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COMINCO LTD.

EXPLORATION

WESTERN CANADA

NTS: 104K/11

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ASSESSMENT REPORT

DIAMOND DRILLING ON

TULSEQUAH CHIEF CROWN GRANT

ATLIN MINING DISTRICT, B.C.

LATITUDE: 58°43'

LONGITUDE: 133°35'

DECEMBER 1989

R.J. AULIS

work performed August 10-17/89

GEOLOGICAL BRANCH
ASSESSMENT REPORT

19,453

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COMINCO LTD

EXPLORATION

WESTERN CANADA

30 November, 1989

ASSESSMENT REPORT - TULSEQUAH CHIEF

SUMMARY

Drill Hole TCU-89-12 was drilled to a depth of 1180 feet, in August 1989, to test down dip extension of G sulphide lens intersected by 1987 and 1988 drill holes. TCU-89-12 intersected the G lens from 923.5-935.5 feet with mineralization grading: 2.25% Cu, 0.48% Pb, 3.84% Zn, 1.36 oz/t Ag and 0.04 oz/t Au.

Hole TCU-89-12 indicates that G sulphide lens continues at least 475 feet below previous levels of testing. It is still open at depth.

INTRODUCTION

A joint venture between Cominco Ltd and Redfern Resources was convened March 25, 1987 to explore the Tulsequah Chief Property. From 1987-1989 work on property has included detailed surface mapping, underground rehabilitation and drifting, and surface and underground drilling.

Work in 1989 included 570 feet of underground drifting from pre-existing workings on the 5400 Level to establish drill stations from which to test downward extension of the mineral horizon hosting Chief deposit. Mining was carried out from June 9 to August 6 and diamond drilling from August 6 to October 14.

Drilling was carried out by Northward Mining Contractors using two drills, a Hagby-Bruk and a Connors BBS-37A. Ten holes totalling 16043 feet were drilled from 2 adjacent drill stations at the end of the 1989 drift.

Ground conditions were generally good and no serious drilling problems were encountered.

Diamond drilling was supervised by M.J. Casselman and E. A. Dembicki.

2.

LOCATION AND ACCESS

The property is situated on east side of the Tulsequah River on map sheet 104K/11 in northwestern B.C. and is centered on latitude 58°43' and longitude 133°35' (Fig.1). Access to area is by air from Atlin, 100 km north, or by water/air from Juneau, 64 km southwest, to a gravel airstrip along Tulsequah River, 10 km south of the Tulsequah Chief mine site where base camp was located.

TOPOGRAPHY

The property is situated on the west side of Mount Eaton at elevations between 50 and 1850 m above sea level. Topography was molded by large valley and smaller alpine glaciers. Slopes are moderate to steep with cliffs ranging up to several tens of metres in height common. Lower slopes to 1100 metres are covered by spruce and hemlock. Slide and blow down areas, common in the forests, are covered by thick growths of devils club, alder and stinging nettles.

PROPERTY AND OWNERSHIP

The property consists of the following claims (Fig. 2):

<u>Located Claims</u>			
<u>Name</u>	<u>Record No.</u>	<u>Recorded</u>	<u>Assessment Work Due</u>
Ross	5226	May 3, 1963	May 30, 1998
Pat	5225	May 3, 1963	May 30, 1998
Birds	5224	May 3, 1963	May 30, 1998
Co1	995	Mar 4, 1980	Mar 4, 1998
Co2	996	Mar 4, 1980	Mar 4, 1998
Co4	999	Mar 4, 1980	Mar 4, 1998
SEQ 1	933	Jan 28, 1980	Jan 28, 1998
SEQ 2	934	Jan 28, 1980	Jan 28, 1998
Phil 1	2885	May 8, 1987	May 8, 1998
Phil 2	2886	May 8, 1987	May 8, 1998
Phil 3	2887	May 8, 1987	May 8, 1991
Phil 4	2888	May 8, 1987	May 8, 1991

3.

Crown Grants

<u>Name</u>	<u>Lot No.</u>	<u>Area (Ha)</u>	<u>1989 Mineral Land Taxes</u>
River Fr	5669	7.99	7.91
Tulsequah Bonanza	5668	20.90	20.69
Tulsequah Bald Eagle	5676	14.16	14.02
Tulsequah Chief	5670	20.90	20.69
Tulsequah Elva Fr	5679	9.70	9.60

PREVIOUS WORK

The Tulsequah Chief deposits were discovered by W. Kirkham of Juneau in 1923 while prospecting. He located a lense of high grade barite, pyrite sphalerite, galena, chalcopryrite outcropping in an east-west trending gulley just above the 6500 level adit. Development of this showing between 1923 and 1929 attracted the attention of prospectors to the promise of the area. In 1929 about 40 prospectors were in the area which resulted in the discovery of the Big Bull deposit by V. Manville, the Potlatch (Sparling) and Banker showings and the Whitewater (Polaris Taku) deposit. The Erickson-Ashby deposit was found in 1930.

Cominco Ltd. acquired the Tulsequah Chief and Big Bull deposits in 1946 and production was started in 1951 with an average of 530 tons per day mined. Mining continued until 1957 when the mine was closed due to low metal prices.

The Tulsequah Chief deposits lay dormant until 1987 when the convening of a joint venture with Redfern Resources led to the present ongoing work program.

In 1987 the entire property was mapped at 1:2500 with the Central Area being mapped in greater detail at 1:1000. From 1987 to present, 39,188 feet of drilling has been done from surface and underground. To carry out the underground drilling, extensive work in the form of rehabilitation and drifting was done to the 5400 Level in 1988 and 1989.

PROPERTY GEOLOGY

1:2500 scale mapping has shown the Tulsequah property to be underlain by rocks belonging to two different lithotectonic blocks separated by the Chief fault. The rocks are primarily andesite flows and pyroclastics with lesser clastic, mixed limestone-chert-clastic, and dacite to rhyodacite pyroclastics units. The Chief fault is a regional structure which cuts off west extension of the stratigraphy hosting the Tulsequah Chief deposit. Rocks west of the Chief fault resemble those east of the fault but they possess a much higher degree of deformation and penetrative foliation. All layered rocks are intruded by numerous dykes and plugs including Paleozoic andesites/diorites and dacites, Mesozoic granodiorites, quartz monzonites, diorites and pyroxenites and Tertiary rhyodacites, diorites and quartz monzonites.

4.

1:1000 scale surface and underground mapping in area of deposit showed it to be broken into separate blocks by north-south striking faults designated Chief, 4400E and 5100E. 4400E and 5100E faults were initially synvolcanic growth faults which developed a graben on the seafloor during deposition of the mineral hosting stratigraphy. There has been later reactivation along these faults. Stratigraphy hosting the Tulsequah Chief deposit is a conformable succession of NE-SW striking, steeply NW dipping volcanics from oldest to youngest as follows:

- 1) Footwall Andesite Volcanics-pyroclastics and flows.
- 2) Mineral Horizon - strongly sericitized and pyritized dacite to rhyolite lapilli tuffs intercalated with a mixed assemblage of tuffs, muds, cherty tuffs and cherts; hosts all the sulphide lenses in deposit.
- 3) Dacite-Rhyolite Pyroclastics.
- 4) Upper Andesite Volcanics-pyroclastics and flows.

The layered rocks have been intruded by a large diorite plug, sill, dyke complex and dacite intrusives of suspected Paleozoic age (subvolcanic-intrusives), and rhyodacite dykes of suspected Eocene age. The Chief deposit occur in one horizon designated the mineral horizon which is located at transition between dominantly andesitic and dominantly felsic volcanism. It can be traced on surface for 700 m with thickest development occurring in graben defined by the 4400E smf 5100E faults.

Mineralization is localized in 3 areas along the mineral horizon; F,E and G sulphide lenses outside graben and A, B and A-B sulphide lenses within graben. The sulphide lenses are stratigraphically controlled and occur as pyrite-rich lenses with varying proportions of sphalerite, galena, chalcopyrite, barite, gypsum, Au and Ag. Production from 1951-1957 was 625,781 tons. Reserves at 1957 to 5200 L were 780,000 tons grading 0.07 oz/t Au, 2.9 oz/t Ag, 1.3% Cu, 1.6% Pb and 8.0% Zn.

The area of deposit contains two large alteration zones interpreted to be feeder pipes; one underlies the Chief deposit (Main Alteration Zone) and the other surrounds the 5200 and 5400 Level portals (5200 Portal Alteration Zone). These pipes developed at different stratigraphic levels.

DIAMOND DRILLING

Drill hole TCU-89-12 was started on August 10, 1989 and completed August 17 at a depth of 1180 feet. It was inclined at -66° with a bearing of 137° (Plate 89-2). This drill hole was planned to test downdip extension of G sulphide lens previously tested by 1988 drilling to 4900 Level. Hole 89-12 intersected 12 feet of mineralization in the G lens at the 4550 Level. Mineralization graded 2.25% Cu, 0.48% Pb, 3.84% Zn, 1.36 oz/t Ag, 0.04 oz/t Au. True thickness of inter-section is calculated to be 10 feet.

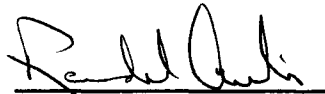
5.

Drill hole TCU-89-12 was logged by E.A. Dembicki and is described in detail in Appendix B. Geochemical and assay data are in Appendix C.

CONCLUSIONS

Drill hole TCU-89-12 extended the G sulphide lens 475 feet downdip from previous drilling and remains open at depth.

Report by:



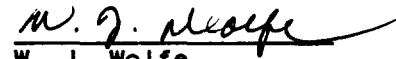
Randal Aulis
Geologist

Endorsed by:



M.J. Casselman
Senior Geologist

Approved for
Release by:



W. J. Wolfe,
Manager, Exploration-
Western Canada

RJA/pm
Distribution
Mining Recorder
File

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APPENDIX "A"

STATEMENT OF EXPENDITURES

Diamond drill hole TCU-89-12 was part of a 10 hole, 16043 foot drill program conducted from June 9 to October 14, 1989. This included 570 feet of underground drifting to establish drill sites.

Salaries:

Permanent	\$ 102,000	
General Roll	32,500	
Temporary	41,500	
Contractor	<u>10,500</u>	\$ 186,500
Communications		31,500
Transportation/Mobilization		
Helicopter	103,000	
Fixed wing	96,000	
Other (fuel, salaries, etc.)	<u>144,218</u>	343,218
Expediting		21,000
Camp Costs		66,000
Surveying		11,000
Expense Accounts		13,500
Geochemistry and Assaying		18,000
Mining/Drill Site Preparation		448,000
Drafting and Report Writing		4,000
Diamond Drilling		529,795
Tenure		<u>10,000</u>
		Total: \$1,682,513

Cost per foot drilling \$1,682,513 for 16043 feet = \$104.88/ft.
Diamond Drill Hole TCU-89-12 Cost = \$104.88 x 1180' = \$123,758.40

APPENDIX B Diamond Drillhole Log TCU-89-12

Property	Tulsequah	District	Atlin	Hole No.	TCU-89-12
Commenced	August 10, 1989	Location	NTS 104/K12	Tests at	End of log
Completed	August 17, 1989	Core size	RC-2	Cor. dip	
Coordinates	"A" Drill Station			True Brq.	
Objective				% Recov.	
Date	August 11, 1989			Horiz. Comp.	
Logged by	Eugene, "the logging machine" Dembicki.			Vert. Comp.	
	Revision Date			September 7, 1989	

Feet	To	Description
0.0	3.0	Casing
3.0	77.0	<p>DACITE LAPILLI TUFF</p> <p>-Medium to dark green aphanitic matrix, locally strongly overprinted by hematite (light purple). Matrix supported with 25% white felsic clasts and 10% hematized clasts; clast size ranges from 0.5-3.0cm with an average of 1.5cm, locally up to 30cm. Bedding defined by felsic clasts is 30 degs. to core axis. Trace pyrite as 2-5mm cubes. Lower contact at 75-80 degs to core axis and is paralleled by a 1-3cm chlorite vein. 1-3 fractures/foot orientated 30-40 degs. to core axis.</p> <p>51.7-60.0 Light grey, hard (not scratchable with knife), feldspar phyrlic (15%, 1-3mm) 1-3% quartz eyes, and locally cut by chlorite veins. Individual fragments are difficult to recognize - possibly a coarse grained biotite phase or dacite intrusive.</p>
77.0	153.0	<p>DACITE INTRUSIVE - HEMATIZED AND FELDSPAR PHYRIC</p> <p>-light purple color caused by extensive hematite overprinting. Matrix is aphanitic and hard (not scratchable with knife); feldspar phyrlic with 20-25% 1-3mm sub to euhedral feldspar phenocrysts. -cut by several milky white quartz veins (1-10cm) orientated semi-parallel to core axis. Rare quartz eyes (<<1%). Upper contact at 75-80 degs. to core axis, lower contact at 55 degs. to core axis. Core good, 1-2 fractures/foot at 45-55 degs. to core axis.</p> <p>77.0-90.0 5% hairline to 5mm epidote veins orientated 70-90 degs. to core axis.</p> <p>121.0-123.5 Diorite Dyke. Dark greenish-black, aphanitic, massive, and homogeneous. Sharp upper and lower contacts at 5-10 degs. and 35 degs. to core axis respectively.</p> <p>126.7-129.0 Diorite Dyke. Same as previous. Upper and lower contacts at 30 degs. and 45 degs. to the core axis respectively.</p> <p>133-135 Swarm of 1-5mm dark green diorite</p>

veinlets surrounded by a 5 cm quartz halo.

153.0

265.0

DACITE LAPILLI TUFF/TUFF BRECCIA

298?

-dark greenish-grey matrix with 20-35% white subhedral feldspar phenocrysts (0.5-3.0mm). Matrix supported with subrounded fragments 0.5-50.0cm, average 3-4cm. Two types of fragments are noted; a light greenish-grey slightly hematized feldspar phyric variety which is similar to the matrix predominated (20%), and a lesser amount of aphanitic creamy grey clasts (5%) which may be speckled with leucoxene; both varieties have 1-2% quartz eyes, locally up to 5%. Bedding defined by felsic clasts is 30-40 degs. to core axis. Locally cut by 3-5mm epidote-magnetite veins with 5mm bleach halos. Upper and lower contacts at 55 degs. and 75-90 degs. to core axis respectively. Core good, 1-2 fractures/foot at 45 degs. to core axis.

190.3-198 Fine grained, mid-dark green dacite lapilli tuff (fragments average 0.5cm) with several sulphide clasts (0.5-3.0cm) consisting of fine grained pyrite (98%), magnetite(2%), and trace chalcopyrite. This interval differs in bedding orientation in that it is parallel to core axis as opposed to 30-40 degs. to core axis in the surrounding lapilli. Sharp upper contact at 60 degs to core axis, lower contact is gradational.

210.4-218 Diorite Dyke - Dark greenish-black. Similar to previous. Upper and lower contacts at 45 degs. and 55 degs. to core axis respectively.

At 273.5 3cm subrounded tan brown pumaceous fragment (andesite composition?)

290.0

869.5

DIORITE DYKE

- Greenish-black, massive, and homogeneous. Variably magnetic from non-existent to moderate, localized areas of strong magnetism associated with mm scale magnetite veins. Grain size varies from aphanitic to very fine grained adjacent to the upper and lower margins (289-306; 830-869.5) and becomes coarser grained in the centre with 0.5 to 3.0mm moderately chloritized augite phenocrysts (20-25%). Upper contact between 75 and 90 degs. to the core axis, lower contact between 45 and 55 degs. to the core axis. Core good, 1 fracture/foot, except for the interval near the upper contact between 289 and 325 where the core is shattered and broken into 5-35cm pieces, and in the faults. Cut by two Sloko Rhyodacite Dykes.

317-318.5 Weak Fault. Core broken into 0.1-5.0cm pieces; no gouge or bleaching.

489-509 Cut by several 5-25cm epidote veins between 70 and 90 degs. to core axis, trace pyrite.

531.5-530 Epidote veining semi-parallel to core axis with 1-2% magnetite in mm scale veins, trace pyrite.

600-603 Fault (weak) Calcite annealed fault (10cm of calcite) with bleached diorite (light green); core is blocky and broken into 15cm pieces; no gouge.

609-612 Fault. Diorite is very blocky and broken into 0.5-10cm pieces; trace hematite lining a fracture; no calcite, bleaching, or gouge.

795.0 796.0

SLOKO RHYODACITE DYKE

- creamy light green with 1-10mm bands orientated 20-30 degs. to the core axis. Very hard (not scratchable with knife), homogeneous, and aphanitic with the exception of 2-3% 1-3mm hornblende needles and ghosted white feldspar (?) phenocrysts (0.5-2.0mm, 2-3%) Upper contact is not preserved, and lower contact is at 30 degs. to core axis. (actual thickness is much less since it was hit at a low angle)

804.0 812.5

SLOKO RHYODACITE DYKE (5000 E DYKE?)

-similar to above dykelet. Core is very blocky and shattered into 0.5-15.0cm pieces; no gouge. (difficult drilling). May possibly be the 5000 E Dyke and/or fault. Bleached pale green at 809'-due to ground water?

812.5-825 Diorite is very blocky and shattered into 5-10cm pieces broken between 70 and 90 degs. to core axis (adjacent to Sloko).

809.5 923.5

DACITE LAPILLI TUFF/TUFF BRECCIA

-dark greyish-green aphanitic matrix (with no feldspar phenocrysts and hematite as compared to previous lapilli tuff.) Matrix has an intermediate hardness (slightly scratchable with knife) and this may reflect a very weak sericite overprinting not visible to the naked eye. Fragments are angular to subrounded, light grey-to white, siliceous, and hard (generally not scratchable with knife) with up to 5% quartz eyes; they average 1.0-2.5cm and range in size from 0.5cm to 80.0cm. Bedding defined by felsic clasts is 40-45 degs. to core axis. Sharp upper contact at 45-55 degs to core axis, and debatable lower contact at 45 degs. to core axis. 2-3 fracture/foot between 60 and 90 degs to core axis.

669.5-679 Weakly cut at 30-50 degs to core axis by 1-10 mm chlorite-magnetite veins with 1-2cm bleach halos; trace chalcopyrite and pyrite. (chlorite veinlets are believed to have originated from the diorite).

At 881 1.0cm angular clast of pyroclastic pyrite.

912.5-915 Pale brownish-grey rhyolite bomb (80cm) with 5% quartz eyes.

917-921 Fault. Cobbles and light green (bleached?) dacite lapilli tuff shattered into 5-15cm pieces; strong rock crush and gouge centred from 919.5-921.

921-923.5 Weakly sericitized, lightly bleached, and pyritized (1-2%). Green color of dacite is still visible - weak hanging wall alteration. Few clots of chalcopyrite. (<1% Cu).

923.5 935.5

MINERAL HORIZON - SULPHIDE ZONE (HIGH GRADE)

- "Banded-ore" consisting of finely laminated fine to medium grained pyrite, pyrrhotite, blackjack sphalerite, chalcopyrite, and galena aligned 45-70 degs. to core axis. (predominantly at 50-55 degs. to the core axis.); locally cut by discontinuous 1-15mm chalcopyrite veins (stringers?) parallel to core axis. Gouge consists of sericite and quartz. Total sulphide content is high, at least 70% and in some places up to 90%. Pyrite (45-60%) and pyrrhotite (5%). Estimate of grade is difficult - chalcopyrite (10-12%, 7-8%Cu), sphalerite (10%, 7-8%Zn), and galena (2-4%, 1-2%Pb). (Conservative??) Core blocky, 2-3 fractures/foot at 40-60 degs. to core axis. Upper contact at 45 degs. to core axis, and lower contact is sitting on top of fresh to very weakly altered andesite flows/breccias at 80 degs. to core axis. (Note: It is most definitely a stratigraphic contact). At 933.5 Fault. 5cm of rock crush and gouge.

935.5 1081.5

FRESH ANDESITE FLOW

-Unaltered dark blackish-green, dense massive, and homogeneous with 2-3% chlorite filled amygdules (flow?), locally weak-moderately magnetic. Fragments locally noted between 969 and 971 which are orientated 70-90 degs. to the core axis. They are light grey, angular, aphanitic, and range in size from 1-30mm, average 5mm. (Interpreted to be formed by autobrecciation). Very weak alteration in the form of very fine grained dark brown biotite and 2-3% pyrite underneath the sulphide zone for

35cm, and weak bleaching (light grey) and disseminated fine grained pyrite (5%) between 947 and 948.5. Weak chlorite veining throughout. Upper contact at 80 degs. to the core axis, lower contact is placed at the first appearance of abundant feldspar phenocrysts. Core good except where faulted a, averages 1-3 fractures/foot between 40 and 70 degs. to core axis.

995.5-986.5 Mixed and swirled chlorite (30%) in milky white quartz, few clots of magnetite (1%) (Interflow crud??)

995-1001 Fault (5000 E ?) Core very blocky and shattered into 1-5 cm splinters. IN places the andesite is bleached mid to light green; rare hematite on fractures; no gouge in core box, but 'green' helper threw about six inches of clay (gouge) out thinking it was unimportant, either in this fault or the one at 1010'.

1005-1030 Poor core recovery due to bad ground, approximately 5' not recovered.

1001-1010 Blocky ground, 2-3 fractures/foot.

1010-1011 Fault. Core broken into pebble to gravel size pieces, some pieces are bleached light green; no gouge in box but there may have originally been some (discarded by 'green' helper)

1011-1037 Core very blocky and broken/shattered into 2-15 cm pieces at 70-90 degs. to the core axis. Between 1018 and 1037' there is a fine crackling texture was observed adjacent to the fault in D.D.H.'s TCU 88-3 and TCU 88-8).

1014.5-1017.5 Footwall Noise. Moderately bleached (light grey) and weak-moderately sericitized; accompanied by fine to medium grained pyrite (15%) and clots of chalcopyrite (1-2%, 0.5% Cu)

1039-1058 Very dark blackish-greenish, massive, and homogeneous; weakly feldspar phyric (0.5-1.0 mm, 2-3%); cut by mm to cm scale chlorite veining.

1079.5-1070.5 ^{1080.5 ?} Fault (moderate-strong) Rock crush and gouge. Surrounding rock is bleached light-mid green 40-80 cm.

1081.5 1180.0

FELDSPAR PHYRIC ANDESITE FLOWS/PYROCLASTICS

-Very dark greenish-black, strongly magnetic, inhomogeneous, and enriched with fresh to weakly chloritized sub to euhedral feldspar phenocrysts (0.1-3.0 mm, 15-20%) Few angular fragments

(0.5 to 3.0 cm) are noted and they are difficult to recognize because of color similar to the matrix. 1-50 cm light green epidote-quartz veining is common. NOTE: This interval is similar to the andesites encountered at the bottom of the D.D.H. TCU 88-8 between 1045 and 1106'.

1180 E.O.H.

SOLAR SUN READINGS

DEPTH (FT)	AZIMUTH	DIP
300	137	-66.0
600	134	-65.5
900	137	-66.0
1150	146	-66.0 **

** NOTE: Rock is magnetic - ignore azimuth.

Make it 137

APPENDIX C Diamond Drillhole Geochemistry and Assay Data

LAB NO	FIELD NUMBER	DRILL INTERVAL		Au	Nt Au	Ag	Cu	Zn	Pb	Cu(1)	Pb(1)	Zn(1)	Ag(1)	Ag(1)	Au(1)	Au(1)
		FROM (METRES) TO	PPB	GRAM	PPM	PPM	PPM	PPM	PPM	%	%	%	G/T	OZ/T	G/T	OZ/T
R0916024	TCU-09-12	902.00	907.00	<10	5	6.4	25	110	10							
R0916025	TCU-09-12	907.00	912.00	<10	5	6.4	26	104	14							
R0916026	TCU-09-12	912.00	917.00	82	5	1.6	332	349	197							
R0916027	TCU-09-12	917.00	923.50	64	5	7.3	373	E11300	2630	0.04	0.26	1.34	7.33	0.214	<0.069	<0.002
R0916028	TCU-09-12	923.50	926.50	458	5	18	E11200	E19800	2370	1.29	0.22	2.25	16.50	0.481	0.343	0.010
R0916029	TCU-09-12	926.50	931.00	1892	5	65.7	E30700	E58600	6870	2.70	0.62	4.90	67.00	1.954	1.782	0.052
R0916030	TCU-09-12	931.00	935.50	1270	5	41.2	E22700	E34000	5060	2.40	0.51	3.70	44.00	1.283	1.097	0.032
R0916031	TCU-09-12	935.50	940.00	38	5	1.2	1120	816	108							
R0916032	TCU-09-12	940.00	945.00	<10	5	6.4	128	114	19							
R0916033	TCU-09-12	945.00	950.00	<10	5	.4	84	84	20							
R0916034	TCU-09-12	950.00	955.00	<10	5	.4	86	115	12							
R0916035	TCU-09-12	955.00	960.00	<10	5	6.4	71	97	20							
R0916036	TCU-09-12	1014.50	1017.50	68	5	13.5	2140	341	50							

I=INSUFFICIENT SAMPLE X=SMALL SAMPLE E=EXCEEDS CALIBRATION C=BEING CHECKED R=REVISED
IF REQUESTED ANALYSES ARE NOT SHOWN RESULTS ARE TO FOLLOW

ANALYTICAL METHODS

- Au AQUA REGIA DECOMPOSITION / SOLVENT EXTRACTION / AAS
- Nt Au TWE WEIGHT OF SAMPLE TAKEN TO ANALYSE FOR GOLD (GEOCHEM)
- Ag AQUA REGIA DECOMPOSITION / AAS
- Cu AQUA REGIA DECOMPOSITION / AAS
- Zn AQUA REGIA DECOMPOSITION / AAS
- Pb AQUA REGIA DECOMPOSITION / AAS
- Cu(1) ASSAY
- Pb(1) ASSAY
- Zn(1) ASSAY
- Ag(1) FIRE ASSAY (LEAD COLLECTION /AA (LOW LEVEL) OR GRAY. FINISH (HIGH LEVEL)
- Ag(1) FIRE ASSAY (LEAD COLLECTION /AA (LOW LEVEL) OR GRAY. FINISH (HIGH LEVEL)
- Au(1) FIRE ASSAY (LEAD COLLECTION /AA (LOW LEVEL) OR GRAY. FINISH (HIGH LEVEL)
- Au(1) FIRE ASSAY (LEAD COLLECTION /AA (LOW LEVEL) OR GRAY. FINISH (HIGH LEVEL)




APPENDIX "D"

IN THE MATTER OF THE B.C. MINERAL ACT AND
IN THE MATTER OF DIAMOND DRILLING
CARRIED OUT ON THE TULSEQUAH PROPERTY
LOCATED IN THE ATLIN MINING DIVISION OF THE PROVINCE OF
BRITISH COLUMBIA - MORE PARTICULARLY N.T.S. 104K/11,12

A F F I D A V I T

I, RANDAL J. AULIS OF THE CITY OF VANCOUVER, IN THE PROVINCE OF BRITISH COLUMBIA,
MAKE OATH AND SAY:

1. THAT I AM EMPLOYED AS A GEOLOGIST BY COMINCO LTD AND AS SUCH HAVE A PERSONAL KNOWLEDGE OF THE FACTS TO WHICH I HEREINAFTER DEPOSE.
2. THAT ANNEXED HERETO AND MARKED AS "APPENDIX A" TO THIS REPORT IS A TRUE COPY OF EXPENDITURE OF A DIAMOND DRILLING PROGRAM CARRIED OUT ON THE TULSEQUAH PROPERTY.
3. THAT THE SAID EXPENDITURES WERE INCURRED BETWEEN THE 9th DAY OF JUNE 1989 AND THE 14th DAY OF OCTOBER 1989 FOR THE PURPOSE OF MINERAL EXPLORATION ON THE ABOVE NOTED PROPERTY.


RANDAL J. AULIS


APPENDIX "E"

STATEMENT OF QUALIFICATIONS

I, RANDAL J. AULIS OF THE CITY OF VANCOUVER, BRITISH COLUMBIA, HEREBY CERTIFY:

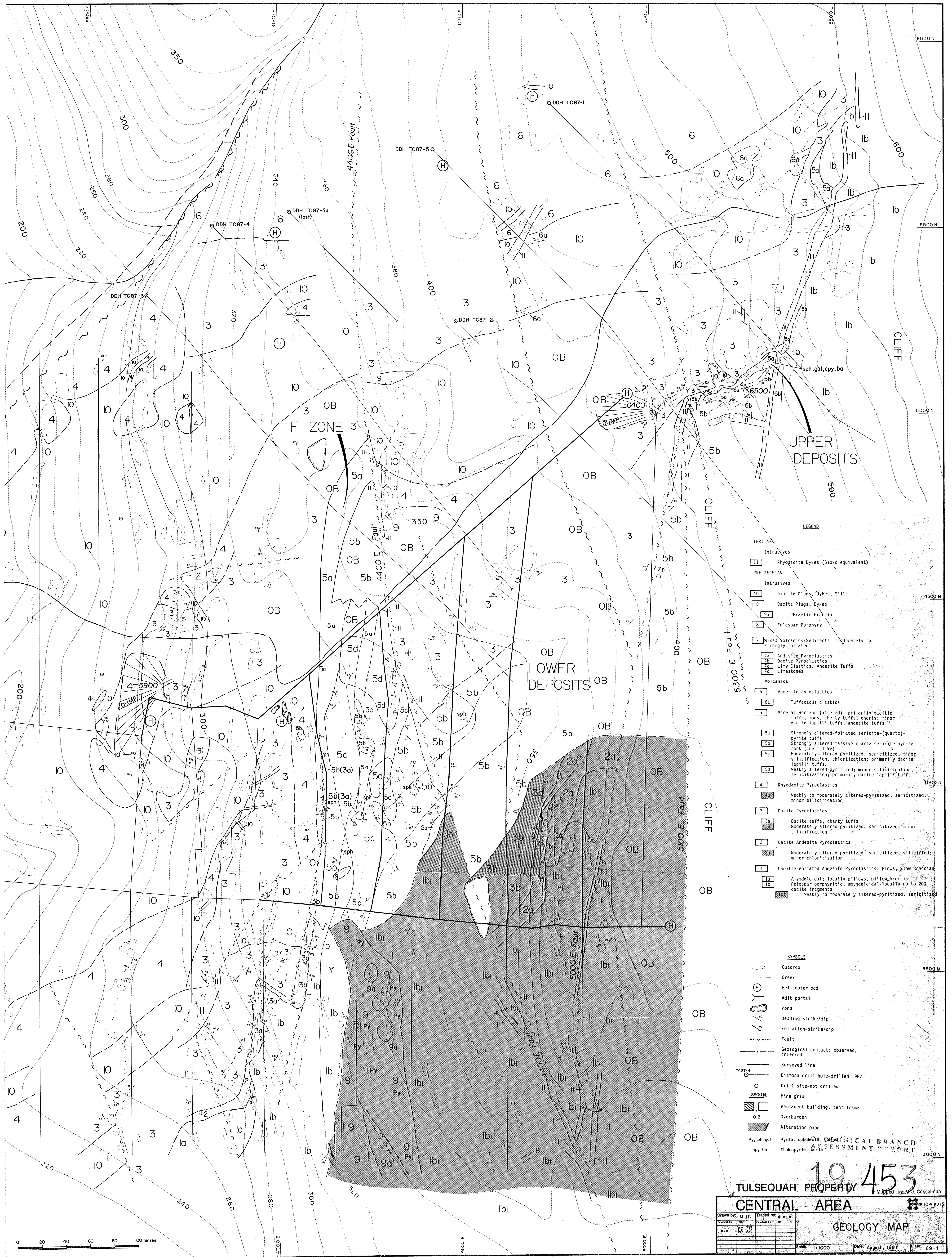
1. THAT I GRADUATED WITH A BSc DEGREE IN EARTH SCIENCES FROM THE UNIVERSITY OF WATERLOO IN 1986.
2. THAT I HAVE PRACTICED GEOLOGY WITH COMINCO LTD FROM 1986 TO PRESENT.
3. THAT I AM A GEOLOGIST WITH A BUSINESS ADDRESS AT 700-409 GRANVILLE STREET, VANCOUVER, B.C.

DATED THIS 5 DAY OF DECEMBER 1989 AT VANCOUVER, BRITISH COLUMBIA.



RANDAL J. AULIS





- LEGEND**
- TERTIARY**
- 11 Intrusives
 - 11b Rhodacite Dykes (Stoko equivalent)
 - PRE-PERMIAN**
 - Intrusives**
 - 10 Diorite Plugs, Dykes, Sills
 - 9 Dacite Plugs, Dykes
 - 9a Phraetitic breccia
 - 8 Feldspar Porphyry
 - 7 Mixed Volcanics/Sediments - moderately to strongly foliated
 - 7a Andesite Pyroclastics
 - 7b Dacite Pyroclastics
 - 7c Limy Clastics, Andesite Tuffs
 - 7d Limestones
 - Volcanics**
 - 6 Andesite Pyroclastics
 - 6a Tuffaceous clastics
 - 5 Mineral Horizon (altered) - primarily dacitic tuffs, muds, cherty tuffs, cherts; minor dacite lapilli tuffs, andesite tuffs
 - 5a Strongly altered-foliated sericite-(quartz)-pyrite tuffs
 - 5b Strongly altered-massive quartz-sericite-pyrite rock (chert-like)
 - 5c Moderately altered-pyritized, sericitized, minor silicification, chloritization; primarily dacite lapilli tuffs
 - 5d Weakly altered-pyritized; minor silicification, sericitization; primarily dacite lapilli tuffs
 - 4 Rhodacite Pyroclastics
 - 4a Weakly to moderately altered-pyritized, sericitized; minor silicification
 - 3 Dacite Pyroclastics
 - 3a Dacite tuffs, cherty tuffs
 - 3b Moderately altered-pyritized, sericitized; minor silicification
 - 2 Dacite Andesite Pyroclastics
 - 2a Moderately altered-pyritized, sericitized, silicified; minor chloritization
 - 1 Undifferentiated Andesite Pyroclastics, Flows, Flow Breccias
 - 1a Amygdaloidal; locally pillows, pillow breccias
 - 1b Feldspar porphyritic, amygdaloidal-locally up to 20% dacite fragments
 - 1b1 Weakly to moderately altered-pyritized, sericitized

- SYMBOLS**
- Outcrop
 - ⊕ Creek
 - ⊙ Helicopter pad
 - ⊕ Adit portal
 - Pond
 - ⊕ Bedding-strike/dip
 - ⊕ Foliation-strike/dip
 - ⊕ Fault
 - ⊕ Geological contact; observed, inferred
 - ⊕ Surveyed line
 - ⊕ Diamond drill hole-drilled 1987
 - ⊕ Drill site-not drilled
 - ⊕ Mine grid
 - ⊕ Permanent building, tent frame
 - ⊕ Overburden
 - ⊕ Alteration pipe
 - Py, sph, gal Pyrite, sphalerite, galena
 - cpy, ba Chalcopyrite, barite

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TULSEQUAH PROPERTY

Mapped by: M. J. Casselman

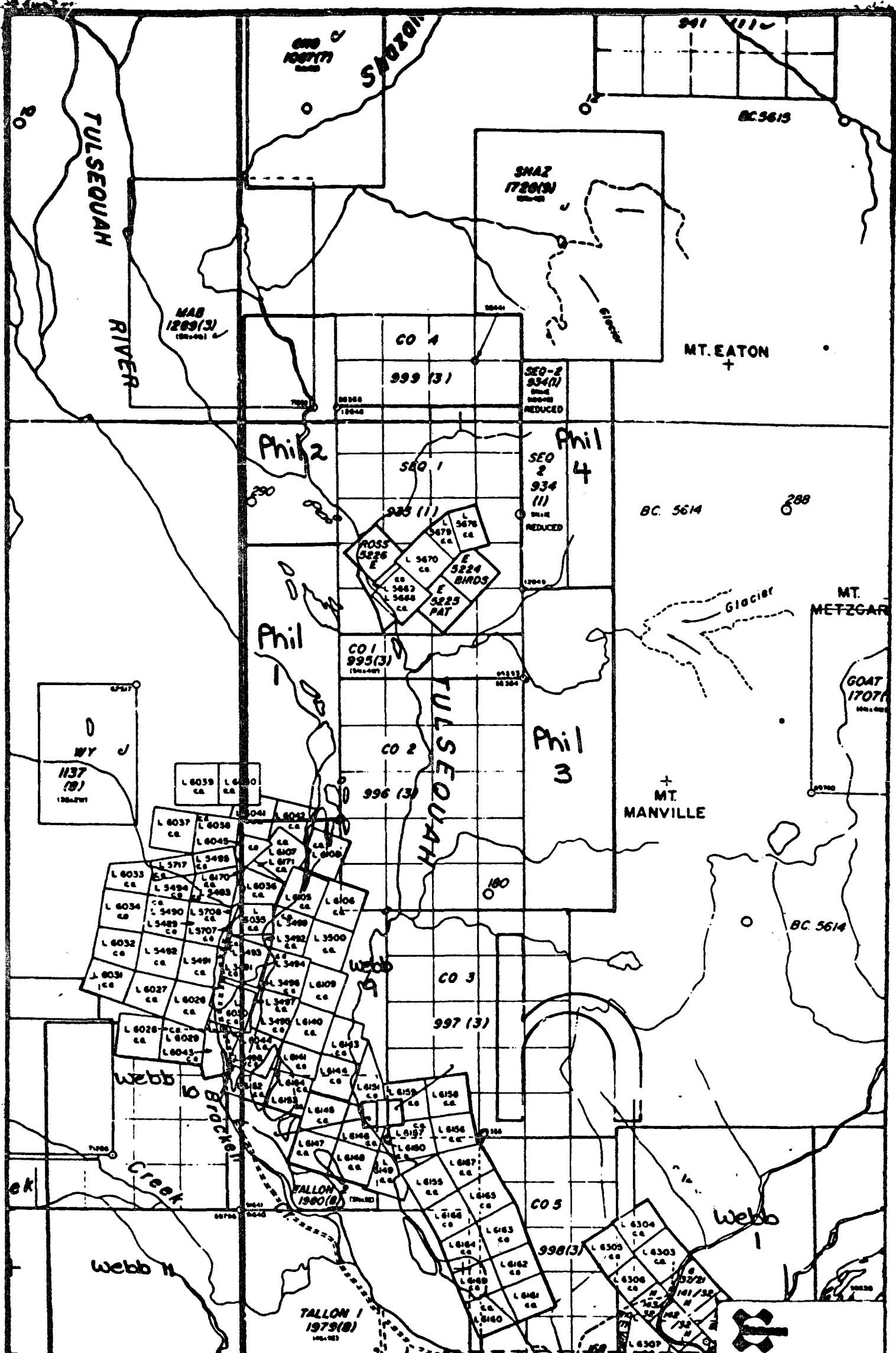
CENTRAL AREA

GEOLOGY MAP

Scale: 1:1000 Date: August, 1987

Drawn by: M.J.C. Traced by: G.M.S.
 Revised by: Date: Revised by: Date:
 M.J.C. G.M.S.
 M.J.C. G.M.S.

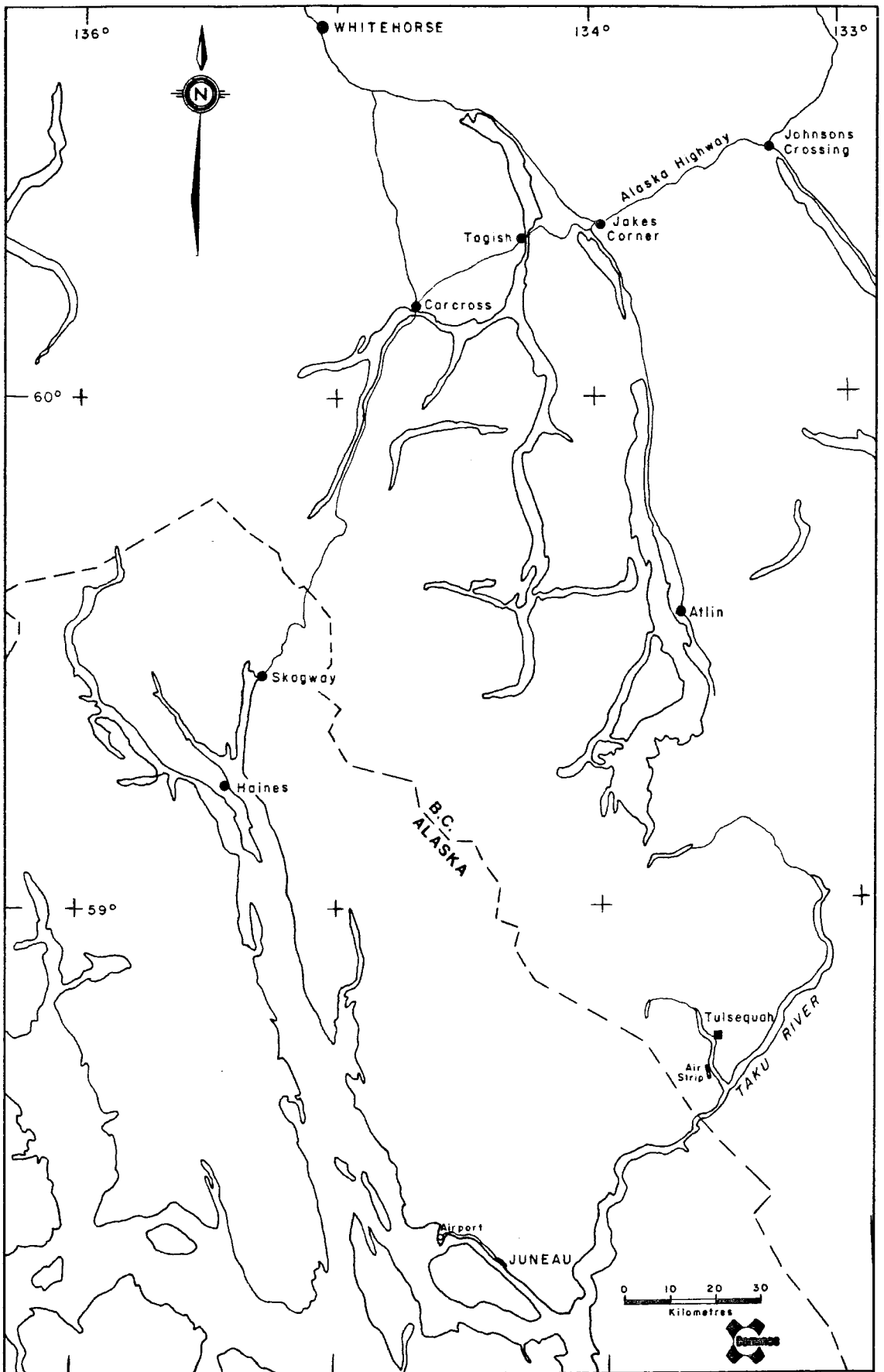
Scale: 1:1000 Date: August, 1987 Page: 89-1



Drawn by:	Traced by:
Revised by: _____	Revised by: _____
Date: _____	Date: _____

TULSEQUAH CHIEF PROPERTY CLAIM MAP

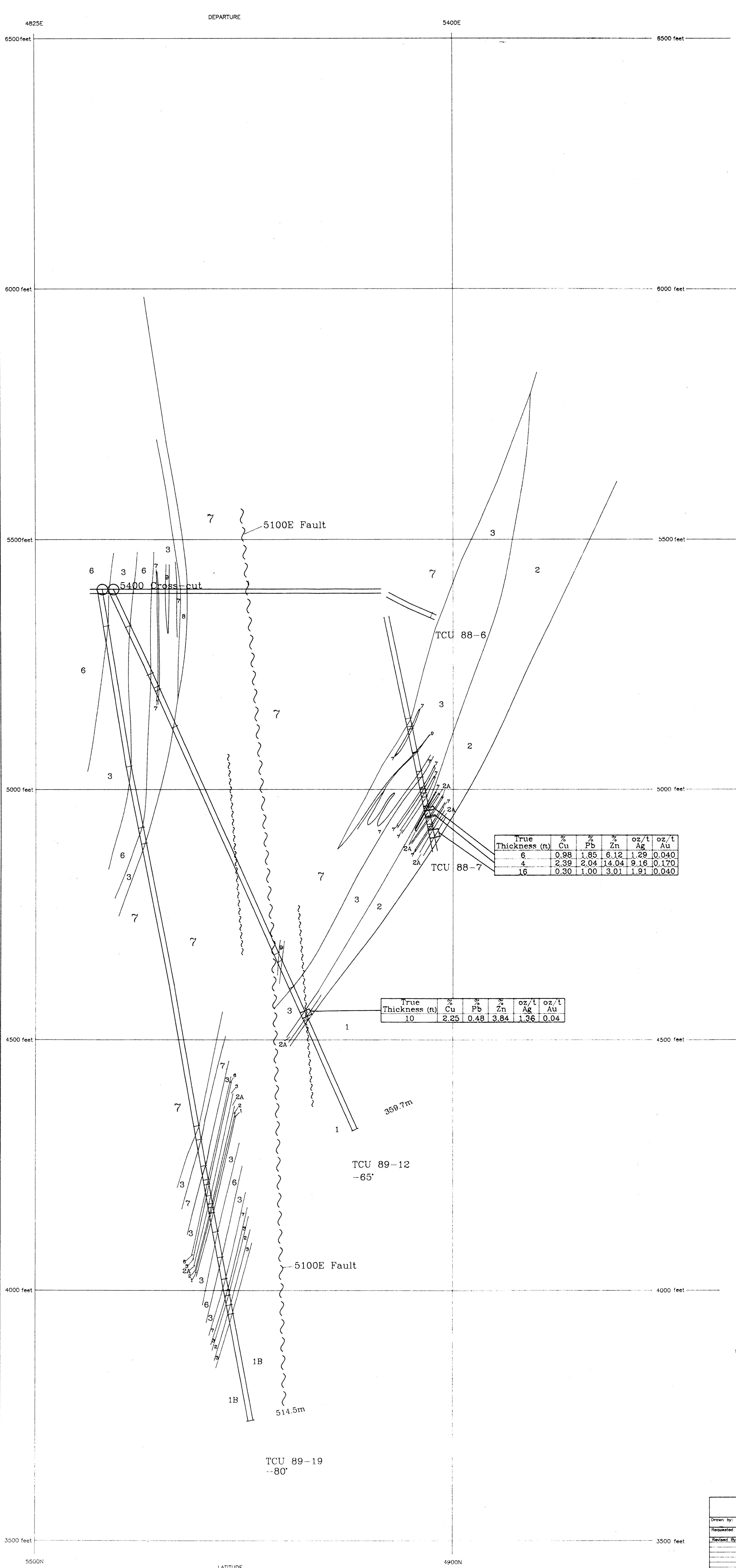
Scale: _____ Date: _____ Plate Figure 2



Drawn by: APR		Traced by:	
Revised by	Date	Revised by	Date

**LOCATION MAP
TULSEQUAH PROPERTY**

Scale: 1:1,000,000 Date: March, 1988 Plate: FIG. 1



LEGEND

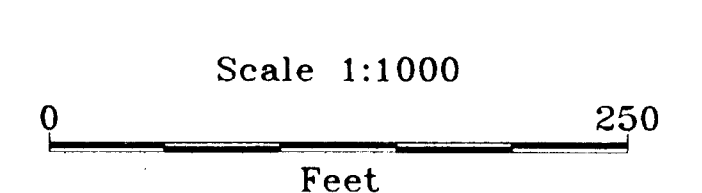
- TERTIARY**
- 9 Sloko rhyodacite dyke
- PRE-PERMIAN Intrusives**
- 8 Feldspar porphyry
- 7 Diorite plugs, dykes
- 6 Dacite plugs, dykes
- Volcanics, Sediments**
- 5 Mixed volcanics and sediments
- 4 Upper andesite pyroclastics, flows
- 3 Dacite lapilli tuff
- 3A altered and pyritized 1-5%
- 2 Mineral horizon- strongly altered, pyrite 5-80% dacite tuffs, muds, cherty tuffs, cherts and lapilli tuffs, minor cpy, sphal, gal, bar and gyp
- 2A sphal, gal, cpy, bar, gyp, Au and Ag
- 1 Andesite pyroclastics
- 1A Andesite flows, flow breccias
- 1B Altered- pyrite 5-25%

True Thickness (ft)	% Cu	% Pb	% Zn	oz/t Ag	oz/t Au
6	0.98	1.85	6.12	1.29	0.040
4	2.39	2.04	14.04	9.16	0.170
16	0.30	1.00	3.01	1.91	0.040

True Thickness (ft)	% Cu	% Pb	% Zn	oz/t Ag	oz/t Au
10	2.25	0.48	3.84	1.36	0.04

GEOLOGICAL BRANCH
ASSESSMENT REPORT

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TULSEQUAH CHIEF		
Drawn by: IBEX	Requested by: A. Roberts	
Revised By: A. Roberts	Date:	GEOLOGY TCU 89-12
Scale: 1"=83'	Date: Oct. 1989	Plate: 89-2