KERR ADDISON MINES LIMITED
44 KING STREET WEST
TORONTO 1, ONTARIO

Swim Lake 'A' Group
Gravity Survey

Gravity
COPY

008612

JOHN IRVINE. W.M. SIROLA.

PREPARATION FOR SWIM LAKES GRAVITY SURVEY (105-K). July 7th, 1964.

The decision has been made to carry out gravity work on ten lines, spaced 800 ft. apart, covering the main anomalous zone on the Swim Lakes "A" Group. Since I do not, as yet, have a plan map of the lines, I will not attempt to state which ten would be the most appropriate, but you can sort this out for yourself. The lines should be well cut out and accurately pegged, at 100 ft. intervals from the No. 1 base line to a point 3,000 ft. south of the base line.

Before the gravity survey can be started, we will need an accurate elevation for each peg on each line. By accurate, I mean within one-tenth of a foot. We will send you a "quickset-type" level, which you may or may not have used in the past. In any case, we will arm you with adequate operating instructions. The datum for your elevations will probably have to be the level of Swim Lakes. Or, you can establish an arbitrary level at your starting point, which might be on the base line on your first line. I do not imagine that there are any convenient bench marks in the area. The levelling goes very quickly once you get the hang of it, but, unfortunately, you have no way of closing a traverse except by repeating each line. So, you will simply have to make very sure that you are reading each shot accurately, and this means making very sure that your instrument is truly level.

When you have finished the levelling, you will, of course, have to make a plan map showing the elevations of each station, so that the gravity survey can be corrected for terrain differences.

We are sending David McRae a MRT-200 radio, which, I trust, will improve communications between your two camps.

William M. Sirola.

WMS/iw.
Encls:
c.c. McRae.

KERR-ADDISON GOLD MINES LIMITED
44 KING STREET WEST
TORONTO 1, ONTARIO

P.M. KAVANAGH. W.M. SIROLA.

GRAVITY SURVEY FOR SWIM LAKES "A" GROUP, Y.T. August 6th, 1964.

Mr. Angus MacKenzie, of V-Zay Mineral Exploration, Calgary, has just advised by phone that he can get hold of a gravity meter at the following rates :

Gravity meter, in very good condition, at rental of $130.00 per week. We would have to pay shipping charges for the instrument and supply our own operator. Company estimates the job would take a week.

Several gravity meters available where we could rent the equipment, with an operator, at the rate of $45.00 - $75.00 per day plus all travel and room and board expenses of the operator. This price would include a report and map presentation of the work. Variance in the above price depends on which company carries out the work.

Mr. MacKenzie can be contacted at his Calgary office; 1143 - 17th Avenue S.W., Calgary, Alberta, phone CH4-5551.

p.p. William M. Sirola.

IW.
WMS/

KERR-ADDISON GOLD MINES LIMITED

(FOR INTER-OFFICE USE ONLY)

To W. Sirola From D. McRae

Subject Drilling on A group Swim Lakes VI. Date 5 Sept. 1964

Bill,

Looking at Tony's revised profile on L 65W I think it probable that the cause is dipping to the north. I think the DDH should go in at 10 S rather than on the peak to ensure that we go through the whole thing. This shouldn't require too much extra drilling as down a considerable slope. Unless I hear different via CNT Dawson I shall have the drill set up on L 65W 10 S.

Regards

Dave.

BILL.

THIS IS A REVISED PROFILE OF LINE 65 W. IF YOU LOOK AT THE ORIGINAL YOU WILL SEE 3 POINTS WAY OFF THE CURVE. ORIGINALLY I ATTRIBUTED THIS TO POOR GRAVITY READINGS (WIND, TREES ETC) · ON REPEATING THE FIELD GRAVITY I FOUND ALL STATIONS OK (± 0·02 mg). WE THEN LOOKED TO THE SURVEY NOTES TO FIND FIVE (CONSIDERABLE) ERRORS IN COMPUTATION OF INTERMEDIATE SHOTS - THIS DOES NOT EFFECT THE TIE ON THIS LINE.

THE PROFILE NOW RESEMBLES THAT OF LINE 69 W BUT ALSO MAKES AN EXTENSION NORTH MORE IMPERATIVE.

TOM.

PHONE: 269-1356

UNITED GEOPHYSICAL COMPANY OF AMERICA

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PASADENA TULSA HOUSTON NEW YORK CALGARY PARIS CARACAS RIO DE JANEIRO SANTIAGO

SUITE 8, 534-6TH AVENUE S.W.
CALGARY, ALBERTA

Party 583
Swim Lakes.
16th Sept. 1964.

Mr Wm. Sirola,
Kerr Addison Mines,
402 - 1112 W Pender St.
Vancouver. B.C.

Dear Bill;

Please find enclosed Bouguer Anomaly Maps - one of Swim Lakes the other of the J.B Group.

I will be moving to Dynasty tomorrow. I intend to complete the paper work in Calgary or Edmonton early in October - ie - cross sections, final Bouguer maps, report etc. - as the rush for results does not seem so immediate without the drill on the prospect

It will take about 2 days to prepare a Residual Gravity map if you require it. From the Bouguer Map of Swim Lakes to date it looks like there will be a residual high (0.5-0.8 mgals) centred about 34W & 55o's. This might show better if the remainder of Base Line 1. were run. Faults & folding are apparent on the Bouguer Map.

The program run on the J.B Group shows little of interest. The contours closely follow the pattern of the glacial debris in the area. If anything of further interest shows in the area I will try to arrange to run gravity over it.

PHONE: 269-1356

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PASADENA TULSA HOUSTON NEW YORK CALGARY PARIS CARACAS RIO DE JANEIRO SANTIAGO

SUITE 8, 534-6TH AVENUE S.W.
CALGARY, ALBERTA

The results from the Swim Group are being sent to Calgary to have the computations checked.

Could I get copies of the Mag., EM & SP maps of the gravity area on the Swim Group — strictly for my own use. I will pay for any reproduction costs.

I hope you now have sufficient gravity information on the area until October when I will send the Residual Map and/or X-sections.

Sincerely Yours.

Tony Reid

United Geo-Co.

PS — For obvious reasons I made only one copy of maps. If Toronto require a copy these should reproduce OK.

I am now at Dynasty camp — they would like to run one or two lines across the Vanguard High. This would help the interpretation of other results in this area — both Kerr A & Dynasty. Al Kulan would like to know how you feel about this. Did you get any density values on schist samples yet?

KERR ADDISON MINES LIMITED
SUITE 402 - 1112 WEST PENDER STREET
VANCOUVER 1, B.C.
PHONE 682-7401

September 21st, 1964.

Mr. William M. Sirola,
C/o The Whitehorse Inn,
Whitehorse, Y.T.

Dear Mr. Sirola :

The gravity drawings arrived by post on Saturday morning.

It is difficult to tell if the map tube has been tampered with, because the tube is not new and has pieces of old Scotch Tape on it. When the tube arrived here it was sealed by means of masking tape. There was no lid on the tube; simply pieces of paper stuffed down the tube on top of the drawings, and then the masking tape over the stuffing. As you know, masking tape can easily be removed without leaving a mark, so that it is possible that the tape has been removed then replaced.

I. Wilson.

iw.

KERR ADDISON MINES LIMITED
44 KING STREET WEST
TORONTO 1, ONTARIO

COPY

P.M. KAVANAGH. W.M. SIROLA.

SWIM LAKES GRAVITY SURVEY, Y.T. (105-K). September 28th, 1964.

Enclosed is a copy of a plan map of Tony Rich's "A" Group gravity work, and a similar contour map for the J.B. Group.

The area in which Rich will do a small amount of additional work will be in the vicinity of Line 32 W., largely because the warp in the gravity contours is similar to the warp west of the main anomaly on Line 65 W. It is conceivable that the additional work could reveal a closure in that vicinity.

There appears to be nothing of interest on the J.B. Group. The close contours shown on Line 36 are believed to be caused by a drumlin.

I managed to reach Bob Galeski in Calgary on Saturday morning, and he said that he would forward copies of all the pertinent calculations for the "A" Group to your office. He, too, has done some work on the interpretation of the anomaly on Line 65 W., and seems quite impressed with the results there. He does mention that the only other cause, other than mineralization, or a denser rock-type, could be a fault, but the shape of the anomaly would, to my mind at least, make this rather unlikely. Please note, however, that Tony Rich has shown two north-trending faults where there are rather abrupt bends in some of the gravity profiles.

The "C" Group data should be available by the end of this week.

William M. Sirola.

WMS/iw.

PHONE: 269-1356

UNITED GEOPHYSICAL COMPANY OF AMERICA

PASADENA TULSA HOUSTON NEW YORK CALGARY PARIS CARACAS RIO DE JANEIRO SANTIAGO

SUITE 8, 534-6TH AVENUE S.W.
CALGARY, ALBERTA

October 23, 1964

Mr. W. M. Sirola,
Kerr Addison Mines Limited,
Suite 402, 1112 West Pender Street,
Vancouver 1, B.C.

Dear Bill:

Gravity work on the ice is certainly not feasible in our usual oil type of exploration, the reason being that the meter never settles down enough for us to take an accurate reading. Whether or not it would be worth trying in mining work where we are looking for large anomalies is a moot point. Should you be able to get readings of sufficient accuracy to detect these rather large anomalies, the depth of the water and the material in the lake bottom would make very little difference - so little in fact that I wouldn't bother to determine these things.

It is possible to conduct gravity surveys on the water when it is not frozen by using a tripod (which can be rented) upon which the meter can be placed above the surface of the water. These things are practical for use in water up to about 20 feet deep. For work in deeper water there is a specially constructed gravity meter which can be lowered from boats to the bottom. This is quite expensive however. I will try to determine a little closer the magnitude of the error introduced by reading a meter on the ice in an effort to see if it is greater or less than the size of the anomalies you are trying to find.

Referring to the sketch which Tony sent you, I would like to suggest that the steep gradient between the relatively positive area on the southwest and the relatively negative area on the north may be indicative of a fault of considerable magnitude. I hope this is of some help to you.

Very truly yours,

Bob

RBG:pmm

Robert B. Galeski

Original in Geophysics II File

PHONE: 269-1356

UNITED GEOPHYSICAL COMPANY OF AMERICA
UNITED GEOPHYSICAL
PASADENA TULSA HOUSTON NEW YORK CALGARY PARIS CARACAS RIO DE JANEIRO SANTIAGO

SUITE 8, 534-6TH AVENUE S.W.
CALGARY, ALBERTA

December 17, 1964.

Mr. W. M. Sirola,
Kerr Addison Mines Limited,
Suite 402 - 1112 West Pender Street,
Vancouver 1, B.C.

Dear Bill:

Under separate cover we are sending six final maps on the gravity work done last fall. I picked up all the basic data from Tony a little over a week ago and brought it down to Calgary. Our staff here has replotted and redrawn contours on all of it. You can appreciate there are certain contour options that can be selected on any group of values; therefore you should consider differences in options between these maps and the preliminary maps by Tony Rich as being just that - a difference in possible lineations which you may evaluate. There is no essential difference in the basic data.

I believe the anomaly of small extent but large gravity value on the Swim Lake prospect to be the only one of genuine significance that has been found. The high gravity values along the south part of the B.S. group may indicate presence of sulphides. However, if they do I suspect that significant concentrations would be rather deep and perhaps of fairly large areal extent.

We are pleased to have had the opportunity of doing these surveys for you and would be happy to perform this sort of work again next year.

Very truly yours,

RBG:pmm

Robert B. Galeski

Copy to PMK - December 22nd, 1964
(Maps sent Dec. 21st).

KERR ADDISON MINES LIMITED
44 KING STREET WEST
TORONTO 1. ONTARIO

COPY

July 19th, 1965.

Mr. Robert Caleski,
United Geophysical Company,
718 - 5th Street S.W.,
Calgary, Alberta.

Dear Bob:

Pursuant to our telephone conversation this morning I enclose the gravity maps requested.

As I mentioned over the telephone, I would be very interested in knowing what the plan area of all the material having a density of four, or better, would be. There is a possibility now that this structure is steeply dipping, and I would be curious to know what your impressions of tonnage to a vertical depth of 1,000 ft. would be. We are not sure, as yet, from our drilling as to what the dip of the structure is, but for geophysical reasons we may have to discount the possibility of a flat dip.

The overburden depth of 60 ft. I mentioned over the telephone is actually 150 ft. north of the centre of the gravity anomaly, and I neglected to tell you that a drill hole right on the northwest end of the 5.0 milligal contour only had 14 ft. of overburden. Perhaps this figure would be more realistic than the 60 ft. I mentioned, but both overburden depths would have to be taken into consideration. It would be realistic to think of 150 - 200 ft. of rock having a density of 2.8 as occurring from the bottom of the overburden to the rock having a density of 4.

I believe you can get a very reasonable estimate of width from your half value formulas, but I would be particularly curious to know what your impressions of the dip of this zone would be. If you can work that out then, of course, you can also work out the tonnage.

Best regards and many thanks for your continued co-operation.

Yours sincerely,

William M. Sirola.

WMS:iw.
Encls:
cc. Geophysics File

KERR ADDISON MINES LIMITED
44 KING STREET WEST
TORONTO 1. ONTARIO

COPY

FRED CHOW. W.M. SIROLA.

SWIM LAKES "A" GROUP - PROPOSED ADDITIONAL GRAVITY SURVEYS. July 30th, 1965.

We have arranged with the United Geophysical Company of Calgary to do additional gravity work as follows:

From Base Line 1 to Base Line 2:

16 E., 13 E., 8 E., 2 W., 6 W., 10 W., 14 W., 18 W., 22 W., 26 W., 30 W., 38 W.

From Base Line 2 to Base Line 3:

16 E., 13 E., 6 E., 3 W., 11 W., 14 W., 19 W., 27 W., 34 W., 73 W., 77 W.

In addition, Base Line 3 should be extended 1,000 ft. past line 77 W., and the gravity survey should be extended on this base line from Line 69 W., a distance of 2,000 ft. to the end of the line.

All of these lines have been cut, with the exception of the 1,000 ft. extension on Base Line 3.

We plan to have the surveyor, who will do the levelling, arrive in Whitehorse on the evening of August 2nd, and he will catch the scheduled Beaver flight on the morning of August 3rd. The gravity operator is tentatively scheduled to arrive August 10th, but should he arrive a few days earlier they will arrange to have a light plane fly him to Swim Lakes.

You will have to assign one of your camp assistants to the surveyor as a rod man.

Dave McRae is familiar with the entire grid and he could acquaint the surveyor with all of the necessary details.

I would not anticipate any problems in finding pegs in the ground at the beginning of each line from which the surveyor could begin, and you have on hand a copy of the United Geophysical contour map showing the elevations of all stations. With a week's head start on the gravity operator, there should be no overlap between the surveyor and the gravity work.

contd./ - 2 -

Approx 35,000 ft.

KERR ADDISON MINES LIMITED
44 KING STREET WEST
TORONTO 1, ONTARIO

COPY

We inadvertently gave you one wrong co-ordinate for A-2 in our memorandum of July 28th. The correct co-ordinates for drill hole A-2 are: 14,517.00 N. 60,013.00 E.

We will look after your "Want List" with dispatch, and will add to it one large diary on which you should record all the events of the day. This should include all of the activities of the operation, and should also include certain inventories, such as gas on hand, empty drums, etc.

Regards.

William M. Sirola.

WMS:iw.

PHONE: 269-1356

UNITED GEOPHYSICAL COMPANY OF AMERICA
UNITED GEOPHYSICAL
PASADENA TULSA HOUSTON NEW YORK CALGARY PARIS CARACAS RIO DE JANEIRO SANTIAGO
718-5th STREET S.W.
SUITE 8, 534-6TH AVENUE S.W.
CALGARY, ALBERTA

October 12th, 1965.

Swim Lakes "A" Group.

Kerr-Addison Mines Ltd.,
#402, 1112 West Pender St.,
Vancouver 1, B.C.

Attention: Mr. W. Sirola

Dear Sirs:

Enclosed is a copy of the bouguer map of combined gravity results of the 1964-1965 seasons. Copy of this letter and one print of the map is being sent to Dr. Kavanagh (Toronto) simultaneously. Elevation maps will be mailed tomorrow under separate cover.

I have sketched the approximate edges of apparent anomalies, as we see them on the bouguer map. I will prepare a residual map shortly and attempt to define these more precisely. In a preliminary way, the following is suggested.

(1) Anomaly in the northwest part has not been changed by recent work.

(2) Small anomaly west of (1) and apparently associated with it. This appears to be caused by low tonnage of high density material very close to the surface.

(3) Large area underlain by a near flat-lying slab of high density material. Tonnage appears to be considerable, but depth to top may be 500' or so. At 3A and 3B, local high gravity values suggest that the high density material may be relatively closer to the surface than elsewhere over the "3" anomaly.

These maps were completed only this morning, and I have not had time to give them a proper analysis. However,

I thought you might be interested in the first impressions. Upon completion of the residual map, I will compute depths and tonnages and prepare a detailed report.

Yours very truly,

UNITED GEOPHYSICAL COMPANY OF AMERICA

R.B. Galeski

RBG/mt
encl:
c.c. Dr. Kavanagh (Toronto)

KERR ADDISON MINES LIMITED
405 - 1112 WEST PENDER STREET
VANCOUVER 1, B.C.

COPY

P.M. KAVANAGH. W.M. SIROLA.

SWIM LAKES GRAVITY ANOMALY No. 3A. October 15th, 1965.

I have just made a calculation of this anomaly based on the following criteria:

(a) The mineralized zone is essentially a flat slab 100 ft. thick.

(b) The density of the mineralization is 4.0.

(c) The density of the surrounding rock is 2.8.

(d) The depth of burial is 400 ft.

The gravity effect for this situation would be 0.4 milligals. While we do not as yet have the residual map, it would appear to me, from the bouguer results, that the final anomaly will be fairly close to the figure of 0.4 which I obtained in the calculation.

It is interesting to note that on Line 13 E. there is a self-potential anomaly which precisely coincides with the gravity high.

William M. Sirola.

WMS:iw.

KERR ADDISON MINES LIMITED
405 - 1112 WEST PENDER STREET
VANCOUVER 1. B.C.

COPY

P.M. KAVANAGH. W.M. SIROLA.

SWIM LAKES "A" GROUP - RESIDUAL GRAVITY MAP. October 27th, 1965.

We received this map from United Geophysical Company today, and, as far as I am concerned, it is an abortion which should be filed in the waste basket.

I called Duncan Crone on another matter pertaining to gravity surveys today, and he advised me that he was working on a residual map for the Swim Lakes property. So, I will not have to go after Galeski for an improved version of this map, but perhaps he will volunteer to send one on his own.

My purpose in calling Crone was that I had found an article by Stan Ward regarding a gravity survey in New Brunswick. Ward had found a 0.6 milligal closure caused by a 500 ft. width of mineralized zone containing only 2% total sulphides. This intrigued me no end because it opened up the possibilities of seeking disseminated-type deposits with the gravity meter. However, Crone advises that in order to be able to distinguish such anomalies from background effects, both terrain and the underlying rock-types must be very uniform. In the main, such a favourable state of affairs does not exist in British Columbia, and, therefore, the value of the gravity meter for this type of exploration is decidedly limited. Hopefully, however, there will be situations in which this equipment can be used to further our knowledge of the cause of electrical conductors.

William M. Sirola.

WMS:iw.

KERR ADDISON MINES LIMITED
405 - 1112 WEST PENDER STREET
VANCOUVER 1, B.C.

COPY

P.M. Kavanagh.

W.M. Sirola.

Swim Lakes "A" Group - Recommended Additional Gravity Work, 1966 Field Season.

November 15th, 1965.

The following gravity work is recommended to the southwest of the main target area:

Line No:	From:	To:	Distance:
77 W.	B.L. 3	B.L. 4 + 250 S.	1,400 ft.
81 W.	B.L. 1	B.L. 4 + 300 S.	4,400
85 W.	B.L. 1	B.L. 4 + 350 S.	4,450
89 W.	B.L. 2	B.L. 4 + 350 S.	2,950
93 W.	B.L. 2	B.L. 4 + 400 S.	2,950
97 W.	B.L. 2	South Boundary	2,950
101 W.	B.L. 2	South Boundary	2,950
105 W.	B.L. 2	South Boundary	3,000
B.L. 2	77 W.	105 W.	2,800
B.L. 3	87 W.	105 W.	1,800
		TOTAL	29,650 ft.

If it is determined in the field that this work is productive, then lines 109 W., 113 W. and 117 W. should be covered from Base Line 3 to the south boundary, a distance of 3,000 ft. in each case. Base Line 3 should then be extended from 105 W. to 117 W. for a distance of 1,200 ft. This additional footage totals 10,200 ft.

I am curious about the gravity closure on Line 42 W. between B.L. 2 and B.L. 3. This is a 0.2 milligal anomaly, but one wonders if more detailed work in that vicinity would produce a stronger closure such as those found on the north side of the main gravity belt east of the main anomaly. I am curious as to what Duncan Crone's thinking may be on this matter.

Please notice that we have extended lines 81 W. and 85 W. north to Base Line 1 to provide additional gradient information. Crone may or may not consider this additional footage necessary. I think this work should be started as soon as our drilling programme is well under way and the camp has settled down to an organized programme of work.

William M. Sirola.

WMS:iw
Encls.

PHONE: 269-1356

UNITED GEOPHYSICAL COMPANY OF AMERICA

UNITED GEOPHYSICAL

PASADENA TULSA HOUSTON NEW YORK CALGARY PARIS CARACAS RIO DE JANEIRO SANTIAGO

718 - 5TH STREET S.W.
CALGARY, ALBERTA

December 1st, 1965.

Swim "A" Group
Grande

Mr. W. Sirola,
Kerr-Addison Mines Ltd.,
402, 1112 West Pender St.,
Vancouver 1, B.C.

Dear Bill:

Enclosed is a residual map of the Swim Lakes gravity survey. It was constructed by arbitrarily subtracting sufficient value from each of the three lowest points on the map (northern, western and southern parts) to bring each to zero, and then distributing evenly the "difference values" across the map. Also enclosed are selected profiles of these "residual" values. Most of the calculated results reported below were derived from these profiles.

As you know, a gravity anomaly cannot be given a unique interpretation on its own merits. It can be shown that a number of buried masses of differing shapes, densities and depths may give rise to the same surficial expression of gravity variations. The particular mass distribution which can be most logically reconciled with what is known of the geology of the region should represent the best interpretation of a given set of gravity values.

Your remark that gabbros crop out to the south adds an important dimension to the picture displayed here. I had already toyed with the idea that the steep gravity gradient in the southernmost part of the area represented one edge of a tabular heavy mass, and that the other may lie in the vicinity of line 18.

cc PMK - Dec 2nd, 65

However, I could not accentuate the northerly edge (weak at best) with any residual treatment one could reasonably use. Besides, such a concept left the problem of explaining the local high values on line 34.

The idea of a large intrusive mass with its edge roughly following the red line, a ring of gravity lows, and pods of mineralization surrounding it makes more sense to me. It not only accounts for the large positive area, but also provides a reason for the mineralization.

Some calculated results pertaining to the intrusive mass as derived from the long line on the southwest of the prospect and from line 18:

1. Assumed density 3.65 (ore containing heavy sulphides). If a tabular slab, 160' thick - 620' to top. If a horizontal cylinder, radius 2350', depth to top 1235'.

2. Assumed density 2.95 (gabbro). If a tabular slab, 720' thick - 340' to top. If a horizontal cylinder, radius 5000' - top 1400' above surface.

I believe it to be gabbro in a form sufficiently modified from slab-shape to be closer to the surface than 340' along the highest (in gravity value) portions of the line. The steep gravity gradient near the southwest end of line 18 appears to be due to a very shallow change in rocks of quite differing density. I suspect it may be due to a (pre-glacial?) topographic drop-off in the top of the instrusive (at or very near the surface) and added surface deposits to the northeast. However, the possibility of mineralization in rocks overlying the instrusive exists. The profile of line 18 has a curious series of steps as it drops off to the northeast. I have no ready explanation for this.

Prime targets are numbered 1, 2, 3. This work does not materially alter the status of #1, as previously described. No. 2 looks a little huskier, however. Assuming the cylinder, we get a radius of 175', depth to top 75' (probably shallower, actually). I will do a new mass analysis of the combined effect of 1 and 2 later.

However, it looks as if it should add another 25% to that previously calculated, bringing the total to 13 million tons. The sulphides in the two anomalies are probably connected, but I would expect a depth to top in the saddle to exceed 100'.

No. 3 is very interesting. It was quite difficult to find a reasonable explanation for a one-side anomaly. However, the concept of an intrusive mass adjacent to a sulphide deposit fairly adequately fits the gravity data. If we remove the "regional" due to the southeasterly edge of the intrusive (can be done in an approximate way - see the profile), we can get a fairly symmetrical anomaly. Computations on this, assuming a horizontal cylinder of density 3.65, give a radius of 200' and depth to top of 350'. Because of the influence of the intrusive, we cannot expect a very accurate mass analysis, but I think we can get reasonably close by working on the southeasterly half of the residual feature and then doubling the results.

The northeasterly-plunging lobes should not be ignored. They are not sharp enough to indicate large masses of sulphide deposition near the surface, and I suspect they, and the intervening lows, most probably are caused by irregularities on the upper surface of the intrusive. However, I would not like to rule out the possibility of some mineralization in the country rock overlying the intrusive. I would recommend that a hole be drilled on at least one of them.

In conclusion, a few remarks are in order:

1. The depth-to-top calculations generally represent maximum values.

2. The density of gabbro is not much greater than that of the country rock in this area (2.95^{+} vs 2.75). Therefore, a very large mass of it is necessary to give rise to the high gravity values on the long southwesterly line.

3. In the southeast end of the prospect, one might extend two lobes farther to the east towards Swim Lake. I chopped it off here to more nearly conform to contour values which are so consistent on both ends of the southwesterly profile and to the north and northeast.

4. A steeper residual might be made through anomaly #1 (see profile of line 65). Even so, the assymetry of this feature is still there indicating a northeasterly dip of the ore body.

5. Anomaly #1 remains the prime target on the map. No. 2 is most certainly caused by some more of the same material. No. 3 is also an excellent target, though its shape is less certain, and the causative heavy mass appears to lie deeper than it does in #1 and #2.

6. The overall concept presented here tends to downgrade the area to the southwest and point up the area to the northeast. I would recommend drilling a hole at the southwest end of line 18 before writing off the area to southwest to make sure the concept is correct. I would also recommend extending the gravity programme to the northeast - starting with an extension of line 30.

Yours very truly,

UNITED GEOPHYSICAL COMPANY OF AMERICA

R.B. Galeski

RBG/mt
encls: (4)

KERR ADDISON MINES LIMITED
405 - 1112 WEST PENDER STREET
VANCOUVER 1, B.C.

COPY

P.M. Kavanagh.

W.M. Sirola.

Swim Lakes "A" Group - United's Residual Gravity Map.

December 2nd, 1965.

Bob Galeski's current interpretation of our gravity picture is enclosed herewith.

It is my feeling now that there may be a dome-like intrusion of intermediate composition which is responsible for the topography on which we are working. Some of the diorites in this area, and also in the areas to the southeast of Ross River, are magnetically indistinguishable from the metamorphic rocks in the same vicinity. Such an intrusive could, however, have sufficient density contrast with the metamorphic rocks to be responsible, at least in part, for the gravity gradient which occurs on our property. Certainly it does not seem that this 4,000 ft. hill should be there, unless some rocks exist which are more resistant to erosion than sericitic or graphitic schist.

William M. Sirola.

WMS:iw.

PHONE: 269-1356

UNITED GEOPHYSICAL COMPANY OF AMERICA

UNITED GEOPHYSICAL — PASADENA TULSA HOUSTON NEW YORK CALGARY PARIS CARACAS RIO DE JANEIRO SANTIAGO

718 - 5TH STREET S.W.
CALGARY, ALBERTA

January 31st, 1966.

Mr. W. Sirola,
Kerr-Addison Mines Ltd.,
#402, 1112 West Pender St.,
Vancouver, B.C.

Dear Bill:-

We completed a new mass analysis of the prime anomaly at Swim Lakes. This includes the added positive values found at the west end in the course of the most recent work. Also, it is basically done in a more optimistic manner than the first one by assuming a lower base value for area affected by the heavy materials. We used a density of 4.0 for the ore and 2.75 for the country rock. The tonnage that comes out of this is 19 million.

At the east end of the area, we worked up a tonnage of 8-1/2 million on the small anomaly. As you know, I consider the west flank obliterated by the effect of another large mass farther west. Therefore, I used only the values easterly of the crest. Our survey did not extend far enough southerly and easterly of the crest to fully map the anomaly. Therefore, the results are fragmental at best. Tonnage could easily be four times that calculated.

Yours very truly,

UNITED GEOPHYSICAL COMPANY OF AMERICA

Bob

R.B. Galeski

RBG/mt

cc: MK - Jan February 3rd 66.

KERR ADDISON MINES LIMITED
405 - 1112 WEST PENDER STREET
VANCOUVER 1, B.C.

COPY

February 3rd, 1966.

Mr. Robert Galeski,
United Geophysical Company of America,
718 - 5th Street S.W.,
Calgary, Alberta.

Dear Bob:

Many thanks for your letters of January 28th and 31st.

I was very glad to hear that our small anomaly contains 8½ million tons, or maybe four times that tonnage. You are definitely starting to look on the brighter side of things. Someday you must tell me how you do this. Should you be right, I will gladly buy you the largest cigar I can find.

We are now toying with the possibility that the prime anomaly is flat, or nearly so, but won't actually know until we have done further drilling. We don't think that any form of geophysics really reflects the true dip of this structure.

Thank you for telling me about the used RN-25's. I understand that both the Nodwell and Flextrack equipment will be exhibited here on or about the 20th of this month, and I think I will wait until then to determine which vehicle appears to be best suited to our needs.

Best regards.

Yours sincerely,

William M. Sirola.

WMS:iw

cc: P.M. Kavanagh.

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Mr. P. M. Kavanagh

W. M. Sirola

Swim Lakes "A" Group - Bouger Gravity Map of North West end of claim group, Lines 77W to 117W

June 30/66

There do not appear to be any potentially significant gravity anomalies in this area. The small increase in values from 25 to 29 south on line 89 west coincides with a weak self potential anomaly but this in all probability is simply indicative of shallow overburden. I would suggest however that all of the lines from 77 west to 117 west be covered by an accurate magnetometer survey. I say this because we are dealing with a steep hillside on which the gravity picture may be difficult to correct; secondly, I feel that the magnetic data is almost as important as gravity information. I recognize that very little showed up in the air borne work in this area but this could be due to parallelism of mineralized zones with flight direction. It should also be remembered that the flight lines are 1,500 feet apart and it would be quite easy to squeeze a sizable tonnage between flight lines.

W. M. Sirola.

WMS/lk

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Mr. P. M. Kavanagh W. M. Sirola

Quemont Mines Limited - Gravity Survey September 27, 1966

Jim Scott phoned yesterday to say that he had talked with Bill Brown of Mining Corporation regarding the gravity survey over Quemont.

Brown's conclusions were as follows: the east ore body located in the triangle between the Horne and the Donalda faults was clearly outlined by the gravity survey. H wever, he cautions that there is also a bed rock hump at the site of the ore body and this could have influenced the results.

The west ore body was not so distinctly outlined despite the fact that it also consists of 200 feet of massive sulphides overlain by 80 feet of porphyritic rhyolite and perhaps 30 feet of water.

This would suggest to me that there are obviously some problems in doing this type of work and one of these is the problem of bed rock contour. It is simple enough to determine the depth of water but not at all simple to know the configuration of the actual bed rock. To be meaningful, at Swim Lakes for example, the gravity anomaly if any, should coincide with other anomalies either electrical or magnetic. Such a situation would then constitute a drilling target.

Bill Brown has promised to send Jim Scott the actual gravity data and Jim will then pass it on to me. Hopefully, we will learn of other case histories and then be able to come to a reasonably intelligent conclusion regarding the feasibility of gravity work over the ice at Swim Lakes.

W. M. Sirola.

WMS/lk

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P. M. Kavanagh W. M. Sirola

Swim Lakes "A" Group -
Gravity Survey, Lines 81 to 117W

September 18, 1967

Herewith the field notes, elevation calculations and gravity computation sheets for this portion of the "A" Group gravity survey.

It does not seem likely that the application of terrain corrections will make or break a gravity anomaly but it is certainly always a good idea to have a second opinion in a situation like this one.

You may be aware that the east end of the Anvil deposit has been down-faulted approximately 200 feet. It is hard to see the evidence for this in the Bougher map of that property except that there is no closure over the down-dropped block.

W. M. Sirola.

WMS/lk

Encl:
1 Field Book
Elevation data
Gravity comp. sheets.

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COPY

P. M. Kavanagh

W. M. Sirola

Swim Lakes "A" Group -
Gravity Interpretation Southwest Portion of Property.

December 27, 1967.

Thank you for sending me the copies of Duncan Crone's corrected Bouger gravity map.

The crowding of the contours from 4.0 to 6.0 milligals between Lines 109W and 117W looks interesting but unfortunately I consider it to be caused by sudden increases in topography which are not truly reflected in the topographic map. The mere fact that the gravity and survey crew were unable to run a line between 109W and 117W corroborates my thinking and Fred Chow advises that there is a cliff which prevented the running of this line. Since the Bouger gravity contours closely follow topographic contours except where interrupted by a denser rock or mineral mass, I have to take the view that there is no indication of concealed mineralization.

I had hoped that the corrected Bouger map would reveal an anomaly between Lines 93W and 97W north of the No. 3 Base Line, but this did not materialize. I mention that location because that is the area from which the geochemical fan appears to emanate.

If you still feel that some investigation is in order, I would again suggest that you do this with a bull dozer rather than with a diamond drill.

W. M. Sirola.

WMS/lk

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VANCOUVER 1. B.C.

COPY

March 27, 1969.

Mr. Robert Galeski,
320 Elveden House,
Calgary, Alberta.

Dear Bob:

Herewith the residual gravity map of Swim Lakes prepared by United in 1965 together with a longitudinal profile along Base Line 3 drawn by one Robert Galeski.

I have often wondered as to how meaningful this gravity hump along the base line really is in as much as the residual gravity increases from north to south and would be cut more or less at right angles by this base line.

It is a matter of some interest to me that the magnetics over the property diminish in amplitude from the mineralized zone southeastward because this could indicate a deeper slab of mineralization plunging gently in that direction. By the same token however, it must be realized that the magnetics correlate rather well with the graphitic schist band and, as you know, this rock type does contain perhaps 0.3% to 0.5% disseminated magnetite.

The question remains that of trying to determine whether or not there really is a slab of denser material at 600 or 700 feet of depth. Using a cylinder 50 feet in radius with a depth of 500 feet at center, I get a maximum gravity effect of .09 milligals and surely this is too slight an effect to be distinguishable on a gravity plan. Such a mineralized slab could be profitably mined if it was sufficiently high grade and it would be very useful to know whether such a target exists.

(continued - Page 2)

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COPY

The sulphides cylinder shown on the lower right hand corner of your section turned out to be an area of shallow overburden.

Many thanks for your co-operation and I hope we can do some business with you this year. Would you kindly return the maps when you have finished with them.

Yours sincerely,

W. M. Sirola.

WMS/lk

Encl. 1) United Geophysical Residual Gravity Map

2) R. Galeski Gravity Profile

Robert B. Galeski P.Geoph.
320, 717-7th Ave. S. W. CALGARY, ALBERTA
TELEPHONE 264 - 6371 AREA CODE: 403

March 31, 1969.

MR. W. M. SIROLA,
Kerr Addison Mines Limited,
Suite 405, 1112 West Pender Street,
VANCOUVER 1, B. C.

Dear Bill:

I have read your letter of 27 March and have re-examined the map and profile. The following comments are apropos:

1. The SW base line has been crossed by only two NE-SW lines, so the NW half of it is not under regional control.

2. The slab thicknesses I computed originally are correct for the densities chosen. However, if the rock mass has a lesser density, say 2.80, the thickness would be much greater.

3. The depth figures may be OK. If I worked on this today I would give a maximum possible depth and indicate that the mass is this depth or less. The maximum possible depth in the two cases shown is indicated in parenthesis on the profile.

4. If I were to do this over, you would not see the residual gravity increasing from north to south. I would put that increase into the regional. This increase is due to the slightly heavier rock mass which I don't think is of any direct economic interest.

5. A 50' radius cylinder of sulphides (with the densities we have in this region) would indeed be outside our limits of error at 500'. There simply isn't enough mass. Vertical and horizontal slabs of 50' thickness are different matters, however, and they can be mapped.

6. In summation, I don't see a target in this huge, broad "anomaly".

Yours very truly,

Bob

R. B. Galeski

RBG:gp
Enc. (2)

KERR ADDISON MINES LIMITED

(FOR INTER-OFFICE USE ONLY)

RECEIVED
JUL 22 1969
KERR ADDISON MINES LTD.
Per.

To W. Surola From F. Cook

Subject Swim Lakes "A" Group, Y.T. Date July 18, 1969

Gravity Survey + Magnometer Survey

Dear Bill:

Enclosed are two sheets containing the calculated magnetic values obtained on the north-south line over D.D. Hole #A-2, plus a sketch showing the profile.

The ground survey confirmed the air-mag. survey; both show a rise in magnetics towards the north.

Overland gravity crew expect to complete the survey on or about July 20. They will be staying within the Ross River area for another week. Apparently Overland has another contract in this area.

Mr. Stan Bowman, Overland's supervisor at Swim Lake can be contacted at RADIO 938 ROSS RIVER (G.M.A.) through Mr. John Rolls.

Overland's Swim Lake portable radio is called 938 Overland - via Radio 938 Ross River.

Fred

OVERLAND

14/Aug/69

Mr. W. Sirola
Kerr Addison Mines
1112 W Pender
Vancouver B.C.

Dear Bill

Enclosed please find some of the preliminary gravity profile for the Lawson Lake Project. It is interesting to note the apparent density "high" present on lines 0E, 2W and 6W. This area has been outlined in red on the station maps and the density high areas have been circled in red on the respective profiles. There is some indication that this anomaly continues to the west, but we will have to complete the profile construction

before we can say much more about this feature.

We hope to have the remainder of this preliminary work finished and in the mail to you on Monday. Please remember that this data is <u>preliminary only</u> and that all points are subject to correction

Yours truly

William G Crook

KERR ADDISON MINES LIMITED
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VANCOUVER 1. B.C.

COPY

P. M. Kavanagh

W. M. Sirola

Swim Lakes "A" Group - 1969 Gravity Survey Report.

Sept. 17/69

Enclosed is Bob Galeski's report which contains a residual gravity map and profiles of each line. It does not contain a Bouger map or a topographic map. When I queried him about the missing maps, he said that Overland had completed these and simply had neglected (as is their wont) to send them to us. I will pry them loose from Overland during the convention and I think that we should pay their account with the same vacillaty as they completed the paper work for this survey.

Galeski recommends drilling Anomaly "A" on Line 26W and Anomaly "B" on Line 34W. He makes no mention of drilling Anomaly "C" on Line 2W because he thinks it is caused by an overburden effect.

He has bet me $5.00 that Anomaly "A" would produce sulphides and I hope that is one bet I will lose.

W. M. Sirola.

WMS/lk
Encl.

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COPY

P. M. Kavanagh

W. M. Sirola

Swim Lakes "A" Group -
1969 Gravity Survey.

Sept. 23/69

Under separate cover we have today mailed you one copy of Overland Exploration Services Ltd. gravity survey report.

The residual map contained in the report plus such interpretation as Overland has provided were not part of the contract agreement and represent a courtesy service on the part of Overland.

The only reason for having Bob Galeski do some interpretive work was that we were unable to get sufficient data from Overland to enable us to do any planning for drilling this fall and we had agreed at the time of the signing of the contract that Bob Galeski would do this work if it appeared necessary. It now appears that Galeski is reentering the field of gravity surveys and the relations therefore between Overland and Galeski are on a competitive rather than a fraternal basis.

Galeski's residual map is more neatly done than Overland's and is contoured on 0.1 milligal contours in contrast with Overland's 0.2 milligal contours. Regardless however of who does the interpretive work, they still cannot differentiate between sulphide anomalies and bedrock anomalies unless a sulphide body happens to be large and close to surface. This situation gives a high amplitude (usually in excess of 1 milligal) with a steep gradient at least on one side.

W. M. Sirola.

WMS/lk

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COPY

October 7, 1969.

Overland Exploration Services Ltd.,
1347 - 12th Avenue S.W.,
Calgary 3, Alberta.

Attention: Mr. Wm. Salt

Dear Bill:

Herewith a copy of your station elevation map and the Bouger Gravity map for our Swim Lakes property.

I am particularly concerned that the effect of terrain corrections extended beyond the limits you used and I am curious about what density was required to remove the anomalies on Lines 26W, 34W, and 0 to 2W.

As I mentioned over the telephone, we do not have your terrain correction sheets for Lines 26W, 34W and 38W. Bob Galeski denies having these and they should therefore be in your files. Would you kindly send them on to me as soon as you have located them.

I will be anticipating some word from you by the weekend.

Best regards,

Yours sincerely,

W. M. Sirola.

WMS/lk
Encl.

KERR ADDISON MINES LIMITED
405 - 1112 WEST PENDER STREET
VANCOUVER 1. B.C.

COPY

October 14, 1969.

Dr. Duncan Crone,
Crone Geophysics Ltd.,
979 Lakeshore Road,
Port Credit, Ontario.

Dear Duncan:

Paul Kavanagh advised me that you were going to confine your terrain corrections for the recent gravity survey at Swim Lakes to one line. I have enclosed the calculation sheets for Line 26W because that is the line with the greatest conformity between topography and Bouger gravity. Unfortunately the terrain correction charts for Lines 26 to 38W have been misplaced by either Overland or Galeski and consequently I am not able to include that information, however, you already know that Overland's terrain correction was limited to a circle with a radius of 175 feet together with an inner circle of 58 feet. Galeski carried the terrain correction to 580 feet without materially changing the gravity profile.

Since the enclosed calculation sheets are both elevations and Bouger values for all of Line 26W, I think this is all of the information you will need. It might be helpful for you to know that the terrain on Line 26W rises to an elevation of 3500 feet, 5200 feet north of BL #1.

Since talking with you last I have come to the conclusion that the anomaly on Lines 0 to 2W is caused by bedrock coming close to the surface at the anomaly and dipping southward under the glacial moraine which shows as a definite hill on the topographic map. I consider the anomaly on Line 26W to be caused by a bedrock hump. There is a swamp on the south of the hump which probably has a great deal of glacial debris on the bottom and the peak on the north of the anomaly is also in a depression which has a considerable amount of valley fill. I do not know the cause of the anomaly on Line 34W.

(continued - Page 2)

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VANCOUVER 1. B.C.

COPY

Should you require any additional data, I will try to make it available.

Best regards,

Yours sincerely,

W. M. Sirola.

WMS/lk
Encl. Overland Exploration Services Ltd.,
Job No. 69-124, Calculation Sheets 20 & 21

cc/ Dr. P. M. Kavanagh,
Toronto Office.

KERR ADDISON MINES LIMITED
405 - 1112 WEST PENDER STREET
VANCOUVER 1. B.C.

COPY

Glen Hogg

W.M. Sirola

January 20, 1971.

John Brock of Dynasty-Atlas has provided us with a copy of the residual gravity over the Faro Orebody. This map forms part of the talk which he will give to the A.I.M.E. in New York in the near future. Incidentally, the geophysical profiles he has for Swim Lakes came from the pamphlets Duncan Crone issues with his J.E.M. advertisements.

There is a rather striking similarity between the abrupt cut off of closely spaced gravity contours on both the Faro and Swim deposits. In the case of Faro, the orebody is down-dropped by a fault which coincides more or less with Faro Creek. The precise orientation of the fault is unknown to me. In the case of the Swim deposit, we have encountered a very definite fault in drill hole A16, and it is interesting that A22 encountered no lead-zinc mineralization. A22 is 520 feet deep suggesting that the east end of the Swim deposit is either down-dropped further, or actually shifted either to the north or south along the fault.

Since a considerable amount of assessment will be required on the Swim claims this coming Fall, it might be worthwhile to do some additional drilling, thereby keeping the ground in good standing for several years instead of paying $100.00 per claim each year. There is room, for example, for additional down-dip drilling and conceivably a search for the down-dropped? portion might be worthwhile, despite the fact that such ore would not be amenable to open pit mining.

We will do some additional study of this situation and present our findings as soon as possible.

W.M. Sirola.

Encls: (1) Contoured Profile-Corrected Residual Gravity - Faro Orebody
(2) Residual Gravity - Swim Lakes 'A' Group Ore Zone

Anvil Mining Corporation, Limited

February 22, 1972

Mr. W. Sirola
Kerr Addison Mines Ltd.
1112 W. Pender Street
Vancouver, British Columbia

Dear Bill:

I have been compiling Anvil's data for work that has been done in the Swim Lake area. The grids cut to the southwest of the Swim claim group were used for ground E-M (JEM) and ground magnetometer surveys.

The results of the E-M work trace out a uniform band of conductors - similar to that on your map of the Swim claims. Drilling of selected areas within this band of conductors encountered graphitic phyllites, and the whole band probably traces out this unit.

The magnetometer survey identified a two station anomaly just to the south of your claim block near the center of the base line. Other than the two station anomaly, no areas of strong magnetism were indicated.

All drilling by Anvil in this area has been to test E-M anomalies. All locations, I believe, are to the southeast of the area where your gravity anomaly would cross over to Anvil's ground. No concentrations of sulfide mineralization were encountered in any of these holes.

I will send a copy of our compilation map for that area as soon as it gets drawn up.

Uldis Jansons
Chief Exploration Geologist

UJ/mm

Post Office Box 1000, Faro, Yukon Territory Telephone (403) 994-2600 Telex 0498277