ASSESSMENT REPORT

on the

093884

SWIFT RIVER PROPERTY, YUKON TERRITORY

For

Birch Mountain Resources Ltd.

By

Sigfrido P. Santiago, P.Geo.

Valmar Pratico, P.Geol.

October 29, 1997



OWNER: First Yukon Silver Resources Inc.
OPERATOR: Birch Mountain Resources Ltd.

NTS : 105 B / 3
Watson Lake Mining District
Yukon Territory

Latitude 60° 10' N
Longitude 131° 10' W

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This report has been examined by
the Geological Exploration Unit
under Section 53 (4) Yukon Quartz
Mining Act and is allowed as
representation work in the amount
of $ $56,000.

for Director, Exploration and
Geological Services for Commissioner
of Yukon Territory.

TABLE OF CONTENTS

Page

Table of Contents 2

List of Figures 3

List of Tables 4

List of Appendices 4

I. Introduction 5

II. Previous Work 5

III. Regional Geology 8

IV. Property Geology 8

V. 1997 Exploration Work 9

Line Cutting

Geological Mapping

Trenching

Sampling

Geophysical Surveys

Diamond Drilling

VI. Statement of Expenditures 14

VII. Conclusions and Recommendations 15

VIII References 15

IX Authors' Certification 16

LIST OF FIGURES

		Page
Figure 1:	Location Map.....	6
Figure 2:	Claim Map..... 1:30,000	in pocket
Figure 3:	Geological Compilation Map..... 1:10,000	in pocket
Figure 4:	Sample Location Map (East)..... 1:5,000	in pocket
Figure 5:	Sample Location Map (Central).... 1:5,000	in pocket
Figure 6:	Sample Location Map (West)..... 1:5,000	in pocket
Figure 7:	Channel Sample Location Map..... 1:250 ..... Lucy Showing	in pocket
Figure 8:	Channel Sample Location Map..... 1:250 ..... Dan & Discovery Showings	in pocket
Figure 9:	Channel Sample Location Map..... 1:250 ..... Lost Showing	in pocket
Figure 10:	Diamond Drill Hole Profiles..... 1:250 ..... DDHSR-97-01 & DDHSR-97-02	in pocket
Figure 11:	Diamond Drill Hole Profiles..... 1:250 ..... DDHSR-97-03 & DDHSR-97-06	in pocket
Figure 12:	Diamond Drill Hole Profiles..... 1:250 ..... DDHSR-97-04 & DDHSR-97-05	in pocket
Figure 13:	Diamond Drill Hole Profiles..... 1:250 ..... DDHSR-97-07	in pocket
Figure 14:	Diamond Drill Hole Profiles..... 1:250 ..... DDHSR-97-08 & DDHSR-97-09	in pocket

LIST OF TABLES

		Page
Table 1	Property Claim List.....	7
Table 2	1997 Diamond Drill Holes.....	11
Table 3	Geology Legend - Diamond Drill Hole Profiles	in pocket

LIST OF APPENDICES

1. Statement of Expenditures
2. Analytical Procedures
3. Diamond Drill Hole logs
4. Diamond Drill Hole sample assays and geochemistry
5. Surface sample assays and geochemistry
6. Laboratory assay certificates
7. Geophysical Report : Associated Mining Consultants Ltd.
8. Geophysical Report : SJ Geophysics Ltd.

I. INTRODUCTION

This report describes the field activities conducted by Birch Mountain Resources Ltd. on the SAM, MINE, PARK, LAKE, DAN, STRATA, M, SNO, KEY, ROAD, and KILL claims, known as the Swift River Property, during the 1997 summer field season. The Swift River Property comprises 594 claims in NTS map sheet 105 B/3 (see Table 1).

The property is in the south-central Yukon (see Figure 1), 130 kilometers west of Watson Lake at latitude 60° 10' North, longitude 131° 10' West in the Watson Lake Mining District, Yukon Territory. The property has good access by 25 kilometers of good gravel road from the Pine Lake Airstrip and the Continental Divide Lodge at Mile 721, Alaska Highway.

In 1996, Birch Mountain Resources Ltd. entered into an option agreement with First Yukon Silver Resources Inc. to further explore the area. The company conducted a program of line cutting, geophysics, geological mapping, trenching and drilling during the 1997 summer field season

During the compilation of this report, S. P. Santiago and V. Pratico were assisted by G. Mombourquette and B. Johnson.

II. PREVIOUS WORK

Initial exploration by Hudson Bay Mining and Smelting Co. (HBMS) in the Swift River area led to the discovery of the Dan Showing in 1946. Geological mapping, ground geophysical surveys , trenching and diamond drilling were done by HBMS in the Dan area from 1952 to 1964.

The area was re-staked in 1966 and optioned to Boswell River Mines Ltd. (BRML). Between 1967 and 1971, BRML conducted ground EM, IP and magnetic and airborne EM, magnetic surveys, trenching, soil geochemistry, diamond drilling in the Dan area and in areas to the south and southwest.

In 1978, Amax Potash Ltd. acquired, by option from Bath Investments Ltd., the STQ property. Exploration by Amax on this property, directed towards Sn-W-Mo prospects associated with two quartz monzonite plugs, consisted of ground magnetic and IP surveys, soil geochemistry, geological mapping and one diamond drill hole.

In 1987 the Dan -Crescent Lake area was staked by First Yukon Silver Resources Inc.(FYSR) and explored the property with road building, trenching, geochemistry and geological mapping. The work resulted in the discovery of a large area of sphalerite mineralized float in the Gossan Hill area and the Lucy copper-zinc showing.

In 1992 Cominco Ltd. optioned the FYSR property and in 1993 conducted an exploration program of line cutting, geological mapping, ground EM and magnetometer surveys, geochemistry and diamond drilling. The program tested for a large tonnage, tabular,"stratabound" zinc deposit with no encouraging results. The option was later abandoned by Cominco.



Birch Mountain Resources Ltd.

Location Map
Swift River Property

Figure 1

Table 1 : Property Claim List

Name	Number	Grant Number	Owner
Dan	1 to 64	YB 14428 to YB 14491	First Yukon Silver Resources Inc.
Dan	65 to 122	YB 14494 to YB 14551	First Yukon Silver Resources Inc.
Key	1 to 30	YB 09486 to YB 09515	First Yukon Silver Resources Inc.
Key	31 to 34	YB 14161 to YB 14164	First Yukon Silver Resources Inc.
Lake	1 to 10	YB 09580 to YB 09589	First Yukon Silver Resources Inc.
Lake	27 to 36	YB 09606 to YB 09615	First Yukon Silver Resources Inc.
M	1 to 14	YB 15913 to YB 15926	First Yukon Silver Resources Inc.
M	15 to 18	YB 15735 to YB 15738	First Yukon Silver Resources Inc.
M	19 to 64	YB 15927 to YB 15972	First Yukon Silver Resources Inc.
Mine	1 to 40	YB 16066 to YB 16105	First Yukon Silver Resources Inc.
Park	1 to 64	YB 09516 to YB 09579	First Yukon Silver Resources Inc.
Sam	1 to 20	YB 15973 to YB 15992	First Yukon Silver Resources Inc.
Sam	21 to 40	YB 33648 to YB 33667	First Yukon Silver Resources Inc.
Sam	41 to 64	YB 16013 to YB 16036	First Yukon Silver Resources Inc.
Sam	65 to 84	YB 33668 to YB 33687	First Yukon Silver Resources Inc.
Sam	85 to 86	YB 16057 to YB 16058	First Yukon Silver Resources Inc.
Sno	1 to 16	YB 63970 to YB 63985	First Yukon Silver Resources Inc.
Sno	19 to 30	YB 33648 to YB 33667	First Yukon Silver Resources Inc.
Strata	1 to 23	YB 15595 to YB 15617	First Yukon Silver Resources Inc.
Strata	24 to 42	YB 16106 to YB 16124	First Yukon Silver Resources Inc.
Kill	1 to 51	YB 89061 to YB 89111	Birch Mountain Resources Ltd.
Road	1 to 27	YB 89034 to YB 89060	Birch Mountain Resources Ltd.

III. REGIONAL GEOLOGY

The mineralization at Swift River occurs within rocks of the Yukon-Tanana Terrane which is most simply interpreted as the product of episodic arc magmatism (Mortensen, 1992). In the Finlayson Lake area, the Yukon-Tanana is divided into the Lower, Middle and Upper units of the Layered Metamorphic Sequence (Hunt, 1997). The Lower Unit consists primarily of Devonian micaceous quartzite. The Middle Unit consists of late Devonian to mid Mississippian interlayered mafic metavolcanics, minor felsic metavolcanics and metasediments. The Upper Unit consists of early Pennsylvanian to early Permian carbonate and quartzite.

The massive sulphide deposits of the Finlayson Lake area occur in pillowed mafic volcanics, felsic metavolcanics, carbonaceous metasediments, felsic volcanics with iron formation, mafic tuffs, felsic tuffs and tuffaceous sediments correlated to the Middle Unit of the Layered Metamorphic Sequence. Unresolved metamorphic and structural overprints make stratigraphic correlations difficult. The **Kudz Ze Kayah** (Cominco) and **Wolverine** (Westmin) deposits consist of lenses of massive and semi-massive pyritic Pb-Zn-Cu mineralization that occur within felsic metavolcanic and volcaniclastic assemblages and are spatially associated with deformed subvolcanic domes or thick sills. The **Fyre Lake** (Columbia Gold) deposits of massive chalcopyrite, pyrite, pyrrhotite and magnetite iron formation occur in a deformed and metamorphosed succession of basic to intermediate flows with intercalated volcaniclastics and volcanically derived fine-grained sedimentary rocks. The **Ice** (Expatriate) massive pyrite, chalcopyrite and bornite deposit occurs within pillowed, massive and brecciated basalt of the Slide Mountain Terrane.

Restoration of 450 km of mid-Cretaceous right-lateral movement on the Tintina fault brings the Finlayson area to a position east of Dawson (Hunt, 1997). Devono-Mississippian strata, correlative to the Yukon-Tanana Terrane, extend from the Dawson area through the Swift River area and contain a number of massive sulphide deposits and occurrences.

IV. PROPERTY GEOLOGY

The Swift River property is underlain by a sequence of Devonian to Permian argillite, shale, felsic and mafic tuffs, siltstone and limestone which strike at an azimuth of 110 - 140° and dip 65 - 85° SW. A number of NE-SW left-lateral faults transect the sequence. Some of these faults may be syn-depositional rift faults. The sequence is intruded by a diorite sill, the Cassiar Batholith on the east and the Seagull Batholith on the west.

Thermally metamorphosed felsic and mafic tuffs and tuffaceous sediments host Volcanogenic Massive Sulphide mineralization that consists of stratabound, finely laminated, massive pyrrhotite-magnetite containing variable amounts of sphalerite, chalcopyrite, galena and pyrite. Regional thermal metamorphism resulted in recrystallization of carbonate rich rocks to a skarn mineralogy assemblage.

Several massive sulphide showings have been prospected. The Dan and Crescent Lake showings are several metre thick zones containing medium to coarse grained sphalerite, pyrite, pyrrhotite, magnetite, minor chalcopyrite and trace galena that occur in massive lenses, thin to thick bands and fine to medium grained irregular disseminations and blebs. The Lucy showing contains bands of massive chalcopyrite-pyrrhotite in tremolite-actinolite and bands of massive pyrrhotite-magnetite-sphalerite in andesitic tuffaceous sediments.

V. 1997 EXPLORATION WORK

Birch Mountain Resources Ltd. conducted, from May 29 to Aug 7 1997, an exploration program of line cutting, geological mapping, ground geophysics, trenching and diamond drilling. The project was managed by S. P. Santiago, P. Geo., geological consultant and supervised by V. Pratico, P. Geol., Chief Geologist for Birch Mountain Resources Ltd.

Line Cutting

A total of 35 line-kilometres were cut during June and July 1997 by Thrundiuk Engineering and Construction from Watson Lake, YT. This grid extends a grid cut during March 1997 and a 1993 grid. This grid was used for geological mapping and ground geophysical surveys.

Geological Mapping

Geological mapping was conducted initially in the area of known mineral showings and extended over the new grid that was cut. Areas previously mapped were inspected in order to compile all mapping into one map (see Figure 3). Detailed mapping was conducted over the Lucy, Dan and Lost showings (see Figures 7, 8 & 9).

Personnel involved in the mapping include V. Pratico, S. P. Santiago, A. Mann, A. Skupinski, B. Johnson and D. Tarkyth.

Trenching

The trenching program was conducted with an excavator and D-8 bulldozer. A total of three trenches were dug (see Figure 4) ranging from 15 to 75 metres in length and 2 to 5 metres in depth. Overburden was stripped from the Paul and Lucy showings to increase the outcrop exposure.

All trenches were back-filled and contoured except the Lucy showing which was contoured and seeded leaving the mineralized outcrops exposed.

Surface Sampling and Geochemistry

Surface sampling conducted during June, July and August 1977 is described below and the analytical results tabulated in Appendix 5. Over 250 samples were collected.

The Lucy Showing was channel sampled by portable rock saw (see Figure 7). The outcrop consists of actinolite and minor siltstone. The outcrop is mineralized by pyrrhotite, magnetite, chalcopyrite and sphalerite.

Geological mapping of the Discovery (or Upper Dan) Showing identified a massive sulfide mineralized sequence of andesitic tuff and tuffaceous siltstone. The rusty weathering massive sulfide mineralization consists of pyrrhotite, magnetite, sphalerite and pyrite. The showing was channel sampled with a portable rock saw (see Figure 8).

Geological mapping of the Dan Showing identified three major rock units consisting of andesitic tuff, marble and tuffaceous siltstone (see Figure 8). These rocks are isoclinally folded and metamorphosed to a calc-silicate assemblage consisting of garnet, diopside, magnetite, pyrrhotite and sphalerite.

The Lost Showing is a mineralized area that the overburden was previously removed. The showing was channel sampled with a portable rock saw (see Figure 9).

Soil, rock and stream sediment samples of a reconnaissance nature where collected and their locations indicated on Figures 4, 5 & 6. Analytical results are tabulated in Appendix 5.

Geophysics

Horizontal Loop Electromagnetic and Proton Magnetometer surveys were conducted on two areas for a total of 35 line-km. Associated Mining Consultants Ltd. extended a March 1997 survey (27.4 km) by an additional 26.0 km during June 1997. SJ Geophysics Ltd. conducted a 8.9 km survey near Crescent Lake during July 1997.

Appendix 7 contains the report submitted by Associated Mining Consultants Ltd. which compiles both the March and June surveys.

Appendix 8 contains the report submitted by SJ Geophysics Ltd.

Diamond Drilling and Core Sample Geochemistry

Nine NQ holes, totaling 956.1 metres were drilled from July 4 to August 4 1997. Drilling was contracted to DJ Diamond Drilling Co. Ltd from Watson Lake, Yukon Territory. The targets were defined by a combination of geologic mapping and interpreted geophysical anomalies.

The drill cores were geologically logged then cut with a rotary rock saw to sample for geochemical analysis. Samples containing significant sulfides were fire assayed for gold and silver while Cu, Pb and Zn were analyzed by Atomic Absorption. Samples with >10, 000 ppm Zn values were further assayed for ore-grade determination. All core samples were analyzed by MS-ICP for a 30 element suite. The analytical results are tabulated in Appendix 4.

Pertinent drill hole information is tabulated in Table 2 and the locations of the drill holes are shown in Figures 4 & 5. Figures 10, 11, 12, 13 & 14 are drill hole profiles showing sample intervals, sample numbers and lithology. Appendix 3 contains the geologic log for each drill hole and Appendix 4 contains the analytical results.

Table 2 : 1997 Diamond Drill Holes

Hole Number	Collar Location Grid	UTM Coord.	Azimuth	Dip	Total Depth (metres)	
SR 97-01	1+00E 1+95S	6672446 N 381166 E	035	-46°	266.77	Lucy
SR 97-02	0+90E 2+25S	6672417 N 381141 E	035	-60°	96.65	Lucy
SR 97-03	12+00E 3+51S	6671844 N 382099 E	035	-44°	35.00	Dan
SR 97-04	18+00E 5+40S	6671458 N 382565 E	035°	-45°	95.73	Lost
SR 97-05A	18+00E 5+80S	6671395 N 393552 E	035°	-45°	74.70	Lost
SR 97-06	11+98E 3+60S	6671935N 382252 E	035°	-50°	114.30	Dan
SR 97-07	47+53W 2+40 S	6674472 N 376892 E	080°	-45°	78.96	Crescent Lk
SR 97-08	45+60W 9+60S	6673760 N 376767 E	110°	-50°	108.30	Crescent Lk
SR 97-09	46+35W 9+95S	6673739 N 376695 E	057°	-50°	85.70	Crescent Lk

DDH SR 97-01

This hole intersected a sequence of andesite tuff, rhyolite tuff and tuffaceous siltstone from 0 to 166 m including an interval of marble from 34 to 39 m. The remainder of the hole to 267 m consists of interbedded tuffs, siltstone and marble. The interval from 28 to 46 m (excluding the marble) is altered to massive to weakly laminated actinolite with 1 to 15 % sulphides (pyrrhotite, sphalerite, pyrite and chalcopyrite) and 1 to 7% magnetite. The mineralization occurs as stringers and laminations consistent with bedding. The remainder of the hole is mineralized 1 to 5% sulphides (pyrrhotite, sphalerite, pyrite and chalcopyrite) and nil to 5% magnetite with short intervals of greater concentration. The lower portion of the hole has intervals heavily recrystallized to garnet and epidote.
Assay results show the interval at 43.84 - 44.5 m to grade **4.65 % zinc**.

DDH SR 97-02

This hole begins with a sequence of silty andesite tuff and andesitic crystal tuff to 42 m. A 30 cm massive bed of actinolite altered andesitic tuff is followed by tuffaceous siltstone from 44 to 60 metres with nil to trace pyrrhotite. The interval from 60 to 87 m consists of siliceous andesitic tuff and actinolite altered units interbedded with impure calc-silicate altered marbles. The last 10 metres consists of barren tuffaceous siltstone. This hole is weakly mineralized with minor pyrrhotite and magnetite. The interval from 60 to 69 m contains minor disseminated pyrite, chalcopyrite and sphalerite. The interval from 6 to 82 m contains magnetite (tr to 4%) in irregular blebs.

DDH SR 97-03

abandoned in overburden

DDH SR 97-04

The hole consists of a sequence of andesitic to felsic tuffs, tuffaceous siltstones and interbedded marble. Fourteen metres of andesitic tuff and tuffaceous siltstone have 1.7 metres of 2.5% sulfides (po with lesser sphalerite) above 90 cm of bleached silicic tuff averaging 35% sulfides (25% pyrrhotite, 10% sphalerite). A metre of rhyolitic tuff overlies 7.5 metres of marble. The following interval from 31 to 57 metres consists of andesite tuff to silty andesite tuff to silty crystal tuff and contains nil to minor sulfides. A 1.8 metre interval of silty andesitic to felsic tuff averages 46 % sulfides, predominantly pyrite and pyrrhotite with sphalerite comprising 10 to 20% of total sulfides. From 59 to 83 metres, the interbedded marble, silty rhyolitic tuff and rhyolite tuff contain nil to 7% sulfides. The sulfides are mostly pyrite and pyrrhotite with sphalerite comprising 15 to 70% of total sulfides. The hole ends in 15 metres of tuffaceous siltstone to siltstone with trace sulfides.

DDH SR 97-05A

The hole begins with 15 metres of andesitic tuff and crystal tuff with nil to trace sulfides, with 40 cm of 7% sulfides, pyrrhotite with minor pyrite and chalcopyrite. From 24 to 32 metres, the tuffaceous siltstone and silty andesite tuff has nil to trace or minor sulfides, with 16 cm and 31 cm of 20% and 10% sulfides, respectively. A half metre of impure dolomite is followed by silty andesitic to felsic to crystal tuffs from 32.5 to 70.5 metres. This interval has nil to trace to 5% sulfides, with 2.75 metres with greater than 2% sulfides, mostly pyrrhotite with trace chalcopyrite. The hole ends in 4.5 metres of impure marble with interlayered siliceous sediments, possibly originally felsic tuff, and rhyolitic to crystal tuff with interlayered carbonates. Sulfides are nil to 2% pyrrhotite.

DDH SR 97-06

This hole intersected andesite tuff, with silty portions, from 0 to 87 m then interbedded marble, andesite tuff and rhyolite tuff from 87 to 100 m. From 100 to 113 m the tuff interbeds are rhyolite. The carbonate interval correlates with the hangingwall section of the Dan showing. Mineralization occurs from 51 to 113 m as blebs and semi-massive magnetite (tr-20%), pyrrhotite (tr-25%) and minor disseminated pyrite and chalcopyrite. An interval of semi-massive to massive sphalerite mineralization occurs at 93.85 - 95.05 m and another at 106.7 - 107.57 m. Assay results show the intervals 93.85 -94.05 m and 94.5 - 95.05 m to grade **18.18 % zinc** and **10.3 % zinc** respectively. The 106.7 - 107.57 m interval grades **13.36 % zinc**.

DDH SR 97-07

This hole intersected andesite tuff, tuffaceous siltstone and siltstone with massive sulphide mineralization from 8 m to 43 m. Four intervals of massive pyrrhotite (>50%) contain magnetite (5%) sphalerite (tr-3%), chalcopyrite (tr) and pyrite (tr) total 23 metres of thickness. A garnet altered breccia (pyroclastic?) from 43 m to 51 m contains blebs and clots of magnetite (2-7%) and sphalerite (nil-3%). The remainder of the hole from 51 to 79 m is epidote-garnet altered and barren. Assay results show the interval 14.4 - 15.5 m to *grade* ***3.52 % zinc***.

DDH SR 97-08

This hole intersected mixed rhyolite and andesite tuffs which are in places silty. Mineralization consisting of magnetite, sphalerite and minor chalcopyrite occurs from 41 m to 65 m which also contains zones of garnet-diopside or actinolite alteration. The best mineralized interval occurs from 41 to 43 m with coarse grained interconnected clots and bands of magnetite (17%), sphalerite (9%) and minor chalcopyrite. The remainder from 43 to 65 m contains intervals of up to 5 m of 0 to 5 % magnetite and 0 to 5 % sphalerite. From 65 m to 108 m, mineralization is nil to trace magnetite & pyrite and the amount of coarse grained quartz rich tuffaceous material increases. Assay results show the interval 46.90 - 51.75 m to grade an average of **4.67 % zinc** and the interval 54.00 - 56.75 m to grade an average of **3.30 % zinc**. The interval 59.23 - 59.56 m grades **8.39 % zinc** and the interval 64.45 - 65.30 m grades **6.29 % zinc**.

DDH SR 97-09

This hole is entirely in andesite tuffs except for an interval of porphyritic diorite from 20 to 21 m. There are several zones of fault shearing. Mineralization consists of trace disseminated pyrrhotite, pyrite and chalcopyrite.

VI. STATEMENT OF EXPENDITURES

Project Supervision	V. Pratico S.P. Santiago		$ 19,957
Camp	operating personnel	$ 86,578	
	set-up & break camp	$ 29,022	
	camp work (excavator)	$ 1,282	
	camp work (D-8)	$ 3,856	
	operating supplies & equip	$ 48,501	
	power generation	$ 2,250	
	hand-held radios	$ 2,718	
	telephone	$ 6,909	
	vehicles	$ 12,959	$194,075
Sundries	air photos & maps	$ 3,133	
	field supplies	$ 1,416	
	shipping	$ 2,921	$ 7,470
Support Services	Sub-total		$221,502
Geological Mapping	V.Pratico S.P. Santiago A. Skupinski B. Johnson D. Tarkyth A. Mann		$ 57,082
Line Cutting	contractor	$ 32,140	
	transit rental	$ 300	$ 32,440
Sampling	company personnel	$ 13,295	
	contractor	$ 13,431	$ 26,726
Geophysical Surveys	AMCL	$ 18,980	
	SJ Geophysics	$ 10,160	
	company personnel	$ 4,263	$ 33,403
Heavy Equipment	trenching (excavator)	$ 33,131	
	trenching (D-8)	$ 18,366	
	drill sites (excavator)	$ 3,847	
	drill sites (D-8)	$ 11,568	
	road work (D-8)	$ 12,075	$ 78,987
Diamond Drilling			$ 95,690
Analyses			$ 10,173
Project Total			$ 556,003

VII. CONCLUSIONS & RECOMMENDATIONS

The program of exploration described in this report resulted in mineralization exposures, numerous significant analytical results and geophysical anomalies at the Lucy, Dan, Lost and Crescent Lake showings. The results support the view that the mineralization is volcanogenic in origin.

It is recommended that a review and compilation of the data be conducted to identify volcanic components of the stratigraphy and targets for further exploration.

VIII. REFERENCES

Hunt, J.A., 1997. Massive Sulphide deposits in the Yukon-Tanana and adjacent Terranes. In: Yukon Exploration and Geology 1996, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, pp 35-45.

Mortensen, J.K., 1992. Pre-Mid-Mesozoic Tectonic Evolution of the Yukon-Tanana Terrane, Yukon and Alaska. In: Tectonics, Vol 11, No 4, pp 836-853.

IX. AUTHORS' CERTIFICATION

I, Sigfrido P. Santiago, undersigned, hereby certify that :

1. I graduated in 1959 with the degree of Bachelor of Science in Geology from the University of the Philippines;

2. I am a member in good standing of the Society of Geology Applied to Mineral Deposits and the Canadian Institute of Mining, Metallurgy and Petroleum;

3. I am registered as a Professional Geoscientist in the Province of British Columbia;

4. I have continuously practiced my profession as a geologist from 1959 to 1970, 1973 to 1991 and 1994 to the present;

5. I conducted and supervised the work on which this report is based; and

6. I have no interest in Birch Mountain Resources Ltd. nor expect to have any interests, direct or indirect in Birch Mountain Resources Ltd. or their properties.



October 29, 1990

Sigfrido P. Santiago, P.Geo. (BC)
5016 Maryvale Drive NE
Calgary AB T2A 2T3

I, Valmar Pratico, undersigned, hereby certify that :

1. I graduated from the University of British Columbia with a degree of Bachelor of Science in Geology in 1972;

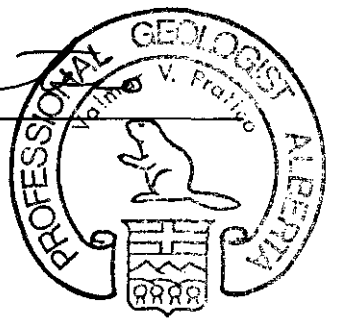
2. I am a registered as a Professional Geologist with Association of Professional Engineers, Geologists and Geophysicists of Alberta;

3. I am actively engaged in my profession as a Geologist;

4. I have held a number of geological and management positions in mineral exploration and production geology since 1972;

5. I conducted and supervised the work on which this report is based; and

6. the expenditure detailed in this report is a true representation of the costs incurred and accrued in the exploration of the property.



October 29, 1990

Valmar Pratico, P.Geol.
111 Oakchurch Place SW
Calgary AB T2V 4G1

APPENDIX 1

STATEMENT OF EXPENDITURES

		Birch Mountain Resources Ltd				Work Claims						
Claim		Grant No.	Line Cutting	Geoph	Geol	Sample	Diamond Dril	Assay	Excavator	D - 8	Support	TOTAL
Crescent Lake												
Key	3	YB09488	$2,094	$2,156							$2,814	$7,064
Key	4	YB09489	$1,674	$1,725							$2,251	$5,650
Key	5	YB09490	$419	$431							$563	$1,413
Key	6	YB09491	$838	$863	$6,850		$19,338	$814		$4,049	$21,688	$54,440
Key	31	YB14161	$419	$431	$3,425						$2,831	$7,106
Key	33	YB14163	$2,048	$2,109	$6,850	$3,205	$7,916	$1,220			$15,461	$38,809
Key	34	YB14164	$745	$767	$3,425						$3,269	$8,206
Park East												
Park	19	YB09534	$326	$335							$438	$1,099
Park	21	YB09536	$838	$863		$1,604		$407			$2,458	$6,170
Park	22	YB09537	$512	$527							$688	$1,727
Park	23	YB09538	$838	$863		$1,604		$407			$2,458	$6,170
Park	24	YB09539	$465	$479							$625	$1,569
Park	25	YB09540	$1,257	$1,294							$1,689	$4,240
Park	26	YB09541	$931	$957							$1,250	$3,138
Park	27	YB09542	$838	$863							$1,126	$2,827
Park	28	YB09543	$558	$575							$750	$1,883
Park	29	YB09544	$838	$863							$1,126	$2,827
Park	30	YB09545	$558	$575							$750	$1,883
Park	51	YB09566	$838	$863							$1,126	$2,827
Park	52	YB09567	$419	$431							$563	$1,413
Park	53	YB09568	$1,257	$1,294							$1,689	$4,240
Park	54	YB09569	$838	$863							$1,126	$2,827
Park	55	YB09570	$1,674	$1,725		$1,604		$407			$3,582	$8,992
Park	56	YB09571	$838	$863		$1,604		$407			$2,458	$6,170
Park	57	YB09572	$1,257	$1,294		$1,604		$407			$3,021	$7,583
Park	58	YB09573	$1,257	$1,294							$1,689	$4,240
Park	59	YB09574	$1,257	$1,294							$1,689	$4,240
Park	60	YB09575	$838	$863		$1,604		$407			$2,458	$6,170
Park	61	YB09576	$931	$957							$1,250	$3,138
Park	62	YB09577	$838	$863		$1,604		$407			$2,602	$6,314
M	5	YB15725	$233	$240							$313	$786
M	7	YB15727	$512	$527							$688	$1,727
M	9	YB15729	$884	$911							$1,189	$2,984
M	11	YB15731	$326	$335							$438	$1,099
M	13	YB15733	$279	$288							$375	$942
Park West												
Park	5	YB09520			$3,425						$2,268	$5,693
Park	40	YB09555			$12,557	$4,809	$36,472	$2,035	$15,443	$6,037	$51,078	$128,431
Park	42	YB09557			$3,425	$1,604		$407	$4,970	$24,404	$23,051	$57,861
Park	43	YB09558	$279	$288	$6,850	$2,672		$814			$7,220	$18,123
Park	44	YB09559	$605	$623	$3,425	$1,604	$14,830	$814	$16,565	$5,784	$29,302	$73,552
Park	48	YB09563			$3,425	$1,604	$17,134	$1,220		$1,735	$16,633	$41,751
Park	50	YB09565	$884	$911							$1,189	$2,984
M	17	YB15737			$3,425						$2,268	$5,693
		Project Total	$32,440	$33,403	$57,082	$26,726	$95,690	$10,173	$36,978	$42,009	$221,502	$556,003

APPENDIX 2

ANALYTICAL PROCEDURES

(Loring Labs of Calgary)

629 Beaverdam Rd. N.E.
Calgary, Alberta T2K 4W7

LORING LABORATORIES LTD.

E-mail: loringll@cadvision.com

Tel: (403) 274-2777
Fax: (403) 275-0541

SAMPLE PREPARATION

GEOCHEMICAL SOIL OR SEDIMENT

Dry, pass thru 80 mesh sieve. Collect entire -80 mesh portion and homogenize. Place in sample bag. Discard +80 mesh fraction unless otherwise advised.

ASSAY ROCK OR CORE

Dry, if necessary, primary and secondary crush, homogenize, riffle to pulp size, (approx 250-300 g) and ring pulverize to -140 mesh, (standard prep.)

629 Beaverdam Rd. N.E.
Calgary, Alberta T2K 4W7

LORING LABORATORIES LTD.

E-mail: loringll@cadvision.com

Tel: (403) 274-2777
Fax: (403) 275-0541

ANALYTICAL PROCEDURES FOR 30 ELEMENTS ICP

A) 0.500 gm of sample is digested with 3 ml of 3-1-2 HCL-HNO3 at 95 degree C for one hour and is diluted to 10 ml with water in test tube.

B) The test tubes are shaken and the solution is mixed thoroughly.

C) The samples are loaded into auto-sampler of the ICP unit and run with standard when the setup is completed.

GEOCHEMICAL ANALYSIS OF GOLD BY FIRE ASSAY/AA

A) Weigh 10, 20 or 30 grams of sample into a fire assay crucible with appropriate amount of fluxes and flour and mix.

B) Add palladium inquart.

C) Place crucible in assay furnace and fuse for 40 minutes.

D) Pour samples, remove slag and cupel buttons.

E) Place bead in test tubes and dissolve with aqua-regia.

F) After dissolution is completed, make to appropriate volume and run against similarly prepared gold standards on Atomic Absorption unit.

APPENDIX 3

DIAMOND DRILL HOLE LOGS

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-01

PROPERTY : SWIFT RIVER

UTM E 381166 E
UTM N 6672446 N
Elev 1124 m

Azimuth 50°
Inclination -46°
Core Size NQ

Survey Type : Acid test

	depth	dip

Depth 266.77 m
Recovery %
Logged by: DJT & BGJ
Drilled by: DJ Drilling
Date: 6-Jul-97

FROM m	TO m	Sample No.	length m	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
0.00	9.15														overburden				casing in till, boulders
9.15	13.87			<1%	blebs				100%			tr	5%	epdt	andesite	pale to	f gr	stressed	act veins (5-25 mm) @45° c.a.
														feld	tuff	dk green		laminations	some epdt present, mostly f gr but some c.g. areas
																			qtz veining (3-4mm) 45° to 75° c.a. @ 12.80 m
13.87	14.93			<1%	stringers	60%			40%			none	2%	epdt	andesite	dk green	m to c gr	massive	only very little qtz veining, 1mm wide and 75°
					dissem										tuff				to ca. qtz blebs approx 12 mm. Reverse graded xtal
																			to fragmental andesitic tuff @ 45° ca.
																			mostly ghost feld and other grains at 2mm in
																			fine matrix w/ biotite alt. 9.70-9.75 ; 9.77-
																			9.84 ; 11.11-11.16 ; 11.73-11.91 ; 12.03-12.09
14.93	27.67			<1%	string	20%			80%			2%	15 to	epdt	andesite	lt to dk	f to m gr	consistently	act veining surrounding qtz
					blebs								20%		tuff	green &		laminated	2-25 mm 70°-90° to c.a.
					clots											brown			laminations 1to 10mm thick
																			stress cracks filled w/ act as well
																			Qtz/act fract filling occurs periodically b/w
																			20.50 &22.60 talcose angular frags 15.36-
																			15.56. 15.75 lam become more even.
																			sandy clastic intervals 14.93 - 27.67; 20.66-21.37 ;
																			21.42-22.33 ;22.80-23.61 ; 23.87-24.50 ; 25.47-25.59
																			(TS SR 97-03 contact)
27.67	28.32	97401	0.65	<1%	clots	100%						2%	5%	chl	andesite	dk grn	f to m gr	laminated	more thinly lam than previous interval
					dissem										tuff	& br			qtz/act veins 10-15mm 45° c.a.
																			calc present in small fractures & in rock
																			iron oxides present in some fractures 90° to c.a.
28.32	29.13	97402	0.81	15%	layers	70%		20%	10%			4%	<1%	act	and tuff	dk grn	most m,	laminated	and tuff that has mag layers throughout @ 2 to
					blebs												some c gr		10mm width 85°-90° c.a.
					clots														also cp, po & act layers, same size & angle
																			pyrite blebs & clots lithic frags inside 2.5 cm act layer
																			zinc zap purplish, poss some Zn
																			last 20cm calc assoc w/ act xtals
																			(TS SR97-05 and TS SR97-06)
29.13	30.92	97403	0.79	2%	aligned	90%	tr		10%			5%	nil	epdt	act skarn	dk grn	m gr	massive int	epidote & clay altered feldspars
					clots									clay		lt grn &		w. mag lam	sphal conc increases downward through interval

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-01

PROPERTY : SWIFT RIVER

				depth	dip
UTM E	381166 E	Azimuth	50°		
UTM N	6672446 N	Inclination	-46°	Survey Type : Acid test	0 / 0
Elev	1124 m	Core Size	NQ		0 / 0

Depth 266.77 m
Recovery ____ %
Logged by: DJT & BGJ
Drilled by: DJ Drilling
Date: 6-Jul-97

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
30.92	34.02			2%	clots	90%		10%				3%	nil	chl	act skarn	lt -med green	m to c gr	massive	med to c gr act; chlorite alteration
																			2 major mag veins: 10cm @ 31.71m & 80°-90°ca
																			and 4cm thick @ 32.84m @ 50° to core axis
																			mag in bands from 33.10m 5% sulfides over 30cm
34.02	39.09			<1%	clots	85%		5%	10%			5%	nil	epdt &	skarn	white &	m to c gr	irreg.	sulfides mostly @ end of interval
					stringers									minor	marble?	green		convolutions	some @ 50 cm past beginning, 30 cm in, &
														clay					20 cm before end. Po along calc veins.
																			calc-silicate veining surround by calc 5-25mm
																			at 5°-20° to core axis. poss exhltve carbonate.
																			some angular calc-silicate outlines poss lithic frags.
																			unmineralized marble w/ 5% magnetite
39.09	40.30	97404	1.21	8%	stringers	80%	5%	15%				4%	-	minor	actinolite	dk green	m to c gr	massive w/	po occurs as stringers; consistent w/ tuff
					clots									epdt &	skarn	black		mag & sulf	banding orient. Py in clots, Sph w/ po. mag
														chl				laminations	lam, uneven dist. <2mm calc veining 20° ca, some
																			w/ black chl. calc veins younger than mag & po;
																			py clots are the most recent
40.30	41.36	97405	1.06	4%	stringers	75%	10%	15%				5%	-	chl	andesite	dk green	m to c gr	massive w/	multistage chl-calc-py vein 10mm wide at 10° ca
					and clots										tuff			mag lam	from 40.90 to 41.30. Py later overprint
																			Sph in clots conc near calc veins
41.36	42.40	97406	1.04	3%	clots and	70%	20%	10%				6%	4%	chl &	andesite	dk green	m to c gr	black mag	ghost xtals(feld?) repl by calc; mag laminations
					stringers								vein	minor	tuff			laminations	calc, chl, py, qtz veins 10 mm wide begins at end
														epdt					4 mm chl-calc vein at 5° ca 42.07 to 42.44m
																			xcuts mag & other mineralization. Sph localized
																			in clots in proximity to the minor epdt alt.
42.40	43.17	97407	0.77	3%	clots	70%	30%					7%	-	chl	actinolite	dk green	m to c gr	massive w/	calc-chl veins cut mineralization; Sph alone or
															skarn			mag lam	associated w/po. amt calc increases downsection.
																			calc-chl, py vein 10-50mm from 42.40 to 42.72 m
																			and xcuts mag
43.17	43.84			<1%	clots		10%	80%	10%			1%	-	chl	andesite	dk green	m to c gr	massive	less calc than in previous intervals.
															tuff				

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-01

PROPERTY : SWIFT RIVER

Depth 266.77 m
Recovery %
Logged by: DJT & BGJ
Drilled by: DJ Drilling
Date: 6-Jul-97

UTM E 381166 E
UTM N 6672446 N
Elev 1124 m
Azimuth 50°
Inclination -46°
Core Size NQ
Survey Type : Acid test

depth	dip
0	0
0	0
0	0

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
43.84	44.50	97408	0.66	15%	lrg clots	70%	30%					-	-	chl	act	dk green	m to c gr	massive	Sph surrounding the po
															skarn				
44.50	45.06			tr	stringers	50%			50%			<1%	-	chl	act	dk green	m gr	faint lam	lithology could possibly be altered andesite
															skarn				sulfides in small stringers; Po along lam, Cpy xcuts
																			lam; epdt alt on ghost xtals.
45.06	46.01	97409	0.95	12%	lam	80%	tr	10%	10%			<1%	-	chl &	act	med-dk	f to m gr	laminated	laminations 45° ca; very minor calc vein .5mm
														minor	skarn	green			45° ca.
														epdt					
46.01	48.89			1%	clots		70%	10%		20%		1%	15%	chl &	tuffaceous	blk, brwn	f to m gr	laminated	up to 47.26 rock fairly fractured chloritized w/ qtz
														clay	siltstone	& dk green			veins & minor calc & clay alt 42cm in for 3cm, lam
																			at 45° ca; mag, po, & minor cp along calc veins; & chl
																			veins 47.40 chl vein 5mm w/ po, xcuts lam 15° ca.
48.89	49.70	97410	0.96	2%	clots	90%	10%					-	15%	chl	tuffaceous	blk	f to m gr	laminated	first 30 cm lam, convoluted, irregular; Po clots in
															siltstone	dk brwn,			qtz veins, minor calc and in chl veins; qtz & chl veins
																green/wht			usually together, concordant w/ lam 45° ca.
																			ghost xtals present.
49.70	50.11			<1%	stringers	100%						tr	10%	chl	tuffaceous	green,	f to m gr	laminated	1mm calc vein 90° to laminations at 50.03m. Po in
															siltstone	dkbrwn, &			chl lam w/ qtz
																white			
50.11	50.78	97411	0.67	2%	stringers	60%	10%	30%				tr	10%	chl,	tuffaceous	green,	f to m gr	laminated	sulfides in chl and qtz veins concordant w/ lam;
					clots									epdt, &	siltstone	dk brwn,&			minor epdt and calc occur together surrounding chl alt
														calc		white			
50.78	50.97			<1%	stringers	50%		50%				tr	10%	chl,calc	tuffaceous	green,	f to m gr	laminated	minor calc assoc w/ chl and qtz veins
															siltstone	& dk brwn			chloritized bt hornfls
50.97	51.50	97412	0.53	2%	clots	25%	75%					tr	5%	calc,epdt	ibbd	gmish	m to c gr	massive	acicular act and Sph together. qtz-chl
															marble &	white		irregular	veins xcut lam at 51.36-51.43m - epdt alt
															andesite				50.97->51.12 impure marble, ghost xtals, poss
															tuff				frags at 51.38->51.48.

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-01

PROPERTY : SWIFT RIVER

Page 4 of 22

UTM E 381166 E | Azimuth 50° | Survey Type : Acid test | depth 0 | dip 0
UTM N 6672446 N | Inclination -46° | 0 | 0
Elev 1124 m | Core Size NQ | 0 | 0

Depth 266.77 m
Recovery %
Logged by: DJT & BGJ
Drilled by: DJ Drilling
Date: 6-Jul-97

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
51.50	52.38	97413	0.88	2%	stringers	30%	70%					tr	5%	chl, clay & m epdt	tuffaceous siltstone	green & brown	f to m gr	laminated	sulf occur in chl and qtz veins conc and xcutting lam lam 45° ca, one vein at 15° ca. clay after ghost feld?
52.38	53.36			<1%	clots	90%	10%					1%	5%	chl, & clay	tuffaceous siltstone	green & brown	f to m gr	laminated	sulf in chl; minor act; <1mm qtz veins xcut lam at 10° to ca. ghost flat shards.
53.36	54.60	97414	1.24	2%	stringers & clots	30%	70%					tr	5%	chl, epdt	tuffaceous siltstone	green & brown	f to m gr	laminated	most Sph is w/ epdt alt b/w 54.30 and 54.60 and 53.63-53.80; some calc w/epdt; lam 45° ca, irreg in vicinity of alt. chl veining w/ Po cuts lam ghost remnants clay, aligned flat
54.60	55.20			1%	clots, veins & blebs	90%	10%					tr	5%	epdt chl	tuffaceous siltstone	green & brown	f gr	laminated	Po in epdt and calc veins concordant w/ lam 10 mm thi 54.90m.
55.20	55.88	97415	0.68	3%	layers, clots blebs	15%	70%		15%			tr	5%	epdt chl	tuffaceous siltstone	green & brown	f to m gr	evenly laminated	Po and cp occur in layers as blebs and clots, parallel to bedding. Sph is in clots throughout section. chl and calc veining along bedding. Prominent epdt alt
55.88	56.17			tr	-							tr	5%	epdt chl	tuffaceous siltstone	green & brown	f to m gr	evenly laminated	chl and calc veining along bedding. Prominent epdt alt.
56.17	57.27	97416	1.10	4%	clots stringers	20%	80%					tr	2%	chl epdt	andesitic tuff	dk to lt green	m gr	fractured and veined	Sph occurs in clots throughout rock. extensive chl veining throughout as well as large epdt alt sections. calc veins near 56.95m; also blebs angular chl/talc outlines poss altered breccciated or frag-rich zone.
57.27	57.94	97417	0.67	7%	clots blebs	20%	80%					-	5%	chl	andesitic tuff	dk to lt green	m to c gr	fractured and veined	Sph occurs mostly around Po. two large veins of Sph & Po at 57.35-57.45m. 20-30mm wide at 50° ca. act vein at 57.55 at 20° ca. Qtz veins at 90° ca, 5-10mm width. chl veins at 57.70 at 5° ca, 10mm width. ghost feld, chl/act/talc altered angular frags

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-01

PROPERTY : SWIFT RIVER

				depth	dip
UTM E	381166 E	Azimuth	50°		
UTM N	6672446 N	Inclination	-46°	Survey Type : Acid test	0 / 0
Elev	1124 m	Core Size	NQ		0 / 0
					0 / 0

Depth 266.77 m
Recovery %
Logged by: DJT & BGJ
Drilled by: DJ Drilling
Date: 6-Jul-97

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
57.94	59.18	97418	1.24	3%	clots	60%	40%					-	5%	epdt	skarnified	lt - dk	m to c gr	splotchy,	extensive epdt to 58.65m. chl veining 2-10mm at
					blebs									chl	tuffaceous	green		disrupted	45° ca. 58.36m. epdt alt disrupts laminations.
					stringers										siltstone			laminations	chl alt usually follows lam. past 58.65 lam more
																			regular 45° ca. rhodochrosite or mag? patch 40 cm
																			in, frags end, bt hmfls evenly lam w/ minor ghost
																			xtals
59.18	59.53			tr	-							-	5%	chl	tuffaceous	green &	f gr	laminated	evenly laminated. Minor <1mm qtz veins
														m epdt	siltstone	brown			minor calc vein
59.53	60.18	97419	0.65	3%	stringers	80%	20%					-	2%	epdt	tuffaceous	green &	f to m gr	laminated	sulfides in epdt and calc zones at 59.53-59.64;
															siltstone	brown			59.73-59.90 and 60.08-60.18. as well as in <2mm
																			chl veinlets. epdt alt roughly concordant w/ lam
																			at 45° ca.
60.18	60.70			tr	-							-	5%	chl	tuffaceous	green &	f gr	laminated	
															siltstone	brown			
60.70	61.69	97420	0.99	3%	clots	80%	5%		15%			-	3%	chl	tuffaceous	green &	f to c gr	laminated	qtz-chl veins disrupt laminations. sulfides xcut
					stringers									epdt	siltstone	brown			lam, assoc w/ chl and epdt alt. chl poss after
														calc					act.
61.69	63.18	97421	1.49	3%	clots	65%	5%		30%			-	3%	chl	tuffaceous	green &	f to c gr	laminated	sulfides conc w/ calc and epdt alt at 62.13m for 40mm
					stringers									epdt	siltstone	brown			and 1mm stringers in chl and qtz lam.
														calc					
63.18	64.64	97422	1.46	3%	clots	80%			20%			-	4%	chl	tuffaceous	green &	f to c gr	laminated	3% of rock is qtz veined along w/ chl-Po-cp.
					stringers									m epdt	siltstone	brown			minor relic xtals and shards. minor irregs in lam
																			soft sed deformation.
64.64	66.00	97423	1.36	2%	clots	80%			20%			-	2%	chl	tuffaceous	green &	f to c gr	laminated	act veins 3mm xcut lam; 1mm calc veins, chl
					stringers									act	siltstone	brown			pseudomorphs act; sulf w/ chl and calc.
														calc					calc alt of ghost feld.
66.00	67.41	97424	1.41	2%	clots	60%			40%			-	7%	act	tuffaceous	green &	f to c gr	laminated	laminations are wavy for 15cm at 66.60;
					stringers									chl	siltstone	brown			qtz/act veining. ghost felds and shards
67.41	68.22	97425	0.81	3%	clots	50%			50%			-	3%	chl or	tuffaceous	green &	f to c gr	laminated	qtz and chl veining increases; laminations becoming
					stringers									talc	siltstone	brown			disturbed and overprinted. ghost feld and shards.

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-01

PROPERTY : SWIFT RIVER

UTM E 381166 E
UTM N 6672446 N
Elev 1124 m

Azimuth 50°
Inclination -46°
Core Size NQ

Survey Type : Acid test

depth	dip
0	0
0	0
0	0

Depth 266.77 m
Recovery %
Logged by: DJT & BGJ
Drilled by: DJ Drilling
Date: 6-Jul-97

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
68.22	69.21			<1%	stringers	90%			10%			-	4%	chl	tuffaceous siltstone	dk green	f.gr	laminated	laminations becoming wavy and crenulated, esp qtz rich lam. ghost feld and shards.
69.21	70.22	117451	1.01	1%	clots	65%	5%		30%			-	15%		tuffaceous siltstone	dk green	f to c gr	laminated	laminations increasingly disrupted by cg qtz veins and chlorite. poss alt andesite frags on tuff deposition
70.22	71.00	117452	0.78	5%	clots, dissem	60%	10%		30%			-	-	chl epdt	act skarn	dk green	m to c gr	massive	act skarn 70.22-70.45; epdt & qtz veined bt hornfls 70.45-71.00m; most mineralization in skarn. Poss andesitic tuff.
71.00	71.65	117453	0.65	2%	clots stringers	70%	10%		20%			-	20%	chl epdt, act	andesite tuff	dk green, white	f to c gr	disrupted laminations	extensively qtz/act veined; calc minor component; chl after act.
71.65	72.45	117454	0.80	2%	clots stringers	70%	10%		20%			-	5%	act, epdt, chl	andesite tuff	dk green, white	f to c gr	disrupted laminations	Po, cp w/ chloritized act and epdt . Portions skarnified chl veinlets xcut patches of epdt . poss alt frags, ghost shards.
72.45	72.98			tr								-	30%	chl, talc act	andesite tuff	dk green, white	f to c gr	disrupted laminations	qtz rich biotite hornfels. qtz vein surrounded by act from 72.45 - 72.75m.
72.98	74.00	117455	1.02	2%	clots, stringers blebs	80%			20%			-	15%	chl, epdt talc	andesite tuff	dk green, white	f to c gr	disrupted laminations	qtz rich biotite hornfels. disrupted lam, qtz-chl areas. poss altered andesite.
74.00	74.48			<1%	clots	100%						-	6%	epdt	andesite tuff	green & brown	f to m gr	laminated	minor epdt alt. qtz/act veins, c gr. concordant w/ lam a 45° ca. some qtz-rich lam slightly wavy. clay-alt shards.
74.48	75.32	117456	0.94	2%	clots	80%			20%			-	40%	-	andesite tuff	green & white	f to c gr	disrupted laminations	calc vein w/ clay 10-12mm thick at 15° ca from 75.17 to 75.30. qtz veins to 2mm thick xcut laminations in same area. bt hornfls disrupted by qtz/act.
75.32	76.23	117457	0.89	2%	clots stringers	90%			10%			-	5%	-	andesite tuff	green & white	m to c gr	disrupted laminations	partially skarnified qtz/act. disrupted bt hornfls, qtz-rich ghost xtals

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-01

PROPERTY : SWIFT RIVER

Page 7 of 22

UTM E 381166 E
UTM N 6672446 N
Elev 1124 m

Azimuth 50°
Inclination -46°
Core Size NQ

Survey Type : Acid test

depth	dip
0	0
0	0
0	0

Depth 266.77 m
Recovery %
Logged by: DJT & BGJ
Drilled by: DJ Drilling
Date: 6-Jul-97

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
76.23	79.53			<1%	clots	90%			10%			-	3%	clay	andesitic	brown	f to m gr	laminated	irregular qtz-rich laminations. main lams at
														talc,	xtal tuff	green &			approx 90° ca. mod epdt alt coarse zone from 77.70-
														chl		white			77.80. And tuff 78.07-78.30, alt zone w/
														m epdt					black glass shards. TSSR 97-07 79.03-79.20m
79.53	80.94	117458	1.41	4%	clots	80%			20%			-	60%	epdt,	andesitic	green &	f to c gr	disrupted	qtz/act rich bt hornfls. dk brown-black flat 2.5m
					stringers									chl	xtal tuff	white		laminations	poss glass shards. fine evenly lam disrupted by
																			c gr qtz rich zones.
80.94	81.69	117459	0.75	1%	veins,	15%	tr		85%			-	10%	epdt	andesite	lt - dk	f to m gr	laminated	almost all sulfides are located in qtz veins 3-
					blebs									chl	tuff	green			30mm wide at 80° ca. act clots and blebs. crenulated
					stringers											black			qtz-rich layers, ghost shards.
81.69	82.58			tr								-	20%	chl	andesite	lt - dk	f to c gr	laminated	qtz consists in veins. one large vein 81.96-82.04
														m epdt	tuff	green		& veined	is 80 mm wide parallel to lam. smaller qtz veins
																black			2mm. act vein at 81.66 about 15mm wide
																			and 5° ca.
82.58	83.33	117460	0.75	7%	clots				100%			-	75%	epdt	andesite	lt-dk	f to c gr	laminated	qtz is in blebs, clots, and veins throughout the
					blebs										tuff	green			section. qtz/act vein at end of section,
					along														10mm wide and 45° ca.
					veins														
83.33	83.93	117461	0.60	1%	clots &		10%		90%			<1%	10%	epdt	andesite	lt-dk	f to c gr	thinly	one calc vein runs near perpendicular to bedding
					veins										tuff	green		laminated	at 3mm. crenulated qtz-rich layers, ghost shards.
83.93	84.98	117462	1.05	1%	clots &	50%		10%	40%			tr	45%	epdt	andesite	green &	f to c gr	disrupted	Po, Cpy assoc w/ qtz veining. fine lam disturbed
					veins									chl	xtal tuff	white		laminations	by irreg qtz-calc-act veins. ghost shards.
														m talc					
84.98	98.77			<1%	clots	50%		50%				tr	20%	epdt	andesite	dk green	f to m gr	laminated	from 86.56-86.59 3mm qtz veins w/ sulfide
														chl	xtal tuff	white		and veined	clots (Py).
																			from 87.90-88.96 qtz-calc-chl vein w/ Py clots
																			88.64 15mm qtz-calc vein, vuggy
																			88.27 20mm vuggy qtz-calc vein
																			88.45-88.47 2-8mm qtz layers concordant w/ lams at
																			75° to ca.
																			88.70-89.79 qtz-chl rich zone w/ laminations

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-01

PROPERTY : SWIFT RIVER

				depth	dip
UTM E	381166 E	Azimuth	50°		
UTM N	6672446 N	Inclination	-46°	0	0
Elev	1124 m	Core Size	NQ	0	0
		Survey Type :	Acid test	0	0

Depth 266.77 m
Recovery %
Logged by: DJT & BGJ
Drilled by: DJ Drilling
Date: 6-Jul-97

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
84.98	98.77																		increasingly irregular and crenulated.
																			89.18-minor epdt alt <10 mm
																			89.42 pink calc and clay vein
																			89.55-89.58 calc vein w/ <5% epdt, <2% Py clots,
																			concordant w/ lam at 45° ca.
																			89.79-89.87 vuggy qtz-calc vein w/ 3% mag, 5%
																			talc, <1% Py.
																			ghost feld and flattened glass shards throughout.
																			89.87-91.00 lam pale dk green hornfls w/25%
																			crenulated qtz lam. 91.31-91.63 v irreg qtz veins
																			and patches disturbing lam. at 91.25 there is a decr
																			in biotite such that bt hornfls is no longer appropriate.
																			91.77-91.99 4 qtz veins 8-15mm thick
																			disturbing lam. 92.16-92.42 irreg qtz-rich
																			zone w/ 2% mag, <1%calc, <1% epdt.
																			94.18-94.51 1%sulfides mainly Py and cp
																			94.51-95.36 1-2% ghost frags, some irreg 1-
																			3mm qtz rich lam. 95.36-98.14 irreg qtz lam
																			and patches. some qtz cuts silt lam.
																			98.14-98.77 qtz rich layers 1-2mm thick. 4%
																			relic feld & shards. 2 qtz veins at 20° ca, 2 mm wide
98.77	99.77	117463	1.00	1%	clots			60%	40%			1%	5%	talc	tuffaceous	green &	f to m gr	laminated	most sulf & mag conc in wtz-calc-epdt veins b/w
														m epdt	siltstone	brown			98.77-98.85 and 98.91-98.99 & 99.65-99.77
														& clay					ghost shards, fairly flat lam w/ only minor cren
																			in qtz layers. poss tremolite in veins-acicular
																			radiating vitreous, colourless.
99.77	101.04			<1%	blebs	100%						<1%	10%	talc	silty	green &	f gr	laminated	Po in xcutting qtz vein w/ talc and mag. dk green
														m epdt	andesite	brown			talc-filled <10mmx1mm tension cracks @100.55-
															tuff				100.61m. 100.50 - 30mmqtz layer irreg qtz veins, poss
																			alt fiamme b/w 100.7-100.82m. TSSR97-08 99.84 - .9
101.04	101.63			<1%	blebs			80%	20%			2%	65%	ep, calc	andesite	green &	m to c gr	disturbed	irreg qtz-feld-calc-epdt-mag areas. poss frag-rich
														k-feld	tuff	white		laminations	area, frags 10-25mm outlined by talc alt. 1-2mm
														talc					ghost shards in f gr matrix, qtz not in definable veins
101.63	102.72			tr								1%	6%	talc	andesite	dk green &	f gr	laminated	dk green-blk chl or talc-filled tensional fractures
														calc	tuff	greyish			at 90° ca; lam 45° ca, epdt alt xtals up to 2mm, relicts
101.63	102.72															green			8%. lam and qtz-rich layers crenulated.

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-01

PROPERTY : SWIFT RIVER

Depth 266.77 m
Recovery %

UTM E 381166 E Azimuth 50° Survey Type : Acid test depth 0 dip 0
UTM N 6672446 N Inclination -46° 0 0
Elev 1124 m Core Size NQ 0 0

Logged by: DJT & BGJ
Drilled by: DJ Drilling
Date: 6-Jul-97

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
102.72	103.16			<1%	blebs			100%				1%	60%	talc	andesite	green &	c gr w/	disrupted	qtz alt frag-rich zone. irreg patches of qtz-kfeld-
					stringers									epdt	tuff	white	f gr areas	laminations	epdt, talc-act and calc.
														act					
103.16	103.75			<1%	clots	100%								act	andesite	dk green	f gr	laminated	2-3% ghost xtals and shards. dk grn talc or chl
														epdt &	tuff	white		crenulated	filled tension cracks perp to laminations. some
														talc					xcutting of lam by qtz layers. discont qtz-rich
																			spindle-shapes and strings <1 cm long.
103.75	104.45			tr	dissem			100%				<1%	25%	m epdt	andesite	dk green	f gr	laminated	lam disrupted by irreg qtz-feld-act-epdt veins. some
															tuff	white			unaltered feld xtals 1.5mm. alt shards xtals 3-4%
																			minor calc w/ the epdt .
104.45	105.73	117464	1.28	2%	dissem &	50%		40%	10%			<1%	20%	m talc	andesite	dk green	f gr	laminated	25mm calc-epdt-qtz vein w/ Po at 104.47 and 104.97
					clots										tuff	white		minor cren	calc, epdt , feld, qtz, Py, Po zone from 105.36 to 105.7
105.73	112.15			<1%	clots			60%	40%					m epdt	silty and	green,	f gr	laminated	bt component higher amt ghost xtals and shards
															tuff	brown &			decreasing; qtz-rich layers 1-2.5mm weakly
																white			crenulated, some discontinuous, concordant.
																			qtz act zones: 106.50-106.54 xcuts lam
																			106.70-106.72 2% Py, 106.74-106.82 3% Py,
																			107.27-107.31 2% Py, 107.60-107.88 10% Py;
																			108.64-109.90 2% Py, 111.07-111.53 silicic
																			f gr lam thinner veins w/greater proportion of
																			sulfides, Py w/ act 1-2%. minor calc. 111.78-
																			112.15 highly silicic & k-feld-rich partly
																			epidotized hornfls w/ minor calc. lam disturbed
																			where present, core broken, poss frags.
112.15	117.01			<1%	clots	40%		60%				tr	5%	m act	tuffaceous	green &	f gr	even	112.53-20mm w/ act, Po veins. 112.55-113.95
					w/in vns									epdt	siltstone	brown		laminations	siliceous zone w/disrupted lam, c gr feld, act and mod
																			epdt alt. poss alt frags. 114.19-114.24 5% Py,1%
																			mag in qtz-feld-act-calc-rich c gr zone. 114.89-
																			115.00 mod epdt alt qtz-act. 115.15-115.19 qtz,
																			act band. 115.90-116.71 act-qtz-feld layers and
																			alt frags(irreg act outlines) interspersed thru reg

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-01

PROPERTY : SWIFT RIVER

UTM E 381166 E
UTM N 6672446 N
Elev 1124 m

Azimuth 50°
Inclination -46°
Core Size NQ

Survey Type : Acid test

depth	dip
0	0
0	0
0	0

Depth 266.77 m
Recovery %
Logged by: DJT & BGJ
Drilled by: DJ Drilling
Date: 6-Jul-97

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
112.15	117.01																		lam bt hornfls. 116.84-116.95 mod epdt alt act-
																			qtz-kfeld zone w/ minor calc, lam disrupted or
																			overprinted.
117.01	118.11	117465	1.10	1%	clots		100%					<1%	10%	major epdt	epidote skarn	pale green	f to m gr	irreg laminated	ep, act, calc, Sph, mag, minor gt. uneven qtz-rich lam, discontinuous. approx 75% epdt dote.
118.11	118.78	117466	0.67	1%	clots & stringers		100%					3%	-	epdt gt,& talc	epdt/gt skarn	green & brown	c gr	irreg laminations	2 mag bands. bands of c gr (2mm) brownish, porphyroblastic 15%. irreg act/talc patches poss orig tuff andesitic hornfls.
118.78	119.78	117467	1.00	<1%	clots		100%					<1%	1%	epdt gt & talc	epdt/gt skarn	pale green	f-c gr	massive or laminated	massive is in qtz-rich zone, lam in epdt & talc zone 1st half -garnet rich 50%. 2nd half - epdt predominant. 119.47-119.55 - talc-alt zone gt c gr remnant ghost lam, act outlines/poss alt shards.
119.78	123.34			<1%	clots			90%	10%			-	20%	epdt silicic	tuffaceous siltstone	green & brown	mostly f gr	evenly laminated	c gr Py bearing zones/veins of act/qtz/calc b/w 120.81-120.92m. highly silicic zone, laminated w/ kfeld, mod epdt alt. majority interval has some relict shards, minor cren of qtz-rich layers, infrequent qtz/act layers or splotches.
123.34	125.73			<1%	clots		5%	85%	10%			<1%	20%	m epdt	tuffaceous siltstone	green & brown	f gr	fine, evenly laminated	f gr sulfides in qtz/act-epdt patches approx 7% qtz/act patches (irreg). 1% ghost xtals.
125.73	126.52	117468	0.79	3%	lrg to 2mm xtals		100%					4%	4%	epdt, gt	gt skarn	brown & green	c gr	massive	15cm epidotized lam hornfls followed by c gr gt skarn w/ poorly defined qtz/mag patches or veins c gr Sph, calc. some remnant laminations visible.
126.52	127.47	117469	0.95	1%	blebs		100%					4%	1%	m epdt	gt skarn	greenish brown	c gr	massive	c gr gt/act skarn w/ f gr act patches oriented 45° ca.
127.47	128.55	117470	1.08	4%	c gr blebs		100%					1%	2%	m epdt	gt skarn	greenish brown	f-c gr	crudely laminated	minor oxidation of Sph. ghost xtals replaced by calc, poss frags-angular act outlines Sph blebs crudely banded.

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-01

PROPERTY : SWIFT RIVER

UTM E	381166 E	Azimuth	50°	Survey Type : Acid test	depth	dip	
UTM N	6672446 N	Inclination	-46°		0	0	
Elev	1124 m	Core Size	NQ		0	0	
					0	0	

Depth 266.77 m
Recovery %
Logged by: DJT & BGJ
Drilled by: DJ Drilling
Date: 6-Jul-97

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
128.55	129.57	117471	1.02	3%	c gr blebs	5%	95%					15%	1%	epdt	gt skarn	greenish brown	f-c gr	crudely laminated	originally lam hornfls-interpret from remnant laminations. mag clots up to 15mm in crude bands. f gr act patches, ghost xtals. gt skarn grades into epidotized lam hornfls.
129.57	131.53			<1%	f gr in veinlet			100%				-	5%	epdt 40%	tuffaceous siltstone	green & grey	f to m gr	laminated	epdt alt, skarnified laminated to less alt lam bt hornfls. irreg qtz/act veinlets. epdt alt decreases downward, unalt bt hornfls has k-feld silicic zones w/ wavy & irreg lam.
131.53	132.62	117472	1.11	3%	clots in veins	5%	10%	80%	5%			-	25%	epdt	tuffaceous siltstone	greenish	f gr	laminated	sulfides conc in act-rich patches & veins; lam wavy & disrupted-poss minor soft sed deformation & altered frags, relict shards; qtz/talc veinlet xcuts lam. calc vein from 131.53-131.63 contains grey hard material, poss broken hornfls frags?
132.62	133.96	117473	1.34	2%	stringers veinlets	40%		60%				<1%	4%	epdt, calc	tuffaceous siltstone	green & grey	f to m gr	laminated	irreg lam, disrupted by qtz-rich spindle-shaped blebs. sulf assoc w/ epdt /calc in irreg veins or oriented patches. ghost shards, poss alt frags.
133.96	134.84			-								-	7%	m epdt	tuffaceous siltstone	green & brown	f gr	laminated	10mm calc vein at 134.02 contains angular shards of act/talc, poss from minor brecciation of hornfls wavy lam, 1% ghost xtals
134.84	135.57	117474	0.73	3%	veinlets clots	10%		70%	20%			<1%	4%	m epdt	tuffaceous siltstone	greenish grey	f gr	laminated	disrupted irreg wavy fine lam, lensoid bodies of act containing most of the sulf, often xcutting lam - fine lam interspersed w/ m gr act in ghost xtals, poss turbidite producing, convolute lam?
135.57	137.80			tr	blebs			100%				-	8%	m epdt	tuffaceous siltstone	greenish grey	f gr	laminated	wavy lam-ripple xlam; 1mm qtz veins xcut lam, no offset. 1mm talc veinlets w/ bleached margins. 3 c gr qtz-rich & act layers over 25mm. at 136. 60-136.80 more bt, more alt ghost shards lam even to wavy.

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-01

PROPERTY : SWIFT RIVER

Depth 266.77 m
Recovery %

UTM E 381166 E Azimuth 50° Survey Type : Acid test depth 0 dip 0
UTM N 6672446 N Inclination -46° 0 0
Elev 1124 m Core Size NQ 0 0
Logged by: DJT & BGJ
Drilled by: DJ Drilling
Date: 6-Jul-97

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
137.80	138.51	117475	0.71	10%	clots, & vein margins			90%	10%			1%	3%	m epdt oxid	tuffaceous siltstone	greenish grey	f gr	laminated	15-20mm wide calc veined w/ Py on inside margins and inside vein. no offset of xcut lam. some hollow cubes, oxidation.
138.51	140.15			-								-	5%	oxid talc	tuffaceous siltstone	greenish grey	f-c gr	laminated	broken - v. broken core, calc veined silicic, feldspar rich lam zones, wavy ripple xlam. holes from remnant sulfides (rusty). talc-qtz rich zones.
138.51	140.15																		
140.15	142.24			tr	blebs dissem		5%	55%	10%	30%		1%	5%		tuffaceous siltstone	green & brown	f gr	laminated	mag & andesite 142.22-142.24. sulf in last 40 cm of section, dissem and in veins. minor Sph in talc-calc veinlet 1mm wide. fine to even lam to qtz/act/talc patch 140.47-140.61 and 140.79 - 140.83 and 140.96-140.97. epdt inc down section.
142.24	146.89			tr	dissem			90%		10%		<1%	4%	epdt	andesite tuff	pale green	f-c gr	laminated	epdt/gt rich overprinting lam. tr calc NOTE: prev epdt alt zones w/ Sph had several % calc w/ epdt . 1mm thick calc vein w/ dk chl margins; qtz-feld rich zones -alt feld xtals along lam
146.89	160.68			1%	blebs & veinlets	60%		40%				<1%	15%	epdt chl	tuffaceous siltstone	green & brown	f gr	laminated	2-3mm calc vein 85° ca from 154.33 to 157.52; other offset veins at 70° ca. sulf conc in calc veins. 2 qtz-rich zones 40mm thick.
160.68	162.18	117476	1.50	3%	stringers clots	50%	10%	40%				<1%	5%	talc	tuffaceous siltstone	greenish grey	f gr	laminated	sulf conc in qtz/calc veins. calc vein xcuts qtz/Py rich vein most but not all sulfides in w/ lam laminar; ghost shards. 5 qtz-talc-Py-Po patches 20-40mm thick.
162.18	162.89			1%	clots & stringers		10%	90%				<1%	1%	chl	tuffaceous siltstone	lt green w/ brown bands	f gr	laminated	the few sulfides occur as stringers along veins that xcuts lam. tr of ghost shards.
162.89	163.80	117477	0.91	3%	clots blebs	90%	10%					<1%	8%	m epdt	tuffaceous siltstone	lt green w/ brown bands	f gr	laminated	fine lam disrupted by irreg c gr qtz-talc zones w/ the Po. 2% ghost shards, minor amt cren qtz-rich lam 1mm qtz veins at 20° ca (only 2).

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-01

PROPERTY : SWIFT RIVER

UTM E 381166 E
UTM N 6672446 N
Elev 1124 m

Azimuth 50°
Inclination -46°
Core Size NQ

Survey Type : Acid test

depth	dip
0	0
0	0
0	0

Depth 266.77 m
Recovery %
Logged by: DJT & BGJ
Drilled by: DJ Drilling
Date: 6-Jul-97

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
163.80	165.04	117478	1.24	3%	clots & stringers	90%	10%					20%	1%	epdt chl	altered andesite tuff	pale green & black	m to c gr	crudely laminated	crude mag bands, lam overprinted by epdt alt; dk green chl assoc w/ mag 1mm calc vein at approx ca for 1st half of sample.
165.04	165.74	117479	0.70	1%	clots & blebs	40%	20%	40%				tr	2%	calc, epd & chl	skamified andesite tuff	pale green	f to m gr	laminated & slightly overprinted	<1mm calc veinlet w/ Sph xcuts lam. lam disturbed poss alt frags.
165.74	166.46	117480	0.72	2%	stringers clots	10%	70%	20%				<1%	1%	calc, epd & chl	skamified andesite tuff	pale green	m gr	messed up laminations	fine fractures, chl, qtz, splotchy epdt alt. bleached margins beyond chl veins.
166.46	166.92			1%	clots blebs	70%		30%				-	15%	calc silicate talc	impure marble	white & pale green	m to c gr	massive	skamified, splotchy; first 20 cm 80% calc, then rest <20% calc. poss lithic frags defined by alt small holes b/w act fibres.
166.92	170.11			-								-	30%	m epdt calc, clay	bleached silicic felsic tuff	pl green & grey	f gr	laminated	166.97-167.72 mod epdt alt, less bleached, less k-rich lam hrnfls, fine, flat laminations. 167.72-167.96 impure laminated marble. 167.96-169.46 bleached lam hornfls, qtz-kfeld rich, most laminar some convoluted lam. 2mm calc vein 10° ca perp to bedding (45° ca) @ 169.44-169.70. 15° ca qtz vein 1-2mm thick 168.80-168.99.
170.11	171.11	117481	1.00	1%	dissem clots		100%					-	10%	m epdt calc	carbonate rich siltstone	pl greenis grey	f to m gr	laminated	40% cg Sph 170.19-170.21. 4mm calc vein w/ chl along calc 170.84-171.11; Sph crudely follows lam in vicinity of epdt and calc. prob orig carbonate-rich siltstone.
171.11	172.53			-								-	35%	m epdt	bleached silicic felsic tuff	pl greenis grey	f to c gr	laminated	1 chalky calc lam 4mm thick, pink-kfeld in silicic lam, some qtz c gr patches disrupt lam slightly.
172.53	172.93			-								<1%	2%	calc silict	impure marble	greenish white	m to c gr	massive	even qtz layer at 80° ca, 4 mm thick + impurities in calc. mag stringers at 172.92.

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-01

PROPERTY : SWIFT RIVER

Depth 266.77 m
Recovery %
Logged by: DJT & BGJ
Drilled by: DJ Drilling
Date: 6-Jul-97

UTM E 381166 E
UTM N 6672446 N
Elev 1124 m
Azimuth 50°
Inclination -46°
Core Size NQ
Survey Type : Acid test

depth	dip
0	0
0	0
0	0

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
172.93	174.08	117482	1.15	3%	veinlets clots	90%			10%			tr	35%	m epdt	tuffaceous siltstone	green & brown	f gr	laminated	Po in veinlets + qtz-rich clots, veinlets w/ tr calc which xcuts lam. Po vein at 0-15° ca cuts Po veinlets at 30-40° ca lam at approx 45° ca. from 172.93-173.53 - 60% qtz in c gr patches w/ chl, epdt , Po.
174.08	175.22	117483	1.14	3%	veinlets stringers & clots	60%	5%	30%	5%			-	10%	m epdt	tuffaceous siltstone	green & brown	f gr	laminated	fine, even lam w/ some sandier layers qtz-calc. minor ghost shards. sulf in qtz-calc veinlets xcutting lam. Po veinlet at 10-15° ca 174.11-174.56.
175.22	175.91			1%	veinlets stringers	50%	5%	45%				tr	5%	m epdt	tuffaceous siltstone	green & brown	f to m gr	laminated	fine, even lam, some fine sandy layers. sulf in 1-2mm qtz-calc veinlets xcutting lam at high angles
175.91	176.68	117484	0.77	4%	veinlets clots & stringers	40%		30%	30%			-	6%	m epdt	tuffaceous siltstone	green & brown	f to m gr	laminated	sulfides in qtz-rich patches cutting lam; some wavy poss ripple xlam in bottom 20 cm of interval.
176.68	187.50			tr	stringers blebs & clots	40%		50%	10%			tr	6%	m epdt	tuffaceous siltstone	green & brown	f gr	laminated	176.68-177.33 laminar to convolute lam disrupted by c gr qtz-rich zones w/ minor epdt alt <1% Po blebs. 2, 2mm calc veins at low angle to ca at 176.98-178.45. 2-3mm calc vein at 20° ca at 180. 34-180.61, some Po. minor qtz veining xcuts lam Po-rich qtz veins or patches at 176.93,177.25, 177.50, 177.87, 178.01, 178.49, 179.10, 179. 15, 180.05. 178.96-179.27 - irreg, wavy lam, Poss soft sed deformation. 180.50 qtz-act w/Po. 180.70 - 20mm qtz-act zone. 180.94-181.16 - mod epdt alt qtz-rich zone w/ irreg lam. 181.30-qtz-act for 10 mm, c gr mod epdt alt in qtz-rich lam zones (minor calc) b/w 182.88-182.95, 183.46-183.74, 183.78-183.83 5% mag in qtz splotch. 184.56-185.26 25% qtz-act layers w/ <2% sulf. 186.79-186.91 wavy lam, ghost shards, m epdt alt, qtz/act. 186.13-186.87 1-2mm calc vein at 10° ca xcuts lam + qtz/act. qtz/act w/ sulfides <5mm at 186.55+186.76. 186.82-187.50 - mod epdt alt c gr qtz/act; lam disrupted, host frags, <1% Po.

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-01

PROPERTY : SWIFT RIVER

				depth	dip
UTM E	381166 E	Azimuth	50°		
UTM N	6672446 N	Inclination	-46°	0	0
Elev	1124 m	Core Size	NQ	0	0
		Survey Type :	Acid test	0	0

Depth 266.77 m
Recovery %
Logged by: DJT & BGJ
Drilled by: DJ Drilling
Date: 6-Jul-97

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
187.50	188.70	117485	1.20	4%	clots, blebs, & stringers	65%		35%				tr	8%	m epdt	tuffaceous siltstone	greenish grey & brown	f gr	laminated	sulfides assoc w/ ep+calc alt veins. 7 qtz/alt layers <10mm, minor irreg to lam in lower half of interval for 15 cm.
188.70	195.38			<1%	clots & stringers	90%		10%				tr	5%	m epdt	tuffaceous siltstone	greenish grey & brown	f gr	laminated	lam laminar to slightly wavy poss ripple xlam. c gr qtz/act layers + zones occur throughout, approx 7% bleached epdt alt silica rich zones 189.59-189.80, 190.04-190.54, 192.02-192.34, 195.84-195.99. 192.37- calc vein 3mm thick at 30° ca, sulfides in qtz/act layers.
195.38	195.88	117486	0.50	1%	clots, dissem	60%	40%					-	5%	m epdt	tuffaceous siltstone	greenish grey & brown	f gr	laminated	sulfides conc in 2 qtz/act/epdt zones, lam even to wavy. calc veining 2mm & 4mm at 40° ca xcutting lam at 195.57-195.78.
195.88	200.88			tr	clots, blebs & veinlets	80%		15%	5%			1%	10%	m epdt	tuffaceous siltstone	green & brown	f gr	laminated	195.98 45mm thick qtz/act layer cut by 15mm wide vein at 25° ca. Vein has >2mm m gr qtz on each margin, inside is platy c gr calc w/ open spaces. fine <.5mm thick, 40mm long chl or talc filled hairline fractures at high angles to bedding throughout interval, xcut lam, qtz/act layers. c gr qtz/act layers w/ m epdt alt, at irreg intervals, <3% of core. 198.30-200.62 - mag in irreg qtz veins which xcut lam, qtz mag patches 4% of rock. sulf in 1mm veinlets w/ minor calc+qtz b/w 200.08-200.13. lam laminar to slightly wavy-poss ripple or distortion in vicinity of qtz/act. no ghost xtals, <0.5% flat, black fine poss glass shards.
200.88	204.42			tr	veinlets	100%						1%	20%	m epdt clay chl	tuffaceous siltstone	green & brown	f gr mtrx c gr qtz	laminated	200.88-201.18 unalt bt hrnfls w/ 40% qtz/act layers. 201.18-201.40 partly clay alt, qtz veined, qtz xcuts lam. 201.38-201.58 mag 7% of qtz-act layers. 201.24 fractured zone w/ soft platy calc 201.70-201.98 bt hornfls w/ irreg qtz w/ no act, lam & blebs <1cm, silty lam slightly wavy irreg, poss alt relict frags. 202.00-202.85 minor qtz and qtz/calc veining and only 3 qtz/act blebs all <1cm 202.86-203.07 mainly qtz/act, minor epdt alt, 3%

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-01

PROPERTY : SWIFT RIVER

				depth	dip
UTM E	381166 E	Azimuth	50°		
UTM N	6672446 N	Inclination	-46°	Survey Type : Acid test	0 / 0
Elev	1124 m	Core Size	NQ		0 / 0
					0 / 0

Depth 266.77 m
Recovery %
Logged by: DJT & BGJ
Drilled by: DJ Drilling
Date: 6-Jul-97

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
																			mag and 203.07-203.23 xcutting qtz/act at med <
																			to ca. 5mm chl vein w/ bleaching in vicinity. xcut
																			by qtz vein, lam disturbed. 203.28-203.55 mag
																			vein 5mm, 10° to ca. 203.57-204.42 zone of sig
																			qtz injection(45%qtz) and mod clay alt. qtz/act veins
																			cut by veins near pure qtz. TSSR97-09 203.07-.22
204.42	205.79			-	-							1%	20%	m epdt	tuffaceous	brown &	f gr &	laminated	crenulated qtz lam, dk green hairline fractures xcut
															siltstone	green	c gr		lam; 3 qtz veins<3mm xcut lam at low angles to core
																			axis. 204.90-205.79 30% qtz/act patches, small
																			ones poss alt frags? act usually surrounded by qtz.
																			trace alt felds & shards.
205.79	208.33			<1%	clots &	70%			30%			2%	5%	m epdt	tuffaceous	brown &		laminated	lam even to cren, lam 80° ca. 205.86 mag concordant
					qtz/act										siltstone	green			laminae, some f gr mag for 40mm along lam.
					layers &														205.97-206.01 Poss volcanic orig-Po deposited,
					blebs														oxidized by seawater then changed from Goethite
																			to Limonite during diogenesis. 205.92 for 15 cm
																			has wispy qtz hairline xcutting lam-poss soft sed
																			diagenetic, some xcut mag, others truncate along
																			mag+chl+sulf veinlets. Po, Cpy assoc w/ dk green
																			chl+mag roughly concordant to laminations.
																			206.27 15mm qtz/mag vein. 206.42-206.60
																			3mm qtz vein at low angle to ca. 206.55 2cm qtz/
																			mag vein w/ tr epdt xcuts lam 206.61-206.65
																			qtz/act vein w/ epdt . lam disrupted in vicinity, poss
																			alt frags. ghost frags, xtals common 206.06-206.81
																			wispy hairline qtz to 206.25. minor Po in act/chl
																			lenses at 206.09 and in qtz/act veins at 207.00 and
																			207.06 and 207.19 mag/chl vein 3mm at 207.25
																			85° ca. 207.39-207.42 irreg mag vein w/ cp,
																			other mag follows lam, some f gr peppering of mag
																			w/in lam. 207.57-208.33 slightly bleached
																			hornfls w/ irreg qtz/mag veins & pepper mag for
																			20mm w/in lam.

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-01

PROPERTY : SWIFT RIVER

Depth 266.77 m
Recovery %

				depth	dip
UTM E	381166 E	Azimuth	50°		
UTM N	6672446 N	Inclination	-46°	0	0
Elev	1124 m	Core Size	NQ	0	0
				0	0

Survey Type : Acid test

Logged by: DJT & BGJ
Drilled by: DJ Drilling
Date: 6-Jul-97

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
208.33	209.27			<1%	blebs & clots	50%			50%			4%	8%	m clay	tuffaceous siltstone	greenish grey, wht, & black	f-c gr	disturbed laminations	highly veined w/ qtz, mag, calc. 15mm vein 15° ca, qtz margins, calc inside, w/clay. sulfides occur in fractures in vein, slickensided surface. Vein 208.43 -208.78 100% mag veins xcut qtz+mag veins, calc xcuts mag veins. some brecciation, bleaching clay alt along major vein.
209.27	209.95			-	-							4%	4%	m epdt m oxid	felsic tuff	greenish grey	f gr	laminated	highly fractured w/ minor offsets. silicic, slightly bleached lam hrnfls-no bt. veins mag+dk green act?, every direction, but most at low angle to ca, black xtal outlines, f gr mag w/in lam.
209.95	213.17			tr	blebs clots	60%		10%	30%			1%	20%	m epdt chl	tuffaceous siltstone	green, brown & white	f-c gr	laminated	lam even to ripple xlam (most rippled) approx 20% qtz/act patches, v minor alt ghost shards. some Po in bt, most sulfides w/ qtz/act some f gr mag,
209.95	213.17																		most c gr mag in or near qtz/act.
213.17	213.85			tr	blebs clots	50%			50%			2%	30%	m epdt chl	tuffaceous siltstone	bleached green & white	f-c gr	laminated	lam highly disturbed, poss soft sed deformation by qtz/act zones. sulfides & mag in qtz/act areas, epdt , alt by qtz/act zones. calc micro-veinlets cut all features, 10° ca. ghost shards+xtals.
213.85	223.50			tr	clots & blebs	60%		20%	20%			<1%	10%	m epdt chl	tuffaceous siltstone	green, brown, & white	f-c gr	laminated	lam silty to v. fine sandy-shallow water w/ coarser clastic input. bedding to laminar 1mm unalt feld xtals in hrnfls 219.95-220.25. tr Py cubes 1mm, prob diagenetic f gr mag pepper 214.50-214.90, 219.20-.42 (TSSR-97-10) qtz/act patches roughly concordant w/ laminae, often w/ m epdt alt, sulfides usually in qtz/act. minor cp in calc vein, Po,Py can have isolated blebs or cubes in bt lam. vuggy qtz veins almost parallel to ca <6mm thick 215.16-215.64, 217.40-218.53, 218.99-219.20, 223.05-223.30. bleaching at 223.05-223.50. 10% mag along lam 213.85-213.95. qtz/act layers @ 214.25-214.35. 215.33-215.42(6 layers under 10mm); 218.02-218.11 qtz lam crenulated. 218.79-218.98 qtz/act w/ chl microveinlets, mag, and minor epdt alt.

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-01

PROPERTY : SWIFT RIVER

Depth 266.77 m
Recovery %
Logged by: DJT & BGJ
Drilled by: DJ Drilling
Date: 6-Jul-97

UTM E 381166 E
UTM N 6672446 N
Elev 1124 m
Azimuth 50°
Inclination -46°
Core Size NQ
Survey Type : Acid test

depth	dip
0	0
0	0
0	0

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
223.50	223.88			-								<1%	4%	epdt, gt, & kspar	altered siltstone	green	f to c gr	laminated	f gr mag along lam. lam at 85° ca; hairline chl fractures at low angle to ca. c gr yellow/green garnet patches for 30mm.
223.88	224.42			-								tr	-	m calc silcts	marble	white	m to c gr	massive	some remnant lam defined by pale green calc-silicate +f.gr mag in 2 lam.
224.42	227.02			tr	bleb & dissem		90%	10%				tr	5%	epdt, kspar gt, & clay	skarnified felsic tuff	pale green	f to c gr	laminated	epidote altered skarnified hornfls. epdt follows lam, 5% c gr garnet, porous; vuggy calc vein 225.77-226.11 of 5-25mm+branching 5° to ca. bleached appearance; minor calc veinlets throughout, xcuts lam, alt, qtz at low angle to ca.
227.02	228.74			-								tr	-	-	marble	greyish white	m to c gr	massive	impure marble, few k-spar lam. porous(some vugs) trace f gr mag, some remnant lam.
228.74	230.58			-								-	2%	epdt, gt, & chl	skarnified felsic tuff	green	c gr	massive to laminated	remnant in lower portion of interval. 229.00-229.10 gt zone; gt yellowish green, other smaller gt bands 228.74-229.12. qtz/chl vein 229.84-230.16 at 5° ca. irreg chloritized splotches w/ epdt alt. 230.26-20.34 - bleached silicic lam hornfls.
230.58	231.55			-								-	2%	epdt	marble	white	c gr	massive	some remnant lam. massive c gr epdt @ 231.20-231.39. irreg patch qtz 230.80-230.84. irreg, angular alt(epdt, chl) frags? at random orientations up to 15mm long, moderately vuggy.
231.55	232.45	117487	0.90	1%	blebs		90%			10%		-	<1%	epdt, chl, & gt	marble	lt grey	c gr	massive	patchy gt/epdt alt, chloritized+epidotized frags at random orientation. frags up to 30mm. largest frags near middle of total marble interval. Poss fossil recrystallization, calcareous debris flow, or disruption of interval layering during flowage.
232.45	234.78			<1%	stringers dissem v.f gr			100%				-	2%	epdt & chl	marble	pale grey	m to c gr	crudely laminated	qtz+kspar-rich lam 3-14mm thick. crude lam defined by chloritized clasts or disrupted layers. few >3cm epdt +chloritized angular to subrounded

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-01

PROPERTY : SWIFT RIVER

UTM E 381166 E | Azimuth 50° | Survey Type : Acid test | depth 0 | dip 0
UTM N 6672446 N | Inclination -46° | 0 | 0
Elev 1124 m | Core Size NQ | 0 | 0

Depth 266.77 m
Recovery %
Logged by: DJT & BGJ
Drilled by: DJ Drilling
Date: 6-Jul-97

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
																			clasts; disrupt in lam-poss soft sed def? small
																			s-shaped fold clearly defined 233.87-234.12 in
																			qtz+feld rich lam. Py conc in fold.
234.78	235.24	117488	0.46	2%	clots &		40%	40%	20%			-	2%	calc	marble	greenish	c gr	crudely	green calc silicates define crude lam, discontinuous,
					stringers									slicte		white		laminated	approx 50° ca., few poss alt clasts.
					dissem														
235.24	240.18			<1%	dissem		5%	60%	35%			-	1%	calc	*marble*	*greyish*	*c gr*	*laminated*	*coarse lam w/ some oriented chl clasts lens shaped;*
					stringers									slicte		white			lam approx 75° ca. irreg patch epdt +talc alt 236.40-
					clots									epdt,&					236.50 v. few clasts.
														talc					
240.18	240.96	117489	0.76	2%	stringers			50%	50%			-	5%	calc	marble	greenish	c gr	laminated	laminations slightly deformed, disrupted by patches
					clots, &									slicte		white			of act/chl/qtz/k-spar; most sulfides as clots &
					dissem									epdt					stringers in calc-silicate+qtz zones. marble
																			part dolomite.
240.96	242.04	117490	1.08	2%	clots,		20%	50%	30%			-	3%	calc	dolomitic	greyish	c gr	laminated	sulfides conc in calc-silicate-rich layers, lam
					stringers									slicte	marble	white			slightly deformed+broken up and cut by 1mm qtz
					dissem														veins, approx 25% calc-silicates.
242.04	242.74			tr	clots			80%	20%			-	-	calc	dolomitic	greyish	c gr	coarsely	lam at 45° to 70° ca, few chl lenses; first slightly
														slicte	marble	white		laminated	vuggy. veins of platy calc, 242.04-242.05 and
																			242.10-242.15 - low angle to ca, several mm.
242.74	243.42	117491	0.68	4%	clots &		20%	80%				-	4%	calc	dolomitic	greenish	c gr	coarsely	sulfides conc w/ calc-silicates and 2 major veinlets
					veinlets									slicte	marble	white		laminated	in dolomite, approx 15% calc-silicates. lam defined
																			by discontinuous flat chl lenses.
243.42	244.61			1%	gr clots			90%	10%			-	1%	calc	marble	greyish	c gr	laminated	small scale folding seen in calc-silicate zones; 1mm
														slicte		white			qtz veins cut folds. 3mm calc vein at 10° ca cuts up ep
																			alt areas. Py in epdt? alt zone(pale green marble)
																			10mm vuggy calc vein w/ platy xtals at 10° ca at
																			244.51-244.60.
244.61	245.85	117492	1.24	4%	clots &		10%	70%	20%			-	-	calc	impure	greyish	c gr	coarsely	approx 10% calc silicates; sulfides usually occur
					stringers									slicte	marble	white		laminated	w/silicates; dolomite? vein cuts mineralized zone.
																			calc veins cut calc silicate zones; some small scale

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-01

PROPERTY : SWIFT RIVER

UTM E 381166 E
UTM N 6672446 N
Elev 1124 m

Azimuth 50°
Inclination -46°
Core Size NQ

Survey Type : Acid test

	depth	dip
	0	0
	0	0
	0	0

Depth 266.77 m
Recovery %
Logged by: DJT & BGJ
Drilled by: DJ Drilling
Date: 6-Jul-97

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
245.85	247.34			tr	clots			100%				-	2%	calc	marble	greyish	c gr	coarsely	occasional qtz+kspar-rich lam; subrounded clasts
														slicte		white		laminated	talc altered. marble partially dolomitic lam 70°-90°ca
247.34	247.92	117493	0.58	3%	clots			40%	60%			-	2%	calc	marble	greenish	c gr	coarsely	irreg patches of calc-silicate(ep+talc) alt contain
														slicte		white		laminated	most of the sulfides . lam disrupted by alt,
																			recrystallization.
247.92	251.71			tr	clots			60%	40%			-	3%	epdt &	marble	greyish	c gr	coarsely	lam defined by chl clasts(few) and bands of pinkish
														chl		white		laminated	calc. most lam 60° ca, some deformation.
251.71	253.20			<1%	clots &			90%	10%			-	10%	talc,	skarn	pale to	f to c gr	laminated	highly calc & qtz veined. layers deformed and broken,
					stringers									epdt &		dk green			small offsets along veins, qtz veins w/ calc inside.
														chl					poss orig siltstone w/ calcareous layers?
253.20	254.54			tr	clots &			100%				-	1%	chl,	marble	greenish	c gr	irregular	lam defined by clay alt chl stringers, 1cm.
					dissem									clay		white		laminations	irreg pink calc lam + lenses & xcutting veinlets.
254.54	255.46	117494	0.92	3%	clots &		15%	85%				-	3%	talc	impure	greenish	f to c gr	laminated	interbedded marble & waxy talc + chl alt f gr lam,
					stringers									chl	calc-	grey			orig sltst. lam cut by hairline chl fractures. sulfides
															silicate				in the green silicate-rich zones. calc vein at low angle
															marble				to ca, 3mm 254.78-255.07 lam disrupted by
																			alteration.
255.46	257.87			tr	xtals	100%						-	4%	talc	impure	pale green	m to c gr	laminated	calc-silicate lam thru-out, slightly vuggy marble.
					dissem									chl	marble				10cm interval of silicic hornfls 256.90-257.00
														epdt					2x3mm calc veins xcut lam at low angles to ca; lam
																			disrupt by alt, qtz veining + calc veining, calc veins cut
																			qtz.
257.87	258.77			-								-	3%	talc	skarnified	pale green	f to c gr	laminated	calc+talc veins, irreg, cut laminations 80° ca.
														clay	felsic tuff	to grey			
258.77	262.25			tr	dissem			100%				-	1%	talc &	marble	greyish	m to c gr	coarsely	lam defined by chl lam + lenses. irreg + subangular
														clay		white		laminated	talc alt clasts. lam cut by irreg calc veins and minor
																			spidery hairline talc-filled veinlets.

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-01

PROPERTY : SWIFT RIVER

UTM E 381166 E
UTM N 6672446 N
Elev 1124 m

Azimuth 50°
Inclination -46°
Core Size NQ

Survey Type : Acid test

depth	dip
0	0
0	0
0	0

Depth 266.77 m
Recovery %
Logged by: DJT & BGJ
Drilled by: DJ Drilling
Date: 6-Jul-97

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
262.25	262.83			<1%	dissem			50%	50%			-	40%	m epdt	felsic tuff	pale green	f to c gr	laminated	bleached, silicic lam hrnfls. lam irreg, defined by
					clots									blchng		white, &			bt and pink f gr k-spar. -qtz/epdt zones texturally
																brown			similar to qtz/act higher in section.
262.83	263.25			1%	clots		30%	70%				-	3%	talc,	marble	pale green	f to c gr	massive	most sulfides in a 4mm calc vein at 30° ca from 262.91
														epdt					-263.10. rock structurally jumbled up; minor
																			orig lam, lots of alt, recyrstallization.
263.25	263.82			<1%	clots		40%	60%				-	-	epdt	felsic tuff	green &	f to m gr	disturbed	skamified hornfls w/ 60mm marble interval calc
														talc		grey		laminations	veined, some Py in qtz/chl veinlet along ca. lam +
																			whole rock highly disturbed and altered.
263.82	264.11			-								-	1%	talc	marble	greyish	m to c gr	laminated	vuggy marble.
																white			
264.11	264.43			1%	clots &		20%	80%				-	8%	m clay	felsic tuff	greenish	f to c gr	laminated	hornfls disrupted by irreg hairline chl veinlets,
					veinlets									epdt &		grey			sulfides assoc w/ chl veinlets.
														chl					
264.43	264.66			-								-	4%	epdt,	marble	greyish	m to c gr	laminated	vuggy, 30mm of silicic hornfls interval.
														clay		white			
														talc					
264.66	265.69	117495	1.03	3%	clots &		10%	70%	20%			-	-	clay	silicic	pale green	f to m gr	laminated	bleached, clay alt, calc+chl veined hornfls; most
					stringers									talc	tuff				sulf in calc veins thru-out interval, almost parallel
																			to ca. lam at 85° ca.
265.69	266.32			<1%	dissem			100%				-	40%	m chl	silicic	greyish	f gr	laminated	bleached silicic hornfels. even lam qtz veins at low
					veinlet										tuff	white			angle to ca cut by calc veins, some qtz veins have
																			interior calc. Py clots assoc w/ chl veinlets.
266.32	266.41			-								-	-	epdt	marble	greyish	c gr	laminated	vuggy marble.
														chl		white			
266.41	266.52			-								-	5%	talc,	skarnified	green	c gr	massive	skamified hornfels.
														clay	tuff				
														epdt					
266.52	266.77			-								-	-	oxid	marble	grey,black	c gr	laminated	vuggy marble, lam in bottom 10cm disrupted by
														talc		& reddish			calc silicate + talc alt. poss fault gouge for 15mm
																			at 266.54.
																			END OF HOLE

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-02

PROPERTY : SWIFT RIVER

Depth 96.65 m
Recovery ____ %
Logged by: DJT
Drilled by: DJ Drilling
Date: Jul-31-97

			depth	dip
UTM E	381141 E	Azimuth 35°	Survey Type : Acid test	
UTM N	6672417 N	Inclination -60°		
Elev	1127 m	Core Size NQ		

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
0.00	7.62														till				overburden
7.62	13.54			tr	clots	80%	20%					tr	25%	minor epdt	silty andesite tuff	green & brown	f to m gr	laminated	act veins cut laminations, few qtz-act-rich lam; minor epdt alt w/ assoc calc. uneven pinching & swelling lam; chalky white, possible ghost frags. 15% biotite.
13.54	14.19	117496	0.65	7%	clots, veins & dissem	95%				5%		4%	20%	minor epdt chl	silty andesite tuff	green & brown	f to m gr	laminated	sulfides concentrated along qtz-rich veins concordant w/ lam.
14.19	15.80			tr	clots	100%						-	20%	chl,epdt, & oxid.	silty andesite tuff	green & brown	f to m gr	laminated	interval defined by epdt +calc alt in chl lam. bt largely alt-10% bt.; Po in ep/act/chl/qtz/calc alt. 15% qtz act(now chl) veins. 1% ghost feld xtals approx 1mm. 3mm chl+qtz+act vein parallel core axis has offshoots from 15.60-16.26, also contains qtz, ep, cc. mag laminae: 4mm 50% 15.49, 3mm 30% @ 15.55, 3mm 90% @ 15.57.
15.80	20.89											-	12%	chl, tr epdt	silty andesite tuff	green & brown	f to m gr	laminated	lam fairly even, only v. minor pinching & swelling some chloritization of bt and actinolite. 30% bt; lam approx 60° ca. chl filled tension crax & veins <3mm wide at low angle to ca. approx 5% qtz/act veins & laminae most at 16.26-16.36, 16.74-16.98; 17.54-17.56; 17.65-18.03. minor feldspar xtals-poss distal xtal tuff?
20.89	22.99											-	8%	chl, tr epdt	andesite tuff	brown & green	f to m gr	laminated	lam pinch & swell more, have more f to m gr feld-rich lam and thin qtz/feld/act layers. act partially chloritized. xcutting chl veinlets 55% bt.
22.99	28.25											-	10%	chl, tr epdt	silty xtal tuff	brown & white	f to c gr	laminated	laminae pinch & swell; feldspar xtals .5 mm-2mm feld xtals 13%; 70% bt; 7% act+chl+ep; chloritization minor-some alt act & little bit of bt <2mm xcutting chl/act veinlets, lam approx 60° ca.
28.25	30.67			tr	dissem vf gr	100%						-	-	chl, m epdt	silty andesite tuff	green, br, & white	f to m gr	deformed laminations	laminae much finer, small to med scale deformation and folding; bt flowage around intense folds in qtz/act veins on layers 29.50-29.75. bt partially chloritized, 40% bt; small 0.3-0.5mm feld xtals 5%. 10%

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-02

PROPERTY : SWIFT RIVER

Depth 96.65 m
Recovery %
Logged by: DJT
Drilled by: DJ Drilling
Date: Jul-31-97

				depth	dip
UTM E	381141 E	Azimuth	35°	0	0
UTM N	6672417 N	Inclination	-60°	0	0
Elev	1127 m	Core Size	NQ	0	0

Survey Type Acid test

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
																			qtz/feld/act layers or veins.
30.67	32.38											-	15%	chl	silty andesit tuff	brown & green	f to c gr	laminated	minor pinch & swell in feld xtal-rich lam, lam finer even, undeformed
																			lam 70° to ca. 31.17-31.27 qtz/act layered interval. 7 other qtz/act
																			layers <5mm; approx 60%bt; 10% feld xtals and rich lam, 15% act+chl.
																			one 2mm calc vein and 2 <1mm qtz veins cut lam.
32.38	33.04											-	20%	chl, minor epdt	silty and tuff	green, br, & white	f to c gr	deformed laminations	qtz-act-rich; qtz/act in irreg pinching & swelling bands usually concordant w/ lam, occasionally cutting around bt patches.
																			30% bt, 7% feld xtals & lam.
33.04	36.68											-	-	chl, minor epdt	andesite xtal tuff	brown & green	f to m gr	lamianted	45% bt, mod chloritization of bt; minor pinch & swell of lam, lam fairly even, undeformed. 25% qtz-act lam. two chl-act-qtz veins <3mm wide parallel to ca 33.03-33.79 xcut all lam; chl alt of bt 2-4mm along vein contacts. feld xtals .25-2.5mm diam. Note: the felds in whole DDHSR-97-02 interval so far are rounded, poss partial solution & reprecipitate. during lithification?
36.68	38.41											-	10%	chl, epdt , kspar	andesite xtal tuff	green, br, & white	f to m gr	deformed laminations	20% bt; felsic bands deformed and intensely folded. irreg actinolite bands thru-out; surrounded by feld & epdt . poss act frag or pinched out layer.
38.41	39.77											-	4%	chl	andesitic xtal tuff	brown & green	m to c gr	laminated	lam fairly even & undeformed. feld xtals up to 2.5 mm. 55% bt; minor xcutting chl veins disrupted feld/chl/qtz 39.50-39.56. "sandy layers" at 38.50-38.55;38.76-38.91; 39.09-39.12; 39.28-39.31; 39.56-39.67; these layers poss bt-rich concentrations of xtal tuff; lam at 60° ca, lam offset along 4mm chl vein.
39.77	43.70			tr	clot				100%			-	10%	CHL, kspar minor epdt	andesitic xtal tuff	green & white; br	m to c gr	deformed laminations	act veins & bt heavily chloritized; 8%bt; xcutting act/chl vein at 45° ca; lam slightly to mod folded and deformed. bt alt to chl adjacent to act veins 42.80-43.70. 5mm chl/qtz/calc vein at 25° ca 42.56-42.88. Sandy layers at 41.54-41.63; and 10cm have bleached appearance.

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-02

PROPERTY : SWIFT RIVER

				depth	dip
UTM E	381141 E	Azimuth	35°	0	0
UTM N	6672417 N	Inclination	-60°	0	0
Elev	1127 m	Core Size	NQ	0	0

Survey Type: Acid test

Depth: 96.65 m
Recovery: %
Logged by: DJT
Drilled by: DJ Drilling
Date: Jul-31-97

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
43.70	43.99											-	-	act, chl	andesite	dk green	m-gr.	massive	poss orig dike; texture looks igneous; interlocked m-gr. xtals; finer on
															tuff				outside 30mm each side of interval partially chloritized; act+greenish
																			feld dk green <1mm wide act fractures cut act skarn.
43.99	53.26			tr	clot				100%			-	-	act, chl,	silty	dk green	m-gr.	deformed	irreg act/chl veins; lam irreg folded and highly altered; qtz/act irreg
														kspar,epdt	andesitic			laminations	veins xcut lam; sandy layers not always continuous through alt
															tuff				across lam. poss frags or channel seds? sandy layers-@ 44.21-44.34,
																			44.70-44.75; 45.20-45.28; 45.45-46.25(not cont); 46.42-46.78;
																			47.56-47.58; 47.95-47.98; 48.44-48.50; 48.57-48.60; 49.24-49.36;
																			49.74-49.81; 50.25-50.36. kspar alt zones have bleached look, no
																			bt. minor <20mm offsets along some chl veins.
53.26	57.15											-	3%	chl,epdt,	silty	brown, gm,	f to m gr	laminated	less epdt alt, more bt rich 45%. lam more even, not much folding or
														kspar	andesitic	& white			deformation. 3mm act/chl vein to 54.39 parallel to ca. 3% feld xtals.
															tuff				5% feld/qtz/act layers. 2mm qtz vein cuts lam at 56.91 at 55° ca. lam
																			approx 65° ca.
57.15	57.89											-	25%	chl, epdt	silty	green, br &	f to c gr	deformed	laminae folded and deformed . coarse qtz/act vein or patch 57.59-
															andesitic	white		laminations	57.70; minor offsets & bleaching along 1mm chl vein 15% bt; 50%
															tuff				coarse qtz+act-rich laminae or veins.
57.89	59.14											-	-	chl, kspar,	silty	brown &	f gr	laminated	lam even, minor deformation. minor f gr feld xtals & ghost shards.
														& epdt	andesite	green			kspar alt splotchy, gives bleached appear. 20% bt, much chloritized.
															tuff				few and thin qtz-act-rich lam.
59.14	60.07											-	3%	epdt, chl, &	andesite	green	f gr	laminated	minor rust on fracture surfaces increasingly epdt alt & dk green chlrite-
														oxid	tuff				veined chl veins <1mm wide & short(<10mm) lam even, 60° ca.
60.07	60.37			1%	clots,			65%	35%			-	5%	epdt, chl,	chlorite	variegated	f to c gr	brecciated	brecciated epdt +calc alt hornfls w/ veining & fract filling of dk green to
					dissem									calc	breccia	green			black chl; later 5mm calc vein at 35° ca; sulfides in and adjacent
																			to calcite.

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-02

PROPERTY : SWIFT RIVER

Depth 96.65 m
Recovery %
Logged by: DJT
Drilled by: DJ Drilling
Date: Jul-31-97

					depth	dip
UTM E	381141 E	Azimuth	35°	Survey Type : Acid test	0	0
UTM N	6672417 N	Inclination	-60°		0	0
Elev	1127 m	Core Size	NQ		0	0

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
60.37	61.31											-	3%	ep, chl,	siliceous	green	f gr	laminated	minor rust on fracture surfaces. 30 cm broken core. decreasingly
														kspar,	andesite tuff				epidotized & chl veined lam at 70° ca. (2) 2mm vuggy calc veins
														minor oxid					for 20cm at 30° ca. also kspar alt hornfls.
61.31	65.04			tr	clots	100%						-	3%	kspar, act,	siliceous	green	f gr	laminated	kspar replacing bt. more act lam than chl lam; poss zone of cooking
														chl,	andesite tuff				adjacent to dike. minor ghost xtals and shards. hairline fractures calc+
														minor epdt					qtz? xcut lam. laminae undeformed 75° ca.
65.04	66.03	117497	0.99	3%	clots	60%	5%	20%	15%			-	2%	act	andesite	dk green	m gr	massive	altered andesite tuff, Po dissem, 2 in clots. sulfides in clots in chl
66.03	66.87	117498	0.84	4%	dissem,	60%	5%	20%	15%			-	3%		xtal and frag				veins. minor dolomite & calc in veins, calc late. 4mm calc vein
					blebs										tuff				w/ sulfides at 66.44m.
66.87	67.54			tr	stringer	90%		10%				-	5%	kspar, act,	siliceous	green	f to c gr	laminated	most bt kspar alt; lam fairly even at 70° ca; minor ghost felds+
					clots, &									ep,dol,chl	andesite tuff				shards; 2mm chl veins at low angles to ca, cut by thin
					dissem														carbonate veins 67.33-67.42. hornfels brecciated & highly
																			altered, minor dolomite, mod epdt .
67.54	68.80			2%	2 lrg clots	95%			5%			-	35%	act, epdt	silty	brown &	f to m gr	laminated	qtz/bt schist. highly folded & deformed laminae. qtz-rich lam
					stringers,										andesite tuf	white			have some green calc-silicates.(act+ep); minor calc veining,
					blebs														*approx 45% bt. one 3X2 cm Po rectangles w/ 5% Cpy.*
68.80	70.94			tr	dissem	40%		30%	30%			4%	-	act, dol,	actinolite	dk green	m gr	banded	remnant bands visible, 60° ca; minor thin calc veins. mag
														chl	skarn				concentrated in bands. minor rust on calc vein fracture
																			surfaces. probably orig and tuff.
70.94	71.27	117513	0.31	<1%	dissem	100%						30%	-	act, dol,	actinolite/	dk green &	m to c gr	massive &	dolomitic magnetite/actinolite skarn. mag texture, looks like coarse
														chl	mag skarn	black		irreg mag	myrmekite. 60% actinolite.
71.27	74.11			tr	blebs			95%		5%		8%	-	act,dol,	actinolite sk	dk green	m to c gr	massive	some remnant laminations. mag in irreg patches. 1mm Po blebs
														chl					w/in mag.
74.11	74.84											10%	-	calc-silicte,	magnetite	bluish grey	c gr	mottled	poss faint remnant lam. green epdt +calc mottles.
														dol	skarn				

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-02

PROPERTY : SWIFT RIVER

Depth 96.65 m
Recovery _____ %
Logged by DJT
Drilled by: DJ Drilling
Date: Jul-31-97

				depth	dip
UTM E	381141 E	Azimuth	35°	Survey Typ Acid test	0	0
UTM N	6672417 N	Inclination	-60°		0	0
Elev	1127 m	Core Size	NQ		0	0

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
74.84	76.70											4%	-	calc-silicte,	impure calc	pale bluish	c gr	mottled	paleness increasing downward. many mottles outlined by mag:
														dol	silicte marb	green			contains fibrous, flexible minerals - serp?
76.70	77.98			tr	blebs,	90%		10%				6%	-	calc-silicte	pyroxene	bluish gree	c gr	mottled	minor calc & dol, 90° ca splintery cleavage on bl-gr px. mag mostly
					clots,&									calc,dol	skarn				inside mottles.
					dissem														
77.98	79.66			tr	dissem			100%				10%	1%	calc	actinolite	green	m to c gr	massive	v mag rich. 79.47-79.59 and 78.26-78.32 in irreg patches. fibrous
															skarn				amphibole? minor open fractured qtz veining; slightly mottled.
79.66	80.04											3%	-	calc-silicate	impure	whitish	m to c gr	massive	slightly mottled. poss felds in residual laminations.
														epdt	marble	green			
80.04	82.15			1%	dissem,	90%		10%				15%	1%	calc-silicate	actinolite sk	dk green	c gr	massive	alteration poss defines orig frags, poss recrystallization breccia?
					clots									epdt,calc,					<1mm calc veins, v minor.
														minor chl					
82.15	83.10			tr	dissem	40%			60%			-	-	calc-silicate	actinolite	light green	m gr	massive	faint residual banding visible. minor chl veining, 1 calc vein; 2mm
														cc,chl	px skarn				
83.10	84.06											tr	-	chl, calc, &	tuffaceous	dk green	m to c gr	laminated	coarse laminae, poss alt frags & ghost felds; chl+qtz vein 2.5mm at
														minor epdt	siltstone				low angle to ca, branches. black-dk green pyroxene.
84.06	85.44											tr	3%	epdt, chl &	altered	pale green	f to m gr	laminated	minor calc+chl veining, usually at low angles to ca. lam at 60° ca.
														carbonate	tuffaceous				
															siltstone				
85.44	86.61			<1%	clots,			90%	10%			-	-	chl, calc	tuffaceous	green	m to c gr	laminated	prob original xtal tuff. alt xtals & shards up to 15mm. lam at 60° ca. Py
					dissem										siltstone				in veins. 3mm calc vein parallel to ca at 85.74-85.97.

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-02

PROPERTY : SWIFT RIVER

Depth 96.65 m
Recovery _____ %
Logged by DJT
Drilled by: DJ Drilling
Date: Jul-31-97

				depth	dip
UTM E	381141 E	Azimuth	35°	Survey Typ Acid test	0	0
UTM N	6672417 N	Inclination	-60°		0	0
Elev	1127 m	Core Size	NQ		0	0

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
86.61	96.65			<1%	clots, &	60%		30%	10%			tr	30%	chl,kspar,	tuffaceous	green &	m to c gr	laminated	approx 40% bt to 87.28; 87.28-87.62 has kspar alt of bt. 30mm of clay
					veinlets									epdt, &	siltstone	brown			alt either side of 30mm calc vein @ 94.39-94.49. sulfides in qtz-act
														clay					patches and veins w/epdt & calc. some late calc veining at low angle to
																			ca. epdt alt localized along bands and cut by dk green chl veinlets
																			91.55 for 50mm; 92.95 for 20mm; 93.04 for 20mm; 93.44 for 40mm.
																			kspar alt 93.63-94.15, some bt remains, irreg qtz/act patches thru-out,
																			approx 5% of whole rock. lam fine and even, 45° to ca.
96.95	E.O.H.																		END OF HOLE

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-03

PROPERTY : SWIFT RIVER

					depth	dip
UTM E	382099 E	Azimuth	35°	Survey Type : Acid test		
UTM N	6671844 N	Inclination	-45°			
Elev	1210 m	Core Size	NQ			

Depth 35.00 m
Recovery %
Logged by DJT
Drilled by: DJ Drilling
Date: 6-Jul-97

FROM metres	TO metres	Tag No	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
0.00	15.20														overburden				casing, no recovery
15.20	15.50			-											till				syenite or granodiorite boulders.
15.50	19.80			-								-	10%	epdt, chl, & kspar	tuffaceous siltstone	green & brown	f to c gr	laminated	some cren qtz lam. orig siltstone to fine sandstone, poss alt frags (now epdt); bt alt to a reddish, purplish colour. laminae deformed, folded on cm scale, pinching and swelling. @ 18.76-deformation decreased, end of main epdt alt interval of 15cm. @18.76-reddish bt stops, chl only. @ 19.35-deformed lam, slightly brecciated appearance; reddish alt increases, epdt incr. Chl & qtz-rich veining increases. poss local fault margin.
19.80	21.30			-								-	-	clay, talc, & kspar	fault gouge				slightly alt clay & talc-rich crumbly rubble.
21.30	22.90			-								-	-		rubble (till)				prob till, some frags of lam bt hornfls.
22.90	25.90			-								-	-		rubble				essentially no recovery.
25.90	26.20			-								-	-		till				
26.20	26.65			-								-	-	talc, chl, & clay	alt siltstone	green	m to c gr	laminated	slightly mushy, deformed, calc veined, highly altered+decomposed - poss not even bedrock.
26.65	28.30			tr	dissem, stringers							-	-	chl, kspar	tuffaceous siltstone				tr py in calc veins. calc veins<1mm thick. lam relatively even and undeformed remnant feld xtals .25to 2.5 mm, poss arkosic immature siltstone or xtal tuff. patchy kspar alt. 28.2-10cm of pink kspar alt cut by chl veins. lam at 75° ca.
28.30	30.70			-								-	-	chl, & minor oxide	alt siltstone & sandstone	greenish Grey	f to c gr	deformed laminations	deformed, interlayered bt siltstone and silicic poss alt rhyolite tuff or arkosic ss. silicic bands more deformed as shown by included chl laminae. dendritic black mn oxide alt? or chl? minor calc veining; qtz-act patch at 30.25. red f gr hematite veinlets, fractures.
30.70	-			-								50%	-		sand	green	f to m gr		hit sand layer, poss overburden again; rods fell through & hole was abandoned

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-04

PROPERTY : SWIFT RIVER

				depth	dip
UTM E	382565 E	Azimuth	35°		
UTM N	6671458 N	Inclination	-45°		
Elev	1235 m	Core Size	NQ		

Survey Type : Acid test

Depth 95.73 m
Recovery %
Logged by: DJT
Drilled by: DJ Drilling
Date: 17-Jul-97

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
0.00	7.62																		overburden - no core recovery
7.62	13.72			tr	clot	90%		10%				-	3%	minor epdt chl	andesite tuff	dk green, & white	f to m gr	laminated	qtz-chl hornfels. broken core, approx 20% recovery. minor def and crenulation in qtz-rich lam. Py-rimmed Po cube.
13.72	19.74			tr	clots, blebs, & dissem							-	4%	chl, epdt , & kspar	tuffaceous siltstone	brown & dk green	f to m gr	laminated	tuffaceous bt hornfls. 45 % bt, sporadic qtz/act/chl layers usually <1cm thick; 14.05-14.30 -qtz/act rich zone followed by disturbed lam for 15cm. angular white feld xtals, poss tuffaceous origin. 15.80 - 16.00 - irreg qtz act veining at 55° ca w/ Po blebs & clots in act. bleaching or kspar alt around chl/act veins undisturbed fine even lam approx 40° ca. Po in irreg xcutting chl veins 18.60-19.12- highly epdt alt & chl veined brecciated zone; rusty fract at low angle to ca.(20°) 19.24-19.31 epdt alt zone, of distorted lam.
19.74	20.59	117526	0.85	2%	clots, blebs, & stringers	90%	10%					-	40%	chl, bleaching	xtal tuff	white, grn & brown	m to c gr	disturbed laminations	bleached silicic, bt/chl hornfels. poss xtal tuff, some sulfides in actinolite veins. lam at 55° ca.
20.59	21.44	117527	0.85	3%	clots, blebs, & stringers	85%	15%					-	40%	chl, bleaching	xtal tuff	white, gm & brown	f to c gr	disturbed laminations	more bt-rich, otherwise the same as above.
21.44	21.72	117528	0.28	80%	massive	70%	30%					-	10%	minor epdt	massive sulfides	bronze	m to c gr	laminated	sulfides along lam. 1/2 the interval 5% sulfides, the other half is massive
21.72	22.31	117529	0.59	20%	stringers, blebs, & clots	70%	30%					-	25%	chl, minor epdt	rhyolite tuff	whitish to pale green	f to m gr	laminated	bleached, xcutting qtz vein. sulfides mostly follow laminations.
22.31	23.47			tr	blebs	40%		60%				-	65%	epdt, chl, & kspar	rhyolite tuff	pale green	f to m gr	laminated	silicic hornfels. broken core, highly fractured and iron oxide stained. lam deformed, pinched and swelled. poss dacitic to rhyolitic tuff or fine sandstone.

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-04

PROPERTY : SWIFT RIVER

					depth	dip
UTM E	382565 E	Azimuth	35°	Survey Type : Acid test	0	0
UTM N	6671458 N	Inclination	-45°		0	0
Elev	1235 m	Core Size	NQ		0	0

Depth 95.73 m
Recovery %
Logged by: DJT
Drilled by: DJ Drilling
Date: 17-Jul-97

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
23.47	30.90											<1%	-	-	impure	pale grey	m to c gr	aminated to	mag in bands. most lam even, minor folding and deformation.
															marble			massive	25.50 - 25.60 - calc & black chl veined, brecciated zone.
																			cc veins crosscut lam.
30.90	43.61			tr	blebs	60%		40%				-	3%	minor epdt	andesitic	dk green	f to m gr	laminated	tuffaceous chlorite schist. prob orig andesite tuff. Cren
															tuff				qtz-rich lam; alt 25mm feld xtals & ghost shards. minor qtz/act
																			layers and veins ; lam highly deformed & qtz
																			calc-silicate veined for 35 cm after marble 35° ca.
																			32.65-32.85 weak-clay or talc alt; 41.75-42.05 irreg patch qtz
																			w/ 10mm qtz vein at 20° ca. the amount of qtz veining increases
																			down the interval.
43.61	44.90			tr	clots,			100%				-	3%	chl,	tuffaceous	brown &	f to c gr	laminated	bt hornfels. 45% bt; laminae fine and more even, v. few
					blebs, &									minor epdt	siltstone	green			crenulated qtz-rich lam. few feld xtals & shards.
					stringers														
44.90	45.32	117499	0.42	3%	clots,			90%	10%			-	30%	kspar,epdt,	tuffaceous	brown &	f to c gr	laminated	few feld xtals & shards (or tiny auger?) most sulf in qtz veins
					stringers,									chl	siltstone	green			or patches b/w 44.90 - 45.32
					blebs														
45.32	45.87			<1%	clots,			100%				-	4%		tuffaceous	brown &	f to c gr	laminated	
					stringers,										siltstone	green			
					blebs														
45.87	46.42	117500	0.55	3%	stringers,			100%				-	60%	epdt, talc	silty rhy	pale bluish	m to c gr	highly	highly silicified & deformed bt hornfels, some remnant bt (5%)
					clots, &										tuff	green		deformed	
					blebs													lams	
46.42	46.95			tr	dissem,			100%				-	8%	talc	silty and	dk green	m to c gr	laminated	biotitic chlorite schist. 5% bt; 50% chl. strongly cren qtz laminae
					stringers										tuff				and several mm thick pinching & swelling qtz layers; 80° ca.

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-04

PROPERTY : SWIFT RIVER

				depth	dip
UTM E	382565 E	Azimuth	35°		
UTM N	6671458 N	Inclination	-45°	0	0
Elev	1235 m	Core Size	NQ	0	0
		Survey Type	Acid test	0	0

Depth 95.73 m
Recovery ____ %
Logged by: DJT
Drilled by: DJ Drilling
Date: 17-Jul-97

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
																			minor 1mm calc veinlets @ 20° to ca. 46.85-5mm offset of
																			qtz pod by calc vein. Talc in qtz-rich layers/veins where
																			actinolite would be expected.
46.95	47.70	117501	0.75	7%	clots,			100%				-	20%	kspar, talc	tuffaceous	greensih	f to c gr	laminated	bt hornfels. heavily qtz+calc veined. most sulfides concordant
					blebs,										siltstone	grey			when in w/ qtz; talc replacing actinolite in w/ qtz?
					dissem														
47.70	57.32			tr	veins,							tr	10%	tr talc	silty	dk green	f to c gr	laminated	biotite chlorite schist. amt of bt dec down hole from approx
					clots										andesitic				10 % to 2%; crenulated qtz lam thru-out; poss alt frags <3mm.
					blebs, &										tuff				poss tuffaceous origin. minor deformation of lam, generally
					dissem														adjacent to irreg qtz veins; thin(<2mm) calc veins & fractures
																			@ 20° to ca; most lam 80° ca. max 20mm discontinuous Py
																			layer @ 50.60m. 51.25 - 51.44 qtz-rich vein w/ calc & green clay
																			alt 52.55 - fractured core, decomposing to green clay for 20mm.
																			55.17-55.45 65% qtz veins w/ talc blebs and veinlets also
																			tr epdt . 56.30-56.40 core broken, decomposing to green clay.
																			56.47-56.60 qtz veined. 56.65-56.86 lam highly deformed by
																			irreg qtz veining. 56.95-57.10 massive qtz veins.
57.32	57.96	117530	0.64	15%	clots,			100%				-	40%	act	silty	brown &	f to m gr	laminated	large qtz/act veins, small pure qtz veins 2mm.
					blebs,										andesitic	green			
					& along										tuff				
					veins														
57.96	58.74	117531	0.78	85%	massive	15%	20%	65%				-	10%		massive	bronze	m gr	massive	7 cm qtz w/ 10% sulfides separates 2 other sulfide zones,
					m to c gr										sulfides				mostly Py, other Sph+Py+Po.
58.74	59.15	117532	0.39	20%	clots	90%	10%					-	30%	clay, S47	rhyolite	greenish	m gr	laminated	minor epdt ; act veins. sulfide clots overprint laminations. Clay
														minor epdt	tuff	white &			alt by irreg calc vein 3-20mm wide.
																bronze			

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-04

PROPERTY : SWIFT RIVER

					depth	dip
UTM E	382565 E	Azimuth	35°	Survey Type Acid test	0	0
UTM N	6671458 N	Inclination	-45°		0	0
Elev	1235 m	Core Size	NQ		0	0

Depth 95.73 m
Recovery ____ %
Logged by: DJT
Drilled by: DJ Drilling
Date: 17-Jul-97

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
59.15	59.86	117502	0.71	2%	dissem,			100%				-	-	-	marble	greyish	c gr	massive	faint remnant laminations.
					blebs, &											white			
					clots														
59.86	60.29	117503	0.43	5%	clots &	85%		15%				tr	60%	kspar,	silty rhy	white &	m gr	deformed	silicic hornfels. remnant lam interrupted by kspar and act alt.
					blebs									minor epdt	tuff	brown		laminations	poss orig rhyolitic tuff w/ cm interbedded marble.
														& act					15% bt; approx 10 % marble.
60.29	61.30	117504	1.01	4%	clots,	65%		35%				-	-	chl,	impure	greyish	c gr	laminated	Po conc in more impure lam areas Py dissem, 1mm cubes in
					blebs, &									minor talc	marble	white			pure marble. minor black chl veinlets.
					dissem														
61.30	61.65		0.35	tr	dissem			100%				-	-	-	marble	greyish	c gr	massive to	some remnant lam.
																white		laminated	
61.65	62.50	117505	0.85	7%	blebs, &	55%		45%				-	-	minor talc,	silty rhy	pale grnish	m to c gr	laminated	silicic rhyolite hornfels. Py conc in black chl+calc veins
					clots,									clay, kspar	tuff	grey			slickensides on chl fractures at 60°ca & talc-filled fracts
					stringers									epdt					at 20° ca. lam deformed and broken in places. poss originally
62.50	63.05	117506	0.55	2%	blebs, &														siltstone and silicic rhyolite or dacitic tuff.
					clots														
63.05	63.75	117507	0.70	4%	clots,	55%	15%	30%				-	5%	talc	impure	greenish	c gr	massive	bound by bt hornfels for 50mm on top of interval. HCL brings
					veinlets,										marble	white			out green colour. prob mixed lms and siliciclastics.
					blebs														
63.75	64.75	117508	1.00	3%	clots,	65%	35%					-	50%	kspar, talc,	rhyolite	whitish grey	f to m gr	laminated	siliceous w/ minor carbonates (calc+dol). 2mm calc vein &
					dissem,									dol, &	tuff & lms				fractured at 20° ca. bleached appearance, 10% bt. poss orig
					stringers									calc					interlayered qtz-rich siliciclastics & lms. lam 75° ca.
64.75	65.00			-								-	-	Wo	marble	white	c gr	laminated	feather Wollastonite laminae and rhodochrosite-filled vugs.

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-04

PROPERTY : SWIFT RIVER

				depth	dip
UTM E	382565 E	Azimuth	35°		
UTM N	6671458 N	Inclination	-45°	Survey Type Acid test	0	0
Elev	1235 m	Core Size	NQ		0	0
					0	0

Depth 95.73 m
Recovery ____ %
Logged by: DJT
Drilled by: DJ Drilling
Date: 17-Jul-97

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
65.00	65.55			tr	clots,	70%	30%					-	40%	kspar	very impure	whitish	f to m gr	laminated	open calc vein 20° ca. laminae slightly soft-sed deformed or
					dissem										marble	grey			def by qtz influx. interlayered marble dk chl along laminae.
65.55	66.40			-								-	3%	-	marble	greyish	f to m gr	massive to	some remnant lam w/ folds Wo along remnant lam, open and
																white		laminated	rhodochrosite-filled vugs. open calc vein at 20° ca.
																			Wo in diff frac at 20° ca. 66.00-66.10. silicic interval
																			66.15-66.30 - soft sed deformation.
66.40	68.30			<1%	dissem,	65%	35%					-	30%	gm calc-	interbedded	greyish	m to c gr	laminated	Wo on fract surfaces. interbedded bleached-looking poss orig
					blebs									silicate &	marble &	white		& banded	siltstone to fine ss, minor kspar. minor soft-sed deformation.
														Wo	silici-				the main marble bands 67.00-67.25, 67.31-67.34;
															clastics				67.80-67.90; 68.15 - 68.20.
68.30	69.10	117509	0.80	2%	clots,	60%	30%	10%				-	-	Wo, kspar	rhyolite	greyish	m to c gr	laminated	silicic hornfels w/ marble. approx 10% carbonates, rusty fract at
					blebs, &										tuff	white		& banded	45° ca. orig mixed calcareous, silty & fine sandy seds. 5% bt;
					irreg lam														bleached appearance.
69.10	71.35			1%	clots,	65%	30%	5%				-	60%	Wo, kspar	calcareous	greyish	f to m gr	laminated	soft sed deformed; few marble interlayers. Bleached
					blebs,&										rhyolite	white			appearance; fibrous, splintery Wo adjacent to marble bands;
					stringers										tuff				pale green layers from calc-silicate formation.
																			dewatering flame structure? Dk chlk along fractures at 50° ca.
71.35	72.25	117510	0.90	3%	clots,	45%	55%					-	-	dol, talc	calcareous	greyish	f to m gr	laminated	minor dolomite, bleached appearance. carbonates prob
					dissem										rhyolite	white			depositional laminae deformed-prob minor soft-sed
															tuff				deformation. HCL alters to yellow & green on sulfides.
72.25	72.53			<1%	clots,	30%	70%					-	-	dol	calcareous	greyish	f to m gr	laminated	not sampled due to bronze rubbings & copper-rod grease.
					dissem										rhyolite	white			
															tuff				

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-04

PROPERTY : SWIFT RIVER

					depth	dip
UTM E	382565 E	Azimuth	35°	Survey Type : Acid test	0	0
UTM N	6671458 N	Inclination	-45°		0	0
Elev	1235 m	Core Size	NQ		0	0

Depth 95.73 m
Recovery ____ %
Logged by: DJT
Drilled by: DJ Drilling
Date: 17-Jul-97

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
72.53	73.20	117511	0.67	2%	dissem,	60%	40%					tr	-	dol, bleach	rhyolite	pale grnsh	f to m gr	laminated	minor remnant unaltered biotite. bleached silicic sltst to fine ss
					clots,&									calc-silicate	tuff & lms	grey			w/ small (<1cm). coarser layers which were prob calcareous
					blebs														at deposition. texture like marble, some dolomite.
																			laminae slightly deformed.
73.20	79.00			tr	blebs,	4%	45%	10%				tr	20%	Wo, dol,	interbedded	whitish grey	m to c gr	laminated	poss orig interlayered lms and rhyolite tuff. small lam bt-rich
					clots, &									talc &	silici-				intervals, minor soft sed deformation. carbonate content
					dissem									rhodo	clastics &				incr downhole. marble intervals slightly vuggy; rhodochrosite
															marble				fills vugs & forms layers <10mm thick b/w 75.10 & 78.80m.
																			Sph conc up to 1% sulfides. 76.90 - 77.35 in greenish marble.
79.00	80.55			-								-	-	rhodo &	marble	pale pastel	c gr	massive	pastel purple, pink, aquamarine blue, green, orange, and red.
														calc-slcte		& white			slightly mottled. pale green calc veins on pervasive fractures.
																			interval ends w/ 20mm of rusty talc.
80.55	80.95	117512	0.40	4%	clots,	60%	40%					-	15%	chl, talc	marble/	dk green	c gr	massive to	strongly chloritized & dk chlorite veined. marble to silicic
					blebs, &										silicic hmfls			laminated	hornfels. some remnant lam in silicic portion. talc alt along
					dissem										contact				fractures at 75° ca.
80.95	83.05			<1%	blebs, &	100%						-	65%	kspar, chl	rhyolite	pale grnish	f to c gr	laminated &	bleached appearance; lam at 75° ca cut by irreg qtz/chl veins
					clots										tuff	grey		disrupted	bearing Po & minor calc. qtz veins cut and offset by <1mm chl
																		laminations	veins; qtz veins deform lam - drag 82.00-82.80 - lam so offset,
																			cut by veins that interval appears brecciated.
83.05	97.73			tr	blebs,	88%		10%	2%			-	40%	kspar,	tuffaceous	dk brown	f to c gr	aminated to	bt hornfls. rock highly veined by qtz/act/chl w/ minor calc.
					clots, &									bleaching,	siltstone			disrupted	Almost all sulf in these veins. these are two almost identical
					dissem									chl, &				laminations	episodes of qtz/act veins, the second of which carries the
														tr epdt					mineralization, or the veins cross each other . Qtz/act veins cut
																			by thinner almost pure act+chl veins, some of which carry Po.
																			85.65-86.75- partially chloritized 10 mm actinolite vein w/ off-
																			shoots; main vein @ approx 15°ca. Offshoots are more qtz-rich;

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-04

PROPERTY : SWIFT RIVER

					depth	dip
UTM E	382565 E	Azimuth	35°	Survey Type : Acid test	0	0
UTM N	6671458 N	Inclination	-45°		0	0
Elev	1235 m	Core Size	NQ		0	0

Depth 95.73 m
Recovery %
Logged by: DJT
Drilled by: DJ Drilling
Date: 17-Jul-97

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
																			bleaching & kspar alt adjacent to veins. Almost no
																			veining from 86.95-87.50 and minor veining 92.80 to E.O.H.
																			large Po clots w/ minor Cpy in qtz/act/chl/calc veins at 88.85-
																			89.05 and 89.82 and 90.10-90.20 and 88.50-88.60. 91.70-92.15 -
																			highly silicic, bleached mod epdt alt zone. most lam 80° ca.
																			mod coarse silty to fairly sandy material. prob orig coarse to
97.73		E.O.H.																	fine siltstone.

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-05A

PROPERTY : SWIFT RIVER

				depth	dip
UTM E	382552 E	Azimuth	35°		
UTM N	6671395 N	Inclination	-45°		
Elev	1244 m	Core Size	NQ		

Survey Type : Acid test

Depth 74.70 m
Recovery ____ %
Logged by: DJT
Drilled by: DJ Drilling
Date: July 19,97

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
0.00	9.50														till				overburden - no sample recovery
9.50	11.20			tr	clots, blebs	85%		15%	<1%			-	20%		andesitic tuff	green & white	c gr	layered	prob orig interbedded andesite tuff, poss xtal tuff, and sltst. bt lam deformed around <2mmX4mm feldspar lenses & xtals. more chlorite than bt, approx 10% bt, minor 5mm qtz/act veins cut lam. bca=70° lam pinch & swell.
11.20	11.42	117525	0.22	7%	clots, & blebs	88%		10%	2%			-	30%	kspar, minor oxid	silty and tuff	dk green & white	c gr	disrupted	veined qtz-act schist. qtz-act-rich zone; orig lam completely disrupted by irreg qtz-act vein. biotitic qtz-act schist.
11.42	12.42			tr	clots, blebs,& dissem			100%				-	10%	minor epdt kspar, chl	andesite tuff	green & brown	c gr	layered	approx 20% bt; <1mm wide act veinlet part epidotized, xcuts lam, some bt chloritized in irreg patches near act/chlorite veins.
12.42	13.50			-								-	-	chl, m epdt, saus.	andesite tuff	green & white	c gr	layered	no biotite; feld mod saussuritized, branching act vein 10mm between 12.65-12.82 disrupts bedding. poss alt frags.
13.50	15.50			-								-	-	m epdt, chl, feld sauss	andesite tuff	green & white	c gr	layered	13.50-13.70 - biotite-rich interval Po clots in act layers at 14.54-14.59 and 14.88.
15.50	15.70	117533	0.20	7%	clots, & blebs	80%			20%			-	20%	minor epdt	andesitic - xtal tuff	green & white	m to c gr	layered	(TSSR97-12 @ 15.50-15.70) 4 cm qtz-rich vein purple violane?(purple Mn diopside); v high % act, orig layers largely obliterated. Sulfides assoc w/ qtz vein.
15.70	24.20			tr	clots, blebs & stringers	10%		85%	5%			-	5%	kspar, chl, oxid, minor epdt	andesitic xtal tuff	dk green & white	m to c gr	layered	minor patches of violane. Coarsely to thinly layered act and qtz-feld layers; purplish tinge in some layers, poss indicator of violane. 16.9 -clot of po, tr Cpy. 16.95-17.45 - kspar alt & slightly rusty zone. 17.07 - 10mm act vein w/ clots Po & Cpy. 17.72 - tr Cpy, po in irreg qtz/act layer or lrg fragment. 18.13 - max 20mm Py clot in act vein. 18.43 30mm rich in violane. 18.22-18.72 - finer lam w/ evidence of soft sed def.19.25-19.40 2% Py clots, 30mm bt lam.19.42-19.62 core mod fractured; film rust on fract surfaces. 19.90-20.35 <1% Po clots and tr Cpy in w/ act. 20.25-20.75 10mm qtz-act vein w/ tr Po @ 30° to ca. Bca 65° 23.50-24.20 more epdt alt, almost all act alt to epdt <1% Po w/ tr Cpy & tr calc. Pale lam mostly feld-poss alt bt?
24.20	24.80	117534	0.60	3%	clots & blebs	45%		55%				-	6%	epdt, kspar	epdt alt tuff siltstone	green, wht, & brown	f to m gr	layered	strongly kspar altered & epidotized bt hornfels w/ alt act layers. Minor calc veins cut laminations at approx 40° to ca.

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-05A

PROPERTY : SWIFT RIVER

Depth 74.70 m
Recovery %
Logged by: DJT
Drilled by: DJ Drilling
Date: July 19,97

UTM E 382552 E Azimuth 35° Survey Type Acid test depth 0 dip 0
UTM N 6671395 N Inclination -45° 0 0
Elev 1244 m Core Size NQ 0 0

FROM metres	TO metres	Tag No	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
24.80	25.10			-								-	6%	epdt, kspar	silty and	green, wht,	f to m gr	layered	interlam kspar, act+ epdt, bt minor crenulation of qtz-rich lam.
															tuff	& brown			core broken-rusty fracture surfaces approx 40° to ca.
25.10	26.25	117535	1.15	2%	clots,	65%		35%				-	6%	kspar, epdt	silty and	green, wht,	f to m gr	layered	minor def of mica-rich lam around act lenses & feld.
					blebs &										tuff	& brown			poss orig interlam sltstn and xtal or fragmental and tuff. Minor
					dissem														calc vein along core axis. Sulfides conc along act-qtz layers.
26.25	27.05	117536	0.80	2%	clots,	55%		45%				-	15%	kspar, epdt,	silty and	green &	m gr	laminated	26.25 - 3mm vuggy qtz vein & fractures w/ interior calc at 45°ca
					blebs &									& chl	tuff	brown			sulfides conc in layers; dk chl around Po, prob alt of act.
					stringers														lam are uneven; pinching and swelling of feld layers. Bca 45°
27.05	27.21	117537	0.16	20%	semi-	94%		3%	3%	tr		5%	40%	epdt	silty and	green &	m gr	laminated	veined bt hornfels. Bladed magnetite in a layer 3mm black
					mssv &										tuff	brown			garnet? porphyroblast. Semi-massive Po & mag bands
					clots														overprinting lam. dendritic Po in qtz vein.
27.21	27.66	117538	0.45	3%	clots,	35%		60%	5%			-	6%	kspar, epdt	silty and	dk pistacci	m gr	layered	prob alt bt hornfels w/ act -rich interlayers. Prob siltstone
					blebs,&									& chl	tuff	green			and andesite tuff. Dk chl around Po clots in act. Lam irreg,
					dissem														mica conforms to swellings in feld layers - feldspars massive
																			w/out orig xtal boundaries - prob from alt and recrystallization.
27.66	28.15			tr	clots	100%						1%	7%	epdt, kspar	felsic tuff	green &	f to m gr	laminated	epidotized hornfels. Rusty fracture surfaces. 3mm vuggy qtz
					dissem											bluish green			vein w/ calc inside at 65° to ca. Lam irreg around felsic
																			patches. Felsic lam are bluish grey - poss related to or same
																			as "purply grey diopside or px" mentioned in the
																			cominco drill logs? Poss alt felsic frags, epdt-alt amphibolite.
28.15	28.46	117539	0.31	10%	clots &	76%		20%	4%			tr	30%	epdt	andesite	green &	m to c gr	laminated	px act hornfels. Patches of purple silicate - violane
					blebs										tuff	white			pyroxene. qtz-act/Po - rich zone. Minor bt in some laminae.
																			Act seems to be replaced by or in close assoc w/ crystalline
																			epidote. Sulfides follow layering.
28.46	31.30			<1%	dissem	55%		40%	5%			-	10%	tr epdt	andesite	dk green	f to m gr	laminated	qtz-act schist, but having suspicions that green
															tuff	& white			silicate may be a pyroxene, or a mix of amphibole & px.
																			minerals 2 green calc-silicates? Fine dissem sulfides
																			thru-out. Layers approx 3mm thick, pinch and swell,
																			discontinue in lenses. Felsic lam appear bleached, pale
																			green when wet. Few rectangular feld xtal outlines visible
																			surrounded by milky feld lenses. Prob orig tuffaceous orig

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-05A

PROPERTY : SWIFT RIVER

Depth 74.70 m
Recovery %
Logged by: DJT
Drilled by: DJ Drilling
Date: July 19,97

UTM E 382552 E
UTM N 6671395 N
Elev 1244 m
Azimuth 35°
Inclination -45°
Core Size NQ
Survey Type Acid test

depth	dip
0	0
0	0
0	0

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
31.30	32.00			1%	clots &	100%						-	20%	oxid &	silty tuff	pale green	f to m gr	laminated	bt lam show ripple xlam & poss turbiditic convolute lam.
					dissem									tr epdt		& br & wht			green silicate paler than previous act. Rusty fractures @
																			31.45 to 31.75 at approx 30°ca; kspar rusty orange in zone.
																			thin epdt & green calc-silicate veins at low angles to ca.
																			31.70 - 31.90 w/ minor Po at the end of qtz act layer 20mm
																			thick w/ 10% Po clots. Dissem Po poss replacing Py cubes.
32.00	32.50			-								-	-		impure	greenish	m to c gr	coarsely	interlayered dolomitic marble and bt and qtz+fled rich lam.
															dolomite	grey		laminated	layer 3mm thick & dissem reddish brown garnet lam irreg
																			from recrystallization? Remnant ripple lam.
32.50	36.05			<1%	dissem	95%		3%	2%			-	15%	kspar, &	silty felsic	brown &	f to c gr	laminated	bt lam deformed around pinching and swelling felsic
					clots									tr epdt	tuff	green			layers approx 25% bt. Some bleaching, kspar alt of bt
																			dk green lam of calc-silicate amphibole or px. interspersed
																			qtz-act layers; Po clots in 10cm qtz-act lam at 33.60-33.70
																			lam at 70°-80° to ca. Small 5 cm fold & Po clots (<2%) at
																			35.50. Po in thin act veins xcutting lam for 2cm at 35.95m.
36.05	36.40			-								-	15%	kspar of bt	andesitic	green grey	m gr	laminated	bt altering to a purply grey, lam at 75°ca. Felsic lam
														& tr epdt	to felsic	& white			contain dissem & lenses of mainly dk green and minor
															tuff				pale green(not epdt) calc-silicate xcutting 2mm wide irreg
																			act? Vein.
36.40	39.30			tr	clots &	100%						-	15%	chl, epdt	silty tuff	green &	f to c gr	irreg	bt lam pinch & swell around felsic dk green px - bearing
					dissem											brown		laminated	layers & lenses. Poss prograde metamorphic sltstn or
																			mudstone and greywacke or tuff. Bt appears to be partially
																			replaced by kspar+px? - bleached purply grey colour. In
																			qtz-act zone, Po is surrounded by dk chl. 37.00-37.70-mod
																			bleached appearance, bt highly altered. 37.50 - small fold
																			w/ Po <1% over 10cm. 37.70-37.90 45% bt, finer lam. 37.90-
																			38.45 - bt highly alt to chl and kspar - alt in feathery
																			patterns showing original lam texture. 38.45-38.70 - 50%bt,
																			less alt, minor soft-sed def. 38.70-39.30 - more bleached,
																			kspar alt zone bt/chl lam deformed around felsic lam.
39.30	46.05			<1%	dissem	90%		10%				-	2%	kspar+px	silty tuff	purply,	f to m gr	laminated	originally finely laminated; feathered alteration. Core has
					clots									minor epdt		br & gm			feathery to mottled or splotchy appearance. Small,
																			sporadic patches of purple mineral-diopside? Bt has small

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-05A

PROPERTY : SWIFT RIVER

				depth	dip
UTM E	382552 E	Azimuth	35°	0	0
UTM N	6671395 N	Inclination	-45°	0	0
Elev	1244 m	Core Size	NQ	0	0

Survey Type Acid test

Depdtth 74.70 m
Recovery %
Logged by: DJT
Drilled by: DJ Drilling
Date: July 19,97

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
																			roundish patches of kspar+px alt. V.few minor calc veinlets.
																			Po conc in m gr Crystalline act? Patches & veins;
																			some Po pseudomorphs Py cubes. Tr Cpy in patch of
																			violane.
46.05	47.15	117540	1.10	2%	clots &	90%		10%	tr			-	2%	kspar+px	silty tuff	purply,	f to m gr	laminated	comments as above, more violane & Po. Po conc in
					dissem									minor epdt		br & gm			act-rich zones.
47.15	49.30			<1%	clots &	90%		10%				-	2%	kspar + px	silty tuff	purply,	f to m gr	laminated	as for 39.30-46.05; more kspar and epdt alt.
					dissem									epdt.		br & gm			
49.30	50.10			tr	clots &	95%		5%				tr	65%	minor oxid	rhyolite	greenish	f gr	laminated	bleached bt-px-feld hornfels for 10 cm, then rusty zone w/
					dissem									& epdt	tuff?	grey to wht			minor calc+act veinlets & fractures for 10cm. 49.60 - max
																			1cm Po clot in qtz-calc-act lens. Minor Po in act + calc veinlets
																			fine lam of discont bt in almost pure silica + feld. Deformed
																			around few to 2mm feld xtals and possible small fragments
50.10	53.55			tr	clots	100%						-	50%	chl, kspar	intrlayered	grn-brwn	f gr	laminated	even laminations, minor deformation around m gr qtz-act
					stringers										rhyolite	& pl grey			layers. Bt layers slightly bleached, kspar alt. Tr ghost
					dissem										tuff				shards. Lam at 85° to ca. Most rhyolitic (palest, highest
																			silica) intervals at 50.10-50.75;50.95-51.10; 51.50-52.90 &
																			53.10-53.30. 53.30-53.55 - bleached kspar-rich qtz-act
																			veined alt bt hornfels.
53.55	54.65			<1%	blebs,	100%						-	6%	chl, &	silty and	dk brwnish	f gr	laminated	dk brown & green banded appearance. Most Po is in act
					stringers									m kspar	tuff	green			layers. 3mm calc vein concordant w/ lam at 70° to ca. Chl
					clots														filled fracture at 50° to ca.
54.65	54.95			tr	dissem	90%		10%				-	70%	kspar	silty tuff	brown, wht	f to c gr	massive -	qtz-act veined silty tuff. 10cm c gr Qtz-act+kspar followed
					cubes											& green		laminated	by deformed bt & felsic lam.
54.95	56.07			2%	clots,	99%			1%			-	12%	chl, kspar	silty and	green &	f to c gr	laminated	evenly laminated partially chloritized bt hornfels w/ qtz-act
					blebs &										tuff	brown			layers up to 10 cm wide. Lam at 65°ca. Minor xcutting calc
					lenses														+act (later) and chl+Po (earlier) veinlets.

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-05A

PROPERTY : SWIFT RIVER

					depth	dip
UTM E	382552 E	Azimuth	35°	Survey Type Acid test	0	0
UTM N	6671395 N	Inclination	-45°		0	0
Elev	1244 m	Core Size	NQ		0	0

Depth 74.70 m
Recovery %
Logged by: DJT
Drilled by: DJ Drilling
Date: July 19,97

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
56.07	63.43			tr	clots	80%		20%				-	60%	chl, kspar,	rhyolite	brown-gm	f gr & c gr	deformed	qtz-act veined qtz-sericite schist. Strongly deformed and
					blebs									minor epdt	tuff	& white		laminations	folded to slightly deformed laminations w/ felsic -
																			laminae w/ large numbers of wide coarse qtz-act
																			intervals. Qtz-act intervals at: 56.45-56.48; 56.71-56.81;
																			57.00-57.10; 57.17-57.22; 57.52-57.65; 57.73-57.88; 58.62-
																			58.95; 59.12-59.24; 59.28-59.35; 59.59-59.62; 59.90-59.97;
																			60.10-60.17; 60.22-60.31; 60.43-60.73; 61.05-61.10; 61.32-
																			61.52; 61.62-61.93; 62.08-62.13; 62.27-62.38; most Po &
																			epdt alt in qtz-act zones. Minor rust and oxidation of
																			fractures at 61.30m. Some bt interlayers, decreasing
																			down section.
63.43	63.97	117590	0.54	3%	clots,	98%			2%			<1%	55%	minor epdt	rhyolitic	greenish	f gr	deformed	qtz-sericite schist. f gr Dissem magnetite sort of follows
					lenses										tuff	grey		laminations	lam. Po in 2 major 5cm and (2) 1cm qtz veins.
					& blebs														
63.97	65.55			tr	clots	100%						<1%	35%	minor epdt	rhyolitic	greenish	f gr	deformed	qtz-sericite schist. Fine dissem magnetite. Crenulated &
					blebs										tuff	grey		laminations	tightly folded sericite lam. Minor qtz-act zones containing
																			most of the Po and m gr epdt. Other epdt is in feldspars.
65.55	67.90			1%	clots							tr	20%	kspar,epdt	silty tuff	brown &	f to c gr	laminated	laminae more even to slightly deformed Po clots in qtz-act
														bleaching		green			irreg veins. Bt bleached irreg-alt to kspar near act vein.
67.90	68.60	117591	0.70	3%	clots	95%			5%			-	35%	chl	rhyolitic	pale green	f to c gr	laminated	Po in x cutting act veins. Some coarser xtals suggest
					blebs									bleaching	tuffaceous	& brown			tuff component. Chl hairline tensional fractures. Patches
					vein fill										siltstone				of remnant. Qtz-act veining & disrupted lam.
68.60	69.05			tr	dissem	100%						-	15%	chl,	tuffaceous	green-grey	f to m gr	deformed	bt altering to purplish silicates - gt? Px? Lam highly
					in veinlet									minor epdt	siltstone	& brown		laminations	deformed and cut by chl veins and fractures.
69.05	69.95	117592	0.90	5%	clots	95%			5%			tr	4%		meta-xtal	greyish	f to m gr	deformed	bt lam altering, purplish, bleached lam; coarser (0.5-3.0mm)
					lenses										tuffaceous	purple		laminations	particles in lam suggest tuff component. Po in two types;
															siltstone				roughly concordant w/ lam and interstitial to crystals in
																			qtz-rich vein.
69.95	70.55	117593	0.60	4%	clots	100%						tr	2%	minor epdt	meta-xtal	pale	f to m gr	laminated	Po conc in act veinlets. Minor deformation of lam.
															tuffaceous	purple			
															siltstone				

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-05A

PROPERTY : SWIFT RIVER

Depth 74.70 m
Recovery ____ %
Logged by: DJT
Drilled by: DJ Drilling
Date: July 19,97

UTM E 382552 E
UTM N 6671395 N
Elev 1244 m

Azimuth 35°
Inclination -45°
Core Size NQ

Survey Type Acid test

depth	dip
0	0
0	0
0	0

FROM metres	TO metres	Tag No	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
70.55	71.55			-								-	-	minor grn-	impure	white to	c gr	massive -	grey laminations poss tuff component. Some f gr Black
														calc-silcte	marble	grey		laminated	xtals or angular particles.
71.55	71.80	1E+05	0.25	2%	clots &	100%						-	-	minor talc,	impure	greensih	c gr	mottled	mottle outlines poss soft sed def; veining or brecciation?
					blebs									& green	marble	white			
														calc-silicte					
71.80	72.35			tr	clots	100%						-	-	m talc	impure	lt to dk	f to c gr	massive -	lam interrupted by calc vein. Lam poss tuffaceous origin - c
															marble	grey		laminated	grey silliceous material; impure marble.
72.35	73.35	1E+05	1.00	3%	clots &	100%						-	15%	m epdt	meta-rhy	bluish	f to m gr	laminated	minor soft sed deformation. Minor bt lam. Ghost xtals &
					blebs										xtal tuff	grey			fragments. Po in chl veinlets & replacing frags. Silty
																			rhyolite xtal tuff.
73.35	74.30	1E+05	0.95	3%	clots	100%	tr					tr	10%	m epdt	meta-rhy	bluish	f to m gr	laminated	grades into impure marble. Po replacing fragments?
					blebs										xtal tuff	grey			xtal outlines.
					dissem														
74.30	74.70		0.40	tr	dissem	80%	20%					-	30%	m epdt	meta-rhy	pale,	f to m gr	laminated	calcareous rhyolite xtal tuff. Remnant xtals or small
															xtal tuff	greenish			fragments < 2mm.
																grey			
74.70				E.O.H.															END OF HOLE

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-06

PROPERTY : SWIFT RIVER

Depth 114.30 m
Recovery ____ %
Logged by: SPS
Drilled by: DJ Drilling
Date: 8/2/1997

UTM E 382090 E
UTM N 6671836 N
Elev 1210 m

Azimuth 35°
Inclination -50°
Core Size NQ

Survey Type : Acid test

depth	dip

FROM m	TO m	Tag No.	length m	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
0.00	9.80														casing				overburden - no core recovery
9.80	14.90			-								-	10%	chl, epdt	andesitic	dark green	f gr	regular -	chloritic matrix/ groundmass w/ thin regular to crenulated
															xtal tuff			crenulated	bt laminae & bands (to5mm) increasing towards base; irreg
																		laminations	contorted, boundinaged-discontinuos wisps, lamina &
																			bands of pistachio green epdt(1mm - 30mm) & whitish-pink
																			kspar; irreg discontinuous to concentrated 'cloud-like'
																			patches crystalline qtz centered by dark clots & small frags
																			of act(&/or px-diopside) + sulfide disseminations, generally
																			parallel to lam, at times xcutting. Dominant lam at 75° ca,
																			minor at 60°. Calcite lined fractures at 30° ca. @ 13.63.
																			sulfides: Po specks, clots & stringers generally along
																			laminations & as disseminations along fractures.
14.90	20.72			-								-	20%	chl, epdt	silty and	greyish-	f gr - silty	regular -	greyish green matrix/groundmass w/ prominent reddish
															xtal tuff	brownish		crenulated	brown bt as closely spaced, regular to crenulated wisps,
																green		laminations	lamina, discontinuos bands (up to 6cm) generally
																			intercalating-blending to groundmass & pinkish to faint
																			brown k-feldspars that are like-wise disposed. Lamina,
																			regular to contorted discontinuos bands & intercalations
																			of pistachio green epidote prominent from 14.9-15.3, minor
																			from 20.4-22.3. Qtz act ' cloud-like' patches parallel to &
																			xcutting lam, characterized by core of dark clots & small
																			fragments of act (&/or px-diopside) & sulfides (po dissem)
																			ubiquitous thin lamina of black, waxy chlorite;
																			carbonaceous material? Dominant lam avg 75°ca. Sulfides:
																			discontinuos stringers, clots of Po @ 17.20, 18.07,18.25,
																			18.26, w/ or w/in qtz-act as 5mm Po band @ 15.75;
																			as stringers & clots along fracture @ 16.6; in 'clouds' as
																			disseminations @ 17.15 parallel to laminations at 65°ca, @
																			17.75, 6cm tk @ 18.74 & discontinuous patches from 19.68-
																			20.30; 17.20-20.30 avg max 1% sulfides
20.72	21.46	117634	0.74	4%		95%		5%				-	30%	chl, epdt	andesitic	dark green	f gr	regular -	as in 9.80-14.90 w/ bands & wispy lamina of black chl
															xtal tuff			crenulated	(&/or carbonaceous material) intercalated w/ matrix/ground-
																		laminations	mass; qtz-act as discontinuous patches & clouds rimmed
																			by epdt & chl, generally parallel lines. Regular, very contorted
																			lam at 45°ca flattening to 70°ca, fingers & wisps into matrix.

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-06

PROPERTY : SWIFT RIVER

UTM E 382090 E | Azimuth 35° | Survey Type : Acid test | depth 0 | dip 0 | Depth 114.30 m
UTM N 5671836 N | Inclination -50° | 0 | 0 | Recovery %
Elev 1210 m | Core Size NQ | 0 | 0 | Logged by: SPS
Drilled by: DJ Drilling
Date: 8/2/1997

FROM m	TO m	Tag No.	length m	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
21.46	22.60	117639	1.14	2%	stringers	100%						-	40%	chl, epdt	andesitic	dark green	f gr	regular -	Po stringers/ clots in qtz-act patches.
					clots										xtal tuff			crenulated	
																		laminations	
22.60	23.21			tr								-	-	chl, epdt	andesitic	dark green	f gr	regular -	
															xtal tuff			crenulated	
																		laminations	
23.21	23.96	117640	0.75	2-3%	stringers	100%						-	30%	chl, epdt	andesitic	dark green	f gr	laminated	Po stringers/clots/blebs parallel to laminations & in
					blebs &										xtal tuff				qtz-act patches; laminations at 70°ca.
					clots														
23.96	25.00	117641	1.04	2%	stringers	95%		5%				-	30%	chl, epdt	andesitic	dark green	f gr	fractured	as above + disseminations on 1cm thick fracture at
					blebs &										xtal tuff			laminated	45°ca @ 14.1; near base FeO stained calcite filled
					clots														fracture at 20°ca.
25.00	25.95	117642	0.95	5%	clots &	90%		10%				-	20%	chl, epdt	andesitic	dark green	f gr	fractured	top of interval, 2 cm cloudy band of qtz/act at 70° ca
					blebs										xtal tuff			laminated	rimmed by Po; @ 25.5 Po disseminated fillings in fractures
																			1cm thick at 60°ca & 3mm thick at 35°ca; other sulfides in
																			interval as scattered, discontinuous clots/blebs of Po & Py
																			& 1-2 cm bleb of Py.
25.95	27.00	117643	1.05	3%	clots	100%		tr				-	30%	chl, epdt	andesitic	dark green	f gr	laminated	Po as specks/clots in 10-15mm qtz-act bands & as
															xtal tuff				disseminations in the cores of discontinuous qtz-act
																			patches.
27.00	28.20	117644	1.20	2%	clots	95%		5%	tr			-	15%	chl, epdt	andesitic	dark green	f gr	laminated	scattered sulfides as specks/clots in dark matrix & as
															xtal tuff				disseminations in calcite filled fractures at 35° ca & 11°ca
																			@ 27.05 & at 30° ca @ 27.50.
28.20	28.57	117524	0.37	25%	mssv,	95%	tr	5%	tr			5%	5%	chl, epdt	andesitic	dark green	f gr	laminated	massive Po sections 55, 40 & 30cm thick + 25cm interval
					clots &										xtal tuff				consisting of po/py clots/blebs w/ 70°ca, paralleling
					blebs														magnetite striae; intervening silty andesitic tuff ground-
																			mass w/ magnetite lamina, Po minor Py clots & minor
																			Cpy in cracks across laminations.

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-06

PROPERTY : SWIFT RIVER

Depth 114.30 m
Recovery %
Logged by: SPS
Drilled by: DJ Drilling
Date: 8/2/1997

UTM E 382090 E
UTM N 5671836 N
Elev 1210 m
Azimuth 35°
Inclination -50°
Core Size NQ
Survey Type : Acid test

depth	dip
0	0
0	0
0	0

FROM m	TO m	Tag No.	length m	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
28.57	29.39	117657	0.82	4%	dissem, clots, & blebs	95%		5%	tr			-	15%	chl, epdt	andesitic xtal tuff	dark green	f gr	regular - crenulated laminations	regular to crenulated lamina & discontinuous bands 65°ca of bt, dull white kspar & patches of qtz-act; sulfides in qtz-act; sulfides in qtz-act. Cloudy patches as disseminations to clots/blebs parallel to lam. (1cm patches @ 28.57 & 28.75) and along thin fractures.
29.39	29.92			1%	dissem	tr		tr				-	10%	bleached oxidized	andesitic xtal tuff	dirty white	f gr	regular - crenulated laminations	dirty white, bleached sheared appearance, clayey interval consisting of alternating to intercalated regular to crenulated lamina, discontinuous bands & boundinaged lenses of silt. Groundmass, bt, green & black (carbonaceous) Chl, minor epdt & kspar 10mm qtz band 50°ca & qtz-act 'cloudy' patches w/ sulfide dissemination in core.
29.92	30.15			tr				tr				-	5%	bleached oxidized	andesitic xtal tuff	dark green	f gr	shear, fractures	crushed, packed coarse broken core : sheared ground-crushed coarse grained gougy chloritized-epidotized groundmass, .50cm broken qtz band 55°ca, odd calc thin fracture fillings & Py specks; brownish red stains near base.
30.15	33.30			-								-	-	bleached oxidized	andesitic xtal tuff	dirty white	f gr	shear, breccia	dirty white, bleached broken core consisting of dk green fragments of epidotized ground mass, deep reddish pink hematite stains, black chl(carbonaceous material) 40°ca; upper portions brecciated groundmass & wht kspar bands.
33.30	44.50			-								-	-	bleached oxidized	andesitic xtal tuff	dk grayish green	f gr	crenulated laminated fractured	mainly broken core; 42.4-42.7 lost core; alternating dk greer chloritic sheared & grayish green hard sections of ground-mass w/ regular(45°) - crenulated laminations & tin-medium bands of blk chl (carbonaceous material?) white kspar, qtz & qtz-act; bleached-reddish hematite stains from 33.6 to 44.15 w/ laminations at 65°ca, intense @ 36.5; calc filled fractures @ 32.6 at 20° ca, @ 36.0 at 20°ca w/ sulfide stringers parallel to laminations, @ 40.9 & 43.2 at 20°ca; sulfides in highly broken core: as Py cubes in clots/blebs @ 36.35-36.60&40.6-40.7

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-06

PROPERTY : SWIFT RIVER

Depth 114.30 m
Recovery %
Logged by: SPS
Drilled by: DJ Drilling
Date: 8/2/1997

UTM E 382090 E Azimuth 35° Survey Type : Acid test depth 0 dip 0
UTM N 6671836 N Inclination -50° 0 0
Elev 1210 m Core Size NQ 0 0

FROM m	TO m	Tag No.	length m	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
44.50	47.70			tr	dissem	tr		tr				-	-	chl, epdt	silty	grnish-	f gr	crenulated	andesitic xtal tuff groundmass w/ interbedded biotitic
															andesitic	brwnish		laminated	bands; distinct bt feldspar mottled bands- discontinuous
															xtal tuff	gray		fractured	30cm @ 46.35 + 10mm bands @ 46.58, 46.85, rimmed by
																			epdt, @ 47.35 at 50°ca; @ 47.61-47.66 epidotized chilled
																			contact appearance; qtz-act 30mm mottled patches @ 45.5;
																			calc lined fracts of thin platy hematitic stained & black chl
																			(carbonaceous material?) units w/ Py disseminations & .5 -
																			1mm qtz xtals at 20°ca @ 44.95 & 45.70(5mm), 45.3 and
																			47.55 calc lined chloritized fractures at 45°ca; fracture
																			@ 45.4 at 35°ca; sulfides as disseminated Po clots & blebs
																			from 44.50-45.15,@47.10 at 60°ca, @47.18,@47.25-47.31,
																			@ 47.38- 47.42 in mottled unit, & @ 47.5m.
47.70	48.80			<1%	specks,	95%		tr	5%			-	-	chl, epdt	silty	moss	f gr	crenulated	highly chloritized-epidotized interval w/ thin bt & blk chlorite
					clots &										andesitic	green		laminated	(carbonaceous material?) bands, stained by oxidized red
					blebs										xtal tuff			fractured	brown hematite at 50° ca laminations. first 20 cm of 3%
																			sulfides (discontinuous clots/blebs of Po, minor Cpy, odd
																			specks of Py throughout.
48.80	49.55			-								-	-	chl, epdt	silty	moss		sheared	oxidized, hematite, reddish brown stained interval, sheared
														oxidized	andesitic	green	f gr	fractured	black chlorite (carbonaceous material?) section from 49.15-
															xtal tuff				49.24; calcite filled fractures, main one @ 49.5 at 20°ca.
49.55	50.04			-								-	-	chl, epdt	silty	greenish	f gr	laminated	less prominent red hematite stains-transition to original
														oxidized	andesitic	gray			groundmass w/ black chlorite (carbonaceous material?)
															xtal tuff				discontinuous patches roughly parallel to laminations in
																			last 0.24m of section.
50.04	51.28			-								1%	-	chl, epdt	silty	dk green	f gr	laminated	moss green and black chlorite lamina bands, rusted bt? &
														oxidized	andesitic			fractured	calc-silicate bands at 50° ca, last .25m chloritized w/ qtz-act
															xtal tuff				cloudy patches; calc-lined wavy-stringy fracture at 20°ca
																			@ 50.30 w/ black chlorite, minor magnetite; parallel to cm
																			-long, thin calc filled fracture w/ deep red hematite stains
																			& assoc 5mm thick fractures at 20°ca.
51.28	51.81	117637	0.53	-								30%	20%	chl, epdt	silty	greenish	f to c gr	semi-	magnetite as blebs, patches parallel to lam in qtz-act; semi-
														oxidized	andesitic	gray		massive	massive near base.
															xtal tuff				

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-06

PROPERTY : SWIFT RIVER

Depth 114.30 m
Recovery ____ %
Logged by: SPS
Drilled by: DJ Drilling
Date: 8/2/1997

UTM E 382090 E
UTM N 6671836 N
Elev 1210 m
Azimuth 35°
Inclination -50°
Core Size NQ
Survey Type : Acid test

	depth	dip
	0	0
	0	0
	0	0

FROM m	TO m	Tag No.	length m	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
51.81	52.79	117518	0.98	-								70%	15%	chl, epdt	silty andesitic xtal tuff	greenish gray	f to c gr	semi-massive	magnetite in qtz-act patches/ clouds; lower half in mottled groundmass.
52.79	53.40	117517	0.61	-								80%	-	chl, epdt	silty andesitic xtal tuff	greenish gray	f to c gr	semi-msv to msv	mottled upper 1/3 of interval, magnetite as blebs-semi-massive & massive.
53.40	53.94	117635	0.54	5%	dissem	100%						40%	-	chl, epdt	silty andesitic xtal tuff	greenish gray	f to c gr	semi-massive	magnetite as blebs & semi-massive; Po as speck and disseminations.
53.94	54.06	117517	0.12	2%	dissem	100%						60%	-	chl, epdt	silty andesitic xtal tuff	greenish gray	f to c gr	semi-msv to msv	magnetite as blebs - semi-massive & massive; Po disseminations & specks.
54.06	54.50	117638	0.44	-								15%	-	chl, epdt	silty andesitic xtal tuff	greenish gray	m gr	fracture	mix of magnetite, blk chlorite (carbonaceous material?) w/ deep red hematite stains in chloritized groundmass; calc lined fracture.
54.50	55.43			-								-	5%	chl, epdt	silty andesitic xtal tuff	dk grayish green	m gr	regular - crenulated laminations	groundmass w/ pink feldspar & chlorite. Discontinuous bands; thick biotite, dk brown bands from 55.00 to 55.43 wit green, gray gouge contact at 60°ca parallel to laminations.
55.43	55.98			-								-	40%	minor chl, epdt	felsic xtal tuff	gray	f to c gr	regular - crenulated laminations	qtz-act patchy clouds in white & whitish gray chloritized-epidotized feldspar & qtz-fragments.
55.98	58.55			tr	specks blebs, & stringers			tr				-	5%	minor chl, epdt	silty andesitic xtal tuff	dark brownish green	f to c gr	regular - crenulated laminations	dominant intercalating laminated to discontinuous brown bt bands in chloritized groundmass, minor qtz, act and pistachio green epdt; Py in specks, blebs, and stringers parallel to laminations at 50°ca from 57.98-58.08. Dominant
58.55	62.55			-								-	20%	minor chl, epdt	silty andesitic xtal tuff	gray	f to c gr	regular - crenulated laminations	dominant intercalating regular to crenulated wavy discontinuous cloudy patches of actinolite bands w/ minor epidote & k feldspar.

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-06

PROPERTY : SWIFT RIVER

				depth	dip
UTM E	382090 E	Azimuth	35°		
UTM N	6671836 N	Inclination	-50°	Survey Type : Acid test	0	0
Elev	1210 m	Core Size	NQ		0	0
					0	0

Depth 114.30 m
Recovery ____ %
Logged by: SPS
Drilled by: DJ Drilling
Date: 8/2/1997

FROM m	TO m	Tag No.	length m	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
62.55	63.42	117645		3%	stringers	100%						-	20%	minor chl	silty	grayish	f to c gr	regular -	Po as laminated stringers, disseminations in dominant
					dissem									epdt	andesitic	green		crenulated	qtz-act patchy clouds intercalated w/ black chlorite
															xtal tuff			laminations	(carbonaceous material?) & epidote bands.
63.42	64.60	117646		3%	stringers	100%						-	15%	minor chl	silty	dark	f to c gr	regular -	as above, w/ biotite bands at 65°ca, and fractures parallel
					dissem									epdt	andesitic	brownish		crenulated	to ca. Calcite lined & chalk filled fractures.
															xtal tuff	green		laminations	
64.60	65.80			-								-	5%	chl, epdt	silty	dark	f gr	regular -	groundmass darkened by chlorite-epidote & biotite clouds
															andesitic	brownish		crenulated	and wispy laminations; qtz band at 65°ca.
															xtal tuff	green		laminations	
65.80	66.05	117647		4%	blebs	100%						-	10%	chl, epdt	silty	dark	f to c gr	crenulated	Po in qtz-act patchy clouds w/ intervening 5 cm biotite
															andesitic	brownish		laminations	band; fracture & lamination at 45°ca.
															xtal tuff	green		fractures	
66.05	67.10			-								-	5%	chl, epdt	silty	dark	f gr	crenulated	dominant brown biotite bands in groundmass; calc lined
															andesitic	brownish		laminations	fracture at 15°ca.
															xtal tuff	green		fractures	
67.10	67.85	117648	0.75	4%	stringers	100%						-	20%	chl, epdt	silty	grayish	f to c gr	regular	sulfides in qtz-act patches as stringers parallel to
															andesitic	green		laminations	laminations at 60°ca.
															xtal tuff				
67.85	73.70			tr	dissem	tr		tr				-	5%	epdt, chl	silty	brownish	f to c gr	regular -	groundmass w/ interbands of discontinuous pistachio
															andesitic	green		crenulated	green epidote & biotite(getting thicker near base) & qtz-act
															xtal tuff			laminations	patches; minor sulfides as Po disseminations, clots &
																			stringers parallel as well as across laminations; @ 68.23 &
																			70.06 10mm thick calc lined fracture at 45°ca parallel
																			to wavy laminations.
73.70	74.60	117649	0.90	5%	dissem	95%		5%				-	20%	minor chl	silty	brownish	f to c gr	regular -	sulfides as disseminated clots & blebs in speckled qtz-act
					clots &									epdt	andesitic	green		crenulated	patches, minor chloritized epidotized groundmass & biotite
					blebs										xtal tuff			laminations	bands.

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-06

PROPERTY : SWIFT RIVER

Page 7 of 10

UTM E 382090 E | Azimuth 35° | Survey Type : Acid test | depth 0 | dip 0 | Depth 114.30 m | Logged by: SPS
UTM N 6671836 N | Inclination -50° | depth 0 | dip 0 | Recovery % | Drilled by: DJ Drilling
Elev 1210 m | Core Size NQ | depth 0 | dip 0 | Date: 8/2/1997

FROM m	TO m	Tag No.	length m	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
74.60	83.26			tr		tr		tr				-	10%	chl epdt	andesitic	greenish	f - c gr	regular -	chloritized groundmass w/ speckled qtz-act patches &
															xtal tuff	gray		crenulated	intercalations of continuous to discontinuous epidote & bt
																		laminations	bands, minor k feldspar; fractures @74.67 - calcite lined
																		fractures	greenish gougy unit at 70° ca, @75.09 FeO stained
																			parallel to ca, @79.3 & 79.6 20mm long calc lined opposite
																			fractures at 15°ca w/ upper part displaying microfolding,
																			@81.13-81.26 irregular calcite filled fractures w/ main one
																			at 20 ° ca, @81.70 - calcite lined fractures at 40°ca, & 82.73
																			FeO stained, calc lined fracture at 25°ca; sulfides mainly as
																			scattered disseminations on qtz-act patches, and stringers.
																			discontinuous fracture fillings from 77.68-77.71 at 35° ca
																			and 81.33-81.42; and as stringers-disseminated specks
																			parallel to laminations at 60°ca.
83.26	83.63			1%	clots, &	95%		5%				-	-	chl epdt	andesitic	greenish	f gr	regular -	broken core, marked cave by drillers: FeO stained faulted
					blebs										xtal tuff	gray		crenulated	unit at 35°ca and crenulated laminations at 45°ca w/ minor
																		laminations	Po, Py clots/blebs.
																		fractures	
83.63	84.09	117516	0.46	90%	semi-	95%		5%				-	-	chl epdt	andesitic	grayish	f gr	semi-msv	semi-massive Po w/ minor Py stringers in groundmass.
					msv &										xtal tuff	green			
					stringers														
84.09	85.35	117650	1.26	5%	dissem	95%		5%				-	-	chl epdt	andesitic	grayish	f - c gr	crenulated	chloritic groundmass w/ crenulated feldspar bands,
															xtal tuff	green		laminations	speckled qtz-act patches, lighter coloured epidote & biotite
																			bands; Po disseminations in qtz-act.
85.35	87.45			-								-	-	chl epdt	andesitic	brownish	f - m gr	regular -	chlorite, minor biotite groundmass w/ black chlorite
															xtal tuff	green		crenulated	(carbonaceous material?) & pinkish k-feldspar parallel to
																		laminations	laminations at 35° ca. Odd Po specks.
87.45	88.24			-								-	-		impure	grayish	m-c gr	crenulated	impure marble w/ discontinuous to boudinaged pinkish
															marble	white		laminations	white carbonate(rhodochrosite?) and white & pink feldspar
																		massive	bands near base; sharp upper contact.
88.24	88.80			-								-	-	chl epdt	andesitic	brownish	f - m gr	regular -	as in interval 85.35 to 87.45m
															xtal tuff	green		crenulated	
																		laminations	

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-06

PROPERTY : SWIFT RIVER

Depth 114.30 m
Recovery %

				depth	dip
UTM E	382090 E	Azimuth	35°		
UTM N	3671836 N	Inclination	-50°	0	0
Elev	1210 m	Core Size	NQ	0	0
		Survey Type :	Acid test	0	0

Logged by: SPS
Drilled by: DJ Drilling
Date: 8/2/1997

FROM m	TO m	Tag No.	length m	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
88.80	93.85			tr	clots, &	100%						-	-	chl epdt	andesitic	grayish	f - c gr	regular -	interbedded, laminated light to dark grayish green
					blebs										xtal tuff	green		crenulated	chloritized groundmass, moss to light green speckled
																		laminations	feldspar - black chlorite (carbonaceous material?)
																		sheared	discontinuous patches & bands (possible rhyolite xtal tuff),
																		fractured	minor qtz/feldspar fragments; laminations at 60°ca; sheared
																			interval from 90.85 to 93.85 characterized by FeO stained
																			fractures parallel to ca. Thin clay bands parallel to fractures
																			at 50°-60°ca; last 1.22m is brecciated; odd Po clots / blebs.
93.85	94.50	117514	0.65	50%	semi-	70%	20%	5%	5%			-	20%	chl epdt	andesitic	grayish	f - c gr	semi-msv	semi-massive Po, minor Py & Cpy, w/ blebs and semi-
					mssv &										xtal tuff	green			massive magnetite & sphalerite.
					clots														
94.50	95.05	117515	0.55	65%	massive	88%	5%	5%	2%			15%	-	chl epdt	andesitic	grayish	f - m gr	massive	3 massive units of Po, minor Py & Cpy, w/ blebs of
					& blebs										xtal tuff	green			magnetite and sphalerite.
95.05	96.90			-								-	-	chl epdt	impure	grayish	f - m gr	laminated	.05 yellowish green chloritized groundmass w/ 'chilled'
															marble	white		fractured	contact w/ impure limestone at 50°ca. Black chlorite
																		massive	(carbonaceous material?) pink carbonate (rhodochrosite?)
																			k-feldspar bands at 40°ca @96.5: fracture at 40°ca @ 95.9
96.90	98.04	117651	1.14	2%	clots &		tr	100%				-	-	chl epdt	impure	grayish	f - m gr	laminated	alternation of above marble & possible felsic xtal tuff,
					blebs										marble &	white		fractured	minor black chlorite; sulfides as Py clots and blebs; minor
															felsic tuff			massive	sphalerite.
98.04	99.06	117652	1.02	3%	clots &			100%				-	-	chl epdt	impure	grayish	f - m gr	laminated	as above, sulfides as large Py clots and blebs.
					blebs										marble &	white		fractured	
															felsic tuff			massive	
99.06	100.00			-								-	-	chl epdt	impure	grayish	f - m gr	laminated	as above
															marble &	white		fractured	
															felsic tuff			massive	
100.00	102.86											-	-	chl epdt	marble	grayish	f - m gr	massive	w/ minor inclusions of as above; lower contact at 45°ca.
																white			
102.86	103.10			-								-	-	chl epdt	felsic xtal	light	f - m gr	crenulated	siliceous kspar unit w/ black chlorite (carbonaceous
															tuff	green		laminations	material?) w/ wispy bands.

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-06

PROPERTY : SWIFT RIVER

					depth	dip
UTM E	382090 E	Azimuth	35°	Survey Type : Acid test	0	0
UTM N	3671836 N	Inclination	-50°		0	0
Elev	1210 m	Core Size	NQ		0	0

Depth 114.30 m
Recovery ____ %
Logged by: SPS
Drilled by: DJ Drilling
Date: 8/2/1997

FROM m	TO m	Tag No.	length m	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
103.10	103.95	117519	0.85	3%	clots, blebs, & stringers	70%	30%					10%	-		felsic xtal tuff	light green	f - m gr	laminated	sulfides as clots/blebs and stringers
103.95	104.90	117520	0.95	4%	stringers & clots		100%					10%	-		felsic xtal tuff	light green	f - m gr	laminated fractured	sulfides as stringers/clots; calcite lined fractures at 20°ca @ 104.35m
104.90	105.69	117521	0.79	7%	clots, blebs & stringers	100%			tr			30%	-		felsic xtal tuff	light green	f - m gr	laminated	sulfides as clots/ blebs and stringers.
105.69	106.70	117522	1.01	4%	clots, blebs & stringers	95%	3%		2%			-	-		felsic xtal tuff	light green	f - m gr	laminated fractured	as above, calcite lined fracture at 60° ca @ 105.69m
106.70	107.57	117523	0.87	35%	clots, blebs & stringers	85%		5%	10%			-	-		felsic xtal tuff	light green	f - m gr	laminated fractured	as above, yellowish brown groundmass near base.
107.57	109.13			-								-	-		marble	grayish white	f - m gr	massive	marble - impure marble
109.13	110.42	117653	1.29	6%	clots, blebs & stringers			100%				-	-	minor epdt & oxid	felsic xtal tuff	light moss green	f - m gr	laminated	upper .20m of impure marble has Py clots, mainly siliceous feldspar (felsic tuff) interval w/ brownish red hematite stains thin epidote bands; sulfides as Py clots/blebs in upper & lower units.
110.42	111.24	117654	0.82	5%	clots, blebs & stringers			100%				-	-		felsic xtal tuff	light moss green	f - c gr	laminated	Sulfides as Py clots/blebs/stringers concentrated in upper half of interval in felsic tuff - siliclastic mixture.
111.24	112.93			-								-	-		marble	grayish white	f - c gr	laminated	dirty marble/siliclastic mix (felsic tuff as above) marble w/ wispy biotite bands and white feldspar patches rimmed with chlorite and epidote.

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-06

PROPERTY : SWIFT RIVER

				depth	dip
UTM E	382090 E	Azimuth	35°		
UTM N	6671836 N	Inclination	-50°	0	0
Elev	1210 m	Core Size	NQ	0	0
		Survey Type :	Acid test	0	0

Depth 114.30 m
Recovery %
Logged by: SPS
Drilled by: DJ Drilling
Date: 8/2/1997

FROM m	TO m	Tag No.	length m	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
112.93	113.53	117655	0.60	2%	clots &			100%				-	-		felsic xtal	dirty white	f - c gr	regular -	large Py clots-blebs in siliclastic melange (felsic tuff) of
					blebs										tuff			crenulated	highly microfolded bands of k-feldspar chloritic-epidotized
																		laminations	dark gray groundmass.
113.53	114.30	117656	0.77	4%	clots &			100%				-	-		felsic xtal	dirty white	f - c gr	regular -	clots and blebs of Py disseminated in as above's felsic tuff.
					blebs										tuff			crenulated	
																		laminations	
114.30		E.O.H.																	END OF HOLE

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-07

PROPERTY : SWIFT RIVER

UTM E 376821 E Azimuth 80° Survey Type Acid test depth dip

UTM N 6674520 N Inclination -45°

Elev 1267 m Core Size NQ

Depth 78.96 m

Recovery 98%

Logged by: DJT

Drilled by: DJ Drilling

Date: July 21,97

FROM m	TO m	Tag No.	length m	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
0.00	7.60		7.60												overburden				casing, no recovery
7.60	8.55	117541	0.95									3%	1%	minor epdt	actinolite	medium	m to c gr	massive	minor calc veining w/ dk chlorite margins; 5 mm calc vein
														oxidation	skarn	green			w/ interior qtz pod. minor rust staining on fractures & around
																			calc veins. interstitial calc; act veins to 1 by 3 mm blades
8.55	9.75	117542	1.20									7%		epdt	actinolite-	med gm	m to c gr	crudely	magnetite concentrated in crude bands at approx 60° to CA
															magnetite	& blk		banded	minor calc & dk chl veining & irreg patches at 40° to CA
				100%											skarn				for 15 cm between 9.35 & 9.50, angular frags of act sk in
																			calc and black chlorite matrix.
9.75	10.75	117543	1.00	2%	bands	95%	1%	3%	1%			10%		epidote	actinolite-	md green	m to c gr	crudely	max 2 cm Po band at 10.33 m; Py in calc-chl vein
					clots									tr. Chl	magnetite	& black		banded	Cpy as <1mm clots surrounded by magnetite & dk chlorite
					dissem										skarn				minor H2S smell w/ 10% HCl
																			magnetite in crude bands at 40° to CA
																			minor calc & dk chlorite veinlets at 30° to CA cut mag and
																			Po band. epdt crystals in discontinous bands
																			trace brown garnet ? w/ the epidote
10.75	11.30	117544	0.55	30%	clots to	98%	1%		<1%			1%		minor epdt	semi-mssv	bronze &	m to c gr	massive	pyrrhotite-actinolite skarn
					semi-									chl.	sulfide	green			2 mm chlorite veins at 20° to CA, form fracture planes and
					mass														contain minor calcite; chl veins cut the sulfides
																			patches of reddish brown alt Kspar and poss garnet
																			Po clots interconnected to semi-massive through
																			actinolite skarn. HCl turns green
11.30	12.40	117545	1.10	35%	clots to	99%		tr	tr					minor epdt	semi-mass	bronze &	m to c gr	massive	"pyrrhotite-actinolite skarn"
					semi-									chl	sulfide	green			1 cm calc vein cuts Po, contains minor Po and is cut by
					mass														chlorite and calc veinlet at 11.90 m
					stringers														chl veins at 20° to CA, chl on margins, calc on inside
																			more chl veining than in 117544
																			stringers of Po aligned- Poss. original lamination
12.40	13.40	117546	1.00	15%	clots &	99%	tr		tr			<1%		dk chl	semi-mass	green &	m to c gr	massive	thin irreg. dk chl veinlets throughout, cut sulfides
					intercon.									minor epdt	sulfide	bronze			calc w/ chl veinlets, fracture surfaces
					clots														1 cm calc vein at 35° CA at 13.00 m, cuts Po, cut by chl,
																			contains minor Po; "actinolite-pyrrhotite skarn"

BIRCH MOUNTAIN RESOURCES LTD.

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					depth	dip
UTM E	376821 E	Azimuth	80°	Survey Type Acid test	0	0
UTM N	6674520 N	Inclination	-45°		0	0
Elev	1267 m	Core Size	NQ		0	0

Depth 78.96 m
Recovery 98 %
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Date: July 21,97

FROM m	TO m	Tag No.	length m	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
13.40	14.40	117547	1.00	15%	clots &	94%	5%		tr			1%		epidote	semi-mass	med. grn &	m gr	crudely	14.15m broken core, chl & calc veining & fractures for
					intercon.									tr. chl	sulfide	bronze		layered	3 cm at 35° to ca. minor calc veining; HCl turns green
					clots														reddish brown gt conc in bands
																			Po conc in bands & layers at approx 65° to CA, Poss orig
																			lam indicator. euhedral dogtooth calc xtals in open fracture
14.40	15.50	117548	1.10	97%	massive	90%	8%		2%					tr chl	massive	bronze	c gr	massive	Sph clots 40%of core for 10 cm at 14.55
														oxid in	sulfide				massive Po w/ dissem. Sph and Cpy
														vein					dk green diopside? & chloritized veinlets; trace calc
																			TS SR 97-02
15.50	16.75	117549	1.25	95%	massive	98%			2%					chl	massive	bronze	c gr	massive	chloritized frags or crystals
															sulfide				minor calc & chl hairline veinlets
16.75	17.30	117550	0.55	12%	intercon.	100%						10%		chl	magnetite-	green& brn	c gr	crudely	magnetite -diopside-garnet-pyrrhotite skarn
					clots &										garnet ska	and black		banded	magnetite interconnected in v. crude bands, interstitial to
					clots														gt clots.
17.30	18.05	117557	0.75	3%	clots	70%		30%				15%	3%	chl,epdt	magnetite-	grn & brn	c gr	crudely	mag in crude bands
					dissem										garnet ska	and black		banded	2 cm calc & dk chl & qtz vein at 50° to CA at 17.30 m; qtz
																			fills 1cm of vein width in interior; sulfides all in vicinity of
																			vein. lost tag 117551
18.05	18.75	117552	0.70	3%	clots	85%		15%				4%	4%	minor epdt	diopside-	med. green	m to c gr	massive	minor calc & chl veinlets; fine chl veinlets throughout
															garnet ska	brown			10 cm silicic zone w/ remnant lam, Poss. alt bt-hfls
18.75	19.30	117553	0.55	60%	semi-	98%		1%	1%					chl	semi-mssv	bronze &			
					massive									tr. epdtidot	sulfide	green	m to c gr	massive	pyrrhotite-actinolite skarn
																			zone chl & calc veined and fractured
																			bluish tinge on chl fracture surfaces
19.30	19.85	117554	0.55	12%	clots &	84%	15%		1%					epidote	semi-mass	green &	m to c gr	massive	actinolite-pyrrhotite skarn
					intercon.										sulfide	bronze			Sph at edges of Po & surrounding Po; Sph poss later?
					clots														minor hairline chl & calc veinlets, cut sulfides
19.85	20.55	117555	0.70	15%	clots &	80%	20%							tr epdt, &	semi-mass	green &	m. to c.gr	massive	Po-diopside-garnet skarn; minor garnet present
					intercon.									chl	sulfide	bronze			thin chlorite veinlets; 2 mm chl & calc multi-stage vein &
					clots														fracture at 30° to core axis

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UTM N	6674520 N	Inclination	-45°	0	0
Elev	1267 m	Core Size	NQ	0	0

Survey Type: Acid test

Depth: 78.96 m
Recovery: 98 %
Logged by: DJT
Drilled by: DJ Drilling
Date: July 21,97

FROM m	TO m	Tag No.	length m	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
20.55	21.05	117556	0.50	25%	clots &	99%	tr	tr				1%		mod. epdt	semi-mass	green &	m to c gr	massive	calc & dk chlorite veins at varying degrees to CA
					intercon.									chl	sulfide	bronze			actinolite strongly epidotized
					clots														act-Po skarn
21.05	22.05	117558	1.00	60%	semi-	97%	3%					tr?		chl, epdt	semi-mssv	bronze &	m to c gr	massive	5 mm calc & dk chl vein at 20° to CA, other 1 mm calc-chl
					massive										sulfide	green			veinlets at 30° to ca.
22.05	22.90	117559	0.85	85%	massive	99%			tr					minor chl.	massive	bronze &	m to c gr	massive	minor 1 mm calc veins
														calc	sulfide	green			
22.90	23.55	117560	0.65	85%	massive	99%			tr					chl, calc	massive	bronze &	m to c gr	massive	trace remnant lam indic by discontinuous calc & chl alt xtals
															sulfide	green			at approx 75° to CA
23.55	24.40	117561	0.85	80%	massive	94%	5%		tr					chl, calc	massive	bronze &	m to c gr	massive	three 1 to 2 mm calc & dk chl veinlets
															sulfide	green			trace remnant lam indic by calc alt crystals, 75° to CA
24.40	25.40	117562	1.00	25%	clots &	90%	2%	8%	tr					Py	actinolite-	bronze &	m to c gr	massive	minor reddish brown garnet
					intercon.										Pyrrhotite	green			3 cm vein at 25.30 m; calc, qtz, Py & Po?- or grayer sulfide-
					clots										brecalcia?				and chlorite cuts earlier sulfides; at 60° to CA
																			irreg calc veins <10 mm; in vicinity Po appears partially alt
																			to Py through large Po clot; minor Py in calc vein
																			TS SR 97-01
25.40	26.50	117563	1.10	tr	blebs		tr	100%				1%		epidote,	actinolite-	variegated	m gr	massive	calc & dk chlorite veins
														chlorite	epidote	green		brecalciated	massive waxy dk green to black chlorite at 25.75
															brecalcia				for 10-15cm; broken core for 30 cm at 25.9 m
																			Py in calc & chl veins
																			poss pyroclastic breccia?
26.50	27.00	117564	0.50	4%	clots,	60%		40%						epdt, chl,	actinolite	variegated	m gr	massive	Po clots in crude bands texturally reminiscent of qtz-act
					irreg clots									Py	epidote	green			layers and veins w/ Po in bt hornfels
															brecalcia				rusty surfaces in calc-chl 6 mm vein at 40° to CA
27.00	27.55	117565	0.55	70%	semi-	68%	2%	30%	tr					epdt, Py,	semi-mass	bronze &	m gr	massive	Po altering to Py
					massive									chl	sulfide	green			calc & chl veins throughout
																			interstitial calc

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Elev	1267 m	Core Size	NQ		0 / 0
					0 / 0

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27.55	28.20	117566	0.65	90%	massive	99%	tr		1%	tr?		2%?		epdt, chl	massive	bronze	m gr	massive	hairline chl & calc veins throughout; interstitial calc;
					to semi-										sulfide				chl fract surfaces black, waxy, trace iridescence in spots
					massive														trace lam indic by Po and calc-silicate layering
																			chl in almost dendritic pattern- Mn oxides?
28.20	28.85	117567	0.65	80%	massive &	70%		30%	tr					Py, chl	massive	bronze	m to c gr	massive	3 cm calc & chl & Py vein at 35° to CA
					semi-										sulfide				interstitial calc & chl & actinolite
					massive														two other chl & calc & Py veins of 1 cm width at 40° to CA
28.85	29.45	117568	0.60	2%	clots	40%	5%	55%				4%	<1%	chl, epdt	gt-diopside	dk to med	m gr	massive	chl & calc veins cut calc veins
															brecalcia	green		brecalciated	moderately veined by thin <1 to 2 mm chl + calc veinlets
29.45	30.15	117569	0.70	1%	blebs			100%				6%	25%	epdt, chl, c	gt-diopside	med gm	m to c gr	massive	10 cm qtz vein at 29.50 m at approx 80° to CA
					veinlet										brecalcia			brecalciated	large, irreg qtz patches; dk chl + calc at margins of qtz vein
					margins,														offset (2mm) of calc vein along hairline fract, calc vein
					dissem														cuts qtz. Py along margins of calc vein; tr alt hematite
30.15	31.10	117570	0.95	<2%	dissem.			98%	2%			tr	35%	epidote	diopside-	variegated	m to c gr	brecalciated	tr v. red hematite near Py
					clots									chl; tr. hm	gt brecalci	greens			core broken, pervasive chl & calc veining and fracturing
																			max 3 cm qtz vein w/ Py flanked by chl+ calc veins,
																			contains fragments of partially chloritized rock.
																			Poss. original pyroclastic breccia
																			Py conc . in veins
31.10	32.00	117571	0.90	1%	dissem.			100%				tr	15%	epdt, chl	diopside-	variegated	m gr	brecalciated	irreg <1mm wide chlorite veins, but less than in previous
					clots									tr hm	gt brecalci	greens			interval. most veins at approx 40° to CA
																			some calc veins cut by chl veinlets
																			Py conc in and around chl veinlets
																			remnant trace silicic bt hornfels texture w/ disturbed lam
32.00	32.80	117572	0.80	2%	blebs			100%				tr	20%	chl, epdt, H	diopside-gt	greens &	m gr	brecalciated	chl fracts at 80° to CA
					dissem										brecalcia	black			calc+chl veins w/ adjacent Py, 40° to CA common
32.80	33.70	117573	0.90	3%	blebs			95%	5%			8%	3%	chl, epdt, H	diopside-gt	med grn-br	m gr	brecalciated	proportion gt increasing 35 % gt
					dissem										brecalcia	and black			pervasive chl & calc veinlets
					veinlets														rusty calc on fract surfaces

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UTM N	6674520 N	Inclination	-45°		0	0
Elev	1267 m	Core Size	NQ		0	0

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33.70	34.50	117574	0.80									20%		minor chl	garnet-diop	gm-brown	m gr	brecalciated	minor calc & chl veining, fracts at 40° to CA
															brecalcia	and black			mottled appearance
																			mag in crude discontinuous bands, poss original lam at
																			approx 45° to ca. or cement of pyroclastic? breccia
34.50	35.30	117575	0.80	2%	clots,			100%				10%		chl	garnet-diop	gm-brown	m gr	brecalciated	calc & chl vein throughout, max 1 cm wide, at 35° to CA
					cubes,										brecalcia	black			
					dissem														
35.30	36.30	117576	1.00	4%	blebs,	7%	tr	90%	2%			5%	2%	chl	garnet-diop	greenish	m gr	brecalciated	calc veins up to 30 mm wide at 30° to CA
					cubes,									tr hematite	brecalcia	brown			slickensided blk chl veins & fracture surfaces
					clots														calc vein has interior qtz; chl veins cut calc & qtz
																			Py in vicinity of calc & chl veins
																			Po in massive gt-di skarn
																			10 cm broken core- massive black chlorite
36.30	37.05	117577	0.75	5%	clots,	90%	5%	tr	5%			6%	2%	tr hm	garnet-diop	greenish	m to c gr	brecalciated	clots of Cpy w/ Po
					blebs										brecalcia	brown			gt to 3 mm across
																			mod irreg calc veining w/ qtz in veins
																			chl coated slickensided fract surfaces
																			magnetite in irreg clots
37.05	37.75	117578	0.70	17%	lg clots,	50%	5%	40%	5%			4%	<1%	chl	garnet-diop	greenish	m to c gr	brecalciated	slight calc & chl veining
					intercon.										brecalcia	brown			large clots of intergrown? Py and Po, Cpy in small blebs in
																			sulfide matrix. Py in & along some calc vein margins
37.75	38.70	117579	0.95	6%	lg inter-	27%		70%	3%			4%			gt-diop	greenish	m to c gr	brecalciated	sulfides have magnetite inclusions in large clots
					connect.										brecalcia	brown			gt forming clots >1 cm. Minor chl veinlets, few <5mm
					clots														calc veins and a lg 1 cm calc vein w/ layers
																			of chl at margins and clots and cubes of Py at and
																			overlapping and adjacent to margins
38.70	39.70	117580	1.00	2%	irreg.	85%		15%				3%	<1%	chl	gt-diop	greenish	m to c gr	brecalciated	2 mm calc + chl vein at 35° to CA cuts chlorite veinlets
					clots										brecalcia	brown			Cpy often assoc w/ magnetite
39.70	40.65	117581	0.95	1%	clots	90%			10%			2%	tr	chl	gt-diop	greenish	m to c gr	brecalciated	2.5 mm calc + chl vein throughout at approx 15° to CA;
														minor epdt	brecalcia	brown			cuts earlier calc veins w/ less or no chl; calc veins cut
																			patches of med green chlorite alt

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40.65	41.05	117582	0.40	12%	irreg.	60%		30%	10%			6%	1%	minor chl	gt-diop	greenish	m to c gr	brecalciated	minor calc veins cut mineralization
					intercon.										brecalcia	brown			qtz lenses in wide parts of calc veins
					clots														Cpy around edges of Po clots
41.05	41.87	117583	0.82	10%	lg irreg	95%			5%			5%	1%	minor chl &	gt-diop	greenish	m to c gr	brecalciated	core moderately to irregularly calc veined, bx. Some frags
					clots									epdt, tr hm	brecalcia	brown			w/in calc veins appear to be partially replaced by sulfides
41.87	42.62	117584	0.75	5%	replaced	40%		60%	tr			5%	1%	minor epdt	brecalcia	greenish	m to c gr	brecalciated	3 mm to 20 mm calc veins at 35° to CA have faulting-
					frags, &									chl		brown			slickensides on chl surfaces. Breccia of sed origin, then
					clots														rebrecciated; orig clasts 1 to 5 mm, some alt to Py & Po
42.62	43.40	117585	0.78	7%	lg clots	70%		27%	3%			6%	1%	minor epdt	gr-alt	greenish	m to c gr	brecalciated	breccia mod veined w/ calc & chl veinlets and one 3 cm
														chl	brecalcia	brown			multistage calc vein at 40° to CA. Py in calc & chl veins
43.40	44.45	117586	1.05	tr	dissem			100%				2%	1%	minor epdt	gt-diop	brownish	m gr	massive to	core broken along many chl veins/faults (slickensides)
														chl	meta-sltst	green		brecalciated	texturally close to cemented impure ss w/ calc-silicate;
																			diop, reddish brown gt, minor interstitial calc & calc veining
44.45	45.45	117587	1.00	tr	dissem			50%	50%				1%	minor epdt	gt-diop	brownish	m to c gr	massive to	gt aligned in crude bands at high angles to CA
														chl	meta-sltst	green		crude lam	minor hairline chl veinlets
45.45	46.10	117588	0.65	2%	clots	50%			50%			8%	1%	minor ep,	gt-diop	brownish	m to c gr	massive	slight calc & chl irreg veining- poss still brecciated,
					dissem									chl	meta-sltst	green			chlorite content in veins decreasing; slickensides on chl
																			fracture surfaces at 35° to ca.
46.10	47.26	117589	1.16	1%	blebs		10%	90%				2%	2%	epdt & chl	gt-diop	brownish	f to c gr	massive to	rotten core for 10 cm, chl alt
															meta-sltst	green		remnant lam	some remnant bt hornfels unaltered
																			chl and calc veined; less gt than in surrounding intervals
																			v. minor interstitial calc
																			4 cm calc+chl vein w/ qtz at 35° to CA
47.26	48.60	117597	1.34									3%	2%	minor epdt	gt-diop	greenish	c gr	massive	gt in crude bands
															meta-sltst	brown			slight calc & qtz veinlets
																			slickensided chl fract at 15° to CA
48.60	49.65	117598	1.05										2%	minor epdt	gt-diop	greenish	c gr	massive	minor calc & chl veinlets
															meta-sltst	brown			

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UTM N	6674520 N	Inclination	-45°	0	0
Elev	1267 m	Core Size	NQ	0	0

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49.65	50.60	117599	0.95	tr	dissem				100%			4%		minor epdt	gt-diop	greenish	c gr	massive	irreg. mottled texture
															meta-sltst	brown			Cpy in magnetite or rock; remnant laminations;
																			reddish brown gt & patches of purple gt or pix
50.60	51.25	117600	0.65	<1%	dissem				100%			7%		mod. ep,	gt-mag	green-	m to c gr	massive	some crude remnant lam indic. by mag & gt concentrations
														tr calc	meta-sltst	brown			
51.25	52.26	117601	1.01	2%	clots	30%		10%	60%			7%		mod epdt	gt-mag	green-brow	m to c gr	massive	dogtooth calc vein w/ chl at 30° to CA is fracture surface
															meta-sltst				
52.26	53.35	117602	1.09											chl, epdt	meta-ande	med grn	m to c gr	massive	irreg remnant trace banding
															tuff				v. little gt- 5 % garnet; minor interstitial calc
																			splotchy ep+ chl+ di? patches
53.35	54.17	117603	0.82									5%		epdt, chl.	gt-meta-	brownish	m to c gr	massive	more garnet- 15 to 20%
															sltst	green			some fibrous green actinolite
54.17	55.10	117604	0.93										5%	mod. epdt	meta-	med. green	f to m gr	deformed	strongly epidotized, minor garnet
															crystal tuff			banding	remnant lam epidotized w/ qtz-rich interlayers & some qtz
																			splotches 2 mm qtz & feld rounded crystals- poss originally
																			of tuffaceous origin. long chlorite veinlet at 20° to CA w/
																			almost perpendicular offshoots.
55.10	56.05	117605	0.95											minor epdt	meta-	med green	f to m gr	massive	55.40-55.50 broken core
														chl	andesitic				calc & chl veins at approx 35° to CA
															tuff?				minor garnet, mostly green calc-silicates
																			3% interstitial calc
56.05	56.90	117606	0.85											very	meta sltst	med green	f to m gr	massive	core mod broken along chl veinlets
														minor chl					increased garnet (15%); tr interstitial calc
																			crude remnant compositional layering indic by gt and epdt
																			gt & diopside? the calc-silicates
56.90	57.75	117607	0.85											epdt	meta-sltst	brown-	m to c gr	massive	40% garnet; 60% grn calc-silicates
																green			minor chl hairline veinlets
57.75	58.55	117608	0.80											epdt	meta-	med green	f to m gr	remnant	minor chl & calc hairline veinlets; epdt alt in splotches; gt
															and tuff			lam	finer gr, <10%. poss alt frags; tr remnant deformed lam

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-07

PROPERTY : SWIFT RIVER

				depth	dip
UTM E	376821 E	Azimuth	80°	0	0
UTM N	6674520 N	Inclination	-45°	0	0
Elev	1267 m	Core Size	NQ	0	0

Survey Type: Acid test

Depth: 78.96 m
Recovery: 98 %
Logged by: DJT
Drilled by: DJ Drilling
Date: July 21,97

FROM m	TO m	Tag No.	length m	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
58.55	67.40		8.85	tr	blebs	80%		20%					20%	minor epdt	meta-	brownish	f gr	deformed	moderately deformed, bleached silicic hornfels w/
					dissem									and chl	tuffaceous	greenish-		lam	remnant bt lam; minor calc veining appears to have
															sltst	grey			original qtz-actinolite veins disturbed and recrystallized
																			rust on calc veined fract. surfaces; lam at 30° to 40° to CA
																			poss ghost crystals or frags in some zones
67.40	68.60	117609	1.20	3%	blebs	90%		10%	tr				20%	tr epdt & c	tuffaceous	brownish	f gr	deformed	as above, most Po in qtz-actinolite patches
					clots										sltst	greenish		lam	
																grey			
68.60	69.60	117610	1.00	2%	clots	40%		60%					15%	minor epdt	tuffaceous	brn-greenis	f gr	deformed	as above, more chl + calc veinlets
					blebs									chl	sltst	grey		lam	
69.60	70.60	117611	1.00	3%	clots,	30%		70%					10%	minor ep,	tuffaceous	brn-greenis	f gr	deformed	as above
					blebs,									chl	sltst	grey		lam	
					dissem														
70.60	78.96		8.36	<1%	blebs,	40%		60%					20%	minor epdt	tuffaceous	brownish-	f gr	deformed	as for 58.55-67.40m; increased chl alt and fracturing
					clots,									chl	sltst	greenish-		lam	along chl veinlets, slickensided
					dissem											grey			
78.96																			END OF HOLE

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-08

PROPERTY : SWIFT RIVER

UTM E	376759 E	Azimuth	110°	Survey Type :	Acid test	depth 13.7 / 108.2 — dip -50° / -50°
UTM N	6673758 N	Inclination	-50°			
Elev	1429 m	Core Size	NQ			

Depth 108.30 m
Recovery >95 %
Logged by: DJT
Drilled by: DJ Drilling
Date: July 24,1997

FROM metres	TO metres	Tag No	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
																			Hole collars just below margin of diorite sill.
0.00	6.70														till				casing through overburden.
6.70	12.17		5.47	tr	clots	100%							2%	minor epdt.	silty felsic t	dk brwnsh	f to c gr	laminated	6.70-6.80 broken core
					blebs										to xtal tuff	green			finely laminated bca=55°. Silty bt lam w/ green-gray
																			and felsic lam; discontinuous silt and
																			felsic lenses; some felsic bands have minor epdt alt-
																			xtals white to pale green- assuming play feld w/o mafics,
																			hence dacitic rather than rhyolitic or andesitic comp.
																			felsic layers cut by hairline chl fracts, minor offsets
																			minor qtz +/- act patches, veins or fragments
																			7.06 m qtz-act vein, 5mm, 50°-90° to ca
																			7.70-7.86m broken core
																			7.86-8.98 m lost core
																			9.20-9.60 m lost core
																			9.60-9.70 m broken core; 9.82-10.37 m broken core
																			10.37-10.70 m lost core
12.17	12.39		0.22										2%	chl	silty xtal	greenish	f to m gr	laminated	bt-rich; minor thin qtz lenses & chloritized thin angular
															tuff	brown			fragments
12.39	13.21		0.82	tr	dissem	100%							2%	tr. epdt.	silty felsic t	dk brwnsh	f to c gr	laminated	tuff dacitic
															to xtal tuff	green			crenulated lam; qtz-rich frags to 4 mm on long axis
13.21	14.65	117631	1.44	2%	clots,	100%							3%	tr. epdt	silty felsic t	dark	f to c gr	laminated	13.54-13.63 m broken core
					stringers,										to xtal tuff	brownish			13.63-13.96 lost core
					odd											green			Po assoc w/ qtz lam, veins
					blebs														13.3 m; qtz-act vein at 40° to CA, 1 cm wide
14.65	15.90	117632	1.25	2%	clots,	100%							4%		silty felsic t	dk brwnsh	f to c gr	laminated	minor hairline calc veinlets
					stringers,										to xtal tuff	green			lam at 60° to ca, calc veins 15° to ca
					odd blebs														
15.90	16.45		0.55										1%	minor epdt	silty felsic t	dk brwnsh	f to c gr	laminated	hairline chl veins cut more felsic layers
															to xtal tuff	green			
16.45	16.90		0.45										3%	minor chl	silty xtal	brown	c gr	crudely	bt-rich, chl +/- act veined w/ greenish feld? alt along
															tuff			laminated	vein margins. 10% chl alt ferromag. crystals

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-08

PROPERTY : SWIFT RIVER

Depth 108.30 m
Recovery >95 %
Logged by: DJT
Drilled by: DJ Drilling
Date: ıly 24,1997

				depth	dip
UTM E	376759 E	Azimuth	110°	13.7	-50°
UTM N	6673758 N	Inclination	-50°	108	-50°
Elev	1429 m	Core Size	NQ	0	0

Survey Type : Acid test

FROM metres	TO metres	Tag No	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
16.90	17.40		0.50	tr	clots,	95%		5%					3%	tr. chl, epdt	silty felsic t	med. green	f to c gr	laminated	Po after Py cubes; chl alt lenses; hairline chl veinlets
					cubes										to xtal tuff				small left-lateral strike slip fault indic by qtz & chl veinlets
17.40	21.45		4.05										3%	minor chl	crystal tuff	brown	m to c gr	massive to	bt-rich, brownish gray matrix w/ minor frags and broken xtals
																		crudely lam	mostly feldspar and chl-alt ferromags; minor qtz bt-matrix,
																			minor alt to pale green chlorite, esp in vicinity of dk green
																			chl veinlets crosscutting at 75° and 40° to ca
21.45	33.55		12.10	tr	clots	95%		4%	tr				3%	tr epdt.	silty	med to dk	f gr	laminated	silty tuffaceous prob dacitic tuff
					blebs									and chl	dacitic tuff	greyish			fine grained, slightly wavy laminations w/ some slightly
					veinlets											green			coarser layers. Interval is rich in feldspar
					dissem														21.7-22.1 m lost core; 25.9-26.0 m lost core
																			30.23-30.35 m; 6 and 4 cm qtz-act patches
																			at 24.8, qtz-act vein at 70° to ca w/ assoc fractures 25° to ca
																			prom bt lam 45° to ca at 32.2-31.5
																			minor Py w/ hairline calc fractures
																			v. minor Cpy assoc w/ Po throughout. Trace sulfide or
																			telluride etc with greenish hue- too small to identify
																			23.25-24.15 paler green-gray, more felsic zone w/ more
																			hairline chl veinlets w/ Po. 24.55-24.80m mod. epdt alt,
																			highly bleached, highly felsic tuff cut by dense
																			cobwebs of hairline chl fracts & some 3mm+ qtz veins
																			Qtz vein at 70° to ca; minor rust stains; core has rusty
																			breaks at 50° - 70° to ca
																			Bleached Kfeld around act-qtz 3mm vein at 40° to ca at
																			25.25 m. 25.50-25.63 folded crenulated felsic & sericitic lam
																			27.40-27.65; mod epdt alt, highly chl veined felsic layer
																			26.20-26.30 c gr crystal tuff
																			29.00 minor displacement of lam along chl veinlets
																			30.0-33.0 increased amt qtz-act and feldspar veins, zones;
																			colour becoming just slightly paler
																			33.55 m epdt-qtz-calc vein 5mm at 35° to ca
33.55	34.70			tr	dissem	100%						<1%	4%	tr epdt	dacitic tuff	dk to med	f gr	faint	<1mm magnetite veinlets at 80° to 40°ca. Minor mt speckles
															to xtal tuff	greenish		laminations	slightly blotchy texture-poss splotchy alt or alt-ferro-mag-
																gray			rich irreg frags-but not angular. Prob just uneven alteration
																			NOTE: the epdt-qtz-calc vein separating this interval from
																			prev marks trans from sulfs & Po veinlets to mag w/ tr sulfs.

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-08

PROPERTY : SWIFT RIVER

Depth 108.30 m
Recovery >95 %
Logged by: DJT
Drilled by: DJ Drilling
Date: July 24,1997

UTM E 376759 E
UTM N 6673758 N
Elev 1429 m
Azimuth 110°
Inclination -50°
Core Size NQ
Survey Type : Acid test

	depth	dip
	13.7	-50°
	108	-50°
	0	0

FROM metres	TO metres	Tag No	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
34.70	35.50		0.80	tr	dissem	100%						tr	35%	minor epdt	silty rhyolite tuff	white & brown	f to c gr	irreg laminations	34.70-34.80 - 60% qtz, some bt; cut by act/chl veins. 34.80-34.85 - v bt rich zone. 34.85-35.20 - epdt alt. Qtz-rich, mod rusty calc & qtz veined (euhedral qtz-xtals in calc vein) 35.20- massive qtz vein? W/ minor chl & epdt veinlets and minor mt speckles w/ tr Po.
35.50	39.65			tr	clots, blebs, dissem	100%						-	30%	minor epdt	silty rhyolite xtal tuff - fragmental tuff	brown and white	f to c gr	irreg laminations	bt lam wraps irreg pinching & swelling. Felsic lam and cracked subrounded qtz-frags. Feldspars pinkish - more potassic. V minor calc veinlets at 35°ca. 38.0-38.1 - epdt+ calc alt zone w/ minor rust & mod chlorite lam. Poss andesitic material? 38.80-38.90 epdt alt zone w/ chl, kspar and tr calc. 39.0m - bt lam reg, relatively even at 75°ca.
39.65	40.80			-								-	25%	minor epdt & calc	silty rhyolite xtal tuff - fragmental tuff	brown and white	f to c gr	deformed laminations	highly deformed & folded qtz-feld bt-sericite w/ 2 qtz-act veins 3 & 2 cm wide at 70° & 40°ca. 40.15 - rock becomes increasingly rusty. 40.30 - calc veined, frags in calc - rusted Py, ankerite? Possible fault contact; last 30cm v rusty red, earthy greenish patches.
40.80	41.20			-								tr	2%	minor rust chl	dacitic tuff	greenish gray	f to c gr	laminated	crenulated lam at 50° ca. Minor calc veinlets w/ chl at 35° ca. few qtz & feld xtals.
41.20	42.40	1E+05	1.20	10%	conn clots	2%	95%		3%			20%	-	minor chl,	dacitic tuff	v dk green to black	f to c gr	laminated	qtz/act metamorph. To 20mm c gr calc vein at 35°ca w/ angular chl frag inclusions near margins and waxy black chlorite at margins. Fractures along chl veinlets. Felds in lam look chalky - clay alt v. minor hairline chl+calc fractures cut mineralization. Mt prob depositional, oft f gr follows lam. Sph in coarse xtals, v crudely follows lam, and overprints lam, Sph purplish red. Gt & act metamorphic minerals.
42.40	42.95	1E+05	0.55	5%	clots	2%	93%		5%			10%	4%	epdt, chl	dacitic tuff	med to dk green	f to c gr	laminated	sulfides assoc w/ magnetite. More kspar, lam slightly deformed and folded.
42.95	43.82	1E+05	0.87	1%					100%			-	-	epdt	meta silty tuff	med to dk green	f to c gr	crudely banded	actinolite & garnet metamorphism. Most mag assoc w/ act bands, Cpy w/ mt & gt; no Sph detected.

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-08

PROPERTY : SWIFT RIVER

					depth	dip
UTM E	376759 E	Azimuth	110°	Survey Type : Acid test	13.7	-50°
UTM N	6673758 N	Inclination	-50°		108	-50°
Elev	1429 m	Core Size	NQ		0	0

Depth 108.30 m
Recovery >95 %
Logged by: DJT
Drilled by: DJ Drilling
Date: uly 24,1997

FROM metres	TO metres	Tag No	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
43.82	45.25			tr	clot in mag	100%						1%	25%	epdt, chl, tr kspar	silty rhyolitic or dacitic tuff	med - pale greenish gray	f gr	laminated	mag in bands, assoc w/ actinolite. 5% bt, minor sericite. bca 60°; 30mm qtz-act vein at 45°ca @ 45.20m.
45.25	46.05	1E+05	0.80	tr	dissem		100%					3%	20%	epdt, chl, tr rust	silty rhyolitic tuff	greenish gray to dk green	f to c gr	laminated	more sericite lam. c gr mag bands assoc w/ c gr actinolite bands 10-25mm. Minor calc, rust. sinistral displacement of lam along hairline calc fracture at 50°ca.
46.05	46.90	1E+05	0.85	2%	dissem				100%			7%	<1%	epdt	meta tuff	med to dk green	f to c gr	laminated	c gr bands of magnetite & actinolite also f gr mag in laminae. V minor calc assoc w/ actinolite. Act-epdt-mag main minerals bca 45° minor calc + dk chl veins and fractures approx 35-45° ca.
46.90	47.84	1E+05	0.94	7%	lrg clots & blebs		97%		3%			7%	<1%	chl, epdt	act-gt altered tuff	med to dk green	m to c gr	laminated	sphalerite assoc w/ gt, mag w/ actinolite. Minor irreg calcite veins.
47.84	48.85	1E+05	1.01	5%								3%	1%	epdt	act-gt altered tuff	med to dk green	m to c gr	laminated to banded	as above, more actinolite; less garnet. Some k-spar lam- poss rhyolitic tuff component. Minor calc & chl vein at 30°ca.
48.85	49.90	1E+05	1.05	5%	clots & blebs		100%					2%	<1%	epdt	act-gt altered tuff	med to dk green	m to c gr	laminated to banded	as above, but more gt in crude bands, coarser grained. 10mm calc vein at 49.85 at 35°ca.
49.90	50.95	1E+05	1.05	3%	f gr dissem blebs		95%		5%			15%	-	epdt	act-gt-mag altered tuff	med to dk green	m to c gr	laminated to banded	as above, but less actinolite, more gt, more mag. Sphal fine grained, more disseminated. Cpy in w/ magnetite.
50.95	51.75	1E+05	0.80	5%	c gr clots & dissem		100%					4%	-	epdt	act-epdt altered tuff	med to dk green	m to c gr	coarsely laminated	50.95-51.15 - f gr unmineralized silty rhyolitic tuff interval; act-epdt w/ minor interstitial calc. epdt & act in crude bands; mineralization is w/ the actinolite bands.
51.75	53.05			-								<1%	12%	epdt	silty rhyolitic tuff	greenish gray & brown	f gr	laminated	qtz-act veined. Matrix v lightly calcareous, chalky, or ashy texture. 51.97-52.05 - massive epdt alt tuff layer. 52.42-52.5 bleached bt lam. 52.60-52.90 - 85% bt w/ max 5cm qtz-act vein. -53.05 irreg vein & bleached bt lam. mag is f gr in tuff.

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-08

PROPERTY : SWIFT RIVER

				depth	dip
UTM E	376759 E	Azimuth	110°	13.7	-50°
UTM N	6673758 N	Inclination	-50°	108	-50°
Elev	1429 m	Core Size	NQ	0	0

Survey Type : Acid test

Depth 108.30 m
Recovery >95 %
Logged by: DJT
Drilled by: DJ Drilling
Date: July 24,1997

FROM metres	TO metres	Tag No	length metres	total % sulfides	sulfide texture	PO	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
53.05	53.40	1E+05	0.35	2%	f gr		100%					1%	2%	epdt	rhyolitic	med	f gr	crudely	irreg lam, almost all epidote altered. f gr Sph & mag
					dissem										tuff	green		laminated	in bands concordant w/ lam at 75°ca. Minor actinolite.
53.40	54.00			tr	dissem		100%					2%	2%	epdt	rhyolitic	greenish	f gr	laminated	minor crenulations to even laminations; kspar in laminae;
															tuff	gray			mag in laminae.
54.00	54.85	1E+05	0.85	3%	clots		70%	10%	20%			12%	-	epdt	tuff	med green	f to m gr	laminated	4mm calc vein at 40°ca at 54.50. Mag along lam at 45°ca.
																gray &			Sph f gr - c gr mostly w/ mag along lam. Cpy & Py in
																black			coarse clots w/ mag & sphal. Minor soft sed deformation
																			or brecciation or fragments for 25cm 54.10-54.35.
																			minor actinolite.
54.85	55.85	1E+05	1.00	3%	dissem		100%					3%	5%	epdt	silty	med green	f to m gr	laminated	f gr epdt alt matrix w/ unmineralized felsic lam 54.85-55.20;
															rhyolitic	to green-			55.25-55.27; 55.75-55.85. calc & chl vein 3mm along fracture
															tuff	gray			at 55.50 at 40°ca. 3% garnet; mag & Sph roughly
																			concordant w/ lam. Minor soft sed deformation.
55.85	56.75	1E+05	0.90	3%	f.gr		100%					tr	-	epdt	tuff	med	f to m gr	laminated	f gr Sph in bands concordant w/ lam. Green matrix act or
					dissem											green			diopside. Lam slightly irregular. Minor kspar & bt in lam
																			at 56.65-56.75m.
56.75	57.10			-								-	5%	oxide	tuff	reddish br	f to m gr	laminated	56.95-57.10 - extremely rusty reddish brown, calc veined
																& green			laminated tuff-poss fluid conduit- no deformation or major
																			offsets of laminations 15mm qtz-act vein concordant w/
																			lam at 45° ca at 56.85m
57.10	59.23			-								-	40%	epdt,	rhyolitic	greenish	f to m gr	laminated	lam rich in kspar and qtz. V minor bt; qtz xtals to 1.5mm;
														Fe oxide	tuff to xtal	gray			chalky ashy texture 15mm of darker chl-rich bands. 57.60-
														& blch	tuff				3mm calc vein w/ qtz interior and open fractures @ 20°ca.
																			57.70-57.80 - v rusty interval. 58.10-58.20 biotitic (90% bt)
																			tuffaceous sltstn w/ felsic wisps. 58.46-58.60 massive qtz-
																			act-epdt concordant w/ lam at 45°ca. 58.79-58.92 - 90%
																			tuffaceous siltstone. Whole interval appears bleached,
																			chalky or ashy texture.
59.23	59.56	1E+05	0.33	3%	c gr		80%	20%				5%	2%	epdt	felsic tuff	greenish	f to m gr	laminated	magnetite & c gr Sph occur together in crude bands
					clots											gray			conc w/ laminations. Actinolite and garnet, poss diopside.

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-08

PROPERTY : SWIFT RIVER

Page 6 of 9

UTM E 376759 E | Azimuth 110° | Survey Type : Acid test | depth 13.7 | dip -50° | Depth 108.30 m
UTM N 6673758 N | Inclination -50° | | 108 | -50° | Recovery >95 %
Elev 1429 m | Core Size NQ | | 0 | 0 | Logged by: DJT
Drilled by: DJ Drilling
Date: July 24,1997

FROM metres	TO metres	Tag No	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
59.56	60.18	1E+05	0.62	tr	stringers		5%	95%				2%	5%	epdt	rhyolitic tuff	greenish gray	f gr	laminated	kspar lam. Bleached appearance. Poss alt frags, wispy lam. mag in lrg clots and f gr in lam. Actinolite developed in zones of high mag concentration.
60.18	60.80	1E+05	0.62	3%	c.gr clots		100%					4%	1%	epdt	gt-di altered tuf	med to dk green	f to c gr	crudely laminated	thick bands of gt developed, Sph assoc w/ mag. Minor interstitial calc.
60.80	63.15			tr	dissem		20%	80%				tr	45%	epdt	rhyolitic tuff - xtal tuff	pale grnsh white - gray	f to c gr	crudely laminated	silty bt-rich interval - 20mm thick. Pale, bleached appearance, 50°ca; <1mm qtz xtals throughout. 62.50-62.87 massive qtz vein, gray qtz. 62.87-62.15 - less bleached, greenish gray dacitic to rhyolitic tuff.
63.15	63.50	1E+05	0.35	7%	clots		97%	3%				5%	-	epdt	gt-di alt felsic tuff	pale grnsh white - gray	f to c gr	massive - laminated	c gr Sphal, mag, gt, green calc-silicate(di?) and interstitial calc as large clots. 10mm act band. NOTE: where sphal occurs, the tuff appears recrystallized and calc-silicate minerals develop. Also usually w/ magnetite.
63.50	64.45	1E+05	0.95	2%	c gr blebs		100%					-	5%	epdt, & Fe oxide	felsic to xtal tuff	greenish gray	f to c gr	laminated	minor 1mm calc veins roughly concordant w/ lam at 75°ca. Sph in c gr bands. 3 max 25mm qtz bands - poss alt of magnetite <1mm qtz xtals in green matrix.
64.45	65.30	1E+05	0.85	5%	clots & laminae		100%					3%	-	epdt	gt-di alt tuff	med to dk green	f to c gr	laminated	Sph very reddish gt-act-di? Bands. Minor soft sed deformation. Tr interstitial calcite.
65.30	66.02			-								-	30%	Fe oxide, epdt	rhyolitic & qtz-xtal tuff	reddish brown & green	f to c gr	laminated	laminations slightly deformed to approx 30°ca. Minor to mod calc & qtz veining. Possible lower fault or vein system contact for the zn-mineralized zone.
66.02	71.52			-								tr	65%	chl, & minor oxid	qtz xtal & rhyolitic tuff	white to pink to grn/gray	m to c gr	laminated to banded	qtz-xtal tuff w/ kspar or bt or sericitic interlayers. Sugary texture to xtal tuff bands. Minor hairline chl fractures. minor qtz-act veining; 68.70-68.85 - broken core.
71.52	72.20			-								-	-	clay, & Fe oxide	flt gouge and tuffaceous siltstone	reddish brown	f gr	laminated brecciated	highly altered and broken core. Bt-rich tuffaceous siltstn & poss clay-alt fault gouge. Heavily calc veined, mod w sulfate veining(v. soft waxy). Tr alt Py cubes.

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-08

PROPERTY : SWIFT RIVER

UTM E 376759 E Azimuth 110° Survey Type : Acid test depth 13.7 dip -50°
UTM N 6673758 N Inclination -50° 108 -50°
Elev 1429 m Core Size NQ 0 0

Depth 108.30 m
Recovery >95 %
Logged by: DJT
Drilled by: DJ Drilling
Date: July 24,1997

FROM metres	TO metres	Tag No	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
72.20	74.95			-								-	15%	minor epd	silty	pale gray	f-m.gr	laminated	minor soft sed def. 15-20% bt over interval. Xtal tuff - most
															rhyolitic			to banded	xtals <1mm, few larger fragments. 73.90-74.15 texture,
															tuff & xtal				high conc green silicates and interstitial calc indicate dep
															tuff				of tuff w/ calcareous sediments.
74.95	75.75			-								-	80%	-	rhyolitic	greenish	c gr	laminated	wavy sericitic laminations wrap around pinching and
															qtz-xtal	gray			swelling qtz-rich layers and lenses. Several rounded qtz
															tuff				frags up to 5mm.
75.75	76.40	1E+05	0.65	tr	stringers	100%						2%	7%	minor	silty	greenish	f to c gr	laminated	mod soft sed deformation and qtz act veining/ layers mag
					dissem									calc-silcte	rhyolitic	brown			conc in qtz-act; minor sinistral offsets of lam along hairline
															xtal tuff				chl fractures. Minor calc veins.
76.40	77.92			<1%	dissem	80%		20%				tr	60%	calc-silcte	rhyolitic	greenish	m to c gr	laminated	sericitic & calc-silicate lam wrapped around uneven felsic
					blebs										qtz-xtal to	gray			layers and broken white subrounded qtz blobs up to 7x3mm
															fragmental				mag & Po in qtz-act layer. 76.85-77.05 - v white qtz-sericite.
															tuff				77.25 qtz-calc-act layer 5mm w/ Po at 50°ca; lam crenulated
77.92	78.34			<1%	clots	100%						1%	15%	calc-silcte	tuffaceous	greenish	f to c gr	laminated	bt-rich, qtz-act veined, rhyolitic tuffaceous siltstone to
															siltstone	brown			rhyolitic xtal tuff.
78.34	79.05			<1%	blebs	100%						tr	65%	calc-silcte	rhyolitic	green &	c gr	laminated	78.60 3mm qtz vein w/ Po blebs at 30°ca, lam at 60°ca. Qtz-
															qtz-xtal to	white			rich lam similar to qtz-act layers or veins. 79.04 - max
															fragmental				25 mm qtz layer or vein.
															tuff				
79.05	81.50			tr	blebs	100%						tr	60%	calc-silcte	rhyolitic	green &	f to c gr	laminated	79.05-79.25 - crenulated bt-rich tuff w/ 3cm qtz-act layer.
					clots										qtz-xtal to	white			79.65-80.25 - increasingly crenulated and folded/ deformed
					dissem										fragmental				laminations
															tuff				
81.50	82.55			-								-	10%	calc-silcte	andesitic	dk green	m gr	laminated	81.50-82.55 - finely laminated, darker green - w/ minor
															to dacitic	& pink			interstitial calc - poss orig calcareous sed in w/ tuff
															tuff				
82.55	82.75			-								-	-	epdt, act	orig	green &	c gr	mottled	82.55-82.75 - mottled green & white; poss orig impure
															impure	white			marble, now calc-silicate altered.
															lms?				

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-08

PROPERTY : SWIFT RIVER

					depth	dip
UTM E	376759 E	Azimuth	110°	Survey Type : Acid test	13.7	-50°
UTM N	6673758 N	Inclination	-50°		108	-50°
Elev	1429 m	Core Size	NQ		0	0

Depth 108.30 m
Recovery >95 %
Logged by: DJT
Drilled by: DJ Drilling
Date: July 24,1997

FROM metres	TO metres	Tag No	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
82.75	83.20			-								-	1%	chl, purple	silty	dk green	f to m gr	laminated	even regular laminae of green chl & purplish bt & silicates
														silicate	andesite	& purple			& kspar, minor act-chl veins.
															tuff				
83.20	86.70			-								-	50%	purple	andesitic	green &	c gr	coarsely	83.65 - 10cm white rhyolitic qtz-xtal tuff interval bt & kspar
														silicate,	xtal tuff	white		laminated	lam. Xtal layers very felsic - possibly orig rhy or dacitic w/
														epdt					act from mag alt? Minor interstitial calc.
86.70	89.50			-								-	15%	epdt, chl,	silty	green &	m gr	laminated	more finely laminated than previous, minor interstitial calc.
														calc-silcte	andesitic	purple			similar to some of the purplish px hmfls in hole 5A, bca 45°
															xtal tuff				87.80 15cm c gr epidote, act & white feld. 89.40 - 8cm of
																			c gr qtz-act-epdt vein.
89.50	91.10			tr	clots	95%			5%			-	85%	tr chl	rhyolitic	grayish	c gr	laminated	even lam to deformed lam. Minor qtz-act veining w/ assoc
															qtz-xtal	white			Po & Cpy. 90.33-91.10 qtz-sericite lam deformed & folded.
															tuff				
91.10	93.00			-								-	20%	tr epdt	andesitic	green &	c gr	coarsely	91.10 -91.23 - finely laminated, qtz poor andesite tuff w/
															xtal tuff	white &		laminated	approx 10% purply alt bt laminations. Bca 60°, minor
																purple			qtz veins at 35°ca.
93.00	95.90			tr	clots	100%						tr	35%	minor epd	silty	brown &	f to m gr	crenulated	93.03-93.15 - c gr qtz-act layers disturbing bt lam. Minor
					blebs										rhyolitic	green		& deforme	purple silicate (violane or gt?) assoc w/ act. Bca 60°, 25% bt
															xtal tuff			laminations	93.70-93.90 - extremely deformed, wtx, felsic and actinolite
																			layers; poss orig softer carbonate-rich rock, mottled
																			appearance similar to some impure marble. 94.35-94.65 -
																			highly deformed qtz-rich lam & sericitic lam. 94.80 -
																			sinistral movement in bt lam. 95.6-95.9 broken core, calc
																			veined, rusty clay alt tuffaceous siltstone, appears
																			brecciated over 10cm.
95.90	98.40			tr	blebs			100%				-	5%	tr Fe oxid	tuffaceous	dark	f gr	laminated	regular fine even laminations w/ minor deformation at base
														minor epd	siltstone	brown			felsic f to m gr tuffaceous laminae < 10mm, 60% bt, 60°bca.
																			2mm calc vein at 35°ca at 96.25m. 97.8: 3mm open calc veir
																			w/ brecciation at 35°ca. 97.92 - 4cm qtz-act layer w/ rusty
																			spots and tr py.

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-08

PROPERTY : SWIFT RIVER

				depth	dip
UTM E	376759 E	Azimuth	110°	13.7	-50°
UTM N	6673758 N	Inclination	-50°	108	-50°
Elev	1429 m	Core Size	NQ	0	0

Survey Type : Acid test

Depth 108.30 m
Recovery >95 %
Logged by: DJT
Drilled by: DJ Drilling
Date: July 24,1997

FROM metres	TO metres	Tag No	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
98.40	99.65			tr	blebs	100%						-	8%	minor epdt silicificatn	silty andesitic xtal tuff	green & white	f to c gr	laminated	andesitic xtal tuff w/ bt-rich silty and felsic layers. 99.14-99.41 - tuffaceous sltstn w/ ripple xlam from 5 cm. Minor 1mm calc veinlet subparallel to core axis. 98.75 - 12cm qtz-act epdt-altered layer, disrupts & cuts bt laminations.
99.65	100.65			-								-	3%	chl	andesitic xtal tuff	dk green	f to m gr	laminated	up to 1mm feld xtals, few < 1cm felsic lam, 2mm wide actinolite veins at low angle to ca cut lam and are in turn cut by hairline chl fractures at 35°ca. Laminations regular and even w/ only v slight deformation in more felsic layers.
100.65	101.55			-								-	20%	minor chl silicificatn	tuffaceous siltstone	brown & gray	f gr	laminated	lam slightly deformed to tightly folded, 60% bt, qtz lam crenulated; 5% green lam - actinolite?
101.55	102.30			-								-	25%	minor epdt silicificatn	andesitic xtal tuff	green & white	f gr	laminated	pinching and swelling feld & actinolite layers b/w qtz & chl layers. Remnant xtals and small frags.
102.30	103.50			tr	blebs	100%						-	25%	tr epdt silicificatn	tuffaceous siltstone	brown & gray	f gr	laminated	Po in qtz lenses. Lam crenulated and deformed; ghost xtals and wisps. 55% bt; 10% sericite. 103.20 - max 2cm qtz-act layer.
103.50	108.30			tr	blebs	100%						-	40%	minor epdt	rhyolitic-dacitic xtal tuff	green & white	m gr	laminated	hairline chl & qtz veinlets at 35°ca. Minor bt-rich bands. 103.50-103.60 - mottled qtz-act layer. Minor deformation of lam, most lam even & wispy to discontinuous at 75°ca. approx 30% feld, 30% green actinolite-rich bands.
108.30		E.O.H.																	END OF HOLE

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-09

PROPERTY : SWIFT RIVER

UTM E 376695 E
UTM N 6673739 N
Elev 1404 m

Azimuth 57°
Inclination -50°
Core Size NQ

Survey Type : Acid test

	depth	dip

Depth 85.70 m
Recovery 90%
Logged by: DJT
Drilled by: DJ DRILLING
Date: 3-Aug-97

FROM m	TO m	Tag No.	length m	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
0.00	10.70														overburden				cobbles & boulders of diorite and dark gray, dirty felsic
																			tuff? Recovered in cobbles.
10.70	20.20			-								-	-		flt gouge	pale to	f to c gr	brecciated	fault gouge & broken core. Angular fragments 1mm -
															& broken	med			10's of cm in a pale - med green, prob chloritic, clay;
															core	green			mostly granules 1-4mm. Broken solid core consists of
																			silicic xtal tuff, angular broken white qtz - prob rhyolitic
																			or felsic tuff, and diorite chunks. @ 13.7 - 14.7 - white
																			qtz-rich gouge 15°ca. Contact b/w green & gray gouge
																			and qtz-rich white gouge @ 14.4m. 14.7-15.35 broken
																			core, dk gray dirty xtal tuff. 15.7-16.00 broken core,
																			diorite. 16.00-16.25 - dk gray broken xtal tuff and green
																			clay rich fault gouge. 16.25-16.80 - white qtz-rich fault
																			gouge; angular silicic pebbles to 20mm. 16.80-19.45 -
																			green fault gouge w/ dk green dirty tuff fragments.
																			19.45-19.80 - white silicic angular fragments in fault
																			gouge. 19.80-20.25 - gabbro fragments in fault gouge;
																			20.00m - 0+20°ca contact b/w broken rock and clayey
																			fault gouge.
20.20	21.25			-								-	-	minor chl	gabbro	black &	c gr	massive	spotty gabbro. 21.25- 20°ca 4m white & pink talc-clay
																white			fract/vein through diorite, <2mm calc veins & fractures
																			@ 40-45°ca and 25°ca. 15% bt, 50% px-dk green-black,
																			c gr 35% feldspar (white plag) some of the px appear
																			to be altering to bt; crystals appear slightly rounded,
																			reabsorbed? Most px=cpx(lrg black xtals). Minor (5%)
																			smaller green opx xtals, finer grained at contact.
21.25	22.65			-								-	2%	chl	recrystallize	brownish	c gr	massive	px-bbld-plag-bt. Bt & chlorite alteration, v minor plag.
															andesite	green			prob andesitic tuff cooked up from contact w/ gabbro.
																			weak remnant compositional banding fractures at 25°ca
																			becoming increasingly silicified from 0 to 5% qtz until
																			contact w/ felsic tuff unit. Altered andesite or sheeted
																			dike? Fractures & contact at 25°ca.

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-09

PROPERTY : SWIFT RIVER

				depth	dip
UTM E	376695 E	Azimuth	57°		
UTM N	6673739 N	Inclination	-50°	0	0
Elev	1404 m	Core Size	NQ	0	0
		Survey Type :	Acid test	0	0

Depth 85.70 m
Recovery 90%
Logged by: DJT
Drilled by: DJ Drilling
Date: 3-Aug-97

FROM m	TO m	Tag No.	length m	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
22.65	23.25			-								-	98%		qtz-xtal tuff	white	c gr	massive	rusty chlorite veins - minor. Fractures at 45° & 25° ca.
23.25	28.60			-								-	-		flt gouge	pale to med green	f & c gr	massive	28.3-28.6 - broken core, dirty xtal tuff. 27.7-27.9 - upper/ lower contact 40°& 45°ca b/w bt-recrystallized brownish green altered andesite tuff & flt gouge. 25.5-25.8 - upper contact 45°, lower25°ca b/w fault gouge & dirty bt-alt xtal tuff. 24.3-24.6 - 25°ca fractures; dk gray dirty xtal tuff. Remainder is fault gouge as in first interval.
28.60	41.85			tr	blebs			100%				-	3%	chl, talc	recrystallized andesite tuff	brownish green	c gr	massive	20° and 45° ca fractures. Amphibole-bt recrystallized andesitic tuff? c gr green matrix (feld+calc-silicates?) with 3-8mm bt-altering blk amphibole xtals w/ white feld? inclusions. Fracture surfaces at 45° and 25°ca, coated in green clay/rock flow and waxy green talc. broken core & gougy intervals at: 31.6-31.8m; 32.1-32.3; 33.20-33.90 (and 30 cm lost core) brecciated and relithified b/4 faulting event. 35.40-35.65 two 4&7 cm veins or layers at 45°ca. Fault gouge & broken core at 36.05-36.15; 36.50-36.75; 38.00-38.15; 38.85-39.70; 41.20-41.40; 41.6-41.75m. @ 39.70 - clay and calc vein 20mm thick at 25°ca.
41.85	43.07			-								-	-	minor kspar, bleaching	andesitic xtal tuff	med green/ gray	f gr	laminated	med to dk greenish gray, andesitic f gr xtal tuff w/ minor calcite veining and hairline green chl fractures, often cobweb like pattern. 41.90-42.00- broken core & mushy fault gouge. 42.15 4mm calc vein 20°ca containing fragments. 42.15-42.45 - bleached, veined, altered, poss kspar altered. 42.65-42.93 - slightly bleached, poss more felsic zone; fractures at 45°to 60° to ca.
43.07	44.50											-	-	bleaching	andesitic to felsic xtal tuff	pale green/ gray	f gr	laminated - brecciated	43.07-44.50 - pale to med green-gray, mod bleached, calc & chl veined; in places appears almost brecciated by the calc veins.

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-09

PROPERTY : SWIFT RIVER

Depth 85.70 m
Recovery 90%
Logged by: DJT
Drilled by: DJ Drilling
Date: 3-Aug-97

UTM E 376695 E
UTM N 6673739 N
Elev 1404 m
Azimuth 57°
Inclination -50°
Core Size NQ
Survey Type : Acid test

	depth	dip
	0	0
	0	0
	0	0

FROM metres	TO metres	Tag No.	length metres	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
44.50	63.40			tr	blebs	60%			40%					Fe oxide	andesitic	med	f gr	laminated	tr Po & Cpy in qtz & chl veins. Interval as 41.85 - 43.07.
					dissem										xtal tuff	green			calc veins at 25° ca and clay + calc fractures at 45°ca.
																gray			bleached or felsic <1cm lam have sinistral offsets on
																			hairline chl veinlets. Silicic 1-2cm lam at 48.78,48.90,
																			48.98 @ 45°ca. 48.30 10mm rusty calc vein at 25°ca.
																			48.50 - 49.40 broken core w/ 20cm lost core. 50.30 -
																			15mm rusty felsic layers and fracture along 2mm calc
																			vein at 25°ca. 50.70 irreg calc veins causing minor
																			brecciation. 53.60 bright green talc in fracture vein at
																			30° ca. 56.00 irreg 8mm wide calc vein at 0-20° causing
																			minor brecciation. 56.15-56.90 broken core & minor
																			fault gouge contact at 20°ca. 57.40-58.15 broken core,
																			minor fault gouge. 58.55 rusty fractures at 45°ca.
																			59.00 irreg qtz vein w/ spurs, brecciation inside 20mm
																			vein. 60.30, 60.50, 60.80 - irreg white, calc & feld veining
																			produces brecciation. Below 58.50, slight coarsening
																			of xtal component & appearance of bt laminations.
																			61.20 - brecciation in 2-3cm white, feld vein. 62.65-
																			63.40- more altered, clay rich, broken core - poss
																			more silty.
63.40	63.85			-								-	90%	-	qtz-xtal	white	f gr	massive -	recrystallized qtz-xtal tuff with two bt-rich silty
															tuff			laminated	interlayers at 45°ca.
63.85	78.65			tr	clots,	70%			30%			-	3%	tr chl	andesitic	med	f to m gr	laminated	silty andesitic crystal tuff, with v minor veining; minor
					blebs, &										xtal tuff	green			hairline chl veins at 25° & 45°ca. <5% bt. 70.35-72.15 -
					stringers											gray			poss alt fragments with tr assoc Po clots. 64.90 act-qtz-
																			purple px? Vein w/ Po & Cpy stringers. Xtals becoming
																			coarser, interval more bt rich downwards.
78.65	80.35			-								-	5%	chl	xtal tuff	green-	c gr	roughly	silty c gr xtal tuff or an immature poorly sorted arkose.
																brown	f gr Matrix	laminated	xtals mostly feldspar granules .5-3mm subangular to
																			subrounded, cracked in bt+chl matrix.
80.35	81.80			-								-	-	-	silty	med	f gr	laminated	silty andesitic tuff & tuffaceous siltstone very similar
															andesite	green/			to 63.85-78.65, w/ more bt.
															tuff	gray &			
																brown			

BIRCH MOUNTAIN RESOURCES LTD.

DDH SR 97-09

PROPERTY : SWIFT RIVER

					depth	dip
UTM E	376695 E	Azimuth	57°	Survey Type : Acid test	0	0
UTM N	6673739 N	Inclination	-50°		0	0
Elev	1404 m	Core Size	NQ		0	0

Depth 85.70 m
Recovery 90%
Logged by: DJT
Drilled by: DJ Drilling
Date: 3-Aug-97

FROM m	TO m	Tag No.	length m	total % sulfides	sulfide texture	Po	Sph	Py	Cpy	Apy	Gal	Mag	Qtz	Alt	Lithology	Colour	Texture	Structure	Comments
81.80	82.60			-								-	-	chl	fragmented tuff or breccia	med green gray	c gr	brecciated f gr Matrix	angular med green-gray fragments 1mm-40mm in slightly paler felsic matrix - poss fragmental tuff or breccia. 82.50 - 3mm vein of soft white sulfate - does not react with HCL.
82.60	85.70			tr	bleb	80%			20%			-	3%		andesitic xtal tuff	med green	f to m gr	laminated	weakly laminated & slight soft sed def cut by cobwebs of hairline dk green chlorite fractures. Minor 45°ca veins of soft alt white feld? 84.6-84.8 - white felsic xtal tuff extensively cut & sinistral faulted by chl veinlets. 85.00- 25°ca open vein w/ dogtooth calc. 85.35-85.70 - 25°ca 15mm fracture with brecciated fragments, red rust, green talc & chl, and calc and qtz.
																			END OF HOLE
																			NOTE: the med green-gray andesitic xtal tuff is the equivalent of the graywacke at the top of Cominco's SR93-06 hole. It is more felsic and not as dark green as the andesitic tuffs in other BMR holes; perhaps from less Fe and less ferrous chl & actinolite formation?

APPENDIX 4

DIAMOND DRILL HOLE CORE ASSAYS AND GEOCHEMISTRY

DIAND - YUKON REGION, LIBRARY

DDH SR-97-01

PROPERTY : SWIFT RIVER

UTM E 381166
UTM N 6672446
Elev 1124 m

Azimuth 50°
Inclination -46°
Core Size NQ

FROM	TO		length			Assay Results					
m	m	Tag No.	m	Lithology	Code	Cu%	Zn%	Pb(ppm)	Ag(ppm)	Au(ppm)	Au(ppb)
0.00	9.15			overburden	0						
9.15	13.87			andesite tuff	1						
13.87	14.93			andesite tuff	1						
14.93	27.67			andesite tuff	1						
27.67	28.32	97401	0.65	andesite tuff	1	0.002	0.0302	12	<0.1		<5
28.32	29.13	97402	0.81	andesite tuff	1am	0.264	0.0227	<1	13		<5
29.13	30.92	97403	0.79	actinolite skarn	1am	0.0067	0.0125	8	1.9		30
30.92	34.02			actinolite skarn	1am						
34.02	39.09			skarn or marble?	6a						
39.09	40.30	97404	1.21	actinolite skarn	1am	0.0144	0.1703	20	2.2		<5
40.30	41.36	97405	1.06	andesite tuff	1am	0.0074	0.913	7	0.4		<5
41.36	42.40	97406	1.04	andesite tuff	1am	0.0015	0.2324	<1	<0.1		<5
42.40	43.17	97407	0.77	actinolite skarn	1am	0.0029	0.4807	3	<0.1		<5
43.17	43.84			andesite tuff	1a						
43.84	44.50	97408	0.66	actinolite skarn	1am	0.0142	4.65	<1	<0.1		<5
44.50	45.06			actinolite skarn	1a						
45.06	46.01	97409	0.95	actinolite skarn	1am	0.0198	0.9428	<1	0.1		<5
46.01	48.89			tuffaceous sltstn	5						
48.89	49.70	97410	0.96	tuffaceous sltstn	5	0.007	0.0157	70	1.1		7
49.70	50.11			tuffaceous sltstn	5						
50.11	50.78	97411	0.67	tuffaceous sltstn	5m	0.0025	0.0137	33	0.8		<5

FROM	TO		length			Assay Results					
m	m	Tag No.	m	Lithology	Code	Cu%	Zn%	Pb(ppm)	Ag(ppm)	Au(ppm)	Au(ppb)
50.78	50.97			tuffaceous sltstn	5						
50.97	51.50	97412	0.53	ibbd marble &	1, 6im	0.006	0.2887	31	1.1		6
				andesite tuff							
51.50	52.38	97413	0.88	tuffaceous sltstn	5	0.0016	0.0413	16	0.4		<5
52.38	53.36			tuffaceous sltstn	5						
53.36	54.60	97414	1.24	tuffaceous sltstn	5m	0.0106	0.212	3	<0.1		<5
54.60	55.20			tuffaceous sltstn	5						
55.20	55.88	97415	0.68	tuffaceous sltstn	5m	0.0068	0.55	15	0.5		<5
55.88	56.17			tuffaceous sltstn	5						
56.17	57.27	97416	1.10	andesitic tuff	1 e	0.0026	0.4	10	<0.1		<5
57.27	57.94	97417	0.67	andesitic tuff	1am	0.0008	0.58	11	0.1		<5
57.94	59.18	97418	1.24	skarnified	5am	0.0049	0.265	11	0.5		<5
				tuffaceous sltstn							
59.18	59.53			tuffaceous sltstn	5						
59.53	60.18	97419	0.65	tuffaceous sltstn	5m	0.0138	0.015	18	0.7		<5
60.18	60.70			tuffaceous sltstn	5						
60.70	61.69	97420	0.99	tuffaceous sltstn	5m	0.0152	0.0105	14	0.7		<5
61.69	63.18	97421	1.49	tuffaceous sltstn	5m	0.1091	0.0184	13	4		15
63.18	64.64	97422	1.46	tuffaceous sltstn	5m	0.0208	0.0088	10	0.7		<5
64.64	66.00	97423	1.36	tuffaceous sltstn	5m	0.0922	0.0121	11	3.4		<5
66.00	67.41	97424	1.41	tuffaceous sltstn	5m	0.0225	0.0082	9	0.3		30
67.41	68.22	97425	0.81	tuffaceous sltstn	5m	0.009	0.0067	10	<0.1		6
68.22	69.21			tuffaceous sltstn	5m						
69.21	70.22	117451	1.01	tuffaceous sltstn	5m	0.0058	0.0074	8	<0.1		5
70.22	71.00	117452	0.78	actinolite skarn	1am	0.0055	0.0041	10	<0.1		6
71.00	71.65	117453	0.65	andesite tuff	1m	0.0461	0.0074	10	1.3		5

FROM	TO		length			Assay			Results		
m	m	Tag No.	m	Lithology	Code	Cu%	Zn%	Pb(ppm)	Ag(ppm)	Au(ppm)	Au(ppb)
71.65	72.45	117454	0.80	andesite tuff	1m	0.0171	0.0053	10	0.4		<5
72.45	72.98			andesite tuff	1						
72.98	74.00	117455	1.02	andesite tuff	1m	0.0356	0.0077	8	1		<5
74.00	74.48			andesite tuff	1s						
74.48	75.32	117456	0.94	andesite tuff	1m	0.0028	0.006	9	0.4		<5
75.32	76.23	117457	0.89	andesite tuff	1m	0.0025	0.0073	13	<0.5	<1	
76.23	79.53			andesitic xtal tuff	1						
79.53	80.94	117458	1.41	andesitic xtal tuff	1m	0.0157	0.0062	16	<0.5	<1	
80.94	81.69	117459	0.75	andesite tuff	1m	0.0665	0.0073	10	1	<1	
81.69	82.58			andesite tuff	1						
82.58	83.33	117460	0.75	andesite tuff	1m	0.0981	0.0063	6	<0.5	<1	
83.33	83.93	117461	0.60	andesite tuff	1m	0.0036	0.0063	1	<0.5	<1	
83.93	84.98	117462	1.05	andesite xtal tuff	1m	0.0069	0.0067	4	<0.5	<1	
84.98	98.77			andesite xtal tuff	1						
98.77	99.77	117463	1.00	tuffaceous sltstn	5m	0.0001	0.0043	380	<0.5	<1	
99.77	101.04			silty andesite tuff	5						
101.04	101.63			andesite tuff	1						
101.63	102.72			andesite tuff	1						
102.72	103.16			andesite tuff	1						
103.16	103.75			andesite tuff	1						
103.75	104.45			andesite tuff	1						
104.45	105.73	117464	1.28	andesite tuff	1m	0.0012	0.0046	4	<0.5	<1	
105.73	112.15			silty andesite tuff	5						
112.15	117.01			tuffaceous sltstn	5						
117.01	118.11	117465	1.10	epidote skarn	5am	0.0001	0.0624	32	<0.5	<1	

FROM	TO		length			Assay			Results		
m	m	Tag No.	m	Lithology	Code	Cu%	Zn%	Pb(ppm)	Ag(ppm)	Au(ppm)	Au(ppb)
118.11	118.78	117466	0.67	epdt/gt skarn	5am	0.0022	0.0069	2	<0.5	1	
118.78	119.78	117467	1.00	epdt/gt skarn	5a	0.0001	0.1331	217	2.4	1	
119.78	123.34			tuffaceous sltstn	5						
123.34	125.73			tuffaceous sltstn	5						
125.73	126.52	117468	0.79	gt skarn	5am	0.0027	0.3323	46	<0.5	1	
126.52	127.47	117469	0.95	gt skarn	5am	0.0005	0.2084	16	<0.5	1	
127.47	128.55	117470	1.08	gt skarn	5am	0.0044	0.4577	34	1.2	2	
128.55	129.57	117471	1.02	gt skarn	5am	0.0114	0.6613	38	2.1	1	
129.57	131.53			tuffaceous sltstn	5a						
131.53	132.62	117472	1.11	tuffaceous sltstn	5m	0.0136	0.0662	70	1.4	2	
132.62	133.96	117473	1.34	tuffaceous sltstn	5m	0.0172	0.0147	35	0.7	1	
133.96	134.84			tuffaceous sltstn	5						
134.84	135.57	117474	0.73	tuffaceous sltstn	5m	0.0073	0.0169	22	<0.5	1	
135.57	137.80			tuffaceous sltstn	5						
137.80	138.51	117475	0.71	tuffaceous sltstn	5m	0.0089	0.0058	11	<0.5	<1	
138.51	140.15			tuffaceous sltstn	5						
140.15	142.24			tuffaceous sltstn	5						
142.24	146.89			andesite tuff	5a						
146.89	160.68			tuffaceous sltstn	5						
160.68	162.18	117476	1.50	tuffaceous sltstn	5m	0.0121	0.0114	8	<0.5	<1	
162.18	162.89			tuffaceous sltstn	5						
162.89	163.80	117477	0.91	tuffaceous sltstn	5m	0.0116	0.0106	9	<0.5	<1	
163.80	165.04	117478	1.24	alt andesite tuff	1am	0.0272	0.0121	10	2.7	1	
165.04	165.74	117479	0.70	skarnified and tuff	1am	0.0041	0.0841	6	0.6	<1	
165.74	166.46	117480	0.72	skarnified and tuff	1am	0.0071	0.0275	31	0.8	<1	

FROM	TO		length			Assay			Results		
m	m	Tag No.	m	Lithology	Code	Cu%	Zn%	Pb(ppm)	Ag(ppm)	Au(ppm)	Au(ppb)
166.46	166.92			impure marble	6i						
166.92	170.11			blchd silicic felsic	2b						
170.11	171.11	117481	1.00	carb rich sltstn	6im	0.0014	0.112	208	<0.5	<1	
171.11	172.53			blchd silicic felsic	2b						
172.53	172.93			impure marble	6i						
172.93	174.08	117482	1.15	tuffaceous sltstn	5m	0.0079	0.0072	81	<0.5	<1	
174.08	175.22	117483	1.14	tuffaceous sltstn	5m	0.005	0.0043	43	<0.5	<1	
175.22	175.91			tuffaceous sltstn	5						
175.91	176.68	117484	0.77	tuffaceous sltstn	5m	0.0064	0.0042	39	<0.5	<1	
176.68	187.50			tuffaceous sltstn	5						
187.50	188.70	117485	1.20	tuffaceous sltstn	5m	0.0222	0.0057	31	<0.5	<1	
188.70	195.38			tuffaceous sltstn	5						
195.38	195.88	117486	0.50	tuffaceous sltstn	5m	0.0084	0.0028	6	<0.5	<1	
195.88	200.88			tuffaceous sltstn	5						
200.88	204.42			tuffaceous sltstn	5						
204.42	205.79			tuffaceous sltstn	5						
205.79	208.33			tuffaceous sltstn	5						
208.33	209.27			tuffaceous sltstn	5b						
209.27	209.95			felsic tuff	5						
209.95	213.17			tuffaceous sltstn	5						
213.17	213.85			tuffaceous sltstn	5						
213.85	223.50			tuffaceous sltstn	5						
223.50	223.88			altered sltstn	5a						
223.88	224.42			marble	6						
224.42	227.02			skarnified felsic tu	2a						

FROM	TO		length			Assay				Results	
m	m	Tag No.	m	Lithology	Code	Cu%	Zn%	Pb(ppm)	Ag(ppm)	Au(ppm)	Au(ppb)
227.02	228.74			marble	6						
228.74	230.58			skarnified felsic tu	2a						
230.58	231.55			marble	6						
231.55	232.45	117487	0.90	marble	6am	0.0026	0.1411	29	<0.5	<1	
232.45	234.78			marble	6						
234.78	235.24	117488	0.46	marble	6m	0.0117	0.0464	36	<0.5	<1	
235.24	240.18			marble	6						
240.18	240.96	117489	0.76	marble	6m	0.0073	0.0109	60	<0.5	<1	
240.96	242.04	117490	1.08	dolomitic marble	6dm	0.0071	0.024	69	<0.5	<1	
242.04	242.74			dolomitic marble	6d						
242.74	243.42	117491	0.68	dolomitic marble	6dm	0.0083	0.4866	69	<0.5	<1	
243.42	244.61			marble	6						
244.61	245.85	117492	1.24	impure marble	6im	0.0037	0.1808	61	<0.5	<1	
245.85	247.34			marble	6						
247.34	247.92	117493	0.58	marble	6m	0.004	0.0742	45	<0.5	<1	
247.92	251.71			marble	6						
251.71	253.20			skarn	6i						
253.20	254.54			marble	6						
254.54	255.46	117494	0.92	impure calc-silicate marble	6im	0.0074	0.0363	281	0.7	<1	
255.46	257.87			impure marble	6i						
257.87	258.77			skarnified felsic tu felsic tuff	2a						
258.77	262.25			marble	6						
262.25	262.83			felsic tuff	2b						
262.83	263.25			marble	6						

FROM	TO		length			Assay				Results	
m	m	Tag No.	m	Lithology	Code	Cu%	Zn%	Pb(ppm)	Ag(ppm)	Au(ppm)	Au(ppb)
263.25	263.82			felsic tuff	2a						
263.82	264.11			marble	6						
264.11	264.43			felsic tuff	6						
264.43	264.66			marble	6						
264.66	265.69	117495	1.03	silicic tuff	2cm	0.0107	0.0072	89	<0.5	<1	
265.69	266.32			silicic tuff	2c						
266.32	266.41			marble	6						
266.41	266.52			skarnified tuff	2a						
266.52	266.77			marble	6						
266.77		E.O.H.				END OF HOLE					

DDHSR-97-01
Assay and ICP results

ELEMENT	location		Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	of	sample	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
97401	1	27.67-28.32	<0.1			<5								20										12								302
97401	1	27.67-28.32	<0.5	2.80	<1	<1	9	229	6	1.31	1	18	38	23	5.14	0.79	3	1.98	871	3	0.13	16	0.067	13	7	33	34	0.04	<1	128	4	284
97402	1	28.32-29.13	13.0			<5								2640										<1								227
97402	1	28.32-29.13	14.7	0.44	<1	<1	85	50	13	0.59	3	104	3	3572	13.71	0.02	4	0.14	331	2	0.02	28	0.034	3	7	<1	65	<0.01	<1	8	<1	186
97403	1	29.13-30.92	1.9			30								67										8								125
97403	1	29.13-30.92	1.6	0.32	<1	<1	23	16	46	2.99	1	22	3	90	6.92	0.01	8	0.19	534	2	0.01	11	0.031	12	5	13	32	0.01	<1	7	5	71
97404	1	39.09-40.30	2.2			<5								144										20								1703
97404	1	39.09-40.30	2.3	0.20	3	<1	75	19	247	3.18	8	58	2	171	10.65	0.01	10	0.19	1823	4	<0.01	15	0.025	26	9	10	48	<0.01	<1	4	66	1240
97405	1	40.30-41.36	0.4			<5								74										7								9130
97405	1	40.30-41.36	0.6	0.20	<1	<1	61	18	34	2.93	54	33	1	91	9.47	0.01	9	0.17	1373	4	0.01	12	0.026	8	8	16	43	<0.01	<1	5	9	7292
97406	1	41.36-42.40	<0.1			<5								15										<1								2324
97406	1	41.36-42.40	<.5	0.22	<1	<1	22	19	84	2.14	14	6	1	22	7.54	0.02	8	0.16	525	1	0.01	9	0.032	7	6	8	34	<0.01	<1	5	<1	2112
97407	1	42.40-43.17	<0.1			<5								29										3								4807
97407	1	42.40-43.17	<.5	0.27	<1	<1	31	20	19	2.10	26	12	0	41	7.14	0.02	7	0.21	592	3	0.02	9	0.030	4	7	7	33	<0.01	<1	6	<1	4035
97408	1	43.84-44.50	<0.1			<5								142										<1								46500
97408	1	43.84-44.50	<.5	0.15	<1	<1	61	13	7	2.07	194	21	0	141	5.70	0.01	6	0.17	486	1	0.01	8	0.015	4	6	8	25	<0.01	<1	2	<1	>10000
97409	1	45.06-46.01	0.1			<5								198										<1								9428
97409	1	45.06-46.01	0.6	0.52	<1	<1	64	55	6	1.23	50	27	1	236	8.29	0.08	5	0.24	580	1	0.06	18	0.026	12	6	5	38	0.01	<1	6	<1	8043
97410	1	48.90-49.70	1.1			7								38										70								157
97410	1	48.90-49.70	<.5	1.56	6	<1	22	98	4	0.70	1	15	40	36	2.88	0.56	<1	1.49	363	2	0.13	9	0.055	72	4	53	22	0.06	<1	84	<1	2130
97411	1	50.11-50.78	0.8			<5								25										25								137
97411	1	50.11-50.78	<.5	1.34	<1	<1	12	106	1	0.67	1	12	52	20	2.50	0.57	<1	1.33	320	1	0.12	8	0.055	41	4	32	23	0.07	<1	81	<1	114
97412	1	50.97-51.50	1.1			6								60										31								2887
97412	1	50.97-51.50	<.5	1.28	<1	<1	21	57	3	2.38	15	10	39	62	2.54	0.14	4	1.16	581	1	0.07	8	0.042	36	6	33	23	0.04	<1	51	<1	2708
97413	1	51.50-52.38	0.4			<5								16										16								413
97413	1	51.50-52.38	<.5	1.45	<1	<1	23	101	3	0.71	3	16	31	17	2.66	0.55	<1	1.47	336	1	0.12	8	0.057	25	5	38	22	0.06	<1	65	<1	404
97414	1	53.36-54.60	<0.1			<5								106										3								2120
97414	1	53.36-54.60	<.5	1.63	<1	<1	22	147	3	0.72	11	9	19	115	2.41	0.89	<1	1.66	352	1	0.14	8	0.055	19	4	33	22	0.07	<1	79	<1	1951
97415	1	55.20-55.88	0.5			<5								68										15								5500
97415	1	55.20-55.88	<.5	1.66	<1	<1	16	84	3	1.39	30	12	20	71	3.38	0.32	2	1.12	578	2	0.15	9	0.056	26	6	35	24	0.04	<1	83	<1	5112
97416	1	56.17-57.27	<0.1			<5								26										10								4000
97416	1	56.17-57.27	<.5	1.27	<1	<1	23	57	3	2.24	22	9	25	29	4.51	0.10	6	0.71	882	3	0.06	8	0.058	19	6	22	27	0.03	<1	30	<1	3778
97417	1	57.27-57.94	0.1			<5								8										11								5800
97417	1	57.27-57.94	<.5	1.06	<1	<1	24	38	4	2.08	31	7	18	8	3.59	0.03	6	0.64	747	5	0.03	6	0.045	17	5	20	24	0.03	<1	26	<1	5116
97418	1	57.94-59.18	0.5			<5								49										11								2650
97418	1	57.94-59.18	<.5	1.27	<1	<1	23	77	2	1.80	14	8	21	51	2.68	0.30	5	0.78	541	2	0.09	7	0.056	17	7	31	24	0.04	<1	41	<1	2397
97419	1	59.53-60.18	0.7			<5								138										18								150
97419	1	59.53-60.18	<.5	1.34	<1	<1	14	98	3	1.23	1	12	31	141	2.49	0.49	1	0.98	272	2	0.15	10	0.054	24	6	41	22	0.05	<1	53	<1	157
97420	1	60.70-61.69	0.7			<5								152										14								105
97420	1	60.70-61.69	<.5	1.46	<1	<1	6	130	2	0.75	1	13	31	161	2.52	0.63	<1	1.25	259	5	0.14	8	0.057	23	5	27	21	0.05	<1	62	<1	87
97421	1	61.69-63.18	0.4			15								1091										1091								184

ELEMENT	location		Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	of	sample	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
97421	1	61.69-63.18	1.4	1.84	<1	<1	18	112	2	0.98	2	31	33	1087	3.12	0.71	<1	1.44	265	2	0.18	11	0.055	23	6	105	23	0.05	<1	76	<1	170
97422	1	63.18-64.64	0.7			<5								208										10								88
97422	1	63.18-64.64	<.5	2.01	<1	<1	14	124	4	0.85	1	26	37	210	2.91	1.09	<1	1.91	261	2	0.18	10	0.055	24	5	53	24	0.07	<1	94	<1	70
97423	1	64.64-66.00	3.4			<5								922										11								121
97423	1	64.64-66.00	0.6	1.81	2	<1	22	124	3	0.78	1	31	33	895	2.74	1.02	<1	1.80	269	2	0.16	9	0.051	21	5	41	21	0.06	<1	83	<1	95
97424	1	66.00-67.41	0.3			30								225										9								82
97424	1	66.00-67.41	<.5	1.94	<1	<1	8	141	3	0.74	1	23	36	229	2.90	1.21	<1	2.03	278	2	0.14	9	0.055	23	6	47	24	0.07	<1	95	<1	65
97425	1	67.41-68.22	<0.1			6								90										10								67
97425	1	67.41-68.22	<.5	1.77	<1	<1	19	90	3	0.68	1	32	33	90	3.50	1.04	<1	1.78	248	2	0.15	9	0.054	22	6	38	26	0.07	<1	83	<1	52
117451	1	69.21-70.22	<0.1			5								58										8								74
117451	1	69.21-70.22	<0.5	2.07	<1	<1	16	197	2	1.12	1	13	27	57	2.17	1.01	<1	1.70	266	2	0.20	8	0.055	24	6	61	20	0.06	<1	84	<1	55
117452	1	70.22-71.00	<0.1			6								55										10								41
117452	1	70.22-71.00	<0.5	0.99	<1	<1	39	44	3	1.80	1	18	24	58	3.21	0.14	8	0.69	384	1	0.08	6	0.032	14	4	30	23	0.02	<1	30	<1	35
117453	1	71.00-71.65	1.3			5								461										10								74
117453	1	71.00-71.65	0.7	1.02	<1	<1	18	32	3	1.40	1	5	26	460	1.54	0.11	3	0.64	278	1	0.13	7	0.053	15	5	41	15	0.02	<1	35	<1	60
117454	1	71.65-72.45	0.4			<5								171										10								53
117454	1	71.65-72.45	<0.5	1.06	<1	<1	20	56	4	1.92	1	9	26	181	1.83	0.23	5	0.70	322	1	0.13	6	0.052	15	4	48	18	0.03	<1	41	<1	41
117455	1	72.98-74.00	1.0			<5								356										8								77
117455	1	72.98-74.00	0.8	1.41	6	<1	18	128	2	0.96	1	18	26	355	1.91	0.52	1	1.17	218	1	0.14	7	0.054	17	5	42	20	0.04	<1	54	<1	59
117456	1	74.48-75.32	0.4			<5								28										9								60
117456	1	74.48-75.32	<0.5	1.91	3	<1	3	148	3	1.72	1	19	28	29	2.04	0.74	2	1.46	267	2	0.16	7	0.059	22	5	78	22	0.04	<1	66	<1	47

DDH SR-97-02

PROPERTY : SWIFT RIVER

UTM E 381141
UTM N 6672417
Elev 1127 m

azimuth= 35°
inclination= -60°
core size= NQ

FROM	TO		length			Assay			Results		
m	m	Tag No.	m	Lithology	Code	Cu%	Zn%	Pb(ppm)	Ag(ppm)	Au(ppm)	Au(ppb)
0.00	7.62			till	0						
7.62	13.54			silty andesite tuff	1s						
13.54	14.19	117496	0.65	silty andesite tuff	1sm	0.008	0.0338	19	<0.5	<1	
14.19	15.80			silty andesite tuff	1s						
15.80	20.89			silty andesite tuff	1s						
20.89	22.99			andesite tuff	1s						
22.99	28.25			silty xtal tuff	1s						
28.25	30.67			silty andesite tuff	1s						
30.67	32.38			silty andesite tuff	1s						
32.38	33.04			silty andesite tuff	1s						
33.04	36.68			andesite xtal tuff	1						
36.68	38.41			andesite xtal tuff	1						
38.41	39.77			andesitic xtal tuff	1						
39.77	43.70			andesitic xtal tuff	1						
43.70	43.99			andesite tuff	1a						
43.99	53.26			silty andesitic tuff	1s						
53.26	57.15			silty andesitic tuff	1s						
57.15	57.89			silty andesitic tuff	1s						
57.89	59.14			silty andesite tuff	1s						
59.14	60.07			andesite tuff	1						
60.07	60.37			chlorite breccia	1x						

FROM	TO		length				Assay		Results		
m	m	Tag No.	m	Lithology	Code	Cu%	Zn%	Pb(ppm)	Ag(ppm)	Au(ppm)	Au(ppb)
60.37	61.31			siliceous and tuff	1c						
61.31	65.04			siliceous and tuff	1c						
65.04	66.03	117497	0.99	andesite	1r m	0.032	0.0171	28	<0.5	<1	
66.03	66.87	117498	0.84	xtal and frag tuff	1r m	0.046	0.0183	24	<0.5	<1	
66.87	67.54			siliceous and tuff	1c						
67.54	68.80			silty andesite tuff	1s						
68.80	70.94			actinolite skarn	1a						
70.94	71.27	117513	0.31	actinolite/mag skarn	1a	0.004	0.027	6	<0.5	<1	
71.27	74.11			actinolite skarn	1a						
74.11	74.84			magnetite skarn	1a						
74.84	76.70			impure calc-silicte marble	6i						
76.70	77.98			pyroxene skarn	1a						
77.98	79.66			actinolite skarn	1a						
79.66	80.04			impure marble	6i						
80.04	82.15			actinolite skarn	1a						
82.15	83.10			actinolite px skarn	1a						
83.10	84.06			tuffaceous sltstn	5						
84.06	85.44			alt tuffaceous sltstn	5a						
85.44	86.61			tuffaceous sltstn	5						
86.61	96.65			tuffaceous sltstn	5						
96.95	E.O.H.										

DDHSR-97-02
Assay and ICP results

ELEMENT	location		Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	of	sample	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
117496	2	13.54-14.19	<0.5	1.98	<1	<1	82	70	6	0.81	3	83	49	338	2.92	0.49	4	0.52	340	<1	0.14	22	0.047	19	8	38	18	0.08	<1	98	14	78
117497	2	65.04-66.03	<0.5	1.08	13	<1	28	57	5	1.40	3	49	33	316	2.32	0.05	6	0.38	309	61	0.09	23	0.101	28	7	26	34	0.06	<1	31	10	171
117498	2	66.03-66.87	<0.5	1.34	<1	<1	26	55	4	2.18	3	33	30	456	2.30	0.06	8	0.57	383	32	0.14	24	0.100	24	10	61	35	0.06	<1	32	10	183
117513	2	70.94-71.27	<0.5	0.29	<1	<1	26	13	28	2.16	4	7	7	35	3.30	0.03	7	0.25	402	<1	0.03	26	0.072	6	6	8	74	0.01	<1	9	<1	270

DDH SR-97-03

PROPERTY : **SWIFT RIVER**

UTM E 382099
UTM N 6671844
Elev 1210 m

Azimuth 35°
Inclination -45°
Core Size NQ

FROM metres	TO metres	Tag No.	length metres	Lithology	Code	Assay Results Cu%	Zn%	Pb(ppm)	Ag(ppm)	Au(ppm)	Au(ppb)
0.00	15.20				0						
15.20	15.50			till	0						
15.50	19.80			tuffacceous sltstn	1s						
19.80	21.30			fault gouge	1f						
21.30	22.90			rubble (till)	0						
22.90	25.90			rubble	0						
25.90	26.20			till	0						
26.20	26.65			alt siltstone	0						
26.65	28.30			tuffaceous sltstn	1s						
28.30	30.70			alt sltstn & sandstn	5 a						
30.70	-			sand	0		HOLE ABANDONED				

DDH SR-97-04

PROPERTY : SWIFT RIVER

UTM E 382565
UTM N 6671458
Elev 1235 m

Azimuth 35°
Inclination -45°
Core Size NQ

FROM metres	TO metres	Tag No.	length metres	Lithology	Codes	Assay Cu%	Assay Zn%	Results Pb(ppm)	Results Ag(ppm)	Results Au(ppm)	Results Au(ppb)
0.00	7.62			overburden	0						
7.62	13.72			andesite tuff	1m						
13.72	19.74			tuffaceous siltstn	5a						
19.74	20.59	117526	0.85	xtal tuff	4 n	0.0039	0.0026	19	0.5		<5
20.59	21.44	117527	0.85	xtal tuff	4 n	0.0047	0.0032	19	0.2		<5
21.44	21.72	117528	0.28	massive sulfides	4 n	0.0248	0.0724	13	1		<5
21.72	22.31	117529	0.59	rhyolite tuff	3bm	0.0069	0.0048	21	0.7		8
22.31	23.47			rhyolite tuff	3c						
23.47	30.90			impure marble	6i						
30.90	43.61			andesitic tuff	1						
43.61	44.90			tuffaceous siltstn	1s						
44.90	45.32	117499	0.42	tuffaceous siltstn	1sm	0.0087	0.0054	42	<0.5	<1	
45.32	45.87			tuffaceous siltstn	1s						
45.87	46.42	117500	0.55	silty rhyolitic tuff	1sm	0.0053	0.005	33	<0.5	<1	
46.42	46.95			silty andesitic tuff	1s						
46.95	47.70	117501	0.75	silty andesitic tuff	1sm	0.0252	0.0052	10	<0.5	<1	
47.70	57.32			silty andesitic tuff	1s						
57.32	57.96	117530	0.64	silty andesitic tuff	1sm	0.0006	0.006	19	0.3		<5
57.96	58.74	117531	0.78	massive sulfides	1sm	0.0047	0.0038	7	0.8		<5
58.74	59.15	117532	0.39	rhyolite tuff	3m	0.018	0.0225	11	1		<5
59.15	59.86	117502	0.71	marble	6m	0.001	0.0048	35	<0.5	1	

FROM	TO		length			Assay				Results	
metres	metres	Tag No.	metres	Lithology	Codes	Cu%	Zn%	Pb(ppm)	Ag(ppm)	Au(ppm)	Au(ppb)
59.86	60.29	117503	0.43	silty rhyolite tuff	3sm	0.0064	0.0137	29	<0.5	<1	
60.29	61.30	117504	1.01	impure marble	6im	0.003	0.0185	15	<0.5	<1	
61.30	61.65			marble	6						
61.65	62.50	117505	0.85	silty rhyolite tuff	3sm	0.0024	0.0353	20	<0.5	<1	
62.50	63.05	117506	0.55	silty rhyolite tuff	3sm	0.0022	0.019	37	<0.5	<1	
63.05	63.75	117507	0.70	impure marble	6i	0.0017	0.0064	116	<0.5	<1	
63.75	64.75	117508	1.00	rhyolite tuff & lms	8 bm	0.0041	0.0062	27	<0.5	<1	
64.75	65.00			marble	6						
65.00	65.55			very impure marb	6i						
65.55	66.40			marble	6						
66.40	68.30			intbdd marble & siliciclastics	9						
68.30	69.10	117509	0.80	rhyolite tuff	3m	0.0039	0.2089	150	0.6	<1	
69.10	71.35			calcareous rhy tuf	3k						
71.35	72.25	117510	0.90	calcareous rhy tuf	3km	0.0035	0.0272	84	<0.5	<1	
72.25	72.53			calcareous rhy tuf	3k						
72.53	73.20	117511	0.67	rhyolite tuff & lms	8 m	0.0015	0.0082	45	<0.5	<1	
73.20	79.00			intbdd siliciclastic and marble	8						
79.00	80.55			marble	6						
80.55	80.95	117512	0.40	marble/silicic horr	8 m	0.009	0.0043	27	<0.5	<1	
80.95	83.05			rhyolite tuff	2b						
83.05	97.73			tuffaceous siltstn	5						
97.73		E.O.H.									

DDHSR-97-04
Assay and ICP results

ELEMENT	location		Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	of	sample	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
117526	4	19.74-20.59	0.5			<5								39										19								26
117526	4	19.74-20.59	<0.5	4.39	2	<1	104	76	5	3.01	16	24	32	203	3.12	0.26	2	0.67	201	4	0.69	12	0.029	58	13	186	28	0.05	<1	52	<1	1912
117527	4	20.59-21.44	0.2			<5								47										19								32
117527	4	20.59-21.44	<0.5	4.23	19	<1	67	112	6	2.64	7	20	27	122	3.41	0.64	1	1.15	141	3	0.64	14	0.031	56	16	147	29	0.05	<1	78	<1	921
117528	4	21.44-21.72	1.0			<5								248										13								724
117528	4	21.44-21.72	<0.5	0.67	<1	<1	82	68	15	0.41	8	35	57	357	18.07	0.04	7	0.12	172	3	0.12	43	0.037	19	14	10	99	0.02	<1	8	<1	895
117529	4	21.72-22.31	0.7			8								69										21								48
117529	4	21.72-22.31	<0.5	1.82	42	<1	65	45	4	1.51	2	12	46	111	4.94	0.07	5	0.17	134	4	0.28	22	0.048	38	13	95	34	0.02	<1	9	<1	219
117499	4	44.32-44.90	<0.5	2.20	2	<1	25	84	4	1.19	2	15	37	87	1.97	0.89	2	0.97	197	2	0.27	11	0.055	42	9	149	31	0.11	<1	87	8	54
117500	4	45.87-46.42	<0.5	1.89	3	<1	20	100	4	1.32	1	11	40	53	1.47	0.41	3	0.68	135	1	0.25	7	0.052	33	8	112	23	0.08	<1	50	5	50
117501	4	46.95-47.70	<0.5	1.96	7	<1	73	48	3	0.77	2	11	59	252	2.23	0.91	4	1.03	239	1	0.12	11	0.053	10	12	20	<1	0.06	<1	93	6	52
117530	4	57.32-57.96	0.3			<5								6										19								60
117530	4	57.32-57.96	<0.5	1.55	5	<1	71	61	5	1.17	2	17	47	28	4.78	0.76	<1	1.30	201	2	0.18	12	0.063	35	11	48	35	0.07	<1	85	<1	148
117531	4	57.96-58.74	0.8			<5								47										7								38
117531	4	57.96-58.74	<0.5	0.59	109	<1	346	51	15	0.37	3	104	49	91	16.04	0.03	7	0.12	116	1	0.06	23	0.015	15	14	22	82	0.01	<1	6	<1	103
117532	4	58.74-59.15	1.0			<5								180										11								225
117532	4	58.74-59.15	5.9	0.95	<1	<1	36	52	8	1.73	3	21	41	232	9.46	0.01	6	0.12	224	4	0.22	32	0.023	19	12	52	32	0.03	<1	20	<1	216
117502	4	59.15-59.86	<0.5	1.66	8	1	28	<1	3	7.68	1	7	10	10	1.26	0.04	10	0.09	1229	<1	0.14	10	0.029	35	8	163	31	0.02	<1	2	<1	48
117503	4	59.86-60.29	<0.5	1.97	3	<1	545	21	9	3.66	2	8	33	64	1.72	0.18	9	0.29	410	<1	0.40	11	0.035	29	12	247	30	0.06	<1	10	9	137
117504	4	60.29-61.30	<0.5	1.28	11	<1	32	57	6	6.31	1	6	15	30	1.73	0.40	9	0.86	1028	<1	0.10	11	0.028	15	8	131	39	0.04	<1	8	<1	185
117505	4	61.65-62.50	<0.5	0.78	12	<1	50	29	3	2.23	3	4	25	24	1.89	0.09	8	0.96	284	1	0.06	16	0.025	20	16	25	39	0.03	<1	6	8	353
117506	4	62.50-63.05	<0.5	0.88	23	<1	99	36	4	1.82	2	6	26	22	1.71	0.22	5	1.21	252	1	0.06	13	0.024	37	25	23	41	0.04	<1	11	6	190
117507	4	63.05-63.75	<0.5	1.10	29	<1	52	9	7	4.89	1	3	11	17	1.14	0.21	7	1.26	411	5	0.07	12	0.041	116	95	62	29	0.04	<1	8	<1	64
117508	4	63.75-64.75	<0.5	1.37	6	<1	613	50	3	1.71	1	8	46	41	1.91	0.09	<1	0.43	219	1	0.23	21	0.079	27	13	52	36	0.11	<1	14	<1	162
117509	4	68.30-69.10	0.6	0.75	9	<1	1305	9	21	5.18	10	5	37	39	1.41	0.12	7	0.34	778	1	0.14	13	0.036	150	82	41	31	0.07	<1	4	<1	2089
117510	4	71.35-72.25	<0.5	0.50	11	<1	571	23	3	1.53	2	8	61	35	1.81	0.06	<1	0.30	209	2	0.10	21	0.047	84	11	26	31	0.10	<1	2	<1	272
117511	4	72.53-73.20	<0.5	0.43	15	<1	2379	4	1	3.37	1	5	53	15	1.08	0.06	3	0.17	271	<1	0.06	14	0.025	45	13	66	22	0.07	<1	<1	<1	82
117512	4	80.55-80.95	<0.5	1.09	70	<1	46	26	5	4.45	3	14	23	90	2.48	0.03	20	0.99	374	<1	0.15	19	0.041	27	15	71	43	0.03	<1	15	11	43

DDH SR-97-05A

PROPERTY : SWIFT RIVER

UTM E 382552
UTM N 6671395
Elev 1244 m

Azimuth : 35°
Inclination : -45°
Core Size : NQ

FROM m	TO m	Tag No.	length m	Lithology	Codes	Assay Cu%	Assay Zn%	Results Pb(ppm)	Results Ag(ppm)	Results Au(ppm)	Results Au(ppb)
0.00	9.50			tilll	0						
9.50	11.20			andesitic tuff	1						
11.20	11.42	117525	0.22	silty andesite tuff	1sm	0.166	0.007	25	9.9	<1	
11.42	12.42			andesite tuff	1						
12.42	13.50			andesite tuff	1						
13.50	15.50			andesite tuff	1						
15.50	15.70	117533	0.20	andesitic - xtal tuff	1m	0.051	0.004	15	1.6	<1	
15.70	24.20			andesitic xtal tuff	1						
24.20	24.80	117534	0.60	ep alt tuff sltstn	5a	0.0234	0.003	19	<0.5	<1	
24.80	25.10			silty andesite tuff	1sa						
25.10	26.25	117535	1.15	silty andesite tuff	1sa	0.0185	0.005	9	<0.5	<1	
26.25	27.05	117536	0.80	silty andesite tuff	1sm	0.0251	0.004	11	<0.5	<1	
27.05	27.21	117537	0.16	silty andesite tuff	1sm	0.0894	0.003	13	1.6	<1	
27.21	27.66	117538	0.45	silty andesite tuff	1sm	0.0304	0.002	16	<0.5	<1	
						0.029	0.002	18	<0.5	<1	
27.66	28.15			felsic tuff	2a						
28.15	28.46	117539	0.31	andesite tuff	1m	0.015	0.002	8	<0.5	<1	
28.46	31.30			andesite tuff	1						
31.30	32.00			silty tuff	1s						
32.00	32.50			impure dolomite	6di						
32.50	36.05			silty felsic tuff	2s						
36.05	36.40			andesitic - felsic tuf	12						

FROM	TO		length			Assay Results					
m	m	Tag No.	m	Lithology	Codes	Cu%	Zn%	Pb(ppm)	Ag(ppm)	Au(ppm)	Au(ppb)
36.40	39.30			silty tuff	1s						
39.30	46.05			silty tuff	4s						
46.05	47.15	117540	1.10	silty tuff	4sm	0.0043	0.013	41	<0.5	<1	
47.15	49.30			silty tuff	4s						
49.30	50.10			rhyolite tuff?	3						
50.10	53.55			ibdd rhyolite tuff	13						
53.55	54.65			silty andesitic tuff	1s						
54.65	54.95			silty tuff	1s						
54.95	56.07			silty andesitic tuff	1s						
56.07	63.43			rhyolite tuff	3						
63.43	63.97	117590	0.54	rhyolitic tuff	3m	0.0041	0.007	43	<0.5	<1	
63.97	65.55			rhyolitic tuff	3						
65.55	67.90			silty tuff	1s						
67.90	68.60	117591	0.70	rhy tuffaceous sltst	3s	0.004	0.004	8	<0.5	<1	
68.60	69.05			tuffaceous sltstn	1s						
69.05	69.95	117592	0.90	meta-xtal tuffaceou	1s	0.0115	0.004	27	<0.5	<1	
69.95	70.55	117593	0.60	meta-xtal tuffaceou	1s	0.0105	0.003	14	<0.5	<1	
70.55	71.55			impure marble	6i						
71.55	71.80	117594	0.25	impure marble	6i	0.0025	0.013	4	<0.5	<1	
71.80	72.35			impure marble	6i						
72.35	73.35	117595	1.00	meta-rhy xtal tuff	3	0.0075	0.004	53	<0.5	<1	
73.35	74.30	117596	0.95	meta-rhy xtal tuff	3	0.0052	0.095	200	<0.5	<1	
74.30	74.70		0.40	meta-rhy xtal tuff	3						
74.70		E.O.H.				END OF HOLE					

DDHSR-97-05A
Assay and ICP results

ELEMENT	location		Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	of	sample	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
117525	5A	11.20-11.42	9.9	0.78	45	<1	176	50	6	0.47	4	285	58	1665	3.22	0.04	9	0.31	189	3	0.03	39	0.028	25	12	1	24	0.02	<1	35	14	67
117533	5A	15.50-15.70	1.6	2.08	15	<1	383	42	8	2.04	2	63	56	510	2.76	0.10	<1	0.42	676	<1	0.13	36	0.039	15	10	20	47	0.10	<1	120	<1	39
117534	5A	24.20-24.80	<0.5	1.52	2	<1	55	97	3	0.91	2	38	46	234	2.14	0.11	3	0.21	143	<1	0.20	15	0.059	19	6	87	7	0.07	<1	56	6	29
117535	5A	25.10-26.25	<0.5	1.85	2	<1	47	118	2	1.20	2	25	49	185	2.00	0.11	4	0.17	141	<1	0.27	13	0.072	9	6	61	6	0.05	<1	57	6	46
117536	5A	26.25-27.05	<0.5	2.02	<1	<1	65	85	4	1.25	2	29	55	251	2.20	0.07	4	0.22	155	<1	0.28	17	0.075	11	7	42	<1	0.06	<1	50	7	44
117537	5A	27.05-27.21	1.6	0.84	<1	<1	305	55	10	0.85	9	101	52	894	3.34	0.01	22	0.11	445	<1	0.02	34	0.017	13	7	7	54	0.02	<1	19	27	29
117538	5A	27.21-27.66	<0.5	0.98	<1	<1	104	67	2	0.74	3	44	54	304	2.70	0.07	3	0.27	223	<1	0.04	20	0.053	16	8	20	8	0.09	<1	65	9	16
117538 CK	5A	27.21-27.66	<0.5	1.01	<1	<1	91	69	3	0.68	3	39	57	290	2.33	0.07	4	0.25	188	<1	0.04	18	0.051	18	7	20	6	0.07	<1	60	10	15
117539	5A	28.15-28.46	<0.5	2.11	1	<1	97	115	3	1.92	2	34	30	150	2.11	0.08	5	0.18	231	<1	0.04	24	0.045	8	10	29	4	0.05	<1	26	6	17
117540	5A	46.05-47.15	<0.5	1.54	120	<1	57	36	2	1.23	2	47	21	43	2.03	0.06	3	0.67	229	<1	0.07	27	0.030	41	26	26	5	0.05	<1	54	7	132
117590	5A	63.43-63.97	<0.5	2.42	2	<1	78	61	4	1.79	2	12	42	41	2.00	0.11	6	0.19	239	1	0.23	10	0.042	43	20	49	4	0.05	<1	31	7	68
117591	5A	67.90-68.60	<0.5	2.27	3	<1	21	64	3	1.34	1	12	53	40	1.31	0.26	<1	0.60	194	<1	0.29	9	0.063	8	12	58	<1	0.12	<1	66	4	38
117592	5A	69.05-69.95	<0.5	4.05	8	<1	76	35	6	2.48	3	26	28	115	2.24	0.16	4	0.47	117	<1	0.42	16	0.025	27	23	129	6	0.07	<1	39	8	36
117593	5A	69.95-70.55	<0.5	4.85	2	<1	81	20	5	3.14	3	18	37	105	2.16	0.07	6	0.23	123	<1	0.56	15	0.022	14	21	152	6	0.05	<1	20	8	30
117594	5A	71.55-71.80	<0.5	0.16	7	<1	4	<1	1	8.12	1	1	5	25	0.71	0.04	13	1.88	1673	10	0.01	10	0.016	4	4	125	<1	0.00	<1	8	3	131
117595	5A	72.35-73.35	<0.5	0.95	95	<1	48	30	1	1.82	2	8	61	75	2.05	0.07	7	0.23	185	2	0.14	25	0.031	53	27	34	<1	0.04	<1	7	6	38
117596	5A	73.35-74.30	<0.5	1.14	233	<1	58	2	5	4.74	6	7	52	52	1.83	0.06	10	0.24	481	1	0.07	18	0.025	200	152	39	<1	0.02	<1	14	6	946

DDH SR-97-06

PROPERTY : SWIFT RIVER

UTM E 382090
UTM N 6671836
Elev 1210 m

Azimuth 35°
Inclination -50°
Core Size NQ

FROM metres	TO metres	Tag No.	length metres	Lithology	Code	Assay Cu%	Zn%	Pb(ppm)	Results Ag(ppm)	Au(ppm)	Au(ppb)
0.00	9.80			casing	0						
9.80	14.90			andesitic xtal tuff	1						
14.90	20.72			silty and xtal tuff	1s						
20.72	21.46	117634	0.74	andesitic xtal tuff	1m	0.0134	0.0043	12	<0.5	<1	
21.46	22.60	117639	1.14	andesitic xtal tuff	1m	0.0178	0.0042	24	<0.5	<1	
22.60	23.21			andesitic xtal tuff	1m						
23.21	23.96	117640	0.75	andesitic xtal tuff	1m	0.0284	0.004	6	<0.5	<1	
23.96	25.00	117641	1.04	andesitic xtal tuff	1m	0.0444	0.0044	8	<0.5	<1	
25.00	25.95	117642	0.95	andesitic xtal tuff	1m	0.0768	0.0053	11	<0.5	<1	
25.95	27.00	117643	1.05	andesitic xtal tuff	1m	0.0399	0.0043	6	<0.5	<1	
27.00	28.20	117644	1.20	andesitic xtal tuff	1m	0.0329	0.0013	24	<0.5	<1	
28.20	28.57	117524	0.37	andesitic xtal tuff	1m	0.2324	0.0391	18	4.3		<5
28.57	29.39	117657	0.82	andesitic xtal tuff	1m	0.0406	0.0012	30	<0.5	<1	
29.39	29.92			andesitic xtal tuff	1bf						
29.92	30.15			andesitic xtal tuff	1af						
30.15	33.30			andesitic xtal tuff	1bx						
33.30	44.50			andesitic xtal tuff	1bf						
44.50	47.70			silty and xtal tuff	1s						
47.70	48.80			silty and xtal tuff	1 h						
48.80	49.55			silty and xtal tuff	1 p						
49.55	50.04			silty and xtal tuff	1sa						

FROM metres	TO metres	Tag No.	length metres	Lithology	Code	Assay Results Cu%	Zn%	Pb(ppm)	Ag(ppm)	Au(ppm)	Au(ppb)
50.04	51.28			silty and xtal tuff	1 q						
51.28	51.81	117637	0.53	silty and xtal tuff	1 q	0.0004	0.014	1	<0.1		84
51.81	52.79	117518	0.98	silty and xtal tuff	1 q	0.0016	0.0064	1	0.3		28
52.79	54.06	117517/	1.27	silty and xtal tuff	1 q	0.0011	0.0176	<4.8	0.33		<5
		117635									
54.06	54.50	117638	0.44	silty and xtal tuff	1 o	0.0006	0.0176	7	0.1		29
54.50	55.43			silty and xtal tuff	1sa						
55.43	55.98			felsic xtal tuff	2a						
55.98	58.55			silty and xtal tuff	1s						
58.55	62.55			silty and xtal tuff	1s						
62.55	63.42	117645	0.87	silty and xtal tuff	1sm	0.0094	0.0031	6	<0.5	<1	
63.42	64.60	117646	1.18	silty and xtal tuff	1sm	0.0038	0.0054	7	<0.5	<1	
64.60	65.80			silty and xtal tuff	1s						
65.80	66.05	117647	0.25	silty and xtal tuff	1sm	0.0039	0.0053	3	<0.5	<1	
66.05	67.10			silty and xtal tuff	1s	0.0047	0.0029	8	<0.5	<1	
67.10	67.85	117648	0.75	silty and xtal tuff	1sm	0.0113	0.0025	9	<0.5	<1	
67.85	73.70			silty and xtal tuff	1s						
73.70	74.60	117649	0.90	silty and xtal tuff	1sm	0.0113	0.0025	9	<0.5	<1	
74.60	83.26			andesitic xtal tuff	1af						
83.26	83.63			andesitic xtal tuff	1f						
83.63	84.09	117516	0.46	andesitic xtal tuff	1m	0.117	0.778	6	1.2		16
84.09	85.35	117650	1.26	andesitic xtal tuff	1am	0.0157	0.0048	10	<0.5	<1	
85.35	87.45			andesitic xtal tuff	1s						
87.45	88.24			impure marble	6i						
88.24	88.80			andesitic xtal tuff	1s						
88.80	93.85			andesitic xtal tuff	1						

FROM metres	TO metres	Tag No.	length metres	Lithology	Code	Assay Cu%	Zn%	Pb(ppm)	Ag(ppm)	Results Au(ppm)	Au(ppb)
93.85	94.50	117514	0.65	andesitic xtal tuff	1m	3.362	18.18	35	17		50
94.50	95.05	117515	0.55	andesitic xtal tuff	1m	0.0807	10.3	41	4.7		8
95.05	96.90			impure marble	6i						
96.90	98.04	117651	1.14	impure marble &	10 im	0.0032	0.3311	43	<0.5	<1	
				felsic tuff		0.0034	0.3301	46	<0.5	<1	
98.04	99.06	117652	1.02	impure marble &	10 im	0.0177	0.4861	27	0.9	<1	
				felsic tuff							
99.06	100.00			impure marble &	10						
				felsic tuff							
100.00	102.86			marble	6						
102.86	103.10			felsic xtal tuff	2						
103.10	103.95	117519	0.85	felsic xtal tuff	2m	0.0212	7.161	14	0.9		<5
103.95	104.90	117520	0.95	felsic xtal tuff	2m	0.0197	1.25	6	1.1		<5
104.90	105.69	117521	0.79	felsic xtal tuff	2m	0.0225	0.0127	3	1.6		<5
105.69	106.70	117522	1.01	felsic xtal tuff	2m	0.0386	0.69	105	4.4		<5
106.70	107.57	117523	0.87	felsic xtal tuff	2m	0.0654	13.36	96	10		<5
107.57	109.13			marble	6						
109.13	110.42	117653	1.29	felsic xtal tuff	2m	0.0326	1.25	167	9.5	<1	
110.42	111.24	117654	0.82	felsic xtal tuff	2m	0.0003	0.1009	154	3.5	<1	
111.24	112.93			marble	6						
112.93	113.53	117655	0.60	felsic xtal tuff	2m	0.0028	0.0999	55	<0.5	<1	
113.53	114.30	117656	0.77	felsic xtal tuff	2m	0.0305	0.3396	68	2.4	<1	
114.30		E.O.H.									

DDHSR-97-06
Assay and ICP results

ELEMENT	location		Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	of	sample	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
117634	6	20.72-21.46	<0.5	2.01	19	<1	65	88	3	0.98	2	16	50	134	1.99	0.25	5	0.49	88	2	0.18	18	0.049	12	15	69	8	0.04	<1	56	8	43
117639	6	21.46-22.60	<0.5	2.69	10	<1	77	67	6	1.31	3	18	26	178	2.19	0.25	5	0.68	141	<1	0.24	28	0.026	24	16	61	12	0.04	<1	54	8	42
117640	6	23.21-23.96	<0.5	3.40	<1	<1	73	87	7	1.40	3	29	31	284	2.31	0.59	5	0.97	161	1	0.29	28	0.031	6	12	76	9	0.04	<1	87	9	40
117641	6	23.96-25.00	<0.5	3.17	3	<1	106	53	7	1.33	4	44	32	444	2.65	0.61	8	1.02	183	1	0.25	33	0.031	8	16	46	17	0.05	<1	104	12	44
117642	6	25.00-25.95	<0.5	3.38	<1	<1	118	52	7	1.34	4	48	30	768	2.64	0.63	8	1.00	173	<1	0.25	36	0.029	11	11	64	19	0.05	<1	99	13	53
117643	6	25.95-27.00	<0.5	3.44	<1	<1	69	89	4	1.42	3	52	27	399	2.19	0.54	5	1.00	161	1	0.29	31	0.032	6	10	86	8	0.05	<1	86	10	43
117644	6	27.00-28.20	<0.5	1.90	<1	<1	39	44	5	1.78	3	48	27	329	2.64	0.07	3	0.54	159	1	0.23	19	0.065	24	9	111	39	0.10	<1	64	10	13
117524	6	28.20-28.57	4.3			<5								2324										18								391
117524	6	28.20-28.57	3.8	0.74	<1	<1	294	55	13	0.75	38	156	23	2639	15.01	0.01	4	0.13	315	2	0.06	22	0.075	22	10	21	79	0.03	<1	14	<1	397
117657	6	28.57-29.39	<0.5	1.99	<1	<1	45	39	6	1.69	3	38	37	406	2.62	0.10	5	0.38	117	1	0.23	13	0.082	30	8	118	38	0.09	<1	54	10	12
117637	6	51.28-51.81	<0.1			84								4										1								140
117637	6	51.28-51.81	<0.5	0.32	<1	<1	1	29	14	3.57	6	8	8	10	16.45	0.12	11	0.29	1449	1	<0.01	22	0.013		7	2	24	<0.01	<1	1	<1	173
117518	6	51.81-52.79	0.5			28								16										1								64
117518	6	51.81-52.79	<0.5	0.26	<1	<1	27	47	12	0.74	3	7	4	7	15.21	0.02	9	0.37	944	1	0.01	20	0.008	3	9	5	74	<0.01	<1	2	<1	56
117517	6	52.79-54.06	0.5			<5								16										<1								194
117517	6	52.79-54.06	<0.5	0.26	<1	<1	18	43	11	0.51	3	7	5	10	15.45	0.70	8	0.51	889	1	0.01	19	0.010	3	9	7	72	<0.01	<1	1	<1	162
117635	6	53.40-53.94	0.1			<5								3										10								151
117635	6	53.40-53.94	<0.5	0.24	<1	<1	5	29	8	0.89	12	0	3	3	14.02	0.06	8	0.36	660	2	0.01	16	0.020	8	14	5	18	<0.01	<1	0	<1	164
117638	6	54.06-54.50	0.1			29								6										7								176
117645	6	62.55-63.42	<0.5	1.68	<1	<1	58	82	3	0.75	2	22	48	94	1.87	0.41	2	0.62	123	2	0.16	12	0.050	6	8	65	0	0.07	<1	53	8	31
117646	6	63.42-64.60	<0.5	2.71	<1	<1	21	230	4	1.14	2	11	35	38	1.38	0.78	1	0.90	175	<1	0.29	9	0.064	7	8	198	1	0.09	<1	83	5	54
117647	6	65.80-66.05	<0.5	2.40	<1	<1	61	192	3	0.86	2	16	35	39	1.60	0.87	1	1.01	153	<1	0.21	8	0.054	3	7	90	2	0.08	<1	71	6	53
117648	6	67.10-67.65	<0.5	2.74	1	<1	42	99	3	1.30	2	24	27	47	1.46	0.22	3	0.67	78	<1	0.33	9	0.058	8	10	180	2	0.05	<1	44	5	29
117649	6	73.70-74.60	<0.5	2.07	<1	<1	52	79	3	0.86	2	17	46	113	1.69	0.29	3	0.69	125	1	0.22	10	0.052	9	8	75	0	0.06	<1	59	6	25
117516	6	83.63-84.09	1.2			16								1170										6								780
117516	6	83.63-84.09	1.0	0.44	<1	<1	74	70	14	0.19	6	43	28	819	18.36	0.80	6	0.05	141	4	0.05	31	0.014	7	9	7	96	0.01	<1	2	<1	506
117650	6	84.09-85.35	<0.5	1.92	<1	<1	35	77	3	1.45	2	9	24	157	1.29	0.37	1	0.83	242	1	0.25	9	0.057	10	6	80	29	0.07	<1	42	<1	46
117514	6	93.85-94.50	17.0			50								3362										35								181800
117514	6	93.85-94.50	15.1	0.49	<1	<1	62	27	9	1.34	573	53	20	3051	9.71	0.64	5	0.25	1670	3	0.02	17	0.028	31	18	11	47	0.01	<1	6	<1	>10000
117515	6	94.50-95.05	4.7			8								807										41								103000
117515	6	94.50-95.05	6.0	1.26	<1	<1	99	45	12	1.67	379	83	25	947	13.97	0.06	9	0.14	1258	5	0.08	24	0.031	44	16	39	76	0.01	<1	6	<1	>10000
117651	6	96.90-98.04	<0.5	0.50	66	<1	4153	<1	16	4.54	25	10	31	32	0.89	0.01	7	0.31	594	2	0.01	12	0.053	43	15	54	<1	0.02	<1	10	5	3311
117651 CK	6	96.90-98.04	<0.5	0.43	69	<1	3893	2	14	5.08	27	11	25	34	0.73	0.02	7	0.34	677	1	0.01	14	0.053	46	12	50	<1	0.02	<1	11	<1	3301
117652	6	98.04-99.06	0.9	0.44	166	<1	7279	<1	5	4.53	45	25	37	177	2.16	0.01	10	0.20	781	2	0.01	18	0.038	27	17	25	<1	0.01	<1	9	14	4861
117519	6	103.10-103.95	0.9			<5								212										14								1610
117519	6	103.10-103.95	0.7	0.31	41	<1	3694	12	8	4.04	9	29	33	201	8.35	0.01	9	0.05	1558	2	<0.01	12	0.010	12	7	3	45	0.01	<1	7	4	1046
117520	6	103.95-104.90	1.1			<5								197										6								12500
117520	6	103.95-104.90	0.9	0.51	38	<1	122	31	6	3.57	59	28	21	181	7.27	0.01	9	0.13	1308	2	0.02	12	0.014	10	8	25	39	<0.01	<1	6	4	7927
117521	6	104.90-105.69	1.6			<5								225										3								127
117521	6	104.90-105.69	1.3	0.32	65	<1	665	16	8	4.31	2	18	32	225	10.14	0.01	10	0.04	1334	1	<0.01	14	0.010	4	7	12	56	0.01	<1	7	9	96

ELEMENT	location		Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Tl	U	V	W	Zn
SAMPLES	of	sample	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
117522	6	105.69-106.70	4.4			5								386										105								6900
117522	6	105.69-106.70	3.2	0.37	65	<1	1448	8	7	4.44	35	27	31	400	8.21	0.01	10	0.08	1427	2	<0.01	13	0.008	101	8	4	46	0.01	<1	6	14	4426
117523	6	106.70-107.57	10.0			<5								654										98								133600
117523	6	106.70-107.57	9.3	0.36	6	1	2448	12	5	3.37	748	99	40	553	4.87	0.01	7	0.24	1876	3	0.01	11	0.024	101	14	11	36	0.01	<1	8	<1	>10000
117653	6	109.13-110.42	9.5	0.64	92	<1	6807	14	38	4.73	59	15	26	326	2.06	0.02	9	0.23	634	2	0.02	15	0.043	167	15	58	<1	0.03	<1	12	12	12500
117654	6	110.42-111.24	3.5	0.38	62	<1	8482	7	18	5.47	7	9	24	3	1.71	0.01	9	0.20	379	2	0.01	10	0.047	154	7	56	<1	0.02	<1	9	69	1009
117655	6	112.93-113.53	<0.5	0.65	38	<1	6186	49	4	4.11	5	13	22	28	1.22	0.03	6	0.23	234	1	0.02	16	0.046	55	9	60	<1	0.02	<1	13	5	999
117656	6	113.53-114.30	2.4	0.79	62	<1	14560	22	7	5.66	22	17	55	305	1.79	0.04	10	0.48	480	2	0.03	19	0.048	68	9	87	21	0.03	<1	16	6	3396

DDH SR-97-07

PROPERTY : SWIFT RIVER

UTM E	376821	Azimuth	80°
UTM N	6674520	Inclination	-45°
Elev	1267 m	Core Size	NQ

FROM m	TO m	Tag No.	length m	Lithology	Code	Assay Cu%	Assay Zn%	Results Pb(ppm)	Results Ag(ppm)	Results Au(ppm)	Results Au(ppb)
0.00	7.60		7.60	overburden	0						
7.60	8.55	117541	0.95	actinolite skarn	1am	0.0002	0.0048	9	<0.5	<1	
8.55	9.75	117542	1.20	act-mag skarn	1am	0.0036	0.0068	11	<0.5	<1	
9.75	10.75	117543	1.00	act-mag skarn	1am	0.0336	0.0061	12	0.9	<1	
10.75	11.30	117544	0.55	semi-msv sulf	1am	0.0836	0.0048	4	0.8		12
11.30	12.40	117545	1.10	semi-msv sulf	1am	0.1068	0.012	7	1.8		<5
12.40	13.40	117546	1.00	semi-msv sulf	1am	0.0788	0.0089	8	0.6	<1	
13.40	14.40	117547	1.00	semi-msv sulf	1am	0.0465	0.007	61	<0.5	<1	
14.40	15.50	117548	1.10	massive sulf	1am	0.1365	3.52	12	1.9		<5
15.50	16.75	117549	1.25	massive sulf	1am	0.1426	0.0176	7	3.3		<5
16.75	17.30	117550	0.55	mag-gt skarn	1am	0.0371	0.0093	3	<0.5	1	
17.30	18.05	117557	0.75	mag-gt skarn	1am	0.006	0.0086	4	<0.5	1	
18.05	18.75	117552	0.70	diop-gt skarn	1am	0.0122	0.0335	66	<0.5	<1	
18.75	19.30	117553	0.55	semi-msv sulf	1am	0.1388	0.0523	6	2.3		<5
19.30	19.85	117554	0.55	semi-msv sulf	1am	0.0637	0.7149	10	<0.5	<1	
19.85	20.55	117555	0.70	semi-msv sulf	1am	0.0516	0.837	7	0.7	<1	
20.55	21.05	117556	0.50	semi-msv sulf	1am	0.0945	0.0807	10	<0.5	<1	
21.05	22.05	117558	1.00	semi-msv sulf	1am	0.1253	0.0669	2	2.3		<5
22.05	22.90	117559	0.85	massive sulf	1am	0.1245	0.006	1	1.2		8
22.90	23.55	117560	0.65	massive sulf	1am	0.1373	0.006	<1	1.5		<5
23.55	24.40	117561	0.85	massive sulf	1am	0.1345	0.1262	<1	1.4		22

FROM	TO		length			Assay			Results		
m	m	Tag No.	m	Lithology	Code	Cu%	Zn%	Pb(ppm)	Ag(ppm)	Au(ppm)	Au(ppb)
24.40	25.40	117562	1.00	act-Po breccia	1 e	0.1146	0.0307	12	0.8		44
25.40	26.50	117563	1.10	act-ep breccia	1ax	0.0014	0.0103	40	<0.5	<1	
26.50	27.00	117564	0.50	act-ep breccia	1ax	0.0114	0.0083	8	<0.5	<1	
27.00	27.55	117565	0.55	semi-msv sulf	1ax	0.126	0.0147	2	1.1		16
27.55	28.20	117566	0.65	massive sulf	1ax	0.2139	0.0098	14	1.9		38
28.20	28.85	117567	0.65	massive sulf	1ax	0.1117	0.0125	3	1.3		22
28.85	29.45	117568	0.60	gt-diop breccia	1ax	0.0009	0.0092	10	<0.5	<1	
29.45	30.15	117569	0.70	gt-diop breccia	1ax	0.0027	0.0193	13	<0.5	<1	
30.15	31.10	117570	0.95	gt-diop breccia	1ax	0.0181	0.0216	17	0.6	<1	
31.10	32.00	117571	0.90	gt-diop breccia	1 e	0.0004	0.02	19	<0.5	<1	
32.00	32.80	117572	0.80	gt-diop breccia	1 e	0.0005	0.0139	21	<0.5	<1	
32.80	33.70	117573	0.90	gt-diop breccia	1 e	0.0451	0.0152	13	1.4	<1	
33.70	34.50	117574	0.80	gt-diop breccia	1 e	0.0017	0.0091	14	<0.5	<1	
34.50	35.30	117575	0.80	gt-diop breccia	1 e	0.0142	0.0091	15	<0.5	<1	
35.30	36.30	117576	1.00	gt-diop breccia	1 e	0.0545	0.0187	12	3.1	<1	
36.30	37.05	117577	0.75	gt-diop breccia	1 e	0.0704	0.0122	11	0.8	<1	
37.05	37.75	117578	0.70	gt-diop breccia	1 e	0.0116	0.0159	15	0.6	<1	
37.75	38.70	117579	0.95	gt-diop breccia	1 e	0.039	0.0205	18	1.7	<1	
38.70	39.70	117580	1.00	gt-diop breccia	1 e	0.0271	0.0089	14	<0.5	<1	
39.70	40.65	117581	0.95	gt-diop breccia	1 e	0.0061	0.0057	11	<0.5	<1	
40.65	41.05	117582	0.40	gt-diop breccia	1 e	0.1172	0.0231	13	1.9	<1	
41.05	41.87	117583	0.82	gt-diop breccia	1 e	0.0769	0.0079	6	0.9		<5
41.87	42.62	117584	0.75	breccia	1 e	0.0264	0.0118	11	<0.5	<1	
42.62	43.40	117585	0.78	gr-alt breccia	1 e	0.0573	0.0232	18	<0.5	<1	
43.40	44.45	117586	1.05	gt-diop meta-slt	5a	0.0096	0.0095	20	<0.5	<1	

FROM	TO		length			Assay				Results	
m	m	Tag No.	m	Lithology	Code	Cu%	Zn%	Pb(ppm)	Ag(ppm)	Au(ppm)	Au(ppb)
44.45	45.45	117587	1.00	gt-diop meta-slt	5a	0.0031	0.0047	12	<0.5	<1	
45.45	46.10	117588	0.65	gt-diop meta-slt	5am	0.028	0.0096	14	<0.5	<1	
46.10	47.26	117589	1.16	gt-diop meta-slt	5am	0.0015	0.0094	20	<0.5	<1	
47.26	48.60	117597	1.34	gt-diop meta-slt	5a	0.0019	0.0076	15	<0.5	<1	
48.60	49.65	117598	1.05	gt-diop meta-slt	5a	0.0027	0.0075	17	<0.5	<1	
49.65	50.60	117599	0.95	gt-diop meta-slt	5a	0.011	0.0078	16	<0.5	<1	
50.60	51.25	117600	0.65	gt-mag meta slt	5am	0.0386	0.0114	11	1.4	<1	
51.25	52.26	117601	1.01	gt-mag meta slt	5am	0.0883	0.0167	3	1.3	<1	
52.26	53.35	117602	1.09	meta-and tuff	5am	0.0008	0.0138	28	<0.5	<1	
53.35	54.17	117603	0.82	gt-meta-sltstn	5am	0.0088	0.0129	13	<0.5	<1	
54.17	55.10	117604	0.93	meta-xtal tuff	4a	0.0005	0.0099	29	<0.5	<1	
55.10	56.05	117605	0.95	meta-and tuff?	1a	0.001	0.0146	24	<0.5	<1	
56.05	56.90	117606	0.85	meta sltst	5	0.0001	0.0075	13	<0.5	<1	
56.90	57.75	117607	0.85	meta-sltst	5a	0.0003	0.0042	10	<0.5	<1	
57.75	58.55	117608	0.80	meta- and tuff	1a	0.0002	0.0078	13	<0.5	<1	
58.55	67.40		8.85	meta-tuffaceou	5a						
				siltstone							
67.40	68.60	117609	1.20	tuffaceous sltst	5am	0.0113	0.0344	19	<0.5	<1	
68.60	69.60	117610	1.00	tuffaceous sltst	5am	0.0137	0.0059	15	<0.5	<1	
69.60	70.60	117611	1.00	tuffaceous sltst	5am	0.0136	0.0033	9	<0.5	<1	
70.60	78.96		8.36	tuffaceous sltst	5						
78.96		E.O.H					END OF HOLE				

DDHSR-97-07
Assay and ICP results

ELEMENT	location		Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	of	sample	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
117544	7	10.75-11.30	0.8			12								836										4								48
117544	7	10.75-11.30	0.9	0.45	<1	<1	54	45	15	0.94	3	62	27	759	17.44	0.24	9	0.05	694	2	0.01	31	0.008	15	9	2	32	0.01	<1	8	<1	41
117545	7	11.30-12.40	1.8			<5								1068										7								120
117545	7	11.30-12.40	1.8	0.42	<1	<1	50	43	16	1.07	3	58	24	1022	24.42	0.23	9	0.05	784	1	<0.01	29	0.011	14	8	<1	30	<0.01	<1	7	<1	80
117546	7	12.40-13.40	0.6	0.34	<1	<1	107	11	23	0.77	4	53	14	788	3.89	<0.01	7	0.18	720	341	0.03	30	0.011	8	<1	7	113	0.01	<1	3	<1	89
117547	7	13.40-14.40	<0.5	0.45	<1	<1	75	11	18	1.69	3	36	28	465	3.68	<0.01	8	0.10	1281	8	0.00	23	0.014	61	1	8	81	0.02	<1	5	<1	70
117548	7	14.40-15.50	1.9			<5								1365										12								35200
117548	7	14.40-15.50	2.0	0.32	<1	<1	43	58	17	0.38	57	78	<1	1278	26.20	0.21	10	0.02	538	2	<0.01	35	<0.001	18	12	<1	36	<0.01	<1	<1	<1	>10000
117549	7	15.50-16.75	3.3			<5								1426										7								176
117549	7	15.50-16.75	2.6	0.35	<1	<1	43	59	17	0.63	7	73	<1	1222	26.61	0.21	10	0.00	504	1	<0.01	35	<0.001	11	11	<1	36	<0.01	<1	<1	<1	170
117550	7	16.75-17.30	<0.5	0.58	<1	1	65	5	25	3.01	4	31	31	371	3.93	<0.01	8	0.05	1396	<1	0.00	32	0.021	3	<1	4	113	0.01	<1	7	<1	93
117557	7	17.30-18.05	<0.5	0.45	<1	1	27	9	20	4.58	4	6	21	60	4.31	<0.01	9	0.11	1354	<1	0.01	31	0.009	4	1	22	100	0.01	<1	4	<1	86
117552	7	18.05-18.75	<0.5	1.30	<1	<1	33	2	10	3.08	3	12	44	122	3.22	0.01	5	0.42	1735	2	0.04	19	0.042	66	16	50	47	0.09	<1	20	<1	335
117562	7	18.05-18.75	0.8			44								1146										12								307
117562	7	18.05-18.75	0.6	0.71	<1	<1	56	61	18	1.23	4	40	6	1032	9.16	0.23	8	0.11	1014	1	0.10	25	0.029	15	7	19	27	<0.01	<1	5	<1	581
117553	7	18.75-19.30	2.3			<5								1388										6								523
117553	7	18.75-19.30	2.1	0.42	<1	<1	47	53	17	0.72	6	67	2	1179	25.32	0.01	9	0.01	678	2	<0.01	34	<0.001	9	9	<1	33	<0.01	<1	1	<1	526
117554	7	19.30-19.85	<0.5	0.62	<1	<1	104	4	20	2.09	67	46	13	637	4.03	<0.01	11	0.19	1216	1	0.01	29	0.063	10	2	18	101	0.03	<1	11	<1	7149
117555	7	19.85-20.55	0.7	0.46	<1	<1	98	9	26	0.88	99	48	3	516	4.54	<0.01	5	0.26	885	<1	0.01	30	0.014	7	<1	13	102	0.02	<1	2	<1	8370
117565	7	19.85-20.55	1.1			16								1260										2								147
117565	7	19.85-20.55	1.0	0.49	<1	<1	86	48	15	1.50	3	99	11	1106	3.38	0.12	9	0.11	1081	1	0.01	32	0.030	4	8	3	27	<0.01	<1	4	<1	156
117556	7	20.55-21.05	<0.5	0.40	<1	<1	123	8	27	1.16	8	61	9	945	4.58	<0.01	7	0.13	937	<1	0.02	40	0.013	10	<1	12	135	0.02	<1	6	<1	807
117566	7	20.55-21.05	1.9			38								2139										14								98
117566	7	20.55-21.05	1.3	0.46	<1	<1	77	58	22	0.56	3	97	<1	1610	3.15	0.21	10	0.05	881	2	<0.01	41	0.031	15	8	<1	38	<0.01	<1	4	<1	91
117558	7	21.05-22.05	2.3			<5								1253										2								669
117558	7	21.05-22.05	1.4	0.40	<1	<1	45	45	13	0.52	5	39	5	1135	26.55	0.06	7	0.06	585	1	0.01	25	<0.001	6	8	4	25	<0.01	<1	3	<1	612
117559	7	22.05-22.90	1.2			8								1245										1								60
117559	7	22.05-22.90	1.3	0.36	<1	<1	41	54	15	0.70	3	46	3	1134	24.16	0.05	10	0.06	647	1	0.01	33	<0.001	1	10	<1	34	<0.01	<1	2	<1	62
117560	7	22.90-23.55	1.5			<5								1373										<1								60
117560	7	22.90-23.55	1.2	0.34	<1	<1	36	54	16	0.68	3	48	<1	1202	24.62	0.06	10	0.03	422	1	0.01	35	0.004	<1	9	<1	36	<0.01	<1	1	<1	85
117561	7	23.55-24.40	1.4			22								1345										<1								1262
117561	7	23.55-24.40	1.3	0.37	<1	<1	49	51	17	1.05	5	41	2	1130	10.69	0.01	10	0.05	446	1	0.02	31	0.013	<1	8	<1	32	<0.01	<1	2	<1	943
117563	7	25.40-26.50	<0.5	1.27	<1	<1	32	<1	10	3.25	1	6	39	12	2.49	0.03	10	0.61	1404	1	0.02	13	0.071	42	7	47	53	0.12	<1	30	<1	101
117563 CK	7	25.40-26.50	<0.5	1.30	<1	<1	26	<1	12	3.35	1	5	39	14	2.57	0.03	10	0.62	1429	2	0.02	14	0.073	40	6	48	53	0.12	<1	30	<1	103
117564	7	26.50-27.00	<0.5	1.07	<1	<1	38	7	7	3.59	1	17	34	114	2.73	0.03	7	0.52	2051	1	0.02	15	0.055	8	6	41	55	0.09	<1	20	<1	83
117567	7	28.20-28.85	1.3			22								1117										3								125
117567	7	28.20-28.85	0.9	0.51	<1	<1	166	39	17	2.86	2	130	23	1053	2.53	0.23	10	0.12	2261	1	<0.01	32	0.009	4	7	10	29	<0.01	<1	11	<1	91
117568	7	28.85-29.45	<0.5	0.79	<1	<1	22	<1	8	4.39	2	6	41	9	2.69	0.02	13	0.31	2922	<1	0.01	17	0.033	10	6	56	54	0.07	<1	15	<1	92
117569	7	29.45-30.15	<0.5	0.33	8	<1	26	<1	9	4.34	2	10	42	27	2.76	0.01	9	0.28	3239	1	0.01	26	0.011	13	5	33	47	0.01	<1	10	<1	193
117570	7	30.15-31.10	0.6	1.64	14	<1	29	12	8	5.03	2	7	78	181	2.42	0.09	14	0.80	3131	<1	0.04	24	0.053	17	7	107	51	0.03	<1	44	<1	216
117571	7	31.10-32.00	<0.5	1.03	<1	<1	25	25	6	3.24	1	9	64	4	2.30	0.03	19	0.56	2631	<1	0.02	19	0.062	19	8	107	52	0.13	<1	25	<1	200

ELEMENT	location		Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	of	sample	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
117572	7	32.00-32.80	<0.5	2.16	49	<1	36	7	8	3.96	2	10	56	5	2.75	0.05	13	0.76	3326	<1	0.06	21	0.059	21	12	126	60	0.08	<1	42	<1	139
117573	7	32.80-33.70	1.4	0.90	61	<1	36	<1	19	4.70	3	16	41	451	3.35	0.02	12	0.40	3473	<1	0.01	28	0.078	13	6	62	99	0.02	<1	24	<1	152
117574	7	33.70-34.50	<0.5	0.45	<1	<1	18	47	7	3.29	11	2	46	17	3.80	<0.01	12	0.14	1699	<1	0.02	32	0.093	14	8	14	3	0.02	<1	15	<1	91
117575	7	34.50-35.30	<0.5	0.66	<1	<1	33	25	7	4.33	7	13	51	142	3.46	<0.01	10	0.21	2106	<1	0.01	22	0.098	15	6	27	<1	0.02	<1	20	<1	91
117576	7	35.30-36.30	3.1	0.92	54	<1	81	33	7	5.10	8	30	29	545	3.70	<0.01	12	0.44	3009	<1	0.01	27	0.076	12	8	66	<1	0.02	<1	30	<1	187
117577	7	36.30-37.05	0.8	0.68	<1	<1	53	35	7	4.29	8	20	51	704	3.56	0.01	11	0.27	2469	<1	0.02	27	0.073	11	8	18	<1	0.02	<1	22	<1	122
117578	7	37.05-37.75	0.6	0.63	<1	<1	168	47	11	2.96	11	129	41	1158	4.30	<0.01	9	0.22	1601	<1	0.01	45	0.046	15	8	7	<1	0.02	<1	19	<1	159
117579	7	37.75-38.70	1.7	0.80	7	<1	60	22	13	6.08	7	25	30	390	4.22	<0.01	13	0.38	1903	<1	0.01	26	0.071	18	9	71	<1	0.03	<1	32	<1	205
117580	7	38.70-39.70	<0.5	0.49	<1	<1	21	24	7	3.84	4	7	28	271	3.59	0.01	8	0.18	1246	<1	0.01	14	0.033	14	5	30	<1	0.02	<1	16	<1	89
117581	7	39.70-40.65	<0.5	0.58	3	<1	12	11	5	4.92	3	4	29	61	2.98	0.02	8	0.16	1645	2	0.01	11	0.038	11	4	20	<1	0.02	<1	15	<1	57
117582	7	40.65-41.05	1.9	0.48	<1	<1	83	42	10	3.74	9	45	27	1172	4.32	<0.01	10	0.21	1557	<1	0.02	30	0.030	13	7	13	<1	0.02	<1	19	<1	231
117583	7	41.05-41.87	0.9			<5								769										6								79
117583	7	41.05-41.87	0.6	0.51	14	<1	86	27	13	5.03	2	97	13	900	1.00	0.01	11	0.22	2371	1	0.01	29	0.023	7	10	21	25	0.01	<1	14	<1	64
117584	7	41.87-42.62	<0.5	0.66	36	<1	59	25	10	6.00	7	55	18	264	4.19	0.01	12	0.33	2444	<1	0.02	29	0.023	11	11	44	<1	0.02	<1	27	<1	118
117585	7	42.62-43.40	<0.5	0.66	1	<1	86	41	12	6.00	9	197	19	573	4.49	<0.01	13	0.26	1921	<1	0.02	51	0.025	18	12	54	<1	0.02	<1	28	<1	232
117586	7	43.40-44.45	<0.5	0.62	<1	<1	20	14	8	4.88	3	18	26	96	3.58	0.01	8	0.23	1490	1	0.01	16	0.015	20	5	20	<1	0.02	<1	18	<1	95
117587	7	44.45-45.45	<0.5	0.75	<1	<1	13	6	3	3.24	2	9	45	31	2.11	0.02	5	0.12	1958	<1	0.01	26	0.008	12	4	13	3	0.03	<1	10	2	47
117588	7	45.45-46.10	<0.5	0.61	<1	<1	28	28	8	4.74	5	15	32	280	3.77	0.02	8	0.13	1836	<1	0.02	32	0.011	14	10	26	1	0.03	<1	18	<1	96
117589	7	46.10-42.26	<0.5	0.69	<1	<1	16	26	6	5.26	3	11	21	15	2.80	0.02	11	0.26	1549	1	0.01	13	0.041	20	7	48	<1	0.03	<1	22	<1	94
117597	7	47.26-78.60	<0.5	0.52	27	<1	27	20	5	4.60	3	30	27	19	3.08	0.02	9	0.12	1538	1	0.01	17	0.061	15	7	29	<1	0.03	<1	18	<1	76
117598	7	48.60-49.65	<0.5	0.57	<1	<1	21	16	4	3.78	2	10	25	27	2.55	0.05	9	0.10	1080	<1	0.02	11	0.052	17	5	19	<1	0.04	<1	16	<1	75
117599	7	49.65-50.60	<0.5	0.61	<1	<1	20	25	7	3.74	4	8	28	110	3.39	0.04	9	0.08	1012	<1	0.02	17	0.026	16	7	13	<1	0.03	<1	17	<1	78
117600	7	50.60-51.25	1.4	0.63	<1	<1	24	57	11	3.03	8	16	28	386	4.58	0.06	9	0.09	1045	<1	0.04	43	0.039	11	10	8	<1	0.02	<1	20	<1	114
117601	7	51.25-52.26	1.3	0.69	<1	<1	26	47	6	2.59	7	13	32	883	2.74	0.10	23	0.12	1202	<1	0.05	29	0.045	3	9	8	59	0.03	<1	18	21	167
117602	7	52.26-53.35	<0.5	0.47	2	<1	56	13	3	1.72	1	4	21	8	0.88	0.02	5	0.19	427	1	0.01	4	0.050	28	7	31	<1	0.06	<1	13	4	138
117603	7	53.35-54.17	<0.5	0.67	<1	<1	65	24	4	2.08	3	5	36	88	2.09	0.07	8	0.08	775	1	0.03	18	0.058	13	7	9	<1	0.03	<1	17	9	129
117604	7	54.17-55.10	<0.5	0.44	1	<1	21	13	2	1.74	1	3	55	5	0.97	0.01	3	0.08	439	19	0.01	7	0.034	29	5	32	<1	0.05	<1	20	4	99
117605	7	55.10-56.05	<0.5	0.46	15	<1	15	<1	4	3.47	2	4	28	10	1.71	0.00	14	0.18	1131	6	0.01	34	0.090	24	22	19	<1	0.02	<1	12	7	146
117606	7	56.05-56.90	<0.5	0.58	<1	<1	13	2	1	2.51	1	3	99	1	1.42	0.01	4	0.12	992	2	0.01	8	0.002	13	4	10	<1	0.04	<1	15	5	75
117607	7	56.90-57.75	<0.5	0.66	<1	<1	9	10	2	2.09	1	2	34	3	1.29	0.02	3	0.08	946	<1	0.01	4	0.001	10	4	7	<1	0.05	<1	19	26	42
117608	7	57.75-58.55	<0.5	0.37	<1	<1	49	15	1	1.75	1	2	25	2	1.01	0.02	17	0.10	718	5	0.01	7	0.099	13	6	14	<1	0.04	<1	16	5	78
117609	7	67.40-68.60	<0.5	2.77	10	<1	276	73	7	2.22	4	18	48	113	0.91	0.15	7	0.49	208	5	0.30	46	0.069	19	8	153	38	0.03	<1	43	<1	344
117610	7	68.60-69.60	<0.5	1.30	<1	<1	63	40	3	1.19	2	16	52	137	2.07	0.05	7	0.35	165	10	0.09	41	0.052	15	5	61	<1	0.03	<1	33	7	59
117541	7	7.60-8.55	<0.5	0.07	<1	<1	20	<1	2	2.38	1	3	24	2	1.79	<0.01	5	0.37	768	<1	0.01	4	0.020	9	2	7	13	0.01	<1	<1	<1	48
117542	7	8.55-9.75	<0.5	0.25	<1	<1	18	5	14	1.56	2	9	18	36	3.57	<0.01	6	0.29	856	1	0.01	21	0.017	11	2	15	65	0.01	<1	1	<1	68
117543	7	9.75-10.75	0.9	0.36	<1	<1	26	4	11	1.67	2	37	12	336	3.37	<0.01	6	0.18	963	<1	0.01	17	0.026	12	2	17	56	0.02	<1	3	<1	61

DDH SR-97-08

PROPERTY : SWIFT RIVER

UTM E	376759	Azimuth	80°
UTM N	6673758	Inclination	-45°
Elev	1429 m	Core Size	NQ

FROM metres	TO metres	Tag No.	length metres	Lithology	Code	Assay Cu%	Assay Zn%	Results Pb(ppm)	Results Ag(ppm)	Results Au(ppm)	Results Au(ppb)
0.00	6.70			till	0						
6.70	12.17			silty felsic - xtal tuff	2s						
12.17	12.39			silty xtal tuff	4s						
12.39	13.21			silty felsic - xtal tuff	2s						
13.21	14.65	117631	1.44	silty felsic - xtal tuff	2sm	0.0172	0.0143	4	<0.5	<1	
14.65	15.90	117632	1.25	silty felsic - xtal tuff	2sm	0.0172	0.0127	4	<0.5	<1	
15.90	16.45			silty felsic - xtal tuff	2s						
16.45	16.90			silty xtal tuff	4s						
16.90	17.40			silty felsic - xtal tuff	2s						
17.40	21.45			crystal tuff	4						
21.45	33.55			silty dacitic tuff	2s						
33.55	34.70			dacitic - xtal tuff	2s						
34.70	35.50			silty felsic tuff	2s						
35.50	39.65			silty rhy xtal - frag tuff	2sr						
39.65	40.80			silty rhy xtal - frag tuff	2sr						
40.80	41.20			dacitic tuff	2						
41.20	42.40	117612	1.20	dacitic tuff	2m	0.0439		1	2.2		<5
42.40	42.95	117613	0.55	dacitic tuff	2m	0.0258	0.0435	4	0.3		<5
42.95	43.82	117614	0.87	meta silty tuff	4sa	0.017	0.0475	4	0.1		<5
43.82	45.25			silty rhy or dac tuff	2s						

FROM metres	TO metres	Tag No.	length metres	Lithology	Code	Assay Results					
						Cu%	Zn%	Pb(ppm)	Ag(ppm)	Au(ppm)	Au(ppb)
45.25	46.05	117615	0.80	silty rhy tuff	2sm	0.005	0.0646	23	1		11
46.05	46.90	117616	0.85	meta tuff	4m	0.1856	0.034	<1	0.9		<5
46.90	47.84	117617	0.94	act-gt altered tuff	4a	0.0167	3.13	5	0.5		38
47.84	48.85	117618	1.01	act-gt altered tuff	4a	0.0083	6.06	17	0.8		40
48.85	49.90	117619	1.05	act-gt altered tuff	4am	0.0116	3.84	16	0.5		8
49.90	50.95	117620	1.05	act-gt mag alt tuff	4am	0.0389	4.56	26	1.3		31
50.95	51.75	117621	0.80	act-ep altered tuff	4am	0.0121	5.94	9	0.4		<5
51.75	53.05			silty rhyolitic tuff	2s						
53.05	53.40	117633	0.35	rhyolitic tuff	2sm	0.0028	0.596	14	<0.5	<1	
53.40	54.00			rhyoitic tuff	2s						
54.00	54.85	117622	0.85	tuff	4m	0.0502	3.48	7	0.5		5
54.85	55.85	117623	1.00	silty rhyolitic tuff	2sm	0.0037	4.1	17	0.3		<5
55.85	56.75	117624	0.90	tuff	4m	0.0014	2.24	12	0.3		<5
56.75	57.10			tuff	4						
57.10	59.23			rhy tuff - xtal tuff	2ab						
59.23	59.56	117625	0.33	felsic tuff	2m	0.0026	0.839	32	0.2		<5
59.56	60.18	117626	0.62	rhyolitic tuff	2m	0.0142	0.0706	47	<0.5	<1	
60.18	60.80	117627	0.62	gt-di altered tuff	2am	0.0163	1.316	9	<0.5	<1	
60.80	63.15			rhy tuff - xtal tuff	2						
63.15	63.50	117628	0.35	gt-di alt felsic tuff	2am	0.0101	0.7362	15	<0.5	<1	
63.50	64.45	117629	0.95	felsic to xtal tuff	2m	0.0007	0.3841	22	<0.5	<1	
64.45	65.30	117630	0.85	gt-di alt tuff	2am	0.0062	6.29	8	0.9		<5
65.30	66.02			rhy & qtz-xtal tuff	14						
66.02	71.52			qtz xtal & rhy tuff	14						
71.52	72.20			flt gouge & tuff slt	5f						

FROM metres	TO metres	Tag No.	length metres	Lithology	Code	Assay Results Cu%	Zn%	Pb(ppm)	Ag(ppm)	Au(ppm)	Au(ppb)
72.20	74.95			silty rhy tuff & xtal	14 s						
74.95	75.75			rhy qtz-xtal tuff	2						
75.75	76.40	117636	0.65	silty rhy xtal tuff	2s	0.0132	0.0208	42	<0.5	<1	
76.40	77.92			rhy qtz-xtal to fragmental tuff	2ar						
77.92	78.34			tuffaceous sltstn	5						
78.34	79.05			rhy qtz-xtal to fragmental tuff	2ar						
79.05	81.50			rhy qtz-xtal to fragmental tuff	2ar						
81.50	82.55			and - dac tuff	1						
82.55	82.75			orig impure lms?	6i						
82.75	83.20			silty and tuff	1s						
83.20	86.70			and xtal tuff	1						
86.70	89.50			silty and xtal tuff	1s						
89.50	91.10			rhy qtz-xtal tuff	2						
91.10	93.00			and xtal tuff	1						
93.00	95.90			silty rhy xtal tuff	2s						
95.90	98.40			tuffaceous sltstn	5						
98.40	99.65			silty and xtal tuff	1s						
99.65	100.65			andesitic xtal tuff	1						
100.65	101.55			tuffaceous sltstn	5						
101.55	102.30			andesitic xtal tuff	1						
102.30	103.50			tuffaceous sltstn	5						
103.50	108.30			rhy - dac xtal tuff	2						
108.30		E.O.H.									

DDHSR-97-08
Assay and ICP results

ELEMENT	location		Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	of	sample	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
117631	8	13.21-14.65	<0.5	2.21	<1	<1	62	163	6	1.39	3	20	32	172	1.46	0.36	<1	0.61	425	1	0.21	14	0.033	4	5	119	31	0.09	<1	107	<1	143
117632	8	14.65-15.90	<0.5	2.22	<1	<1	39	88	3	1.58	2	22	55	172	1.41	0.23	3	0.51	393	<1	0.26	11	0.044	4	4	132	29	0.07	<1	71	<1	127
117612	8	41.20-42.40	2.2			<5								439										1								46000
117612	8	41.20-42.40	1.8	0.62	<1	<1	35	33	11	3.63	94	60	13	520	0.67	0.04	23	0.38	1471	1	0.04	75	0.194	7	10	7	24	0.01	<1	10	<1	>10000
117613	8	42.40-42.95	0.3			<5								258										4								435
117613	8	42.40-42.95	<0.5	0.93	<1	<1	8	31	9	3.15	7	25	16	343	0.70	0.01	48	0.19	1280	1	0.04	79	0.117	11	6	34	21	0.01	<1	12	<1	432
117614	8	42.95-43.82	0.1			<5								170										4								475
117614	8	42.95-43.82	<0.5	1.00	<1	<1	3	42	7	2.26	4	22	15	198	0.01	0.06	28	0.10	670	1	0.08	71	0.124	11	4	32	18	0.02	<1	7	<1	425
117615	8	45.25-46.05	1.0			11								50										23								646
117615	8	45.25-46.05	0.8	2.74	24	<1		120	45	2.25	4	39	65	71	0.01	0.32	10	0.53	385	3	0.21	42	0.039	36	5	158	12	0.04	<1	21	<1	619
117616	8	46.05-46.90	0.9			<5								340										<1								1856
117616	8	46.05-46.90	0.9	0.72	1	<1		28	12	1.89	6	35	18	343	<0.01	0.04	17	0.16	641	1	0.04	85	0.130	7	5	19	18	0.01	<1	6	<1	1813
117617	8	46.90-47.84	0.5			38								167										5								31300
117617	8	46.90-47.84	<0.5	1.30	<1	<1	12	35	15	2.65	84	31	22	173	2.83	0.07	18	0.25	932	2	0.07	74	0.090	15	7	54	15	0.02	<1	8	<1	>10000
117618	8	47.84-48.85	0.8			40								83										17								60600
117618	8	47.84-48.85	0.8	0.85	<1	<1	23	28	62	1.74	187	56	22	93	2.23	0.07	31	0.22	751	2	0.06	34	0.075	21	7	25	16	0.02	<1	6	<1	>10000
117619	8	48.85-49.90	0.5			8								116										16								38400
117619	8	48.85-49.90	<0.5	0.92	<1	<1	20	24	21	2.57	125	41	23	128	2.06	0.07	28	0.23	787	2	0.06	51	0.099	16	5	17	17	0.02	<1	8	<1	>10000
117620	8	49.90-50.95	1.3			31								389										26								45600
117620	8	49.90-50.95	1.7	0.38	<1	<1	31	19	32	1.55	132	101	20	390	2.80	0.02	16	0.12	580	1	0.02	322	0.223	20	7	5	15	0.01	<1	2	<1	>10000
117621	8	50.95-51.75	0.4			<5								121										9								59400
117621	8	50.95-51.75	<0.5	1.24	1	<1	28	31	10	2.07	174	90	22	132	2.55	0.14	12	0.31	696	2	0.09	173	0.168	17	7	47	16	0.02	<1	8	<1	>10000
117633	8	53.05-53.40	<0.5	1.08	2	<1	22	5	3	1.61	29	17	50	28	1.20	0.02	48	0.10	653	1	0.04	37	0.024	14	5	55	37	0.09	<1	6	6	5960
117622	8	54.00-54.85	0.5			5								502										7								34800
117622	8	54.00-54.85	<0.5	0.36	<1	<1	28	23	12	1.40	101	87	10	517	12.27	0.12	14	0.10	561	1	0.01	525	0.182	6	9	5	22	0.01	<1	2	<1	>10000
117623	8	54.85-55.85	0.3			<5								37										17								41000
117623	8	54.85-55.85	<0.5	1.72	<1	<1	13	28	6	2.49	113	32	35	63	2.07	0.05	13	0.19	646	2	0.12	67	0.089	20	7	65	12	0.02	<1	10	<1	>10000
117624	8	55.85-56.75	0.3			<5								14										12								22400
117624	8	55.85-56.75	<0.5	0.55	<1	<1	9	5	4	1.27	78	38	27	27	0.89	0.03	26	0.09	320	1	0.02	52	0.055	12	4	28	8	0.02	<1	3	<1	>10000
117625	8	59.23-59.56	0.2			<5								26										32								8390
117625	8	59.23-59.56	<0.5	0.43	<1	<1	1	3	1	1.24	35	15	31	27	1.15	0.02	22	0.05	275	2	0.01	38	0.045	8	3	18	10	0.03	<1	2	<1	>10000
117626	8	59.56-60.18	<0.5	2.68	20	<1	14	36	6	2.86	4	20	37	142	1.59	0.05	10	0.17	232	1	0.22	70	0.055	47	9	132	41	0.12	<1	8	6	706
117627	8	60.18-60.80	<0.5	0.63	1	<1	33	1	3	1.81	124	31	53	163	1.51	0.00	21	0.08	599	<1	0.01	27	0.077	9	6	23	42	0.05	<1	1	6	13160
117628	8	63.15-63.50	<0.5	1.24	<1	<1	17	24	6	2.59	41	28	56	101	2.51	0.02	32	0.10	753	<1	0.05	91	0.089	15	7	53	55	0.07	<1	12	11	7362
117629	8	63.50-64.45	<0.5	0.70	<1	<1	12	20	8	1.87	16	8	40	7	1.20	0.02	27	0.14	578	1	0.04	24	0.084	22	5	50	42	0.06	<1	6	4	3841
117630	8	64.45-65.30	0.9			<5								62										8								62900
117630	8	64.45-65.30	0.8	0.53	<1	<1	30	18	4	1.96	183	30	13	58	2.10	0.02	15	0.17	634	2	0.03	15	0.204	10	7	17	13	0.02	<1	4	<1	>10000
117636	8	75.75-76.40	<0.5	2.61	24	<1	25	74	8	2.12	3	19	74	132	2.31	0.33	9	0.49	160	3	0.26	48	0.034	42	8	148	54	0.08	<1	34	9	208

DDH SR-97-09

PROPERTY : SWIFT RIVER

UTM E	376469	Azimuth	57°
UTM N	6673851	Inclination	-50°
Elev	1404 m	Core Size	NQ

FROM m	TO m	Tag No.	length m	Lithology	Codes	Assay Results Cu%	Zn%	Pb(ppm)	Ag(ppm)	Au(ppm)	Au(ppb)
0.00	10.70			overburden	0						
10.70	20.20			flt gouge bkn core	3f						
20.20	21.25			gabbro	8						
21.25	22.65			rextallized andesite	1z						
22.65	23.25			qtz-xtal tuff	4c						
23.25	28.60			flt gouge	1f						
28.60	41.85			rextallized and tuff	1z						
41.85	43.07			andesitic xtal tuff	1j						
43.07	44.50			and - felsic xtal tuff	1b						
44.50	63.40			andesitic xtal tuff	1bf						
63.40	63.85			qtz-xtal tuff	4c						
63.85	78.65			andesitic xtal tuff	1						
78.65	80.35			xtal tuff	4s						
80.35	81.80			silty andesite tuff	1s						
81.80	82.60			frag tuff or breccia	2rb						
82.60	85.70			andesitic xtal tuff	1						
85.70		E.O.H.		END OF HOLE							

APPENDIX 5

SURFACE SAMPLE ASSAYS AND GEOCHEMISTRY

(Soil, rock, channel, and stream sediment samples)

Field Sample ICP Results

T= stream sediment sample **S=** Soil sample (B horizon) **R=** Rock sample **F=** Float sample

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
BJ 97 -T 001	<0.5	0.90	7	2	2	241	1	1.74	1	6	15	18	1.44	0.08	18	0.91	571	1	0.01	18	0.078	27	3	33	20	0.02	<1	18	<1	20
BJ 97 - T002	<0.5	1.18	3	1	2	232	2	0.94	1	5	19	17	1.60	0.09	22	0.43	399	1	0.01	19	0.078	13	2	37	19	0.03	<1	21	<1	25
BJ 97 - T003	<0.5	0.65	3	1	10	177	<1	0.19	1	8	107	11	1.39	0.13	11	0.28	889	8	0.02	17	0.044	15	2	13	16	0.01	<1	3	<1	11
BJ 97 - T003 ck	<0.5	0.72	2	<1	14	201	1	0.19	1	8	114	10	1.36	0.11	10	0.26	843	7	0.02	16	0.038	11	2	13	11	0.01	<1	2	<1	10
BJ 97 - T004	<0.5	0.89	2	<1	2	236	<1	0.38	1	8	89	11	1.64	0.14	15	0.40	712	2	0.02	20	0.060	11	2	18	19	0.01	<1	10	<1	12
BJ 97 - T005	<0.5	1.18	3	<1	5	199	2	0.31	2	10	77	33	2.10	0.14	15	0.58	505	2	0.02	39	0.064	16	3	21	27	0.02	<1	22	<1	20
BJ 97 - T006	<0.5	1.29	5	<1	5	172	1	0.30	2	12	93	37	2.15	0.16	14	0.65	656	4	0.02	47	0.070	20	4	21	31	0.02	<1	21	<1	46
BJ 97 - T007	<0.5	1.30	4	<1	4	242	2	0.42	2	11	114	31	2.08	0.15	16	0.65	678	3	0.02	45	0.072	16	4	25	25	0.02	<1	18	<1	50
BJ 97 - T009	<0.5	1.24	5	<1	4	185	2	0.29	2	11	98	29	2.04	0.15	13	0.64	534	4	0.02	46	0.066	14	3	21	26	0.01	<1	19	<1	45
BJ 97 - T011	<0.5	1.13	4	<1	11	297	2	0.38	2	10	89	20	1.90	0.12	13	0.56	508	2	0.02	36	0.066	13	3	24	20	0.02	<1	18	<1	26
BJ 97 - T012	<0.5	1.31	4	<1	8	317	3	0.42	2	10	130	22	2.07	0.18	16	0.65	434	3	0.03	38	0.064	19	4	23	30	0.03	<1	21	<1	26
BJ 97 - T013	<0.5	1.07	4	<1	7	314	2	0.25	2	9	89	18	1.92	0.13	13	0.57	472	2	0.02	34	0.058	10	3	18	25	0.02	<1	18	<1	14
BJ 97 - T014	<0.5	1.05	3	<1	8	218	1	0.24	2	9	99	18	1.76	0.13	12	0.54	472	3	0.02	33	0.056	11	3	17	23	0.02	<1	16	<1	14
BJ 97 - T015	<0.5	1.07	4	<1	9	243	2	0.23	1	8	112	16	1.70	0.11	11	0.46	487	2	0.02	28	0.046	8	2	16	17	0.01	<1	11	<1	1
BJ 97 - T016	<0.5	1.30	8	<1	6	249	2	0.58	1	6	112	15	1.45	0.14	9	0.44	187	2	0.05	22	0.046	10	3	25	21	0.05	<1	18	<1	1
BJ 97 - T017	<0.5	3.16	10	1	13	349	2	0.88	3	20	71	82	1.60	0.11	56	0.54	918	1	0.03	15	0.056	17	3	49	18	0.03	<1	50	<1	14
BJ 97 - T018	<0.5	1.20	10	<1	11	236	2	0.31	2	7	205	22	1.54	0.16	10	0.37	456	3	0.04	19	0.034	15	3	17	13	0.04	<1	13	<1	238
BJ 97 - T019	<0.5	1.74	19	3	7	97	3	0.51	1	7	86	19	1.47	0.24	10	0.44	389	2	0.07	22	0.042	11	3	25	29	0.06	<1	36	<1	3
BJ 97 - T111	<0.5	1.18	4	<1	9	233	3	0.30	2	8	134	22	1.69	0.19	9	0.43	558	1	0.03	24	0.048	17	2	21	15	0.04	<1	18	<1	107
BJ 97 - T112	0.6	2.09	7	<1	9	256	4	0.56	3	10	99	32	1.97	0.29	18	0.66	350	1	0.02	32	0.066	22	4	38	20	0.06	<1	41	<1	178
BJ 97 - T113	<0.5	1.18	7	<1	8	305	2	0.31	2	8	106	19	1.70	0.18	10	0.42	550	1	0.03	21	0.046	13	3	21	14	0.04	<1	23	<1	63
BJ 97 - T114	<0.5	1.16	3	<1	17	709	2	0.29	2	9	132	25	1.76	0.22	11	0.46	635	2	0.03	29	0.048	15	3	23	21	0.05	<1	20	<1	62
BJ 97 - T115	<0.5	1.12	3	<1	16	323	1	0.32	2	8	130	24	1.74	0.21	12	0.43	682	1	0.02	24	0.048	16	2	23	18	0.04	<1	20	<1	69
BJ 97 - T116	<0.5	1.40	4	<1	17	439	2	0.53	2	9	156	30	1.91	0.28	16	0.51	785	2	0.03	29	0.060	17	3	33	22	0.05	<1	23	<1	86
BJ 97 - T117	<0.5	1.15	4	<1	12	357	2	0.27	2	8	92	25	1.84	0.22	10	0.44	636	1	0.02	26	0.052	16	3	21	20	0.05	<1	25	<1	69
BJ 97 - T118	<0.5	1.22	3	<1	14	401	2	0.28	2	8	124	26	1.84	0.26	11	0.46	620	2	0.02	26	0.050	19	2	22	20	0.05	<1	25	<1	77
BJ 97 - T119	<0.5	1.14	3	<1	10	289	1	0.26	2	8	99	24	1.78	0.23	9	0.44	639	1	0.02	25	0.048	16	2	19	19	0.05	<1	24	<1	59
BJ 97 - T120	<0.5	1.34	4	<1	10	218	4	0.34	2	9	137	28	1.83	0.26	13	0.47	596	2	0.02	28	0.054	17	3	24	20	0.05	<1	22	<1	81
BJ 97 - T121	<0.5	1.33	5	<1	8	396	3	0.29	2	9	94	25	1.83	0.20	11	0.47	779	1	0.02	26	0.050	17	2	21	18	0.04	<1	27	<1	95
BJ 97 - T122	<0.5	1.35	3	<1	8	212	2	0.42	2	9	135	25	1.78	0.22	14	0.46	575	2	0.02	26	0.052	17	2	26	19	0.05	<1	21	<1	97
BJ 97 - T123	<0.5	1.14	3	<1	9	196	3	0.26	2	8	93	24	1.70	0.19	9	0.43	687	1	0.02	23	0.048	16	3	18	16	0.04	<1	22	<1	64
BJ 97 - T124	<0.5	1.31	5	<1	15	217	2	0.40	2	8	151	27	1.78	0.23	12	0.46	547	2	0.03	25	0.052	18	3	24	18	0.05	<1	20	<1	72
BJ 97 - T125	<0.5	1.23	3	<1	12	224	2	0.31	2	8	121	24	1.70	0.21	10	0.43	556	1	0.03	23	0.052	16	3	29	18	0.04	<1	20	<1	64
BJ 97 - T126	<0.5	0.71	3	<1	12	121	1	0.51	1	4	74	19	1.09	0.09	12	0.24	331	1	0.02	14	0.034	8	2	28	6	0.02	<1	10	<1	14
BJ 97 - T127	<0.5	1.03	4	<1	11	215	2	0.31	2	8	98	23	1.70	0.17	10	0.40	603	1	0.03	21	0.044	15	2	24	16	0.04	<1	19	<1	48
BJ 97 - T128	<0.5	1.13	6	1	12	232	2	0.34	2	8	147	22	1.69	0.19	10	0.40	591	2	0.03	23	0.044	15	3	37	15	0.04	<1	20	<1	60
BJ 97 - T129	<0.5	1.10	5	<1	11	221	1	0.33	2	7	110	22	1.67	0.19	11	0.41	572	1	0.02	22	0.044	14	3	28	15	0.04	<1	21	<1	60
BJ 97 - T130	<0.5	1.27	5	<1	8	260	2	0.40	2	8	154	22	1.72	0.21	13	0.43	436	2	0.03	23	0.046	16	3	31	16	0.04	<1	19	<1	89
BJ 97 - T131	<0.5	1.16	5	<1	9	238	3	0.40	2	8	106	22	1.70	0.20	10	0.44	625	1	0.04	21	0.050	14	2	29	17	0.04	<1	24	<1	49
BJ 97 - T132	<0.5	1.01	5	<1	9	193	2	0.34	2	6	145	18	1.85	0.12	12	0.36	321	2	0.02	21	0.052	15	3	22	16	0.04	<1	17	<1	77
BJ 97 - T133	<0.5	0.99	6	1	10	183	2	0.29	2	7	97	17	1.73	0.14	10	0.40	617	1	0.02	21	0.044	14	2	17	14	0.03	<1	18	<1	137
BJ 97 - T134	<0.5	1.06	7	<1	11	222	3	0.48	4	8	147	21	1.70	0.14	14	0.39	1004	2	0.02	25	0.050	18	2	25	14	0.03	<1	17	<1	222
BJ 97 - T135	<0.5	0.92	7	<1	12	184	2	0.24	2	8	123	16	1.69	0.15	9	0.38	966	1	0.02	22	0.040	14	2	16	15	0.03	<1	16	<1	111
BJ 97 - T136	<0.5	1.11	9	<1	11	208	3	0.43	4	9	168	21	1.87	0.16	14	0.41	1353	2	0.02	27	0.050	21	3	23	15	0.03	<1	16	<1	215
BJ 97 - T137	<0.5	1.12	5	<1	10	187	2	0.39	3	8	132	20	1.68	0.13	14	0.39	822	1	0.02	24	0.052	20	3	21	13	0.03	<1	16	<1	219
BJ 97 - T138	<0.5	1.18	8	<1	9	210	2	0.43	4	9	101	21	1.76	0.12	14	0.40	1123	2	0.02	25	0.052	20	3	23	14	0.03	<1	20	<1	233

T= stream sediment sample S= Soil sample (B horizon) R= Rock sample F= Float sample

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
BJ 97 - T139	<0.5	1.08	5	<1	12	168	3	0.31	2	8	135	18	1.67	0.14	11	0.39	626	1	0.02	22	0.044	16	3	19	14	0.03	<1	17	<1	123
BJ 97 - T140	<0.5	0.96	7	<1	8	218	2	0.33	2	7	122	16	1.53	0.12	11	0.34	692	2	0.02	20	0.040	15	2	22	11	0.03	<1	14	<1	130
BJ 97 - T141	<0.5	0.89	8	1	9	189	3	0.31	2	8	111	15	1.65	0.12	10	0.34	983	1	0.02	20	0.038	15	2	26	13	0.03	<1	17	<1	102
BJ 97 - T142	<0.5	1.03	6	<1	12	258	3	0.30	2	7	112	15	1.58	0.13	11	0.36	663	2	0.02	20	0.040	15	2	23	13	0.03	<1	18	<1	127
BJ 97 - T143	<0.5	1.18	7	<1	11	220	2	0.45	3	7	145	19	1.65	0.15	12	0.40	741	1	0.03	22	0.048	15	3	27	12	0.03	<1	19	<1	114
BJ 97 - T143 ck	<0.5	1.02	9	<1	13	264	2	0.43	2	8	139	21	1.49	0.16	11	0.40	769	1	0.04	25	0.048	19	4	26	16	0.04	<1	19	<1	92
BJ 97 - T144	<0.5	1.18	7	<1	13	233	2	0.47	2	7	140	22	1.66	0.14	15	0.40	543	2	0.03	22	0.050	19	2	30	13	0.04	<1	21	<1	143
BJ 97 - T145	<0.5	1.05	6	<1	8	197	2	0.41	2	7	139	17	1.59	0.14	12	0.38	648	1	0.03	20	0.044	15	2	25	12	0.03	<1	17	<1	139
BJ 97 - T146	<0.5	1.02	6	<1	7	198	2	0.43	2	6	162	17	1.52	0.13	11	0.36	537	2	0.03	20	0.042	14	2	25	11	0.03	<1	14	<1	129
BJ 97 - T147	<0.5	1.10	6	<1	7	167	2	0.42	2	6	153	17	1.60	0.13	12	0.38	485	1	0.03	20	0.044	13	2	26	13	0.03	<1	16	<1	96
BJ 97 - T148	<0.5	1.18	5	<1	9	232	2	0.34	2	7	143	22	1.65	0.19	10	0.39	579	2	0.03	20	0.042	14	3	30	12	0.04	<1	18	<1	50
BJ 97 - T149	<0.5	1.22	4	<1	4	173	2	0.34	2	7	106	22	1.58	0.17	10	0.39	513	1	0.03	21	0.044	14	2	30	11	0.04	<1	21	<1	69
BJ 97 - T150	<0.5	1.34	4	<1	6	182	2	0.46	2	7	123	26	1.60	0.17	15	0.42	485	2	0.02	22	0.052	16	3	31	11	0.04	<1	21	<1	94
BJ 97 - T151	<0.5	1.06	19	<1	6	219	3	0.25	2	10	124	18	1.65	0.16	8	0.37	1122	1	0.02	27	0.036	9	2	16	12	0.03	<1	20	<1	23
BJ 97 - T152	<0.5	1.11	15	<1	6	216	3	0.28	1	9	116	19	1.64	0.17	8	0.40	820	2	0.02	27	0.040	8	2	17	13	0.03	<1	20	<1	15
BJ 97 - T153	<0.5	0.92	20	1	8	201	3	0.20	1	8	107	32	1.51	0.21	6	0.40	837	2	0.02	27	0.036	112	3	13	26	0.04	2	22	<1	8
BJ 97 - T154	5.2	0.93	26	1	12	172	2	0.29	1	9	97	20	1.59	0.16	7	0.38	762	1	0.02	31	0.040	2670	7	16	23	0.03	3	21	<1	4
BJ 97 - T155	<0.5	1.08	22	1	8	263	2	0.34	1	10	128	22	1.67	0.20	9	0.42	942	3	0.02	33	0.046	18	3	20	25	0.04	<1	23	<1	5
BJ 97 - T156	<0.5	0.87	23	1	9	424	1	0.19	1	9	84	19	1.49	0.17	7	0.37	1092	8	0.02	28	0.034	40	3	14	23	0.03	<1	22	<1	7
BJ 97 - T157	<0.5	1.13	29	<1	4	254	1	0.52	2	11	150	30	1.66	0.16	12	0.40	1065	2	0.02	50	0.054	15	4	27	25	0.03	<1	19	<1	15
BJ 97 - T158	<0.5	0.98	24	<1	6	185	2	0.25	1	10	91	19	1.62	0.16	8	0.39	840	1	0.02	29	0.042	120	3	15	22	0.03	<1	23	<1	5
BJ 97 - T159	<0.5	0.96	21	<1	8	213	2	0.26	1	9	89	19	1.51	0.16	8	0.39	752	1	0.02	29	0.042	12	2	16	23	0.03	<1	23	<1	6
BJ 97 - T160	<0.5	0.89	19	<1	9	196	2	0.23	1	8	124	20	1.50	0.19	6	0.38	796	3	0.02	27	0.036	31	3	14	24	0.03	<1	20	<1	7
BJ 97 - T161	<0.5	0.92	9	<1	6	150	2	0.24	1	8	84	19	1.68	0.16	11	0.41	1054	1	0.03	31	0.042	52	2	14	28	0.03	<1	17	<1	7
BJ 97 - T162	<0.5	0.97	15	<1	9	277	3	0.22	1	12	107	31	2.08	0.18	14	0.46	2682	2	0.01	47	0.048	16	1	13	33	0.01	<1	15	<1	1
BJ 97 - T163	<0.5	0.93	14	<1	8	226	4	0.23	1	11	121	29	2.12	0.17	13	0.44	2346	2	0.01	43	0.048	28	1	14	32	0.01	<1	12	<1	3
BJ 97 - T164	<0.5	0.85	16	<1	11	242	3	0.23	1	12	90	29	2.26	0.15	12	0.41	3324	1	0.01	49	0.048	13	2	14	33	0.01	<1	13	<1	2
BJ 97 - T165	<0.5	0.79	13	<1	8	206	2	0.18	1	11	106	29	1.96	0.15	11	0.40	2746	1	0.01	47	0.044	36	1	12	28	0.01	<1	11	<1	3
BJ 97 - T166	<0.5	0.82	11	<1	7	223	2	0.17	1	11	92	30	1.88	0.17	12	0.44	2832	2	0.01	52	0.044	12	2	11	30	0.01	<1	13	<1	6
BJ 97 - T167	<0.5	0.84	22	<1	7	274	2	0.26	1	11	148	30	2.07	0.18	12	0.41	3668	2	0.01	54	0.046	25	2	15	31	0.01	<1	9	<1	9
BJ 97 - T168	<0.5	0.83	12	<1	7	316	4	0.18	1	12	101	29	1.99	0.16	12	0.41	4038	1	0.01	61	0.044	13	2	12	29	0.01	<1	14	<1	8
BJ 97 - T168 ck	<0.5	0.80	14	1	7	301	4	0.19	1	12	97	28	2.02	0.15	11	0.41	3990	1	0.01	61	0.044	13	3	12	31	0.01	<1	13	<1	9
BJ 97 - T169	<0.5	0.88	13	<1	14	300	3	0.30	1	12	181	28	2.06	0.18	12	0.40	3644	1	0.01	55	0.054	33	3	15	28	0.01	<1	6	<1	9
BJ 97 - T171	<0.5	0.81	10	<1	5	272	2	0.18	2	12	72	25	1.79	0.13	12	0.41	4476	1	0.01	61	0.044	11	1	11	27	0.01	<1	14	<1	10
BJ 97 - T172	<0.5	0.79	14	<1	8	294	3	0.18	2	13	81	27	1.85	0.13	11	0.37	4750	2	0.01	60	0.040	18	2	11	26	0.01	<1	13	<1	2
BJ 97 - T173	<0.5	0.81	17	<1	9	131	2	0.23	2	5	129	16	1.34	0.12	13	0.29	597	1	0.02	28	0.028	23	2	12	25	0.02	<1	12	<1	5
BJ 97 - T174	<0.5	0.77	12	<1	11	112	<1	0.20	1	4	106	12	1.32	0.15	10	0.31	370	1	0.03	20	0.026	10	3	11	25	0.03	<1	15	<1	9
BJ 97 - T175	<0.5	0.84	13	<1	10	112	2	0.23	1	5	123	14	1.33	0.15	9	0.30	441	5	0.04	24	0.026	17	2	13	26	0.03	<1	14	<1	7
BJ 97 - T176	<0.5	0.77	13	<1	10	125	2	0.19	1	5	113	13	1.34	0.15	11	0.30	387	2	0.03	23	0.024	11	2	11	26	0.03	<1	14	<1	8
BJ 97 - T177	<0.5	0.78	13	<1	11	106	2	0.22	1	5	104	13	1.25	0.14	8	0.29	544	1	0.04	20	0.026	17	2	13	23	0.02	<1	15	<1	8
BJ 97 - T178	<0.5	0.73	13	<1	9	161	2	0.21	1	5	114	13	1.32	0.13	12	0.28	522	1	0.03	20	0.026	12	3	12	25	0.02	<1	13	<1	6
BJ 97 - T179	<0.5	0.83	19	<1	10	262	3	0.24	2	6	142	17	1.45	0.13	16	0.29	671	3	0.02	34	0.028	17	3	13	27	0.02	<1	13	<1	2
BJ 97 - T180	<0.5	0.80	10	<1	8	207	2	0.22	1	5	103	13	1.27	0.14	9	0.30	442	2	0.04	22	0.026	9	2	13	24	0.02	<1	15	<1	7
BJ 97 - T181	<0.5	0.72	13	<1	7	260	1	0.17	1	4	128	13	1.19	0.13	8	0.27	369	1	0.03	19	0.022	17	2	11	21	0.02	<1	9	<1	7
BJ 97 - T182	<0.5	0.80	23	<1	11	136	1	0.19	1	5	117	15	1.34	0.14	10	0.30	446	2	0.03	22	0.026	16	2	11	25	0.03	<1	14	<1	4
BJ 97 - T183	<0.5	0.77	23	<1	10	109	1	0.18	1	5	102	14	1.44	0.14	14	0.32	421	1	0.03	25	0.026	13	1	10	30	0.03	<1	17	2	3
BJ 97 - T184	<0.5	0.76	16	<1	8	101	1	0.19	1	4	83	12	1.21	0.14	7	0.28	385	1	0.03	18	0.022	15	2	11	23	0.02	<1	15	<1	7
BJ 97 - T185	<0.5	0.95	22	<1	8	116	2	0.28	1	5	91	14	1.40	0.19	8	0.37	439	2	0.05	21	0.030	11	1	14	30	0.04	<1	21	<1	6

T= stream sediment sample **S=** Soil sample (B horizon) **R=** Rock sample **F=** Float sample

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
BJ 97 - T186	<0.5	0.76	22	<1	7	89	3	0.19	1	5	113	13	1.29	0.14	10	0.29	361	2	0.03	19	0.024	14	3	10	25	0.03	<1	13	2	6
BJ 97 - T187	<0.5	0.79	25	<1	11	137	2	0.20	1	5	117	15	1.57	0.14	18	0.34	363	1	0.03	24	0.028	16	1	11	34	0.04	<1	18	9	4
BJ 97 - T188	<0.5	0.76	23	<1	11	426	3	0.18	1	4	120	13	1.27	0.14	10	0.28	321	2	0.03	19	0.024	25	2	13	22	0.02	<1	11	1	5
BJ 97 - T189	<0.5	0.83	26	<1	10	470	2	0.22	1	5	99	13	1.39	0.15	12	0.33	437	1	0.03	21	0.028	17	2	14	28	0.03	<1	17	2	4
BJ 97 - T190	<0.5	0.86	36	<1	10	135	2	0.20	1	5	101	16	1.36	0.14	14	0.32	398	1	0.02	21	0.028	15	2	13	22	0.03	<1	16	2	3
BJ 97 - T191	<0.5	2.99	34	4	14	241	5	0.78	2	10	95	41	1.73	0.32	27	0.47	707	2	0.06	32	0.082	17	7	42	39	0.06	<1	43	<1	87
BJ 97 - T192	1.1	2.62	93	<1	9	288	5	0.73	3	17	79	45	2.15	0.18	34	0.45	1313	3	0.02	42	0.062	44	8	42	36	0.03	<1	57	<1	94
BJ 97 - T193	1.3	2.91	64	<1	7	288	5	0.91	3	11	62	50	1.99	0.20	41	0.48	593	2	0.02	37	0.074	35	7	51	34	0.03	<1	50	<1	88
BJ 97 - T194	0.9	2.29	45	<1	6	229	4	0.95	3	10	58	45	1.64	0.15	43	0.40	468	1	0.02	28	0.064	25	6	49	29	0.02	<1	38	<1	77
BJ 97 - T195	<0.5	0.86	18	1	10	149	1	0.44	1	4	154	15	1.24	0.13	12	0.30	230	3	0.03	15	0.020	21	3	20	19	0.03	<1	15	<1	2
BJ 97 - T196	<0.5	1.24	15	1	4	95	3	0.34	1	6	79	13	1.39	0.16	10	0.38	350	1	0.05	15	0.034	35	2	19	16	0.03	<1	24	<1	33
BJ 97 - T197	<0.5	0.88	2	1	2	75	1	0.19	1	3	108	11	0.83	0.09	9	0.24	107	2	0.02	12	0.024	11	2	10	9	0.02	<1	9	<1	6
BJ 97 - T198	<0.5	0.88	18	1	4	79	1	0.29	1	4	165	13	1.10	0.09	23	0.23	197	3	0.03	14	0.028	12	2	15	12	0.02	<1	5	<1	3
BJ 97 - T199	<0.5	1.02	22	1	4	102	2	0.37	1	5	160	17	1.29	0.12	17	0.29	338	1	0.04	16	0.030	14	4	18	13	0.02	<1	11	<1	3
BJ 97 - T202	<0.5	0.80	5	<1	17	67	2	0.21	1	5	82	9	1.17	0.09	16	0.31	205	8	0.02	18	0.034	12	2	12	19	0.03	<1	14	<1	56
BJ 97 - T203	<0.5	0.87	6	<1	17	64	<1	0.19	1	6	102	9	1.34	0.11	17	0.35	240	2	0.02	19	0.035	11	4	11	20	0.03	<1	12	<1	60
BJ 97 - T204	<0.5	0.94	10	<1	13	56	5	0.18	1	6	76	12	1.59	0.11	15	0.42	314	3	0.02	20	0.040	10	3	11	23	0.02	<1	13	<1	59
BJ 97 - T205	<0.5	0.93	7	<1	14	66	2	0.20	1	6	127	9	1.41	0.12	17	0.37	238	2	0.03	20	0.035	11	3	12	21	0.03	<1	10	<1	55
BJ 97 - T206	<0.5	0.93	7	<1	15	70	3	0.24	1	6	57	14	1.44	0.10	17	0.38	289	2	0.02	19	0.047	11	4	14	22	0.03	<1	16	<1	58
BJ 97 - T207	<0.5	0.99	7	<1	18	73	2	0.20	1	6	127	10	1.48	0.13	19	0.39	259	2	0.03	21	0.038	12	2	12	23	0.04	<1	13	<1	61
BJ 97 - T208	<0.5	1.05	4	<1	14	65	3	0.17	1	8	127	8	1.51	0.12	19	0.41	279	3	0.02	22	0.032	11	3	12	21	0.02	<1	9	<1	59
BJ 97 - T209	<0.5	0.91	15	<1	16	86	1	0.23	1	5	138	9	1.30	0.13	15	0.37	263	1	0.03	22	0.031	12	3	17	23	0.04	<1	13	<1	79
BJ 97 - T210	<0.5	0.92	16	<1	19	86	<1	0.20	1	5	123	9	1.28	0.14	12	0.36	263	1	0.03	21	0.029	12	2	17	22	0.04	<1	14	<1	81
BJ 97 - T211	<0.5	0.85	12	<1	16	79	2	0.20	1	5	96	9	1.26	0.12	14	0.35	240	2	0.02	20	0.032	12	3	14	22	0.04	<1	15	<1	70
BJ 97 - T212	<0.5	1.05	20	<1	16	98	3	0.30	1	7	133	15	1.55	0.14	15	0.42	375	1	0.03	25	0.039	15	5	18	25	0.05	<1	20	<1	87
BJ 97 - T213	<0.5	0.86	14	<1	17	85	1	0.20	1	5	139	9	1.30	0.14	13	0.35	214	3	0.03	22	0.029	12	4	14	23	0.04	<1	13	<1	79
BJ 97 - T214	<0.5	0.99	11	<1	15	86	2	0.30	1	6	87	14	1.39	0.09	18	0.45	223	1	0.02	23	0.042	15	3	18	21	0.04	<1	21	1	90
BJ 97 - T215	<0.5	1.10	16	<1	14	94	4	0.34	1	7	101	14	1.56	0.14	17	0.46	309	1	0.03	25	0.055	19	3	20	25	0.04	<1	21	<1	81
BJ 97 - T241	<0.5	1.45	20	<1	11	103	3	0.57	2	11	75	21	0.88	0.28	8	0.58	364	1	0.05	25	0.051	169	3	28	33	0.07	<1	38	<1	301
JC 97 - T001	<0.5	1.07	10	<1	4	135	2	0.52	1	5	105	20	1.08	0.10	19	0.28	273	2	0.04	17	0.036	11	2	24	12	0.02	<1	13	<1	8
JC 97 - T002	<0.5	1.18	8	<1	4	171	2	0.46	1	7	109	17	1.47	0.12	10	0.38	403	2	0.03	20	0.048	14	3	22	16	0.04	<1	24	<1	6
JC 97 - T003	<0.5	1.71	7	1	5	226	5	0.49	1	8	74	24	1.63	0.13	10	0.57	410	1	0.05	23	0.050	17	3	28	19	0.05	<1	39	<1	4
JC 97 - T004	<0.5	2.00	10	1	10	215	5	0.73	1	9	83	23	1.68	0.21	10	0.54	519	1	0.06	24	0.086	15	5	32	37	0.08	<1	40	<1	1
JC 97 - T005	<0.5	1.87	6	1	9	191	4	0.64	1	7	61	22	1.47	0.19	9	0.53	326	1	0.06	21	0.072	14	4	28	32	0.08	<1	36	<1	3
JC 97 - T006	<0.5	1.96	11	1	5	225	4	0.66	1	9	72	25	1.78	0.15	10	0.65	338	1	0.06	24	0.054	16	4	35	20	0.06	<1	48	<1	1
JC 97 - T006 ck	<0.5	1.95	10	1	7	224	5	0.64	1	9	72	24	1.78	0.15	10	0.63	336	1	0.06	23	0.054	15	6	36	19	0.05	<1	47	<1	2
JC 97 - T007	<0.5	1.80	7	1	3	237	4	0.60	1	9	63	20	1.66	0.11	10	0.59	804	1	0.07	22	0.060	17	2	36	18	0.05	<1	42	<1	1
JC 97 - T008	<0.5	1.40	10	1	4	219	3	0.63	1	8	80	16	1.47	0.10	9	0.43	1227	1	0.09	16	0.040	14	3	48	15	0.03	<1	31	<1	7
JC 97 - T009	<0.5	1.81	12	1	5	267	4	0.80	1	13	106	28	1.70	0.17	12	0.63	1517	1	0.08	24	0.052	16	5	47	21	0.06	<1	47	<1	2
JC 97 - T010	<0.5	1.95	12	2	4	320	3	0.83	1	10	114	30	1.75	0.19	10	0.56	1433	1	0.17	20	0.048	15	4	97	18	0.04	<1	40	<1	6
JC 97 - T011	<0.5	1.48	8	1	5	241	3	0.53	1	9	73	23	1.60	0.12	12	0.49	582	1	0.03	22	0.054	16	2	39	18	0.04	<1	34	<1	2
JC 97 - T012	<0.5	1.31	11	1	7	138	4	0.34	1	7	147	17	1.57	0.14	8	0.44	443	2	0.05	23	0.038	12	4	18	15	0.06	<1	27	<1	7
JC 97 - T013	<0.5	1.50	7	<1	2	188	2	0.39	1	8	84	24	1.68	0.13	13	0.47	394	1	0.02	24	0.056	24	3	26	18	0.05	<1	32	<1	74
JC 97 - T014	0.9	1.66	17	1	4	89	1	0.69	1	5	86	52	0.96	0.08	51	0.24	381	1	0.03	16	0.052	17	4	28	12	0.01	<1	11	<1	3
JC 97 - T015	<0.5	1.70	11	1	9	177	3	0.49	2	8	107	38	1.52	0.12	26	0.43	413	2	0.03	26	0.064	27	4	29	16	0.04	<1	26	<1	56
JC 97 - T016	<0.5	1.94	10	2	9	140	2	1.04	1	6	120	32	1.26	0.18	34	0.39	392	2	0.07	23	0.076	13	3	40	32	0.07	<1	20	<1	4

T= stream sediment sample **S=** Soil sample (B horizon) **R=** Rock sample **F=** Float sample

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
BJ-97S-217	<0.5	0.53	0	<1	67	54	1	0.10	<1	2	6	24	0.58	0.16	5	0.07	53	1	0.02	3	0.027	17	<1	7	11	0.05	<1	23	2	52
BJ-97S-218	<0.5	1.55	18	<1	27	64	6	0.14	2	9	57	24	2.28	0.13	<1	0.32	170	2	0.02	19	0.044	18	2	9	38	0.22	<1	123	7	57
BJ-97S-219	<0.5	1.92	65	<1	10	68	6	0.08	2	9	52	15	2.29	0.16	<1	0.36	190	1	0.02	18	0.039	17	3	3	40	0.25	<1	138	8	61
BJ-97S-220	<0.5	1.88	18	<1	9	82	5	0.10	3	18	67	27	2.22	0.19	<1	0.43	284	2	0.02	31	0.059	13	4	10	61	0.21	<1	99	1	93
BJ-97S-221	<0.5	4.32	30	<1	12	73	6	0.15	2	11	66	23	1.61	0.15	7	0.55	249	<1	0.02	32	0.093	12	8	10	51	0.09	<1	40	<1	81
BJ-97S-222	<0.5	1.46	7	<1	7	63	4	0.13	3	9	32	89	2.35	0.13	<1	0.33	508	2	0.02	17	0.034	13	4	5	43	0.14	<1	58	<1	103
BJ-97S-223	<0.5	0.56	3	<1	2	44	2	0.06	1	5	13	16	1.67	0.13	<1	0.07	87	2	0.01	7	0.028	14	2	3	28	0.18	<1	81	<1	27
BJ-97S-224	<0.5	0.57	3	<1	<1	47	4	0.07	1	6	15	18	1.28	0.14	<1	0.12	125	2	0.02	7	0.023	12	2	4	28	0.20	<1	83	<1	31
BJ-97S-225	<0.5	0.58	1	<1	2	38	3	0.04	1	5	14	15	0.51	0.10	<1	0.10	69	1	0.01	6	0.015	16	1	3	26	0.16	<1	77	<1	23
BJ-97S-226	<0.5	0.99	16	<1	1	53	3	0.04	2	6	32	13	0.85	0.11	<1	0.24	130	1	0.01	12	0.026	11	3	2	36	0.20	<1	117	<1	26
BJ-97S-227	<0.5	0.64	2	<1	1	48	2	0.06	1	6	19	13	1.06	0.11	<1	0.15	108	1	0.01	9	0.023	17	1	4	30	0.20	<1	119	3	27
BJ-97S-228	<0.5	2.04	30	<1	3	141	4	0.63	2	16	85	44	0.82	0.28	6	0.86	529	1	0.04	47	0.078	33	4	38	33	0.10	<1	61	<1	329
BJ-97S-229	<0.5	2.04	29	<1	3	128	2	0.58	3	15	74	35	0.79	0.30	8	0.84	489	1	0.04	44	0.073	49	4	32	33	0.10	<1	59	<1	472
BJ-97S-230	<0.5	1.90	21	<1	2	149	2	0.54	2	16	80	28	0.85	0.30	6	0.83	438	1	0.03	47	0.072	78	3	37	31	0.09	<1	51	<1	279
BJ-97S-231	<0.5	1.86	22	<1	5	120	3	0.47	2	15	68	43	0.78	0.28	8	0.79	434	1	0.04	43	0.078	45	5	32	32	0.09	<1	49	<1	457
BJ-97S-232	<0.5	2.12	29	<1	7	133	5	0.88	3	18	84	40	0.88	0.33	5	0.89	595	1	0.04	50	0.088	47	4	38	34	0.09	<1	58	<1	227
BJ-97S-233	<0.5	1.11	10	<1	6	103	2	0.23	1	8	40	14	0.82	0.18	3	0.51	155	<1	0.02	25	0.052	16	2	15	28	0.07	<1	31	<1	124
BJ-97S-234	<0.5	0.45	4	<1	2	47	2	0.07	<1	4	11	14	0.48	0.11	<1	0.08	59	<1	0.02	6	0.031	12	1	5	16	0.09	<1	35	<1	35
BJ-97S-235	<0.5	0.87	15	<1	3	49	1	0.10	1	5	26	14	0.40	0.10	7	0.28	123	1	0.02	15	0.036	14	1	4	31	0.10	<1	40	<1	44
BJ-97S-236	<0.5	0.52	10	<1	<1	41	2	0.05	1	6	20	11	0.60	0.13	<1	0.16	84	1	0.01	10	0.022	11	1	3	30	0.20	<1	87	<1	23
BJ-97S-237	<0.5	2.37	40	<1	1	98	5	0.16	2	12	78	25	0.55	0.27	0	0.69	253	1	0.02	32	0.082	25	4	5	59	0.20	<1	84	<1	85
BJ-97S-238	<0.5	1.70	25	<1	3	122	3	0.32	2	15	56	25	1.22	0.21	10	0.67	449	1	0.03	37	0.083	43	4	23	42	0.10	<1	48	<1	225
BJ-97S-239	<0.5	1.96	26	<1	2	123	4	0.29	2	14	75	31	0.83	0.22	4	0.78	334	1	0.03	41	0.090	45	4	21	34	0.09	<1	58	<1	274
BJ-97S-240	<0.5	1.84	29	<1	2	124	5	0.28	2	16	68	28	1.14	0.23	3	0.77	425	<1	0.03	42	0.083	47	4	20	33	0.09	<1	56	<1	344
AS-97-D10A	3	0.03	<1	<1	<1	13	67	0.04	31.4	71	5	1293	4.23	0.80	<1	0.03	1179	1	0.01	32	<0.005	<1	1	<1	2	<0.01	<2	3	<1	1001
AS-97-D11	<1	0.24	<1	<1	<1	2	8	0.03	15.2	13	1	133	2.65	0.02	<1	0.01	105	<1	0.03	5	<0.005	1	<1	<1	1	<0.01	<2	<1	<1	781
AS-97-D12	<1	0.16	<1	<1	<1	2	7	0.04	1.5	12	1	116	2.71	0.03	<1	0.02	89	<1	0.01	4	<0.005	2	<1	2	2	<0.01	<2	<1	<1	92
AS-97-D13	<1	0.18	<1	<1	<1	2	6	0.03	1.3	10	<1	87	2.24	0.01	<1	0.02	68	<1	0.01	4	<0.005	2	<1	<1	2	<0.01	<2	<1	1	10
AS-97-D3A	1	1.31	20	<1	3	144	7	0.51	0.9	41	45	29	2.57	0.22	35	0.84	1149	2	0.01	53	0.089	23	1	6	5	0.07	<2	25	<1	130
AS-97-D3A(N)	1	0.80	<1	<1	<1	103	<1	0.01	0.1	110	100	102	0.01	0.01	<1	0.01	98	<1	0.02	112	0.011	<1	<1	17	21	0.01	2	44	<1	104
AS-97-D3B	1	0.71	<1	<1	<1	100	<1	0.01	0.1	100	101	101	0.01	0.01	<1	0.01	101	<1	0.01	100	0.010	<1	<1	1	38	0.01	2	50	<1	101
AS-97-D3E	1	0.43	<1	<1	<1	99	<1	0.01	0.1	97	95	96	0.01	0.01	<1	0.01	95	<1	0.01	96	0.010	<1	<1	12	37	0.01	2	45	<1	8
AS-97-D4B(1)	<1	2.53	<1	<1	<1	25	33	1.36	9.2	101	32	444	10.15	0.12	<1	0.38	498	6	0.02	75	0.040	115	22	5	5	0.02	<2	41	<1	649
AS-97-D5A	1	0.13	75	<1	211	10	15	1.69	7.5	84	8	228	5.85	0.01	3	0.11	410	1	0.01	43	0.007	21	4	1	3	<0.01	<2	2	<1	516
AS-97-D5B	2	0.27	66	<1	188	6	19	1.32	17.4	136	13	353	7.13	0.11	2	0.05	744	2	0.01	56	0.006	16	1	<1	2	<0.01	<2	<1	<1	778
AS-97-D5D	2	0.53	37	<1	<1	50	3	9.28	0.2	17	9	60	1.56	0.03	9	0.30	2452	1	0.02	9	0.024	10	11	6	1	<0.01	<2	2	2	21
AS-97-D6A	<1	0.30	<1	<1	89	14	5	2.51	4.8	13	24	37	1.52	0.02	4	0.33	1589	1	0.01	10	0.008	10	2	1	1	<0.01	<2	2	1	407
AS-97-D6B	1	0.37	50	<1	<1	15	165	0.51	34.9	120	18	1328	4.08	0.12	<1	0.05	1662	5	0.01	29	0.008	10	8	1	1	<0.01	<2	6	<1	1015
AS-97-D9A	2	0.28	<1	<1	<1	18	57	3.06	11.7	130	10	791	3.73	0.03	<1	0.07	421	1	0.01	33	0.009	19	1	2	1	<0.01	<2	3	<1	674
AS-97-L14	<1	0.15	<1	<1	<1	2	6	0.03	24.0	10	1	106	2.11	0.02	<1	0.01	83	<1	0.01	3	<0.005	1	1	<1	2	<0.01	<2	<1	1	921
AS-97-L15	2	0.11	<1	<1	<1	4	13	0.03	1.5	17	1	170	3.23	0.03	<1	0.01	141	1	0.04	6	<0.005	<1	0	1	2	<0.01	<2	1	<1	184
AS-97-R002	<1	2.70	1	<1	<1	61	5	2.00	1.6	6	35	34	1.56	0.05	3	0.38	192	2	0.01	8	0.057	24	5	4	3	0.02	<2	51	1	206
AS-97-R004	<1	1.09	<1	<1	7	24	5	0.63	0.1	11	62	38	0.57	0.03	1	0.39	294	1	0.01	8	0.035	21	3	1	3	0.03	<2	27	2	14
AS-97-R005	<1	1.04	<1	<1	3	190	1	1.03	0.2	4	108	6	0.82	0.10	3	0.19	164	1	0.01	4	0.036	15	2	2	4	0.03	<2	<1	1	377
AS-97-R006	<1	2.28	<1	<1	3	119	6	1.34	0.1	13	52	81	1.71	0.12	2	0.44	235	2	0.01	6	0.058	20	2	4	2	0.06	<2	46	1	11
AS-97-R006B	<1	0.37	<1	<1	10	14	5	0.21	0.1	9	11	2	1.48	0.06	1	0.22	35	1	0.01	11	0.059	13	2	1	1	0.01	<2	13	2	12

T= stream sediment sample **S=** Soil sample (B horizon) **R=** Rock sample **F=** Float sample

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
AS-97-R007	<1	0.22	2	<1	16	17	9	0.14	0.2	15	8	21	2.09	0.05	1	0.08	13	2	0.01	29	0.124	12	3	5	1	0.01	<2	4	1	19
AS-97-R008	<1	1.53	<1	<1	7	108	4	0.24	0.1	12	31	42	1.37	1.00	<1	1.06	381	1	0.01	7	0.055	10	1	1	1	0.08	<2	32	1	16
AS-97-R009	<1	1.82	<1	<1	<1	187	5	0.40	0.1	4	16	22	1.59	0.03	1	0.24	91	1	0.01	8	0.054	19	1	10	2	0.03	<2	23	2	21
AS-97-R010	1	0.11	<1	<1	<1	16	85	0.01	1.7	49	8	1069	3.98	0.03	<1	0.01	11	<1	0.01	48	<0.005	<1	5	<1	<1	0.01	<2	2	<1	11
AS-97-R011	<1	0.47	<1	<1	<1	5	25	0.13	0.6	29	6	73	3.18	0.04	<1	0.04	90	<1	0.01	21	0.042	-9	3	<1	1	<0.01	<2	2	<1	9
BJ 97-R100	<0.5	2.29	31	<1	28	13	4	1.38	3	17	36	112	2.77	0.06	4	0.46	228	1	0.16	17	0.042	69	13	90	32	0.04	<1	51	<1	3
BJ 97-R101	<0.5	2.12	17	<1	16	51	3	1.12	2	35	27	154	2.36	0.32	<1	0.76	243	4	0.25	13	0.050	28	6	56	33	0.13	<1	91	<1	1
BJ 97-R102	<0.5	2.36	23	<1	13	67	4	0.58	2	15	77	46	2.42	1.09	<1	0.92	359	3	0.15	54	0.060	18	6	41	48	0.14	<1	82	<1	1
BJ 97-R103	<0.5	2.37	2	<1	17	150	8	1.66	2	13	26	45	2.00	0.32	3	0.60	297	1	0.09	15	0.050	13	6	42	26	0.07	<1	82	<1	41
BJ 97-R104	<0.5	2.15	5	<1	12	89	1	1.38	1	4	51	23	1.27	0.12	5	0.19	112	1	0.19	4	0.034	8	4	124	15	0.03	<1	<1	<1	31
BJ 97-R105	<0.5	1.41	<1	<1	5	434	1	0.99	1	3	42	4	1.73	0.14	4	0.24	215	<1	0.11	4	0.034	7	3	63	23	0.04	<1	2	<1	2
BJ 97-R106	<0.5	1.49	3	<1	14	49	3	0.88	1	8	52	32	1.86	0.09	3	0.23	148	2	0.10	6	0.036	18	4	75	24	0.04	<1	12	<1	1
BJ 97-R107	<0.5	1.64	<1	1	40	13	6	1.25	3	18	34	116	3.28	0.20	5	0.23	460	<1	0.19	14	0.032	8	5	21	46	0.05	<1	58	<1	1
BJ 97-R108	<0.5	2.37	2	<1	17	51	1	1.42	2	17	36	128	1.85	0.20	<1	0.49	237	1	0.38	14	0.048	23	5	82	25	0.08	<1	55	<1	56
BJ 97-R109	<0.5	2.00	<1	1	7	639	2	1.21	1	9	64	63	1.61	0.11	3	0.31	280	2	0.15	5	0.040	16	3	72	21	0.05	1	5	<1	4
BJ 97-R110	<0.5	2.48	4	1	6	165	4	0.68	2	11	86	54	2.24	0.71	5	0.82	340	3	0.12	34	0.064	17	6	56	36	0.08	<1	46	<1	14
BJ 97-R200-1	<0.5	1.59	450	<1	4	80	3	0.70	1	9	29	35	1.14	0.62	<1	0.94	167	1	0.19	10	0.057	7	9	40	23	0.12	<1	33	<1	39
BJ 97-R200-2	1.0	0.38	902	<1	830	38	13	0.66	8	17	28	456	3.00	0.02	6	0.33	152	<1	0.08	30	0.015	29	15	6	61	0.02	<1	<1	<1	202
BJ 97-R200-3	1.4	0.31	19	<1	658	39	17	1.47	41	16	29	263	3.00	0.04	3	0.11	247	1	0.02	29	0.066	78	42	3	71	0.06	<1	<1	<1	4360
BJ 97-R200-4	<0.5	0.47	<1	<1	23	40	16	2.89	10	6	42	98	3.21	0.00	10	0.05	1327	<1	0.01	23	0.016	7	6	<1	94	0.01	<1	4	1	51
BJ 97-F 242	<0.5	3.18	2	<1	12	138	27	2.15	2	12	49	50	1.15	0.49	15	0.67	304	1	0.25	11	0.060	7	5	98	34	0.11	<1	43	<1	59
BJ 97-R 241	<0.5	0.59	<1	<1	13	15	4	1.54	2	12	48	96	1.06	0.03	1	0.13	774	2	0.02	9	0.047	10	5	15	36	0.07	<1	17	<1	51
BJ 97-R 243	<0.5	2.63	<1	<1	5	158	5	1.25	2	9	51	54	1.05	0.91	<1	1.24	173	1	0.16	6	0.092	3	6	56	27	0.10	<1	26	<1	34
BJ 97-R 244	<0.5	3.29	118	<1	20	66	10	1.62	5	17	92	105	1.24	0.20	11	1.22	682	4	0.30	171	0.058	103	35	74	42	0.06	<1	115	<1	254
BJ 97-R 245	<0.5	3.07	126	<1	15	181	6	1.50	3	19	183	89	1.93	1.12	<1	1.23	163	22	0.23	101	0.078	10	14	77	56	0.12	<1	206	<1	54
BJ 97-R 246	<0.5	2.19	37	<1	21	67	5	1.09	3	14	110	104	1.57	0.22	<1	0.95	200	34	0.20	79	0.071	16	10	48	49	0.07	<1	191	<1	186
BJ 97-R 247	<0.5	4.36	57	<1	10	47	7	2.88	3	9	97	58	1.83	0.18	5	1.04	358	4	0.33	45	0.064	10	14	215	33	0.04	<1	76	<1	170
BJ 97-R 248	<0.5	2.64	14	<1	5	230	4	0.24	3	11	60	16	1.18	0.67	2	0.87	358	1	0.05	48	0.057	4	17	32	46	0.08	<1	57	<1	105
DT 97-R100	0.5	5.07	132	2	16	24	7	2.88	4	22	127	148	2.60	1.10	6	1.06	994	5	0.51	210	0.052	19	14	227	42	0.10	<1	145	<1	37
DT-97-R001	<1	1.35	<1	<1	9	82	8	0.82	0.2	1	35	9	2.26	0.09	3	0.16	226	2	0.01	6	0.022	78	2	1	1	0.01	<2	<1	3	5
DT-97-R002	<1	0.44	357	<1	<1	17	14	0.50	0.4	17	31	407	2.65	0.02	1	0.25	24	1	0.01	21	0.036	51	21	1	1	0.01	<2	<1	1	12
DT-97-R003	<1	1.15	2	<1	<1	97	4	0.42	0.1	11	40	92	1.39	0.35	1	0.61	68	2	0.01	8	0.055	15	4	2	1	0.06	<2	51	2	19
DT-97-R004	<1	1.18	29	<1	5	58	3	4.07	0.1	10	22	78	0.84	0.47	8	1.71	1906	1	0.04	12	0.054	87	15	1	12	0.01	<2	5	2	112
DT-97-R006	<1	0.55	2	<1	<1	3	4	0.22	0.1	5	3	5	1.38	0.01	1	0.09	6	1	0.01	9	0.058	14	3	4	1	<0.01	<2	1	3	19
DT-97-R007	<1	0.44	3	<1	5	6	33	2.57	0.8	13	9	8	2.53	0.01	2	0.07	334	2	0.02	11	0.031	8	6	<1	2	<0.01	<2	1	3	120
DT-97-R008	<1	0.21	8	<1	7	18	6	4.43	0.2	4	29	54	1.61	0.02	6	0.93	1510	2	0.02	8	0.046	2	11	1	2	0.01	<2	<1	3	11
DT-97-R009	<1	0.86	2	<1	<1	177	5	0.22	0.1	29	46	51	1.62	0.06	<1	0.22	227	1	0.02	4	0.040	17	2	1	3	0.03	<2	<1	<1	10
DT-97-R010	<1	2.03	<1	<1	13	191	5	1.12	0.1	9	27	2	1.68	0.04	2	0.51	126	1	0.04	6	0.030	32	3	4	3	0.01	<2	2	2	8
DT-97-R011	<1	1.37	<1	<1	12	108	3	0.23	0.1	7	30	5	1.32	0.66	4	0.71	159	1	0.05	6	0.053	7	1	2	2	0.06	<2	32	2	14
DT-97-R012	<1	1.63	<1	<1	<1	49	4	0.55	0.1	3	69	39	1.29	0.56	2	0.41	127	2	0.01	4	0.046	7	3	3	4	0.02	<2	2	3	16
DT-97-R013	<1	0.26	<1	<1	3	20	34	0.13	1.0	3	6	45	3.50	0.20	<1	0.05	23	<1	0.01	19	0.004	332	3	<1	<1	0.02	<2	6	3	12
DT-97-R014	<1	1.66	22	<1	<1	74	6	0.22	0.2	4	122	41	1.66	0.17	3	0.56	155	16	0.03	19	0.054	11	8	1	5	0.01	<2	63	2	54
DT-97-R015	<1	1.99	14	<1	<1	117	9	0.56	0.2	6	92	68	1.92	0.53	2	0.80	52	11	0.07	24	0.043	18	7	2	6	0.05	<2	86	2	54
DT-97-R016	<1	0.70	<1	<1	3	63	2	0.50	0.1	3	55	26	0.98	0.10	4	0.23	204	2	0.05	3	0.021	10	1	3	1	0.02	<2	7	3	147
DT-97-R018	<1	1.45	<1	<1	15	180	3	0.46	0.1	11	229	6	1.19	0.61	<1	0.96	73	1	0.05	112	0.043	9	3	2	5	0.07	<2	8	1	17
VP-97-13	<0.5	0.58	2	<1	600	34	22	3.17	10	6	32	8	2.42	0.01	12	0.12	2122	1	0.01	10	0.039	23	4	7	26	0.03	<1	20	8	1909

LUCY SHOWING

BJ1 Channel samples

ELEMENT	location	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	of sample	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
117985	3.30-4.50	<0.5	2.09	<1	<1	17	114	6	0.67	4	45	30	52	2.18	0.60	1	0.95	339	1	0.15	11	0.056	29	6	35	30	0.11	<1	89	10	457
117984	4.63-15.47*	35.2			<5								11300										3								860
117984	4.63-15.47*	40.1	0.59	<1	<1	121	40	13	0.19	5	64	2	7286	18.11	0.24	1	0.20	271	2	<0.01	47	0.042	2	9	<1	24	<0.01	<1	14	10	568
117983	5.57-16.17	1.6			<5								722										4								665
117983	5.57-16.17	1.0	0.39	<1	<1	89	53	16	0.20	4	1	<1	687	17.95	0.23	6	0.06	268	1	0.01	28	0.026	5	9	<1	27	<0.01	<1	7	5	518
117982	6.17-16.75	1.3			<5								398										3								1822
117982	6.17-16.75	1.2	0.49	<1	<1	102	44	15	0.42	10	6	<1	393	17.54	0.02	6	0.10	336	1	0.02	28	0.042	8	9	<1	24	<0.01	<1	5	3	1782
117981	6.75-17.55	<0.5	0.07	<1	<1	22	59	5	0.72	20	4	6	55	2.82	0.01	14	0.16	378	8	0.01	36	0.058	12	10	2	39	0.01	<1	7	42	2896
117980	7.55-18.27	<0.5	0.07	<1	<1	13	34	3	0.84	19	5	4	28	2.10	0.01	7	0.20	427	3	0.01	11	0.046	2	5	3	19	0.01	<1	4	13	3044
117979	8.27-19.07	0.8			<5								11										4								7078
117979	8.27-19.07	<0.5	0.09	<1	<1	3	13	17	0.50	38	<1	<1	42	2.43	0.12	3	0.15	221	2	<0.01	6	0.043	6	4	<1	5	<0.01	<1	1	<1	7586
117978	9.07-19.60	1.6			8								688										7								3498
117978	9.07-19.60	0.9	0.32	<1	<1	167	38	15	0.17	20	9	<1	668	17.93	0.06	5	0.11	175	2	<0.01	27	0.023	10	7	<1	23	<0.01	<1	6	<1	3827
117977	9.97-21.25	<0.5	0.33	<1	<1	15	52	3	1.36	17	3	7	14	2.12	0.05	8	0.33	804	2	0.03	7	0.033	9	5	10	21	0.01	<1	7	10	2792
117976	21.52-22.27	170	0.8	17	7	6371																									
117976	21.52-22.27	0.6	0.35	27	<1	7	50	3	2.31	31	<1	3	31	1.86	0.04	5	0.25	660	2	0.04	7	0.059	13	5	18	5	<0.01	<1	3	<1	6828

AS Channel S1-10 samples

ELEMENT	location	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	of sample	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
CHANNEL	**S1**																														
AS97-001	0.00-0.70	1.2			<5								0.09										<0.01								<0.01
AS97-002	0.70-1.25	3.3			30								0.07										<0.01								<0.01
AS97-003	1.25-1.75	0.6			<5								0.06										<0.01								<0.01
CHANNEL	**S2**																														
AS97-004	0.00-0.50	93.0			56								2.62										<0.01								0.14
AS97-005	0.50-1.00	15.8			<5								0.11										<0.01								0.01
AS97-006	1.00-1.40	8.2			<5								0.19										<0.01								<0.01
AS97-007	1.40-1.90	2.0			<5								0.08										<0.01								<0.01
AS97-008	1.90-2.40	1.1			<5								0.08										<0.01								0.01
AS97-009	2.40-2.90	0.6			<5								0.04										<0.01								0.05
AS97-010	2.90-3.40	0.4			<5								0.03										<0.01								0.44
AS97-011	3.40-4.10	<0.1			<5								<0.01										<0.01								0.31
GAP	4.10-4.60																														
AS97-012	4.60-5.10	<0.1			<5								<0.01										<0.01								0.43
AS97-013	5.10-5.65	0.7			<5								0.07										<0.01								0.17
CHANNEL	**S3**																														
AS97-014	0.00-0.65	1.5			<5								0.13										<0.01								<0.01
AS97-015	0.65-1.25	0.4			<5								0.04										<0.01								<0.01
AS97-016	1.25-1.75	0.6			<5								0.02										<0.01								0.02
AS97-017	1.75-2.15	0.8			<5								0.05										<0.01								0.41
AS97-018	2.15-2.65	<0.1			<5								<0.01										<0.01								1.03
AS97-019	2.65-3.60	<0.1			<5								<0.01										0.02								1.20
ELEMENT	location	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn

SAMPLES	of sample	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
CHANNEL	**S4**																														
AS97-020	0.00-0.10	75.0			20								1.48										0.01								0.10
CHANNEL	**S5**																														
AS97-021	0.00-0.55	1.3			<5								0.12										<0.01								0.56
AS97-022	0.55-1.00	0.7			<5								0.07										0.01								0.08
CHANNEL	**S6**																														
AS97-023	0.00-0.60	0.6			<5								0.03										<0.01								0.22
AS97-024	0.60-1.13	1.5			<5								0.08										0.02								1.18
AS97-025	1.13-1.63	0.3			<5								0.03										0.01								0.07
CHANNEL	**S7**																														
AS97-026	0.00-0.60	0.3			<5								<0.01										<0.01								0.01
AS97-027	0.60-1.25	0.3			30								<0.01										0.01								0.01
AS97-028	1.25-1.65	<0.1			40								<0.01										<0.01								0.10
CHANNEL	**S8**																														
AS97-029	0.00-0.60	0.4			<5								0.02										<0.01								0.12
AS97-030	0.60-1.10	<0.1			<5								<0.01										<0.01								0.09
CHANNEL	**S9**																														
AS97-031	0.00-0.50	<0.1			<5								<0.01										<0.01								0.09
AS97-032	0.50-1.00	3.3			<5								0.04										<0.01								2.83
AS97-033	1.00-1.50	1.2			92								<0.01										<0.01								1.73
AS97-034	1.50-2.15	0.8			<5								0.01										<0.01								0.64
AS97-035	2.15-2.60	0.3			135								0.02										<0.01								0.25
AS97-036	2.60-3.05	0.3			300								0.03										<0.01								0.42
CHANNEL	**S10**																														
AS97-037	0.00-0.50	<0.1			<5								<0.01										<0.01								0.36
GAP	0.50-1.10																														
AS97-038	1.10-1.60	2.3			<5								0.04										0.02								0.77
AS97-039	1.60-2.20	1.8			<5								0.07										0.01								0.16
AS97-040	2.20-2.80	0.8			<5								0.02										0.01								2.90

LOST SHOWING

BJ's channel samples

ELEMENT	location	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	of sample	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
117959	7.70-8.30	<0.5	1.20	1	<1	15	77	3	0.65	1	13	43	50	1.14	0.42	1	0.81	116	1	0.18	7	0.050	18	10	39	24	0.11	<1	74	5	42
117958	9.30-9.50	<0.5	1.01	22	<1	24	45	4	0.81	2	15	25	86	1.34	0.11	1	0.37	79	<1	0.18	8	0.052	30	11	35	19	0.10	<1	29	7	112
117957	9.50-11.25	<0.5	1.43	26	<1	28	91	4	0.83	2	15	31	64	1.21	0.35	2	0.76	133	<1	0.20	8	0.050	27	8	44	24	0.11	<1	58	6	170
117956	1.25-12.05	2.1			<5								390										54								198
117956	1.25-12.05	1.8	0.70	39	<1	158	23	6	0.71	3	17	15	412	10.55	0.01	5	0.15	122	2	0.19	20	0.058	65	12	21	13	0.01	<1	2	<1	213
117955	2.65-13.45	2.0			<5								288										47								2866
117955	2.65-13.45	1.6	0.45	1057	<1	667	21	6	1.21	16	5	20	314	3.08	0.03	5	0.67	196	1	0.03	21	0.033	60	44	7	12	0.01	<1	3	<1	2458
117954	3.75-14.95	0.7			<5								118										5								518
117954	3.75-14.95	0.6	0.15	16	<1	21	6	5	4.76	10	<1	3	125	2.04	0.02	9	0.70	413	1	<.01	6	0.035	17	28	15	7	<.01	<1	1	<1	632
117953	6.32-17.26	3.0			<5								526										212								48000
117953	6.32-17.26	2.7	0.33	164	<1	139	24	43	0.82	171	4	31	494	9.64	0.01	5	0.45	574	2	0.02	24	0.105	214	158	2	15	0.01	<1	4	<1	10000
117952	7.26-18.38	<0.5	1.11	105	<1	200	33	26	0.87	19	14	16	555	2.48	0.05	10	0.31	237	<1	0.19	18	0.077	221	179	29	42	0.06	<1	10	15	3352
117951	8.38-19.30	<0.5	0.47	40	<1	82	35	34	0.55	5	13	27	500	2.41	0.05	8	0.28	190	1	0.06	13	0.030	472	368	8	36	0.04	<1	7	14	590

DISCOVERY SHOWING

BJ's channel samples

ELEMENT	location	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	of sample	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
117986	3.60-4.70	<0.5	3.08	<1	<1	48	41	5	1.81	4	44	19	572	2.45	0.14	7	0.66	202	3	0.43	16	0.015	45	8	81	33	0.08	<1	68	14	100
117986 ck	3.60-4.70	<0.5	3.07	<1	<1	48	42	7	1.84	4	43	20	584	2.49	0.15	7	0.67	205	3	0.43	17	0.015	52	7	83	33	0.07	<1	68	11	89
117987	4.70-5.41	<0.5	3.88	<1	<1	48	44	6	2.19	4	33	19	673	2.44	0.34	8	1.18	380	<1	0.39	15	0.018	41	10	74	34	0.08	<1	172	12	99
117988	5.41-6.18	20.7			<5								4098										45								248
117988	5.41-6.18	23.6	0.61	<1	<1	41	34	13	0.22	2	145	2	4118	15.13	0.65	2	0.28	203	1	0.03	85	0.032	39	5	<1	20	<0.01	<1	9	<1	175
117989	6.18-7.13	<0.5	0.50	<1	<1	101	6	3	3.35	2	4	18	9	1.80	0.01	8	0.67	1602	<1	0.02	9	0.033	4	12	52	24	0.03	<1	20	8	68
117990	7.13-7.94	15.2			<5								2973										9								216
117990	7.13-7.94	16.3	0.48	<1	<1	44	24	9	2.95	2	141	5	2707	14.01	0.06	7	0.59	1368	1	<0.01	37	0.029	8	7	36	18	<0.01	<1	10	<1	215
117991	7.94-8.39*	5.3			<5								2015										1								55
117991	7.94-8.39*	5.5	0.63	<1	<1	70	57	16	0.37	3	314	<1	2142	20.26	0.08	8	0.14	408	1	0.04	63	0.017	2	9	<1	35	<0.01	<1	5	<1	49
117992	8.75-9.72	3.7			<5								2368										1								78
117992	8.75-9.72	3.3	0.59	<1	<1	81	47	17	0.36	2	234	<1	2318	22.75	0.26	6	0.16	368	2	0.04	39	0.017	1	8	<1	31	<0.01	<1	6	<1	39
117993	9.72-10.62	1.2			<5								752										11								71
117993	9.72-10.62	1.1	1.08	<1	<1	50	37	9	0.70	1	57	20	969	12.37	0.02	5	0.2	192	1	0.11	17	0.035	18	6	19	15	0.01	<1	8	<1	40
117994	0.62-11.48	1.2			<5								2030										1								75
117994	0.62-11.48	1.2	0.36	<1	<1	79	42	12	0.06	2	75	8	1559	12.84	0.28	4	0.07	201	2	0.03	25	0.013	2	10	7	52	<0.01	<1	10	<1	42
117995	1.59-12.63	1.3			<5								2000										5								86
117995	1.59-12.63	1.00	0.37	<1	<1	103	45	16	0.22	2	70	7	1853	16.91	0.34	6	0.04	258	1	0.03	24	0.019	5	10	<1	56	<0.01	<1	2	<1	43
117996	2.63-13.94	1.4			<5								1724										4								58
117996	2.63-13.94	1.1	0.34	<1	<1	73	42	12	0.13	2	49	6	1490	19.81	0.68	5	0.04	197	1	0.04	20	0.016	6	9	<1	49	<0.01	<1	1	<1	26
117997	4.28-15.47	0.9			<5								520										8								74
117997	4.28-15.47	0.8	0.82	<1	<1	45	38	5	0.30	1	13	23	471	8.39	0.26	<1	0.72	82	2	0.08	9	0.041	14	6	9	21	0.03	<1	34	<1	35
117998	5.47-16.67	0.8			<5								65										6								70
117998	5.47-16.67	0.7	1.48	<1	<1	9	79	7	0.43	1	12	23	66	7.83	0.9	<1	1.76	102	2	0.09	5	0.054	6	5	15	10	0.05	<1	78	<1	68
117999	6.67-17.42	<0.5	1.96	<1	<1	15	133	2	0.69	1	9	33	70	1.46	1.14	1	1.20	160	<1	0.20	8	0.054	18	5	37	26	0.12	<1	88	7	44

PAUL SHOWING

BJ's chip samples

ELEMENT	location	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	of sample	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
117962	8.10-8.70	<0.5	0.49	<1	<1	78	34	13	2.13	5	23	23	222	3.41	0.00	12	0.15	352	1	0.02	16	0.039	11	9	16	48	0.05	<1	8	17	30
117961	8.70-9.50	<0.5	0.29	<1	<1	64	14	12	5.84	7	13	43	170	3.65	0.01	23	0.08	1193	<1	0.01	17	0.025	4	8	1	59	0.01	<1	1	30	99
117960	6.80-17.70	<0.5	0.21	<1	<1	20	21	4	0.79	10	10	13	81	2.43	0.01	8	0.64	316	1	0.01	8	0.025	48	9	4	30	0.01	<1	6	9	367

Project: Swift River, YK

NTS map:

Area:

Birch Mountain Resources Ltd.

Rock Sampling

Date: June 1997

Sampler: Jackie Charlie

Sample prefix: JC97 R

Sample #	Grid Reference		Rock Data			Description describe mineralogy, structure, strike, dip and other comments
	Easting	Northing	Type	Sulfides	%	
JC97R01			intermed. tuff	ap diss	<1%	qtz rich lam tuff w/ dk micro veinlets
JC97R02			intermed tuff	ap. diss	<1%	red green - grey tuff
JC97R03			intermed tuff	ap, diss py - trace	<1%	e.gr. brownish purple intermediate tuff

Project: SWIFT RIVER, YK

NTS map:

Area:

Birch Mountain Resources Ltd.

Rock Sampling

F = float sample

Date: 19

Sampler:

Sample prefix: DT97

Sample #	Grid Reference		Rock Data			Description describe mineralogy, structure, strike, dip and other comments
	Easting	Northing	Type	Sulfides	%	
DT97F002	12+00E	175 S	lam hornfels	Py po	2%	f.g. siliceous limonite-boulder dup. [illegible]
DT97F003	1+60E	400S	hfels			angular, [illegible] stone to [illegible] gtzite to irreg. dk green chlorite [illegible] irreg. discordant [illegible] to sample

Project: SOFT RIVER, YK

NTS map:

Area:

Birch Mountain Resources Ltd.

Rock Sampling

R= outcrop sample

Date: [illegible] 19[illegible]

Sampler: [illegible]

Sample prefix: DT97-

Sample #	Grid Reference		Rock Data			Description describe mineralogy, structure, strike, dip and other comments
	Easting	Northing	Type	Sulfides	%	
DT97R-001	16+25E	[illegible] S	lam hornfels			[illegible] 220±5 78W [illegible] graphitic metarenite to lam. hornfels [illegible] graphitic, chloritic ± ep, fold [illegible]
DT97R-002	17+50E	450 S	iron formation			black & rust [illegible] bearing iron fm in 1.8m thick [illegible] So 085/78S ; J 155/90
DT97R-003	17+45E	460 S	hornfels			less-rusty weathered [illegible] lam. hornfels
DT97R-004	17+50E	430S	weathered skarn?			crumbly, limonitic, boxwork weathered [illegible]
DT97R005	10+00E	100N	argillite			dk grey argillite, [illegible] strike/dip: [illegible] E J 040/70E
DT97R006	5+20E	110 S	lam [illegible]			rusty weathered [illegible] hornfels in [illegible]
DT97R007	5+00E	150S	lam hornfels			rusty weathered [illegible] banded hfels on conductor A
DT97R008	11+20E	500S	skarn	[illegible] or py		P skarn, [illegible] graph. chlor. gt. cc. N-flaser [illegible] mod. rust stain [illegible] minor py. vn
DT97R009	0+90E	370S	lam hornfels	v. minor lim. fe		lam. impure otzite hornfels, [illegible] minor rusty [illegible] 124°/24SW [illegible] vein ; 2c
DT97R010	1+40E	320S	phyllite			fissile green [illegible] to intercalated otz-feld [illegible] S 130°/70SW [illegible]
DT97R011	0+15E	170S	phyllite	[illegible]		green-grey chloritic fissile phyllite to [illegible] veins [illegible] foliation = 020/48 S ; v. little rust
DT97R012	0+95W	315S	lam hornfels			[illegible] surface weathered [illegible] otz veins to 2cm, [illegible] rusty S 130°/70S
DT97R013	47+65W	155S	goethite + silicates	poss. trace		goethite + limonite + green silicates - argh, chlor, fibrous to fg. poss trace sulphides; iridescent rust
DT97R014	4800W	50S	dk grey hornfels			dk grey graphitic, blocky weathering argillite to hornfels So 080°/70 SE ; J 042°/88 SE
DT97R015	4800W	50S	dk grey hornfels			dk grey graphitic? hornfels (some argillitic) [illegible] otz veins to 2cm So 110°/76S J 172°/90 + 130°/90

Project: SWIFT RIVER YK | **Birch Mountain Resources Ltd.** | Date: 13 JUNE 19 97

NTS map: | **Rock Sampling** | Sampler: D. TARR / TH

Area: Reconnaissance sample | Sample prefix: DT 97

Sample #	Grid Reference		Rock Data			Description describe mineralogy, structure, strike, dip and other comments
	Easting	Northing	Type	Sulfides	%	
DT97 R016	46+00W	550S	banded hornfels	tr. Py		Pale green banded hornfels w qtz veins to 10cm thick So 143/60S J 043/88E
DT97 R017	4650W	1050S	diorite	—		qtz-feld dyke + diorite contact diorite cut by mafic, chloritic veinlets + felsic dykes
DT97 R018	4650W	1050S	diorite			Hbld + feld medium equigranular diorite / 1 petr sample cut by qtz-feld dykes + veins (dyke chilled contact)
DT97 R019	9+00S	425 S	graded bedded schist			banded ltgy fine to med grained siltst to phyllite layers + qtz veins with fractured zone at trench bottom N/A
DT97 R020	376450	6669615	banded hornfels	tr. semi. Py	1%	banded hfels; ltgy-grn folded & deformed; qtz veins, rust stain
DT97 R100	19+55E	345N	argillite	[illegible]	<1%	shaly dk grey to ltgy fine grained [illegible] 143/60
DT97 R101	13+05E	280S	tuffaceous ltgy siltst	—	—	ltgy banded tuff [illegible] siltst [illegible] black lithics → volcanic [illegible]
DT97 R102	13+15E	355S	dk grey-brn siltst/sh stain	py ml	>1%	[illegible] stain zone
DT97 R103	386040	6669700	interbedded tuff	—	—	qtz sericite tuff [illegible] weathers light grey [illegible] 234/88 E 198/89, black specks
DT97 R104	386050	6669675	interbedded tuff			light grey [illegible] seg-incus dominant, black [illegible] foliation 134/28°
DT97 R105	386010	6668675	interbedded tuff	tr	1%	lt grey [illegible] tuff [illegible]
DT97 R106	386025	6668435	interbedded tuff	tr pyrite	<1%	lt grey [illegible] qtz [illegible] tuff [illegible]

10D drill site

Project: SWIFT RIVER, YUKON

NTS map:

Area:

Birch Mountain Resources Ltd.

Rock Sampling

Date: July 4 1997

Sampler: D TARKYTH

Sample prefix: D.T97R

Sample #	Grid Reference		Rock Data			Description describe mineralogy, structure, strike, dip and other comments
	Easting	Northing	Type	Sulfides	%	
DT97R107	378570E	6672975	rhyolite tuff	PO, dissem some veinlets	~2%	PO occurs sporadically in asst outcrops of rhyolite tuff on GOSSAN hill, rusty weathering, platy to blocky fracturing
DT97R108	386120	6670280	graphitic schist	—	—	dk grey to black fissile, rotten graphitic schist, more resistant less fissile areas have <1mm xtals, poss tuff origin ∠ 276/80°N
DT97R109	386135	6670530	graphitic schist			lg river bank cliff outcrop, contorted folds, shiny flecks of glass in xtal frags in resistant portions of gr. schist
DT97R110	386145	6669995	andesite crystal tuff	weathered PY	5%	Qtz+cc-veined xtal tuff, visible weathered py, mica flakes >1mm N side of river bank, mod hill slope; fractured to rotten
DT97R111	386180	6669955	andesite tuff	weathered PY	5%	in trench, fragile, mod fissile rotten rock, qtz and cc veining to 30 cm+ cc vein width, almost stockwoid; 2cm-30cm folding;

Project: Swift River, Yukon

NTS map:

Area:

Birch Mountain Resources Ltd.

Rock Sampling

Date: June 4-7 1997

Sampler: Brett G. Johnson

Sample prefix: BJ-97-

Sample #	Grid Reference		Rock Data			Description describe mineralogy, structure, strike, dip and other comments
	Easting	Northing	Type	Sulfides	%	
BJ-97-R001	16+30 E	450 S	amph. bdg	None	—	minor epidote - limonite 320°S/78 in till zone overflow drainage - very coniferous
BJ-97-R002	9+70E	470 S				
BJ-97-R003	4+20 E	160S	argillite	pyrite	<1%	bedding 130°, magnetite present - the minor pyrite occurs mainly in the magnetite or limonite north facing slope - slight till zone
BJ-97-R004	0+00	375 S		None	—	chlorite present - quartzite - banding is present - quartz crystals are large - slight oxidation - north facing slope
BJ-97-R005	0+00	348 S	Skarn	None	—	banding in quartzite - no oxidation large veins of chlorite north facing slope
BJ-97-R006	0+00	400 S	~~Pegmatite~~	None	-	oxidation present - apparent layering and bedding - large quartz crystals - limonite also present in many areas
BJ-97-R007	0+00	450 S	~~Graphitic~~ schist	None	—	oxidation visible - prominent ~~chlorite~~ talc banding north facing slope qtz - talc schist
BJ-97-R008	0+00	200 S	phyllite	None	—	large quartzite veins seen on surface, easily fractured - very "slaty" large quartz crystals
BJ-97-R009	1+00W	310S	laminated hornfels	None	—	fracture surfaces - weathered and rusty qtz veins up to 3cm thick
BJ-97-R010	48+00W c/a	175S c	BJ-97-R010 Fe oxides	None	—	highly weathered - highly oxidized - fish Lower Crescent Lake showings - on steep NW facing slope
BJ-97-R011	48+00W	165S	hornfels	pyrrhotite	1%	green-chlorite/amph. bdg tough - blocky oxidized irregular bands of magnetite, chlorite banding
BJ-97-R012	48+75W	160S	~~iron formation~~ hornfels	pyrite	<1%	fine grained ~~hornfels~~ oxidized - Lower Crescent Lake showings.
BJ-97-R013	47+65W	155S	iron formation silicate	pyrite a pyrrhotite	~10%	Lower Crescent Lake showings - green silicate - weathered - hosts silvery, brassy coloured sulfide - sulfides on surface
BJ-97-R014	9+00E	485 S	qtz-ser schist	fine weathered py cubes	<1%	moderately rusty stain, deformed shimmery green phyllite to qtz veins - fracture filled py cubes; N-facing slope
BJ-97-R015	9+00E	470S	qtz sericite schist	pyrite disseminations	2-4%	slightly banded qtz sericite schist, mod. oxidized, rusty on fracture surfaces Sa 130/72 J 130/72

Project: Swift Rivers, Yukon

NTS map:

Area:

Birch Mountain Resources Ltd.

Rock Sampling

Date: June 15 → 1997

Sampler: Brett Johnston

Sample prefix: BJ-97

Sample #	Grid Reference		Rock Data			Description describe mineralogy, structure, strike, dip and other comments
	Easting	Northing	Type	Sulfides	%	
MOD BJ97-RO16	376290	6669320	qtz sericite schist	[illegible]		rusty, red-orange overbleached pale green slightly banded siliceous schist ± phyllitic layers So 134°/60 SW
BJ97 RO17			shale	–	–	shale, mod phyllitic & fissile, clay, NOT silt, moderate reactivity, dk green to v.light [illegible] crust in qtz; qtz veins 3-5cm rubbly & 030/30°
BJ97 RO18			shale			immature shale some blocky fracturing otherwise sim. to RO17 slight rust
BJ97 RO19			argillite			well-cooked dk grey argillite bedding 040/46°
BJ97 RO20	387450	6668950	graphitic schist	–	–	graphitic schist surface [illegible] holloway cubes, mica [illegible] main [illegible] 124, red grey [illegible]
BJ97 RO21	386625	6669520	green banded siltstone	[illegible]	–	[illegible] lam sltst to 10-25 cm qtz veins; B 132/74° [illegible] surface [illegible] 155/87 150/50 [illegible]
BJ97 RO22	386480	6669480	lam green sltst			no oxidation or trace sulfides, [illegible] layers 170/[illegible] to 5 [illegible]
BJ97 RO23	386395	6669780	lam sltst	[illegible]	<1%	lam sltstone, minor qtz veins & lots of rust, hollows [illegible] lam 150°/45°
BJ97 RO24	170 E	370 S	~~schist~~ qtz	ap, cp, py	2%	lam [illegible] [illegible] grey [illegible] act. like + qtz schist [illegible]
BJ97 RO25	[illegible] E	59 S	qtz schist [illegible]	cp, py [illegible]	3%	less weathered [illegible] act. [illegible] cp in [illegible] & stringers
BJ97 RO26	[illegible]	105 S	[illegible]	py	<1%	grey [illegible] hornfels [illegible] py [illegible]
BJ97 RO27	[illegible]	[illegible]	qtz-sericite schist	ap, py	[illegible]	[illegible] lam qtz-sericite-talc schist [illegible] at 330° 72 [illegible]

Project: Swift River, Yukon

NTS map:

Area:

Birch Mountain Resources Ltd.

Rock Sampling

Date: June 4 → 1997

Sampler: Brett C. Johnson

Sample prefix: BJ-97

Sample #	Grid Reference		Rock Data			Description describe mineralogy, structure, strike, dip and other comments
	Easting	Northing	Type	Sulfides	%	
BJ-97-F001			argillite			
BJ-97-F002						
BJ-97-F003	9+75 E	460 S		Pyrite / Pyrrhotite	1%	talus, highly oxidized magnetite and quartzite present - on surface on north facing slope. - siliceous
BJ-97-F004	6+00 E	350 S		Pyrite, pyrrhotite minor cp	1%	talus, north facing, slope
BJ-97-F005	3+50 W	475 S	argillite	None	—	previous sulfide present - quartz - highly weathered float creek - no outcrops - vast boulder crop
BJ97F006	4+70 E	370 S	actinolite schist	aspy, py stringers, blebs	~10%	weathered actinolite schist, aspy blebs + stringers in boulder & definite contact w less weath. actinolite schist
BJ97F007	4+70E	370 S	actinolite schist	aspy py cp stringers	~10%	less weathered, definitely laminated actinolite schist, aspy in blebs & stringers
BJ97F008	4+90E	370 S	hornfels	aspy, py disseminated	<1%	green-grey hornfels w some disseminated sulphides, mostly aspy
BJ97F009	4+30E	380 S	qtz schist	aspy, py	~10%	pale green lam qtz schist; mineralization in qtzitic schist, rare in contacting unmineralized phyllite (So, contact 300/78) road clay, baby shit + dk. [illegible]

Project: Swift River, Yukon

Birch Mountain Resources Ltd.

Stream Sediment Sampling

Date: June 24 19 97

NTS map:

Sampler: Brett C. Johnson
Dene Turkyth

Area:

Sample prefix: BS-97-

UTM

Sample #	Grid Reference		Stream Data			Description describe composition [% clay, silt, sand, organic], *nearby outcrop, slope direction, and other comments*
	Easting	Northing	Width	Depth	Velocity	
BS-97-T001	390775	6669100	2m	30cm	laminar	centre of stream, moss and alders, gentle slope
T002	390840	6669030	1.5m	10cm	laminar	centre of stream, moss, alders, and pines, gentle slope
T-003	390845	6668925	1m	35cm	laminar	alders, buck brush, coniferous, gentle slope
T-004	390880	6668840	1.5m	20cm	laminar → turbulent	sample taken on side of river, alders, buckbrush, coniferous, gentle slope
T-005	390890	6668725	1m	10cm	turbulent	alders, willow, buckbrush, & coniferous, taken from a side pool.
T-006	390920	6668640	1.5m	5cm	turbulent	alders, willow & moss, sample taken from side of stream.
T-007	390965	6668562	2m	8cm	turbulent	moss, willow and alders, side pond, greater slope
T-008	391045	6668525	1.5m	20cm	turbulent	moss, willow, and alders, side of stream, greater slope
T-009	391082	6668420	1m	10cm	turbulent	moss, willow, buckbrush, and coniferous, side of stream
T-010	391090	6668317	2m	10cm	turbulent	moss, alders, willow & coniferous, taken from corner of stream
T-011	391130	6668215	1.5→2m	10cm	laminar → turbulent	buckbrush alders, moss, taken from side of stream, good slope
T-012	391185	6668125	1→1.5m	15cm	laminar → turbulent	alders and buckbrush, loss of a slope, taken from side of stream
T-013	391250	6669070	1m	20cm	laminar → turbulent	alders and buckbrush, taken from side of stream.
T-014	391240	6667960	1m	15cm	laminar → turbulent	only alders, willow, and buckbrush, flat area, gentle slope

Project: Snaft River, Yukon

NTS map:

Area:

Birch Mountain Resources Ltd.

Stream Sediment Sampling

Date: 19

Sampler: Brett C. Johnson
Dene Turkyth

Sample prefix: BS-97-

Sample #	Grid Reference		Stream Data			Description describe composition [% clay, silt, sand, organic], nearby outcrop, slope direction, and other comments
	Easting	Northing	Width	Depth	Velocity	
T-015	391230	6667880	2m	15cm	laminar	only buckbrush, swampy area, almost no slope
T-016			1m	5cm	laminar	small stream crossing road, buckbrush
June 17						
T-017			<1m	5cm	not quite laminar	mainly stagnant pond, slight trickle into it over bedrock, tall zone on outcrop 425s 6w 070/070w, lots of moss & lichen
T-018			<1m	10cm	laminar	North from Lucy about 100m, small stream, lichen, marshy area taken from side of stream
T-019			<1m	15cm	laminar	coniferous, moss & lichen, gentle → steeper slope
June 22						
T-111			<1m	35cm	laminar → turbulent	buckbrush, small pine, alders - taken from side of stream very windy river
T-112			1m	25cm	turbulent	in cutbank, alders buckbrush, small coniferous, gentle slope
T-113			<1m	15cm	turbulent	buckbrush!!, alders, willows!!, little pool in side bay
T-114			1→1.5m	15cm	turbulent	buckbrush, alders, pine, point bar area, sample was taken there. near river junction
T-115			2m	5cm	turbulent	small side stream of major river, laminar in the side stream alders, buckbrush, small pines, snags
T-116			2-2.5m	5 cm	very turbulent	small bay; large pines, alders, buckbrush and snags; good slope
T-117			1→1.5m	5cm	turbulent	alders, willows!!!, pine and snags; sample taken from cutbank

Project:	Birch Mountain Resources Ltd.	Date:	19
NTS map:	**Stream Sediment Sampling**	Sampler:	
Area:		Sample prefix: BJ 97	

Sample #	Grid Reference		Stream Data			Description describe composition [% clay, silt, sand, organic], nearby outcrop, slope direction, and other comments
	Easting	Northing	Width	Depth	Velocity	
T-118			1m	10cm	turbulent	tough to find area to sample, side bay for sample lots of alders, willow, buckbrush, med pine
T-119			1-1.5m	10cm	turbulent	sample taken from point bar; alders, buckbrush, and large cw.
T-120			1m	15cm	turbulent	bay on outside of stream is where sample taken from; alders, buckbrush, and large conifers.
T-121			2m	20cm	turbulent	sample taken from side bay, buckbrush and alders
T-122			2-3m	15cm	turbulent	sample taken from side bay, buckbrush, alders, and small pines
T-123			2m	25cm	turbulent	alders, buckbrush, willows, sample taken from side bay
T-124			1.5-2m	30cm	turbulent	Sample taken from point bar alders, buckbrush.
T-125			1.5m	40cm	turbulent	Sample taken from outside bay alders, buckbrush.
T-126			1m	20cm	turbulent	Sample taken from sand bar alders, buckbrush, at Y with another river?
T-127			1m	40cm	turbulent	Sample taken from inside bay alders, buckbrush
T-128			1m	35cm	turbulent	Sample taken from small bay same veg.
T-129			2m	40cm	turbulent	Sample taken from side pond, Same veg.
T-130			2m	10cm	turbulent	Sample taken from side pond same veg = alders, buckbrush
T-131			2m	20cm	turbulent	inside pool/bay, same veg near baseline crossing
T-132	42+10E	500S	60cm	5cm	laminar	Small trickle, on baseline on way out, swampy area buckbrush, no pines - lowlying

Project:

NTS map:

Area:

Birch Mountain Resources Ltd.

Stream Sediment Sampling

Date: 19

Sampler:

Sample prefix:

Sample #	Grid Reference		Stream Data			Description describe composition [% clay, silt, sand, organic], nearby outcrop, slope direction, and other comments
	Easting	Northing	Width	Depth	Velocity	
T 133			1 m	35 cm	turbulent	Sample taken from side pool alders, buckbrush
T 134			1 m	10 cm	near turbulent	Small side stream alders, buckbrush
T-135			2 m	15 cm	turbulent	side pool / bay alders, buck/brush.
T 136			1 m	35 cm	turbulent	Sample taken from side pond alders, buckbrush
T-137			1.5 m	20 cm	turbulent	sample taken from side pond alders, buckbrush.
T-138			1.5 m	25 cm	turbulent	side pond sample, alders, buckbrush.
T-139			1-1.5 m	35 cm	laminar to turbulent	Sample taken from side bay buckbrush, alders, small spruce
T-140			1-1.5 m	15 cm	turbulent	sample taken from side bay / pool mod spruce, alders, buckbrush
T-141			1 m	10 cm	turbulent	laminar flow pond - stream turbulent. small spruce, buckbrush, alders
T-142			1 m	5 cm	laminar to turbulent	Sample taken from side pool same veg
T-143			2 m	5 cm	laminar to turbulent	Sample taken from side pool along cut line
T-144			1-1.5 m	10-15 cm	turbent to laminar	lichen, large pine + balsam laminar side pond
T-145			1.5 m	15 cm	turbulent	side pond same veg.
T-146			1 m	30 cm	laminar to turbulent	point bar sample; same veg. on base line
T-147			1 m	15 m	laminar	v. small side stream, getting into marshy area buckbrush

Project:	Birch Mountain Resources Ltd.	Date:	19
NTS map:	**Stream Sediment Sampling**	Sampler:	
Area:		Sample prefix:	

Sample #	Grid Reference		Stream Data			Description describe composition [% clay, silt, sand, organic], nearby outcrop, slope direction, and other comments
	Easting	Northing	Width	Depth	Velocity	
T 148	30+006	475 S	1-1.5m	15 cm	laminar to turbulent	Sample taken from side pool small pine, alders
T-149			2 m	20cm	turbulent	side pool, small pine, alders
T 150			1.5 m	10 cm	turbulent	side pool, small pine, alders
T-151			3.5m	20cm	laminar	side of river, willow, buckbrush
T-152			1.5 m	10 cm	turbulent	willow, buckbrush. side pools, little sediment
T-153			2.5m	25 cm	laminar	laminar side bank, willow, buckbrush.
T-154			2.5 m	15 cm	turbulent	side pool, willow, buckbrush, fast flowing river
T-155			2 m	5 cm	laminar	side stagnant pool, flatter area, willow buckbrush
T-156			2 m	15 cm	laminar	point bar, willows, buckbrush
T-157			3 m	50 cm	fast laminar	cut bank-bay large buckbrush, flat plains
T-158			2.5m	15-20cm	fast laminar	cut-bank pool, same veg - no large trees in meadow - mostly buckbrush
T-159			6 m	18 cm	laminar	road crossing to Sipun taken before road buckbrush, no large trees
T-160			3 m	15 cm	laminar	buckbrush, no big trees

Project:	Birch Mountain Resources Ltd.	Date:	19
NTS map:	**Stream Sediment Sampling**	Sampler:	
Area:		Sample prefix:	

Sample #	Grid Reference		Stream Data			Description describe composition [% clay, silt, sand, organic], nearby outcrop, slope direction, and other comments
	Easting	Northing	Width	Depth	Velocity	
BS97T161	385525	6668825				
T162	386440	6668815				
T163	386360	6668765				
T164	386275	6668755				
T165	386170	6668755				
T166	386075	6668705				
T167	386002	6668636				
T168	386030	6668535				
T169	386020	6668435				
T171	386000	6668330				
T172	385990	6668240				

Project: SWIFT RIVER, YUKON

NTS map:

Area:

Birch Mountain Resources Ltd.

Stream Sediment Sampling

Date: July 4 1997

Sampler: B. Johnson

Sample prefix: BJ97 T...

Sample #	Grid Reference		Stream Data			Description describe composition [% clay, silt, sand, organic], nearby outcrop, slope direction, and other comments
	Easting	Northing	Width	Depth	Velocity	
BJ97 T202	[illegible]	[illegible]0380	1 m	10 cm	laminar	in bay, gradual slope, buckbrush & willow
T 203	[illegible]	[illegible]0465	1-1.5m	5 cm	laminar	point bar, gradual slope, same veg.
T 204	386144	6670431	2m	15cm	turbulent	directly below outcrop wall, gradual slope, buckbrush, lg. pines
T 205	[illegible]	6670555	1.5m	5 cm	laminar to turbulent	side bay, good slope - thick vegetation - buckbrush, willows, large pines
T 206	[illegible]	[illegible]0630	1 m	40cm	fast laminar	side of stream, same slope, same vegetation
T 207	[illegible]	6670700	2 m	20cm	slow laminar	stream beginning to peter out, wide flat marshy area; buckbrush & lg pine
T 208	[illegible]	[illegible]0780	1.5m	15cm	laminar	side bay, gentle slope, same vegetation
T209	[illegible]	[illegible]0398	6 m	15cm	fast laminar to turbulent	side of river sampled, centre 70 cm 2° slope over 70 m; buckbrush & willow
T 210	385900	[illegible]0335	6m	20cm	fast laminar	junction of two rivers — a bar + same slope, same veg
T 211	[illegible]	[illegible]245	5m	25cm	fast laminar to turbulent	side of stream, same slope, same vegetation
T 212	386020	[illegible]0165	7m	25-30cm	fast laminar to turbulent	side of stream slope 2° over 90m same vegetation
T 213	[illegible]	6670085	8m	20cm	laminar	side of stream, same slope, same veg
T 214	[illegible]	6669990	10 m	35cm	fast laminar	below outcrop, side of stream, buckbrush, willow, tall conifers; same gentle slope
T 215	386170	6669820	15 m	10 cm	rapid laminar	side of stream; 10 m up stream from major river crossing same veg. same slope

Project: Swift River

NTS map:

Area: Dam outcrops

Birch Mountain Resources Ltd.

Rock Sampling

Date: June 8 1991

Sampler: A Skupinski

Sample prefix: AS97

Strike and dip is marked as dip azimuth/dip angle

	Sample #	Grid Reference		Rock Data			Description describe mineralogy, structure, strike, dip and other comments
		Easting	Northing	Type	Sulfides	%	
A	AS97 D3A(sk)	14+30E	240 S	skarn	Po, Sp, Py	>10	mineralized skarn
A	D3A(h)	14+39E	244S	hornfels			weakly " hornfels
A	D3B	14+33E	237S	massive sulph in sk			f. 212°/85° mineralized skarn with massive sulphides lenses.
	D3C	14+28E	237S	mineralized skarn			mineralized skarn
	D3D	14+29E	232 S	-11-			f. 200°/85° mineralized skarn
A	D3E	14+29E	229 S	weakly mineral marble			weakly mineralized marble, plastic folding is common in marble
	D4A (1)	13+78E	221 S	Skarnified marble	trace		marble laminated by skarn intercalations
	D4A (2)	-11-	-11-	hornfels			weakly mineralized
A	D4B (1)	13+73E	220 S	m skarn	Po, Py, Sp	~ 20%	Strongly mineralized and silicified
	D4B (2)	-11-	-11-	m. sulp.		~ 100%	
A	D5A	12+90E	207 S	m. skarn	Sp + Cp trace	~ 20%	Epidotized skarn (actinolite) with frequent stringers of Sphalerite
A	D5B	12+83E	207S	m. sk	Sp	20	
	D5C	12+82E	212 S	sk			Rusty textured skarn with Magnetite
A	D5D	-11-	215 S				hydrothermalite with Celestite or barite
	D5E	-11-	-11-	m sk			

Project:

NTS map:

Area:

Birch Mountain Resources Ltd.

Rock Sampling

Date: 19

Sampler:

Sample prefix:

	Sample #	Grid Reference		Rock Data			Description describe mineralogy, structure, strike, dip and other comments
		Easting	Northing	Type	Sulfides	%	
	AS9+D5E	12+82E	215S	Sk	Py		weak mineralization, rusty fragments (Mt?)
A	D6A	12+65E	222S	sm. Skarn			
A	D6B	— " —	— " —	mass. sulf			
	D7A	12+20E	228S	Sk.			weak mineralization
	D8A	12+15E	240S	Horn! dig.			veinlets of granitoid incorp in argillite (sandstone?)
A	D9A	12+00E	234S		Po, Sp, Cp	10%	Strong contact mineraliz. with marbles
	D9B	— " —	— " —	Sk.			contact w/ite marbles
A	D10A	11+90E	238S	mass. sulph	Po, Sp.	10%	
A	D11	11+37E	240S	— " —	— " —	85%	
A	D12	11+66E	252S	— " —	— " —		
A	D13	11+68E	237S	— " —	— " —		
	L14	0+95E	243S	actin. sch.			
	L15	0+93E	247S	"			
A	L16	1+19E	261S	"	Ms, Cp(trace)	~10%	
A	L17	1+16E	258S	min. act sch.	Mt, Ms	~30%	

Project: Swift River

NTS map:

Area: Lucy lower showing

Birch Mountain Resources Ltd.

Rock Sampling

Channels

Date: June 15 1997

Sampler: A. Skupinski

Sample prefix: AS97

Sample #	Grid Reference		Rock Data			Description describe mineralogy, structure, strike, dip and other comments
	Easting	Northing	Type	Sulfides	%	
001	1+06E	255S	mas	Po	trace	Channel ①
002	"	"	"	Po + Cp(min)		
003	"	"	"	Po+Cp+Sp		
004	1+10E	260S	as	Po	trace	Channel ②
005	"	"	"	"	"	
006	"	"	"	"	"	
007	"	"	"	"	"	
008	"	"	mas	Po	locally up to 85%	
009	"	"	"	Po+Cp tr	>80%	
010	"	"	as	-		②
011	"	"	"	-		
012	"	"	"	-		
013	"	"	mas	Po		
014	1+14E	258S	"	Po + Cp tr	~10	Channel ③
015	"	"	"	-"-	~10	

Project: Swift River

NTS map:

Area: Lower Lucy Showing

Birch Mountain Resources Ltd.

Rock Sampling

Channels

Date: June 15 1997

Sampler: A. Stavpiński

Sample prefix: AS97

Sample #	Grid Reference		Rock Data			Description describe mineralogy, structure, strike, dip and other comments
	Easting	Northing	Type	Sulfides	%	
016	1+14E	258S	mas	Po	Locally ~40	Channel ③
017	"	"	"	Po	~10	
018	"	"	qs	–		
019	"	"	qs	–		
020	1+18E	261S	mas	Cp+Po(minor)	~20	Channel ④
021	1+07E	252S	"	Po	~20	Up to 50% Po in first 15cm Channel ⑤
022	"	"	"	"	"	
023	1+02E	250S	oxidized mas	Melnikovite ?	~30	The rock contains pinkish fastly tarnishing mineral up to 30% Probably it is melnikovite (after Po alteration) ??
024	"	"	"	–"–	~20	Channel ⑥
025	"	"	"			Totally limonitized rock
026	0+99E	249S				Channel ⑦ Altered products of the mas
027	"	"				
028	"	"				
029	0+99E	246S	mas	Po+Ms	~10	Ms is marcasite Channel ⑧
030	"	"	"	Po+Ms	~10	

Project: Swift River

NTS map:

Area: Lower Lucy Showing

Birch Mountain Resources Ltd.

Rock Sampling

Channels

Date: June 17 1997

Sampler: A. Skupinski

Sample prefix: AS97

Sample #	Grid Reference		Rock Data			Description (describe mineralogy, structure, strike, dip and other comments)
	Easting	Northing	Type	Sulfides	%	
031	100+02E	248S	qs	–		Channel (9)
032	〃	〃	〃	Py	trace	
033	〃	〃	〃	–		
034	〃	〃	〃	Py + Sp	trace	
035	〃	〃	〃	–		
036	〃	〃	〃	–		
037	0+96E	246S	qs	–		Channel (10)
038	〃	〃	mas	Ms	~ 1%	
039	〃	〃	–〃–	Ms	~ 10%	
040	〃	〃	–〃–	Ms	~ 1%	

APPENDIX 6

LABORATORY CERTIFICATES

(Loring Labs of Calgary)

To: BIRCH MOUNTAIN MINERALS LTD.
3100, Bow Valley Square II
205 - 5th Avenue S.W.
Calgary, Alberta T2P 2V7
ATTN: Val Pratico

File No : 39231
Date : June 27, 1997
Samples: Rock
Project :
P.O.#

Certificate of Assay

Loring Laboratories Ltd.

629 Beaverdam Road, NE Calgary Alberta
Tel: (403)274-2777 Fax: (403)275-0541

Sample No.	F.A. Au ppb	Cu %	Pb %	Zn %	F.A. Ag ppm
"Rock Samples"					
AS97 - 001	<5	0.09	<0.01	<0.01	1.2
AS97 - 002	30	0.07	<0.01	<0.01	3.3
AS97 - 003	<5	0.06	<0.01	<0.01	0.6
AS97 - 004	56	2.62	<0.01	0.14	93.0
AS97 - 005	<5	0.11	<0.01	0.01	15.8
AS97 - 006	<5	0.19	<0.01	<0.01	8.2
AS97 - 007	<5	0.08	<0.01	<0.01	2.0
AS97 - 008	<5	0.08	<0.01	0.01	1.1
AS97 - 009	<5	0.04	<0.01	0.05	0.6
AS97 - 010	<5	0.03	<0.01	0.44	0.4
AS97 - 011	<5	<0.01	<0.01	0.31	<0.1
AS97 - 012	<5	<0.01	<0.01	0.43	<0.1
AS97 - 013	<5	0.07	<0.01	0.17	0.7
AS97 - 014	<5	0.13	<0.01	<0.01	1.5
AS97 - 015	<5	0.04	<0.01	<0.01	0.4
AS97 - 016	<5	0.02	<0.01	0.02	0.6
AS97 - 017	<5	0.05	<0.01	0.41	0.8
AS97 - 018	<5	<0.01	<0.01	1.03	<0.1
AS97 - 019	<5	<0.01	0.02	1.20	<0.1
AS97 - 020	20	1.48	0.01	0.10	75.0
AS97 - 021	<5	0.12	<0.01	0.56	1.3
AS97 - 022	<5	0.07	0.01	0.08	0.7
AS97 - 023	<5	0.03	<0.01	0.22	0.6
AS97 - 024	<5	0.08	0.02	1.18	1.5
AS97 - 025	<5	0.03	0.01	0.07	0.3

I HEREBY CERTIFY that the above results are those assays made by me upon the herein described samples :

Assayer

Rejects and pulps are retained for one month unless specific arrangements are made in advance.

To : **BIRCH MOUNTAIN MINERALS LTD.**
3100, Bow Valley Square II
205 - 5th Avenue S.W.
Calgary, Alberta T2P 2V7
ATTN : Val Pratico

File No : **39231**
Date : June 27, 1997
Samples : Rock
Project :
P.O.#

Certificate of Assay

Loring Laboratories Ltd.

629 Beaverdam Road, NE Calgary Alberta
Tel: (403)274-2777 Fax: (403)275-0541

Sample No.	Au ppb	Cu %	Pb %	Zn %	Ag ppm
AS97 - 026	<5	<0.01	<0.01	0.01	0.3
AS97 - 027	30	<0.01	0.01	0.01	0.3
AS97 - 028	40	<0.01	<0.01	0.10	<0.1
AS97 - 029	<5	0.02	<0.01	0.12	0.4
AS97 - 030	<5	<0.01	<0.01	0.09	<0.1
AS97 - 031	<5	<0.01	<0.01	0.09	<0.1
AS97 - 032	<5	0.04	<0.01	2.83	3.3
AS97 - 033	92	<0.01	<0.01	1.73	1.2
AS97 - 034	<5	0.01	<0.01	0.64	0.8
AS97 - 035	135	0.02	<0.01	0.25	0.3
AS97 - 036	300	0.03	<0.01	0.42	0.3
AS97 - 037	<5	<0.01	<0.01	0.36	<0.1
AS97 - 038	<5	0.04	0.02	0.77	2.3
AS97 - 039	<5	0.07	0.01	0.16	1.8
AS97 - 040	<5	0.02	0.01	2.90	0.8

I HEREBY CERTIFY that the above results are those assays made by me upon the herein described samples :

Assayer

Rejects and pulps are retained for one month unless specific arrangements are made in advance.

To : **BIRCH MOUNTAIN MINERALS LTD.**
3100 Bow Valley Square II
205 - 5th Avenue S.W.
Calgary, Alberta T2P 2V7
ATTN : Val Pratico

File No : **39258**
Date : July 16, 1997
Samples : Rock
Project :
P.O.#

Certificate of Assay

Loring Laboratories Ltd.

629 Beaverdam Road, NE Calgary Alberta
Tel: (403)274-2777 Fax: (403)275-0541

Sample No.	Au ppb	Ag ppm
BJ 97R-200-1	<5	0.1
BJ 97R-200-2	<5	1.2
BJ 97R-200-3	<5	1.5
BJ 97R-200-6	10	0.1

I HEREBY CERTIFY that the above results are those assays made by me upon the herein described samples :

Assayer

Rejects and pulps are retained for one month unless specific arrangements are made in advance.

To : **BIRCH MOUNTAIN MINERALS LTD.**
3100, 205 - 5th Avenue S.W.
Calgary, Alberta
T2P 2V7
ATTN : Val Pratico

File No : **3 9 2 9 7**
Date : July 25, 1997
Samples : Core
Project :
P.O.#

Certificate of Assay

Loring Laboratories Ltd.

629 Beaverdam Road, NE Calgary Alberta
Tel: (403)274-2777 Fax: (403)275-0541

Sample No.	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
"Geochemical Analysis"					
97401	<5	< 0.1	20	12	302
97402	<5	13.0	2640	<1	227
97403	30	1.9	67	8	125
97404	<5	2.2	144	20	1703
97405	<5	0.4	74	7	9130
97406	<5	< 0.1	15	<1	2324
97407	<5	< 0.1	29	3	4807
97408	<5	< 0.1	142	<1	> 10000
97409	<5	0.1	198	<1	9428
97414	<5	< 0.1	106	3	2120

I HEREBY CERTIFY that the above results are those assays made by me upon the herein described samples :

Assayer

Rejects and pulps are retained for one month unless specific arrangements are made in advance.

To : **BIRCH MOUNTAIN MINERALS LTD.**
3100, 205 - 5th Avenue S.W.
Calgary, Alberta
T2P 2V7
ATTN : Val Pratico

File No : **3 9 2 9 7**
Date : July 25, 1997
Samples : Core
Project :
P.O.#

Certificate of Assay

Loring Laboratories Ltd.

629 Beaverdam Road, NE Calgary Alberta
Tel: (403)274-2777 Fax: (403)275-0541

Sample No.	Zn %
"Assay Analysis"	
97408	4.65

I HEREBY CERTIFY that the above results are those assays made by me upon the herein described samples :

Assayer

Rejects and pulps are retained for one month unless specific arrangements are made in advance.

To : **BIRCH MOUNTAIN MINERALS LTD.**
3100, 205 - 5th Avenue S.W.
Calgary, Alberta
T2P 2V7
ATTN : Val Pratico

File No : **39350**
Date : July 30, 1997
Samples : 23 DD Core
Project :
P.O.#

Certificate of Assay

Loring Laboratories Ltd.

629 Beaverdam Road, NE Calgary Alberta
Tel: (403)274-2777 Fax: (403)275-0541

Sample No.	ppb Au	ppm Ag	ppm Cu	ppm Pb	ppm Zn
117583	<5	0.90	769	6	79
117612	<5	2.20	439	1	>10000
117613	<5	0.30	258	4	435
117614	<5	0.10	170	4	475

I HEREBY CERTIFY that the above results are those assays made by me upon the herein described samples :

Assayer

Rejects and pulps are retained for one month unless specific arrangements are made in advance.

To : **BIRCH MOUNTAIN MINERALS LTD.**
3100, 205 - 5th Avenue S.W.
Calgary, Alberta
T2P 2V7
ATTN : Val Pratico

Certificate of Assay
Loring Laboratories Ltd.

629 Beaverdam Road, NE Calgary Alberta
Tel: (403)274-2777 Fax: (403)275-0541

File No : **39350-F**
Date : July 30, 1997
Samples :
Project :
P.O.#

Sample No.	Zn %
"Assay Analysis"	
117642	4.35

I HEREBY CERTIFY that the above results are those assays made by me upon the herein described samples :

Assayer

Rejects and pulps are retained for one month unless specific arrangements are made in advance.

To : **BIRCH MOUNTAIN MINERALS LTD.**
3100, 205 - 5th Avenue S.W.
Calgary, Alberta
T2P 2V7
ATTN : Val Pratico

Certificate of Assay

Loring Laboratories Ltd.

629 Beaverdam Road, NE Calgary Alberta
Tel: (403)274-2777 Fax: (403)275-0541

File No . **39340**
Date : July 30, 1997
Samples : 23 Core
Project .
P.O.#

A.A. F.A. A.A.

Sample No.	ppb Au	ppm Ag	ppm Cu	ppm Pb	ppm Zn
117514	50	17	3362	35	>10000
117515	8	4.7	807	41	>10000
117516	16	1.2	1170	6	>780
117517	<5	0.5	16	<1	194
117518	28	0.5	16	1	64
117519	<5	0.9	212	14	>1610
117920	<5	1.1	197	6	>10000
117521	<5	1.6	225	3	127
117522	5	4.4	386	105	>10000
117523	<5	10	654	98	>10000
117524	<5	4.3	2324	18	391

I HEREBY CERTIFY that the above results are those assays made by me upon the herein described samples :

Assayer

Rejects and pulps are retained for one month unless specific arrangements are made in advance.

To : **Birch MOuntain Minerals LTD.**
3100. 205 - 5th Avenue S.W.
Calgary, Alberta
T2P 2V7
ATTN : Val Prastico

File No : **3 9 3 4 0**
Date : 7/31/97
Samples :
Project :
P.O.#

Certificate of Assay

Loring Laboratories Ltd.

629 Beaverdam Road, NE Calgary Alberta
Tel: (403)274-2777 Fax: (403)275-0541

Sample No.	% Zn
"Assay Analyses"	
117514	18.18
117515	10.3
117520	1.25
117522	0.69
117523	13.36

I HEREBY CERTIFY that the above results are those assays made by me upon the herein described samples :

Assayer

Rejects and pulps are retained for one month unless specific arrangements are made in advance.

To : **BIRCH MOUNTAIN MINERALS LTD.**
3100, 205 - 5th Avenue S.W.
Calgary, Alberta
T2P 2V7
ATTN : Val Pratico

Certificate of Assay
Loring Laboratories Ltd.

629 Beaverdam Road, NE Calgary Alberta
Tel: (403)274-2777 Fax: (403)275-0541

File No : **39319**
Date : July 30, 1997
Samples : 28 Core
Project :
P.O.#

"CORRECTED"

Sample No.	ppb Au	ppm Ag	ppm Cu	ppm Pb	ppm Zn
"Geochemical Analyses"					
BMR97					
97410	7	1.1	38	70	157
97411	<5	0.8	25	33	137
97412	6	1.1	60	31	2887
97413	<5	0.4	16	16	413
97415	<5	0.5	68	15	5500
97416	<5	<0.1	26	10	4000
97417	<5	0.1	8	11	5800
97418	<5	0.5	49	11	2650
97419	<5	0.7	138	18	150
97420	<5	0.7	152	14	105
97421	15	4.0	1091	13	184
97422	<5	0.7	208	10	88
97423	<5	3.4	922	11	121
97424	30	0.3	225	9	82
97425	6	<0.1	90	10	67
117451	5	<0.1	58	8	74
117452	6	<0.1	55	10	41
117453	5	1.3	461	10	74
117454	<5	0.4	171	10	53
117455	<5	1.0	356	8	77
117456	<5	0.4	28	9	60
117526	<5	0.5	39	19	26
117527	<5	0.2	47	19	32
117528	<5	1.0	248	13	724
117529	8	0.7	69	21	48
117530	<5	0.3	6	19	60
117531	<5	0.8	47	7	38
117532	<5	1.0	180	11	225

I HEREBY CERTIFY that the above results are those assays made by me upon the herein described samples :

Assayer

Rejects and pulps are retained for one month unless specific arrangements are made in advance.

To : **BIRCH MOUNTAIN MINERALS LTD.**
3100, 205 - 5th Avenue S.W.
Calgary, Alberta
T2P 2V7
ATTN : Val Pratico

Certificate of Assay
Loring Laboratories Ltd.

629 Beaverdam Road, NE Calgary Alberta
Tel: (403)274-2777 Fax: (403)275-0541

File No : **39341**
Date : July 30, 1997
Samples : 23 Core
Project :
P.O.#

Sample No.	ppb Au	ppm Ag	ppm Cu	ppm Pb	ppm Zn
"Geochemical Analysis"					
117558	<5	2.3	1253	2	669
117559	8	1.2	1245	1	60
117560	<5	1.5	1373	<1	60
117561	22	1.4	1345	<1	1262
117562	44	0.8	1146	12	307
117565	16	1.1	1260	2	147
117566	38	1.9	2139	14	98
117567	22	1.3	1117	3	125

I HEREBY CERTIFY that the above results are those assays made by me upon the herein described samples :

Assayer

Rejects and pulps are retained for one month unless specific arrangements are made in advance.

To : **Birch Mountain Minerals LTD.**
31st Fl, 31000 Bow Valley SQ ii
205 - 5th Ave., S.W., Calgary Alta
T2P 2V7
ATTN : Val Pratico

File No : **39342**
Date : July 31,1997
Samples : 16
Project :
P.O.#

Certificate of Assay

Loring Laboratories Ltd.

629 Beaverdam Road, NE Calgary Alberta
Tel: (403)274-2777 Fax: (403)275-0541

Sample No.		F.A. ppb Au	ppm Ag	A.A. ppm Cu	ppm Pb	ppm Zn
"Geochemical Analyses"	A.A.					
117544		12	0.8	836	4	48
117545		<5	1.8	1068	7	120
117548		<5	1.9	1365	12	>10000
117549		<5	3.3	1426	7	176
117553		<5	2.3	1388	6	523
		%				
"Assay Analyses"		Zn				
117548		3.52				

I HEREBY CERTIFY that the above results are those assays made by me upon the herein described samples :

Assayer

Rejects and pulps are retained for one month unless specific arrangements are made in advance.

To : **Birch Mountain Minerals Ltd.**
31st fl, 3100, Bow Valley Sq II
205 - 5th Ave, Sw
T2P 2V7
ATTN : Val Pratico

File No . 39359
Date August 6/97
Samples : 14 D.D Core
Project :
P.O.#

Certificate of Assay
Loring Laboratories Ltd.

Sample No.	ppb Au (F.A.)	ppm Ag (F.A.)	ppm Cu (A.A.)	ppm Pb (A.A.)	ppm Zn (A.A.)
Geochemical Analyses					
117615	11	1.0	50	23	646
117616	<5	0.9	340	<1	1856
117617	38	0.5	167	5	>10000
117618	40	0.8	83	17	>10000
117619	8	0.5	116	16	>10000
117620	31	1.3	389	26	>10000
117621	<5	0.4	121	9	>10000
117622	5	0.5	502	7	>10000
117623	<5	0.3	37	17	>10000
117624	<5	0.3	14	12	>10000
117625	<5	0.2	26	32	8390
117635	<5	0.1	3	10	151
117637	84	<0.1	4	1	140
117638	29	0.1	6	7	176

I HEREBY CERTIFY that the above results are those assays made by me upon the herein described samples :

Assayer

Rejects and pulps are retained for one month unless specific arrangements are made in advance.

To : **Birch Mountain Minerals Ltd.**
31st fl, 3100. Bow Valley Sq II
205 - 5th Ave. Sw
T2P 2V7
ATTN : Val Pratico

File No . **39359**
Date : August 6/97
Samples : 14 D.D Core
Project :
P.O.#

Certificate of Assay
Loring Laboratories Ltd.

Sample No.	% Zn
"Assay Analyses"	
117617	3.13
117618	6.06
117619	3.84
117620	4.56
117621	5.94
117622	3.48
117623	4.10
117624	2.24

I HEREBY CERTIFY that the above results are those assays made by me upon the herein described samples :

Assayer

Rejects and pulps are retained for one month unless specific arrangements are made in advance.

To : **BIRCH MOUNTAIN MINERALS LTD.**
3100, 205 - 5th Avenue S.W.
Calgary, Alberta
T2P 2V7
ATTN : Val Pratico

File No : **39367**
Date : August 14, 1997
Samples : Rock/Core
Project :
P.O.#

Certificate of Assay

Loring Laboratories Ltd.

629 Beaverdam Road, NE Calgary Alberta
Tel: (403)274-2777 Fax: (403)275-0541

Sample No.	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
"Geochemical Analysis"					
117630	<5	0.9	62	8	> 10000
117953	<5	3.0	526	212	> 10000
117954	<5	0.7	118	5	518
117955	<5	2.0	288	47	2866
117956	<5	2.1	390	54	198
117976	170	0.8	17	7	6371
117978	8	1.6	688	7	3498
117979	<5	0.8	11	4	7078
117982	<5	1.3	398	3	1822
117983	<5	1.6	722	4	665
117984	<5	35.2	> 10000	3	860
117988	<5	20.7	4098	45	248
117990	<5	15.2	2973	9	216
117991	<5	5.3	2015	1	55
117992	<5	3.7	2368	1	78
117993	<5	1.2	752	11	71
117994	<5	1.2	2030	1	75
117995	<5	1.3	2000	5	86
117996	<5	1.4	1724	4	58
117997	<5	0.9	520	8	74
117998	<5	0.8	65	6	70

I HEREBY CERTIFY that the above results are those assays made by me upon the herein described samples :

Assayer

Rejects and pulps are retained for one month unless specific arrangements are made in advance.

To : **BIRCH MOUNTAIN MINERALS LTD.**
3100, 205 - 5th Avenue S.W.
Calgary, Alberta
T2P 2V7
ATTN : Val Pratico

File No : **39367**
Date : August 14, 1997
Samples : Rock/Core
Project :
P.O.#

Certificate of Assay

Loring Laboratories Ltd.

629 Beaverdam Road, NE Calgary Alberta
Tel: (403)274-2777 Fax: (403)275-0541

Sample No.	Cu %	Zn %
"Assay Analysis"		
117630	---	6.29
117953	---	4.80
117984	1.13	---

I HEREBY CERTIFY that the above results are those assays made by me upon the herein described samples :

Assayer

Rejects and pulps are retained for one month unless specific arrangements are made in advance.

To : **BIRCH MOUNTAIN MINERALS LTD.**
3100, 205 - 5th Avenue S.W.
Calgary, Alberta
T2P 2V7
ATTN : Val Pratico

File No : **3 9 3 5 0-1**
Date : September 5, 1997
Samples : Core
Project :
P.O.#

Certificate of Assay

Loring Laboratories Ltd.

629 Beaverdam Road, NE Calgary Alberta
Tel: (403)274-2777 Fax: (403)275-0541

Sample No.	Zn %
"Assay Analysis"	
117612	4.60
117653	1.25

I HEREBY CERTIFY that the above results are those assays made by me upon the herein described samples :

Assayer

Rejects and pulps are retained for one month unless specific arrangements are made in advance.

Loring Laboratories Ltd.

629 Beaverdam Road N E.,
Calgary Alberta T2K 4W7
Tel: 274-2777 Fax: 275-0541

TO BIRCH MOUNTAIN MINERALS LTD.
3100 Bow Valley Square 2
205 - 5th Ave S W.,
Calgary, Alberta
T2P 2V7
Attn Val Pratico

File # 39211

DATE: July 7, 1997

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
AS-97-D3A	1	1 31	20	<1	3	144	7	0.51	0.9	41	45	29	2.57	0.22	35	0.84	1149	2	0.01	53	0.089	23	1	6	5	0 07	<2	25	<1	130
AS-97-D3A(N)	1	0 80	<1	<1	<1	103	<1	0 01	0.1	110	100	102	0.01	0 01	<1	0.01	98	<1	0.02	112	0.011	<1	<1	17	21	0 01	2	44	<1	104
AS-97-D3B	1	0 71	<1	<1	<1	100	<1	0 01	0.1	100	101	101	0 01	0.01	<1	0.01	101	<1	0.01	100	0.010	<1	<1	1	38	0 01	2	50	<1	101
AS-97-D3E	1	0 43	<1	<1	<1	99	<1	0.01	0.1	97	95	96	0.01	0.01	<1	0.01	95	<1	0 01	96	0.010	<1	<1	12	37	0 01	2	45	<1	8
AS-97-D4B(1)	<1	2 53	<1	<1	<1	25	33	1.36	9.2	101	32	444	10.15	0 12	<1	0.38	498	6	0.02	75	0 040	115	22	5	5	0.02	<2	41	<1	649
AS-97-D5A	1	0 13	75	<1	211	10	15	1.69	7.5	84	8	228	5.85	0.01	3	0.11	410	1	0.01	43	0.007	21	4	1	3	<0 01	<2	2	<1	516
AS-97-D5B	2	0.27	66	<1	188	6	19	1.32	17.4	136	13	353	7.13	0.11	2	0.05	744	2	0.01	56	0.006	16	1	<1	2	<0 01	<2	<1	<1	778
AS-97-D5D	2	0 53	37	<1	<1	50	3	9.28	0.2	17	9	60	1.56	0.03	9	0.30	2452	1	0.02	9	0.024	10	11	6	1	<0.01	<2	2	2	21
AS-97-D6A	<1	0.30	<1	<1	89	14	5	2.51	4.8	13	24	37	1.52	0.02	4	0.33	1589	1	0.01	10	0.008	10	2	1	1	<0.01	<2	2	1	407
AS-97-D6B	1	0.37	50	<1	<1	15	165	0.51	34.9	120	18	1328	4.08	0 12	<1	0.05	1662	5	0.01	29	0.008	10	8	1	1	<0.01	<2	6	<1	1015
AS-97-D9A	2	0 28	<1	<1	<1	18	57	3.06	11.7	130	10	791	3.73	0.03	<1	0.07	421	1	0.01	33	0.009	19	1	2	1	<0.01	<2	3	<1	674
AS-97-D10A	3	0.03	<1	<1	<1	13	67	0.04	31.4	71	5	1293	4.23	0.80	<1	0.03	1179	1	0.01	32	<0.005	<1	1	<1	2	<0 01	<2	3	<1	1001
AS-97-D11	<1	0 24	<1	<1	<1	2	8	0.03	15.2	13	1	133	2.65	0 02	<1	0.01	105	<1	0.03	5	<0.005	1	<1	<1	1	<0 01	<2	<1	<1	781
AS-97-D12	<1	0 16	<1	<1	<1	2	7	0.04	1.5	12	1	116	2.71	0.03	<1	0.02	89	<1	0.01	4	<0.005	2	<1	2	2	<0.01	<2	<1	<1	92
AS-97-D13	<1	0 18	<1	<1	<1	2	6	0.03	1.3	10	<1	87	2.24	0.01	<1	0.02	68	<1	0.01	4	<0.005	2	<1	<1	2	<0.01	<2	<1	1	10
AS-97-L14	<1	0.15	<1	<1	<1	2	6	0.03	24.0	10	1	106	2.11	0.02	<1	0.01	83	<1	0.01	3	<0.005	1	1	<1	2	<0.01	<2	<1	1	921
AS-97-L15	2	0 11	<1	<1	<1	4	13	0.03	1.5	17	1	170	3.23	0.03	<1	0.01	141	1	0.04	6	<0.005	<1	0	1	2	<0.01	<2	1	<1	184
AS-97-R002	<1	2 70	1	<1	<1	61	5	2 00	1.6	6	35	34	1.56	0.05	3	0.38	192	2	0.01	8	0.057	24	5	4	3	0.02	<2	51	1	206
AS-97-R004	<1	1 09	<1	<1	7	24	5	0.63	0.1	11	62	38	0.57	0 03	1	0.39	294	1	0.01	8	0.035	21	3	1	3	0.03	<2	27	2	14
AS-97-R005	<1	1 04	<1	<1	3	190	1	1.03	0.2	4	108	6	0.82	0.10	3	0.19	164	1	0.01	4	0.036	15	2	2	4	0.03	<2	<1	1	377
AS-97-R006	<1	2 28	<1	<1	3	119	6	1.34	0.1	13	52	81	1.71	0.12	2	0.44	235	2	0.01	6	0.058	20	2	4	2	0 06	<2	46	1	11
AS-97-R006B	<1	0 37	<1	<1	10	14	5	0.21	0.1	9	11	2	1.48	0 06	1	0.22	35	1	0.01	11	0.059	13	2	1	1	0 01	<2	13	2	12
AS-97-R007	<1	0 22	2	<1	16	17	9	0.14	0.2	15	8	21	2.09	0.05	1	0.08	13	2	0.01	29	0.124	12	3	5	1	0.01	<2	4	1	19
AS-97-R008	<1	1.53	<1	<1	7	108	4	0.24	0 1	12	31	42	1.37	1.00	<1	1.06	381	1	0.01	7	0.055	10	1	1	1	0.08	<2	32	1	16
AS-97-R009	<1	1.82	<1	<1	<1	187	5	0.40	0.1	4	16	22	1.59	0.03	1	0.24	91	1	0.01	8	0.054	19	1	10	2	0.03	<2	23	2	21

Loring Laboratories Ltd.

629 Beaverdam Road N.E.,
Calgary Alberta T2K 4W7
Tel: 274-2777 Fax: 275-0541

TO BIRCH MOUNTAIN MINERALS LTD
3100, Bow Valley Square 2
205 - 5th Ave S.W.,
Calgary, Alberta
T2P 2V7
Attn Val Pratico

File: # 39211

DATE: July 7, 1997

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
AS-97-R010	1	0.11	<1	<1	<1	16	85	0.01	1.7	49	8	1069	3.98	0.03	<1	0.01	11	<1	0.01	48	<0.005	<1	5	<1	<1	0.01	<2	2	<1	11
AS-97-R011	<1	0.47	<1	<1	<1	5	25	0.13	0.6	29	6	73	3.18	0.04	<1	0.04	90	<1	0.01	21	0.042	-9	3	<1	1	<0.01	<2	2	<1	9
DT-97-R001	<1	1.35	<1	<1	9	82	8	0.82	0.2	1	35	9	2.26	0.09	3	0.16	226	2	0.01	6	0.022	78	2	1	1	0.01	<2	<1	3	5
DT-97-R002	<1	0.44	357	<1	<1	17	14	0.50	0.4	17	31	407	2.65	0.02	1	0.25	24	1	0.01	21	0.036	51	21	1	1	0.01	<2	<1	1	12
DT-97-R003	<1	1.15	2	<1	<1	97	4	0.42	0.1	11	40	92	1.39	0.35	1	0.61	68	2	0.01	8	0.055	15	4	2	1	0.06	<2	51	2	19
DT-97-R004	<1	1.18	29	<1	5	58	3	4.07	0.1	10	22	78	0.84	0.47	8	1.71	1906	1	0.04	12	0.054	87	15	1	12	0.01	<2	5	2	112
DT-97-R006	<1	0.55	2	<1	<1	3	4	0.22	0.1	5	3	5	1.38	0.01	1	0.09	6	1	0.01	9	0.058	14	3	4	1	<0.01	<2	1	3	19
DT-97-R007	<1	0.44	3	<1	5	6	33	2.57	0.8	13	9	8	2.53	0.01	2	0.07	334	2	0.02	11	0.031	8	6	<1	2	<0.01	<2	1	3	120
DT-97-R008	<1	0.21	8	<1	7	18	6	4.43	0.2	4	29	54	1.61	0.02	6	0.93	1510	2	0.02	8	0.046	2	11	1	2	0.01	<2	<1	3	11
DT-97-R009	<1	0.86	2	<1	<1	177	5	0.22	0.1	29	46	51	1.62	0.06	<1	0.22	227	1	0.02	4	0.040	17	2	1	3	0.03	<2	<1	<1	10
DT-97-R010	<1	2.03	<1	<1	13	191	5	1.12	0.1	9	27	2	1.68	0.04	2	0.51	126	1	0.04	6	0.030	32	3	4	3	0.01	<2	2	2	8
DT-97-R011	<1	1.37	<1	<1	12	108	3	0.23	0.1	7	30	5	1.32	0.66	4	0.71	159	1	0.05	6	0.053	7	1	2	2	0.06	<2	32	2	14
DT-97-R012	<1	1.63	<1	<1	<1	49	4	0.55	0.1	3	69	39	1.29	0.56	2	0.41	127	2	0.01	4	0.046	7	3	3	4	0.02	<2	2	3	16
DT-97-R013	<1	0.26	<1	<1	3	20	34	0.13	1.0	3	6	45	3.50	0.20	<1	0.05	23	<1	0.01	19	0.004	332	3	<1	<1	0.02	<2	6	3	12
CK-AS-97-D10A	2	0.04	<1	<1	<1	17	69	0.03	32.0	69	5	1324	3.84	0.80	<1	0.03	1258	1	0.01	33	<0.005	<1	1	<1	<1	<0.01	<2	3	<1	1056
DT-97-R014	<1	1.66	22	<1	<1	74	6	0.22	0.2	4	122	41	1.66	0.17	3	0.56	155	16	0.03	19	0.054	11	8	1	5	0.01	<2	63	2	54
DT-97-R015	<1	1.99	14	<1	<1	117	9	0.56	0.2	6	92	68	1.92	0.53	2	0.80	52	11	0.07	24	0.043	18	7	2	6	0.05	<2	86	2	54
DT-97-R016	<1	0.70	<1	<1	3	63	2	0.50	0.1	3	55	26	0.98	0.10	4	0.23	204	2	0.05	3	0.021	10	1	3	1	0.02	<2	7	3	147
DT-97-R018	<1	1.45	<1	<1	15	180	3	0.46	0.1	11	229	6	1.19	0.61	<1	0.96	73	1	0.05	112	0.043	9	3	2	5	0.07	<2	8	1	17

Note 0.500 Gram sample is digested with Aqua Regia at 95 C for one hour and bulked to 10 ml with distilled water.
Partial dissolution for Al, B, Ba, Ca, Cr, Fe, K, La, Mg, Mn, Na, P, Sr, Ti, and W.

Loring Laboratories Ltd.

629 Beaverdam Road N.E.,
Calgary Alberta T2K 4W7
Tel: 274-2777 Fax: 275-0541

File # 39258

DATE: July 22, 1997

TO BIRCH MOUNTAIN MINERALS LTD.
31 st Floor, Bow Valley Square II
3100, 205 - 5th Ave S W ,
Calgary, Alberta
T2P 2V7
Attn Val Pratico

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
BJ 97 - T120	<0.5	1.34	4	<1	10	218	4	0.34	2	9	137	28	1.83	0.26	13	0.47	596	2	0.02	28	0.054	17	3	24	20	0.05	<1	22	<1	81
BJ 97 - T003 CK	<0.5	0.72	2	<1	14	201	1	0.19	1	8	114	10	1.36	0.11	10	0.26	843	7	0.02	16	0.038	11	2	13	11	0.01	<1	2	<1	10
BJ 97 - T121	<0.5	1.33	5	<1	8	396	3	0.29	2	9	94	25	1.83	0.20	11	0.47	779	1	0.02	26	0.050	17	2	21	18	0.04	<1	27	<1	95
BJ 97 - T122	<0.5	1.35	3	<1	8	212	2	0.42	2	9	135	25	1.78	0.22	14	0.46	575	2	0.02	26	0.052	17	2	26	19	0.05	<1	21	<1	97
BJ 97 - T123	<0.5	1.14	3	<1	9	196	3	0.26	2	8	93	24	1.70	0.19	9	0.43	687	1	0.02	23	0.048	16	3	18	16	0.04	<1	22	<1	64
BJ 97 - T124	<0.5	1.31	5	<1	15	217	2	0.40	2	8	151	27	1.78	0.23	12	0.46	547	2	0.03	25	0.052	18	3	24	18	0.05	<1	20	<1	72
BJ 97 - T125	<0.5	1.23	3	<1	12	224	2	0.31	2	8	121	24	1.70	0.21	10	0.43	556	1	0.03	23	0.052	16	3	29	18	0.04	<1	20	<1	64
BJ 97 - T126	<0.5	0.71	3	<1	12	121	1	0.51	1	4	74	19	1.09	0.09	12	0.24	331	1	0.02	14	0.034	8	2	28	6	0.02	<1	10	<1	14
BJ 97 - T127	<0.5	1.03	4	<1	11	215	2	0.31	2	8	98	23	1.70	0.17	10	0.40	603	1	0.03	21	0.044	15	2	24	16	0.04	<1	19	<1	48
BJ 97 - T128	<0.5	1.13	6	1	12	232	2	0.34	2	8	147	22	1.69	0.19	10	0.40	591	2	0.03	23	0.044	15	3	37	15	0.04	<1	20	<1	60
BJ 97 - T129	<0.5	1.10	5	<1	11	221	1	0.33	2	7	110	22	1.67	0.19	11	0.41	572	1	0.02	22	0.044	14	3	28	15	0.04	<1	21	<1	60
BJ 97 - T130	<0.5	1.27	5	<1	8	260	2	0.40	2	8	154	22	1.72	0.21	13	0.43	436	2	0.03	23	0.046	16	3	31	16	0.04	<1	19	<1	89
BJ 97 - T131	<0.5	1.16	5	<1	9	238	3	0.40	2	8	106	22	1.70	0.20	10	0.44	625	1	0.04	21	0.050	14	2	29	17	0.04	<1	24	<1	49
BJ 97 - T132	<0.5	1.01	5	<1	9	193	2	0.34	2	6	145	18	1.85	0.12	12	0.36	321	2	0.02	21	0.052	15	3	22	16	0.04	<1	17	<1	77
BJ 97 - T133	<0.5	0.99	6	1	10	183	2	0.29	2	7	97	17	1.73	0.14	10	0.40	617	1	0.02	21	0.044	14	2	17	14	0.03	<1	18	<1	137
BJ 97 - T134	<0.5	1.06	7	<1	11	222	3	0.48	4	8	147	21	1.70	0.14	14	0.39	1004	2	0.02	25	0.050	18	2	25	14	0.03	<1	17	<1	222
BJ 97 - T135	<0.5	0.92	7	<1	12	184	2	0.24	2	8	123	16	1.69	0.15	9	0.38	966	1	0.02	22	0.040	14	2	16	15	0.03	<1	16	<1	111
BJ 97 - T136	<0.5	1.11	9	<1	11	208	3	0.43	4	9	168	21	1.87	0.16	14	0.41	1353	2	0.02	27	0.050	21	3	23	15	0.03	<1	16	<1	215
BJ 97 - T137	<0.5	1.12	5	<1	10	187	2	0.39	3	8	132	20	1.68	0.13	14	0.39	822	1	0.02	24	0.052	20	3	21	13	0.03	<1	16	<1	219

Loring Laboratories Ltd.

629 Beaverdam Road N.E.,
Calgary Alberta T2K 4W7
Tel: 274-2777 Fax: 275-0541

File: # 39258

DATE: July 22, 1997

TO BIRCH MOUNTAIN MINERALS LTD
31 st Floor, Bow Valley Square II
3100, 205 - 5th Ave S.W.,
Calgary, Alberta
T2P 2V7
Attn Val Pratico

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
BJ 97 - T138	<0 5	1 18	8	<1	9	210	2	0.43	4	9	101	21	1.76	0.12	14	0.40	1123	2	0.02	25	0.052	20	3	23	14	0.03	<1	20	<1	233
BJ 97 - T139	<0 5	1 08	5	<1	12	168	3	0.31	2	8	135	18	1.67	0.14	11	0.39	626	1	0.02	22	0.044	16	3	19	14	0.03	<1	17	<1	123
BJ 97 - T140	<0 5	0 96	7	<1	8	218	2	0.33	2	7	122	16	1.53	0.12	11	0.34	692	2	0.02	20	0.040	15	2	22	11	0.03	<1	14	<1	130
BJ 97 - T141	<0 5	0.89	8	1	9	189	3	0.31	2	8	111	15	1.65	0.12	10	0.34	983	1	0.02	20	0.038	15	2	26	13	0.03	<1	17	<1	102
BJ 97 - T142	<0 5	1.03	6	<1	12	258	3	0.30	2	7	112	15	1.58	0 13	11	0.36	663	2	0.02	20	0.040	15	2	23	13	0.03	<1	18	<1	127
BJ 97 - T143	<0 5	1.18	7	<1	11	220	2	0 45	3	7	145	19	1.65	0.15	12	0.40	741	1	0 03	22	0.048	15	3	27	12	0.03	<1	19	<1	114
BJ 97 - T144	<0 5	1 18	7	<1	13	233	2	0 47	2	7	140	22	1.66	0.14	15	0.40	543	2	0.03	22	0.050	19	2	30	13	0.04	<1	21	<1	143
BJ 97 - T145	<0 5	1 05	6	<1	8	197	2	0.41	2	7	139	17	1.59	0.14	12	0.38	648	1	0.03	20	0.044	15	2	25	12	0.03	<1	17	<1	139
BJ 97 - T146	<0 5	1.02	6	<1	7	198	2	0.43	2	6	162	17	1.52	0.13	11	0.36	537	2	0.03	20	0.042	14	2	25	11	0.03	<1	14	<1	129
BJ 97 - T147	<0.5	1 10	6	<1	7	167	2	0.42	2	6	153	17	1.60	0.13	12	0.38	485	1	0 03	20	0.044	13	2	26	13	0.03	<1	16	<1	96
BJ 97 - T148	<0 5	1.18	5	<1	9	232	2	0.34	2	7	143	22	1.65	0.19	10	0.39	579	2	0 03	20	0.042	14	3	30	12	0.04	<1	18	<1	50
BJ 97 - T149	<0 5	1.22	4	<1	4	173	2	0.34	2	7	106	22	1.58	0.17	10	0.39	513	1	0.03	21	0.044	14	2	30	11	0.04	<1	21	<1	69
BJ 97 - T150	<0.5	1 34	4	<1	6	182	2	0.46	2	7	123	26	1.60	0.17	15	0.42	485	2	0.02	22	0.052	16	3	31	11	0.04	<1	21	<1	94
BJ 97 - T151	<0 5	1 06	19	<1	6	219	3	0.25	2	10	124	18	1.65	0.16	8	0.37	1122	1	0.02	27	0.036	9	2	16	12	0.03	<1	20	<1	23
BJ 97 - T152	<0.5	1 11	15	<1	6	216	3	0.28	1	9	116	19	1.64	0.17	8	0.40	820	2	0.02	27	0.040	8	2	17	13	0.03	<1	20	<1	15
BJ 97 - T153	<0 5	0 92	20	1	8	201	3	0.20	1	8	107	32	1.51	0.21	6	0.40	837	2	0 02	27	0.036	112	3	13	26	0.04	2	22	<1	8
BJ 97 - T154	5 2	0 93	26	1	12	172	2	0.29	1	9	97	20	1.59	0.16	7	0.38	762	1	0.02	31	0.040	2670	7	16	23	0.03	3	21	<1	4
BJ 97 - T155	<0.5	1 08	22	1	8	263	2	0.34	1	10	128	22	1.67	0.20	9	0.42	942	3	0.02	33	0.046	18	3	20	25	0.04	<1	23	<1	5
BJ 97 - T156	<0 5	0 87	23	1	9	424	1	0.19	1	9	84	19	1.49	0.17	7	0.37	1092	8	0.02	28	0.034	40	3	14	23	0.03	<1	22	<1	7

Loring Laboratories Ltd.

629 Beaverdam Road N.E.,
Calgary Alberta T2K 4W7
Tel: 274-2777 Fax 275-0541

File: # 39258

DATE: July 22, 1997

TO: BIRCH MOUNTAIN MINERALS LTD.
31 st Floor Bow Valley Square II
3100, 205 - 5th Ave S.W.,
Calgary, Alberta
T2P 2V7
Attn Val Pratico

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
BJ 97 - T157	<0.5	1.13	29	<1	4	254	1	0.52	2	11	150	30	1.66	0.16	12	0.40	1065	2	0.02	50	0.054	15	4	27	25	0.03	<1	19	<1	15
BJ 97 - T158	<0.5	0.98	24	<1	6	185	2	0.25	1	10	91	19	1.62	0.16	8	0.39	840	1	0.02	29	0.042	120	3	15	22	0.03	<1	23	<1	5
BJ 97 - T159	<0.5	0.96	21	<1	8	213	2	0.26	1	9	89	19	1.51	0.16	8	0.39	752	1	0.02	29	0.042	12	2	16	23	0.03	<1	23	<1	6
BJ 97 - T143 CK	<0.5	1.02	9	<1	13	264	2	0.43	2	8	139	21	1.49	0.16	11	0.40	769	1	0.04	25	0.048	19	4	26	16	0.04	<1	19	<1	92
BJ 97 - T160	<0.5	0.89	19	<1	9	196	2	0.23	1	8	124	20	1.50	0.19	6	0.38	796	3	0.02	27	0.036	31	3	14	24	0.03	<1	20	<1	7
BJ 97 - T161	<0.5	0.92	9	<1	6	150	2	0.24	1	8	84	19	1.68	0.16	11	0.41	1054	1	0.03	31	0.042	52	2	14	28	0.03	<1	17	<1	7
BJ 97 - T162	<0.5	0.97	15	<1	9	277	3	0.22	1	12	107	31	2.08	0.18	14	0.46	2682	2	0.01	47	0.048	16	1	13	33	0.01	<1	15	<1	1
BJ 97 - T163	<0.5	0.93	14	<1	8	226	4	0.23	1	11	121	29	2.12	0.17	13	0.44	2346	2	0.01	43	0.048	28	1	14	32	0.01	<1	12	<1	3
BJ 97 - T164	<0.5	0.85	16	<1	11	242	3	0.23	1	12	90	29	2.26	0.15	12	0.41	3324	1	0.01	49	0.048	13	2	14	33	0.01	<1	13	<1	2
BJ 97 - T165	<0.5	0.79	13	<1	8	206	2	0.18	1	11	106	29	1.96	0.15	11	0.40	2746	1	0.01	47	0.044	36	1	12	28	0.01	<1	11	<1	3
BJ 97 - T166	<0.5	0.82	11	<1	7	223	2	0.17	1	11	92	30	1.88	0.17	12	0.44	2832	2	0.01	52	0.044	12	2	11	30	0.01	<1	13	<1	6
BJ 97 - T167	<0.5	0.84	22	<1	7	274	2	0.26	1	11	148	30	2.07	0.18	12	0.41	3668	2	0.01	54	0.046	25	2	15	31	0.01	<1	9	<1	9
BJ 97 - T168	<0.5	0.83	12	<1	7	316	4	0.18	1	12	101	29	1.99	0.16	12	0.41	4038	1	0.01	61	0.044	13	2	12	29	0.01	<1	14	<1	8
BJ 97 - T169	<0.5	0.88	13	<1	14	300	3	0.30	1	12	181	28	2.06	0.18	12	0.40	3644	1	0.01	55	0.054	33	3	15	28	0.01	<1	6	<1	9
BJ 97 - T171	<0.5	0.81	10	<1	5	272	2	0.18	2	12	72	25	1.79	0.13	12	0.41	4476	1	0.01	61	0.044	11	1	11	27	0.01	<1	14	<1	10
BJ 97 - T172	<0.5	0.79	14	<1	8	294	3	0.18	2	13	81	27	1.85	0.13	11	0.37	4750	2	0.01	60	0.040	18	2	11	26	0.01	<1	13	<1	2
BJ 97 - T173	<0.5	0.81	17	<1	9	131	2	0.23	2	5	129	16	1.34	0.12	13	0.29	597	1	0.02	28	0.028	23	2	12	25	0.02	<1	12	<1	5
BJ 97 - T174	<0.5	0.77	12	<1	11	112	<1	0.20	1	4	106	12	1.32	0.15	10	0.31	370	1	0.03	20	0.026	10	3	11	25	0.03	<1	15	<1	9
BJ 97 - T175	<0.5	0.84	13	<1	10	112	2	0.23	1	5	123	14	1.33	0.15	9	0.30	441	5	0.04	24	0.026	17	2	13	26	0.03	<1	14	<1	7

Loring Laboratories Ltd.

629 Beaverdam Road N.E.,
Calgary Alberta T2K 4W7
Tel: 274-2777 Fax: 275-0541

File: # 39258

DATE July 22, 1997

TO: BIRCH MOUNTAIN MINERALS LTD
31 st Floor Bow Valley Square II
3100, 205 - 5th Ave S W
Calgary, Alberta
T2P 2V7
Attn: Val Pratico

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
BJ 97 - T176	<0.5	0 77	13	<1	10	125	2	0 19	1	5	113	13	1.34	0 15	11	0 30	387	2	0 03	23	0.024	11	2	11	26	0.03	<1	14	<1	8
BJ 97 - T177	<0 5	0 78	13	<1	11	106	2	0 22	1	5	104	13	1.25	0.14	8	0.29	544	1	0 04	20	0.026	17	2	13	23	0.02	<1	15	<1	8
BJ 97 - T178	<0 5	0 73	13	<1	9	161	2	0 21	1	5	114	13	1.32	0.13	12	0 28	522	1	0 03	20	0.026	12	3	12	25	0.02	<1	13	<1	6
BJ 97 - T179	<0 5	0.83	19	<1	10	262	3	0.24	2	6	142	17	1.45	0.13	16	0.29	671	3	0.02	34	0.028	17	3	13	27	0.02	<1	13	<1	2
BJ 97 - T180	<0 5	0.80	10	<1	8	207	2	0 22	1	5	103	13	1.27	0.14	9	0 30	442	2	0 04	22	0.026	9	2	13	24	0 02	<1	15	<1	7
BJ 97 - T181	<0.5	0.72	13	<1	7	260	1	0.17	1	4	128	13	1.19	0 13	8	0.27	369	1	0.03	19	0.022	17	2	11	21	0.02	<1	9	<1	7
BJ 97 - T182	<0 5	0 80	23	<1	11	136	1	0 19	1	5	117	15	1.34	0.14	10	0.30	446	2	0.03	22	0 026	16	2	11	25	0.03	<1	14	<1	4
BJ 97 - T183	<0 5	0.77	23	<1	10	109	1	0.18	1	5	102	14	1.44	0.14	14	0.32	421	1	0 03	25	0.026	13	1	10	30	0.03	<1	17	2	3
BJ 97 - T184	<0 5	0.76	16	<1	8	101	1	0.19	1	4	83	12	1.21	0.14	7	0.28	385	1	0.03	18	0.022	15	2	11	23	0.02	<1	15	<1	7
BJ 97 - T185	<0 5	0 95	22	<1	8	116	2	0.28	1	5	91	14	1.40	0.19	8	0.37	439	2	0.05	21	0.030	11	1	14	30	0.04	<1	21	<1	6
BJ 97 - T186	<0 5	0 76	22	<1	7	89	3	0.19	1	5	113	13	1.29	0.14	10	0 29	361	2	0 03	19	0.024	14	3	10	25	0.03	<1	13	2	6
BJ 97 - T187	<0.5	0.79	25	<1	11	137	2	0.20	1	5	117	15	1.57	0.14	18	0 34	363	1	0.03	24	0.028	16	1	11	34	0.04	<1	18	9	4
BJ 97 - T188	<0.5	0.76	23	<1	11	426	3	0.18	1	4	120	13	1.27	0.14	10	0.28	321	2	0.03	19	0.024	25	2	13	22	0.02	<1	11	1	5
BJ 97 - T189	<0 5	0 83	26	<1	10	470	2	0.22	1	5	99	13	1.39	0.15	12	0.33	437	1	0.03	21	0.028	17	2	14	28	0.03	<1	17	2	4
BJ 97 - T190	<0 5	0 86	36	<1	10	135	2	0 20	1	5	101	16	1.36	0.14	14	0.32	398	1	0 02	21	0 028	15	2	13	22	0.03	<1	16	2	3
BJ 97 - T191	<0.5	2 99	34	4	14	241	5	0.78	2	10	95	41	1.73	0.32	27	0.47	707	2	0.06	32	0.082	17	7	42	39	0.06	<1	43	<1	87
BJ 97 - T192	1 1	2 62	93	<1	9	288	5	0 73	3	17	79	45	2.15	0.18	34	0.45	1313	3	0.02	42	0.062	44	8	42	36	0.03	<1	57	<1	94
BJ 97 - T193	1.3	2.91	64	<1	7	288	5	0.91	3	11	62	50	1.99	0.20	41	0.48	593	2	0.02	37	0.074	35	7	51	34	0.03	<1	50	<1	88
BJ 97 - T194	0 9	2.29	45	<1	6	229	4	0.95	3	10	58	45	1.64	0.15	43	0.40	468	1	0.02	28	0.064	25	6	49	29	0.02	<1	38	<1	77

Loring Laboratories Ltd.

629 Beaverdam Road N.E.,
Calgary Alberta T2K 4W7
Tel: 274-2777 Fax: 275-0541

File: # 39258

DATE: July 22, 1997

TO BIRCH MOUNTAIN MINERALS LTD.
31 st Floor, Bow Valley Square II
3100, 205 - 5th Ave S.W.,
Calgary, Alberta
T2P 2V7
Attn Val Pratico

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
BJ 97 - T195	<0.5	0.86	18	1	10	149	1	0.44	1	4	154	15	1.24	0.13	12	0.30	230	3	0.03	15	0.020	21	3	20	19	0.03	<1	15	<1	2
BJ 97 - T168 CK	<0.5	0.80	14	1	7	301	4	0.19	1	12	97	28	2.02	0.15	11	0.41	3990	1	0.01	61	0.044	13	3	12	31	0.01	<1	13	<1	9
BJ 97 - T196	<0.5	1.24	15	1	4	95	3	0.34	1	6	79	13	1.39	0.16	10	0.38	350	1	0.05	15	0.034	35	2	19	16	0.03	<1	24	<1	33
BJ 97 - T197	<0.5	0.88	2	1	2	75	1	0.19	1	3	108	11	0.83	0.09	9	0.24	107	2	0.02	12	0.024	11	2	10	9	0.02	<1	9	<1	6
BJ 97 - T198	<0.5	0.88	18	1	4	79	1	0.29	1	4	165	13	1.10	0.09	23	0.23	197	3	0.03	14	0.028	12	2	15	12	0.02	<1	5	<1	3
BJ 97 - T199	<0.5	1.02	22	1	4	102	2	0.37	1	5	160	17	1.29	0.12	17	0.29	338	1	0.04	16	0.030	14	4	18	13	0.02	<1	11	<1	3
JC 97 - T001	<0.5	1.07	10	<1	4	135	2	0.52	1	5	105	20	1.08	0.10	19	0.28	273	2	0.04	17	0.036	11	2	24	12	0.02	<1	13	<1	8
JC 97 - T002	<0.5	1.18	8	<1	4	171	2	0.46	1	7	109	17	1.47	0.12	10	0.38	403	2	0.03	20	0.048	14	3	22	16	0.04	<1	24	<1	6
JC 97 - T003	<0.5	1.71	7	1	5	226	5	0.49	1	8	74	24	1.63	0.13	10	0.57	410	1	0.05	23	0.050	17	3	28	19	0.05	<1	39	<1	4
JC 97 - T004	<0.5	2.00	10	1	10	215	5	0.73	1	9	83	23	1.68	0.21	10	0.54	519	1	0.06	24	0.086	15	5	32	37	0.08	<1	40	<1	1
JC 97 - T005	<0.5	1.87	6	1	9	191	4	0.64	1	7	61	22	1.47	0.19	9	0.53	326	1	0.06	21	0.072	14	4	28	32	0.08	<1	36	<1	3
JC 97 - T006	<0.5	1.96	11	1	5	225	4	0.66	1	9	72	25	1.78	0.15	10	0.65	338	1	0.06	24	0.054	16	4	35	20	0.06	<1	48	<1	1
JC 97 - T007	<0.5	1.80	7	1	3	237	4	0.60	1	9	63	20	1.66	0.11	10	0.59	804	1	0.07	22	0.060	17	2	36	18	0.05	<1	42	<1	1
JC 97 - T008	<0.5	1.40	10	1	4	219	3	0.63	1	8	80	16	1.47	0.10	9	0.43	1227	1	0.09	16	0.040	14	3	48	15	0.03	<1	31	<1	7
JC 97 - T009	<0.5	1.81	12	1	5	267	4	0.80	1	13	106	28	1.70	0.17	12	0.63	1517	1	0.08	24	0.052	16	5	47	21	0.06	<1	47	<1	2
JC 97 - T010	<0.5	1.95	12	2	4	320	3	0.83	1	10	114	30	1.75	0.19	10	0.56	1433	1	0.17	20	0.048	15	4	97	18	0.04	<1	40	<1	6
JC 97 - T011	<0.5	1.48	8	1	5	241	3	0.53	1	9	73	23	1.60	0.12	12	0.49	582	1	0.03	22	0.054	16	2	39	18	0.04	<1	34	<1	2
JC 97 - T012	<0.5	1.31	11	1	7	138	4	0.34	1	7	147	17	1.57	0.14	8	0.44	443	2	0.05	23	0.038	12	4	18	15	0.06	<1	27	<1	7
JC 97 - T013	<0.5	1.50	7	<1	2	188	2	0.39	1	8	84	24	1.68	0.13	13	0.47	394	1	0.02	24	0.056	24	3	26	18	0.05	<1	32	<1	74

Loring Laboratories Ltd.

629 Beaverdam Road N.E.,
Calgary Alberta T2K 4W7
Tel: 274-2777 Fax: 275-0541

File # 39258

DATE: July 22, 1997

TO: BIRCH MOUNTAIN MINERALS LTD
31 st Floor Bow Valley Square II
3100, 205 - 5th Ave S.W.
Calgary, Alberta
T2P 2V7
Attn Val Pratico

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
JC 97 - T014	0.9	1.66	17	1	4	89	1	0.69	1	5	86	52	0.96	0.08	51	0.24	381	1	0.03	16	0.052	17	4	28	12	0.01	<1	11	<1	3
JC 97 - T015	<0.5	1.70	11	1	9	177	3	0.49	2	8	107	38	1.52	0.12	26	0.43	413	2	0.03	26	0.064	27	4	29	16	0.04	<1	26	<1	56
JC 97 - T016	<0.5	1.94	10	2	9	140	2	1.04	1	6	120	32	1.26	0.18	34	0.39	392	2	0.07	23	0.076	13	3	40	32	0.07	<1	20	<1	4
JC 97 - T006 CK	<0.5	1.95	10	1	7	224	5	0.64	1	9	72	24	1.78	0.15	10	0.63	336	1	0.06	23	0.054	15	6	36	19	0.05	<1	47	<1	2

0.500 Gram sample is digested with Aqua Regia at 95 C for one hour and bulked to 10 ml with distilled water.
Partial dissolution for Al, B, Ba, Ca, Cr, Fe, K, La, Mg, Mn, Na, P, Sr, Ti, and W

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TO BIRCH MOUNTAIN MINERALS LTD.
31 st Floor, Bow Valley Square II
3100, 205 - 5th Ave S.W.,
Calgary, Alberta
T2P 2V7
Attn Val Piatico

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
BJ97 R100	<0 5	2.29	31	<1	28	13	4	1.38	3	17	36	112	2.77	0.06	4	0.46	228	1	0.16	17	0.042	69	13	90	32	0.04	<1	51	<1	3
BJ97 R101	<0 5	2.12	17	<1	16	51	3	1.12	2	35	27	154	2 36	0.32	<1	0.76	243	4	0.25	13	0.050	28	6	56	33	0.13	<1	91	<1	1
BJ97 R102	<0 5	2 36	23	<1	13	67	4	0.58	2	15	77	46	2.42	1.09	<1	0 92	359	3	0.15	54	0 060	18	6	41	48	0.14	<1	82	<1	1
BJ97 R103	<0 5	2 37	2	<1	17	150	8	1.66	2	13	26	45	2.00	0.32	3	0.60	297	1	0.09	15	0.050	13	6	42	26	0 07	<1	82	<1	41
BJ97 R104	<0 5	2.15	5	<1	12	89	1	1 38	1	4	51	23	1.27	0.12	5	0.19	112	1	0.19	4	0.034	8	4	124	15	0.03	<1	<1	<1	31
BJ97 R105	<0 5	1 41	<1	<1	5	434	1	0.99	1	3	42	4	1.73	0.14	4	0 24	215	<1	0.11	4	0.034	7	3	63	23	0.04	<1	2	<1	2
BJ97 R106	<0 5	1 49	3	<1	14	49	3	0.88	1	8	52	32	1.86	0 09	3	0 23	148	2	0.10	6	0.036	18	4	75	24	0.04	<1	12	<1	1
BJ97 R107	<0 5	1.64	<1	1	40	13	6	1.25	3	18	34	116	3.28	0.20	5	0 23	460	<1	0.19	14	0.032	8	5	21	46	0.05	<1	58	<1	1
BJ97 R108	<0 5	2.37	2	<1	17	51	1	1.42	2	17	36	128	1.85	0.20	<1	0.49	237	1	0.38	14	0.048	23	5	82	25	0.08	<1	55	<1	56
BJ97 R109	<0 5	2 00	<1	1	7	639	2	1.21	1	9	64	63	1.61	0.11	3	0.31	280	2	0.15	5	0.040	16	3	72	21	0.05	1	5	<1	4
BJ97 R110	<0 5	2.48	4	1	6	165	4	0.68	2	11	86	54	2.24	0.71	5	0.82	340	3	0.12	34	0.064	17	6	56	36	0.08	<1	46	<1	14
DT 97 R100	0 5	5.07	132	2	16	24	7	2.88	4	22	127	148	2.60	1.10	6	1.06	994	5	0.51	210	0.052	19	14	227	42	0.10	<1	145	<1	37
BJ 97 -T 001	<0 5	0 90	7	2	2	241	1	1.74	1	6	15	18	1.44	0.08	18	0.91	571	1	0.01	18	0.078	27	3	33	20	0.02	<1	18	<1	20
BJ 97 - T002	<0.5	1.18	3	1	2	232	2	0.94	1	5	19	17	1.60	0.09	22	0.43	399	1	0.01	19	0.078	13	2	37	19	0.03	<1	21	<1	25
BJ 97 - T003	<0 5	0 65	3	1	10	177	<1	0.19	1	8	107	11	1.39	0.13	11	0.28	889	8	0.02	17	0.044	15	2	13	16	0.01	<1	3	<1	11
BJ 97 - T004	<0.5	0.89	2	<1	2	236	<1	0 38	1	8	89	11	1.64	0.14	15	0.40	712	2	0.02	20	0.060	11	2	18	19	0 01	<1	10	<1	12
BJ 97 - T005	<0 5	1 18	3	<1	5	199	2	0.31	2	10	77	33	2.10	0.14	15	0.58	505	2	0.02	39	0.064	16	3	21	27	0.02	<1	22	<1	20
BJ 97 - T006	<0 5	1 29	5	<1	5	172	1	0.30	2	12	93	37	2.15	0.16	14	0.65	656	4	0.02	47	0.070	20	4	21	31	0.02	<1	21	<1	46
BJ 97 - T007	<0 5	1.30	4	<1	4	242	2	0.42	2	11	114	31	2.08	0.15	16	0.65	678	3	0.02	45	0.072	16	4	25	25	0.02	<1	18	<1	50

Loring Laboratories Ltd.

629 Beaverdam Road N.E.,
Calgary Alberta T2K 4W7
Tel: 274-2777 Fax: 275-0541

File: # 39258

DATE: July 22, 1997

TO: BIRCH MOUNTAIN MINERALS LTD
31 st Floor, Bow Valley Square II
3100, 205 - 5th Ave S.W.,
Calgary, Alberta
T2P 2V7
Attn: Val Pratico

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
BJ 97 - T009	<0.5	1.24	5	<1	4	185	2	0.29	2	11	98	29	2.04	0.15	13	0.64	534	4	0.02	46	0.066	14	3	21	26	0.01	<1	19	<1	45
BJ 97 - T011	<0.5	1.13	4	<1	11	297	2	0.38	2	10	89	20	1.90	0.12	13	0.56	508	2	0.02	36	0.066	13	3	24	20	0.02	<1	18	<1	26
BJ 97 - T012	<0.5	1.31	4	<1	8	317	3	0.42	2	10	130	22	2.07	0.18	16	0.65	434	3	0.03	38	0.064	19	4	23	30	0.03	<1	21	<1	26
BJ 97 - T013	<0.5	1.07	4	<1	7	314	2	0.25	2	9	89	18	1.92	0.13	13	0.57	472	2	0.02	34	0.058	10	3	18	25	0.02	<1	18	<1	14
BJ 97 - T014	<0.5	1.05	3	<1	8	218	1	0.24	2	9	99	18	1.76	0.13	12	0.54	472	3	0.02	33	0.056	11	3	17	23	0.02	<1	16	<1	14
BJ 97 - T015	<0.5	1.07	4	<1	9	243	2	0.23	1	8	112	16	1.70	0.11	11	0.46	487	2	0.02	28	0.046	8	2	16	17	0.01	<1	11	<1	1
BJ 97 - T016	<0.5	1.30	8	<1	6	249	2	0.58	1	6	112	15	1.45	0.14	9	0.44	187	2	0.05	22	0.046	10	3	25	21	0.05	<1	18	<1	1
BJ 97 - T017	<0.5	3.16	10	1	13	349	2	0.88	3	20	71	82	1.60	0.11	56	0.54	918	1	0.03	15	0.056	17	3	49	18	0.03	<1	50	<1	14
BJ 97 - T018	<0.5	1.20	10	<1	11	236	2	0.31	2	7	205	22	1.54	0.16	10	0.37	456	3	0.04	19	0.034	15	3	17	13	0.04	<1	13	<1	238
BJ 97 - T019	<0.5	1.74	19	3	7	97	3	0.51	1	7	86	19	1.47	0.24	10	0.44	389	2	0.07	22	0.042	11	3	25	29	0.06	<1	36	<1	3
BJ 97 - T111	<0.5	1.18	4	<1	9	233	3	0.30	2	8	134	22	1.69	0.19	9	0.43	558	1	0.03	24	0.048	17	2	21	15	0.04	<1	18	<1	107
BJ 97 - T112	0.6	2.09	7	<1	9	256	4	0.56	3	10	99	32	1.97	0.29	18	0.66	350	1	0.02	32	0.066	22	4	38	20	0.06	<1	41	<1	178
BJ 97 - T113	<0.5	1.18	7	<1	8	305	2	0.31	2	8	106	19	1.70	0.18	10	0.42	550	1	0.03	21	0.046	13	3	21	14	0.04	<1	23	<1	63
BJ 97 - T114	<0.5	1.16	3	<1	17	709	2	0.29	2	9	132	25	1.76	0.22	11	0.46	635	2	0.03	29	0.048	15	3	23	21	0.05	<1	20	<1	62
BJ 97 - T115	<0.5	1.12	3	<1	16	323	1	0.32	2	8	130	24	1.74	0.21	12	0.43	682	1	0.02	24	0.048	16	2	23	18	0.04	<1	20	<1	69
BJ 97 - T116	<0.5	1.40	4	<1	17	439	2	0.53	2	9	156	30	1.91	0.28	16	0.51	785	2	0.03	29	0.060	17	3	33	22	0.05	<1	23	<1	86
BJ 97 - T117	<0.5	1.15	4	<1	12	357	2	0.27	2	8	92	25	1.84	0.22	10	0.44	636	1	0.02	26	0.052	16	3	21	20	0.05	<1	25	<1	69
BJ 97 - T118	<0.5	1.22	3	<1	14	401	2	0.28	2	8	124	26	1.84	0.26	11	0.46	620	2	0.02	26	0.050	19	2	22	20	0.05	<1	25	<1	77
BJ 97 - T119	<0.5	1.14	3	<1	10	289	1	0.26	2	8	99	24	1.78	0.23	9	0.44	639	1	0.02	25	0.048	16	2	19	19	0.05	<1	24	<1	59

Loring Laboratories Ltd.

629 Beaverdam Road N.E.,
Calgary Alberta T2K 4W7
Tel: 274-2777 Fax: 275-0541

File: # 39258

DATE: July 31, 1997

TO: BIRCH MOUNTAIN MINERALS LTD.,
3100, Bow Valley Square II, 205 - 5th Ave S.W.,
Calgary, Alberta
T2P 2V7

Attn: Val Pratico

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
BJ 97 R-200-1	<0.5	1.59	450	<1	4	80	3	0.70	1	9	29	35	1.14	0.62	<1	0.94	167	1	0.19	10	0.057	7	9	40	23	0.12	<1	33	<1	39
BJ 97 R-200-2	1.0	0.38	902	<1	830	38	13	0.66	8	17	28	456	3.00	0.02	6	0.33	152	<1	0.08	30	0.015	29	15	6	61	0.02	<1	<1	<1	202
BJ 97 R-200-3	1.4	0.31	19	<1	658	39	17	1.47	41	16	29	263	3.00	0.04	3	0.11	247	1	0.02	29	0.066	78	42	3	71	0.06	<1	<1	<1	4360
BJ 97 R-200-4	<0.5	0.47	<1	<1	23	40	16	2.89	10	6	42	98	3.21	0.00	10	0.05	1327	<1	0.01	23	0.016	7	6	<1	94	0.01	<1	4	1	51

0.500 Gram sample is digested with Aqua Regia at 95 C for one hour and bulked to 10 ml with distilled water.
Partial dissolution for Al, B, Ba, Ca, Cr, Fe, K, La, Mg, Mn, Na, P, Sr, Ti, and W

Loring Laboratories Ltd.

629 Beaverdam Road N.E.,
Calgary Alberta T2K 4W7
Tel: 274-2777 Fax: 275-0541

File: # 39340

TO: BIRCH MOUNTAIN MINERALS LTD.,
3100, Bow Valley Sq. II, 205 - 5th Ave S.W.,
Calgary, Alberta
T2P 2V7

DATE: August 5, 1997

ICP ANALYSIS

Attn: Val Pratico

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
117 460	<0.5	1.53	<1	<1	9	112	3	1.26	2	8	34	981	1.92	0.63	<1	1.04	207	<1	0.07	8	0.039	6	5	28	20	0.08	<1	30	<1	63
117 461	<0.5	1.88	<1	<1	10	136	4	1.40	2	10	35	36	2.09	0.80	<1	1.09	311	2	0.08	8	0.041	1	4	118	22	0.09	<1	31	<1	63
117 462	<0.5	2.01	<1	<1	12	157	4	0.78	2	13	36	69	2.45	0.92	<1	1.13	253	2	0.10	9	0.038	4	5	159	24	0.10	<1	40	<1	67
117 463	<0.5	1.32	<1	<1	10	84	3	0.84	2	7	32	1	2.35	0.79	<1	0.78	196	<1	0.08	7	0.040	380	4	37	25	0.10	<1	42	<1	43
117 464	<0.5	2.06	<1	<1	12	92	5	1.31	2	13	40	12	2.42	1.07	<1	1.01	225	<1	0.19	8	0.040	4	6	59	26	0.10	<1	47	<1	46
117 465	<0.5	0.56	1	<1	10	<1	1	2.17	4	3	47	1	1.21	0.00	<1	0.20	550	<1	<0.01	3	0.031	32	7	31	18	0.07	<1	<1	<1	624
117 466	<0.5	2.31	<1	1	9	215	4	1.03	2	15	45	22	2.07	1.04	<1	1.09	241	<1	0.21	9	0.045	2	5	56	23	0.09	<1	41	<1	69
117 467	2.4	0.42	4	1	12	<1	16	4.21	9	3	54	1	2.99	0.01	5	0.29	2030	<1	<0.01	8	0.024	217	6	16	36	0.04	<1	<1	4	1331
117 468	0.6	0.31	19	1	16	<1	10	5.57	23	5	45	27	3.82	0.02	9	0.15	1409	<1	0.01	13	0.013	46	5	12	53	0.01	<1	<1	1	3323
117 469	<0.5	0.26	15	1	19	<1	10	5.70	16	5	45	5	4.07	0.00	10	0.11	3027	<1	<0.01	14	0.007	16	5	3	64	<0.01	<1	<1	7	2084
117 470	1.2	0.27	21	2	14	<1	10	5.46	32	8	54	44	3.78	0.00	10	0.16	2730	<1	<0.01	13	0.008	34	5	4	55	<0.01	<1	2	18	4577
117 471	2.1	0.35	13	1	21	<1	11	4.31	58	18	30	114	4.01	0.00	8	0.16	1716	<1	<0.01	15	0.013	38	6	9	59	0.02	<1	14	1	6613
117 472	1.4	1.78	63	2	31	30	7	2.99	5	30	22	136	2.62	0.06	<1	0.51	870	<1	0.21	14	0.044	70	70	57	28	0.07	<1	11	<1	662
117 473	0.7	1.92	<1	1	33	52	7	1.32	4	32	19	172	3.30	0.12	<1	0.70	331	<1	0.19	33	0.025	35	6	65	35	0.07	<1	26	<1	147
117 474	<0.5	1.84	3	1	16	117	5	1.32	4	17	26	73	2.64	0.27	<1	0.78	327	<1	0.18	14	0.053	22	5	63	29	0.12	<1	27	<1	169
117 475	<0.5	0.90	37	<1	35	<1	5	4.61	4	17	18	89	3.09	0.03	5	0.26	446	<1	0.03	15	0.028	11	32	172	40	0.05	<1	<1	<1	58
117 476	<0.5	1.41	<1	<1	25	40	4	1.42	3	12	37	121	2.55	0.06	3	0.36	141	1	0.20	10	0.044	8	5	41	26	0.04	<1	8	<1	114
117 477	<0.5	1.78	<1	1	20	50	4	1.26	2	12	30	116	2.42	0.08	2	0.46	158	2	0.23	8	0.042	9	5	71	25	0.04	<1	14	<1	106
117 478	2.7	0.99	<1	1	26	58	14	1.24	8	13	8	272	4.40	0.02	5	0.18	439	-1	0.03	25	0.026	10	9	28	76	0.03	<1	<1	<1	121
117 479	0.6	0.23	<1	<1	14	2	1	2.04	5	5	33	41	2.01	0.01	4	0.21	357	0	0.01	22	0.018	6	4	13	18	0.01	<1	<1	<1	814
117 480	0.8	0.24	3	<1	29	<1	3	2.48	2	6	26	71	1.48	0.01	5	0.38	480	2	0.01	10	0.018	31	7	16	21	0.01	<1	<1	2	275
117 507	<0.5	1.10	29	<1	52	9	7	4.89	1	3	11	17	1.14	0.21	7	1.26	411	5	0.07	12	0.041	116	95	62	29	0.04	<1	8	<1	64
117 513	<0.5	0.29	<1	<1	26	13	28	2.16	4	7	7	35	3.30	0.03	7	0.25	402	<1	0.03	26	0.072	6	6	8	74	0.01	<1	9	<1	270

Loring Laboratories Ltd.

629 Beaverdam Road N.E.,
Calgary Alberta T2K 4W7
Tel: 274-2777 Fax: 275-0541

File: # 39340

DATE: August 5, 1997

TO: BIRCH MOUNTAIN MINERALS LTD.,
3100, Bow Valley Sq. II, 205 - 5th Ave S.W.,
Calgary, Alberta
T2P 2V7

Attn: Val Pratico

ICP ANALYSIS

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
117 457	<0.5	2.47	<1	<1	13	233	3	1.03	1	16	51	25	1.65	1.22	<1	1.20	288	<1	0.25	11	0.050	13	7	64	24	0.11	<1	92	<1	73
117 458	<0.5	2.30	<1	<1	14	260	4	0.80	1	14	56	157	1.87	1.30	<1	1.24	248	<1	0.17	11	0.047	16	7	72	26	0.09	<1	80	<1	62
117 459	1.0	2.49	<1	<1	14	280	4	0.65	1	14	42	665	1.96	1.72	<1	1.36	262	<1	0.19	12	0.052	10	7	68	28	0.11	<1	109	<1	73
BJ 97 - T202	<0.5	0.80	5	<1	17	67	2	0.21	1	5	82	9	1.17	0.09	16	0.31	205	8	0.02	18	0.034	12	2	12	19	0.03	<1	14	<1	56
BJ 97 - T203	<0.5	0.87	6	<1	17	64	<1	0.19	1	6	102	9	1.34	0.11	17	0.35	240	2	0.02	19	0.035	11	4	11	20	0.03	<1	12	<1	60
BJ 97 - T204	<0.5	0.94	10	<1	13	56	5	0.18	1	6	76	12	1.59	0.11	15	0.42	314	3	0.02	20	0.040	10	3	11	23	0.02	<1	13	<1	59
BJ 97 - T205	<0.5	0.93	7	<1	14	66	2	0.20	1	6	127	9	1.41	0.12	17	0.37	238	2	0.03	20	0.035	11	3	12	21	0.03	<1	10	<1	55
BJ 97 - T206	<0.5	0.93	7	<1	15	70	3	0.24	1	6	57	14	1.44	0.10	17	0.38	289	2	0.02	19	0.047	11	4	14	22	0.03	<1	16	<1	58
BJ 97 - T207	<0.5	0.99	7	<1	18	73	2	0.20	1	6	127	10	1.48	0.13	19	0.39	259	2	0.03	21	0.038	12	2	12	23	0.04	<1	13	<1	61
BJ 97 - T208	<0.5	1.05	4	<1	14	65	3	0.17	1	8	127	8	1.51	0.12	19	0.41	279	3	0.02	22	0.032	11	3	12	21	0.02	<1	9	<1	59
BJ 97 - T209	<0.5	0.91	15	<1	16	86	1	0.23	1	5	138	9	1.30	0.13	15	0.37	263	1	0.03	22	0.031	12	3	17	23	0.04	<1	13	<1	79
BJ 97 - T210	<0.5	0.92	16	<1	19	86	<1	0.20	1	5	123	9	1.28	0.14	12	0.36	263	1	0.03	21	0.029	12	2	17	22	0.04	<1	14	<1	81
BJ 97 - T211	<0.5	0.85	12	<1	16	79	2	0.20	1	5	96	9	1.26	0.12	14	0.35	240	2	0.02	20	0.032	12	3	14	22	0.04	<1	15	<1	70
BJ 97 - T212	<0.5	1.05	20	<1	16	98	3	0.30	1	7	133	15	1.55	0.14	15	0.42	375	1	0.03	25	0.039	15	5	18	25	0.05	<1	20	<1	87
BJ 97 - T213	<0.5	0.86	14	<1	17	85	1	0.20	1	5	139	9	1.30	0.14	13	0.35	214	3	0.03	22	0.029	12	4	14	23	0.04	<1	13	<1	79
BJ 97 - T214	<0.5	0.99	11	<1	15	86	2	0.30	1	6	87	14	1.39	0.09	18	0.45	223	1	0.02	23	0.042	15	3	18	21	0.04	<1	21	1	90
BJ 97 - T215	<0.5	1.10	16	<1	14	94	4	0.34	1	7	101	14	1.56	0.14	17	0.46	309	1	0.03	25	0.055	19	3	20	25	0.04	<1	21	<1	81

0.500 Gram sample is digested with Aqua Regia at 95 C for one hour and bulked to 10 ml with distilled water.
Partial dissolution for Al, B, Ba, Ca, Cr, Fe, K, La, Mg, Mn, Na, P, Sr, Ti, and W

Loring Laboratories Ltd.

629 Beaverdam Road N.E.,
Calgary Alberta T2K 4W7
Tel: 274-2777 Fax: 275-0541

TO: BIRCH MOUNTAIN MINERALS LTD.,
3100, Bow Valley Sq. II, 205 - 5th Ave S.W.,
Calgary, Alberta
T2P 2V7

Attn: Val Pratico

File: # 39341

DATE: August 5, 1997

ICP ANALYSIS

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
117 502	<0.5	1.66	8	1	28	<1	3	7.68	1	7	10	10	1.26	0.04	10	0.09	1229	<1	0.14	10	0.029	35	8	163	31	0.02	<1	2	<1	48
117 504	<0.5	1.28	11	<1	32	57	6	6.31	1	6	15	30	1.73	0.40	9	0.86	1028	<1	0.10	11	0.028	15	8	131	39	0.04	<1	8	<1	185
117 508	<0.5	1.37	6	<1	613	50	3	1.71	1	8	46	41	1.91	0.09	<1	0.43	219	1	0.23	21	0.079	27	13	52	36	0.11	<1	14	<1	162
117 509	0.6	0.75	9	<1	1305	9	21	5.18	10	5	37	39	1.41	0.12	7	0.34	778	1	0.14	13	0.036	150	82	41	31	0.07	<1	4	<1	2089
117 510	<0.5	0.50	11	<1	571	23	3	1.53	2	8	61	35	1.81	0.06	<1	0.30	209	2	0.10	21	0.047	84	11	26	31	0.10	<1	2	<1	272
117 511	<0.5	0.43	15	<1	2379	4	1	3.37	1	5	53	15	1.08	0.06	3	0.17	271	<1	0.06	14	0.025	45	13	66	22	0.07	<1	<1	<1	82
117 533	1.6	2.08	15	<1	383	42	8	2.04	2	63	56	510	2.76	0.10	<1	0.42	676	<1	0.13	36	0.039	15	10	20	47	0.10	<1	120	<1	39
117 563	<0.5	1.27	<1	<1	32	<1	10	3.25	1	6	39	12	2.49	0.03	10	0.61	1404	1	0.02	13	0.071	42	7	47	53	0.12	<1	30	<1	101
117 564	<0.5	1.07	<1	<1	38	7	7	3.59	1	17	34	114	2.73	0.03	7	0.52	2051	1	0.02	15	0.055	8	6	41	55	0.09	<1	20	<1	83
117 568	<0.5	0.79	<1	<1	22	<1	8	4.39	2	6	41	9	2.69	0.02	13	0.31	2922	<1	0.01	17	0.033	10	6	56	54	0.07	<1	15	<1	92
117 569	<0.5	0.33	8	<1	26	<1	9	4.34	2	10	42	27	2.76	0.01	9	0.28	3239	1	0.01	26	0.011	13	5	33	47	0.01	<1	10	<1	193
117 570	0.6	1.64	14	<1	29	12	8	5.03	2	7	78	181	2.42	0.09	14	0.80	3131	<1	0.04	24	0.053	17	7	107	51	0.03	<1	44	<1	216
117 571	<0.5	1.03	<1	<1	25	25	6	3.24	1	9	64	4	2.30	0.03	19	0.56	2631	<1	0.02	19	0.062	19	8	107	52	0.13	<1	25	<1	200
117 572	<0.5	2.16	49	<1	36	7	8	3.96	2	10	56	5	2.75	0.05	13	0.76	3326	<1	0.06	21	0.059	21	12	126	60	0.08	<1	42	<1	139
117 573	1.4	0.90	61	<1	36	<1	19	4.70	3	16	41	451	3.35	0.02	12	0.40	3473	<1	0.01	28	0.078	13	6	62	99	0.02	<1	24	<1	152
117 563 CK	<0.5	1.30	<1	<1	26	<1	12	3.35	1	5	39	14	2.57	0.03	10	0.62	1429	2	0.02	14	0.073	40	6	48	53	0.12	<1	30	<1	103

0.500 Gram sample is digested with Aqua Regia at 95 C for one hour and bulked to 10 ml with distilled water.
Partial dissolution for Al, B, Ba, Ca, Cr, Fe, K, La, Mg, Mn, Na, P, Sr, Ti, and W

Loring Laboratories Ltd.

629 Beaverdam Road N.E.,
Calgary Alberta T2K 4W7
Tel: 274-2777 Fax: 275-0541

File: # 39342

DATE: August 5, 1997

TO: BIRCH MOUNTAIN MINERALS LTD.,
3100, Bow Valley Sq. II, 205 - 5th Ave S.W.,
Calgary, Alberta
T2P 2V7

Attn: Val Pratico

ICP ANALYSIS

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
117 541	<0.5	0.07	<1	<1	20	<1	2	2.38	1	3	24	2	1.79	<0.01	5	0.37	768	<1	0.01	4	0.020	9	2	7	13	0.01	<1	<1	<1	48
117 542	<0.5	0.25	<1	<1	18	5	14	1.56	2	9	18	36	3.57	<0.01	6	0.29	856	1	0.01	21	0.017	11	2	15	65	0.01	<1	1	<1	68
117 543	0.9	0.36	<1	<1	26	4	11	1.67	2	37	12	336	3.37	<0.01	6	0.18	963	<1	0.01	17	0.026	12	2	17	56	0.02	<1	3	<1	61
117 546	0.6	0.34	<1	<1	107	11	23	0.77	4	53	14	788	3.89	<0.01	7	0.18	720	341	0.03	30	0.011	8	<1	7	113	0.01	<1	3	<1	89
117 547	<0.5	0.45	<1	<1	75	11	18	1.69	3	36	28	465	3.68	<0.01	8	0.10	1281	8	0.00	23	0.014	61	1	8	81	0.02	<1	5	<1	70
117 550	<0.5	0.58	<1	1	65	5	25	3.01	4	31	31	371	3.93	<0.01	8	0.05	1396	<1	0.00	32	0.021	3	<1	4	113	0.01	<1	7	<1	93
117 552	<0.5	1.30	<1	<1	33	2	10	3.08	3	12	44	122	3.22	0.01	5	0.42	1735	2	0.04	19	0.042	66	16	50	47	0.09	<1	20	<1	335
117 554	<0.5	0.62	<1	<1	104	4	20	2.09	67	46	13	637	4.03	<0.01	11	0.19	1216	1	0.01	29	0.063	10	2	18	101	0.03	<1	11	<1	7149
117 555	0.7	0.46	<1	<1	98	9	26	0.88	99	48	3	516	4.54	<0.01	5	0.26	885	<1	0.01	30	0.014	7	<1	13	102	0.02	<1	2	<1	8370
117 556	<0.5	0.40	<1	<1	123	8	27	1.16	8	61	9	945	4.58	<0.01	7	0.13	937	<1	0.02	40	0.013	10	<1	12	135	0.02	<1	6	<1	807
117 557	<0.5	0.45	<1	1	27	9	20	4.58	4	6	21	60	4.31	<0.01	9	0.11	1354	<1	0.01	31	0.009	4	1	22	100	0.01	<1	4	<1	86

0.500 Gram sample is digested with Aqua Regia at 95 C for one hour and bulked to 10 ml with distilled water.
Partial dissolution for Al, B, Ba, Ca, Cr, Fe, K, La, Mg, Mn, Na, P, Sr, Ti, and W

Loring Laboratories Ltd.

629 Beaverdam Road N.E.,
Calgary Alberta T2K 4W7
Tel: 274-2777 Fax: 275-0541

File: # 39350

DATE: August 8, 1997

TO: BIRCH MOUNTAIN MINERALS
3100, Bow Valley Sq II, 205 - 5th Ave S.W.,
Calgary, Alberta
T2P 2V7

Attn: Val Pratico

ICP ANALYSIS

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
117574	<0.5	0.45	<1	<1	18	47	7	3.29	11	2	46	17	3.80	<0.01	12	0.14	1699	<1	0.02	32	0.093	14	8	14	3	0.02	<1	15	<1	91
117575	<0.5	0.66	<1	<1	33	25	7	4.33	7	13	51	142	3.46	<0.01	10	0.21	2106	<1	0.01	22	0.098	15	6	27	<1	0.02	<1	20	<1	91
117576	3.1	0.92	54	<1	81	33	7	5.10	8	30	29	545	3.70	<0.01	12	0.44	3009	<1	0.01	27	0.076	12	8	66	<1	0.02	<1	30	<1	187
117577	0.8	0.68	<1	<1	53	35	7	4.29	8	20	51	704	3.56	0.01	11	0.27	2469	<1	0.02	27	0.073	11	8	18	<1	0.02	<1	22	<1	122
117578	0.6	0.63	<1	<1	168	47	11	2.96	11	129	41	1158	4.30	<0.01	9	0.22	1601	<1	0.01	45	0.046	15	8	7	<1	0.02	<1	19	<1	159
117579	1.7	0.80	7	<1	60	22	13	6.08	7	25	30	390	4.22	<0.01	13	0.38	1903	<1	0.01	26	0.071	18	9	71	<1	0.03	<1	32	<1	205
117580	<0.5	0.49	<1	<1	21	24	7	3.84	4	7	28	271	3.59	0.01	8	0.18	1246	<1	0.01	14	0.033	14	5	30	<1	0.02	<1	16	<1	89
117581	<0.5	0.58	3	<1	12	11	5	4.92	3	4	29	61	2.98	0.02	8	0.16	1645	2	0.01	11	0.038	11	4	20	<1	0.02	<1	15	<1	57
117582	1.9	0.48	<1	<1	83	42	10	3.74	9	45	27	1172	4.32	<0.01	10	0.21	1557	<1	0.02	30	0.030	13	7	13	<1	0.02	<1	19	<1	231
117584	<0.5	0.66	36	<1	59	25	10	6.00	7	55	18	264	4.19	0.01	12	0.33	2444	<1	0.02	29	0.023	11	11	44	<1	0.02	<1	27	<1	118
117585	<0.5	0.66	1	<1	86	41	12	6.00	9	197	19	573	4.49	<0.01	13	0.26	1921	<1	0.02	51	0.025	18	12	54	<1	0.02	<1	28	<1	232
117586	<0.5	0.62	<1	<1	20	14	8	4.88	3	18	26	96	3.58	0.01	8	0.23	1490	1	0.01	16	0.015	20	5	20	<1	0.02	<1	18	<1	95
117587	<0.5	0.75	<1	<1	13	6	3	3.24	2	9	45	31	2.11	0.02	5	0.12	1958	<1	0.01	26	0.008	12	4	13	3	0.03	<1	10	2	47
117588	<0.5	0.61	<1	<1	28	28	8	4.74	5	15	32	280	3.77	0.02	8	0.13	1836	<1	0.02	32	0.011	14	10	26	1	0.03	<1	18	<1	96
117589	<0.5	0.69	<1	<1	16	26	6	5.26	3	11	21	15	2.80	0.02	11	0.26	1549	1	0.01	13	0.041	20	7	48	<1	0.03	<1	22	<1	94
117597	<0.5	0.52	27	<1	27	20	5	4.60	3	30	27	19	3.08	0.02	9	0.12	1538	1	0.01	17	0.061	15	7	29	<1	0.03	<1	18	<1	76
117598	<0.5	0.57	<1	<1	21	16	4	3.78	2	10	25	27	2.55	0.05	9	0.10	1080	<1	0.02	11	0.052	17	5	19	<1	0.04	<1	16	<1	75
117599	<0.5	0.61	<1	<1	20	25	7	3.74	4	8	28	110	3.39	0.04	9	0.08	1012	<1	0.02	17	0.026	16	7	13	<1	0.03	<1	17	<1	78
117600	1.4	0.63	<1	<1	24	57	11	3.03	8	16	28	386	4.58	0.06	9	0.09	1045	<1	0.04	43	0.039	11	10	8	<1	0.02	<1	20	<1	114

0.500 Gram sample is digested with Aqua Regia at 95 C for one hour and bulked to 10 ml with distilled water.
Partial dissolution for Al, B, Ba, Ca, Cr, Fe, K, La, Mg, Mn, Na, P, Sr, Ti, and W

Loring Laboratories Ltd.

629 Beaverdam Road N.E.,
Calgary Alberta T2K 4W7
Tel: 274-2777 Fax: 275-0541

File: # 39376

DATE: August 12, 1997

TO: BIRCH MOUNTAIN MINERALS LTD.
3100, Bow Valley Sq. II, 205 - 5th Ave S.W.,
Calgary, Alberta
T2P 2V7

Attn: Val Pratico

ICP ANALYSIS

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
117481	<0.5	0.31	12	<1	32	5	4	4.39	5	2	37	14	0.72	0.06	5	0.17	769	1	0.03	4	0.017	208	40	38	21	0.05	<1	1	4	1120
117482	<0.5	2.43	<1	<1	29	74	4	1.38	2	16	64	79	2.02	0.50	5	0.96	226	<1	0.29	23	0.055	81	19	71	31	0.10	<1	64	8	72
117483	<0.5	2.19	<1	<1	20	73	4	1.30	2	14	50	50	1.81	0.16	4	0.68	195	1	0.34	19	0.051	43	10	83	28	0.10	<1	48	8	43
117484	<0.5	1.92	<1	<1	21	80	4	1.32	2	19	75	64	1.77	0.07	4	0.57	228	1	0.31	29	0.066	39	9	99	27	0.10	<1	37	8	42
117485	<0.5	1.70	4	<1	24	77	3	1.66	2	22	68	222	1.49	0.30	<1	0.56	279	2	0.26	22	0.071	31	9	134	32	0.16	<1	54	7	57
117489	<0.5	1.46	3	<1	24	13	4	7.03	2	8	37	73	1.07	0.13	10	0.32	703	3	0.19	9	0.030	60	9	201	25	0.04	<1	17	6	109
117490	<0.5	1.86	2	<1	26	37	5	7.58	2	8	22	71	1.17	0.26	10	0.43	858	5	0.20	10	0.029	69	11	245	34	0.04	<1	24	5	240
117491	<0.5	1.60	1	<1	43	21	7	7.55	33	7	20	83	1.59	0.20	13	0.41	659	3	0.17	10	0.028	69	14	302	33	0.03	<1	17	7	4866
117492	<0.5	1.55	2	<1	33	28	5	7.73	7	7	16	37	1.30	0.10	12	0.24	591	2	0.20	9	0.029	61	10	323	29	0.02	<1	10	5	1808
117493	<0.5	1.19	3	<1	25	3	4	8.75	4	5	15	40	1.03	0.06	13	0.18	817	3	0.14	7	0.023	45	9	261	29	0.01	<1	12	4	742
117497	<0.5	1.08	13	<1	28	57	5	1.40	3	49	33	316	2.32	0.05	6	0.38	309	61	0.09	23	0.101	28	7	26	34	0.06	<1	31	10	171
117498	<0.5	1.34	<1	<1	26	55	4	2.18	3	33	30	456	2.30	0.06	8	0.57	383	32	0.14	24	0.100	24	10	61	35	0.06	<1	32	10	183
117499	<0.5	2.20	2	<1	25	84	4	1.19	2	15	37	87	1.97	0.89	2	0.97	197	2	0.27	11	0.055	42	9	149	31	0.11	<1	87	8	54
117500	<0.5	1.89	3	<1	20	100	4	1.32	1	11	40	53	1.47	0.41	3	0.68	135	1	0.25	7	0.052	33	8	112	23	0.08	<1	50	5	50
117505	<0.5	0.78	12	<1	50	29	3	2.23	3	4	25	24	1.89	0.09	8	0.96	284	1	0.06	16	0.025	20	16	25	39	0.03	<1	6	8	353
117506	<0.5	0.88	23	<1	99	36	4	1.82	2	6	26	22	1.71	0.22	5	1.21	252	1	0.06	13	0.024	37	25	23	41	0.04	<1	11	6	190
117512	<0.5	1.09	70	<1	46	26	5	4.45	3	14	23	90	2.48	0.03	20	0.99	374	<1	0.15	19	0.041	27	15	71	43	0.03	<1	15	11	43
117626	<0.5	2.68	20	<1	14	36	6	2.86	4	20	37	142	1.59	0.05	10	0.17	232	1	0.22	70	0.055	47	9	132	41	0.12	<1	8	6	706
117627	<0.5	0.63	1	<1	33	1	3	1.81	124	31	53	163	1.51	0.00	21	0.08	599	<1	0.01	27	0.077	9	6	23	42	0.05	<1	1	6	13160
117628	<0.5	1.24	<1	<1	17	24	6	2.59	41	28	56	101	2.51	0.02	32	0.10	753	<1	0.05	91	0.089	15	7	53	55	0.07	<1	12	11	7362
117629	<0.5	0.70	<1	<1	12	20	8	1.87	16	8	40	7	1.20	0.02	27	0.14	578	1	0.04	24	0.084	22	5	50	42	0.06	<1	6	4	3841
117636	<0.5	2.61	24	<1	25	74	8	2.12	3	19	74	132	2.31	0.33	9	0.49	160	3	0.26	48	0.034	42	8	148	54	0.08	<1	34	9	208
117644	<0.5	1.90	<1	<1	39	44	5	1.78	3	48	27	329	2.64	0.07	3	0.54	159	1	0.23	19	0.065	24	9	111	39	0.10	<1	64	10	13
117657	<0.5	1.99	<1	<1	45	39	6	1.69	3	38	37	406	2.62	0.10	5	0.38	117	1	0.23	13	0.082	30	8	118	38	0.09	<1	54	10	12
117960	<0.5	0.21	<1	<1	20	21	4	0.79	10	10	13	81	2.43	0.01	8	0.64	316	1	0.01	8	0.025	48	9	4	30	0.01	<1	6	9	367

Loring Laboratories Ltd.

629 Beaverdam Road N.E.,
Calgary Alberta T2K 4W7
Tel: 274-2777 Fax: 275-0541

File: # 39367

DATE: August 12, 1997

TO: BIRCH MOUNTAIN MINERALS LTD.
3100, Bow Valley Sq. II, 205 - 5th Ave S.W.,
Calgary, Alberta
T2P 2V7

ICP ANALYSIS

Attn: Val Pratico

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
117951	<0.5	0.47	40	<1	82	35	34	0.55	5	13	27	500	2.41	0.05	8	0.28	190	1	0.06	13	0.030	472	368	8	36	0.04	<1	7	14	590
117952	<0.5	1.11	105	<1	200	33	26	0.87	19	14	16	555	2.48	0.05	10	0.31	237	<1	0.19	18	0.077	221	179	29	42	0.06	<1	10	15	3352
117662	<0.5	0.86	<1	<1	152	61	7	0.87	12	54	39	790	2.91	0.22	29	0.19	654	<1	0.10	37	0.022	3	9	0	92	0.03	<1	18	33	147
117663	<0.5	1.11	<1	<1	115	41	401	1.24	8	53	43	766	2.93	0.24	20	0.14	686	<1	0.11	50	0.033	10	7	3	81	0.04	<1	11	26	425
117503	<0.5	1.97	3	<1	545	21	9	3.66	2	8	33	64	1.72	0.18	9	0.29	410	<1	0.40	11	0.035	29	12	247	30	0.06	<1	10	9	137
117601	1.3	0.69	<1	<1	26	47	6	2.59	7	13	32	883	2.74	0.10	23	0.12	1202	<1	0.05	29	0.045	3	9	8	59	0.03	<1	18	21	167
117633	<0.5	1.08	2	<1	22	5	3	1.61	29	17	50	28	1.20	0.02	48	0.10	653	1	0.04	37	0.024	14	5	55	37	0.09	<1	6	6	5960
117957	<0.5	1.43	26	<1	28	91	4	0.83	2	15	31	64	1.21	0.35	2	0.76	133	<1	0.20	8	0.050	27	8	44	24	0.11	<1	58	6	170
117958	<0.5	1.01	22	<1	24	45	4	0.81	2	15	25	86	1.34	0.11	1	0.37	79	<1	0.18	8	0.052	30	11	35	19	0.10	<1	29	7	112
117959	<0.5	1.20	1	<1	15	77	3	0.65	1	13	43	50	1.14	0.42	1	0.81	116	1	0.18	7	0.050	18	10	39	24	0.11	<1	74	5	42
117977	<0.5	0.33	<1	<1	15	52	3	1.36	17	3	7	14	2.12	0.05	8	0.33	804	2	0.03	7	0.033	9	5	10	21	0.01	<1	7	10	2792
117980	<0.5	0.07	<1	<1	13	34	3	0.84	19	5	4	28	2.10	0.01	7	0.20	427	3	0.01	11	0.046	2	5	3	19	0.01	<1	4	13	3044
117981	<0.5	0.07	<1	<1	22	59	5	0.72	20	4	6	55	2.82	0.01	14	0.16	378	8	0.01	36	0.058	12	10	2	39	0.01	<1	7	42	2896
117985	<0.5	2.09	<1	<1	17	114	6	0.67	4	45	30	52	2.18	0.60	1	0.95	339	1	0.15	11	0.056	29	6	35	30	0.11	<1	89	10	457
117986	<0.5	3.08	<1	<1	48	41	5	1.81	4	44	19	572	2.45	0.14	7	0.66	202	3	0.43	16	0.015	45	8	81	33	0.08	<1	68	14	100
117987	<0.5	3.88	<1	<1	48	44	6	2.19	4	33	19	673	2.44	0.34	8	1.18	380	<1	0.39	15	0.018	41	10	74	34	0.08	<1	172	12	99
117989	<0.5	0.50	<1	<1	101	6	3	3.35	2	4	18	9	1.80	0.01	8	0.67	1602	<1	0.02	9	0.033	4	12	52	24	0.03	<1	20	8	68
117999	<0.5	1.96	<1	<1	15	133	2	0.69	1	9	33	70	1.46	1.14	1	1.20	160	<1	0.20	8	0.054	18	5	37	26	0.12	<1	88	7	44
117986 ck	<0.5	3.07	<1	<1	48	42	7	1.84	4	43	20	584	2.49	0.15	7	0.67	205	3	0.43	17	0.015	52	7	83	33	0.07	<1	68	11	89

0.500 Gram sample is digested with Aqua Regia at 95 C for one hour and bulked to 10 ml with distilled water.
Partial dissolution for Al, B, Ba, Ca, Cr, Fe, K, La, Mg, Mn, Na, P, Sr, Ti, and W

Loring Laboratories Ltd.

629 Beaverdam Road N.E.,
Calgary Alberta T2K 4W7
Tel: 274-2777 Fax: 275-0541

File: # 39376

TO: BIRCH MOUNTAIN MINERALS LTD.
3100, Bow Valley Sq. II, 205 - 5th Ave S.W.,
Calgary, Alberta
T2P 2V7

DATE: August 12, 1997

ICP ANALYSIS

Attn: Val Pratico

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
117961	<0.5	0.29	<1	<1	64	14	12	5.84	7	13	43	170	3.65	0.01	23	0.08	1193	<1	0.01	17	0.025	4	8	1	59	0.01	<1	1	30	99
117962	<0.5	0.49	<1	<1	78	34	13	2.13	5	23	23	222	3.41	0.00	12	0.15	352	1	0.02	16	0.039	11	9	16	48	0.05	<1	8	17	30
117963	<0.5	3.61	36	<1	24	107	9	2.52	3	16	110	73	2.43	0.53	6	0.98	127	28	0.39	65	0.076	54	14	187	58	0.09	<1	200	10	74
118000	<0.5	6.31	178	<1	21	89	6	2.33	2	28	191	130	0.09	1.03	2	1.23	160	34	0.33	102	0.072	35	12	85	80	0.12	<1	226	9	11

0.500 Gram sample is digested with Aqua Regia at 95 C for one hour and bulked to 10 ml with distilled water.
Partial dissolution for Al, B, Ba, Ca, Cr, Fe, K, La, Mg, Mn, Na, P, Sr, Ti, and W

Loring Laboratories Ltd.

629 Beaverdam Road N.E.,
Calgary Alberta T2K 4W7
Tel: 274-2777 Fax: 275-0541

File: # 39377

DATE: August 15, 1997

TO: BIRCH MOUNTAIN MINERALS LTD
3100, Bow Valley Sq II, 205 - 5th Ave S.W.,
Calgary, Alberta
T2P 2V7

Attn: Val Pratico

ICP ANALYSIS

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
117605	<0.5	0.46	15	<1	15	<1	4	3.47	2	4	28	10	1.71	0.00	14	0.18	1131	6	0.01	34	0.090	24	22	19	<1	0.02	<1	12	7	146
117606	<0.5	0.58	<1	<1	13	2	1	2.51	1	3	99	1	1.42	0.01	4	0.12	992	2	0.01	8	0.002	13	4	10	<1	0.04	<1	15	5	75
117607	<0.5	0.66	<1	<1	9	10	2	2.09	1	2	34	3	1.29	0.02	3	0.08	946	<1	0.01	4	0.001	10	4	7	<1	0.05	<1	19	26	42
117608	<0.5	0.37	<1	<1	49	15	1	1.75	1	2	25	2	1.01	0.02	17	0.10	718	5	0.01	7	0.099	13	6	14	<1	0.04	<1	16	5	78
117610	<0.5	1.30	<1	<1	63	40	3	1.19	2	16	52	137	2.07	0.05	7	0.35	165	10	0.09	41	0.052	15	5	61	<1	0.03	<1	33	7	59
117611	<0.5	2.12	<1	<1	44	46	3	1.40	2	15	44	136	1.99	0.06	8	0.26	142	4	0.23	37	0.063	9	5	91	2	0.03	<1	41	6	33
117634	<0.5	2.01	19	<1	65	88	3	0.98	2	16	50	134	1.99	0.25	5	0.49	88	2	0.18	18	0.049	12	15	69	8	0.04	<1	56	8	43
117639	<0.5	2.69	10	<1	77	67	6	1.31	3	18	26	178	2.19	0.25	5	0.68	141	<1	0.24	28	0.026	24	16	61	12	0.04	<1	54	8	42
117640	<0.5	3.40	<1	<1	73	87	7	1.40	3	29	31	284	2.31	0.59	5	0.97	161	1	0.29	28	0.031	6	12	76	9	0.04	<1	87	9	40
117641	<0.5	3.17	3	<1	106	53	7	1.33	4	44	32	444	2.65	0.61	8	1.02	183	1	0.25	33	0.031	8	16	46	17	0.05	<1	104	12	44
117642	<0.5	3.38	<1	<1	118	52	7	1.34	4	48	30	768	2.64	0.63	8	1.00	173	<1	0.25	36	0.029	11	11	64	19	0.05	<1	99	13	53
117643	<0.5	3.44	<1	<1	69	89	4	1.42	3	52	27	399	2.19	0.54	5	1.00	161	1	0.29	31	0.032	6	10	86	8	0.05	<1	86	10	43
117645	<0.5	1.68	<1	<1	58	82	3	0.75	2	22	48	94	1.87	0.41	2	0.62	123	2	0.16	12	0.050	6	8	65	0	0.07	<1	53	8	31
117646	<0.5	2.71	<1	<1	21	230	4	1.14	2	11	35	38	1.38	0.78	1	0.90	175	<1	0.29	9	0.064	7	8	198	1	0.09	<1	83	5	54
117538 CK	<0.5	1.01	<1	<1	91	69	3	0.68	3	39	57	290	2.33	0.07	4	0.25	188	<1	0.04	18	0.051	18	7	20	6	0.07	<1	60	10	15
117647	<0.5	2.40	<1	<1	61	192	3	0.86	2	16	35	39	1.60	0.87	1	1.01	153	<1	0.21	8	0.054	3	7	90	2	0.08	<1	71	6	53
117648	<0.5	2.74	1	<1	42	99	3	1.30	2	24	27	47	1.46	0.22	3	0.67	78	<1	0.33	9	0.058	8	10	180	2	0.05	<1	44	5	29
117649	<0.5	2.07	<1	<1	52	79	3	0.86	2	17	46	113	1.69	0.29	3	0.69	125	1	0.22	10	0.052	9	8	75	0	0.06	<1	59	6	25
117651	<0.5	0.50	66	<1	4153	<1	16	4.54	25	10	31	32	0.89	0.01	7	0.31	594	2	0.01	12	0.053	43	15	54	<1	0.02	<1	10	5	3311
117652	0.9	0.44	166	<1	7279	<1	5	4.53	45	25	37	177	2.16	0.01	10	0.20	781	2	0.01	18	0.038	27	17	25	<1	0.01	<1	9	14	4861
117653	9.5	0.64	92	<1	6807	14	38	4.73	59	15	26	326	2.06	0.02	9	0.23	634	2	0.02	15	0.043	167	15	58	<1	0.03	<1	12	12	>10000
117654	3.5	0.38	62	<1	8482	7	18	5.47	7	9	24	3	1.71	0.01	9	0.20	379	2	0.01	10	0.047	154	7	56	<1	0.02	<1	9	69	1009
117655	<0.5	0.65	38	<1	6186	49	4	4.11	5	13	22	28	1.22	0.03	6	0.23	234	1	0.02	16	0.046	55	9	60	<1	0.02	<1	13	5	999
117656	2.4	0.79	62	<1	14560	22	7	5.66	22	17	55	305	1.79	0.04	10	0.48	480	2	0.03	19	0.048	68	9	87	21	0.03	<1	16	6	3396
VP 97-13	<0.5	0.58	2	<1	600	34	22	3.17	10	6	32	8	2.42	0.01	12	0.12	2122	1	0.01	10	0.039	23	4	7	26	0.03	<1	20	8	1909

Loring Laboratories Ltd.

629 Beaverdam Road N.E.,
Calgary Alberta T2K 4W7
Tel: 274-2777 Fax: 275-0541

File: # 39384

DATE: August 15, 1997

TO: BIRCH MOUNTAIN MINERALS LTD
3100, Bow Valley Sq II, 205 - 5th Ave S.W.,
Calgary, Alberta
T2P 2V7

Attn: Val Pratico

ICP ANALYSIS

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
117609	<0.5	2.77	10	<1	276	73	7	2.22	4	18	48	113	0.91	0.15	7	0.49	208	5	0.30	46	0.069	19	8	153	38	0.03	<1	43	<1	344
117631	<0.5	2.21	<1	<1	62	163	6	1.39	3	20	32	172	1.46	0.36	<1	0.61	425	1	0.21	14	0.033	4	5	119	31	0.09	<1	107	<1	143
117632	<0.5	2.22	<1	<1	39	88	3	1.58	2	22	55	172	1.41	0.23	3	0.51	393	<1	0.26	11	0.044	4	4	132	29	0.07	<1	71	<1	127
117650	<0.5	1.92	<1	<1	35	77	3	1.45	2	9	24	157	1.29	0.37	1	0.83	242	1	0.25	9	0.057	10	6	80	29	0.07	<1	42	<1	46
RJ 97-R 241	<0.5	0.59	<1	<1	13	15	4	1.54	2	12	48	96	1.06	0.03	1	0.13	774	2	0.02	9	0.047	10	5	15	36	0.07	<1	17	<1	51
RJ 97-F242	<0.5	3.18	2	<1	12	138	27	2.15	2	12	49	50	1.15	0.49	15	0.67	304	1	0.25	11	0.060	7	5	98	34	0.11	<1	43	<1	59
RJ 97-R 243	<0.5	2.63	<1	<1	5	158	5	1.25	2	9	51	54	1.05	0.91	<1	1.24	173	1	0.16	6	0.092	3	6	56	27	0.10	<1	26	<1	34
RJ 97-R 244	<0.5	3.29	118	<1	20	66	10	1.62	5	17	92	105	1.24	0.20	11	1.22	682	4	0.30	171	0.058	103	35	74	42	0.06	<1	115	<1	254
RJ 97-R 245	<0.5	3.07	126	<1	15	181	6	1.50	3	19	183	89	1.93	1.12	<1	1.23	163	22	0.23	101	0.078	10	14	77	56	0.12	<1	206	<1	54
RJ 97-R 246	<0.5	2.19	37	<1	21	67	5	1.09	3	14	110	104	1.57	0.22	<1	0.95	200	34	0.20	79	0.071	16	10	48	49	0.07	<1	191	<1	186
RJ 97-R 247	<0.5	4.36	57	<1	10	47	7	2.88	3	9	97	58	1.83	0.18	5	1.04	358	4	0.33	45	0.064	10	14	215	33	0.04	<1	76	<1	170
RJ 97-R 248	<0.5	2.64	14	<1	5	230	4	0.24	3	11	60	16	1.18	0.67	2	0.87	358	1	0.05	48	0.057	4	17	32	46	0.08	<1	57	<1	105

0.500 Gram sample is digested with Aqua Regia at 95 C for one hour and bulked to 10 ml with distilled water.
Partial dissolution for Al, B, Ba, Ca, Cr, Fe, K, La, Mg, Mn, Na, P, Sr, Ti, and W

Loring Laboratories Ltd.

629 Beaverdam Road N.E.,
Calgary Alberta T2K 4W7
Tel: 274-2777 Fax: 275-0541

File: # 39377

DATE: August 15, 1997

TO: BIRCH MOUNTAIN MINERALS LTD
3100, Bow Valley Sq II, 205 - 5th Ave S.W.,
Calgary, Alberta
T2P 2V7

Attn: Val Pratico

ICP ANALYSIS

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
117651 CK	<0.5	0.43	69	<1	3893	2	14	5.08	27	11	25	34	0.73	0.02	7	0.34	677	1	0.01	14	0.053	46	12	50	<1	0.02	<1	11	<1	3301

0.500 Gram sample is digested with Aqua Regia at 95 C for one hour and bulked to 10 ml with distilled water.
Partial dissolution for Al, B, Ba, Ca, Cr, Fe, K, La, Mg, Mn, Na, P, Sr, Ti, and W

Loring Laboratories Ltd.

629 Beaverdam Road N.E.,
Calgary Alberta T2K 4W7
Tel: 274-2777 Fax: 275-0541

File: # 39377

DATE: August 15, 1997

TO: BIRCH MOUNTAIN MINERALS LTD
3100, Bow Valley Sq II, 205 - 5th Ave S.W.,
Calgary, Alberta
T2P 2V7

Attn: Val Pratico

ICP ANALYSIS

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
117486	<0.5	1.60	1	<1	16	118	2	1.21	1	16	52	84	1.14	0.26	<1	0.48	226	1	0.20	22	0.059	6	6	208	<1	0.12	<1	53	9	28
117487	<0.5	1.61	7	<1	21	64	3	6.79	7	8	26	26	1.03	0.13	9	0.59	1376	3	0.13	10	0.034	29	10	202	<1	0.03	<1	26	5	1411
117488	<0.5	1.73	7	<1	54	23	3	7.73	3	7	19	117	1.24	0.16	12	0.31	943	2	0.22	10	0.055	36	6	231	<1	0.01	<1	15	4	464
117494	0.7	1.58	2	<1	40	55	4	6.96	3	8	15	74	1.25	0.28	12	0.48	1203	3	0.17	10	0.040	281	23	262	<1	0.02	<1	29	4	363
117495	<0.5	2.05	8	<1	26	82	1	2.18	3	18	25	107	1.48	0.19	6	0.71	571	<1	0.23	17	0.063	89	14	195	1	0.03	<1	46	4	72
117496	<0.5	1.98	<1	<1	82	70	6	0.81	3	83	49	338	2.92	0.49	4	0.52	340	<1	0.14	22	0.047	19	8	38	18	0.08	<1	98	14	78
117501	<0.5	1.96	7	<1	73	48	3	0.77	2	11	59	252	2.23	0.91	4	1.03	239	1	0.12	11	0.053	10	12	20	<1	0.06	<1	93	6	52
117525	9.9	0.78	45	<1	176	50	6	0.47	4	285	58	1665	3.22	0.04	9	0.31	189	3	0.03	39	0.028	25	12	1	24	0.02	<1	35	14	67
117534	<0.5	1.52	2	<1	55	97	3	0.91	2	38	46	234	2.14	0.11	3	0.21	143	<1	0.20	15	0.059	19	6	87	7	0.07	<1	56	6	29
117535	<0.5	1.85	2	<1	47	118	2	1.20	2	25	49	185	2.00	0.11	4	0.17	141	<1	0.27	13	0.072	9	6	61	6	0.05	<1	57	6	46
117536	<0.5	2.02	<1	<1	65	85	4	1.25	2	29	55	251	2.20	0.07	4	0.22	155	<1	0.28	17	0.075	11	7	42	<1	0.06	<1	50	7	44
117537	1.6	0.84	<1	<1	305	55	10	0.85	9	101	52	894	3.34	0.01	22	0.11	445	<1	0.02	34	0.017	13	7	7	54	0.02	<1	19	27	29
117538	<0.5	0.98	<1	<1	104	67	2	0.74	3	44	54	304	2.70	0.07	3	0.27	223	<1	0.04	20	0.053	16	8	20	8	0.09	<1	65	9	16
117539	<0.5	2.11	1	<1	97	115	3	1.92	2	34	30	150	2.11	0.08	5	0.18	231	<1	0.04	24	0.045	8	10	29	4	0.05	<1	26	6	17
117540	<0.5	1.54	120	<1	57	36	2	1.23	2	47	21	43	2.03	0.06	3	0.67	229	<1	0.07	27	0.030	41	26	26	5	0.05	<1	54	7	132
117590	<0.5	2.42	2	<1	78	61	4	1.79	2	12	42	41	2.00	0.11	6	0.19	239	1	0.23	10	0.042	43	20	49	4	0.05	<1	31	7	68
117591	<0.5	2.27	3	<1	21	64	3	1.34	1	12	53	40	1.31	0.26	<1	0.60	194	<1	0.29	9	0.063	8	12	58	<1	0.12	<1	66	4	38
117592	<0.5	4.05	8	<1	76	35	6	2.48	3	26	28	115	2.24	0.16	4	0.47	117	<1	0.42	16	0.025	27	23	129	6	0.07	<1	39	8	36
117593	<0.5	4.85	2	<1	81	20	5	3.14	3	18	37	105	2.16	0.07	6	0.23	123	<1	0.56	15	0.022	14	21	152	6	0.05	<1	20	8	30
117594	<0.5	0.16	7	<1	4	<1	1	8.12	1	1	5	25	0.71	0.04	13	1.88	1673	10	0.01	10	0.016	4	4	125	<1	0.00	<1	8	3	131
117595	<0.5	0.95	95	<1	48	30	1	1.82	2	8	61	75	2.05	0.07	7	0.23	185	2	0.14	25	0.031	53	27	34	<1	0.04	<1	7	6	38
117596	<0.5	1.14	233	<1	58	2	5	4.74	6	7	52	52	1.83	0.06	10	0.24	481	1	0.07	18	0.025	200	152	39	<1	0.02	<1	14	6	946
117602	<0.5	0.47	2	<1	56	13	3	1.72	1	4	21	8	0.88	0.02	5	0.19	427	1	0.01	4	0.050	28	7	31	<1	0.06	<1	13	4	138
117603	<0.5	0.67	<1	<1	65	24	4	2.08	3	5	36	88	2.09	0.07	8	0.08	775	1	0.03	18	0.058	13	7	9	<1	0.03	<1	17	9	129
117604	<0.5	0.44	1	<1	21	13	2	1.74	1	3	55	5	0.97	0.01	3	0.08	439	19	0.01	7	0.034	29	5	32	<1	0.05	<1	20	4	99

Loring Laboratories Ltd.

629 Beaverdam Road N.E.,
Calgary Alberta T2K 4W7
Tel: 274-2777 Fax: 275-0541

File: # 39377

TO: BIRCH MOUNTAIN MINERALS LTD
3100, Bow Valley Sq II, 205 - 5th Ave S.W.,
Calgary, Alberta
T2P 2V7

DATE: August 15, 1997

ICP ANALYSIS

Attn: Val Pratico

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
BJ 97S-217	<0.5	0.53	0	<1	67	54	1	0.10	<1	2	6	24	0.58	0.16	5	0.07	53	1	0.02	3	0.027	17	<1	7	11	0.05	<1	23	2	52
BJ-97S-218	<0.5	1.55	18	<1	27	64	6	0.14	2	9	57	24	2.28	0.13	<1	0.32	170	2	0.02	19	0.044	18	2	9	38	0.22	<1	123	7	57
BJ-97S-219	<0.5	1.92	65	<1	10	68	6	0.08	2	9	52	15	2.29	0.16	<1	0.36	190	1	0.02	18	0.039	17	3	3	40	0.25	<1	138	8	61
BJ-97S-220	<0.5	1.88	18	<1	9	82	5	0.10	3	18	67	27	2.22	0.19	<1	0.43	284	2	0.02	31	0.059	13	4	10	61	0.21	<1	99	1	93
BJ-97S-221	<0.5	4.32	30	<1	12	73	6	0.15	2	11	66	23	1.61	0.15	7	0.55	249	<1	0.02	32	0.093	12	8	10	51	0.09	<1	40	<1	81
BJ-97S-222	<0.5	1.46	7	<1	7	63	4	0.13	3	9	32	89	2.35	0.13	<1	0.33	508	2	0.02	17	0.034	13	4	5	43	0.14	<1	58	<1	103
BJ-97S-223	<0.5	0.56	3	<1	2	44	2	0.06	1	5	13	16	1.67	0.13	<1	0.07	87	2	0.01	7	0.028	14	2	3	28	0.18	<1	81	<1	27
BJ-97S-224	<0.5	0.57	3	<1	<1	47	4	0.07	1	6	15	18	1.28	0.14	<1	0.12	125	2	0.02	7	0.023	12	2	4	28	0.20	<1	83	<1	31
BJ-97S-225	<0.5	0.58	1	<1	2	38	3	0.04	1	5	14	15	0.51	0.10	<1	0.10	69	1	0.01	6	0.015	16	1	3	26	0.16	<1	77	<1	23
BJ-97S-226	<0.5	0.99	16	<1	1	53	3	0.04	2	6	32	13	0.85	0.11	<1	0.24	130	1	0.01	12	0.026	11	3	2	36	0.20	<1	117	<1	26
BJ-97S-227	<0.5	0.64	2	<1	1	48	2	0.06	1	6	19	13	1.06	0.11	<1	0.15	108	1	0.01	9	0.023	17	1	4	30	0.20	<1	119	3	27
BJ-97S-228	<0.5	2.04	30	<1	3	141	4	0.63	2	16	85	44	0.82	0.28	6	0.86	529	1	0.04	47	0.078	33	4	38	33	0.10	<1	61	<1	329
BJ-97S-229	<0.5	2.04	29	<1	3	128	2	0.58	3	15	74	35	0.79	0.30	8	0.84	489	1	0.04	44	0.073	49	4	32	33	0.10	<1	59	<1	472
BJ-97S-230	<0.5	1.90	21	<1	2	149	2	0.54	2	16	80	28	0.85	0.30	6	0.83	438	1	0.03	47	0.072	78	3	37	31	0.09	<1	51	<1	279
BJ-97S-231	<0.5	1.86	22	<1	5	120	3	0.47	2	15	68	43	0.78	0.28	8	0.79	434	1	0.04	43	0.078	45	5	32	32	0.09	<1	49	<1	457
BJ-97S-232	<0.5	2.12	29	<1	7	133	5	0.88	3	18	84	40	0.88	0.33	5	0.89	595	1	0.04	50	0.088	47	4	38	34	0.09	<1	58	<1	227
BJ-97S-233	<0.5	1.11	10	<1	6	103	2	0.23	1	8	40	14	0.82	0.18	3	0.51	155	<1	0.02	25	0.052	16	2	15	28	0.07	<1	31	<1	124
BJ-97S-234	<0.5	0.45	4	<1	2	47	2	0.07	<1	4	11	14	0.48	0.11	<1	0.08	59	<1	0.02	6	0.031	12	1	5	16	0.09	<1	35	<1	35
BJ-97S-235	<0.5	0.87	15	<1	3	49	1	0.10	1	5	26	14	0.40	0.10	7	0.28	123	1	0.02	15	0.036	14	1	4	31	0.10	<1	40	<1	44
BJ-97S-236	<0.5	0.52	10	<1	<1	41	2	0.05	1	6	20	11	0.60	0.13	<1	0.16	84	1	0.01	10	0.022	11	1	3	30	0.20	<1	87	<1	23
BJ-97S-237	<0.5	2.37	40	<1	1	98	5	0.16	2	12	78	25	0.55	0.27	0	0.69	253	1	0.02	32	0.082	25	4	5	59	0.20	<1	84	<1	85
BJ-97S-238	<0.5	1.70	25	<1	3	122	3	0.32	2	15	56	25	1.22	0.21	10	0.67	449	1	0.03	37	0.083	43	4	23	42	0.10	<1	48	<1	225
BJ-97S-239	<0.5	1.96	26	<1	2	123	4	0.29	2	14	75	31	0.83	0.22	4	0.78	334	1	0.03	41	0.090	45	4	21	34	0.09	<1	58	<1	274
BJ-97S-240	<0.5	1.84	29	<1	2	124	5	0.28	2	16	68	28	1.14	0.23	3	0.77	425	<1	0.03	42	0.083	47	4	20	33	0.09	<1	56	<1	344
BJ-97T-241	<0.5	1.45	20	<1	11	103	3	0.57	2	11	75	21	0.88	0.28	8	0.58	364	1	0.05	25	0.051	169	3	28	33	0.07	<1	38	<1	301

Loring Laboratories Ltd.

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TO: Birch Mountain Minerals Ltd
FILE # 38577

DATE: October 22, 1998

ELEMENT	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Sn	Y	Nb	Be	Sc
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
L 1-2	< 2	22788	< 5	1413	96.1	33	121	3791	19.90	32	< 10	< 4	3	14	13.3	< 5	< 5	105	6.38	0.053	2	33	5.07	207	0.09	2.78	0.20	0.29	< 4	14	22	14	< 2	< 1	7
L 1-3	5	1467	10	192	4.2	15	105	1869	37.07	7	16	< 4	2	5	3.5	< 5	5	84	2.90	0.035	< 2	19	2.69	10	0.02	0.65	0.06	0.05	75	2	5	10	< 2	< 1	2
L 1-4	4	637	8	298	0.5	10	9	2077	31.94	< 5	< 10	< 4	8	21	2.5	< 5	< 5	56	2.92	0.032	3	23	1.97	120	0.04	1.23	0.12	0.22	12	7	8	6	< 2	< 1	3
L 1-5	< 2	339	7	740	0.8	22	57	4913	21.87	8	< 10	< 4	2	59	5	< 5	6	111	7.28	0.068	< 2	19	4.22	25	0.04	1.71	0.12	0.08	< 4	8	16	8	< 2	< 1	3
L 1-6	< 2	554	17	391	1.4	19	218	4673	23.61	198	< 10	< 4	2	84	2.6	6	7	88	6.56	0.047	< 2	34	3.29	57	0.09	2.13	0.14	0.19	< 4	10	18	11	< 2	2	6
L 1-7	6	130	29	1147	0.9	18	15	4630	24.33	< 5	< 10	< 4	< 2	6	5.5	8	12	52	7.22	0.039	< 2	21	6.81	39	0.03	0.65	0.09	0.06	< 4	5	10	7	< 2	2	2
L 1-8	< 2	620	30	20159	1.1	11	16	1535	24.65	< 5	21	< 4	< 2	4	139.6	< 5	10	39	5.15	0.023	< 2	27	6.94	5	0.02	0.41	0.07	0.03	< 4	3	4	7	< 2	< 1	1
L 1-9	< 2	604	24	6573	< .5	10	3	1115	34.30	< 5	14	< 4	< 2	3	43.6	< 5	< 5	31	2.95	0.042	< 2	15	3.97	30	0.02	0.48	0.07	0.06	< 4	3	5	6	< 2	3	< 1
L 1-10	< 2	265	17	513	< .5	9	< 2	1007	31.68	< 5	12	< 4	2	3	3.2	< 5	7	40	3.69	0.033	< 2	16	5.20	18	0.02	0.41	0.07	0.05	< 4	3	5	6	< 2	< 1	1
L 1-11	< 2	152	8	920	< .5	13	5	4581	25.18	< 5	< 10	< 4	3	4	3.6	< 5	< 5	29	5.85	0.034	< 2	17	3.94	17	0.03	0.54	0.05	0.04	< 4	4	21	3	< 2	1	2
L 1-12	< 2	319	21	6505	< .5	22	11	3253	30.50	< 5	< 10	< 4	< 2	6	46.6	< 5	< 5	43	4.61	0.033	< 2	18	2.28	84	0.04	1.01	0.11	0.18	< 4	5	8	4	< 2	< 1	2
L 1-13	< 2	379	20	898	< .5	31	18	3443	30.39	< 5	16	< 4	< 2	11	16	< 5	< 5	47	4.44	0.029	< 2	17	2.03	40	0.07	1.46	0.14	0.26	4	11	9	5	< 2	< 1	3
L 1-14	< 2	273	7	877	< 5	12	< 2	3189	33.26	14	< 10	< 4	2	20	5.8	15	< 5	44	3.69	0.024	< 2	15	1.94	143	0.08	1.22	0.08	0.10	30	7	17	5	< 2	4	3
L 1-15	< 2	83	14	10739	1.0	12	8	1820	10.87	< 5	< 10	< 4	3	310	72.2	9	< 5	162	4.78	0.046	13	59	2.34	217	0.25	7.50	1.32	1.33	< 4	17	< 2	18	< 2	< 1	16
L 1-16	< 2	184	14	830	1.1	8	12	917	8.83	< 5	< 10	< 4	4	260	2.2	< 5	7	187	2.98	0.054	11	38	2.54	6911	0.29	8.28	1.89	3.30	< 4	15	< 2	17	< 2	< 1	20
L 2-1	< 2	1139	8	520	5.4	27	62	2658	14.35	< 5	< 10	< 4	4	113	2.6	< 5	< 5	237	3.88	0.037	3	73	3.78	37	0.24	5.69	0.83	1.76	< 4	10	5	16	< 2	5	28
L 2-2	9	1404	5	463	13.8	13	14	2889	22.19	12	19	< 4	3	25	4.2	15	< 5	147	5.38	0.057	8	45	4.64	250	0.12	2.43	0.23	0.32	118	12	7	21	< 2	< 1	8
L 2-3	< 2	538	16	236	0.7	13	< 2	1478	41.94	< 5	< 10	< 4	3	4	2.9	< 5	< 5	43	2.37	0.027	< 2	13	1.95	99	0.02	0.58	0.07	0.13	104	4	4	6	< 2	< 1	1
L 2-4	< 2	382	8	5123	0.8	22	15	4184	24.71	< 5	< 10	< 4	2	27	29.8	< 5	< 5	35	7.28	0.054	< 2	21	3.36	58	0.04	1.35	0.12	0.15	< 4	6	10	8	< 2	3	2
L 2-5	< 2	44	15	4436	< .5	32	16	5082	24.56	< 5	< 10	< 4	< 2	7	22.8	6	< 5	27	8.03	0.049	< 2	25	4.31	75	0.02	0.48	0.06	0.05	< 4	3	14	5	< 2	3	< 1
L 2-6	< 2	172	17	14796	0.7	13	17	4249	23.56	< 5	< 10	< 4	< 2	5	105.9	< 5	< 5	32	8.10	0.025	< 2	31	4.81	24	0.02	0.50	0.06	0.03	< 4	3	11	7	< 2	3	< 1
L 2-7	4	701	15	1230	0.8	7	4	1638	29.67	< 5	14	< 4	3	3	8.5	< 5	< 5	42	4.02	0.029	< 2	19	4.98	14	0.02	0.64	0.10	0.04	< 4	3	8	7	< 2	< 1	1
L 2-8	< 2	103	< 5	8507	< .5	7	9	5637	21.69	< 5	< 10	< 4	< 2	75	47.4	< 5	< 5	52	7.74	0.017	< 2	24	3.92	14	0.05	1.04	0.07	0.05	< 4	6	19	8	< 2	< 1	4
RE L 2-8	< 2	100	< 5	8574	< .5	8	9	5651	21.79	< 5	< 10	< 4	2	75	48.9	< 5	< 5	52	7.81	0.017	< 2	22	3.95	14	0.05	1.04	0.07	0.04	< 4	6	20	8	< 2	< 1	4
L 2-9	< 2	21	11	8870	< .5	11	15	9413	16.69	< 5	< 10	< 4	2	28	48.3	< 5	< 5	42	10.94	0.042	< 2	20	4.56	94	0.03	0.87	0.11	0.10	< 4	4	12	5	< 2	5	2
L 2-10	< 2	17	< 5	6915	< .5	13	14	7596	19.71	< 5	< 10	< 4	< 2	61	41.8	< 5	< 5	37	9.89	0.033	< 2	17	3.82	332	0.06	2.03	0.21	0.31	< 4	10	16	7	< 2	2	3
L 3-1	9	171	10	254	1.1	19	24	1658	16.81	< 5	< 10	< 4	3	144	1.4	< 5	6	174	3.11	0.043	6	95	1.85	58	0.29	6.34	0.38	2.34	< 4	21	5	16	< 2	5	18
L 3-2	5	730	25	237	1.2	18	37	1889	27.13	< 5	< 10	< 4	2	13	3.8	10	< 5	41	3.97	0.033	< 2	29	4.15	50	0.05	1.05	0.12	0.15	45	7	4	7	< 2	3	3
L 3-3	< 2	243	< 5	8358	< .5	22	28	5090	21.93	< 5	< 10	< 4	< 2	60	40	< 5	< 5	90	7.12	0.051	< 2	22	3.34	84	0.04	1.71	0.11	0.12	< 4	9	13	7	< 2	< 1	3
L 3-4	< 2	112	12	6380	1.2	15	19	6218	19.22	< 5	< 10	< 4	< 2	11	27.1	11	< 5	28	8.12	0.054	< 2	16	4.06	97	0.02	0.81	0.09	0.06	< 4	4	19	6	< 2	4	1
L 3-5	< 2	41	< 5	3360	< .5	34	14	6220	20.98	< 5	< 10	< 4	2	8	19.1	5	< 5	28	8.78	0.041	< 2	19	5.13	48	0.03	0.48	0.05	0.04	< 4	5	13	6	< 2	< 1	2

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TO: Birch Mountain Minerals Ltd
FILE # 38577

DATE: October 22, 1998

ELEMENT	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Sn	Y	Nb	Ba	Sc
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
L 3-5	2	234	< 5	2117	< .5	8	< 2	2421	32.27	< 5	< 10	< 4	< 2	4	12	< 5	< 5	33	4.62	0.038	< 2	21	4.98	29	0.03	0 40	0.05	0.04	< 4	< 2	4	9	< 2	< 1	1
L 3-7	< 2	65	12	5955	< .5	19	13	4780	17.79	5	< 10	< 4	< 2	10	35.5	9	< 5	32	7.50	0.078	< 2	23	6 65	78	0.04	0 92	0.13	0.09	< 4	3	5	11	< 2	4	2
L 3-8	< 2	28	5	4840	0 5	15	22	7792	18.34	< 5	< 10	< 4	2	44	27.8	< 5	< 5	46	8.54	0.051	< 2	17	4.32	278	0.03	1.28	0.11	0 10	< 4	4	14	8	< 2	4	3
L 3-9	< 2	100	8	20385	0.6	25	36	6478	20.85	< 5	< 10	< 4	< 2	63	178.7	10	< 5	45	7.64	0.041	< 2	38	3 08	220	0.07	2.80	0.20	0.27	10	9	13	10	< 2	< 1	4
STANDARD CT2	20	59	34	163	7.1	76	32	1169	4.73	24	22	7	45	246	18.7	17	16	139	1.18	0 107	48	125	1.32	847	0.36	7 30	1.60	1 84	19	43	17	15	8	2	14
L 3-10	< 2	378	13	3405	0 9	18	26	3582	17.26	< 5	< 10	< 4	< 2	77	23 4	7	< 5	62	5.23	0.031	3	37	2.82	20	0.10	2.99	0.36	0.40	< 4	12	7	8	< 2	4	7
L 3-11	< 2	14	11	391	< .5	8	8	619	2 92	< 5	< 10	< 4	2	219	0 8	< 5	< 5	154	2.19	0.050	14	47	2 30	5959	0.27	7.77	1.89	2.69	< 4	23	2	18	< 2	< 1	19
L 3-12	< 2	58	25	786	0.9	8	8	714	3.37	< 5	19	< 4	3	187	3.1	< 5	< 5	142	2.32	0 050	12	37	2 28	3724	0.27	7 79	2 63	1 99	< 4	17	< 2	15	< 2	< 1	18
L 4-1	< 2	86	114	12893	3 4	11	260	2262	15 69	126	< 10	< 4	3	414	90.6	47	287	226	7.94	0 039	8	104	0 91	424	0 35	8 84	0.19	0 66	238	22	193	17	< 2	5	30
L 4-2	< 2	159	280	48870	1.3	15	106	1730	34.76	165	14	< 4	3	202	383.3	8	12	84	4.79	0.029	5	129	0.29	43	0.16	3.47	0.03	0.03	< 4	13	69	14	< 2	8	10
L 4-3	< 2	37	647	53364	2.5	15	98	7033	33.14	< 5	10	< 4	2	54	372.6	< 5	6	43	6.02	0 022	2	84	0.88	102	0.02	0.59	0.06	0.02	38	3	27	7	< 2	4	1
L 4-4	< 2	16	12	19161	0.7	10	47	10619	22.71	< 5	< 10	< 4	2	210	139.2	< 5	6	86	11.05	0 046	6	65	1.09	103	0.08	1.97	0.07	0.04	20	4	43	13	< 2	4	4
L 4-5	< 2	10	9	17549	< .5	14	40	11110	15.81	< 5	< 10	< 4	< 2	16	83 8	< 5	< 5	23	11.34	0 033	3	45	3.28	119	0.07	0.58	0.06	0.03	< 4	4	19	6	< 2	5	2
L 5-1	8	34	8	35145	< .5	13	76	8072	17.70	< 5	< 10	< 4	< 2	45	238 5	< 5	20	51	10.24	0 027	3	93	2 06	114	0.07	2.20	0.20	0.41	28	5	31	12	< 2	3	4
RE L 5-1	8	33	10	34811	< .5	12	76	7924	17 44	< 5	< 10	< 4	< 2	44	235 8	< 5	17	51	10.04	0 027	3	97	2 03	120	0.07	2 18	0.19	0 40	38	5	30	11	< 2	5	4
L 5-2	3	16	16	99853	< .5	16	199	14836	20.73	15	< 10	< 4	2	6	815.9	< 5	23	14	8.97	0 024	< 2	45	0.57	36	0.02	0.71	0 08	0.08	180	4	36	6	< 2	< 1	1
L 5-3	2	55	40	46203	0.7	324	124	10715	23.85	< 5	22	< 4	2	24	311 2	< 5	16	30	7.94	0.033	3	88	0.97	38	0.05	1.15	0.14	0.17	< 4	9	62	8	< 2	4	3
L 5-4	2	18	24	49904	< .5	10	128	11345	21.82	< 5	< 10	< 4	< 2	7	338.9	< 5	18	20	10.73	0.023	2	105	1.19	69	0.02	0 98	0.09	0.09	76	4	44	7	2	3	1
L 5-5	< 2	19	16	50060	< .5	15	96	11214	21.62	< 5	< 10	< 4	2	80	353.2	< 5	7	26	8.63	0 022	5	93	1.37	83	0.07	1.43	0.07	0.07	< 4	9	38	7	< 2	3	3
L 5-6	< 2	9	12	33998	< .5	4	58	5085	12.90	< 5	< 10	< 4	< 2	25	212.3	16	10	23	7.59	0.021	2	65	7.29	57	0.04	1.02	0.06	0.05	< 4	3	22	7	< 2	5	2
L 5-7	< 2	10	8	16356	< .5	12	44	8881	18.18	< 5	< 10	< 4	< 2	98	87.6	< 5	6	46	8.20	0.023	6	36	2.38	278	0.09	2.59	0.13	0.17	463	9	74	9	< 2	4	7
L 6-1	2	78	< 5	1128	< .5	19	90	8016	26.35	< 5	19	< 4	2	17	6 7	< 5	34	19	6.50	0.024	< 2	20	1.10	53	0.02	0.63	0.05	0.10	36	3	36	5	2	2	2
L 6-2	< 2	155	< 5	47036	< .5	21	163	8309	27.12	< 5	< 10	< 4	< 2	7	374 8	< 5	9	14	5.27	0.025	< 2	84	0.60	58	0.02	0.69	0.08	0.05	< 4	5	30	6	< 2	1	1
L 6-3	18	204	< 5	13700	< .5	14	120	5733	28.72	< 5	< 10	< 4	< 2	6	91.5	< 5	10	15	5.38	0.022	< 2	33	0.95	86	0 02	0.65	0.09	0.08	183	5	42	6	< 2	2	1
L 6-4	2	33	< 5	587	< .5	12	73	4845	24.32	< 5	< 10	< 4	< 2	4	5 1	< 5	7	14	6.31	0.026	< 2	19	3.30	39	0 01	0.50	0.06	0.04	30	3	44	5	< 2	3	1
L 6-5	3	258	11	1485	0.8	7	97	4325	24.09	83	11	< 4	< 2	11	7 9	11	5	18	5.78	0.023	3	13	4 07	46	0.03	0.91	0.07	0.07	< 4	4	41	7	2	3	2
RE L 6-5	3	249	8	1431	0.9	9	95	4095	22.90	75	< 10	< 4	< 2	10	8	< 5	9	18	5.51	0.021	2	11	3.90	43	0.02	0 88	0.05	0.06	< 4	4	40	7	< 2	3	2
L 6-6	< 2	11	< 5	1619	< .5	11	43	3876	14.85	< 5	< 10	< 4	< 2	21	6	9	< 5	35	7.09	0.027	6	19	7.10	41	0.09	2 37	0 12	0.13	< 4	12	51	9	< 2	5	5
L 6-7	< 2	33	5	5570	< .5	7	61	8034	20.92	< 5	< 10	< 4	< 2	56	44	< 5	< 5	42	7.74	0.025	5	21	2 63	95	0.08	2.33	0.16	0.19	8	8	58	11	< 2	1	5
L 6-8	< 2	22	< 5	4142	< .5	11	41	5583	20.36	< 5	< 10	< 4	< 2	139	23.3	9	< 5	70	7.72	0.035	15	35	2.26	179	0.11	3.56	0.22	0.38	29	12	23	17	< 2	< 1	6
L 7-1	3	52	13	35790	1.5	11	38	10558	14.01	5	< 10	< 4	< 2	17	288	< 5	13	59	17.83	0.025	3	178	0.43	121	0.09	3.08	0.02	0.37	< 4	6	7	31	< 2	5	8

Loring Laboratories Ltd.

629 Beaverdam Road N.E.,
Calgary Alberta T2K 4W7
Tel: 274-2777 Fax: 275-0541

File: # 39384

DATE: August 15, 1997

TO: BIRCH MOUNTAIN MINERALS LTD
3100, Bow Valley Sq II, 205 - 5th Ave S.W.,
Calgary, Alberta
T2P 2V7

Attn: Val Pratico

ICP ANALYSIS

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
117609	<0.5	2.77	10	<1	276	73	7	2.22	4	18	48	113	0.91	0.15	7	0.49	208	5	0.30	46	0.069	19	8	153	38	0.03	<1	43	<1	344
117631	<0.5	2.21	<1	<1	62	163	6	1.39	3	20	32	172	1.46	0.36	<1	0.61	425	1	0.21	14	0.033	4	5	119	31	0.09	<1	107	<1	143
117632	<0.5	2.22	<1	<1	39	88	3	1.58	2	22	55	172	1.41	0.23	3	0.51	393	<1	0.26	11	0.044	4	4	132	29	0.07	<1	71	<1	127
117650	<0.5	1.92	<1	<1	35	77	3	1.45	2	9	24	157	1.29	0.37	1	0.83	242	1	0.25	9	0.057	10	6	80	29	0.07	<1	42	<1	46
RJ 97-R 241	<0.5	0.59	<1	<1	13	15	4	1.54	2	12	48	96	1.06	0.03	1	0.13	774	2	0.02	9	0.047	10	5	15	36	0.07	<1	17	<1	51
RJ 97-F242	<0.5	3.18	2	<1	12	138	27	2.15	2	12	49	50	1.15	0.49	15	0.67	304	1	0.25	11	0.060	7	5	98	34	0.11	<1	43	<1	59
RJ 97-R 243	<0.5	2.63	<1	<1	5	158	5	1.25	2	9	51	54	1.05	0.91	<1	1.24	173	1	0.16	6	0.092	3	6	56	27	0.10	<1	26	<1	34
RJ 97-R 244	<0.5	3.29	118	<1	20	66	10	1.62	5	17	92	105	1.24	0.20	11	1.22	682	4	0.30	171	0.058	103	35	74	42	0.06	<1	115	<1	254
RJ 97-R 245	<0.5	3.07	126	<1	15	181	6	1.50	3	19	183	89	1.93	1.12	<1	1.23	163	22	0.23	101	0.078	10	14	77	56	0.12	<1	206	<1	54
RJ 97-R 246	<0.5	2.19	37	<1	21	67	5	1.09	3	14	110	104	1.57	0.22	<1	0.95	200	34	0.20	79	0.071	16	10	48	49	0.07	<1	191	<1	186
RJ 97-R 247	<0.5	4.36	57	<1	10	47	7	2.88	3	9	97	58	1.83	0.18	5	1.04	358	4	0.33	45	0.064	10	14	215	33	0.04	<1	76	<1	170
RJ 97-R 248	<0.5	2.64	14	<1	5	230	4	0.24	3	11	60	16	1.18	0.67	2	0.87	358	1	0.05	48	0.057	4	17	32	46	0.08	<1	57	<1	105

0.500 Gram sample is digested with Aqua Regia at 95 C for one hour and bulked to 10 ml with distilled water.
Partial dissolution for Al, B, Ba, Ca, Cr, Fe, K, La, Mg, Mn, Na, P, Sr, Ti, and W

Loring Laboratories Ltd.

629 Beaverdam Road N.E.,
Calgary Alberta T2K 4W7
Tel: 274-2777 Fax: 275-0541

File: # 39377

TO: BIRCH MOUNTAIN MINERALS LTD
3100, Bow Valley Sq II, 205 - 5th Ave S.W.,
Calgary, Alberta
T2P 2V7

DATE: August 15, 1997

ICP ANALYSIS

Attn: Val Pratico

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
117651 CK	<0.5	0.43	69	<1	3893	2	14	5.08	27	11	25	34	0.73	0.02	7	0.34	677	1	0.01	14	0.053	46	12	50	<1	0.02	<1	11	<1	3301

0.500 Gram sample is digested with Aqua Regia at 95 C for one hour and bulked to 10 ml with distilled water.
Partial dissolution for Al, B, Ba, Ca, Cr, Fe, K, La, Mg, Mn, Na, P, Sr, Ti, and W

JUN-25-1997 02:23PM FROM TO 2639888 P.06

Loring Laboratories Ltd.
629 Beaverdam Road N.E.
Calgary Alberta T2K 4W7
Tel 274-2777 Fax 275-0541

TO: Birch Mountain Minerals Ltd
FILE # 38577

DATE: October 22, 1996

ELEMENT	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Sn	Y	Nb	Be	S
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
L 7-2	< 2	15	14	4647	0.8	11	19	5872	7.01	< 5	< 10	< 4	2	453	25	9	< 5	102	16.93	0.037	13	57	1.50	214	0.17	5.24	0.02	0.13	< 4	17	10	23	< 2	< 1	1(
STANDARD CT2	19	55	38	150	6.6	74	30	1124	4.31	24	15	5	39	230	17.3	19	16	128	1.11	0.102	41	112	1.19	752	0.32	6.73	1.91	1.68	17	42	19	14	7	1	1.

Loring Laboratories Ltd.

629 Beaverdam Road N.E.,
Calgary Alberta T2K 4W7
Tel: 274-2777 Fax: 275-0541

File: # 39377

DATE: August 15, 1997

TO: BIRCH MOUNTAIN MINERALS LTD
3100, Bow Valley Sq II, 205 - 5th Ave S.W.,
Calgary, Alberta
T2P 2V7

Attn: Val Pratico

ICP ANALYSIS

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
117486	<0.5	1.60	1	<1	16	118	2	1.21	1	16	52	84	1.14	0.26	<1	0.48	226	1	0.20	22	0.059	6	6	208	<1	0.12	<1	53	9	28
117487	<0.5	1.61	7	<1	21	64	3	6.79	7	8	26	26	1.03	0.13	9	0.59	1376	3	0.13	10	0.034	29	10	202	<1	0.03	<1	26	5	1411
117488	<0.5	1.73	7	<1	54	23	3	7.73	3	7	19	117	1.24	0.16	12	0.31	943	2	0.22	10	0.055	36	6	231	<1	0.01	<1	15	4	464
117494	0.7	1.58	2	<1	40	55	4	6.96	3	8	15	74	1.25	0.28	12	0.48	1203	3	0.17	10	0.040	281	23	262	<1	0.02	<1	29	4	363
117495	<0.5	2.05	8	<1	26	82	1	2.18	3	18	25	107	1.48	0.19	6	0.71	571	<1	0.23	17	0.063	89	14	195	1	0.03	<1	46	4	72
117496	<0.5	1.98	<1	<1	82	70	6	0.81	3	83	49	338	2.92	0.49	4	0.52	340	<1	0.14	22	0.047	19	8	38	18	0.08	<1	98	14	78
117501	<0.5	1.96	7	<1	73	48	3	0.77	2	11	59	252	2.23	0.91	4	1.03	239	1	0.12	11	0.053	10	12	20	<1	0.06	<1	93	6	52
117525	9.9	0.78	45	<1	176	50	6	0.47	4	285	58	1665	3.22	0.04	9	0.31	189	3	0.03	39	0.028	25	12	1	24	0.02	<1	35	14	67
117534	<0.5	1.52	2	<1	55	97	3	0.91	2	38	46	234	2.14	0.11	3	0.21	143	<1	0.20	15	0.059	19	6	87	7	0.07	<1	56	6	29
117535	<0.5	1.85	2	<1	47	118	2	1.20	2	25	49	185	2.00	0.11	4	0.17	141	<1	0.27	13	0.072	9	6	61	6	0.05	<1	57	6	46
117536	<0.5	2.02	<1	<1	65	85	4	1.25	2	29	55	251	2.20	0.07	4	0.22	155	<1	0.28	17	0.075	11	7	42	<1	0.06	<1	50	7	44
117537	1.6	0.84	<1	<1	305	55	10	0.85	9	101	52	894	3.34	0.01	22	0.11	445	<1	0.02	34	0.017	13	7	7	54	0.02	<1	19	27	29
117538	<0.5	0.98	<1	<1	104	67	2	0.74	3	44	54	304	2.70	0.07	3	0.27	223	<1	0.04	20	0.053	16	8	20	8	0.09	<1	65	9	16
117539	<0.5	2.11	1	<1	97	115	3	1.92	2	34	30	150	2.11	0.08	5	0.18	231	<1	0.04	24	0.045	8	10	29	4	0.05	<1	26	6	17
117540	<0.5	1.54	120	<1	57	36	2	1.23	2	47	21	43	2.03	0.06	3	0.67	229	<1	0.07	27	0.030	41	26	26	5	0.05	<1	54	7	132
117590	<0.5	2.42	2	<1	78	61	4	1.79	2	12	42	41	2.00	0.11	6	0.19	239	1	0.23	10	0.042	43	20	49	4	0.05	<1	31	7	68
117591	<0.5	2.27	3	<1	21	64	3	1.34	1	12	53	40	1.31	0.26	<1	0.60	194	<1	0.29	9	0.063	8	12	58	<1	0.12	<1	66	4	38
117592	<0.5	4.05	8	<1	76	35	6	2.48	3	26	28	115	2.24	0.16	4	0.47	117	<1	0.42	16	0.025	27	23	129	6	0.07	<1	39	8	36
117593	<0.5	4.85	2	<1	81	20	5	3.14	3	18	37	105	2.16	0.07	6	0.23	123	<1	0.56	15	0.022	14	21	152	6	0.05	<1	20	8	30
117594	<0.5	0.16	7	<1	4	<1	1	8.12	1	1	5	25	0.71	0.04	13	1.88	1673	10	0.01	10	0.016	4	4	125	<1	0.00	<1	8	3	131
117595	<0.5	0.95	95	<1	48	30	1	1.82	2	8	61	75	2.05	0.07	7	0.23	185	2	0.14	25	0.031	53	27	34	<1	0.04	<1	7	6	38
117596	<0.5	1.14	233	<1	58	2	5	4.74	6	7	52	52	1.83	0.06	10	0.24	481	1	0.07	18	0.025	200	152	39	<1	0.02	<1	14	6	946
117602	<0.5	0.47	2	<1	56	13	3	1.72	1	4	21	8	0.88	0.02	5	0.19	427	1	0.01	4	0.050	28	7	31	<1	0.06	<1	13	4	138
117603	<0.5	0.67	<1	<1	65	24	4	2.08	3	5	36	88	2.09	0.07	8	0.08	775	1	0.03	18	0.058	13	7	9	<1	0.03	<1	17	9	129
117604	<0.5	0.44	1	<1	21	13	2	1.74	1	3	55	5	0.97	0.01	3	0.08	439	19	0.01	7	0.034	29	5	32	<1	0.05	<1	20	4	99

Loring Laboratories Ltd.

629 Beaverdam Road N.E.,
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File: # 39377

DATE: August 15, 1997

TO: BIRCH MOUNTAIN MINERALS LTD
3100, Bow Valley Sq II, 205 - 5th Ave S.W.,
Calgary, Alberta
T2P 2V7

Attn: Val Pratico

ICP ANALYSIS

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Th	Ti	U	V	W	Zn
SAMPLES	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
BJ 97S-217	<0.5	0.53	0	<1	67	54	1	0.10	<1	2	6	24	0.58	0.16	5	0.07	53	1	0.02	3	0.027	17	<1	7	11	0.05	<1	23	2	52
BJ-97S-218	<0.5	1.55	18	<1	27	64	6	0.14	2	9	57	24	2.28	0.13	<1	0.32	170	2	0.02	19	0.044	18	2	9	38	0.22	<1	123	7	57
BJ-97S-219	<0.5	1.92	65	<1	10	68	6	0.08	2	9	52	15	2.29	0.16	<1	0.36	190	1	0.02	18	0.039	17	3	3	40	0.25	<1	138	8	61
BJ-97S-220	<0.5	1.88	18	<1	9	82	5	0.10	3	18	67	27	2.22	0.19	<1	0.43	284	2	0.02	31	0.059	13	4	10	61	0.21	<1	99	1	93
BJ-97S-221	<0.5	4.32	30	<1	12	73	6	0.15	2	11	66	23	1.61	0.15	7	0.55	249	<1	0.02	32	0.093	12	8	10	51	0.09	<1	40	<1	81
BJ-97S-222	<0.5	1.46	7	<1	7	63	4	0.13	3	9	32	89	2.35	0.13	<1	0.33	508	2	0.02	17	0.034	13	4	5	43	0.14	<1	58	<1	103
BJ-97S-223	<0.5	0.56	3	<1	2	44	2	0.06	1	5	13	16	1.67	0.13	<1	0.07	87	2	0.01	7	0.028	14	2	3	28	0.18	<1	81	<1	27
BJ-97S-224	<0.5	0.57	3	<1	<1	47	4	0.07	1	6	15	18	1.28	0.14	<1	0.12	125	2	0.02	7	0.023	12	2	4	28	0.20	<1	83	<1	31
BJ-97S-225	<0.5	0.58	1	<1	2	38	3	0.04	1	5	14	15	0.51	0.10	<1	0.10	69	1	0.01	6	0.015	16	1	3	26	0.16	<1	77	<1	23
BJ-97S-226	<0.5	0.99	16	<1	1	53	3	0.04	2	6	32	13	0.85	0.11	<1	0.24	130	1	0.01	12	0.026	11	3	2	36	0.20	<1	117	<1	26
BJ-97S-227	<0.5	0.64	2	<1	1	48	2	0.06	1	6	19	13	1.06	0.11	<1	0.15	108	1	0.01	9	0.023	17	1	4	30	0.20	<1	119	3	27
BJ-97S-228	<0.5	2.04	30	<1	3	141	4	0.63	2	16	85	44	0.82	0.28	6	0.86	529	1	0.04	47	0.078	33	4	38	33	0.10	<1	61	<1	329
BJ-97S-229	<0.5	2.04	29	<1	3	128	2	0.58	3	15	74	35	0.79	0.30	8	0.84	489	1	0.04	44	0.073	49	4	32	33	0.10	<1	59	<1	472
BJ-97S-230	<0.5	1.90	21	<1	2	149	2	0.54	2	16	80	28	0.85	0.30	6	0.83	438	1	0.03	47	0.072	78	3	37	31	0.09	<1	51	<1	279
BJ-97S-231	<0.5	1.86	22	<1	5	120	3	0.47	2	15	68	43	0.78	0.28	8	0.79	434	1	0.04	43	0.078	45	5	32	32	0.09	<1	49	<1	457
BJ-97S-232	<0.5	2.12	29	<1	7	133	5	0.88	3	18	84	40	0.88	0.33	5	0.89	595	1	0.04	50	0.088	47	4	38	34	0.09	<1	58	<1	227
BJ-97S-233	<0.5	1.11	10	<1	6	103	2	0.23	1	8	40	14	0.82	0.18	3	0.51	155	<1	0.02	25	0.052	16	2	15	28	0.07	<1	31	<1	124
BJ-97S-234	<0.5	0.45	4	<1	2	47	2	0.07	<1	4	11	14	0.48	0.11	<1	0.08	59	<1	0.02	6	0.031	12	1	5	16	0.09	<1	35	<1	35
BJ-97S-235	<0.5	0.87	15	<1	3	49	1	0.10	1	5	26	14	0.40	0.10	7	0.28	123	1	0.02	15	0.036	14	1	4	31	0.10	<1	40	<1	44
BJ-97S-236	<0.5	0.52	10	<1	<1	41	2	0.05	1	6	20	11	0.60	0.13	<1	0.16	84	1	0.01	10	0.022	11	1	3	30	0.20	<1	87	<1	23
BJ-97S-237	<0.5	2.37	40	<1	1	98	5	0.16	2	12	78	25	0.55	0.27	0	0.69	253	1	0.02	32	0.082	25	4	5	59	0.20	<1	84	<1	85
BJ-97S-238	<0.5	1.70	25	<1	3	122	3	0.32	2	15	56	25	1.22	0.21	10	0.67	449	1	0.03	37	0.083	43	4	23	42	0.10	<1	48	<1	225
BJ-97S-239	<0.5	1.96	26	<1	2	123	4	0.29	2	14	75	31	0.83	0.22	4	0.78	334	1	0.03	41	0.090	45	4	21	34	0.09	<1	58	<1	274
BJ-97S-240	<0.5	1.84	29	<1	2	124	5	0.28	2	16	68	28	1.14	0.23	3	0.77	425	<1	0.03	42	0.083	47	4	20	33	0.09	<1	56	<1	344
BJ-97T-241	<0.5	1.45	20	<1	11	103	3	0.57	2	11	75	21	0.88	0.28	8	0.58	364	1	0.05	25	0.051	169	3	28	33	0.07	<1	38	<1	301

APPENDIX 7

GEOPHYSICAL REPORT

(Associated Mining Consultants Ltd.)

HORIZONTAL LOOP ELECTROMAGNETIC AND MAGNETIC SURVEYS
SWIFT RIVER PROPERTY, YUKON TERRITORY

Phase II

Submitted to:

Birch Mountain Resources Ltd.
Calgary, Alberta

Submitted by:

Associated Mining Consultants Ltd.
Calgary, Alberta

TABLE OF CONTENTS

Letter of Transmittal
Table of Contents

1.0 INTRODUCTION 1

2.0 GEOLOGY (from MacRobbie, 1992) 2

3.0 SURVEY GRID DESCRIPTION 3

4.0 METHOD 4
4.1 Horizontal Loop Electromagnetics (HLEM) 4
4.2 Total Field Magnetics 5

5.0 RESULTS 6

6.0 CONCLUSIONS AND RECOMMENDATIONS 9

7.0 REFERENCES 10

Figures bound separately

1.0 INTRODUCTION

This report presents the results of a horizontal loop electromagnetic survey and total field magnetometer survey undertaken at the Birch Mountain Resources Ltd. (BMRL) Swift River Property, located approximately 130 kilometres west of Watson Lake, Yukon Territory. Performed between March 21 - 29, and June 17 - June 30, 1997, the objective of the geophysical surveys was to detect and map the location of mineralised zones and/or stratigraphic intervals for correlation with base metal exploration targets.

All work for this project was undertaken in accordance with Associated Mining Consultants Ltd.'s proposals dated January 28, 1997 (AMP 819) and February 25, 1997 (AMP 828).

2.0 GEOLOGY (from MacRobbie, 1992)

The regional geology is dominated by the northwest-trending Cretaceous Cassiar Batholith comprised of quartz monzonite to granodiorite, with smaller batholiths and stocks of Cretaceous to Tertiary quartz monzonite, diorite and alaskite occurring to the west. Major regional faulting includes the northwest-trending Cassiar Fault and Swift River Fault, the latter separating Devono-Mississippian black argillite from Campro-Ordivician carbonate, phyllite, minor schist and hornfels. The Devono-Mississippian sequence is overlain by Mississippian to Permian (?) Carbonate, conglomerate, chert, phyllite, volcanic rocks, schist, quartzite and amphibolite of the Yukon Cataclastic Complex.

Within the property boundary, Devo-Mississippian calcareous argillite is overlain by Mississippian to Permian (?) medium to thinly bedded marble, massive stratabound to stratiform Fe-Ca-silicate skarn and finely laminated Ca-silicate hornfels/meta-tuff (?).

Mineralisation is predominantly Zn and Fe, with evidence of Pb, Cu, Au, Ag and W, Sn. Mineralised boulders are comprised of medium to coarse-grained banded skarn with thin to thick massive sphalerite, magnetite, pyrrhotite and pyrite bands within Fe-Ca-silicates. The mineralised boulders and subcrop exposure may indicate the occurrence of well mineralised skarn over widths of up to 5-20 metres, with skarn textures suggesting that several Zn(Fe) mineralised skarn horizons occur within a less mineralised sequence.

Within the survey grid perimeter, previous studies have concluded that stratigraphy dips steeply to the south.

3.0 SURVEY GRID DESCRIPTION

The survey grid, established by BMRL personnel, extended to the east and west of the existing Dan and Lucy showings. Where possible, existing cutlines were incorporated into the present survey grid. Survey lines were generally located on 200 metre centres, decreasing to 100 metres and 50 metres in close proximity to the Lucy showing.

Stations were flagged at 25 metre intervals along the north-south survey lines.

4.0 METHOD

Horizontal loop electromagnetic and total field magnetic surveys were conducted over known skarn mineralisation at the BMRL Swift River, Y.T. property in an attempt to delineate sulfide mineralisation and/or stratigraphy hosting the mineralisation. A brief review of the geophysical methods employed in this study are presented as follows:

4.1 Horizontal Loop Electromagnetics (HLEM)

The HLEM method induces eddy current flow in the subsurface by means of a time varying magnetic field imparted by a magnetic dipole transmitter. The eddy current flow, in turn, induces a secondary magnetic field which is sensed by a receiver dipole. The magnitude of the secondary field is largely dependent upon the electrical properties of the subsurface. Two perpendicular vector components of the secondary field (in-phase and quadrature components) are measured to determine the location and orientation of subsurface conductive features. As a rule of thumb, the in-phase/quadrature ratio is to some degree proportional to conductor quality, relating here to an qualitative indication of sulfide/silicate ratios.

HLEM instrumentation design enables both variable transmitter-receiver coil spacing and operating frequencies, resulting in expandable exploration depths in addition to promoting optimal transmitter-conductor coupling. The use of multiple operating frequencies may also result in higher resolution in complex conductive zones, aid interpretation within geologically noisy environments, and enable the determination of overburden resistivities.

Four HLEM survey data sets, at operating frequencies of 1760, 3520, 7060, and 14080 Hz, were collected at 25 metre station intervals using the APEX MaxMin I portable EM system in the horizontal coplanar mode. A nominal transmitter-receiver coil separation of 100 metres was maintained over the survey grid. For steeply dipping, highly conductive dike-like conductive zones, effective exploration depths are in the order of 0.7 times the transmitter-receiver coil separation distance.

In total, 46.95 kilometres of HLEM survey data were collected during this program.

4.2 Total Field Magnetics

Variations within the earth's magnetic field, as measured by portable magnetometers, indicate localised variations of anomalous ferrimagnetic mineralisation. The geomagnetic field is comprised of three main parts:

I) The earth's magnetic field. The origin of this field is apparently a system of electrical currents originating in the earth's fluid conductive core. The resulting magnetic field resembles that of a large bar magnet.

ii) The external magnetic field originating in the outer atmosphere. This includes the eleven year cycle of sunspot activity, solar diurnal variations due to the action of the sun on ionospheric currents, lunar diurnal variations due to moon-ionosphere variations, magnetic storms usually associated with the aurora, and localised electrical storms.

iii) Local magnetic anomalies resulting from the magnetic content of relatively near-surface rocks.

The total magnetic field intensity, as measured in the present study with the GEM Systems Inc. GSM-19 magnetometer system, is a scalar measurement, or simply the magnitude of the earth's field vector independent of direction. Units of measurement of the geomagnetic field are generally nanoTeslas (nT), where 1 nT is in the order of 10^{-5} of the earth's main field. Resolution of the GSM-19 system is 0.01nT; accuracy is approximately 0.2 nT within the operating range.

Field measurements were acquired at 12.5 metre station intervals along the survey lines, employing a magnetometer console configured as a field magnetometer. The effects of diurnal variations in the earth's magnetic field were removed from the field data by means of a base station magnetometer. The base station magnetometer was configured to collect magnetic field data at five second intervals over the duration of each survey day at a stationary position in close proximity to the survey grid.

In total, 46.60 kilometres of total field magnetics survey data were acquired during this program.

5.0 RESULTS

In order to enhance presentation quality, the survey grid has been divided into two sections. The western portion encompasses survey lines 1200W to 2200E, whereas the eastern portion includes lines 2800E to 5200E.

HLEM survey data are presented as separate figures for each acquisition frequency (Figures 1a to 4a and 1b to 4b) at a scale of 1:5000. In addition, in the region where the survey line spacing interval has been reduced in the general vicinity of the Lucy showing (Lines 100W to 600E), scale has been reduced to 1:2500 to further clarify the illustrated HLEM response (Figures A-1 to A-4). Prominent conductors have been identified and labelled in each figure.

Strike is predominantly east-west relative to the survey grid coordinates. The amplitude of the anomalous responses is an indicator of the conductivity-thickness and/or depth of a subsurface conductor. In general, electromagnetic response to the occurring mineralisation at the Swift River property is moderate to weak, as confirmed by survey lines located directly over known zones of mineralisation (Lucy and Dan showings).

Due to the effects of current gathering, the amplitude of those conductors defined by the higher frequencies of operation are generally greater than those mapped with the lower operating frequencies. The attenuating effects of conductive overburden notwithstanding, the higher frequency results generally have a greater potential of identifying subsurface conductors. Consideration of multiple frequencies enables the identification of shallow anomalies which may mask conductors at depth.

Variations in transmitter-receiver coil spacing, due predominantly to large topographical gradients and/or minor inaccuracies in surveyed station spacing, result in noise that is most apparent in the in-phase response. In data where this noise is apparent, the quadrature response generally yields a more reliable indicator of subsurface anomalies.

Total field magnetometer survey data are presented as line profiles (Figures 5a and 5b) with background response (55,850 nT) removed.

Similar trending Conductors **A-A'**, **B-B'** and **C-C'** extend to the west and east of the Lucy showing from 200W to 500E. Dip is estimated at 90° to 75° to the south relative to topography. The discontinuities between Conductors **A-A'**, **B-B'** and **C-C'** may be a result of faulting.

In an attempt to extend the strike of Conductor **A-A'** to the west, transmitter-receiver coil spacing was increased from 100 metres to 150 metres along Lines 200W, 400W and 600W to increase the exploration depth. No evidence of Conductor **A-A'** continuing at depth is apparent within these data. Results of this exercise have been illustrated and summarised in Associated Mining Consultants Ltd.'s report 97PH04 entitled Horizontal Loop Electromagnetic and Magnetic Surveys, Swift River Property, Yukon Territory (April 14, 1997).

Moderate to strong magnetic response occurs along the same strike angle as that of Conductors **A-A'** and **B-B'**, while displaced approximately 25 to 50 metres to the south. The magnetic anomaly may be indicative of an adjacent magnetite-rich stratigraphic unit. Skarn mineralisation may occur between the HLEM conductor and the magnetic anomaly. Little to no magnetic response is associated with Conductor **A-A'**.

Conductor **D-D'** occurs subparallel to, and immediately to the north of Conductors **A-A'** and **B-B'**, extending between Line 0 to 150E. A weak to moderate magnetic response occurs coincident with Conductor **D-D'**.

Conductor **E-E'**, coincident with a relatively strong magnetic response, trends east-west between Lines 800E and 1200E. Dip appears to be approximately 75° to the south relative to topography.

Located immediately south of the Dan showing, Conductor **F-F'** extends from Line 1200E to 1800E. A relatively strong magnetic response is evident at the western extent of the conductor (Line 1200W). Dip angle is estimated to be 90° to 75° to the south relative to topography.

Conductor **G-G'**, positioned to the southeast of the Dan showing along strike of Conductor **E-E'**, is coincident with a moderate to weak magnetic response.

A strong in-phase anomaly, Conductor **H-H'** extends from 1200E to 1800E. Minimal corresponding quadrature response along portions of the conductor may be due, at least in part, to a reduced transmitter-receiver separation resulting from the high topographical gradients that occur in this region.

Little to no magnetic response is apparent in correlation with Conductor **H-H'**. This may suggest that the conductor is a graphite response and/or due to highly disseminated sulphides, as would be consistent with the nature of the quadrature response.

Other conditions that may satisfy this type response may include overlying conductive overburden. Although vegetation occurring in this region is indigenous of sandy soils, proximity to the river may indicate that finer grained material (more conductive) may occur below the sands.

Conductors **I-I'** and **J-J'** strikes northwest-southeast between Lines 0 and 800E. The two conductors appear relatively strong within each of the four data sets. Dip is estimated to be 60° to the south. A magnetic response of moderate strength is offset 50 to 100 metres south of Conductor **J-J'**. No magnetic anomaly is directly associated with Conductor **I-I'**.

Strike discontinuity between Conductors **I-I'** and **J-J'** may be due to a similar faulting mechanism as may be apparent in the vicinity of Conductors **A-A'**, **B-B'**, **C-C'** and **D-D'**.

Conductor **K-K'** is of limited lateral extent, evident on Lines 500E and 600E only. No anomalous magnetic response is associated with the HLEM signature.

With lateral extent significantly greater within the 14080 Hz data set, Conductor **L-L'** extends from 200W to 800W. Estimated conductor dip, as observed along Line 600W, is 75° to the south. A parallel striking magnetic anomaly is offset 150 metres to 175 metres to the south.

M-M' represents a relatively strong in-phase HLEM response striking northwest-southeast immediately south of the baseline between Lines 4400E and 4800E. Conductor **N-N'**, offset to the north of and oriented along a parallel strike to Conductor **M-M'**, may be a continuation of the same conductor. A moderately strong magnetic response is coincident with Conductor **N-N'**, and displaced to the north of **M-M'**.

Conductor **O-O'** extends east-west between Lines 3800E and 4400E, with the strongest response evident along Line 4200E. Dip is estimated at 75° the south, relative to topography. Corresponding magnetic response is evident along Lines 4000E and 4200E, displaced 50 to 100 metres to the south.

P-P' identifies a conductor of limited lateral extent occurring in the southern region of the surveyed grid. It is located at the north edge of a magnetic anomaly that extends from approximately 1400S along Lines 4400E and 4800E to the southern limits of the surveyed area, possibly representing a contact of the argillites to the north and volcanics to the south.

In-phase conductors **Q-Q'** and **R-R'** extend northwest-southeast along the northeastern perimeter of the surveyed region, parallel to the southern edge of the Swift River. Little to no corresponding magnetic response is evident. This response type may be due to graphite within faulting, or with geomorphic features associated with the adjacent river.

Conductors **S-S'** and **T-T'** are two parallel features occurring south of the baseline from 3200E to 3600E and 3600E to 3400E, respectively. Relatively strong in-phase and quadrature response is evident. Laterally displaced magnetic responses to the south follow a parallel strike.

In addition to those conductors described above, several other anomalous responses are identified in the accompanying figures that represent conductors of limited apparent extent and magnitude.

6.0 CONCLUSIONS AND RECOMMENDATIONS

The geophysical surveys performed on the BMRL Swift River, Y.T. property have identified a number of subsurface electrical conductors and magnetic anomalies. These may be used to prioritise locations for ground follow-up.

HLEM magnetic anomalous response is mostly attributed to pyrrhotite and magnetite, respectively, within stratigraphic boundaries. Mineralisation hosted by skarn horizons may occur between the mapped HLEM conductors and magnetic anomalies.

Magnetic anomalies mostly occur to the south (up-slope) of mapped HLEM conductors. The magnitude of relative displacement may be attributed to the relationship between dip angle and topography. That is, displacement is generally less in areas of high topographical gradient along the southern portion of the grid as compared to relatively flat regions to the north.

Given the accepted geological model of this region, the induced polarisation (IP) method may provide results of greater detail than the HLEM technique. However, given the apparent success of the HLEM method of extending the known conductors laterally, the increased data acquisition costs associated with the IP survey method may not be warranted at this time.

If, upon full integration of the present geophysical survey data with existing drillhole information, further HLEM surveys are deemed necessary to determine the full lateral extent of the mapped conductors, it is recommended that survey lines at the edges of the HLEM conductors be repeated with an expanded transmitter-receiver separation. This would determine if conductor length increases with depth.

7.0 REFERENCES

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1993. **Internal Report on HLEM and Magnetic Surveys at the Swift River Option, Yukon Territory.**

Ketola, M., Puranen, M.;

1967. **Type Curves for the Interpretation of Slingram (Horizontal Loop) Anomalies Over Tabular Bodies.** Geological Survey of Finland.

Bowman, M.;

1997. **Horizontal Loop Electromagnetic and Magnetic Surveys, Swift River Property, Yukon Territory.** Associated Mining Consultants Ltd..

AMCL

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File: 97PH22
October 29, 1997

BIRCH MOUNTAIN RESOURCES LTD.
3100, Bow Valley Square 2
205 - 5th Avenue S.W.
Calgary, Alberta
T2P 2V7

Attention: Val Pratico, P.Geol.

Dear Val

Associated Mining Consultants Ltd. (AMCL) is pleased to submit the following report entitled:

Horizontal Loop Electromagnetic and Magnetic Surveys
Swift River Property, Yukon Territory

We would like to express our thanks to Birch Mountain Resources Ltd. for the opportunity to provide our services in relation to this project.

If you have any questions or require any additional information, please do not hesitate to contact our office.

Yours sincerely
ASSOCIATED MINING CONSULTANTS LTD.

Mark Bowman, P.Geoph.
Senior Geophysicist

MB/mlh
N:\PROJECTS\GEOPH\CURRENT\PH22\REPORT\BIRCHFNL.H22

APPENDIX 8

GEOPHYSICAL REPORT

(SJ Geophysics)

BIRCH MOUNTAIN RESOURCES LTD.

SWIFT RIVER PROJECT
SUMMARY REPORT ON 1997 GEOPHYSICAL SURVEYS

UTM 379000E, 6674000N
NTS 105 B/3
Yukon Territory

By
E. R. Rockel
SJ Geophysics Ltd.
September 12, 1997

TABLE OF CONTENTS

LIST OF MAPS 2

1. INTRODUCTION 3

2. EQUIPMENT AND SURVEY PARAMETERS 3

3. DISCUSSION OF RESULTS 4

4. CONCLUSIONS 4

5. RECOMMENDATIONS 6

STATEMENT OF QUALIFICATIONS - E. R. ROCKEL 7

SJ Geophysics Ltd. / S.J.V. Consultants Ltd. 11762 - 94th Ave., Delta, B.C. Canada
tel: (604) 582-1100 fax: (604) 589-7466 e-mail: sydv@istar.ca

LIST OF MAPS

PLATE	TITLE	LOCATION
G1a	HLEM SURVEY, 1997 STACKED PROFILE MAP IN PHASE COMPONENT 100m. Coil separation	Map Pocket
G1b	HLEM SURVEY, 1997 STACKED PROFILE MAP QUADRATURE COMPONENT 100m. Coil separation	Map Pocket
G1c	HLEM SURVEY, 1997 STACKED PROFILE MAP IN PHASE COMPONENT 50m. Coil separation	Map Pocket
G1d	HLEM SURVEY, 1997 STACKED PROFILE MAP QUADRATURE COMPONENT 50m. Coil separation	Map Pocket
G2a	MAGNETIC SURVEY, 1997 CONTOUR MAP TOTAL MAGNETIC FIELD	Map Pocket
G3	HLEM & MAGNETIC SURVEYS, 1997 COMPILATION MAP	Map Pocket

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tel: (604) 582-1100 fax: (604) 589-7466 e-mail: sydv@istar.ca

1. INTRODUCTION

Horizontal loop EM (HLEM) and total field magnetic surveys were carried out by SJ Geophysics Ltd. on the Swift River property during the period from July 28 to August 3, 1997. Mobilization was from Whitehorse, on July 28, by four wheel drive truck into the project camp. Demobilization was on August 3. The surveys were done on a small grid extended from an old grid previously surveyed using the same methods. A total of 7.6 km. of HLEM survey was completed at a coil separation of 100 meters and a total of 1.3 km. of HLEM survey was completed using a 50 meter coil separation. A total of 9.35 km. of magnetic survey was completed. The purpose of the surveys was to continue conductive and magnetic trends westward from previously explored ground. Results of the HLEM survey are shown in profile form on map plates G1a, G1b (100m. coil separation), G1c and G1d (50m. coil separation). Results of the magnetic survey are shown as colour contours on map plate G2a. The combined HLEM and magnetic survey interpretation is shown on map plate G3.

2. EQUIPMENT AND SURVEY PARAMETERS

A Max Min I-10 system was used in the "Max 1" horizontal coplaner mode (horizontal loop) to carry out the HLEM survey. Normal survey was carried out using a 100 meter coil separation and the 220 Hz., 440 Hz., 1760 Hz., 7040 Hz. and 14080 Hz. frequencies. Only a small amount of survey was carried out on line 4600W, from 575S to 700S, using the 220 Hz. frequency. Detail survey was carried out on the northern portions of lines using a 50 meter coil separation and only the 1760 Hz., 7040 Hz. and 14080 Hz. frequencies. Station spacing was 25 meters for the 100m. separation survey and 12.5 meters for the detail 50m. survey. A Gem Systems GSM-19 total field magnetometer and magnetic base station were used for the magnetic survey. Field readings were corrected for variations in the earth's magnetic field using the magnetic base station. Magnetic survey station spacing was 12.5 meters.

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3. DISCUSSION OF RESULTS

Data quality was good for both HLEM and magnetic surveys. HLEM in-phase profiles showed slight effects of cable foreshortening due to topography. Normally this effect can be eliminated by subtracting the lowest frequency in-phase values (220 Hz. or 440 Hz.) from all other frequencies. In this case, however, the correction was not carried out because an appreciable conductive response was observed on the 440 Hz. frequency, which would subtract genuine anomalous values from other frequencies in the highly conductive regions. Since the quadrature component (out-of-phase) was not affected emphasis was placed on these profiles for the EM interpretation.

Magnetic values ranged from about 56700 nT to 58000 nT with a general background of the order of 57500 nT. Three southeast trending magnetic highs were the only significant anomalous features seen on the magnetic contour map.

4. CONCLUSIONS

Four conductive trends were interpreted from the HLEM data and labeled as "A", "B", "C" and "Zone D" on the compilation map plate G3. A northerly trending fault has been interpreted from 1300S to 100S based on magnetic character, magnetic anomaly terminations and offsets as well as on apparent offsets and terminations of conductive trends. Conductors A and C seem to be offset to the north on the west side of the fault and conductive Zone D, based on limited coverage (due to Crescent Lake) in the northern parts of lines 5000W and 5100W, seems to be terminated or offset to the north. An apparent offset of Zone D, seen on both 100m. and 50m. coil separation data between lines 4700W and 4800W, suggests a fault splaying off the main northerly trending structure from about 650S to 00N.

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Conductor A is a low conductivity feature that seems to be associated with magnetism. Part of conductor A occurs on the southern flank of one of the magnetic high anomaly trends mentioned above and another part is believed to occur to the west of the main northerly trending fault. The eastern portion, on lines 4600W and 4700W, appears to dip towards the south at about 60 to 70 degrees and to plunge westward from a depth of about 30 to 40 meters to around 40 to 50 meters. The western part of the conductor coincides with the northern flank of a weaker magnetic high anomaly and appears to be deeper, of the order of 40 to 50 meters, with a similar dip direction but more towards the vertical. Conductor A may reflect a narrow zone of conductive sulphides contiguous with concentrations of magnetite.

Conductor B exhibits electromagnetic characteristics similar to conductor A. Conductor B was considered to be different from A because B is not associated with a magnetic high trend. Profiles indicate that conductor B plunges westward from about 40 to 50 meters on line 5000W to about the practical depth penetration of the system at 100m. coil separation (60 meters) on line 5100W. The cause of conductivity here may be narrow conductive sulphides or graphite.

Conductor C exhibits low conductivity and characteristics similar to conductors A and B. Depth is probably of the order of 30 to 40 meters. Dip is difficult to estimate due to the effects of conductive Zone D.

Conductive Zone D is believed to be a complex conductive zone containing a number of highly conductive layers. Interference from adjoining layers makes dip determination unreliable. Depth of conductivity appears to range from around 30 meters or more at the south boundary of the zone to less than 10 meters and possibly on surface in the middle of the zone. Detail EM survey has delineated the shallow conductor axes as shown on map plate G3. Conductive Zone D is probably composed of a series of closely spaced conductive bodies composed of significant amounts of graphite and probably sulphides.

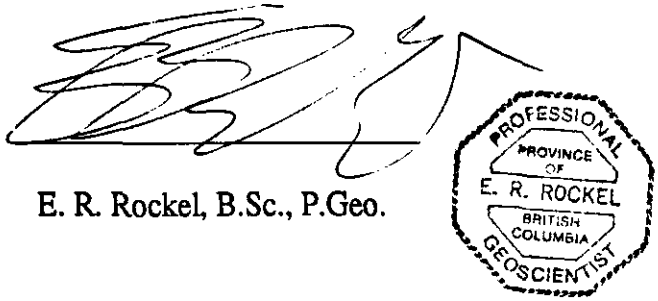
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The large magnetic anomaly within Zone D is believed to reflect concentrations of magnetite associated with the conductive mineralization. Magnetic contours on lines 4700W, 4800W and 4900W north of the large magnetic anomaly display many short wavelength small magnetic highs which are believed to represent concentrations of magnetite and/or pyrrhotite associated with some of the graphite/sulphide mineralization. The present survey lines ended in anomalous EM values and therefore conductivity in Zone D may continue to the north of present coverage.

5. RECOMMENDATIONS

Surface exploration of the detail survey (50m. coil separation) conductors shown on map plate G3 is recommended to check for sulphide mineralization at surface. Trenching across these conductors is recommended to test for shallow sulphide mineralization. If trenching results prove encouraging then drilling of the deeper conductors should be considered within conductive Zone D. The conductor axes shown on map plate G3 are believed to be the major contributors to the conductive response and should be tested first. Conductors A, B and C are believed to be deep narrow features and do not warrant follow-up unless additional geological or geochemical encouragement can be found. Depending on land tenure status, some consideration should be given to extending HLEM and magnetic survey approximately 500 meters towards the north, on lines 4600W, 4700W, 4800W and 4900W, to delineate the northern boundary of the conductive zone D and to further explore its association with magnetism.

Respectfully submitted,
Per SJ Geophysics Ltd.,



E. R. Rockel, B.Sc., P.Geo.

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STATEMENT OF QUALIFICATIONS - E. R. ROCKEL

I, Edwin Ross Rockel, of the city of Surrey, Province of British Columbia, hereby certify that:

- I received a B.Sc. degree in Geophysics from the University of British Columbia in 1966.
- I currently reside at 13000 54A Avenue, in the City of Surrey, in the Province of British Columbia.
- I have been practising my profession since graduation.
- I am a Professional Geoscientist registered in the Province of British Columbia.
- I am a Professional Geoscientist registered in the Province of Newfoundland.
- I am a Professional Geoscientist registered in the Northwest Territories.
- I hold no direct or indirect interest in, nor expect to receive any benefits from, the mineral property or properties described in this report.
- This report may be used for the development of the property, provided that no portion will be used out of context in such a manner as to convey meanings different from that set out in the whole.
- Consent is hereby given to the company for which this report was prepared to reproduce the report or any part of it for the purposes of development of the property, or facts relating to the raising of funds by way of a prospectus and/or statement of material facts.

Dated Sept. 12, 1997 **Signed**

E. R. Rockel, B.Sc., P.Geo.

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TABLE 3

Geology Legend - Diamond Drill Hole Profiles

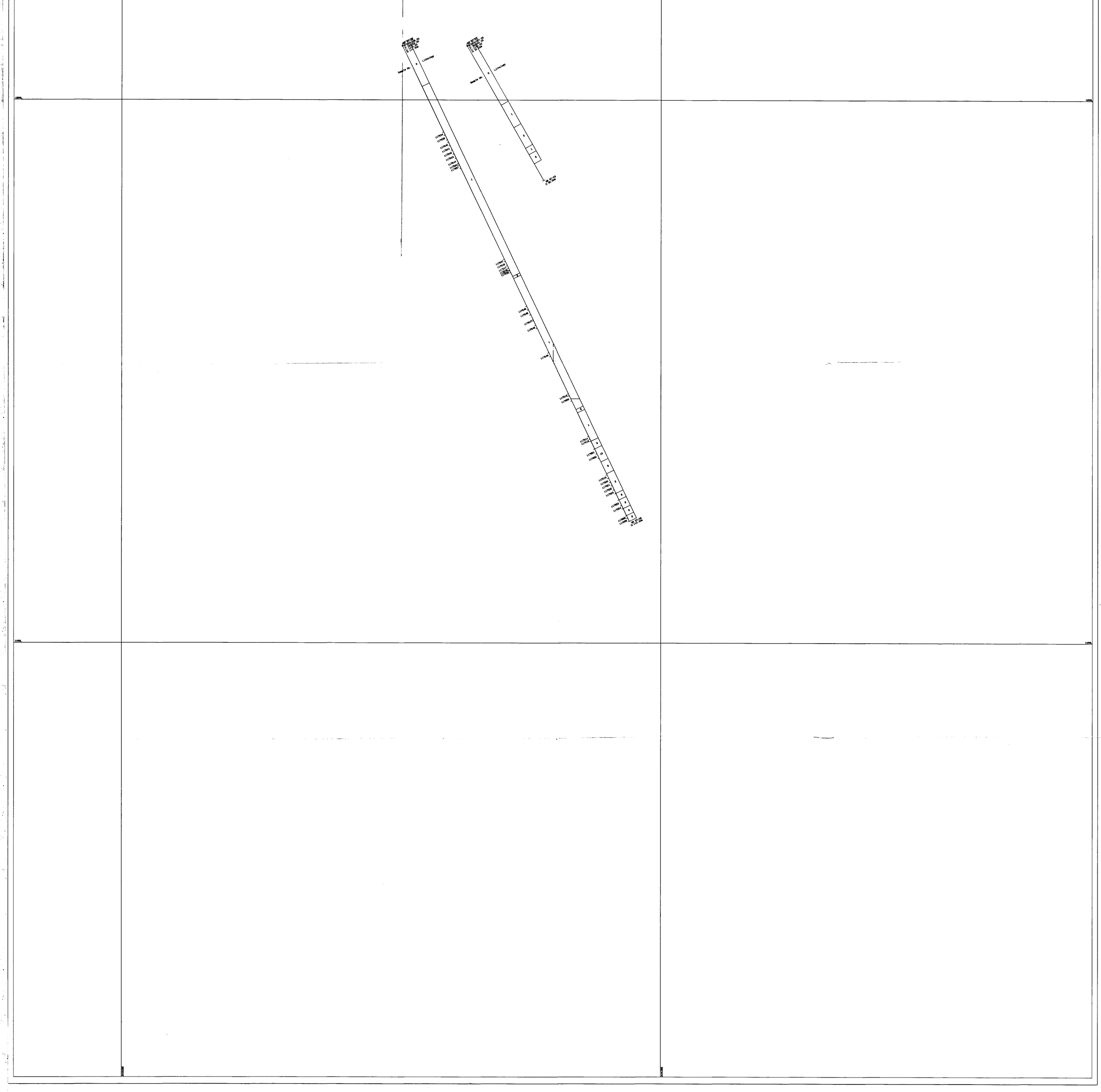
Code	Description
0	Overburden
1	andesite, andesitic tuff
2	felsic tuff, felsic crystal tuff
3	rhyolite, rhyolitic tuff
4	tuff, crystal tuff
5	tuffaceous siltstone
6	marble, limestone
7	argillite
8	rhyolite tuff, & limestone
9	interbedded marble and siliclastics
10	interbedded marble and felsic tuff
11	interbedded marble and andesitic tuff
12	andesitic and felsic tuffs
13	andesitic and rhyolitic tuffs
14	rhyolitic and crystal tuffs

Birch Mountain Resources Ltd.

	Init	Date
Surveyor	G.M.	
Drawn		
Checked		
Approved		

Swift River Project (Yukon) 1997
SR-97-03 & SR-97-06
Sample No. / Lithology

File : FIGURE 11
Scale : 1 : 250
Date : 28 Oct 1997
Dwg (10)



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Birch Mountain Resources Ltd.

	Init	Date
Surveyor	G.M.	
Drawn		
Checked		
Approved		

Swift River Project (Yukon) 1997

SR-97-01 & SR-97-02

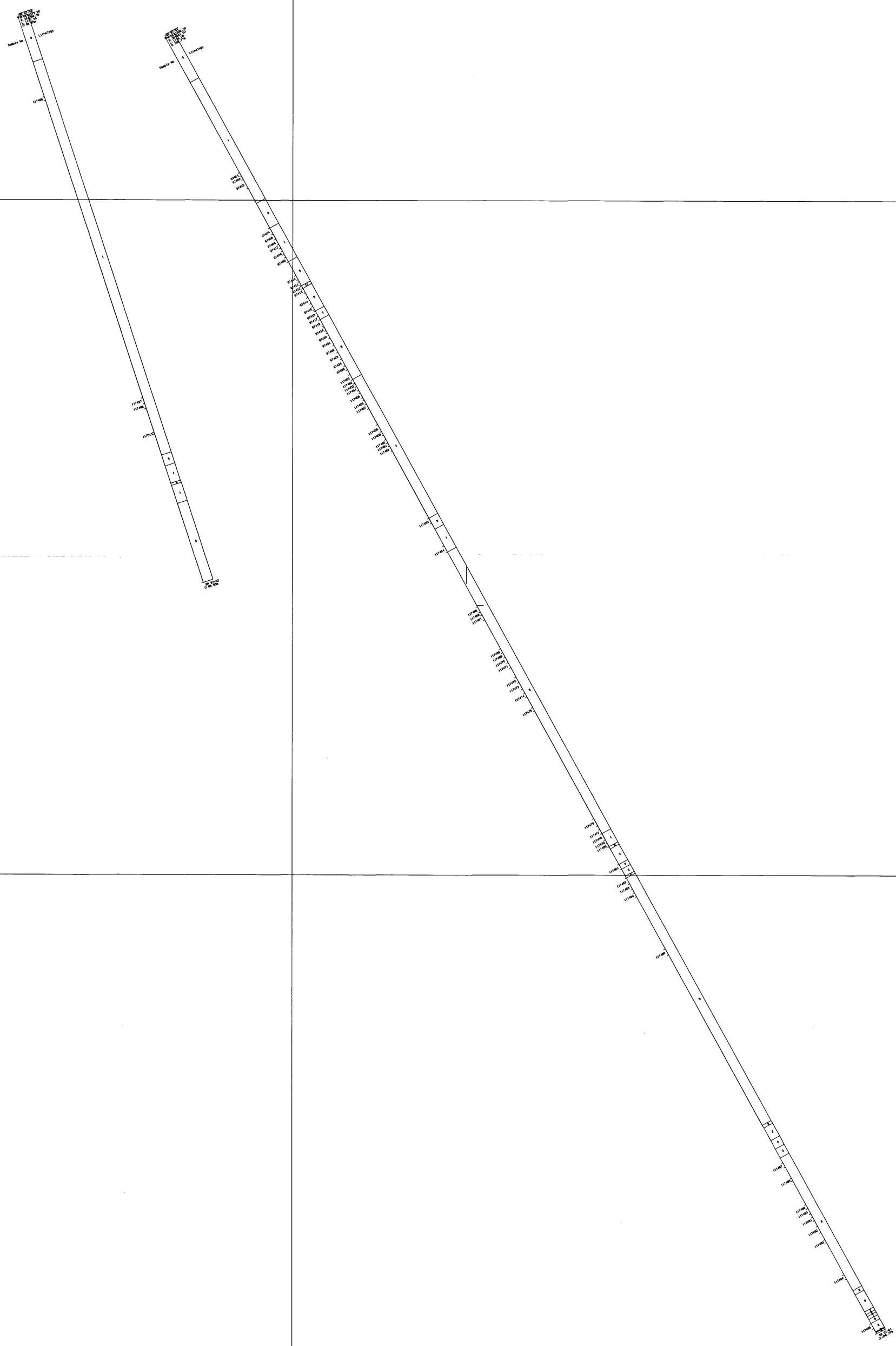
Sample No. / Lithology

File : FIGURE 10

Scale : 1 : 250

Date : 28 Oct 1997

Dwg 9



BJ-117951

117959

DDHSR-97-04

DDHSR-97-05A

N

Birch Mountain Resources

Swift River Project, Yukon

Lost Showing Channel Sample Locations

Compiled by: VP,SPS,BGJ

Oct 1, 1997		Drawn by: BGJ
Scale: 1:250	NTS 105 B/3	Figure 9

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N

S10
S8
S7
S9
S6
BJ1
M1
S5
S1
S4
M2
S2
S3
S4
M3
?
S?
S?
DDHSR-97-01
DDHSR-97-02
M4
M5
M4

Birch Mountain Resources

Swift River Project, Yukon

Lucy Channel Sample Locations

Compiled by: VP,SPS,BGJ

Oct 1, 1997		Drawn by, BGJ
Scale: 1:250	NTS 105 B/3	Figure 7

DIAND - YUKON REGION, LIBRARY

DIAND - YUKON REGION, LIBRARY

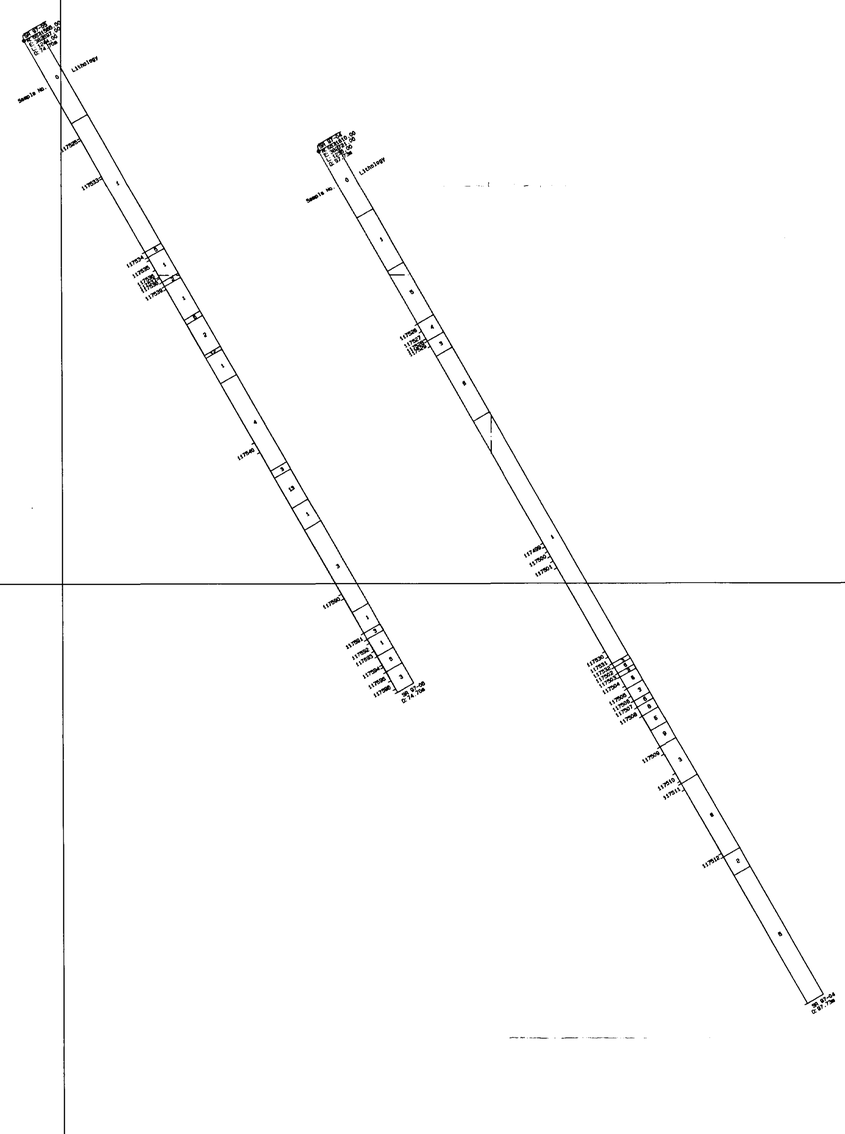
Birch Mountain Resources Ltd.

	Init	Date
Surveyor	G.M.	
Drawn		
Checked		
Approved		

Swift River Project (Yukon) 1997
SR-97-04 & SR-97-05
Sample No. / Lithology

File : FIGURE 12
Scale : 1 : 250
Date : 28 Oct 1997

Dwg 11



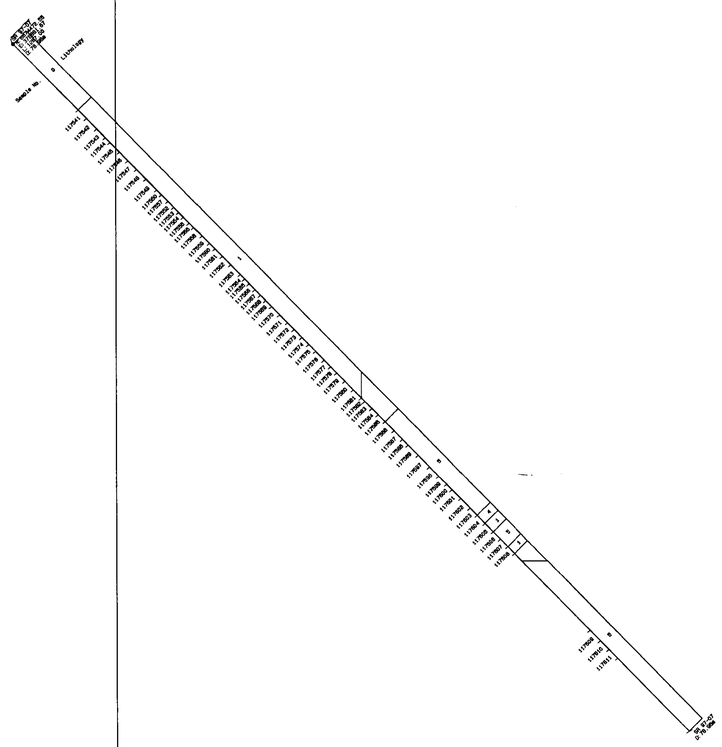
DIAND - YUKON REGIONAL LIBRARY

Birch Mountain Resources Ltd.

	Init	Date
Surveyor	G.M.	
Drawn		
Checked		
Approved		

Swift River Project (Yukon) 1997
SR-97-07
Sample No. / Lithology

File : FIGURE 13
Scale : 1 : 250
Date : 28 Oct 1997
Rev 02



DIAND - YUKON REGION, LIBRARY

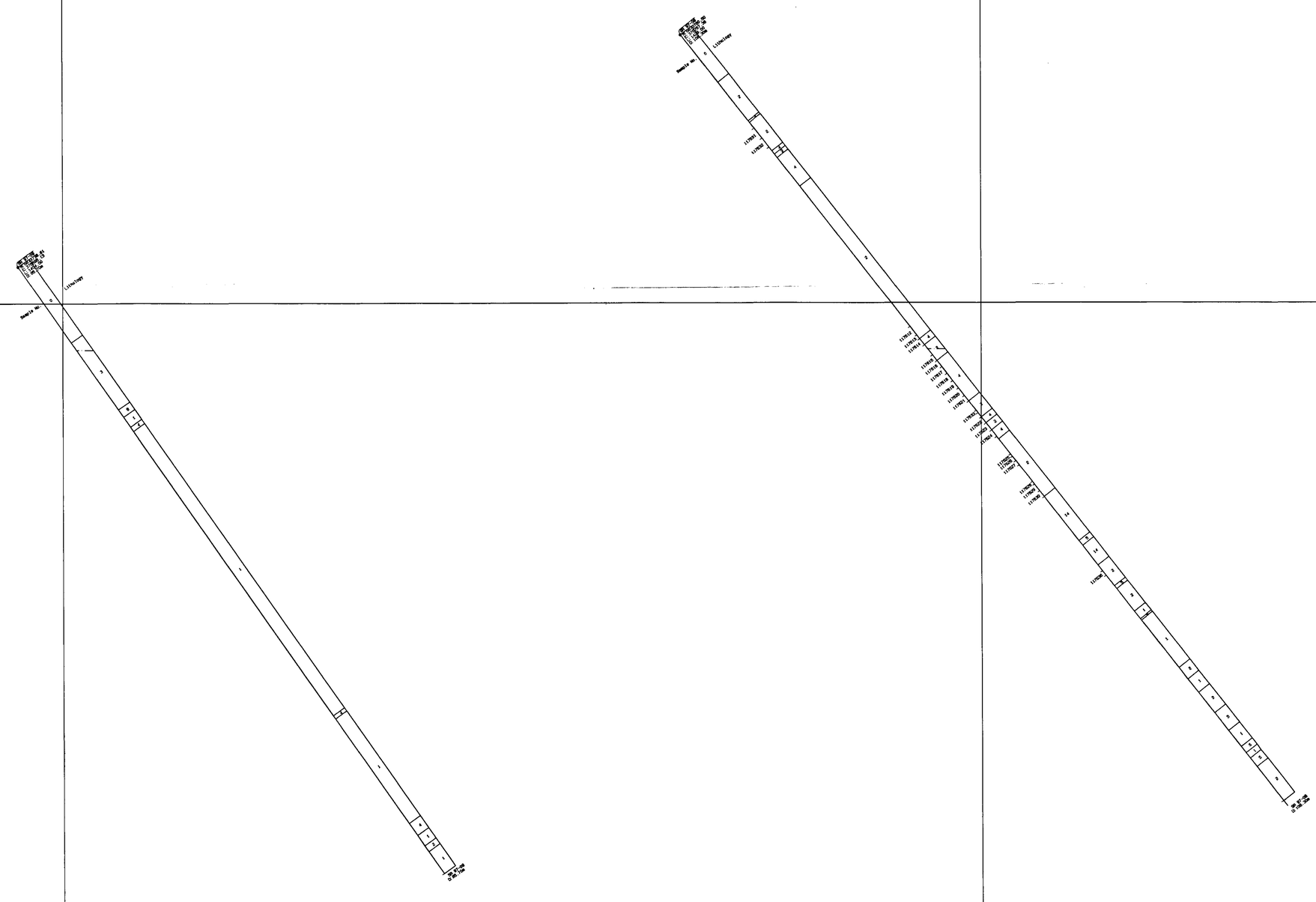
Birch Mountain Resources Ltd.

	Init	Date
Surveyor	G.M.	
Drawn		
Checked		
Approved		

Swift River Project (Yukon) 1997
SR-97-08 & SR-97-09
Sample No. / Lithology

File : FIGURE 14
Scale : 1 : 250
Date : 28 Oct 1997

Rev (3)



D11

D12

D13

D10

D9

D8

D7A

D6A

D6B

D5F

D5C

D5B

D5A

D5D

D4B

D4A

DDHSR-97-03

DDHSR-97-06

117999

BJ-117986

Birch Mountain Resources

Swift River Project, Yukon

Dan/Discovery Channel Sample Locations

Compiled by: VP,SPS,BGJ

Oct 1, 1997		Drawn by, BGJ
Scale: 1:250	NTS 105 B/3	Figure 8

YUKON REGION, LIBRARY

0+500 E
1+000 E
1+500 E
2+000 E
2+500 E
3+000 E
3+500 E
4+000 E
4+500 E
5+000 E
500 S BL
396000m E
6672000m N
N
31°00'
Paul Showing
Dan Showing
Lost Showing
base camp
SR93-01
DDHSR-97-03
DDHSR-97-06
DDHSR-97-04
DDHSR-97-05A
BJ-97-R003
DT-97-R006
DT-97-R007
BJ-97-R100
BJ-97-R105 to R108
BJ-97-R002
BJ-97-R109
BJ-97-R104
BJ-97-R100
DT-97-R101
DT-97-R102
AS-97-D3 to AS-97-D13
DT-97-R100
BJ-97-R110
BJ-97-R101
BJ-97-R102
DT-97-R008
DT-97-R001
BJ-97-R001
DT-97-R002-4
BJ-97-200-(1-4)
VP97-4
BJ-97-T111
BJ-97-T138
BJ-97-T208
DT-97-R108
DT-97-R110
R109
R111
R022
R021
BJ-97-R023
JC-97-R011
R002
R003
JC-97-T011
BJ-97-T181
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Birch Mountain Resources		
Swift River Project, Yukon		
Sample Location Map (Central)		
Compiled by: VP,SPS,BGJ		Drawn by, BGJ
Oct 1, 1997		
Scale: 1:5000	NTS 105 B/3	Figure 5

381000m E

6674000m N

N

31°00'

"0" Baseline

5+000 W

4+500 W

4+000 W

3+500 W

3+000 W

2+500 W

2+000 W

1+500 W

1+000 W

0+800 W

0+400 W

0+000

Lucy Baseline

Lwr Crescent Lake Showing

Upr Crescent Lake Showing

Lucy Showing

SR93-08

SR93-07

SR93-06

SR93-05

SR93-04

SR93-03

SR93-02

DDHSR-97-07

DDHSR-97-08

DDHSR-97-09

DDHSR-97-01

DDHSR-97-02

VP97-(7-11)

VP97-15

VP97-5-1.5

VP97-6

VP-97-3

BJ-97-R241

BJ-97-R243

BJ-97-R245

BJ-97-R014

BJ-97-R015

BJ-97-R246

BJ-97-R244

BJ-97-R247

BJ-97-R248

BJ-97-R241

BJ-97-R224

BJ-97-R242

DT-97-R013

DT-97-R016

DT-97-R017

DT-97-R018

DT-97-R107

BJ-97-R031

DT-97-R012

DT-97-R011

BJ-97-R029

DT-97-R007

BJ-97-T017

BJ-97-T018

BJ-97-T191

T175-97-R008-010

Cominco Geology (1993)

DIAND - YUKON REGION, LIBRARY

RESERVED AREA

R-17A

Birch Mountain Resources		
Swift River Project, Yukon		
Claim Map		
Compiled by: VP,SPS,BGJ		
Oct. 1, 1997		Drawn by, BGJ
Scale: 1:30,000	NTS 105 B/3	Figure 2

DW62

YUKON - YUKON RESOURCE LIBRARY

EXPLANATION

CRETACEOUS

- 14 — alaskite
- 13 — quartz monzonite

JURASSIC ?

- 12 — diorite/quartz diorite

MISSISSIPPIAN

- 10 — massive sulfides
- 11 — tuffaceous siltstone
- 11b — siltstone
- 10 — conglomerate
- 9 — chert
- 8 — skarn
- 7 — sericitic schist/mylonite
- 7a — quartz talc schist
- 7b — graphite schist
- 6 — andesitic tuff
- 6a — crystal tuff
- 5 — amphibolite
- 4 — rhyolite
- 3 — marble
- 2 — limestone
- 1 — argillite

N

31°00'

6674000m N

360000m E

Lwr Crescent Lake Showing

Upr Crescent Lake Showing

Cominco Geology (1993)

Paul Showing

Lucy Showing

Dan Showing

base camp

Lost Showing

Mod Showing

75 74 73 72 71 70 69 68

Birch Mountain Resources

Swift River Project, Yukon

Geological Compilation Map

Compiled by: VP,SPS,BGJ

Oct 1, 1997		Drawn by, BGJ
Scale: 1:10,000	NTS 105 B/3	Figure 3

INAC - YUKON REGION LIBRARY

391000m E

6669000m N

N

31°00'

T213
DT-97-R110
T214
R111
T215
BJ-97-R023
R022
R021
T159
T160
T158
T157
T156
T155
T154
BJ-97-R020
BJ-97-T001
T002
T003
T004
BJ-97-R017
T005
T006
T007
T008
T009
T010
R018
R019
T011
T012
T013
T014
T015
DT-97-R108
R104
T165
T166
T164
T163
T162
T161
R105
T167
T168
R106
BJ-97-R170
T169
T171
BJ-97-T172

86 87 88 89 90

Birch Mountain Resources

Swift River Project, Yukon

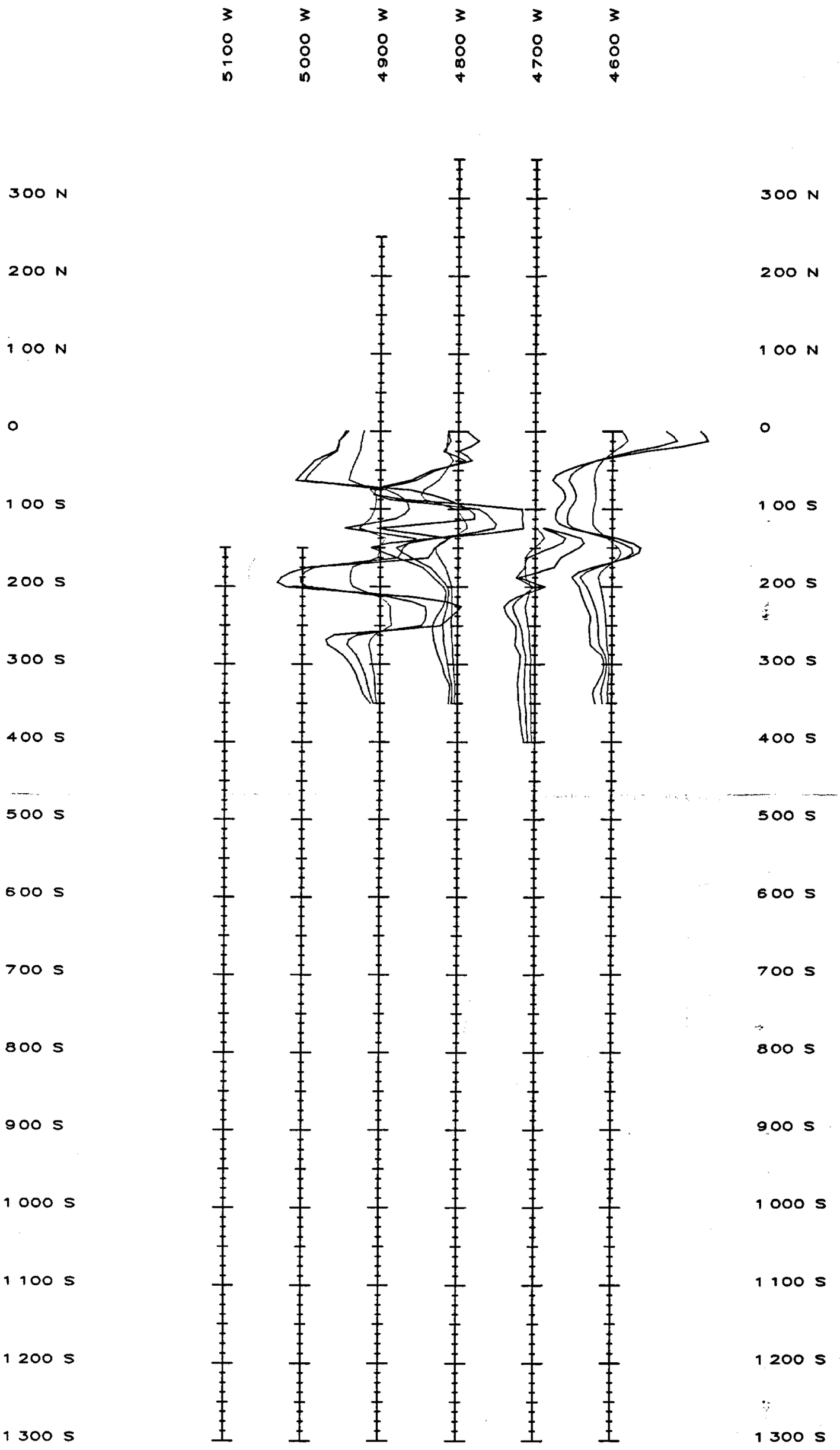
Sample Location Map (East)

Compiled by: VP,SPS,BGJ

DWG 3

Oct 1, 1997		Drawn by, BGJ
Scale: 1:5000	NTS 105 B/3	Figure 4

DIAND - YUKON REGION, LIBRARY



INSTRUMENTATION

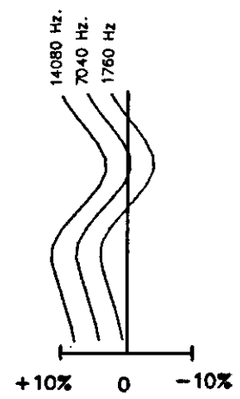
MaxMin equipment: MM I 10 – S/N 10374

Mode: Max1 (Horizontal Coplaner)

Separation: 50m.

Frequencies (Hz): 1760, 7040 & 14080

LEGEND



BIRCH MOUNTAIN RESOURCES LTD.

SWIFT RIVER PROJECT

HLEM SURVEY, 1997
STACKED PROFILE MAP
QUADRATURE COMPONENT

50m Coil Separation

NTS: 105 B/3 YUKON

meters

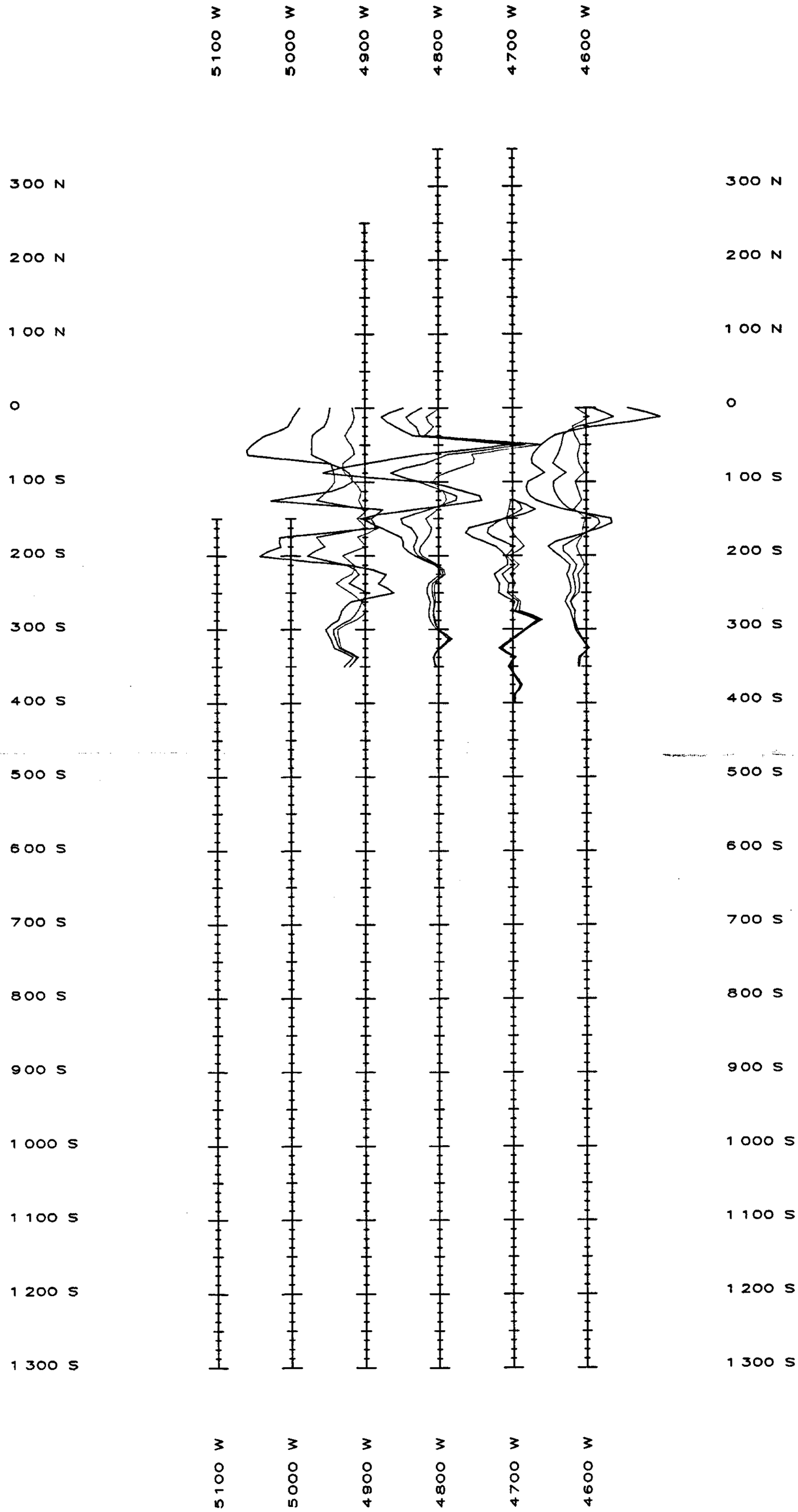
1 00 0 1 00 200 300

SJ GEOPHYSICS LTD.

September, 1997 Plate G1d

Dwg (14)

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INSTRUMENTATION

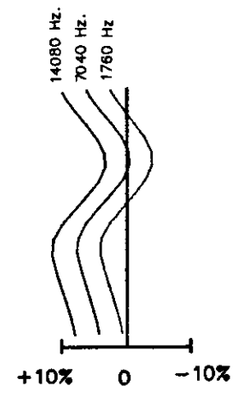
MaxMin equipment: MM I 10 – S/N 10374

Mode: Max1 (Horizontal Coplaner)

Separation: 50m.

Frequencies (Hz): 1760, 7040 & 14080

LEGEND



BIRCH MOUNTAIN RESOURCES LTD.

SWIFT RIVER PROJECT

HLEM SURVEY, 1997
STACKED PROFILE MAP
IN PHASE COMPONENT

50m Coil Separation

NTS: 105 B/3 YUKON

meters

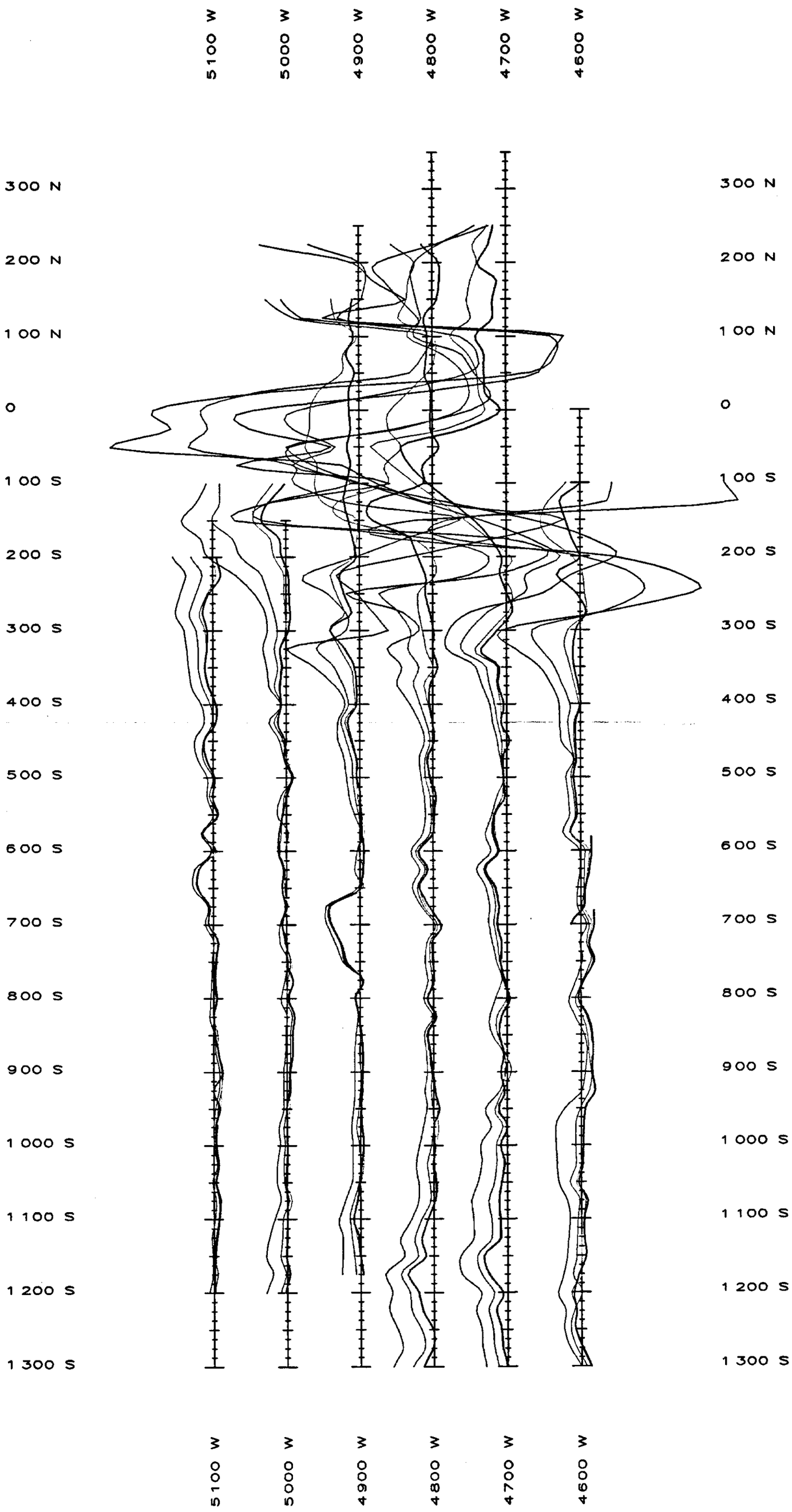
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September, 1997 Plate G1c

Dwg (15)

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INSTRUMENTATION

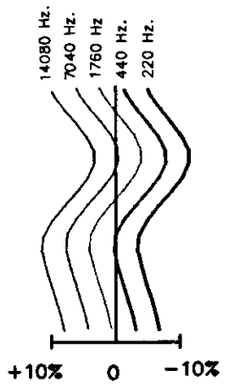
MaxMin equipment: MM I 10 – S/N 10374

Mode: Max1 (Horizontal Coplaner)

Separation: 100m.

Frequencies (Hz): 220, 440, 1760, 7040, & 14080

LEGEND



BIRCH MOUNTAIN RESOURCES LTD.

SWIFT RIVER PROJECT

HLEM SURVEY, 1997
STACKED PROFILE MAP
IN PHASE COMPONENT

100m Coil Separation

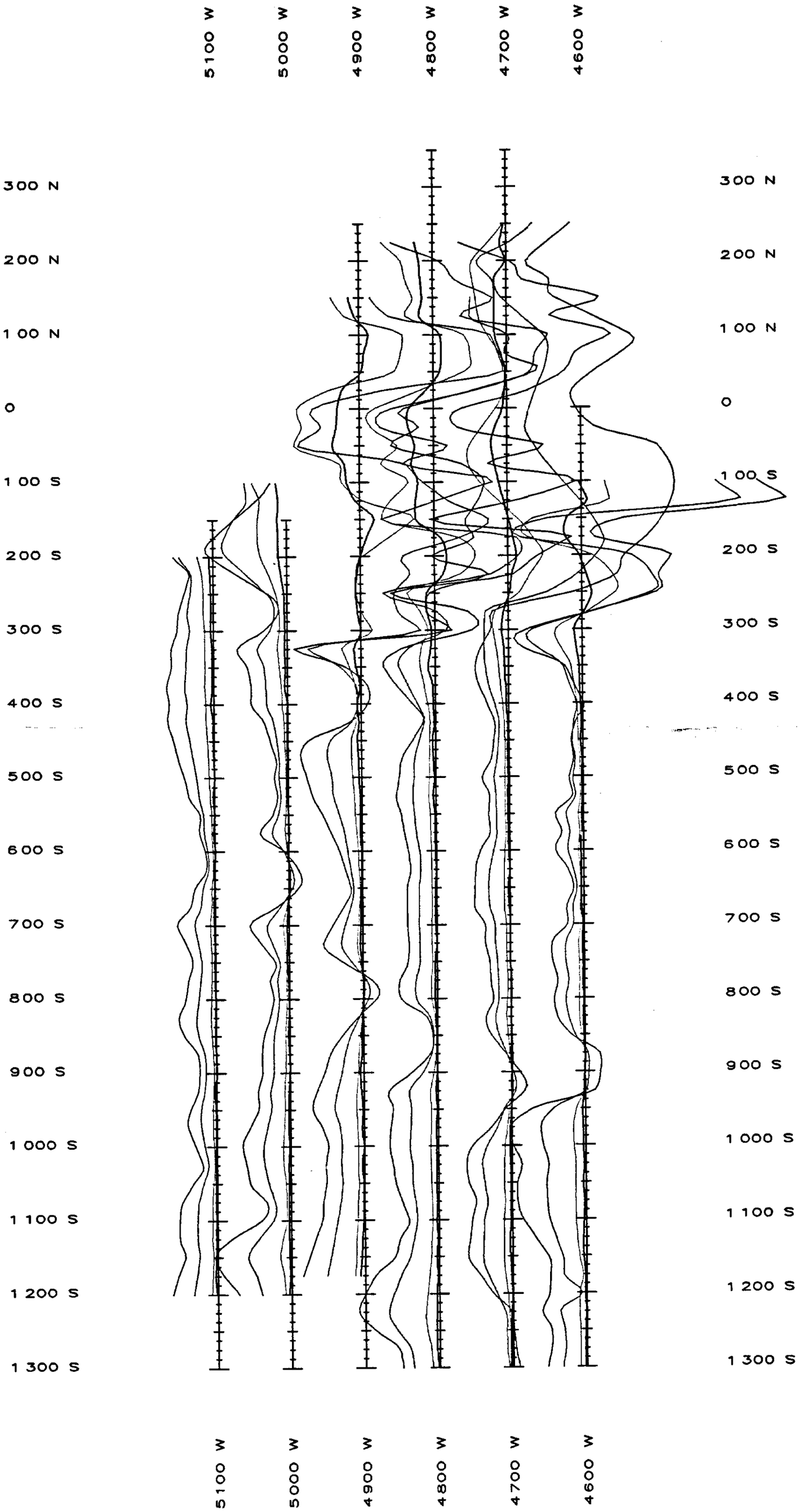
NTS: 105 B/3 YUKON

meters

1 00 0 1 00 200 300

September, 1997 **Plate G1a**

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INSTRUMENTATION

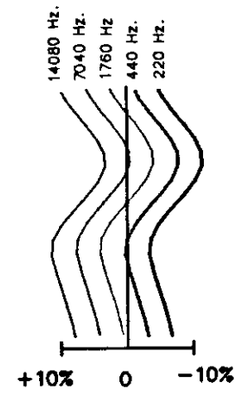
MaxMin equipment: MM I 10 – S/N 10374

Mode: Max1 (Horizontal Coplaner)

Separation: 100m.

Frequencies (Hz): 220, 440, 1760, 7040, & 14080

LEGEND



BIRCH MOUNTAIN RESOURCES LTD.

SWIFT RIVER PROJECT

HLEM SURVEY, 1997

STACKED PROFILE MAP

QUADRATURE COMPONENT

100m Coil Separation

NTS: 105 B/3 YUKON

meters

100 0 100 200 300

SJ GEOPHYSICS LTD.

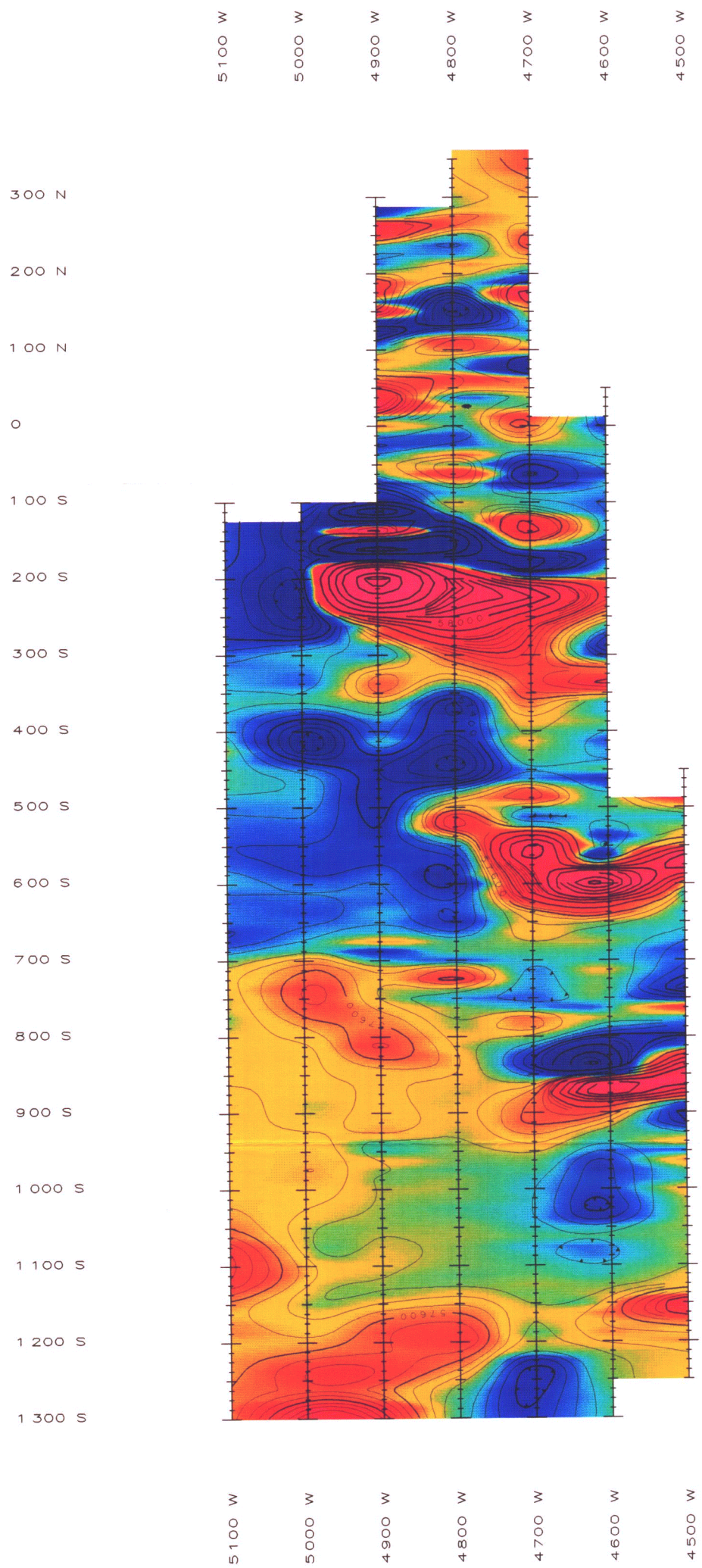
September, 1997 **Plate G1b**

Dwg 17

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INSTRUMENTATION

Magnetic Equipment: GEM GSM-19, s/n 67971





LEGEND

Magnetic Contour Levels

25 nT
100 nT
500 nT
2500 nT

58057.75
57770.00
57669.50
57632.25
57613.75
57598.75
57583.25
57572.50
57562.50
57554.25
57547.50
57541.00
57532.75
57525.25
57519.00
57512.00
57504.50
57496.25
57487.00
57477.50
57468.00
57458.25
57449.50
57440.25
57426.75
57413.00
57394.75
57368.25
57326.50
56754.25

BIRCH MOUNTAIN RESOURCES LTD.

SWIFT RIVER PROJECT

MAGNETIC SURVEY, 1997
CONTOUR MAP
TOTAL MAGNETIC FIELD

NTS: 105 B/3 YUKON

meters

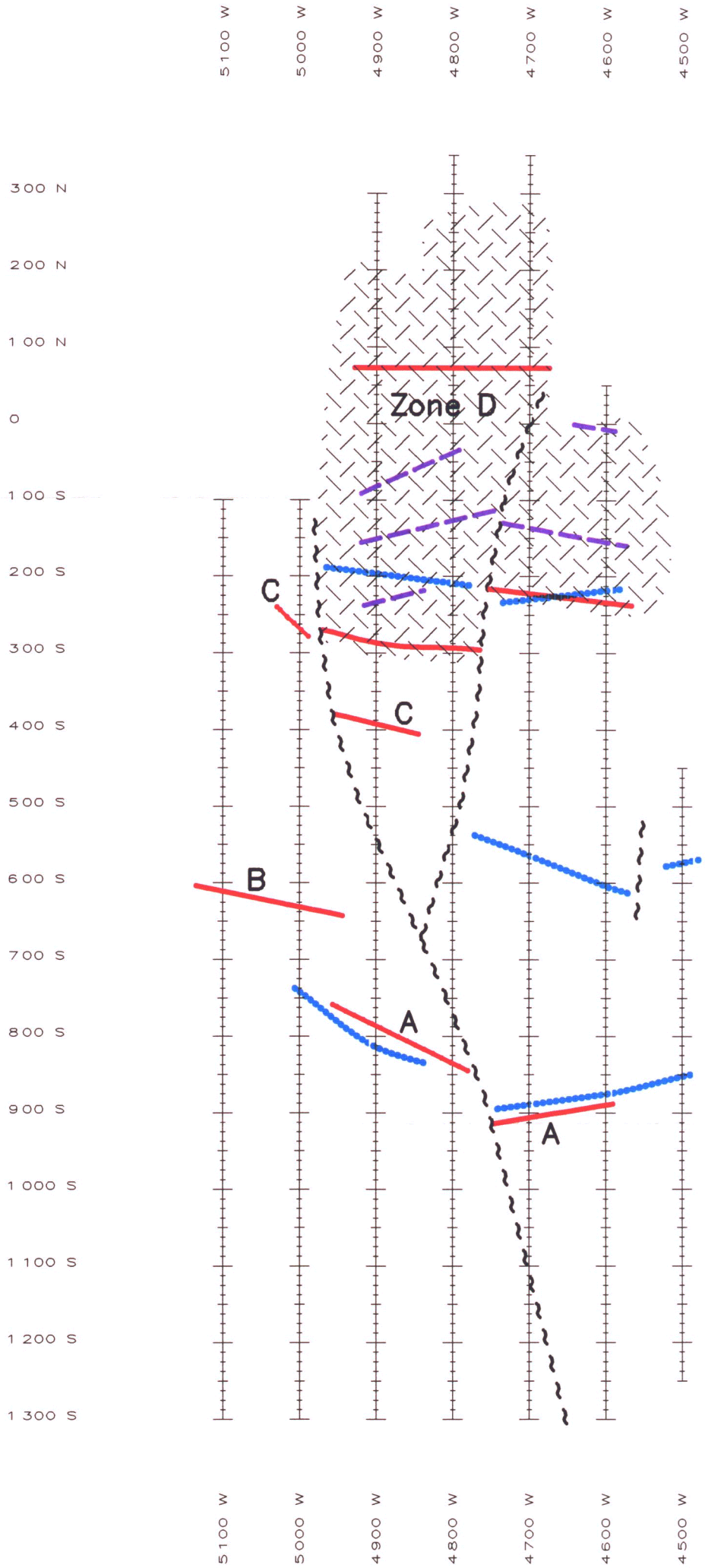
100 0 100 200 300

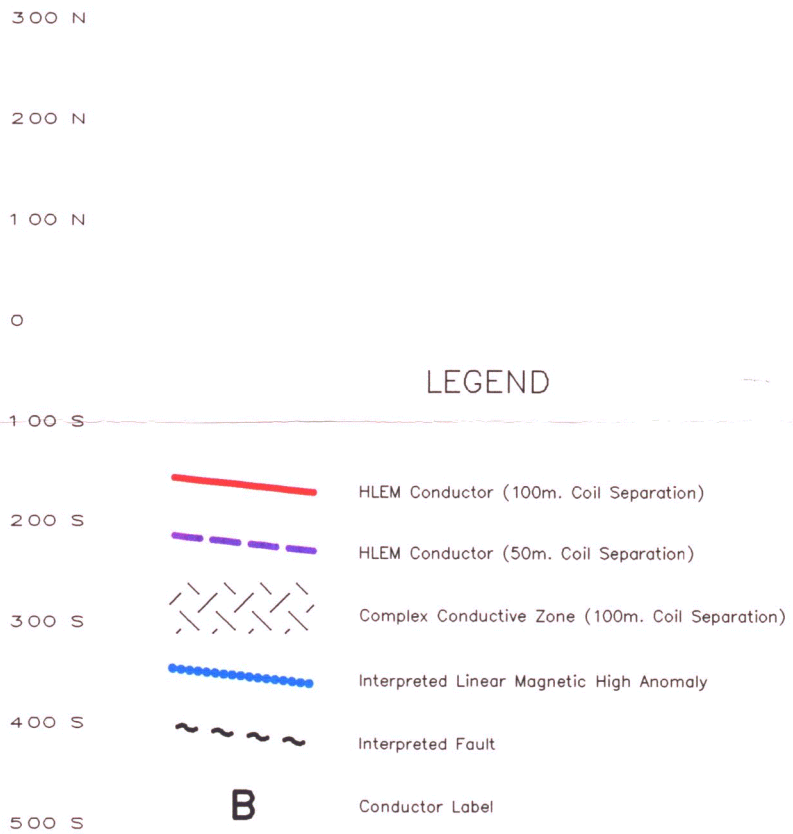
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Dwg 18

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SWIFT RIVER PROJECT

HLEM & MAGNETIC SURVEYS, 1997

COMPILATION MAP

NTS: 105 B/3 YUKON

meters

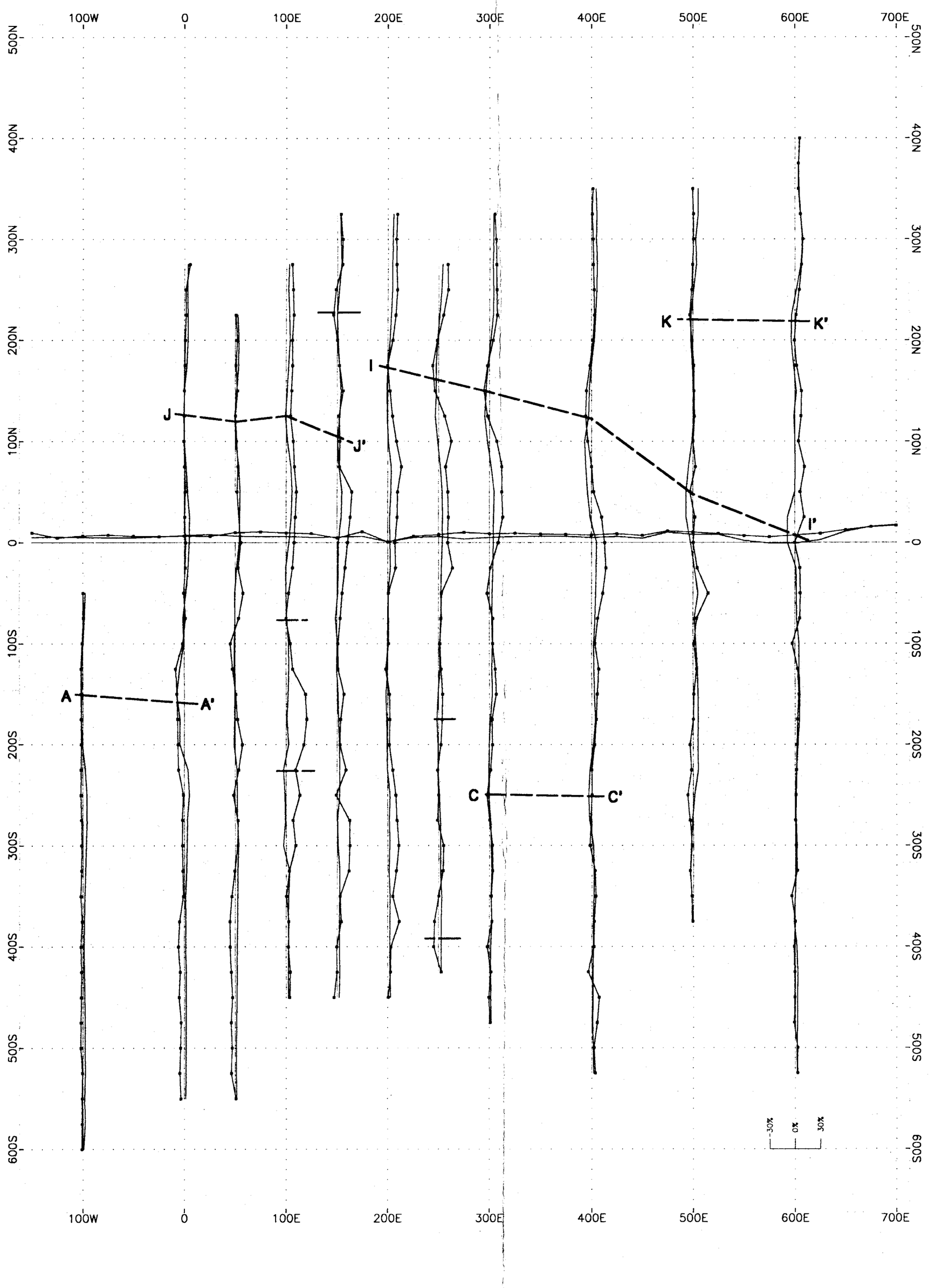
1 00 0 1 00 200 300

SJ GEOPHYSICS LTD.

September, 1997 Plate G3

Dwg 19

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In-Phase response (% Primary)

Quadrature Response (% Primary)

Conductor

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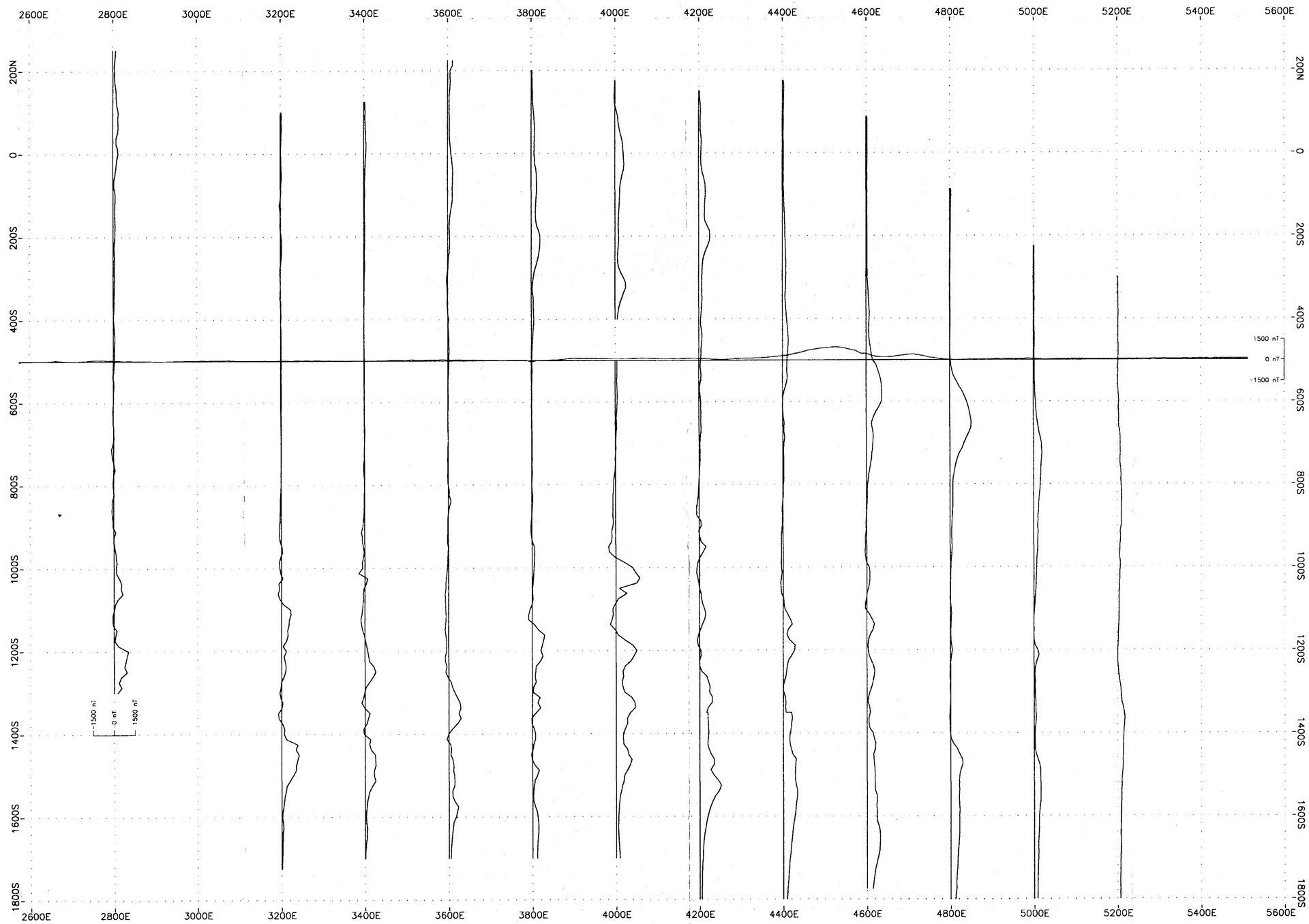
SWIFT RIVER PROJECT (YUKON) 1997 - LUCY

HORIZONTAL LOOP EM (MAX-MIN I)
1760 Hz - 100 metre Transmitter/Receiver Separation
Scale: 1:2,500
September, 1997 - Figure A-1

Dwh (30)

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Dwh (30)



55,800 nT Subtracted From Field Data

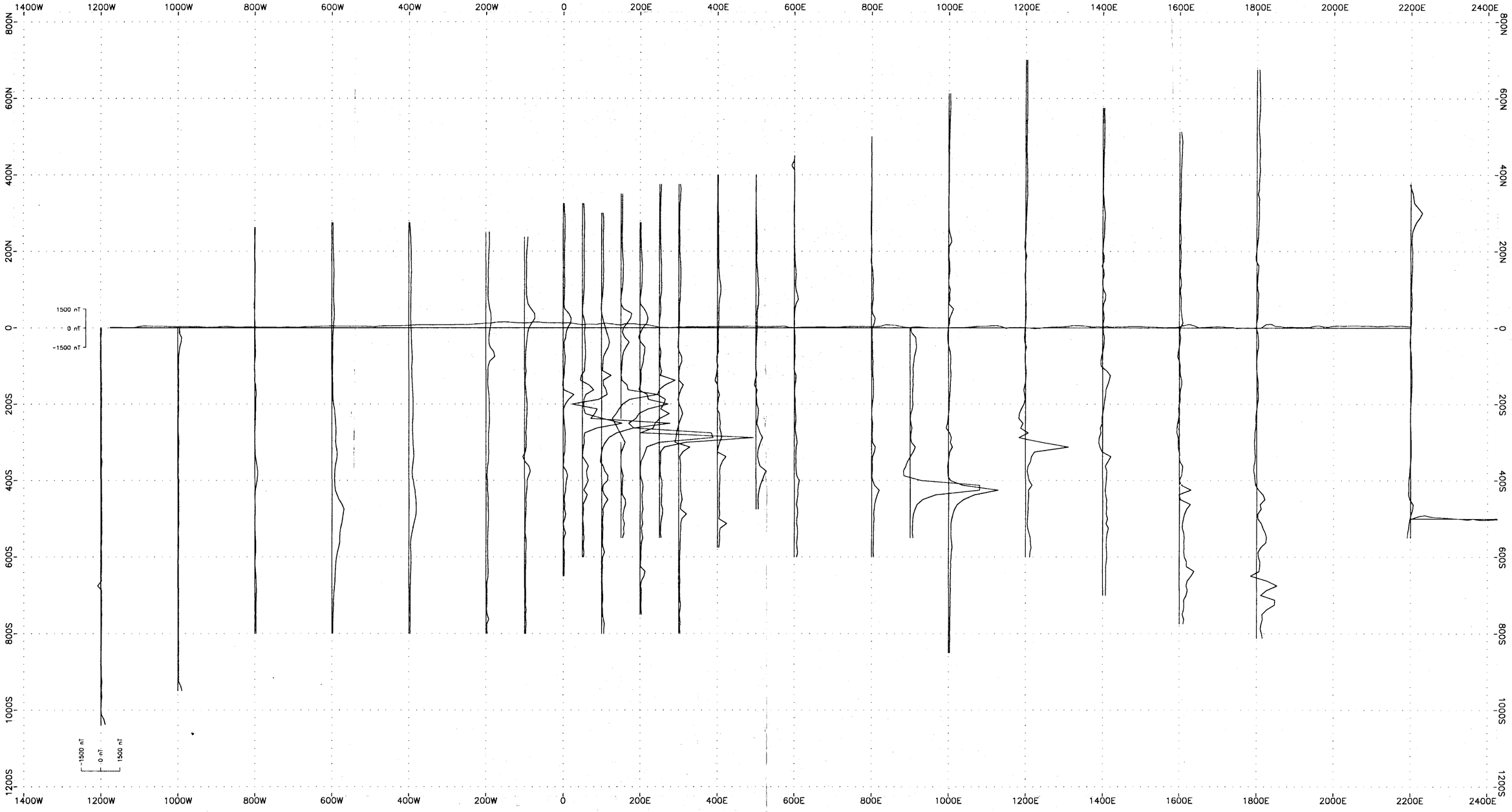
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BIRCH MOUNTAIN RESOURCES LTD.

SWIFT RIVER PROJECT (YUKON) 1997

TOTAL FIELD MAGNETOMETER SURVEY
MAGNETIC INTENSITY PROFILES
Scale: 1:5,000
September, 1997 - Figure 5b

ASSOCIATED MINING CONSULTANTS LTD. - PH22



55,800 nT Subtracted From Field Data

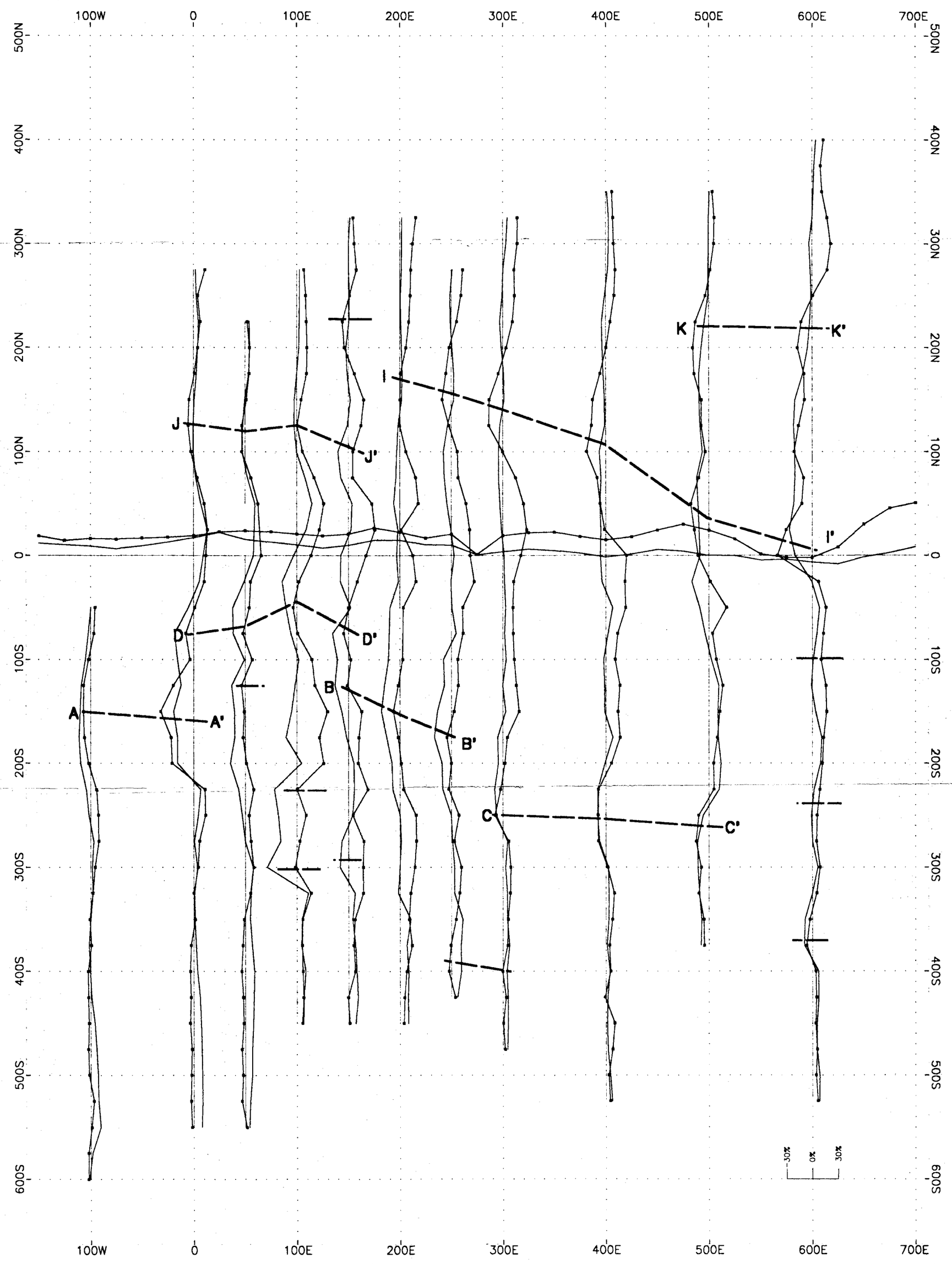
DIAND - YUKON REGION LIBRARY

BIRCH MOUNTAIN RESOURCES LTD.

SWIFT RIVER PROJECT (YUKON) 1997

TOTAL FIELD MAGNETOMETER SURVEY
MAGNETIC INTENSITY PROFILES
Scale: 1:5,000
September, 1997 - Figure 5a

ASSOCIATED MINING CONSULTANTS LTD. - PH22



In-Phase response (% Primary)

Quadrature Response (% Primary)

Conductor

BIRCH MOUNTAIN RESOURCES LTD.

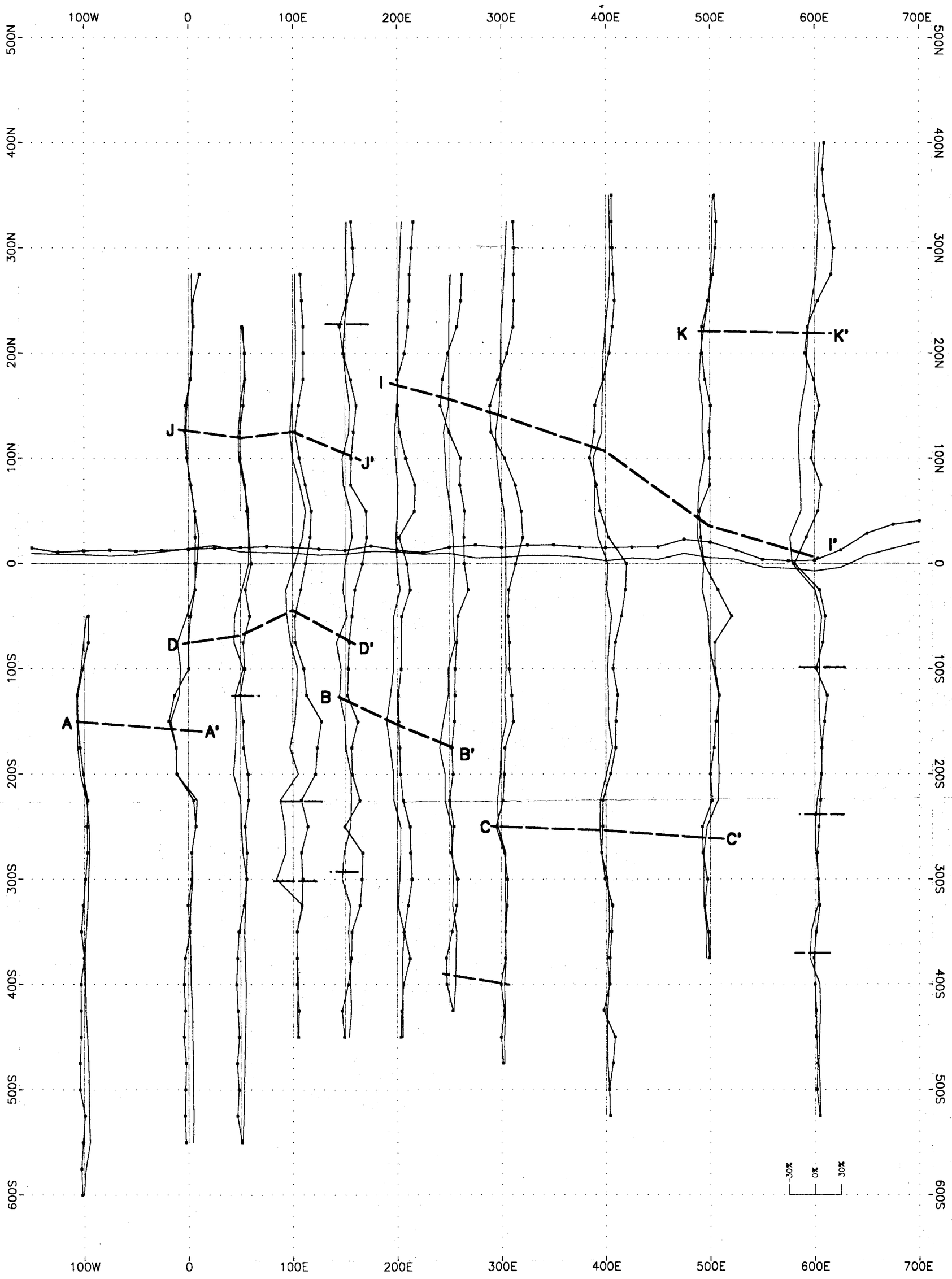
SWIFT RIVER PROJECT (YUKON) 1997 - LUCY

HORIZONTAL LOOP EM (MAX-MIN I)
14080 Hz - 100 metre Transmitter/Receiver Separation
Scale: 1:2,500
September, 1997 - Figure A-4 Dwn (33)

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Dwn (33)

DIAND - YUKON REGION, LIBRARY



In-Phase response (% Primary)

Quadrature Response (% Primary)

Conductor

BIRCH MOUNTAIN RESOURCES LTD.

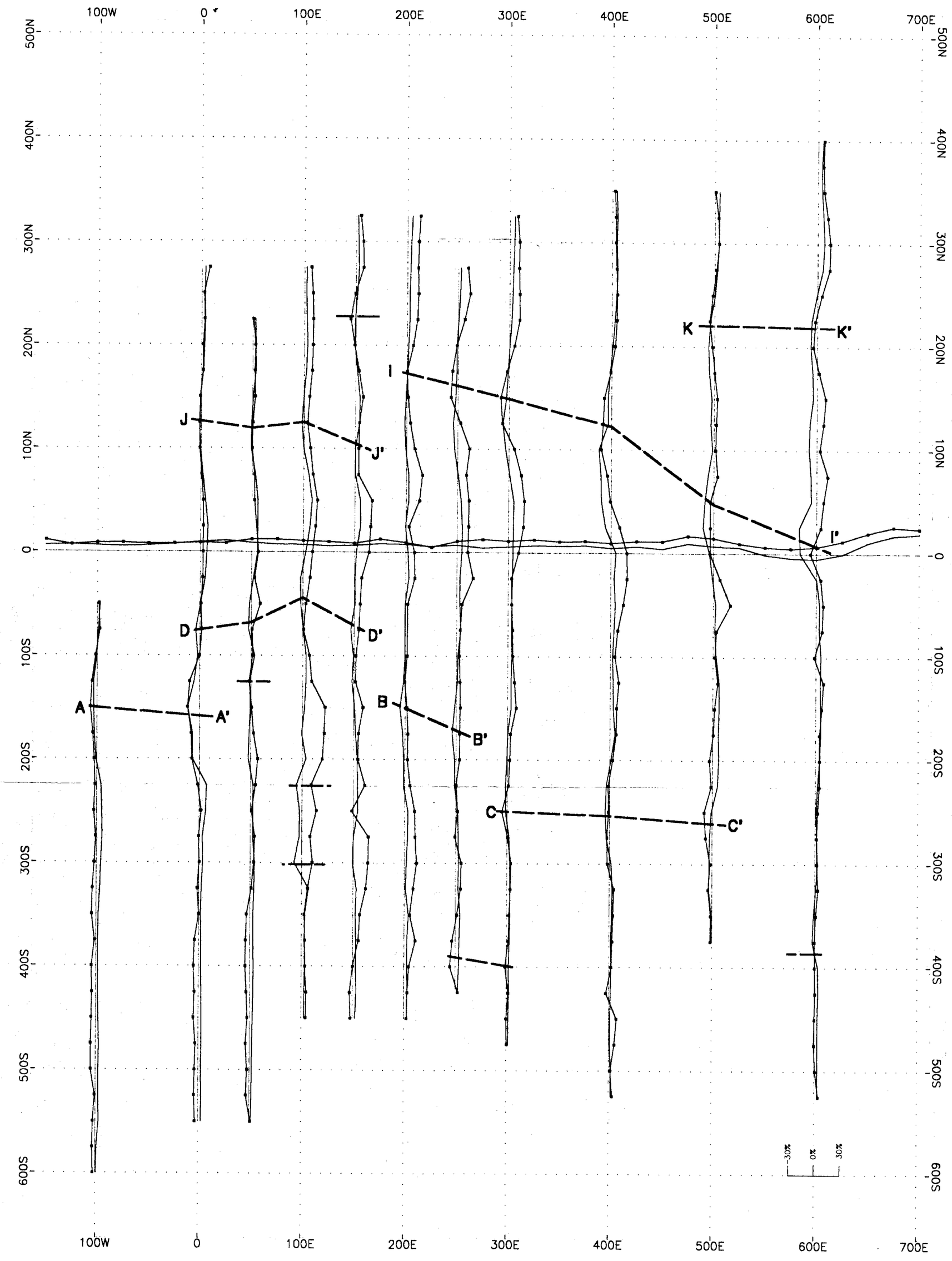
SWIFT RIVER PROJECT (YUKON) 1997 - LUCY

HORIZONTAL LOOP EM (MAX-MIN I)
7040 Hz - 100 metre Transmitter/Receiver Separation
Scale: 1:2,500
September, 1997 - Figure A-3 Dwg 32

ASSOCIATED MINING CONSULTANTS LTD. - PH22

Dwg 32

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In-Phase response (% Primary)

Quadrature Response (% Primary)

Conductor

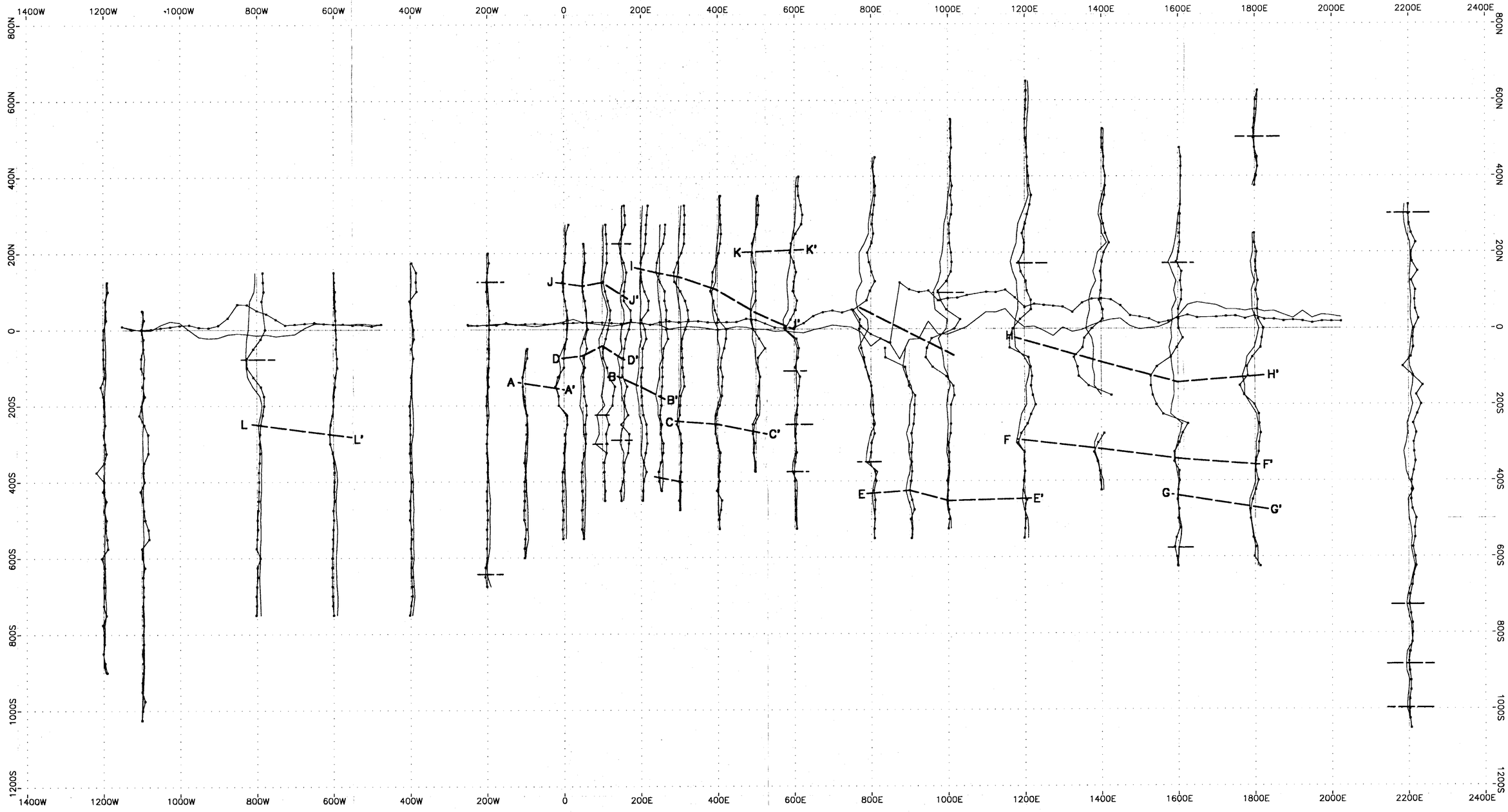
DIAND - YUKON REGION, LIBRARY

BIRCH MOUNTAIN RESOURCES LTD.

SWIFT RIVER PROJECT (YUKON) 1997 - LUCY

HORIZONTAL LOOP EM (MAX-MIN I)
3520 Hz - 100 metre Transmitter/Receiver Separation
Scale: 1:2,500
September, 1997 - Figure A-2

ASSOCIATED MINING CONSULTANTS LTD. - PH22



In-Phase Response (% Primary)
Quadrature Response (% Primary)

A—A' Conductor

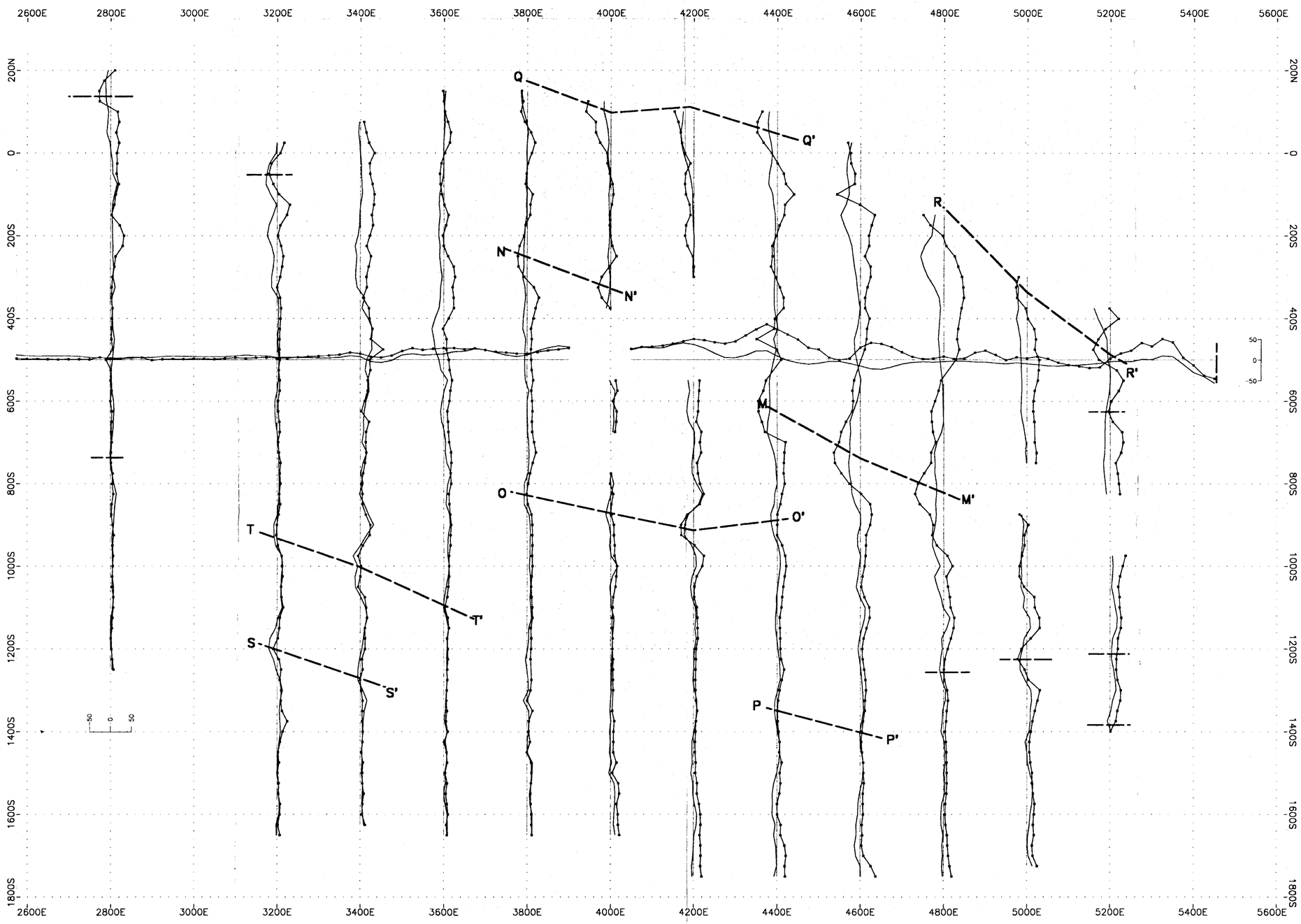
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SWIFT RIVER PROJECT (YUKON) 1997

HORIZONTAL LOOP EM (MAX-MIN I)
7040 Hz - 100 metre Transmitter/Receiver Separation
Scale: 1:5,000
September, 1997 - Figure 3a

ASSOCIATED MINING CONSULTANTS LTD. - PH22



In-Phase Response (% Primary)

Quadrature Response (% Primary)

M——M' Conductor

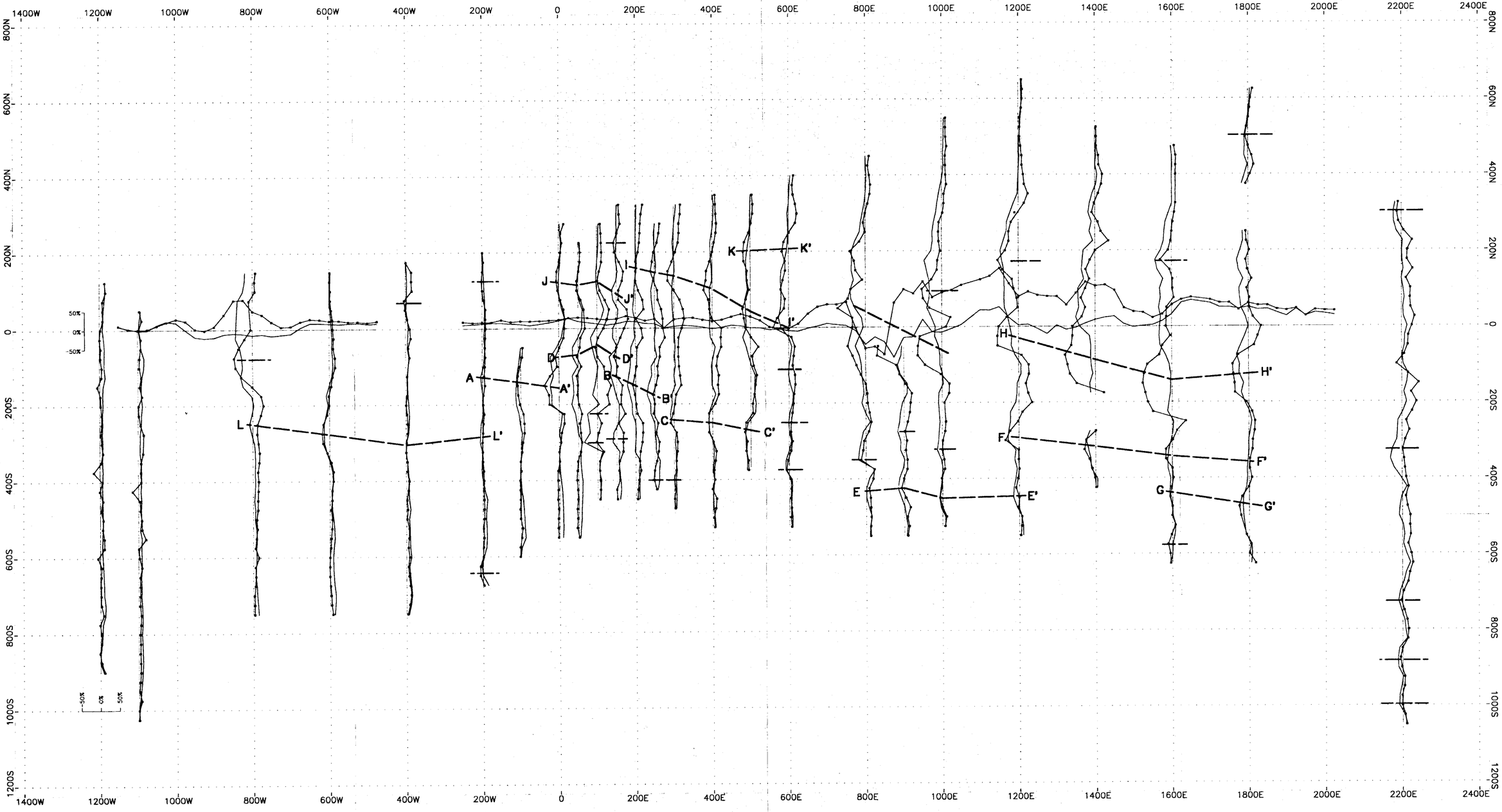
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BIRCH MOUNTAIN RESOURCES LTD.

SWIFT RIVER PROJECT (YUKON) 1997

HORIZONTAL LOOP EM (MAX-MIN I)
7040 Hz - 100 metre Transmitter/Receiver Separation
Scale: 1:5,000
September, 1997 - Figure 3b Dwg 25

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In-Phase Response (% Primary)
Quadrature Response (% Primary)

A——A' Conductor

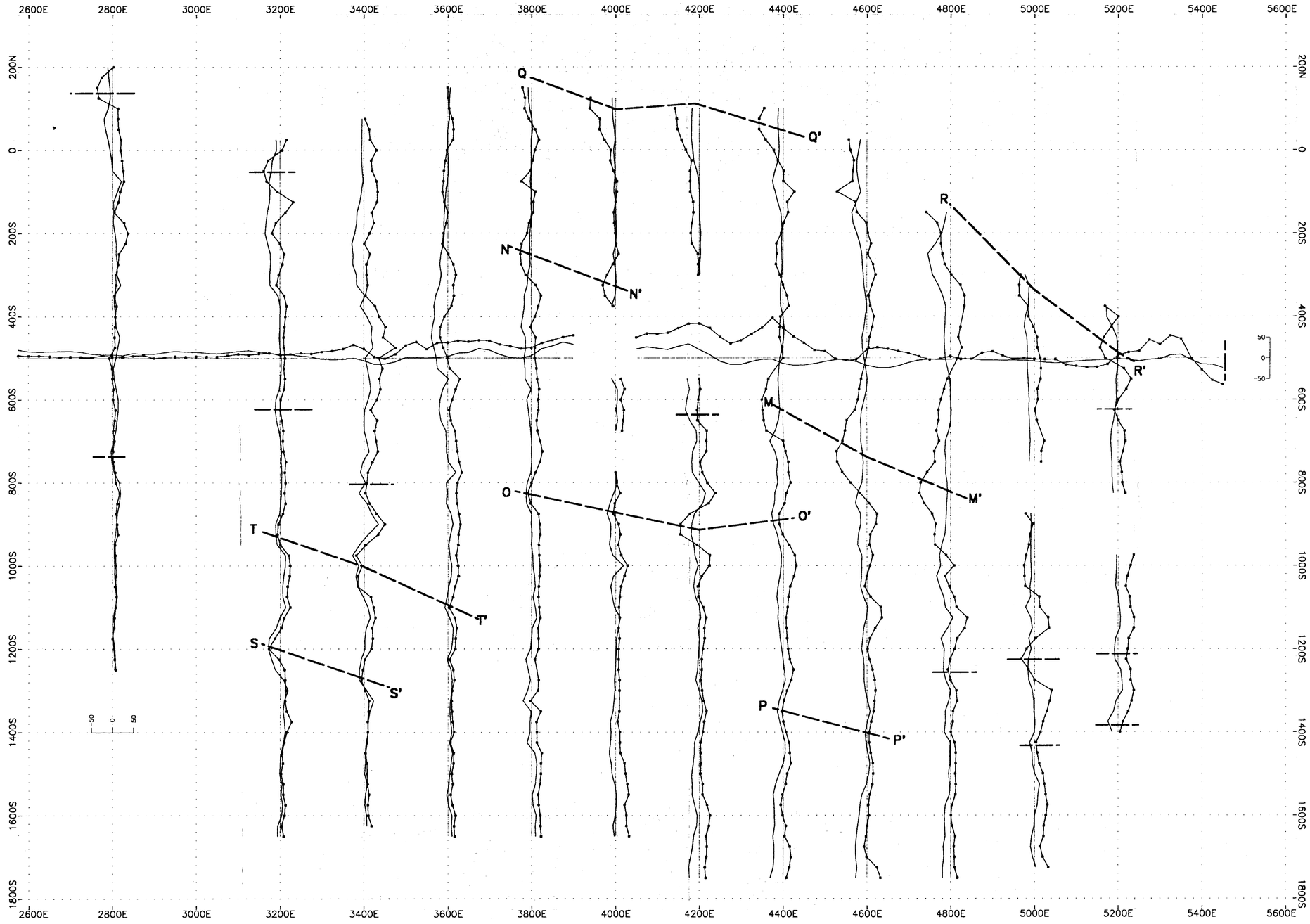
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SWIFT RIVER PROJECT (YUKON) 1997

HORIZONTAL LOOP EM (MAX-MIN I)
14080 Hz - 100 metre Transmitter/Receiver Separation
Scale: 1:5,000
September, 1997 - Figure 4a

ASSOCIATED MINING CONSULTANTS LTD. - PH22



In-Phase Response (% Primary)

Quadrature Response (% Primary)

M——M' Conductor

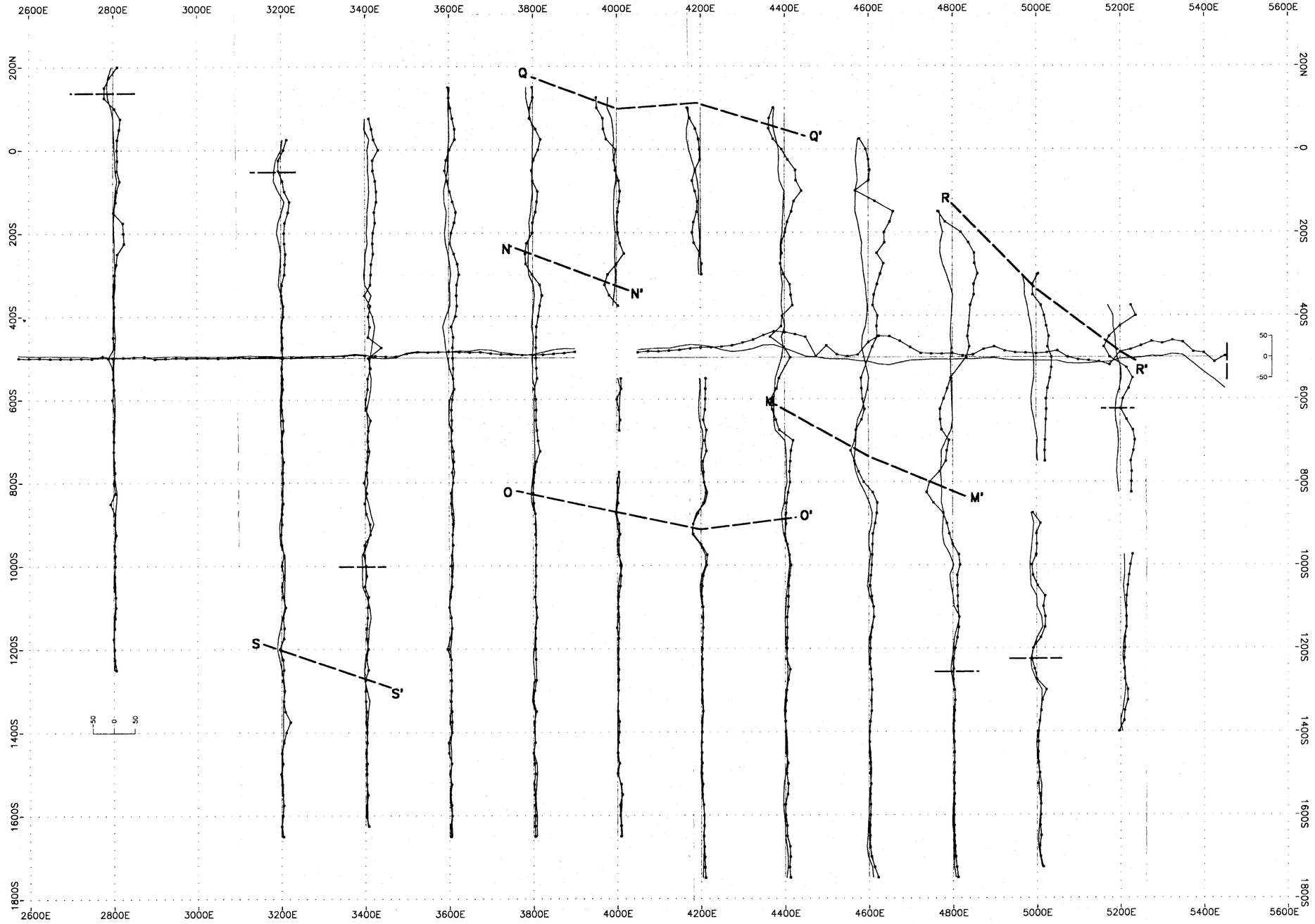
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HORIZONTAL LOOP EM (MAX-MIN I)
14080 Hz - 100 metre Transmitter/Receiver Separation
Scale: 1:5,000
September, 1997 - Figure 4b

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In-Phase Response (% Primary)

Quadrature Response (% Primary)

M——M' Conductor

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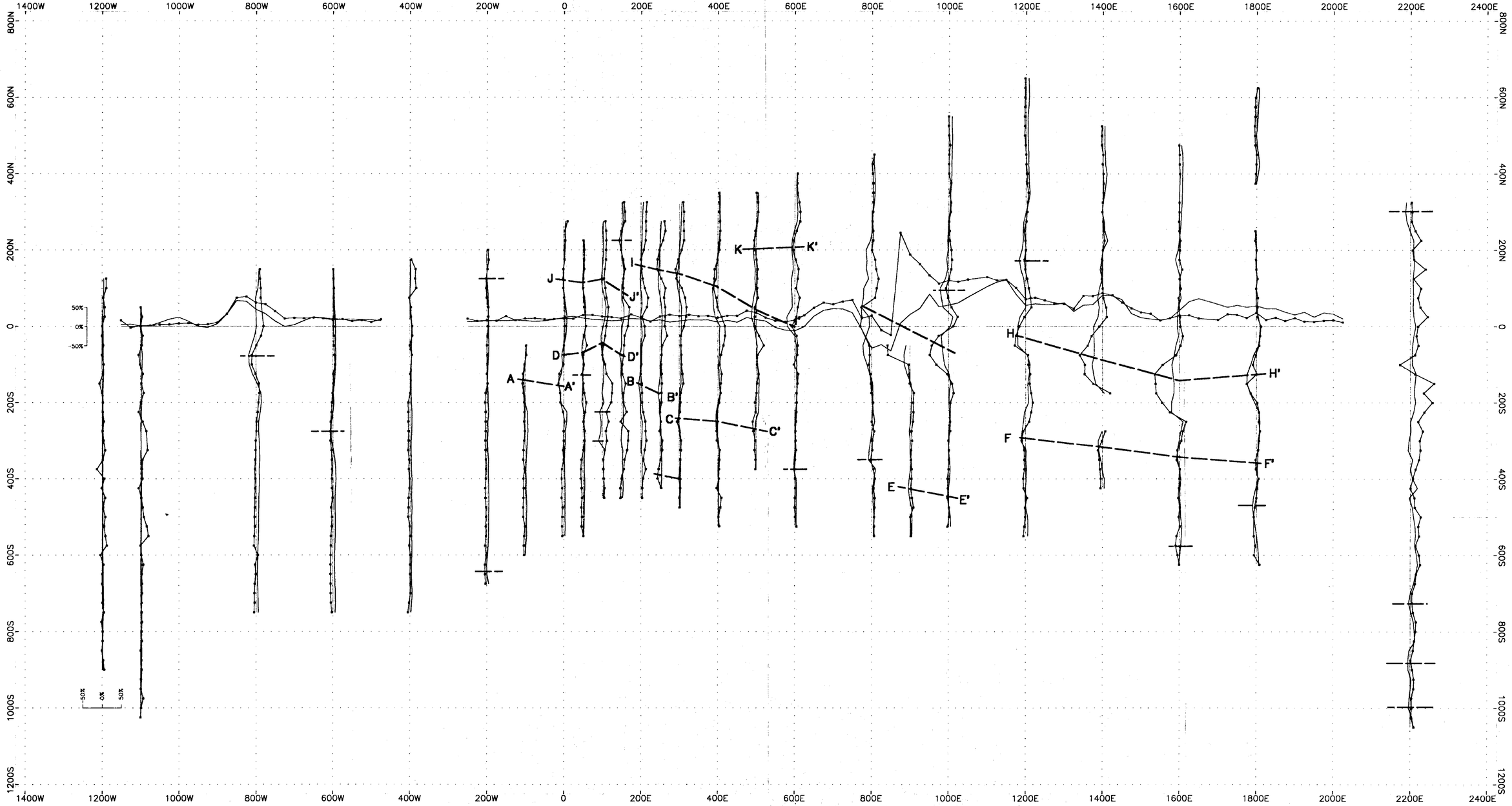
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HORIZONTAL LOOP EM (MAX-MIN I)
3520 Hz - 100 metre Transmitter/Receiver Separation
Scale: 1:5,000
September, 1997 - Figure 2b

Data (23)

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In-Phase Response (% Primary)

Quadrature Response (% Primary)

A——A' Conductor

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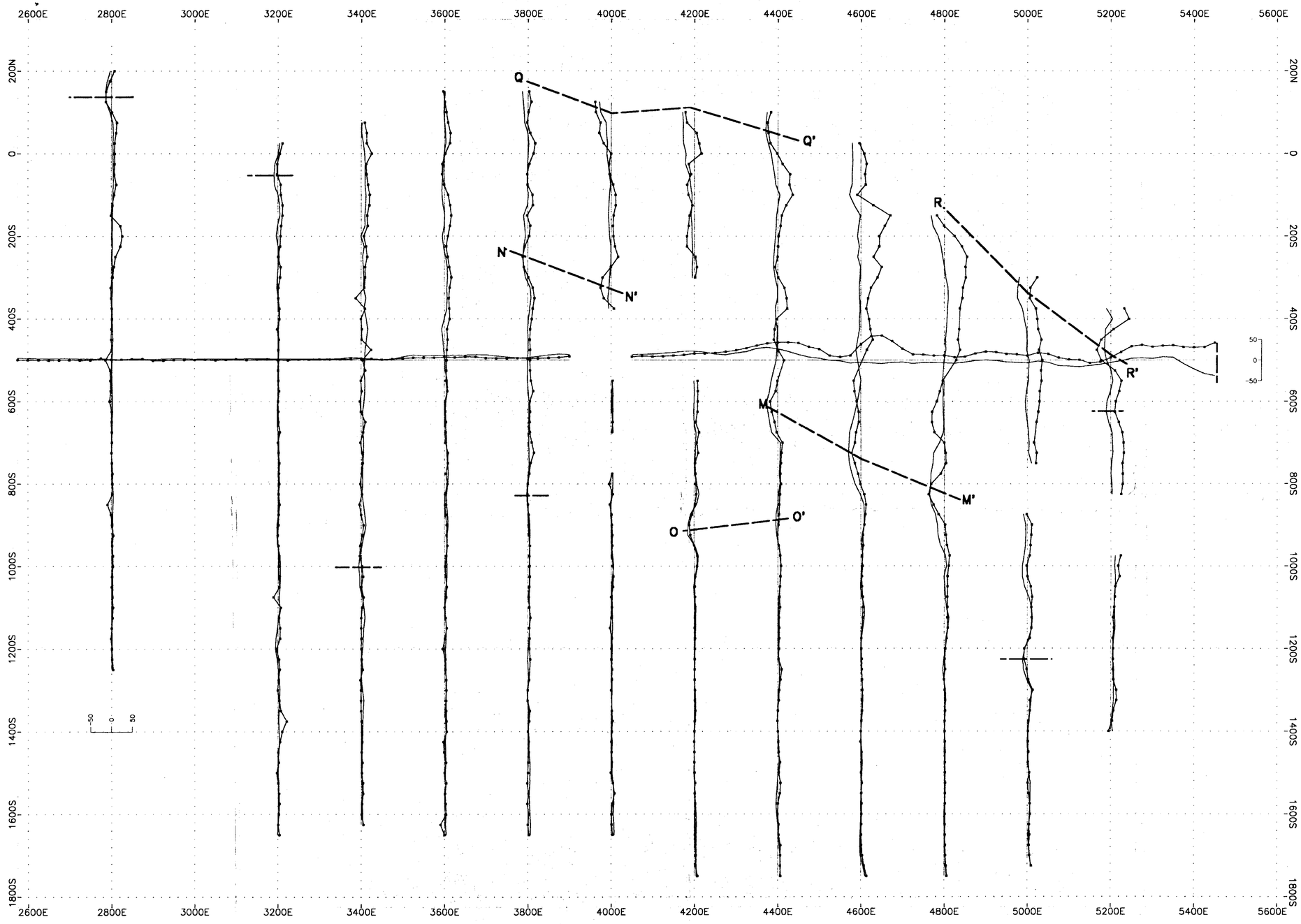
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SWIFT RIVER PROJECT (YUKON) 1997

HORIZONTAL LOOP EM (MAX-MIN I)
3520 Hz - 100 metre Transmitter/Receiver Separation
Scale: 1:5,000
September, 1997 - Figure 2a

Dwg (22)

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In-Phase Response (% Primary)

Quadrature Response (% Primary)

M——M' Conductor

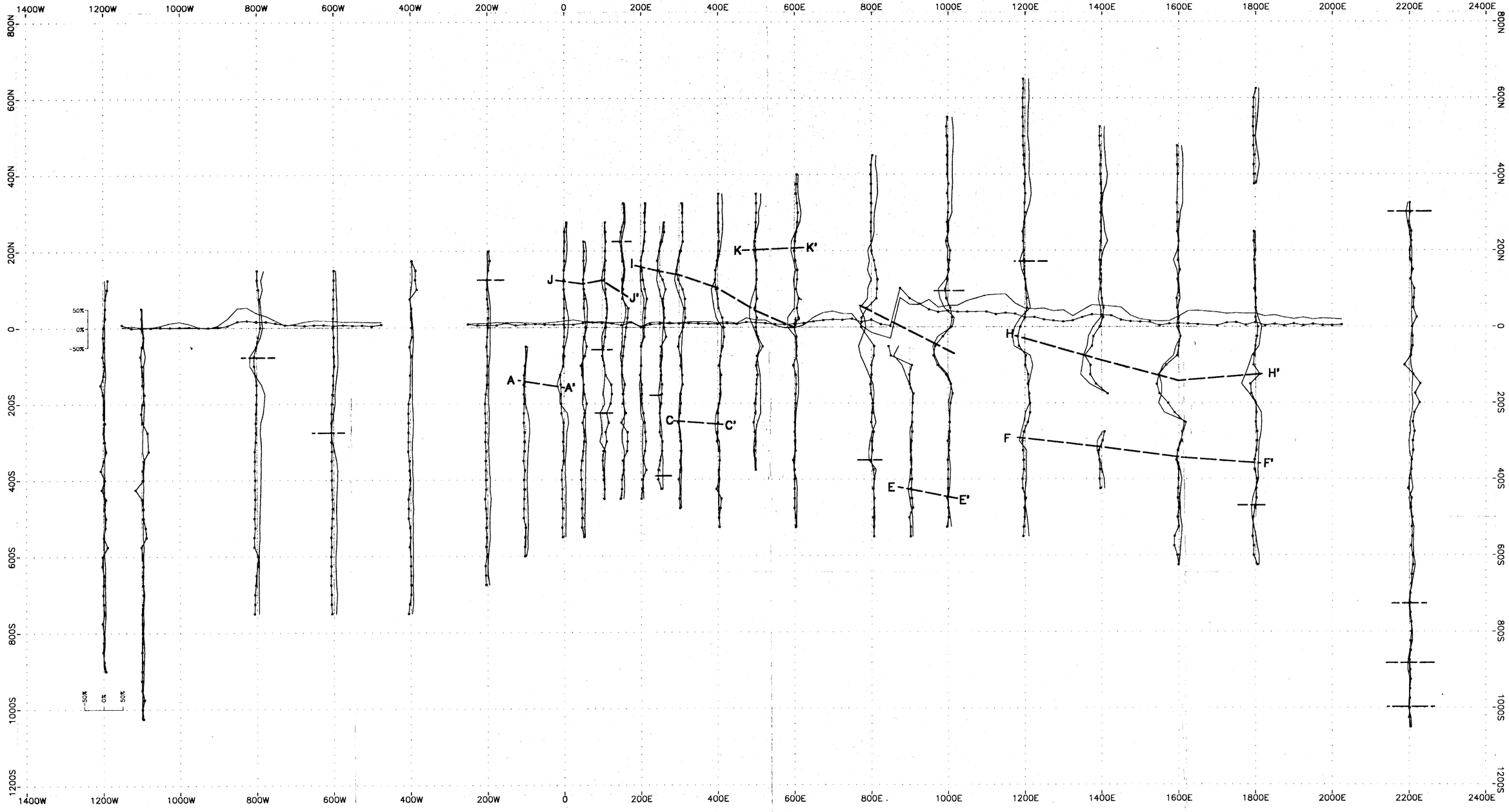
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SWIFT RIVER PROJECT (YUKON) 1997

HORIZONTAL LOOP EM (MAX-MIN I)
1760 Hz - 100 metre Transmitter/Receiver Separation
Scale: 1:5,000
September, 1997 - Figure 1b

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In-Phase Response (% Primary)
Quadrature Response (% Primary)

A——A' Conductor

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Assessment Report on the
SWIFT RIVER PROPERTY
Watson Lake Mining District
Yukon Territory

October 29, 1997
S.P. Santiago
V. Pratico

BIRCH MOUNTAIN RESOURCES LTD.

SWIFT RIVER PROJECT (YUKON) 1997

HORIZONTAL LOOP EM (MAX-MIN I)
1760 Hz - 100 metre Transmitter/Receiver Separation
Scale: 1:5,000
September, 1997 - Figure 1a

dwh (20)

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