A Report on
Gravity Surveys
Anvil Area, Yukon Territory

by

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A REPORT

ON

GRAVITY SURVEYS

Anvil Area, Whitehorse M.D.,

Yukon Territory

FOR

ANVIL MINING CORPORATION LIMITED

Faro, Yukon Territory

BY

PETER E. WALCOTT & ASSOCIATES LIMITED

Vancouver, British Columbia

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ACCOMPANYING MAPS — MAP POCKET

Scale 1" = 200'

PROFILES OF BOUGUER GRAVITY AND SURFACE ELEVATIONS
Seamor grid - west sheet, east sheet
B.L. & T.L. ..... W-166-15 to 17

Dea-Kay grid - west sheet, east sheet
B.L. & T.L. ..... W-166-21 to 23

Scale 1" = 400'

CONTOURS OF SURFACE ELEVATION - Seamor grid .. W-166-18

BOUGUER GRAVITY - Seamor grid W-166-19

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RESIDUAL GRAVITY - " " " W-166-26

INTRODUCTION

Between March 20th and May 14th, 1973, Peter E. Walcott & Associates Limited carried out gravity surveys over parts of various claims held by Anvil Mining Corporation Limited.

The surveys were carried out on handcut lines 800 feet apart on grids known respectively as the Seamor and Dea-Kay grids.

Measurements of relative gravity were made every 100 feet along the picket lines using a CG-2 gravity meter. In addition elevations at each of the gravity stations were obtained using a Wild T-1A theodolite and rod.

The data was then processed and presented in profile and contour form on Maps W-166-15 to 26 that accompany this report.

PURPOSE

The purpose of the survey was to try and locate by the gravimetric method the presence of any mineralized deposits.

It was anticipated that a typical deposit of the area should give an anomaly of 0.5 milligals or better.

SURVEY SPECIFICATIONS AND PROCEDURES

The gravity survey was carried out using a Scintrex CG-2 gravity meter, which measures variations in the earth's gravitational field to an accurracy of ± 0.01 milligals.

Values of observed gravity were obtained every 100 feet along the picket lines. Corrections for meter drift were made by tying-in to previously established base stations at intervals not exceeding 2 to 3 hours. Drifts of over 0.10 milligals per hour were not allowable.

The elevations of the gravity stations were determined by rod and transit (Wild T1-A theodolite) using the stadia method. Errors in the tying-in of loops were kept to a minimal, this being dependent on the severity of the topography.

Density profiles were run over topographic features to determine the density of the underlying rocks.

Corrections were then applied to the observed gravity values for the differences in elevation and latitude. Terrain corrections were calculated in areas of steep topographic relief from the contoured elevation maps and supplementary field observations using a standard three circle template.

The final Bouguer gravity values were then plotted and contoured.

The regional gravity effects were established from the profiles by graphical smoothing. These were then plotted and contoured, further smoothed and replotted on the profiles.

The differences between the Bouguer gravity values and the regional effects, the residual gravity values, were then computed and plotted.

Seamor grid

23 Gravity base stations were established from the main base station (M.B.S.) around the perimeter of the area surveyed (approx. 7 miles). The closure of these was 0.09 milligals with a tie across the middle of 0.05 milligals. This error was then distributed evenly around the loop.

The closure on the elevation survey around the perimeter was 0.17 feet. Tie-ins on the subsequently surveyed picket lines were ± 0.2 feet.

SURVEY SPECIFICATIONS AND PROCEDURES cont'd

Three density profiles were carried out over topographic highs resulting in densities of 2.45, 2.50 and 3.10 gm/cc respectively. A density of 2.50 gm/cc was then used for Bouguer corrections.

Inner circle terrain corrections were made over the cliff areas as shown on the profiles.

The final Bouguer gravity was contoured at 0.2 milligals, the residual gravity at 0.1 milligals above 0.3 milligals, and the surface elevations at 50 feet.

Dea-Kay grid

17 Gravity base stations were established from the main base station (M.B.S.) around the perimeter of the area surveyed (approx. 3.3 miles). The closure on these was 0.09 milligals with a tie across the middle of 0.02 milligals. This error was then distributed evenly around the loop.

The closures on the elevations were 0.40 feet or better on a 6000 - 7000 foot loop with everything being tied on the road that dissects the grid.

Density profiling over a topographic feature resulted in a density of 2.70 gm/cc being used in Bouguer corrections.

Considerable problems were encountered on the cliffs that resulted in many busts and caused many re-runs before satisfactory closures were obtained.

Problems were also encountered in drawing the base map as neither the angled tie-line nor some of the cross lines were straight particularly in areas where they traversed rough topography.

This results in discrepancies of the gravity and elevation plots in location and values near the tie line on the western portion of the grid.

DISCUSSION OF RESULTS

Seamor grid.

Only one gravity anomaly of significance, Anomaly "A" on Map W-166-20, was observed on the residual map. This is most probably caused by overcorrecting for terrain effects on the cliff sides as can be seen from the Bouguer profiles, Map W-166-16, where both terrain corrected and uncorrected values are shown.

Dea-Kay grid.

Six residual anomalies were obtained as can be seen from Map W-166-26.

Anomaly "A" is a large irregular shaped broad anomaly with steep gradients on its flanks. The irregularity is probably due to topographic effects as the ground surface is fairly uneven in the area.

The maximum possible depth, as calculated from the flank gradient and amplitudes, was 170-210 feet. However this depth could be somewhat lesser due to the above mentioned irregularity.

An excess mass estimation yielded a figure of 2.8 million tons.

Anomaly "B" is attributable to terrain corrections as can be seen from the profiles, Map W-166-22.

Anomaly "C" is also attributable to terrain corrections - Map W-166-21.

Anomaly "D" is a small anomaly on the baseline with no definition.

Anomaly "E" is a low amplitude anomaly.

Anomaly "F" is a small anomaly on the tie line with no definition.

The large negative anomaly occurring on the tie line around 24 W is due to topography as the tie line runs along and below the side of a steep cliff. No terrain corrections were attempted as no information on elevations was available south of the tie line.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Between March 20th and May 14th, 1973, Peter E. Walcott & Associates Limited carried out gravity surveys over parts of various claim groups for Anvil Mining Corporation Limited.

The claim groups are located in the Anvil area of the Yukon Territory.

The survey indicated the presence of a number of gravity anomalies only one of which was thought to be worthy of further discussion.

This anomaly, Anomaly "A" on the Dea-Kay grid, is a large irregular shaped anomaly having a suggested maximum possible depth of 170 - 210 feet, shough possibly shallower, and an excess mass of 2.8×10^6 tons.

As a result the writer concludes that the above mentioned anomaly is most probably caused by bedrock relief due to its lack of geochemical response and suggested shallower depth.

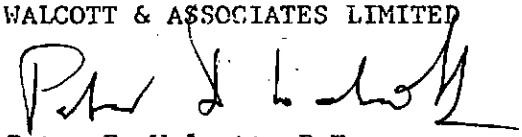
He therefore recommends that

(1) no further work be done on the Seamor grid

(2) consideration be given to carrying out magnetic and possible borehole investigation of the forementioned anomaly to determine its causative nature.

Respectfully submitted,

PETER E. WALCOTT & ASSOCIATES LIMITED



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