DIAMOND DRILLING REPORT

ON THE

KUTCHO CREEK PROJECT

N.T.S. 104I/1W,2E

DEASE LAKE, B.C.

FOR

ATNA RESOURCES LTD.

LATITUDE: 58 Degrees 12' N

LONGITUDE: 128 Degrees 22'W

March, 1998

REPORT BY

Peter Holbek, Gary Belik and Robert Wilson, Atna Resources Ltd.

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1. INTRODUCTION

This report describes the results of a diamond drilling program that was completed by Atna Resources Ltd. on the Kutcho Property during the time period June 20 to July 11, 1997.

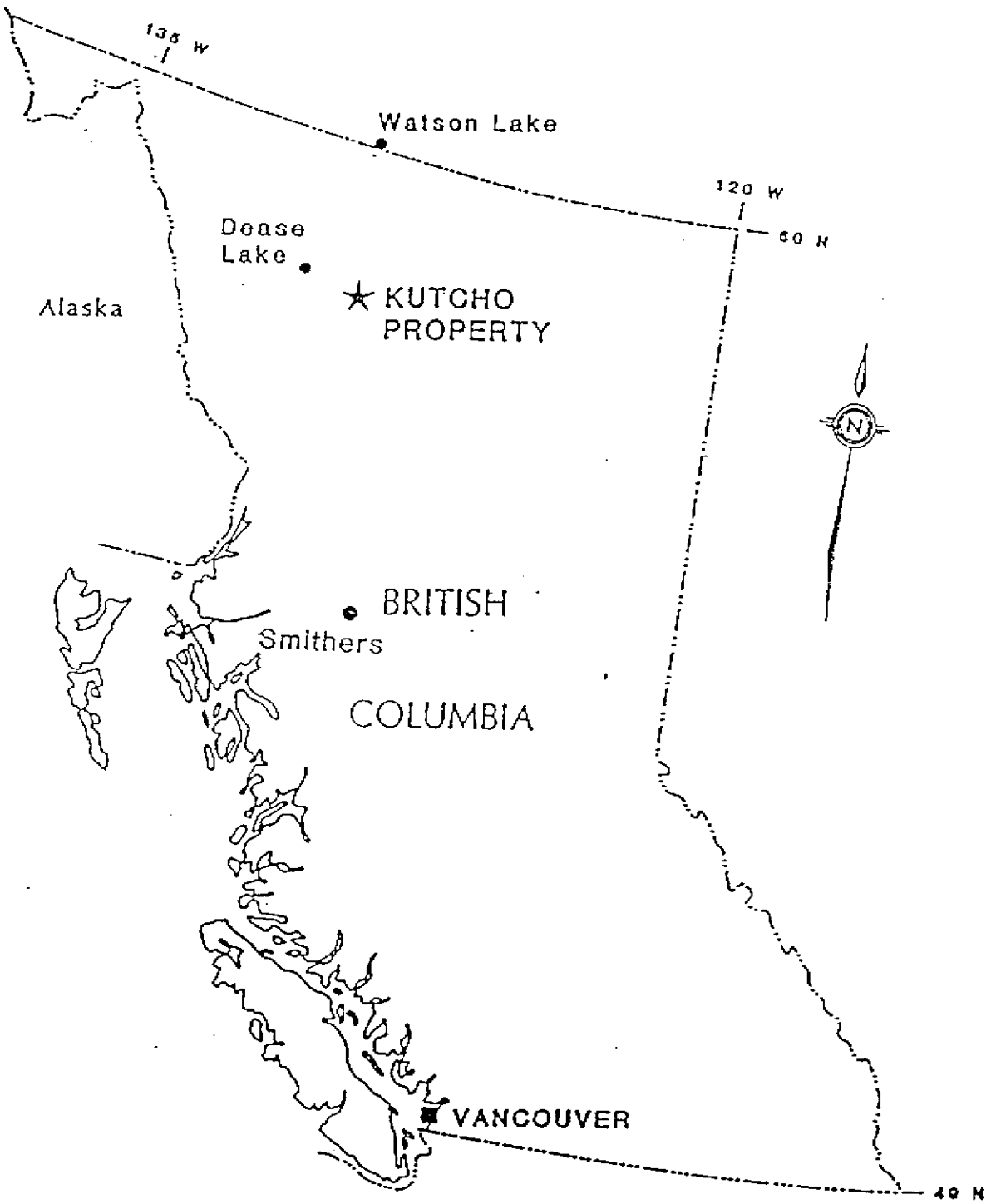
1.1 Location and Access

The Kutcho Property is located 90 km east of Dease Lake, B.C. at Latitude 58° 12' N and Longitude 128° 22' W. The property straddles Kutcho Creek, near its headwaters and is located within the Liard Mining Division.

Access to the property is provided by an 1,100 metre long, gravel airstrip located along the west side of Kutcho Creek, immediately north of the Kutcho 39 claim and 5 kilometres north of the center of the grid areas. The grid areas are accessible by trail from the airstrip. Accommodation was provided by Jade West at their camp located adjacent to the airstrip. Fuel, equipment, personnel and supplies were transported from either Dease Lake or Smithers, located 250 km south of the airstrip. A rough cat-road connects the airstrip with the town of Dease Lake and is commonly used by the Jade miners for hauling fuel, supplies and jade, usually in large tired vehicles.

1.2 Climate and Physiography

The property area lies on the two slopes of the Kutcho Creek valley with elevations ranging from 1,300 to 1,800 metres. Topography would be classified as gentle to moderate. Physiographically, the property area is situated within the southern flank of the Cassiar Mountains. Regionally much of the area is above tree-line which occurs at about the 1,500 metre elevation. The area is characterized by broad U-shaped valleys that are conspicuous by the absence of trees. Forested areas are restricted to a 300 to 400 metre vertical elevation band along slopes above the valleys. Much of the property occurs in this area of forest cover. Forests consist of thin to thick, tangled growths of sub-alpine fir with spruce and pine at lower elevations. Forests commonly contain a variety of tree sizes and only a very small proportion of the forest contains trees of sufficient size to be considered merchantable timber. At lower elevations, in areas without forest cover, thick growths of 'buckbrush' (alpine willow) with interspersed grass meadows predominate.



0 250 500
kilometres

ATNA RESOURCES LTD.			
KUTCHO PROPERTY			
LOCATION MAP			
DRAWN	DATE	NTS	FIG. 1.1
		104I/1W	

The climate is typical of the northern interior of British Columbia with short, wet summers and long, cold, dry winters. Winter snow accumulations range from 1 to 3 metres, with snow cover lasting from early October to mid May. Summer daytime temperatures range from 0 to 30° with a mean of 10°.

1.3 Claims

The property consists of 55 claims comprising 177 contiguous units covering an area of approximately 4,000 hectares (Figure 1.2). The claims are either owned or under option to Atna Resources Ltd. Details of claim status are summarized in Table 1.1. The claims are divided into two groups as shown on Table 1.1.

Table 1.1 Summary of Claim Data

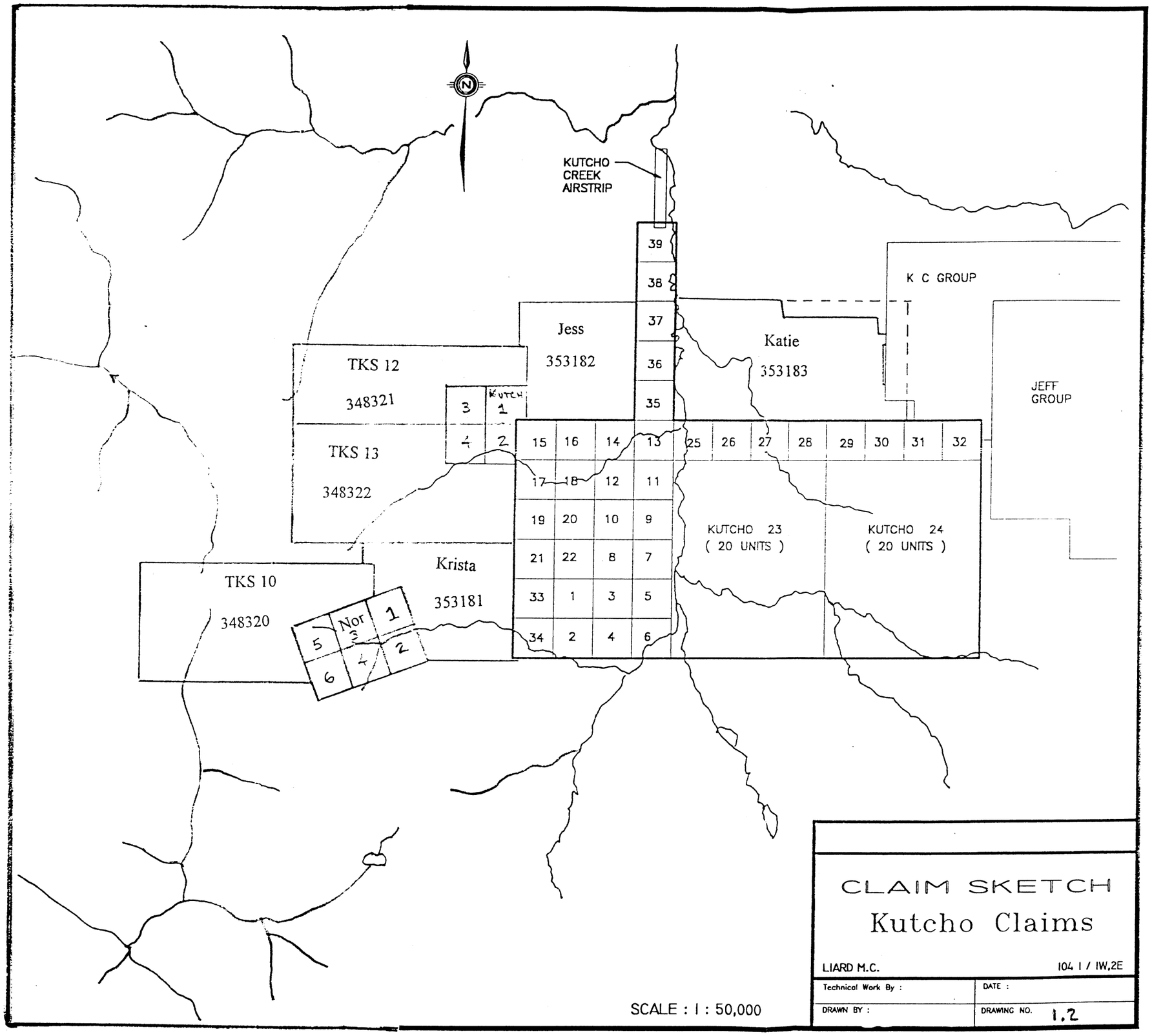
CLAIM	UNITS	RECORD #	RECORD DATE	EXPIRY DATE	OWNER	GROUP
Kutcho 1	1	330916	9/16/94	9/16/2007	Atna	Kut 2
Kutcho 2	1	330917	9/16/94	9/16/2007	Atna	2
Kutcho 3	1	330918	9/16/94	9/16/2007	Atna	2
Kutcho 4	1	330919	9/16/94	9/16/2007	Atna	2
Kutcho 5	1	330944	9/16/94	9/16/2007	Atna	2
Kutcho 6	1	330921	9/16/94	9/16/2007	Atna	2
Kutcho 7	1	330922	9/16/94	9/16/2008		2
Kutcho 8	1	330923	9/16/94	9/16/2008	Atna	2
Kutcho 9	1	347103	6/18/96	6/18/2007	Atna	2
Kutcho 10	1	347104	6/18/96	6/18/2007	Atna	2
Kutcho 11	1	347105	6/18/96	6/18/2004	Atna	Kut 1
Kutcho 12	1	347106	6/18/96	6/18/2004	Atna	1
Kutcho 13	1	347107	6/18/96	6/18/2004	Atna	1
Kutcho 14	1	347108	6/18/96	6/18/2004	Atna	1
Kutcho 15	1	347109	6/18/96	6/18/2004	Atna	1
Kutcho 16	1	347110	6/18/96	6/18/2004	Atna	1
Kutcho 17	1	347111	6/19/96	6/19/2004	Atna	1
Kutcho 18	1	347112	6/19/96	6/19/2004	Atna	1
Kutcho 19	1	347113	6/19/96	6/19/2007	Atna	Kut 2
Kutcho 20	1	347114	6/19/96	6/19/2007	Atna	2
Kutcho 21	1	347115	6/19/96	6/19/2007	Atna	2

Kutcho 22	1	347116	6/19/96	6/19/2007	Atna	2
Kutcho 23	20	347099	6/19/96	6/19/2002	Atna	Kut 1
Kutcho 24	20	347100	6/19/96	6/19/2001	Atna	1
Kutcho 25	1	347117	6/19/96	6/19/2001	Atna	1
Kutcho 26	1	347118	6/19/96	6/19/2001	Atna	1
Kutcho 27	1	347119	6/19/96	6/19/2001	Atna	1
Kutcho 28	1	347120	6/19/96	6/19/2001	Atna	1
Kutcho 29	1	347121	6/19/96	6/19/2001	Atna	1
Kutcho 30	1	347122	6/19/96	6/19/2001	Atna	1
Kutcho 31	1	347123	6/19/96	6/19/2001	Atna	1
Kutcho 32	1	347124	6/19/96	6/19/2001	Atna	1
Kutcho 33	1	350720	9/09/96	9/09/2007	Atna	Kut 2
Kutcho 34	1	350719	9/09/96	9/09/2007	Atna	2
Kutcho 35	1	350721	9/10/96	9/10/2000	Atna	Kut 1
Kutcho 36	1	350722	9/10/96	9/10/2000	Atna	1
Kutcho 37	1	350723	9/10/96	9/10/2000	Atna	1
Kutcho 38	1	350724	9/10/96	9/10/2000	Atna	1
Kutcho 39	1	350725	9/10/96	9/10/2000	Atna	1
Jess	12	353182	12/19/96	12/19/97	Atna	1
Katie	18	353183	12/19/96	12/19/97	Atna	1
Krista	12	353181	12/19/96	12/19/2000	Atna	Kut 2
TKS 10	18	348320	7/06/96	7/06/2000	Hunter Gp	2
TKS 12	12	348321	7/06/96	7/06/2000	"	2
TKS 13	18	348322	7/06/96	7/06/2000	"	2
Nor 1	1	348325	7/02/96	7/02/2000	"	2
Nor 2	1	348326	7/02/96	7/02/2000	"	2
Nor 3	1	348327	7/02/96	7/02/2000	"	2
Nor 4	1	348328	7/02/96	7/02/2000	"	2
Nor 5	1	348329	7/02/96	7/02/2000	"	2
Nor 6	1	348330	7/02/96	7/02/2000	"	2
Kutch 1	1	348331	7/02/96	7/02/2000	"	2
Kutch 2	1	348332	7/02/96	7/02/2000	"	2
Kutch 3	1	348333	7/02/96	7/02/2000	"	2
Kutch 4	1	348334	2/07/96	7/02/2000	"	2

1.4 Exploration History

The recent exploration history of the Kutcho area dates back 1967 when the initial stream sediments leading to the discovery of mineralization were first collected by an exploration syndicate operated by Imperial Oil Ltd. The discovery of a mineralized float boulder and initial claim staking occurred in 1970 during follow-up work resulting from the anomalous stream sediment samples collected by the syndicate. The initial claims were allowed to lapse as the other parties in the syndicate declined to fund further exploration work. Imperial Oil returned to the area in 1973 in order to restake the area following dissolution of the exploration syndicate. However, Sumac Mines Ltd., the Canadian exploration arm of Sumitomo Corp. of Japan, had staked eight claims adjacent to a small stream where they had collected anomalous stream sediment samples in 1972. These original Sumac claims cover the western part of the main lens of the Kutcho Creek volcanogenic massive sulphide deposit. Exploration work was carried out by both Sumac and Imperial (Esso Minerals Canada Limited) and by 1982 three massive sulphide lenses had been delineated. Collectively, Esso and Sumac have incurred exploration expenditures in excess of $10 million in programs that include two airborne geophysical surveys, numerous campaigns of ground geophysics, geology and geochemistry, more than 60,000 metres of drilling in 231 holes, collection of a 100 ton bulk sample from a 225 metre long adit and a plethora of engineering, metallurgical and environmental studies.

The property discussed in this report covers ground that was previously held by Esso, (primarily on the east side of Kutcho Creek) and Noranda (on the west side of Kutcho Creek) and is immediately southwest, and along strike, of the area containing the defined massive sulphide lenses. Noranda carried out exploration work on to the west of Kutcho Creek between 1976 and 1980 which consisted of line cutting, geological, geochemical and geophysical surveys and three core holes totalling 229 metres. However, only one of these holes was drilled in the current claim area with the remaining two holes having been drilled in areas further to the west. Esso drilled three holes in the current claim area between 1974 and 1977 and an additional two holes in 1990. The early holes were drilled to test airborne EM conductors while the 1990 holes tested an area of favourable geology and lithogeochemistry.


KUTCHO CREEK AIRSTRIP
K C GROUP
JEFF GROUP
Jess
353182
Katie
353183
Krista
353181
TKS 12
348321
TKS 13
348322
TKS 10
348320
KUTCHO 23
(20 UNITS)
KUTCHO 24
(20 UNITS)
SCALE : 1 : 50,000
CLAIM SKETCH
Kutcho Claims
LIARD M.C.
104 I / IW,2E
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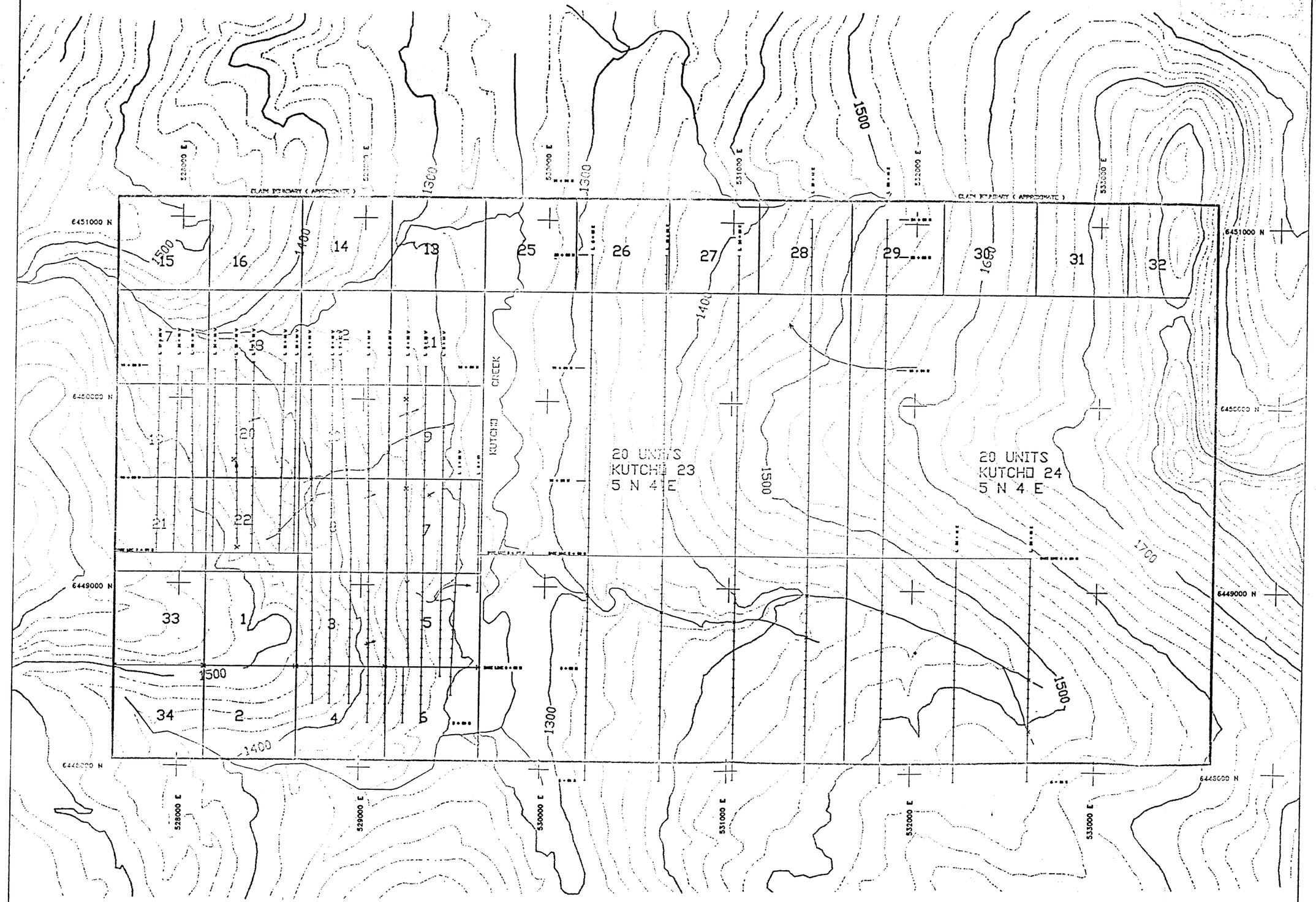

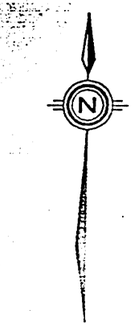

CLAIM BOUI

CLAIM POS

UTM GRID

GRID LINE

CREEK, RI\

ELEVATION CO
(20 m INTER\

0 200 400 600

SCALE : 1:20,000

KUTCHO PROP

ATNA RESOURCES

GRID & CLAIM MAP

LIARD MINING DIVISION, B.C.

FIG. 1.2b

DATE :

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The initial claims of the current property were staked by G. Belik in 1994, who carried out a program of geological mapping, data compilation and soil geochemistry. This program established the presence of a felsic flow-dome complex with associated areas of pyrite-silica exhalite, hydrothermal alteration and anomalous copper and zinc geochemistry in soils. Based on the results of this work Atna Resources Ltd. optioned the property and staked an additional 69 claim units and carried out an exploration program consisting of additional geological mapping, prospecting, soil sampling and test pitting, and a ground electromagnetic survey. Continued favourable results prompted staking of an additional 42 claim units and optioning of 58 claim units from the Hunter Exploration Group.

1.5 Current Exploration Work

The 1997 program consisted of line-cutting, UTEM and Max-Min geophysical surveys, geological mapping, soil geochemistry, lithogeochemical sampling and 9 NQ diamond drill holes totalling 1,586 metres. Work began on June 7 and was completed on July 11, diamond drilling commenced on June 21. This report covers the diamond drill holes drilled on Claim Group Kut-2 (DDH97-K01 and K04). These two holes comprise 451.7 metres of the above total and were the most northerly drilled holes. The purpose for conducting the surveys and diamond drilling was to search for Cu-Zn massive sulphides of volcanic exhalative origin, similar to and along strike of the known Kutcho Creek massive sulphide deposits.

The exploration and drilling crew was accommodated at the Jade West camp, located adjacent to the Kutcho airstrip and within 5 km walking distance from the grids being surveyed. A helicopter, under contract from Vancouver Island Helicopters, was used for moving the drill and crew changes. The drill core was logged at the Jade West camp and is stored in cross stacked piles on the southwest end of the Kutcho airstrip.

2. GEOLOGY

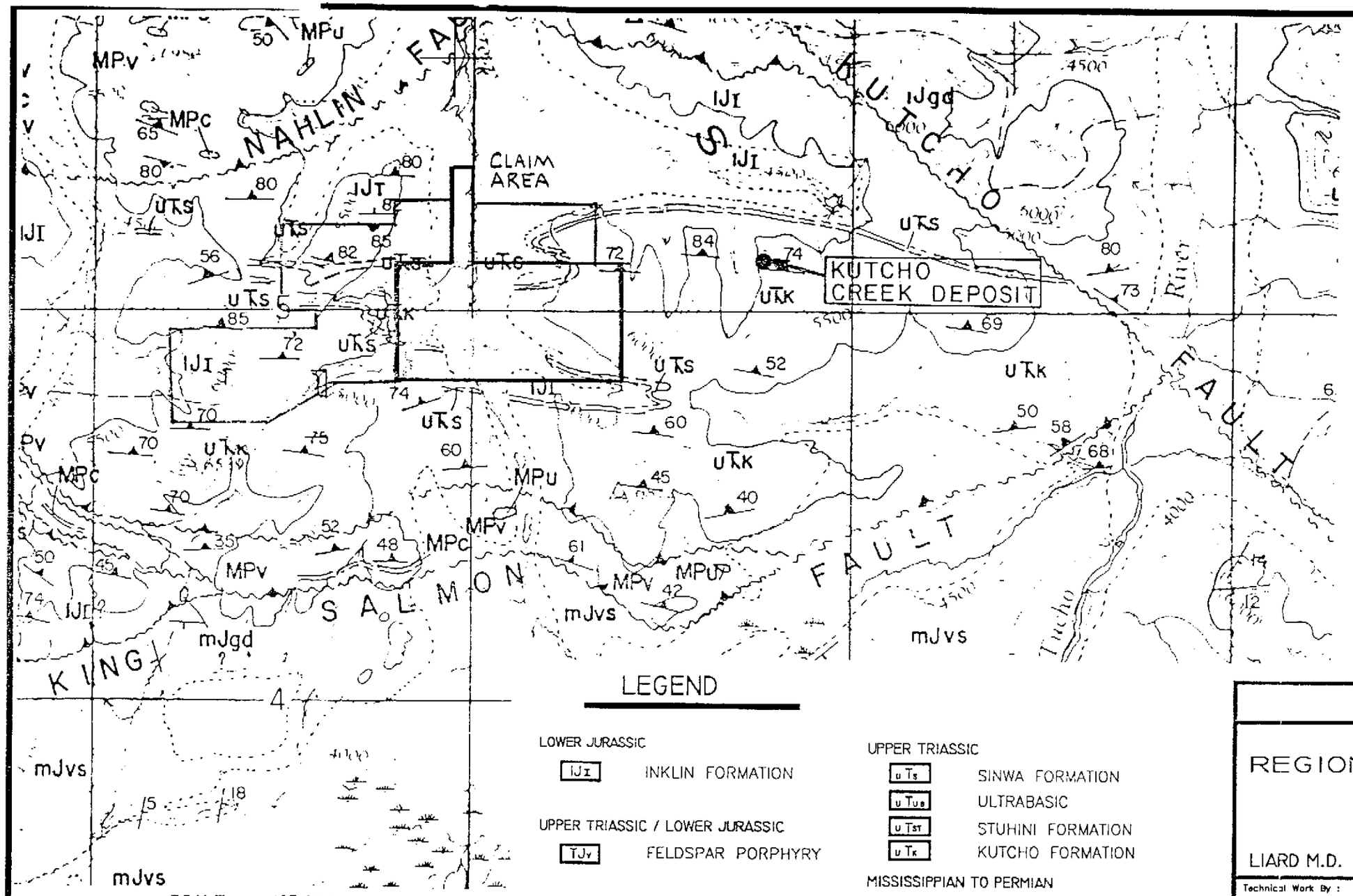
2.1 Regional Geology

The Kutcho property lies within the King Salmon Allochthon, a narrow belt of Triassic to Permian island-arc volcanic rocks and Jurassic sediments sandwiched between two northerly dipping thrust faults: the Nahlin fault, to the north, and the King Salmon fault, to the south (Fig. 2.1). Penetrative foliation and axial planes of major folds are parallel to these east-west trending, southerly dipping, bounding faults. The volcanic rocks within the Allochthon are thickest in the area of the known massive sulphide deposits; due in part to primary deposition but also to stratigraphic repetition caused by folding and thrust faulting. Large scale folds plunge gently to the west and consequently the volcanic host rocks for mineralization are overlain by sediments west of the claim area discussed in this report.

Stratigraphy of the Allochthon consists of mafic and felsic volcanic rocks of the Kutcho Formation overlain by limestone of the Upper Triassic Sinwa Formation, and sediments of the Lower Jurassic Inklin Formation. Major folds are best delineated by the Sinwa limestone and the contact between Kutcho Formation volcanic rocks and Inklin Formation argillite. The Kutcho Formation and the King Salmon allochthon are cut off 16 kilometres to the east by the Kutcho Fault, a major right-lateral strike-slip fault. The King Salmon Allochthon extends to the west past Dease Lake but Kutcho Formation volcanic rocks become scarce a few kilometres to the west of the property area.

Volcanogenic massive sulphide mineralization of the Kutcho deposits occurs at the contact between footwall lapilli tuffs and hanging wall quartz-feldspar crystal tuffs of the Kutcho Formation. The main sulphide bearing horizon is marked by extensive hydrothermal alteration in the form of sericite, and deposition of iron-carbonate and silica exhalitive rocks and pyritic ash tuffs. This horizon is visually and geochemically recognizable for at least 8 km along strike.

The pyroclastic rocks of the Kutcho Formation exhibit greater thicknesses and coarser grain size in the vicinity of the known sulphide deposits and units become thinner and finer grained away from the deposit area suggesting that the deposits are vent proximal. Other, possibly subordinate, vent areas may exist in the region.



LEGEND

LOWER JURASSIC

- IJI — INKLIN FORMATION

UPPER TRIASSIC / LOWER JURASSIC

- TJv — FELDSPAR PORPHYRY

UPPER TRIASSIC

- uTs — SINWA FORMATION
- uTuB — ULTRABASIC
- uTst — STUHINI FORMATION
- uTk — KUTCHO FORMATION

MISSISSIPPIAN TO PERMIAN

- MP — CACHE CREEK GROUP

SCALE : 1 : 125,000

REGIONAL GEOLOGY

O.F. 610

LIARD M.D. 104 I / 1W,2E

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2.2 Property Geology

Geology of the property has been described in detail in an assessment report by Belik (1996) and will only be briefly reviewed here.

2.2.1 Stratigraphy

The most prominent stratigraphic and structural feature on the property is a large syncline defined by Inklin argillite, Sinwa limestone and another argillite/shale unit below the limestone that could be part of the Sinwa Formation or may mark the upper limit of the Kutcho Formation. Typically the top of the Kutcho Formation is marked by a volcanic conglomerate unit which is only present the north edge of the claim area. Below this sedimentary package sits a sequence of felsic and minor mafic volcanic rocks that is the main focus of the exploration effort. A precise and detailed stratigraphy is difficult to establish due extensive and rapid facies changes and complex fold geometry. The felsic volcanic rocks have been divided into six units. One unit is composed of resistant, fairly uniform, rhyolitic quartz-feldspar porphyry that most likely represents a rhyolite flow-dome complex. The interpreted dome is flanked by flows, tuffaceous units and breccias (although some of the breccias may also be a hydrothermal in origin). Units are differentiated on the basis of grain size and abundance, however the same eruptive unit may show considerable variation in grain size and phenocryst abundance along strike. All of the felsic units have quartz phenocrysts. Within the felsic pile but towards the base are a number of mafic units consisting of basalt flows and derived epivolcaniclastic rocks.

2.2.1 Structure

On a regional scale, the claim area straddles a large, westerly trending anticline-syncline pair. These folds plunge very gently to the west. The shallow plunge gives a map appearance isoclinal folds however, in a structural section it can be seen that these folds are open to moderately tight. All units display a penetrative axial plane foliation which is most pronounced within the sericitic units. Foliation ranges from near-vertical to moderately north dipping. Changes in the dip of the foliation is only observed on the west side of Kutcho Creek whereas on the east side foliation dips consistently at 45° to the north. The changes in foliation dip may be due to block faulting and/or post-metamorphic compression. Detailed mapping has confirmed that between the axial planes of the major fold set, subordinate folds of variable amplitudes are ubiquitous. It would also appear that these folds are disharmonic in that they have variable plunges. An enclosing envelope about these folds is interpreted to be nearly flat lying within the central part of the claim area.

3. DIAMOND DRILL PROGRAM

3.1 Description of the Diamond Drill Program

The diamond drilling program was undertaken following an extensive program of geological mapping, soil geochemistry and deep penetration UTEM geophysical surveys. It is recognized from previous work on the Kutcho Creek massive sulphide deposits that additional deposits would likely have a similar form to the known deposits, namely elongated, even cigar shaped, along a gentle west-plunging trend. Small sulphide deposits of this shape would be difficult to detect geophysically at anything other than shallow depths and consequently drill hole locations were guided as much by favourable stratigraphy and alteration as by the location of EM conductors.

Drilling equipment used consisted of a Britton 2500 hydraulic diamond drill with NQ diameter core size which is owned and operated by Britton Brothers Diamond Drilling from Smithers, B.C. The drill was mobilized to the Kutcho airstrip using a Skyvan aircraft with a 4,500 lb. payload which is based in Whitehorse and operated by Summit Air Ltd. Demobilization of drill equipment was achieved using a Delta articulated, balloon tired vehicle with a 16 tonne payload which is operated by Jade West. Drill moves were carried out with a Hughs 500D helicopter under contract from Vancouver Island Helicopters. Nine holes totalling 1,586 metres were completed although only holes 97-01 and 97-04 were completed on the Kut-2 Claim Group and are the subject of this report. Drill hole locations, orientations and lengths are given in Table 3.1.

The drill was setup on 5x5 metre pads built from lumber upon a log crib. Drill pad materials were re-used for each pad and surface disturbance was minimal to non-existent. Drill water was obtained from near-by streams and drill lubricants were recycled via mudtanks. Drill return overflow passed into a settling sump and was filtered before being released. Drill core was flown to the Jade West camp and logged and sampled prior to being stored on the southwest corner of the Kutcho airstrip. Sulphide rich intervals were split, either manually or with a daimond saw, whereas altered intervals were sampled for lithogeochemical analysis by taking a 3 to 4 cm length of whole core every 50 cm along the sample interval, usually 5 to 10 metres. Split and lithogeochemical samples were shipped to Eco-Tech Laboratories Ltd. in Kamloops, B.C. for multi-element ICP analysis following nitric-perchloric-hydrofluoric acid (total) digestion. Drill logs can be located in Appendix I and analytical data in Appendix II.

Table 3.1 Summary of Diamond Drill Hole Location and Survey Data

Hole ID	Northing	Easting	Elevation	Azimuth	Dip	Length
KU97-01	20+27	14+05	1490	180.0	-45	303.6
KU97-04	25+45	15+45	1425	180.0	-50	148.1

3.2 DESCRIPTION DRILL RESULTS

Drill holes 97-01 and 97-04 were collared on the Kutcho 15 and Kutcho 18 claims, respectively (Figure 3.1). Drill hole 97-01 was designed to test a sequence of coarse grained quartz-feldspar crystal tuffs which occur immediately below the Kutcho conglomerate. This stratigraphic position is equivalent to the "mine sequence" (Holbek and Heberlein, 1985) hosting the Kutcho Creek massive sulphide deposits 3 to 6 kilometres to the east. Drill hole 97-01 was located where the crystal tuffs appeared to be the thickest, coarsest grained and the most mineralized, however an EM conductor was not present in this area. The hole intersected over 300 metres of interlayered quartz-feldspar crystal tuffs, crystal-lithic tuffs and lapilli tuffs including a pumice fragment lapilli tuff that is characteristic of the footwall of the Kutcho deposit. All of the units are weakly altered showing variable development of sericite and locally laminae and clots of pyrite. Lithogeochemical indicator elements display background to weak indications of alteration with little variation down the hole. Due to the relatively weak alteration and mineralization displayed in the hole, down-hole geophysical surveys were not carried out.

Drill hole 97-04 was targeted on a weak to moderate EM conductor within the same sequence of felsic pyroclastic rocks as 97-01 but at the base of the sequence. This drill hole intersected a sequence of fine grained, felsic, crystal and crystal-lithic tuffs that became both finer grained and thinner bedded progressively down the hole; eventually becoming intermixed ash tuffs, greywackes and mudstones with minor chert and/or silica exhalite. Graphitic sediments correlate with the EM conductor. Alteration within the tuffaceous rocks is relatively weak, however, lithogeochemistry, although weak, shows a distinctive strengthening towards the bottom of the hole. The presence of significant molybdenum and barium associated with the chert horizons indicates that these rocks are associated with hydrothermal exhalations. This sequence appears to be inverted suggesting an anticlinal axis between holes 97-01 and 97-04. While hole 97-01 appears to be in the footwall of the mineralized horizon, drill hole 97-04 appears to have intersected a "mineralized horizon", where mudstones represent a facies equivalent of sulphides, albeit at a considerable distance from a hydrothermal vent area.

4. CONCLUSIONS AND RECOMMENDATIONS

The geophysical surveys conducted during this program, and previously, have covered an extensive, but by no means exhaustive area of promising geology for potential sulphide mineralization in the Kutcho Creek camp. The surveys were successful in identifying a number of conductors, most of which have turned out to be graphite bearing lithologies, although some of these display lithogeochemical trends characteristic of the mineralized horizon. Because of the tendency of the known sulphide deposits to form elongate bodies with limited "along dip" dimensions it must be borne in mind that smaller sulphide deposits may have little or no EM response and areas of favourable geology, alteration and chemistry still require investigation.

The two drill holes discussed in this report were drilled in a thick section of felsic pyroclastic rocks interpreted to be stratigraphically equivalent to rocks hosting the Kutcho massive sulphide deposits. Drill hole 97-01 was collared in the hanging wall conglomerate and cored a thick section of weakly altered crystal and lapilli tuffs. Lithogeochemical values are at background levels with little variation and lithologies suggest that the cored interval is footwall to the mineralized horizon. This implies that the conglomerate unit sits on an unconformity that cuts downwards into the stratigraphy and has removed the mineralized horizon in this area.

Stratigraphy intersected by drill hole 97-04 appears inverted and implies an anticline between holes 1 and 4. Fine grained felsic crystal and lithic tuffs grade into ash tuffs and sediments suggestive of a period of volcanic "quiescence". Lithogeochemical values indicate that the cherts are exhalative in origin and that the graphitic mudstones are a distal facies equivalent of sulphides. However, the relatively weak geochemistry suggests a significant distance (+3 km) from hydrothermal vent area.

Based upon the results of this drilling, and lack of alternative targets, the exploration potential of the northwest part of the claim group is insufficient to warrant any additional work at this time.

APPENDIX I

DRILL LOGS

SUMITOMO METAL MINING CO. OF CANADA LTD.

PROPERTY Kutcho

HOLE No. Ku-97-01

DIP TEST		
	Angle	
Footage	Reading	Corrected
0		-45°
90.2		-44°
181.7		-36°
276.5		-31°

Hole No. ..... Sheet No. 1
Section .....
Date Begun. June 21/97
Date Finished. June 26/97

Lat. 25145 N
Dep. 15145 W
Bearing 180°
Elev. Collar. .....

Total Depth. 303.6 m
Logged By. G. Bell
Claim. Kutcho 15
Core Size. NQ

DEPTH (METRES)	DESCRIPTION	SAMPLE No.	FOOTAGE (METRES)	WIDTH OF SAMPLE	TYPE	RECOVERY
0 - 2.7	OB - CASING TO 3.1 m					
2.7 - 20.0	COARSE FRAGMENTAL SEQUENCE (UPPER CONGLOMERATE/ AGGLOMERATE UNIT); 50%-70% 2-1 cm ROUNDED/ SUBROUNDED STRETCHED CLASTS IN FINE-GRAINED, FOLIATED, TUFFACEOUS TO GRITTY-LOOKING MATRIX; 2 MAIN FRAG TYPES: 1) PALE- TO LIGHT-GREEN FOLIATED DACITE, AND 2) FINE-GRAINED RHYOLITE WITH SMALL QTZ EYES (< 1 mm) IN FOLIATED FINE-GRAINED MATRIX; SOME ANDESITIC CLASTS (CHLOR); TRACE DISSEM P_y	73601	2.7-9.3	6.6	L.G.	100%
		73602	9.3-18.3	9.0	L.G.	100%
		73501	18.3-20.0	1.7	SPLIT	90%
	@ 13.4 m: 3 cm x 0.7 cm GRN SIL FRAG WITH 15%-20% V.F.GR DISSEM SULPH (P_y + ?); 2nd SIMILAR SULPH FRAG					
	@ 17.1 m: SMALL (MAX 2 mm) STRETCHED SULPH CLASTS (P_o + ?)					
	18.3 - 20.0 m: SEVERAL FOLIATED, THIN WISPY LAYINGS OF F.GR. P_o + ?; LOCAL SULPHIDE-RICH SIL CLASTS; LIGHTER GREEN MUD TO SILTSTONE (SED INT ?)					

BCIL - 2306 - S.M.M.

SUMITOMO METAL MINING CO. OF CANADA LTD.

PROPERTY Kutcho

HOLE No. Ku-92-01

DIP TEST		
	Angle	
Footage	Reading	Corrected

Hole No. ..... Sheet No. 2

Section .....

Date Begun .....

Date Finished .....

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Dep. .....

Bearing .....

Elev. Collar .....

Total Depth .....

Logged By .....

Claim .....

Core Size .....

DEPTH	DESCRIPTION	SAMPLE No.	FOOTAGE	WIDTH OF SAMPLE	TYPE	RECOVERY
20.0 - 21.9	FELSIC XAL/LAPILLI TUFF; L. GREEN, SERICITIC (ALT?); LOCAL BOMB-SIZE STRETCHED FELSIC CLASTS; DEFORMED F.GR., SULPH-RICH, SIL EXHALITE LAMINATIONS & WISPY BANDS; SMALL, LAPILLI-SIZE, F.GR., SULPH/QTZ FRAGS (MAINLY Po ± Py + Sph(?)); AVERAGE SULPHIDE CONTENT 2 - 3%	73502	20.0-21.9	1.9	SPLIT	98%
21.9 - 31.7	FELDSPATHIC LAPILLI TUFF; DACITIC COMP; 20%-40% RECENT VOLCANIC. LAPILLI, 2mm - 7mm, IN CL-SE XAL TUFF MATRIX; SOME QTZ EYES DECREASING IN SIZE AND ABUNDANCE TOWARD BOTTOM OF SECTION; GEN MINOR Py; TRACE Sph	73503	21.9-23.6	1.7	SPLIT	100
		73603	23.6-31.7	8.1	L.G.	100
	22.0-23.6: 2?-3? ROUNDED STRETCHED CLASTS AND IRREG WISPY LAMINAE OF DENSE, SIL, GREY/BROWN EXHALITE WITH MINOR F.GR. Po ± Py ± ?					
	30.2-30.9: QTZ/CARB VEIN					
31.7 - 41.3	FELDS XAL TUFF; MED GREEN, CHLORITIC; DACITIC TO ANDESITIC COMP; OCCASIONAL QTZ EYES; SCATTERED VOLC LAPILLI (SAME COMPOSITION); GEN MINOR Py	73604	36.3-41.3	5.0	L.G.	100
	33.2-36.3: LATE-STAGE, POST KINEMATIC QTZ-CARB VEIN					

SUMITOMO METAL MINING CO. OF CANADA LTD.

PROPERTY Kutcho

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DIP TEST		
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Footage	Reading	Corrected

Hole No. ..... Sheet No. 3
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Core Size .....

DEPTH	DESCRIPTION	SAMPLE No.	FOOTAGE	WIDTH OF SAMPLE	TYPE	RECOV			
	@ 23.8 m: Fol 45°/Long Core Axis								
41.3-53.5	Feldspar Xal Tuff; Similar To Above Unit With Interbedded Sections (60% of Unit) With Abundant (10-20%) Intermediate Vole Lapilli, up To 1 cm in Size; Epidote-Alt Feldspars Within Lapilli Phases A Pepperad Appearance To Unit; Trace Py	73605	41.3-46.8	5.5	L.G.	100%			
		73606	46.8-53.5	6.7	L.G.	100			
	@ 47.9 m: Planar Banding (Grain-Size) 75°/Long Core Axis								
	Fol @ 50.3 m: 65°/ (Core Axis)								
53.5-53.8	Fine Grained, Intermediate, Fine-Banded Xal Tuff; Green; Loc Brecciated Grey (Sc Alt?); 5%-10% Disem Py	73504	53.5-53.8	0.3	Split	100			
53.8-58.0	Feldspar Xal Tuff; Similar To 31.7-41.3; Ep Alt; V. Minor Qtz Eyes	73607	53.8-58.0	4.2	L.G.	100			
	56.85-57.0: Lapilli Tuff Band With Ovoid Vole Lapilli up To 0.7 cm in Size; 2% Py (Pervasive/Veins); Bedding Parallel To Foliation = 60°/Long Core Axes								

SUMITOMO METAL MINING CO. OF CANADA LTD.

PROPERTY Kutcho

HOLE No. Ku-92-01

DIP TEST		
	Angle	
Footage	Reading	Corrected

Hole No. ..... Sheet No. 4
Section .....
Date Begun .....
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Total Depth .....
Logged By .....
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Core Size .....

DEPTH	DESCRIPTION	SAMPLE No.	FOOTAGE	WIDTH OF SAMPLE	TYPE	RECOV			
	57.3 - 57.5 : Lapilli Tuff								
	57.5 - 58.0 : Pink Hematite Mud								
58.0 - 61.1	Intermediate Xal/Lapilli Tuff; a few narrow Bands of mod Coarse Qtz-Eye Lapilli Tuff; Occasional Qtz-Eye Rhyolite Clasts, up to 4 cm in Size; Scattered Py Porphyroblasts; Local Pink, Hematitic Mud; Bedding 55°/Long Core Axis	73608	58.0-61.1	3.1	L.G.	99			
	@ 58.6 m: 3cm Band of Silty Semi-massive Py/Po								
61.1 - 68.7	Fn-Grained Felds Xal Tuff; 50% Scrags (0.2-1mm) Ep-Alt Feldspar Clasts in Fn-Grained, Green Matrix; Occasional Small Qtz Eyes; No Sulphides; Bedding 45°-65°/Long Core Axis	73609	61.1-68.7	7.6	L.G.	100			
68.7 - 73.9	Gradational Contact; med To Coarse-Grained, Qtz-Felds Xal/Lapilli Tuff; Light To med Green; 15% To + 20% Blue/Grey Qtz Eyes, < 1mm To 4mm (Av. 2mm); Green	73610	68.7-72.5	3.8	L.G.	100			
	@ 72.5 m: 6cm Qtz Poor Rhyolite Bands								

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PROPERTY Kutcho

HOLE No. Ku-92-01

DIP TEST		
Footage	Angle	
	Reading	Corrected

Hole No. ____ Sheet No. 5
Section ____
Date Begun ____
Date Finished ____

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Total Depth ____
Logged By ____
Claim ____
Core Size ____

DEPTH	DESCRIPTION	SAMPLE No.	FOOTAGE	WIDTH OF SAMPLE	TYPE	RECOV
	VOLC LAPILLI DRUS YELLOW/GREEN RHYOLITE PUMICE CLASTS, ϕ 0.2 mm – 0.6 mm, SCATTERED THROUGHOUT MOST OF SECTION; WELL FOL Se/Cl NATAM; MINOR SULPHIDE EXCEPT AS NOTED					
	72.5–75.6: 1–2% P_y AS TINY, WISPY LAMINAE, DISSEM GRAINS AND SMALL CLS, SULPHIDE-RICH FRAGS	73505	72.5–75.6	3.1	SPLIT	90%
	78.6–82.6: 1% ± P_y/P_o AS DISSEM & WISPY LAMINAE BEDDING 65°/CORE AXIS	73611	75.6–89.4	6.8	L.G.	100
		73612	82.4–89.7	7.3	L.G.	100
	@ 85.7 m: 2 mm QTZ PORPH RHYOLITE CLAST; GREEN/YELLOW MATRIX					
	85.7–99.4: INCREASE IN ABUNDANCE AND SIZE OF GREEN/YELLOW RHYOLITE PUMICE FRAGS (MANY 2 cm IN SIZE)					
	@ 94.8 m: FOL 70°/CORE AXIS	73613	89.7–96.9	7.2	L.G.	
	115.5–120.4: PALER GREEN, MORE SILICEOUS, VERY ABUNDANT QTZ EYES	73614	96.9–104.9	8.0	L.G.	
	120.4–120.9: 70% QTZ PORPH RHYOLITE BLOCKS AND FRAGMENTS	73615	104.9–112.2	7.4	L.G.	
		73616	112.2–118.9	6.7	L.G.	
	122.5–123.0: CHLOR AND WISPY LAMINAE OF FN. GR. P_y/P_o	73617	118.9–123.7	4.8	L.G.	

SUMITOMO METAL MINING CO. OF CANADA LTD.

PROPERTY Kutcho

HOLE No. Ku-92-01

DIP TEST		
	Angle	
Footage	Reading	Corrected

Hole No. ..... Sheet No. 6

Section .....

Date Begun .....

Date Finished .....

Lat. .....

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Bearing .....

Elev. Collar .....

Total Depth .....

Logged By .....

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Core Size .....

DEPTH	DESCRIPTION	SAMPLE No.	FOOTAGE	WIDTH OF SAMPLE	TYPE	RECOV			
	@ 123.0 m: 5cm Rhyolite Dyke; Sharp, Angular Edges	73617	118.9-123.7	4.8	L.G.	100?			
	Bedding/Foliation @ 122.5 m 45°/Long Core Axis	7368	123.7-127.9	8.3	L.G.	100			
	@ 126.2 m: 4cm Rhyolite Qtz Porphyry Clast								
	123.8-132.0: Pyrite Bleaching; P3/Pa in Thin								
	Deformed Laminations and Shale Clasts								
	@ 127.4 m: 5cm Rhyolite Clast								
	@ 128.3 m: Bedding 75°/Long Core Axis								
131.9-132.9	Dacitic Xal/Lapilli Tuff; Minor Sulphide								
132.9-150.0	L. To Med Green Dacitic Silt (?); Weak To Mod. Well Foliated Parallel; Weakly Deformed Sections Contain 10% Plag + Qtz Phenos (1-3mm in Size) In Fn-Gn To Aphanitic Matrix	73619	132.9-150.0	17.1	L.G.	100			
150.0-152.7	Fn-Gn, Qtz-Felds Xal Tuff (QFCT); 10%-15% Qtz + Felds Clasts (1mm-2mm) In Fn-Grained Cl-Se-Qtz-Felds Matrix; Minor Sulphide F ≈ 65°/Long Core Axis								

SUMITOMO METAL MINING CO. OF CANADA LTD.

PROPERTY Kutcho

HOLE No. Ku-92-01

DIP TEST		
	Angle	
Footage	Reading	Corrected

Hole No. Sheet No. 7
Section
Date Begun
Date Finished

Lat.
Dep.
Bearing
Elev. Collar

Total Depth
Logged By
Claim
Core Size

DEPTH	DESCRIPTION	SAMPLE No.	FOOTAGE	WIDTH OF SAMPLE	TYPE	RECOV			
152.7-171.9	MED-GRAINED, L. TO MED-GREEN QFCT; PATCHY BLEACHING (ONLY SERICITE); +15% QTZ EYES (1-3mm TO 3mm) IN WELL-FOL, FN. GRANULAR MATRIX; MINOR VOLC LAPILLI (SAME COMPOSITION AS QFCT); MINOR SULPHIDE	73620	152.7-159.7	7.0	L.G.	100%			
		73621	159.7-165.0	5.3	L.G.	100			
		73622	165.0-171.9	6.9	L.G.	100			
171.9-181.7	FN-GR QFCT/LAPILLI TUFF; 15% STRETCHED, QTZ/FELDS INTERGROWTH LAPILLI (RECRYST VOLC), QTZ EYES AND FELDS CLASTS IN L. TO M. GREEN, WELDED, V.F.GR. MATRIX; DISTAL/REWORKING CONE; 0.5% Py WITH TRACES OF Cpy IN SCATTERED, THIN WISPY LAMINAE.	73623	171.9-181.7	9.8	L.G.	99			
181.7-188.1	SIMILAR TO 132.9-150.0; POSSIBLE PRE-DEFORMATIONAL SILL; FOLIATED	73624	181.7-188.1	6.4	L.G.	100			
188.1-392.2	SHARP CONTACT (60°/CORE AXIS); MED-TO COARSE-GRAINED QFCT WITH SCATTERED CREAM-COLOURED, RHYOLITIC PORPH AND RHYOLITE PUMICE FRAGMENTS 0.2 cm TO SEVERAL cm IN SIZE; 20%-30% QTZ EYES (CLASTS) UP TO 6 mm IN SIZE (AV. ≈ 2 mm); LOC WISPS OF V. FN GR. Py WITH TRACES OF Cpy	73625	188.1-192.6	4.5	L.G.	100			

SUMITOMO METAL MINING CO. OF CANADA LTD.

PROPERTY Kuycho HOLE No. Ku-97-01

DIP TEST		
	Angle	
Footage	Reading	Corrected

Hole No. ..... Sheet No. 8
Section .....
Date Begun .....
Date Finished .....

Lat. .....
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Bearing .....
Elev. Collar .....

Total Depth .....
Logged By .....
Claim .....
Core Size .....

DEPTH	DESCRIPTION	SAMPLE No.	FOOTAGE	WIDTH OF SAMPLE	TYPE	RECOV			
	196.0 – 199.7 : 1% ± Po, Py AND TRACES OF Cpy	73506	196.0-199.7	3.7	SPLIT	100%			
	PAST 201.9 m : LOC DISSEM AND WISPY THIN LAMINAE OF Py, Po ± Cpy ; AU SHOW CONTENT 0.5g/t ±	73626	199.7-203.6	8.0	L.G.	100			
		73627	203.6-211.8	8.2	L.G.	100			
	BEDDING @ 205.7 m 75°/CORE AXIS								
	PAST 217.0 m : GRN INCREASE IN SULPHIDE CONTENT TO 2% ± AS THIN WISPY BANDS AND SMALL CLOTS OF SEMI-MASSIVE F.GR Po ± Cpy	73507	218.2-221.3	3.1	SPLIT	100			
	PAST 218.2 m : GRN ABSENCE OF RHY PORPH AND RHY PUNICE FRAGS WHICH ARE COMMON IN PRECEDING SECTION								
	@ 221.3 m : 4 cm RHY DYKE								
	@ 231.6 m : BEDDING/FOL 70°/CORE AXIS	73508	227.4-230.4	3.0	SPLIT	100			
	@ 235.0 m : 3 cm RHY DYKE	73509	233.5-236.5	3.0	SPLIT	100			
	@ 236.7 m : PALE GREEN CHERT BANDS (70°/CORE)								

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PROPERTY Kutcho

HOLE No. Ku-97-01

DIP TEST		
	Angle	
Footage	Reading	Corrected

Hole No. ..... Sheet No. 9

Section .....

Date Begun .....

Date Finished .....

Lat. .....

Dep. .....

Bearing .....

Elev. Collar .....

Total Depth .....

Logged By .....

Claim .....

Core Size .....

DEPTH	DESCRIPTION	SAMPLE No.	FOOTAGE	WIDTH OF SAMPLE	TYPE	RECOV			
	PAST 237.8 m: RECRYSTALLIZED QTZ CRYST - CALCITE								
	RHYOLITE PORPH FRAGS; SHARP TO DIFFUSE EDGES;								
	0.2 TO ± 1.0 CMS IN SIZE; COINCIDES WITH								
	TAIL OFF OF SULPHIDES TO ½% ±								
	245.7-248.7 m: ± 2% Po, Py ± Cpy	73510	245.7-248.7	3.0	SPLIT	100%			
		73628	249.9-260.9	11.0	L.G.	100			
	PAST 260.3 m; PICK UP IN SULPH CONTENT TO	73511	264.0-267.0	3.0	SPLIT	100			
	ABOUT 2% ±	73512	273.1-276.2	3.1	SPLIT	100			
	264.3 - 264.7 m: BANDS WITH ABUNDANT VERY LARGE	73513	282.2-285.3	3.1	SPLIT	100			
	QTZ EYES (UP TO 0.8 cm)								
292.2-303.6	ALTERED QFCT; GRADUAL INCREASE IN INTENSITY	73514	292.2-294.5	2.2	SPLIT	100			
	OF ALTERATION DOWN SECTION; 4% ± Po, LESSER Py AND	73515	294.5-297.5	3.0	SPLIT	100			
	TRCS Cp THROUGHOUT ZONE WITH LOCAL HEAVIER SULPH	73516	297.5-300.5	3.0	SPLIT	100			
	SECTIONS (DISSEM, BLEBS AND THIN WISPY LAMINAE); ALTERATION	73517	300.5-303.6	3.1	SPLIT	100			
	CONSISTS OF A GENERAL BLEACHING AND SILICIFICATION								
	WITH AN IRREGULAR, PATCHY / WEBBING PATTERN OF SER								
	CHLORITE AND MANGANESE; QTZ EYES PRESERVED BUT								
	ORIGINAL MATRIX TEXTURES INDISTINCT								
	299.6 - 303.6 m: FELSIC - CRYSTAL XAL TUFF;								
	CHLORITE ALTERATION; 4% ± SULPHIDES								

END OF HOLE — CASING LEFT IN

SUMITOMO METAL MINING CO. OF CANADA LTD.

PROPERTY Kutcho

HOLE No. Ku-97-04

DIP TEST		
	Angle	
Footage	Reading	Corrected

Hole No. Ku-97-04 Sheet No. 1
Section
Date Begun. June 28/97
Date Finished. June 29/97

Lat. 2222.22 N
Dep. 144.05-W
Bearing 180°
Elev. Collar

Total Depth 148.1 m
Logged By G. Beluk
Claim Kutcho 12
Core Size NQ

DEPTH (METRES)	DESCRIPTION	SAMPLE No.	FOOTAGE	WIDTH OF SAMPLE	TYPE	RECOV			
0-27.7	OVERBURDEN								
27.7-42.8	FINE-TO MED-GRAINED QTZ-FELDS XAL/LAPILLI TUFF; 30% STRETCHED, RECRYST (QTZ-FELDS INTERGROWTHS) LAPILLI AND 15% BLUE/GREY QTZ EYES (UP TO 2.5 mm ø) IN FN-GRAINED, WELL-FOLIATED CL-SE GRITTY MATRIX; VARIABLY OXIDIZED AND LIMONITE-STAINED; UNIQUE MATERIAL CONTAINS 12-22% PO AND TRACE AMOUNTS OF CPY AS SMALL LENTIC-ULAR CLASTS AND DISCONTINUOUS, V. FN. GR. WISPY LAMINATIONS								
	36.3-36.9 m: FN-GRAINED DACITIC INTERVAL; 3-4% PO; FOL = 65°/LONG CORE AXIS	73638	32.6-37.4	4.8	L.G.				
42.8-56.6	L. TO MED GREEN, FN-GRAINED DACITIC, FELDS XAL TUFF; 2% PO AS V. THIN FN-GRAINED WISPS AND DISSEM. GRNS	73639	42.8-48.5	5.7	L.G.				
		73640	48.5-53.6	5.1	L.G.				
		73641	53.6-56.6	3.0	L.G.				
	43.1-43.2 m: STRONGLY WEATHERED, LIMONITIC								
	46.0-46.7 m: FN-GRAINED QTZ-FELDS XAL TUFF								

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SUMITOMO METAL MINING CO. OF CANADA LTD.

PROPERTY Kutcho

HOLE No. KU-77-04

DIP TEST		
	Angle	
Footage	Reading	Corrected

Hole No. KU-77-04 Sheet No. 2
Section
Date Begun
Date Finished

Lat.
Dep.
Bearing
Elev. Collar

Total Depth
Logged By
Claim
Core Size

DEPTH	DESCRIPTION	SAMPLE No.	FOOTAGE	WIDTH OF SAMPLE	TYPE	RECOV
56.6-60.0	SHARP CONTACT; FN- TO MED- GRAINED QTZ-FELDS XAL TUFF; L. GREEN, WELL-FOLIATED, MOD SERICITIC MATRIX; 25?-30? QTZ EYES GEN < 1mm BUT LOC UP TO 3mm IN SIZE; 1?-2? DISS Py; FOL 75° TO LONG CORE AXIS	73642	56.6-60.0	3.4	L.G.	
60.0-66.2	SHARP CONTACT; FN-GRAINED DACITIC XAL TUFF; 1-2? DISSEM Py; A FEW SCATTERED SMALL QTZ EYES; V. FN. GRAINED MATRIX	73643	60.0-66.2	6.2	L.G.	
66.2-71.8	FN- TO MED-GRAINED QTZ-FELDS XAL TUFF (QFCT); WELL-DEV FOLIATION ± 80°/CORE AXIS; 15% QTZ EYES UP TO 3mm; 1% ± DISSEM Py	73644	66.2-71.8	5.6	L.G.	
71.8-85.0	GRADATIONAL CONTACT; MED-GRAINED, SILICEOUS QFCT; 25?-30? OVOID QTZ EYES UP TO 3mm; SILICEOUS MATRIX; A FEW SCATTERED, FN-GRAINED, GREEN CHLORITE, RHYOLITIC PUMICE FRAGS UP TO 0.5 cm x 1.0 cm IN SIZE; 1% ± DISSEM Py	73645 73646	71.8-78.0 78.0-85.0	6.2 7.0	L.G. L.G.	

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SUMITOMO METAL MINING CO. OF CANADA LTD.

PROPERTY Kutcho

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Hole No. Ku-77-04 Sheet No. 3
Section
Date Begun
Date Finished

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Bearing
Elev. Collar

Total Depth
Logged By
Claim
Core Size

DEPTH	DESCRIPTION	SAMPLE No.	FOOTAGE	WIDTH OF SAMPLE	TYPE
85.0 - 88.4	GRADATIONAL; FG - TO MED-GRAINED QFCT WITH BLACK ARGILLACEOUS PARTINGS; FELDS > QTZ; 12-27% PO F = 75°/CORE AXIS	73647	85.0-88.4	3.4	L.G.
	86.7 - 87.3 m: BLACK CARBONACEOUS SILIC ARGILLITE INTERBED				
88.4 - 99.7	SHARP CONTACT; LT GREEN, FG - GRAINED DACITE; SMALL FELDS + QTZ PHENOS (?) IN VI FG GRAINED MATRIX; WEAKLY FOLIATED; UPPER CONTACT SHARP AND CONTAINS A FEW ARGILLITE FRAGS (DISCORDANT INTRUSIVE CONTACT ?); 2% ± PO AS FLATTENED GRAINS AND VI THIN WISPY LAMINATIONS	73648	88.4-94.8	6.4	L.G.
		73649	94.8-99.7	4.5	L.G.
	PAST 94.8 m: GREEN-COLORED, BLEACHED, SILIC SECTIONS; INCREASING ALTERATION AT DEPTH				
	97.2 - 99.3 m: GREEN-COLORED; PERVASIVE SILICIFICATION				
	- SHARP, DISRUPTED LOWER CONTACT				
	- LATE STAGE QTZ VEINS WITH BLEACHED SILICIFIED MARGINS @ 89.9 - 90.2 m				
	90.4 - 90.6 m & 93.0 - 93.3 m				

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PROPERTY Kutcho

HOLE No. Ku-97-04

DIP TEST		
Footage	Angle	
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Section
Date Begun
Date Finished

Lat.
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Bearing
Elev. Collar

Total Depth
Logged By
Claim
Core Size

DEPTH	DESCRIPTION	SAMPLE No.	FOOTAGE	WIDTH OF SAMPLE	TYPE
99.3 - 108.9	Fg. - Grained Dacitic Tuff with Laminae and Bands of Grey to Black Argillite / Cherty Argillite; 1.7-2% Disseminated Py; Tight Fold Structures with F.A. Perpendicular to Long Core Axis; Fol = 75° / Core Axis	73650	99.3-103.9	4.6	L.G.
		73651	103.9-108.9	5.0	L.G.
108.9 - 110.7	V. Coarse-Grained Qfct with Interbeds and Wispy Laminations of Grey / Black Siliceous Argillite; Abundant Large Qtz Eyes up to 8mm in Size; 1-2% Py, Po	73652	108.9-110.7	1.8	L.G.
110.7 - 111.4	Gradational / Contact; Pale Grey Cherty Argillaceous Partings; Minor Sulph	73653	110.7-111.4	0.7	L.G.
111.4 - 112.8	Fg to Med-Grained Qfct with Black Carbonaceous Partings and Grey / Black Argillaceous Bands; A Few Rounded Rhyolite Qtz-Porph Fragments up to 1cm x 3cm in Size; 2-3% Py, Po as Disseminations and Thin Wispy Laminae	73654	111.4-112.8	1.4	L.G.

SUMITOMO METAL MINING CO. OF CANADA LTD.

PROPERTY Kuecmo

HOLE No. Ku-97-04

DIP TEST		
Footage	Angle	
	Reading	Corrected

Hole No. Ku-97-04 Sheet No. 5
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Date Begun
Date Finished

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Bearing
Elev. Collar

Total Depth
Logged By
Claim
Core Size

DEPTH	DESCRIPTION	SAMPLE No.	FOOTAGE	WIDTH OF SAMPLE	TYPE
112.8–114.5	GREY, CARBONACEOUS ± SILTY CHERT	73655	112.8–114.5	1.7	L.G.
114.5–115.9	SHARP CONTACT; HYALOCLASTITE BRECCIA; CRACKLED, SILICIFIED AND FINELY FRAGMENTED RHYOLITE WITH CARBONACEOUS MATRIX; ALL FRAGMENTS SIMILAR AND RESEMBLE QUENCHED RHYOLITE; 2–3% MATRIX P_1; LOCAL GRAIN MICA (FUCHSITE?)	73656	114.5–115.9	1.4	L.G.
115.9–122.0	SHARP CONTACT; GREEN-COLOURED FE-CARBONATE RHYOLITE; PROB SYNVOLC SILL; SMALL ELONGATE QTZ PHENOS; 3% ± DISSEM P_2, P_1	73657	115.9–122.0	6.1	L.G.
122.0–123.2	SHARP CONTACT; GREY/BLACK CHERTY ARGILLITE; 2–3% P_2	73658	122.0–123.2	1.2	L.G.
123.2–124.9	SHARP CONTACT (82°/CORE AXIS); L. GREEN SILIC RHYO/DACITE PORPH (PROB SILL); SMALL QTZ PHENOS IN FINELY CRYSTALLINE WEAKLY FOLIATED MATRIX; FRACTURED WITH BLEACHED ALTERATION ENVELOPES; 3% ± DISSEM P_2, P_0	73659	123.2–124.9	1.7	L.G.
	CARBONACEOUS CHERT SEAM @ 124.3 m				

SUMITOMO METAL MINING CO. OF CANADA LTD.

PROPERTY Kuffner

HOLE No. Ku-97-04

DIP TEST		
	Angle	
Footage	Reading	Corrected

Hole No. Ku-97-04 Sheet No. 6
Section
Date Begun
Date Finished

Lat.
Dep.
Bearing
Elev. Collar

Total Depth
Logged By
Claim
Core Size

DEPTH	DESCRIPTION	SAMPLE No.	FOOTAGE	WIDTH OF SAMPLE	TYPE	RECOV
	Bottom Contact: 10 cm Zone of Sheared, Stretched Rhy Breccia with Carbonaceous Matrix (Intrusive Hyaloclastite)					
124.9-125.7	Silicified Breccia to Coarse, Graded Wacke; Variety of Stretched, Angular Clasts (Mainly Chert) in Black, Siliceous, Argillaceous Matrix; 2-3% P_3, P_0	73660	124.9-125.7	0.8	L.G.	
125.7-126.7	Gradational Contact; Hard, Resist, L. Green Qfct; 37-42 Disseminated Wisps P_0, P_3					
126.7-127.4	Carbonaceous, Grey/Black Siliceous Argillite; Bedding and Fol 70°/Core Axis					
127.4-130.0	L. Green to Grey, Fg-Grained Chloritic Tuff; Sm Qtz Eyes; 5% P_0, P_3 as Thin Wispy Laminae 128.2-128.8 mm; Fragmental; 5% Diffuse, White Porcellaneous Siliceous Fragments in Silic Foliated Sericitic Matrix	73703	127.4-130.0	2.6	Split	100%

BCIL - 2306 - S.M.M.

SUMITOMO METAL MINING CO. OF CANADA LTD.

PROPERTY Kutcho

HOLE No. KU-97-04

DIP TEST		
	Angle	
Footage	Reading	Corrected

Hole No. KU-97-04 Sheet No. 7
Section
Date Begun
Date Finished

Lat.
Dep.
Bearing
Elev. Collar

Total Depth
Logged By
Claim
Core Size

DEPTH	DESCRIPTION	SAMPLE No.	FOOTAGE	WIDTH OF SAMPLE	TYPE
130.0 - 131.0	SHARP CONTACT; L. GREEN, V. FN. GRAINED DACITIC TUFF; INTERBEDS AND INTERLAMINATIONS OF GREY CHERT AND SILICEOUS ARGILLITE; 1% - 2% Py_2/Po				
131.0 - 132.4	SHARP CONTACT; L. GREEN SILICEOUS BELT; SMALL QTZ + FELDS PHENOS IN V. FN. GRAINED MATRIX; 1% - 2% Py, Po				
132.4 - 136.0	INTERLAMINATED TO INTERBEDDED SILICEOUS ARGILLITE, CHERT AND ARGILLITE; GREY/BLACK WITH STRONGLY CARBONACEOUS SECTIONS	73661	132.4 - 136.0	3.6	L.G.
136.0 - 137.0	PALE GREEN SILICEOUS ARGILLITE AND CHERT WITH ARGILLACEOUS PARTINGS; TECTONICALLY FRAGMENTED; 2% Py	73662	136.0 - 137.0	1.0	L.G.
137.0 - 148.1	GREY TO BLACK, FINE-GRAINED, ARGILLACEOUS UNIT, CARBONACEOUS SILICEOUS ARGILLITE AND CHERT; 2% Po, Py	73663	137.0 - 141.5	4.5	L.G.
	GREY CHERT-PEBBLE CONGLOMERATE BEDS WITH GREEN AND GREY/BLACK ARGILL MATRIX @ 142.7 - 143.6 m, 144.0 - 144.1 m, 145.4 - 145.5 m AND 146.8 - 148.1 m	73664	141.5 - 148.1	6.6	L.G.
	END OF HOLE — CASING PULLED				

BCIL - 2306 - S.M.M

APPENDIX II

GEOCHEMICAL DATA

DDH Core Selected Geochemical Results

Hole_ID	From	To	Width	Samp	Type	Ag	Cu	Zn	Mo	Ba	Mn	F	Ca %	Fe %	Mg %	Na %	K %
KU-97-01	2.7	9.3	6.6	73601	LG	<0.2	29	61	<1	90	596	200	3.25	3.74	1.55	3.05	0.83
KU-97-01	9.3	18.3	9.0	73602	LG	<0.2	11	67	<1	120	606	220	3.48	3.34	1.91	2.41	1.36
KU-97-01	18.3	20.0	1.7	73501	AS	0.2	38	71	<1	135	509	280	2.76	5.24	2.35	2.83	1.15
KU-97-01	20.0	21.9	1.9	73502	AS	<0.2	12	57	<1	155	651	250	4.29	2.70	1.31	2.51	1.49
KU-97-01	21.9	23.6	1.7	73503	AS	0.2	34	58	<1	85	336	270	2.23	4.74	2.47	3.49	0.75
KU-97-01	23.6	31.7	8.1	73603	LG	0.2	16	83	<1	30	549	300	2.40	5.72	2.35	3.40	0.31
KU-97-01	36.3	41.3	5.0	73604	LG	0.4	27	67	<1	50	745	200	4.41	5.98	2.49	2.44	0.53
KU-97-01	41.3	46.8	5.5	73605	LG	0.6	21	71	<1	180	599	230	2.28	5.28	2.38	2.65	1.44
KU-97-01	46.8	53.5	6.7	73606	LG	0.3	32	64	<1	75	892	220	4.63	5.27	2.27	2.47	0.44
KU-97-01	53.5	53.8	0.3	73504	AS	0.4	85	24	18	425	393	300	2.77	5.98	1.34	1.11	2.30
KU-97-01	53.8	58.0	4.2	73607	LG	<0.2	45	50	<1	60	618	NS	3.79	4.80	1.88	2.11	0.33
KU-97-01	58.0	61.1	3.1	73608	LG	0.4	30	65	<1	80	866	200	4.97	5.85	2.03	1.57	0.58
KU-97-01	61.1	68.7	7.6	73609	LG	<0.2	29	45	<1	35	589	160	3.14	4.13	1.42	1.91	0.22
KU-97-01	68.7	72.5	3.8	73610	LG	<0.2	14	62	<1	150	457	240	2.82	3.08	1.24	2.07	1.66
KU-97-01	72.5	75.6	3.1	73505	AS	0.2	16	50	<1	150	405	290	2.65	3.28	1.27	2.14	1.64
KU-97-01	75.6	82.4	6.8	73611	LG	<0.2	18	48	<1	90	480	210	2.59	2.77	0.96	3.00	1.11
KU-97-01	82.4	89.7	7.3	73612	LG	<0.2	31	37	<1	90	454	250	2.84	2.52	0.86	2.17	1.16
KU-97-01	89.7	96.9	7.2	73613	LG	<0.2	10	34	<1	65	449	250	3.45	2.63	0.83	2.58	0.94
KU-97-01	96.9	104.9	8.0	73614	LG	<0.2	19	46	<1	125	428	250	2.64	2.80	1.06	1.95	1.58
KU-97-01	104.9	112.2	7.3	73615	LG	<0.2	24	36	<1	120	414	230	2.38	2.36	0.82	2.33	1.66
KU-97-01	112.2	118.9	6.7	73616	LG	<0.2	11	38	<1	95	485	260	3.21	2.05	0.68	2.86	1.44
KU-97-01	118.9	127.3	8.4	73617	LG	<0.2	13	42	<1	150	439	260	1.82	2.38	0.94	2.28	2.06
KU-97-01	127.3	131.9	4.6	73618	LG	<0.2	16	39	<1	90	498	270	1.91	2.34	0.85	2.88	1.32
KU-97-01	132.9	150.0	17.1	73619	LG	<0.2	5	45	<1	95	594	270	1.76	2.30	0.73	2.78	1.26
KU-97-01	152.7	159.7	7.0	73620	LG	<0.2	22	48	<1	215	788	260	1.47	3.01	1.61	1.68	2.94
KU-97-01	159.7	165.0	5.3	73621	LG	<0.2	14	33	<1	150	683	280	1.64	2.56	1.32	1.74	2.18
KU-97-01	165.0	171.9	6.9	73622	LG	<0.2	18	50	<1	180	788	270	1.37	2.60	1.42	2.07	2.35
KU-97-01	171.9	181.7	9.8	73623	LG	<0.2	5	55	<1	135	418	230	1.17	2.09	0.77	2.49	1.58
KU-97-01	181.7	188.1	6.4	73624	LG	<0.2	4	58	<1	90	505	190	1.52	2.36	0.84	2.47	1.27
KU-97-01	188.1	192.6	4.5	73625	LG	<0.2	9	52	<1	135	546	260	1.01	3.05	1.49	1.96	2.13
KU-97-01	196.0	197.7	1.7	73506	AS	0.2	17	50	<1	135	649	260	1.42	2.91	1.50	1.96	1.73
KU-97-01	199.7	207.6	7.9	73626	LG	<0.2	33	45	<1	150	923	260	2.44	3.36	1.84	2.10	2.17
KU-97-01	207.6	215.8	8.2	73627	LG	<0.2	19	38	<1	120	644	260	2.14	3.01	1.13	2.34	1.48
KU-97-01	218.2	221.3	3.1	73507	AS	0.2	17	57	<1	150	464	240	1.55	2.41	0.83	2.72	1.46
KU-97-01	227.4	230.4	3.0	73508	AS	<0.2	11	45	<1	400	566	250	1.73	2.65	0.98	2.68	1.80
KU-97-01	233.5	236.5	3.0	73509	AS	<0.2	11	28	<1	435	977	230	5.65	2.27	0.81	2.16	1.67
KU-97-01	245.7	248.7	3.0	73510	AS	0.2	14	38	<1	2050	665	220	2.55	2.75	0.99	2.67	1.63
KU-97-01	249.9	260.9	1.0	73628	LG	<0.2	6	43	<1	125	606	NS	2.38	2.62	0.99	2.42	1.24
KU-97-01	264.0	267.0	3.0	73511	AS	<0.2	13	38	<1	645	602	180	2.47	2.72	0.98	2.82	1.48
KU-97-01	273.1	276.2	3.1	73512	AS	0.2	13	66	<1	180	593	380	2.10	2.72	1.05	2.72	1.13
KU-97-01	282.2	285.3	3.1	73513	AS	0.2	8	29	7	110	438	430	1.92	2.05	0.69	2.02	0.99
KU-97-01	292.2	294.5	2.3	73514	AS	<0.2	11	32	<1	155	679	340	3.64	2.41	0.79	3.08	1.29
KU-97-01	294.5	297.5	3.0	73515	AS	0.2	10	42	<1	205	510	340	1.75	2.52	0.95	3.93	0.80
KU-97-01	297.5	300.5	3.0	73516	AS	0.3	15	27	<1	230	656	400	4.07	3.04	0.78	3.11	1.89
KU-97-01	300.5	303.6	3.1	73517	AS	0.2	17	47	<1	235	731	330	2.20	3.01	1.34	2.12	1.93

AS = Split Core Sample
LG = Representative Sample for Lithogeochemical Analysis

DDH Core Selected Geochemical Results

Hole_ID	From	To	Width	Samp	Type	Ag	Cu	Zn	Mo	Ba	Mn	F	Ca %	Fe %	Mg %	Na %	K %
KU-97-04	32.6	37.4	4.8	73638	LG	<0.2	10	33	<1	155	561	NS	1.35	2.78	1.66	3.00	1.76
KU-97-04	42.8	48.5	5.7	73639	LG	0.3	3	55	<1	60	306	NS	0.51	2.37	0.63	3.52	0.89
KU-97-04	48.5	53.6	5.1	73640	LG	<0.2	3	51	<1	80	345	NS	0.57	2.54	0.67	3.49	1.19
KU-97-04	53.6	56.6	3.0	73641	LG	<0.2	9	42	<1	150	402	NS	0.40	2.48	0.68	3.00	1.61
KU-97-04	56.6	60.0	3.4	73642	LG	0.2	10	41	<1	125	317	NS	1.31	2.67	1.26	2.76	1.64
KU-97-04	60.0	66.2	6.2	73643	LG	0.2	7	56	<1	50	255	NS	0.62	2.32	0.77	3.67	0.68
KU-97-04	66.2	71.8	5.6	73644	LG	<0.2	19	43	1	125	398	NS	0.88	2.84	1.75	3.11	2.14
KU-97-04	71.8	78.0	6.2	73645	LG	<0.2	18	70	<1	95	432	NS	0.89	2.69	1.54	3.43	1.52
KU-97-04	78.0	85.0	7.0	73646	LG	<0.2	10	39	<1	135	431	NS	0.92	2.69	1.59	3.43	1.53
KU-97-04	85.0	88.4	3.4	73647	LG	<0.2	20	39	6	355	374	NS	0.68	2.85	1.46	1.46	2.77
KU-97-04	88.4	94.8	6.4	73648	LG	<0.2	6	63	<1	215	267	NS	0.28	2.47	0.70	2.95	1.64
KU-97-04	94.8	99.3	4.5	73649	LG	0.4	5	50	<1	110	264	NS	0.19	2.35	0.59	3.34	0.98
KU-97-04	99.3	103.9	4.6	73650	LG	0.4	38	57	<1	245	559	NS	1.55	4.32	1.73	2.97	1.50
KU-97-04	103.9	108.9	5.0	73651	LG	0.4	19	57	<1	260	481	NS	0.96	3.34	1.60	2.79	1.36
KU-97-04	108.9	110.7	1.8	73652	LG	0.3	12	83	3	800	463	NS	0.19	2.73	1.64	2.14	2.30
KU-97-04	110.7	111.4	0.7	73653	LG	0.3	21	54	<1	230	388	NS	0.19	2.15	1.14	3.44	0.81
KU-97-04	111.4	112.8	1.4	73654	LG	0.2	36	120	1	1335	592	NS	0.58	3.61	2.13	0.53	3.46
KU-97-04	112.8	114.5	1.7	73655	LG	0.3	17	83	<1	195	308	NS	0.18	1.66	0.80	3.38	0.74
KU-97-04	114.5	115.9	1.4	73656	LG	0.2	15	47	3	270	424	NS	0.65	2.07	0.92	3.87	0.90
KU-97-04	115.9	122.0	6.1	73657	LG	0.3	3	44	2	105	360	NS	0.25	2.04	0.44	4.55	0.24
KU-97-04	122.0	123.2	1.2	73658	LG	0.2	89	241	134	1220	381	NS	0.40	3.15	0.97	0.65	1.79
KU-97-04	123.2	124.9	1.7	73659	LG	0.5	9	91	4	90	471	NS	0.46	2.00	0.46	4.59	0.09
KU-97-04	124.9	125.7	0.8	73660	LG	0.2	18	75	10	1215	758	NS	1.35	2.35	1.14	2.41	1.34
KU-97-04	127.4	130.0	2.6	73703	AS	0.2	21	42	3	1170	605	NS	0.32	2.25	0.92	3.65	1.20
KU-97-04	132.4	136.0	3.6	73661	LG	0.4	69	105	71	1900	1027	NS	1.60	2.76	1.52	0.52	1.86
KU-97-04	136.0	137.0	1.0	73662	LG	0.2	9	58	4	1470	355	NS	0.24	1.93	0.93	3.19	1.42
KU-97-04	137.0	141.5	4.5	73663	LG	0.3	58	134	3	1690	934	NS	0.95	2.73	1.10	1.26	1.35
KU-97-04	141.5	148.1	6.6	73664	LG	0.4	32	81	3	1575	847	NS	0.99	2.29	0.91	2.29	1.38

AS = Split Core Sample
LG = Representative Sample for Lithogeochemical Analysis

29-Jul-97

ECO-TECH LABORATORIES LTD.
10041 East Trans Canada Highway
KAMLOOPS, B.C.
V2C 6T4

Phone: 604-573-5700
Fax : 604-573-4557

ICP CERTIFICATE OF ANALYSIS AK 97-684

"TOTAL DIGESTION"

ATNA RESOURCES LTD.
1550-409 GRANVILLE STREET
VANCOUVER, BC
V6C 1T2

ATTENTION: P. HOLBEK

No. of samples received: 92
Sample type: Rock
PROJECT #: not given
SHIPMENT #: not given
Samples submitted by: not given

Values in ppm unless otherwise reported

Et #.	Tag #	Ag	Al %	As	Ba	Bi	Ca %	Cd	Co	Cr	Cu	Fe %	K %	La	Mg %	Mn	Mo	Na %	Ni	P	Pb	Sb	Sn	Sr	Tl %	U	V	W	Y	Zn
1	KU9701LG 11-25	<0.2	6.37	<5	90	10	3.25	<1	8	65	29	3.74	0.83	<10	1.55	596	<1	3.05	6	480	8	20	<20	99	0.32	<10	50	<10	8	61
2	KU9701LG 31-34	<0.2	7.39	<5	120	5	3.48	<1	9	97	11	3.34	1.36	<10	1.91	606	<1	2.41	7	690	4	30	<20	112	0.32	<10	76	<10	11	67
3	KU9701LG 68.88-72.54	<0.2	7.53	30	150	10	2.82	<1	10	108	14	3.08	1.66	<10	1.24	457	<1	2.07	4	560	3	20	<20	134	0.38	<10	59	30	27	62
4	KU9701LG 83-97	0.2	8.37	20	30	20	2.40	<1	24	56	16	5.72	0.31	<10	2.35	549	<1	3.40	9	410	2	30	<20	112	0.41	<10	193	60	6	83
5	KU9701LG 122-134	0.4	8.86	35	50	15	4.41	<1	24	67	27	5.98	0.53	<10	2.49	745	<1	2.44	10	400	2	40	<20	183	0.30	<10	210	70	5	67
6	KU9701LG 136-151	0.6	8.28	25	180	30	2.28	<1	21	83	21	5.28	1.44	<10	2.38	599	<1	2.65	6	440	5	30	<20	94	0.43	<10	205	<10	15	71
7	KU9701LG 156-175	0.3	7.70	15	75	15	4.63	<1	20	80	32	5.27	0.44	<10	2.27	892	<1	2.47	8	380	3	30	<20	112	0.39	<10	165	<10	20	64
8	KU9701LG 170-190	<0.2	7.39	15	60	20	3.79	<1	19	116	45	4.80	0.33	<10	1.88	618	<1	2.11	7	330	3	20	<20	143	0.44	<10	171	<10	18	50
9	KU9701LG 191-200	0.4	7.34	15	80	20	4.97	<1	20	77	30	5.85	0.58	<10	2.03	866	<1	1.57	11	430	4	10	<20	274	0.41	<10	176	<10	17	65
10	KU9701LG 202-222	<0.2	4.83	20	35	15	3.14	<1	16	84	29	4.13	0.22	<10	1.42	589	<1	1.91	6	410	5	5	<20	152	0.39	<10	119	<10	19	45
11	KU9701LG 249-268	<0.2	7.11	25	90	15	2.59	<1	10	114	18	2.77	1.11	<10	0.96	480	<1	3.00	2	500	6	<5	<20	203	0.38	<10	66	<10	36	48
12	KU9701LG 273-292	<0.2	6.33	20	90	10	2.84	<1	8	127	31	2.52	1.16	<10	0.86	454	<1	2.17	1	400	6	10	<20	144	0.30	<10	50	<10	25	37
13	KU9701LG 297-316	<0.2	7.23	30	65	<5	3.45	<1	9	90	10	2.63	0.94	<10	0.83	449	<1	2.58	1	380	10	20	<20	304	0.31	<10	51	<10	28	34
14	KU9701LG 320-341	<0.2	7.91	45	125	15	2.64	<1	9	129	19	2.80	1.58	<10	1.06	428	<1	1.95	2	510	8	<5	<20	173	0.34	<10	61	10	34	46
15	KU9701LG 347-366	<0.2	7.27	25	120	10	2.38	<1	8	74	24	2.36	1.66	<10	0.82	414	<1	2.33	2	470	6	30	<20	169	0.28	<10	46	<10	32	36
16	KU9701LG 370-390	<0.2	7.37	25	95	5	3.21	<1	7	110	11	2.05	1.44	<10	0.68	485	<1	2.86	1	570	4	10	<20	179	0.30	<10	39	20	38	38
17	KU9701LG 390-406	<0.2	6.89	15	150	10	1.82	<1	8	128	13	2.38	2.06	<10	0.94	439	<1	2.28	2	500	10	10	<20	145	0.39	<10	43	<10	37	42
18	KU9701LG 406-433	<0.2	5.42	10	90	5	1.91	<1	9	166	16	2.34	1.32	<10	0.85	498	<1	2.88	2	450	6	10	<20	122	0.31	<10	41	<10	24	39
19	KU9701LG 437-491	<0.2	6.49	25	95	20	1.76	<1	5	114	5	2.30	1.26	<10	0.73	594	<1	2.78	<1	510	3	10	<20	127	0.32	<10	12	20	43	45
20	KU9701LG 501-521	<0.2	6.13	25	215	10	1.47	<1	11	131	22	3.01	2.94	<10	1.61	788	<1	1.68	2	440	9	30	<20	55	0.36	<10	63	20	31	48

ATNA RESOURCES LTD.

ICP CERTIFICATE OF ANALYSIS AK 97-684

ECO-TECH LABORATORIES LTD.

Et #.	Tag #	Ag	Al %	As	Ba	Bi	Ca %	Cd	Co	Cr	Cu	Fe %	K %	La	Mg %	Mn	Mo	Na %	Ni	P	Pb	Sb	Sn	Sr	Ti %	U	V	W	Y	Zn
21	KU9701LG 527-	<0.2	6.70	20	150	<5	1.64	<1	8	119	14	2.56	2.18	<10	1.32	683	<1	1.74	4	400	8	20	<20	42	0.30	<10	44	20	29	33
22	KU9701LG 542-563	<0.2	6.33	15	180	10	1.37	<1	9	121	18	2.80	2.35	<10	1.42	788	<1	2.07	4	410	8	15	<20	38	0.34	<10	51	<10	29	50
23	KU9701LG 565-592	<0.2	6.23	15	135	5	1.17	<1	6	44	5	2.09	1.58	<10	0.77	418	<1	2.49	4	520	7	15	<20	84	0.34	<10	13	<10	45	55
24	KU9701LG 597-616	<0.2	4.75	10	90	5	1.52	<1	6	50	4	2.36	1.27	<10	0.84	505	<1	2.47	<1	440	6	10	<20	73	0.31	<10	11	<10	38	58
25	KU9701LG 68-632	<0.2	6.03	25	135	5	1.01	<1	9	129	9	3.05	2.13	<10	1.49	546	<1	1.96	3	500	7	<5	<20	47	0.36	<10	57	<10	23	52
26	KU9701LG 660-679	<0.2	7.23	40	150	30	2.44	<1	13	91	33	3.36	2.17	<10	1.84	923	<1	2.10	6	460	10	25	<20	71	0.36	<10	73	<10	28	45
27	KU9701LG 683-708	<0.2	5.66	35	120	15	2.14	<1	10	114	19	3.01	1.48	<10	1.13	644	<1	2.34	5	390	5	<5	<20	114	0.33	<10	65	<10	26	38
28	KU9701LG 820-856	<0.2	7.27	30	125	15	2.38	<1	9	122	6	2.62	1.24	<10	0.99	606	<1	2.42	4	440	5	<5	<20	98	0.31	<10	50	<10	29	43
29	KU9701LG 20.3-21.95	0.2	7.94	55	135	5	2.76	<1	21	67	38	5.24	1.15	<10	2.35	509	<1	2.83	16	390	6	15	<20	63	0.52	<10	178	<10	24	71
30	KU9701LG 18.29-20.03	<0.2	7.15	15	155	20	4.29	<1	10	85	12	2.70	1.49	<10	1.31	651	<1	2.51	10	470	6	20	<20	103	0.37	<10	73	<10	35	57
31	KU9701LG 21.95-23.59	0.2	7.36	35	85	20	2.23	<1	22	37	34	4.74	0.75	<10	2.47	336	<1	3.49	24	280	10	35	<20	50	0.51	<10	196	<10	18	58
32	KU9701LG 53.49-53.80	0.4	7.41	215	425	5	2.77	<1	25	108	85	5.98	2.30	<10	1.34	393	18	1.11	14	390	28	5	<20	81	0.54	<10	185	<10	29	24
33	KU9701LG 72.54-75.59	0.2	6.84	30	150	10	2.65	<1	12	128	16	3.28	1.64	<10	1.27	405	<1	2.14	6	530	10	20	<20	162	0.39	<10	66	<10	32	50
34	KU9701LG 195.99-199.64	0.2	6.68	10	135	5	1.42	<1	9	103	17	2.91	1.73	<10	1.50	649	<1	1.96	8	350	8	20	<20	59	0.30	<10	62	<10	26	50
35	KU9701LG 218.34-221.28	0.2	5.62	25	150	<5	1.55	<1	7	134	17	2.41	1.46	<10	0.83	464	<1	2.72	<1	360	12	<5	<20	30	0.31	<10	46	<10	18	57
36	KU9701LG 227.38-230.43	<0.2	6.41	10	400	15	1.73	<1	8	101	11	2.65	1.80	<10	0.98	566	<1	2.68	<1	400	10	<5	<20	32	0.31	<10	48	<10	28	45
37	KU9701LG 233.48-236.52	<0.2	5.95	20	435	5	5.65	<1	6	101	11	2.27	1.67	<10	0.81	977	<1	2.16	<1	340	10	15	<20	91	0.25	<10	45	<10	23	28
38	KU9701LG 245.67-248.72	0.2	6.44	30	2050	10	2.55	<1	6	106	14	2.75	1.63	<10	0.99	665	<1	2.67	<1	430	8	15	<20	64	0.31	<10	53	<10	27	38
39	KU9701LG 263.96-267.00	<0.2	7.54	25	645	10	2.47	<1	8	110	13	2.72	1.48	<10	0.98	602	<1	2.82	3	410	8	15	<20	48	0.29	<10	52	<10	30	38
40	KU9701LG 273.1-276.15	0.2	6.90	15	180	15	2.10	<1	9	138	13	2.72	1.13	<10	1.05	593	<1	2.72	1	430	8	<5	<20	81	0.32	<10	57	<10	29	66
41	KU9701LG 292.15-294.44	<0.2	6.00	10	155	10	3.64	<1	8	114	11	2.41	1.29	<10	0.79	679	<1	3.08	2	370	8	10	<20	70	0.28	<10	44	<10	24	32
42	KU9701LG 294.44-297.48	0.2	7.00	30	205	20	1.75	<1	8	130	10	2.52	0.80	<10	0.95	510	<1	3.93	<1	390	36	15	<20	29	0.30	<10	49	<10	25	42
43	KU9701LG 297.48-300.53	0.3	7.21	30	230	20	4.07	<1	10	92	15	3.04	1.89	<10	0.78	656	<1	3.11	2	420	10	15	<20	61	0.34	<10	50	<10	31	27
44	KU9701LG 300.43-303.58	0.2	6.07	10	235	15	2.20	<1	11	125	17	3.01	1.93	<10	1.34	731	<1	2.12	6	400	4	20	<20	28	0.33	<10	74	<10	22	47
45	KU972 2.90-4.22	<0.2	6.72	5	20	20	0.69	<1	20	168	56	5.71	0.01	<10	4.52	1532	5	2.79	28	270	6	45	<20	16	0.09	<10	193	<10	<1	176
46	KU972 4.22-6.00	<0.2	1.34	15	35	15	4.00	<1	12	305	70	>10	0.03	<10	2.17	3295	37	0.22	29	750	12	<5	<20	66	0.02	<10	158	<10	<1	520
47	KU972 6.00-7.84	<0.2	6.69	20	40	25	1.28	20	35	297	111	>10	0.08	<10	6.84	5302	34	0.64	109	1070	6	20	<20	48	0.08	<10	384	<10	<1	3504
48	KU972 7.84-10.97	0.2	7.51	20	70	<5	6.87	<1	29	116	104	8.61	0.26	<10	4.70	6931	8	2.01	104	880	6	30	<20	165	0.33	<10	327	<10	<1	647
49	KU972 10.97-12.60	0.8	3.80	<5	30	5	6.43	<1	19	95	59	5.02	0.19	<10	2.69	5231	4	1.02	53	580	8	30	<20	138	0.14	<10	180	<10	<1	132
50	KU972 12.60-13.00	<0.2	6.70	25	70	<5	8.27	<1	44	198	1954	>10	0.36	<10	3.61	5122	35	1.46	127	4070	12	<5	<20	237	0.36	<10	523	<10	6	165
51	KU972 13.00-15.54	<0.2	4.34	10	100	15	5.37	<1	22	241	14	4.45	0.32	<10	2.04	2772	<1	2.62	64	490	10	25	<20	151	0.26	<10	227	<10	<1	101
52	KU972 15.54-18.48	<0.2	5.61	10	70	15	8.37	<1	19	141	13	4.85	0.29	<10	3.17	3854	<1	1.73	63	1200	8	40	<20	161	0.22	<10	182	<10	4	98
53	KU972 18.48-20.73	0.8	7.49	15	35	5	7.14	<1	22	240	16	5.58	0.28	<10	3.67	3358	4	2.52	84	500	8	40	<20	165	0.11	<10	229	<10	<1	144
54	KU972 20.73-21.11	2.4	1.56	<5	65	<5	2.12	<1	46	197	2529	>10	0.09	<10	1.61	1402	209	0.39	145	<10	8	<5	<20	45	0.04	<10	113	<10	<1	244
55	KU972 21.11-23.16	0.5	7.70	<5	40	10	8.86	<1	31	149	111	7.36	0.33	<10	3.98	3388	14	2.42	81	530	10	15	<20	206	0.34	<10	286	<10	1	601

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ICP CERTIFICATE OF ANALYSIS AK 97-684

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Et #.	Tag #	Ag	Al %	As	Ba	Bi	Ca %	Cd	Co	Cr	Cu	Fe %	K %	La	Mg %	Mn	Mo	Na %	Ni	P	Pb	Sb	Sn	Sr	Ti %	U	V	W	Y	Zn
56	KU972 23.16-26.21	0.8	8.75	40	25	15	9.25	<1	37	143	46	6.79	0.31	<10	4.30	3410	<1	2.55	98	750	14	40	<20	244	0.43	<10	274	<10	7	279
57	KU972 26.21-30.10	<0.2	6.16	20	20	10	6.23	<1	29	106	84	5.78	0.16	<10	3.58	2942	<1	1.74	90	520	10	30	<20	146	0.24	<10	224	<10	<1	268
58	KU972 30.10-32.31	<0.2	3.54	<5	<5	15	3.67	<1	24	214	8	4.84	0.08	<10	2.11	2435	<1	1.63	90	450	4	10	<20	73	0.19	<10	200	<10	<1	112
59	KU972 32.31-35.26	0.8	5.24	20	20	<5	5.40	<1	23	143	6	5.52	0.12	<10	2.90	2979	<1	1.86	104	470	8	20	<20	119	0.27	<10	200	<10	<1	157
60	KU972 35.26-36.16	0.3	1.54	<5	65	<5	5.36	17	28	278	2394	>10	0.02	<10	2.10	3067	156	0.18	166	4410	20	<5	<20	82	0.06	<10	513	<10	<1	3175
61	KU972 36.16-38.40	<0.2	>10	50	55	35	9.34	<1	63	405	45	>10	0.18	<10	>10	8245	11	3.74	78	1010	14	25	<20	212	0.61	<10	624	<10	<1	493
62	KU972 38.40-41.45	0.2	7.55	<5	45	<5	5.16	<1	29	249	229	6.18	0.14	<10	4.88	3786	3	1.56	68	540	20	40	<20	141	0.23	<10	249	<10	<1	529
63	KU972 41.45-44.80	0.6	5.46	<5	25	15	6.96	<1	28	121	12	4.85	0.33	<10	2.75	2714	<1	1.43	72	520	12	45	<20	133	0.16	<10	234	<10	<1	90
64	KU972 44.80-48.20	<0.2	6.51	15	40	10	8.06	<1	29	103	39	5.06	0.35	<10	3.35	2901	<1	1.40	71	550	8	40	<20	164	0.24	<10	214	<10	2	218
65	KU972 44.8-52.85	<0.2	5.62	10	60	<5	5.55	<1	29	151	140	5.23	0.48	<10	3.25	3339	<1	2.02	69	490	12	35	<20	67	0.24	<10	233	<10	1	358
66	KU972 56.69-59.74	0.8	7.51	10	45	5	2.22	<1	34	196	304	6.23	0.16	<10	6.57	3460	<1	2.10	79	480	12	55	<20	28	0.41	<10	298	<10	1	631
67	KU972 62.70-66.08	<0.2	6.83	10	50	<5	4.29	<1	30	189	400	6.11	0.14	<10	4.72	3684	9	1.56	67	480	8	30	<20	47	0.54	<10	240	<10	10	487
68	KU972 73.69-75.40	<0.2	3.51	25	5	<5	1.05	<1	25	113	510	5.25	<0.01	<10	3.16	2322	1	0.67	40	290	10	30	<20	14	0.47	<10	156	<10	9	353
69	KU972 85.3-92.96	0.2	6.33	20	10	30	8.01	<1	29	151	19	5.32	<0.01	<10	3.58	4152	<1	0.62	67	490	4	50	<20	195	0.77	<10	227	<10	23	196
70	KU973 10.70-15.40	<0.2	5.63	5	25	10	3.41	<1	28	155	34	6.00	<0.01	<10	3.79	3173	<1	2.01	81	650	6	40	<20	52	0.47	<10	231	<10	2	316
71	KU973 73.50-78.10	0.2	6.99	25	70	25	6.18	<1	38	189	30	6.03	<0.01	<10	3.52	3021	<1	0.97	90	450	8	40	<20	188	0.86	<10	273	<10	24	248
72	KU973 79.2-84.2	0.3	7.40	15	45	25	8.35	<1	33	138	33	5.62	0.00	<10	3.76	3704	<1	0.66	61	550	6	60	<20	208	0.79	<10	264	<10	25	294
73	KU973 96.9-102.9	<0.2	7.53	35	10	<5	6.39	<1	36	178	564	5.44	<0.01	<10	3.85	3127	<1	1.77	90	670	6	30	<20	130	0.76	<10	231	<10	22	152
74	KU973 104.2-112.8	<0.2	6.52	30	5	30	7.13	<1	31	178	26	5.25	<0.01	<10	3.22	2931	<1	1.24	88	520	4	45	<20	193	0.78	<10	251	<10	20	158
75	KU973 112.8-118.9	<0.2	5.34	15	5	20	8.66	<1	24	135	9	4.48	<0.01	<10	2.14	3662	<1	1.03	51	530	8	20	<20	193	0.62	<10	210	<10	17	110
76	KU973 119.8-125.6	<0.2	7.20	20	65	30	>10	<1	26	232	13	4.94	0.36	<10	2.18	3897	<1	1.12	59	580	8	25	<20	197	0.70	<10	263	<10	24	84
77	KU973 128.3-132.89	<0.2	7.83	20	75	15	7.32	<1	33	169	9	6.68	0.53	<10	4.08	3408	<1	1.05	68	550	4	40	<20	126	0.42	<10	299	<10	7	228
78	97 NT 01	<0.2	2.14	15	55	5	0.13	<1	4	118	7	1.25	0.19	<10	0.23	110	<1	3.38	2	170	6	<5	<20	11	0.17	<10	11	<10	1	10
79	97 NT 02	<0.2	6.58	10	35	20	1.53	<1	39	323	7	7.18	0.05	<10	4.33	961	<1	1.30	97	700	4	35	<20	60	1.00	<10	271	<10	11	131
80	97 NT 03	<0.2	3.79	10	50	10	0.10	<1	3	176	4	1.39	0.37	<10	0.07	62	<1	3.66	1	360	4	<5	<20	10	0.25	<10	10	<10	2	8
81	97 NT 04	<0.2	2.43	20	10	<5	0.72	<1	4	97	12	1.34	0.08	<10	0.14	78	<1	3.79	3	380	2	<5	<20	7	0.23	<10	10	<10	3	<1
82	97 NT 05	<0.2	5.14	<5	50	<5	2.82	<1	63	192	882	7.65	0.08	<10	3.61	830	<1	0.76	428	400	2	20	<20	51	0.39	<10	144	10	<1	62
83	97 NT 06	<0.2	2.83	5	35	<5	0.40	<1	5	104	31	2.10	0.26	<10	0.40	333	5	2.84	11	320	2	20	<20	19	0.11	<10	12	<10	1	11
84	97 NT 07	<0.2	3.04	5	20	10	0.14	<1	3	132	6	2.06	0.12	<10	0.40	188	8	3.54	6	260	4	30	<20	12	0.15	<10	8	<10	1	15
85	97 NT 08	NO SAMPLE																												

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ICP CERTIFICATE OF ANALYSIS AK 97-684

ECO-TECH LABORATORIES LTD.

Et #.	Tag #	Ag	Al %	As	Ba	Bi	Ca %	Cd	Co	Cr	Cu	Fe %	K %	La	Mg %	Mn	Mo	Na %	Ni	P	Pb	Sb	Sn	Sr	Ti %	U	V	W	Y	Zn
86	97 NT 09	<0.2	4.41	20	20	5	0.09	<1	4	101	7	2.26	0.10	<10	0.62	227	5	3.50	3	390	24	40	<20	11	0.22	<10	10	<10	5	18
87	97 NT 10	<0.2	6.75	10	135	15	1.71	<1	22	283	85	7.26	0.81	<10	3.47	1498	14	1.03	71	550	8	130	<20	68	0.67	<10	252	<10	25	503
88	97 NT 11	0.2	3.40	15	15	<5	0.05	<1	2	163	14	1.90	0.05	<10	0.18	87	11	4.09	3	70	6	20	<20	6	0.09	<10	13	<10	3	45
89	97 NT 12	0.2	7.76	5	70	<5	3.01	<1	35	245	40	6.34	0.44	<10	3.85	1899	9	1.86	98	680	6	130	<20	93	0.43	<10	260	<10	13	442
90	97 NT 13	0.2	6.27	15	30	30	1.51	<1	20	237	21	6.58	0.01	<10	2.73	1018	2	2.66	65	1140	6	105	<20	70	0.69	<10	146	<10	35	125
91	97 NT 14	0.2	5.56	15	25	20	1.30	<1	15	177	20	6.25	0.02	<10	2.73	950	1	2.80	41	850	4	115	<20	62	0.75	<10	221	<10	24	134
92	KU971LG 282.24-285.29	0.2	3.95	10	110	15	1.92	<1	6	159	8	2.05	0.99	<10	0.69	438	7	2.02	4	320	6	55	<20	52	0.19	<10	43	<10	18	29
QC DATA:																														
Resplit:																														
1	KU9701LG 11-25	<0.2	6.07	30	80	15	2.96	<1	7	70	25	3.42	0.77	<10	1.43	549	<1	2.97	4	470	8	20	<20	86	0.29	<10	47	<10	6	55
36	KU9701LG 227.38-230.43	0.3	5.82	35	365	5	1.73	<1	8	90	12	2.67	1.80	<10	0.98	566	<1	2.64	1	410	8	20	<20	31	0.34	<10	49	<10	26	47
71	KU973 73.50-78.10	<0.2	7.61	30	60	20	6.40	1	38	189	32	6.20	<0.01	<10	3.66	3108	14	0.92	76	450	6	35	<20	189	378.00	<10	275	<10	24	261
Repeat:																														
1	KU9701LG 11-25	2.4	6.14	35	85	15	3.40	<1	7	65	37	3.43	0.80	<10	1.50	575	<1	3.06	7	460	100	20	<20	102	0.29	<10	47	<10	8	69
34	KU9701LG 195.99-199.64	0.3	3.75	35	110	15	1.38	<1	8	98	16	2.83	<0.01	<10	1.45	652	<1	1.82	4	310	8	15	<20	55	0.25	<10	55	20	24	50
67	KU972 62.70-66.08	0.3	6.23	25	45	<5	4.08	<1	28	169	390	5.57	0.11	<10	4.55	3506	6	1.50	67	420	8	30	<20	42	0.49	<10	234	<10	13	461
Standard:																														
STSD-1		0.3	5.52	23	660	15	2.81	<1	19	65	40	4.82	1.11	20	1.43	4152	<1	1.47	24	2000	35	5	<20	191	0.49	<10	98	<10	45	180
STSD-2		0.6	7.16	40	495	20	2.69	<1	21	103	47	5.02	1.66	40	1.78	980	10	1.26	55	1570	66	5	<20	374	0.48	14	98	<10	35	218
STSD-3		0.4	5.36	28	1495	15	2.35	1	16	75	42	4.41	1.51	30	1.31	2660	6	1.21	33	1880	40	4	<20	232	0.48	<10	136	<10	33	196
STSD-4		0.3	6.71	20	1920	5	2.80	<1	13	82	69	3.96	1.31	24	1.27	1469	<1	2.00	30	1080	16	8	<20	354	0.46	<10	107	<10	27	104

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XLS/97

ECO-TECH LABORATORIES LTD.
Frank J. Pezzotti, A.Sc.T.
B.C. Certified Assayer

29-Jul-97

ECO-TECH LABORATORIES LTD.
10041 East Trans Canada Highway
KAMLOOPS, B.C.
V2C 6T4

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ICP CERTIFICATE OF ANALYSIS AK 97-707

"TOTAL DIGESTION"

ATNA RESOURCES LTD.
1550-409 GRANVILLE STREET
VANCOUVER, BC
V6C 1T2

ATTENTION: Peter Holbek

No. of samples received: 112
Sample type: Core
PROJECT #: not given
SHIPMENT #: not given
Samples submitted by: Peter Holbek

Values in ppm unless otherwise reported

Et #.	Tag #	Ag	Al %	Ba	Bi	Ca %	Cd	Co	Cr	Cu	Fe %	K %	Mg %	Mn	Mo	Na %	Ni	P	Pb	Sr	Ti %	V	W	Y	Zn
1	KU973 4.27-7.62	<0.2	9.03	35	<5	3.29	<1	36	203	304	9.35	0.03	6.82	5830	11	2.14	78	1310	16	72	0.14	283	<10	<1	757
2	KU973 11.10-11.26	0.2	4.22	70	<5	4.98	<1	101	70	1349	>10	<0.01	4.10	4942	30	0.08	84	630	26	47	0.05	278	<10	<1	651
3	KU973 18.29-21.64	0.7	8.95	40	<5	2.37	8	36	153	1817	>10	0.08	7.69	4493	9	1.49	78	540	16	69	0.14	275	<10	<1	1148
4	KU973 26.3-28.74	0.2	8.10	35	<5	3.73	<1	31	104	175	7.07	0.16	5.30	4327	4	2.63	70	540	12	97	0.14	234	<10	<1	405
5	KU973 33.22-36.27	0.2	8.63	80	10	4.03	<1	38	123	178	8.07	0.21	4.56	4347	12	3.19	66	550	14	81	0.13	259	<10	<1	251
6	KU973 41.45-44.80	<0.2	9.41	100	<5	3.88	<1	30	108	177	8.16	0.41	4.46	4123	3	2.96	62	590	10	88	0.09	241	<10	<1	252
7	KU973 47.40-50.60	0.2	>10	100	<5	3.53	<1	38	128	595	9.34	0.30	5.22	4156	7	3.30	80	660	20	65	0.18	304	<10	<1	384
8	KU973 59.5-62.75	0.3	9.84	30	20	4.72	6	47	134	343	9.75	0.00	5.54	5589	<1	2.48	78	690	22	76	1.04	351	<10	29	1329
9	KU973 65.5-68.7	0.2	9.06	45	<5	3.50	8	45	176	1169	9.39	0.05	5.75	5352	<1	1.87	80	550	12	50	0.71	299	<10	20	1817
10	KU973 87.17-90.55	0.3	9.89	45	<5	4.29	<1	37	154	296	8.51	0.06	6.73	5036	<1	2.05	80	650	22	56	0.32	311	<10	6	656
11	KU973 90.55-93.75	1.1	9.28	35	<5	4.31	<1	44	126	1457	8.34	0.01	5.59	4139	<1	2.89	86	620	10	51	0.87	297	<10	32	465
12	KU974 127.4-130.0	0.2	6.26	1170	<5	0.32	<1	3	43	21	2.25	1.20	0.92	605	3	3.65	2	330	16	21	0.21	16	<10	21	42
13	KU975 32.0-33.5	0.3	6.99	195	<5	0.53	<1	5	76	260	2.51	0.64	1.61	683	8	3.10	8	200	10	30	0.05	8	<10	1	60
14	KU975 36.6-38.2	0.2	7.78	385	<5	0.16	<1	2	52	7	2.28	1.12	1.63	462	4	2.46	6	210	12	37	0.04	4	<10	1	42
15	KU975 40-41.5	0.2	8.04	645	15	0.29	<1	3	66	5	2.88	1.42	2.28	878	3	1.78	8	490	10	36	0.13	13	<10	2	103
16	KU975 41.5-42.9	0.2	8.11	660	15	0.26	<1	3	64	4	3.22	1.41	2.25	888	2	1.50	6	590	10	40	0.14	11	<10	2	112
17	KU975 42.9-46.2	0.3	8.95	715	<5	0.49	<1	3	72	8	3.84	1.40	2.69	1334	4	1.85	6	620	12	55	0.10	15	<10	1	151
18	KU975 46.2-48.4	0.4	8.96	680	<5	0.24	<1	2	53	5	3.11	1.25	1.73	1103	<1	2.91	14	620	4	31	0.10	9	<10	2	112
19	KU975 56.2-58.2	<0.2	7.81	240	<5	0.68	1	4	83	155	3.19	0.51	2.52	1411	7	2.95	10	630	6	47	0.09	15	<10	3	338
20	KU975 58.2-60.0	<0.2	9.05	245	5	0.54	<1	11	53	106	5.14	0.45	3.96	2038	5	3.16	6	920	10	26	0.08	20	<10	6	239

ATNA RESOURCES LTD.

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Et #.	Tag #	Ag	Al %	Ba	Bi	Ca %	Cd	Co	Cr	Cu	Fe %	K %	Mg %	Mn	Mo	Na %	Ni	P	Pb	Sr	Ti %	V	W	Y	Zn
21	KU975 60.0-62.3	0.2	6.98	45	20	0.88	<1	9	72	20	3.64	0.07	2.73	1655	8	3.30	4	940	10	16	0.08	21	<10	8	159
22	KU975 75.9-76.2	<0.2	7.58	935	<5	0.79	<1	16	97	214	3.82	1.41	2.87	2050	<1	2.24	14	480	8	9	0.39	158	<10	25	407
23	KU975 82.3-82.5	0.2	1.85	45	10	2.31	<1	8	164	56	3.92	0.07	1.41	1932	16	0.22	20	90	148	25	0.03	30	<10	2	92
24	KU975 82.5-84.9	<0.2	8.55	295	10	0.49	<1	11	90	17	3.44	0.46	3.08	1768	5	3.73	10	750	8	11	0.19	64	<10	40	131
25	KU975 84.9-85.7	<0.2	0.80	25	<5	1.55	<1	4	235	50	5.27	0.01	0.47	746	16	0.12	4	50	8	12	<0.01	6	<10	<1	16
26	KU975 107.1-107.3	<0.2	2.19	95	<5	>10	<1	14	110	221	8.20	0.01	1.68	3362	26	0.05	80	350	12	85	0.12	527	<10	18	91
27	KU976 40.4-40.8	<0.2	2.77	80	10	0.75	<1	4	120	16	3.15	0.38	0.94	864	10	0.68	20	90	12	18	0.02	20	<10	<1	18
28	KU976 45.7-47.3	<0.2	9.06	25	20	1.79	<1	31	58	54	8.02	0.05	4.74	2346	6	2.97	18	730	12	46	0.20	279	<10	<1	204
29	KU976 48.3-50.8	<0.2	9.99	30	15	0.78	<1	32	63	124	8.43	0.11	5.65	2300	5	3.22	20	750	8	48	0.24	296	<10	<1	409
30	KU976 50.8-52.3	<0.2	6.91	15	5	1.25	<1	6	86	13	3.57	0.05	2.28	1126	8	3.88	8	190	10	55	0.04	88	<10	<1	215
31	KU976 68.0-69.9	<0.2	0.41	15	<5	2.19	<1	6	94	125	4.51	0.01	1.04	1435	12	0.09	6	60	8	17	<0.01	25	<10	<1	583
32	KU976 69.9-70.8	0.2	9.73	50	30	0.74	<1	30	218	19	>10	0.01	6.75	1870	15	1.43	66	950	12	25	0.10	420	<10	<1	226
33	KU976 70.8-72.1	<0.2	2.17	50	<5	1.44	<1	8	281	74	5.91	0.04	0.78	958	15	0.05	14	240	4	94	<0.01	47	<10	<1	115
34	KU976 73.5-75.7	<0.2	0.20	20	<5	3.07	<1	3	270	68	5.17	0.02	1.34	1221	12	0.07	6	20	10	44	<0.01	21	<10	<1	94
35	KU976 85.7-89.5	<0.2	8.09	470	<5	0.24	<1	7	227	8	2.83	0.78	1.87	760	6	2.91	8	310	8	3	0.13	50	20	41	67
36	KU976 89.5-89.8	<0.2	2.00	215	<5	0.92	<1	7	300	226	4.25	0.09	1.08	650	9	0.49	6	130	6	<1	0.09	38	<10	6	38
37	KU976 89.8-91.1	<0.2	8.50	55	<5	1.20	<1	15	293	136	3.75	0.07	2.73	1254	2	3.73	22	380	6	9	0.30	83	<10	39	140
38	KU9704LG 32.60-37.40	<0.2	7.42	155	10	1.35	<1	9	145	10	2.78	1.76	1.66	561	<1	3.00	4	360	8	31	0.31	50	<10	31	33
39	KU9704LG 42.80-48.5	0.3	5.35	60	<5	0.51	<1	5	151	3	2.37	0.89	0.63	306	<1	3.52	4	310	4	12	0.29	3	<10	28	55
40	KU9704LG 48.5-53.6	<0.2	5.30	80	5	0.57	<1	5	143	3	2.54	1.19	0.67	345	<1	3.49	12	350	6	11	0.31	2	<10	33	51
41	KU9704LG 53.6-56.6	<0.2	6.60	150	<5	0.40	<1	5	133	9	2.48	1.61	0.68	402	<1	3.00	6	360	6	19	0.30	10	<10	37	42
42	KU9704LG 56.6-60.0	0.2	7.34	125	<5	1.31	<1	6	151	10	2.67	1.64	1.26	317	<1	2.76	6	270	6	32	0.28	29	<10	39	41
43	KU9704LG 60.0-66.2	0.2	7.53	50	10	0.62	<1	5	140	7	2.32	0.68	0.77	255	<1	3.67	4	340	4	26	0.29	3	20	38	56
44	KU9704LG 66.2-71.8	<0.2	7.42	125	10	0.88	<1	11	153	19	2.84	2.14	1.75	398	1	3.11	4	370	4	19	0.31	72	30	26	43
45	KU9704LG 71.8-78.0	<0.2	5.61	95	10	0.89	<1	8	146	18	2.69	1.52	1.54	432	<1	3.43	12	340	8	14	0.29	59	<10	20	70
46	KU9704LG 78.0-85.0	<0.2	5.90	135	10	0.92	<1	7	145	10	2.69	1.53	1.59	431	<1	3.43	4	340	6	12	0.28	51	<10	19	39
47	KU9704LG 85.0-88.4	<0.2	5.17	355	5	0.68	<1	8	123	20	2.85	2.77	1.46	374	6	1.46	8	330	4	6	0.27	58	20	17	39
48	KU9704LG 88.4-94.8	<0.2	4.27	215	<5	0.28	<1	4	138	6	2.47	1.64	0.70	267	<1	2.95	2	320	4	2	0.26	4	20	7	63
49	KU9704LG 94.8-99.3	0.4	3.97	110	<5	0.19	<1	5	123	5	2.35	0.98	0.59	264	<1	3.34	4	330	4	8	0.27	5	<10	7	50
50	KU9704LG 99.3-103.9	0.4	6.03	245	5	1.55	<1	19	72	38	4.32	1.50	1.73	559	<1	2.97	4	270	6	48	0.35	168	20	14	57

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51	KU9704LG 103.9-108.9	0.4	4.40	260	10	0.96	<1	11	112	19	3.34	1.36	1.60	481	<1	2.79	8	320	6	17	0.27	110	50	6	57
52	KU9704LG 108.9-110.7	0.3	5.43	800	5	0.19	<1	4	165	12	2.73	2.30	1.64	463	3	2.14	4	260	8	8	0.20	30	<10	7	83
53	KU9704LG 110.7-111.4	0.3	6.65	230	5	0.19	<1	4	120	21	2.15	0.81	1.14	388	<1	3.44	6	310	4	5	0.27	20	10	13	54
54	KU9704LG 111.4-112.8	0.2	6.92	1335	<5	0.58	<1	5	119	36	3.61	3.46	2.13	592	1	0.53	6	560	6	16	0.22	30	50	13	120
55	KU9704LG 112.8-114.5	0.3	4.76	195	<5	0.18	<1	3	134	17	1.66	0.74	0.80	308	<1	3.38	12	260	4	4	0.17	24	<10	7	83
56	KU9704LG 114.5-115.9	0.2	5.60	270	<5	0.65	<1	5	234	15	2.07	0.90	0.92	424	3	3.87	8	230	4	26	0.19	38	30	9	47
57	KU9704LG 115.9-122.0	0.3	4.27	105	<5	0.25	<1	5	185	3	2.04	0.24	0.44	360	2	4.55	4	260	6	4	0.23	8	10	7	44
58	KU9704LG 122.0-123.2	0.2	4.15	1220	<5	0.40	<1	10	203	89	3.15	1.79	0.97	381	134	0.65	64	540	12	25	0.18	318	<10	8	241
59	KU9704LG 123.2-124.9	0.5	5.21	90	<5	0.46	<1	4	162	9	2.00	0.09	0.46	471	4	4.59	14	270	4	12	0.21	8	<10	12	91
60	KU9704LG 124.9-125.7	0.2	5.94	1215	<5	1.35	<1	5	193	18	2.35	1.34	1.14	758	10	2.41	18	470	8	33	0.19	29	<10	24	75
61	KU9704LG 132.4-136.0	0.4	5.84	1900	<5	1.60	<1	7	184	69	2.76	1.86	1.52	1027	71	0.52	28	590	10	54	0.15	81	<10	25	105
62	KU9704LG 136.0-137.0	0.2	5.12	1470	5	0.24	<1	2	138	9	1.93	1.42	0.93	355	4	3.19	4	170	4	9	0.16	6	10	5	58
63	KU9704LG 137.0-141.5	0.3	5.30	1690	<5	0.95	<1	5	224	58	2.73	1.35	1.10	934	3	1.26	20	750	4	33	0.17	63	<10	11	134
64	KU9704LG 141.5-148.1	0.4	5.76	1575	<5	0.99	<1	3	171	32	2.29	1.38	0.91	847	3	2.29	12	440	8	23	0.18	32	30	16	81
65	KU9705LG 3.7-8.8	0.2	5.74	185	5	0.08	<1	2	154	<1	1.63	1.31	1.69	268	<1	2.42	2	140	4	28	0.08	1	10	2	83
66	KU9705LG 8.8-	0.3	6.42	130	5	0.02	<1	2	220	4	1.41	0.97	1.50	218	4	2.54	4	170	4	34	0.06	1	<10	<1	51
67	KU9705LG 13.4-20.1	<0.2	4.63	115	5	0.26	<1	2	147	4	1.44	0.73	1.52	396	2	3.37	2	150	4	28	0.10	1	<10	17	53
68	KU9705LG 20.1-25.9	<0.2	6.45	370	<5	0.09	<1	3	121	3	3.19	1.53	2.68	677	4	1.63	2	440	6	17	0.21	8	<10	10	159
69	KU9705LG 25.9-32.0	<0.2	5.83	390	<5	0.08	<1	4	97	3	3.13	1.68	2.72	684	<1	1.56	2	480	6	15	0.23	10	<10	6	150
70	KU9705LG 38.2-40.1	<0.2	3.67	240	5	0.05	<1	1	198	2	1.51	0.74	1.69	342	3	2.55	2	100	6	9	0.07	<1	20	2	43
71	KU9705LG 48.4-53.8	<0.2	4.54	440	<5	0.12	<1	4	122	4	2.70	0.85	1.76	832	<1	2.61	2	350	4	16	0.18	15	<10	4	100
72	KU9705LG 53.8-56.2	<0.2	4.63	200	10	0.29	<1	3	113	<1	2.14	0.51	2.06	930	<1	2.84	2	300	4	8	0.12	4	<10	3	97
73	KU9705LG 62.3-68.6	<0.2	>10	135	5	5.39	<1	36	316	220	7.39	0.14	7.10	4327	<1	2.17	70	770	10	55	0.66	330	<10	28	992
74	KU9705LG 68.6-75.9	0.2	9.32	180	15	7.01	<1	31	227	16	5.02	0.28	4.27	3257	<1	2.83	44	570	4	57	0.60	251	<10	25	522
75	KU9705LG 76.2-82.3	0.2	9.03	315	15	3.70	<1	27	202	65	5.84	0.52	5.73	3975	<1	1.95	36	510	6	17	0.63	248	<10	27	532
76	KU9705LG 91.1-	<0.2	8.89	35	15	3.60	<1	32	220	20	6.39	0.01	5.94	2393	<1	2.09	66	360	4	48	0.55	280	<10	20	203
77	KU9705LG 97.5-107.1	0.2	8.67	75	15	5.25	<1	35	249	49	6.32	0.05	5.61	2145	<1	2.47	68	500	2	34	0.62	285	<10	20	169
78	KU9705LG 107.3-111.9	0.2	8.12	810	35	3.17	<1	33	221	44	6.14	0.07	4.14	1713	<1	3.74	44	590	4	23	0.67	290	<10	18	226
79	KU9705LG 121.0-130.0	0.7	>10	25	<5	8.65	<1	40	372	115	6.24	<0.01	5.72	3950	<1	2.35	104	560	4	116	0.74	269	<10	30	1677
80	KU9705LG 119.9-121.0	0.6	8.16	20	<5	9.25	11	31	349	158	5.24	<0.01	4.06	3800	<1	1.87	86	470	26	122	0.58	221	<10	27	3268
81	KU9705LG 130.0-139.9	0.8	9.57	20	15	7.82	7	39	313	166	5.75	<0.01	6.30	3435	<1	2.47	114	580	208	59	0.67	233	<10	26	2459
82	KU9705LG 139.0-148.0	0.6	6.76	25	10	0.50	<1	6	173	2	3.16	0.12	3.47	951	5	4.57	8	160	8	23	0.15	67	40	4	141
83	KU9705LG 148.0-157.0	0.4	9.22	15	25	>10	<1	35	308	12	6.12	<0.01	4.19	3305	<1	1.45	80	610	10	268	0.77	286	<10	27	154
84	KU9705LG 157.0-164.0	0.2	8.37	20	10	6.63	<1	37	306	34	6.89	<0.01	5.71	3145	<1	1.48	84	460	16	100	0.71	292	<10	24	438
85	KU9705LG 164.0-169.5	0.2	7.47	20	20	4.94	<1	41	379	48	7.30	<0.02	7.05	1916	<1	2.39	120	390	4	95	0.68	278	<10	21	155

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86	KU9706LG 1.0-7.9	0.2	4.82	120	<5	0.29	<1	2	220	1	1.80	1.26	1.82	350	4	1.86	2	150	8	16	0.09	7	<10	1	67
87	KU9706LG 7.9-14.8	<0.2	5.15	200	<5	0.27	<1	3	141	<1	1.77	1.56	2.07	373	3	1.65	2	180	4	18	0.08	8	20	1	60
88	KU9706LG 14.8-20.0	<0.2	4.56	75	10	0.29	<1	4	209	<1	1.78	0.63	1.86	381	4	3.09	2	220	6	20	0.09	13	10	2	63
89	KU9706LG 20.0-26.2	0.2	3.56	80	<5	0.10	<1	3	161	1	1.57	0.66	1.85	351	2	2.32	2	120	6	13	0.08	14	<10	1	59
90	KU9706LG 26.2-32.7	<0.2	3.88	90	<5	0.50	<1	4	174	1	1.87	0.80	2.17	543	5	1.89	4	150	4	17	0.08	42	<10	1	99
91	KU9706LG 32.7-40.4	<0.2	7.72	75	<5	0.20	<1	11	158	8	3.81	0.53	3.87	848	5	2.67	16	260	4	13	0.12	80	<10	4	162
92	KU9706LG 40.8-41.9	<0.2	7.74	10	20	9.85	<1	38	310	42	6.14	<0.02	4.28	3738	<1	1.73	72	740	6	199	0.85	285	<10	33	390
93	KU9706LG 41.9-45.7	<0.2	9.93	30	15	1.67	<1	29	47	24	7.82	0.09	5.40	1862	<1	2.96	4	640	4	43	0.50	315	<10	9	272
94	KU9706LG 47.3-48.3	<0.2	8.43	<5	<5	0.29	<1	12	101	3	5.41	0.03	4.68	1091	4	2.94	8	150	2	19	0.11	118	<10	<1	214
95	KU9706LG 52.3-55.5	<0.2	9.84	25	5	1.32	<1	21	207	21	5.59	0.04	5.91	1686	4	3.01	32	330	4	47	0.13	166	<10	<1	425
96	KU9706LG 55.5-62.5	<0.2	7.44	10	<5	1.20	<1	19	192	68	4.55	0.02	4.43	1386	3	3.44	22	360	4	29	0.14	160	<10	<1	174
97	KU9706LG 62.5-68.0	0.2	>10	15	<5	0.55	<1	24	205	77	5.12	<0.02	5.94	1053	5	3.01	30	490	2	33	0.19	161	20	2	258
98	KU9706LG 72.1-73.5	0.2	>10	25	<5	0.74	<1	34	242	99	9.55	<0.02	8.47	1618	8	1.93	58	710	2	20	0.22	339	<10	<1	322
99	KU9706LG 81.7-87.0	<0.2	9.04	25	<5	1.86	<1	27	232	45	5.99	0.01	7.04	1687	<1	2.42	62	370	4	38	0.27	212	<10	<1	263
100	KU9706LG 100.4-105.1	<0.2	7.89	35	30	1.80	<1	44	314	52	8.39	<0.01	8.59	2412	<1	0.90	88	400	6	39	0.48	254	<10	<1	258
101	KU9706LG 116.6-114.6	<0.2	8.07	20	25	3.76	<1	39	205	6	6.80	0.05	7.51	3174	<1	1.58	86	500	4	46	0.46	287	<10	8	182
102	KU9706LG 115.1-122.1	<0.2	7.44	95	25	4.51	<1	33	151	32	5.76	0.46	6.44	4134	<1	1.51	68	390	6	71	0.37	253	<10	5	354
103	KU9706LG 125.3-131.0	<0.2	7.63	15	35	4.52	<1	43	141	13	6.58	<0.02	5.58	3133	<1	1.79	60	350	8	78	0.69	264	<10	22	258
104	KU9706LG 131.0-136.5	<0.2	7.52	40	20	5.85	<1	47	166	178	6.68	0.07	3.56	2829	<1	2.52	62	400	12	86	0.65	230	<10	21	225
105	KU9706LG 136.5-141.9	<0.2	8.75	45	30	5.90	<1	48	210	37	7.25	0.09	4.27	3521	<1	2.22	70	360	6	145	0.73	278	10	27	224
106	KU9706LG 141.9-148.0	<0.2	7.81	15	25	6.91	<1	40	160	146	6.75	<0.01	4.12	3266	<1	1.43	56	370	10	196	0.69	265	<10	23	377
107	KU9706LG 148.0-153.5	<0.2	6.62	10	15	4.78	<1	39	152	122	6.17	<0.01	3.88	3698	<1	2.40	62	430	6	61	0.56	233	<10	19	554
108	KU9706LG 155.6-157.1	<0.2	5.67	20	25	3.54	<1	47	327	42	7.15	0.06	5.17	3371	<1	1.44	94	270	10	103	0.34	201	<10	<1	418
109	KU9706LG 157.1-162.3	<0.2	7.59	30	20	4.63	<1	37	208	51	6.28	0.25	5.16	2844	<1	2.05	66	410	10	106	0.35	269	<10	6	262
110	KU9706LG 163.4-166.2	<0.2	6.98	35	<5	4.81	<1	42	225	731	7.43	0.18	4.52	3514	<1	1.90	80	290	14	82	0.31	230	<10	2	446
111	KU9706LG 166.2-170.1	<0.2	7.66	15	20	5.44	<1	50	172	90	7.12	0.01	4.74	4459	<1	2.33	88	460	20	66	0.42	235	<10	6	681
112	KU9706LG 170.1-	<0.2	6.86	20	25	5.03	<1	42	167	28	6.45	0.01	4.07	4152	<1	2.16	70	330	22	59	0.52	214	<10	12	580

ATNA RESOURCES LTD.

ICP CERTIFICATE OF ANALYSIS AK 97-707
"TOTAL DIGESTION"

ECO-TECH LABORATORIES LTD.

Et #.	Tag #	Ag	Al %	Ba	Bi	Ca %	Cd	Co	Cr	Cu	Fe %	K %	Mg %	Mn	Mo	Na %	Ni	P	Pb	Sr	Tl %	V	W	Y	Zn
QC DATA:																									
Resplit:																									
1	KU973 4.27-7.62	<0.2	8.65	30	<5	3.07	<1	33	196	324	8.81	0.03	6.55	5296	12	2.08	78	1360	14	66	0.12	267	<10	<1	687
36	KU976 89.5-89.8	0.2	1.84	195	<5	0.84	<1	7	277	230	3.86	0.09	0.90	621	7	0.46	8	110	6	<1	0.09	36	<10	6	37
71	KU9705LG 48.4-53.8	<0.2	3.82	395	5	0.09	<1	4	131	5	2.57	0.79	1.70	736	4	2.50	2	320	4	13	0.18	15	<10	5	96
106	KU9706LG 141.9-148.0	<0.2	7.91	20	15	7.09	<1	42	160	154	6.98	<0.01	4.16	3298	<1	1.40	60	410	8	201	0.69	269	<10	26	393
Repeat:																									
1	KU973 4.27-7.62	<0.2	8.99	30	<5	3.04	<1	33	200	298	9.12	0.03	6.62	5697	10	1.88	80	1190	12	62	0.11	269	<10	<1	740
34	KU976 73.5-75.7	<0.2	0.26	<5	<5	3.04	<1	4	274	59	5.19	<0.01	1.28	1214	13	0.05	6	30	6	35	<0.01	20	<10	<1	78
67	KU9705LG 13.4-20.1	<0.2	4.65	90	<5	0.26	<1	2	145	3	1.47	0.71	1.57	395	1	3.25	2	170	4	19	0.10	2	30	10	48
100	KU9706LG 100.4-105.1	<0.2	8.21	40	25	1.82	<1	44	305	49	8.37	<0.01	8.82	2427	<1	0.89	84	450	10	44	0.38	251	<10	<1	255
Standard:																									
STSD-1		0.4	5.15	630	10	2.70	0.8	16	55	36	4.49	0.97	1.33	3928	<1	1.29	24	1900	35	184	0.46	82	<10	42	176
STSD-2		0.7	>10	555	25	3.28	0.6	22	106	50	5.62	1.85	2.07	1097	10	1.48	53	1780	66	416	0.48	103	<10	36	230
STSD-3		0.5	7.36	1635	25	2.77	1.2	17	82	45	4.95	1.62	1.52	3067	4	1.31	30	2220	40	230	0.45	141	<10	36	206
STSD-4		0.6	7.94	2050	15	3.20	0.6	15	89	73	4.35	1.41	1.43	1628	<1	2.18	30	1290	16	380	0.45	113	<10	26	98
STSD-1		0.4	6.56	665	<5	2.77	0.6	18	68	38	4.80	1.21	1.54	3833	<1	1.38	24	1870	35	184	0.46	99	10	46	176
STSD-2		0.6	7.72	480	10	2.71	0.8	21	114	46	5.14	1.66	2.05	931	12	1.23	53	1500	66	360	0.48	100	<10	34	245
STSD-3		0.5	6.95	1525	15	2.39	1.2	15	83	39	4.66	1.57	1.52	2630	4	1.17	30	1730	40	227	0.44	137	<10	35	217
STSD-4		0.4	6.91	1990	5	2.78	0.8	13	93	65	4.06	1.29	1.42	1592	<1	1.90	30	1040	16	342	0.45	110	<10	25	98
STSD-1		0.2	5.22	630	25	2.63	0.8	17	64	36	4.83	1.08	1.56	3982	<1	1.33	24	1790	35	158	0.44	95	<10	39	178
STSD-2		0.5	8.34	510	20	2.86	0.6	22	118	47	5.45	1.83	2.19	989	10	1.26	53	1530	66	359	0.51	103	10	40	264
STSD-3		0.4	4.86	1420	5	2.13	1.0	15	78	37	4.32	1.43	1.45	2635	6	1.07	30	1600	40	210	0.44	129	<10	32	211
STSD-4		0.4	5.92	1985	5	2.74	0.6	13	91	66	4.09	1.37	1.46	1402	<1	1.93	30	990	16	310	0.46	111	<10	28	97
STSD-1		0.4	4.32	595	20	2.54	0.8	20	57	31	4.44	0.99	1.47	3844	<1	1.06	24	1420	35	176	0.44	84	<10	38	167
STSD-2		0.5	6.30	510	25	2.80	0.8	24	120	40	4.94	1.66	2.04	988	12	1.04	53	1270	66	382	0.47	92	<10	34	238
STSD-3		0.2	6.78	1675	25	2.79	1.2	20	92	40	5.02	1.66	1.71	2754	4	1.08	30	1670	40	270	0.43	141	<10	43	219
STSD-4		0.4	5.59	1915	20	2.81	0.4	15	91	59	3.97	1.29	1.46	1359	<1	1.60	30	860	16	325	0.45	101	<10	27	90

df/707/707A/684C
XLS/97

ECO-TECH LABORATORIES LTD.
Frank J. Pezzotti, A.Sc.T.
B.C. Certified Assayer

Eco-Tech
LABORATORIES LTD.

ASSAYING
GEOCHEMISTRY
ANALYTICAL CHEMISTRY
ENVIRONMENTAL TESTING

10041 E. Trans Canada Hwy., R.R. #2, Kamloops, B.C. V2C 6T4 Phone (250) 573-5700
Fax (250) 573-4557

CERTIFICATE OF ANALYSIS AK 97-684

ATNA RESOURCES LTD.
1550-409 GRANVILLE STREET
VANCOUVER, BC
V6C 1T2

28-Jul-97

ATTENTION: P. HOLBEK

No. of samples received: 92
Sample type: Rock
PROJECT #: not given
SHIPMENT #: not given
Samples submitted by: not given

ET #.	Tag #	F (ppm)
1	KU9701LG 11-25	200
2	KU9701LG 31-34	220
3	KU9701LG 68.88-72.54	240
4	KU9701LG 83-97	300
5	KU9701LG 122-134	200
6	KU9701LG 136-151	230
7	KU9701LG 156-175	220
8	KU9701LG 170-190	200
9	KU9701LG 191-200	180
10	KU9701LG 202-222	220
11	KU9701LG 249-268	210
12	KU9701LG 273-292	250
13	KU9701LG 297-316	250
14	KU9701LG 320-341	250
15	KU9701LG 347-366	230
16	KU9701LG 370-390	260
17	KU9701LG 390-406	260
18	KU9701LG 406-433	270
19	KU9701LG 437-491	270
20	KU9701LG 501-521	260
21	KU9701LG 527-	280
22	KU9701LG 542-563	270
23	KU9701LG 565-592	230
24	KU9701LG 597-616	190

ATNA RESOURCES LTD. AK 684

28-Jul-97

ET #.	Tag #	F (ppm)
25	KU9701LG 68-632	260
26	KU9701LG 660-679	260
27	KU9701LG 683-708	260
28	KU9701LG 820-856	280
29	KU9701LG 20.3-21.95	280
30	KU9701LG 18.29-20.03	250
31	KU9701LG 21.95-23.59	270
32	KU9701LG 53.49-53.80	300
33	KU9701LG 72.54-75.59	290
34	KU9701LG 195.99-199.64	260
35	KU9701LG 18.34-221.28	240
36	KU9701LG 227.38-230.43	250
37	KU9701LG 233.48-236.52	230
38	KU9701LG 245.67-248.72	220
39	KU9701LG 263.96-267.00	180
40	KU9701LG 273.1-276.15	380
41	KU9701LG 292.15-294.44	340
42	KU9701LG 294.44-297.48	340
43	KU9701LG 297.48-300.53	400
44	KU9701LG 300.43-303.58	330
45	KU972 2.90-4.22	360
46	KU972 4.22-6.00	310
47	KU972 6.00-7.84	600
48	KU972 7.84-10.97	520
49	KU972 10.97-12.60	580
50	KU972 12.60-13.00	480
51	KU972 13.00-15.54	360
52	KU972 15.54-18.48	340
53	KU972 18.48-20.73	360
54	KU972 20.73-21.11	250
55	KU972 21.11-23.16	360
56	KU972 23.16-26.21	300
57	KU972 26.21-30.10	420
58	KU972 30.10-32.31	520
59	KU972 32.31-35.26	440
60	KU972 35.26-36.16	840
61	KU972 36.16-38.40	840
62	KU972 38.40-41.45	750
63	KU972 41.45-44.80	460
64	KU972 44.80-48.20	620
65	KU972 44.8-52.85	680
66	KU972 56.69-59.74	1240
67	KU972 62.70-66.08	1000
68	KU972 73.69-75.40	750
69	KU972 85.3-92.96	700
70	KU973 10.70-15.40	880

ATNA RESOURCES LTD. AK 684

28-Jul-97

ET #.	Tag #	F (ppm)
71	KU973 73.50-78.10	880
72	KU973 79.2-84.2	1040
73	KU973 96.9-102.9	580
74	KU973 104.2-112.8	700
75	KU973 112.8-118.9	540
76	KU973 119.8-125.6	540
77	KU973 128.3-132.89	580
78	97 NT 01	360
79	97 NT 02	720
80	97 NT 03	300
81	97 NT 04	260
82	97 NT 05	300
83	97 NT 06	340
84	97 NT 07	340
85	97 NT 08	290
86	97 NT 09	340
87	97 NT 10	520
88	97 NT 11	290
89	97 NT 12	480
90	97 NT 13	450
91	97 NT 14	450
92	KU971LG 282.24-285.29	430

QC DATA:

Resplit:

1	KU9701LG 11-25	210
36	KU9701LG 227.38-230.43	260

Repeat:

1	KU9701LG 11-25	210
38	KU9701LG 245.67-248.72	240
75	KU973 112.8-118.9	540
84	97 NT 07	380

Standard:

SO1	700
SO2	500
SO3	300

ECO-TECH LABORATORIES LTD.
per Frank J. Pezzotti, A.Sc.T.
B.C. Certified Assayer

XLS/97

APPENDIX III
STATEMENT OF COSTS

1.	Diamond Drilling	
	451.7 metres @ $ 91.50/m	41,330.55
	Proportion of Mob/Demob	6,875.00
	Proportion of Pad Materials	833.00
2.	Labour and Management - Pad Prep and Logging	
	Duncan McCrae 10 days @ $170/day	1,700.00
	Bart Piekarski 10 days @ $140/day	1,400.00
	Heath Walton 4 days @ $200/day	2,800.00
	Rob Wilson 12days @ $330/day	3,960.00
	Gary Belik 10 days @ $400/day	4,000.00
	Peter Holbek 3 days @ $425/day	1,275.00
3.	Helicopter Support	
	16.5 Hours @ $790/hr	13,035.00
4.	Camp Costs (Camp rent, fuel, food and supplies)	
	69 man days @ $75/day	5,175.00
5.	Aircraft Charter	
	Northern Lights Air Services	3,458.21
6.	Travel Expenses (pro-rated)	
	Canadian Airlines International	1,085.00
	Air Canada/Central Mountain Air	1,274.00
7.	Report Preparation	650.00
8.	Geochemical Analysis, Freight	1,004.18
	Total	**$ 89,854.94**

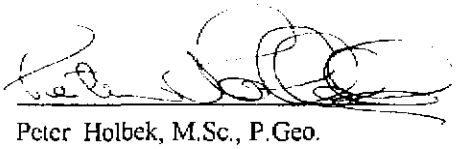
APPENDIX IV

STATEMENT OF QUALIFICATIONS

Certificate of Qualifications

I, Peter M. Holbek with a business address of 1550 - 409 Granville Street, Vancouver, British Columbia, V6C 1T2, do hereby certify that:

1. I am a professional geologist registered under the Professional Engineers and Geoscientists Act of the Province of British Columbia and a member in good standing with the Association of Professional Engineers and Geoscientists of British Columbia.
2. I am a graduate of The University of British Columbia with a B.Sc. in geology 1980 and an M.Sc. in geology, 1988.
3. I have practiced my profession continuously since 1980.
4. I am vice president of Atna Resources having a business address as given above.
5. I supervised the work program conducted on the Kutcho property as described in this report.



Peter Holbek, M.Sc., P.Geo.

March '98

GEOLOGIST'S CERTIFICATE

I, Robert G. Wilson, of 3328 West 15th Ave. Vancouver, in the Province of British Columbia, DO HEREBY CERTIFY:

1. THAT I am employed by Atna Resources Ltd. of 1550 - 409 Granville St., Vancouver B.C.

2. THAT I am a graduate of the University of British Columbia with a Bachelor of Science degree in Geology.

3. THAT I am a Professional Geoscientist registered in good standing with the Association of Professional Engineers and Geoscientists of the Province of British Columbia.

4. THAT this report is based in part on property work I personally completed and/or directly supervised between June 21 and July 11, 1997.

DATED at Vancouver, British Columbia, this 18 th day of MARCH, 1998.

Robert G. Wilson, P.Geo.

KUTCHO PROPERTY

CLAIM BOUNDARY

CLAIM POSTS

UTM GRID

GRID LINE

CREEK, RIVER

ELEVATION CONTOURS
(20 m INTERVALS)

SYMBOLS

OUTCROP AREA

GEOLOGIC CONTACT
(DEFINED, ASSUMED)

DRILL HOLE

BEDDING (INCLINED, VERTICAL)

SCHISTOSITY (INCLINED, VERTICAL)

SYNCLINE

ANTICLINE

FAULT
(DEFINED, PROJECTED EXTENSION)

× MINERAL OCCURENCE

Py PYRITE
Cpy CHALCOPYRITE
Sph SPHALERITE
Mag MAGNETITE

LITHOLOGIES

INKLIN FORMATION :

6. a) GREY/BLACK PHYLLITE/SLATE , LIMY SLATE; LOCAL LIMESTONE INTERBEDS.

b) ARENACEOUS PHYLLITE, SILICEOUS GREEN PHYLLITE.

SINWA FORMATION :

5. GREY CRYSTALLINE LIMESTONE, CHERTY LIMESTONE

KUTCHO FORMATION :

4. SEDIMENTS

a) POLYMICTIC CONGLOMERATE; COMMONLY WITH STRETCHED CLASTS

b) CALCAREOUS FELSIC TUFF; LIMESTONE LENSES AND INTERBEDS.

c) GREY/BLACK SLATE

d) CHERT

e) PHYLLITIC GREYWACKE, FINE-GRAINED GREEN PHYLLITE, SILICEOUS PHYLLITE; IN PART TUFFACEOUS.

3. FELSIC VOLCANICS

a) QUARTZ ± FELDSPAR, RHYOLITE PORPHYRY; FLOW-DOME SEQUENCE

b) COARSE PYROCLASTIC WITH BOMB-SIZE FRAGMENTS.

c) BRECCIA

d) QUARTZ-FELDSPAR LAPILLI/CRYSTAL TUFF.

e) MEDIUM-TO COARSE-GRAINED CRYSTAL TUFF.

f) FINE-GRAINED CRYSTAL TUFF.

(R) RHYOLITIC COMPOSITION WITH ABUNDANT QUARTZ EYES.

(Q) ABUNDANT QUARTZ EYES.

(F) FELDSPATHIC; MINOR QUARTZ EYES.

2. INTERMEDIATE VOLCANICS

a) FINE-GRAINED DACITIC PORPHYRY

b) DACITIC TUFF; COMMONLY FINE GRAINED; LOCAL QUARTZ EYES.

1. BASIC VOLCANICS

a) ANDESITIC & BASALTIC FLOWS, CRYSTAL AND LAPILLI TUFF.

b) COARSE LAPILLI TUFF AND AGGLOMERATE

GREY, GREEN AND RED CHERTY EXHALITE WITH SEMIMASSIVE TO MASSIVE SULPHIDE (PYRITE ± Cpy) LENSES.

INTRUSIVE ROCKS (PRE KINEMATIC)

A MEDIUM-TO COARSE-GRAINED TRONDHJEMITE; SILL-LIKE

B COARSE-GRAINED FELSIC; POSSIBLE DYKE

0 100 200 300 400 500m

SCALE : 1:5,000

FIG. 3.1

G. BELIK & ASSOCIATES

KUTCHO PROPERTY

ATNA RESOURCES LTD.

GEOLOGICAL PLAN

LIARD MINING DIVISION, B.C. 104I / 1W, 2E

TECHNICAL WORK BY: G. D. BELIK	DATE : OCTOBER / 1996
DRAWN BY : DBM TECHNICAL SERVICES	DRAWING NO. : 1065 - 5E