

Lyn Group Claims

(Centred about $52^{\circ}06'$ N. latitude, $133^{\circ}13'$
W. longitude
Claim Sheet Number 105K3)

Yukon Territory

Gravity Interpretation

for

Kerr- Addison Mines Ltd.

by

Robert B. Galeski, P. Geoph.

August, 1971

This report has been examined by the Geological Evaluation Unit and is recommended to the Commission to be considered as a preliminary report in the amount of

\$ 9,441.41

A. R. Craig
Geological Engineer

Considered as exploration work under Section 33 (a) Yukon Quartz Mining Act.

[Signature]
Commissioner of Yukon Territory

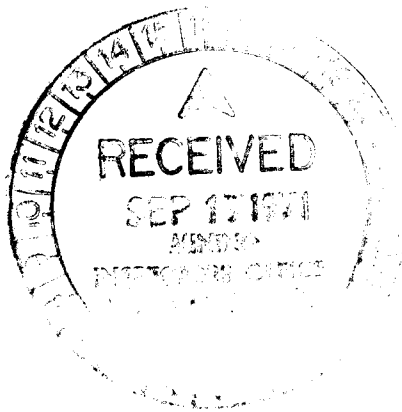


Table of Contents

Introduction	Page 1
Interpretation	
Bouguer Map	Page 3
Residual Map	Page 3
Conclusions and Re- commendations	Page 6

Introduction

In the early summer of 1971, the writer reviewed the results of a gravity survey which had been conducted on the Lyn Group the previous year. Extremely high gravity gradients were found to coincide with the steep topography of the area. In places, these gradients were as high as three milligals/100'. No geological change can result in such a high gradient, yet no computational errors could be found to account for this.

A decision was made to send a three man crew of Airborne Geophysical Surveys, Ltd. to re-survey and re meter (with LaCoste and Romberg meter G-232) a few of the lines. The crew left Calgary on 17 May, spent 7 days chargeable to the prospect and returned to Calgary. Three lines were re-run. After computation of the data acquired and comparison of it to that of the previous year, it was concluded that the earlier control work was acceptable, but that the meter readings were not because of the unfortunate use of a defective meter.

On 26 June two meter operators were returned to the prospect with LaCoste and Romberg meter G232 to re-meter all the previously picketed stations. Upon

completion of this work, a preliminary interpretation resulted in the decision to extend certain lines and to add another. So, the two-man metering crew and a surveyor returned to the Lyn Group to complete this work. In all, eighty man days were spent on the Lyn Group during the summer of 1971.

During the course of the work, Airborne Geophysical surveyed and metered approximately 335 stations and metered an additional 830 stations. Stations were placed at 100' intervals along NE-SW trending lines spaced at 400' and 800' intervals.

Elevations vary between 2857' a.s.l. and 4086' a.s.l. Highest topography is along the southwest side. Lowest elevations are along the northeast edge of area surveyed. Because of the extreme surface relief (e.g., there is a 1000' elevation change on line 134 W), field operations were difficult. Work progressed slowly, and it was not possible to make base ties at the usual two-hour intervals without the utilization of considerable helicopter time. However, base ties made at longer intervals indicated very little meter drift, and it is considered that no significant error was introduced because of this factor.

Data were reduced to a sealevel datum by use of a 0.060 elevation correction factor (2.7 surface density). A factor corresponding to a surface density of 2.3 was tested and found to be unsatisfactory. Latitude corrections used were made appropriate for the area (rate of change = $1.307 \times \sin (2 \text{ lat.}) \text{ mgal/mi.}$).

Interpretation

Bouguer Map

Average gradient across the area is 0.7 mgal/1000' northeast. The gradient is interrupted by many "noses", by minor positive closures at 23 N on line 98, 25 N on line 146, 42 N on line 166 and 52 N on line 174, and by major positive closures at 48 N on line 154 and at 55 N on lines 122 to 146.

Residual Map

The most significant feature on the residual map is a strong positive trend extending from the vicinity of 48 N on line 110 to 56 N on line 142 - a distance of about 3000'. Amplitude exceeds 1.3 mgals, and flank gradients are approximately 0.2 mgal/100'. It is well developed on lines 122 to 142. It is somewhat questionable east of line 122 because lines 110, 114 and 118 were not extended far enough north. Results are highly irregular on the north end of line 110. Causative mass is about 700' wide at its maximum, calculated maximum depth to top is 200' and minimum thickness (assuming 0.9 density contrast) is 120'. However, top may be as shallow as 100' and thickness as great as 200'.

A small, very sharp positive of 1.7 mgal amplitude was found at 48 N on line 154. It may extend to 55 N on line 150, where amplitude is less than half that on line 154, but it does not exist on line 162 to the west. Causative mass is small in areal extent, and calculated depth to top is 80'.

A third positive anomaly of significance is located between 31 N and 32 N on line 166. Amplitude is about one milligal. It appears to be part of a trend extending northeasterly from 14 N on line 174 to the anomaly (48 N on line 154) described in the previous paragraph. Because of the high angularity between this trend and line direction, it is not possible to make meaningful depth and thickness calculations of causative mass.

Other positive features on the map - 41 N on line 138, 48 N on line 82, 23 N on line 98, 26 N on line 118, 53 N on line 174, and 33 N on line 186 - may be significant; but it is thought that, either because of low amplitude, low flank gradient or both, these are more likely caused by overburden effects rather than ore accumulations.

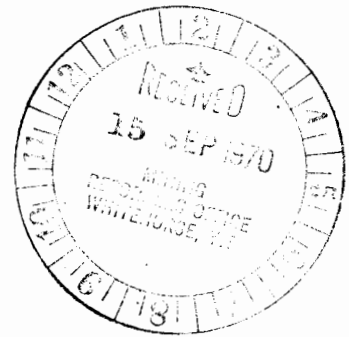
Conclusions and Recommendations

1. The strong positive along 55 N, lines 122 to 142 is caused by the presence of a buried heavy mass which is quite possibly an ore body. If so, it is probably over 3000 feet long, up to 700 feet wide and 120 feet to 200 feet thick. Depth to top 100 - 200 feet. It should be tested by a hole at 56 N on line 134 or at 56 N on line 138.
2. If the hole recommended above is a discovery, additional gravity work should be done between lines 90 and 122 and northward before development proceeds east of line 126.
3. If a gravity crew is moved into the area, line 154 should be re-run between 40 N and 56 N to confirm the presence of the sharp feature at 48 N. If confirmation is obtained a short east-west line should be run to pin-point a location for drilling.
4. Additional gravity lines - run true north-south - should be run across the trend that extends from 14 N on line 174 through 31 N on line 166 towards 48 N on line 154. Particular attention should be paid to the vicinity of 31 N, line 166.

Respectfully submitted,

Robert B. Galeski
Robert B. Galeski, P. Geoph.
2 September, 1971

INDEX



PAGE

INTRODUCTION

1

SURVEY & FIELD
PROCEDURE

DATA

INTERPRETATION

BOUGUER GRAVITY MAP

5

BOUGUER PROFILES

RESIDUAL GRAVITY MAP

CONCLUSIONS

This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of

\$12,283.95

D.B. Craig

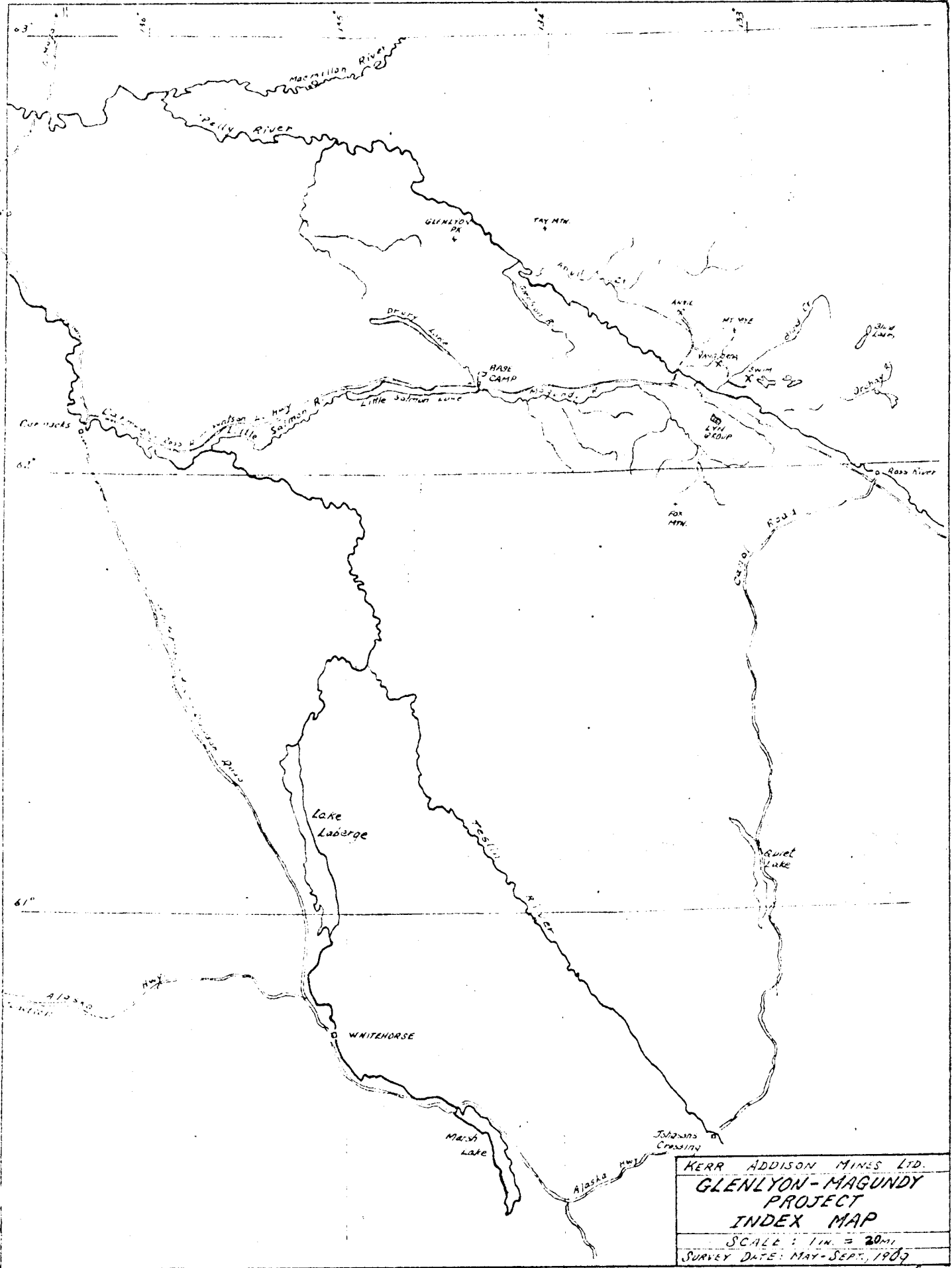
Resident Geologist or
Resident Mining Engineer

Considered as representation work under
Section 53 (4) Yukon Quartz Mining Act.

13

[Signature]
Commissioner of Yukon Territory

*10/1/70
12,283.95*



-9 Show

G. S. H. B. C.

GRAVITY SURVEY

of the

LYN GROUP MINERAL CLAIMS,
MAGUNDY RIVER, Y.T.

for

KERR ADDISON MINES LIMITED

by

OVERLAND EXPLORATION
SERVICES (1969) LTD.

INTRODUCTION

This gravity survey was conducted on the Lyn Group Mineral Claims by Overland Exploration Services (1969) Ltd., in June of 1970. Overland contracted to cut lines, conduct the gravity survey and interpret the results on this claim group for the account of Kerr Addison Mines Limited. Kerr Addison provided the helicopter support necessary to transport the crew to the location, supply the camp during the job, and move the camp out at the termination of the program. A total of 22 line miles of gravity was run on the Lyn Group. Station spacing was at 100-foot intervals along grid lines which were spaced 400 to 800 feet apart along a connecting base line.

SURVEY & FIELD
PROCEDURE

The Horizontal and Vertical Survey was conducted with a T-1 A Theodolite. Stations were located and elevated along each of the grid lines. The elevation was then closed across the extremities of the grid lines, all of the closures thus formed were under 2.5 feet. A field plot of the actual elevation closures has been included with this report. The gravity readings were taken with a Worden Master meter and stations were metered on a two and one-half hour run from base to base interval. The base station plots were used for graphing the diurnal gravity drift which in turn was applied to all station readings. Each gravity station run had several repeat stations from preceding runs in order to prove the repeatability of the gravity meter. The repeats were all within a 0.00 to 0.08 milligal range. All gravity readings were corrected for diurnal tidal drift, Bouguer Free-Air-Correction, latitude correction, and terrain correction. A density factor of 0.060 for a surface density of 2.65 has been used in this interpretation.

DATA

Bouguer Free-Air Correction Factor	-	0.06
Latitude Correction	-	4911.15 feet/milligal
Density	-	2.65
Diurnal Drift	-	Taken from Base Plots
Terrain Corrections	-	Taken where necessary
Meter Number	-	Worden No. 806
Meter Constant	-	0.08351
Base Value	-	Arbitrary value of of 500 milligals

INTERPRETATION

The main body of this interpretation is derived from gravity profiles of the survey lines. From these profiles a regional gravity gradient has been determined which forms the basis for determining local positive and negative anomalies. These gravity anomalies show as density highs and lows relative to the regional gradient and are mapped on the Residual Gravity Map. In our study of the anomalies we have assumed that a density contrast of 1.0 exists between a massive sulphide body and the surrounding native rock. This contrast can be approached by two other sources, these are:

- (1) a quartz diorite or biotite porphyry to skarn contrast, or,
- (2) escarpment of native rock adjoining a deep layer of unconsolidated surface till.

These probabilities will be discussed for each of the anomalies as shown on the Residual Map.

BOUGUER GRAVITY MAP

The Bouguer Gravity Map is a total intensity map showing the total gravity component from surface to intra-Basement effects. The Bouguer Map of the Lyn Group Claims displays a total intensity gradient of 48 milligals. The gradient on this map is too steep to discern local anomalies, however, it can be of considerable value in examining density trends across the area. We generally find that the density increases to the southwest as does the elevation. From this we deduct that we are observing the greater mass of the mountain to the south, exerting its influence on the total mass Bouguer picture. The creeks also exhibit themselves as mass deficient areas, this is through both the existence of less dense material in the creek beds and the removal of the dense material where the creek bed has been cut. The local areas exhibiting shallow sourced anomalous highs have been defined and contoured on the Residual Map and a further discussion of each of these anomalies is carried forth in the Residual portion of this report.

BOUGUER PROFILES

Bouguer profiles constructed from the Bouguer gravity readings along the grid lines show a remarkable similarity to the topographic profiles. The first conclusion which can be drawn from this is that an under compensated Bouguer Free-Air-Correction was used, thus forming a mirror image of the actual topography. However, this is not true, we find that when the density is increased thus decreasing the correction factor we do not eliminate or even tend to eliminate the mirroring of the elevation profile. Surface density factors were run for densities all the way to 2.95 with no appreciable reduction in the mirror image. We construe from this that the adhesion of the Bouguer profile to the elevation profile must be caused by a density change within the geologic section.

An examination of the Bouguer profiles shows without the exception a steep north dipping gradient. This steep dipping gradient is interrupted by reversals in the

gravity trend which form residual gravity positives. In all cases these residual positives are coincident with a change in gradient of the surface elevation. The change in surface gradient results in local topographic highs. These elevation highs trend east-west and form ridges along the flank of the main elevation gradient. It is these linear ridges that appear as gravity anomalies.

If the Bouguer-Free-Air-Correction factor is not at fault then the coincidence between Bouguer gravity and elevation must have a geological source. We offer two explanations which may explain this effect.

- (1) Topographic ridges could represent outcrop or near outcrop of native rock. This outcrop if flanked by additional surface till would cause a gravity positive anomaly. With the dominant north dip to the regional gravity we would only need a moderate amount of till to the north to give this effect. However, to the south of the topographic ridge we would need approximately 300 feet

of surface till to achieve the reversal necessary to form the 2 milligal anomalies which we find coincident with the ridge.

- (2) If the till is fairly uniform to the south of the topographic ridges we would have to then consider that the density highs are formed by a dense section within the native rock. This could take the form of a dense ultra basic rock intrusion which could be the source of the existence of the ridge. By this we mean that if there was erosion on the hillside the dykes of dense material running laterally along the topographic flank would tend to cause ridging. A further possibility contained in this second explanation is that rather than a basic rock intrusion we may be looking at dense mineralized deposits. We have constructed a cross-section through the area which shows the two examples of what we interpret

the density highs to mean. Grid
line 118 is the line which has been
selected for the example cross-section.

RESIDUAL GRAVITY MAP

The Residual Gravity Map displays linear positive gravity features striking east-west across the project. It is mentioned in the Profile Discussion that these features follow the topographic highs. We have colored in red on the prints of the Residual Map certain areas where the rise in the Bouguer gravity is disproportionate to the rise in elevation. By this we mean that in these areas we have a greater gravity intensity than in other areas on the map where we also have a similar elevation rise. We have done this to point out areas of prime interest which could be the first targets to be selected for further investigation. If these areas in red should prove to contain mineralization then further investigation of the remaining anomalies should also be undertaken.

"A" ANOMALY

The "A" anomaly has an extremely sharp gravitational rise compared to the elevation rise. We feel that this is indicative of a coincidence between the existence of dense material and a topographic high. This anomaly is no deeper than 200 feet and is possibly closer to surface than this. As is in the case of all the positive gravity anomalies on this prospect we have used only a portion of the total anomaly as being residual. By this I mean that we have a basic reversal in gravity which is coincident with the elevation change plus a steeper gradient at the apex of this anomaly which we construe to be anomalous high. This anomalous portion of the basic anomaly is what has been withdrawn as being residual. Because of this association it is impossible to assume what the actual size and tonnage of the residual portion of the anomaly may be. However we can say that if this anomaly is associated with mineralization the areal extent of it will be great indeed, as it could extend both to the east and west, to the lines where we do not see the steep residual portion of the anomaly existing.

"B" ANOMALY

The "B" anomaly is a shorter linear anomaly than "A", but is still associated with the topographic bench. This anomaly displays an anomalous gravitational high in comparison with the topographic high thus making us believe as in the "A" anomaly that this portion which we call residual is in reality a dense material lying within the geologic section.

"C" ANOMALY

The "C" anomaly is a series of several gravitational highs which have significant local highs distributed along its length. Again the areas marked in red are of the greatest interest.

"D" ANOMALY

The "D" anomaly is a striking anomaly on the plateau area long the south edge of the prospect. This anomaly has great intensity and could possibly be the most interesting of the programme should the more linear bench type anomalies to the north prove to be barren of any mineralization.

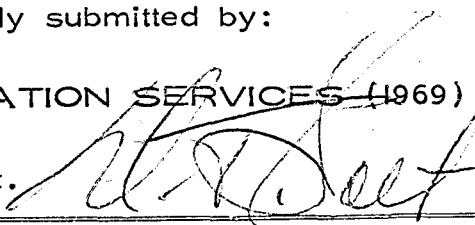
CONCLUSION

We conclude that the majority of the anomalies are probably highs in the native rock along the topographic benches. However, it cannot be overlooked that there may be dense material situated within the native rock and that they certainly have the gravitational intensity required to relate them to a 1.0 density contrast. This is the density contrast which we require in order to relate an anomaly to massive sulphides. Two milligal anomalies such as these having a shallow source should be investigated further. The first form of investigation would be to try and determine if the south side of the gravity positive do, in fact, have an excess amount of surface till. If this cannot be done, other geophysical methods could be examined. However, it is generally agreed that lead-zinc sulphides in this area are not particularly conducive to other forms of geophysical prospecting. The final way is to drill one or all of the anomalies marked in red, we feel that these are the first choice for drilling.

Respectfully submitted by:

OVERLAND EXPLORATION SERVICES (1969) LTD.

W.T. Salt.



OVERLAND PERSONNEL :

FIELD

Mr. Jack Krohn
Box 551
Strathmore, Alberta

Mr. Mike Dettling
Box 355
Fairview, Alberta

Mr. Bob Wallyuchow
1819 - 17th Street S.W.
Calgary, Alberta

Mr. Jack Austin
348 - 14th Avenue S.W.
Calgary, Alberta

Mr. W. Stark
Tisdale, Saskatchewan

OFFICE

W.T. Salt
1347 - 12th Avenue S.W.
Calgary 3, Alberta

Supervisor

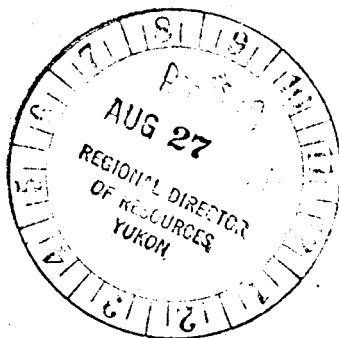
David K.Y. Chen
1347 - 12th Avenue S.W.
Calgary 3, Alberta

KERR ADDISON MINES LIMITED

SUITE 1600 - 44 KING STREET WEST

TORONTO 1, ONTARIO

TELEPHONE 362-2608



August 23, 1971

Mr. B. R. Baxter,
Mining Recorder,
Whitehorse Mining Division,
P.O. Box 1767,
WHITEHORSE, Y.T.

Dear Mr. Baxter:

During the months of May, June, July and August, 1971, a gravity survey was performed by R. B. Galeski of Airborne Gravity and Seismic Services Limited over a group of 32 claims located in the Mye Mountain area (105-K-3).

Total expenditure incurred in performing and evaluating this survey was \$9,441.41 made up as follows:

May 17 - June 6, 1971	(1)	(Gravity Surveying	\$2,544.20
		(Groceries	126.21
May 31, 1971		Helicopter Charter	1,500.00
June 26 - August 7, 1971	(2)	Gravity Surveying	5,411.00
W. M. Sirola (Senior Geologist)			700.00
G. M. Hogg (Chief Geologist)			40.00
Geophysical Consultant (Dr. Crone)			120.00
<u>LESS:</u> Staking Fees (on Gravity Survey - Statement (2))			<u>1,000.00</u>
			<u>\$9,441.41</u>

The claims covered by this survey are:

Lyn 31 and 32
Lyn 81, 82 and 89
Lyn 90 - 106 inclusive
Lyn 119 - 124 inclusive
Lyn 127 - 130 inclusive

It is requested that this work be applied to 85 contiguous claims broken down into 6 groups (5 groups of 16 claims and 1 group of 5 claims).

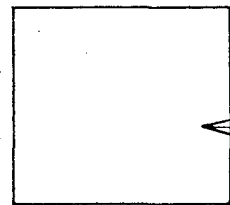
The fees involved are:

6 Grouping Certificates	\$ 30.00
Work for 1 year on 85 claims	<u>425.00</u>
	<u>\$455.00</u>

DIAMOND DRILL RECORD

LOGGED BY _____

PROPERTY _____
 ALTITUDE _____ BEARING OF HOLE _____ STARTED _____
 DEPARTURE _____ DIP OF HOLE _____ COMPLETED _____
 ELEVATION _____ DIP TESTS _____ DEPTH _____

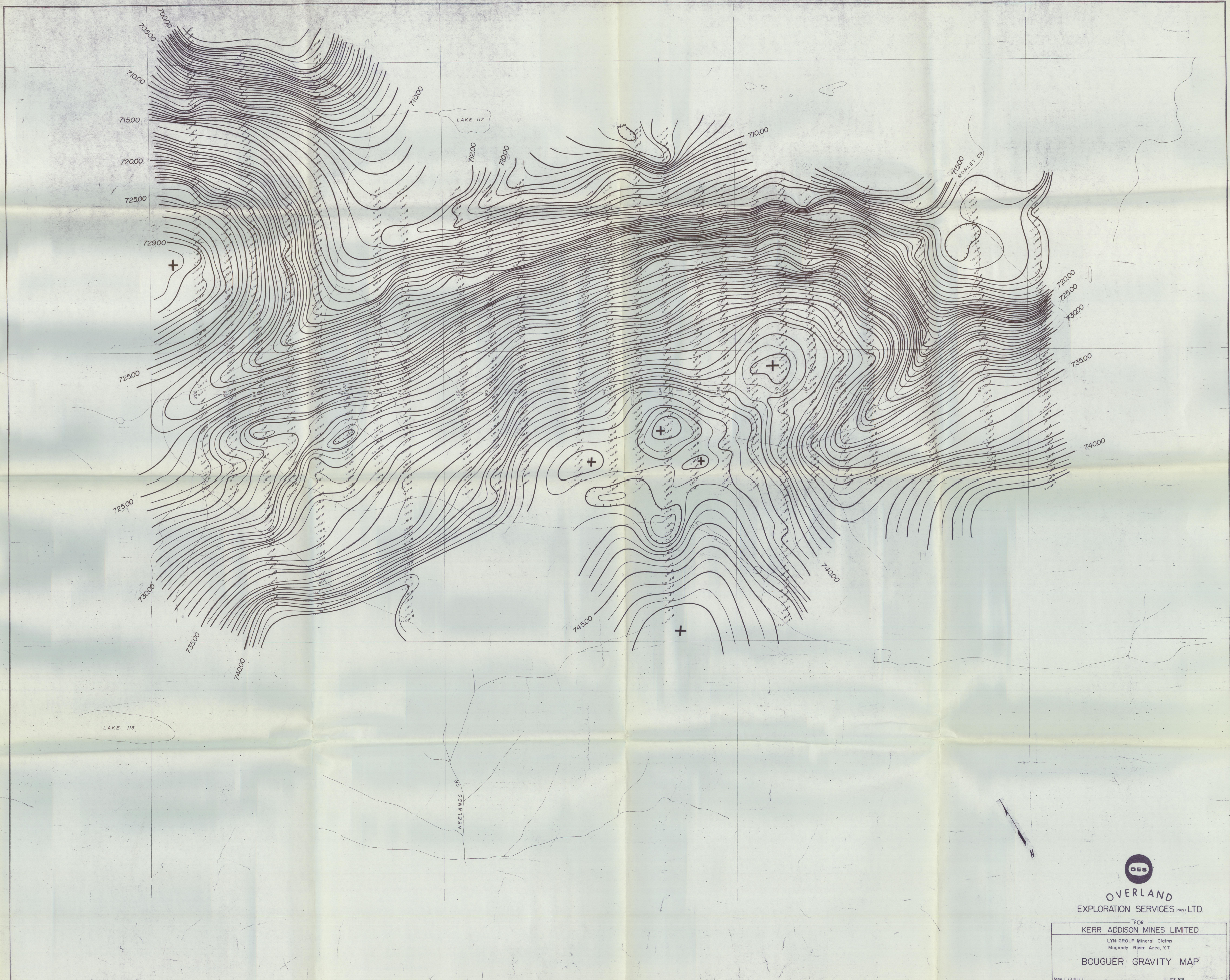


D.D.H. No. L71-3 PAGE 12

CLAIM No. _____
 DIRECTION AND DISTANCE FROM
 NE. CLAIM POST

FOOTAGE		DESCRIPTION	SAMPLE No.	FOOTAGE		SAMPLE LENGTH	ASSAY							
FROM	TO			FROM	TO									
397.0	402.0	<u>BRECCIA ZONE:</u> Phyllite fragments healed by quartz-feldspar(?). Brecciation 27° of core axis. Pyrite sparce.												
402.0	405.0	<u>PHYLLITE:</u> with interbanded green-tan mineral; rock a "marble cake" texture 403' - 404'. Pyrite - 1%+. Minor crenulations on schistose planes. Schistosity 75° of core axis at 402'.												
405.0	406.0	<u>BRECCIA:</u> Fragments of phyllite healed by quartz. (Rock sample at 406'.)												
406.0	426.0	<u>BRECCIA:</u> to 417' then same as 402' - 405'. Increase biotite 422' - 426', brown "rust" (oxidation) on fractures. Increase quartz as irregular masses, lenses and bands. Schistosity 65° of core axis at 410'; 76° of core axis at 415'; 80° of core axis at 420'; 82° at 426'. Pyrite sparce. END OF HOLE												

Recovery - 95%.



LAKE 113

NEELANDS CR

LAKE 117

MORLEY CR



OVERLAND
EXPLORATION SERVICES (1969) LTD.

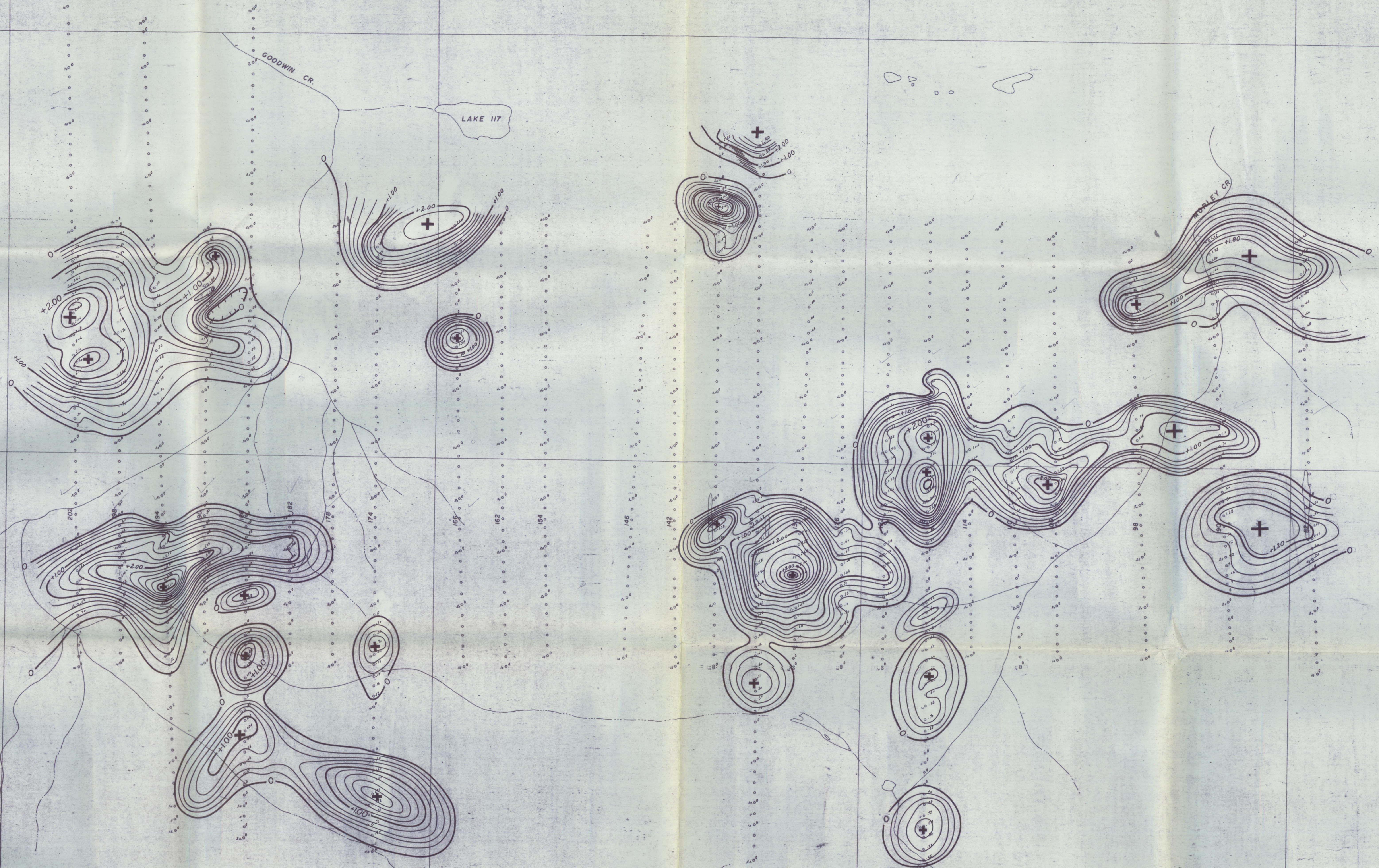
FOR
KERR ADDISON MINES LIMITED

LYN GROUP Mineral Claims
Magandy River Area, Y.T.

BOUGUER GRAVITY MAP

Scale 1" = 400 FT.

C.I. 050 MSL



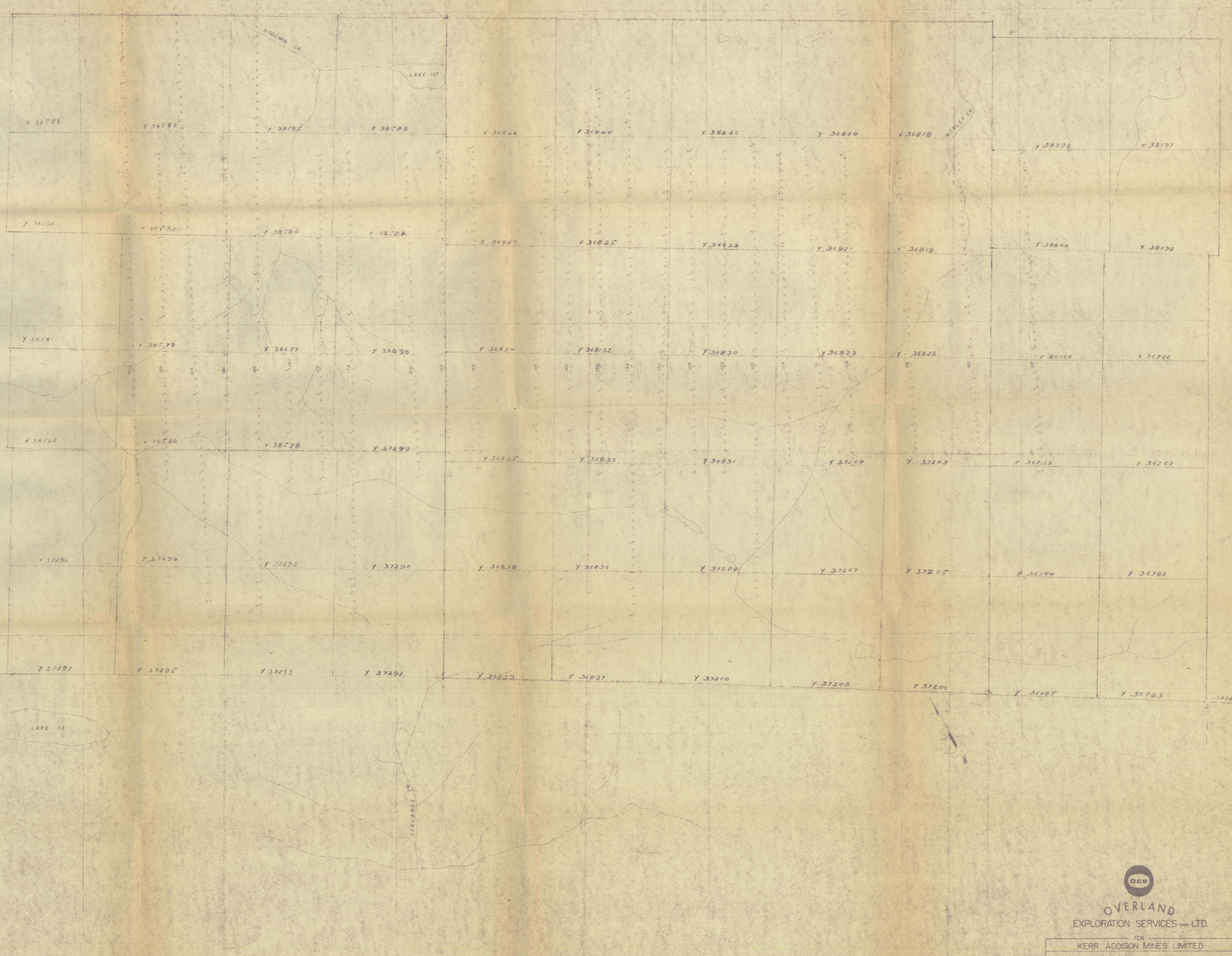
LAKE 113



OVERLAND
EXPLORATION SERVICES (1969) LTD.

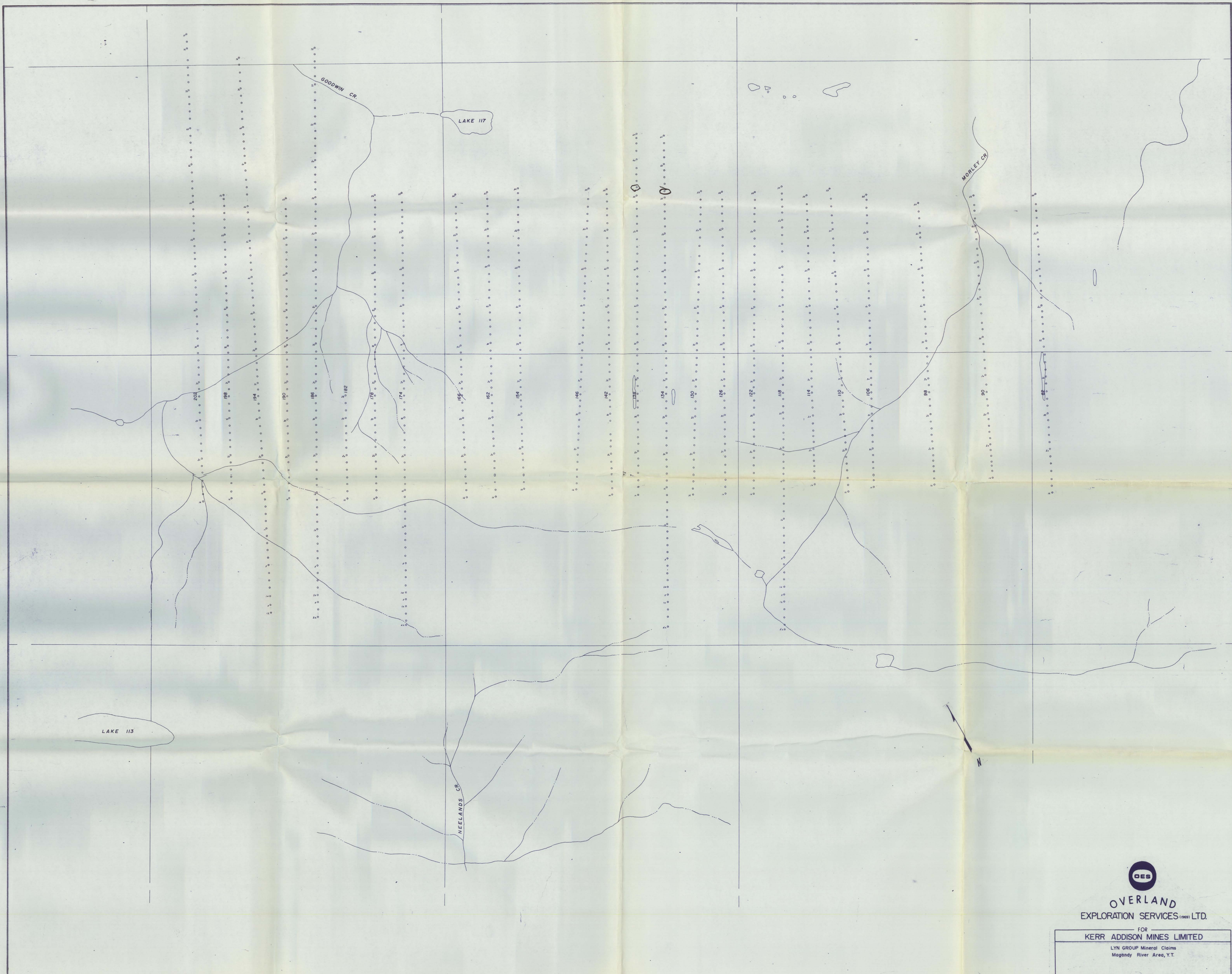
FOR
KERR ADDISON MINES LIMITED
LYN GROUP Mineral Claims
Magbndy River Area, Y.T.
RESIDUAL GRAVITY MAP

Scale 1" = 400 FT. CA 1029 mg



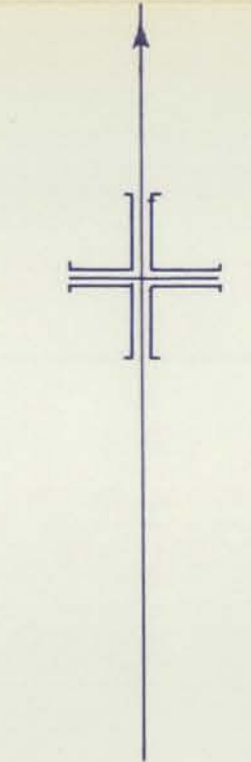
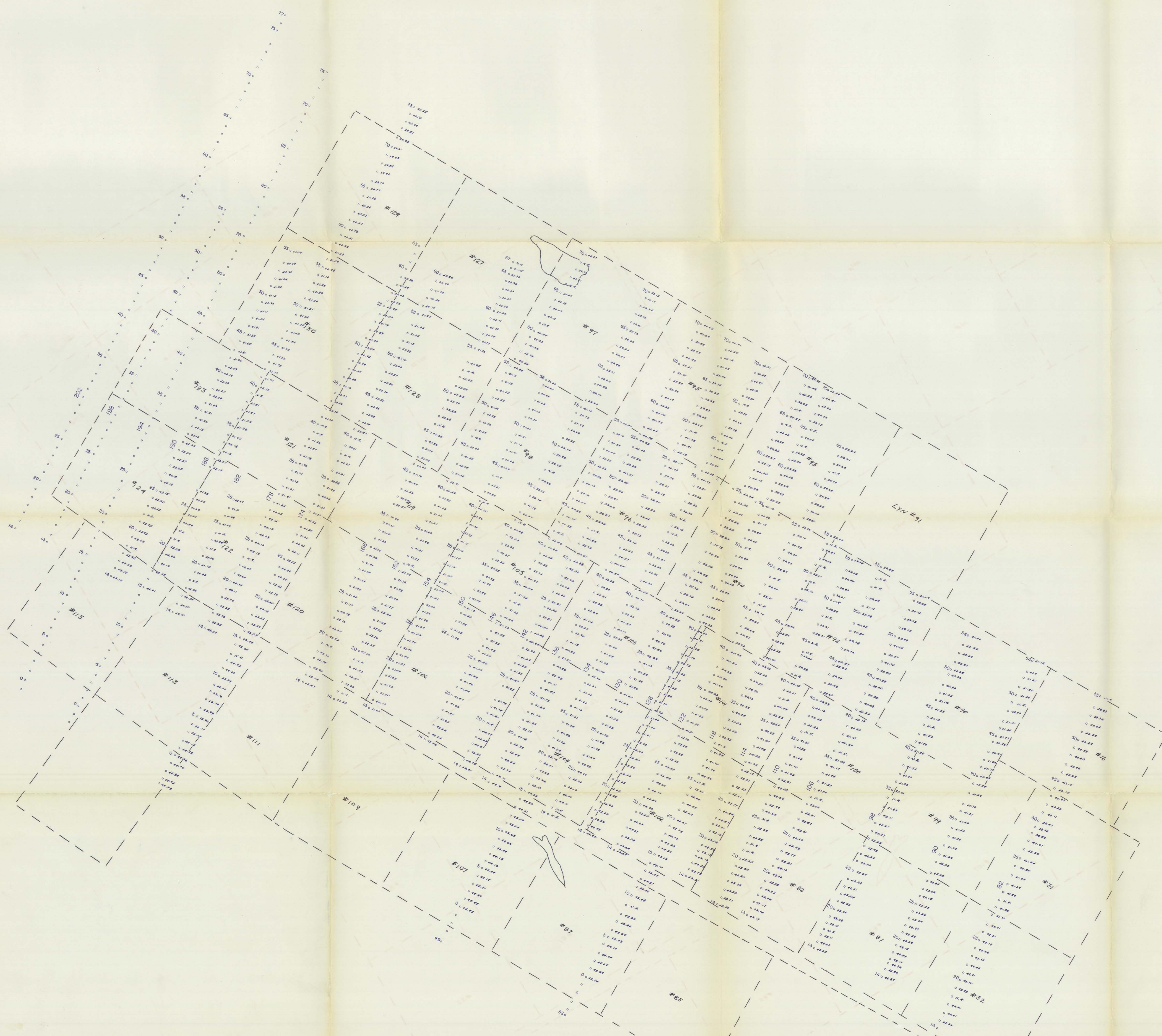

OVERLAND
 EXPLORATION SERVICES (1980) LTD.
 FOR
KERR ADDISON MINES LIMITED
LYN GROUP Mineral Claims
 Magdalen River Area, Y.T.

See 40874
 C1




OVERLAND
 EXPLORATION SERVICES (1969) LTD.
 FOR
KERR ADDISON MINES LIMITED
 LYN GROUP Mineral Claims
 Magandy River Area, Y.T.

Scale 1" = 400 FT. CL.

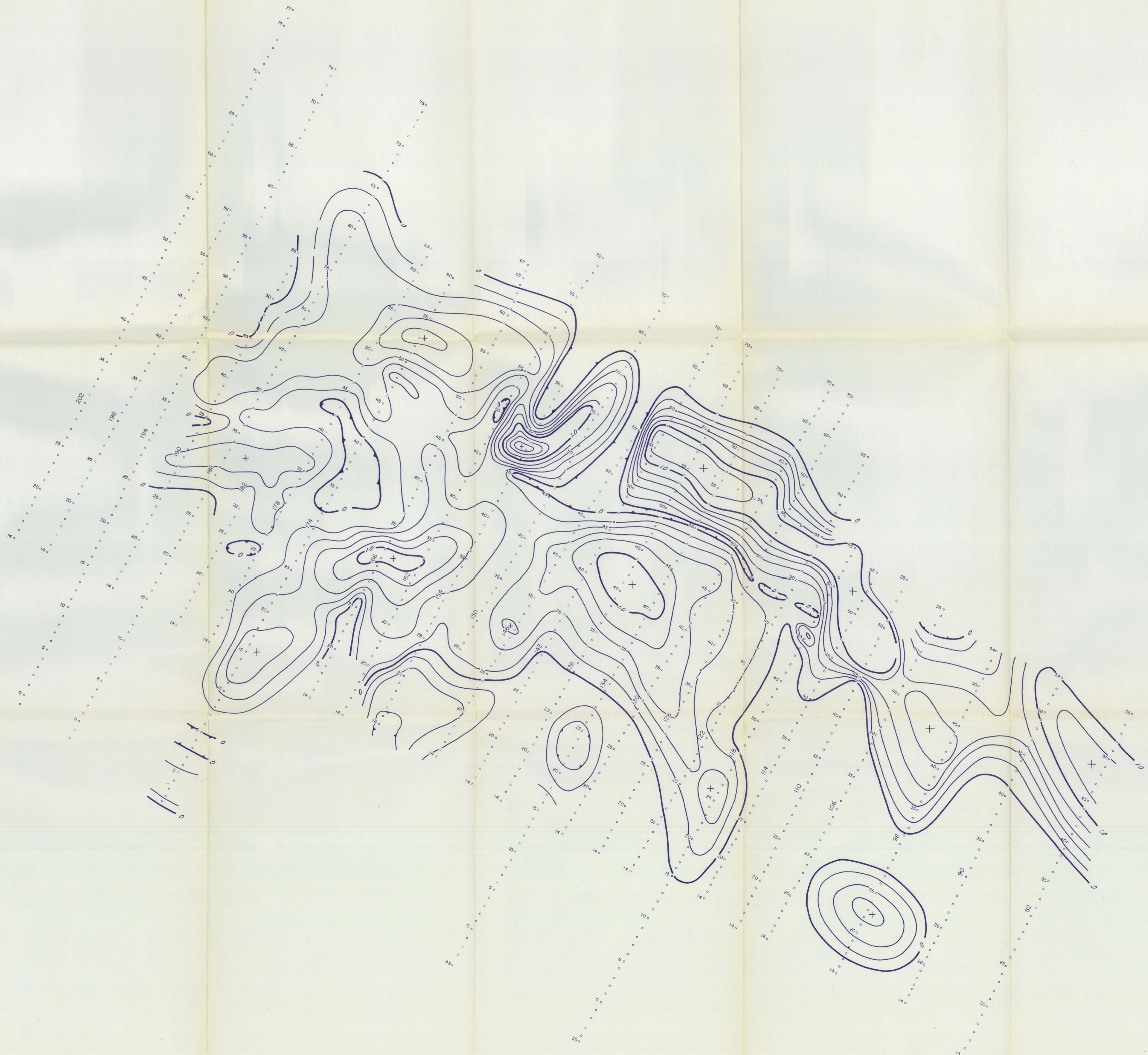


KERR-ADDISON MINES LTD.
LYN GROUP MINERAL CLAIMS
MAGUNDY RIVER AREA
 YUKON TERRITORY
 BOUGUER VALUES

C.I.L.
 Scale: 1" = 400'

R.B. Galeski
 August, 1971

AIRBORNE GEOPHYSICAL SURVEYS



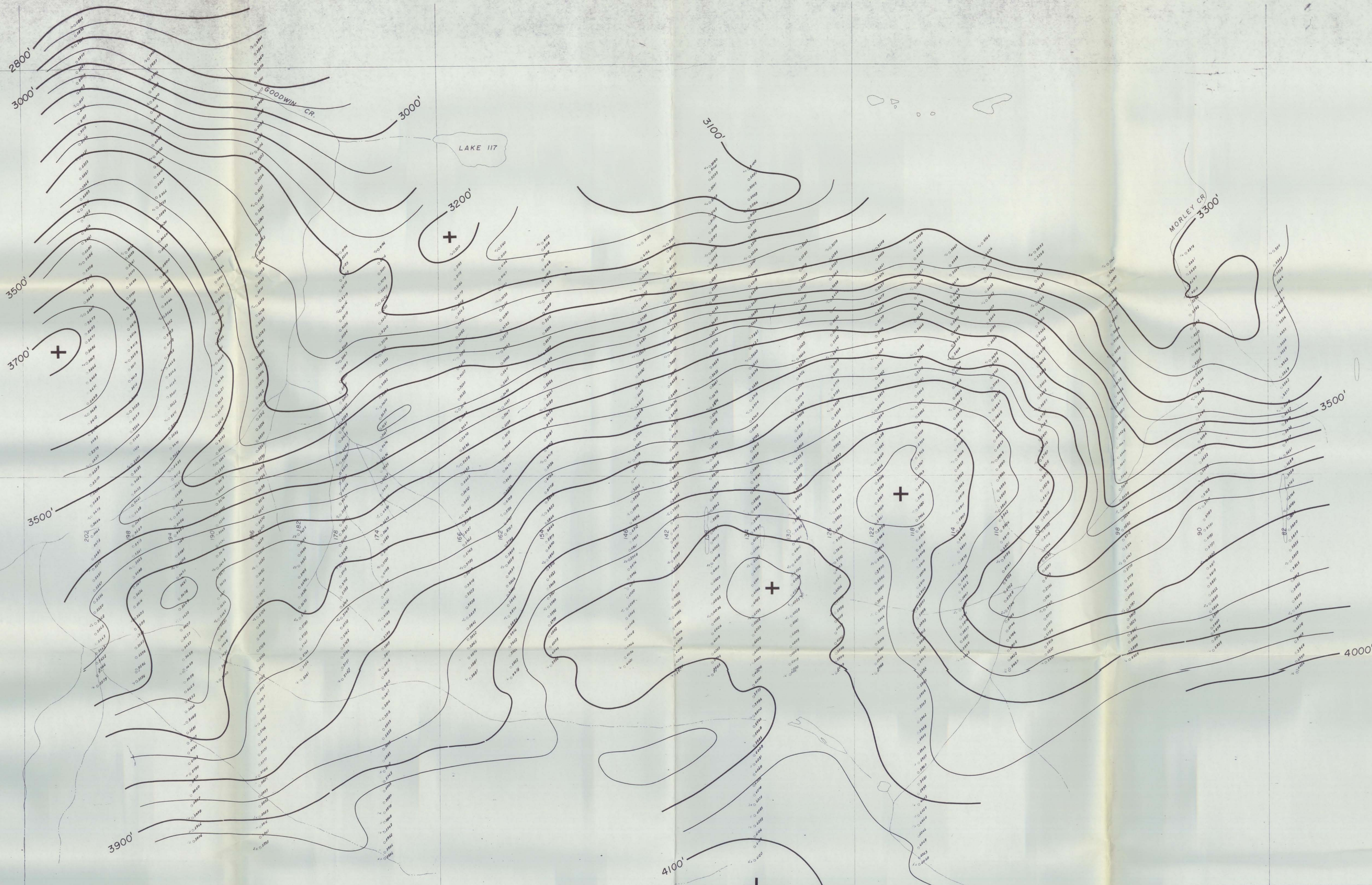
KERR-ADDISON MINES LTD.

MAGUNDY RIVER AREA
RESIDUAL MAP

C.I. - 0.2 mgal
Scale - 1 in. = 400 ft.

R.B. Galeski
August, 1971

AIRBORNE GEOPHYSICAL SURVEYS



LAKE 113

NEELANDS CR.

GOODWIN CR.

LAKE 117

MORLEY CR.



OVERLAND
EXPLORATION SERVICES (1969) LTD.

FOR
KERR ADDISON MINES LIMITED
LYN GROUP Mineral Claims
Magandy River Area, Y.T.

SURFACE ELEVATION MAP

Scale 1" = 400 FT. C.I. 50 FT.