GRAVITY SURVEY

SEA MINERAL CLAIM GROUP

Location: 62° 11' N. Lat.
135° 54' W. Long.

Reference: Claim Sheet 105 K 2

SWIM LAKES AREA

WHITEHORSE MINING DIVISION

Yukon Territory

By: John S.Brock
June 1965

TELEPHONE MUTUAL 2-6191

DYNASTY EXPLORATIONS LIMITED
(N. P. L.)
328 MARINE BUILDING
355 BURRARD STREET
VANCOUVER 1, B. C.

June 20, 1965

Chief Mining Recorder,
Federal Building,
Whitehorse, Y.T.

Dear Sir:

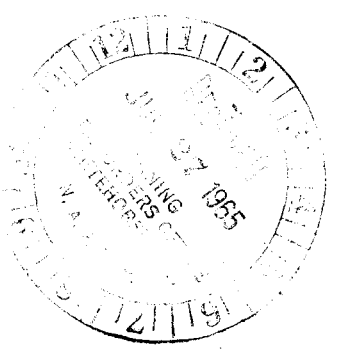
Submitted to you for the purposes of assessment work is the following report, 'Gravity Survey, Sea Mineral Claim Group'. The total costs incurred for this survey are to be applied as a portion of the assessment work required to hold previously mentioned claims under Section 53-2 of the Yukon Quartz Mining Act.

I realize that the maps enclosed do not have the Sea Claims shown on them, the correct maps will be forwarded to you as soon as possible.

Respectfully submitted,

John S. Brock

Approved by, Dr. A.E.Aho, P.Eng.



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INTRODUCTION

General:

During the month of September 1964, United Geophysical Company of America was contracted by Dynasty Explorations Limited, in order to carry out a gravity survey over a portion of the Sea Claim Group. The area was surveyed by gravimetric methods in order to supply additional geophysical data to ground magnetometer survey results obtained by Dynasty Explorations at an earlier date. The limits of the gravity survey bound an area of anomalous magnetics.

Location and Access:

The Sea Claim Group is situated east of Swim Lake on the northeast side of the Pelly River which occupies the Tintina trench. The area consists of rolling glaciated terrain with elevations varying from 3100 to 3600 feet above sea level. Slopes are generally from 5 to 15 degrees, seldom over 20 degrees. The area is heavily forested except for burns such as on the southeast part of the Sea Group. Spruce is the dominant species with birch occuring on the south-facing slopes and occasional pine on well-drained ridge tops.

GEOLOGY

Outcrops are very scarce, making up only a fraction of one percent of the claim group area which is generally covered by a mantle of glacial till varying in depth from a few feet to one hundred feet or more. The glacial trend is from east to west. Most outcrops are sericite to chlorite schist, isoclinally folded, with the foliation dipping gently to the north.

Several outcrops of subporphyritic quartz diorite occur on the southeastern part of the Sea group. Outcrops of skarn containing pyrite, pyrrhotite, chalcopyrite, galena and sphalerite are fou nd at three localities near the north boundary of Sea 69, on Sea 1 Fraction and in the southwestern corner of Sea 40 mineral claims. Lenses of flat-lying sulphide mineralization, primarily pyrrhotite, lie on or near the bedrock surface for at least 2000 feet to the east of these mineralized skarn outcrops (See Geological Report).

METHOD OF SURVEY

Instrument:

A Worden Pioneer gravimeter, No. 251, was used during the entire survey. The instrument is capable of being read to 0.01 milligal.

Survey Grid:

In total 48,000 feet of line was cut over the Sea Claims for the gravity survey. A base line 8800 feet in length, bearing 90^{o}, was established. Cross lines of 800-foot spacing were cut 1500 feet on either side of the base line except for ground over claims held by Kerr-Addison Mines; lines 40W and 32W were cut 3000 feet south of the base line. All readings were taken at a station interval of 100 feet. The grid was laid out by picket and chain methods and later surveyed by stadia.

Elevation and Ground Control Survey:

Each 100-foot gravity station was surveyed for location and elevation by stadia traverse methods. Elevations were looped and misclosures over 0.7 feet were re-run.

Gravity Survey:

The gravity survey was conducted by United Geophysical of America, who supplied Mr. A. Rich as instrument operator and surveyor. Mr. A. Harman, an employee of Dynasty Explorations, surveyed most of the claim group for gravity station location and elevation.

Permanent base stations were set up on the base lines, each was read with the meter and "looped" in order to provide accurate control of instrument drift and diurnal variations. Precision on repeated stations was maintained to 0.05 milligals. There were no conditions of extreme topography or climate, thus eliminating anomalous discrepancies. The closest base station was read every two hours in order to establish drift and diurnal variation corrections for the actual survey. Stations were read at 100-foot intervals on each cross line.

Data Reductions:

All gravity reductions were carried out by United Geophysical, each station was corrected for latitude, drift and elevation above datum. A Bouguer density of 2.77 was used by United for elevation corrections.

The contracted company presented Dynasty Explorations with a topographic map, and Bouguer Gravity interpretation of the Sea Claim Group.

INTERPRETATION

Bouguer Density:

Inspection of the Bouguer gravity results in comparison with local topographic relief gives evidence of the possibilities of "over correction".

Comparison of the Bouguer gravity profiles and the topographic profiles over four survey lines in the area, show that in many cases topographic lows give rise to gravity "highs" and vice versa.

Recent drilling results have shown depths of overburden to be in excess of what was previously expected. In order to re-evaluate the gravity results the depth of overburden should be considered. This has been done, however, the data is not available as it has been submitted to United Geophysical for further examination.

Line 76W was observed to be a good example of "over-correction" For example, a hill approximately 30 feet in relief and assumed to be composed ov overburden, gives an elevation correction of .07mg/ vertical foot if it has a density of 2.0. Therefore, 30 feet of overburden will give a correction of 2.1 mg. If the hill is assumed to be composed of a material of 2.8 density (2.77 used by United for Sea Group), the correction for 30 feet of this material will be 1.8 mg./foot; the difference in corrective factors is then 0.3 mg. It is evident in this case that the Bouguer value has then been influenced by the accumulation of overburden and should be corrected by a factor of 0.3 mg.

Line 76W also reflects a valley as shown by a gravity "high". Correction for the valley by using a density of 2.8 to datum, would result in a higher Bouguer value than if the density of overburden were used. The valley has a depth of 30 feet so the anomaly should be reduced by a factor of 0.3 mg. This would give an anomaly of 0.2 mg.after correction. The sulphides obtained in SRH-3, if estimated to have a density contrast of .3 (due to their disseminated nature) and comprising a semi-infinite slab of 40 feet thickness, would give an anomaly of .15 mg.

General Interpretation:

An attempt was made to remove the regional gradient over the western end of the Sea Group gravity survey but the residual gravity results were inconclusive and generally similar to the Bouguer Interpretation. It is difficult to choose a regional gradient over the area with the limited gravity information known.

If the "over-correction" factor is ignored, the gravity anomaly is trending approximately 290°, and matches well with the location and size of the magnetic anomaly over the same area (see Magnetometer Survey - Sea Claim Group).

In many cases the gravity anomaly obtained can be accounted for by drilling results. In the vicinity of DDH-3, if the sulphides encountered were assumed to be of uniform nature and an infinite slab 30 feet thick with a density contrast of 0.9, the anomaly obtained due to this causative structure would be in the order of 0.34 milligals. This is comparable to a 0.4 milligal anomaly as shown on the Bouguer map if a 4.5 milligal background is adopted.

Total mass calculations over the anomaly gave a result of 2.5 million tons at a depth of 750 feet. This result does not correspond with depth of approximately 100 feet as given by the magnetic results. Tonnage calculations are not considered to be of value due to the difficulty of determining a "background" on the Bouguer map, overburden effects and influence of regional gradient.

SUMMARY AND RECOMMENDATIONS

The gravity survey results at this stage do not warrant a detailed interpretation until the effects of overburden are understood. Although in many cases the gravity may be explained by drill results obtained, no solution is unique and many assumptions have been used in order to calculate figures as to the dimensions and composition of any causative structure.

It is of interest to note the same approximate strike of the gravity and magnetics as well as geochemical soil anomalies. The area of deepest overburden is to the northwest end of the survey area, this same zone proved to be of interest from drill results as well. It appears conceivable that by re-calculating the raw gravity results using a correction for overburden, a new interpretation could be obtained that would aid in future drilling. At the present time this zone is only recognized by a strong east-west linear on the Bouguer map.

APPENDIX 1.

SUMMARY OF COSTS AND EXPENDITURES

Gravity Survey - Sea Claim Group

Linecutting:		
a) Footage:	48,100	
b) Contract	$7/1000 ft.	
Cost:		$ 336.00
Gravity Survey:		
a) Elevation and Location Survey		
i) Rod Man	$10/day	
ii) Surveyor	$14.50/day	
iii) Time	14 days	
Cost:		343.00
iv) Camp Cost @ $6/day		168.00
v) Calculations		200.00
b) Gravity Survey		
i) Operator and Instrument @	$60/day	
ii) Time	8 days	480.00
iii) Camp Cost @	$6/day	48.00
iv) Data Reductions		300.00
TOTAL		$1875.00

Appendix 2

AFFIDAVIT Supporting Statement of Expenditure,
Gravity Survey, Sea Mineral Claim Group

I, John S. Brock, of West Vancouver, British Columbia, have compiled the statement of cost and expenditure as submitted under this report, 'Gravity Survey, Sea Mineral Claim Group.

I make oath and say that to the best of my knowledge and belief, the statement of cost and expenditure as presented in this report, is both true and an accurate representation of costs to be applied as a portion of the assessment work to hold previously mentioned mineral claims under Section 53-2 of the Yukon Quartz Mining Act.

John S. Brock

Commissioner for taking affidavits in and for the Yukon Territory

Witness (signed in presence of commissioner of oaths)

June 23/65
date

APPENDIX 3

PERSONNEL

United Geophysical of America - Gravity Operator:	A. Rich, Edmonton, Alberta.
Surveyor:	A. Harman, Salmo, B.C.
Rodman:	McCleary Acklack, Ross River, Y.T.
Linecutters:	Robert Etzel, William Peter, Charlie Ollie, Jack Ladue, all of Ross River, Y.T.
Supervision:	R.E. Gordon Davis, Vancouver, B.C.
Report:	John S. Brock, West Vancouver, B.C.

APPENDIX 4

REFERENCES USED IN REPORT

Geology and Mineral Occurrences, Vangorda District, Central Yukon.

A private report to Dynasty Explorations Limited
by John F. Fairley (1965)

Magnetometer Survey, Sea Claim Group,

A private report to Dynasty Explorations Limited
by John S. Brock (1965)

Consultants Report to Dynasty Explorations (1964).
by Dr. Douglas D. Campbell

Geophysical Prospecting for Oil,
by L. L. Nettleton (1940)

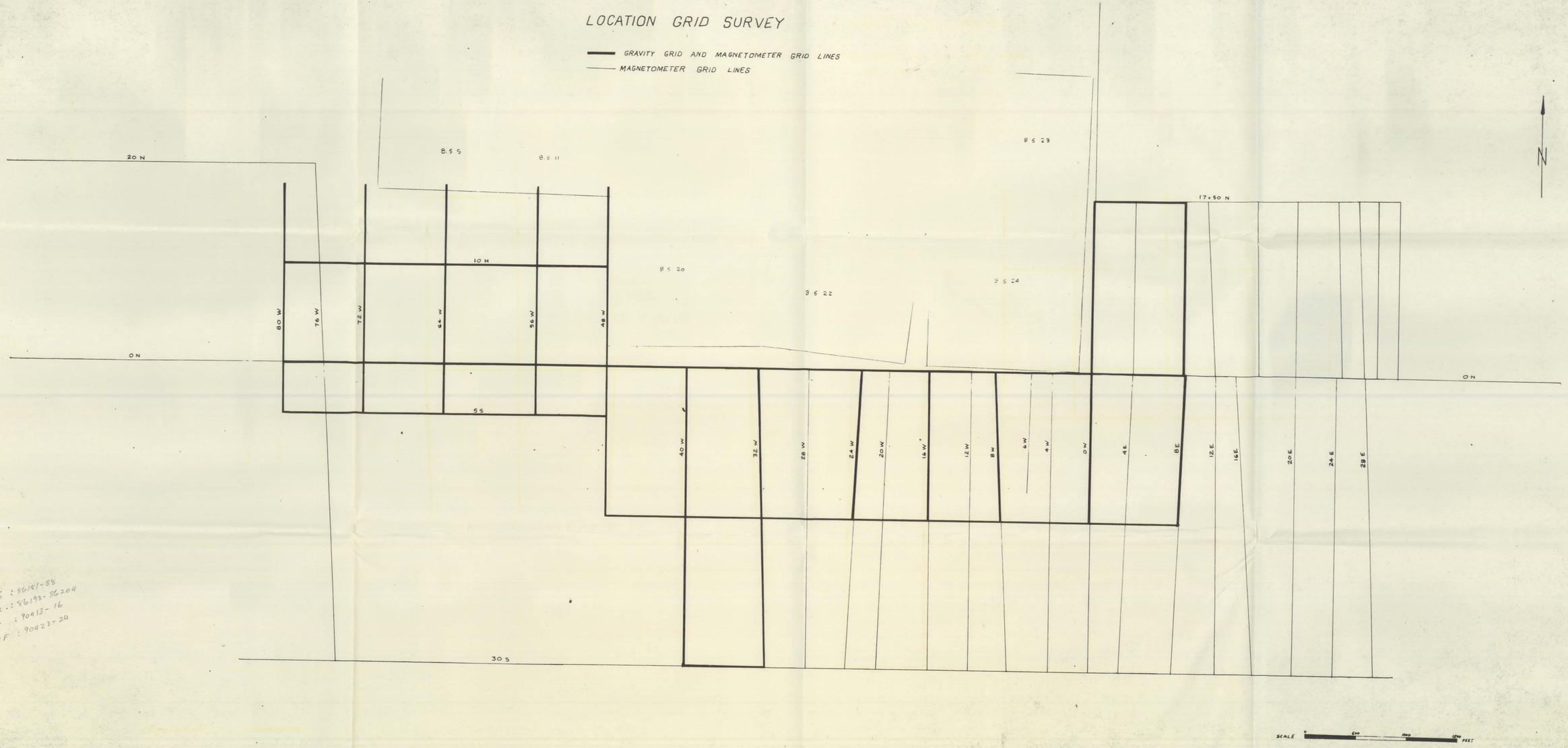
Geophysical Prospecting (2nd Edit.)
by M. B. Dobrin (1960)

SEA GROUP SOUTHEAST

LOCATION GRID SURVEY

GRAVITY GRID AND MAGNETOMETER GRID LINES

MAGNETOMETER GRID LINES



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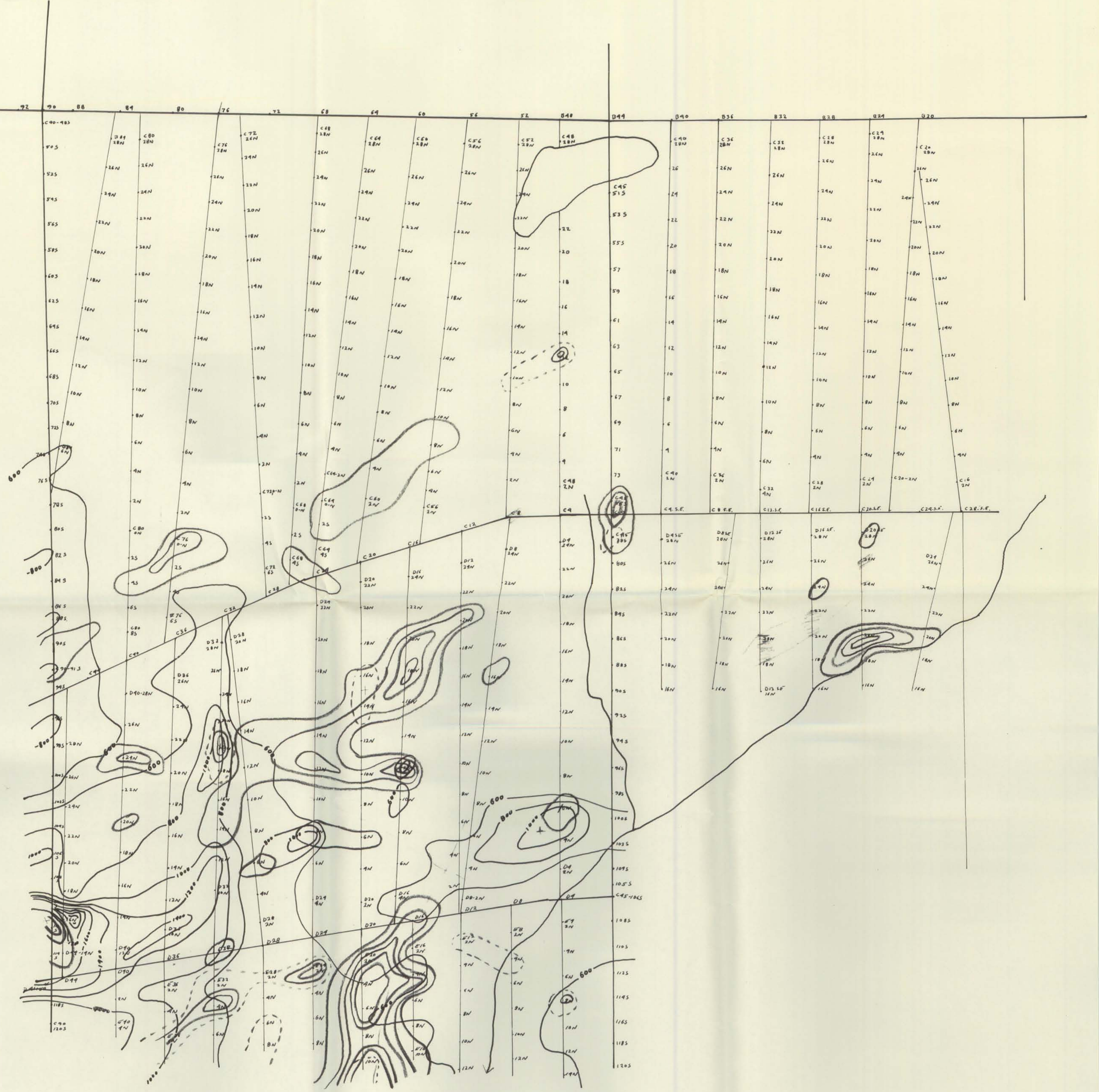
61 – 72 : 86193-86204
1F – 4F : 90413-16
11F – 12F : 90423-24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D20
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C68 28N
C64 28N
C60 28N
C56 28N
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C20 28N
C45 S15
C90 2N
C36 2N
C32 4N
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C12 S.E.
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C28 S.E.
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D44 28N
D40 28N
D36 28N
D32 28N
D28 28N
D24 28N
D20 28N
D16 28N
D12 28N
D8 28N
D4 28N
C45-108S
600
800
1000
1200
1400
1600

62° 11' 30"

62° 11' 30"

SWIM LAKE

FINGER LAKE

62° 11'

62° 11'

62° 10' 30"

62° 10' 30"

132° 55'

132° 54'

132° 53'

LINE 15N

LINE 10N

LINE 00

LINE 5S

LINE 72W

LINE 64W

LINE 56W

LINE 48W

LINE 40W

LINE 24W

LINE 16W

LINE 8W

LINE 0

LINE 8E

4.0

4.5

5.0

5.1

5.4

42

43

44

45

DYNASTY EXPLORATIONS LIMITED

SEA GROUP PROJECT
YUKON TERRITORY

BOUGUER

UNITED GEOPHYSICAL CO. OF AMERICA
PARTY 588

Contour Interval 0.1 MG.
Scale 1inch = 400ft.

Interpretation by A. RICH
Approved by R.B. SALESKI

Date NOV. 1964