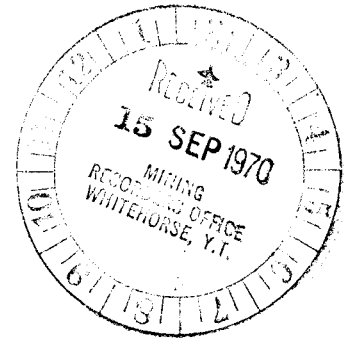


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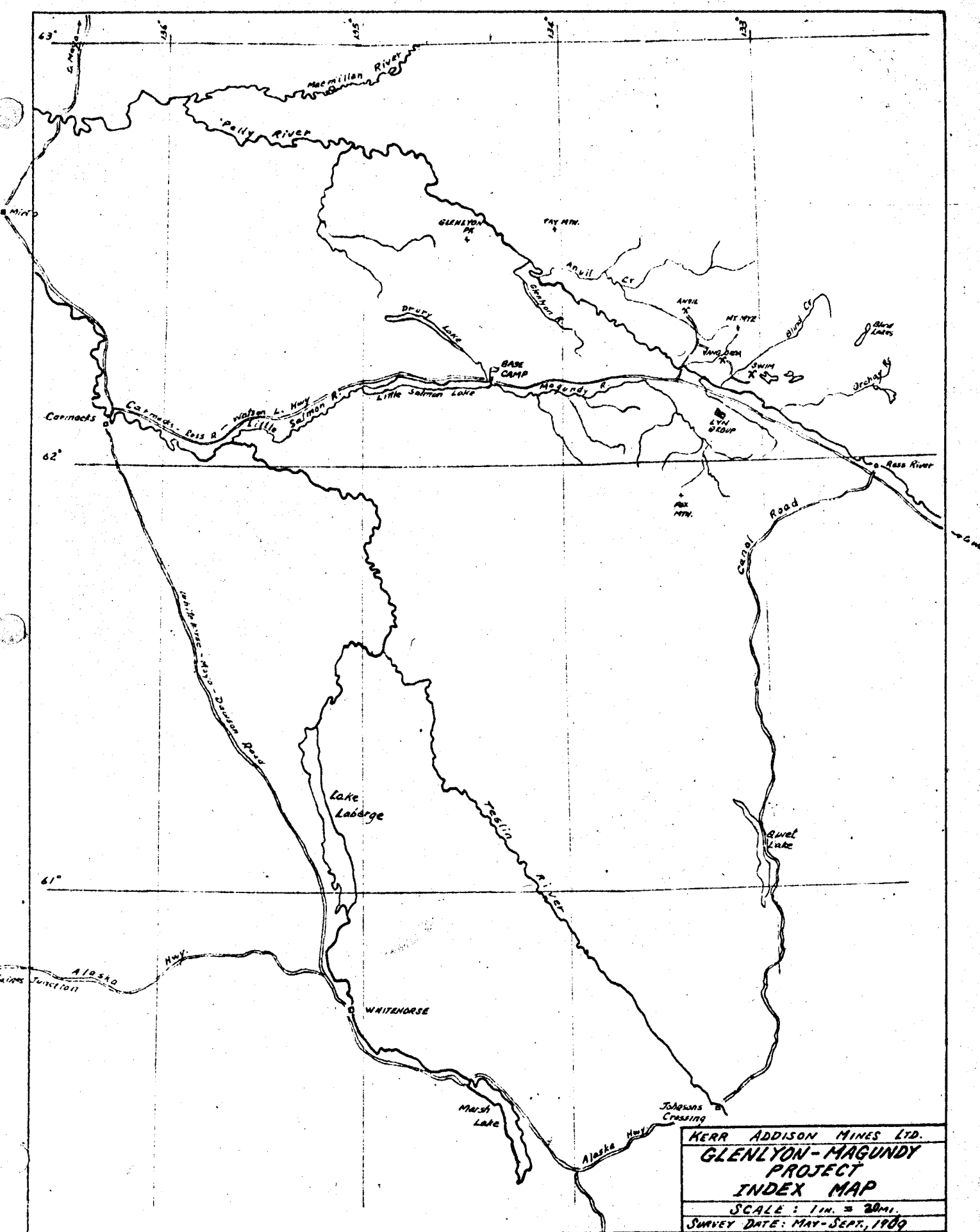
This report has⁶ been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of

\$⁷ 10,12,283.25

[Signature]
Resident Geologist, or
Resident¹³ Mining Engineer

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

[Signature]
Commissioner of Yukon Territory



KERR ADDISON MINES LTD.
**GLENLYON-MAGUNDY
 PROJECT
 INDEX MAP**
 SCALE: 1 in. = 20 mi.
 SURVEY DATE: MAY-SEPT, 1909

J. Shaw

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

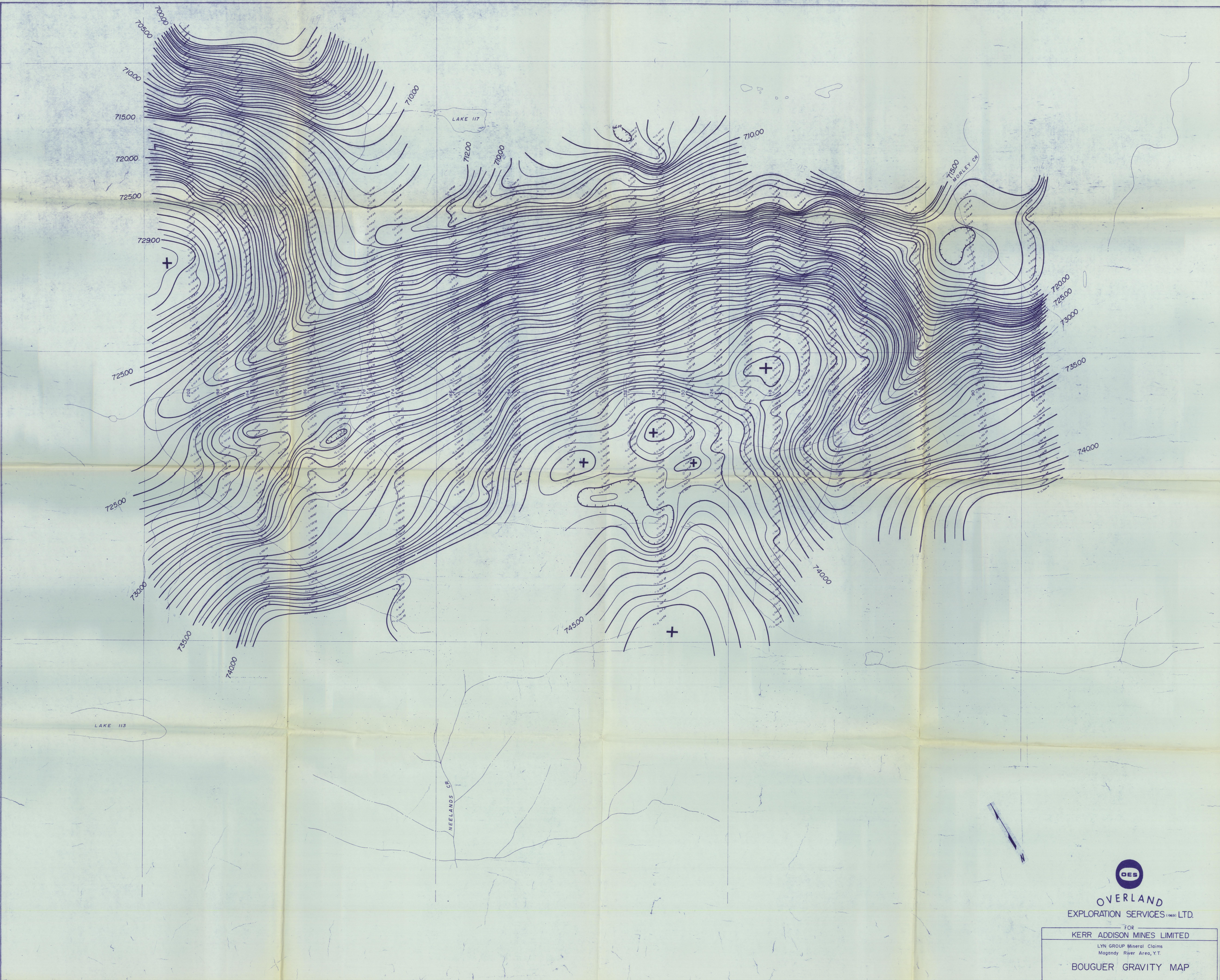
Mr. W. Stark
Tisdale, Saskatchewan

OFFICE

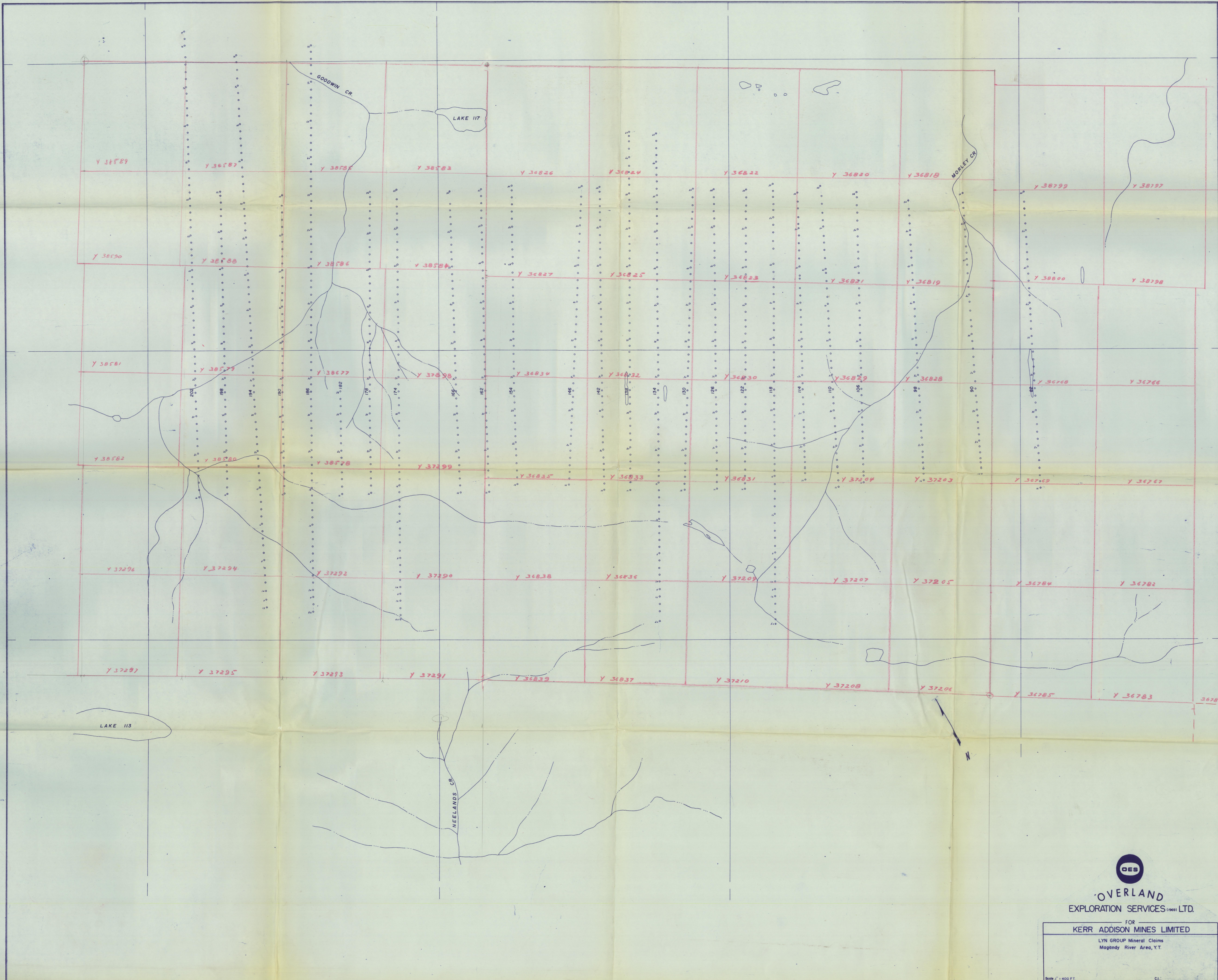
W.T. Salt
1347 - 12th Avenue S.W.
Calgary 3, Alberta

Supervisor

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




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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



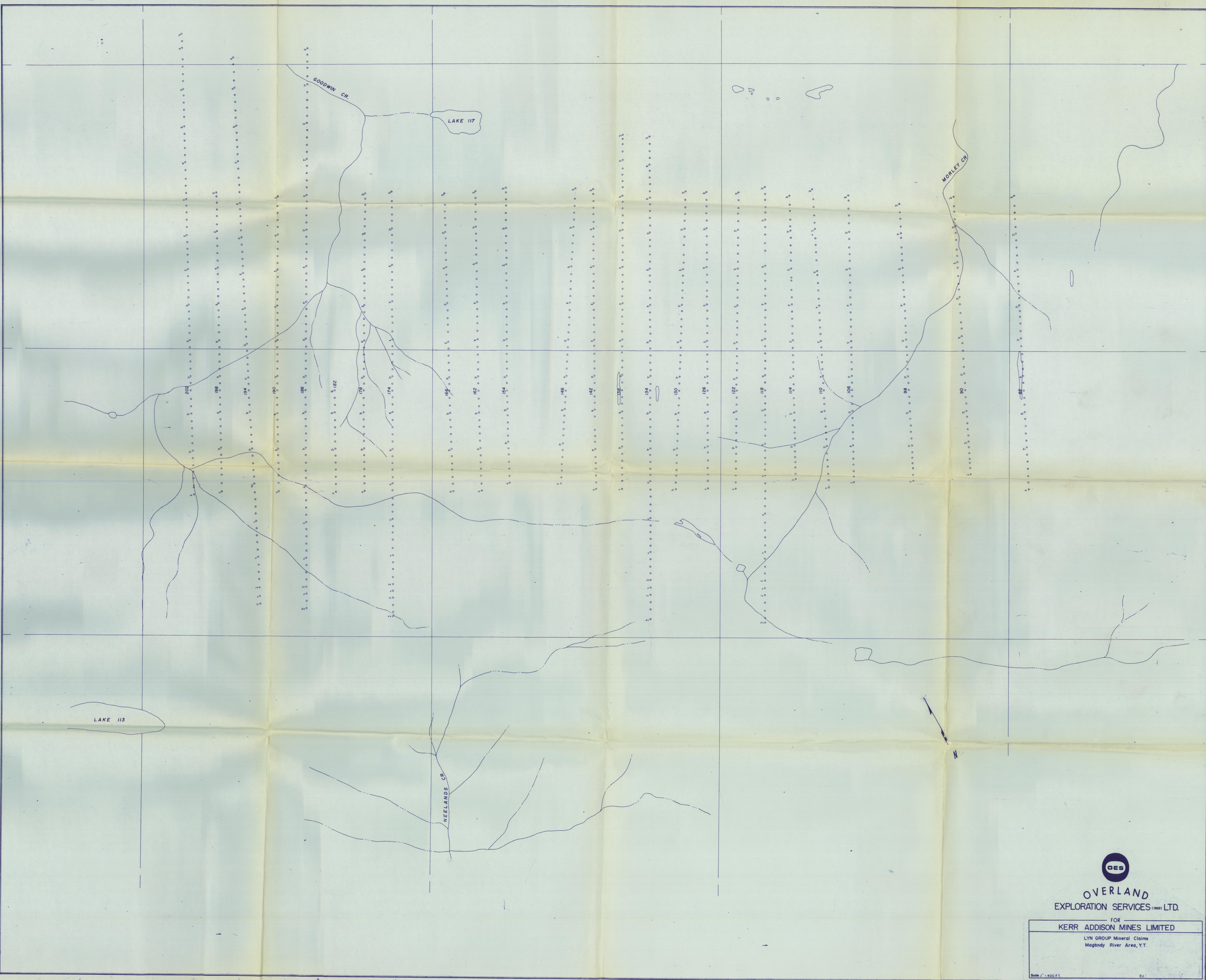
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FOR
KERR ADDISON MINES LIMITED

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

Scale 1" = 400 FT.

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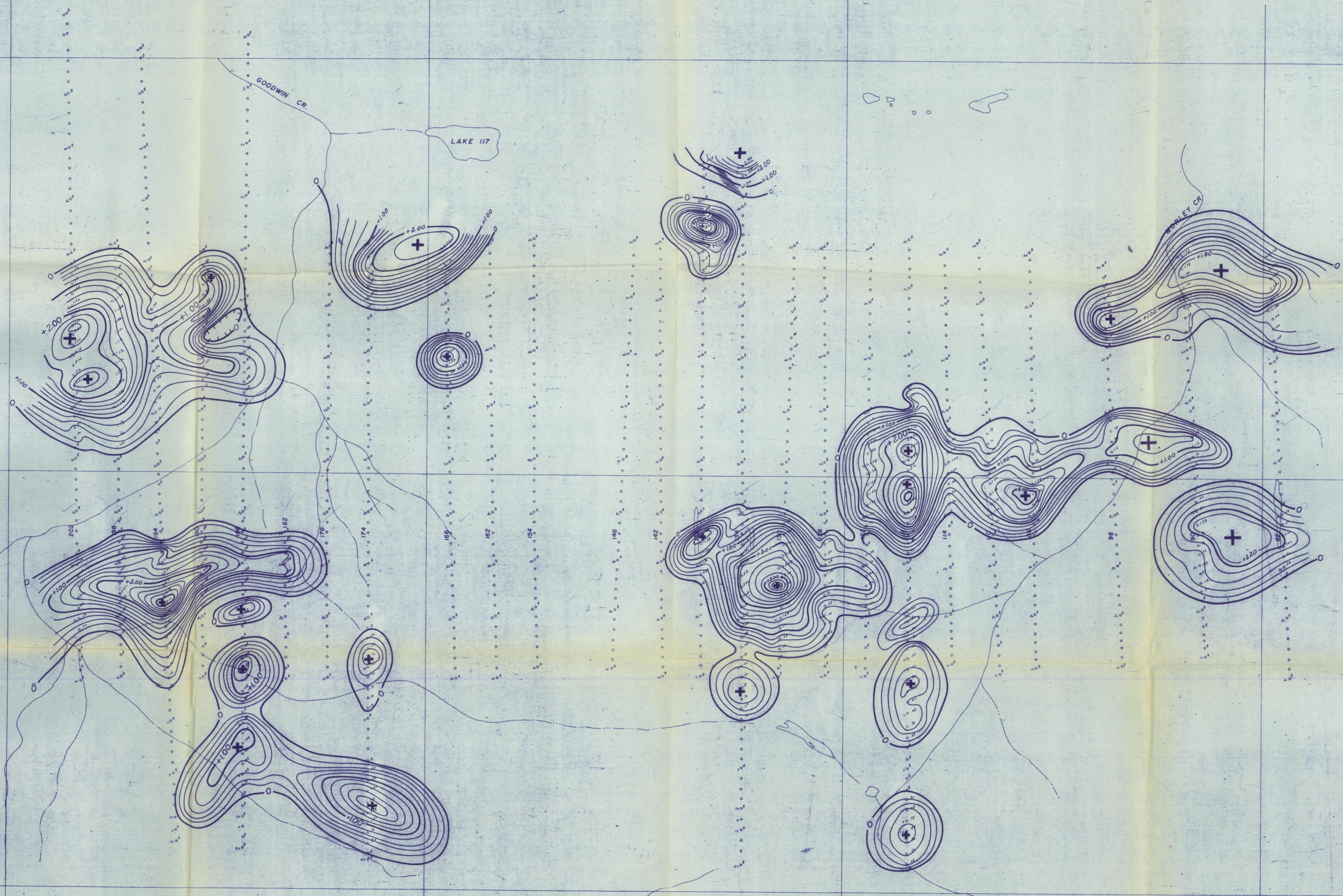


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LYN GROUP Mineral Claims
Magandy River Area, Y.T.

Scale 1" = 400 FT

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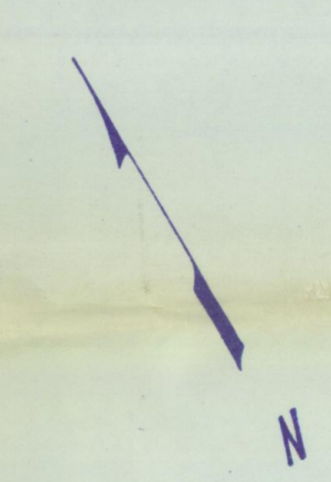
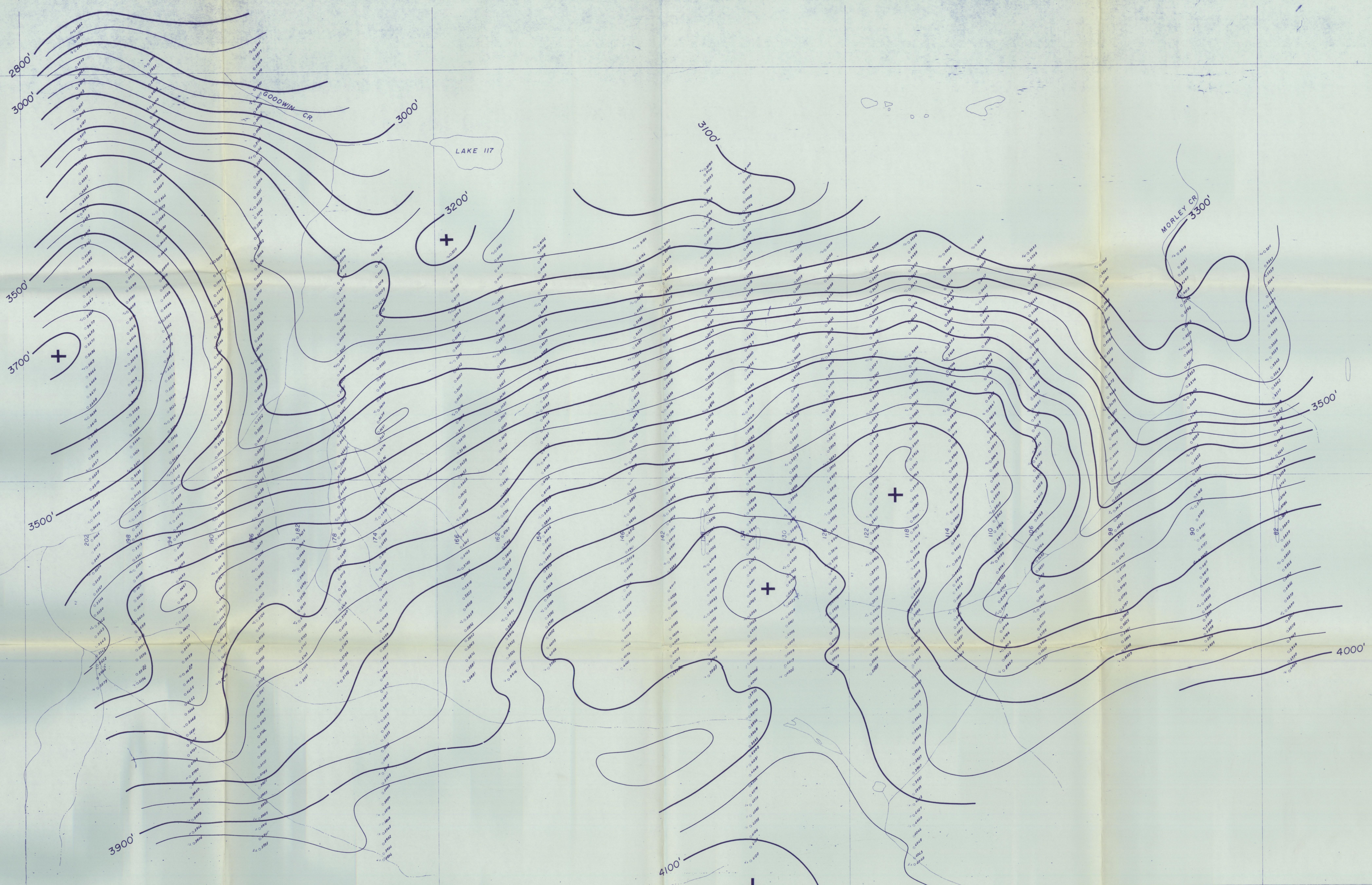
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FOR
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LYN GROUP Mineral Claims
Magandy River Area, Y.T.

RESIDUAL GRAVITY MAP

Scale 1" = 400 FT. CA 1020 2011



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

SURFACE ELEVATION MAP

Scale 1" = 400 FT. CI. 50 FT.

