020780

PAN, BILL, LO CLAIMS

GRAVITY INTERPRETATION

Yukon Territory

for

ANVIL MINING CORP.

by

ROBERT B. GALBRAI, P. Geoph.

July, 1966

Paro, Mill, Le Claire
Gravity Interpretation

Field work was completed on the above claims by United Geophysical Company of America, approximately 1650 stations having been surveyed and metered. United prepared elevation and Bouguer maps of the field data. These are included with this report.

The writer plotted Bouguer gravity, regional and residual profiles which are attached to this report. Regionals were drawn through the profiles and tied. Regional and residual maps (both included in this report) were prepared by the profile method. Also prepared and included was another residual map by the template method. Computations were based on the residual profiles.

Elevation Map:

Elevation varies from a high of 4677' at the west end of the northernmost base line to a low of 3719' at 10 west on the south base line. Two southward-flowing streams have cut small valleys across the area. None of the gravity features seems to be related in any way to topographic variations.

Therefore the elevation correction factor of .060 (corresponding to a surface density of about 2.7) was an adequate figure to use in Bouguer calculations.

Bouguer Map:

The Bouguer map indicates one outstanding anomaly so great in relief that the south flank has nearly a full milligal of gravity gradient against strong regional north gradient. Although there are no other positive anomalies of this magnitude there are several well-defined closings and flattenings which show up as residual closures. These will be described in detail in a following section of the report. A feature of interest is a steep northern gravity gradient which follows the westerly half of the north base line, curves southeasterly to the south base line which it follows to the southeastern corner of the area. This appears to represent a line of demarcation between two highly different rock types at medium depth (1000'-2000').

Regional Map:

The regional map was constructed from the

profiles. It should be considered inaccurate in a 1000' band along the edge of the mapped area. It shows fairly regular, relatively steep northern and northeastern gravity gradient. Interruption in the general east-west strike parallels the demarcation line mentioned above. It appears that at great depth (2000'+) rocks to the south are heavier than those to the north; or at great depth a mass of heavy rock dips northward.

Profile-Residual Map:

This map was constructed from the Bouguer profiles. Since it represents a plot of the difference in values between Bouguer and regional, it tends to isolate effects caused by rock changes in the zone between the surface and a depth of approximately 1500'. Since the regional values could not be accurately determined around the edge of the observed data, caution should be exercised in evaluating residual anomalies in these areas. Significant positive anomalies are lettered "A" through "G" for reference. Computations pertaining to these anomalies were based on the Bouguer and residual profiles and on the

profile-residual map. Though the procedure is highly inaccurate, an attempt has been made to show the approximate edges of the causative heavy material in the case of each anomaly. Below is a brief description of the masses assumed to cause each anomaly. Tonnage computations are given to show relative sizes of causative masses. Should you wish to supply the writer with representative samples of country rock and ore, more accurate estimates will be made.

"A" - This is the most outstanding positive gravity anomaly the writer has ever seen. It is slightly unsymmetrical suggesting small dip to the south and west.

Relief: 2.6 mgals.

Length: 3300'-3900'

Width: 1200'±

Average depth to top: 250'

(103-255 ave = 180')

Thickness: 240'± in the region of highest gravity values.

Tonnage: 65 million. This estimate is 30% higher than a previous one made by the writer. The figure of 65 million tons is based on a more accurate residual map and on a more optimistic evaluation of the lateral extent of the gravity effects of the deposit.

"B" - Possibly a slab-like extension of "A".

Relief: 0.9 mgals.

Length: 1600'-2600'

Width: 1000'+ (maximum)

Average depth to top: 435'

Average thickness: 70'

Tonnage: 17 million.

"C" - Separate from "B". Appears relatively flat on top and reasonably shallow.

Relief: 0.7 mgals.

Length: 2000'

Width: 700' (?) maximum

Average depth to top: 145'

Thickness: 100'+ (maximum)

Tonnage: 9 million.

"D" - Slab-like, deep.

Relief: 0.6 to 1.1 mgals.

Length: 3200'

Width: 1600'

Average depth to top: 430'

Average thickness: 95'

Tonnage: 20 million.

"E" - Fairly well developed. North dip.
Relief: 0.5 to 0.8 mgals.
Length: 1200'
Width: 700' (maximum)
Depth: 185'-315'
Tonnage: 4 million.

"F" - Very strong Bouguer gradient in the southeast corner of the area. Residual gradient shown is less in fact than by choice (guess!). This looks suspiciously like a regional feature in its entirety. More gravity work should be done south and east of present control to confirm this.

"G" - Very small sharp, shallow feature. Since it appears on only one line and since it is caused largely by a 0.9 mgal. change in Bouguer value in 200', it is highly suspicious. It should be re-checked in the field.

All computed values noted above are based on an assumed density contrast of 0.9 between country

rock and causative masses and on the assumption of certain geometrical shapes of the heavy masses. To the extent that these assumptions are in error the computed values will be in error.

Template Residual Map:

A second residual map was constructed using a four-point average on a 1400' diameter ring for regional control. The purpose of this was to provide a mathematically controlled check on the more highly interpretational profile residual map. The tendency of anomaly orientation at 45 to the grid pattern is inherent in the four-point method. Anomalies "A" through "G", mapped by the profile method, are confirmed on this map. No additional anomalies were developed.

Recommendations:

1. Since an active drilling programme has been underway on the "A" anomaly, no further recommendations are made pertaining to it.

2. Drill the "B" anomaly between station 12N, line 52W, and station 12N, line 48W. Be prepared to go to 500'+.

3. Drill the "C" anomaly at 59+ on the north base line. 200' should adequately test it.

4. Drill the "D" anomaly at 52 on line 8W. A 600' hole is necessary for a proper test.

5. Drill at 20S on line 28W to 300' to test the "E" anomaly.

6. Run a gravity line from the intersection of line 4E and the south base line southeasterly for at least 3000' to determine the significance of the steep gravity gradient in the southeastern corner of the area.

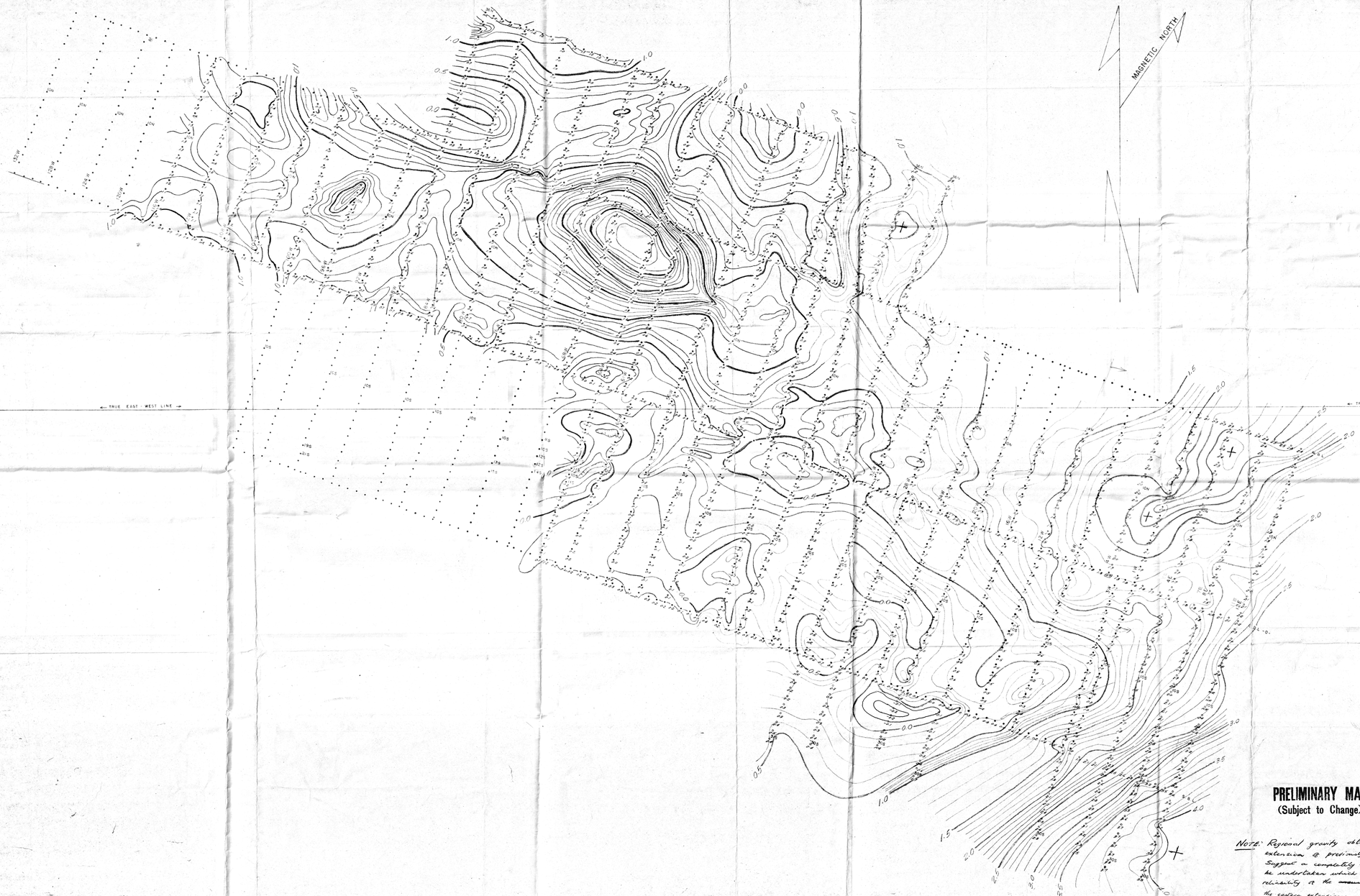
7. Re-water and re-survey line 36W. If the anomaly shown there is confirmed test it with a hole between stations 11S and12S. Be prepared to go to 300'.

8. If the "C" anomaly proves to be caused by a deposit of sulphides, consider running a gravity profile 300' north of the north base line and parallel to the north base

line from the centre of the gravity low west of "D" to 20%.

Respectfully submitted,

Robert D. Galeski,
Professional Geophysicist.



ANVIL MINING CORP.

GRAVITY SURVEY

OF

FARO, BILL, LO CLAIM GROUPS

VANGORDA AREA, YUKON TERRITORY

PRELIMINARY MAP
(Subject to Change)

RESIDUAL GRAVITY

NOTE: Regional gravity obtained from extension of previously used regional. Support or completely new regional study be undertaken which would increase the reliability of the ~~missing~~ residual gravity of the eastern extension.

BY

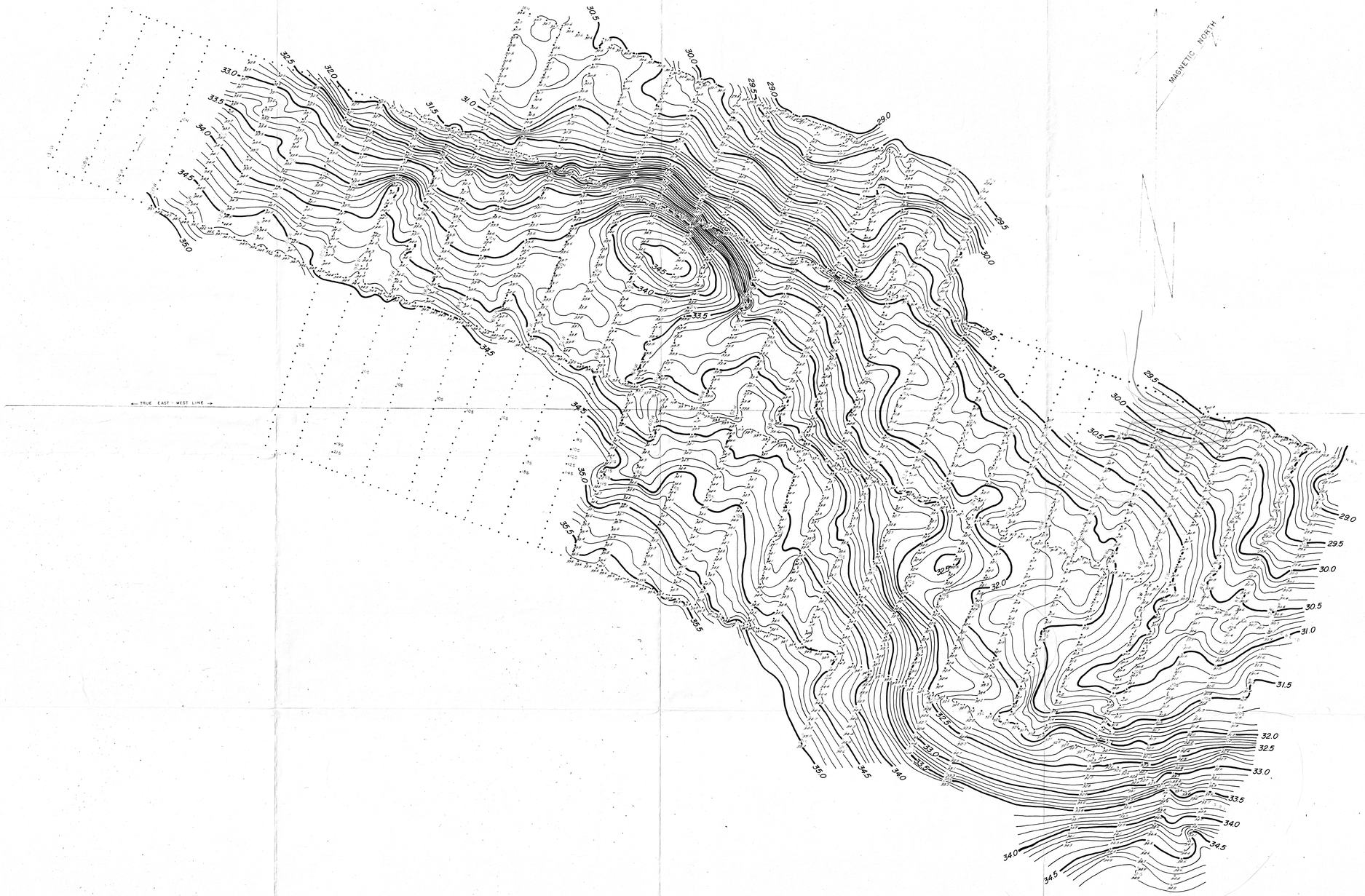
UNITED GEOPHYSICAL CO.

SCALE: 1" = 400'

DATE: 1965, • 1966: •

C.I. = 0.1 mg.

INTERPRETATION BY: R.J. Lisle
(Amended east portion of map)



ANVIL MINING CORP.

GRAVITY SURVEY

OF

FARO, BILL, LO CLAIM GROUPS

VANGORDA AREA, YUKON TERRITORY

BOUGUER

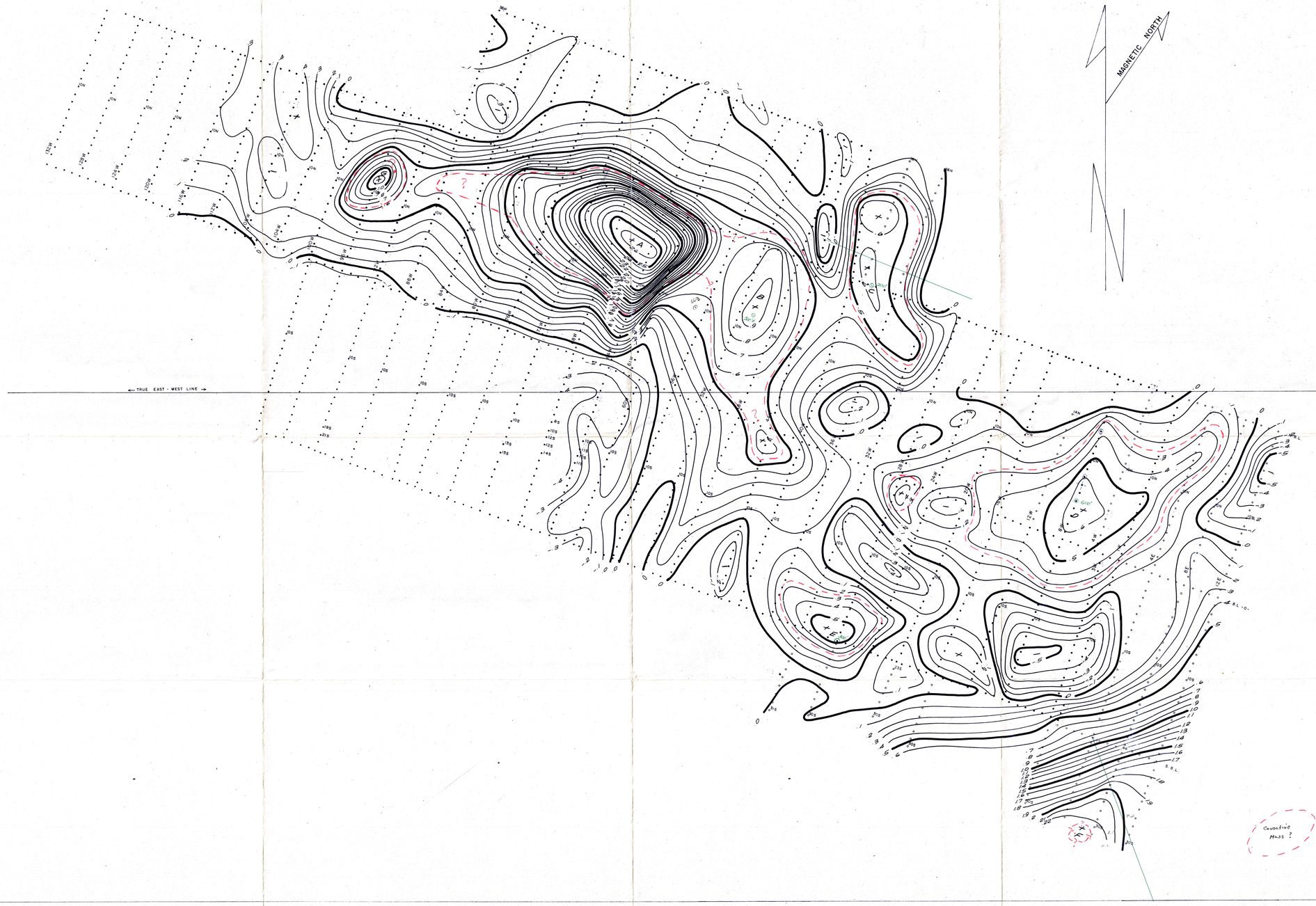
ELEVATION CORR. FACTOR: 0.059

BY

UNITED GEOPHYSICAL CO.

SCALE 1" = 400' DATE: 1965 - 1966

C.I. = 0.1 MG. INTERPRETATION BY: R.Z. EDDO



ANVIL MINING CORP.

GRAVITY SURVEY

OF

FARO, BILL, LO CLAIM GROUPS

VANGORDA AREA, YUKON TERRITORY

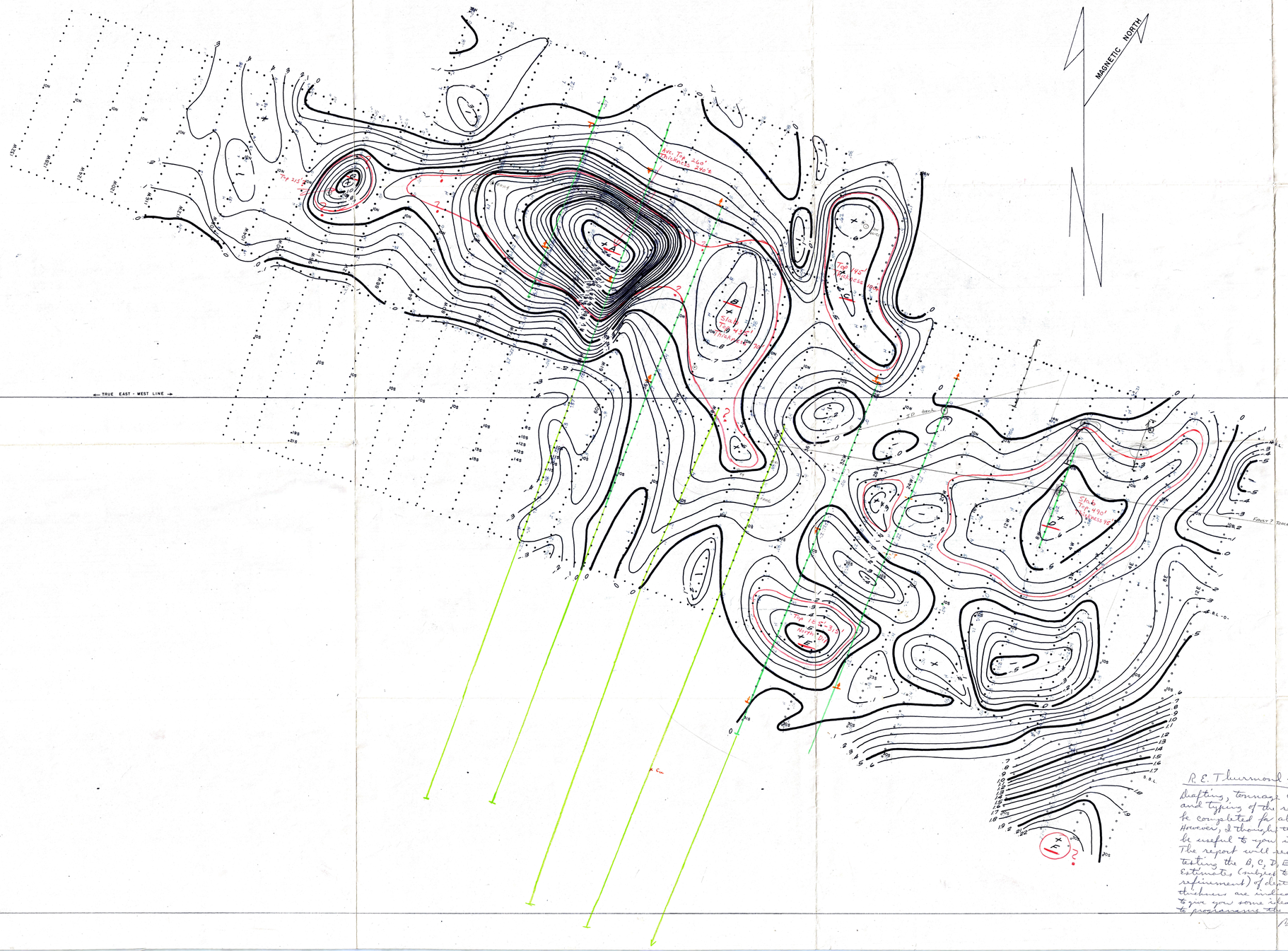
PROFILE - RESIDUAL MAP

BY

UNITED GEOPHYSICAL CO.

SCALE: 1" = 400' DATE: 1965: • 1966: ◦

C.I. = 0.1 M.gal. INTERPRETATION BY: R.B. SALESKI



ANVIL MINING CORP.

GRAVITY SURVEY

OF

FARO, BILL, LO CLAIM GROUPS

VANGORDA AREA, YUKON TERRITORY

→ Preliminary ←

PROFILE - RESIDUAL MAP

BY

UNITED GEOPHYSICAL CO.

SCALE: 1" = 400' DATE: 1965: • 1966: •

C.I. = 0.1 M.gal. INTERPRETATION BY: R.B. GALESKI

R. E. Thurmond — Note

Drafting, tonnage computations, and typing of the report won't be completed for about a week. However, I thought this might be useful to you in the interim. The report will recommend testing the B, C, D, E anomalies. Estimates (subject to possible refinement) of depth to top and thickness are indicated in red to give you some idea of how deep to program the holes.

Rob Galeski



DYNASTY EXPLORATION LTD.

GRAVITY SURVEY

FOR

FARO, BILL, LO CLAIM GROUPS

VANGORDA AREA, YUKON TERRITORY

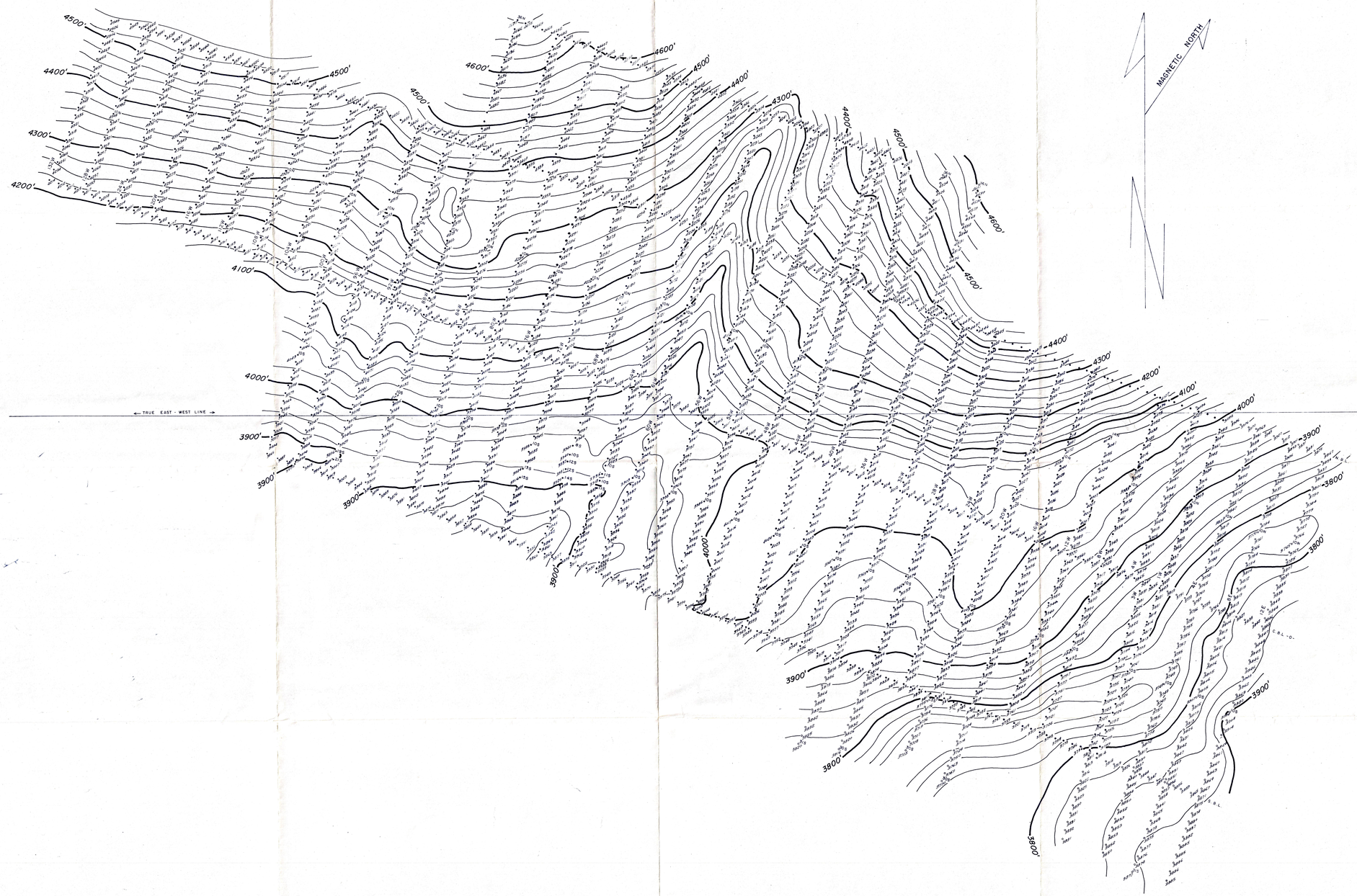
RESIDUAL MAP

BY

UNITED GEOPHYSICAL CORP

SCALE 1"=400' DATE 1965

CI = 0.1 Mg INTERPRETATION BY R.B. GALESKI



ANVIL MINING CORP.

GRAVITY SURVEY

OF

FARO, BILL, LO CLAIM GROUPS
VANGORDA AREA, YUKON TERRITORY

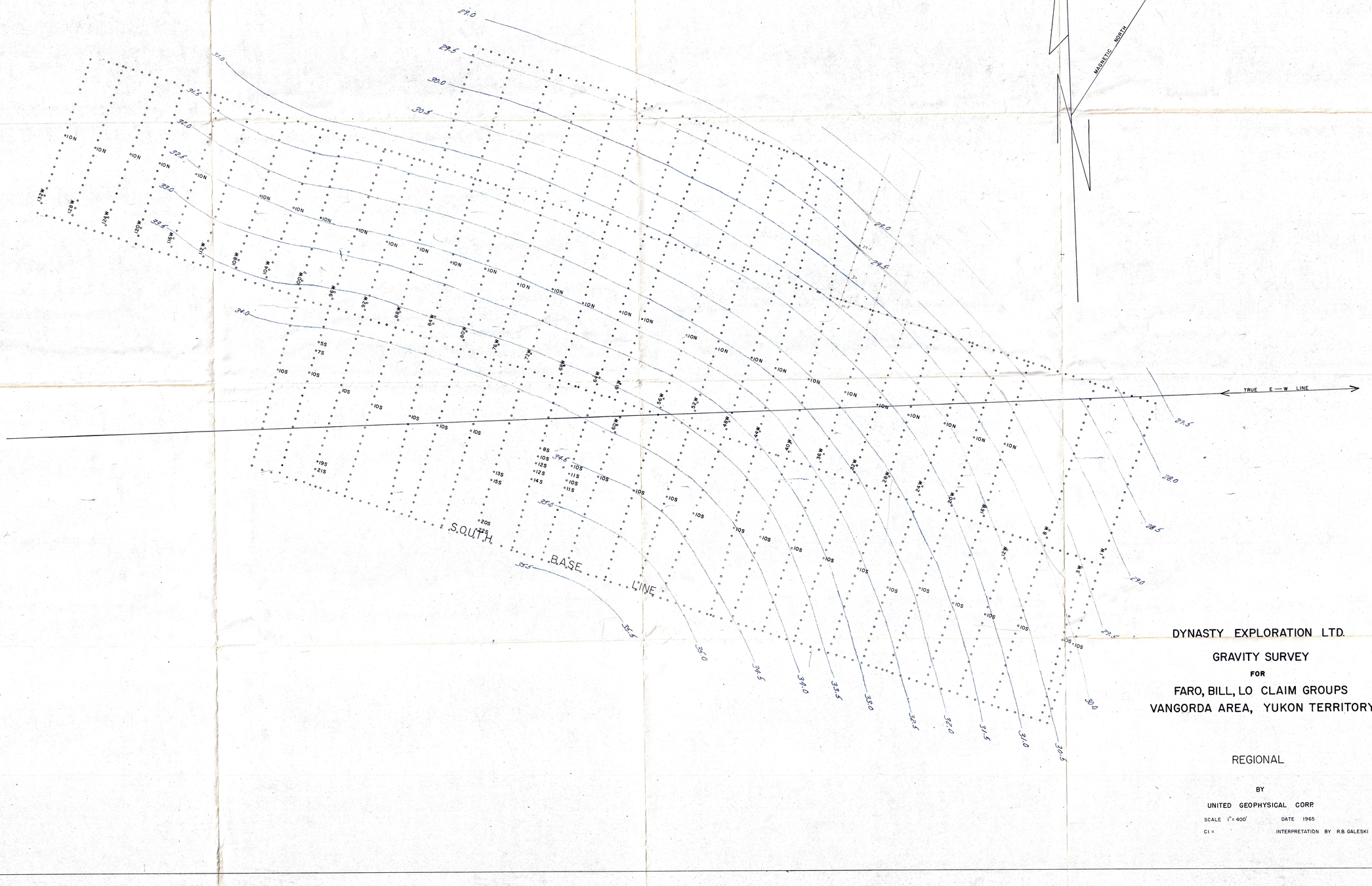
ELEVATION

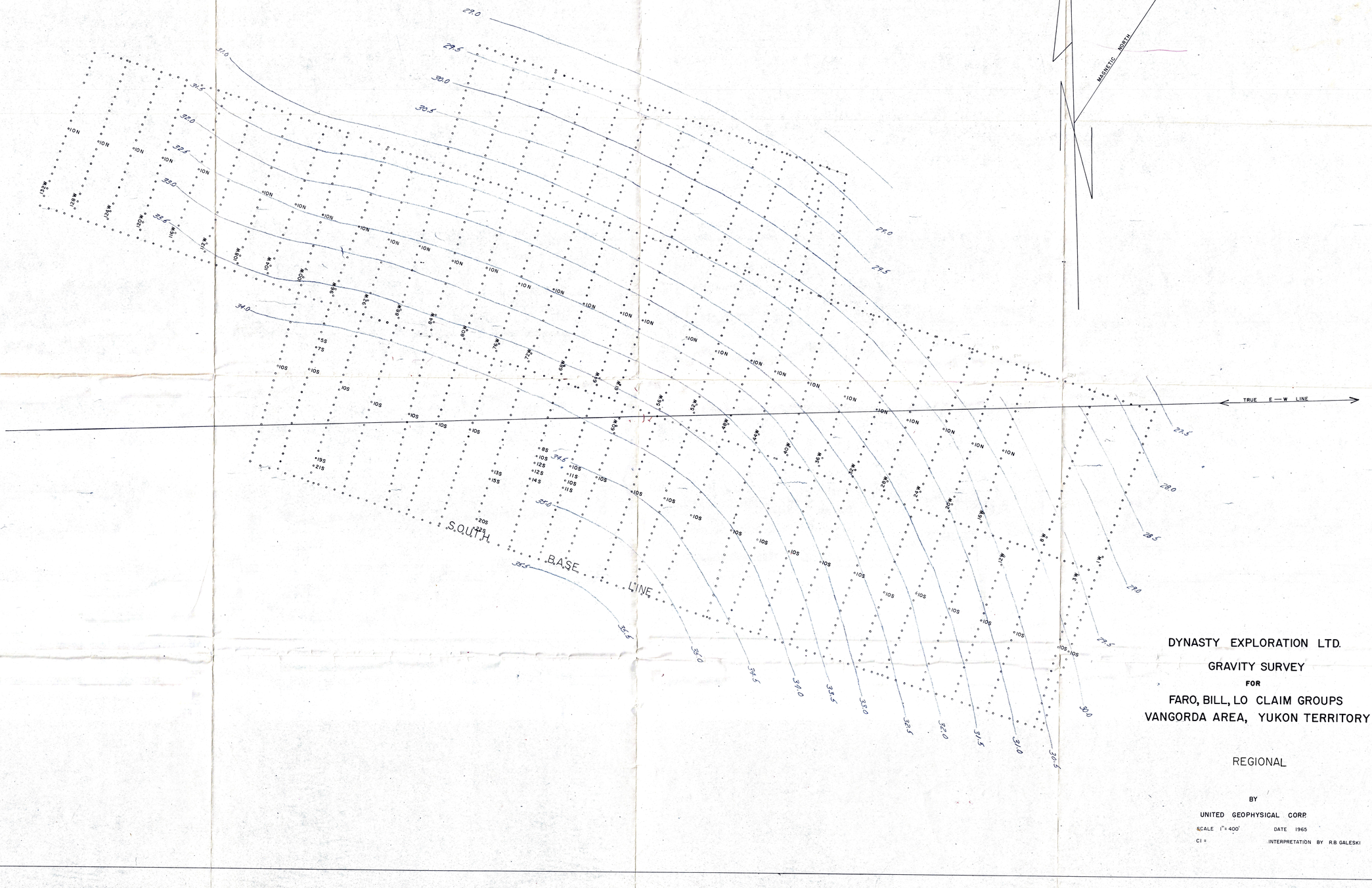
BY

UNITED GEOPHYSICAL CO.

SCALE: 1" = 400' DATE: 1965: • 1966: .o

C.I. = 25 Feet INTERPRETATION BY: J.P. JANISZEWSKI


MAGNETIC NORTH
TRUE E — W LINE
SOUTH BASE LINE
DYNASTY EXPLORATION LTD.
GRAVITY SURVEY
FOR
FARO, BILL, LO CLAIM GROUPS
VANGORDA AREA, YUKON TERRITORY
REGIONAL
BY
UNITED GEOPHYSICAL CORP.
SCALE 1"= 400' DATE 1965
CI = INTERPRETATION BY R.B. GALESKI


MAGNETIC NORTH
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REGIONAL
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UNITED GEOPHYSICAL CORP.
SCALE 1" = 400'
DATE 1965
CI =
INTERPRETATION BY R.B. GALESKI

E 15000

E 16000

E 17000

E 18000

E 19000

MAGNETIC NORTH

TRUE E — W LINE

N 8000

N 7000

N 6000

N 5000

DYNASTY EXPLORATION LTD.

GRAVITY SURVEY

FOR

FARO, BILL, LO CLAIM GROUPS

VANGORDA AREA, YUKON TERRITORY

RESIDUAL

BY

UNITED GEOPHYSICAL CORP.

SCALE 1" = 400' DATE 1965

CI = INTERPRETATION BY R.B. GALESKI

.05 m.g. max. allowable
.06 m.g. = 1 ft. elevation

E 7000
E 8000
E 9000
E 10,000
E 11000
E 12,000
E 13000
E 14000

N 12000
N 11,000
N 10,000
N 9000
N 8000

SOUTH BASE

PRELIMINARY MAP