

3992

DEASE SYNDICATE
MAGNETOMETER SURVEY
on the

A.S.B. 1-8
H.D.A. 1-12
B.Y.N. 1-20

129° 15' Long. 58° 30' lat.

by

A.D.K. Burton, P. Eng.
590 #1 Road,
Richmond, B. C.

May, 1972

Department of	
Mines and Petroleum Resources	
ASSESSMENT REPORT	
No. 3992	MAP.....

TABLE OF CONTENTS

	<u>PAGE</u>
INTRODUCTION	1
LOCATION and ACCESS	1 - 2
CLAIMS	2
GEOLOGY	2 - 3
JURASSIC	
Lower Jurassic, Unit 14	3
PERMIAN	
Unit 10	3
DEVONIAN and MISSISSIPPIAN	
Upper Devonian and Lower Mississippian, Unit 8	3
UPPER TRIASSIC and EARLIER	
Unit 11	4
ASBESTOS	4
PROPERTY GEOLOGY	
Limestone	4
Argillaceous Sediments	5
Peridotites & Associated Rock Types	5
MINERALIZATION	
Asbestos	5 - 6
Copper	6
SURVEY CONTROL	6 - 7
MAGNETOMETER	7 - 8
FIELD PROCEDURE	8
DISCUSSION OF RESULTS	8
MODIFICATIONS CAUSED BY SURFICIAL FEATURES	8 - 10
BEDROCK INTERPRETATION	10
CONCLUSIONS	11

LIST OF ILLUSTRATIONS

In Back of Report

- #1 1. Claim Location Map
- 1" = 1/2 mile
- #2 2. Fig. 1. Magnetometer Survey Readings
- 1" = 400'
- #3 3. Fig. 2. Magnetometer Survey Contours
- 1" = 400'
- #4 4. Air Photo Showing Grid Outline
- 1" = 400'

INTRODUCTION

A magnetometer survey conducted over a portion of the A.S.B., D.H.A., and B.Y.N. claims covered the A.S.B. 3,4,5,6,7 and 8 claims.

The survey was run over an area chosen for its known asbestos showing in serpentized peridotite. Briefly the area with the known asbestos coincided with that portion of the magnetic survey with the sharpest gradient of change. This indicates the usefulness of the magnetic survey in outlining areas of asbestos on these claims.

LOCATION AND ACCESS

The A.S.B. 1-8, D.H.A. 1-12 and B.Y.N. 1-20 claims are in the Liard Mining Division just south and east of $129^{\circ}15'$ longitude and $58^{\circ}30'$ latitude.

They are about 30 miles east of Dease Lake; just east of the Serpentine Lakes and south of Eaglehead Lake.

The claims and the showings lie along a north-west flowing stream which enters the stream from the Serpentine Lakes to the Eagle River just below its exit from the Serpentine Lakes.

Elevations range from just below 4,000 feet above sea level to over 5,000 feet elevation. The creek at the

starting point of the survey was around 4,300 feet elevation.

Most commonly access is by air from Watson Lake, Yukon Territory or Dease Lake, B.C. either by fixed or rotary wing aircraft. The northern most point of the Serpentine Lakes is large enough for float planes in the summer and ski equipped planes in the winter. From the north end of the lake less than one hour's snowshoeing is required to reach the first of the asbestos showings and starting point of the survey. In the summer a helicopter would be useful to reach the furthest asbestos showings at the southeast end.

Air photos B.C.5428 - 97,98,102,103 and 104 give adequate stereo coverage of the property.

N.T.S. co-ordinates are 104I/6W.

CLAIMS

<u>NAME</u>	<u>RECORD NO.</u>
D.H.A. 1 - 12	57807 - 57818
A.S.B. 1 - 8	57819 - 57826
B.Y.N. 1 - 20	57827 - 57846

GEOLOGY

The claims are underlain by three rock groups as mapped by the Geological Survey of Canada, Map 29-162, Cry

Lake Sheet 1 inch to 4 miles, 104 I. The appropriate portion of the legend is reproduced here.

JURASSIC

Lower Jurassic

Unit 14 Well bedded greywacke, phyllitic slate, conglomerate; 14a includes minor limestone; mainly metamorphized, age uncertain.

PERMIAN

Unit 10 Well bedded to massive, crystalline, foraminiferal limestone.

DEVONIAN and MISSISSIPPIAN

Upper Devonian and Lower Mississippian

Unit 8 Chert, argillite, argillaceous quartzite, greenstone, diorite, meta-diorite, conglomerate, limestone.

8(a) - may be in part or entirely younger

8(b) - serpentized peridotite, locally includes meta-andesite and meta-diorite.

Not shown on the portion of map 29-1962 covered by the claims is a unit which may correlate with unit 8(b).

UPPER TRIASSIC and (?) EARLIER

Unit 11

11(c) - Serpentinized peridotite; 11(c) may be pre-Upper Triassic and post-Permian, or may be equivalent to 8(a) and 8(b).

ASBESTOS

Besides the showings of asbestos on the claims there is the well known Letain chrysotile asbestos deposit in ultramafic rocks of unit 8(b) northeast of Letain Lake. Many other ultramafic bodies within the map sheet contain minor amounts of chrysotile asbestos and small lenses of chromite.

PROPERTY GEOLOGY

Three main rock types occur on the property.

- (1) Limestones
- (2) Argillaceous sediments
- (3) Peridotites and associated rock types

(1) LIMESTONE

The limestones occur mainly at the southeastern end of the property and consist of exposed bosses and ridges of marble and tremolite marble.

Contacts with other rock types were not seen, however, small patches of marble up to 50 feet in length were noticed fully enclosed within the peridotites.

(2) ARGILLACEOUS SEDIMENTS

The sediments were found intermittently along the length of the claims.

They consist of argillite; argillites with minor beds of limestone and greywacke; minor quartzite; and phyllitic argillites.

Attitudes of the bedding and foliation vary greatly as the argillites are drag folded but the most common strike is NW-SE.

(3) PERIDOTITES and ASSOCIATED ROCK TYPES

Peridotites range from meta-diorite and peridotite to serpentized peridotite and serpentine.

The contact of the main mass of peridotites with the argillites to the southwest of the showings is NW-SE. In the vicinity of the showings the general trend is similar but must be more complex in detail.

MINERALIZATION

(1) ASBESTOS

Asbestos mineralization on the property ranges from chrysotile asbestos in veinlets up to one inch thick to areas with picrolite veinlets.

Asbestos was seen in outcrops for a distance of three and one half miles along the NW-SE trend of the mineralized zone.

The full extent and frequency of the asbestos was not ascertained because of the snow cover.

(2) COPPER

At 12N on the base line in the creek an outcrop of peridotite, stained with malachite, is mineralized with fine grained disseminated chalcopyrite and some pyrite. Snow made examination difficult but this area should be prospected.

SURVEY CONTROL

The central portion of air photo B.C. 5428-98 was blown up to a scale of 1 inch to 400 feet and blue line white prints of the enlarged photo used as a base map. This map in conjunction with stereoscopic examination of air photos and pace and compass surveying made it possible to plot station locations accurately. This method was necessary because the deep snow made straight line travel impossible on snowshoes up and down the steep walls of the stream valley. In addition the stations can be re-occupied at any time and the survey verified or added to by reference to the air photos.

The starting point of the survey at ON/OE is easily located on air photo B.C. 5428 - 98 just downstream from a noticeable bend in the creek. Lines were run normal to the grain of the country north 45° east (true) and south 45° west at 400 foot intervals with readings at least every hundred feet. In places of sharp magnetic gradient readings were at 50 and even 25 foot intervals.

MAGNETOMETER

A Sharpe Fluxgate Magnetometer, model MF-2 was used for this survey. This is a hand-held instrument which requires only coarse levelling and is not significantly affected by orientation and, therefore, can be used rapidly and efficiently.

The Magnetometer measures the vertical component of the earth's magnetic field to 5 gammas on the lowest scale range. Full scale ranges vary progressively from a minimum of plus or minus 1,000 gammas to a maximum of plus or minus 100,000 gammas. The values can be read directly from the scale.

Since temperature compensations have been built directly into the instrument, the only corrections of the readings necessary is the diurnal variation. The variation in each survey loop is assumed to be linear and is determined by subtraction of the initial and final readings. The

correction added to each reading in the loop is the product of the total diurnal variation of the loop and the ratio of time elapsed up to the time of the reading over the total time elapsed for the loop.

FIELD PROCEDURE

The instrument was tied in with the base camp morning and evening. During the day it was tied in to base station ON/OE at the start and end of each traverse.

Except for lines 12S and 16S variations were less than was occasioned by taking the reading five feet from the station.

DISCUSSION OF RESULTS

The readings were plotted on a base map of 1" = 400 feet which was made from the air photos. Readings were plotted as gammas relative to the base station at ON/OE with a value of +1850. Values ranged from a high of +2200 gammas to a low of (-)1100 gammas; a range of 3300 gammas.

MODIFICATIONS CAUSED BY SURFICIAL FEATURES

Fluvial-glacial features modified the values obtained. On uniform slopes such as on line 12N east of the base line low ridges of bench gravels caused small variations in magnetic intensity according to position

(i.e.: higher on the gravel ridges and lower on the flanks). Usually the variation due to this type of feature is less than one contour interval.

Where the base line stream is incised to form a small canyon with steep side walls there is an intensification of the basic reading. This is seen along the base line from 5N to 14N where there is a steep canyon in the creek and the values are the lowest obtained in the survey.

The sharp changes in magnetic values along the line of the creek are merely intensified by the topography of the canyon.

At the southwest end of line 4N magnetic values are diminished by a full contour interval along the valley of an old glacial outwash stream. The effect of this dry stream extends southeasterly from 4N, through the middle of 0N and on down through 4S.

On the northeast side of line 4S from 1E to 5E readings were taken along the crest of a gravel ridge or bench associated with the north bank of this fluvio-glacial drainage system. The high, erratic readings caused by magnetite in the gravel of this ridge give variations of more than one contour interval and showed a prominent narrow anomaly running normal to the predominant

trend of the geology and mineralization. On the air photo the light coloured trace of the gravel outlines this anomaly.

BEDROCK INTERPRETATION

With the effects of the fluvio-glacial features accounted for there is a strong N-W trending steep change of magnetic gradient which coincides with the known location of asbestos fibre.

The N.W. trending magnetic high which is west of the base line drops off in values but does continue to the south beyond the abandoned fluvio-glacial stream bed.

Similiarly, the magnetic low on the east side of the base line continues to the south beyond the narrow gravel ridge high. Both the high and the low move further west as they are traced south.

Asbestos fibre was found in outcrops poking through the snow just east of the base line on line ON. In this area which is within the magnetic "low" and close to the sharp change to the magnetic high there are local variations of magnetic intensity within the low. These local highs within the low may be partially due to bench gravels and may tend to overemphasize the variations one might expect in detailed readings over asbestos.

CONCLUSIONS

A detailed magnetometer survey was run over a portion of one of the known asbestos showings on the property in order to determine the suitability of this technique for the rest of the property in outlining asbestos bearing zones.

The survey showed that known asbestos was in a magnetic low close to a steep change in values adjacent to a magnetic high. The characteristic features are significant enough so that they should show up on lines spaced 400 or even 800 feet apart with readings taken every 100 feet.

These features should show up with a helicopter borne magnetic survey and with care to allow for topographic "drape" even a fixed wing survey. In this way a large area could be covered quickly and areas chosen for detailed work. For detailed work close attention should be paid to the fluvio-glacial features.

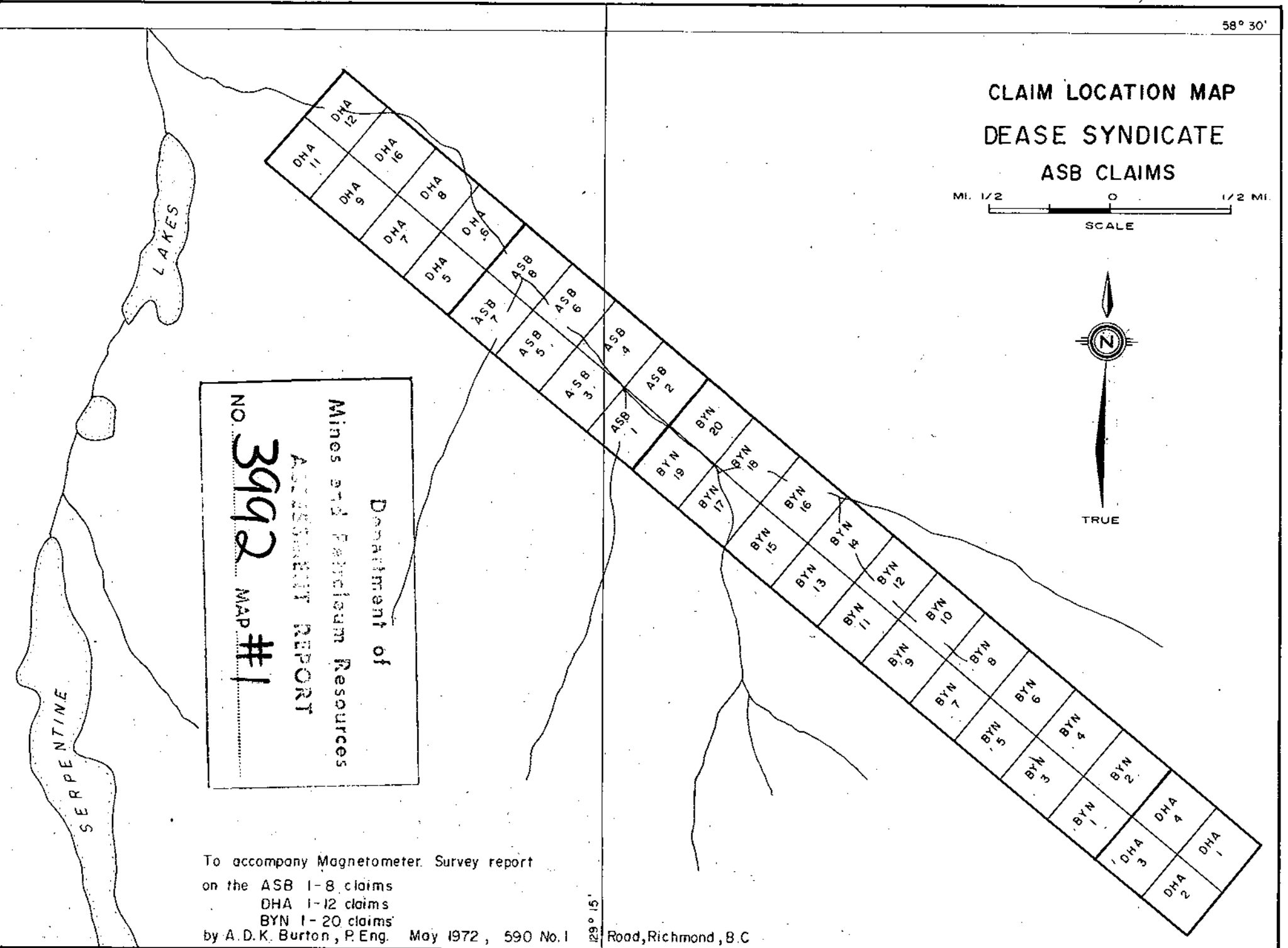
CLAIM LOCATION MAP DEASE SYNDICATE ASB CLAIMS

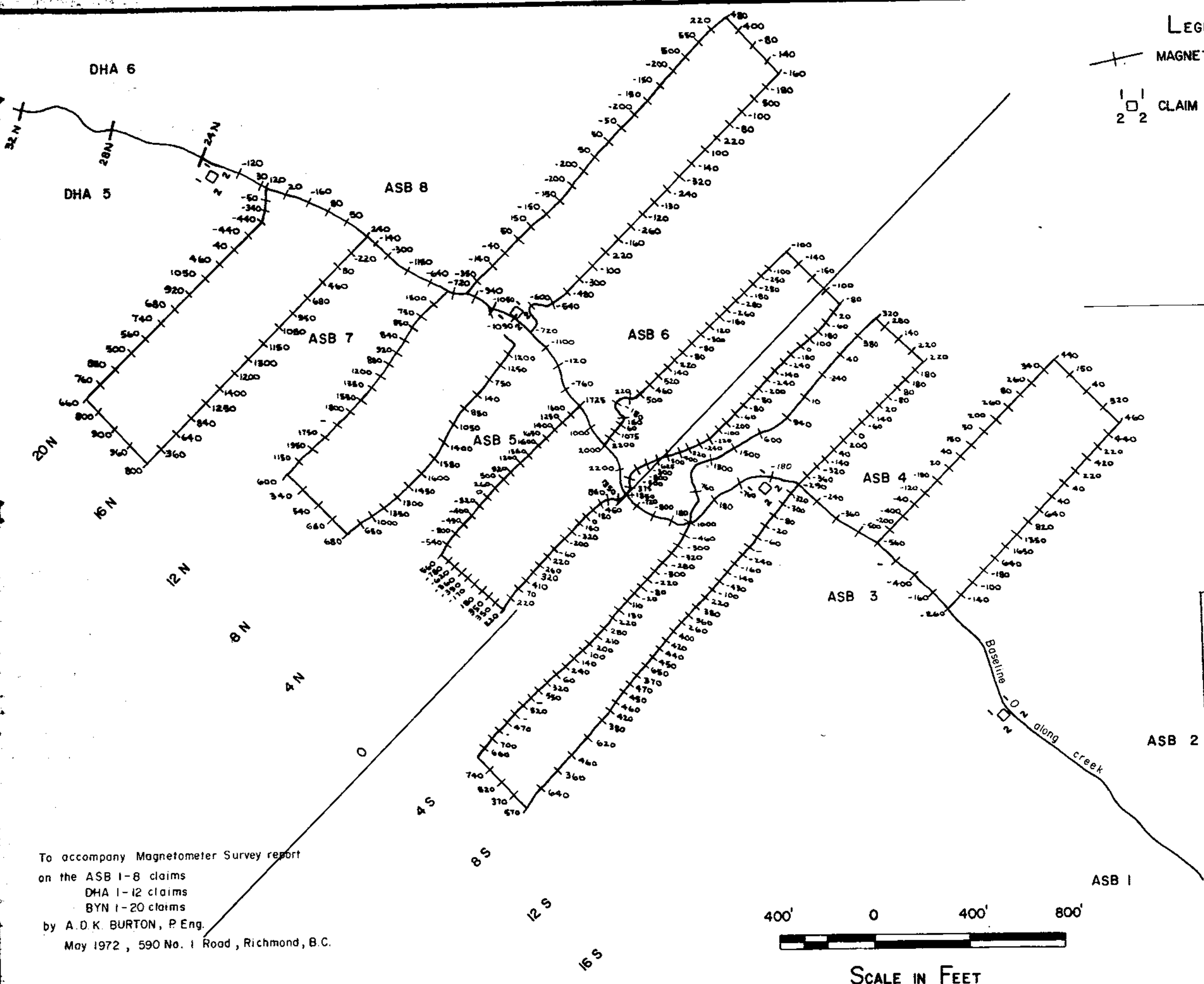


Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. **3992** MAP #1

To accompany Magnetometer Survey report
on the ASB 1-8 claims
DHA 1-12 claims
BYN 1-20 claims
by A.D.K. Burton, P.Eng. May 1972, 590 No.1

29° 15' Road, Richmond, B.C.





LEGEND
 + MAGNETOMETER SURVEY STATION
 □ CLAIM POST

PHOTO CENTER
 BC 5428-98

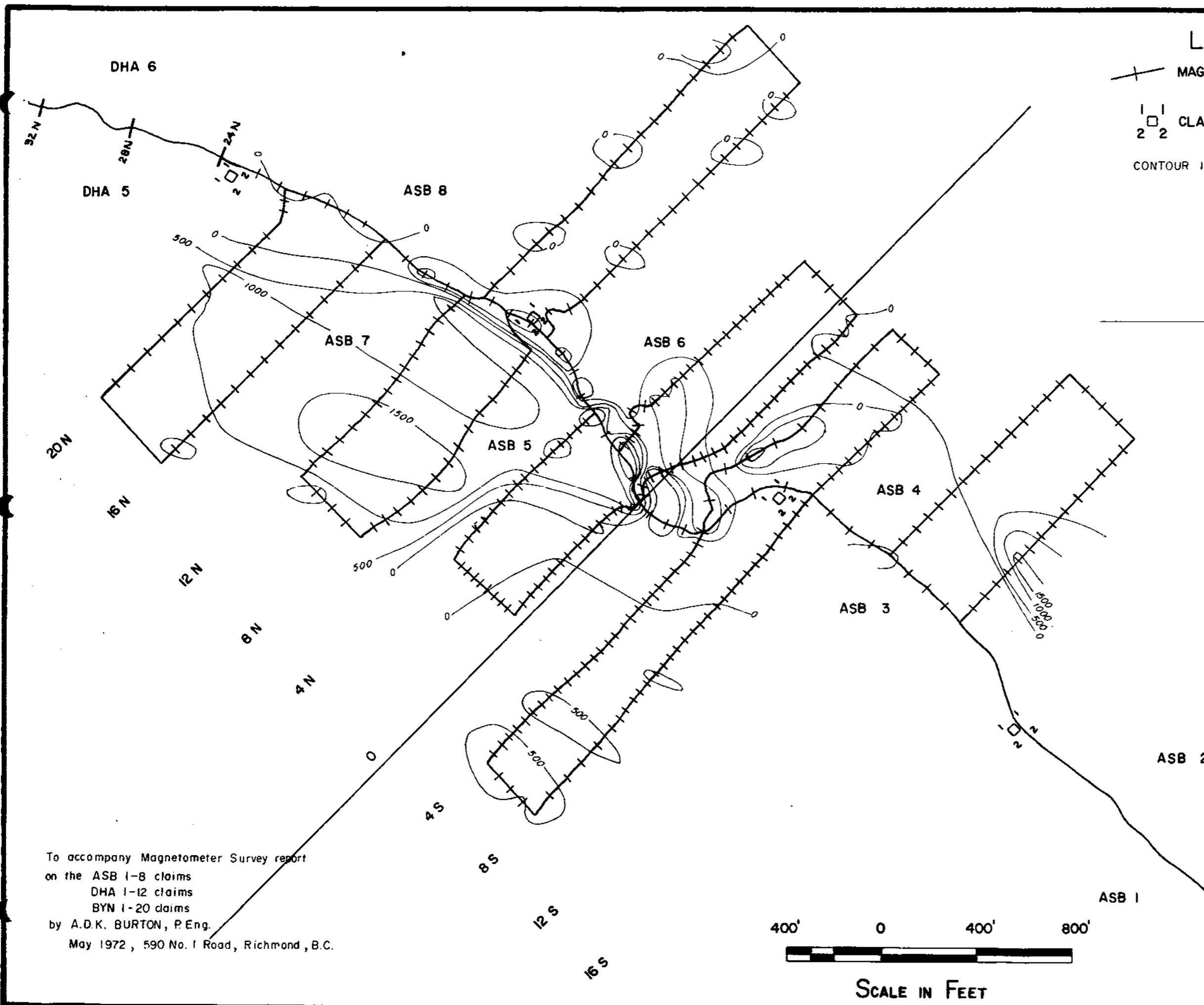


Department of
 Mines and Geotechnical Services
 ANNUAL REPORT
 NO. 3992 #2

To accompany Magnetometer Survey report
 on the ASB 1-8 claims
 DHA 1-12 claims
 BYN 1-20 claims
 by A. D. K. BURTON, P. Eng.
 May 1972, 590 No. 1 Road, Richmond, B.C.

400' 0 400' 800'
 SCALE IN FEET

FIG. 1
MAGNETOMETER SURVEY READINGS
 DEASE SYNDICATE
 ASB CLAIMS
 Date - 16/3/72 Scale - 1" = 400' a.m.b.



LEGEND

—+— MAGNETOMETER SURVEY STATION

□ CLAIM POST

CONTOUR INTERVAL - 500 gammas

PHOTO CENTER
B.C. 5428 - 98

TRUE

Department of
Mines and Technical Resources
ALBERTA
NO. **3992** #3

To accompany Magnetometer Survey report
on the ASB 1-8 claims
DHA 1-12 claims
BYN 1-20 claims
by A.D.K. BURTON, P.Eng.
May 1972, 590 No. 1 Road, Richmond, B.C.

400' 0 400' 800'

SCALE IN FEET

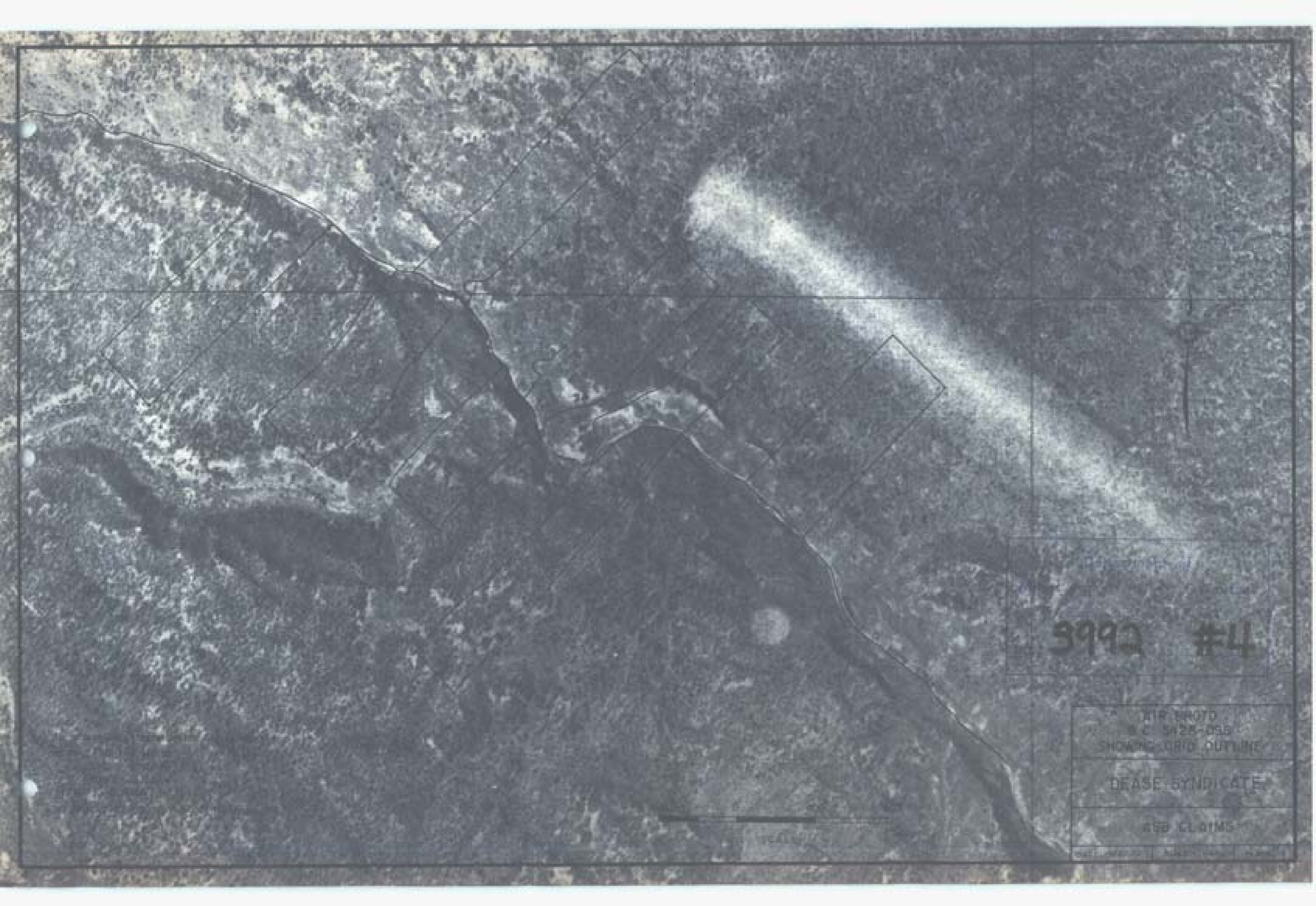
FIG. 2

**MAGNETOMETER SURVEY
CONTOURED**

DEASE SYNDICATE

ASB CLAIMS

Date - 16/3/72 Scale - 1" = 400' a.m.b.



3992 #4

AIR PHOTO
S.C. 5425-05B
SHOWING GRID OUTLINE
DEASE SYNDICATE
ASB CLAIMS

STATEMENT OF COST

Dease Syndicate
Henry Neugebauer
3864 West 8th Ave.
Vancouver 8, B.C.

Magnetometer Survey

Crew: A. Burton, S. Young

6 days Operating	@ \$200/day	\$1,200.00	
2 days Preparation & Travel	@ \$125/day	250.00	
1 day Compilation	@ \$100/day	100.00	
		<u>\$1,550.00</u>	\$1,550.00

Expenses:

Air Fare	\$1,027.20	
Air Freight	109.08	
Taxis	25.00	
Meals & Accommodation	80.00	
Camp supplies and food	240.00	
Base Map, printing	100.00	
Magnetometer rental	150.00	
Magnetomer insurance	25.00	
	<u>\$1,756.28</u>	\$1,756.28
		<u><u>\$3,306.28</u></u>

Dated December 21, 1972



Alex Burton
Alex K. BURTON
P. Eng.

Declared before me at the
 of _____, in the
 Province of British **VANCOUVER, B. C.**
 Day of _____, A.D.
DEC 21 1972
 Sub-Mining Recorder

Alex Burton

ASSIGNMENT DETAILS

PROPERTY: Dease Syndicate MINING DIVISION: Liard
 SPONSOR: Dease Syndicate PROVINCE: British Columbia
 Henry Neugebauer
 LOCATION: E. of Dease Lake.
 TYPE OF SURVEY: Ground Magnetometer
 OPERATING MAN DAYS: 12 DATE STARTED: December 31, 1971;
 EQUIVALENT 8 HR. MAN DAYS 18 DATE FINISHED: January 6, 1972
 CONSULTING MAN DAYS: 2 NO. OF STATIONS: 350
 DRAUGHTING MAN DAYS: 2 NO. OF READINGS: 367
 TOTAL MAN DAYS: 22 MILES OF LINE SURVEYED: 5.4

CONSULTANTS:

Alex Burton, 590 #1 Road, Richmond, B.C.

FIELD OPERATORS:


Alex Burton, 590 #1 Road, Richmond, B.C.
Seamus Young, Apt. 607, 1651 Harwood, Vancouver, B.C.

DRAUGHTSMEN:

Altair Draughting Ltd. #5-821 W. Pender St., Vancouver 1, B.C.
Henry Neugebauer 3864 West 8th Ave., Vancouver 8, B.C.

Dated December 22, 1972

Declared before me at the
 of **VANCOUVER, B. C.** in the
 Province of British Columbia, this
 day of **DECEMBER**, 1972
Sub-Mining Recorder, A.D.

 Alex Burton
 Alex Burton
PROFESSIONAL ENGINEER
 PROVINCE OF BRITISH COLUMBIA

Alex Burton

CERTIFICATE

I, Alex Burton, of the City of Richmond, in the Province of British Columbia, hereby certify:

1. That I am a geologist and a fellow of the Geological Association of Canada.
2. That I am a registered member of the Association of Professional Engineers of the Province of British Columbia.
3. That I hold a B.A. degree from the University of British Columbia in 1953 and have been practising my profession as a geologist since then.
4. That I do have a direct interest in the claims covered by this report.
5. That the statements made in this report are based on a study of published geological literature; unpublished private reports, and from personal knowledge of the property.
6. That permission is granted to use this report for assessment and qualification requirements.

Dated at Vancouver

This 22nd day of December 1972


A. D. K. BURTON
Alex BURTON, Eng.