

GEOLOGICAL AND GEOPHYSICAL REPORT
ON THE EXPO GROUPS A, D, E, F, G, H, J, K, L,
M AND N LOCATED TWENTY MILES
SOUTHWEST OF PORT HARDY, B.C.
50° 127° ^{NW}
BY *Q/L/D E & W*
A. ASCENCIOS UTAH MINES LTD.

4000

GEOLOGICAL AND GEOPHYSICAL REPORT
ON THE
EXPO GROUPS A,D,E,F,G,H,I,J,K,L,M AND N

LOCATED
FIFTEEN TO TWENTY MILES SOUTHWEST OF PORT HARDY
50°, 127°, NW

4000

Department of Mines and Petroleum Resources ASSESSMENT REPORT NO. <u>4000</u> MAP _____
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BY

A. ASCENCIOS, SENIOR GEOLOGIST
UTAH MINES LTD.

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mg



SCALE: 1 INCH = 30 MILES

INDEX MAP

EXPO GROUPS
Mining Division

2/14

4000 M1



UTAH CONSTRUCTION & MINING CO.
EXPO-HEP CLAIM MAP
SANDOVER ISLAND

SUMMARY

Utah Mines Ltd. examined the Expo claims from 16th May to 16th September, 1972, with a crew of eighteen men. Geological mapping as well as induced polarization and magnetic surveys were carried out over part of the claim block which is located along the north side of Holberg Inlet, Northern Vancouver Island.

The Expo claims are underlain by volcanic and sedimentary rocks of Triassic age (the Karmutsen volcanics and Quatsino Limestone) and of Upper Triassic-Lower Jurassic ages (the Parson Bay Sediments and the Bonanza pyroclastic rocks). These rocks in this area are believed to form a west to northwest trending synclinal structure. The above rocks are intruded by several plutons of different sizes, and probably of Jurassic age.

Pyrite is the most widespread and abundant sulphide over the whole area of study, though chalcopyrite showings occur in some quartz-monzonite-diorite outcrops. Molybdenite is minor, and only small specks were found in some outcrops of the complex breccia.

A magnetic survey appears to outline several plutonic masses where contacts seemingly carry some magnetite.

GEOLOGICAL AND GEOPHYSICAL REPORT FOR EXPO GROUPS

A, D, E, F, G, H, I, J, K, L, M AND N

INTRODUCTION

From 16th May to 16 September, 1972, geological and geophysical work was done on the Expo Groups A, D, E, F, G, H, I, J, K, L, M and N. The claims specifically covered in this work include Expo Nos. 257, 259, 261, 262 to 265, 241 to 243, 280 to 289, 302 to 310, 334 to 343, 357 to 365, 378, 382, 384 to 386, 398, 405, 408, 548, 557, 833 to 836, 886 to 891, Don 5, 6, 11, 12, 13 Fractions, and Expo 503 Fraction. The work also included portions of Expo Nos. 219, 221, 223, 239, 240, 244, 245, 258, 260, 266, 267, 278, 279, 290, 291, 300, 301, 311 to 313, 325, 326, 332, 333, 344, 345, 355, 356, 366, 377, 379, 381, 383, 403, 404, 426, 547, 558 to 560, 565, 631, 633, 646, 648, 650, 652 to 654, 665, 666, 837, 876 to 879, 885, Don 4, 9 and 14 Fractions. The field work was undertaken by A. Ascencios, R. Anderson, R. Potter, N. le Nobel, G. Clouthier and G. Cargill, geologists, K. Witherly, geophysicist, and T. Drown, D. Pelly, E. Rorstad, D. Spencers, L. Harrison, B. Muller and R. Caldwell as field assistants.

The above claims are part of a larger block of 836 claims located by Utah Mines Ltd. between 1963 and 1971, along the north side of Holberg Inlet about thirty-four miles west of Port Hardy, near the north end of Vancouver Island.

The Expo groups affected by this report cover an area roughly seven miles long by five miles wide trending west to northwest. The claims lie within the timber licences of the Rayonier Logging Company. Logging has only been active across Expo #228 claim in Expo Group A, during the last few years. Most of the area has not been logged, and it is covered with mature stands of hemlock, spruce, cedar and balsam. Areas located over an elevation of 1,600 feet above sea level are covered with sparse vegetation. In general, the whole area of study is fairly rugged, with swamps and few lakes. The elevation ranges from 700 feet to 2,250 feet above sea level.

These claims are partly accessible by the Port Hardy-Holberg Road which is used by both the O'Connor and Rayonier Logging Companies. This gravel road leaves the paved Port Hardy-Port McNeill highway about two miles south of Port Hardy and passes along the south side of Kains and Nahwitti Lakes.

The access for provisions, and maintenance given to the various camps during the field season, were almost entirely accomplished by helicopter from Port Hardy.

FIELD WORK

The 1972 field work by Utah Mines Ltd. on the Expo claims consisted of geological mapping, and magnetic and induced polarization surveys. For control, a ten mile Baseline was surveyed with a Wild Model C-16 Theodolite. This Baseline trends southeasterly through the area, and the breakdown of its location is as follows:

<u>LENGTH</u> (in miles)	<u>LOCATION</u>		<u>BEARING</u>
	<u>FROM</u>	<u>TO</u>	
2.0	EXPO # 223 M.C.	EXPO # 304 M.C.	E-W
1.0	EXPO # 304 M.C.	EXPO # 310 M.C.	N-S
1.7	EXPO # 310 M.C.	EXPO # 379 M.C.	E-W
1.0	EXPO # 379 M.C.	EXPO # 835 M.C.	N-S
1.9	EXPO # 835 M.C.	EXPO # 877 M.C.	E-W
1.5	EXPO # 877 M.C.	EXPO # 654 M.C.	N-S
0.9	EXPO # 654 M.C.	EXPO # 665 M.C.	E-W

From this baseline, 53 picket lines, running north, with a total length of 36.5 miles, were surveyed using a compass and chain. Picket line spacing was designed to be 500 feet. All pickets have been marked with stations every 200 feet and all lines were tied at each end with a Brunton compass and chain survey. This grid comprises 72 miles of traverse line.

Altimeter readings were taken at all stations and corrected to Baseline readings by straight-line extrapolation. The elevations of many tran-

sit hubs surveyed along the Baseline were used as datum for the area herein submitted. The surveyed grid, as described above, was employed as a base for the geological mapping which was done on a scale of one inch to 200 feet. Magnetometer readings were taken at 200 foot stations along each picket line, and at about 500 foot intervals for seven miles along the Baseline. Finally, an induced polarization survey was run for a total length of 14 miles, and it was concentrated on the following claims: Expo #257 to #262, #284 to #290, #325, #326, Don 13 and 14 Fractions, and portions of Expo #239, #241, #243, #260, #263, #265 to #267, #282, #283, #291 and Don 6 Fraction.

The induced polarization survey on the Expo grid was carried out using a Scintrex IPR-7 receiver and an Elliot transmitter with a pole-dipole array and a 300 foot "a" spacing. The IPR-7 was carried along the picket lines while the transmitter remained in a semi-fixed position due to the weight and lack of portability of its power supply (4HP B&S generator). The transmitter put out alternating positive and negative pulses of two second duration with a two second interval between pulses. The transmitter had a maximum outrating of 1,500 watts. The unit of the apparent chargeability is milliseconds, and that of the apparent resistivity is ohm-feet. The n=1 and n=3 data taken are presented on four maps.

The ground magnetometer survey of the Expo claims was conducted using a Jalander fluxgate magnetometer. The vertical component of the Earth's field was measured in D.C. micro amps and was converted to gammas with a previously measured constant. The effective sensitivity of the Jalander is about \pm 50 gammas. Readings were taken every 200 feet with the grid lines being corrected for diurnal drift to "absolute" baseline readings.

GENERAL GEOLOGY

The Holberg Inlet-Nahwitti Lake area is represented by the Vancouver Group which is made up of Karmutsen basic volcanic rocks of Triassic age overlain by Upper Triassic-Lower Jurassic Bonanza pyroclastic rocks. Periods of intrusive activity accompanied the later stages of the Karmut-

sen and Bonanza volcanic rocks. Around the Holberg Inlet-Nahwitti Lake area, the Triassic Karmutsen Formation is at least 10,000 feet in thickness. It consists of pillow lavas, pillow breccias, amigdaloidal and massive flows and have some interbedded tuffaceous sediments. The Karmutsen volcanic rocks fall almost entirely within the basalt compositional range based on refractive indices and silica analyses of representative rock types. Dykes and sills of similar composition, but of coarser texture, stand for the plutonic activity accompanying the Karmutsen volcanic rocks.

The Quatsino Formation consists almost entirely of limestone with a few thin andesite and basalt flows. Its thickness ranges from 200 to 3,500 feet. A thick section of the formation is exposed along the south side of Holberg Inlet.

The Parson Bay sediments consist of argillite, some limestone, agglomeratic and tuffaceous limestone, tuff, quartzite and minor conglomerate. This sedimentary division grades upward into the Bonanza volcanic rocks.

The Bonanza rocks represent the resurgence of volcanism after the period of Quatsino and Parson Bay deposition. This volcanism was of an explosive nature during which viscous Bonanza flows and pyroclastic and flows were deposited. The Bonanza sequence attained a thickness of 6,000 to 8,000 feet. Most Bonanza volcanic rocks near the bottom of the sequence are of a basaltic andesite composition. Rhyolite and rhyodacitic rocks are interbedded with basaltic andesite and andesite higher in the sequence.

Plutonic activity during the last stages of Bonanza volcanism is manifested by a large intrusive body exposed at the southwest end of Nahwitti Lake and extending toward the south on both sides of the Hepler Creek. This intrusive mass is also present around the head waters of the Hushamu Creek, very likely related to the same intrusive mass found along the Wanokana Creek. The mineral composition of these plutonic rocks is largely granodioritic, but in several places it varies to granite, quartz monzonite, monzonite and diorite. In addition, several bodies of syenite porphyry have also been found intruding the Bonanza volcanic

rocks. These syenite masses appear to follow roughly the regional WNW structural trend, and are exposed at various places along Rayonier's NE 92 branch logging road as well as around the head waters of the Hushamu Creek.

Finally, some outcrops of pyrophyllite breccia and a few large outcrops of silicified breccia are also present in the area. They will be further described under Detailed Geology.

Regionally, the area of study lies in a block faulting structural environment with post-Lower Cretaceous northwesterly trending faults apparently the major system. This system causes both repetition and loss of parts of the stratigraphic section. Because the strike of these faults is approximately parallel to that of the bedding, lateral displacements on these faults are difficult to detect. In order to cause repetition and loss of large parts of the section, aggregate movement in a vertical sense must be in the order of hundreds to thousands of feet. The most significant of these fault systems follows Holberg Inlet, with one branch passing through the west side of Stranby Valley and another branch continuing westerly toward San Josef Bay. Another northwesterly westerly system passes through William Lake and Fisherman River and still another smaller system passes through Nahwitti Lake.

Northeasterly trending faults seem to be the next most important system. In some cases apparent lateral displacement, in the order of a few hundred feet, can be measured on certain horizons. Sense of movement, however, could be entirely vertical with the apparent offset resulting from regional dip of the beds.

The regional dip of bedding is generally gentle to moderate southwesterly. Locally, in the area west of Holberg, dips are much steeper, but these are in close proximity to major faults. There is little folding or flexuring of bedding visible except along locii of major faults where it is particularly conspicuous in thin-bedded sediments of Lower Bonanza. Bedding is generally inconspicuous in massive beds of Karmutsen, Quatsino and Bonanza rocks; particularly inland where outcrops are widely scattered and covered by vegetation.

Some lineaments observed in airphotographs and trending northwest-southeast and northeast-southwest are known to be fault traces.

DETAILED GEOLOGY

The area of detailed study is underlain by pyroclastics and flows of the Bonanza sequence, which have been intruded by several masses of diorite, granodiorite, monzonite and quartz monzonite. Some exposures of syenite porphyry are also present.

The Bonanza section includes essentially andesite tuffs, andesite flow breccias, and porphyritic andesites. Some exposures are strongly affected by weathering so that rock identification is difficult. Attempts to correlate rock units were made, but were unsuccessful, not only because of the possible complex structural setting of the area, but also because of the relative scarcity of outcrops. Flow bedding attitudes were mapped at two locations. The first one gave an attitude of N 15° W dipping 40° southwest (around Expo #378 M.C.), and in the second location, the attitude was about N 15° W with dips varying from 70° to 75° southwest (around Expo #386 and #836 M.C.).

The larger intrusive mass, centered at about 241,000 N and 242,000 E map co-ordinates, consists essentially of diorite, though in some places the mineral composition appears to be largely granodioritic and in other places, monzonitic or quartz monzonitic.

In addition, several outcrops of a syenite porphyry were noted around 239,500 N and 242,200 E and 243,800 N and 238,800 E map co-ordinates, possibly related to a much larger and deeper elongated syenitic mass. Finally, some outcrops of a quartz monzonite-diorite were found around 242,500 N and 238,000 E map co-ordinates.

Around and in the Expo #260 and #262 claims, a few pyrophyllite breccia outcrops appear to mark the southeast extension of a complex breccia body centered in Expo #239 and #240 claims.

In the Expo #241 claim, some outcrops of a silicified breccia appear to

limit the southeast extension of what is believed to be an aplitic breccia elongated in a N 65° W direction.

Around and in the Expo #264, #363, #382, #383, #384, #386, #404, #406, and #834 claims, several outcrops of a silicified breccia have been mapped. These outcrops appear to form a N 75° W trending zone in which the continuity also appears interrupted by diorite masses and pyroclastics.

Structurally, the Bonanza sequence is generally cut by northeast, northwest and east-west trending faults and shear zones whose dips vary from about 60° to vertical. Jointing is fairly well developed in most outcrops, and in some places, is associated with shearing.

The several intrusive outcrops are structurally cut by different sets of jointing and some faults, though jointing and faults appear to be more strongly developed in the diorite mass, centered at about 241,000 N and 242,000 E, than in the other ones.

The complex breccia and the silicified breccia are essentially cut by numerous faults, shears and joints generally striking northwest-southeast, northeast-southwest, east-west, and north-south. In some particular zones, attitudes, seemingly indicating flow bedding (?), have also been mapped within the silicified breccia, around 232,000 N and 249,500 E map co-ordinates.

The Bonanza pyroclastics and flows on the Expo claims have been largely argillized, though some of this alteration appears to have been exaggerated by supergene activity as found in outcrops lying in and around Expo #243 and #246 claims.

Silicification in the Bonanza volcanic rocks appears to be almost entirely related to intrusive bodies.

A chlorite-epidote-zeolite assemblage is well developed in a propylitized Bonanza section on the north and east sides of Hushamu Lake. Chloritization is generally pervasive; epidote is present as specks and in

- veinlets. Also, some zeolites are present, and controlled by jointing and shearing. In addition, there are several other outcrops which outline small propylitic zones, in which chlorite is the main alteration product.

The intrusive masses usually show some propylitic alteration, though the area centered at about 242,500 N and 238,000 E map co-ordinates has undergone some silicification and argillization, and some zeolite veinlets are also found.

In the several silicified breccia outcrops, mention previously, some argillization and minor pyrophyllitization are also distinguishable. Possibly related to this silicified breccia, some small outcrops of pyrophyllite breccia have been mapped at about 232,800 N and 247,800 E.

Over the entire area of study, pyrite is the most widespread and abundant sulphide. It essentially occurs in disseminations and in veinlets in the silicified and argillized Bonanza volcanic rocks associated with no copper sulphides. In general, most of the intrusive outcrops are lean in pyrite, but in the quartz monzonite-diorite centered at about 242,500 N and 238,000 E there is some minor disseminations of chalcopyrite and coatings of covellite and bornite. Some magnetite is also present.

Pyrite, in disseminations and in veinlets, is also the most widespread and abundant sulphide in all the silicified breccia outcrops. Brown and dark yellow limonite obscures any sulphides that may be present in some outcrops. The oxidation appears to be deep.

Molybdenite specks are present in some of the pyrophyllite breccia outcrops mapped in Expo #260 and #262 claims. Also, some molybdenite showings were found at 236,600 N - 243,900 E.

GEOPHYSICAL RESULTS

INDUCED POLARIZATION

CHARGEABILITY

The results show an elongated belt of anomalous chargeability striking roughly northwest-southeast. The anomaly starts from the northwest limit of the survey and runs about 5,000 feet to the southeast. The zone is about half as wide as it is long. The apparent chargeability values increase from a background of about 20 Milliseconds to a maximum of 108 Milliseconds moving in a south westerly direction across the strike of the zone. The n=1 and n=3 data agree on this picture, although the n=1 data shows a slightly shorter and more sharply defined strike length. To the southeast past the major zone but still on the same strike, a series of localized anomalies of the order of 50 to 70 milliseconds appear. The centers of two of these anomalies are at 238,300 E, 241,100 N and 239,800 E, 239,700 N. The abundance of pyrite visible throughout the area is sufficient to account for the observed anomalies.

RESISTIVITY

Values of the apparent resistivity ranged from 200 ohm feet to 6,000 ohm feet, although values of less than 1,000 ohm feet were considered anomalously low. The resistivity patterns seem to follow roughly the same trends as outlined for the chargeability, however, in a reciprocal fashion in many cases. Higher values of resistivity (2,000 to 4,000 ohm feet) to the S.E. of Hushamu Lake may indicate deeper overburden in this area. Generally, resistivity seems of only limited interpretive value in this area, however, it may help in outlining gross changes in the physical state of the rock with specific reference to porosity and permeability of the rock.

MAGNETICS

The background for the magnetics is around 1,300 to 1,500 gammas, with some strong anomalies over twice these values. The dominant features on the map are three closely grouped anomalies roughly 2,500 feet by 2,500 feet centered at 240,100 E, 239,500 N. One center is at 239,300 E, 230,500 N where a value of 3,000 gammas is observed. The second of the

three lies centered at 240,800 E, 239,500 N and there a value of over 3,400 gammas was recorded. The third center is at 241,000 E, 238,500N where again a value of 3,000 gammas is observed. Several smaller peripheral highs are present to the NW and SE of the main grouping, and the whole system is enveloped in a region of moderately high magnetic relief. The overall dimensions of the anomaly are greatly increased with these satellites included, stretching over 7,000 feet in a NW-SE direction and almost 3,000 feet on a SW-NE line. Displaced approximately 2,400 feet to the NE, a spotty line of magnetic highs runs on a strike parallel to the main anomaly. Centers of these are at 237,300 E, 245,500N; 238,800 E, 224,500 N; 243,800 E, 241,700 N; 244,300 E, 240,900 N; and 246,300 E, 239,900 N where a value of about 800 gammas was observed. Another rather large low occurs at 243,300 E, 236,700 N, just to the NE of the above mentioned anomaly where the magnetic intensity drops to 1,100 gammas.

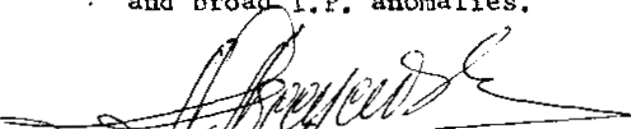
CONCLUSIONS

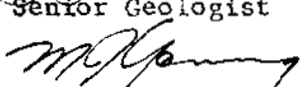
The main geological feature in the whole area appears to be a N 75° W trending silicified breccia zone in which the continuity appears interrupted by intrusive masses and pyroclastics.


Pyrite is the most widespread and abundant sulphide in argillized Bonanza volcanic rocks associated with no copper sulphides. Some minor dissemination of chalcopyrite, and coatings of covellite and bornite are found in a quartz monzonite-diorite centered at about 242,500 N and 238,000 E. Molybdenite occurrence is minor, and essentially localized in the complex breccia.

Magnetite anomalies appear to indicate the presence of intrusive masses where contacts carry some magnetite.

The abundance of pyrite throughout the area accounts for the several and broad I.P. anomalies.


A. Ascencios,
Senior Geologist


M.J. Young,
District Geologist.



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APPENDIX

STATEMENT OF QUALIFICATIONS

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STATEMENT OF QUALIFICATIONS

The field work for this report was done by the following persons whose qualifications are outlined below.

1. A. ASCENCIOS, Senior Geologist for Utah Mines Ltd., Vancouver, British Columbia;

Completed geological engineering at San Marcos National University of Lima, Peru in 1959 and M.Sc. (Geology) at the University of Arizona, Tuscon, U.S.A. in 1966; employed by Cerro de Pasco Corporation, La Oroya, Peru from January, 1956 to March, 1956 and from January, 1957 to March, 1957 as student-trainee; employed by Cerro de Pasco Corporation, La Oroya, Peru from May, 1960 to August, 1961 as assistant mine geologist under the supervision of U. Peterson, Chief Geologist; employed by ASARCO In Casagrande, Arizona, U.S.A. from June, 1962 to September, 1962 as student-trainee under the supervision of K. Richard, Chief Geologist; employed by Cerro da Pasco Corporation, La Oroya, Peru, from February, 1963 to June, 1970, as a pit geologist, division geologist and project geologist at Cerro da Pasco Mine (February, 1963 to November, 1963) at Yauriocochoa Mine (November, 1963 to March, 1967), and at the Exploration Department, Lima (April, 1967 to June, 1970) under the supervision of G.E. Walker, J.S. Molloy and C.R. Petersen respectively; employed by Utah Mines Ltd. from July, 1970 to date as a Senior Geologist under E.S. Rugg, P. Eng., and M.J. Young, P. Eng.

2. R.B. ANDERSON, Geologist for Utah Mines Ltd., Vancouver, British Columbia;

Completed B.SC. (Geology) at University of B.C. in 1970; employed by British Columbia Department of Mines, Texas Gulf Sulfur and Canico during 1967, 1968 and 1969 field summer seasons respectively as geologist assistant; employed by Utah Mines Ltd. from April, 1970 to date as a geologist under the supervision of E.S. Rugg, P. Eng., and M.J. Young, P. Eng.

3. G.A. CLOUTHIER, Geologist for Utah Mines Ltd., Vancouver, British Columbia; completed B.Sc. (Honors Geology) at University of British Columbia in 1970; employed by Utah Construction and Mining Company during

1968 and 1969 summer field seasons as geochemical and geological assistant respectively; employed by Utah Mines Ltd. from April, 1970 to date as a geologist under the supervision of E.S. Rugg, P. Eng., and M.J. Young, P. Eng.

4. R. POTTER, Senior Geologist for Utah Mines Ltd., Vancouver, British Columbia; completed B.A.Sc (Geological Engineering) at the University of British Columbia in 1961 and M.Sc. (Applied) at the University of McGill, Province of Quebec, in 1972; employed as Geologist in Mining Exploration and Engineering Geology by Asbestos Corp. Ltd. and Caseco Consultants Ltd., Vancouver, British Columbia, during 1961 to 1963; employed as geologist in petroleum exploration by Atlantic Refining Co. Ltd., Calgary, during 1963 to 1965; employed as Exploration Geologist by Alrae Engineering Ltd., Vancouver, during 1966; employed as Exploration Geologist by Mining Explorations International, Madrid, Spain, during 1967 to 1970; employed as Exploration Geologist by Agilis Exploration Services Ltd., Vancouver, during 1970 to 1971 summer field seasons; employed as Senior Geologist by Utah Mines Ltd., from May, 1972 to date under E.S. Rugg, P. Eng., and M.J. Young, P. Eng. Member of the Association of Professional Engineers of British Columbia since 1970.

5. D. GEORGE CARGILL, Geologist during the last three summer field seasons for Utah Mines Ltd., Vancouver, British Columbia; completed B.A.Sc. at the University of Toronto in 1967, M.Sc. at the Queens University, Ontario, in 1970; worked as a student during summer field seasons with Geological Survey of Canada in 1964, and with the Ontario Department of Mines in 1965 and 1966; employed as a field geologist during summer field seasons by Lytton Minerals Ltd. in 1967, by Eldorado Nuclear Ltd. in 1968 and 1969, and by Utah Mines Ltd. in 1970, 1971 and 1972. Registered as a P. Eng. in Ontario and British Columbia.

6. N. le NOBEL, Geologist for Utah Mines Ltd., Vancouver, British Columbia; completed geological engineering at University of British Columbia in 1970; employed by Tara Mining and Exploration Company, Saskatchewan and Cominco Limited, British Columbia during 1968 and 1969 summer field seasons as a geologist's assistant; employed by Kennco Explorations

(Western) Limited, Vancouver, British Columbia, from May, 1970 to February, 1971 as an assistant geologist under the supervision of C.S. Ney, P. Eng.; employed by Utah Mines Ltd., from February, 1971 to date as a geologist under the supervision of E.S. Rugg, P. Eng., and M.J. Young, P. Eng.

7. K. WITHERLY, Geophysicist for Utah Construction & Mining Co., Vancouver, British Columbia; completed B.Sc. (Geophysics) at University of British Columbia in 1971; employed by Utah Mines Ltd. and Tri-Con Exploration Surveys during 1969 and 1970 summer field seasons respectively as a geophysicist's assistant; employed by Utah Mines Ltd. from May, 1971 to date as a geophysicist under the supervision of E.S. Rugg, P. Eng., and M.J. Young, P. Eng.

APPENDIX
STATEMENT OF COST

MSH

STATEMENT OF COST

SALARIES

A. Ascencios	109 days @ \$45/day	\$4,905.00	
R. Anderson	108 days @ \$27/day	\$2,916.00	
R. Potter	21 days @ \$43.25/day	\$ 908.25	
N. le Nobel	21 days @ \$27.50/day	\$ 577.50	
G. Clouthier	21 days @ \$28.50/day	\$ 598.50	
K. Witherly	97 days @ \$26.30/day	\$2,551.10	
G. Cargill	73 days @ \$32.50/day	\$2,372.50	
R. Caldwell	112 days @ \$19.20/day	\$2,150.40	
T. Drown	118 days @ \$20.00/day	\$2,360.00	
L. Harrison	120 days @ \$19.20/day	\$2,304.00	
C. Fleming	100 days @ \$26.70/day	\$2,670.00	
D. Pelly	116 days @ \$19.20/day	\$2,227.20	
E. Rorstad	140 days @ \$18.30/day	\$2,562.00	
D. Spancers	141 days @ \$17.50/day	\$2,467.50	
L. Sonmor	88 days @ \$26.70/day	\$2,349.60	
B. Muller	62 days @ \$14.20/day	\$ 880.40	
G. Hedges	50 days @ \$26.70/day	\$1,335.00	
K. Orleski	30 days @ \$20.00/day	\$ 600.00	
	TOTAL SALARIES	\$36,734.95	\$36,734.95

VEHICLE RENTAL

May 17 to Sept. 16, 1972 1 G.M.C. 4X4			
123 days @ \$10.00/day		\$ 1,230.00	
May 17 to Aug. 30, 1972 1 G.M.C. 4X4			
107 days @ \$11.30/day		\$ 1,208.00	
	TOTAL	\$ 2,438.00	\$ 2,438.00

LIGHT PLANT RENTAL

May 16 to Sept. 16, 1972 1 VM-Markon			
5KW Diesel 110V-AC			
4 months @ \$210.00/month		\$ 840.00	
	TOTAL		\$ 840.00

RADIO EQUIPMENT

SSB 60 Rental, 6 months @ \$56.00/month	\$ 336.00	
SSB Rental, 2 months @ \$78.50/month	\$ 157.00	
	<hr/>	
	\$ 493.00	\$ 493.00

I.P. EQUIPMENT

Transmitter Receiver and Honda 21 days @\$45/day	\$ 945.00	
Radios 4 Motorola HT 220 @ \$40/month	18.00	
	<hr/>	
TOTAL	\$ 963.00	\$ 963.00

MAGNETIC EQUIPMENT

Jalander Magnetometer 4 months @ \$250/month	\$ 1,000.00	
	<hr/>	
TOTAL	\$ 1,000.00	\$ 1,000.00

GRID PREPARATION

Baseline Cutting Cost (Underhill & Underhill)	\$ 8,439.78	
	<hr/>	
TOTAL	\$ 8,439.78	\$ 8,439.78
Picket Lines Cutting Cost (Mannex Mining)	\$13,898.00	
	<hr/>	
TOTAL	\$13,898.00	\$13,898.00

HELICOPTER

91.4 hours @ \$155.00/hour	\$14,171.20	
	<hr/>	
TOTAL	\$14,171.20	\$14,171.20

CAMP COSTS

2,044 man days @ \$5.18/man day	\$10,593.94	
	<hr/>	
TOTAL	\$10,593.94	\$10,593.94

REPORT AND MAP PREPARATION

\$ 5,000.00

GRAND TOTAL

\$94,571.87



M.J. Young, P. Eng.,
District Geologist.

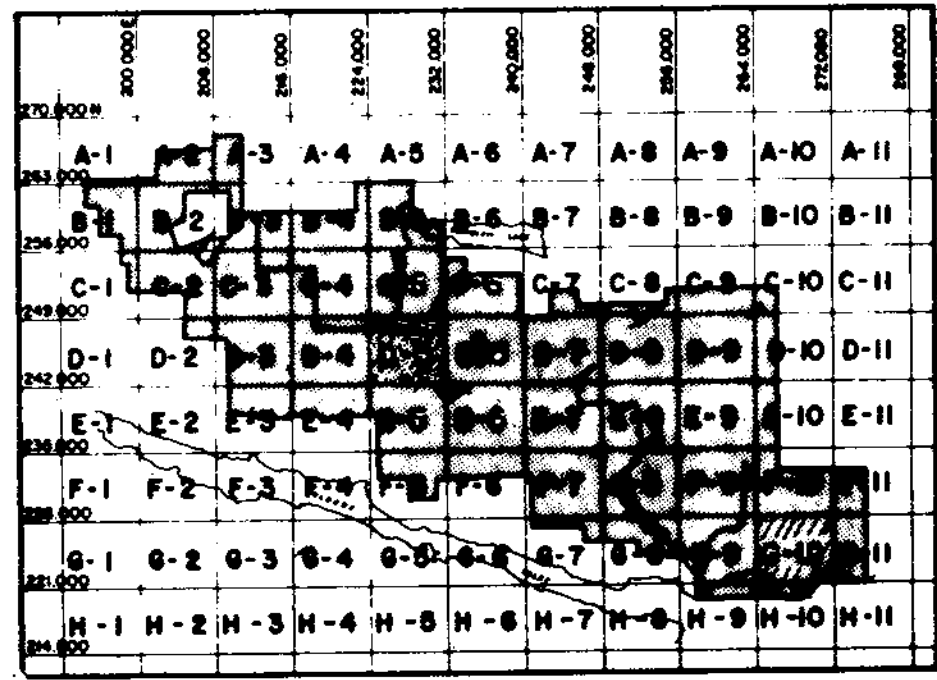


Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. **4000** MAP **#40**

M. Young

TO ACCOMPANY GEOLOGICAL & GEOPHYSICAL
REPORT ON EXPO
LOCATED 50° 127' NW
BY A. ASCENCIOS 16 MAY TO SEPT. 1972

Plate 38



TRANSIT SURVEY HUBS



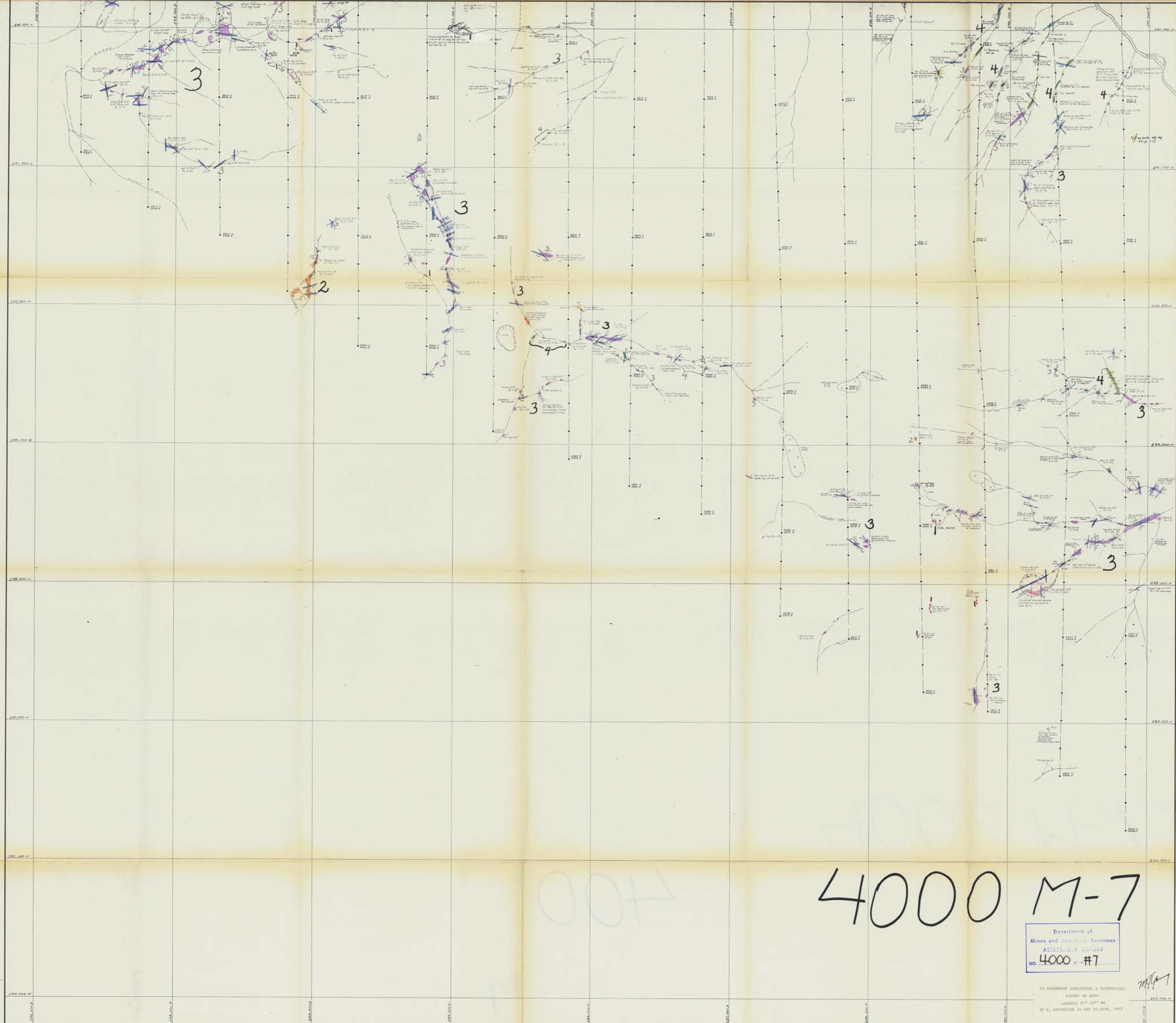
UTAH MINES LTD.
MINERAL EXPLORATION & DEVELOPMENT DEPARTMENT
VANCOUVER BRITISH COLUMBIA

EXPO GROUP
BASELINE SURVEY CONTROL

VANCOUVER ISLAND BRITISH COLUMBIA

Work by: *K. Witherley* Date: *November 1972* NTS Ref:
Drawn by: *C.D./E.C.* Revised: MAP of **G-10**

200 100 0 200 400 600
SCALE IN FEET



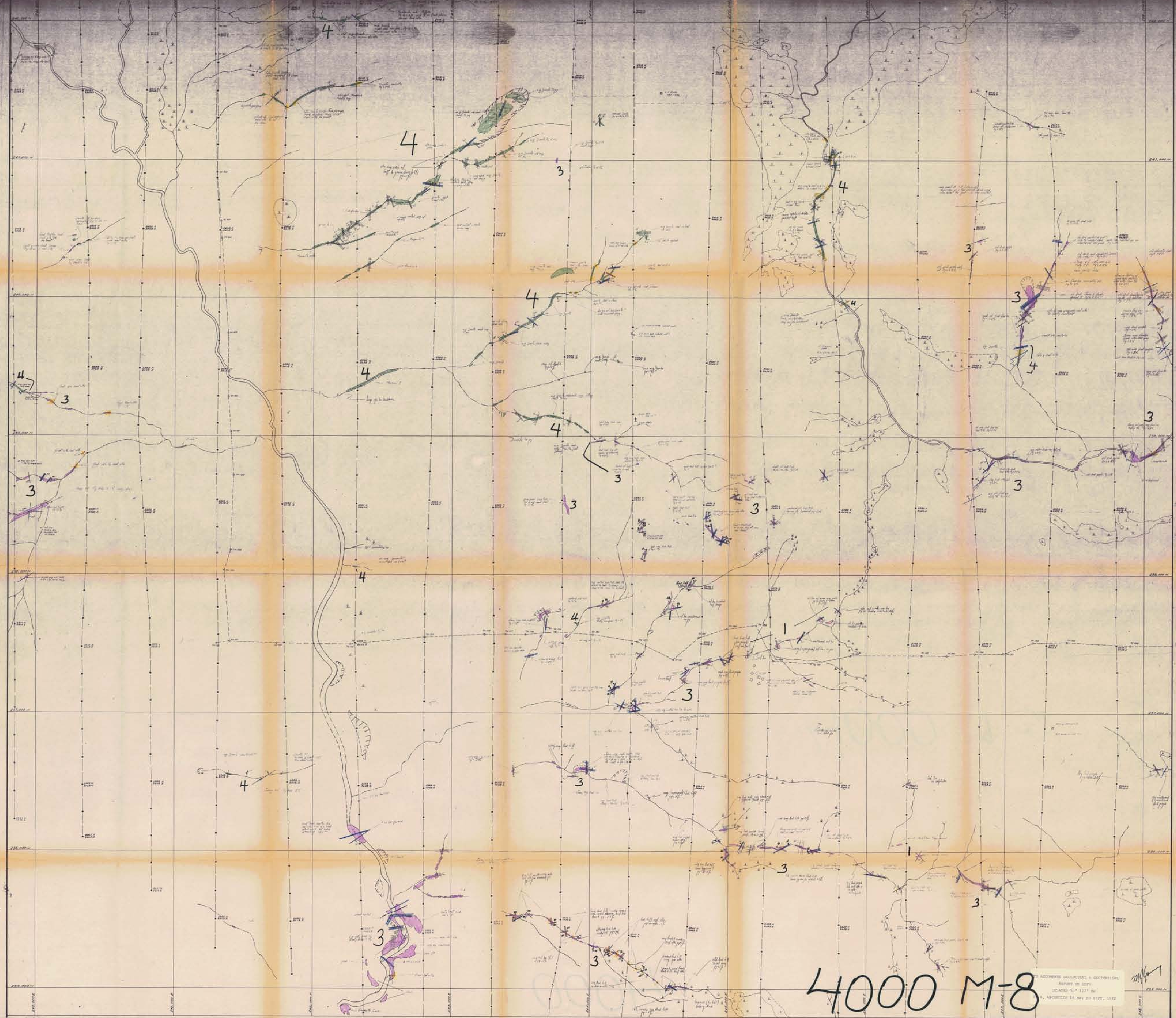
4000 M-7

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO 4000 M-7 #7

TO ACCOMPANY GEOLOGICAL & GEOPHYSICAL
REPORT ON EXPLORATION
LOCATED 30° 12' 30" N
BY W. AMERSON IN 1942 TO 1957, 1962

LEGEND

INTRUSIVE ROCKS	Dyke, showing strike-slip, normal, or thrust	Fault, showing strike-slip, normal, or thrust	Ore zone, showing strike-slip, normal, or thrust
Granite	Quartzite, showing strike-slip, normal, or thrust	Schist, showing strike-slip, normal, or thrust	Amphibolite, showing strike-slip, normal, or thrust
Gneiss	Mica schist, showing strike-slip, normal, or thrust	Amphibolite, showing strike-slip, normal, or thrust	Amphibolite, showing strike-slip, normal, or thrust
Quartzite	Schist	Amphibolite	Amphibolite
Mica schist	Amphibolite	Amphibolite	Amphibolite
Amphibolite	Amphibolite	Amphibolite	Amphibolite
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Amphibolite	Amphibolite	Amphibolite	Amphibolite
Amphibolite	Amphibolite	Amphibolite	Amphibolite
Amphibolite			



4000 M-8

LEGEND

INTRUSIVE ROCKS:

- Diabase
- Granite, Gneiss, Schist, Quartzite, Siltstone, Shale
- Basalt
- Diorite (?) Breccia

VOLCANIC ROCKS

- BONANZA VOLCANICS
- Quartzite, Siltstone, Shale, Sandstone, Conglomerate, Breccia, Tuff, Lava, Ash, Scoria
- CLIFFS PYROXYLITE BRECCIA
- SILICEOUS BRECCIA

- Steep slope, talus, scree, gravel, sand, silt, clay, etc.
- Rock, talus, scree, gravel, sand, silt, clay, etc.
- Flow, debris, talus, scree, gravel, sand, silt, clay, etc.
- Quartzite, siltstone, shale, sandstone, conglomerate, breccia, tuff, lava, ash, scoria, etc.
- Geological contact
- Crack, intermittent
- Crack, with, without, obscure
- Road, paved, unpaved
- Swamp

- Trail, narrow
- Railroad line, showing the location of the main line
- Clear boundary, showing the location of the main line
- Diamond drill site, vertical
- Diamond drill site, showing the main line

- Zincite, arsenic, along with, irregular
- Quartzite, arsenic, along with, irregular
- Pyrite, arsenic, along with, irregular

SECTION	1	2	3	4	5	6	7	8	9	10	11
A-1	F-1	F-2	F-3	F-4	F-5	F-6	F-7	F-8	F-9	F-10	F-11
B-1	C-1	C-2	C-3	C-4	C-5	C-6	C-7	C-8	C-9	C-10	C-11
D-1	D-2	D-3	D-4	D-5	D-6	D-7	D-8	D-9	D-10	D-11	
E-1	E-2	E-3	E-4	E-5	E-6	E-7	E-8	E-9	E-10	E-11	
F-1	F-2	F-3	F-4	F-5	F-6	F-7	F-8	F-9	F-10	F-11	
G-1	G-2	G-3	G-4	G-5	G-6	G-7	G-8	G-9	G-10	G-11	
H-1	H-2	H-3	H-4	H-5	H-6	H-7	H-8	H-9	H-10	H-11	

Plate 6

Department of MINES AND PETROLEUM UTAH MINES LTD.
MINERAL INVESTIGATION & DEVELOPMENT DEPARTMENT
VANCOUVER BRITISH COLUMBIA

4000 #8 EXPO GROUP
GEOLOGY MAP

VANCOUVER ISLAND BRITISH COLUMBIA

Scale in Feet: 0 200 400 600

3

3

3

3

4

4

3

3

2

4

4000 M-10

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4000 M-10

TO ACCOMPANY GEOLOGICAL & GEOPHYSICAL
REPORT ON 1070
MERCER 107 127 80
BY A. ARCHERD 16 MAY TO 6 SEP. 1972.

[Signature]

LEGEND

- INTRUSIVE ROCKS**
 - Granite
 - Granite, Gneiss, Migmatite, Quartz Monzonite
 - Diabase
 - Tonalite (?) Breccia
- VOLCANIC ROCKS**
 - SONAZIA VOLCANICS
 - Basaltic andesite (andesite)
 - Andesite, basalt (andesite)
 - COMPLEX HYDROTHERMAL BRECCIA
 - SILICEOUS BRECCIA
- SEDIMENTARY ROCKS**
 - Sandstone, siltstone, shale, mudstone, claystone
 - Claystone, silty claystone
 - Siltstone, silty claystone
 - Claystone, silty claystone
 - Geological contact
 - Creek, intermittent
 - Creek, with debris channel
 - Road, highway, unimproved
 - Swamp
- STRUCTURAL FEATURES**
 - Trace of survey line
 - Right line, showing line and station occupation
 - Close boundary, showing claim number and claim area
 - Stippled fill, rock, contact
 - Stippled fill, showing rock type and boundary of metamorphism
 - Quality control, showing surface, irregular
 - Quality control, showing surface, irregular
 - Quality control, showing surface, irregular

SECTION	1	2	3	4	5	6	7	8	9	10	11
A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8	A-9	A-10	A-11	
B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	B-11	
C-1	C-2	C-3	C-4	C-5	C-6	C-7	C-8	C-9	C-10	C-11	
D-1	D-2	D-3	D-4	D-5	D-6	D-7	D-8	D-9	D-10	D-11	
E-1	E-2	E-3	E-4	E-5	E-6	E-7	E-8	E-9	E-10	E-11	
F-1	F-2	F-3	F-4	F-5	F-6	F-7	F-8	F-9	F-10	F-11	
G-1	G-2	G-3	G-4	G-5	G-6	G-7	G-8	G-9	G-10	G-11	
H-1	H-2	H-3	H-4	H-5	H-6	H-7	H-8	H-9	H-10	H-11	

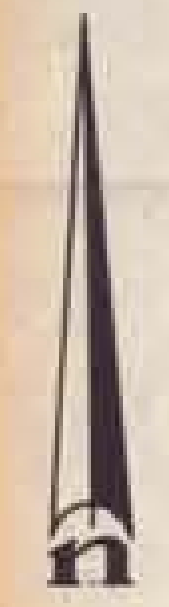


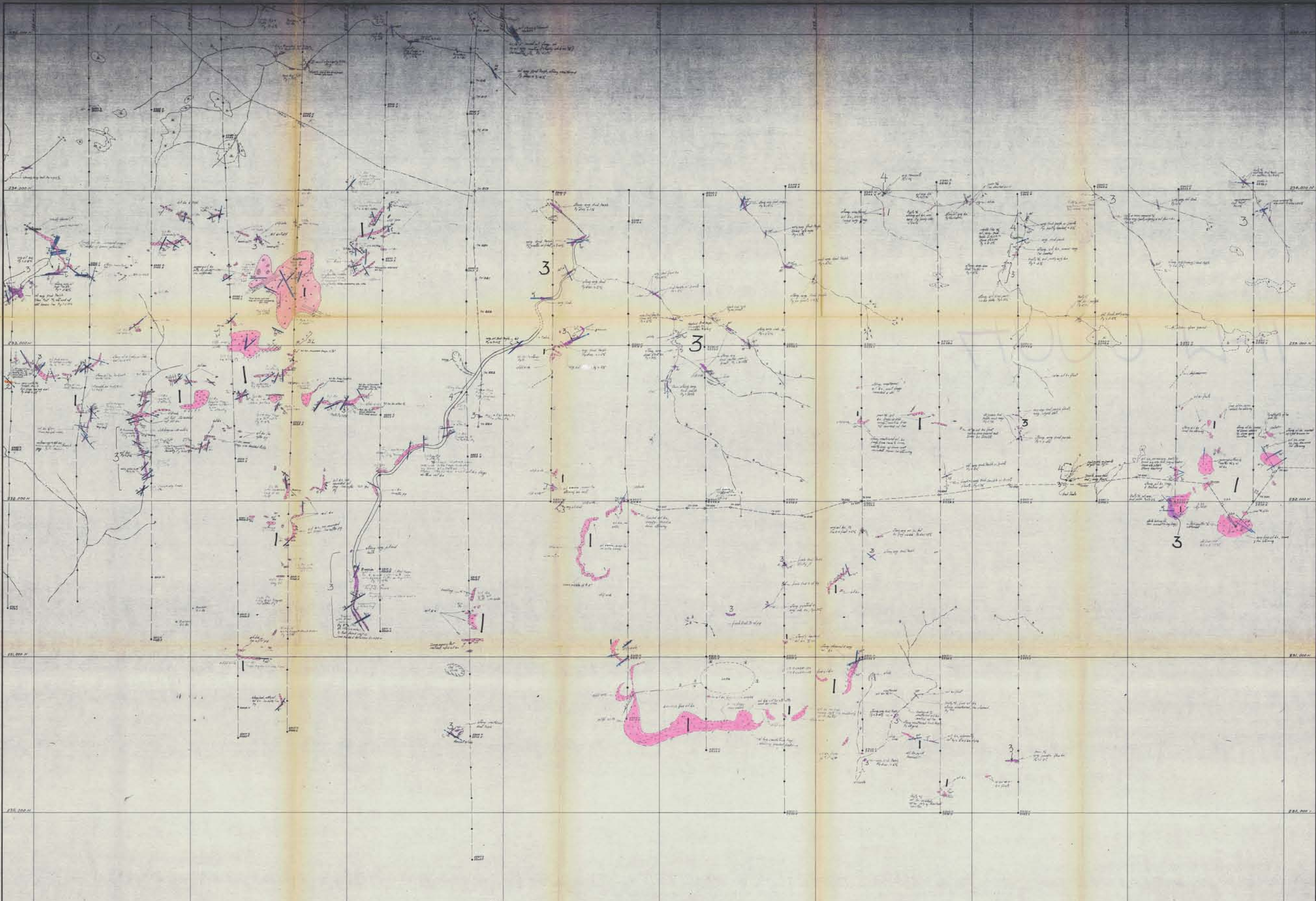
Plate 8

UTAH MINES LTD.
MINERAL EXPLORATION & DEVELOPMENT DEPARTMENT
VANCOUVER BRITISH COLUMBIA

**EXPO GROUP
GEOLOGY MAP**

VANCOUVER ISLAND BRITISH COLUMBIA

Work by A. Archerd Date: Nov. 1972 NTS Ref.
Drawn by CA/SC Revised: MAP of P-7
Scale: 200 100 0 200 400 600
SCALE IN FEET



4000 M-11

Department of
 Mines and Geology
 NO. 4000 #11

TO ACCOMPANY GEOLOGICAL & GEOPHYSICAL
 REPORT ON THE
 LOCATED 30° 12' N
 BY A. ASSOCIATED 14 MAY TO SEPT. 1972.

LEGEND

INTRUSIVE ROCKS:			
VOLCANIC ROCKS			

A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8	A-9	A-10	A-11
B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	B-11
C-1	C-2	C-3	C-4	C-5	C-6	C-7	C-8	C-9	C-10	C-11
D-1	D-2	D-3	D-4	D-5	D-6	D-7	D-8	D-9	D-10	D-11
E-1	E-2	E-3	E-4	E-5	E-6	E-7	E-8	E-9	E-10	E-11
F-1	F-2	F-3	F-4	F-5	F-6	F-7	F-8	F-9	F-10	F-11
G-1	G-2	G-3	G-4	G-5	G-6	G-7	G-8	G-9	G-10	G-11
H-1	H-2	H-3	H-4	H-5	H-6	H-7	H-8	H-9	H-10	H-11

Plate 9

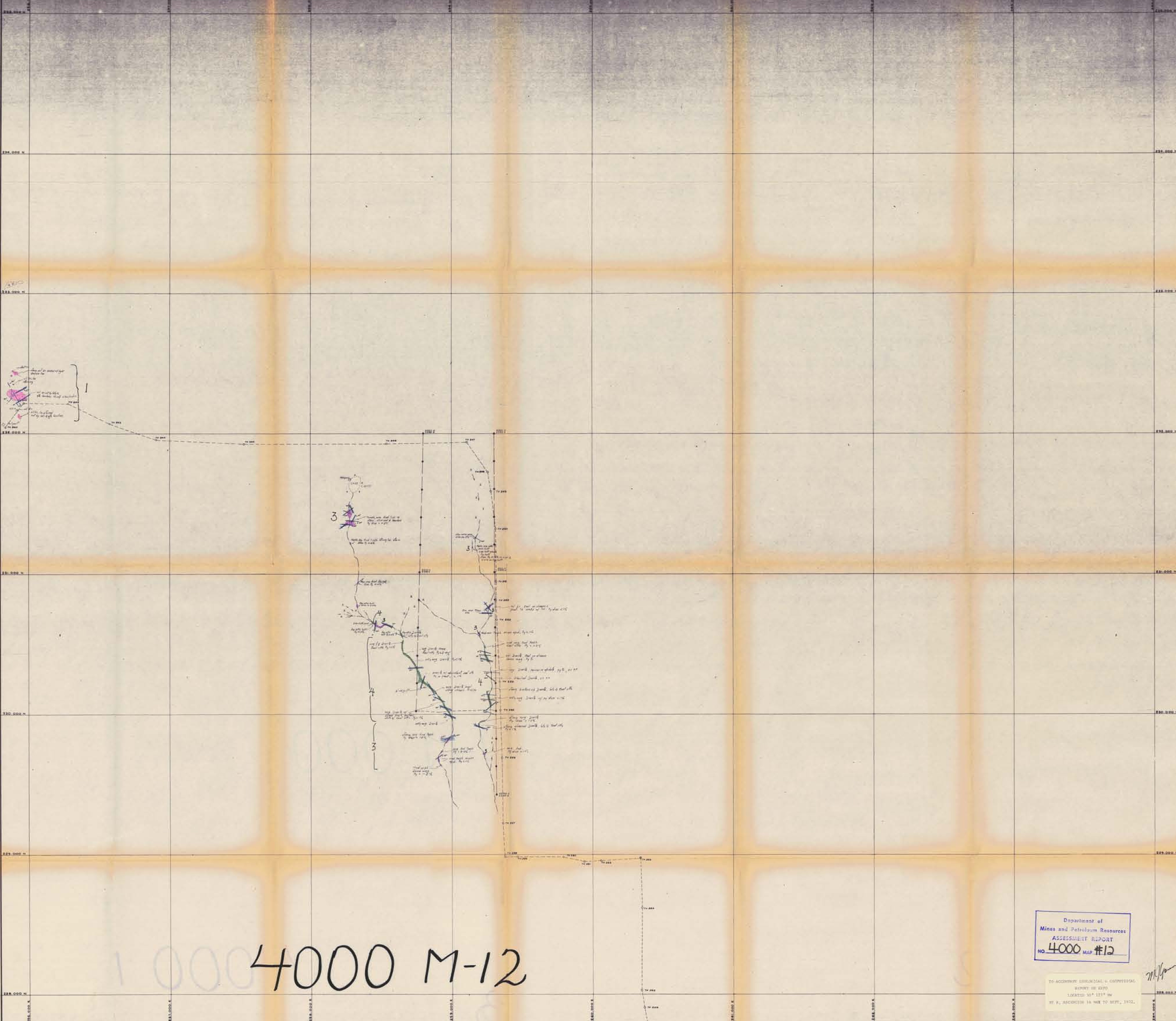
UTAH MINES LTD.
 MINERAL EXPLORATION & DEVELOPMENT DEPARTMENT
 VANCOUVER BRITISH COLUMBIA

EXPO GROUP
GEOLOGY MAP

VANCOUVER ISLAND BRITISH COLUMBIA

Work by: J. Anderson Date: May 1972 NTS Ref:
 Drawn by: CA/EC Revised: MAP of F-5

200 100 0 200 400 600
 SCALE IN FEET



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4000 MAP #12

TO ACCOMPANY GEOLOGICAL & CHRONOLOGICAL
REPORT NO. 2220
LOCATED 50° 13' 11" N
BY P. A. ASSOCIATION 16 HEX TO SEPT., 1970.

M. J. [Signature]

1000 4000 M-12

LEGEND

- INTRUSIVE ROCKS**
- Granite
 - Quartzite, Gneiss, Schist, etc.
 - Diorite
 - Breccia (?)
- VOLCANIC ROCKS**
- Basaltic Volcanics
 - Andesitic Volcanics
 - Complex Propylite Breccia
 - Siliceous Breccia
- Other Symbols:**
- Steep slope, stream, etc.
 - Fault line, showing line and strike-slip displacement
 - Line boundary, showing strike-slip displacement
 - Boundary of country, village, etc.
 - Geographical contour
 - Creek, intermittent
 - Road, railway, etc.
 - Swamp
 - Dip-slip fault, normal
 - Dip-slip fault, thrust
 - Fault strike-slip, showing strike-slip displacement
 - Fault strike-slip, showing strike-slip displacement

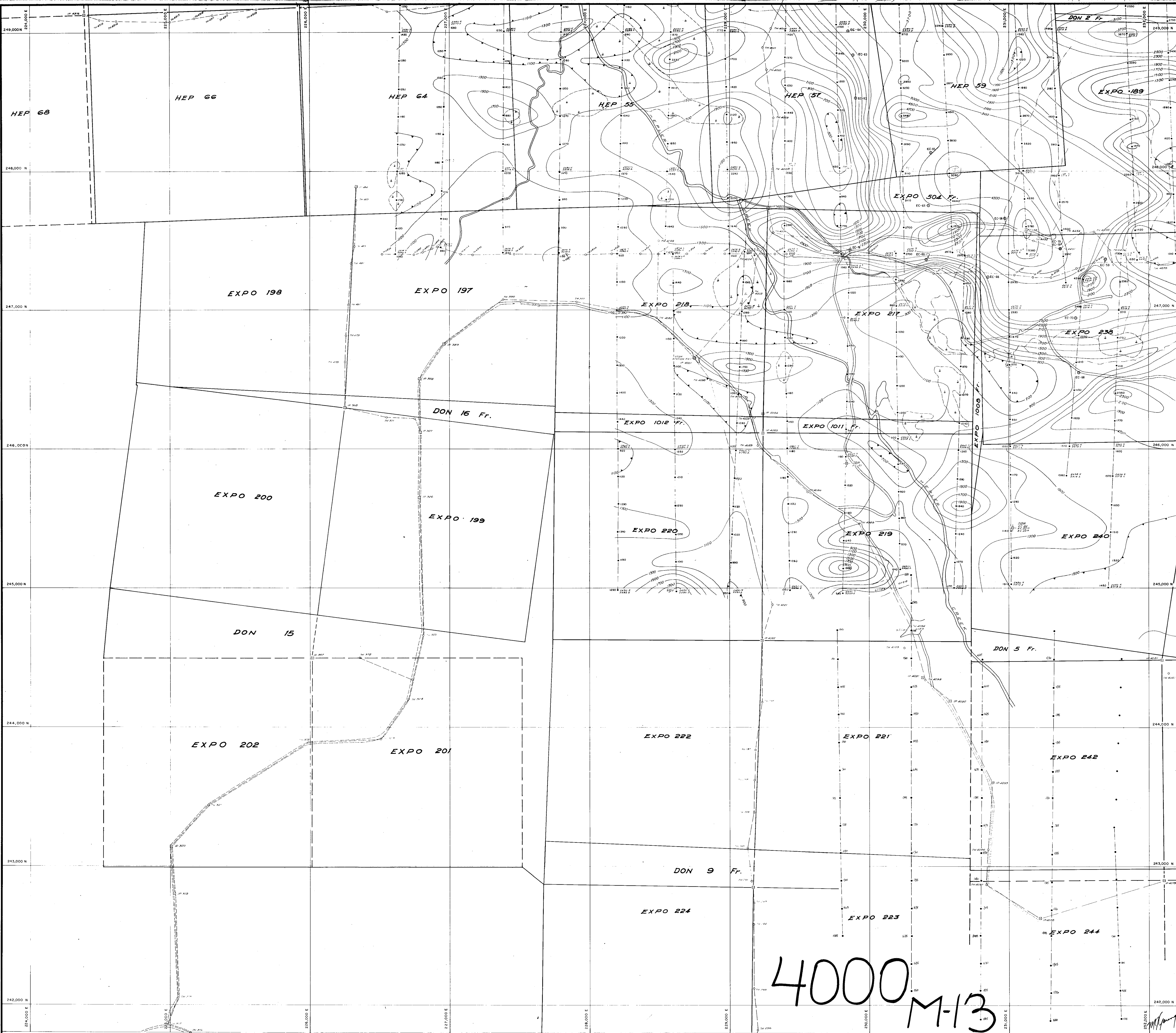
SECTION	1	2	3	4	5	6	7	8	9	10	11
A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8	A-9	A-10	A-11	
B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	B-11	
C-1	C-2	C-3	C-4	C-5	C-6	C-7	C-8	C-9	C-10	C-11	
D-1	D-2	D-3	D-4	D-5	D-6	D-7	D-8	D-9	D-10	D-11	
E-1	E-2	E-3	E-4	E-5	E-6	E-7	E-8	E-9	E-10	E-11	
F-1	F-2	F-3	F-4	F-5	F-6	F-7	F-8	F-9	F-10	F-11	
G-1	G-2	G-3	G-4	G-5	G-6	G-7	G-8	G-9	G-10	G-11	
H-1	H-2	H-3	H-4	H-5	H-6	H-7	H-8	H-9	H-10	H-11	

Plate 10
UTAH MINES LTD.
MINERAL EXPLORATION & DEVELOPMENT DEPARTMENT
VANCOUVER BRITISH COLUMBIA

EXPO GROUP
GEOLOGY MAP

VANCOUVER ISLAND BRITISH COLUMBIA

Work by: A. [Name] Date: May 1972 NTS Ref: []
Drawn by: C.D./K.C. Revised: [] MAP of F-5
200 0 200 400 600
SCALE IN FEET



LEGEND

INSTRUMENTATION:

JALANDER FLUXGATE MAGNETOMETER
No. 5770

CREEK, INTERMITTENT
CREEK, WIDTH DEFINED, INFERRED
ROAD SURVEYED UNSURVEYED
SWAMP
MAGNETIC INTENSITY IN GAMMAS
DATA POINT

SYMBOLS

Transit Survey, Wada
Diamond Drill Hole
Picket Line, Showing line and station designation
Hep Claim Boundary Unsurveyed, showing claim number and claim post

224000	A-1	B-1	C-1	D-1	E-1	F-1	G-1	H-1	I-1	J-1	K-1	L-1	M-1	N-1	O-1	P-1	Q-1	R-1	S-1	T-1	U-1	V-1	W-1	X-1	Y-1	Z-1
225000	A-2	B-2	C-2	D-2	E-2	F-2	G-2	H-2	I-2	J-2	K-2	L-2	M-2	N-2	O-2	P-2	Q-2	R-2	S-2	T-2	U-2	V-2	W-2	X-2	Y-2	Z-2
226000	A-3	B-3	C-3	D-3	E-3	F-3	G-3	H-3	I-3	J-3	K-3	L-3	M-3	N-3	O-3	P-3	Q-3	R-3	S-3	T-3	U-3	V-3	W-3	X-3	Y-3	Z-3
227000	A-4	B-4	C-4	D-4	E-4	F-4	G-4	H-4	I-4	J-4	K-4	L-4	M-4	N-4	O-4	P-4	Q-4	R-4	S-4	T-4	U-4	V-4	W-4	X-4	Y-4	Z-4
228000	A-5	B-5	C-5	D-5	E-5	F-5	G-5	H-5	I-5	J-5	K-5	L-5	M-5	N-5	O-5	P-5	Q-5	R-5	S-5	T-5	U-5	V-5	W-5	X-5	Y-5	Z-5
229000	A-6	B-6	C-6	D-6	E-6	F-6	G-6	H-6	I-6	J-6	K-6	L-6	M-6	N-6	O-6	P-6	Q-6	R-6	S-6	T-6	U-6	V-6	W-6	X-6	Y-6	Z-6
230000	A-7	B-7	C-7	D-7	E-7	F-7	G-7	H-7	I-7	J-7	K-7	L-7	M-7	N-7	O-7	P-7	Q-7	R-7	S-7	T-7	U-7	V-7	W-7	X-7	Y-7	Z-7
231000	A-8	B-8	C-8	D-8	E-8	F-8	G-8	H-8	I-8	J-8	K-8	L-8	M-8	N-8	O-8	P-8	Q-8	R-8	S-8	T-8	U-8	V-8	W-8	X-8	Y-8	Z-8
232000	A-9	B-9	C-9	D-9	E-9	F-9	G-9	H-9	I-9	J-9	K-9	L-9	M-9	N-9	O-9	P-9	Q-9	R-9	S-9	T-9	U-9	V-9	W-9	X-9	Y-9	Z-9
233000	A-10	B-10	C-10	D-10	E-10	F-10	G-10	H-10	I-10	J-10	K-10	L-10	M-10	N-10	O-10	P-10	Q-10	R-10	S-10	T-10	U-10	V-10	W-10	X-10	Y-10	Z-10

TO ACCOMPANY GEOLOGICAL & GEOPHYSICAL REPORT ON CLAIM LOCATION 50° 123' W BY A. ASCHEPINS 14 MAY TO 14 SEPT, 1972

Plate 11

Department of UTAH MINES LTD.
Mines and Petroleum Exploration & Development Department
VANCOUVER BRITISH COLUMBIA

MAP #13 HEP-EXPO GROUP
GROUND MAGNETICS SURVEY
VERTICAL INTENSITY

Work by K. McPherson Date: Feb 72
Drawn by G.P./E.C. Revised: Nov. 1972
Scale: 1:50,000

NTS Ref. D-5



4000 M-14

LEGEND

INSTRUMENTATION:
 JALANDER FLUXGATE MAGNETOMETER
 No. 5770

CREEK, INTERMITTENT
 CREEK, WIDTH DEFINED, INFERRED
 ROAD, SURVEYED, UNSURVEYED
 SWAMP

MAGNETIC INTENSITY IN GAMMAS
 DATA POINT

Transit Survey, Hubs
 Picket Lines, Showing line and station designation
 Map Claim Boundary Unsurveyed, showing claim number and claim post

Diamond Drill Hole

TO ACCOMPANY GEOLOGICAL & GEOPHYSICAL
 REPORT ON EXPO
 LOCATED: 56° 12' N W
 BY A. ASCHEBUS 16 MAY TO 16 SEPT, 1972

A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8	A-9	A-10	A-11
B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	B-11
C-1	C-2	C-3	C-4	C-5	C-6	C-7	C-8	C-9	C-10	C-11
D-1	D-2	D-3	D-4	D-5	D-6	D-7	D-8	D-9	D-10	D-11
E-1	E-2	E-3	E-4	E-5	E-6	E-7	E-8	E-9	E-10	E-11
F-1	F-2	F-3	F-4	F-5	F-6	F-7	F-8	F-9	F-10	F-11
G-1	G-2	G-3	G-4	G-5	G-6	G-7	G-8	G-9	G-10	G-11
H-1	H-2	H-3	H-4	H-5	H-6	H-7	H-8	H-9	H-10	H-11

Plate 12

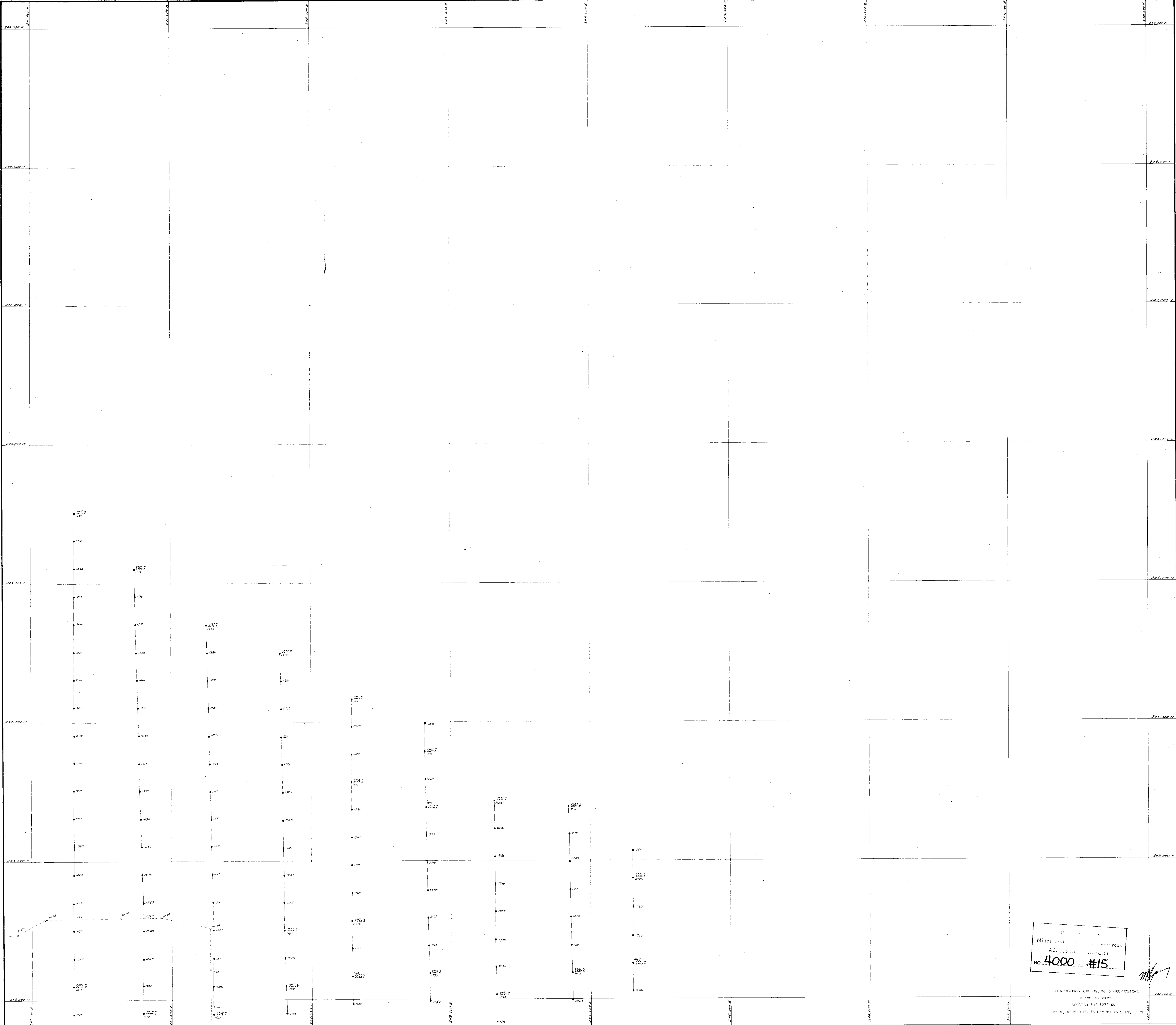
UNIVERSITY OF UTAH MINES LTD.
 MINERAL EXPLORATION & DEVELOPMENT DEPARTMENT
 VANCOUVER BRITISH COLUMBIA

NO. 4000 MAP #14 EXPO GROUP

**GROUND MAGNETICS SURVEY
 VERTICAL INTENSITY**

VANCOUVER ISLAND BRITISH COLUMBIA

Work by: K. Millberry Date: 1972
 Drawn by: C.P.F.C. Revised: MAP D-6
 SCALE IN FEET



Report of
Mines and Geophysical Resources
Account Report
NO. 4000 #15

TO ACCOMPANY GEOLOGICAL & GEOPHYSICAL
REPORT ON CLAIM
LOCATED 51° 127' 00"
BY A. ASSOCIATES 16 MAY TO 16 SEPT. 1972

LEGEND
INSTRUMENTATION:
JALANDER FLUXGATE MAGNETOMETER
No. 5770
CREEK, INTERMITTENT
CREEK, WIDTH DEFINED, INFERRED
ROAD SURVEYED UNSURVEYED
SWAMP
MAGNETIC INTENSITY IN GAMMAS
DATA POINT

4000
M-15

SYMBOLS
Transit Survey, Hubs
Picket Line, Showing line and station designation
Hep Claim Boundary Unsurveyed, showing claim number and claim post

DDH Diamond Drill Hole

SECTION	STATION	SECTION	STATION	SECTION	STATION	SECTION	STATION
A-1	1	A-4	4	A-7	7	A-10	10
A-2	2	A-5	5	A-8	8	A-11	11
A-3	3	A-6	6	A-9	9		
B-1	12	B-4	15	B-7	18	B-10	21
B-2	13	B-5	16	B-8	19	B-11	22
B-3	14	B-6	17	B-9	20		
C-1	24	C-4	27	C-7	30	C-10	33
C-2	25	C-5	28	C-8	31	C-11	34
C-3	26	C-6	29	C-9	32		
D-1	36	D-4	39	D-7	42	D-10	45
D-2	37	D-5	40	D-8	43	D-11	46
D-3	38	D-6	41	D-9	44		
E-1	48	E-4	51	E-7	54	E-10	57
E-2	49	E-5	52	E-8	55	E-11	58
E-3	50	E-6	53	E-9	56		
F-1	60	F-4	63	F-7	66	F-10	69
F-2	61	F-5	64	F-8	67	F-11	70
F-3	62	F-6	65	F-9	68		
G-1	72	G-4	75	G-7	78	G-10	81
G-2	73	G-5	76	G-8	79	G-11	82
G-3	74	G-6	77	G-9	80		
H-1	84	H-4	87	H-7	90	H-10	93
H-2	85	H-5	88	H-8	91	H-11	94
H-3	86	H-6	89	H-9	92		



Plate 13
UTAH MINES LTD.
MINERAL EXPLORATION & DEVELOPMENT DEPARTMENT
VANCOUVER BRITISH COLUMBIA
EXPO GROUP
GROUND MAGNETICS SURVEY
VERTICAL INTENSITY
VANCOUVER ISLAND BRITISH COLUMBIA
Work by: K. Wilberley Date: Feb 72 MTS Ref.
Drawn by: C.D./E.C. Revised: Sept 1972 MAP D-7
SCALE IN FEET

4000 M-16

Department of
Mines and Geotechnical Resources
Aerial Photo
NO. 4000 #16

TO ACCOMPANY GEOLOGICAL & CHRONOPHYSICAL
REPORT ON DEPO
LOCATED 50° 127' NW
BY A. ASCUNCIO 16 MAY TO SEPT, 1972

LEGEND

INSTRUMENTATION:

JALANDER FLUXGATE MAGNETOMETER
No. 5770

CREEK, INTERMITTENT

CREEK, WIDTH DEFINED, INFERRED

ROAD SURVEYED UNSURVEYED

SWAMP

SYMBOLS

Transit Survey, Hubs

Picket Line, Showing line and station designation

See Claim Boundary Unsurveyed, showing claim number and claim post

Diamond Drill Hole

SECTION	LINE	STATION	SECTION	LINE	STATION	SECTION	LINE	STATION
232000	A-1	1	A-5	5	A-9	A-10	10	A-11
232000	B-1	1	B-5	5	B-9	B-10	10	B-11
232000	C-1	1	C-5	5	C-9	C-10	10	C-11
232000	D-1	1	D-5	5	D-9	D-10	10	D-11
232000	E-1	1	E-5	5	E-9	E-10	10	E-11
232000	F-1	1	F-5	5	F-9	F-10	10	F-11
232000	G-1	1	G-5	5	G-9	G-10	10	G-11
232000	H-1	1	H-5	5	H-9	H-10	10	H-11

Plate 14

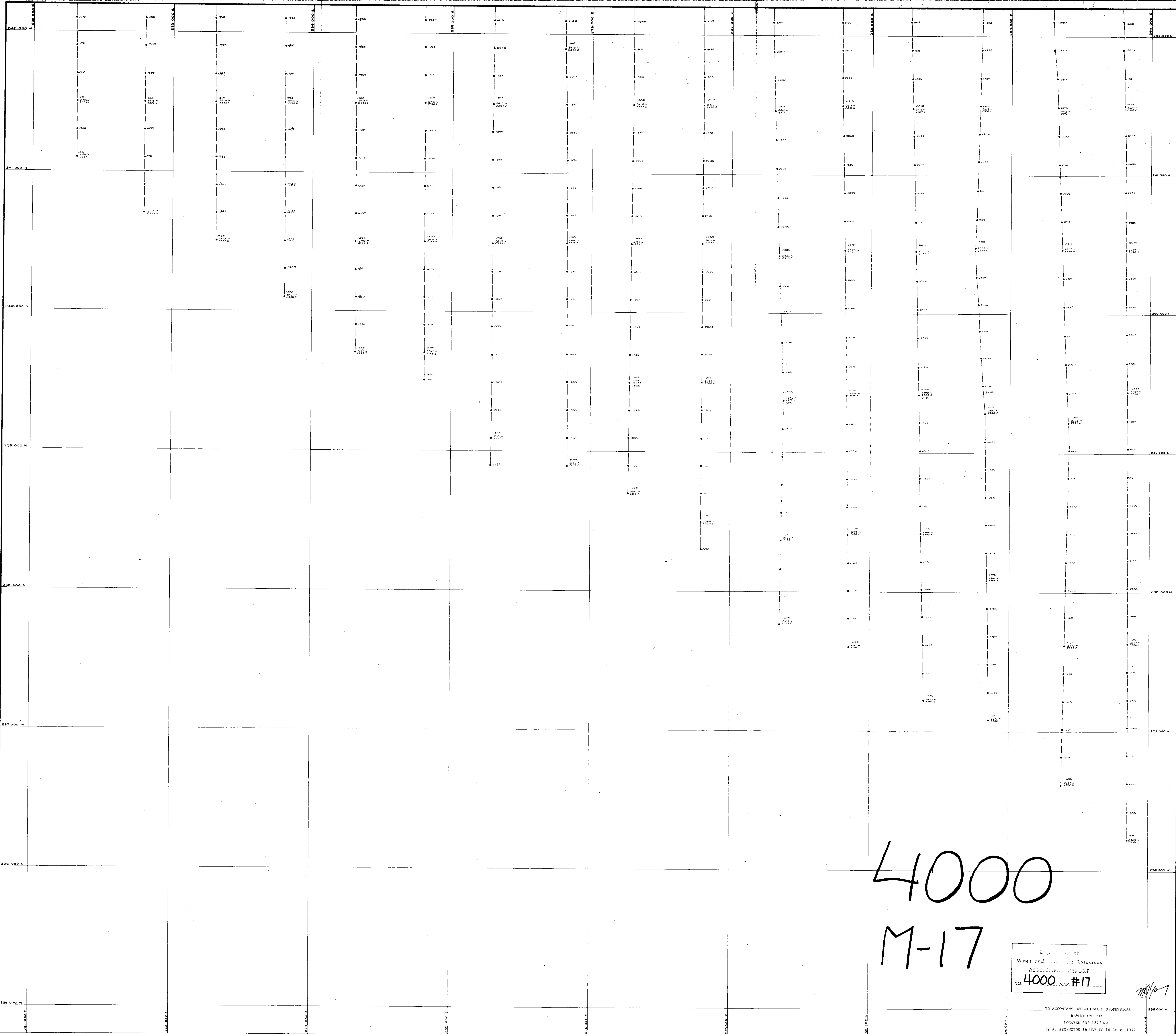
UTAH MINES LTD.
MINERAL EXPLORATION & DEVELOPMENT DEPARTMENT
VANCOUVER BRITISH COLUMBIA

EXPO GROUP
GROUND MAGNETICS SURVEY
VERTICAL INTENSITY

VANCOUVER ISLAND BRITISH COLUMBIA

Work by: J. Ascencio Date: FEB 72 NTS Ref.
Drawn by: MAP Revised: SEPT 1972 MAP E-5

SCALE IN FEET



4000
M-17

Department of
Mines and Technical Resources
ASSESSMENT REPORT
NO. 4000 MAP #17

TO ACCOMPANY GEOLOGICAL & GEOGRAPHICAL
REPORT ON 4000
LOCATED 56° 127' NW
BY A. ASORCIOS 16 NOV TO 16 SEPT, 1972

LEGEND

- INSTRUMENTATION:**
JALANDER FLUXGATE MAGNETOMETER
No. 5770
- CREEK, INTERMITTENT
CREEK, WIDTH DEFINED, INFERRED
ROAD SURVEYED UNSURVEYED
SWAMP
- MAGNETIC INTENSITY IN GAMMAS
DATA POINT

SYMBOLS

- Transit Survey, Hubs
Picket Line, Showing line and station designation
Map Claim Boundary Unsurveyed, showing claim number and claim post
Diamond Drill Hole

A-1	F-1	G-1	H-1	I-1	J-1	K-1	L-1	M-1	N-1	O-1	P-1	Q-1	R-1	S-1	T-1	U-1	V-1	W-1	X-1	Y-1	Z-1
A-2	F-2	G-2	H-2	I-2	J-2	K-2	L-2	M-2	N-2	O-2	P-2	Q-2	R-2	S-2	T-2	U-2	V-2	W-2	X-2	Y-2	Z-2
A-3	F-3	G-3	H-3	I-3	J-3	K-3	L-3	M-3	N-3	O-3	P-3	Q-3	R-3	S-3	T-3	U-3	V-3	W-3	X-3	Y-3	Z-3
A-4	F-4	G-4	H-4	I-4	J-4	K-4	L-4	M-4	N-4	O-4	P-4	Q-4	R-4	S-4	T-4	U-4	V-4	W-4	X-4	Y-4	Z-4
A-5	F-5	G-5	H-5	I-5	J-5	K-5	L-5	M-5	N-5	O-5	P-5	Q-5	R-5	S-5	T-5	U-5	V-5	W-5	X-5	Y-5	Z-5
A-6	F-6	G-6	H-6	I-6	J-6	K-6	L-6	M-6	N-6	O-6	P-6	Q-6	R-6	S-6	T-6	U-6	V-6	W-6	X-6	Y-6	Z-6
A-7	F-7	G-7	H-7	I-7	J-7	K-7	L-7	M-7	N-7	O-7	P-7	Q-7	R-7	S-7	T-7	U-7	V-7	W-7	X-7	Y-7	Z-7
A-8	F-8	G-8	H-8	I-8	J-8	K-8	L-8	M-8	N-8	O-8	P-8	Q-8	R-8	S-8	T-8	U-8	V-8	W-8	X-8	Y-8	Z-8
A-9	F-9	G-9	H-9	I-9	J-9	K-9	L-9	M-9	N-9	O-9	P-9	Q-9	R-9	S-9	T-9	U-9	V-9	W-9	X-9	Y-9	Z-9
A-10	F-10	G-10	H-10	I-10	J-10	K-10	L-10	M-10	N-10	O-10	P-10	Q-10	R-10	S-10	T-10	U-10	V-10	W-10	X-10	Y-10	Z-10
A-11	F-11	G-11	H-11	I-11	J-11	K-11	L-11	M-11	N-11	O-11	P-11	Q-11	R-11	S-11	T-11	U-11	V-11	W-11	X-11	Y-11	Z-11
A-12	F-12	G-12	H-12	I-12	J-12	K-12	L-12	M-12	N-12	O-12	P-12	Q-12	R-12	S-12	T-12	U-12	V-12	W-12	X-12	Y-12	Z-12
A-13	F-13	G-13	H-13	I-13	J-13	K-13	L-13	M-13	N-13	O-13	P-13	Q-13	R-13	S-13	T-13	U-13	V-13	W-13	X-13	Y-13	Z-13
A-14	F-14	G-14	H-14	I-14	J-14	K-14	L-14	M-14	N-14	O-14	P-14	Q-14	R-14	S-14	T-14	U-14	V-14	W-14	X-14	Y-14	Z-14
A-15	F-15	G-15	H-15	I-15	J-15	K-15	L-15	M-15	N-15	O-15	P-15	Q-15	R-15	S-15	T-15	U-15	V-15	W-15	X-15	Y-15	Z-15
A-16	F-16	G-16	H-16	I-16	J-16	K-16	L-16	M-16	N-16	O-16	P-16	Q-16	R-16	S-16	T-16	U-16	V-16	W-16	X-16	Y-16	Z-16
A-17	F-17	G-17	H-17	I-17	J-17	K-17	L-17	M-17	N-17	O-17	P-17	Q-17	R-17	S-17	T-17	U-17	V-17	W-17	X-17	Y-17	Z-17
A-18	F-18	G-18	H-18	I-18	J-18	K-18	L-18	M-18	N-18	O-18	P-18	Q-18	R-18	S-18	T-18	U-18	V-18	W-18	X-18	Y-18	Z-18
A-19	F-19	G-19	H-19	I-19	J-19	K-19	L-19	M-19	N-19	O-19	P-19	Q-19	R-19	S-19	T-19	U-19	V-19	W-19	X-19	Y-19	Z-19
A-20	F-20	G-20	H-20	I-20	J-20	K-20	L-20	M-20	N-20	O-20	P-20	Q-20	R-20	S-20	T-20	U-20	V-20	W-20	X-20	Y-20	Z-20
A-21	F-21	G-21	H-21	I-21	J-21	K-21	L-21	M-21	N-21	O-21	P-21	Q-21	R-21	S-21	T-21	U-21	V-21	W-21	X-21	Y-21	Z-21
A-22	F-22	G-22	H-22	I-22	J-22	K-22	L-22	M-22	N-22	O-22	P-22	Q-22	R-22	S-22	T-22	U-22	V-22	W-22	X-22	Y-22	Z-22
A-23	F-23	G-23	H-23	I-23	J-23	K-23	L-23	M-23	N-23	O-23	P-23	Q-23	R-23	S-23	T-23	U-23	V-23	W-23	X-23	Y-23	Z-23
A-24	F-24	G-24	H-24	I-24	J-24	K-24	L-24	M-24	N-24	O-24	P-24	Q-24	R-24	S-24	T-24	U-24	V-24	W-24	X-24	Y-24	Z-24
A-25	F-25	G-25	H-25	I-25	J-25	K-25	L-25	M-25	N-25	O-25	P-25	Q-25	R-25	S-25	T-25	U-25	V-25	W-25	X-25	Y-25	Z-25
A-26	F-26	G-26	H-26	I-26	J-26	K-26	L-26	M-26	N-26	O-26	P-26	Q-26	R-26	S-26	T-26	U-26	V-26	W-26	X-26	Y-26	Z-26
A-27	F-27	G-27	H-27	I-27	J-27	K-27	L-27	M-27	N-27	O-27	P-27	Q-27	R-27	S-27	T-27	U-27	V-27	W-27	X-27	Y-27	Z-27
A-28	F-28	G-28	H-28	I-28	J-28	K-28	L-28	M-28	N-28	O-28	P-28	Q-28	R-28	S-28	T-28	U-28	V-28	W-28	X-28	Y-28	Z-28
A-29	F-29	G-29	H-29	I-29	J-29	K-29	L-29	M-29	N-29	O-29	P-29	Q-29	R-29	S-29	T-29	U-29	V-29	W-29	X-29	Y-29	Z-29
A-30	F-30	G-30	H-30	I-30	J-30	K-30	L-30	M-30	N-30	O-30	P-30	Q-30	R-30	S-30	T-30	U-30	V-30	W-30	X-30	Y-30	Z-30
A-31	F-31	G-31	H-31	I-31	J-31	K-31	L-31	M-31	N-31	O-31	P-31	Q-31	R-31	S-31	T-31	U-31	V-31	W-31	X-31	Y-31	Z-31
A-32	F-32	G-32	H-32	I-32	J-32	K-32	L-32	M-32	N-32	O-32	P-32	Q-32	R-32	S-32	T-32	U-32	V-32	W-32	X-32	Y-32	Z-32
A-33	F-33	G-33	H-33	I-33	J-33	K-33	L-33	M-33	N-33	O-33	P-33	Q-33	R-33	S-33	T-33	U-33	V-33	W-33	X-33	Y-33	Z-33
A-34	F-34	G-34	H-34	I-34	J-34	K-34	L-34	M-34	N-34	O-34	P-34	Q-34	R-34	S-34	T-34	U-34	V-34	W-34	X-34	Y-34	Z-34
A-35	F-35	G-35	H-35	I-35	J-35	K-35	L-35	M-35	N-35	O-35	P-35	Q-35	R-35	S-35	T-35	U-35	V-35	W-35	X-35	Y-35	Z-35
A-36	F-36	G-36	H-36	I-36	J-36	K-36	L-36	M-36	N-36	O-36	P-36	Q-36	R-36	S-36	T-36	U-36	V-36	W-36	X-36	Y-36	Z-36
A-37	F-37	G-37	H-37	I-37	J-37	K-37	L-37	M-37	N-37	O-37	P-37	Q-37	R-37	S-37	T-37	U-37	V-37	W-37	X-37	Y-37	Z-37
A-38	F-38	G-38	H-38	I-38	J-38	K-38	L-38	M-38	N-38	O-38	P-38	Q-38	R-38	S-38	T-38	U-38	V-38	W-38	X-38	Y-38	Z-38
A-39	F-39	G-39	H-39	I-39	J-39	K-39	L-39	M-39	N-39	O-39	P-39	Q-39	R-39	S-39	T-39	U-39	V-39	W-39	X-39	Y-39	Z-39
A-40	F-40	G-40	H-40	I-40	J-40	K-40	L-40	M-40	N-40	O-40	P-40	Q-40	R-40	S-40	T-40	U-40	V-40	W-40	X-40	Y-40	Z-40
A-41	F-41	G-41	H-41	I-41	J-41	K-41	L-41	M-41	N-41	O-41	P-41	Q-41	R-41	S-41	T-41	U-41	V-41	W-41	X-41	Y-41	Z-41
A-42	F-42	G-42	H-42	I-42	J-42	K-42	L-42	M-42	N-42	O-42	P-42	Q-42	R-42	S-42	T-42	U-42	V-42	W-42	X-42	Y-42	Z-42
A-43	F-43	G-43	H-43	I-43	J-43	K-43	L-43	M-43	N-43	O-43	P-43	Q-43	R-43	S-43	T-43	U-43	V-43	W-43	X-43	Y-43	Z-43
A-44	F-44	G-44	H-44	I-44	J-44	K-44	L-44	M-44	N-44	O-44	P-44	Q-44	R-44	S-44	T-44	U-44	V-44	W-44	X-44	Y-44	Z-44
A-45	F-45	G-45	H-45	I-45	J-45	K-45	L-45	M-45	N-45	O-45	P-45	Q-45	R-45	S-45	T-45	U-45	V-45	W-45	X-45	Y-45	Z-45
A-46	F-46	G-46	H-46	I-46	J-46	K-46	L-46	M-46	N-46	O-46	P-46	Q-46	R-46	S-46	T-46	U-46	V-46	W-46	X-46	Y-46	Z-46
A-47	F-47	G-47	H-47	I-47	J-47	K-47	L-47	M-47	N-47	O-47	P-47	Q-47	R-47	S-47	T-47	U-47	V-47	W-47	X-47	Y-47	Z-47
A-48	F-48	G-48	H-48	I-48	J-48	K-48	L-48	M-48	N-48	O-48	P-48	Q-48	R-48	S-48	T-48	U-48	V-48	W-48	X-48	Y-48	Z-48
A-49	F-49	G-49	H-49	I-49	J-49	K-49	L-49	M-49	N-49	O-49	P-49	Q-49	R-49	S-49	T-49	U-49	V-49	W-49	X-49	Y-49	Z-49
A-50	F-50	G-50	H-50	I-50	J-50	K-50	L-50	M-50	N-50	O-50	P-50	Q-50	R-50	S-50	T-50	U-50	V-50	W-50	X-50	Y-50	Z-50

Plate 15

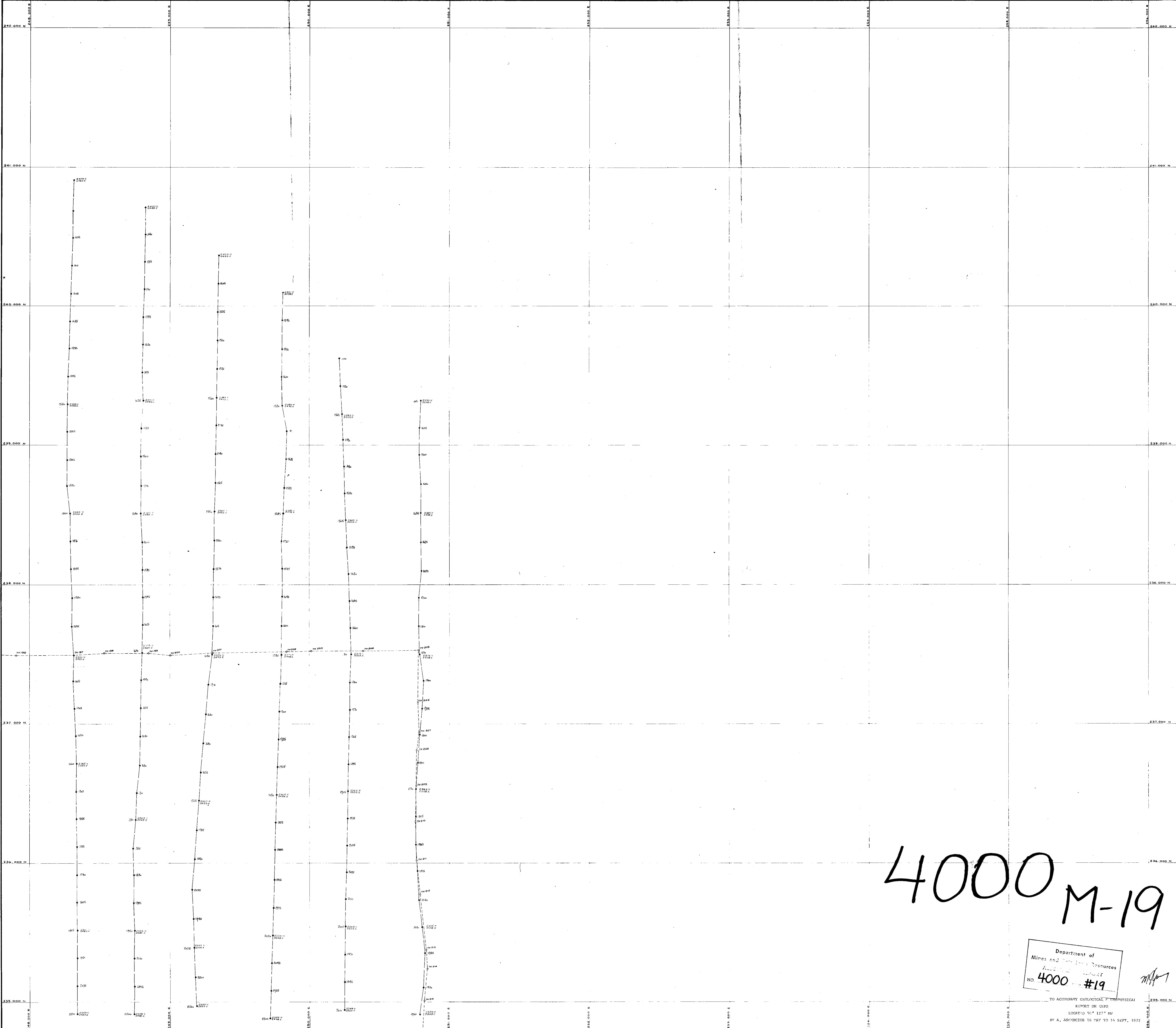
UTAH MINES LTD.
MINERAL EXPLORATION & DEVELOPMENT DEPARTMENT
VANCOUVER BRITISH COLUMBIA

EXPO GROUP
GROUND MAGNETICS SURVEY
VERTICAL INTENSITY

VANCOUVER ISLAND BRITISH COLUMBIA

Map by: *C. J. G. C.* Date: Feb. 72
Drawn by: *C. J. G. C.* Revised: Nov. 1972

SCALE IN FEET
200 100 0 100 200 400



4000 M-19

Department of
Mines and Technical Resources
No. 4000 #19

TO ACCOMPANY GEOLOGICAL & PHYSICAL REPORT ON EXPO
LOCATION: 10° 12' 17" N
BY A. ASHONICKS 16 MAY TO 14 SEPT, 1972

LEGEND

INSTRUMENTATION:

- JALANDER FLUXGATE MAGNETOMETER (No. 5770)
- CREEK, INTERMITTENT
- CREEK, WIDTH DEFINED, INFERRED
- ROAD, SURVEYED UNSURVEYED
- SWAMP
- MAGNETIC INTENSITY IN GAMMAS
- DATA POINT

4000 M-19

SYMBOLS

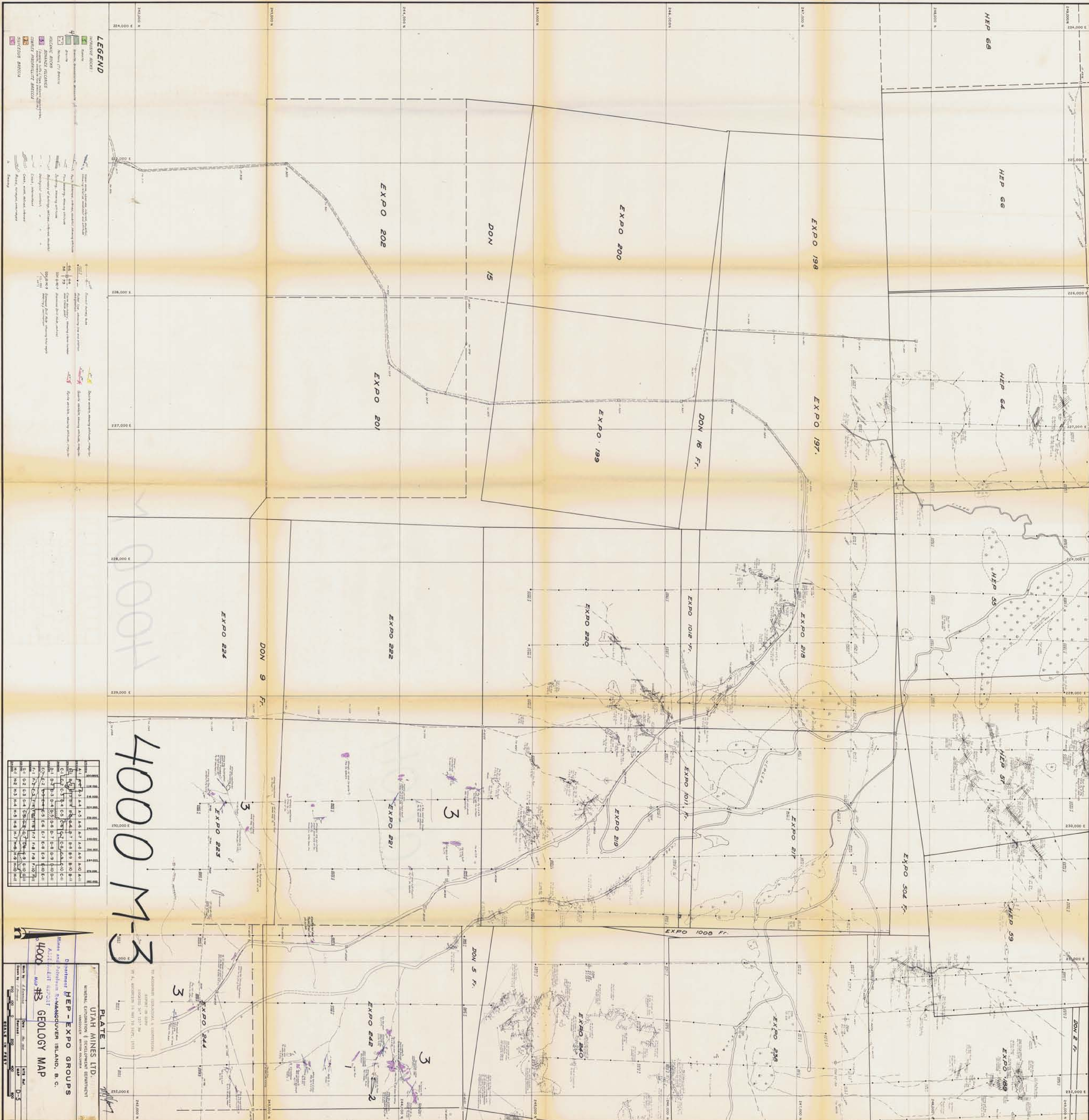
- Transit Survey, Hubs
- Picket Line, Showing line and station designation
- Hep. Claim Boundary Unsurveyed, showing claim number and claim post
- Diamond Drill Hole

A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8	A-9	A-10	A-11
B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	B-11
C-1	C-2	C-3	C-4	C-5	C-6	C-7	C-8	C-9	C-10	C-11
D-1	D-2	D-3	D-4	D-5	D-6	D-7	D-8	D-9	D-10	D-11
E-1	E-2	E-3	E-4	E-5	E-6	E-7	E-8	E-9	E-10	E-11
F-1	F-2	F-3	F-4	F-5	F-6	F-7	F-8	F-9	F-10	F-11
G-1	G-2	G-3	G-4	G-5	G-6	G-7	G-8	G-9	G-10	G-11
H-1	H-2	H-3	H-4	H-5	H-6	H-7	H-8	H-9	H-10	H-11

Plate 17

UTAH MINES LTD.
MINERAL EXPLORATION & DEVELOPMENT DEPARTMENT
VANCOUVER BRITISH COLUMBIA
EXPO GROUP
GROUND MAGNETICS SURVEY
VERTICAL INTENSITY

VANCOUVER ISLAND BRITISH COLUMBIA
Work by: K. Blodgett Date: Feb. 72 NTS Ref.
Drawn by: C.D./E.C. Revised: Nov. 1972 MAP E-8
SCALE IN FEET



LEGEND

UNSATURATED ROCKS:

- 1. Sandstone
- 2. Shale
- 3. Limestone
- 4. Dolomite
- 5. Gypsum
- 6. Anhydrite
- 7. Salt
- 8. Other

FLUIDS:

- 1. Oil
- 2. Gas
- 3. Water
- 4. Brine

STRUCTURAL FEATURES:

- 1. Fault
- 2. Fracture
- 3. Fold
- 4. Unconformity
- 5. Discontinuity
- 6. Other

OTHER FEATURES:

- 1. Well
- 2. Pipeline
- 3. Road
- 4. River
- 5. Contour
- 6. Elevation
- 7. Other

4000 M-3

PLATE 1

UTAH MINES LTD.

MINERAL, EXPLORATION & DEVELOPMENT DEPARTMENT

WINGOVER BRIDGE, COLEMAN

Department HEP - EXPO GROUPS

Mines and Exploration, RIMMANGOVER ISLAND, B. C.

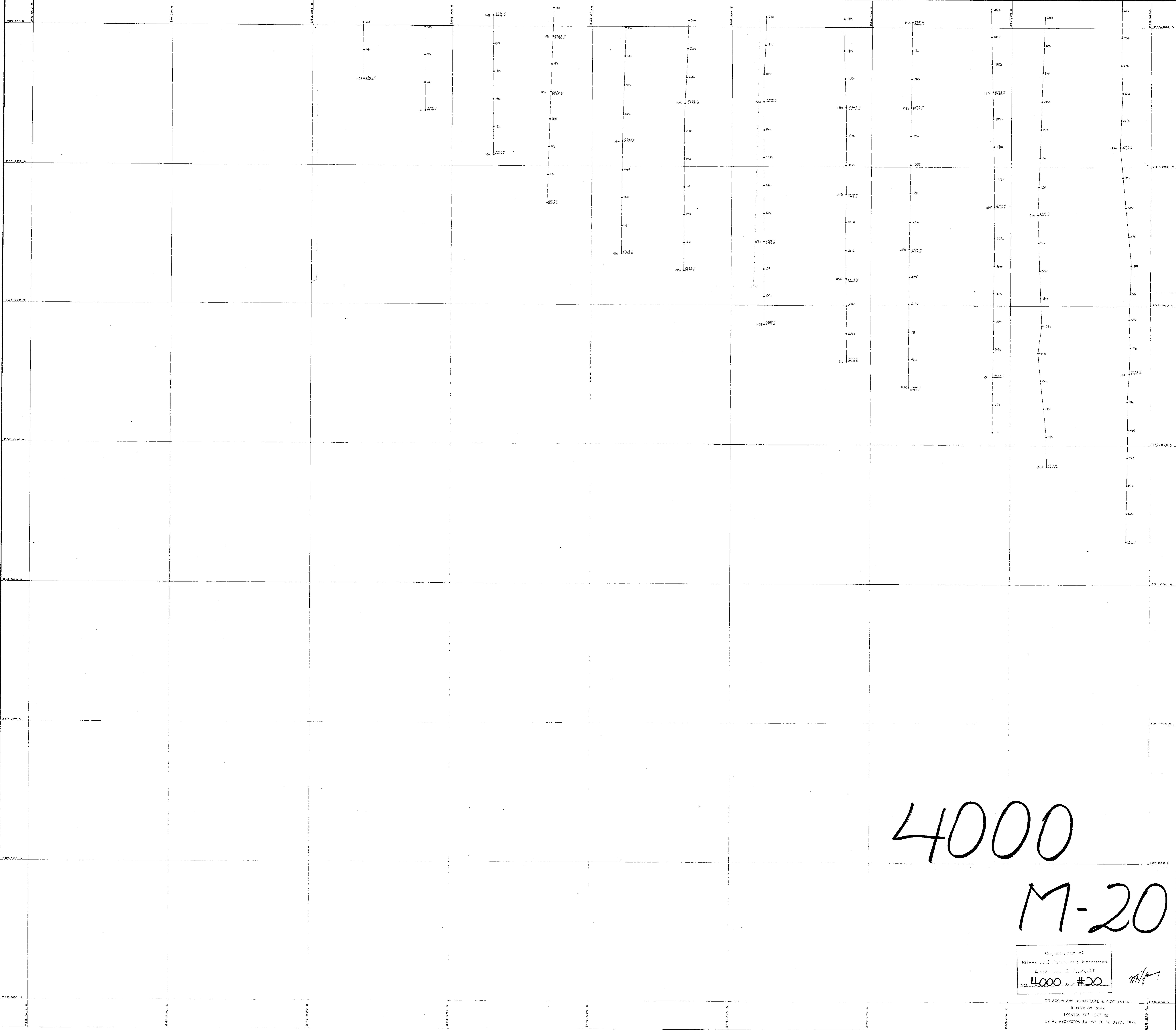
A-111

Scale 1:4000

#3 GEOLOGY MAP

DATE: 1973

SCALE: 1:4000



4000
M-20

Department of
Mines and Geophysical Resources
Geological Survey
NO. 4000 REG. #20

TO ACCOMPANY GEOLOGICAL & GEOPHYSICAL
REPORT ON 1370
LOCATED 51° 12' 17" W
BY A. ASQUARDUS 16 MAY TO 16 SEPT, 1972

LEGEND

- INSTRUMENTATION:**
- JALANDER FLUXGATE MAGNETOMETER
NO. 5770
 - CREEK, INTERMITTENT
 - CREEK, WIDTH DEFINED, INFERRED
 - ROAD SURVEYED UNSURVEYED
 - SWAMP
 - MAGNETIC INTENSITY IN GAMMAS
 - DATA POINT

SYMBOLS

- Transect Survey, Hubs
- Picket Line, Showing line and station designation
- Hep. Claim Boundary Unsurveyed, showing claim number and claim post
- Diamond Drill Hole

A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8	A-9	A-10	A-11
B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	B-11
C-1	C-2	C-3	C-4	C-5	C-6	C-7	C-8	C-9	C-10	C-11
D-1	D-2	D-3	D-4	D-5	D-6	D-7	D-8	D-9	D-10	D-11
E-1	E-2	E-3	E-4	E-5	E-6	E-7	E-8	E-9	E-10	E-11
F-1	F-2	F-3	F-4	F-5	F-6	F-7	F-8	F-9	F-10	F-11
G-1	G-2	G-3	G-4	G-5	G-6	G-7	G-8	G-9	G-10	G-11
H-1	H-2	H-3	H-4	H-5	H-6	H-7	H-8	H-9	H-10	H-11

Plate 18

UTAH MINES LTD.
MINERAL EXPLORATION & DEVELOPMENT DEPARTMENT
VANCOUVER BRITISH COLUMBIA

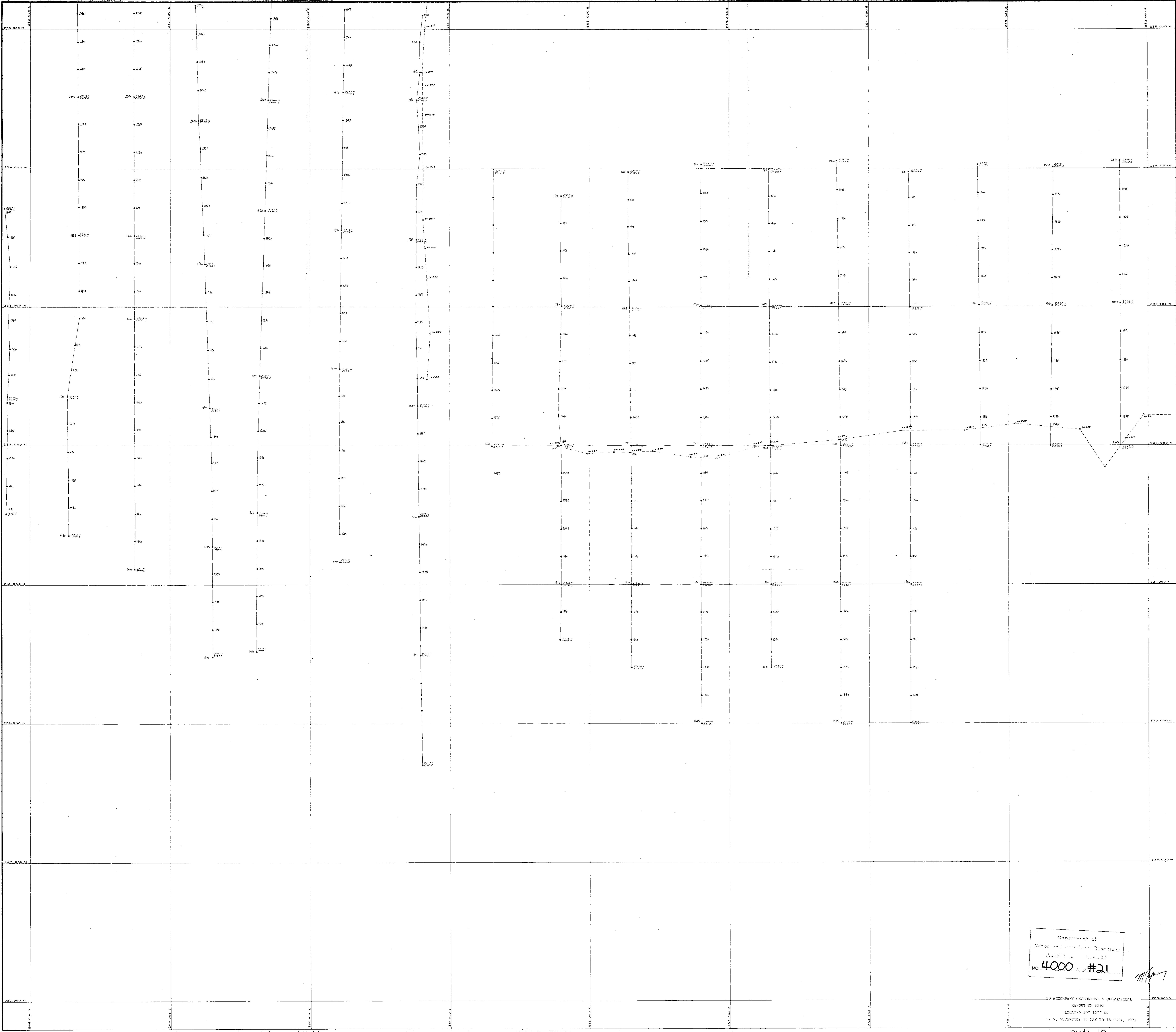
EXPO GROUP

**GROUND MAGNETICS SURVEY
VERTICAL INTENSITY**

VANCOUVER ISLAND BRITISH COLUMBIA

Work by: *K. Williams* Date: FEB 72 MTS Ref.
Drawn by: *C.D./E.C.* Revised: Nov 72 MAP E-7
Scale: 200 400 800

SCALE IN FEET



Department of
 Mines and Technical Surveys
 ADI 100-100-100
 NO. 4000 #21

TO ACCOMPANY GEOLOGICAL & CHEMICAL
 REPORT '68 (27)
 LOCATED 55° 12' 30" N
 BY A. ASSOCIATES 15 MAY TO 16 SEPT, 1972

Plate 19

LEGEND
INSTRUMENTATION:
 JALANDER FLUXGATE MAGNETOMETER
 No. 3770
 CREEK, INTERMITTENT
 CREEK, WIDTH DEFINED, INFERRED
 ROAD SURVEYED UNSURVEYED
 SWAMP
 MAGNETIC INTENSITY IN GAMMAS
 DATA POINT

4000
 M-21

SYMBOLS
 --- Transit Survey, Nubs
 --- Picket Line, Showing line and station designation
 665 678 697 694 Heo Claim Boundary Unsurveyed, showing claim number and claim post

Diamond Drill Hole
 2407

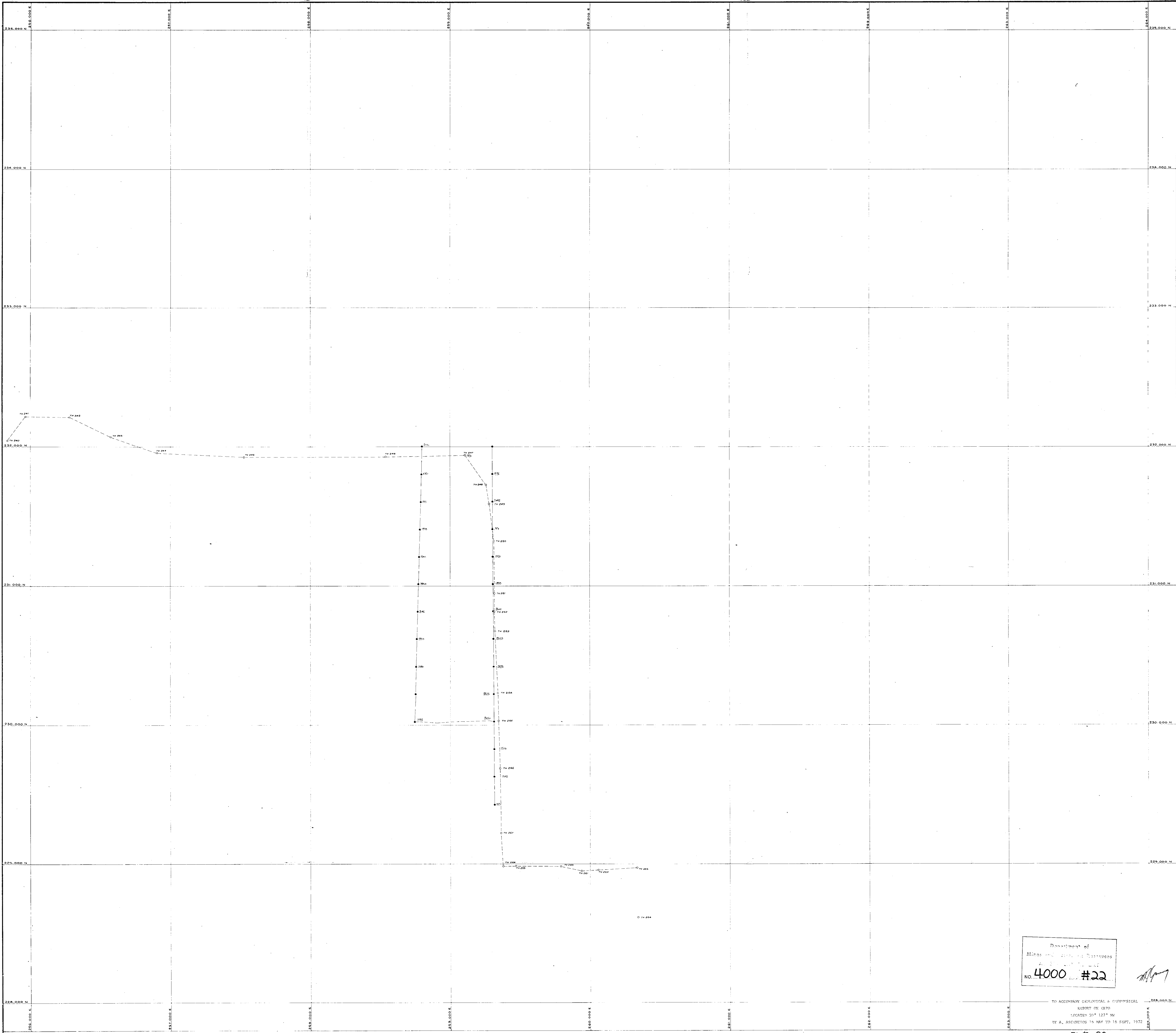
STATION	DEPTH	TEMP.	TEMP.	TEMP.	TEMP.	TEMP.	TEMP.	TEMP.	TEMP.	TEMP.
A-1	3-3	A-4	A-5	A-6	A-7	A-8	A-9	A-10	A-11	
B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	B-11
C-1	C-2	C-3	C-4	C-5	C-6	C-7	C-8	C-9	C-10	C-11
D-1	D-2	D-3	D-4	D-5	D-6	D-7	D-8	D-9	D-10	D-11
E-1	E-2	E-3	E-4	E-5	E-6	E-7	E-8	E-9	E-10	E-11
F-1	F-2	F-3	F-4	F-5	F-6	F-7	F-8	F-9	F-10	F-11
G-1	G-2	G-3	G-4	G-5	G-6	G-7	G-8	G-9	G-10	G-11
H-1	H-2	H-3	H-4	H-5	H-6	H-7	H-8	H-9	H-10	H-11

UTAH MINES LTD.
 MINERAL EXPLORATION & DEVELOPMENT DEPARTMENT
 VANCOUVER BRITISH COLUMBIA

EXPO GROUP
GROUND MAGNETICS SURVEY
VERTICAL INTENSITY SURVEY

VANCOUVER ISLAND BRITISH COLUMBIA

Work by: K. Willetts Date: Feb 72 MTS Ref.
 Drawn by: CD/EC Revised: Nov. 1972 MAP Ref.
 200 0 200 400 600
 SCALE IN FEET



Department of
 Mines and Technical Surveys
 NO. 4000 #22

TO ACCOMPANY GEOMAGNETICAL & GEOPHYSICAL
 REPORT ON EXPO
 LOCATED 50° 12' 30"
 BY A. ARCADETOS 16 MAY TO 16 SEPT. 1972

Plate 20

LEGEND

- INSTRUMENTATION:**
- JALANDER FLUXGATE MAGNETOMETER No. 5770
 - CREEK, INTERMITTENT
 - CREEK, WIDTH DEFINED, INFERRED
 - ROAD SURVEYED UNSURVEYED
 - SWAMP
 - MAGNETIC INTENSITY IN GAMMAS
 - DATA POINT

4000
M-22

SYMBOLS

- Transit Survey, Hubs
- Picket Line, Showing line and station designation
- Rep. Claim Boundary Unsurveyed, showing claim number and claim post
- Diamond Drill Hole

A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8	A-9	A-10	A-11
B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	B-11
C-1	C-2	C-3	C-4	C-5	C-6	C-7	C-8	C-9	C-10	C-11
D-1	D-2	D-3	D-4	D-5	D-6	D-7	D-8	D-9	D-10	D-11
E-1	E-2	E-3	E-4	E-5	E-6	E-7	E-8	E-9	E-10	E-11
F-1	F-2	F-3	F-4	F-5	F-6	F-7	F-8	F-9	F-10	F-11
G-1	G-2	G-3	G-4	G-5	G-6	G-7	G-8	G-9	G-10	G-11
H-1	H-2	H-3	H-4	H-5	H-6	H-7	H-8	H-9	H-10	H-11

UTAH MINES LTD.
 MINERAL EXPLORATION & DEVELOPMENT DEPARTMENT
 VANCOUVER BRITISH COLUMBIA

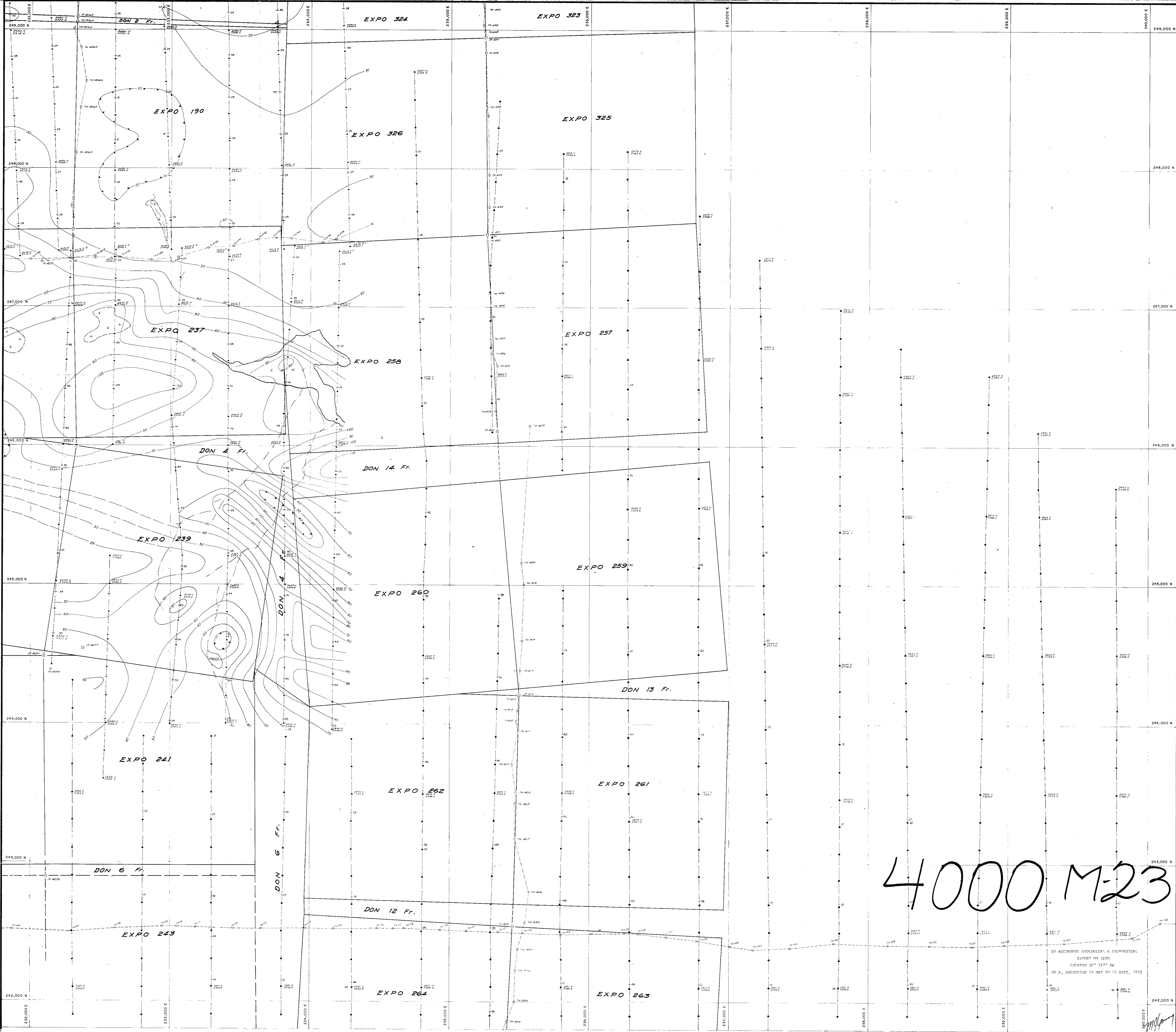
EXPO GROUP

**GROUND MAGNETICS SURVEY
 VERTICAL INTENSITY**

VANCOUVER ISLAND BRITISH COLUMBIA

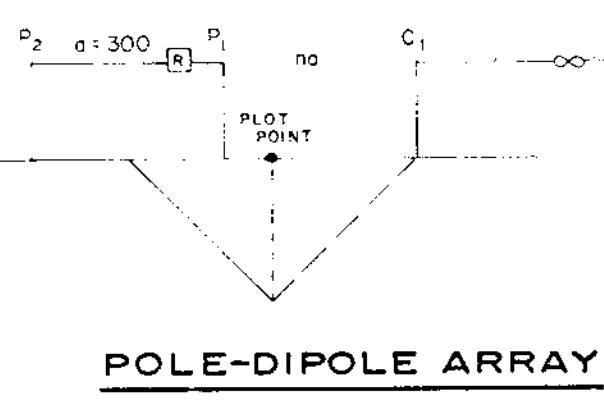
Work by: *R. McPherson* Date: 1972
 Drawn by: *C. J. G. G.* Revised: 1/72 MAP F-5

SCALE IN FEET



4000 M-23

LEGEND:



POLE-DIPOLE ARRAY

INSTRUMENTATION

ELLIOTT XTR
SCINTREX IPR-7 REC'R

- CREEK, INTERMITTENT
- CREEK, WIDTH DEFINED, INFERRED
- ROAD, SURVEYED UNSURVEYED
- SWAMP

TRANSIT SURVEY HUBS

- TRANSIT SURVEY HUBS
- PICKET LINE
- CHARGEAB. IN MILLISEC.

LINE	1-1	1-2	1-3	1-4	1-5	1-6	1-7	1-8	1-9	1-10	1-11
23000											
23100											
23200											
23300											
23400											
23500											
23600											
23700											
23800											
23900											

Plate 21

UTAH MINES LTD.
MINES AND DEVELOPMENT DEPARTMENT
VANCOUVER BRITISH COLUMBIA

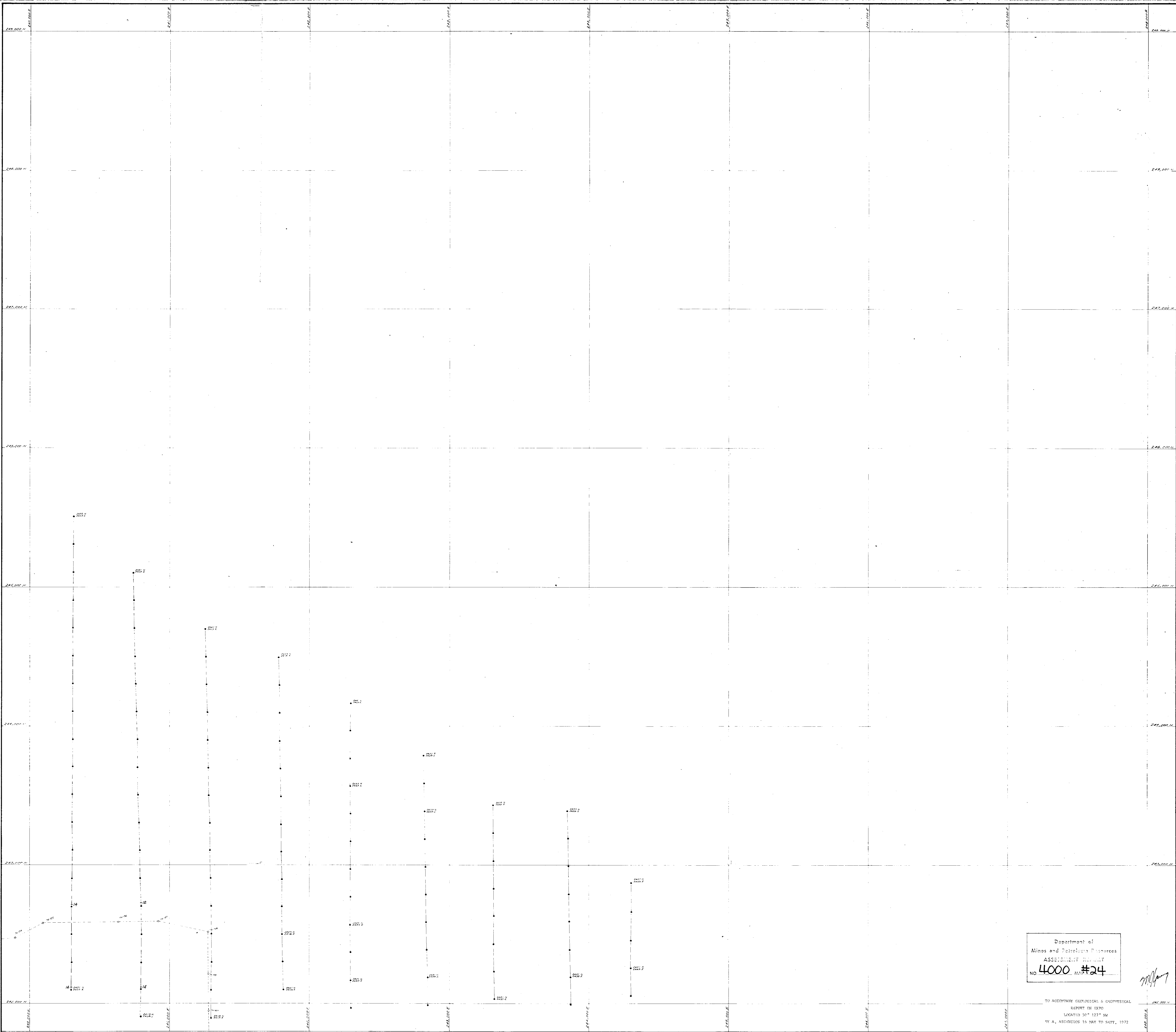
NO. 4000 #23 EXPO GROUP
VANCOUVER ISLAND, B. C.

INDUCED POLARIZATION
APPARENT CHARGEABILITY N=1

Work by: K. M. H. Date: 1972 NTS Ref:
Drawn by: C.S./C.C. Revised: MAP D-6 of

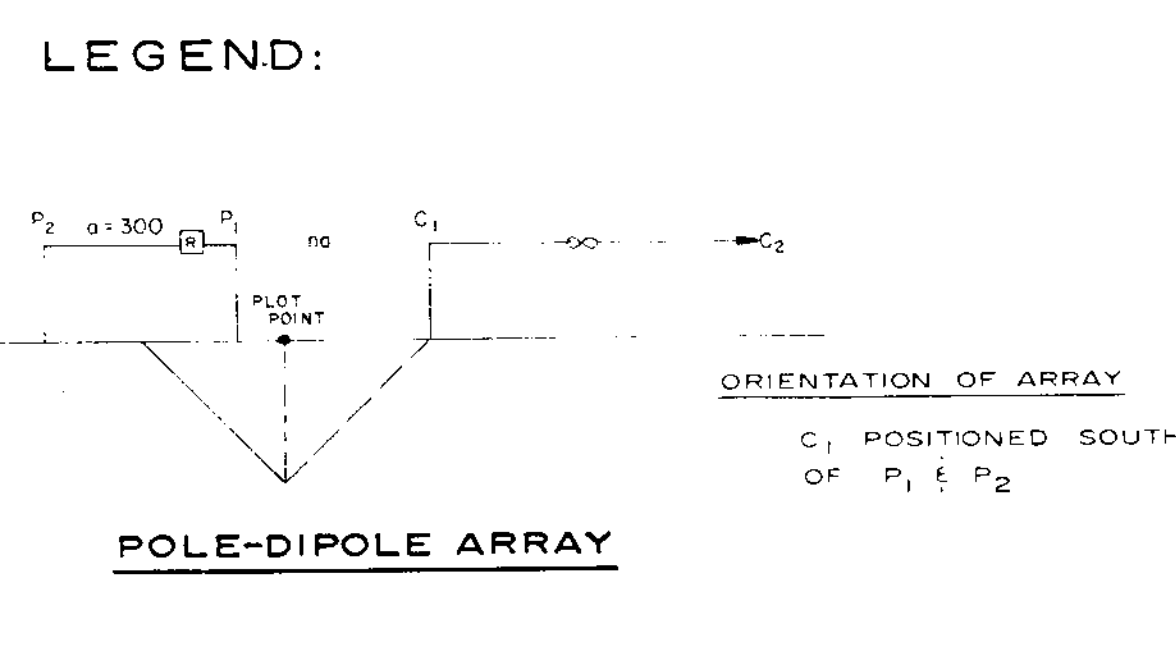
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SCALE IN FEET

TO ACCOMPANY GEOLOGICAL & GEOPHYSICAL
REPORT BY SISK
LOCATION 50° 12' 30" N
BY A. ASCHOFFS 16 NOV TO 16 SEPT, 1972



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4000 MAP #24

TO ACCOMPANY GEOLOGICAL & GEOPHYSICAL
REPORT OR EXPRO
LOCATION 50° 12' 27" NW
T4 A, AS081025 15 MAY TO SEPT, 1972



- INSTRUMENTATION**
- ELLIOTT XTR
 - SCINTREX IPR-7 REC
- TRANSIT SURVEY HUBS**
- PICKET LINE
 - SHOWING LINE AND STATION DESIGNATION
- CHARGEAB. IN MILLISEC.**
- CREEK, INTERMITTENT
 - CREEK, WIDTH DEFINED, INTERMITTENT
 - ROAD, SURVEYED UNSURVEYED
 - SWAMP

M-24
4000

LINE	STATION	CHARGEAB.	LINE	STATION	CHARGEAB.	LINE	STATION	CHARGEAB.	LINE	STATION	CHARGEAB.
A-1	2211	100	A-5	2215	100	A-9	2219	100	A-10	2220	100
A-2	2212	100	A-6	2216	100	A-10	2220	100	A-11	2221	100
A-3	2213	100	A-7	2217	100	B-8	2218	100	B-9	2219	100
A-4	2214	100	A-8	2218	100	B-9	2219	100	B-10	2220	100
B-1	2221	100	A-11	2221	100	C-2	2222	100	C-3	2223	100
B-2	2222	100	B-10	2220	100	C-3	2223	100	C-4	2224	100
B-3	2223	100	C-1	2221	100	C-4	2224	100	C-5	2225	100
B-4	2224	100	C-2	2222	100	C-5	2225	100	C-6	2226	100
B-5	2225	100	C-3	2223	100	C-6	2226	100	C-7	2227	100
B-6	2226	100	C-4	2224	100	C-7	2227	100	C-8	2228	100
B-7	2227	100	C-5	2225	100	C-8	2228	100	C-9	2229	100
B-8	2228	100	C-6	2226	100	C-9	2229	100	C-10	2230	100
B-9	2229	100	C-7	2227	100	C-10	2230	100	C-11	2231	100
B-10	2230	100	C-8	2228	100	D-1	2231	100	D-2	2232	100
B-11	2231	100	C-9	2229	100	D-2	2232	100	D-3	2233	100
C-1	2221	100	C-10	2230	100	D-3	2233	100	D-4	2234	100
C-2	2222	100	C-11	2231	100	D-4	2234	100	D-5	2235	100
C-3	2223	100	D-1	2231	100	D-5	2235	100	D-6	2236	100
C-4	2224	100	D-2	2232	100	D-6	2236	100	D-7	2237	100
C-5	2225	100	D-3	2233	100	D-7	2237	100	D-8	2238	100
C-6	2226	100	D-4	2234	100	D-8	2238	100	D-9	2239	100
C-7	2227	100	D-5	2235	100	D-9	2239	100	D-10	2240	100
C-8	2228	100	D-6	2236	100	D-10	2240	100	D-11	2241	100
C-9	2229	100	D-7	2237	100	E-1	2241	100	E-2	2242	100
C-10	2230	100	D-8	2238	100	E-2	2242	100	E-3	2243	100
C-11	2231	100	D-9	2239	100	E-3	2243	100	E-4	2244	100
D-1	2231	100	D-10	2240	100	E-4	2244	100	E-5	2245	100
D-2	2232	100	D-11	2241	100	E-5	2245	100	E-6	2246	100
D-3	2233	100	E-1	2241	100	E-6	2246	100	E-7	2247	100
D-4	2234	100	E-2	2242	100	E-7	2247	100	E-8	2248	100
D-5	2235	100	E-3	2243	100	E-8	2248	100	E-9	2249	100
D-6	2236	100	E-4	2244	100	E-9	2249	100	E-10	2250	100
D-7	2237	100	E-5	2245	100	E-10	2250	100	E-11	2251	100
D-8	2238	100	E-6	2246	100	F-1	2251	100	F-2	2252	100
D-9	2239	100	E-7	2247	100	F-2	2252	100	F-3	2253	100
D-10	2240	100	E-8	2248	100	F-3	2253	100	F-4	2254	100
D-11	2241	100	E-9	2249	100	F-4	2254	100	F-5	2255	100
E-1	2241	100	E-10	2250	100	F-5	2255	100	F-6	2256	100
E-2	2242	100	E-11	2251	100	F-6	2256	100	F-7	2257	100
E-3	2243	100	F-1	2251	100	F-7	2257	100	F-8	2258	100
E-4	2244	100	F-2	2252	100	F-8	2258	100	F-9	2259	100
E-5	2245	100	F-3	2253	100	F-9	2259	100	F-10	2260	100
E-6	2246	100	F-4	2254	100	F-10	2260	100	F-11	2261	100
E-7	2247	100	F-5	2255	100	G-1	2261	100	G-2	2262	100
E-8	2248	100	F-6	2256	100	G-2	2262	100	G-3	2263	100
E-9	2249	100	F-7	2257	100	G-3	2263	100	G-4	2264	100
E-10	2250	100	F-8	2258	100	G-4	2264	100	G-5	2265	100
E-11	2251	100	F-9	2259	100	G-5	2265	100	G-6	2266	100
F-1	2251	100	F-10	2260	100	G-6	2266	100	G-7	2267	100
F-2	2252	100	F-11	2261	100	G-7	2267	100	G-8	2268	100
F-3	2253	100	G-1	2261	100	G-8	2268	100	G-9	2269	100
F-4	2254	100	G-2	2262	100	G-9	2269	100	G-10	2270	100
F-5	2255	100	G-3	2263	100	G-10	2270	100	G-11	2271	100
F-6	2256	100	G-4	2264	100	G-11	2271	100	H-1	2271	100
F-7	2257	100	G-5	2265	100	H-1	2271	100	H-2	2272	100
F-8	2258	100	G-6	2266	100	H-2	2272	100	H-3	2273	100
F-9	2259	100	G-7	2267	100	H-3	2273	100	H-4	2274	100
F-10	2260	100	G-8	2268	100	H-4	2274	100	H-5	2275	100
F-11	2261	100	G-9	2269	100	H-5	2275	100	H-6	2276	100
G-1	2261	100	G-10	2270	100	H-6	2276	100	H-7	2277	100
G-2	2262	100	G-11	2271	100	H-7	2277	100	H-8	2278	100
G-3	2263	100	H-1	2271	100	H-8	2278	100	H-9	2279	100
G-4	2264	100	H-2	2272	100	H-9	2279	100	H-10	2280	100
G-5	2265	100	H-3	2273	100	H-10	2280	100	H-11	2281	100
G-6	2266	100	H-4	2274	100	H-11	2281	100			
G-7	2267	100	H-5	2275	100						
G-8	2268	100	H-6	2276	100						
G-9	2269	100	H-7	2277	100						
G-10	2270	100									
G-11	2271	100									

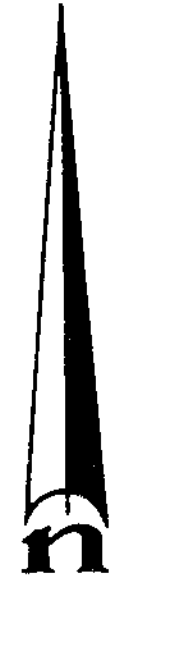
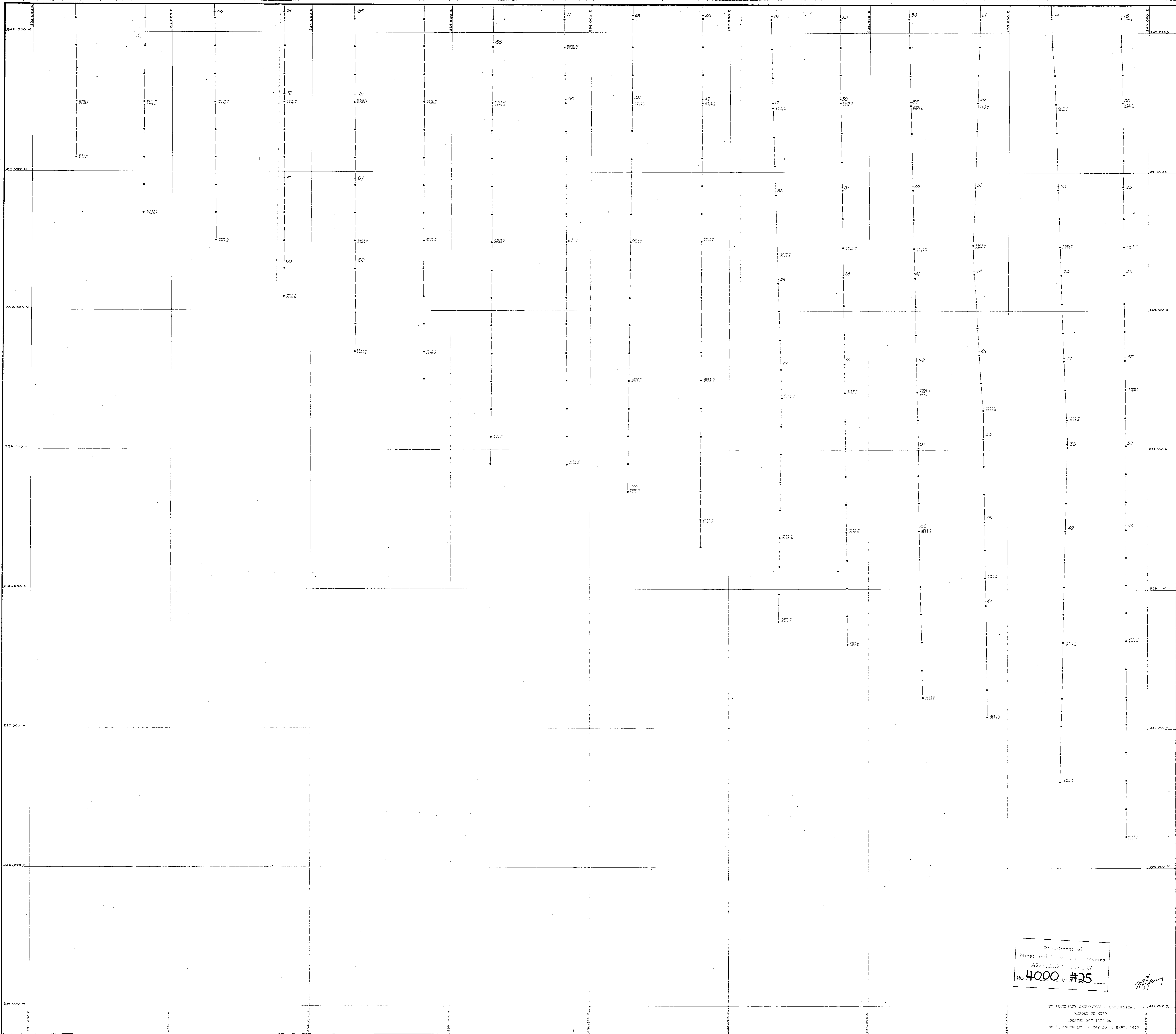


Plate 25

UTAH MINES LTD.
MINERAL EXPLORATION & DEVELOPMENT DEPARTMENT
VANCOUVER BRITISH COLUMBIA

EXPO GROUP
VANCOUVER ISLAND, B.C.
INDUCED POLARIZATION
APPARENT CHARGEABILITY N=1

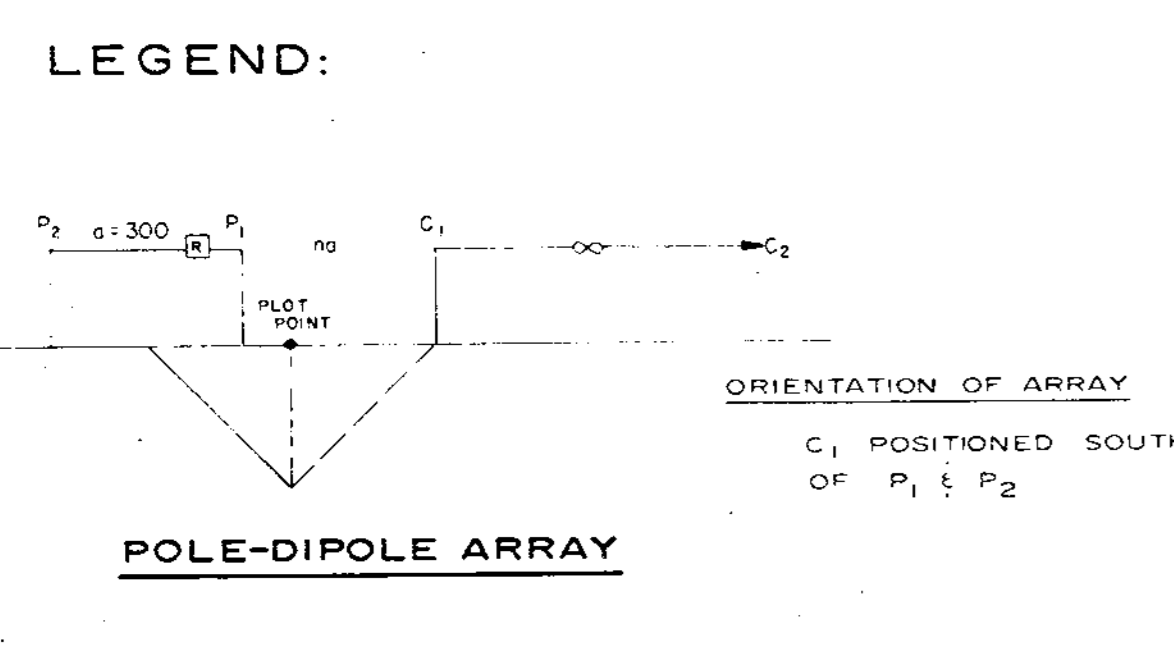
Work by: K. [Name] Date: [Date] NTS Ref: [Ref]
Drawn by: C.D./[Name] Revised: [Date] MAP D-7 of [Total]
200 0 200 400 600
SCALE IN FEET



Department of
Mines and Technical Services
Assessment Branch
No. 4000 M-25

TO ACCOMPANY EXPLORATION & DEVELOPMENT REPORT ON 50%
LOCATION 50° 22' 30" N
BY A. ASSOCIATES 16 MAY TO 16 SEPT, 1972

Plate 29



INSTRUMENTATION
ELLIOTT XTR
SCINTREX IPR-7 REC'R

CREEK, INTERMITTENT
CREEK, WIDTH DEFINED, INFERRED
ROAD, SURVEYED UNSURVEYED
SWAMP

TRANSIT SURVEY HUBB
PICKET LINE
SHOWING LINE AND STATION DESIGNATION
CHARGEAB. IN MILLISEC.

4000 M-25

STATION	CHARGEAB. IN MILLISEC.	STATION	CHARGEAB. IN MILLISEC.	STATION	CHARGEAB. IN MILLISEC.	STATION	CHARGEAB. IN MILLISEC.
A-1	7.3	A-4	A-5	A-7	A-8	A-9	A-10
A-2	7.3	A-6	A-7	A-8	A-9	A-10	A-11
A-3	7.3	A-8	A-9	A-10	A-11	A-12	A-13
B-1	7.3	B-4	B-5	B-7	B-8	B-9	B-10
B-2	7.3	B-6	B-7	B-8	B-9	B-10	B-11
B-3	7.3	B-8	B-9	B-10	B-11	B-12	B-13
C-1	7.3	C-4	C-5	C-7	C-8	C-9	C-10
C-2	7.3	C-6	C-7	C-8	C-9	C-10	C-11
C-3	7.3	C-8	C-9	C-10	C-11	C-12	C-13
D-1	7.3	D-4	D-5	D-7	D-8	D-9	D-10
D-2	7.3	D-6	D-7	D-8	D-9	D-10	D-11
D-3	7.3	D-8	D-9	D-10	D-11	D-12	D-13
E-1	7.3	E-4	E-5	E-7	E-8	E-9	E-10
E-2	7.3	E-6	E-7	E-8	E-9	E-10	E-11
E-3	7.3	E-8	E-9	E-10	E-11	E-12	E-13
F-1	7.3	F-4	F-5	F-7	F-8	F-9	F-10
F-2	7.3	F-6	F-7	F-8	F-9	F-10	F-11
F-3	7.3	F-8	F-9	F-10	F-11	F-12	F-13
G-1	7.3	G-4	G-5	G-7	G-8	G-9	G-10
G-2	7.3	G-6	G-7	G-8	G-9	G-10	G-11
G-3	7.3	G-8	G-9	G-10	G-11	G-12	G-13
H-1	7.3	H-4	H-5	H-7	H-8	H-9	H-10
H-2	7.3	H-6	H-7	H-8	H-9	H-10	H-11
H-3	7.3	H-8	H-9	H-10	H-11	H-12	H-13

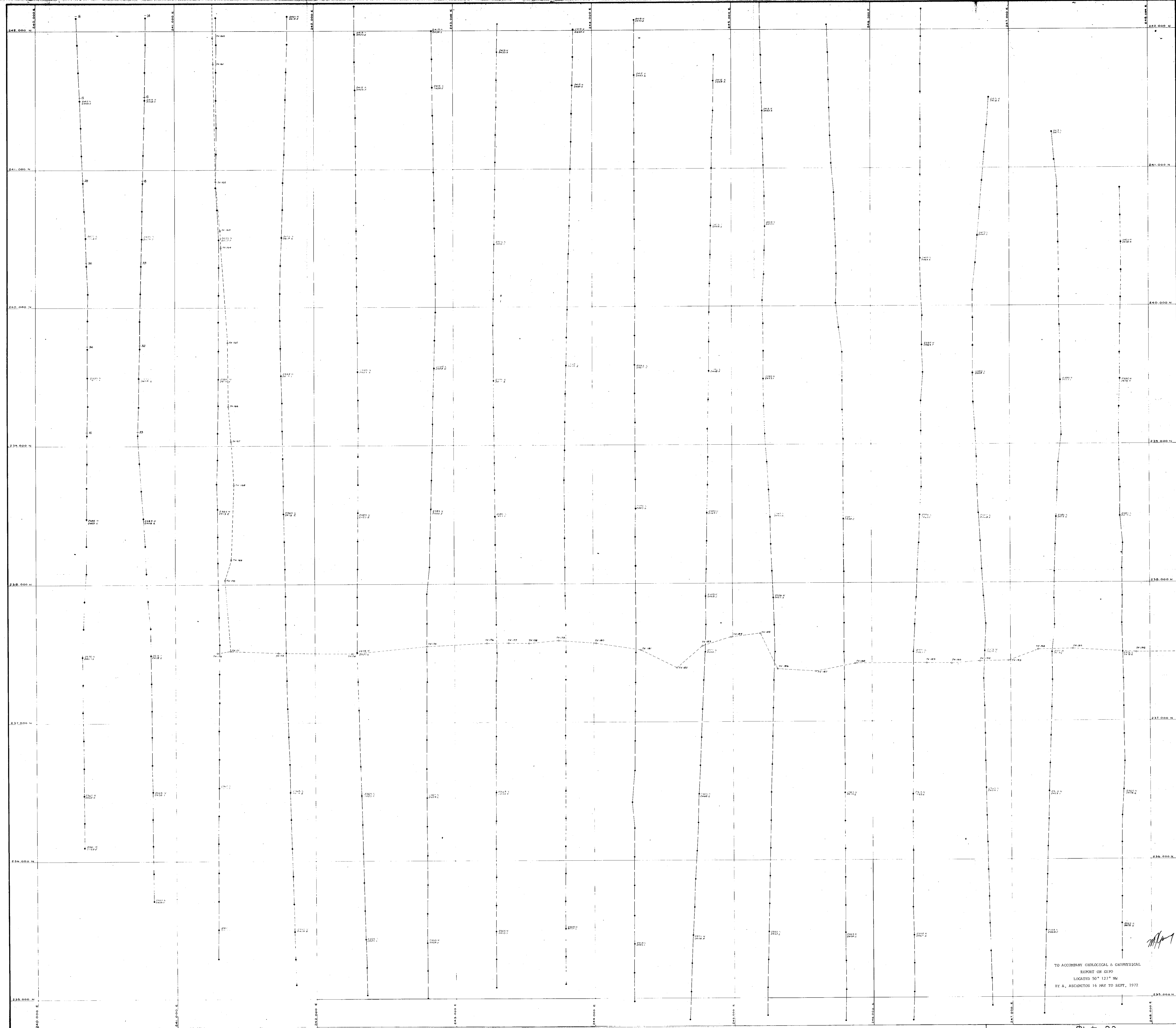


UTAH MINES LTD.
MINERAL EXPLORATION & DEVELOPMENT DEPARTMENT
VANCOUVER BRITISH COLUMBIA

EXPO GROUP
VANCOUVER ISLAND, B.C.

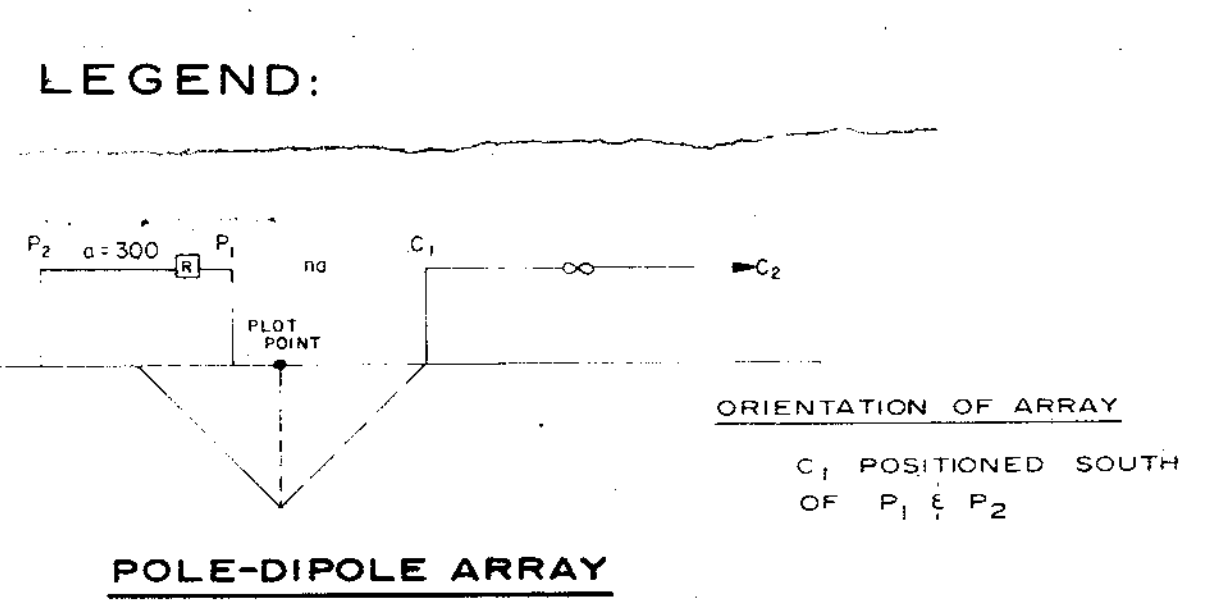
**INDUCED POLARIZATION
APPARENT CHARGEABILITY N=1**

Work by: K. McPherson Date: May '72 NTS Ref:
Drawn by: C.D.F.C. Revised: MSP E-6 of
200 100 0 200 400 600
SCALE IN FEET

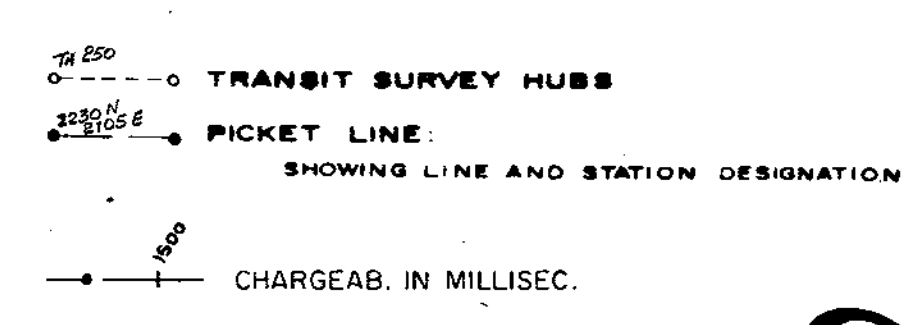


TO ACCOMPANY GEOLOGICAL & GEOPHYSICAL
REPORT ON EXPO
LOCATED 50° 12' 17" NW
BY A. ASCENCIOS 16 MAY TO SEPT, 1972

Handwritten signature



- INSTRUMENTATION**
- ELLIOTT XTR
 - SCINTREX IPR-7 REC'R
- FEATURES**
- CREEK, INTERMITTENT
 - CREEK, WIDTH DEFINED, INFERRED
 - ROAD, SURVEYED UNSURVEYED
 - SWAMP



4000 M-26

STATION	LINE	STATION	LINE	STATION	LINE	STATION	LINE	STATION	LINE	STATION	LINE
A-1	F-1	A-3	A-4	A-5	A-6	A-7	A-8	A-9	A-10	A-11	
B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	B-11	
C-1	C-2	C-3	C-4	C-5	C-6	C-7	C-8	C-9	C-10	C-11	
D-1	D-2	D-3	D-4	D-5	D-6	D-7	D-8	D-9	D-10	D-11	
E-1	E-2	E-3	E-4	E-5	E-6	E-7	E-8	E-9	E-10	E-11	
F-1	F-2	F-3	F-4	F-5	F-6	F-7	F-8	F-9	F-10	F-11	
G-1	G-2	G-3	G-4	G-5	G-6	G-7	G-8	G-9	G-10	G-11	
H-1	H-2	H-3	H-4	H-5	H-6	H-7	H-8	H-9	H-10	H-11	

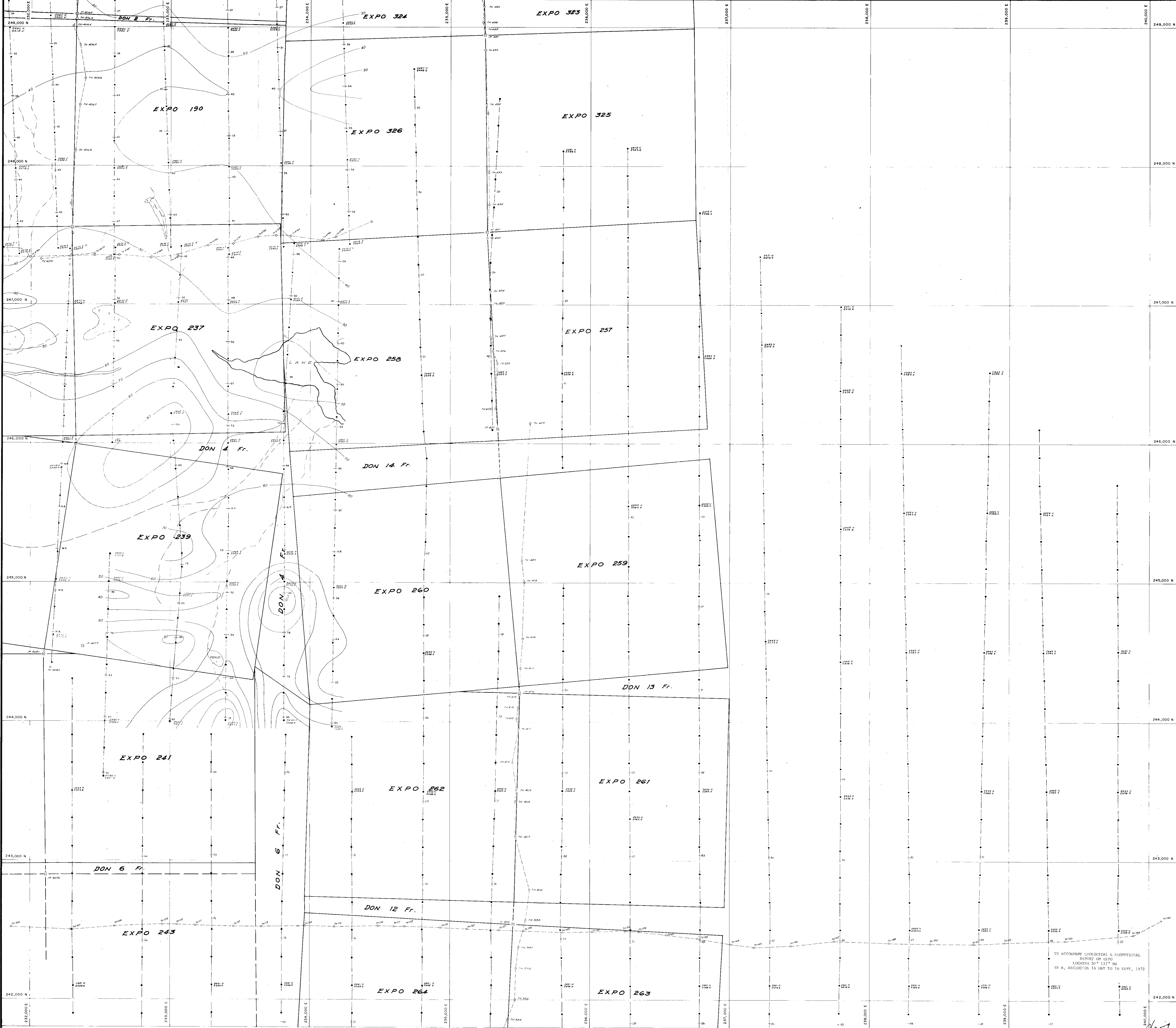
Plate 33

Mines and Geology Branch **UTAH MINES LTD.**
MINERAL EXPLORATION & DEVELOPMENT DEPARTMENT
VANCOUVER BRITISH COLUMBIA

NO. 4000 Map #26 **EXPO GROUP**
VANCOUVER ISLAND, B.C.

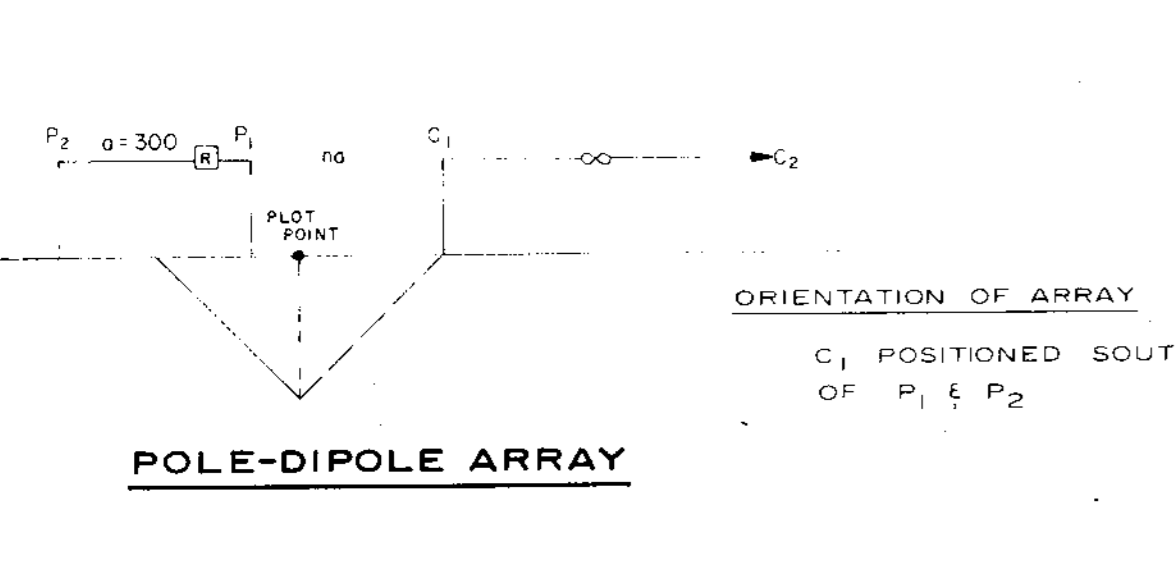
INDUCED POLARIZATION
APPARENT CHARGEABILITY N=1

Work by: *E. Netherley* Date: *May 72* NTS Ref:
Drawn by: *C.D./e.c.* Revised: MAP E-7 of
200 0 200 400 600
SCALE IN FEET



TO ACCOMPANY GEOLOGICAL & GEOPHYSICAL REPORT ON EXPO LOCATION 56° 12' N BY A. ARSINGTON 16 MAY TO 16 SEPT, 1972

LEGEND:



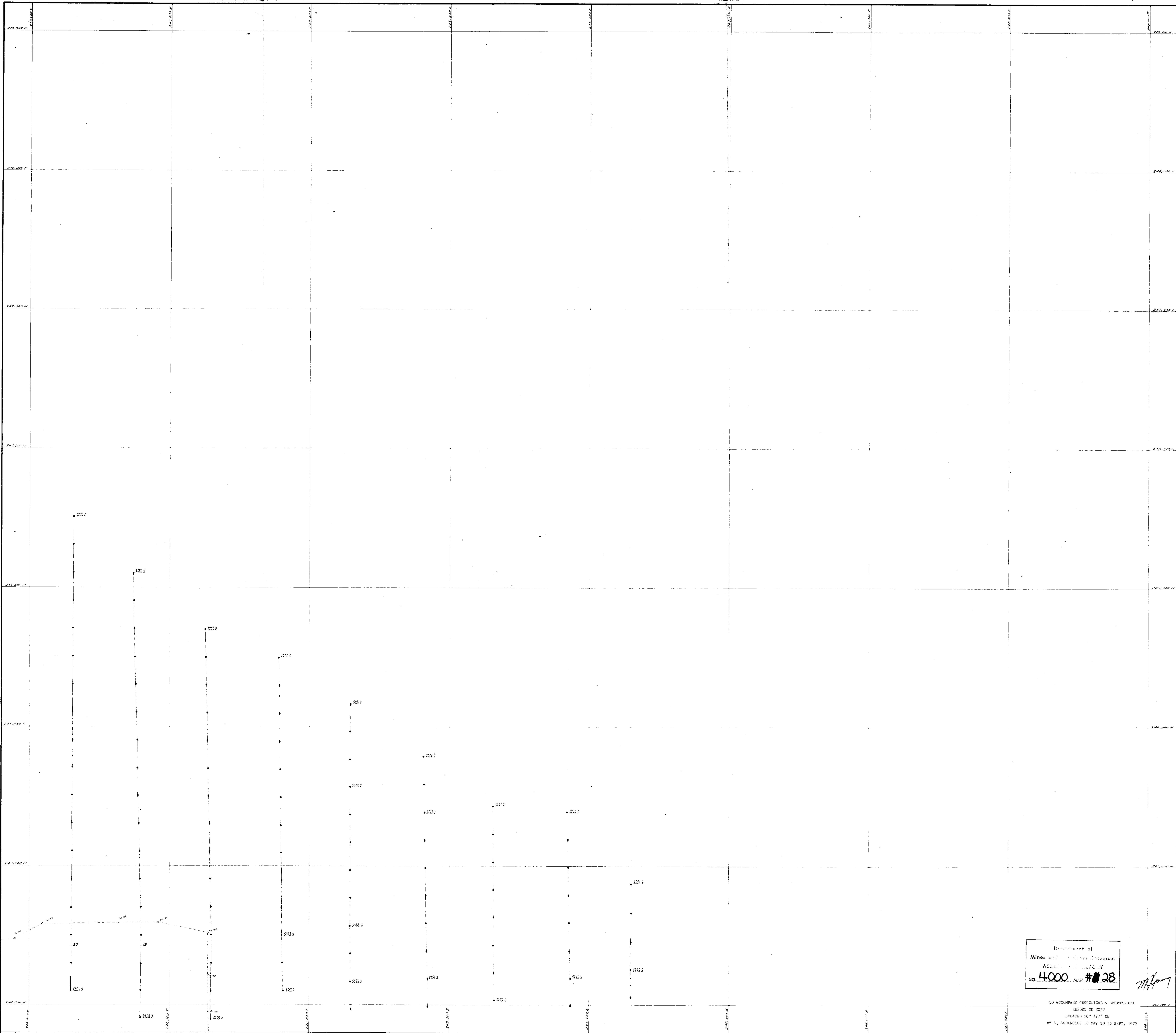
INSTRUMENTATION
 ELLIOTT XTR
 SCINTREX (PR-7 REC'R)
 CREEK, INTERMITTENT
 CREEK, WIDTH DEFINED, INFERRED
 ROAD, SURVEYED UNSURVEYED
 SWAMP

TRANSIT SURVEY HUBS
 PICKET LINE
 SHOWING LINE AND STATION DESIGNATION
 CHARGEAB IN MILLISEC

4000 M-27

EXPO	FR.	1	2	3	4	5	6	7	8	9	10	11
A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8	A-9	A-10	A-11		
B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	B-11		
C-1	C-2	C-3	C-4	C-5	C-6	C-7	C-8	C-9	C-10	C-11		
D-1	D-2	D-3	D-4	D-5	D-6	D-7	D-8	D-9	D-10	D-11		
E-1	E-2	E-3	E-4	E-5	E-6	E-7	E-8	E-9	E-10	E-11		
F-1	F-2	F-3	F-4	F-5	F-6	F-7	F-8	F-9	F-10	F-11		
G-1	G-2	G-3	G-4	G-5	G-6	G-7	G-8	G-9	G-10	G-11		
H-1	H-2	H-3	H-4	H-5	H-6	H-7	H-8	H-9	H-10	H-11		

Department of UTAH MINES LTD.
 Mines and Geology MINERAL EXPLORATION & DEVELOPMENT DEPARTMENT
 ASSESSMENT REPORT VANCOUVER ISLAND, B.C.
 NO. 4000 MAP 37 EXPO GROUP
 VANCOUVER ISLAND, B.C.
INDUCED POLARIZATION
APPARENT CHARGEABILITY N=3
 Work by K. Witherby Date: May '72 NTS Ref.
 Drawn by C.D. J.C.C. Revised MAP D-G-41
 200 100 0 200 400 600
 SCALE IN FEET



Department of
Mines and Geotechnical Resources
ASBESTOS REPORT
NO. 4000 MAP # 28

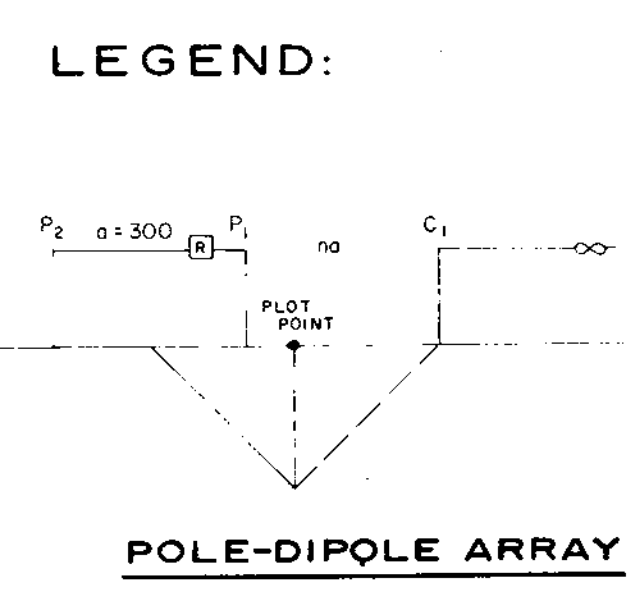
TO ACCOMPANY GEOLOGICAL & GEOPHYSICAL
REPORT ON EXPO
LOCATED 50° 12' 17" N
BY A. ASCORCIOS 16 MAY TO 16 SEPT, 1972

Plate 26

UTAH MINES LTD.
MINERAL EXPLORATION & DEVELOPMENT DEPARTMENT
VANCOUVER, BRITISH COLUMBIA

EXPO GROUP
VANCOUVER ISLAND, B. C.
INDUCED POLARIZATION
APPARENT CHARGEABILITY N=3

Work by: K. W. M. / Date: 1972 NTS Ref:
Drawn by: C. J. E. C. / Revised: MAP L-7 of
Scale: 200 100 0 200 400 600
SCALE IN FEET



INSTRUMENTATION
ELLIOTT XTR
SCINTEX (PR-7 REC'R)

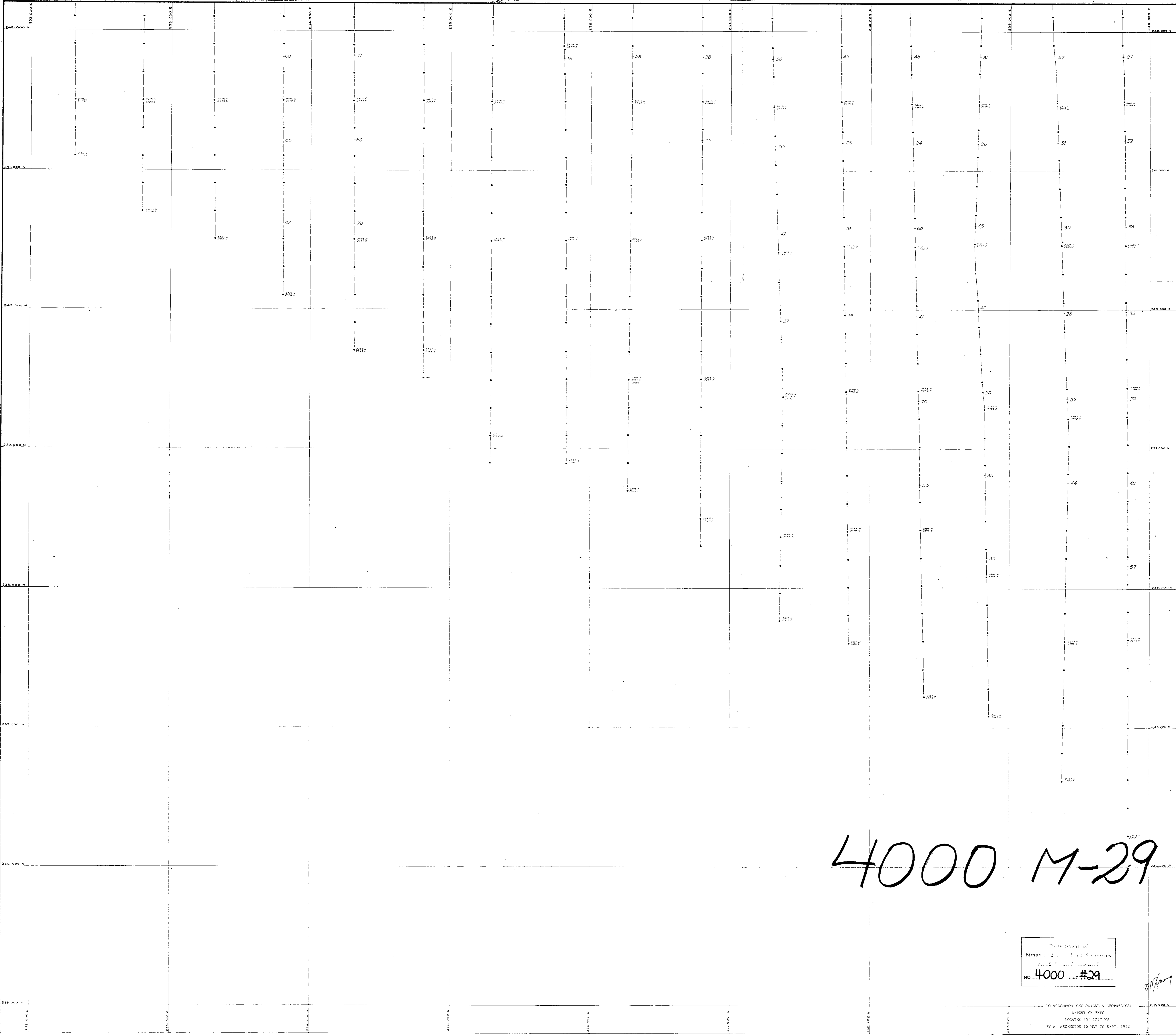
CREEK, INTERMITTENT
CREEK, WIDTH DEFINED, INFERRED
ROAD, SURVEYED UNSURVEYED
SWAMP

TRANSIT SURVEY HUBB
PICKET LINE
SHOWING LINE AND STATION DESIGNATION

CHARGEAB IN MILLISEC

4000 M-28

LINE	STATION	COORDINATES	CHARGEABILITY
A-1	7-3	A-4 A-5 A-6 A-7 A-8 A-9 A-10 A-11	
B-1	8-3	B-4 B-5 B-6 B-7 B-8 B-9 B-10 B-11	
C-1	9-3	C-4 C-5 C-6 C-7 C-8 C-9 C-10 C-11	
D-1	10-3	D-4 D-5 D-6 D-7 D-8 D-9 D-10 D-11	
E-1	11-3	E-4 E-5 E-6 E-7 E-8 E-9 E-10 E-11	
F-1	12-3	F-4 F-5 F-6 F-7 F-8 F-9 F-10 F-11	
G-1	13-3	G-4 G-5 G-6 G-7 G-8 G-9 G-10 G-11	
H-1	14-3	H-4 H-5 H-6 H-7 H-8 H-9 H-10 H-11	



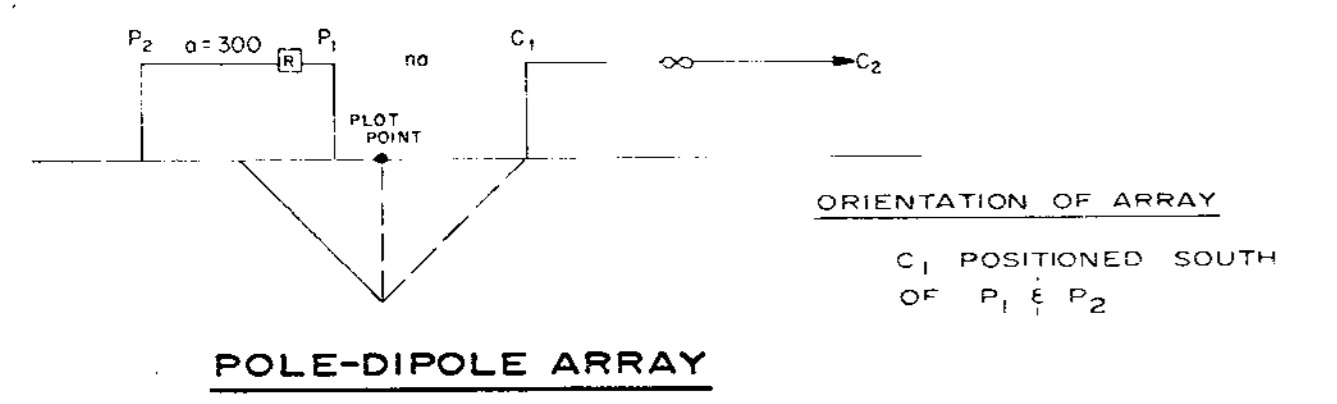
4000 M-29

Department of
Mineral Resources
4000 #29

TO ACCOMPANY GEOLOGICAL & GEOPHYSICAL
REPORT ON EXPO
LOCATION 50° 12' 17" W
BY A. ASSOCIATES 16 MAY TO SEPT, 1972

Plate 30

LEGEND:



INSTRUMENTATION

- ELLIOTT XTR
- SCINTREX 1PR-7 REC'R
- CREEK, INTERMITTENT
- CREEK, WIDTH DEFINED, INFERRED
- ROAD, SURVEYED UNSURVEYED
- SWAMP

- TRANSIT SURVEY HUBS
- PICKET LINE SHOWING LINE AND STATION DESIGNATION
- CHARGEAB IN MILLISEC.

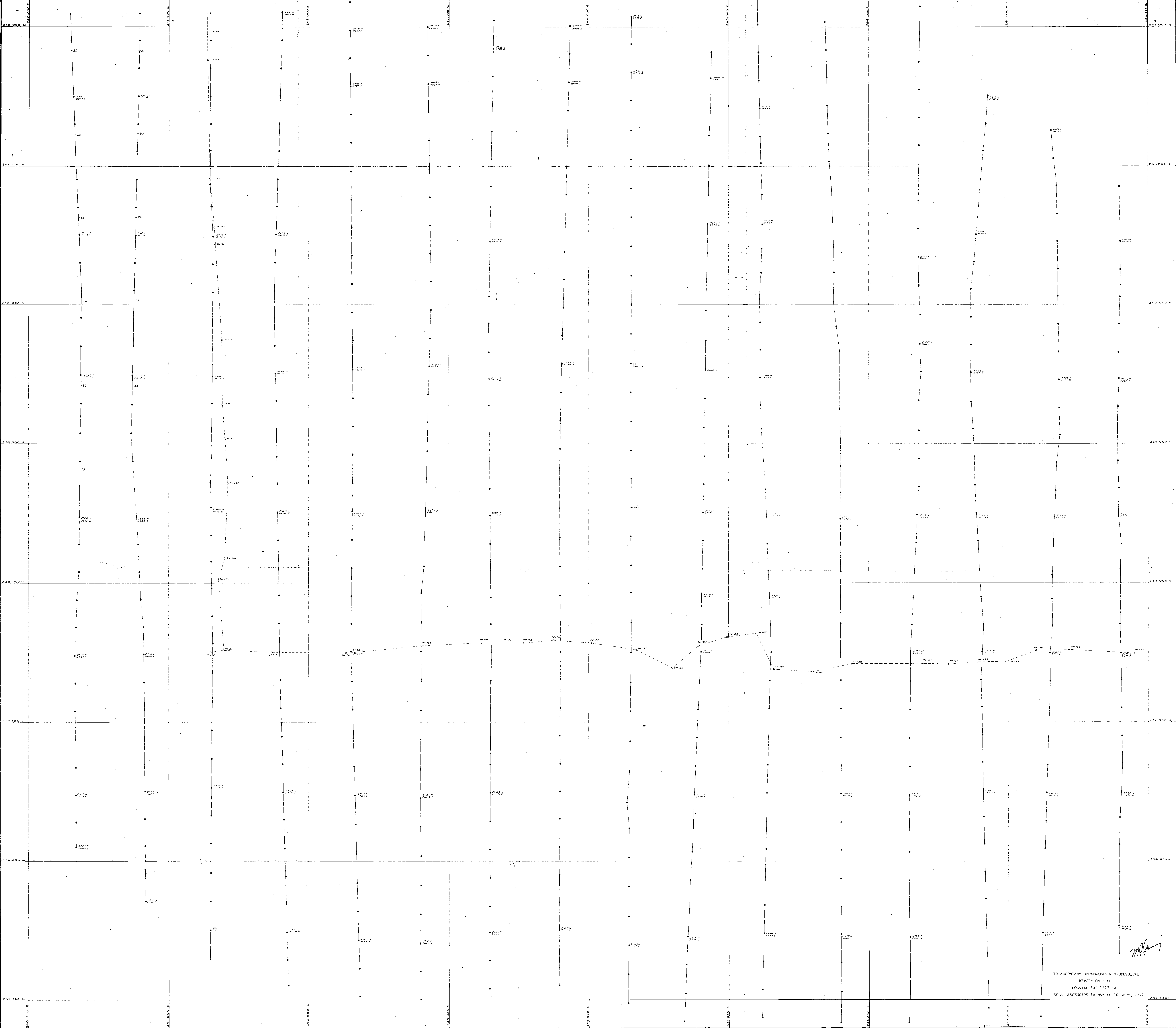
STATION	CHARGEAB	STATION	CHARGEAB	STATION	CHARGEAB	STATION	CHARGEAB
A-1	1.0	A-5	1.0	A-9	1.0	A-11	1.0
B-1	1.0	B-5	1.0	B-9	1.0	B-11	1.0
C-1	1.0	C-5	1.0	C-9	1.0	C-11	1.0
D-1	1.0	D-5	1.0	D-9	1.0	D-11	1.0
E-1	1.0	E-5	1.0	E-9	1.0	E-11	1.0
F-1	1.0	F-5	1.0	F-9	1.0	F-11	1.0
G-1	1.0	G-5	1.0	G-9	1.0	G-11	1.0
H-1	1.0	H-5	1.0	H-9	1.0	H-11	1.0
I-1	1.0	I-5	1.0	I-9	1.0	I-11	1.0

UTAH MINES LTD.
MINERAL EXPLORATION & DEVELOPMENT DEPARTMENT
VANCOUVER BRITISH COLUMBIA

EXPO GROUP
VANCOUVER ISLAND, B. C.
INDUCED POLARIZATION
APPARENT CHARGEABILITY N=3

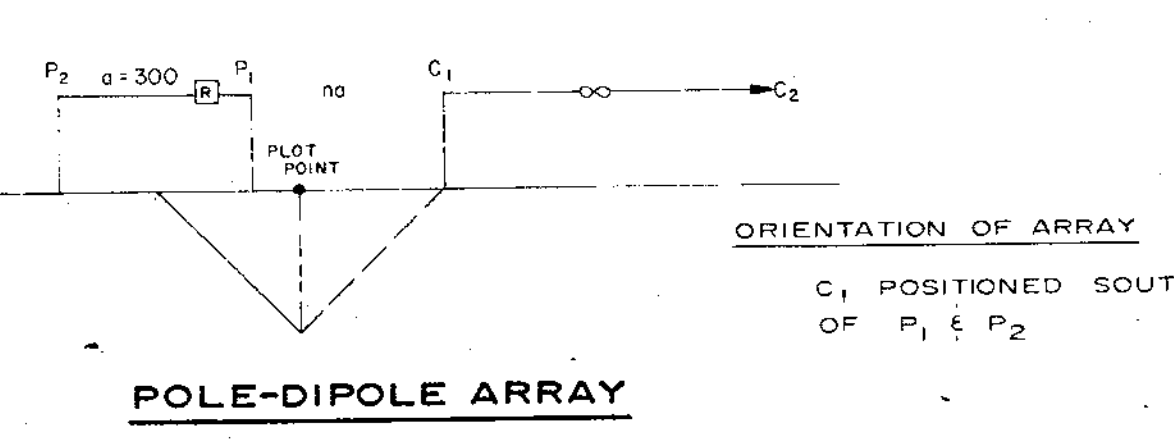
Work by: K. McHardy Date: Nov 72 NTS Ref:
Drawn by: C.D./E.C. Revised: MAP E-6 of

200 100 0 200 400 600
SCALE IN FEET



TO ACCOMPANY GEOLOGICAL & GEOPHYSICAL
REPORT ON EXPO
LOCATED 50° 127' NW
BY A. ASCENCIO 16 MAY TO 16 SEPT. 1972

LEGEND:



INSTRUMENTATION:

- ELLIOTT XTR
- SCINTREX IPR-7 REC'R
- CREEK, INTERMITTENT
- CREEK, WIDTH DEFINED, INFERRED
- ROAD, SURVEYED UNSURVEYED
- SWAMP

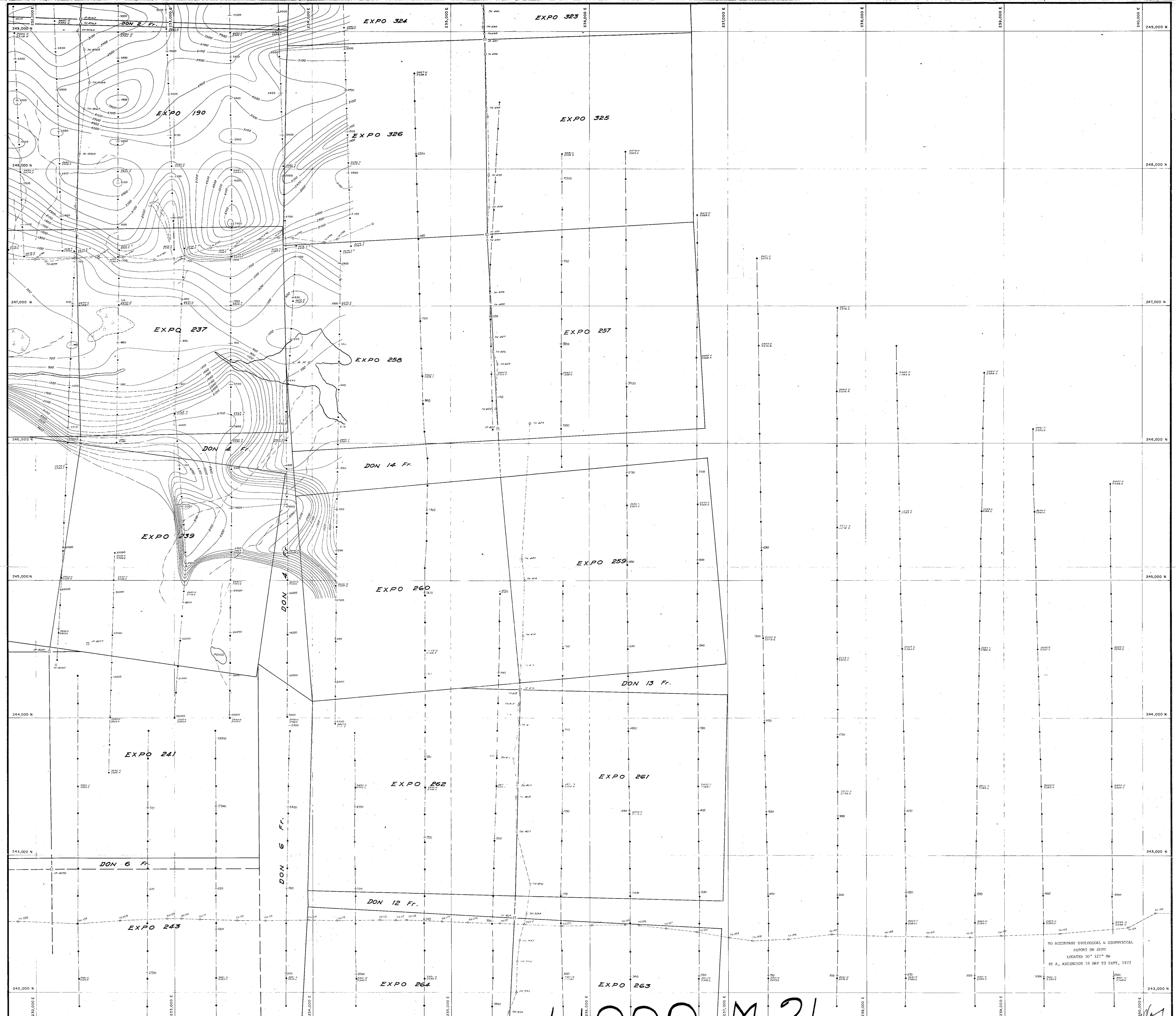
TRANSIT SURVEY HUBS

- PICKET LINE
SHOWING LINE AND STATION DESIGNATION
- CHARGEAB IN MILLISEC.

4000 M-30

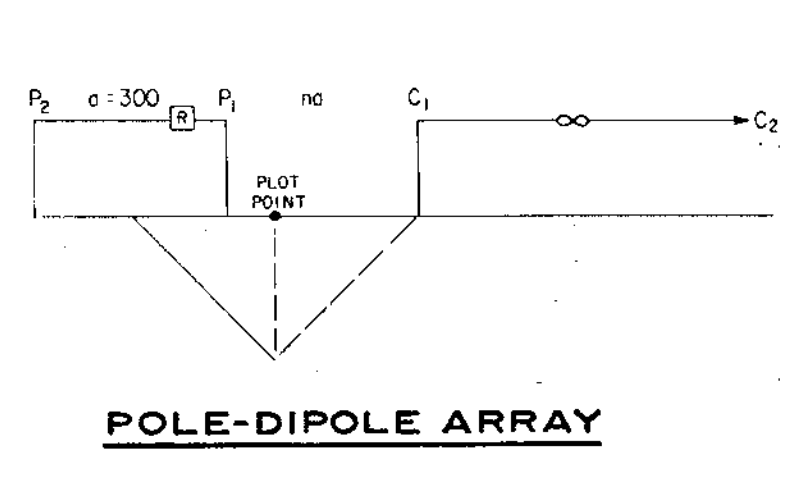
STATION	CHARGEAB	STATION	CHARGEAB	STATION	CHARGEAB	STATION	CHARGEAB	STATION	CHARGEAB
A-1	200	A-4	200	A-7	200	A-10	200	A-11	200
B-1	200	B-4	200	B-7	200	B-10	200	B-11	200
C-1	200	C-4	200	C-7	200	C-10	200	C-11	200
D-1	200	D-4	200	D-7	200	D-10	200	D-11	200
E-1	200	E-4	200	E-7	200	E-10	200	E-11	200
F-1	200	F-4	200	F-7	200	F-10	200	F-11	200
G-1	200	G-4	200	G-7	200	G-10	200	G-11	200
H-1	200	H-4	200	H-7	200	H-10	200	H-11	200

Department of Mines and Geology
Plate 34
Mines and Geology
ASBESTOS MINERAL EXPLORATION & DEVELOPMENT DEPARTMENT
VANCOUVER BRITISH COLUMBIA
NO. 4000 MAP #30 EXPO GROUP
VANCOUVER ISLAND, B. C.
**INDUCED POLARIZATION
APPARENT CHARGEABILITY N=3**
Map by: K.M. Henley Date: May 72 NTS Ref.
Drawn by: C.D. LeC. Revises: MAP E-7 of
200 100 0 200 400 600
SCALE IN FEET



TO ACCOMPANY GEOLOGICAL & GEOPHYSICAL
REPORT ON EXPO
LOCATED 50° 12' 17" N
BY A, ASCENTION 16 MAY TO SEPT. 1972

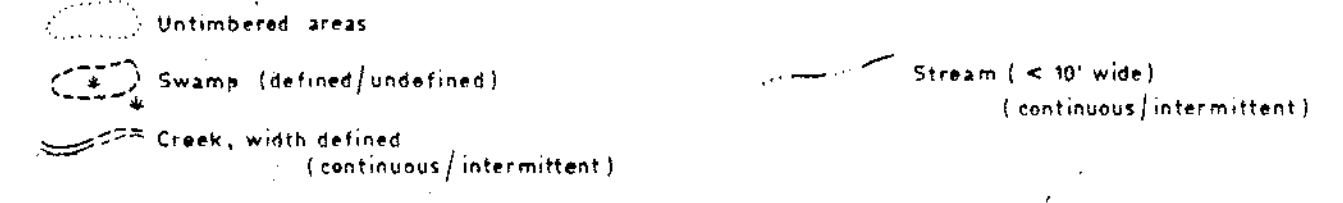
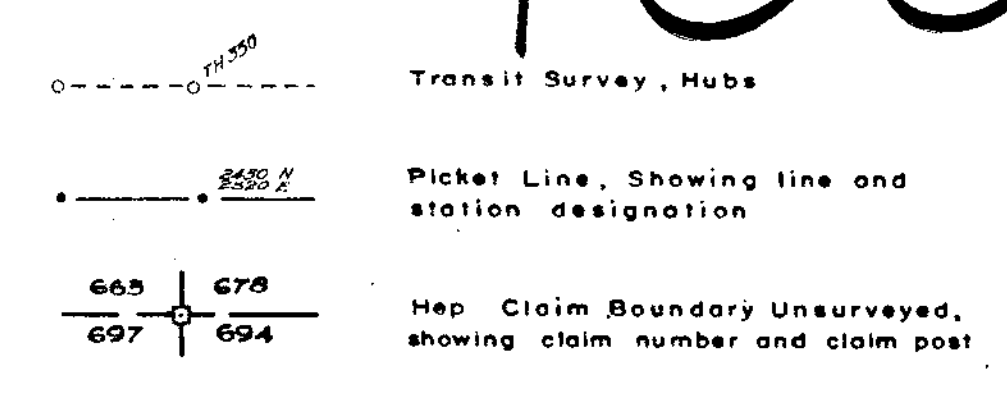
LEGEND



INSTRUMENTATION

ELLIOTT XTR
SCINTREX IPR-7 REC'R
RESISTIVITY IN OHM-Feet

ORIENTATION OF ARRAY
C1 POSITIONED SOUTH
OF P1 & P2



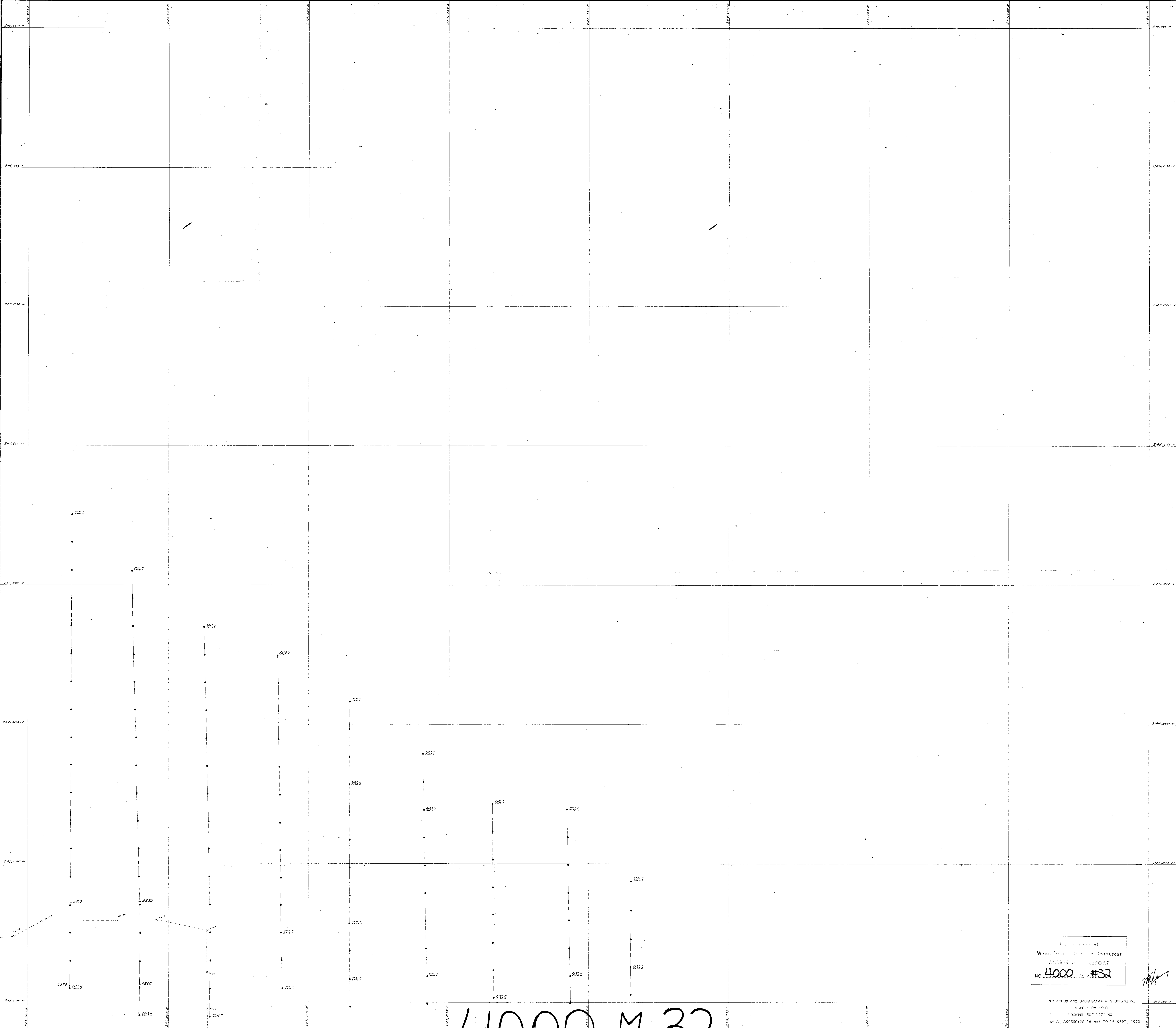
4000 M-31

A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8	A-9	A-10	A-11
B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	B-11
C-1	C-2	C-3	C-4	C-5	C-6	C-7	C-8	C-9	C-10	C-11
D-1	D-2	D-3	D-4	D-5	D-6	D-7	D-8	D-9	D-10	D-11
E-1	E-2	E-3	E-4	E-5	E-6	E-7	E-8	E-9	E-10	E-11
F-1	F-2	F-3	F-4	F-5	F-6	F-7	F-8	F-9	F-10	F-11
G-1	G-2	G-3	G-4	G-5	G-6	G-7	G-8	G-9	G-10	G-11
H-1	H-2	H-3	H-4	H-5	H-6	H-7	H-8	H-9	H-10	H-11

Plate 23

Department of **UTAH MINES LTD.**
Mines and Petroleum Exploration & Development Department
Vancouver, British Columbia
ACQUISITION REPORT
NO. 4000 MAP #31 VANCOUVER ISLAND, B.C.
EXPO GROUP
INDUCED POLARIZATION
APPARENT RESISTIVITY N=1

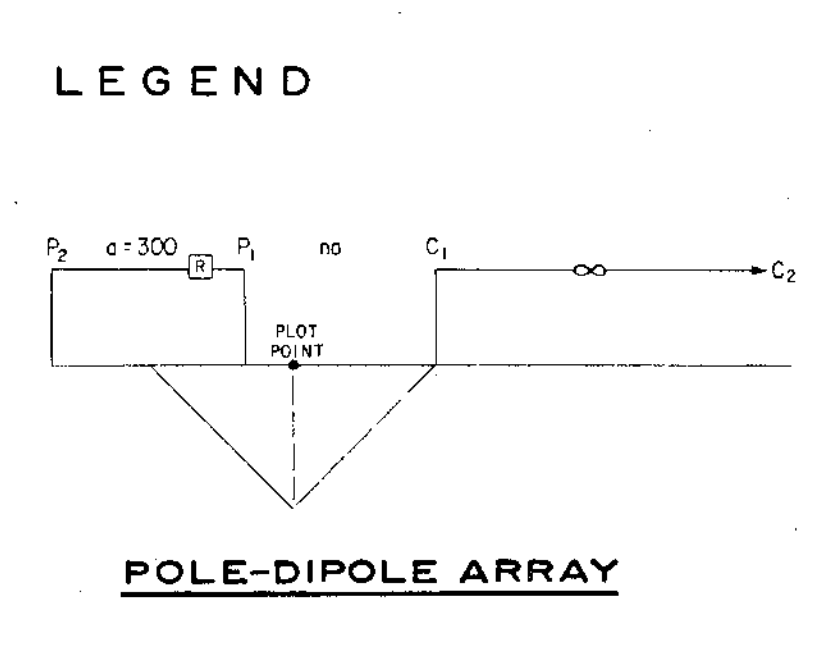
Work by: K. W. H. Date: Nov. 1972 NTS Ref.
Drawn by: C.D.F. Revised: MAP D-6
SCALE IN FEET



Department of
Mines and Geotechnical Resources
ASSESSMENT REPORT
NO. 4000 M-32

TO ACCOMPANY GEOLOGICAL & GEOPHYSICAL
REPORT ON EXPO
LOCATED 50° 12' 17" N
BY A. ASCRIVOS 16 MAY TO 16 SEPT, 1972

4000 M-32



INSTRUMENTATION:
ELLIOTT XTR
SCINTREX IPR-7 REC'R
RESISTIVITY IN OHM-FEET

ORIENTATION OF ARRAY
C1 POSITIONED SOUTH
OF P1 & P2

- Transit Survey, Hubs
- Picker Line, Showing line and station designation
- Hed Claim Boundary Unsurveyed, showing claim number and claim post
- Untimbered area
- Swamp [defined/undefined]
- Creek, with defined [continuous/intermittent]
- Stream (< 10' wide) [continuous/intermittent]
- Diamond Drill Hole

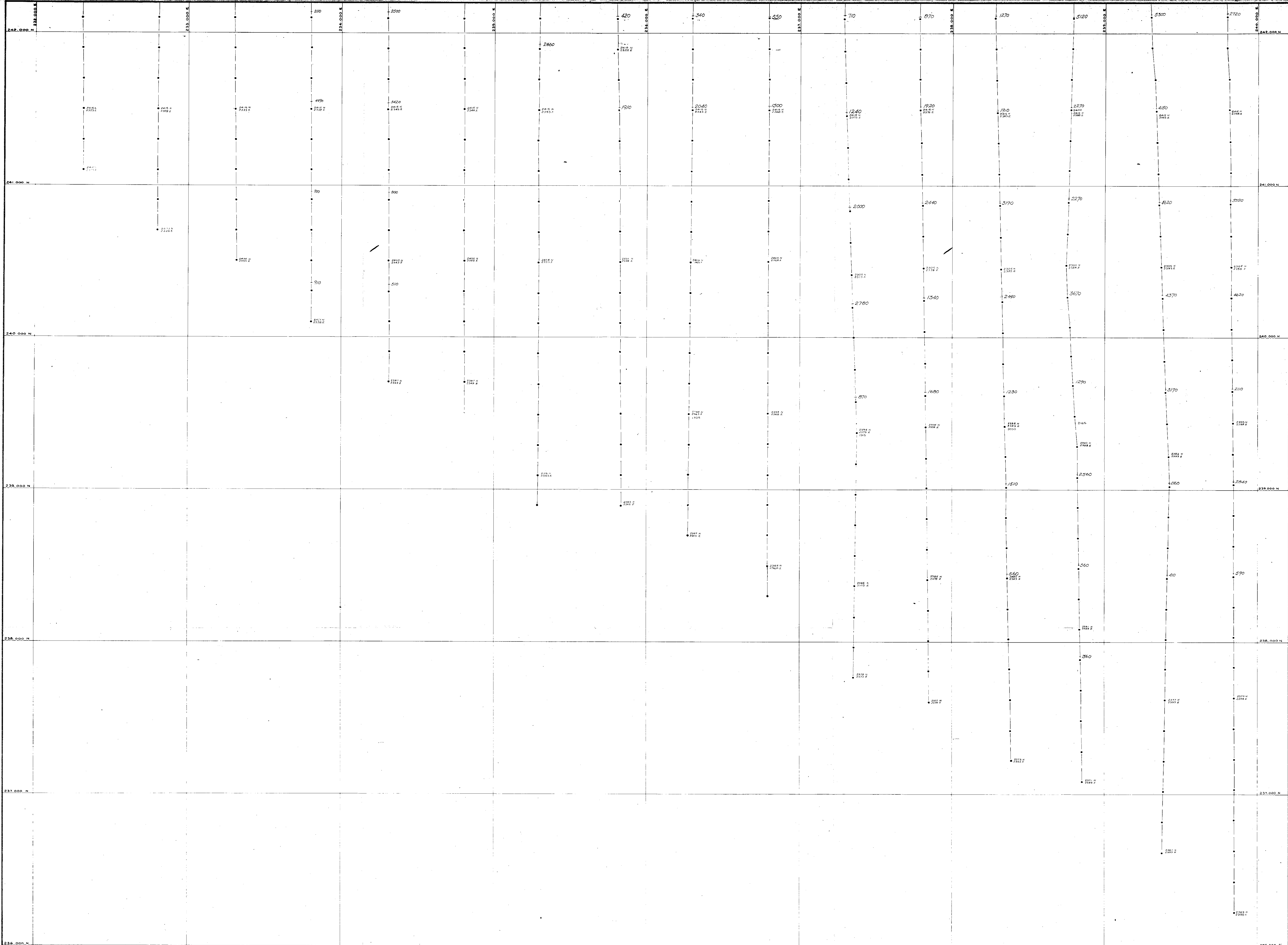
STATION	RESISTIVITY	STATION	RESISTIVITY	STATION	RESISTIVITY	STATION	RESISTIVITY
A-1	1000	A-4	1000	A-7	1000	A-10	1000
A-2	1000	A-5	1000	A-8	1000	A-11	1000
A-3	1000	A-6	1000	A-9	1000		
B-1	1000	B-4	1000	B-7	1000	B-10	1000
B-2	1000	B-5	1000	B-8	1000	B-11	1000
B-3	1000	B-6	1000	B-9	1000		
C-1	1000	C-4	1000	C-7	1000	C-10	1000
C-2	1000	C-5	1000	C-8	1000	C-11	1000
C-3	1000	C-6	1000	C-9	1000		
D-1	1000	D-4	1000	D-7	1000	D-10	1000
D-2	1000	D-5	1000	D-8	1000	D-11	1000
D-3	1000	D-6	1000	D-9	1000		
E-1	1000	E-4	1000	E-7	1000	E-10	1000
E-2	1000	E-5	1000	E-8	1000	E-11	1000
E-3	1000	E-6	1000	E-9	1000		
F-1	1000	F-4	1000	F-7	1000	F-10	1000
F-2	1000	F-5	1000	F-8	1000	F-11	1000
F-3	1000	F-6	1000	F-9	1000		
G-1	1000	G-4	1000	G-7	1000	G-10	1000
G-2	1000	G-5	1000	G-8	1000	G-11	1000
G-3	1000	G-6	1000	G-9	1000		
H-1	1000	H-4	1000	H-7	1000	H-10	1000
H-2	1000	H-5	1000	H-8	1000	H-11	1000
H-3	1000	H-6	1000	H-9	1000		

Plate 27

UTAH MINES LTD.
MINERAL EXPLORATION & DEVELOPMENT DEPARTMENT
VANCOUVER BRITISH COLUMBIA
EXPO GROUP
VANCOUVER ISLAND, B.C.

**INDUCED POLARIZATION
APPARENT RESISTIVITY N=1**

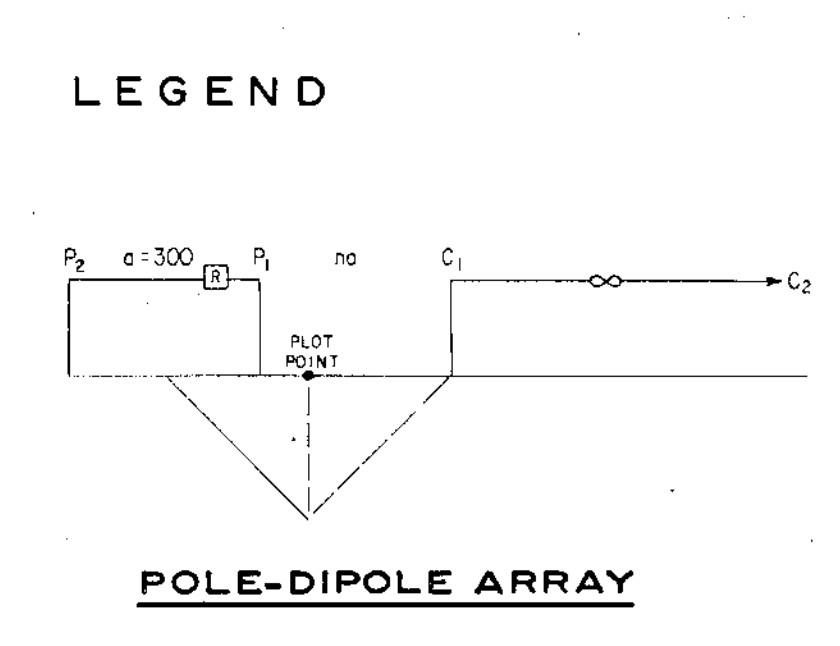
Work by: *R. Withersley* Date: *Nov 1972* RYS Ref.
Drawn by: *C.D. Jones* Revised: *MAP* D-7
Scale: 200 100 0 100 200 400 800
SCALE IN FEET



4000 M-33

Department of
Mines and Technical Resources
ASSESSMENT REPORT
NO. 4000 M-33

TO ACCOMPANY GEOLOGICAL & GEOPHYSICAL
REPORT ON EX-20
LOCATED 50° 127' N
BY A. ASCENIO 16 MAY TO 16 SEPT. 1972



INSTRUMENTATION:
ELLIOTT XTR
SCINTREX IPR-7 REC'R
RESISTIVITY IN OHM-Feet

ORIENTATION OF ARRAY
C₁ POSITIONED SOUTH
OF P₁ & P₂

Transect Survey, Hubs

Picket Line, Showing line and station designation

Red Claim Boundary Unsurveyed, showing claim number and claim post

Un timbered area

Swamp (dashed/undashed)

Creek, width defined (continuous/intermittent)

10" Diamond Drill Hole

Stream (< 10' wide) (continuous/intermittent)

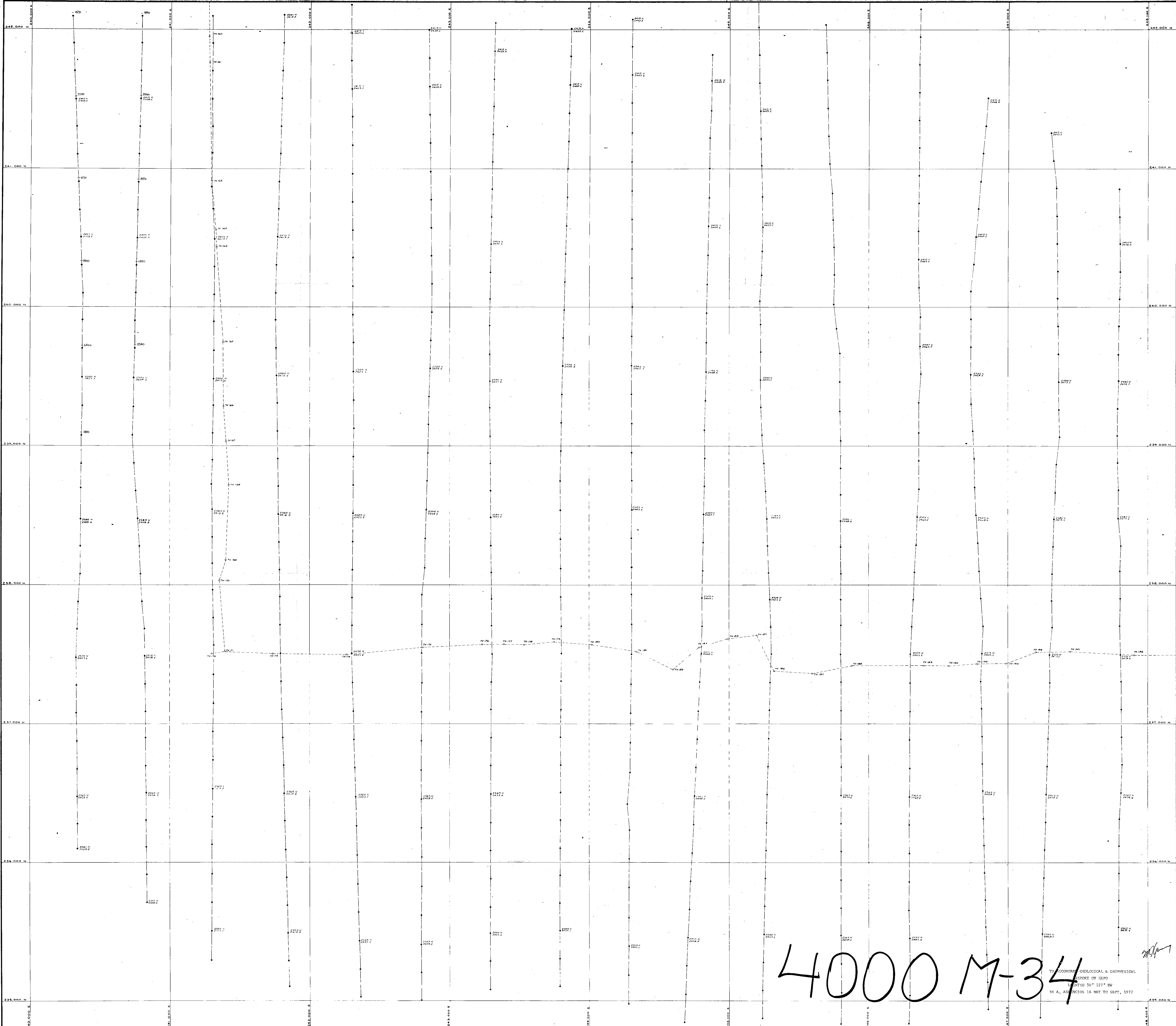
	232000	233000	234000	235000	236000	237000	238000	239000	240000
A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8	A-9	A-10
B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10
C-1	C-2	C-3	C-4	C-5	C-6	C-7	C-8	C-9	C-10
D-1	D-2	D-3	D-4	D-5	D-6	D-7	D-8	D-9	D-10
E-1	E-2	E-3	E-4	E-5	E-6	E-7	E-8	E-9	E-10
F-1	F-2	F-3	F-4	F-5	F-6	F-7	F-8	F-9	F-10
G-1	G-2	G-3	G-4	G-5	G-6	G-7	G-8	G-9	G-10
H-1	H-2	H-3	H-4	H-5	H-6	H-7	H-8	H-9	H-10

Plate 31

UTAH MINES LTD.
MINERAL EXPLORATION & DEVELOPMENT DEPARTMENT
VANCOUVER, BRITISH COLUMBIA
EXPO GROUP
VANCOUVER ISLAND, B.C.

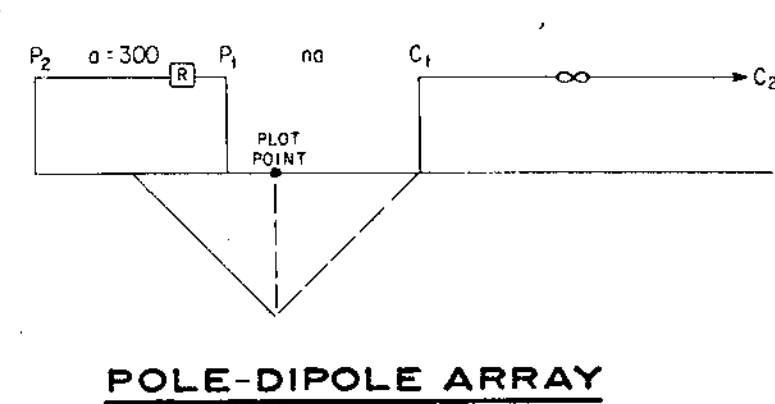
**INDUCED POLARIZATION
APPARENT RESISTIVITY N=1**

Work by: R. Wilton Date: Nov. 1972 NTS Ref.
Drawn by: C.B./P.C. Revised: MAP E-6
200 100 0 200 400 600
SCALE IN FEET



4000 M-34

LEGEND



INSTRUMENTATION

ELLIOTT XTR
SCINTREX IPR-7 REC'R
RESISTIVITY IN OHM-Feet

ORIENTATION OF ARRAY

C₁ POSITIONED SOUTH
OF P₁ & P₂

Transect Survey, Hubs
Picket Line, Showing line and station designation

665 670
697 694
Hep. Claim Boundary Unsurveyed, showing claim number and claim post

Untimbered areas
Swamp (defined/unlined)
Creek, width defined (continuous/intermittent)
Stream (< 10' wide) (continuous/intermittent)
Diamond Drill Hole

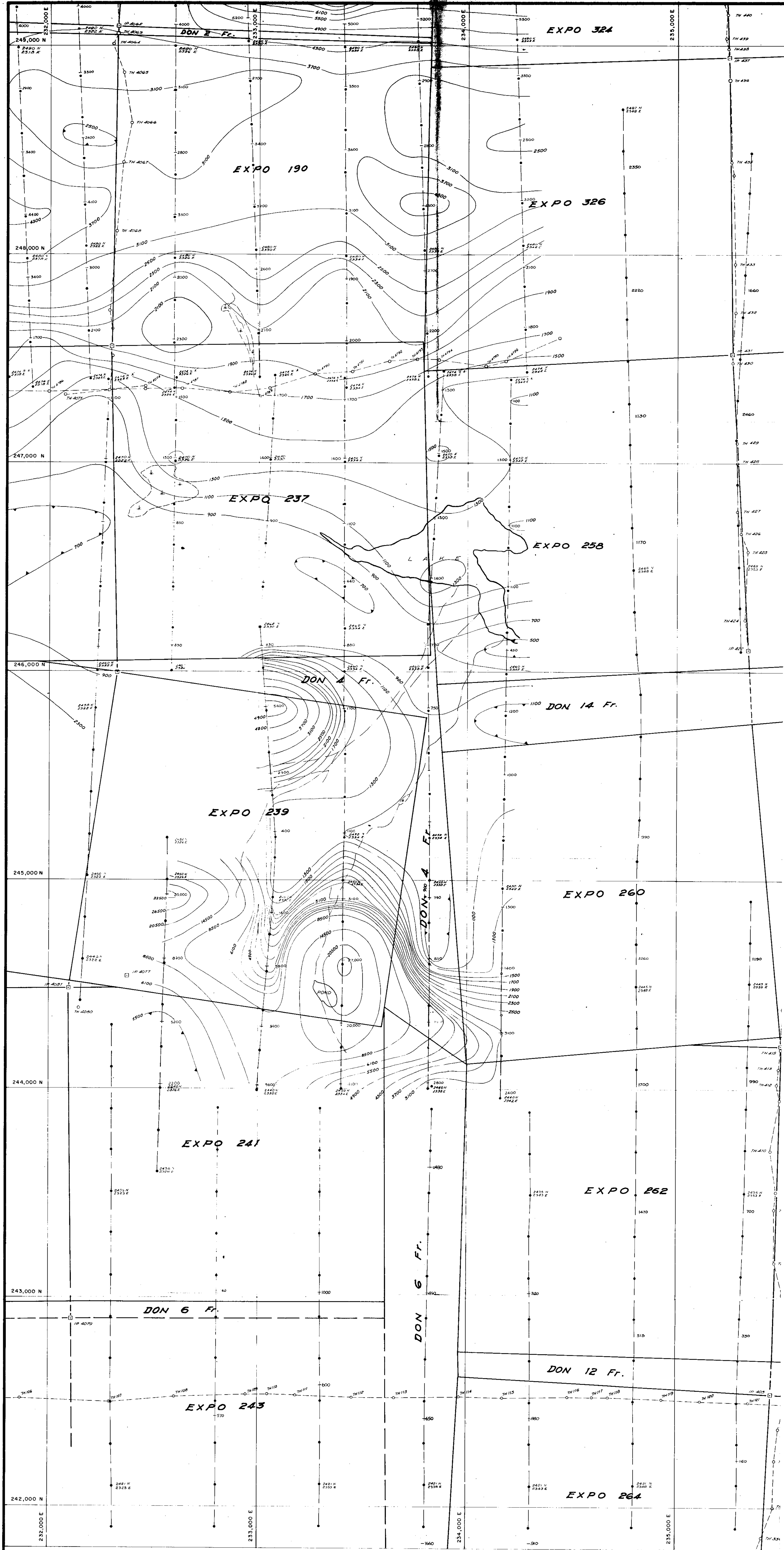
A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8	A-9	A-10	A-11
B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	B-11
C-1	C-2	C-3	C-4	C-5	C-6	C-7	C-8	C-9	C-10	C-11
D-1	D-2	D-3	D-4	D-5	D-6	D-7	D-8	D-9	D-10	D-11
E-1	E-2	E-3	E-4	E-5	E-6	E-7	E-8	E-9	E-10	E-11
F-1	F-2	F-3	F-4	F-5	F-6	F-7	F-8	F-9	F-10	F-11
G-1	G-2	G-3	G-4	G-5	G-6	G-7	G-8	G-9	G-10	G-11
H-1	H-2	H-3	H-4	H-5	H-6	H-7	H-8	H-9	H-10	H-11

Plate 35

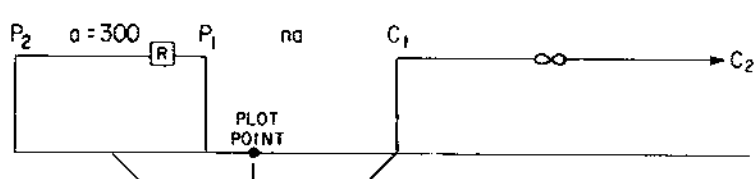
Department of MINERAL EXPLORATION & DEVELOPMENT BRITISH COLUMBIA
UTAH MINES LTD.
MINERAL EXPLORATION & DEVELOPMENT DEPARTMENT
VANCOUVER BRITISH COLUMBIA
EXPO GROUP
NO. 4000 #34 VANCOUVER ISLAND, B.C.

**INDUCED POLARIZATION
APPARENT RESISTIVITY N=1**

Drawn by: G.D. [Name] Date: Nov. 1972
Revised: [Name] MAP E-7
Scale: 1" = 400'



LEGEND



POLE-DIPOLE ARRAY

INSTRUMENTATION:

- ELLIOTT XTR
- SCINTREX IPR-7 REC'R
- RESISTIVITY IN OHM-FeET

ORIENTATION OF ARRAY

- C₁ POSITIONED SOUTH OF P₁ & P₂

Untimbered
 Swamp (of
 Creek, width



--- Transit Survey, Hubs
 2582 Z
 678
 694
 Hep Claim Boundary Unsurveyed, showing claim number and claim post
 Stream (< 10' wide) (continuous/intermittent)

DDH Diamond Drill Hole Elev. 210.5
 211.5
 212.5
 213.5
 214.5
 215.5
 216.5
 217.5
 218.5
 219.5
 220.5
 221.5
 222.5
 223.5
 224.5
 225.5
 226.5
 227.5
 228.5
 229.5
 230.5
 231.5
 232.5
 233.5
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 247.5
 248.5
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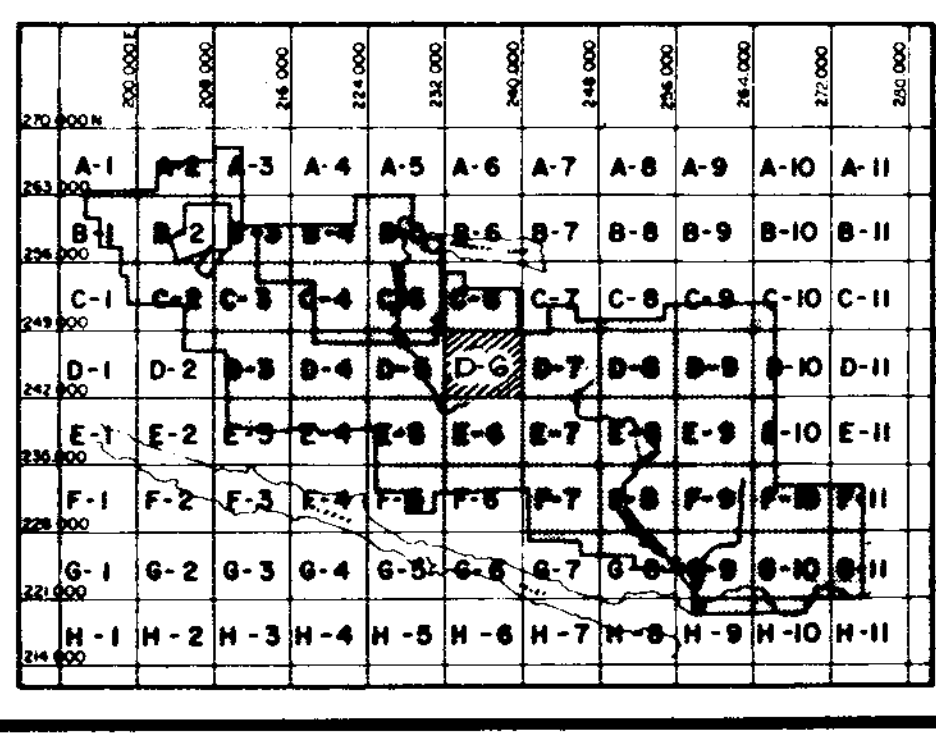


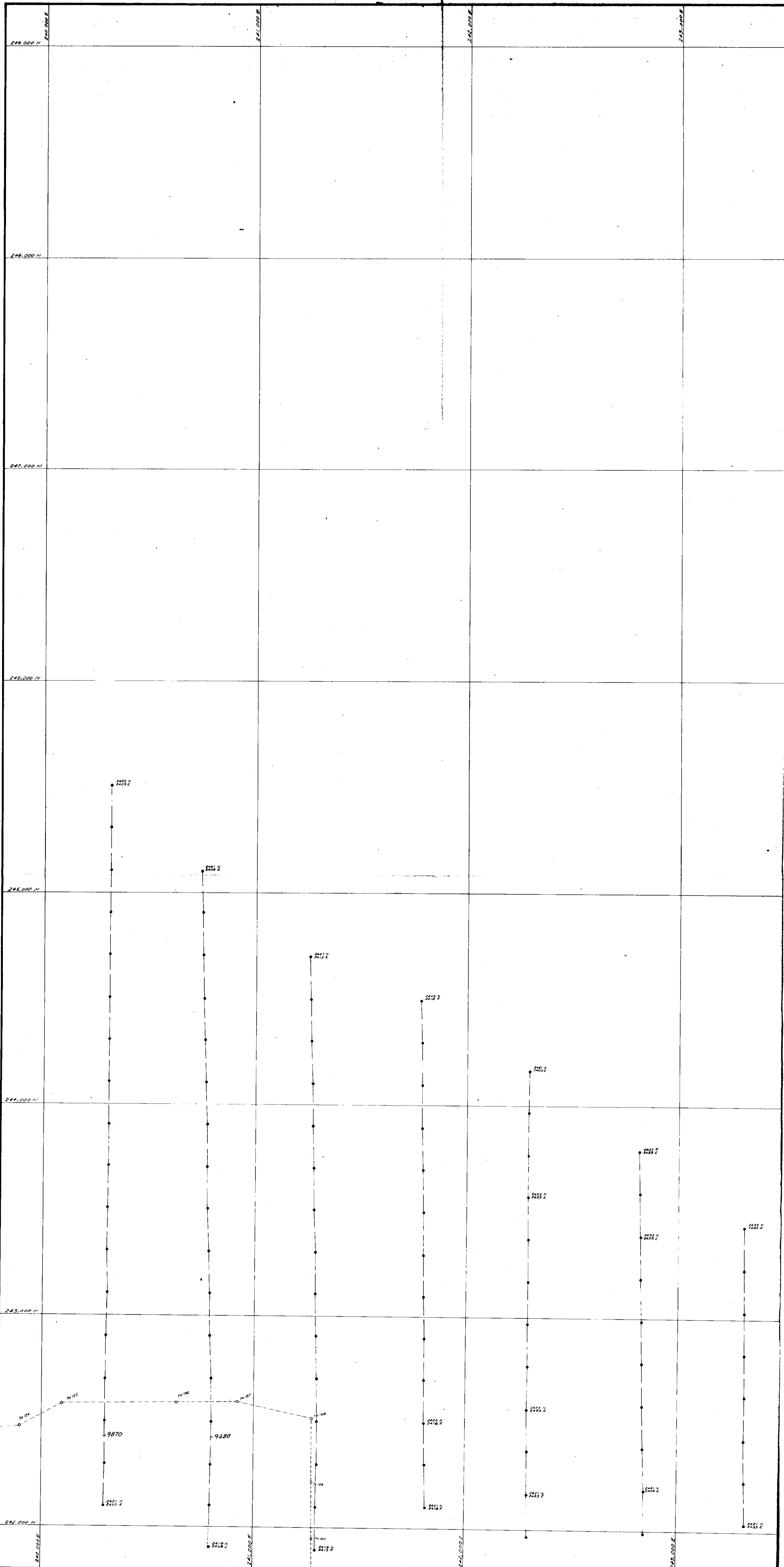
Plate 24

Department of UTAH MINES LTD.
 MINERAL EXPLORATION & DEVELOPMENT DEPARTMENT
 VANCOUVER BRITISH COLUMBIA
 4000 #35 VANCOUVER ISLAND, B.C.

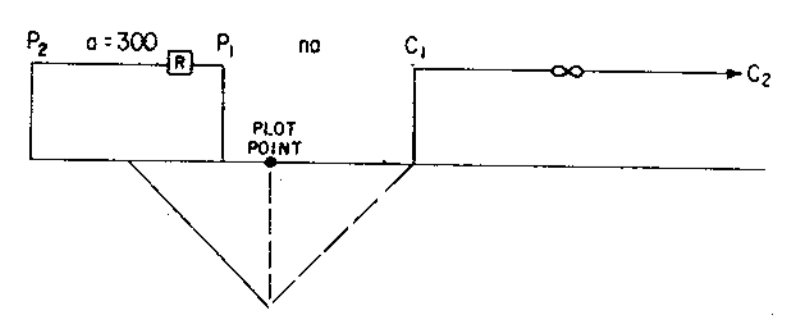
**INDUCED POLARIZATION
 APPARENT RESISTIVITY N=3**

Work by: K. Witherley Date: Nov. 1972 NTS Ref.
 Drawn by: C.D./E.C. Revised: MAP D-6
 200 100 0 200 400 600
 SCALE IN FEET

TO ACCOMPANY GEOLOGICAL & GEOPHYSICAL
 REPORT ON EXPO
 LOCATED 50° 127' NW
 BY A. ASCENCIOS 16 MAY TO SEPT. 1972



LEGEND



POLE-DIPOLE ARRAY

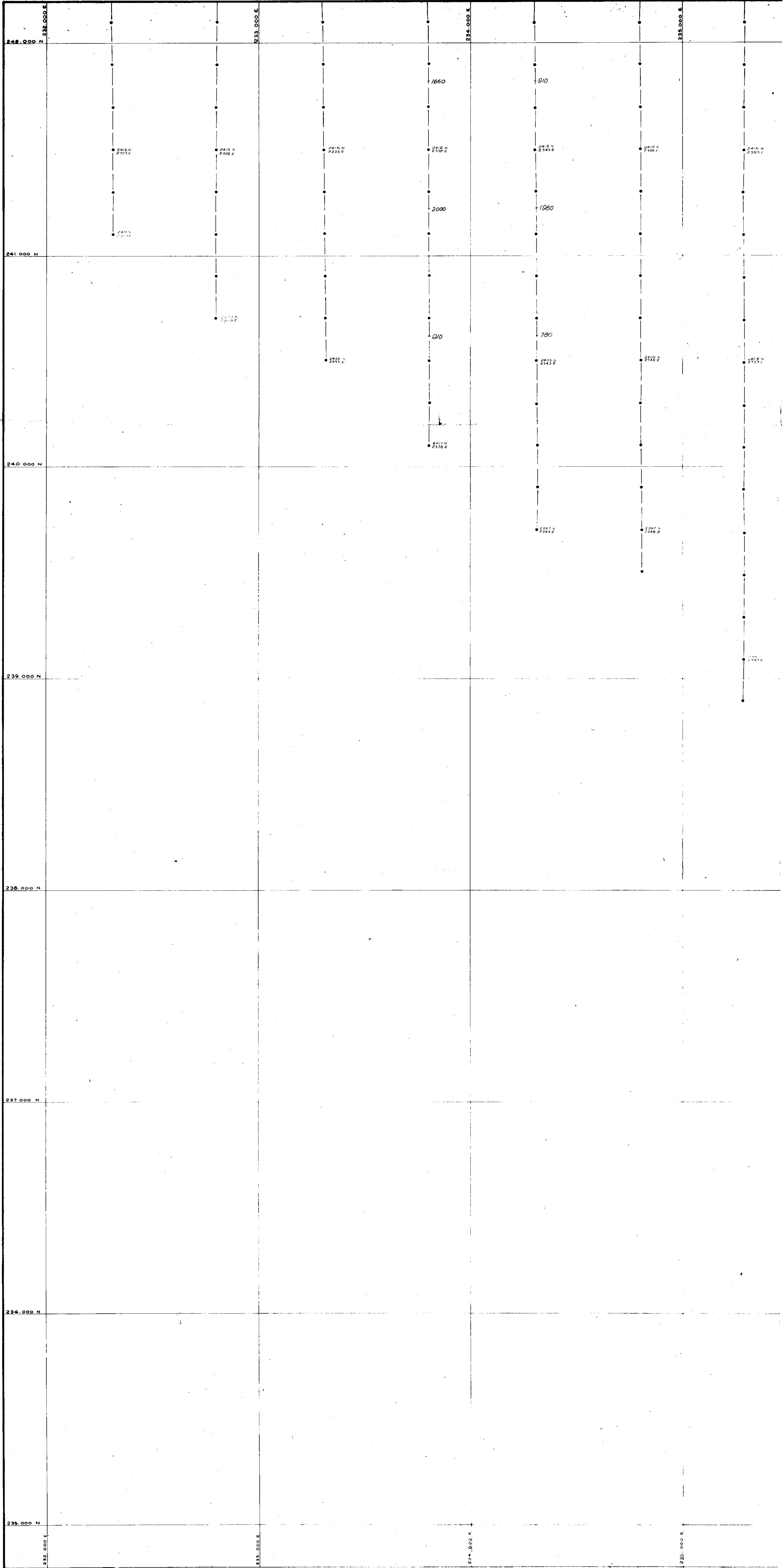
INSTRUMENTATION:

ELLIOTT XTR
SCINTREX IPR-7 REC'R
RESISTIVITY IN OHM-FeET

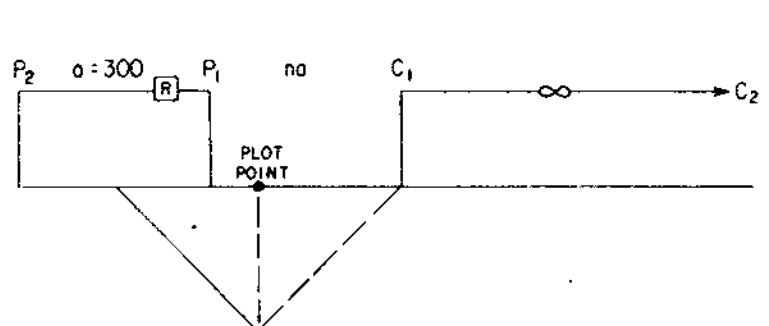
ORIENTATION OF ARRAY

C₁ POSITIONED SOUTH
OF P₁ & P₂

Untimbered
Swamp (d
Creek, wi



LEGEND



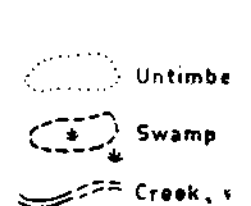
POLE-DIPOLE ARRAY

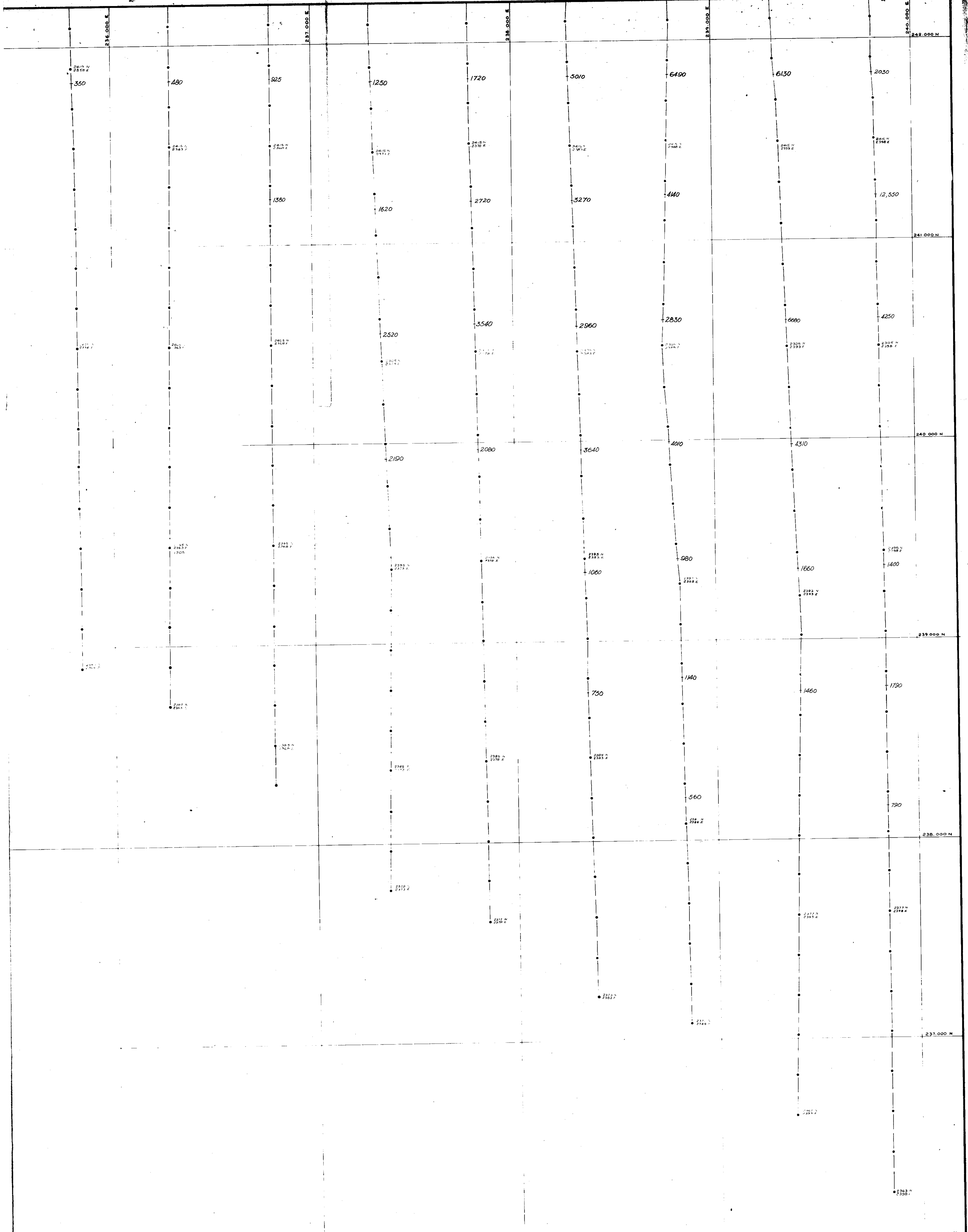
INSTRUMENTATION:

ELLIOTT XTR
SCINTREX IPR-7 REC'R

ORIENTATION OF ARRAY

C₁ POSITIONED SOUTH
OF P₁ & P₂





4000 M-37

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4000 MAP #37

TO ACCOMPANY GEOLOGICAL & GEOPHYSICAL
REPORT ON EXPO
LOCATED 50° 127' NW
BY A. ASCENCIO 16 MAY TO SEPT. 1972

Plate 32

UTAH MINES LTD.
MINERAL EXPLORATION & DEVELOPMENT DEPARTMENT
VANCOUVER BRITISH COLUMBIA
EXPO GROUP
VANCOUVER ISLAND, B.C.

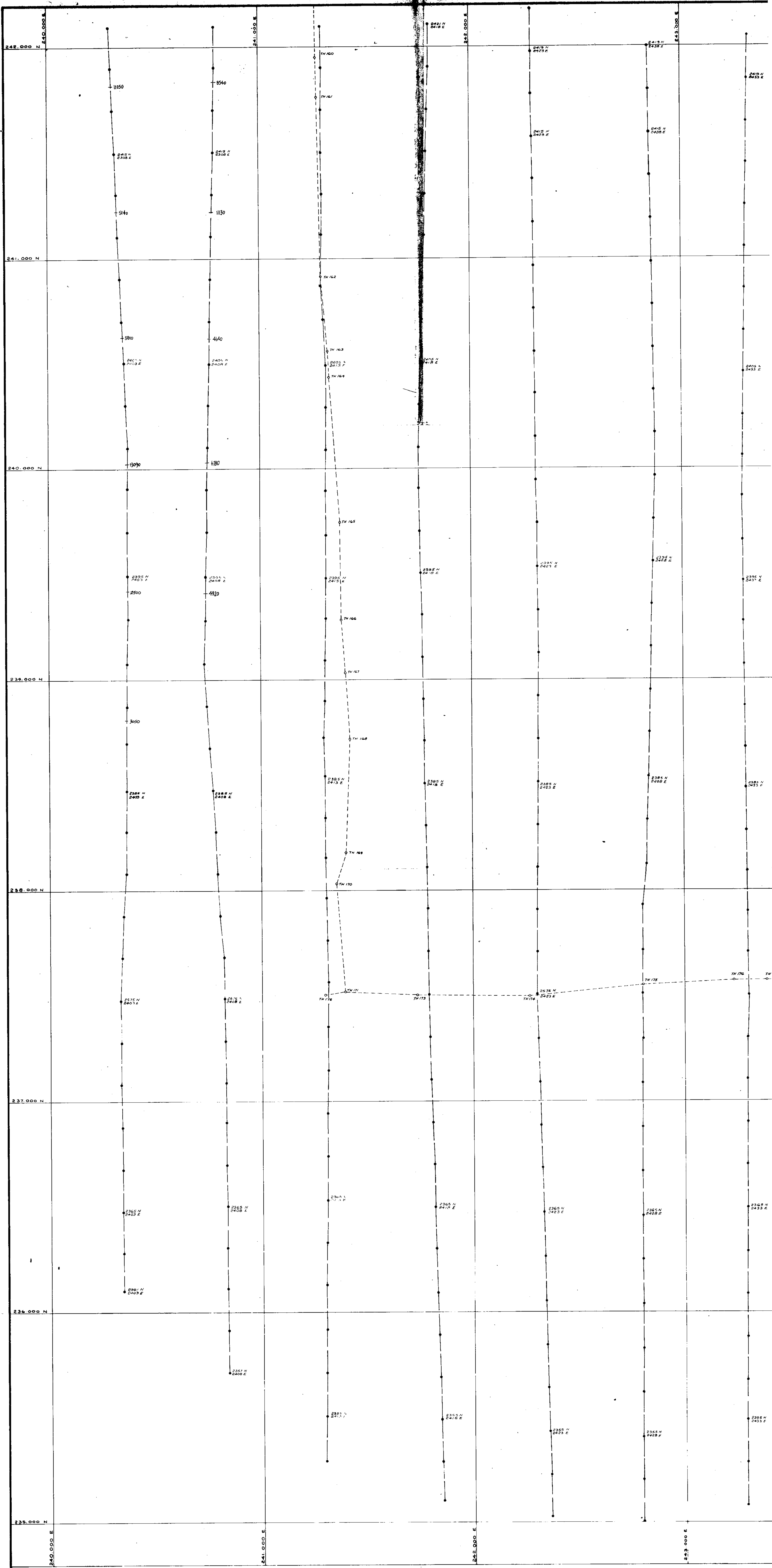
**INDUCED POLARIZATION
APPARENT RESISTIVITY N=3**

Work by: *K. Wilkerson* Date: *Nov. 1972* MTS Ref.
Drawn by: *C.D./E.C.* Revised: *MAP E-6*
200 100 0 200 400 800
SCALE IN FEET

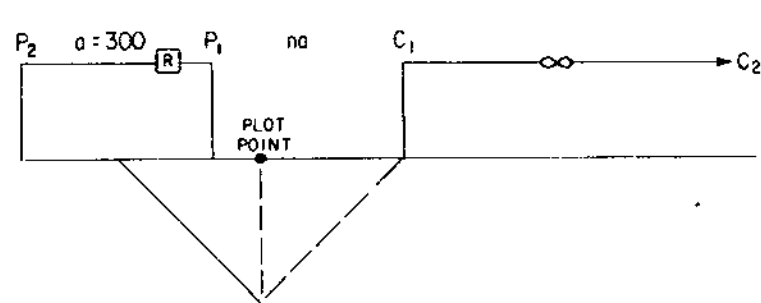
Transit Survey, Hubs
Picket Line, Showing line and station designation
Map Claim Boundary Unsurveyed, showing claim number and claim post
red areas
(defined/undefined)
width defined
(continuous/intermittent)

DDH Diamond Drill Hole
Stream (< 10' wide)
(continuous/intermittent)

230,000	231,000	232,000	233,000	234,000	235,000	236,000	237,000	238,000	239,000	240,000
A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8	A-9	A-10	A-11
B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	B-11
C-1	C-2	C-3	C-4	C-5	C-6	C-7	C-8	C-9	C-10	C-11
D-1	D-2	D-3	D-4	D-5	D-6	D-7	D-8	D-9	D-10	D-11
E-1	E-2	E-3	E-4	E-5	E-6	E-7	E-8	E-9	E-10	E-11
F-1	F-2	F-3	F-4	F-5	F-6	F-7	F-8	F-9	F-10	F-11
G-1	G-2	G-3	G-4	G-5	G-6	G-7	G-8	G-9	G-10	G-11
H-1	H-2	H-3	H-4	H-5	H-6	H-7	H-8	H-9	H-10	H-11



LEGEND



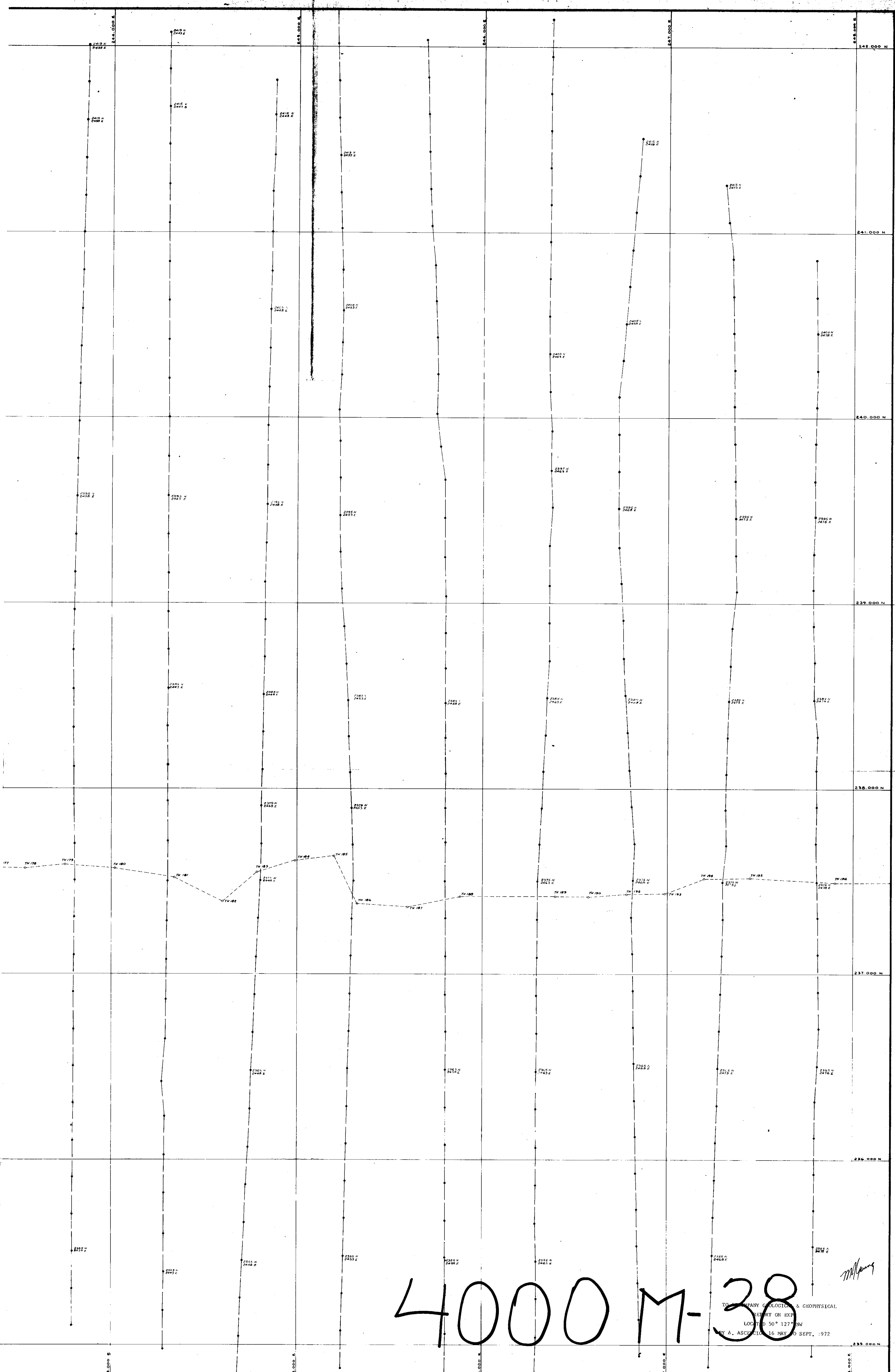
POLE-DIPOLE ARRAY

INSTRUMENTATION:

ELLIOTT XTR
SCINTREX IPR-7 REC'R
RESISTIVITY IN OHM-FeET

ORIENTATION OF ARRAY

C₁ POSITIONED SOUTH
OF P₁ & P₂



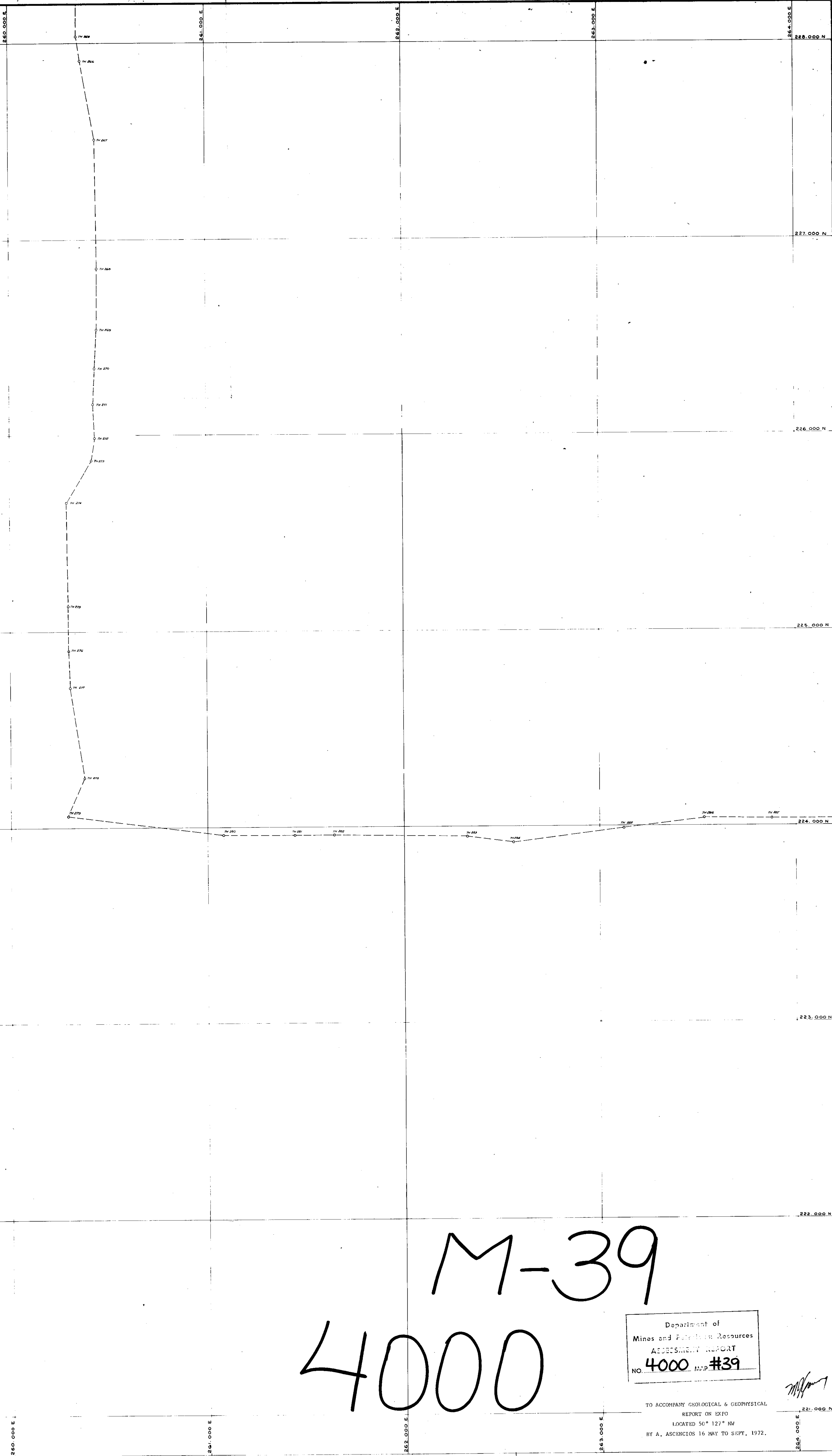
665 678
 697 694
 Map Claim Boundary Unsurveyed, showing claim number and claim post
 Stream (< 10' wide) (continuous/intermittent)

DDH Diamond Drill Hole Elev. 203.3

235000	A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8	A-9	A-10	A-11
241000	B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	B-11
247000	C-1	C-2	C-3	C-4	C-5	C-6	C-7	C-8	C-9	C-10	C-11
253000	D-1	D-2	D-3	D-4	D-5	D-6	D-7	D-8	D-9	D-10	D-11
259000	E-1	E-2	E-3	E-4	E-5	E-6	E-7	E-8	E-9	E-10	E-11
265000	F-1	F-2	F-3	F-4	F-5	F-6	F-7	F-8	F-9	F-10	F-11
271000	G-1	G-2	G-3	G-4	G-5	G-6	G-7	G-8	G-9	G-10	G-11
277000	H-1	H-2	H-3	H-4	H-5	H-6	H-7	H-8	H-9	H-10	H-11

Department of **Plate 36**
 Mineral Resources **UTAH MINES LTD.**
 MINERAL EXPLORATION & DEVELOPMENT DEPARTMENT
 VANCOUVER BRITISH COLUMBIA
 REPORT ON EXPLORATION
 LOCATED 50° 127' NW
 MAP #38
 VANCOUVER ISLAND, B.C.
INDUCED POLARIZATION APPARENT RESISTIVITY N=3
 Work by: *K. W. Hervey* Date: *Nov. 1972* NTS Ref.
 Drawn by: *C.D./E.C.* Revised: *MAP E-7*
 200 100 0 200 400 600
 SCALE IN FEET

228.000 N	256.000 E				
227.000 N					
226.000 N					
225.000 N					
224.000 N					
223.000 N					
222.000 N					
221.000 N	256.000 E	257.000 E	258.000 E	259.000 E	



M-39
4000

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4000 MAP #39

TO ACCOMPANY GEOLOGICAL & GEOPHYSICAL
REPORT ON EXPO
LOCATED 50° 127' NW
BY A. ASCENCIO 16 MAY TO SEPT. 1972.

Plate 37

UTAH MINES LTD.
MINERAL EXPLORATION & DEVELOPMENT DEPARTMENT
VANCOUVER BRITISH COLUMBIA

EXPO GROUP
BASELINE SURVEY CONTROL

VANCOUVER ISLAND BRITISH COLUMBIA

Work by: A. Ascencio Date: November 1972 N.T.S. Ref

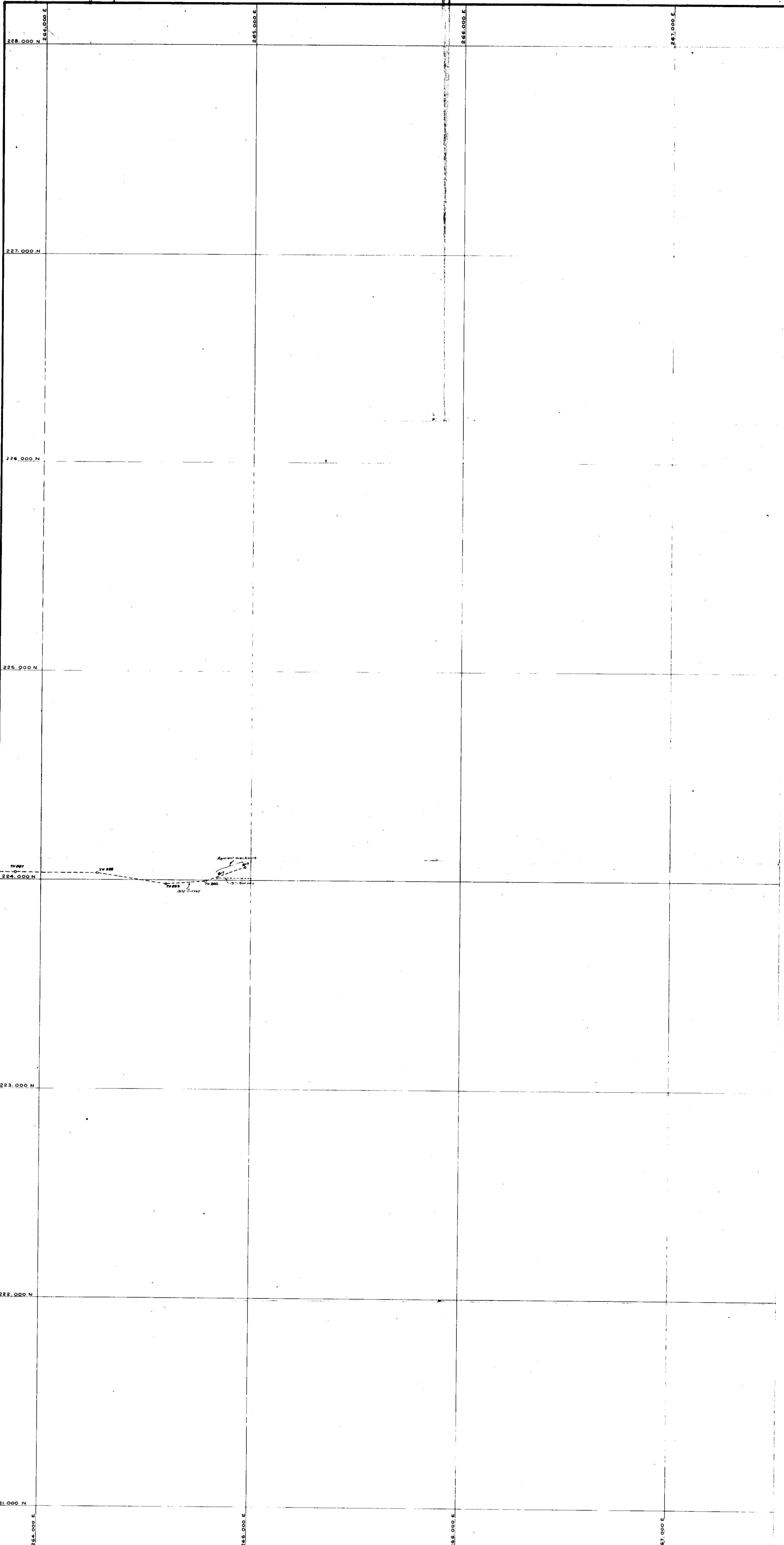
Drawn by: Revised: MAP of G-9

200 100 0 200 400 600
SCALE IN FEET

TRANSIT SURVEY HUBS

210,000 N	210,000 E	A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8	A-9	A-10	A-11
213,000 N	210,000 E	B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	B-11
216,000 N	210,000 E	C-1	C-2	C-3	C-4	C-5	C-6	C-7	C-8	C-9	C-10	C-11
219,000 N	210,000 E	D-1	D-2	D-3	D-4	D-5	D-6	D-7	D-8	D-9	D-10	D-11
222,000 N	210,000 E	E-1	E-2	E-3	E-4	E-5	E-6	E-7	E-8	E-9	E-10	E-11
225,000 N	210,000 E	F-1	F-2	F-3	F-4	F-5	F-6	F-7	F-8	F-9	F-10	F-11
228,000 N	210,000 E	G-1	G-2	G-3	G-4	G-5	G-6	G-7	G-8	G-9	G-10	G-11
231,000 N	210,000 E	H-1	H-2	H-3	H-4	H-5	H-6	H-7	H-8	H-9	H-10	H-11
234,000 N	210,000 E											





4000
M-40

