GEOLOGY
OF THE TERRACE AREA, BRITISH COLUMBIA
LADY LUCK AND MAYNER'S FORTUNE
MINERAL CLAIM GROUPS
CREE LAKE MINING LTD. (N.P.L.)

RESOURCE MANAGEMENT LIMITED
Management and Geological Consultants - - - - -

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INTRODUCTION

A photogeological and field geological survey was undertaken for the purpose of mineral exploration in the area covering Mayner's Fortune and the Lady Luck claims. The Mayner's Fortune claims are located approximately 8 miles to the southwest and the Lady Luck claims are approximately 9 miles to the southwest of Terrace, British Columbia.

ACCESSIBILITY

The town of Terrace is the main business and administrative centre of the area. Kitimat, with its aluminum smelter and a harbor at the Kitimat Arm leading to the Pacific is located 40 miles south of Terrace. There are numerous other small settlements, particularly along the Canadian National Railway.

The Prince Rupert line of the CNR, with daily passenger service connects Terrace with Jasper and Vancouver via Prince George. A branch line through Mayner's Fortune claims connects Terrace with Kitimat.

Highway No. 16 is paved mainly and connects Prince George via Terrace with Prince Rupert. A further extension from Prince George to Jasper is presently under construction. The paved highway 25 leads from Terrace, passing Lakelse Hot Springs to Kitimat. CPA has daily scheduled service from Vancouver to an all-weather airport at Terrace. Charter float-plane service is available at Lakelse Lake and charter helicopter service is available at the Terrace airport.

Local access to the claims is on gravel roads mainly. The branch line of the CNR from Terrace to Kitimat passes through Mayner's Fortune claims. These claims can also be reached along a gravel road leading south from Terrace airport and then turning west along several lumber roads. The last mile has to be covered on foot along several trails, though vehicular travel by Landrover or Jeep may be possible under dry ground conditions.

The Lady Luck claims can be reached by landrover, jeep or truck along a public road leading to the southwest from the Terrace airport and then over lumber roads which lead right into the centre of the claims.

METHOD OF STUDY

Aerial photographs at a scale of approximately 4 inches = 1 mile (1 inch = 1320 feet) were obtained from the B.C. Government. The photographs are of good quality and are suitable for mosaic construction because of relatively little distortion which is at its maximum in areas of high topographic relief. The mosaic was printed from a contact negative at the scale of approximately 4 inches = 1 mile, and covers an area 9 by 9 miles south of Terrace.

The aerial photographs were analyzed steroscopically and the observed data were printed on the photo mosaic. This analysis leads to the detection of structural trends. Geological interpretations are, however, difficult to obtain because of the very dense cover of the coastal rainforest and no outcrops of bedrock are visible within the area under consideration. The analysis resulted in the recognition of several types of linear trends. One system of lineaments is interpreted as faults or fractures. A system of subparallel lineaments trending essentially north-south is interpreted to mark contacts of Paleozoic strata. It was possible also to identify some coast intrusives and to map their contacts with Paleozoic sediments by observing geomorphic and vegetal changes.

The data obtained from photogeologic analysis were checked by detailed field mapping during two field trips. The regional trends observed on the aerial photographs were confirmed as indicating contact zones and structural trends (e.g., fold axes). Several contacts between intrusives and Paleozoic sediments as marked by photo analysis were found to be plotted correctly, with an error of approximately 150 feet only. Some other geological interpretations had to be revised particularly in the vicinity of Herman Mtn.

Generally speaking we may conclude that the photogeological analysis proved to be essentially correct for establishing structural trends, and for mapping various contacts. The distinction between intrusives and sediments is, however, not correct in all cases because the dense vegetation conceals all outcrops and the contacts may be gradational so that a sharp boundary cannot be detected.

The field geological survey was carried out by running a series of traverses across the known structural trends. Various rock types were mapped on the photo mosaic and their more or less continuous trends were either traced for a certain distance or were assumed to extend along the trends observed on the aerial photographs. A reasonably accurate geological map was produced in a relatively short time and at low cost by combining photogeology and field geology.

Numerous strike and dip measurements were taken from the attitude of the strata. The data was plotted on a sterographic net following the techniques published by Haman (1961). These techniques render accurate data on fold and fault structures relevant to mining operations and exploration.

The portion of the photo mosaic covering the area of immediate interest (Lady Luck and Mayner's Fortune claims) was enlarged to a scale of approximately 8 inches = 1 mile. Though the good quality of the aerial photographs produced much topographic detail, it was still very difficult to accurately position certain surveyed locations on the mosaic. The aerial photographs are several years old and do not show recent developments of lumbering activity and new roads.

A photo survey was, therefore, carried out by renting a helicopter from Okanagan Helicopters Ltd. Three surveyed points (two on Lady Luck and one on Mayner's Fortune) were makred in the field by lifting sets of large baloons filled with helium above the trees. The balloons were then photographed by taking oblique pictures from the helicopter. This photo survey was, unfortunately, badly affected by a rapidly moving weather system which developed strong southwesterly winds. Smoke from a forest fire drifted into the valley at the time of the scheduled flight so that the quality of this survey was considerably reduced. The marker at Mayner's Fortune can be identified on the photographs and the survey system extending from Mayner's Fortune to the Hal claims could be plotted quite accurately on the mosaic. The unfavourable weather conditions make the identification of the Balloons at Lady Luck very difficult and the survey system in this part of the area may not be plotted very accurately.

In order to facilitate future surveying in this area, a series of vertical air photographs were taken from the helicopter which had its door dismounted. A conventional 35 mm Voigtlander Vito II camera was used by attaching water levels on the back of the camera. The pictures were taken by leaning out of the helicopter and by observing the two water levels positioned at right

angles to each other. The flight elevation was approximately 7,000', at a temperature of 3 degrees C (35 degrees Fahrenheit). The camera is equipped with a two-inch focal length lense and a Kodak negative film was used. The experiment to obtain stereoscopic coverage was successful, though unfortunately, the individual photographs were off-set obliquely because of the very strong southwest winds. (Plate :). The distortion on the individual photographs is almost negligible and there is an almost perfect match from one photograph to the next adjoining one. A new mosaic of high planimetric accuracy could thus be constructed. This mosaic was enlarged to the scale of approximately 8 inches = 1 mile. The new superposed portion of the mosaic shows all recent topographic detail as to the date of September 15, 1966, and the pertinent data, i.e. roads and slashes, were transferred to the mosaic of the government photography.

Stereoscopic coverage of colour photography may result in a considerable improvement of photo interpretation and this experimental survey can be considered partly successful in spite of the very unfavourable atmospheric conditions.

REGIONAL GEOLOGY

The Mayner's Fortune and Lady Luck claims are located 8 to 9 miles southwest of Terrace, B.C., and lie in a broad drainage valley that extends north from Kitimat Arm across Skeena River up Kitsumkalum and Cedar rivers to Sand Lake (Kalum - Kitimat Valley). This most spectacular physical feature had probably its origin from the Pleistocene period (Duffell and Souther, 1964, p. 8).

The reason for forming this regional north trending valley is herein interpreted to be structural. In the Lakelse Lake area the valley is bordered toward west and east by large intrusive bodies. The rocks within the valley consist mainly of Paleozoic strata or Mesozoic strata in the Kitimat area. An isolated major instrusive complex is present between Herman Mtn. and Lakelse Lake and is topographically indicated by mountains protruding above the Pleistocene valley floor (Plate 2).

ECONOMIC GEOLOGY

Mining and prospecting have played an important part in the settlement and development of Terrace map-area. Both placer and lode deposits have been worked as well as some deposits containing non-metallic material.

Duffell and Souther (1964, p. 69) stated: "Most sulphide occurrences in the area are in veins that give little promise of a continuous mining operation. However, it is possible that some of these deposits could be worked profitably in a small way." "The widespread occurrence of molybdenite and scheelite in veins and granitic rocks near contacts suggests the possibility that economic deposits of these minerals may some day be found in the area".

Duffell and Souther's statement was rather discouraging for mining exploration and an exploration concept had to evolve with its prime target on granodioritic contact zones. The quarrying of high-grade limestone at Shames, and the observation of numerous limestone shows within the claimed area encouraged

a more detailed structural and stratigraphic study of these deposits.

Limestone Exploration

The limestone beds are usually covered by moss and other dense vegetation so that it is difficult to determine extent and quality of the limestone bodies. A combined field and photo survey resulted in the recognition of relatively long trends of carbonate zones. Within the Lady Luck group some very thin bands of limestones only were observed and do not appear to be of economic value.

A sequence of approximately 100 feet of limestones was measured along the railroad within Mayner's Fortune claims. This limestone unit is repeated by fold and fault structures toward the east and six prominent carbonate belts were mapped on the accompanying geological photo mosaic.

The first limestone belt is relatively pure though structural deformation is quite intense particularly in the northern portion. A reconnaissance cross section through the 5th limestone belt showed an apparent thickness of 800 feet, i.e. a true thickness of approximately 650 feet. This limestone shows a great amount of interbedded chert. The limestone exploration encounters, accordingly, a stratigraphic problem and it appears that the carbonate zone is relatively thick and contains up to 30% interbedded chert in the eastern part. Toward west the carbonate unit becomes thinner and the limestone is more pure.

The economic potential of the limestone bodies is further reduced by structural deformation. Presently known field data indicates that structural deformation is most intense where the carbonate units are close to intrusive bodies.

Mineral exploration

Exploration for sulphidic minerals appears to be most promising along the contacts between intrusives and their overlying sediments. The flanks of the Kalum-Kitimat valley can, therefore, be considered highly prospective. The Lady Luck claims are located on the west flank of this valley. The Mayner's Fortune claims are located more centrally within the valley though they lie near the flanks of the isolated Herman Mtn. intrusive complex. Both claim blocks are strategically well located for mineral exploration.

An exploration concept based on mineralizations along contact zones of intrusives versus overlying sediments encounters problems arising from the greatly varying chemical-mineralogical composition of the intrusives. Duffell and Souther (1964) distinguished between biotite bearing granodiorites which are often white and pinkish in colour, and the more basic hornblende rocks, characterized by absence of biotite and greenish colour. The latter rocks are marginal to the biotite intrusives and occur along the contact zones with the overlying sediments. The contacts can be very sharp, with obviously intrusive biotite-granodiorite being close to the sediments, or there can be a gradual transition with hornblende-diorites and extensive zones of migmatization separating the intrusives from the low grade metamorphosed sediments. It is our not fully proven contention that the sharp contacts between biotite-granodiorite and sediments are more favourable for mineralizations than the contacts between the more basic hornblende granodiorites, or diorites with the sediments. Continued attention to this concept may considerably improve future exploration.

A very prominent sharp contact between biotite-granodiorite and sediments is present in the Lady Luck group, where a major intrusive body occurs to the west (herein called "Lady Luck intrusive) and sediments with some minor biotite-granodiorite stocks to the east. Most of the granodiorites or diorites in the Mayner's Fortune claims are of the more basic type and carry no biotite. A few small stocks, however, contained some biotite and were more pinkish in colour and may possibly be more prospective.

Economic mineral concentrations are presently thought to be found either within the biotite-granodiorites and very close to the contact, or the minerals evaded from the intrusive by hydrothermal action and migrated into a suitable host rock within the sediments. The latter type appears to be most common in both the Lady Luck and Mayner's Fortune claims.

Future mining exploration requires detailed structural analysis in order to map attitude and extent of the host rocks. The regional structural trends have already been established by photo and field geology but minor complications can be expected. There is presently no indication that the mineralization followed fractures, faults or is related to transvers porphyric dykes.

The Lady Luck Claims

The Lady Luck claims cover an important contact between a large biotite-granodiorite intrusive in the west (Lady Luck intrusive) and Paleozoic sediments with some minor intrusive stocks toward the east. The contact strikes

approximately N 10 degrees W and dips very steeply, almost vertically toward the west. The contact is repeatedly exposed immediately west of a south draining valley and shows white biotite-granodiorite in contact with metamorphic hornfels-greenstone carrying large amounts of garnet and some sulphides. Thin veins of granodiorite and quartz breccias extend from the intrusive into the sediments (Plates 3 and 4). There are no outcrops immediately east of the contact within the south draining valley. It is suggested that the valley is highly prospective for mineralizations because of the vicinity to the major intrusive contact and it is assumed that the valley trending parallel to the contact indicates soft Paleozoic sediments and sulphides which are more susceptible to erosion than the intrusives. Exploration is hindered, however, by swamps and a probably thick infill of boulders and Pleistocene material. Geochemical and geophysical prospecting is required to test this highly promising ground.

The area east of the valley consists of a series of north trending ridges and ravines which indicate that the regional structural trend is parallel to the major contact of the Lady Luck intrusive. Outcrops are very widely scattered and the structure can be analyzed only following extensive opening of the ground by trenching.

The "O" point of the survey system stands near a small stock of biotite-granodiorite in contact with greenstone. Good mineralizations are present up to five feet from the intrusive. Toward northeast (100' north and 150' east) is greenstone in contact with limestone. At 200' north and 250' east is a small outcrop of greenstone with some sulphides and at 300' north and 250' east, a granodiorite vein shooting through garnet greenstone was observed.

At 800' south and 300' east occurs a minor granodiorite in contact with greenstone and limestones appear to be present 100' to the east.

A well mineralized zone was observed at 1300' south and 300' east and trenching operations were started at the time of the survey on September 21, 1966 (Plate 5). Four continuous outcrops were inspected and showed greenstone with heavy mineralization trending precisely N 10 degrees W, i.e., parallel to the main contact of the Lady Luck intrusive and parallel to the regional structural trends. At 1320' south and 300' east garnet greenstones and argillites contain sulphides which partly replace the sedimentary rocks and partly follow fractures. At 1340' south and 300' east greenstones with olivine and argillites carry various sulphides and molybdenum.

At 1300' south and 400' east massive greenstones occur to the west and limestones to the east.

The regional strike of the strata is approximately N 10 degrees W, the dip may range between 50 degrees and 85 degrees toward west and it is suggested that the Paleozoic sedimentary series is overturned. Future trenching operations may lead to the recognition of minor fold structures with the fold axes trending essentially N 10 degrees W.

The mineralization within the Lady Luck group is presently thought to originate from the major contact of the Lady Luck intrusive with Paleozoic sediments. Minor stocks of the intrusive branching off from the main body occur east of the intrusive and have supplied a series of mineralizations near the contact zones.

The mineralization is of the replacement type and the minerals evading out of the intrusve migrated into a suitable host rock within the Paleozoic sediments. The regional trend of the mineralized zone is N 10° W. The attitudes and the extent of the orebodies may vary depending upon folding of the host rock and is also possibly affected by faulting. Photogeologic analysis indicates that east-northeast trending faults may be dominant. Mineralization in fractures is presently thought to be secondary and may be of less economic importance than the mineralization by replacement.

The Mayner's Fortune Claims

This claim block is located centrally within the Kalum-Kitimat Pleistocene Valley, near the west flank of the Herman Mtn. intrusive complex. Paleozoic strata are the main component of the rocks and intrusives are less dominant. The regional structural grain is approximately north - south to north 10° east and indicates north trending folds and some thrust faults dipping east. There are a few isolated biotite-granodiorite intrusives light grey to pinkish in colour. Most of the stratigraphically lowest rocks are of the medium to dark green, more basic hornblende granodiorite to diorite variety and occurr near paleozic hornfels and greenstones. These medium to coarsely grained rocks are indicating relatively wide contact zones characterized by migmatisation and their contacts with sedimentary rocks are presently thought much less prospective than the contacts of biotite-granodiorite. At stratigraphic higher levels are hornfels and greenstones usually fine grained and dark bluish grey. The thickness may be in the order of a few hundred feet but may also be considerably less, probably

because of structural thinning. Apparently overlying the greenstones are graphitic argillites and limestones. A well exposed section was measured along the railroad.

Greenstone, fine and coarse	several hundred feet
Slate and quartzite, strongly laminated	3 feet
Limestone, thickly bedded, containing approximately 10% greenstone	8 feet
Covered interval (probably desintegrated limestone	20 feet
Limestone, poorly exposed, bedding indistinct, thickness estimated	30 feet
Greenstone, approximately parallel to bedding	1 foot
Limestone grading to marble, thick bedded, pure, medium crystalline	30 feet
Limestone, silicified, quartz is approximately parallel to bedding and appears to be sedimentary	1 foot
Limestone, massive, fine to medium crystalline, grading to Marble, with approximately 10% greenstone impurities	6 feet
Limestone grading to marble, massive, pure	15 feet
Limestone, 4 inches to 1 foot bedded, containing some impurities	6 feet
Limestone grading to marble, massive, relatively pure	15 feet
Total thickness of carbonate section	135 feet

The height of the carbonate unit is in average approximately 100 feet above the railroad tracks and can be traced for 450 feet toward north where it may become slightly thinner, with an average thickness of approximately 100 feet.

This continuous carbonate unit contains, accordingly, 4 million and five hundred thousand cubic feet or four hundred and fifty thousand tons of carbonates.

Additional limestone reserves are present by quarrying below the level of the railroad. The lower limit is probably given by a thrust fault dipping approximately 30° toward east from above the railroad tracks.

The limestone appears to be of better quality than the limestone previously quarried by Barr at Shames where two massive limestone beds, 20 to 25 feet thick, were flanked by numerous greenstone - dykes and were off-set by faults.

The carbonates extend even further north but some faulting and crossing porphyric dykes may make quarrying more difficult. The carbonate volume of this northern extension is, at least, another four hundred thousand tons though, possibly, of a poorer grade. This northern carbonate unit comes closer to a pinkish grey granodiorite intrusive, and this contact zone is favourable for mineral exploration. At station 2 South 500 feet is limestone intersected by small diorite intrusives and veins. The contact between the limestones, characterized by low topography and hornfels-greenstone rocks to the west, forming high hills, intersects the base line at 400 feet east. There are some hornblende ites within the greenstones and some light mineralizations of zinc sulphides and magnetite is present. This approximately north-south running contact ought to be further analyzed by geochemical or geophysical investigations.

At 6 South 400 feet occurs pinkish biotite-granodiorite grading to hornblende-diorite intruding into hornfels-greenstone.

Station 8 South 400 feet, stands on biotite-granodiorite with some hornblende-diorite, flanked by a belt of greenstones to the east. At 10 South 500 feet, is another hornblende-diorite belt. The area farther east is completely covered and is assumed to be underlain by Paleozoic rocks.

Station 16 South 600 feet, stands in a little south draining creek. On the east side of the creek is a west facing cliff of biotite-granodiorite. It is suggested that a north striking thrust fault brings the granodiorite on the upthrown block in contact with paleozoic strata on the downthrown block. If this assumption can be proven to be correct, one may expect mineralizations along the east contacts of the intrusives only. The west contact is a structural contact and may be barren, unless the fault zone itself is mineralized.

The area further east is characterized by gentle topography with scattered showings of hornfels-greenstone, argillites and some carbonates (2nd limestone belt). Some higher knobs contain biotite-granodiorite intrusives which appear to be surrounded by the more basic border facies of the hornblende-diorites.

Station 26 South 1300 feet is located in a little south draining creek. Toward west is a belt of coarse grained hornblende-diorites which appear to be flanked on both sides by greenstones. The diorite trend is possibly following an anticlinal axis.

To the east lies the prominent 3rd limestone belt which may intersect the base line at approximately 3,400 feet east. In the southern part this limestone belt comes relatively close to a large hornblende-diorite with some

intrusive characteristics. The central and northern part is apparently relatively far away from any major intrusives. The very few scattered outcrops suggest the presence of some pure limestones suitable for quarrying. The apparently little disturbed, very long extent in northerly direction may indicate the presence of a large amount of tonnage. Very detailed sampling and mapping is a prerequisite for ascertaining economic feasibility.

East of the 3rd limestone is a broad zone of greenstones and hornfels with hornblende-diorite in the central portions forming high hills. This zone is interpreted to indicate an anticline with highly metamorphic and migmatized rocks in its core (herein referred to as "Bridge Anticline"). Biotite-granodiorite was not observed and, accordingly, the area is presently considered less favourable for mineral exploration. Some test soil sampling in the immediate vicinity of the hornblende-diorites may prove or disprove the present exploration concept that biotite-granodiorites are better for mineralizations than the more basic hornblende-diorites. The intrusives appear to widen and become more acid in the south giving the appearance of a north plunging anticline. The possibility of mineralizations is, therefore, believed to be better in the southern part of this prominent trend. The high knob north of the railway bridge crossing Lakelse River consists of hornblende-diorite on the west slope. It is suggested to carry out some soil sampling along the base of this slope, where the diorites are in contact with greenstones and the third limestone belt. The east slope of the knob consists of quartz schists, hornfels, greenstones and limestones. No

mineralization has been observed so far though there is a good contact between a major hornblende-diorite and the overlying sediments. Some soil sampling is required on the top of the knob and on its east slope in order to disqualify this area for mineral exploration.

The east flank of the Bridge Anticline appears to be structurally complicated because of repeated limestone, greenstone and hornblende-diorite belts. The 4th limestone belt is generally very poorly exposed.

To the east across a little south draining creek are some scattered outcrops of pinkish grey hornblende diorites which are overlain by some 200 feet of argillites and quartz schists and greenstones. These rocks are fairly well mineralized by sulphides and magnetite as shown in the workings of Mr. Mayner. The area between the hornblende-diorite in the west and the workings appear to be prospective for further exploration and the regional trend of the mineralized zone is probably approximately north-south.

Above the workings is the base of the 5th limestone belt. The lowermost 150 feet of this carbonate unit is very well exposed in a little west draining creek, approximately 1,000 feet north of Mayner's workings. The limestone is strongly laminated and carries approximately 30% of interbedded chert. The strata dip between 45° and 75° to the east and a survey in easterly direction indicated an apparent thickness of 800 feet or a true thickness of approximately 650 feet of carbonate rocks. There are sporadic outcrops only but quartz and chert beds up to several feet in thickness appear to be present throughout the carbonate unit, particularly in the lower and upper part. The central part of the section

may carry some massive, pure limestone-marble beds of still unknown thickness. A pure limestone bed of sufficient thickness may supply considerable tonnage because of the very long northerly extent of the carbonate unit and apparently relatively little structural deformation.

To the east of the 5th carbonate belt is a very poorly exposed zone of argillites, quartz schists, greestones and hornfels. Several minor hornblende and biotite-diorite occurrences indicate some close-by intrusives but no mineralization was observed.

The 6th carbonate belt runs along the east side of a little south draining creek and is generally very poorly exposed. On the west side of the creek is a ridge formed by grey hornblende-diorite. No mineralization near the contact was observed. East of the 6th carbonate belt are poor outcrops of hornfels, greenstone, quartzite schists with sporadic granodiorite veins. The strata appear to form a major north plunging syncline. The eastern border of the Paleozoic sediments is marked by a hornblende-diorite contact which is well exposed west and above High Lake. The contact does not show any significant mineralizations.

Several porphyry dykes are scattered throughout the Mayner's Fortune claims and trend essentially east-west to east-northeast. The dykes are apparently younger than the regional structures and intrusives. No mineralizations associated with the dykes were observed.

Generally speaking we may conclude that the Mayner's Fortune claims appear to be less favourable for mineral exploration than the Lady Luck claims.

One of the best prospects is probably near the north end of the first carbonate belt. Further prospects exist: 1. immediately east of the second carbonate belt; 2. along both flanks at the south end of Bridge Anticline and, 3. along a north-south trend through Mayner's workings, immediately east of the 5th carbonate belt. Further prospects may develop by future exploration.

The deposition of carbonates is apparently better for commercial exploitation within Mayner's Fortune claims than within the Lady Luck claims. Several prominent carbonate belts were mapped. The first carbonate belt may contain more than 450,000 tons of limestone. The third carbonate belt appears to be most favourable for future carbonate exploration. The 5th carbonate belt contains a very thick section of impure limestone though it may contain commercial deposits in the central portion.

SUMMARY AND CONCLUSIONS

A combined photo-geological and field geological analysis was carried out covering the area of the Lady Luck and Mayner's Fortune claims southwest of Terrace, B.C. The area under consideration lies within a prominent north trending Pleistocene valley (Kalum-Kitimat valley) which is bordered toward west and east by major coast intrusives. The rocks within the valley consist of folded and faulted Paleozoic sediments mainly with some minor intrusives with the exception of a centrally located intrusive complex extending from Herman Mtn. to Lakelse Lake. The Lady Luck claims are located on the west flank of the Kalum-Kitimat valley, and are in a very favourable position for mineral exploration.

The Mayner's Fortune claims are located more centrally within the valley and are near the flanks of the Herman Mtn. - Lakelse Lake intrusive complex. The latter claim block is, therefore, also relatively well located for mineral exploration. Six relatively long carbonate belts were observed which may be partly economically feasible for limestone quarrying.

The Lady Luck Claims

This claim block covers an important contact between a large intrusive to the west and Paleozoic strata to the east. The contact strikes approximately N 10° W, and dips steeply to the west. The area immediately to the east of the contact is highly prospective for mineralizations. A series of minor intrusives, probably branching off from the major intrusive, were observed further east and good mineralizations are present in the surrounding sediments. The mineralized zone is thought to trend essentially parallel to the intrusive contact, i.e., N 10° W. The orebodies may have different attitudes depending upon the apparently folded and faulted host rocks. Detailed structural analysis is necessary to establish trend and extent of the orebodies.

The Mayner's Fortune claims

This claim block covers large areas of Paleozoic rocks with minor occurrences of intrusives. Most of the intrusives are of a relatively basic hornblende-diorite type and may be essentially barren. Some more acid biotite-granodorite intrusives are presently thought to be more favourable for mineralizations.

One prospect showing sulphides and magnetite near an intrusive contact was observed immediately east of the railroad. Another similar prospect is present in Mr. Mayner's workings in the eastern part of the claim group. The prospective trend is in approximately north-south direction. Several other contacts are present which may become prospects by additional geochemical and geophysical exploration. Six major trends of carbonates were mapped. The first carbonate belt may contain more than 450,000 tons of relatively pure limestone. The third carbonate belt carries some pure limestone of probably large extent and with relatively little structural deformation. The 5th carbonate zone is very thick but impure. Chert laminations are abundant, particularly in the lower and upper part of the section. The central part contains some pure limestones. If these are of sufficient thickness a considerable tonnage of limestone may be present because of the very long extent and relatively little structural deformation of this carbonate belt.

References:

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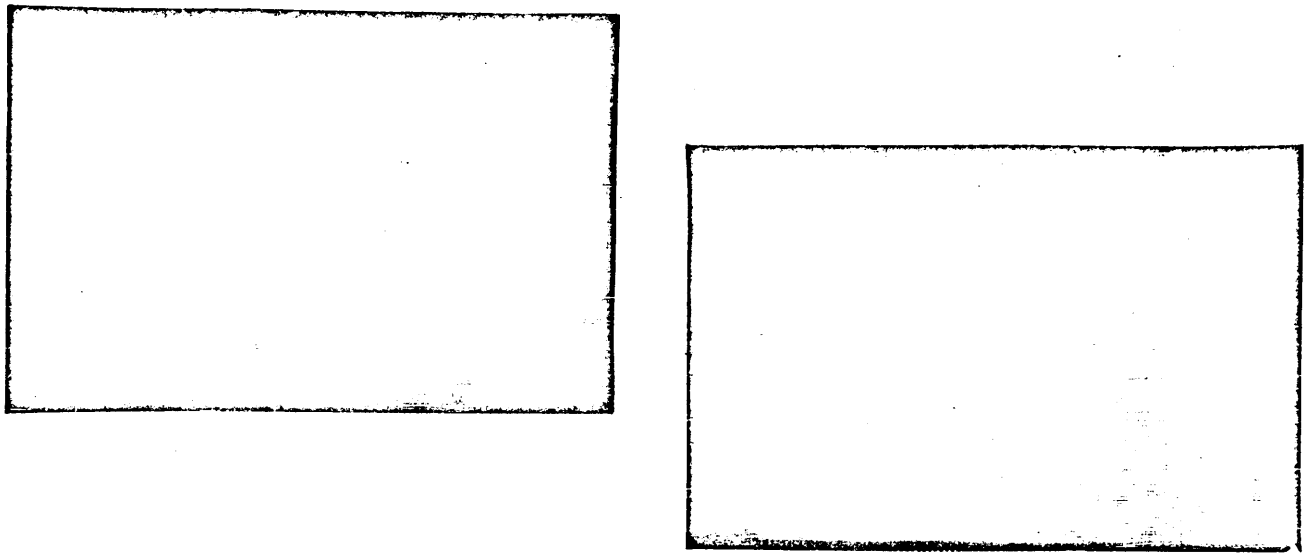

Plate No. 1 Stereo-Pair

Lady Luck Intrusive (upper left and contact along a South draining valley (lower right)

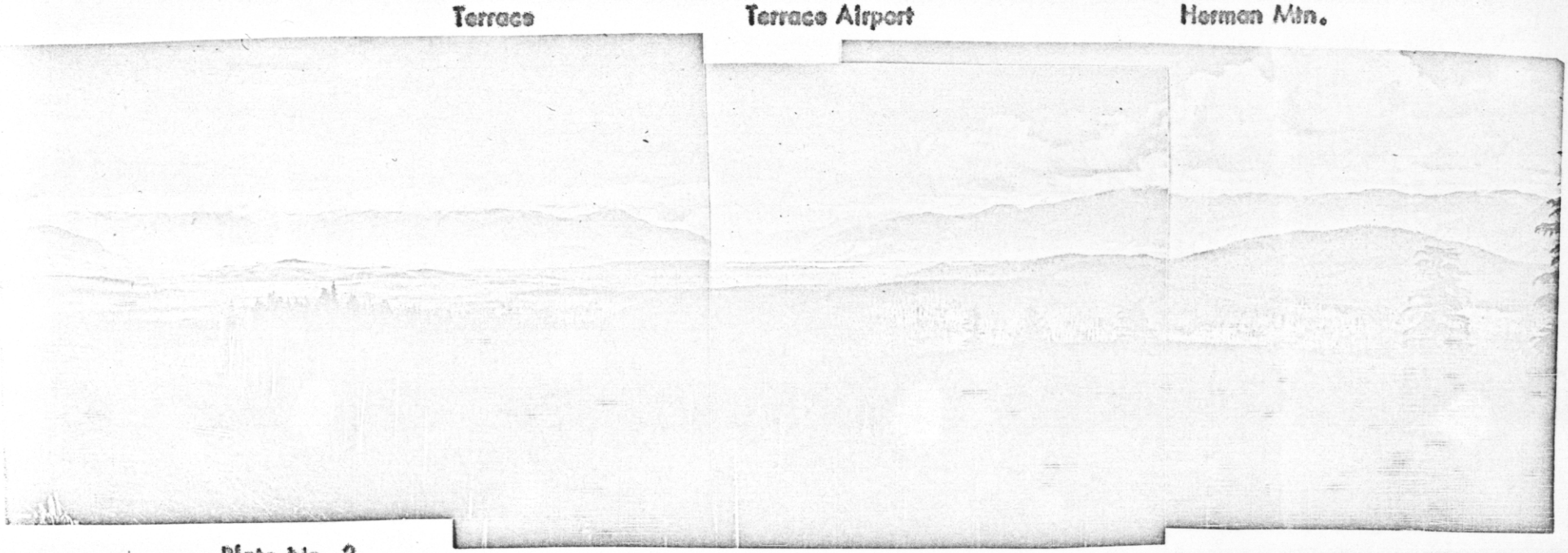

Plate No. 2

Panoramic view from Lady Luck Intrusive (left) toward northeast and north

Plate No. 3

Lady Luck intrusive (upper part) in contact with metamorphic Paleozoic sediments (lower part)

Plate No. 4 Contact of Lady Luck intrusive. Granodiorite veins and quartz breccias extend from the intrusive into Paleozoic strata (lower right). Mr. Gabriel Holday at extreme right.

Plate No. 5

Trenching operations at Lady Luck, 1300' south and 300' east of zero.

September 21, 1966