82-289-10356.
4

GEOCHEMICAL REPORT

ON

DRIFT GROUP MINERAL CLAIMS

N.T.S. 104 I 5E

LATITUDE: 58° 18'N; LONGITUDE: 129° 35'W

OWNER: SERRANA RESOURCES LTD.

OPERATORS: SERRANA RESOURCES LTD.

NORANDA EXPLORATIONS LTD.

CONSULTANT: C.W. BALL, P. ENG.

AUTHORS: C.W. BALL, P. ENG.

J.M. ASHTON, P. ENG.

SUBMITTED: MAY 5, 1982

Clive W. Ball, P.Eng.

J.M. Ashton

TABLE OF CONTENTS

APPENDICES

APPENDIX I	NORANDA EXPLORATIONS, ASSAY RESULTS
APPENDIX II	CHEMEX LABS, ASSAY RESULTS

MAPS

MAP 1	GENERAL LOCATION
MAP 2	MINERAL CLAIM LOCATION
MAP 3	GRID LOCATION
MAP 4	MOLYBDENUM IN SOIL
MAP 5	COPPER IN SOIL
MAP 6	ZINC IN SOIL

1.0 INTRODUCTION

The initial field examination of the Drift Mineral Claims was made by C.W. Ball, P.Eng. accompanied by J.M. Ashton, P.Eng., J. Brander, P.Eng. and others on July 31, 1981. The purpose of the examination was to re-assess the prospect as it related to the geological, geochemical and geophysical data gathered by previous owners and determine a new exploration program if warranted.

The initial examination included the taking of a limited number of silt samples to check the sampling by the previous owners.

C.W. Ball, P.Eng. recommended that a limited program of soil sampling be carried out over and adjacent to the area of interest to both confirm the previous work and expand the knowledge of the area as a prelude to a much larger program should the results so justify it.

Between September 10 and September 20, 1981 John C. Ball, geologist and Thomas Spink were employed by Serrana Resources Ltd. under the direction of C.W. Ball, P.Eng. and J.M. Ashton, P.Eng. to carry out a limited geochemical soil survey over the Drift mineral claims. Prior to the commencement of work on the property, on September 16, 1981 two additional claim groups Drift Number 6 and Drift Number 7 were staked.

At the initial field examination, access to the property was by Bell Jet Ranger 206B Hellicopter under charter from Frontier Helicopters Ltd. of Watson Lake. Access to and from the property and logistics support for the geochemical soil survey was ably provided by Frontier Helicopters Ltd. out of their Dease Lake base.

2.0 LOCATION AND ACCESS

The property is situated at Latitude 58° 18'N and Longitude 129° 35'W, about 20 miles southeast of the town of Dease Lake. It lies at the headwaters of Snowdrift Creek, which is part of the Arctic watershed. However, the west margin of the property drains into the Tanzilla River which drains into the Stikine River and Pacific watershed. Elevations on the property range from 4,600 feet to 6,000 feet above sea level with a prevailing gentle slope to the north.

Vegetation is sparse with some mountain alder, alpine fir and clumps of willow. The ground is covered by grass and moss. Swamps are plentiful and a series of small streams reticulate through the property and drain into nine or ten small lakes, the largest of which is about 1,500 feet across. Water supply for camp and diamond drilling is quite adequate.

Access is achieved by helicopter from Dease Lake. In addition a winter road runs for 15 miles from the property to the Stewart-Cassiar highway, a distance of approximately 15 miles.

Soil and glacial cover mask the greater part of the property and rock outcrops are consequently sparce and widely spaced. Perma-frost conditions undoubtedly exist over the greater part of the property.

3.0 PROPERTY AND OWNERSHIP

Seven mineral claim units named Drift No. 1 to 7 comprising a total of ninety-nine (99) mineral claims are held by location and recording. The claims are registered in the Liard Mining Division and record date of the claims is April 10 and September 23, 1981. Ownership is vested in the name of Serrana Resources Limited. The claims straddle Snowdrift Creek and form a solid block and are contiguous to one another.

The mineral rights are held under the following claim names and record numbers:

Mineral Claim	Unit	Record Number	Record Date
Drift 1	18	1866	April 10, 1981
Drift 2	18	1867	April 10, 1981
Drift 3	2	1868	April 10, 1981
Drift 4	12	1869	April 10, 1981
Drift 5	20	1870	April 10, 1981
Drift 6	20	2082	Sept. 23, 1981
Drift 7	9	2083	Sept. 23, 1981

4.0 PREVIOUS WORK AND HISTORY

Kennco Explorations (Western) Limited carried out an extensive program of exploration work in the area and on this property in 1973. This work was carefully studied and provided much useful information on the property.

Utah Mines Limited became interested in the property in 1975 and carried out an advanced work program through 1976. The Company's reports and maps constitute a valuable supplement to the original work by Kennco.

Between 1977 and 1980 Noranda Mines Limited and Canadian Superior Oil each held the Snowdrift property but no records are available in the published reports of the Minister of Mines, Victoria. It is therefore concluded that no on site physical work was performed in this latter period and the efforts of Noranda and Canadian Superior were confined to preliminary field inspections.

Serrana Resources Ltd. staked the ground in March 1981 with Drift No. 1 to 5 Mineral Claims and two additional Mineral Claims Drift No. 1 and No. 7 were staked on September 16, 1981 for a total of ninety-nine (99) units. Ownership is vested with Serrana Resources Ltd. All of the mineral claims are grouped in the name "Drift Group".

5.0 REGIONAL GEOLOGY

The regional geology has been mapped and is covered by Geological Survey of Canada, Map 29-1962 - Cry Lake, British Columbia. The mapping was supervised by Dr. H. Gabrielse from 1957 to 1961 and from 1977 to 1981. Mr. J.M. Ashton, P.Eng. and the writer had the opportunity to visit with Dr. Gabrielse in the survey base-camp at Dease Lake prior to visiting the property of Serrana Resources Ltd. on July 31, 1981.

The predominant rock types in the Snowdrift Creek - Tanzilla River area comprise andesite and minor basalt with associated sediments such as graywacke, limestone and argillite of Upper Triassic age. The volcanic and sedimentary rocks have been intruded by hornblende granodiorite and biotite-quartz-monzonite of Mid-Jurrasic age.

The north edge of the Snowdrift property is probably underlain by graywacke and related sediments of Lower Jurrasic age.

The fault pattern in the Cry Lake map sheet is reflected by the "grain of the country" in the vicinity of the Snowdrift property. The King Salmon Fault as mapped by the G.S.C. is a major structural break trending across the entire map sheet. The "King Salmon" is a thrust fault of mid-Jurrasic age with apparent over-thrust to the southwest.

A series of northeast trending faults are referred to by the Geological Survey of Canada as the Tanzilla trend and are of Late Cretaceous to Tertiary age. The streams in the Snowdrift Creek area appear to follow the imprint of the pattern of faults described above.

Glaciation effects have been studied by Dr. Gabrielse and the predominant trend of ice movement in the Cry Lake map sheet area is to the N.N.E. This has been determined by observations of Pleistocene glacial striae.

6.0 LOCAL GEOLOGY

Mapping by Utah Mines Ltd. indicates outcrops of two main rock types volcanics and granodiorite. The field work by J.R. Deighton on behalf of Utah Mines Ltd. appears to have been very carefully done. Local zones of quartz-sericite alteration trending northwesterly and sub-parallel to the contact of the volcanics and the intrusive granodiorite. Occurrences of pyrite and quartz-molybdenite veins are confined to outcrops of granodiorite.

Prominent zones of limonite gossan are mapped along the course of two streams cutting the volcanics. These are referred to by Utah Mines Ltd. as "ferrocrete".

Several fault zones are mapped in the volcanics and they trend both northeast and northwest in general and are classed as minor faults.

The volcanics contain isolated occurrences of lazulite and chlorite. Calcite and marcasite occur as films along late fractures. Lazulite is a rare blue secondary mineral - a hydrated phosphate of iron, magnesium and aluminium.

The granodiorite exposed on surface is essentially fresh-looking, but in the diamond drill core minor chloritization, sericitization and kaolinization are common. Pyrite is noted throughout the granodiorite and probably averages about 3 percent, whereas in the volcanics and minor associated sediments it averages about 1 percent.

Differentiation of the major intrusive is suggested by the presence in the drill core of sections of feldspar porphyry, micro-diorite and diabasic textured dykes.

Logging of diamond drill core by Utah Mines Ltd. indicates the presence of limestone and altered sediments probably graywacke as well as rhyolitic ash and andesitic tuffs.

7.0 MINERALIZATION

The occurences of molybdenite are found in quartz veinlets in the hornblende biotite granodiorite. The quartz is milky white and the veinlets range from 10mm to 25mm

in thickness. The molybdenite occurs as fine specks disseminated near the margins of the quartz veins. K-spar envelopes occur along the margins of the quartz veins and rarely carry fine molybdenite. The K-spar is pale pink in colour and sometimes carries pyrite.

Chalcopyrite is very fine and on this account is not always detected in preliminary evaluation in the field.

Pyrite occurs to the extent of 1 percent in the volcanics although in short sections it will range up to 20 percent. Pyrite is more regularly distributed in the granodiorite where it is estimated to average about 3 percent.

Chloritization is common in the andestic rocks where it is moderately developed and also to some degree in the granodiorite and feldspar porphyry intrusives.

Magnetite is widespread in the volcanics and the granodiorite. The later is generally feebly magnetic while the volcanics are moderately magnetic.

8.0 MINERAL CLAIMS ON WHICH WORK WAS DONE

The geochemical survey was carried out on the Drift Group Mineral Claims. Specific claims in the group on which the work was performed and as generally shown on Map 3, Grid Location Map are:

Mineral Claim	Record Number
Drift 2	1867
Drift 3	1868
Drift 4	1869
Drift 7	2083

9.0 RESULTS OF 1981 GEOCHEMICAL SURVEY

Between September 16 and September 19, 1981 a total of one hundred and forty-seven (147) soil samples and 8 silt samples were taken by J.C. Ball assisted by T. Spink. Four areas were selected in the vicinity of Snowdrift Creek and designated as areas I to IV on the accompanying geochemical survey maps with assay values for molybdenum, copper and zinc.

Grids were established by chain and compass survey. Samples were taken at intervals of 60 metres along the survey lines which were spaced at varying intervals up to 250 metres.

The environment and terrain of the Snowdrift Creek area comprises flat-lying valley floors covered by unconsolidated glacial till to thicknesses varying up to 20 metres. This is covered to a large degree by blocky talus from the eroded hillslopes and the talus in turn is covered by a humus rich soil.

Soil profiles were examined and recorded in the field and the Ph of the water in the sample area averages 6.5. The soil is locally well developed but according to J.C. Ball most areas lack a "B" horizon. Consequently, the majority of the samples were taken from the A-1 or humus-rich horizon.

Assaying was carried out by courtesy of Noranda Exploration Co. Ltd. with the geochemical assays being reported in parts per million for Copper, Molybdenum, Silver, Lead and Zinc as recorded on the six sheets of assays furnished by Noranda Exploration Co. Ltd., Vancouver, B.C. dated March 5, 1982.

Molybdenum values - 100 p.p.m. are classed as anomalous and three such zones are shown on the accompanying maps of molybdenum in soil.

Copper values - 200 p.p.m. are considered as moderate to strongly anomalous and two of the latter zones are delineated on the map of copper in soil enclosed with this report.

For the most part the silver assays are fairly uniform averaging - 0.3 p.p.m. silver with isolated erratic highs up to 8.6 p.p.m.

Lead generally ranges from 6 to 30 p.p.m. and is not considered anomalous. Likewise, no distinct anomalous zones are indicated when the zinc assays are plotted on the map, although a few minor erratic high readings are shown.

The geochemical survey completed by Serrana Resources Ltd. fills in an important area in the southeast sector of the Drift Mineral Claims. This area was not previously tested or sampled by Kennco Explorations (Western) Limited during the term of their option of the Snowdrift property in 1973.

The Kennco Explorations geochemical surveys have been analyzed by the writer and the results are incorporated in a comprehensive report being prepared for Serrana Resources Ltd. Suffice it to say at this stage that when a proposed new work program is outlined for percussion/rotary drilling, the significance of the latest molybdenum and copper anomalies will be given full consideration.

10.0 PREPARATION AND ANALYSIS OF SAMPLES

10.1 GENERAL

Samples were brought from the field to the office of J.M. Ashton and Associates Limited where they were air dried. The samples were then taken to the Noranda Exploration Company Limited assay laboratory in Vancouver for further preparation and assay.

10.2 SAMPLE PREPARATION

At the Noranda laboratory samples were oven dried at 80°C for 24 hours to remove all moisture. The samples were then sieved to the minus 80 mesh fraction with a nylon screen and the plus 80 mesh fraction (reject) was discarded. The minus 80 mesh fraction of all the samples was the fraction analyzed for mineral content.

10.3 ANALYSIS

The samples were digested using the Perchloric Nitric acid decomposition technique ($HClO_4$, HNO_3). The procedure for preparing the samples was as follows:

1. 200 milligrams (0.20 grams) of sample was weighed and digested with 2 millilitres (2 ml.) of perchloric acid (70% Normal) plus nitric acid (4 + 1) for 4 hours at reflux temperature.

2. After digestion each sample was diluted to 5 millilitres (5 ml) with distilled water. This solution was used for the determination of Cu, Mo, Zn, Pb and Ag by aspiration in a Varian, Atomic Absorption Spectrophotometer, Model 475.

11.0 DETAILED COST STATEMENT

11.1 SUMMARY

	$ Cost
Transportation	4,462.59
Professional fees & labour	6,175.00
Food, Lodging, Camp support General Expenses	1,226.61
Assay	1,059.60
Report & Maps	135.00
	$13,058.80

11.2 TRANSPORTATION

AIRCRAFT

Date	Description	$ Cost
July 30, 1981	C.W. Ball, P.Eng. & J.M. Ashton, P.Eng., Vancouver-Watson Lake-Vancouver, 2x353.50	707.00

Date	Description	$ Cost
July 31,1981	Frontier Helicopters Watson Lake-Snowdrift-Watson Lake	2,187.44
Sept. 14,1981	John Ball & Tom Spinks, Vancouver-Smithers-Vancouver	440.60
Sept. 16,1981	Frontier Helicopters Dease Lake-Snowdrift Creek	232.25
Sept. 19,1981	Frontier Helicopters Snowdrift Creek - Dease Lake	371.60
	TRUCK RENTAL	
Sept. 22,1981	Bow-Mac truck rental Smithers - Dease Lake - Smithers	523.70
		$4,462.59

11.3 PROFESSIONAL FEES & LABOUR

FIELD WORK

July 30,31, August 1,1981	C.W. Ball,P.Eng. 3 days @ $400/day	1,200.00
July 30,31 August 1,1981	J.M. Ashton,P.Eng. 3 days @ $400/day	1,200.00

Date	Description	$ Cost
Sept. 10-20 1981	J.C. Ball, Geologist 7.5 days @ @200/day (excludes one day for staking)	1,500.00
Sept. 10-20 1981	T. Spink, 7.0 days @ 85/day (excludes 1 day for claim staking)	595.00

REPORT PREPARATION

April, 1982	E. Catapia, 12 hrs drafting @ 30/hr	360.00
March, April 1982	J.M. Ashton, P.Eng. 1.5 days @ 400/day	600.00
April, 1982	C.W. Ball, P.Eng. 1 day @ 400/day	400.00
May, 1982	S. Apchkrum 16.0 hrs @ 20/hr	320.00
		$6,175.00

11.4 FOOD, LODGING, CAMP SUPPORT, GENERAL EXPENSES

July 30, Aug. 1,1981	C.W. Ball, P.Eng. & J.M. Ashton, P.Eng. Expenses	324.44
Sept. 10-20	J. Ball & T.Spink	902.17
		$1,226.61

11.5 ASSAYS

a) ASSAYS FOR Mo, Cu, Ag, Pb, Zn

Sample Preparation	0.70
First Element	1.90
Additional Elements 4 @ $0.90	3.60
	$6.20
163 soil/silt @ $6.20	1,010.60

b) ASSAYS FOR Mo, Cu, Pb, Zn, W

10 silts @ 4.90	49.00
	$1,059.60

11.6 REPORT REPRODUCTION COSTS

$ 135.00

12.0 CERTIFICATION OF C.W. BALL, P. ENG.

I, Clive W. Ball, of 3191 West 36th Avenue, Vancouver, B.C. hereby certify as follows:

1. I am a consulting geologist residing at the above address.

2. I am an honours graduate of the University of Queensland, Brisbane, Australia, holding a M.Sc. degree in Geology and Mineralogy.

3. As a geologist, I have practiced my profession since 1935 in mining geology and exploration for 30 years, I was employed as a geologist on the staff of Placer Development Limited retiring as Chief Geologist in 1978.

4. I am registered as a member of the Association of Professional Engineers (Geological) of the Province of British Columbia.

5. My knowledge of the property is based on a study of published reports and maps by the Geological Survey of Canada and reports and maps made available through the courtesy of Kennco Explorations (Western) Limited and Utah Mines Limited.

6. Physical inventory and knowledge of the property and terrain is based on a visit to the Drift Mineral Claims property on July 31, 1981 under the guidance of Mr. J.M. Ashton, P. Eng., President of Serrana Resources Limited.

7. I hold no interest whatsoever in the Company or the property of Serrana Resources Limited as encompassed in my report.

Respectfully submitted

Clive W. Ball, P.Eng

Clive W. Ball, P.Eng.
Consulting Geologist

Vancouver, B.C.
May 5, 1982

13.0 CERTIFICATION OF J.M. ASHTON, P. ENG.

I, J.M. Ashton, P.Eng. of Suite #1251 - 409 Granville Street Vancouver, B.C., hereby certify that:

1. I am a Consulting Engineer and principal in the Company, J.M. Ashton and Associates Limited.

2. I am President of Serrana Resources Limited.

3. I am a graduate of the University of British Columbia with a Bachelor of Applied Science in Electrical Engineering (1965).

4. I am a member in good standing in the Association of Professional Engineers of British Columbia.

5. I am a member of the Canadian Institute of Mining and Metallurgy.

6. I have practiced my profession as a Consulting Engineer since 1969.

7. The local Geology, mineralization and results of the 1981 Geochemical Survey in this report were prepared by C.W. Ball, P.Eng. The remaining part of the report was prepared by J.M. Ashton and Associates Limited.

J.M. Ashton, P.Eng.

Dated this 5th day of May
1982
Vancouver, British Columbia

APPENDIX I

GEOCHEMICAL SOIL

SURVEY

ASSAY RESULTS

PREPARED BY

NORANDA EXPLORATION

COMPANY LIMITED

NORANDA EXPLORATION CO. LTD.

LOCATION J. ASHTON

MATERIAL SOIL

PROJECT 01 *3-1 | SHEET 1

SAMPLE Nos.

COLLECTOR D.C. DATE RECEIVED / /

ANALYST R.F. DATE ANALYSED March / 5 / 82

REMARKS Cu, Zn, Pb, Ag, Mo in ppm

0.2g / 2 ml $HClO_4$: HNO_3 → 5 ml.

T.T. No.	SAMPLE No.	1	2 Cu	3 Zn	4 Pb	5 Ag	6 Mo	7	8	G.C.I. NUMBER
1	CHECK NL-2		80	60	12	1.0	8			
2	EB-1 -1		14	70	10	0.4	2			
3	3		34	100	6	0.2	<2			
4	4		20	86	12	0.2	2			
5	5		66	120	16	0.2	4			
6	6		72	120	14	0.2	4			
7	7		68	110	14	0.2	4			
8	8		24	52	22	0.8	8			
9	9		16	56	28	0.4	22			
10	10		66	120	18	0.4	16			
1	11		150	100	10	0.2	28			
2	12		160	350	12	0.2	32			
3	13		130	70	10	2.6	8			
4	14		14	100	10	0.4	2			
5	15		150	94	10	0.2	24			
6	16		180	120	14	0.4	14			
7	17		64	150	8	0.2	2			
8	18		190	110	10	0.2	18			
9	19		110	82	6	0.4	22			
20	EB-1 -20		74	130	12	0.4	4			
1	EB-0 - 1		42	94	8	0.2	<2			
2	2		40	80	8	0.2	<2			
3	3		28	84	10	0.2	<2			
4	4		78	120	8	0.2	8			
5	5		34	92	14	0.6	2			
6	6		62	100	12	0.4	18			
7	7		68	120	12	0.2	10			
8	8		40	62	8	1.4	20			
9	9		250	88	16	1.2	30			
30	EB-0 -10		52	100	6	0.6	44			

NORANDA EXPLORATION CO. LTD.

LOCATION J.ASHTON | PROJECT 01 | SHEET 2

MATERIAL SOIL | SAMPLE Nos.

COLLECTOR D.C. | DATE RECEIVED / /

ANALYST R.F. | DATE ANALYSED March / 5 /82

REMARKS Cu, Zn, Pb, Ag, Mo in ppm

0.2g/2ml $HClO_4$: HNO_3 → 5 ml.

T.T. No.	SAMPLE No.	1	2 Cu	3 Zn	4 Pb	5 Ag	6 Mo	7	8	G.C.I. NUMBER
31	EB-0 -11		100	78	8	0.2	54			
2	12		110	140	20	0.4	4			
3	13		30	82	6	0.4	6			
4	14		190	92	10	0.2	20			
5	15		84	100	8	0.4	2			
6	16		30	100	6	0.2	6			
7	17		250	68	8	0.6	10			
8	18		52	120	28	0.8	2			
9	19		130	92	96	0.2	22			
40	EB-0 -20		50	92	8	0.2	12			
1	CW - 1		64	90	22	0.2	20			
2	2		62	78	8	0.6	76			
3	3		42	130	6	0.4	10			
4	4		110	90	16	0.4	28			
5	5		52	84	6	0.4	14			
6	6		94	86	10	0.2	14			
7	7		60	62	10	0.8	4			
8	8		88	100	4	0.4	4			
9	9		40	60	4	0.2	6			
50	CW - 10		62	84	6	0.4	<2			
1	23.00S - 1		140	94	8	0.2	24			
2	2		62	100	16	0.8	8			
3	3		84	140	4	0.4	4			
4	4		70	120	8	0.6	4			
5	5		94	120	8	0.4	2			
6	6		98	180	8	0.2	8			
7	7		160	90	26	2.6	32			
8	8		210	96	6	2.4	6			
9	9		36	88	8	0.2	<2			
60	23.00S-10		24	84	8	0.6	<2			

NORANDA EXPLORATION CO. LTD.

LOCATION J. ASHTON

MATERIAL SOIL

REMARKS Cu, Zn, Pb, Ag, Mo in ppm.

PROJECT 01 #5-1 | SHEET 3

SAMPLE Nos.

COLLECTOR D.C. DATE RECEIVED / /

ANALYST R.F. DATE ANALYSED March / 5 / 89.

0.2g/2.0ml $HClO_4$: HNO_3 → 5 ml.

T.T. No.	SAMPLE No.	1	2 Cu	3 Zn	4 Pb	5 Ag	6 Mo	7	8	G.C.I. NUMBER
61	23.00S - 11		410	70	28	8.6	6			
2	12		100	130	10	0.2	6			
3	23.00S - 13		34	110	12	0.2	4			
4	27.00S - 1		280	46	6	3.0	<2			
5	2		40	140	6	0.2	10			
6	3		44	120	6	0.4	<2			
7	4		52	120	26	0.4	12			
8	5		200	350	28	0.8	<2			
9	6		330	360	14	1.4	<2			
70	7		480	600	34	1.2	<2			
1	8		68	170	60	0.4	<2			
2	9		48	84	28	0.6	<2			
3	27.00S - 10		180	100	10	0.2	22			
4	CW-1 plastic vials		140	150	18	1.2	12			
5	2		130	110	16	1.0	4			
6	4		130	100	16	0.4	6			
7	6		110	92	10	0.6	8			
8	8		110	76	4	0.4	12			
9	10		32	38	4	1.8	4			
80	11		76	100	12	0.8	14			
1	CW-16 plastic vials		110	78	4	0.4	14			
2	35.00S. - 1		24	92	26	0.4	2			
3	2		30	120	16	0.2	2			
4	3		34	120	22	0.2	4			
5	4		16	84	6	0.2	2			
6	5		68	170	22	0.2	<2			
7	6		38	130	76	0.2	<2			
8	7		34	110	6	0.2	<2			
9	8		82	230	44	0.2	2			
90	35.00S - 9		14	76	44	0.2	<2			

NORANDA EXPLORATION CO. LTD.

LOCATION J. ASHTON

MATERIAL SOIL

PROJECT 01 #3-1 SHEET 4

SAMPLE Nos.

COLLECTOR D.C. DATE RECEIVED / /

ANALYST R.F. DATE ANALYSED March / 5 / 82

REMARKS Cu, Zn, Pb, Ag, Mo in ppm

0.2g/2ml $HClO_4$: HNO_3 → 5ml.

T.T. No.	SAMPLE No.	1	2 Cu	3 Zn	4 Pb	5 Ag	6 Mo	7	8	G.C.I. NUMBER
91	35.00S -10		70	150	24	0.2	<2			
2	40.00N -1		120	88	8	0.2	22			
3	2		48	110	4	0.4	470			
4	3		68	100	12	0.2	46			
5	4		68	110	12	0.2	40			
6	5		62	120	12	0.2	40			
7	6		74	82	12	0.4	82			
8	7		76	78	6	0.2	40			
9	40.00N -8		52	76	8	0.2	54			
100	CHECK NL-2		76	66	10	0.8	10			
1	40.00N -9		130	120	6	0.4	74			
2	-10		120	160	6	0.2	200			
3	11		36	80	6	0.2	18			
4	12		56	130	10	0.2	460			
5	13		92	110	6	0.2	150			
6	40.00N -14		250	160	10	0.2	230			
7	56.00N - 1		98	72	10	0.2	22			
8	2		20	78	8	0.2	16			
9	3 -(A horiz bog)		66	76	12	0.2	16			
110	3 -(grass root bog)		16	48	6	0.2	22			
1	4		70	110	12	0.2	38			
2	5		130	110	8	0.2	24			
3	6		30	110	4	0.2	210			
4	7		88	92	12	0.2	56			
5	8		60	130	10	0.2	78			
6	56.00N -9		50	100	8	0.2	74			
7	48.00N -1		100	170	6	0.2	150			
8	2		64	92	6	0.2	82			
9	3		72	90	6	0.2	32			
120	48.00N -4 (moss root tubes)		24	80	2	0.2	16			

NORANDA EXPLORATION CO. LTD.

LOCATION _____ PROJECT 01 #3-1 SHEET 5

J. ASHTON SAMPLE Nos. _____

MATERIAL SOIL COLLECTOR D.C. DATE RECEIVED / /

ANALYST R.F DATE ANALYSED March / 5 / 82

REMARKS Cu, Zn, Pb, Ag, Mo in ppm

0.2g/2ml $HClO_4$: HNO_3 → 5 ml.

T.T. No.	SAMPLE No.	1	2 Cu	3 Zn	4 Pb	5 Ag	6 Mo	7	8	G.C.I. NUMBER
121	48.00N - 4 (log)		74	78	12	0.2	18			
2	5		150	150	8	0.8	160			
3	6		18	58	6	0.2	18			
4	7		52	86	2	0.2	42			
5	8		32	76	8	0.2	30			
6	9		30	34	2	0.6	66			
7	10		56	94	6	0.2	12			
8	11		28	110	6	0.2	80			
9	12		98	90	8	0.2	24			
130	13		70	86	6	0.2	54			
1	48.00N - 14		26	88	6	0.2	4			
2	32.00N - 1		190	120	6	0.4	190			
3	2		110	100	4	0.2	160			
4	3		14	78	2	0.2	4			
5	4		28	80	2	0.4	4			
6	5		160	110	6	0.4	260			
7	6		32	92	4	0.2	18			
8	7		8	38	14	0.2	4			
9	8		60	110	4	0.2	32			
140	9		120	100	8	0.2	66			
1	10		72	82	8	0.4	190			
2	11		68	90	10	0.2	40			
3	12		18	86	4	0.4	14			
4	13		98	190	10	0.4	200			
5	32.00N -14		50	58	8	0.4	88			
6	32.00N -15		18	100	10	0.2	6			
7	-8.00N - 1		96	110	6	0.2	< 2			
8	- 2		98	130	6	0.2	4			
9	-8.00N -3		78	120	2	0.2	2			
150	CHECK NL-2		74	66	12	0.8	10			

NORANDA EXPLORATION CO. LTD.

LOCATION _____ | PROJECT 01 #3-1 | SHEET 6

J. ASHTON | SAMPLE Nos. _____

MATERIAL SOIL | COLLECTOR D.C. | DATE RECEIVED / /

ANALYST R.F. | DATE ANALYSED March 5 /82

REMARKS Cu, Zn, Pb, Ag, Mo in ppm

0.2g 12 vol $HClO_4$: HNO_3 → 5 ml.

T.T. No.	SAMPLE No.	1	2 Cu	3 Zn	4 Pb	5 Ag	6 Mo	7	8	G.C.I. NUMBER
151	-8.00N -4		150	140	2	0.2	8			
2	5		110	110	2	0.2	4			
3	6		110	110	2	0.2	6			
4	7		180	120	2	0.2	6			
5	8		110	110	6	0.2	8			
6	9		88	82	10	0.2	50			
7	10		140	86	6	0.2	84			
8	11		100	78	6	0.2	56			
9	12		200	94	12	0.2	40			
160	13		44	80	10	0.4	26			
1	14		150	84	4	0.2	68			
2	15		56	94	2	0.2	20			
163	-8.00N -16		130	150	4	0.2	8			

NORANDA EXPLORATION COMPANY, LIMITED

(Cu Zn Ag Au Mo (

Sheet 1 of 5

160 Soil District

Lab Code 3-1

RECORD OF SAMPLE TRANSMITTAL

NORANDA EXPLORATION COMPANY, LIMITED
P.O. BOX 2380
1050 DAVIE STREET
VANCOUVER, B.C.
V6B 3T5

MATERIAL:
- [X] SOIL
- [ ] SILT
- [ ] ROCK

Date Shipped:
Date Received: MAR. 1/82
Shipped Via:
No. of Cartons: 3
No. of Samples: 160
Geologist: D.CROSS
Date:

Project JACK ASHTON No. 01

~~SAMPLE NOS.~~/COORDS. ~~FROM~~/LINE	~~TO~~/STATION	~~N.T.S. NOS.~~	~~G.C.I. NOS.~~	ADD ELEMENT	~~SAMPLE NOS.~~/COORDS. ~~FROM~~/LINE	~~TO~~/STATION	N.T.S. NOS.	G.C.I. NOS.	ADD ELEMENT
40+00N	1	A1			48+00N	9	Bog Grassland		
	2	A1				10	A1		
	3	A1				11	Grassland over talus		
	4	A1				12	Grass in Bog		
	5	A1				13	A1		
	6	A1			48+00N	14	Grassland over Bog		
	7	A1							
	8	Qtz Rich Clay			-8+00N	1	B		
	9	A1				2	A1		
	10	A1				3	A1		
	11	A1				4	A1+B		
	12	A1	J.ASHTON 01			5	A1		
	13	A1	SOIL 3-1 '82			6	A1		
40+00N	14					7	A1		
						8	A1		
48+00N	1	A1				9	A1		
	2	A1				10	A1+B		
	3	A1				11	B		
	4	A1 (Moss over talus)				12	A1+B		
	4	A1 (Bog)				13	A1+B		
	5	A1				14	B		
	6	A1				15	A1		
	7	Grass over talus			-8+00N	16	B		
48+00N	8	A1							

ANALYTICAL INSTRUCTIONS

ALL SAMPLES: (Cu, Pb, Zn, Mo, Ag) [X]
(Cu, Pb, Zn, Mo, Ag) +__+__ [ ]
(Cu, Pb, Zn, Mo, Ag) + AS NOTED [ ]

SPECIAL ~~INSTRUCTIONS~~ OR REMARKS:
J. Ashton 01
Soil 3-1 '82

RESULTS TO:

Sheet 2 of 5

_____ District

Lab Code _____

RECORD OF SAMPLE TRANSMITTAL

NORANDA EXPLORATION COMPANY, LIMITED
P.O. BOX 2380
1050 DAVIE STREET
VANCOUVER, B.C.
V6B 3T5

MATERIAL:
- [x] SOIL
- [ ] SILT
- [ ] ROCK

Date Shipped: _____
Date Received: _____
Shipped Via: _____
No. of Cartons: _____
No. of Samples: _____
Geologist: _____
Date: _____

Project JACK ASHTON No. 01

~~SAMPLE NOS.~~/COORDS. ~~FROM~~/LINE	~~TO~~/STATION	N.T.S. NOS.	G.C.I. NOS.	ADD ELEMENT	~~SAMPLE NOS.~~/COORDS. ~~FROM~~/LINE	~~TO~~/STATION	N.T.S. NOS.	G.C.I. NOS.	ADD ELEMENT
32+00N	1	A1			56+00N	8	A1		
	2	A1				9	Bog		
	3	A1							
	4	A1			23+00S	1	A1		
	5	A1				2	A1		
	6	A1				3	A1		
	7	A				4	A1		
	8	A1+B				5	A1		
	9	A1				6	A1+B		
	10	A1				7	A1+B		
	11	A1				8	A1+B		
	12	A1				9	A1+B		
	13	A1				10	A1		
	14	A1+B				11	A1		
32+00N	15	A1				12	A1 (Minor amt of B)		
					23+00S	13	A1		
56+00N	1	Grassland over Bog							
	2	Grass over Bog							
	3	A1							
	3	Grass over Bog							
	4								
	5	↓							
	6	Bog							
56+00N	7	Bog							

ANALYTICAL INSTRUCTIONS

ALL SAMPLES: (Cu, Pb, Zn, Mo, Ag) ☐
(Cu, Pb, Zn, Mo, Ag) +___+___ ☐
(Cu, Pb, Zn, Mo, Ag) + AS NOTED ☐

SPECIAL INSTRUCTIONS OR REMARKS:

RESULTS TO: _____

Sheet 3 of 5

_____ District

Lab Code _____

RECORD OF SAMPLE TRANSMITTAL

NORANDA EXPLORATION COMPANY, LIMITED
P.O. BOX 2380
1050 DAVIE STREET
VANCOUVER, B.C.
V6B 3T5

MATERIAL:
- [x] SOIL
- [ ] SILT
- [ ] ROCK

Date Shipped: _____
Date Received: _____
Shipped Via: _____
No. of Cartons: _____
No. of Samples: _____
Geologist: _____
Date: _____

Project JACK ASHTON No. 01

SAMPLE NOS./COORDS. FROM/LINE	SAMPLE NOS./COORDS. TO/STATION	N.T.S. NOS.	G.C.I. NOS.	ADD ELEMENT	SAMPLE NOS./COORDS. FROM/LINE	SAMPLE NOS./COORDS. TO/STATION	N.T.S. NOS.	G.C.I. NOS.	ADD ELEMENT
35+00S	1	Grass over talus							
	2	Grass							
	3	Grass - Good soil Dev.							
	4	Grass - Good deep podzol							
	5	Grass - over deep podzol							
	6	Grass over well dev. pod. A							
	7	A_1							
	8	Grass hill slope - well developed podzol over talus							
	9	A_1							
35+00S	10	A_1							
27+00S	1	Moss about Bog.							
	2	A_1							
	3	Grass on hill over talus							
	4	A_1							
	5	A_1							
	6	Bog over talus							
	7	A_1							
	8	A_1							
	9	A_1							
27+00S	10	A_1							

ANALYTICAL INSTRUCTIONS

ALL SAMPLES: (Cu, Pb, Zn, Mo, Ag) ☐
(Cu, Pb, Zn, Mo, Ag) +___+___ ☐
(Cu, Pb, Zn, Mo, Ag) + AS NOTED ☐

SPECIAL INSTRUCTIONS OR REMARKS:

RESULTS TO: _____

Sheet 7 of 5

_____ District

Lab Code _____

RECORD OF SAMPLE TRANSMITTAL

NORANDA EXPLORATION COMPANY, LIMITED
P.O. BOX 2380
1050 DAVIE STREET
VANCOUVER, B.C.
V6B 3T5

MATERIAL:
☐ SOIL
☐ SILT
☐ ROCK

Date Shipped: _____
Date Received: _____
Shipped Via: _____
No. of Cartons: _____
No. of Samples: _____
Geologist: _____
Date: _____

Project JACK ASHTON No. 81

SAMPLE NOS./COORDS. FROM/LINE	SAMPLE NOS./COORDS. TO/STATION	N.T.S. NOS.	G.C.I. NOS.	ADD ELEMENT	SAMPLE NOS./COORDS. FROM/LINE	SAMPLE NOS./COORDS. TO/STATION	N.T.S. NOS.	G.C.I. NOS.	ADD ELEMENT
CW	1	B			EB-0	14	A1		
	2	B				15	A1		
	3	A1+B				16	A1		
	4	A1				17	A1		
	5	A1				18	A1+B		
	6	Grass on hill over talus				19	A1		
	7	A1			EB-0	20	A1		
	8	Grass slope over talus							
	9		↓		EB-1	1			
CW	10					3			
						4			
EB-0	1					5			
	2					6			
	3					7			
	4					8			
	5					9			
	6					10			
	7					11	A1		
	8					12	A1+B		
	9					13	A1		
	10					14	A1		
	11	B				15	A1		
	12	A1				16	Humus rich, clay rich		
EB-0	13	A1			EB-1	17	B		

ANALYTICAL INSTRUCTIONS

ALL SAMPLES: (Cu, Pb, Zn, Mo, Ag) ☐
(Cu, Pb, Zn, Mo, Ag) +___+___ ☐
(Cu, Pb, Zn, Mo, Ag) + AS NOTED ☐

SPECIAL INSTRUCTIONS OR REMARKS:

RESULTS TO: _____

Sheet 5 of 5

_____ District

Lab Code _____

RECORD OF SAMPLE TRANSMITTAL

NORANDA EXPLORATION COMPANY, LIMITED
P.O. BOX 2380
1050 DAVIE STREET
VANCOUVER, B.C.
V6B 3T5

MATERIAL:
☐ SOIL
☐ SILT
☐ ROCK

Date Shipped: _____
Date Received: _____
Shipped Via: _____
No. of Cartons: _____
No. of Samples: _____
Geologist: _____
Date: _____

Project JACK ASHTON No. 01

SAMPLE NOS./COORDS. FROM/LINE	SAMPLE NOS./COORDS. TO/STATION	N.T.S. NOS.	G.C.I. NOS.	ADD ELEMENT	SAMPLE NOS./COORDS. FROM/LINE	SAMPLE NOS./COORDS. TO/STATION	N.T.S. NOS.	G.C.I. NOS.	ADD ELEMENT
EB-1	18	A1							
	19	A1							
EB-1	20	A1							
PLASTIC VIALS									
CW	2								
	4								
	6								
	8								
	10	BoG							
	11	BoG							
	16								
	1	27 to 05	BoG						

ANALYTICAL INSTRUCTIONS

ALL SAMPLES: (Cu, Pb, Zn, Mo, Ag) ☐
(Cu, Pb, Zn, Mo, Ag) +___+___ ☐
(Cu, Pb, Zn, Mo, Ag) + AS NOTED ☐

SPECIAL INSTRUCTIONS OR REMARKS:

RESULTS TO: _____

APPENDIX II

GEOCHEMICAL SILT

SURVEY

ASSAY RESULTS

CHEMEX LABS LTD.

CHEMEX LABS LTD.

212 BROOKSBANK AVE
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE (604)984-0221
TELEX 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

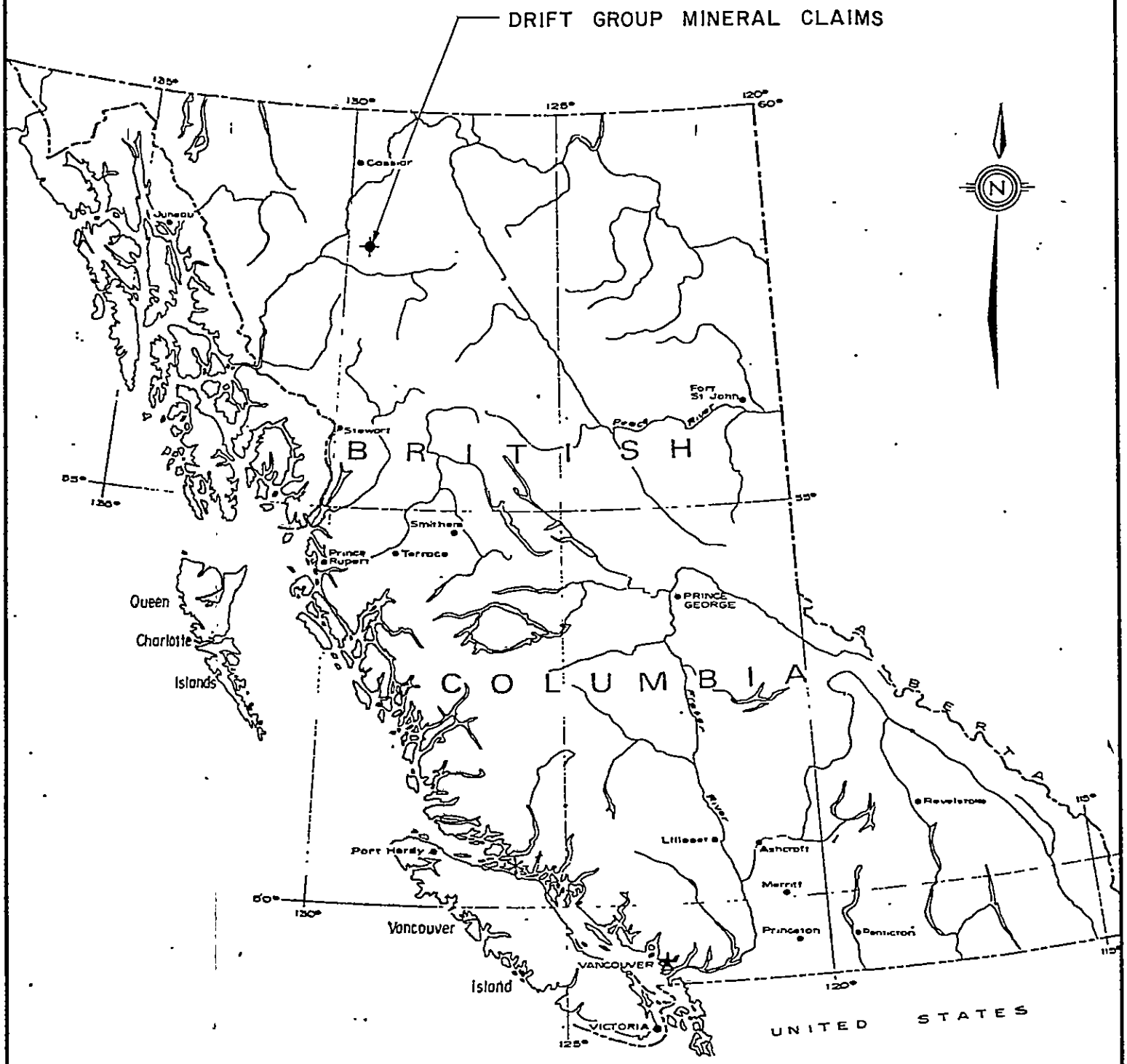
CERTIFICATE OF ANALYSIS

TO : J.M. ASHTON & ASSOCIATES LTD.
409 GRANVILLE ST. VANCOUVER, B.C.

CERT. # : A8113002-001-A
INVOICE # : I8113002
DATE : 18-AUG-81
P.O. # : NONE

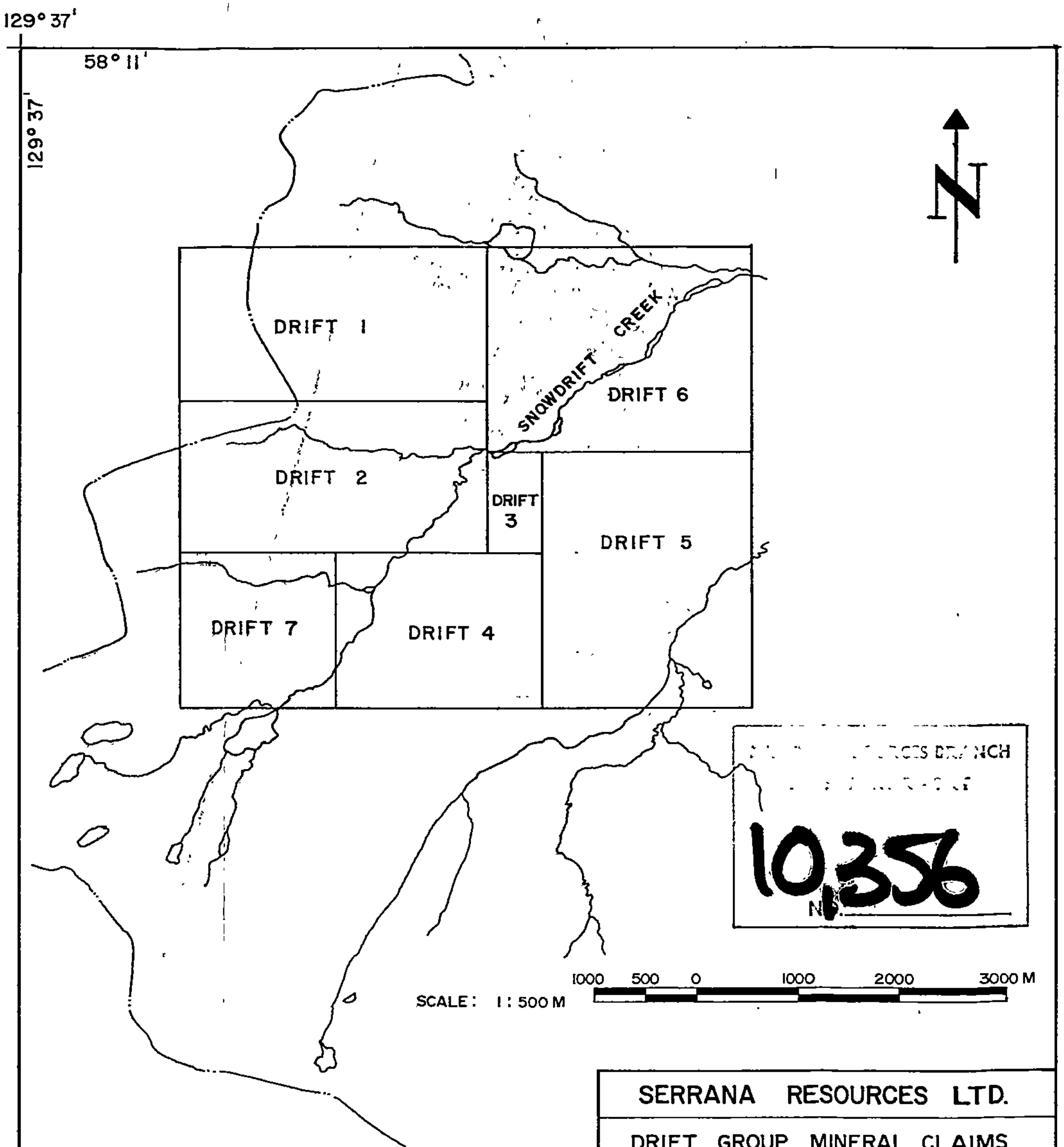
Sample description	Prep code	Cu ppm	Mo ppm	Pb ppm	Zn ppm	W ppm	
S-1	261	136	12	--	--	--	--
S-2	261	164	14	--	--	--	--
S-3	261	149	19	--	--	--	--
S-4	261	150	15	--	--	--	--
S-5	261	143	10	--	--	--	--
S-6	261	158	12	--	--	--	--
S-7	261	142	17	--	--	--	--
S-8	261	138	24	--	--	--	--
S-9	261	141	23	--	--	--	--
COMP. S-1 TO 9	261	--	--	1	62	1	--

Certified by Hart Richler



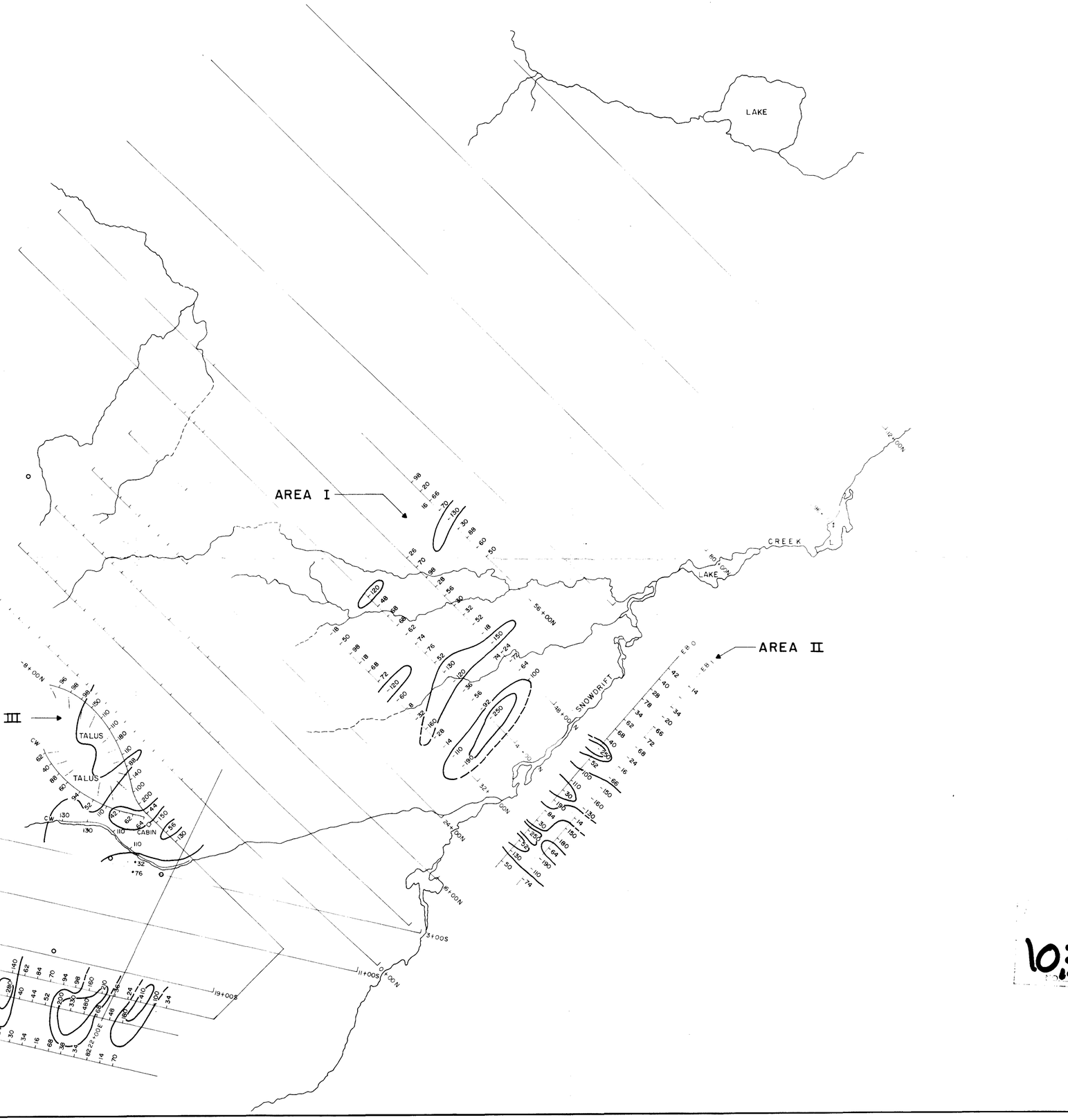
MAP 1

GENERAL LOCATION MAP



PART OF MINERAL CLAIM MAP 104I/5E
DEPT. OF MINES AND PETROLEUM
RESOURCES. VICTORIA, B.C.

SERRANA RESOURCES LTD.	
DRIFT GROUP MINERAL CLAIMS	
MAP 2	
CLAIM LOCATION MAP	
DRAWN: E.B.CATAPIA	DATE: OCTOBER, 1981



LEGEND :

- 100 - 200 PPM Cu WEAK TO MODERATELY ANOMALOUS
- > 201 PPM Cu MODERATE TO STRONGLY ANOMALOUS

SCALE : 1 : 100

100 50 0 100 200 300 400 500 600 700 800 900 M

10,356

SERRANA RESOURCES LTD.

DRIFT GROUP MINERAL CLAIMS
LIARD MINING DIVISION, B.C.

GEOCHEMICAL SURVEY

MAP 5
COPPER IN SOIL

GEOLOGIST	C.W. BALL, P.ENG	SCALE	1 : 100 M
DRAWN	E.B. CATAPIA	DATE	MARCH 1982
CHECKED	J.M. ASHTON		

10,356

SERRANA RESOURCES LTD.

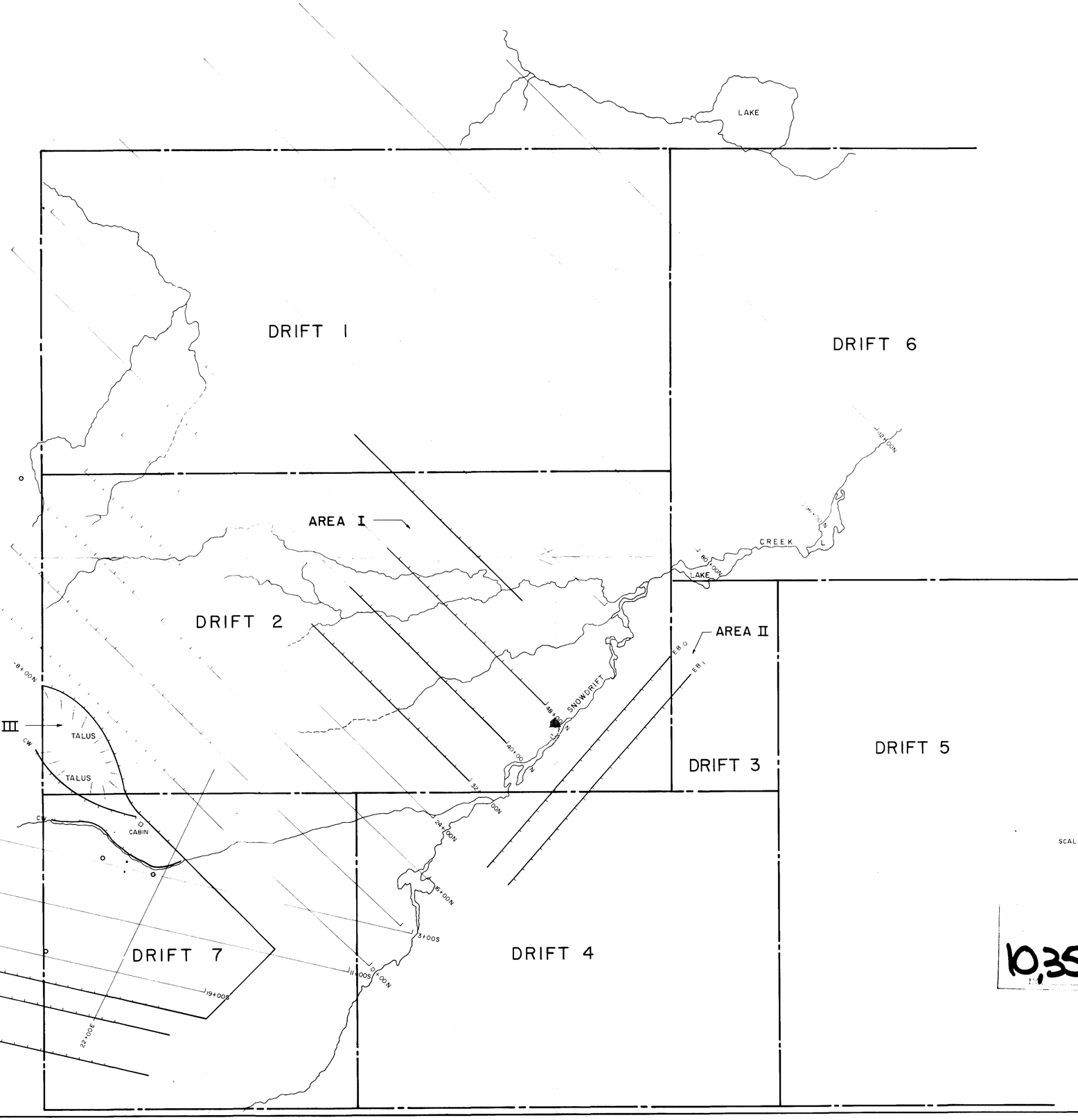
DRIFT GROUP MINERAL CLAIMS

LIARD MINING DIVISION, B.C.

GEOCHEMICAL SURVEY

MAP 6
ZINC IN SOIL

GEOLOGIST	C.W. BALL, P.ENG.	SCALE: 1 : 100 M
DRAWN	E.B. CATAPIA	DATE: MARCH 1982
CHECKED	J.M. ASHTON	



LEGEND :

1981 GRID LINE
(SERRANA RESOURCES LTD.)

1973 GRID LINE
KENNCO EXPLORATIONS (WESTERN) LTD.

SCALE : 1 : 100

100 50 0 100 200 300 400 500 600 700 800 900M

10,356

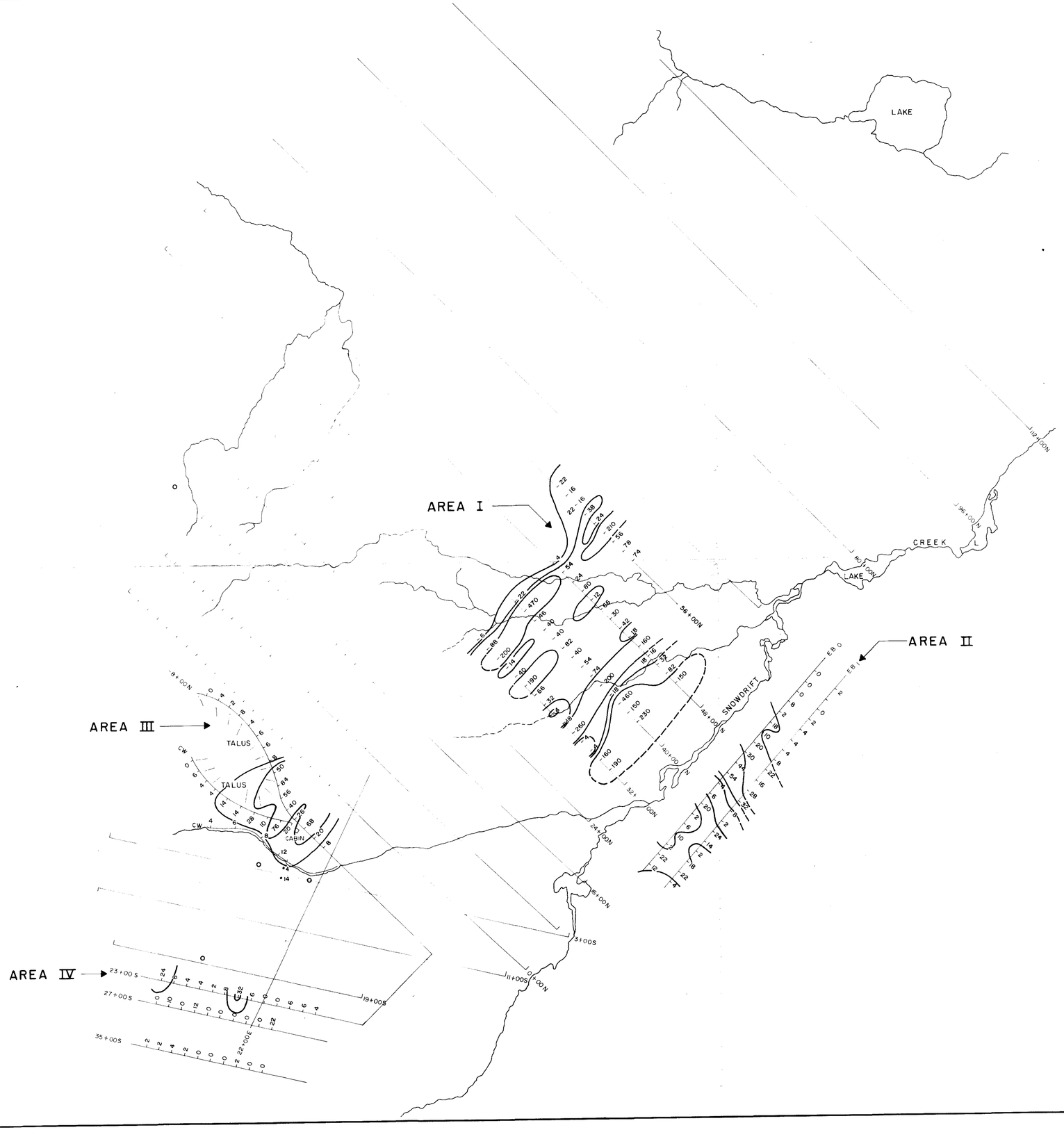
SERRANA RESOURCES LTD.

DRIFT GROUP MINERAL CLAIMS
LIARD MINING DIVISION, B.C.

MAP 3

GRID LOCATION MAP

GEOLOGIST	C.W.BALL, P.ENG	SCALE	1 : 100 M
DRAWN	E.B.CATAPIA	DATE	MARCH 1982
CHECKED	J.M.ASHTON		



N

LEGEND :

- 10 - 30 PPM Mo WEAKLY ANOMALOUS
- 31 - 100 PPM Mo MODERATELY ANOMALOUS
- >101 PPM Mo STRONGLY ANOMALOUS

SCALE : 1 : 100

100 50 0 100 200 300 400 500 600 700 800 900 M

10,356

SERRANA RESOURCES LTD.

DRIFT GROUP MINERAL CLAIMS
LIARD MINING DIVISION, B.C.

GEOCHEMICAL SURVEY

MAP 4
MOLYBDENUM IN SOIL

GEOLOGIST	C.W. BALL, P.ENG.	SCALE	1 : 100 M
DRAWN	E.B. CATAPIA	DATE	MARCH 1982
CHECKED	J.M. ASHTON		