

MINERAL SURVEY BRANCH
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VANCOUVER, B.C.

GEOLOGICAL AND GEOCHEMICAL REPORT

ON THE MAC 9 - 14 CLAIMS

CARIBOO MINING DIVISION, B.C.

93J/14E

BY

PERRY GRUNENBERG, P.Geo.

AUGUST, 2000

LOCATION: 54°56' NORTH LATITUDE; 123°14' WEST LONGITUDE
OPERATOR: PERRY GRUNENBERG, P.Geo.
OWNER: PERRY GRUNENBERG, P.Geo.

MINERAL SURVEY BRANCH
VANCOUVER, B.C.

26,315

**GEOLOGICAL AND GEOCHEMICAL REPORT
ON THE MAC 9 - 14 CLAIMS
CARIBOO MINING DIVISION, B.C.**

SUMMARY

The **MAC 9-14** claims lie approximately 40 kilometres southwest of Mackenzie, and 1 kilometre north of the McLeod River. The property lies within Triassic-Jurassic Takla Group volcanics and Mississippian Slide Mountain Group sediments of the Omineca Crystalline Belt. These rocks are adjacent to a northwesterly trending pyroxenite sill/dyke. In the vicinity of the claim block, feldspar porphyry dykes are closely associated with epithermal style chalcedonic quartz veining containing stibnite, arsenopyrite, and gold.

Previous work conducted on the property in 1995 and 1996 included soil and rock sampling and magnetometer surveying. Rock sampling returned gold values up to 5230 ppb, with associated silver, arsenic and antimony values.

A total of 36 soil samples and 2 rock samples were taken over the property in September 1997. Soil sampling gave anomalous gold and arsenic results trending across the grid, indicating a gold bearing mineralized zone of at least 400 metres length. Neither of the rock samples contained detectable gold values.

A geological review and additional rock sampling was conducted on the property from May 2 to 5, 2000, and 6 rock chip samples were taken from several sites within the 1998 soil grid area. Results of sampling further confirm the presence of gold bearing epithermal veins on the property. Analysis for platinum and palladium did not return any significant results.

Detailed geological mapping and an extended soil geochemical grid, combined with VLF-EM surveying, is recommended to further detail the extent of gold mineralization on the property.

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**GEOLOGICAL AND GEOCHEMICAL REPORT
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CARIBOO MINING DIVISION, B.C.**

1.0 INTRODUCTION

The **MAC 9-14** and **DWEEB** claims are an epithermal gold prospect located 40 kilometres southwest of Mackenzie in north-central British Columbia. The property was staked by the author to cover an outcropping of quartz-stibnite mineralization.

Field work, consisting of geological and lithogeochemical surveys, was carried out by a two-person crew working out of the town of Mackenzie in May 2000. The purpose of this work was to further evaluate the extent of the visible epithermal style mineralization, and to sample for platinum group elements in surrounding rocks. Field work was carried out by the author and L. Dandy, P.Geo., of P & L Geological Services.

1.1 LOCATION AND ACCESS

The **MAC 9-14** claims are located along Des Creek, approximately one kilometre north of its confluence with the McLeod River, 40 kilometres southwest of Mackenzie, in the Cariboo Mining Division of north-central British Columbia (see Figure 1). The claims cover an area of 1.5 square kilometres and are centred at latitude 54°56' N and longitude 123°14' W on NTS mapsheet 93J/14E.

Access to the property is via a recently extended, good quality, all-weather, graded gravel logging road which leaves Highway 97 one kilometre south of Windy Point, approximately 160 kilometres north of Prince George. From the highway junction one travels west along the Finlay Forest Service Road for 9 kilometres to the junction of the Holder Mainline, then to approximately kilometre 24. The property is bisected by the Holder Mainline.

1.2 PHYSIOGRAPHY

The **MAC 9-14** claims are in the physiographic division known as the Nechako Plateau, which is part of the Interior Plateau of British Columbia, located just west of the Rocky Mountain Trench. The property lies on glacially deposited material in an area of low topographic relief. Maximum relief is about 100 metres, with most of the property being at approximately 900 metre elevation. Drumlins and eskers in the vicinity of the property strike northeast. Several small, swampy lakes in the vicinity are the

MAC PROPERTY

P & L GEOLOGICAL SERVICES

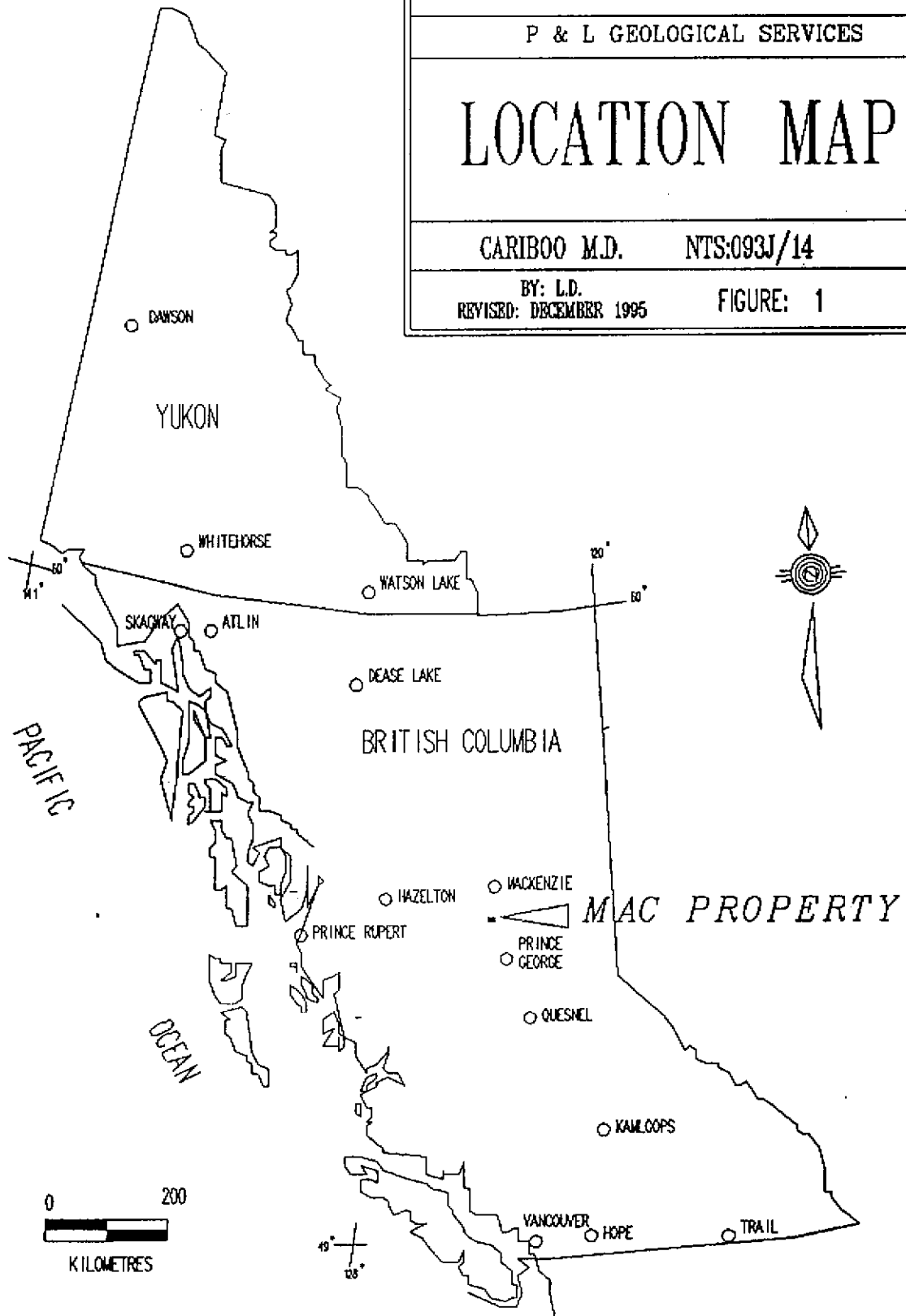
LOCATION MAP

CARIBOO M.D.

NTS:093J/14

BY: L.D.
REVISED: DECEMBER 1995

FIGURE: 1



result of glaciation and beaver activity.

Tree cover is extensive and consists mostly of white spruce, fir and lodgepole pine. Along Des Creek and in low lying swampy areas are dense alder thickets and devil's club.

The climate in this portion of interior British Columbia is generally warm and dry with a moderately long, cold winter. Frost may occur at any time; however, daytime temperatures in excess of 10°C are normal from early May until mid to late October, with occasional temperatures in excess of 30°C. In winter months, temperatures are generally in the -5°C to -10°C range with lows below -30°C being rare. The greatest accumulation of moisture (average of 25 mm per year) occurs during the fall, winter and early spring in the form of snow, with the remainder of the year being moderately dry. Moisture in the form of rainfall is generally confined to afternoon showers during the warm months.

1.3 PROPERTY STATUS

The **MAC 9-14** property is comprised of 7 two-post claims located within the Cariboo Mining Division (Figure 2). Table I lists claim names, record numbers and expiry dates for the **MAC 9-14** and **DWEEB** claims.

TABLE I

CLAIM NAME	RECORD NUMBER	NEW EXPIRY DATE
MAC 9	335824	MAY 16, 2001
MAC 10	335825	MAY 16, 2001
MAC 11	337555	JUNE 25, 2000
MAC 12	337556	JUNE 25, 2000
MAC 13	337557	JUNE 25, 2000
MAC 14	337558	JUNE 25, 2000
DWEEB	345885	MAY 15, 2001

1.4 HISTORY AND PREVIOUS EXPLORATION

In the 1930's placer exploration and mining projects predominated in this region. In 1933 and 1934, the McDougall River area was extensively worked by Cariboo Northern Development Co. Ltd. and Northern Reef Gold Mines Ltd. These two companies held much of the mineralized ground east of the Reed Creek-McDougall River confluence. In 1933, Cariboo Northern Development tested their property and obtained encouraging results. The company manager reported that several low gravel benches ran as high as

123 15'

DESCREEK

MAC 11	MAC 9	MAC 13
2	1	2
MAC 12	MAC 10	MAC 14



F.S. ROAD

RIVER

MCLOED

64° 55'

P & L GEOLOGICAL SERVICES

MAC PROPERTY

CARIBOO MINING DIVISION

NTS: 93J/14W

CLAIM MAP

SCALE: 1: 50,000

BY: PG
DATE: AUGUST 1996

FIGURE 2

\$3.15 per yard (1933) with yardage ranging from 2 to 13 yards.

Fourteen random surface samples taken from zones other than quartz veins assayed as much as \$3.60 (1933) per ton in gold with all the concentrates carrying assayable platinum concentrations.

In 1934, Northern Reef Gold Mines continued the work begun by Cariboo. Additional work included the construction of a 26 kilometre tractor trail from McLeod Lake, ditch and dam construction, and underground workings. A 16 metre adit with a 8.5 metre winze at the end of it was driven in 3 metres above the river. Placer testing was carried out in 1934 at four points adjacent to the river with results averaging \$1.87 (1934) per cubic yard. Hydraulic mining started early in 1935 but the operation was apparently short lived, since only a small amount of ground was worked.

A gold bearing quartz vein on the north side of the McDougall River just downstream from Reed Creek was developed by a short adit at this time. Other quartz veins in the area are known to contain some gold. Pyroxenite intrusions have been reported to occur in the area and are thought to be the source rock of the platinum group minerals found in the placer deposits.

The federal and provincial governments in early 1986 released regional geochemical survey data. This data indicated a large area anomalous for many elements in the vicinity of the **MAC 9-14** claims. This survey prompted the previous claim holder Plasway National Resources Ltd. to stake a large claim block in this area.

In 1993 the Plasway claims were allowed to lapse.

During the course of exploration work on the Plasway property, soil sampling outlined zones of anomalous gold, silver, platinum and palladium that appear to be spatially related to mafic intrusive rocks.

2.0 GEOLOGY

The **MAC 9-14** claims lie within the Upper Paleozoic units of the Omineca Crystalline Belt, at the boundary with the Rocky Mountain Trench (Tipper et al, 1979).

Detailed geological mapping on the **MAC 9-14** claims has been limited by poor outcrop exposure. Outcrop exposure is generally confined to the road cuts and creek valleys.

Due to limited outcrop exposure, formal geologic mapping of the property was not undertaken, however some conclusions can be

drawn. The property appears to be underlain by Triassic-Jurassic Takla Group volcanic tuffs and Mississippian Slide Mountain Group argillites. Pyroxenite, intruded as a large dyke or sill, occurs immediately west of the property. The pyroxenite body (using government high level airborne magnetics map as reference) appears to trend for at least 4 kilometres in a north-westerly direction, and is likely at least 100 to 200 metres wide, in places appearing to be as wide as 500 metres. Narrow feldspar porphyry dykes appear in outcrop in the vicinity of the epithermal mineralization and may be associated with the larger mafic intrusive.

Outcrop exposed along a road cut adjacent to Des Creek consists of rusty argillite with quartz stock-work which grades into completely silicified, brecciated, pyritic rock. The silicified section of outcrop contains gold bearing, epithermal style, banded chalcedonic quartz veins with patches and bands of massive stibnite and lesser arsenopyrite.

3.0 GEOCHEMISTRY

3.1 ROCK SAMPLING

A total of 6 rock chip samples were collected on the property. All of these samples were fire assayed for platinum, palladium, and gold, and were tested for 32 additional elements by ICP method. Sample locations are shown on figure 3.

In the field, sample locations were marked with labelled flagging tape, and all samples were placed in correspondingly numbered bags and shipped to Chemex Labs Ltd. in Vancouver for analyses.

3.2 ROCK SAMPLE RESULTS AND DISCUSSION

Figure 3 shows the 1997 soil sample results for gold, with the location of the 6 rock samples taken in May 2000. For complete results of these 6 samples, see Chemex Labs Ltd. Certificates of Analysis in the Appendix.

Figure 3 shows a north-south trend of elevated gold values near the centre of the grid. The grid is centred over a mineralized outcrop located at 1000N and 1000E. At station 975E on L1300N and L1100N gold values of 160 and 100 ppb occur, while on L900N values of 25 and 30 ppb occur at stations 950E and 975E. A second anomalous area (35 ppb gold) is found on L900N at station 1125E.

Rock sampling in 2000 was designed to further test the gold potential of rocks in the grid area. Sample 00MAC-1 was a 2 metre chip sample taken across the exposure of vein near grid 1000N, 1000E. This sample returned 3940 ppb gold and 4100 ppm antimony.

Three samples (DES 59.5-63, 63-75, and 75-76) represent a chip sample over 16.5 metres across the margins and centre of a feldspar porphyry dyke exposed along the road cut south of the mineralized vein exposure. This dyke is thought to have a genetic relationship to epithermal veining at this location. Results of this sampling returned slightly elevated molybdenum values (to 9 ppm), with no appreciable gold or antimony values.

Sample 00MAC-2 was taken from an exposure of argillaceous sediments, and was tested for multi-element potential. Slightly elevated arsenic (156 ppm), nickel (150 ppm), and strontium (404 ppm) values were returned from this sample.

Sample L11N, 850E was taken from an area of elevated arsenic in soil at this grid location from the 1997 soil sampling survey. This sample returned 4 ppm bismuth, 33 ppm cobalt, 1035 ppm manganese, and 219 ppm vanadium, all of which are elevated compared to samples taken from the grid area, however, arsenic values were not elevated compared to other samples.

N

MAC PROPERTY - 1997 SOIL GOLD RESULTS AND 2000 ROCK SAMPLE LOCATIONS

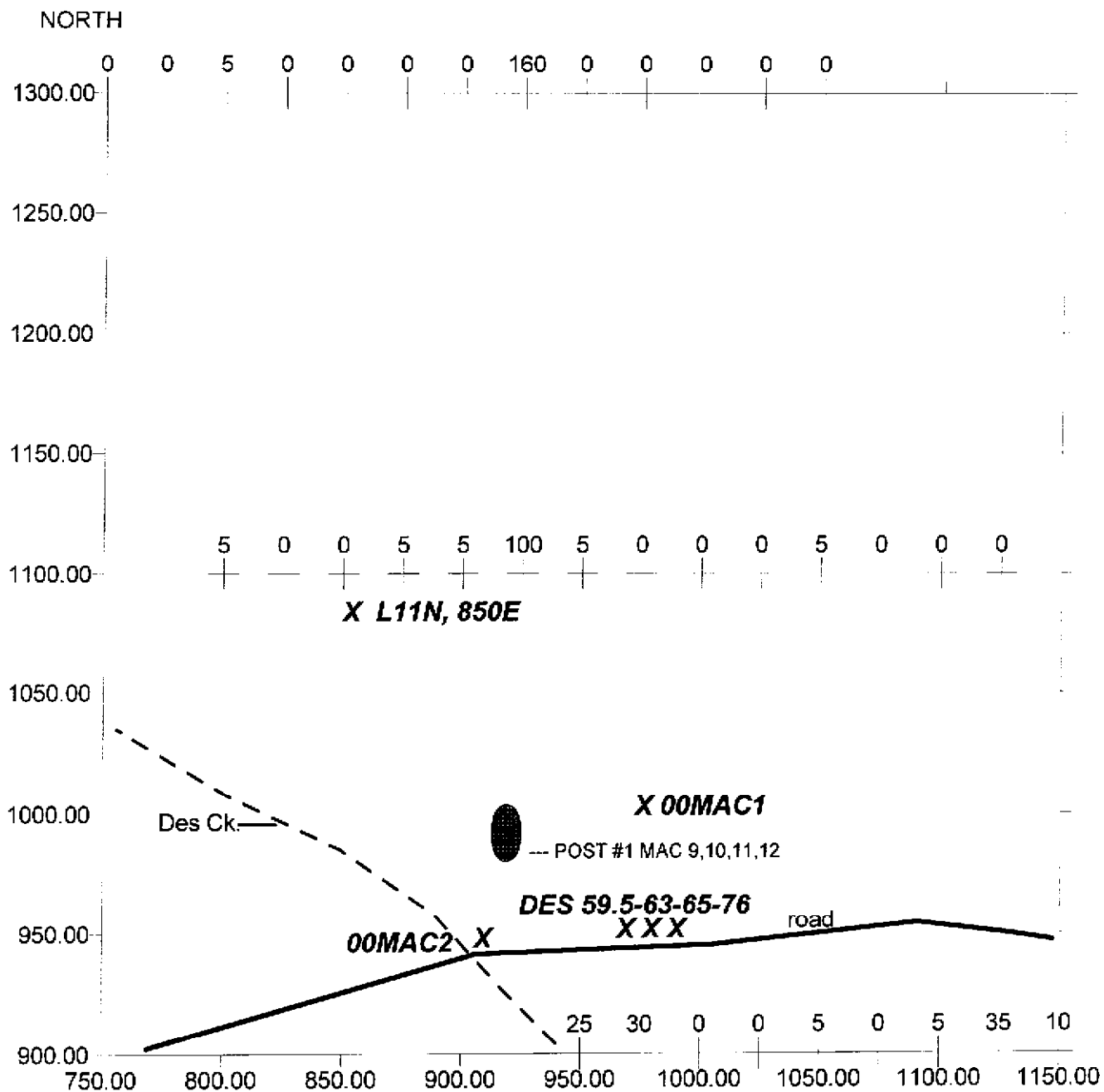


FIGURE 3

EAST

SCALE = 1:2500

0=<detection

X ROCK SAMPLE LOCATION

4.0 CONCLUSIONS

Triassic-Jurassic Takla Group volcanic tuffs and Mississippian Slide Mountain Group argillites of the Omineca Crystalline Belt underlie the **MAC 9-14** Claims. These rocks are adjacent to a north-westerly trending pyroxenite dyke or sill. Dimensions of the pyroxenite body can be inferred from government high level airborne magnetics map to be approximately 4 kilometres long and 300 metres wide. In the vicinity of the claim block, feldspar porphyry dykes, possibly related to this intrusive, are associated with epithermal style quartz veining containing visible stibnite and arsenopyrite.


Soil sampling in 1997, centred on the mineralized outcrop, defined two subparallel 400 metre long gold and arsenic soil anomalies. These anomalies are open along strike in either direction. Soil results ranged up to 160 ppb gold and 320 ppm arsenic. Rock sampling in 1996, 1997, and 2000 confirms that an epithermal style vein, exposed within the soil geochemical anomalous area, contains gold, with values to 5,230 ppb (1996 sampling) returned to date. Poor exposures of outcrop limits the amount of rock sample availability to the north and south of this exposure.

Assaying for platinum and palladium did not return any values above the lower detection limits of analysis for these elements.

5.0 RECOMMENDATIONS

Future work, including expanded soil and rock chip sampling, plus VLF-Em surveying, should be designed to further explore the trend of the epithermal mineralization. Detailed geologic mapping is recommended to define outcrops, which should be systematically chip sampled where mineralization is encountered.

Respectfully submitted


Perry B. Grunenberg, P. Geo.

6.0 REFERENCES

ARMSTRONG, J.E., 1965; Fort St. James Map Area, Cassiar and Coast Districts, B.C.: Geological Survey of Canada, Memoir 252.

ARMSTRONG, J.E., TIPPER, H.W., and HOADLEY, J.W., 1946; and MULLER, J.E. and TIPPER, H.W., 1961; Geology, McLeod Lake, British Columbia: Geological Survey of Canada, Map 1204A, Scale 1:253,440.

BRITISH COLUMBIA MINISTER OF MINES ANNUAL REPORTS, 1933 and 1934; McLeod River Area: p.A100-A104 (1933) and p.C13-C16 (1934).

DANDY, L., 1996; Geochemical and Geophysical Report on the Mac 9-14 Claims: MEMPR Assessment Report.

DANDY, L., 1998; Geological and Geochemical Report on the MAC 9 - 14 Claims: MEMPR Assessment Report.

RICHARDS, G.G., 1986; Report on the Mineral Potential of the McLeod Prospect, McLeod River, British Columbia for Plasway National Resources Ltd.: unpublished report.

TIPPER, H.W., CAMPBELL, R.B., TAYLOR, G.C. and STOTT, D.F., 1979; Parsnip River, British Columbia, Sheet 93: Geological Survey of Canada 1:1,000,000 Geological Atlas Series, Map 1424A.

TROUP, A.G. and DANDY, L., 1983; Geology, Geochemistry and Geophysics Report on the G NORTH Property for Ezekiel Explorations Ltd.: MEMPR Assessment Report.

**7.0 CERTIFICATE OF QUALIFICATIONS
PERRY B. GRUNENBERG**

I, Perry B. GrunenberG do hereby certify that:

I am a consulting geologist and a partner in P & L Geological Services having a business address of Box 5036, Lac Le Jeune, B.C.

I am a graduate of the University of British Columbia with a B.Sc. in Geology, 1982.

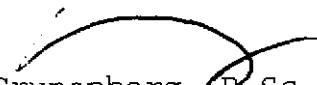
I have continued my studies with the University of British Columbia obtaining Certificates in Terrain Mapping and Slope Stability Assessment.

I am a professional geoscientist and a member in good standing with the Association of Professional Engineers and Geoscientists of British Columbia since 1992 (Registration # 19246).

I have maintained fellowship status in the Geological Association of Canada since 1987 (Membership # F5203).

I have practiced my profession continuously since 1982.

I carried out geological and geochemical survey work on the MAC claims during May of 2000.


Perry B. GrunenberG, B.Sc., P.Geo.
August, 2000

8.0 COST STATEMENT

WAGES - GEOLOGIST 4 mandays @ \$350.00	\$1400.00
FOOD AND ACCOMMODATION 4 mandays @ \$60	240.00
TRANSPORTATION Truck rental/fuel	200.00
ANALYSES 6 rocks @ \$23.75	142.50
TOTAL ANALYSES	142.50
SUPPLIES	21.00
TELEPHONE/FAX/POSTAGE	5.00
REPORT PREPARATION 0.5 manday @ \$350.00	175.00
<u>TOTAL COSTS</u>	<u>\$ 2183.50</u>

APPENDIX

CHEMEX LABS LTD. CERTIFICATES OF ANALYSES
ROCK SAMPLES



ALS Chemex

Aurora Laboratory Services Ltd.
 Analytical Chemists * Geochemists * Registered Assayers
 212 Brooksbank Ave., North Vancouver
 British Columbia, Canada V7J 2C1
 PHONE: 604-984-0221 FAX: 604-984-0218

To: P & L GEOLOGICAL SERVICES

BOX 5036
 LAC LE JEUNE, BC
 V1S 1Y8

Project: MAC
 Comments: ATTN: LINDA DANDY

Page Number : 1-A
 Total Pages : 1
 Certificate Date: 18-MAY-2000
 Invoice No. : 10018415
 P.O. Number :
 Account : MRV

CERTIFICATE OF ANALYSIS A0018415

SAMPLE	PREP CODE		Au	Pt	Pd	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K
	ICP	ICP	ppb	ppb	ppb	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	%
DES 59.5-63	205	226	18	< 5	< 2	0.4	0.29	70	< 10	120	< 0.5	< 2	0.08	< 0.5	3	193	15	1.63	< 10	< 1	0.14
DES 63-75	205	226	14	< 5	< 2	< 0.2	0.74	96	< 10	120	0.5	< 2	0.50	< 0.5	5	43	6	2.01	< 10	< 1	0.28
DES 75-76	205	226	26	< 5	< 2	0.2	0.38	54	< 10	180	< 0.5	< 2	0.03	< 0.5	6	178	15	1.67	< 10	< 1	0.18
L11N, 850E	205	226	2	< 5	< 2	< 0.2	4.22	22	< 10	40	< 0.5	4	3.06	< 0.5	33	223	58	6.00	10	1	0.01
00-MAC-1	205	226	3940	< 5	< 2	14.0	0.38	2130	< 10	90	< 0.5	< 2	0.35	< 0.5	6	129	17	1.31	< 10	< 1	0.15
00-MAC-2	205	226	16	< 5	< 2	0.2	0.52	156	< 10	90	< 0.5	< 2	9.99	< 0.5	26	55	24	4.23	< 10	1	0.26

CERTIFICATION 



ALS Chemex

Aurora Laboratory Services Ltd.
 Analytical Chemists * Geochemists * Registered Assayers
 212 Brooksbank Ave., North Vancouver
 British Columbia, Canada V7J 2C1
 PHONE: 604-984-0221 FAX: 604-984-0218

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CERTIFICATE OF ANALYSIS A0018415

SAMPLE	PREP CODE	La ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
DES 59.5-63	205 226	10	0.03	55	9 < 0.01		11	390	14	0.03	12	1	5 < 0.01	< 10	< 10		11	< 10	56
DES 63-75	205 226	50	0.09	215	6 < 0.01		5	1030	30	1.35	8	1	30 < 0.01	< 10	< 10		4	< 10	44
DES 75-76	205 226	< 10	0.03	125	3 < 0.01		22	190	18	0.60	8	2	7 < 0.01	< 10	< 10		11	< 10	34
L11N, 850E	205 226	< 10	3.28	1035	1 0.04		68	400	2	0.16	6	21	28 0.33	< 10	< 10		219	< 10	68
00-MAC-1	205 226	< 10	0.14	105	3 < 0.01		11	120	2	0.68	4100	1	10 < 0.01	< 10	< 10		12	< 10	40
00-MAC-2	205 226	< 10	1.12	635	< 1 0.02		150	1100	4	0.48	10	5	404 < 0.01	< 10	< 10		11	< 10	96

CERTIFICATION: