5361

# 1974 GEOPHYSICAL REPORT
# ON THE POPLAR LAKE PROPERTY

in the Omineca Mining Division
Thirty (30) miles southwest of Houston, British Columbia.

54°N, 127°W, SW

Owned by M.J. Callaghan, C. Critichlow, F. Onucki
and Utah Mines Ltd.

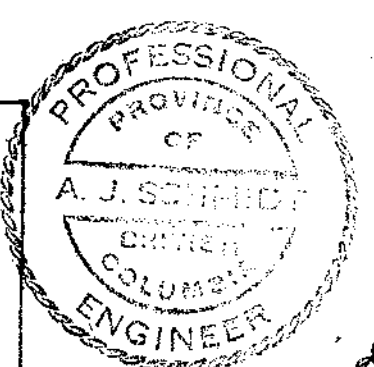
93L/2W

by
K.E. Witherly, B.Sc.
of Utah Mines Ltd.
1600-1050 West Pender Street,
Vancouver, British Columbia.

Work Performed Between
15th October and 10th November, 1974

JANUARY, 1975






A. Schmidt
Feb. 4/75

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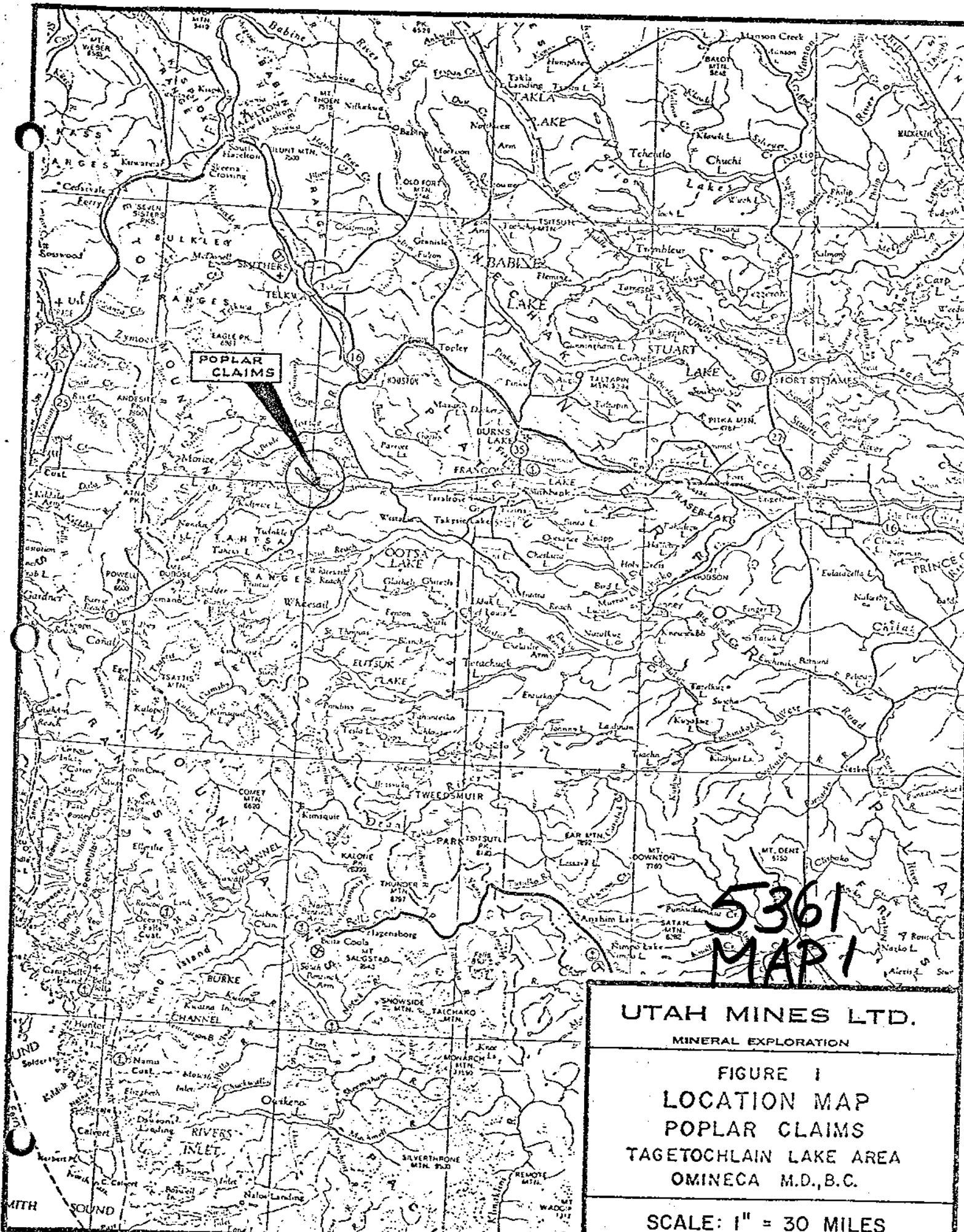



UTAH MINES LTD.

MINERAL EXPLORATION

FIGURE 1

LOCATION MAP

POPLAR CLAIMS

TAGETOCHLAIN LAKE AREA

OMINECA M.D., B.C.

SCALE: 1" = 30 MILES

## SUMMARY

Between 15th October and 9th November, 1974, a combined induced polarization and ground magnetics survey was conducted over the below listed mineral claims in the Omineca Mining Division owned by F. Onucki, C. Critchlow, M.J. Callaghan and Utah Mines Ltd. The mineral claims covered were:

Don 33, 34, 35, 36
Poplar 2, 4, 6, 8, 10, 13, 14, 15, 16, 17, 18, 19 and 20
Dave Fr. 1, 2, 5, Poplar Fr. 1, 2.

Work was carried out by K. Roxbourgh, geophysicist, under the supervision of K. Witherly, geophysicist, and G. Clouthier, geologist for Utah Mines Ltd. Also working for Utah Mines Ltd. on the surveys were J. Grant, R. Milne, H. Schwenk and J. Sullivan.

## INTRODUCTION

### LOCATION AND ACCESS

Tagetochlain Lake (local name Poplar) lies approximately thirty (30) miles (48.3 Km) southwest of Houston, British Columbia. Vehicle access may be gained by good Forest Service roads along the Morice River and Owen Lake drainages and then by the rather poor Tahtsa Lake access road. A rough jeep road extends from the Tahtsa Lake road along the north shore of Tagetochlain Lake, through the Poplar groups of mineral claims. Alternate access may be gained by float plane to Tagetochlain Lake, or by helicopter to the open meadows on the north shore of the lake.

## FIELD WORK

### LINE CUTTING

The base line along 2,000N was surveyed with a transit by Underhill and Underhill. Off from the baseline, twelve (12) perpendicular grid lines running north-south were cut by Utah personnel. From lines 3,600E to 3,960E, these grid lines were spaced four hundred (400) feet (122 M) apart. The next two (2) lines, 4,040E and 4,120E, were spaced out eight hundred (800) feet (244 M) apart. Grid lines were compassed and chained and had stations marked every two hundred (200) feet (61 M). The total baseline used and grid lines flagged are:

a) Base Line 5,230 feet (.99 miles) 1.60 Km)

b) Grid Lines 63,600 feet (12.05 miles) (19.38 Km) at 200 foot (61 M) stations.

### GEOPHYSICS

#### (a) INDUCED POLARIZATION

The induced polarization (IP) survey was conducted using time domain equipment, a Scintrex IPR-7 and an Elliot 1.5 KW transmitter. The pole-dipole array was used with a dipole length of a=200 feet (61 M) and with readings being taken at n=1 and n=3 separations.

The IPR-7 was carried along the picket lines while the transmitter and its power supply, a five (5) HP Briggs and Straton gas generator, remained in a vehicle on the nearby road. The transmitter puts out alternating positive and negative pulses of two (2) seconds duration with a two (2) second off period between pulses. The convention used is that one reading is the sum of one positive pulse and one negative pulse. The apparent chargeability is measured in milliseconds and the apparent resistivity in ohm-feet. The n=1 and n=3 data is presented on four (4) contoured plan maps. (See Plates 1 to 4).

(b) GROUND MAGNETICS

A magnetics baseline was established along the surveyed 2,000N baseline. Measurements along the baseline were taken in closed loops of duration of an hour or less so that any diurnal variation could be corrected for. The grid lines were also surveyed in loops for diurnal control, although these loops would tend to be of a longer duration than for those made for base line control. Readings were recorded every two hundred (200) feet (61 M) along the grid lines. A constant 56,500 gammas was subtracted from the diurnally corrected values which were then plotted and contoured on the enclosed plan map (See Plate 5).

## GEOPHYSICAL RESULTS

IP

(a) CHARGEABILITY

The greater part of the grid shows chargeabilities which are either anomalous or highly anomalous. Values range from negative sixty (-60) to over two hundred (200) milliseconds. The overall anomalous zone has an apparent width of one (1) mile (east-west) and apparent length of forty-five hundred (4,500) feet. Both n=1 and n=3 separations show three (3) of the strongest anomaly centers forming a trough-shaped pattern with generally lower chargeability values in the center of the trough. The three (3) anomaly centers on the n=3 plane are located at 1,360E, 1,196N; 1,380E, 1,188N and 1,404E, 1,206N. The north end of the grid shows a

general decrease in chargeability with some of the lines showing the apparent chargeability dropping by fifty (50) to seventy (70) per cent over four hundred (400) feet. The southern ends of some of the lines also showed marked decreases in chargeability. However, the lake edge often prevented more than one (1) or two (2) readings being taken away from the anomaly, so that the anomaly's closure to the south is not as certain as it is in the north. The anomalous zone is open to the west and to the east, although the eastern side does not appear as intense as the west.

(b) RESISTIVITY

The resistivity results do not present any obvious overall trend. Values of apparent resistivity varied from 165 ohm feet to over 3,000 ohm feet. Where the lines ran into the lake, lower resistivity values are observed, in the order of 100 to 300 ohm feet. Most of the rest of the grid shows resistivities in the order of 400 to 800 ohm feet, with some local variations above and below this. A zone of higher resistivity is noted in the northwest corner of the grid, on lines 1,368E to 1,360E, from about 1,260N going north. This may well be the result of thickening of the overburden moving into that area, since in the more central portion of the grid, overburden cover is believed relatively thin (evidenced from the diamond drill hole results where not more than fifty (50) feet of overburden was encountered in any of the holes).

The geology in the area is complex and is not as yet very well understood. In the trenchs at surface and in the diamond drill core, metallic sulfides, chiefly pyrite, but some chalcopyrite, are found extensively. Sulfide content varies from less than one per cent (1%) to over four per cent (4%) over large areas, with local concentrations of over ten per cent (10%). Argillic and sericitic alteration is wide spread, as is strong fracturing of the rock. Quite possibly, alteration clays and geometric effects due to the broken up nature of the rock make some contribution to the overall IP response.

GROUND MAGNETICS

The average magnetic field strength is of the order of 1,250 gammas (57,750 gammas, total field) with local relief of over 700 gammas. The magnetic character of the grid is divided roughly diagonally on a NW-SE line. In the NE half, magnetic field values are very uniform with few variations of more than fifty (50) gammas. In the southwestern half, a series of local magnetic highs form a northwesterly trend stretching from the lake shore in the southeast to off line 1,360E in the northwest. The anomalies are all fairly small. The causative sources could not be larger than of the order of a few hundred feet in horizontal dimensions. Several of the anomalies show dipole latitude effects (highs located at 1,384E, 1,184N and 1,376E, 1,196N). One anomaly right on the lake edge ( 1,376E, 1,177N), only shows the negative trough with the positive high and probable source lying just off shore.

The magnetics results show a variability in their correlation with the IP results. Some of the magnetic highs are over or near IP highs and some are over or near IP lows.

The geology is still too scanty to make much in the way of correlation between it and the ground magnetics results. It would appear, though, that the strong alteration in the area has destroyed most of the primary magnetite in the rocks. The observed magnetic features may well be caused by magnetite enriched rock that was introduced into the host after the alteration took place.

## CONCLUSIONS

1) The IP survey was successful in delineating the widespread occurrences of pyrite and possibly alteration clays over the survey area.
2) The ground magnetics survey shows up several small anomalies, but, overall, reflects the wide spread destruction of magnetite due to the intense alteration of the rock.

Ken E. Witherly

K.E. WITHERLY
GEOPHYSICIST

VANCOUVER, BRITISH COLUMBIA

4TH FEBRUARY, 1975.

KEW/mw
Attachments.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
A. J. SCHMIDT

A. J. Schmidt
Feb. 4/75

## APPENDIX A

## STATEMENT OF QUALIFICATIONS

1. K. ROXBURGH: Geophysical technician for Utah Mines Ltd., Vancouver, British Columbia. Completed a B.Sc. in Geology and Geophysics at University of Alberta, 1965, Ph.D in Geophysics at the University of British Columbia, 1970. Worked for Utah Mines Ltd. in the fall of 1973 as a geophysical assistant and for the 1974 field season as a geophysical technician under the supervision of K. Witherly, Geophysicist.

2. K. WITHERLY: Geophysicist for Utah Mines Ltd., Vancouver, British Columbia. Completed a B.Sc. in Geophysics at University of British Columbia in 1971. Employed with Utah Construction and Mining Co. in the summer of 1969 as a geophysical helper. Employed with Tri-Can Exploration Surveys Ltd. as a geophysical technician during the summer of 1970. Employed with Utah Mines Ltd. from 1971 to the present as a geophysicst under the supervision of E.S. Rugg, P. Eng., and M.J. Young, P. Eng.

## APPENDIX B

## STATEMENT OF COSTS

### SALARIES

| | | |
|---|---|---|
| J. Grant | Geophysical Assistant<br>3rd October to 29th October, 1974<br>27 days @ $1,100.00 per month | $ 1,142.00 |
| R. Milne | Geophysical Assistant<br>22nd October to 10th November, 1974<br>19 days @ $600.00 per month | $ 438.50 |
| K. Roxbourgh | Geophysical Technician<br>15th October to 9th November, 1974<br>26 days @ $800.00 per month | $ 800.00 |
| H. Schwenk | Geophysical Assistant<br>10th October to 8th November, 1974<br>30 days @ $600.00 per month | $ 692.00 |
| J. Sullivan | Geophysical Assistant<br>21st October to 8th November, 1974<br>19 days @ $650.00 per month | $ 475.00 |
| | | 3,547.50 |

### VEHICLES

1973 GMC Suburban 4 WD 10th October to 9th November, 1974
32 days @ $6.00 per day $ 192.00

### IP EQUIPMENT

Transmitter, motor generator, receiver, FM walky talkies 15th October to 9th November, 1974
26 days @ $46.00 per day $ 1,196.00

### MAGNETOMETER

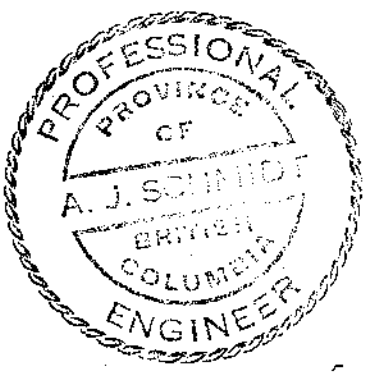
McPhar GP-70 Proton Precession SN73-12
21st October to 27th October, 1974
6 days @ $15.00 per day $ 90.00

### ROOM AND BOARD

| | | |
|---|---|---|
| K. Roxbourgh | 15th October to 9th November, 1974<br>26 days @ $15.00 per day | $ 390.00 |
| J. Grant | 3rd October to 29th October, 1974<br>27 days @ $15.00 per day | $ 405.00 |
| R. Milne | 22nd October to 10th November, 1974<br>19 days @ $15.00 per day | $ 285.00 |
| | | $ 1,080.00 |

DRAFTING $ 300.00

TOTAL REPORT $ 6,405.50




A. Schmidt
Feb. 4/75

DON 1 | DON 3 | DON 12 | DON 26 | DON 29 | DON 31 | DON 32 | DON 33 | DON 34 | DON 35 | DON 36 | DON 37

POPLAR 1 | POPLAR 2 | POPLAR 3 | POPLAR 4 | POPLAR 5 | POPLAR 6 | POPLAR 7 | POPLAR 8 | POPLAR 9 | POPLAR 10 | POPLAR 11 | POPLAR 12 | POPLAR 13 | POPLAR 14 | POPLAR 15 | POPLAR 16 | POPLAR 17 | POPLAR 18 | POPLAR 19 | POPLAR 20 | POPLAR 33 | POPLAR 35 | POPLAR 60 | POPLAR 62

POPLAR No. 1 FR.

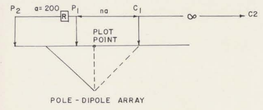
DAVE 1 Fr. | DAVE 2 Fr. | DAVE 4 Fr. | DAVE 5 Fr. | POPLAR 2 Fr.

TAGETOCH LAIN LAKE

LINE 1360 E | LINE 1364 E | LINE 1368 E | LINE 1372 E | LINE 1376 E | LINE 1380 E | LINE 1384 E | LINE 1388 E | LINE 1392 E | LINE 1396 E | LINE 1404 E | LINE 1412 E

## LEGEND

GRID SURVEY




POLE - DIPOLE ARRAY

ELLIOT 1.5 Kw Transmitter
SCINTREX IPR-7 Receiver
Convention is used that one reading is the sum of one positive pulse and one negative pulse

$C_1$ POSITIONED South OF $P_1$ & $P_2$

Data point 43

40 Contour interval: 20 Milliseconds

## SYMBOLS

- Shore line
- Creeks, continuous/intermittent
- Creek width defined/inferred
- Swamp
- Road surveyed/unsurveyed
- TH12 — Transit lines w. hubs
- 1264 / 1400 — Picket line, showing line and station designation
- DDH C-1 TO 947' — Diamond drill hole showing total depth, bearing and inclination
- Claims, surveyed, showing post

TO ACCOMPANY GEOPHYSICAL REPORT
ON POPLAR CLAIMS LOCATED AT
54°N, 127°W, S.W.
BY K.E.WITHERLY
OCT. TO NOV. 1974

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA A. J. SCHMIDT

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 5361 MAP #2

5361 MAP2

Plate 1

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

# POPLAR PROPERTY

OMINECA M.D. BRITISH COLUMBIA

## IP
## APPARENT CHARGEABILITY N = 1
IN MILLISECONDS

| Work by K.E.W. & K.K.R. | Date JAN. 1975 | NTS Ref |
|---|---|---|
| Drawn by E.R. | Revised | |

400 200 0 200 400
SCALE IN FEET

DON 1 | DON 3 | DON 12 | DON 26 | DON 29 | DON 31 | DON 32 | DON 33 | DON 34 | DON 35 | DON 36

POPLAR 1 | POPLAR 2 | POPLAR 3 | POPLAR 4 | POPLAR 5 | POPLAR 6 | POPLAR 7 | POPLAR 8 | POPLAR 9 | POPLAR 10 | POPLAR 11 | POPLAR 12 | POPLAR 13 | POPLAR 14 | POPLAR 15 | POPLAR 16 | POPLAR 17 | POPLAR 18 | POPLAR 19 | POPLAR 20 | POPLAR 33 | POPLAR 35 | POPLAR 37 | POPLAR 60 | POPLAR 62

DAVE 1 Fr. | DAVE 2 Fr. | DAVE 4 Fr. | DAVE 5 Fr. | POPLAR 2 Fr.

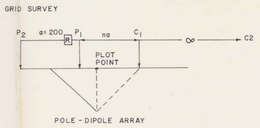
POPLAR NO. 1 FR

TAGETOCH LAIN LAKE

LINE 1360 E | LINE 1364 E | LINE 1368 E | LINE 1372 E | LINE 1376 E | LINE 1380 E | LINE 1384 E | LINE 1388 E | LINE 1392 E | LINE 1396 E | LINE 1404 E | LINE 1412 E

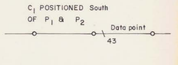
## LEGEND

GRID SURVEY




ELLIOT 1.5 Kw Transmitter
SCINTREX IPR-7 Receiver
Convention is used that one reading is the sum of one positive pulse and one negative pulse

$C_1$ POSITIONED South OF $P_1$ & $P_2$




Contour interval: 20 Milliseconds

## SYMBOLS

- Shore line
- Creeks, continuous/intermittent
- Creek width defined/inferred
- Swamp
- Road surveyed/unsurveyed
- Transit lines & hubs
- Picket line, showing line and station designation
- Diamond drill hole showing total depth, bearing and inclination
- Claims, surveyed, showing post

TO ACCOMPANY GEOPHYSICAL REPORT
ON POPLAR CLAIMS LOCATED AT
54°N, 127°W, S.W.
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PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA A. J. SCHMIDT

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 5361 MAP #3

5361 MAP3

Plate 2

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

# POPLAR PROPERTY

OMINECA M.D. BRITISH COLUMBIA

IP
APPARENT CHARGEABILITY N=3
IN MILLISECONDS

| Work by K.E.W. & K.K.R. | Date JAN. 1975 | NTS Ref. |
|---|---|---|
| Drawn by E.R. | Revised | |

SCALE IN FEET

DON 1 | DON 3 | DON 12 | POPLAR 60 | POPLAR 62

POPLAR 20 | POPLAR 18 | POPLAR 33 | POPLAR 19 | POPLAR 16 | POPLAR 14

DON 26 | POPLAR 17 | POPLAR 15 | POPLAR 12 | POPLAR 35 | POPLAR 13

POPLAR 1 | POPLAR 11 | POPLAR 37 | POPLAR 3 | POPLAR 5

POPLAR 2 | POPLAR 7 | POPLAR 9 | DON 29 | POPLAR 4 | POPLAR 6 | POPLAR 8

DON 32 | POPLAR 10 | DON 31 | DON 33 | DON 34 | DON 35 | DON 36

TAGETOCH LAIN | L A K E

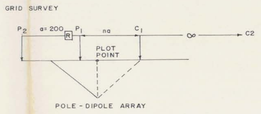
LINE 1360 E | LINE 1364 E | LINE 1368 E | LINE 1372 E | LINE 1376 E | LINE 1380 E | LINE 1384 E | LINE 1388 E | LINE 1392 E | LINE 1396 E | LINE 1404 E | LINE 1412 E

POPLAR NO. 1 FR.

DAVE 1 Fr. | DAVE 2 Fr. | DAVE 4 Fr. | DAVE 5 Fr. | POPLAR 2 Fr.

## LEGEND

GRID SURVEY




ELLIOT 1.5 Kw Transmitter
SCINTREX IPR-7 Receiver
Convention is used that one reading is the sum of one positive pulse and one negative pulse

$C_1$ POSITIONED South OF $P_1$ & $P_2$

Data point 43

Contour interval: 250, 500, 1,000, 2,000 OHM FEET

## SYMBOLS

- Shore line
- Creeks, continuous/intermittent
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- Road surveyed/unsurveyed
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- Diamond drill hole showing total depth, bearing and inclination
- Claims, surveyed, showing post

TO ACCOMPANY GEOPHYSICAL REPORT ON POPLAR CLAIMS LOCATED AT 54°N, 127°W, S.W. BY K.E.WITHERLY OCT. TO NOV. 1974

5361 MAP 4
Plate 3

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA A. J. SCHMIDT

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

# POPLAR PROPERTY

OMINECA M.D. BRITISH COLUMBIA

IP
APPARENT RESISTIVITY N = 1
IN OHM FEET

| | | |
|---|---|---|
| Work by K.E.W. & K.K.R. | Date JAN. 1975 | NTS Ref |
| Drawn by E.R. | Revised | |

SCALE IN FEET

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
5361 MAP #4


TO ACCOMPANY GEOPHYSICAL REPORT
ON POPLAR CLAIMS LOCATED AT
54°N, 127°W, S.W.
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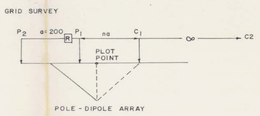
## LEGEND

GRID SURVEY




ELLIOT 1.5 Kw Transmitter
SCINTREX IPR-7 Receiver
Convention is used that one reading is the sum of one positive pulse and one negative pulse

$C_1$ POSITIONED South OF $P_1$ & $P_2$


Contour interval: 250, 500, 1,000, 2,000 OHM FEET

## SYMBOLS

- Shore line
- Creeks, continuous/intermittent
- Creek width defined/inferred
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PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — A. J. SCHMIDT

A. Schmidt Feb 5/75

Department of Mines and Petroleum Resources
ASSESSMENT REPORT

5361 MAPS

Plate 4

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

# POPLAR PROPERTY

OMINECA M.D. — BRITISH COLUMBIA

IP
## APPARENT RESISTIVITY N = 3
IN OHM FEET

| Work by K.E.W. & K.K.R. | Date JAN. 1975 | NTS Ref |
|---|---|---|
| Drawn by E.R. | Revised | |

SCALE IN FEET

DON 1 | DON 3 | DON 12 | POPLAR 60 | POPLAR 62 | POPLAR 33 | POPLAR 20 | POPLAR 18 | POPLAR 16 | POPLAR 19 | POPLAR 17 | POPLAR 14 | POPLAR 12 | DON 26 | POPLAR 35 | POPLAR 15 | POPLAR 13 | POPLAR 1 | POPLAR 3 | POPLAR 11 | POPLAR 37 | POPLAR 5 | POPLAR 2 | POPLAR 4 | POPLAR 7 | POPLAR 9 | DON 29 | POPLAR 6 | POPLAR 8 | DON 32 | POPLAR 2 Fr. | POPLAR 10 | DON 31 | DON 33 | TAGETOCH LAIN | DON 34 | LAKE | DON 35 | DON 36

DAVE 1 Fr. | DAVE 2 Fr. | DAVE 4 Fr. | DAVE 5 Fr.

POPLAR NO. 1 FR.

LINE 360 E | LINE 364 E | LINE 368 E | LINE 372 E | LINE 376 E | LINE 380 E | LINE 384 E | LINE 388 E | LINE 392 E | LINE 396 E | LINE 404 E | LINE 412 E

DDH C-1 TO 987' | DDH C-2 TO 937' | DDH C-3 TO 503' | DDH C-4 TO 647'

## LEGEND

INSTRUMENTATION:

McPHAR GP-70 PROTON PRECESSION MAGNETOMETER NO. 73-12

Picket line showing magnetics survey sample site; total field values in gammas (less a constant of 56,500 gammas)

Contour interval: 100 gammas
500 "

## SYMBOLS

- Shore line
- Creeks continuous/intermittent
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- Swamp
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TO ACCOMPANY GEOPHYSICAL REPORT
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A. J. SCHMIDT
VANCOUVER BRITISH COLUMBIA

Feb 5/75

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 5361 MAP #6

5361 MAP 6

Plate 5

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

# POPLAR PROPERTY

OMINECA M.D. BRITISH COLUMBIA

## GROUND MAGNETIC SURVEY TOTAL FIELD INTENSITY

IN GAMMAS

| | | |
|---|---|---|
| Grid & K.E.W. & K.K.R. | Date JAN. 1975 | NTS Ref. |
| Drawn by E.R. | Revised | |

SCALE IN FEET