University
OFFICIAL TRANSCRIPT

REF: 8304840
NAME: [redacted]RR     ELIZABETH JANE
DATE: 03 JUN 1987     DATE OF BIRTH: 12/10/64

CERTIFIED CORRECT
JUN 04 1987
F. J. WALKER



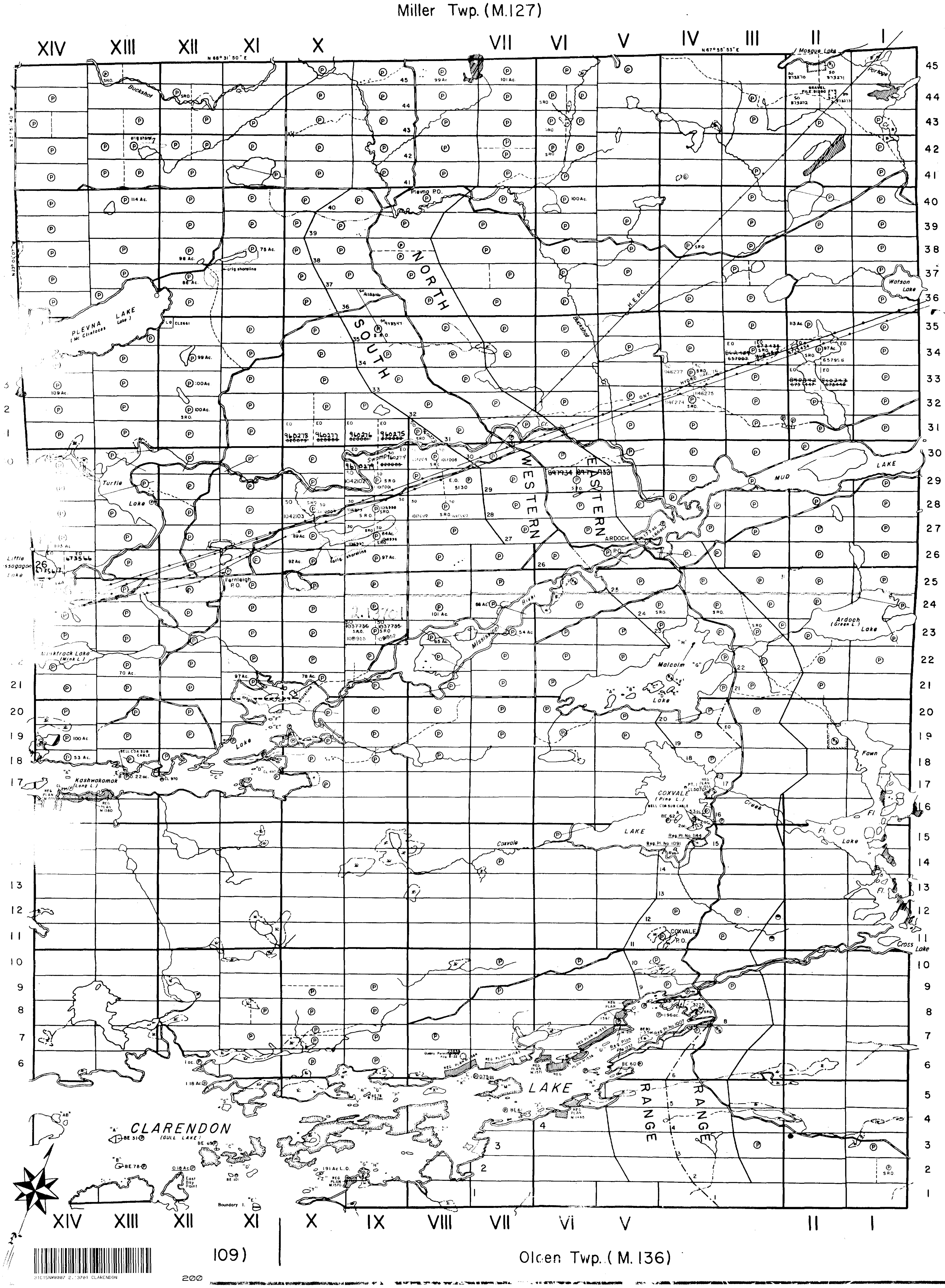
ISSUED TC STUDENT

| COURSES | | UNITS | | FINAL | DEF | TM | AREA | CATEGORY | MEDIAN |
|---|---|---|---|---|---|---|---|---|---|
| 86/87 WINTER | | | | | | | | | |
| GECLCGY | 4E06 | 6 | METALL MINERAL CEP | B- | | | RA | | (B-/..21) |
| GECLCGY | 4K06 | 6 | GECLOGY THESIS | B+ | | | RA | | (A-/...8) |
| GECLCGY | 4MM3 | 3 | SEDIMENT-CHEM PRCC | A- | | 2 | RA | | (B-/..18) |
| GECLCGY | 4M03 | 3 | SEDIMENT-PHYS PRCC | A- | | 1 | RA | | (C /..23) |
| GECLCGY | 4U03 | 3 | GECL FCSSIL FUELS | B+ | | 1 | E | | (B /..11) |

UNIVERSITY AVG: 8.4/30 UNITS     CUM AREA AVERAGE: 8.8/ 45.6 UNITS
CLEAR TC GRADUATE.
GRACUATICN AVG : 8.5/ 36.0 UNITS     PROGRAMME STDG: 5/ 6
GRACUATION STDING: II
**********************************ENC CF TRANSCRIPT**************************************************

SUDBURY
MINING DIV.
RECEIVED
NOV 28 1990
A.M. P.M.
7 8 9 10 11 12 1 2 3 4 5 6

2:30 PM




# THE TOWNSHIP

2.13701 OF

# CLARENDON

## COUNTY OF FRONTENAC

**SOUTHERN ONTARIO**

MINING DIVISION

SCALE: 1-INCH=40 CHAIN

## LEGEND

PATENTED LAND
CROWN LAND SALE
LEASES
LOCATED LAND
LICENSE OF OCCUPATION
MINING RIGHTS ONLY
SURFACE RIGHTS ONLY
ROADS
IMPROVED ROADS
KING'S HIGHWAYS
RAILWAYS
POWER LINES
MARSH OR MUSKEG
MINES
CANCELLED
TRAILS
PATENTED S.R.O.

## NOTES

This Map Is Not To Be Use
FOR SURVEY PURPOSE

Lot And Concession Lines Shown Hereon Are Projected From The Best Information Available, But Their True Position Is Not Guaranteed, For Official Survey Purposes Consult The Original Survey Plans And Field Notes Of Records In The Ministry of Natural Resources.

400' surface rights reservation along the shores of all lakes and rivers.

Flooded Lands Shown Thus:

Flooding Rights Reserved On Cross Lake And Fawn Lake To Elevation 110.5'. File: 128113.

Original Survey Line Of Frontenac Road Shown Thus:

Islands in Clarendon Lake shown thus
Surface Rights Only withdrawn from staking. File: 180708

**AREAS WITHDRAWN FROM STAKING**

S.R. – SURFACE RIGHTS M.R. – MINING RIGHTS

| Section | Order No. | Date | Disposition | File |
|---|---|---|---|---|
| Reserved for Public Use | | | SR | 8743 |
| - | | | SR | 12557 |
| M.N.R. Reservation | | | SR | 1408 |
| - | | | SR&MR | 9237 |
| Reservation | | | | |

DATE OF ISSUE
AUG 27 1990
SOUTHERN ONTARIO MINING DIVISION

THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES AND ACCURACY IS NOT GUARANTEED. THOSE WISHING TO STAKE MINING CLAIMS SHOULD CONSULT WITH THE MINING RECORDER, MINISTRY OF NORTHERN DEVELOPMENT AND MINES FOR ADDITIONAL INFORMATION ON THE STATUS OF THE LANDS SHOWN HEREON

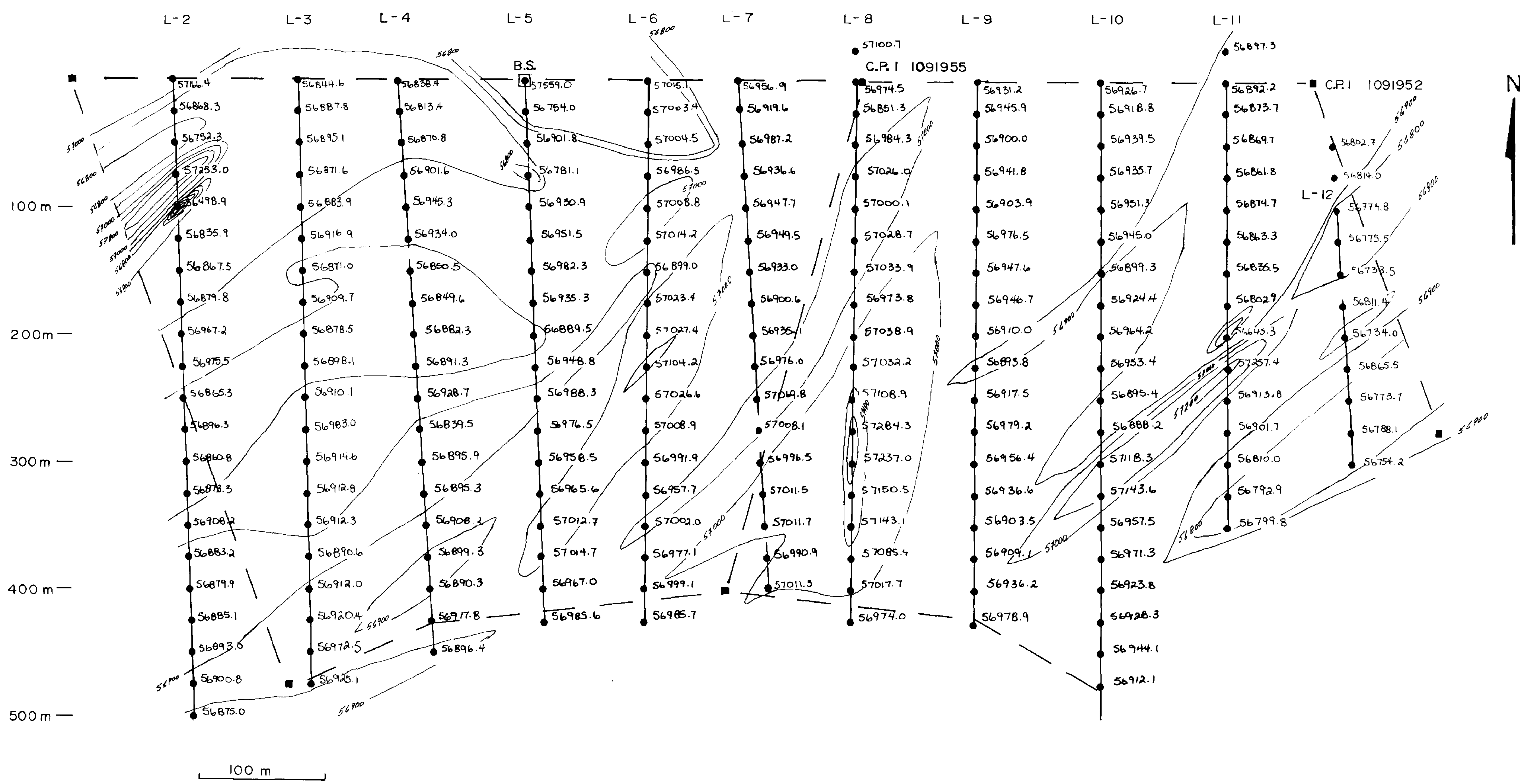
PLAN NO.-M.77

ONTARIO
MINISTRY OF NATURAL RESOURC
SURVEYS AND MAPPING BRANCH

31C15NW0007 2.13701 CLARENDON

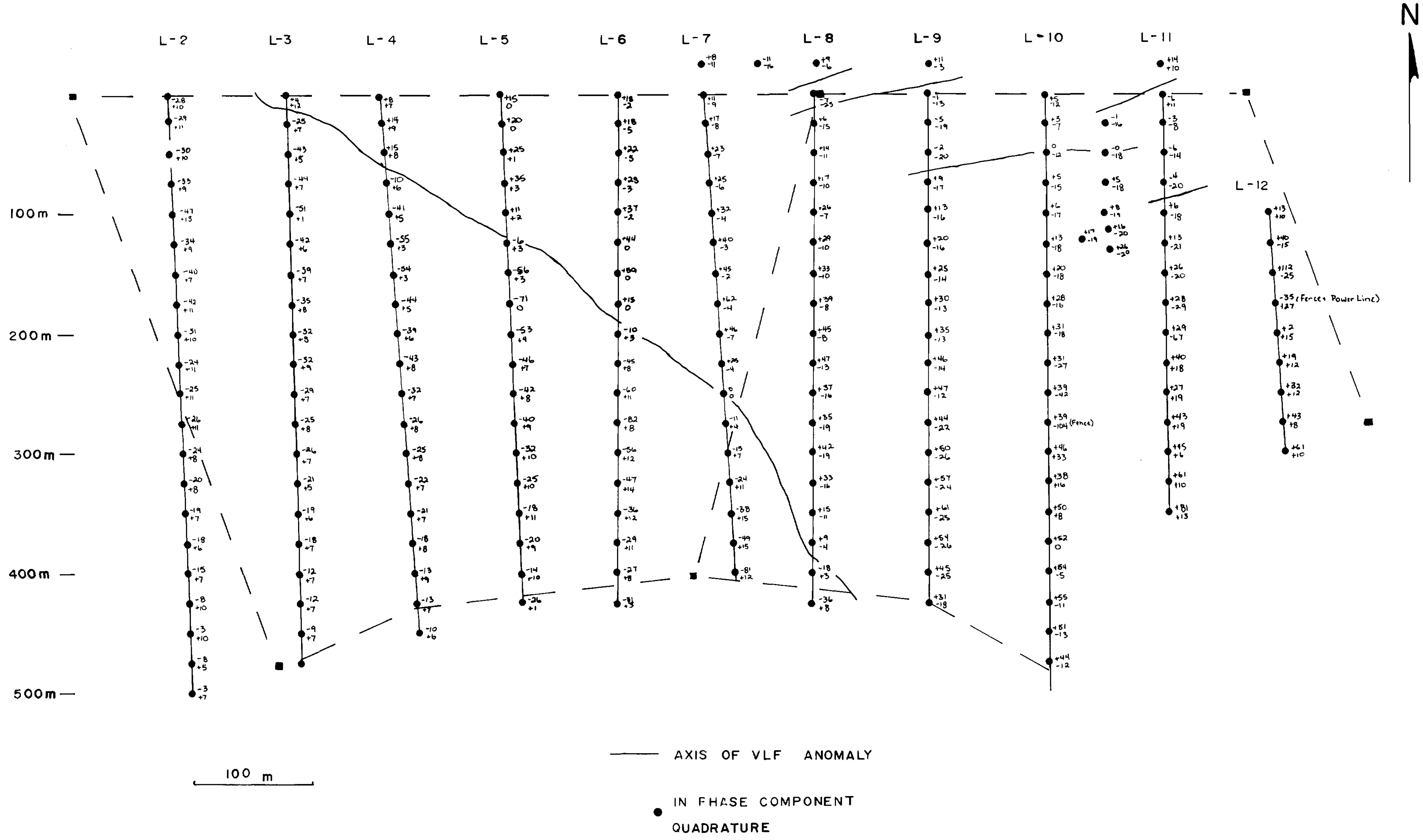
200

# MAGNETICS




2,13701

# VLF


N
L-2
L-3
L-4
L-5
L-6
L-7
L-8
L-9
L-10
L-11
L-12
100m
200m
300m
400m
500m
(Fence)
(Fence + Power Line)
100 m
AXIS OF VLF ANOMALY
IN PHASE COMPONENT
QUADRATURE

2.13701

# LEGEND



| | | |
|---|---|---|
| DMT | DMT | DOLOMITIC MARBLE TUFF |
| MAT | MAT | MARBLE TUFF |
| MT | MT | MAFIC TUFF |
| AMP | AMP | AMPHIBOLITE |
| M | M | MARBLE |
| FP | FP | FELDSPAR PORPHYRITIC DIORITE |

X —X—X FENCE LINE

CLAIM POST

TEST PIT

C-# SAMPLE LOCATION

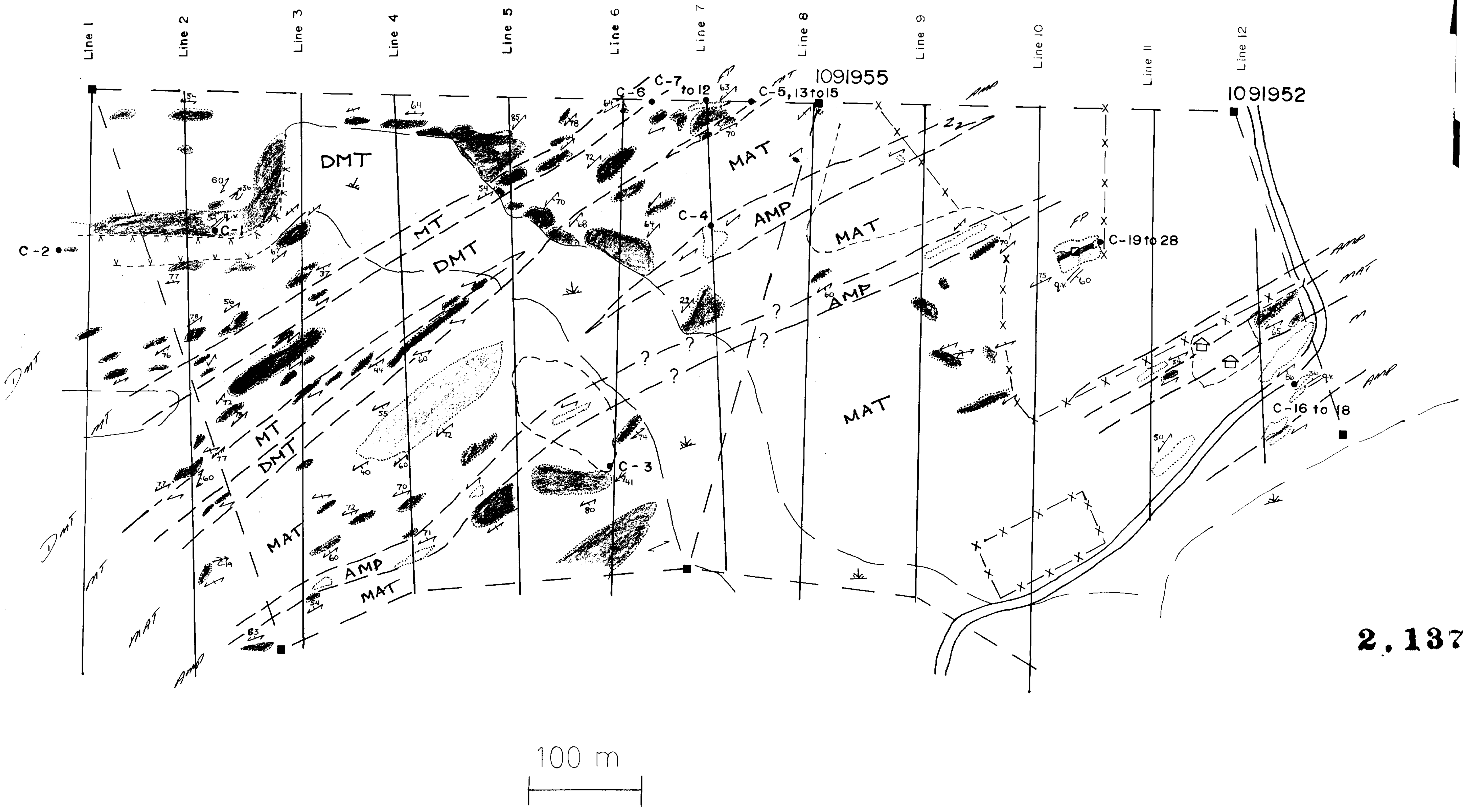
STRIKE AND DIP OF FOLITION

SWAMP

AREA OF OUTCROP

STRIKE AND DIP OF QUARTZ VEIN

# GEOLOGY

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