GEOLOGICAL BRANCH ASSESSMENT REPORT

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11,903

SUMMARY

During the summer of 1983 a combined geophysical and magnetometer survey was carried out on the Crater Lake group of mineral claims. These claims are located about 32 kilometers south-southeast of Smithers, British Columbia. Access is most easily gained by helicopter from Smithers. The terrain consists of moderate to steep slopes covered with trees, scrub bushes and talus. The purpose of the geochemical and geophysical surveys was to extend the known zones of copper and silver mineralization.

Previous work on the property consisted of rock sampling programs, magnetometer and dip needle work, as well as diamond drilling.

The property is mainly underlain by Jurassic and Lower Cretaceous Hazelton Group volcanics. The rock types are green agglomertae, green andesite, red andesite, and basalts. Intruding into these rocks are acidic dykes and sills. Several prospects of copper and silver mineralization occur on the property.

The magnetometer readings and soil samples were taken from a grid system using 30 meter station separations. Magnetometer readings have been diurnally corrected, statistically

analyzed, plotted and contoured. Soil samples were assayed for zinc, lead, copper, gold, silver and strontium. The results for zinc, lead, copper and strontium have been plotted on separate maps and contoured.

CONCLUSIONS

1. The 1983 magnetometer survey has revealed several linear magnetic highs and lows. Other magnetic highs and lows, uncovered in past magnetic surveys on the property, have corresponded with known areas of mineralization. The new magnetic highs and lows could be reflecting sulphide mineralization.

2. The geochemical soil sampling program revealed that several areas on the property contain moderate amounts of copper, zinc, lead and strontium. Several stations also reported moderate amounts of gold and silver.

RECOMMENDATIONS

No recommendations are made at this time as work discussed in this report is part of a multi-phased work program outlined by Kikuchi (1981). Changes to these recommendations will have to await the completion of more of the proposed work projects.

REPORT ON

A

GEOPHYSICAL AND GEOCHEMICAL SURVEY

CRATER LAKE CLAIM GROUP,

TELKWA AREA, OMINECA M.D., B.C.

INTRODUCTION AND GENERAL REMARKS

This report discusses the survey method, data compilation and interpretation of results from a geochemical and magnetometer survey carried out on the Crater Lake group of mineral claims, located near Telkwa, B.C. Work discussed in this report was completed between July 29 and August 3, 1983 by Customer Mining Services Limited of Vancouver, B.C. The work program was under the direction of James Parker, who was following recommendations outlined by Dr. Kikuchi (1981). The combined magnetometer and geochemical surveys totalled approximately 20 kilometers of line.

The purpose of the magnetometer and geochemical survey was to locate new areas of copper sulphide mineralization, and to extend the geological knowledge about the area.

The grid system used in this geophysical and geochemical survey was a northerly extension of the 1980 survey area (outlined by Marks 1980) on the east and west ridge along Crater Lake.

PROPERTY AND OWNERSHIP

The Crater Lake Group includes the following adjoining mineral claims:

Copper 1	8 Units	#1338
Copper 2	8 Units	#1339
Copper 3	8 Units	#1340
Copper 4	8 Units	#1341

The Copper 2 and 4 claims overlap with several of the Hankin 1-16 and Old Tom 1-2 claims. For assessment purposes these claims have been grouped together.

All claims listed above are owned 100% by Mecca Minerals Limited of Vancouver, British Columbia.

LOCATION AND ACCESS

The Crater Lake Group is located at Crater Lake, approximately 20 kilometers south of Telkwa, British Columbia. Crater Lake, a small alpine lake, lies between Loring and Webster creeks. The legal post for the Copper claims is one kilometer south of Crater Lake: latitude 54° 31' N. and 127° 07' W. longitude.

The Loring Creek Group of mineral claims overlap with the eastern half of the Copper 2 and 4 claims.

Access to the Crater Lake claims is easiest by helicopter, although a logging road and a 4 x 4 access trail comes to within 2 kilometers of the Loring Creek Group.

TOPOGRAPHY

The Crater Lake group of mineral claims covers a northerly trending mountain spur bounded to the west by Webster Creek and to the east by Loring Creek. Cliffs bound the Copper claims on the east, west and south sides, while Crater Lake lies to the north. Elevations on the claims vary from 1,250 to 2,075 meters above M.S.L.

Vegetation is almost non-existent south of Crater Lake, while north of the lake small trees and bushes are thick and abundant.

HISTORY OF PREVIOUS WORK

Copper was discovered in the general vicinity of Crater Lake in 1903, and intermittent exploration of the area has continued to this day. Several old audit tunnels can be found along Loring Creek.

In 1968 and 1969 the Crater Lake area was explored geophysically and geochemically by Falconbridge Nickel Mines.

In 1973 Maharaja Minerals of Vancouver acquired properties in the area and carried out their own geochemical and geophysical exploration programs. Maharaja completed diamond drill programs on the Old Tom claims in 1973 and again in 1978. Drill programs were completed on the Copper claims, near the "chimney" showings, in 1975 and again in 1978.

In 1980 Mecca Minerals of Vancouver conducted a short Induced Polarization survey near the "chimney" showings. That same year an 18 kilometer magnetometer survey was completed on the Copper claims. In 1981 a 12 kilometer magnetometer survey, and a short E.M.-16 survey were carried out on the Crater Lake group of mineral claims.

GEOLOGY

Introduction:

D.H. Brown, in his report for the "Old Tom, Crater, Webster, Dominion, Lava, Marmot and Dome" claims, assessment report #1810, describes the geology of the area as follows:

> "The Telkwa Range is dominantly underlain by volcanic rocks of the Hazelton Group which consist of an apparently conformable succession of interbedded sedimentary and volcanic rocks ranging in age from Pre-Middle Jurassic to Lower Cretaceous. The Hazelton Group is overlain by sediments of the Bowser formation of Lower Cretaceous age which outcrop in low parts of the valleys and in folds in the Hazelton volcanics.
>
> "Intruding the Hazelton rocks in the central part of the Telkwa Range is a relatively large granodiorite or quartz monzonitic stock. Lesser diorite stocks and sills and dykes of granodiorite, felsite and rhyolite quartz porphyry cut the Hazelton rocks in diverse directions.
>
> "Structure is to a large extent controlled by intrusion of the granodiorite plug and bedding generally dips outward from the granodiorite. Block faults of variable displacement are common and in Loring Creek area most have their north side displaced downward. Vertical movement has been more important than

horizontal movement and most of the faults are hinged. Occasional local flat-lying similar folds are perhaps a result of low angle faulting and bedding plane slippage. Alteration and mineralization associated with the central granodiorite stock are related to a hornfelsed zone at the periphery of the stock and with porphyritic phases within the stock. The alteration within the hornfelsed zone is chiefly due to pyrite and magnetite mineralization. Within the porphyritic phases of the granodiorite, alteration is related to fracture contolled quartz stockworks bearing moderate pyrite and minor chalcopyrite and molybdenite.

"Away from the central stock where small diorite stocks and sills intrude the volcanics, the mineralization is pyrite, chalcopyrite and minor bornite associated with epidote and minor chlorite. Within the volcanic series there are two types of mineral occurrences related to volcanic tuffs and pyroclastics. One is a pyrite-chalcopyrite-tetrahedrite assemblage associated with strong quartz and epidote alteration within bedded tuffs. The other is a bornite-minor chalcopyrite-specularite assemblage associated with skarnified pyroclastic beds and exhibiting strong epidote-garnet alteration."

In general, sulphide mineralization bearing copper, silver, and molybdenum from the area has been observed in lenses, dykes, sills, gneissic volcaniclastic stratiform showings, stratiform andesitic and basaltic clasts, shear zones, holding veins and veinlets, fault zone fillings and as disseminated sulphides in volcaniclastic stock works.

Crater Lake Area

The following is quoted from Taylor's (1980) report on the Copper 1-4 claims:

"Structurally the rocks form a broad anticline striking north-northwest and plunging northerly, with its axis passing through Crater Lake. Faults and shear zones are prominent in the cliffs above the lake and Webster Creek. Block faults with variable displacements are common, north side down for the most part, and with little horizontal displacement.

"Metallic minerals occur in narrow veins in the traverse faults and shear zones, and surface exposures show secondary enrichment. The vein deposits exhibit hematite, bornite, malachite, azurite, chalcopyrite, chalcocite and tetrahedrite. The best exposure of this type is known as the 'chimney' zone. (The 'chimney' zone is found on the western side of the Crater Lake Cirque).

"Samples taken along this "chimney", and reported by McAndrew (1974) ranges from 0.76% to 15.6% copper, and from 0.15 oz/ton to 12.4 oz/ton silver.

"Copper staining occurs on bands in the cirque walls southwest of the tarn. McAndrew (1974) examined two of these showings. The lower one he refers to as the 'chalcocite mineral horizon'. The chalcocite is very finely disseminated in a band of green andesite and has been designated the C2 horizon by the owners."

INSTRUMENTATION AND THEORY

The magnetometer survey utilized a portable vertical component fluxgate magnetometer, model G-110, manufactured by Sabre Electronic Instruments Ltd. of Burnaby, B.C. This magnetometer uses a digital dial read-out with a range of 100,000 gammas and a reading accuracy of 10 gammas. Specifications of the magnetometer can be found in greater detail in Appendix I.

Magnetite and pyrrhotite are the only commonly occurring strongly magnetic minerals. Magnetic surveys, therefore, can be used to locate the existence of these two minerals.

Different rock types have different background amounts of these two minerals, thus magnetic data can also aid in the mapping of geologic lithology and structure.

SURVEY PROCEDURE

A grid system was established on the property using flagged stations every 30 meters. Approximately 12 kilometers of grid system was established. Magnetometer readings were taken over the entire survey area and the diurnal shift was monitored in the field using the closed loop method of a series of base stations.

Soil samples were taken over approximately 7 kilometers of the survey area. These samples, taken from the B Horizon, were placed in kraft paper bags, marked, sealed, and analyzed by Acme Analytic Laboratories Limited of Vancouver for copper, silver, gold, lead, zinc and strontium.

Acme Analytic's geochemical methodology is presented in Appendix II. The complete assay results can be found in Appendix II.

COMPILATION OF DATA

Magnetometer readings have been plotted on Map CC1/83 at a scale of 1 cm. = 10 meters. To simplify matters 53,000 gammas have been subtracted from each raw data point before being

plotted. The magnetic values were grouped together in equal arithmetic intervals and a cumulative frequency distribution was established. The statistical parameters taken from this distribution and used for map construction are as follows:

1,800 gammas Anomalous High Threshold Value

1,500 gammas Sub-Anomalous High Threshold Value

1,225 gammas Mean Background Value

950 gammas Sub-Anomalous Low Threshold Value

650 gammas Anomalous Low Threshold Value

The contour interval for the plotted results is 150 gammas. High threshold values have been contoured with a solid line while low threshold values have been contoured with a broken line. Background values, those between 950 gammas and 1,500 gammas, have not been contoured.

Assay results for copper, zinc, lead and strontium have been plotted on maps, Map CC2/83, Map CC3/83, Map CC4/83 and Map CC5/83 respectively. Silver and gold assays were too low to warrant graphic presentation.

Map CC2/83, which contains the copper assays, has been plotted such that 1 cm. = 10 meters. The contour interval is 10 p.p.m., with assay results below 30 p.p.m. acting as background.

Map CC5/83, which contains the strontium assays, has been plotted such that 1 cm. = 10 meters. The contour interval is 10 p.p.m., with assay results below 15 p.p.m. acting as background.

Map CC3/83, which contains the zinc assays, has been plotted such that 1 cm. = 10 meters. The contour interval is 10 p.p.m., with assay results below 70 p.p.m. acting as background.
Map CC4/83, which contains the lead assays, has been plotted such that 1 cm. = 10 meters. The contour interval is 10 p.p.m., with assay results below 20 p.p.m. acting as background.

DISCUSSION OF RESULTS

Magnetometer Survey

Four moderately sized anomalous high zones were located in the survey area. These anomalous highs are centered as follows:

Station 4 West - 19 North
Station 4 West - 14 North
Station 11 East - 28 North
Station 14 East - 32 North

Four smaller anomalous low zones were also located in the survey area. These anomalous lows are centered as follows:

Station 13 East - 39 North
Station 7 West - 14 North
Station 5 West - 27 North
Station 8 West - 28 North

Several small, but scattered sub-anomalous zones were located. To date none of these highs nor lows correspond with any known mineralized zones.

Geochemical Survey

The survey revealed that an area with high concentrations of zinc, lead and copper is centered roughly from 7 West - 16 North to 5 West - 16 North. The only significant gold finding was found near this zone at station 8 West - 15 North. Gold assayed at 475 p.p.b. at this station.

A second area showing over-lapping mineral highs was centered at station 8 West - 9 North. The highest values for silver and strontium were reported in this area. This area also corresponded with a moderate sub-anomalous magnetic high.

SELECTED BIBLIOGRAPHY

Brown, D.H., Assessment Reports, Falconbridge Nickel Mines Ltd. 1969

McAndrew, J.M., 1973-74 Field Exploration Report, Maharaja Minerals Ltd. (N.P.L.) 1974 and Memorandum, 1976.

Taylor, B., Report on The Copper 1 - 4 Mineral Claims, Omineca M.D., British Columbia, January 31, 1980

Mark, D.G., Geophysical Report on a Magnetic Survey, Copper Claim Group, Crater Lake Area, Omineca M.D., B.C. December 11, 1980

Kikuchi, T., Report and Recommendations on The Crater Lake Group, Cliffs Above Webster Creek, Omineca M.D., B.C., 1981

Kikuchi, T., Report and Recommendations on The Loring Creek Group, Loring Creek Valley, Omineca M.D., B.C., 1981

Rutherford, J., Geophysical Report on a Magnetic and Electromagnetic Survey, Copper and Loring Creek Claim Groups, Telkwa Area, Omineca M.D., B.C. 1981

STATEMENT OF QUALIFICATIONS

I, James D.A. Parker of the City of Toronto, Ontario hereby certify that:

1. I am a University Student employed part time for several of James A. Rutherford's business', with offices at 1102-207 West Hastings Street, Vancouver, B.C., V6B 1H7. I reside at 9469 - 127 A Street, Surrey, B.C., V3P 5X8

2. I have a B.A. degree in Psychology and English from Simon Fraser University.

3. I am working towards a M.A. degree in Psychology at York University.

4. I have worked three field seasons on Smithers area properties under the direction of James A. Rutherford in the capacity of field manager.

5. As at date I have no direct or indirect interest in any claims or properties held by Mecca Minerals Limited.

DATED at Toronto, Ontario, this 15th day of October, 1983.

James D.A. Parker

STATEMENT OF QUALIFICATIONS

I, TORU KIKUCHI of the City of Vancouver, B.C. bereby certify that:

1. I am a graduate of the Hokkaido University, Japan (B.Sc., Geology and Minerology, 1946) and of the Tohoku University, Japan (Ph.D., Economic Geology, 1963).

2. I am a "GIJUTSUSHI" (a qualification for a consulting engineer authorized by the Japanese Government) and a member in good standing of the Association of Professional Engineers of the Province of British Columbia.

3. I have been practising my profession continuously for the past thirty-five years, and am an independent Consulting Geologist with my office at 5375 Quebec St., Vancouver, B.C., V5W 2N4.

4. I have no direct or indirect interest in the property, nor do I anticipate receiving any such interest, nor in the securities of Mecca Minerals Limited.

5. I inspected a portion of the work while the program was being carried out. I have read this report and personally endorse the facts and concepts contained in the text.

Toru Kikuchi, P.Eng.

Vancouver, B.C.
October 15th, 1983

CERTIFICATE

I, JAMES A. RUTHERFORD, of the City of Vancouver, British Columbia, the author of this report, hereby certify that:

1. I am President and Manager of Customer Mining Services Limited, with offices at 1102 - 207 West Hastings Street, Vancouver, B.C., V6B 1H7.

2. I hold a B.Sc. degree (major geology) from the University of Alberta - 1955.

3. I hold an M.B.A. degree (major business administration) from the University of Western Ontario - 1957.

4. I hold a Ph.D. degree (major economics) from South-western University, Arizona - 1983.

5. I am a Fellow of the Geological Association of Canada.

6. I am not a Registered Engineer in the Province of British Columbia or of any province.

7. I have worked professionally and as a businessman in the mining and/or oil business for over 30 years.

8. As at date I have direct and indirect interest through Customer Mining Services Limited in the securities of Mecca Minerals constituting a position of "shareholder of control".

9. This report is based on personal field examination and examination of the data obtained as a result of the survey.

DATED at Vancouver, British Columbia, this 15th day of October 1983.

James A. Rutherford
B.Sc., M.B.A., Ph.D., FGAC, AFCGS

AFFIDAVIT OF EXPENSES

The magnetic and geochemical survey carried out on the Crater Lake area Claims, Crater Lake, Omineca, M.D., B.C. July 27 to August 31 1983 was done to the value of the following set in below. Geological investigations were carried out sporadically in the summer of 1983 in conjunction with other work in the general area.

FIELD:

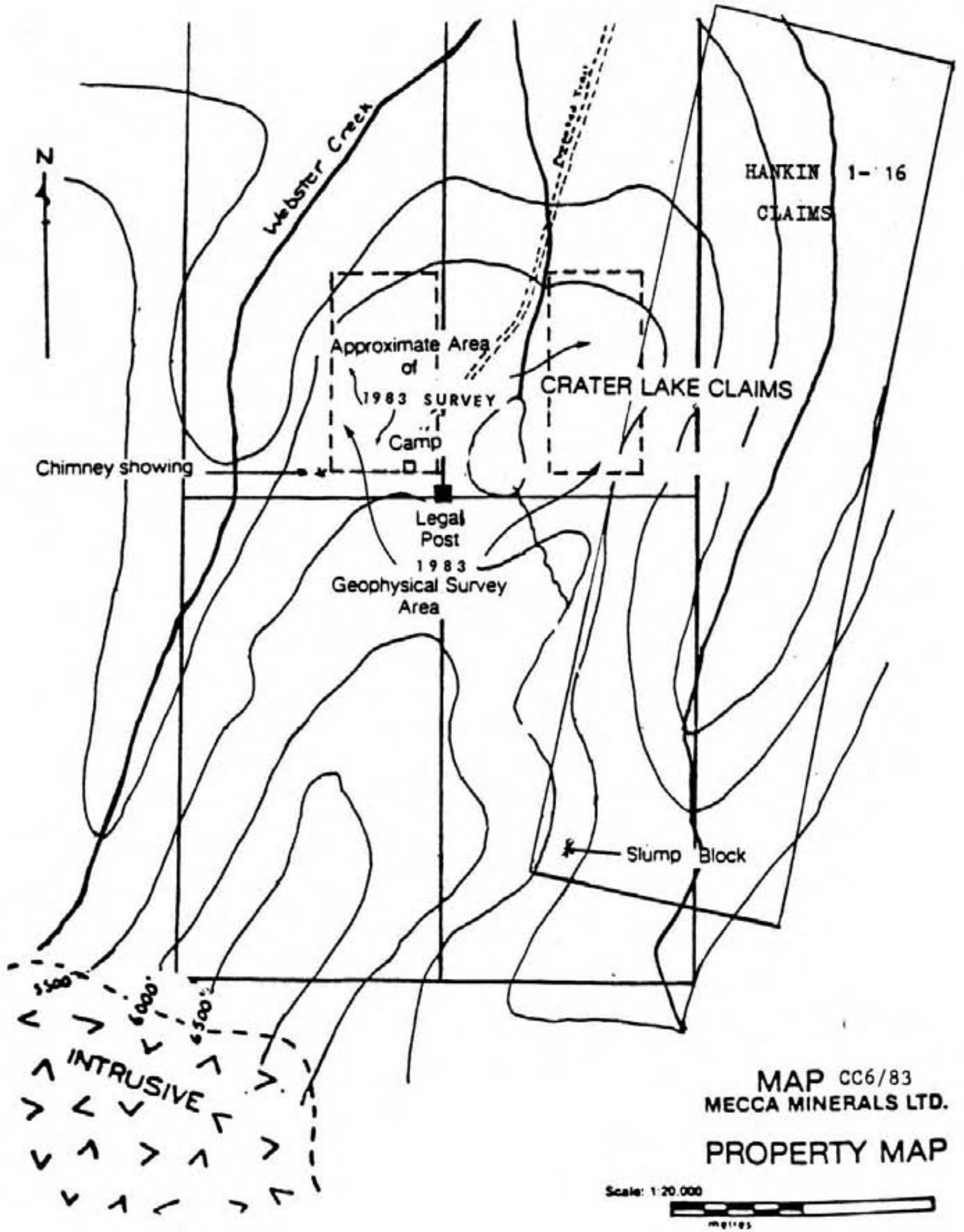
5-man crew, (crew varied from 2 to 8 people with a conservative average of 5 struck) 15 days at $300.00 per day	$4,500.00
Supervision	1,000.00
Instrument rental	250.00
Board and room	1,500.00
Survey supplies and assaying	2,000.00
Mobilization and demobilization (air fares and return to Vancouver)	1,000.00
	$ 10.250.00

REPORT:

Drafting and printing (binding)	$ 750.00
Report typing and compilation	350.00
	1,100.00
Grand Total	$ 11,350.00

Respectfully submitted,
Customer Mining Services Ltd.

James A. Rutherford
President

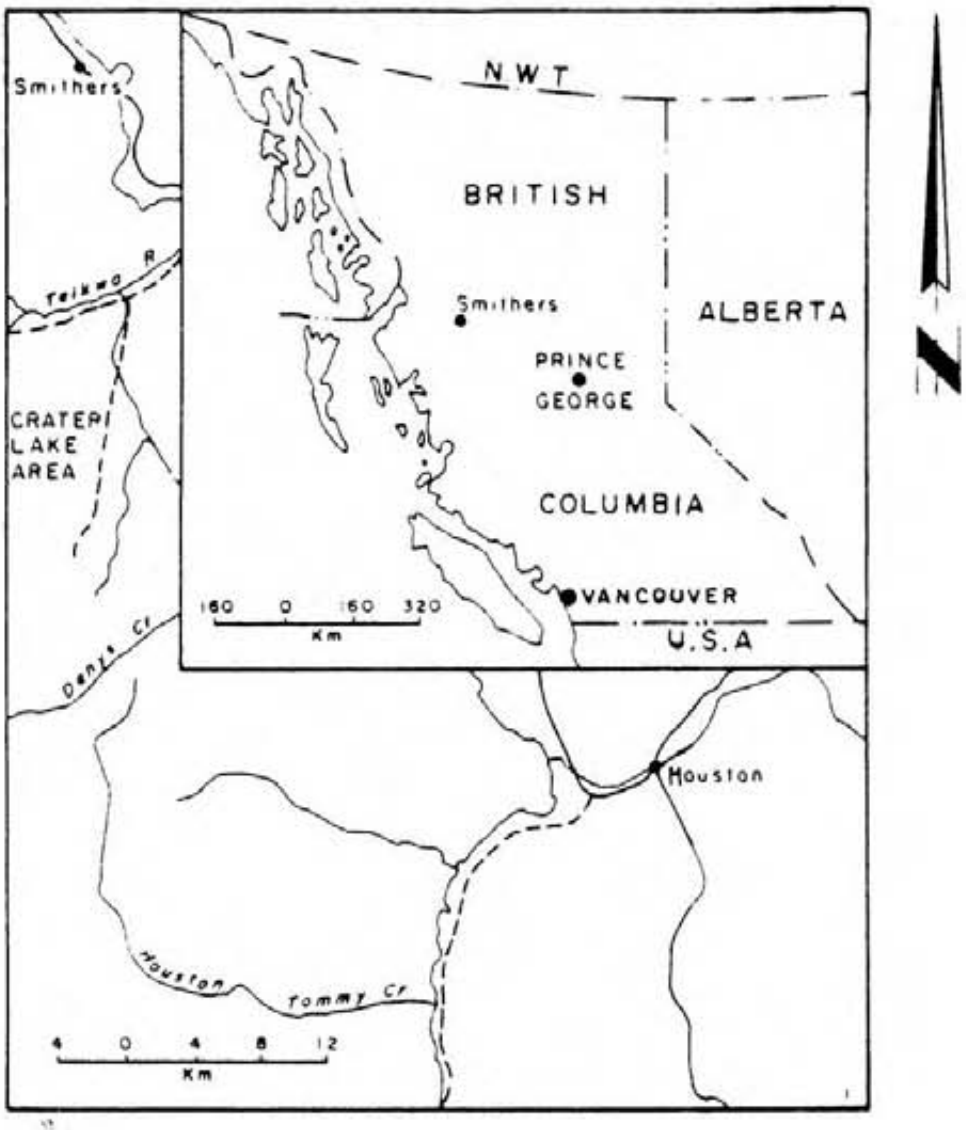


MAP CC6/83
MECCA MINERALS LTD.

PROPERTY MAP

Scale: 1:20,000

metres


Smithers
Telkwa R
CRATER LAKE AREA
Davis Cr
Houston
Houston Tommy Cr
4 0 4 8 12
Km
NWT
BRITISH
COLUMBIA
ALBERTA
Smithers
PRINCE GEORGE
VANCOUVER
U.S.A
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APPENDIX I

geophysical industrial instruments and services

SABRE MODEL 22* PORTABLE MAGNETOMETER

The model 22 magnetometer is an accurate and rugged instrument that is simple to operate yet fulfills all the requirements of a first class geophysical exploration instrument.

Specifications

Principle of Operation:	Neutralized fluxgate.
Type of Readout:	Meter to indicate null and precision digital dial to indicate value of earth's vertical field directly in gammas.
Range:	0 to 100,000 gammas (without the use of complicated latitude controls or range switches)
Sensitivity:	20 gammas per division on digital dial. Constant and linear throughout the entire range.
Operating Temperature Range:	-30°C to +85°C.
Temperature Drift:	Less than 2 gammas per degree throughout the entire operating range.
Fluxgate Suspension System:	Oil-damped gimbal, self-levelling.
Dimensions:	Magnetometer:9 inches high x 7-1/4 in. wide x 4 in. deep. Battery Case:4-3/4 in. x 4-3/4 in. x 1-1/2 in.
Weight:	Magnetometer 4 lbs. Battery Case 2 lbs. (complete with batteries)
Field Cases:	Magnetometer and battery case are both housed in heavy saddle leather cases with convenient carrying straps.
Batteries:	4 Eveready No. 246 transistor batteries (9 volt), with service life of approx. 2 months depending on use.

* Specifications for Model G-110 are the same.

ACME ANALYTICAL LABORATORIES LTD.
852 E. HASTINGS, VANCOUVER B.C.
PH:253-3158 TELEX:04-53124

DATE RECEIVED AUG 5 1983

DATE REPORTS MAILED Aug 11/83

ICP GEOCHEMICAL ANALYSIS

.500 GRAM SAMPLE IS DIGESTED WITH 3 ML OF 3:1:3 HCL TO HNO3 TO H2O AT 90 DEG.C. FOR 1 HOUR.
THE SAMPLE IS DILUTED TO 10 MLS WITH WATER.
THIS LEACH IS PARTIAL FOR: Ca,P,Mg,Al,Ti,La,Na,K,W,Ba,Si,Sr,Cr AND B. Au DETECTION 3 ppm.
AU* ANALYSIS BY AA FROM 10 GRAM SAMPLE.
SAMPLE TYPE - SOIL - PULVERIZING

ASSAYER _____ DEAN TOYE, CERTIFIED B.C. ASSAYER

MECCA MINERAL FILE # 83-1503 PAGE# 1

SAMPLE	CU ppm	PB ppm	ZN ppm	AG ppm	SR ppm	Au* ppb
29N 9W	13	12	73	.1	8	5
28N 9W	17	13	90	.1	6	5
27N 9W	21	12	76	.1	9	5
26N 9W	8	8	46	.1	10	5
25N 9W	33	7	87	.1	17	5
23N 9W	11	12	45	.1	8	5
22N 9W	12	8	60	.1	8	5
21N 9W	12	14	58	.1	9	5
19N 9W	29	15	50	.3	27	5
18AN 9W	17	15	37	.1	11	5
18N 9W	34	20	43	.3	23	5
16N 9W	30	17	23	.4	14	5
14N 9W	23	16	52	.4	18	5
13N 9W	36	11	69	.1	23	5
30N 8W	17	18	73	.1	6	5
29N 8W	13	25	59	.1	6	5
28N 8W	13	9	72	.1	5	5
27N 8W	10	11	43	.1	7	5
24N 8W	24	19	48	.1	14	5
21N 8W	25	16	24	.1	13	5
20N 8W	15	9	19	.1	10	5
19N 8W	55	30	66	.2	35	5
18N 8W	12	9	32	.1	10	5
17N 8W	17	11	24	.1	12	5
16N 8W	34	15	45	.1	14	5
15N 8W	18	14	22	.1	14	475
14N 8W	29	13	44	.1	15	5
13N 8W	27	12	50	.2	20	5
12N 8W	42	13	80	.2	31	5
11N 8W	36	17	45	.4	24	5
10AN 8W	22	12	52	.1	10	5
10N 8W	24	18	26	.3	17	5
9N 8W	60	21	44	2.3	48	5
30N 7W	18	15	77	.1	8	5
29N 7W	17	14	64	.1	6	5
28N 7W	14	10	56	.1	9	5
27N 7W	11	14	38	.1	9	5
26N 7W	14	11	33	.1	9	5
STD A-1/AU 0.5	30	39	179	.3	35	480

MECCA MINERAL FILE # 83-1503 PAGE# 2

SAMPLE	CU ppm	PB ppm	ZN ppm	AG ppm	SR ppm	Au* ppb
25N 7W	11	12	66	.1	8	5
24N 7W	13	9	20	.1	14	5
23N 7W	10	14	62	.1	9	5
22N 7W	20	14	59	.1	9	5
21N 7W	27	16	51	.1	14	5
20N 7W	18	14	39	.1	15	5
19N 7W	20	15	65	.1	7	5
18N 7W	16	11	27	.2	11	5
17N 7W	48	22	61	.5	23	5
16N 7W	18	10	43	.1	11	5
15N 7W	18	11	56	.1	7	5
14N 7W	14	11	47	.1	11	5
13N 7W	19	10	45	.3	12	5
12N 7W	18	7	25	.4	14	5
11N 7W	29	13	68	.2	20	5
10N 7W	21	10	57	.1	9	5
9N 7W	41	9	76	.1	9	5
8N 7W	36	14	80	.2	10	5
7N 7W	28	13	64	.1	11	5
30N 6W	22	11	81	.2	8	5
29N 6W	18	15	86	.1	6	5
28N 6W	22	14	77	.1	5	5
27N 6W	17	12	85	.1	7	5
26N 6W	18	9	21	.1	13	5
25N 6W	7	15	41	.1	10	15
24N 6W	8	10	39	.1	8	10
23N 6W	17	16	60	.2	10	5
22N 6W	20	13	77	.1	7	5
21N 6W	15	16	38	.1	9	5
20N 6W	24	9	68	.2	11	5
19N 6W	15	15	58	.3	7	5
18N 6W	12	15	60	.3	8	5
17N 6W	16	14	50	.2	11	5
16N 6W	63	46	108	.9	8	10
15N 6W	23	13	69	.3	8	5
14N 6W	29	12	70	.1	8	5
13N 6W	20	9	69	.1	11	5
STD A-1/AU 0.5	30	40	181	.3	35	490

NECCA MINERAL FILE # 83-1503 PAGE# 3

SAMPLE	CU ppm	PB ppm	ZN ppm	AG ppm	SR ppm	Au* ppb
12N 6W	29	13	72	.1	11	5
11N 6W	20	13	73	.3	14	5
10N 6W	18	10	71	.1	9	5
9N 6W	24	16	82	.1	18	5
8N 6W	24	9	85	.1	14	5
7N 6W	12	16	70	.1	11	5
6N 6W	22	21	59	.2	16	5
30N 5W	8	11	83	.1	5	5
29N 5W	14	18	73	.1	12	5
27N 5W	10	12	81	.1	6	5
26N 5W	5	12	58	.1	8	5
25N 5W	21	11	84	.1	12	5
24N 5W	11	12	26	.3	9	5
23N 5W	18	14	52	.1	10	5
22AN 5W	24	14	89	.1	8	5
22N 5W	9	11	41	.1	7	5
20N 5W	9	13	67	.2	8	5
19N 5W	21	11	72	.1	9	5
18N 5W	15	12	27	.1	12	5
16AN 5W	33	43	97	.1	7	10
16N 5W	16	15	69	.1	7	5
15N 5W	21	8	75	.1	8	5
14N 5W	22	9	77	.1	10	5
13N 5W	14	12	69	.1	9	5
12N 5W	19	14	68	.1	8	5
11N 5W	22	11	63	.1	12	5
10N 5W	16	9	57	.2	13	5
9N 5W	32	13	77	.1	13	5
8N 5W	11	15	35	.1	12	5
7N 5W	23	13	86	.3	12	5
6N 5W	34	12	88	.1	13	5
30N 4W	16	15	82	.1	7	5
29N 4W	20	14	83	.1	6	5
28N 4W	17	14	82	.1	7	5
27N 4W	16	11	82	.1	8	5
26N 4W	14	15	81	.1	7	5
25N 4W	10	12	36	.1	11	5
STD A-1/AU 0.5	29	38	182	.3	35	480

MECCA MINERAL FILE # 83-1503 PAGE# 4

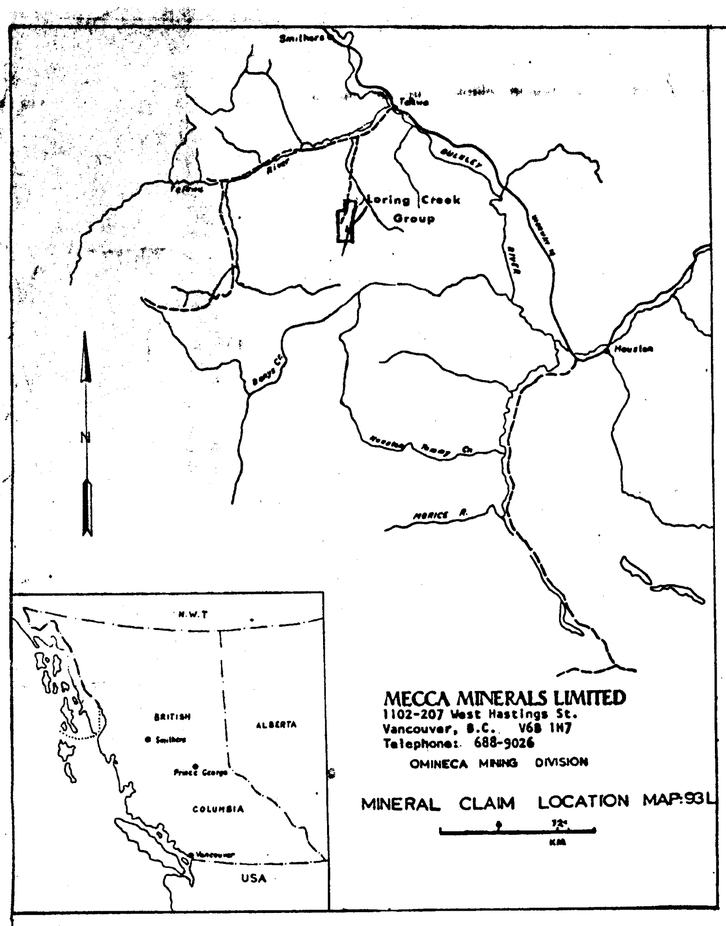
SAMPLE	CU ppm	PB ppm	ZN ppm	AG ppm	SR ppm	Au* ppb
24N 4W	16	13	72	.1	9	5
23N 4W	13	13	61	.2	9	5
22N 4W	13	14	48	.1	9	5
21N 4W	12	15	40	.1	14	5
20N 4W	10	14	67	.1	7	5
19N 4W	10	11	36	.1	7	5
18N 4W	12	12	68	.1	7	5
17N 4W	8	19	57	.1	11	5
16N 4W	20	26	89	.2	6	5
15N 4W	63	13	99	.4	6	5
14N 4W	18	18	67	.1	12	5
13N 4W	13	14	55	.1	12	5
12N 4W	7	8	42	.1	9	5
11N 4W	16	10	38	.1	15	5
10N 4W	17	12	24	.1	20	5
9N 4W	20	9	64	.1	13	5
8N 4W	18	12	49	.1	15	5
6N 4W	35	11	90	.1	14	5
6N 4E	11	13	60	.1	10	5
30N 11E	20	18	62	.1	7	10
29N 11E	16	13	81	.1	5	5
28N 11E	11	11	46	.1	9	5
27N 11E	14	12	52	.1	6	5
26N 11E	14	12	73	.1	4	5
25N 11E	11	12	53	.1	6	5
24N 11E	15	16	64	.1	6	5
23N 11E	24	11	37	.1	5	5
22N 11E	18	17	58	.1	7	5
21N 11E	10	12	49	.1	5	5
20N 11E	11	14	51	.1	6	5
19N 11E	17	11	60	.1	6	5
18N 11E	11	11	50	.1	5	5
17N 11E	17	11	64	.1	6	5
16N 11E	9	9	22	.1	6	5
30N 12E	15	14	91	.1	7	5
29N 12E	13	14	66	.1	6	5
28N 12E	15	15	73	.1	6	5
STD A-1/AU 0.5	30	38	178	.3	35	490

MECCA MINERAL FILE # 83-1503 PAGE# 5

SAMPLE	CU ppm	PB ppm	ZN ppm	AG ppm	SR ppm	Au* ppb
27N 12E	13	12	74	.1	5	5
26N 12E	14	11	59	.1	5	5
24N 12E	15	15	77	.1	5	5
23N 12E	15	13	55	.1	6	5
22N 12E	7	7	51	.1	6	5
21N 12E	15	13	53	.1	5	5
20N 12E	13	9	61	.1	6	5
19N 12E	12	16	37	.1	10	5
18N 12E	10	12	39	.1	8	5
17N 12E	12	12	21	.1	9	5
16N 12E	11	15	74	.1	6	5
36N 13E	18	15	83	.1	6	5
35N 13E	18	19	50	.4	8	5
34N 13E	16	16	68	.1	6	5
33N 13E	18	16	44	.1	6	5
32N 13E	19	15	75	.1	7	5
30N 13E	8	12	66	.1	6	5
29N 13E	19	13	61	.1	5	5
28N 13E	12	11	47	.1	6	5
27N 13E	15	15	74	.1	7	5
26N 13E	7	12	36	.1	8	5
25N 13E	14	13	70	.1	10	5
24N 13E	16	14	61	.1	8	5
23N 13E	15	15	66	.1	6	5
22N 13E	16	23	48	.1	7	5
21N 13E	10	12	29	.1	5	15
20N 13E	19	14	55	.1	6	5
19N 13E	11	9	42	.2	7	5
17N 13E	14	7	50	.1	5	5
16N 13E	15	11	59	.1	5	5
35N 14E	36	19	85	.2	8	5
34N 14E	36	26	81	.2	7	5
33N 14E	20	19	69	.1	5	5
32N 14E	20	14	51	.2	8	5
31N 14E	19	13	62	.1	6	5
29AN 14E	14	16	27	.1	8	5
29N 14E	12	12	43	.1	8	5
27N 14E	14	12	61	.1	8	5
STD A-1/AU 0.5	30	38	182	.3	36	5

MECCA MINERAL FILE # 83-1503 PAGE# 6

SAMPLE	CU ppm	PB ppm	ZN ppm	AG ppm	SR ppm	Au* ppb
26N 14E	24	13	67	.1	7	5
25N 14E	20	10	78	.1	6	5
24N 14E	13	8	58	.2	8	5
23N 14E	75	7	69	.1	11	5
22N 14E	4	6	34	.1	10	5
21N 14E	44	8	55	.1	12	5
20N 14E	79	4	74	.1	9	5
19N 14E	79	7	58	.1	13	5
18N 14E	49	4	51	.1	9	5
17N 14E	34	5	63	.1	10	5
16N 14E	16	9	41	.1	7	5
29N 15E	22	5	75	.1	9	5
A	19	16	84	.1	7	5
B	17	13	55	.1	7	5
C	29	16	58	.2	32	5
D	25	16	71	.1	7	5
STD A-1/AU 0.5	30	39	181	.3	35	490



MECCA MINERALS LIMITED
1102-207 West Hastings St.
Vancouver, B.C. V6B 1H7
Telephone: 688-9026

OMINECA MINING DIVISION

MINERAL CLAIM LOCATION MAP: 93L

0 1/2 1 KM

LEGEND

INTRUSIVE ROCK (in order)

- BASALT (dykes)
- GRANODIORITE (porphyritic Quartz Monzonite) (dykes and plugs) (also Quartz Monzonite dykes of Dominion Basin area)
- QUARTZ PORPHYRY FELSITE (dykes and sills)
- DIORITE (sills and irregular crosscutting intrusives some may be meta diorite)
- GREEN ANDESITE

HAZELTON GROUP
Layered rock (not in lithologic order)

- LIMESTONE (fossiliferous)
- BASALT (flows, black to dark green massive rock commonly limey)
- RED TUFFS RED and/or GREEN FRAGMENTALS (agglomerates) and RED ARGILLITE SOME PURPLE ANDESITE TUFFS MINOR CLASTIC SEDIMENTS
- GREEN ANDESITE MASSIVE FINE GRAINED FLOW ROCKS SOME VESICULAR and/or WITH HORNBLENDE PHENOCRYSTS
- LATITE VOLCANIC ROCK INTERMEDIATE IN COMPOSITION BETWEEN RHYODACITE AND GREEN ANDESITE
- RHYODACITE ACID VOLCANIC ROCK MAINLY TUFFACEOUS IN ORIGIN POSSIBLY MINOR FLOWS. FINE GRAINED TO APHANITIC GROUNDMASS. LIGHT GRAY OR PURPLE LESS COMMOLY BLACK OR RED IN COLOUR COMMONLY WITH QUARTZ EYES and/or WHITE OR PINK FELDSPAR PHENOCRYSTS ROCK IS USUALLY LESS COMMONLY THINLY BEDDED OR FRAGMENTAL.

- BEDDING
- CLEAVAGE
- BEDDING PLANE JOINT
- JOINT
- FAULT (defined projected or assumed)

NOTE: ALL POSITIONS AND LOCATIONS ARE APPROXIMATE.
Geology after Church, Falconbridge Nickel Mines Ltd. and private source.

Old Tom 1-2 Claims

Hankin 1-16 Claims

Crater 1-4 Claims

Old Tom Showing

El 4802 Crater Lake

Rhyolite dike

"Slump Block"

GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,903

MECCA MINERALS LIMITED
1102-207 West Hastings St.
Vancouver, B.C. V6B 1H7
Telephone: 688-9026

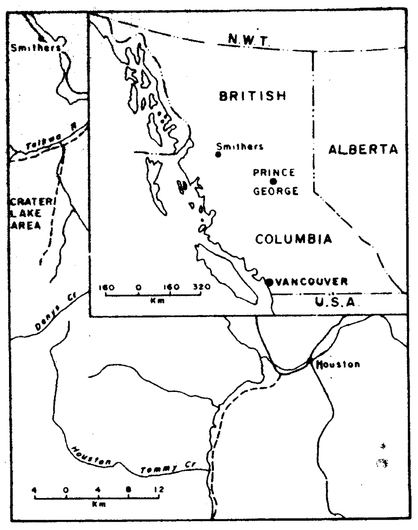
Map-
LC-81
OMINECA M.D.

P.O. Box 533
Postal Station A
Vancouver, B.C.
V6C 2N3

LORING CREEK GROUP

CLAIM LOCATION & GEOLOGICAL MAP

Scale: 1cm = 110m



CLIFFS

CLIFFS

CLIFFS

CRATER LAKE

CLIFFS

CLIFFS

CABIN

CONTOURS

CONTOUR INTERVAL : 150 GAMMAS
1,500 GAMMAS AND HIGHER ———
1,800 GAMMAS AND LOWER - - - - -
INSTRUMENT: SABRE MODEL G-110 FLUXGATE MAGNETOMETER

PARAMETERS

1,800 GAMMAS	ANOMALOUS HIGH THRESHOLD VALUE
1,500 GAMMAS	SUB ANOMALOUS HIGH THRESHOLD
1,225 GAMMAS	MEAN BACKGROUND VALUE
950 GAMMAS	SUB ANOMALOUS LOW THRESHOLD VALUE
650 GAMMAS	ANOMALOUS LOW THRESHOLD VALUE

BACKGROUND GAMMAS NOT DRAWN IN
53,000 GAMMAS = 300 GAMMAS FROM BASELINE

GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,903

MECCA MINERALS LTD.
1102 207 W. HASTINGS ST.
VANCOUVER B.C. V6B 1H7

COPPER CLAIMS " CRATER LAKE " AREA
OMINECA MINING DIVISION

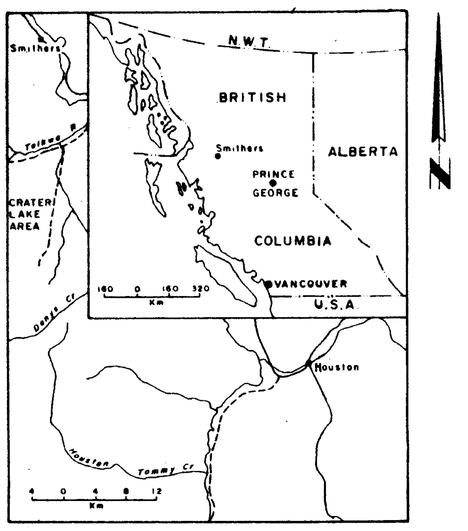
MAGNETOMETER SURVEY
MAP CC 1/83
COPPER
DATA AND CONTOURS

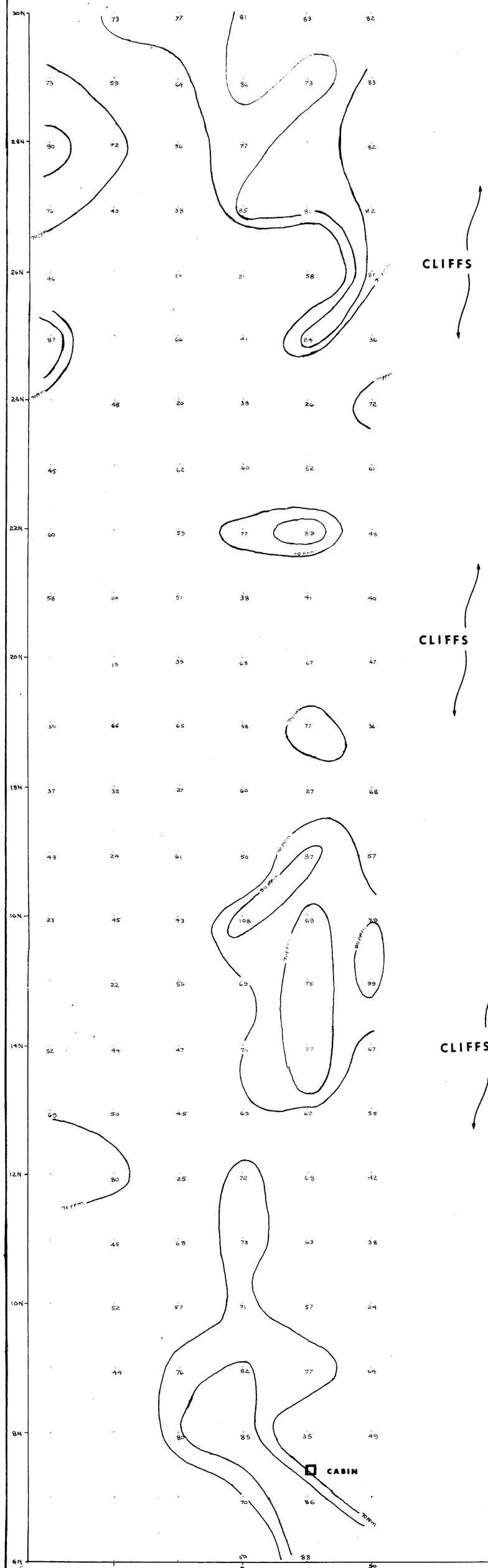
DRAWN BY	DATE	CHK. BY	SCALE:
J.A.R.	OCT., 1983		1 CM = 10 METERS

Meters

36N 34N 32N 30N 28N 26N 24N 22N 20N 18N 16N 14N 12N 10N 8N 6N

8W 6W 4W 2W 0-BASELINE 2E 4E 6E 8E 10E 12E 14E





GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,903

CONTOUR INTERVAL = 10 p.p.m.
BELOW 70 p.p.m. IS BACKGROUND

MECCA MINERALS LTD.
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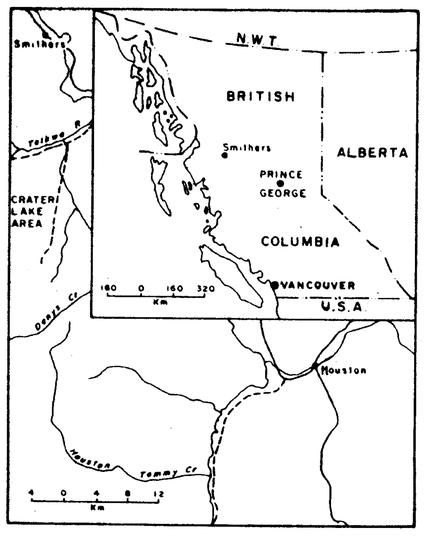
VANCOUVER B.C. V6B 1H7

COPPER CLAIMS "CRATER LAKE" AREA
OMINECA MINING DIVISION

GEOCHEMICAL SURVEY
MAP CC 3/83
ZINC
DATA AND CONTOURS

DRAWN BY	DATE	CHK. BY	SCALE:
J.A.R.	OCT., 1983	J.G. Stanford	1 CM = 10 METERS



CLIFFS

CLIFFS

CRATER LAKE

CLIFFS

CLIFFS

CLIFFS

CABIN

Meters

GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,903

CONTOUR INTERVAL = 10 p.p.m.
BELOW 30 P.P.m. IS BACKGROUND

MECCA MINERALS LTD.
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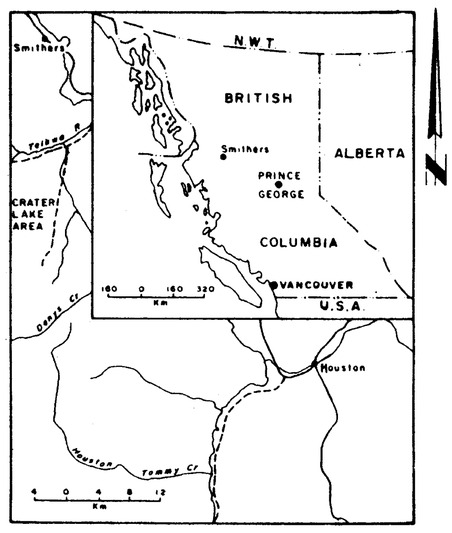
VANCOUVER B.C. V6B 1H7

COPPER CLAIMS "CRATER LAKE" AREA
OMINECA MINING DIVISION

GEOCHEMICAL SURVEY
MAP CC2/83
COPPER
DATA AND CONTOURS

DRAWN BY	DATE	CHK. BY	SCALE:
J.A.R.	OCT., 1983		1 CM = 10 METERS



CLIFFS

CLIFFS

CRATER LAKE

CLIFFS

CLIFFS

CABIN

GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,903

CONTOUR INTERVAL = 10 p.p.m.
BELOW 20 P.P.m. IS BACKGROUND

MECCA MINERALS LTD.
1102 207 W. HASTINGS ST.
VANCOUVER B.C. V6B 1H7

COPPER CLAIMS " CRATER LAKE " AREA
OMINECA MINING DIVISION

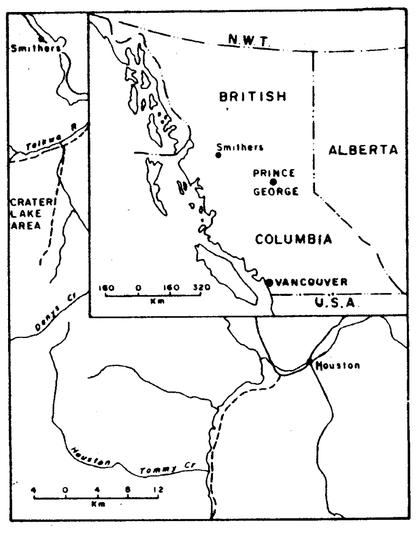
GEOCHEMICAL SURVEY
MAP CC4/83
LEAD
DATA AND CONTOURS

DRAWN BY	DATE	CHK. BY	SCALE:
J.A.R.	OCT., 1983		1 CM = 10 METERS

Meters

36N 34N 32N 30N 28N 26N 24N 22N 20N 18N 16N 14N 12N 10N 8N 6N

8W 6W 4W 2W 0-BASELINE 2E 4E 6E 8E 10E 12E 14E



CLIFFS

CLIFFS

CLIFFS

CRATER LAKE

CLIFFS

CLIFFS

15 ppm

CABIN

Meters

BASELINE

GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,903

CONTOUR INTERVAL = 10 p.p.m.
BELOW 15 P.P.m. IS BACKGROUND

MECCA MINERALS LTD.
1102 207 W. HASTINGS ST.
VANCOUVER B.C. V6B 1H7

COPPER CLAIMS " CRATER LAKE " AREA
OMINECA MINING DIVISION

GEOCHEMICAL SURVEY
MAP CC5/83
STRONTIUM
DATA AND CONTOURS

DRAWN BY	DATE	CHK. BY	SCALE:
J.A.R.	OCT., 1983		1 CM = 10 METERS