

A total of 64 rock samples were taken from the Ridge Grid area, and all were geochemically analyzed for parts per million (ppm) Cu, Pb, Zn, Mo, As, Ag, and parts per billion (ppb) Au.

Sampling concentrated chiefly on zones of silicification and/or shearing, particularly in areas with high gold soil anomalies. The results are listed in tabular format in Appendix B, accompanied by sample report sheets with a brief description for each sample. Many of these rocks were slightly anomalous in gold, but of particular interest are those found to have one gm/tonne Au or greater. These are listed along with their arsenic analyses in the following table.

TABLE #3: Table of 1987 Surficial Rock Geochem >1.0 g/t Au

gm/tonne Au	Sample Type	As (ppm)	Sample #	Location
16.00	Float Grab	>10,000	9072	9145N, 10237.5E
15.40	1 m Chip	292	9073	9125N, 10247.5E
5.00	Grab	8	9067	9190N, 10023E
4.32	Grab	40	9075	9350N, 10107E
3.09	.2 m Chip	450	27712	9575N, 10333E
2.44	.3 m Chip	1,640	68583	9340N, 10220E
1.76	Grab	64	27090	9530N, 10217E
1.61	Grab	>10,000	27715	9575N, 10334E
1.38	Grab	1,360	9074	9350N, 10115E
1.17	.8 m Chip	700	76871	9560N, 10358E
1.06	Grab	20	9066	9180N, 10045E

The above samples have been plotted on Drawing #3 to illustrate their relative locations on the Ridge Grid. Sample #9072 which ran 16.0 gm/tonne Au was a 30 cm x 30 cm boulder of massive arsenopyrite/limonite float which appeared to be shear related. Its source was never located, but a soil sample on line 91+50N at 102+32.5E 5 metres north along contour had 2,600 ppb Au. In addition, a one metre chip sample from outcrop (#9073) about 25 metres south along contour from #9072 had 15.4 gm/tonne Au. This area should be closely inspected and sampled in detail.

An interesting system of shears was discovered about 70 m due east of 9550N, 102+75E in newly exposed roadside outcrop. The best sample (#27712) yielded 3.09 gm/tonne Au across a 20 cm shear zone. These extensive shears were often heavily mineralized with arsenopyrite and pyrite, and may help explain the nature of mineralizing structures related to nearby anomalous targets.

## 7.5 Congo Grid (Drawing #4)

Previous work by Hudson Bay Oil and Gas Co. Ltd. in the early 1980's revealed several anomalous gold, copper and molybdenum soil and rock samples on the southwest corner of the property west of Congo Creek. In June 1987 a grid with an interval of 50 m between wing lines was established to cover these anomalies, and subsequently mapped in detail at a scale of 1:2,500. Steep bluffs often hampered prospecting and locally made grid coverage inaccessible.

The mapping revealed an altered package of Rossland volcanic pyroclastics similar to the Ridge Grid, but bordered by diorite on the west end, which locally intrudes approximately east-west through the central portion of the grid where it is usually bleached and altered. Silicification and alteration occurs locally throughout the grid, but generally appears more pervasive at the south end.

A total of 16 rock samples were taken from various grid locations and all were geochemically analyzed for ppm Cu, Pb, Zn, Mo, Ag, As and ppb Au. Only one sample was slightly anomalous in gold (120 ppb Au). Results for these rocks are listed in tabular format in Appendix B with accompanying brief field descriptions.

All rock samples from both the Ridge Grid and Congo Grid were analyzed at Rossbacher Laboratory Ltd., 2225 S. Springer Avenue, Burnaby, B.C. Laboratory analytical methods are outlined in Appendix D.

## 8.0 SOIL GEOCHEMICAL SURVEY

### 8.1 Introduction

Encouraging Au analyses from soils on the Ridge Grid extension of the Fingland Creek Grid, in conjunction with coincident I.P. and magnetic anomalies, led to the addition of 6 grid lines (9550N, 9450N, 9350N, 9250N, 9150N and 9050N) closing the interval between pre-existing lines to 50 metres. Each line was subsequently sampled at 12.5 metre intervals in order to extend and delineate Au soil anomalies from the 1986 survey.

Soil and rock anomalies (Au, Cu, Mo) discovered previously by Hudson Bay Oil & Gas Co. Ltd. prompted the formation of a new grid west of Congo Creek where 9 wing lines (4450E, 4500E, 4550E, 4600E, 4650E, 4700E, 4750E, 4800E and 4850E) were cut and soil sampled at 25 m intervals, across a 400 metre baseline at 5300N.

Grid lines added and intervals sampled during the 1987 programme are presented by grid co-ordinates in the following table.

TABLE #3: Table of 1987 Soil Survey  
Co-ordinates and # of Samples

A) Ridge Grid

<u>Line #</u>	<u>Stations</u>		<u># of Samples</u>
	<u>From</u>	<u>To</u>	
9050N	10125E	10375E	21
9150N	9925E	10200E	23
9250N	9925E	10362.5E	34
9350N	9912.5E	10250E	27
9450N	9950E	10225E	21
9550N	9937.5E	0225E	17

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B) Congo Grid

<u>Line #</u>	<u>Stations</u>		<u># of Samples</u>
	<u>From</u>	<u>To</u>	
4450E	4800N	5375N	24
4500E	4750N	5375N	25
4550E	4725N	5500N	32
4600E	5025N	5575N	22
4650E	5225N	5625N	14
4700E	5075N	5625N	23
4750E	5175N	5587.5N	16
4800E	5300N	5675N	16
4850E	5300N	5675N	15

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All 1987 soil samples from both grids were geochemically analyzed for ppm As, Ag, Cu, Pb, Zn, Mo, and ppb Au.

All soils were analyzed at Noranda Exploration Company, Limited's laboratory at 1050 Davie Street, Vancouver, B.C. (see Appendix D for laboratory analytical methods).

## 8.2 Soil Sampling Method

1987, 1986 and 1985 surveys were conducted in the following manner.

Soils, taken at numbered flagged stations every 25 and/or 12.5 metres were obtained by digging holes with a maddock to a depth of 15 to 30 cm where the visible B horizon, whenever possible, was exposed. Samples were then placed in a "Hi Wet Strength Kraft 3½" x 6 1/8" Open End" envelopes with grid co-ordinates marked on the envelope with an indelible felt pen.

In certain areas samples could not be obtained due to steepness of terrain or insufficient sampling material.

## 8.3 Presentation & Discussion of Results

### 8.3a) Ridge Grid

Both 1986 and 1985 soil analyses are included with the 1987 results for the purpose of contouring on Drawings #5 through #9. Wing lines sampled in 1987 are drawn as solid lines, whereas 1986 and 1985 data is represented by broken or dashed wing lines. All 1987 soil results are presented in tabular format in Appendix A. The 1986 and 1985 results can be found in the LH 1986 "Report on Field Activities", Appendix B. Contour intervals on Drawings #5 through #9 were obtained by visual inspection of the data.

Zn/Ag: Zinc ranging from 20 ppm to 140 ppm and silver ranging from 0.2 to 2.2 ppm appear to be of little significance and contour only as spot highs. Both elements are plotted on Drawing #5, with zinc contoured at 80 ppm and 130 ppm intervals, and silver at 0.7 ppm, 1.4 ppm, and 2.1 ppm intervals.

Pb: Lead ranges from 1 ppm to 70 ppm but with 90% of all samples less than 20 ppm is also thought to be of little significance. One narrow, weak, elongated trend subparallels the west side of the baseline, mainly within the highly silicified ridge zone. Lead is contoured on Drawing #6 at 20 ppm, 40 ppm, and 60 ppm intervals.

Mo/Cu: Molybdenum ranging from 1 ppm to 32 ppm and copper ranging from 10 ppm to 270 ppm are also of little significance. Both elements are plotted on Drawing #7, with molybdenum contoured at 6 ppm, 12 ppm, and 30 ppm intervals, and copper contoured at 120 ppm, 180 ppm, and 240 ppm intervals. Aside from two spot high values of 32 ppm and 14 ppm, all remaining molybdenum values are less than 12 ppm. Copper exhibits one broad, weak anomaly subparalleling the baseline on the west side, and a few spot highs.

Au/As: Gold mineralization as seen in 1987 drilling, 1986 drilling, and the L.H. workings is thought to be structurally controlled. For this reason any alignment of, or break in soil geochemical trends may be of importance.

Trends on the contoured As and Au soil geochemistry drawings are depicted with arrows (see Drawings #8 & #9). Dashed arrows delineate a break or low in the geochemical response while solid arrows depict an alignment of anomalous highs. Gold values range from 10 ppb to 2600 ppb and are contoured at 100, 300, and 700 ppb intervals on Drawing #8. Large gold anomalies occur over the Ridge Grid, from which 3 principle trends are inferred. These are indicated by solid arrows on Drawing #8.

The first and westernmost trend follows closely to the north-south striking main ridge, underlain by highly silicified and altered tuffs. This trend is still open at the north end where inaccessible cliffs prevented further sampling. It is also subparallelled by a coincident geophysical I.P. anomaly, and a coincident, discrete magnetic trend of high intensity which is also open to the north.

The second trend, somewhat parallel to the first, occurs lower down on the east side of the baseline. It is also accompanied by a discrete, subparallel, dyke-like magnetic trend of moderate intensity which appears to be related to the magnetic trend running north-south through the centre of the Finland Creek Grid (see Drawing #19). Rocks underlying this anomalous soil zone are generally less altered tuffs, however, local silicified areas occur on the northern portion, with geology on the southeast side being obscured by a large talus slope.

The third possible trend can be interpreted roughly east-west across the two mag high zones, on the northern half of the Ridge Grid. This is paralleled to the south by a series of areas geochemically low in Au responses (depicted by dashed arrows on Drawing #8). This anomalous gold trend may be related to the one along the main ridge as topography would warp this north-south zone eastward at lower elevations on the north end of the grid if the zone had an eastward dip. In this case, the large anomalous gold zone at the eastern end of lines 9800N and 9900N on the Finland Creek Grid could be an extension of this zone, offset by the Finland Creek fault.

Surface grab samples taken within these areas on the ridge grid often had elevated Au values and locally merit more detailed investigation.

Arsenic values range from 1 ppm to 2700 ppm and are contoured at 150, 500 and 1000 ppm intervals on Drawing #9. The arsenic geochemical signature coincides very closely with the gold and therefore supports the conclusions outlined above suggesting two discrete structurally controlled zones with a possible westward dip, or a single structurally controlled zone dipping east with topography warping the geochemical anomalies in the same direction at lower elevations to the north. These similar anomalous trends are also depicted by arrows on Drawing #9.

The close coincidence of arsenic and gold geochemical anomalies on the Ridge Grid suggests a correlation between arsenopyrite mineralization and gold, which should be investigated further.

### 8.3b) Congo Grid

All results for soils taken on this grid are represented in tabular format in Appendix A. The data has been plotted on Drawings #10 through #14 for contouring at intervals obtained by visual inspection.

- Cu: Copper ranging from 12 ppm to 500 ppm is contoured at intervals of 200, 300, and 400 ppm on Drawing #10. The data suggests a definite north-south trend across the geological alteration boundaries and central intrusive, with the strongest geochemical signature over the central portion of the grid at the baseline.
- Pb: Lead, ranging from 1 ppm to 230 ppm is contoured on Drawing #11 at intervals of 50, 100, and 200 ppm. The data, highly coincident with the copper geochemical signature, displays a series of thin, discontinuous north-south trending anomalous zones.
- Mo: Molybdenum, ranging from 2 ppm to 190 ppm is contoured at intervals of 30, 60, 100 and 150 ppm on Drawing #12. It reveals the same north-south trend and is also highly coincident with both copper and lead.
- As/Zn: Arsenic ranging from 1 ppm to 110 ppm is contoured at 20, 50, and 100 ppm intervals, while zinc ranging from 16 ppm to 200 ppm is contoured at 90, 150, and 200 ppm intervals. Both elements are plotted on Drawing #13 and appear to be of little significance other than a few spot highs or small zones coincident with the other geochem.
- Au/Ag: Gold ranging from 10 ppb to 160 ppb is contoured at 50, 100, and 150 ppb intervals, while silver ranging from 0.2 ppm to 2.6 ppm is contoured at 1.0, 1.8 and 2.6 ppm intervals. Both elements are plotted on Drawing #14. Gold appears mainly as spot highs of low intensity, chiefly at the centre of the grid around the baseline. Silver has a slightly more animated response and although low in

intensity, displays the typical north-south trending narrow zones characteristic of copper, lead and molybdenum.

In general, the geochemical response for all elements is fairly low but there are a few high zones of copper, and particularly lead and molybdenum. This is consistent with Hudson Bay's data which also revealed local zones prolific in molybdenum and occasionally copper. Three areas of interest may be worth further investigation as they consistently produced coincident anomalies in almost every element. These are:

- 1) The area between lines 4650E and 4750E, and between 5400N and the baseline at 5300N.
- 2) The south end of line 4750E at 5200N.
- 3) The south end of line 4650E at 5250N

These areas are underlain almost entirely by diorite or altered diorite, with only minor altered and/or silicified tuff locally.

The dominant north-south trend of the geochemical responses across the geology of the Congo Grid suggests an underlying cross-cutting structure related to mineralization. The central intrusive may have picked up and concentrated mineralization from this structure, or may pre-date it and have been a source for mineralization, remobilized and concentrated along the structure.

## 9.0 TRENCHING

### 9.1 Introduction

During the 1987 programme one soil pit and one trench totalling 75 metres in length were dug using a John Deere 690 Backhoe. The trenching was done by Kennelly Contracting, Ltd., of Cranbrook, B.C. Trench locations are plotted on Drawing #19.

- 1) Trench #1 was dug to test for the surface expression of Au mineralization intersected in Holes LH-86-3, 7 and 8 in addition to locating the source of a long, narrow magnetic trend of moderate intensity striking north-south through the middle of the Finland Creek Grid and on strike with a similar zone on the northeast side of the Ridge Grid. The 75 metre trench was dug along the road in a northeasterly direction across the magnetic trend, from 9855N, 9998E, onto the drill pad for DDH-LH-86-7, 8 and 9.
- 2) A pit was dug to test a narrow, northeast trending zone moderately anomalous in Au. A spot high of 1150 ppb Au was targeted for trenching at 9900N, 10312.5E, however, due to the excessive

## 11.0 SUMMARY AND RECOMMENDATIONS

During the period June 21 and September 23, 1987 a gold mineral exploration programme on the L.H. property was conducted by Noranda Exploration Company, Limited.

The programme consisted of 2 diamond drill holes (totalling 794.82 metres), a 75 metre trench, a pit with 2 soil profiles, linecutting (6962.5 metres), grid soil geochemical sampling (332 samples geochemically analyzed for ppm Cu, Pb, Zn, Mo, Ag, As, and ppb Au) and geological prospecting/mapping (scale 1:2,500).

A new grid was established on the southwest portion of the property west of Congo Creek, but the geological prospecting and soil sampling programme was unsuccessful in locating substantial auriferous mineralization.

The majority of work focussed on a more detailed programme over the Ridge Grid at the south end of the Fingland Creek Grid. Recontouring of 1985 and 1986 soil sampling results along with 1987 analyses clarified previously established trends representing breaks in, and/or alignments of anomalous soil geochemical signatures for Au and As. These trends may be structurally related and could help in clarifying the attitudes of auriferous mineralization intersected by 1987 and 1986 drilling programmes.

Detailed geological mapping on the Ridge Grid defined a series of alteration zones in the chaotic sequence of pyroclastics comprising the main ridge. Alteration increases progressively towards the southwest where intensely altered rocks are common. A highly silicified zone was delineated on a north-south trend through the centre of the grid and forms the peak of the main ridge.

1987, 1986 and 1985 drilling and prospecting programmes established that gold mineralization appears to be structurally controlled with an intimate association to zones of intense silicification, calc-silicate veining and variable sulphide (Aspy, Po, Py) concentrations. The highly silicified zone found on the ridge correlated closely with the broad gold soil anomalies occurring on the ridge. A coincident north-south magnetic high trend and geophysical I.P. anomaly here made this zone a primary drilling target.

Due to access problems, the ridge zone could only be tested at great depth (about 380 metres below surface) by drilling from below the ridge. A smaller, possibly subparallel zone (Target #2) occurs here on the eastern flank, and a single hole was calculated to intersect both targets. This was tested by DDH-LH-87-11 which yielded one substantial intersection of 15.02 gm/tonne Au over 1.42 metres (true width approximately 1.0 m). If this intersection correlates to surface with a 1600 ppb Au soil anomaly and a 1 metre chip sample of 15.4 gm/tonne Au obtained from an outcrop situated some



300 metres south along the silicified ridge zone, then the potential gold content could be at least 129,244 ounces assuming no strike or depth extensions exist. In addition, a piece of float found on surface between these two anomalous points assayed 16.0 gm/tonne Au, and a grid line soil analysis ran 2600 ppb Au.

LH-87-12 was drilled in an attempt to locate the source of high gold soil anomalies which last years LH-86-5 failed to intersect. LH-87-12 was unsuccessful in locating substantial gold mineralization although 4.89 metres containing variable massive sulphide mineralization was intersected, with the best section assaying 2.57 gm/tonne Au over 1.02 metres. If this intersection correlates to surface with a 1150 ppb Au soil anomaly, then the zone's dip might be 63° SSE. This orientation is very similar to and possibly related with one of the principle anomalous Au soil trends on the Ridge Grid and/or the prominent mineralized shearing in roadside trenching east of the Ridge Grid's northeast corner and/or the orientation of some of the quartz veining in the old L.H. workings.

This NNE-SSW trending structure would cross-cut the silicified zone along the main ridge and suggest the possibility that auriferous mineralizing events may occur at localized nodes produced by the intersections of these two structures. This could account for the somewhat disjointed nature of soil anomalies throughout the Ridge Grid.

The gradational increase in metamorphic alteration towards the west across the Ridge Grid infers that this side may be closer to a large subsurface intrusive complex which could be the source for mineralization on the L.H. property. This system may have been integral in the formation of the ore deposits on the adjacent Willa Creek discovery.

The copper and molybdenum anomalies on the Congo Grid further west may be related to a porphyry copper-molybdenum phase of the underlying batholith.

The following list represents some recommendations for future work on the L.H. property:

- 1) More detailed sampling and mapping on the northwest corner of the Ridge Grid, possibly using technical climbing gear to explore the area where silicification and anomalous gold soil boundaries are still open due to steep cliffs. Data from this could shed light on the true orientation of the Ridge Zone.
- 2) Detailed sampling, mapping and/or hand trenching of the area between the 2600 ppb Au soil, 16.0 gm/tonne Au float, and 15.4 gm/tonne Au from 1 metre chip in outcrop.
- 3) Hand trenching of highly anomalous gold soils which are coincident with a magnetic high on the lower, northeast corner of the Ridge Grid.