

A SUPPLEMENTARY REPORT ON
THE 1974 GEOCHEMICAL SOIL SURVEY ON
THE LAFORMA PROPERTY OF
DISCOVERY MINES LIMITED

006786

INTRODUCTION

A surface soil sampling geochemical exploration program was conducted on the LaForma Property at Mount Freegold, 40 miles west of Carmacks, Yukon, during August and September 1974. Samples were analysed for copper, zinc, and arsenic. Arsenic is known as a good indicator element for gold mineralization in this region.

Results outlined numerous areas of anomalous arsenic values. Two large areas, approximately 2,000 feet in diameter, of anomalous values were especially interesting. Area I is along the Pal Fault to the west of the G-3 Zone, the previously developed gold-bearing structure. Area II is east of the Rambler Vein at the east end of the property. Additional analyses for gold, silver, and mercury were conducted on samples from these areas.

CONCLUSIONS

Significant correlation was obtained between anomalies of gold, arsenic, silver and mercury. The great variation in topography, soil type, sporadic presence of permafrost, and, except for a few areas, lack of geological data on underlying

rock types makes interpretation difficult.

Area I is primarily one of steep slopes and permafrost except near the A Baseline. Arsenic and mercury, which normally form the largest halos around gold deposits, give corresponding strong anomalies. Gold and silver returned low anomalies with generally the same trends and occasional spot highs. This indicates that the mineralized source of these elements is not at the surface but may be in the order of 100 feet or more below. The diamond drilling should be directed to cut the indicated zones from 100 to 200 feet below surface.

Area II results gave strong anomalies for all elements with some extremely high gold values. Most of the best values were at the crest of the ridge with gentle south facing slopes. The recorded soil descriptions indicate a strong possibility that at least some of the high values are attributable to residual soil concentrations. GSC mapping shows a complex of quartz porphyry, syenite and granodiorite underlying the anomalous area. These rocks may produce a more acid soil leading to a much higher mobility for all elements. The gentle slopes would retard the dispersal and lead to higher concentrations. One very strongly anomalous structure is outlined as probably being the northeast extension of the old Theodore Vein. This is near the west edge of the anomalous area.

Parallel or branching structures are indicated to the east. This area could also possibly be a fracture zone within the syenite or quartz porphyry. A row of diamond drill holes should be laid out to obtain the maximum information on the geology of the area as well as intersect the indicated structures.

DISCUSSION

A great number of variable factors influence soil sample geochemistry and make the interpretation and evaluation of results difficult. These include rock type, soil type and acidity, topography and the presence of permafrost.

The bulk of the rocks underlying the property are granodiorites. A few exposures of older syenites are known, but it is not known what shape these have. It may be that they are roof pendant type bodies. Younger quartz porphyry and feldspar porphyry dykes and irregular intrusive bodies appear to cut both the older rocks. These are occasionally weakly mineralized and appear to have some control of gold deposition. A few young andesite dykes are also present.

Soils on the property are classed as residual; that is, they were not transported, but are formed from the underlying rocks. In general, the soils in this area are considered

neutral, but a little disseminated sulphide locally could cause acid conditions. Theoretically, this would have no change on the mobility of arsenic, which is considered medium, but copper, zinc, mercury, silver and gold, which have a low mobility in a neutral environment change to a high mobility in acid conditions. It is known that in some sections, the quartz porphyry does contain a low level of disseminated sulphides.

Slope angles have a great effect on the dispersion of elements. On steep slopes dispersion by rainwater is a major factor in the movement of elements down slope and away from the source. On gentle slopes the run-off is not as rapid and can lead to a concentration of elements with a low mobility such as gold. In flat areas and very gentle slopes, dispersion is negligible resulting in the possibility of an enriched zone in soils above a low grade source.

Permafrost adds another dimension to the interpretation problem. It is known that permafrost retards the dispersion of elements. Thawing of the upper layer in the spring and summer flushes out the elements which percolated up through the frost layer during the winter. Flushing by rainwater is enhanced since it is confined to a narrow zone above the ice. Geochemical threshold values are generally lower, therefore, than under other conditions.

Most epithermal mineral deposits have a primary dispersion halo. Some detailed studies of gold deposits in Russia found that the upper parts of these halos contain high arsenic and mercury concentrations, and are quite wide, sometimes at a considerable distance above the actual mineralization. With depth, as the mineralization is approached, narrow halos of silver and gold are found. Gold in particular is very restricted to immediately above the zone. These primary halos can find an expression in the secondary dispersion pattern. Broad areas of relatively high arsenic and mercury, without any substantial gold or silver, could indicate that the source of the elements is at some distance below the surface. Conversely, high gold and silver could indicate a source very near the surface.

AREA I

Arsenic determinations have shown a broad area of anomalous values. Mercury results correspond quite closely although there were insufficient samples to calculate background and threshold levels. Silver values were very weak and cannot be considered anomalous. Only a few isolated high gold values were obtained. All elements show corresponding trends which indicate a possible series of mineralized

structures extending north and south, roughly parallel to the G-3 Zone, from the Pal Fault which is itself mineralized.

Soil conditions change rapidly within the area. At the A-Baseline around the Pal Fault (18N), soils are shallow and dry. About 800 feet to the northeast the alluvium cover starts, along with some permafrost. Slopes here are gentle, about 5 to 10 degrees to the southwest. About 500 feet to the northwest along the Pal Fault, permafrost becomes extensive and slopes steepen rapidly to end in cliffs above the gully of the east branch of Major Creek. This gully separates B and C Grids at this elevation. The C Baseline runs along the crest of the ridge to the northwest of the gully with steep but dry slopes down to the creek. To the northeast, the alluvium and permafrost are once again encountered.

Most of the indicated structures are in areas of permafrost. The lack of high gold and silver values can be the result of the seasonal washing action of spring melting and fall rains. A build up and dispersion of values could not occur. The broad area of anomalous arsenic and mercury values may indicate the presence of a wide primary halo and a deeper mineralized source for the elements. It is planned to diamond drill a number of holes for an estimated total of 2,000 feet to test these indicated structures. Holes will

have to be spotted in the field. Sample lines were run by pace and compass and may not be quite in the relationship shown on the plans.

AREA II

Topography may play a very important part in the localizing of this anomaly. The crest of the east end of the Mt. Freegold ridge crosses at right angles to the baselines just above 8N on E Baseline. Most of the high values were obtained on this crest and on the gentle slopes immediately to the southwest. Near the crest, these are dry, open slopes with very shallow soil where the volcanic ash layer has been washed away. Slopes steepen rapidly after about 400 feet and high values do continue, but this may be a drainage dispersion pattern at least in part. This topographic control may be only apparent. To the northeast, Line 12N is mostly under alluvium and permafrost on relatively flat terrain. Arsenic and gold values show a sharp drop in this environment but silver and mercury values continue, especially along indicated structural trends.

Another factor which may have an important effect is the underlying rock type. The GSC have mapped this area as a complex of old syenite and young quartz porphyry. These rocks apparently stop slightly below the ridge crest, about where

the values begin to drop off. What rock type is under the alluvium is not known. The quartz porphyry is known, on occasion, to contain low levels of mineralization and is thought to have some control over gold mineralization. It is possible that the gentle slopes in this area produced a residual concentration above weakly mineralized rocks. Any contained sulphides might produce an acid condition in the soil and increase the mobility of the elements tested, also leading to higher concentrations.

Very high gold results were obtained. A total of 17 samples contained more than 500 ppb (0.015 oz/ton). Of these, nine contained more than 1,000 ppb of which one contained 8,430 ppb--equivalent to 0.246 oz/ton. One major structure is indicated extending from the old Theodore Showing 2,000 feet to the northeast. Gold and arsenic values end abruptly where the alluvium cover begins. Silver and mercury results show a continuation of this structure a further 1,200 feet to the property boundary.

Additional high values suggest two possible explanations. The distribution of values indicates a series of branches emanating from the major structure at small angles, creating a fan type array. The Rambler Zone is the westernmost branch separated at the top of the ridge by about 300 feet from much

more closely spaced strands which cover a width of about 1,200 feet. The other possibility is that as the major structure passes through the syenite and quartz porphyry a fracture pattern was formed, and mineralized, within these rocks. This area of anomalous values is about 800 feet square.

A row of holes is to be diamond drilled across the anomalous area so as to intersect the possible structures and to obtain geological information on the underlying rocks. This row of holes is to be laid out in the field to take advantage of topography. One of the holes will be targetted to test below the 8,430 ppb gold value on Line 8N of Baseline E.

RAYROCK MINES LIMITED



T. Antoniuk, P.Eng.
Geologist

April 15, 1975

LAL

REPORT ON THE 1974 GEOCHEMICAL SOIL SURVEY
OF THE LA FORMA PROPERTY
OF DISCOVERY MINES LIMITED

INTRODUCTION

A surface soil sampling geochemical exploration program was conducted on the La Forma Property at Mount Freegold, 40 miles west of Carmacks, Yukon, during August and September 1974. The purpose of the program was to determine geochemically the potential of known surface showings on the property and explore for additional possibly hidden gold bearing structures.

PROCEDURES

All 32 claims and fractions were covered by geochemical soil sampling grids. Six baselines striking N35°E and a tie line were cut, chained and picketed at 100 foot intervals. Slope corrections were estimated and applied only on Grid A Baseline. Slope measurements were used elsewhere. A total of 41,000 feet of line was cut, including 8000 feet of cross lines in the G-3 Zone, Pal, G-3 Extension area. Sample lines were run by pace and compass at 400 foot intervals at right angles to the baselines. Baselines and sample lines were sampled at 50 foot intervals with all sample locations flagged and marked with line coordinates.

Samples were taken of B horizon soil directly below the volcanic ash layer where possible. Volcanic ash was very thin to

non-existent on many of the southeast facing slopes. In this case samples were classed as C Horizon because of the abundant rock chips although depth to rock surface was not determined. On north and west facing slopes, permafrost was very often encountered. In most cases this was just below or at the bottom of the ash layer and only poor samples could be obtained. In other cases permafrost was in the ash; in which case, depending on adjoining samples, samples were taken of the ash or not taken at all. In some cases the ground was very wet and swampy above the permafrost, and it could not be determined whether an ash layer was present. Depth of sample location averaged about 16 inches with a maximum depth of 48 inches. Ash thickness was up to 26 inches. A total of 3,158 samples were taken on both reconnaissance and detail grids. All samples were analyzed
* for Copper, Zinc and Arsenic.

Detail grids were laid out over portions of the Rambler Zone, Alpha Vein, Pal Fault, Camp Fault, and the A-6 Anomaly area. Here samples were taken at varying line spacing up to 200 feet and 10- to 20-foot sample intervals.

Lines were cut at 200 foot intervals from 6N to 20N on A Baseline to run a test EM-16 VLF electromagnetic survey and try to locate a faulted extension of the G-3 Zone south of the Pal Fault.

DISCUSSION OF RESULTS

All samples were analyzed for Copper, Zinc and Arsenic.

* Copper is known to occur in the G-3 Zone both as native copper and chalcopyrite. Zinc is sometimes an indicator of sulphide content. Arsenic is very often a good geochemical indicator of gold bearing structures. Tests carried out at La Forma in 1965
* showed that arsenic very closely defined the G-3 Zone. Arsenic is not a very mobile element, and the tests showed that a very close sample spacing was necessary for proper definition. For this reason the 50 foot reconnaissance sample spacing was selected for this survey.

Copper results showed no discernible anomalies. A few erratic high single station readings could not be related to any known structures or to the arsenic anomalies.

Zinc also gave erratic low results except for the east edge of the property where anomalous values were obtained flanking the east side of the E-1, E-2, and F-1 arsenic anomaly area. This zinc anomaly is unexplained but is considered very favorable as it does indicate that this area is one of above average mineral activity.

* Arsenic results proved very significant, and anomalies will be discussed individually. In general two fairly large areas with
* a high geochemical arsenic level in soils and potential gold

mineralization were located. One area was along the Pal Fault to the west of the G-3 Zone. A series of structures parallel to the G-3 Zone are indicated and at least two extensions south of the Pal Fault. The Pal Fault itself returned high arsenic values.

* * The G-3 Zone was identified but was surprisingly low in relation to other anomalies. A north extension to the G-3 Zone is indicated.
* * The second area was east of the Rambler Zone. Individual structures could not be positively recognized, but an area approximately 1400 feet by 2000 feet showed consistent very high arsenic values.

A histogram of arsenic values was prepared, and is attached, which disclosed a typical population pattern.

Background	0 - 40 ppm
Threshold	50 - 90 ppm
<u>Anomalous</u>	<u>100 - 400 ppm</u>
<u>Highly Anomalous</u>	<u>500+ ppm</u>

* Interpretation of results was made difficult by a number of conditions. The upper portion of the property is covered by a variable thickness of alluvium. Geochemical results in this area were generally low. Some small variations may be the expression of buried structures but considerably more test work and study would be required before any interpretations could be made. This situation also exists to a smaller extent near Seymour Creek. Especially at the west end of the property, in the G-3 to Tourmaline Vein areas there are good arsenic anomalies starting

at the edge of the alluvium. It is not certain whether these are the Tourmaline Vein or a drainage expression of a zone beneath the alluvium.

Previous work in this region of the Yukon by a number of geochemists indicated that the optimum sample location was immediately below a pervasive volcanic ash layer. On the property it was found that the ash varied greatly in thickness and in depth below surface. This is not considered to have any effect on the significance of the sample but it was found that, on occasion, there were two ash layers with a narrow section of black, usually highly organic material between, possibly the remains of entrapped timber. In permafrost areas this layer may have been sampled in some cases. It was also found that on southeast facing open slopes the ash layer was very thin or not present.

There was considerable variation in soil type. The west facing slopes had a heavy moss cover, thick ash layer, permafrost and were generally very wet. These contained a slightly higher level of organics. The east and south facing slopes were generally dry and sandy with only a thin ash layer and only minor organics. In all cases there were abundant rock chips and the soil could best be termed "C" horizon.

The property is underlain primarily by granodiorite with a number of dykes and irregular masses of quartz porphyry, syenite and andesite porphyry in relatively that order of abundance.

Detail geologic mapping was completed over the central portion only. No geochemical variance over different rock types was noted except for the quartz porphyry. All the arsenic geochemical anomalies are related to known structures or to areas mapped by the GSC as containing quartz porphyry intrusives. Not all quartz porphyry areas were anomalous. Early underground work on the G-3 Zone indicated a possible relationship of this gold mineralization to quartz porphyry intrusions, but no definite proof was located.

The Camp Fault is a very strong structure which appears to be a limiting factor for gold mineralization on the property. Geochemical results were uniformly low in all samples taken to the southwest, topographically below the fault. The fault itself was not anomalous. The Camp Fault is approximately parallel to the Pal Fault and may have the same northeast dip. Where observed at the camp it appeared nearly vertical. The dip should be accurately determined as it has a direct effect on the potential strike length of the G-3 Zone south extension.

* The EM-16 VLF test survey over the possible G-3 extension
* was not successful. The Pal Fault and Camp Fault gave very
* strong conductors. The G-3 Zone north of the Pal Fault gave only
a weak conductor. A weak conductor was located south of the Pal Fault and 600 feet west of the G-3 intersection. This proved to be the A-6 anomaly. Geochemical results were not in agreement

with the conductor.

Arsenic Anomalies

Grid "A"

A-1 The G-3 Zone. The zone is not well defined.

Anomalous values were obtained near the No. 1 and No. 2 Portals and near the junction with the Pal Fault. Five hundred feet north of the No. 1 Adit, on line 28N, one 400 ppm value was obtained. North of line 28N, the alluvium cover becomes deep and may mask further geochemical evidence. The 600 ppm value at 1+00W on line 28N may be a drainage expression of the G-3 Zone. Trenching was attempted here about 1965 with indifferent results. Deep alluvium and permafrost caused difficulties and it is uncertain whether the main zone was exposed. This area should be explored with at least three diamond drill holes.

A-2 An anomalous area 450 feet east of the G-3 Zone, and about parallel, which extends 800 feet from the Pal Fault to the northeast to the edge of the alluvium cover. This anomaly is on the southeast facing slopes of a median ridge in Forrest Gulch. Geochemical arsenic values are as high as those obtained over the best part of the G-3. A detailed prospecting and some trenching is warranted with diamond drilling if results are favorable.

A-3 The Pal Zone. Geochemically high throughout its length from the G-3 Zone west. The zone was sampled in detail

from the baseline, 500 feet west of the G-3, for 900 feet to the west. Lines were 100 feet apart with a sample interval of 10 feet. Arsenic values were consistently high. The zone deserves diamond drilling, especially in areas of junction with northeast striking structures. Three holes are proposed.

* A-4 The Reo Vein. An anomalous area, roughly parallel to and 800 feet west of the G-3, which extends 800 feet from the Pal Fault to the alluvium cover. This anomaly is near the steep slopes and rock cliffs of the east branch of Major Creek. The zone should be tested by diamond drilling.

A-5 One of two anomalies which may be the faulted extension of the G-3 Zone. This starts at the Pal Fault about 1000 feet west of the G-3 and extends south to the Camp Fault. A sample 350 feet south of the Pal Fault showed 1800 ppm arsenic, the highest recorded in this area and 1200 ppm higher than anything recorded on the G-3 Zone. Diamond drilling is warranted and two (?) shallow holes are proposed.

A-6 This is the second anomaly which may be the faulted extension of the G-3 Zone but is more likely an extension of the A-2 anomaly. It lies 600 feet west of the G-3 and 400 feet east of A-5. An unusually shaped anomaly very close to the grid baseline from 4N to 16N. The EM-16 survey was carried out over this area. A weak conductor was indicated and a detailed sampling grid was laid out on this basis. There was no correlation between the

geochemical and EM-16 results. The detailed geochemistry did confirm an anomaly extending 1200 feet between the Pal and Camp Faults. Diamond drilling of one shallow hole is warranted to test this anomaly.

Grid "C"

C-1 The Tourmaline Vein. A northwest strike is indicated, roughly parallel to the Pal Fault. On lines 4S and 8S, arsenic values of 100, 150 and 200 ppm were obtained at the west end where the showing is reported to be located. On line 8S a 250 ppm value was obtained near the baseline and three 150 ppm values at 2E, 3E and 5+50E. Below the line joining these two areas many threshold values were obtained west of the baseline. East of the baseline many additional 100 ppm values were obtained. This trend should be prospected in detail. The alluvium cover lies between this trend and the next line to the north and may mask the source of these anomalous values. Trenching or diamond drilling may be required.

C-2 A northeast striking anomaly, parallel to the G-3, which extends between the Pal Fault and the Tourmaline Vein, at least 900 feet. Up to 400 ppm arsenic is recorded. Quartz porphyry dykes are reported by the GSC to be in this area.

Detailed prospecting is warranted.

C-3 The Pal Fault. Up to 400 ppm values are recorded below the projected location of this Fault. Detailed prospecting is warranted in conjunction with the prospecting of this zone on the A grid.

Grid "D"

D-1 An 800 ppm arsenic, one line anomaly, near the projected location of the Pal Fault. The sample was taken of shallow soil on outcrop just above the road to the No. 3 Portal. This may be an extension of the A-2 anomaly. The area should be prospected in detail.

D-2 A 200 ppm arsenic one line anomaly on the projected location of the Pal Fault.

D-3 Two adjoining 150 ppm values on a line through the Alpha Vein area. Detail sampling on strike with the Alpha Vein did not produce anomalous results. Possibly, a down slope anomaly from the Pal Fault.

D-4 A weak northeast striking narrow anomaly on five lines (1200 feet) terminating at the Pal Fault with a 300 ppm value. Probably corresponds to some narrow quartz veining mapped in this area but should be check by detailed prospecting.

D-5 A two line 150 ppm anomaly with a northeast strike. Typical of a number of small one and two line 100 and 150 ppm anomalies on this grid. All these locations should be prospected.

D-6 The Rambler Zone. This area overlaps Grid E but because lines were run by pace and compass, correlation is not exact. The lower portion of the Rambler Zone is not anomalous in arsenic although visible gold is reported at two location. The upper portion, on the crest of the hill, is weakly outlined by anomalous values up to 200 ppm.

D-7 A branching structure from the Rambler Zone which in trenching carried some visible gold. The structure is outlined by 150 ppm arsenic values.

Grid "E"

E-1 Anomalous arsenic values with a northeast trend from 4N to 20N. In part the same as anomaly F-1.

E-2 A northeast trend which is on strike with the Theodore Vein. Anomalous values extend from 8S where the Theodore Adit is located to 20N. Some complexity is indicated from 4N to 8N where there may be branching structures. The area is mapped by the GSC as being underlain by quartz porphyry.

E-1, E-2, and F-1. These three anomalies are all part of a complex anomalous lenticular area, with a northeast trend, about 2000 feet long and 1400 feet wide. The widest part corresponds to the south facing slope of the crest of the ridge. Most of the samples have been classed as "C" horizon, generally sandy with abundant rock chips. The north facing slopes, from 12N to 20N are characterized by very wet, muddy, conditions lying at the top

of permafrost. In many cases it could not be determined whether the ash was penetrated before hitting permafrost. This may have had a masking effect and the anomalous area is considerably larger.

A large part of the area has been mapped by the GSC as being underlain by quartz porphyry. This rock type is known to, on occasion, be highly siliceous and be gold bearing. The Goldbank Vein and the Whale Vein are of this type. Other possibilities are that there is a flat lying structure present or that this quartz porphyry has a very high arsenic geochemical level. The adjacent zinc geochemical anomaly does indicate that this is an area of above average mineral activity. The size of the arsenic anomaly makes this a high priority target for further exploration.

* Special attention should be given to the possibility that the level of mineralization is high enough or branching structures are close enough together for an open pit operation. It is proposed to diamond drill a fence of holes across the widest part of the anomaly to assess its potential.

* E-3 The Rambler Zone. The zone is outlined by a 200-300 ppm anomaly, occasionally reaching 400 ppm. A branching structure similar to that mapped in trenches is indicated. On line 4N a sample of 1000 ppm arsenic was located 200 feet to the east. This may be another branch or an entirely new structure. A 50 to 100 foot wide band separates this anomalous area from the E-1 and E-2 anomalies. Detail sampling showed a definite narrow

anomalous area 500 feet long near where trenching showed a branching structure and visible gold. Diamond drilling is warranted.

E-4 Two, weak, one and two line anomalies following the Rambler Gulch near the projected location of the Pal Fault. This is also the approximate location of the Goldbank Vein. It may be drainage from above but should be prospected.

E-5 A moderate anomaly on four lines in the lower part of Rambler Gulch. It lies on the side hill just below the main access road near the gate and may be the result of contamination from the road or from logging operations. Since the road is not anomalous in other sections, this anomaly deserves prospecting.

E-6 An irregularly shaped anomaly in a logged area. It lies on strike with the Camp Fault. Probably contamination, but should be checked.

Grid "F"

F-1 Anomalous arsenic values up to 2000 ppm were recorded over a 450 foot length at the west end of lines 8N and 12N and for 50 feet at the west end of line 4N. This adjoins anomaly E-1 on lines 4N and 8N of Grid E and forms part of a large area of anomalous values. On Grid F the area has been mapped by the GSC as being underlain by quartz porphyry and syenite. Some north-east striking trends are indicated but whether these are structure or drainage patterns is uncertain. The anomaly is near the crest of Mount Freegold ridge, with gentle slopes and little vegetation.

Samples reported a number of old caved trenches near the west end of line 12N.

F-2 A 600 ppm arsenic value at 8N and 2+50E. A north-east trend is indicated and the anomaly could have a length of 600 feet. Anomalous zinc values with highs of 1000 and 1100 ppm, are located 100 feet to the east. These may be drainage from the F-1 area. The anomaly should be prospected and explored in conjunction with anomaly F-1.

F-3 A north-south striking anomaly from 0+50W on line 12S, crossing the baseline at 13+00S and at 1+00E on line 16S. This is reported as being at the bottom of Nabob Gulch and may be an accumulation from percolating solutions from above. Should be checked, but this has a very low priority.

F-4 Four anomalous values on an East-West trend from the baseline at 7+00S to 6+00E on line 8S. This corresponds to a GSC mapped narrow quartz porphyry dyke and may be an extension of the Goldbank Vein. The area should be prospected.

CONCLUSIONS

The soil geochemical survey with arsenic analyses was successful in outlining areas of potential gold mineralization. Of great significance was the location of two relatively large areas of anomalous arsenic values. One area was along the Pal Fault west of the G-3 Zone and the second area along the top of Mount Freegold ridge east of the Rambler Zone.

Area one appears to be centred on the northwest striking Pal Fault. The fault is anomalous. A series of northeast striking structures, at roughly 500 foot intervals both north and south of the fault, are indicated. The G-3 Zone is one of these structures but was geochemically fairly low in comparison to some of the other structures. A south extension to the G-3 is indicated as being offset 1000 feet to the west along the Pal Fault. Most of the anomalies north of the Fault terminate at the edge of the alluvium overburden and these structures may continue under this cover. This is certainly the case with the G-3 Zone.

Area two lies east of the Rambler Zone and encompasses anomalies E-1, E-2, and F-1, with the highest arsenic values obtained in the survey. Little is known about this area. There are no known gold occurrences although there are a few old trenches. GSC maps show the area to be underlain by quartz porphyry and and syenite. Quartz porphyry is known to on occasion be highly siliceous and contain gold. Some northeast trends are evident in the geochemical results and this may be a series of parallel structures. To the north it terminates at a wet muskeg, permafrost area where samples were poor and it is not certain that the ash was penetrated.

These two areas deserve detailed exploration. A program of diamond drilling and trenching is recommended.

The G-3 Zone did not respond as well as expected. The zone was anomalous in the area of the upper adits and at the junction with the Pal Fault. At the junction a 600 ppm value was obtained. An extension to the north was indicated by a 400 ppm value at the edge of the alluvium. Diamond drilling is recommended.

The Rambler Zone was poorly defined. Arsenic values were generally 100 to 200 ppm. Only the area where trenching disclosed branching structures and visible gold was well defined. Diamond drilling is recommended for this section. The Rambler Zone is separated from the E-1, E-2, F-1 anomalous area by a 50 to 100 foot wide band with low arsenic levels.

The Alpha Vein and the Goldbank Vein did not give any anomalous values.

The Reo and Tourmaline Veins lie within the large area one, north of the Pal Fault.

The Camp Fault was found to be a major gold mineralization limiting structure. Only low arsenic values were obtained to the south and downhill from this fault.

OBSERVATIONS AND RECOMMENDATIONS

Common practice in following up a reconnaissance geochemical survey is, detail geochemical surveys, geophysical surveys, trenching, and diamond drilling. The La Forma property has characteristics which enable this schedule to be telescoped.

Detail geochemical surveys and geophysics are used to locate anomalies and structures more accurately. EM-16 VLF is considered one of the most sensitive electromagnetic systems which, in practice, quite often picks up extraneous barren structures as well as mineralization. The test work done showed that it was not successful at La Forma. The reconnaissance geochemical results obtained over the G-3 Zone and other known zones showed that the 50 foot sample spacing located the structures within acceptable limits. Some research on other deposits has shown that ratios of geochemical levels of gold, silver, arsenic and mercury can sometimes be used to locate more exactly the source of the anomalies. Samples from the two large areas of anomalous arsenic values are being sent for analysis for gold, silver and mercury as this may aid in spotting drill holes to the best advantage.

Trenching has been conducted at La Forma in the past. It was found difficult, except for the dry, southeast facing slopes. Surface weathering in this unglaciated terrain is quite deep with little soil but a great deal of fragmented rock. Permafrost makes

this extremely difficult material to trench as well as making it hard to determine when solid bedrock is reached. The alluvium adds its own dimensions to the problem in areas where it occurs. In addition we have the restrictions applied by the land use regulations and environmental agencies.

* Diamond drilling is not without problems. Most of the anomalies which require investigation are on the upper slopes. The only good, reliable, water supply is at the No. 4 Adit about 500 feet in elevation below. In spring it may be possible to use run off water, but this supply is uncertain. An added difficulty is that in this highly fractured rock there is quite often a loss of water in the drill hole. The use of drilling mud should alleviate this condition. It may be necessary to haul water to the drills. The road up the hill is steep. I would recommend that, if possible, water be pumped from the No. 4 Adit to the area of the Pal Zone for drilling in this area. Water could be trucked without difficulty from here to the Rambler area if surface run off water was not adequate.

* A two stage exploration program is recommended to explore for and develop additional ore sources.

Stage 1

A program of diamond drilling and trenching of arsenic geochemical anomalies is proposed. Work is to be concentrated on the two large anomalous areas at the east and west ends of the property. It is recommended that this program be carried out in

April, May and June when the spring run off may provide an adequate water supply.

Surface Diamond Drilling

- | | | |
|----|-------------------------------------------------------------------------------------------|-------------------|
| a) | North extension of the G-3 Zone | |
| | 3 holes at 250 feet each | 750 feet |
| b) | Pal Zone west of the G-3 | |
| | 3 holes at 250 feet each | 750 feet |
| c) | Anomaly A-5, G-3 south faulted extension. | |
| | 2 holes at 250 feet each | 500 feet |
| d) | Anomaly A-6 | |
| | 2 holes at 250 feet each | 500 feet |
| e) | Anomaly A-4, Reo Vein | |
| | 2 holes at 250 feet each | 500 feet |
| f) | Anomalies C-1 and C-2, Tourmaline Vein area. | |
| | 2 holes at 250 feet each | 500 feet |
| g) | Rambler Vein | |
| | 2 holes at 150 feet each | 300 feet |
| h) | Anomalies E-1, E-2, F-1 | |
| | A fence of holes in an east-west direction covering 1200 feet across this anomalous area. | |
| | 3 holes at 400 feet each | <u>1,200 feet</u> |

Total

5,000 feet

Trenching

Trenching might be successful on the Pal Zone, the Reo Vein, the Tourmaline Vein and the E-1, E-2 and F-1 anomalies area. This would require an estimated 200 hours with a D-7 Cat.

Stage 2

The undertaking of this stage would be dependent upon obtaining favorable results in stage one. This would be a program of road repair, camp rehabilitation and construction, and underground exploration of surface drill indications in the Pal Zone-G-3 Zone area. No estimate can be made of work requirements in the E-1, E-2, and F-1 area until the drilling is complete and a better understanding of the nature of the deposit in this area is achieved.

Cost Estimate

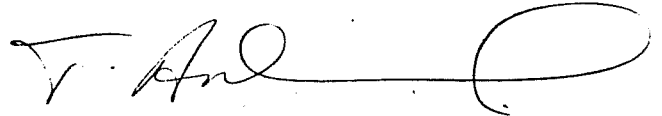
Stage 1

Surface Diamond Drilling 5000 feet at <u>\$20/ft.</u>	\$100,000
Trenching - 200 hours at \$40/hr.	8,000
Pumping water from No. 4 Adit	3,000
Camp, travel, assaying and supervision	<u>14,000</u>
Total	<u>\$125,000</u>

Stage 2 -- A five month program

Repair road to Carmacks	\$ 5,000
Repair buildings and establish a 20-man camp	30,000
Camp servicing and supplies	40,000
Rehabilitate 4 Level	15,000
Drifting and Crosscutting Estimate 1200 feet at \$80/ft.	96,000
Underground Diamond Drilling Estimate 4000 feet at \$12/ft	<u>48,000</u>
Total	\$234,000
Contingencies	<u>41,000</u>
Total	\$275,000
 <u>Total Stage 1 and Stage 2</u>	 <u>\$400,000</u>

RAYROCK MINES LIMITED



T. Antoniuk, P.Eng.
Geologist

Toronto
December 13, 1974

RAYROCK MINES LIMITED
LaFORMA PROJECT

HISTOGRAM OF ARSENIC
GEOCHEMICAL VALUES FROM
3158 SOIL SAMPLES

10/12/74 TA

