

LOG NO: *April 15/91* RD.

ACTION:

REPORT

FILE NO:

on the

HAIDA-CATSPAW PROPERTY  
STEWART GOLD CAMP AREA  
SKEENA MINING DIVISION, B.C.

LATITUDE 56 DEGREES 18 MINUTES NORTH  
LONGITUDE 130 DEGREES 06 MINUTES WEST  
MAP REFERENCE - N.T.S. 1048/8E

on behalf of

BIG I DEVELOPMENTS LTD.

by

JAMES W. McLEOD, B.Sc.

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

March 7, 1991  
Vancouver, British Columbia

**21,212**

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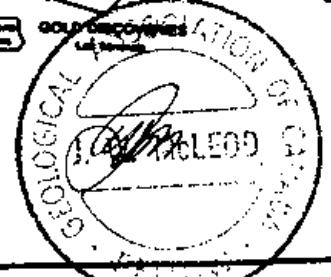
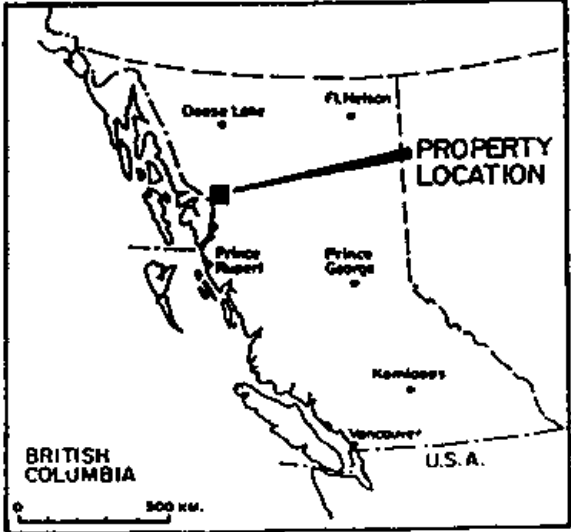
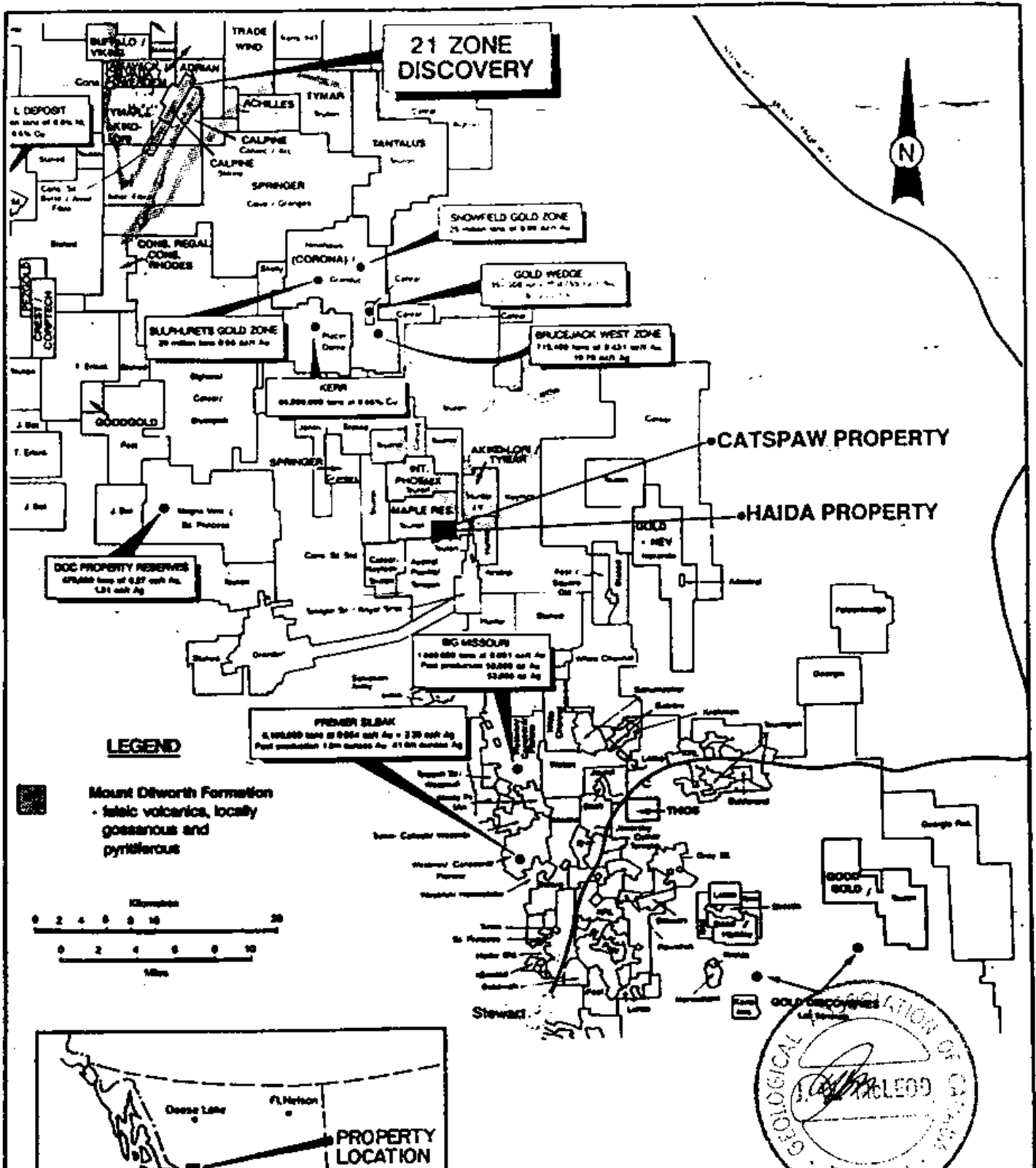
## SUMMARY

The exploration program performed on the Haida-Catspaw mineral claims during the summer of 1990 confirmed a number of occurrences of structurally controlled quartz-fissure (breccia) zones containing significant gold and silver values. All of the known precious metal-bearing showings, examined to date, appear related to E-W faults and/or contacts. Gold values were encountered which ran as high as 1.16 oz/t. and silver values which ran as high as 132 oz/t.

The geological setting is one of a thick sequence of upper Triassic to early Jurassic interbedded sediments and volcanics of the type, siltstones-tuffaceous flows, which are generally found striking northwesterly and dipping to the east on what may be the western-limb of a northerly-trending syncline. The magnetometer and VLF-EM data suggests an underlying northerly-trending structure. The mineralized zones are steeply dipping, 50 -80 degrees and could attain considerable depth.

The positive nature of the results obtained to date, including many anomalous geochemical results encourages the writer to recommend a diamond core drilling program and a continuing surface exploration program. The initial five hole drilling program is designed to test the continuity of mineralization to depth in two of the zones.

The initial drilling program is expected to take one month to complete at an estimated cost of \$98,000.00.



<b>BIG I DEVELOPMENTS LTD.</b>	
<b>CATSPA W - HAIDA CLAIMS LOCATION MAP</b>	
N.T.S. 104B-8E	SKEENA M.D., B.C.
SCALE: AS SHOWN	MAY 1990
FIG. 1	

## INTRODUCTION

The fieldwork program described in this report was conducted by the writer during July and August 1990 and includes rock exposure mapping, grid-line installation, VLF-EM and magnetometer surveys, rock trenching, sampling and a short diamond core drill hole. The data is plotted on 1:5,000 scale topographic maps of the property prepared from government aerial photographs.

The program was of a reconnaissance nature, designed to correlate some of the data collected previously by other parties on these two separate, although adjoining properties (Haida #1 mineral claim is enclosed by the Catspaw mineral claim).

Portions of the property still may not have been mapped or prospected because of the extremely rugged nature of some of the terrain.

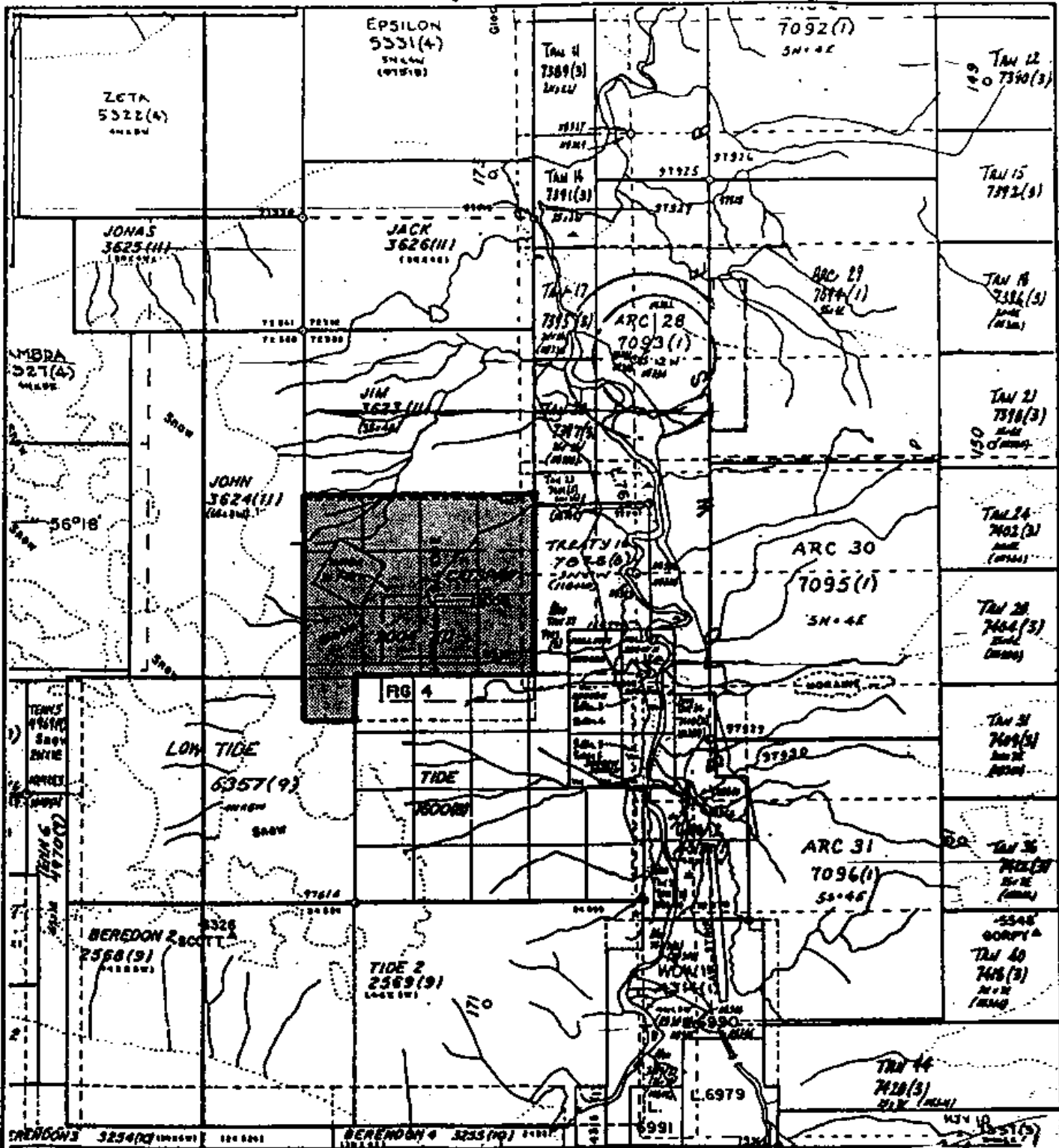
This report is being prepared at the request of the Board of Directors of Big I Developments Ltd. of Vancouver, British Columbia.

## LOCATION AND ACCESS

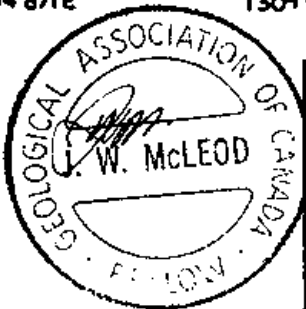
The property is located 40 kilometres north of British Columbia's most northerly coastal town of Stewart, B.C. in the northwestern part of the Province near the eastern International Boundary of the Alaska Panhandle.

Access, to within 2 kilometres of the property, is afforded by travelling by road for approximately 55 kilometres from Stewart, B.C. passing a number of historic sites. The drive begins by travelling through the Town of Hyder, Alaska and on through a southeastern portion of the Alaska Panhandle, back into British Columbia past the Premier Gold Mine, continuing past the terminus of the Salmon Glacier, through the Scottie Gold Mine Summit Lake Camp, continuing past the former site of the Granduc millsite, concentrator and portal of the famous 11 mile haulage tunnel and on to the Tide Lake airstrip. The Tide Lake strip is essentially the end of the road.

When the airstrip is open, normally during the summer and fall, access is provided to small charter fixed-wing and helicopter service. The writer transported the equipment, camp and supplies by truck and trailer from Vancouver to the airstrip. The camp service and support was provided by helicopter from the airstrip via a short (two kilometre) flight. In respect to many of the mining exploration prospects in the Stewart and Iskut-Stikine Camps, the Haida-Catspaw property has good access. At the south-end of the airstrip a road crosses the Bowser River and continues on for approximately 1.5 km. to the East Gold Mine from which a 2 km. long trail connects it with the Catspaw mineral claim.



TO SOUTH SEE MAP 1048/1E 130° 05'



<b>BIG I DEVELOPMENTS LTD.</b>		
<b>CATSPAW-HAIDA CLAIMS CLAIM MAP</b>		
N.T.S. 1048-8E		SKEENA M.D., B.C.
SCALE: 1:50,000	MAY 1990	FIG. 2

The writer has not walked the trail to the property but in the event more extensive property development becomes a consideration, road access is in place to within two kilometres of the property and the writer feels that property access could be developed without too much expense. The major difficulty in providing motor vehicle access to the property would be in bridging the Bowser River and that could possibly be a modest problem if a seasonal (portable) structure were used.

The property may be located on N.T.S. Map Sheet 104B/0E at latitude 56 degrees 18 minutes N. and longitude 130 degrees 06 minutes W.

**PROPERTY AND OWNERSHIP**

The Haida-Catspaw property consists of two mineral claims. The Haida #1 claim lies within the Catspaw claim (see Figure 2) which are listed as follows:

<u>Claim Name</u>	<u>No. of Units</u>	<u>Record No.</u>	<u>Anniversary Date</u>
Haida #1	1	31748	July 5, 1996
Catspaw	16	2004	January 9, 1996

The area of the property is 350 hectares (865 acres). The property is in the Skeena Mining Division, British Columbia.

The Haida #1 mineral claim is owned by Silver Standard Resources Inc. of 400 - 1199 West Hastings Street, Vancouver, B.C., V6E 3T5 and the Catspaw mineral claim is owned by Teuton Resources Corp. of 602 - 675 West Hastings Street, Vancouver, B.C., V6B 1N2. The claims are held under Option Agreements by Big I Developments Ltd. of 207 - 1318 56th Street, Delta, B.C., V4L 2A4.

**TOPOGRAPHICAL AND PHYSICAL ENVIRONMENT**

The property lies in rounded benched to steep mountainous glacial terrain in what is termed the Boundary Ranges of the Coast Mountains physiographic setting between the elevations of 660 metres (2165') and 1450 metres (4760') mean sea level. The general area valleys have a typical glacial U-shape with many of the tributaries to the larger water courses exhibiting a hanging valley profile.

The property is transected from southwest to northeast by an active (receding) glacial tongue of a portion of the Frank Mackie glacier to the centre of the property with the older valley created by the receding glacier providing present drainage to the northeast, into the Bowser River. Numerous small creeks with very steep gradients whose courses often appear to

be determined by the stratigraphic dip of the underlying bedrock affords drainage generally to the north and/or east and eventually into the Bowser River which flows north into Bowser Lake.

The biotic setting is Sub-Alpine which has undergone much recent and current glaciation. Sparse evergreen cover (often stunted and snow bent) occurs in places on the property below 1200 metres (4000') which in this location is timberline. Above this elevation grasses, mosses and lichen (and flowers) are predominant. Useable timber for underground exploration work exist in several places on the property. Water for drilling is available in many areas below 1200 metres on the property from snowpack run-off and nowhere on the property should adequate drilling water be a problem utilizing some piping and pumping.

The general area receives heavy precipitation >250 cm/year with very heavy snow fall in the range of 5-8 metres accumulating during the early fall to late spring. The exploration season on much of the property may last from June through October because of the open, generally southeasterly-facing nature of much of this particular property.

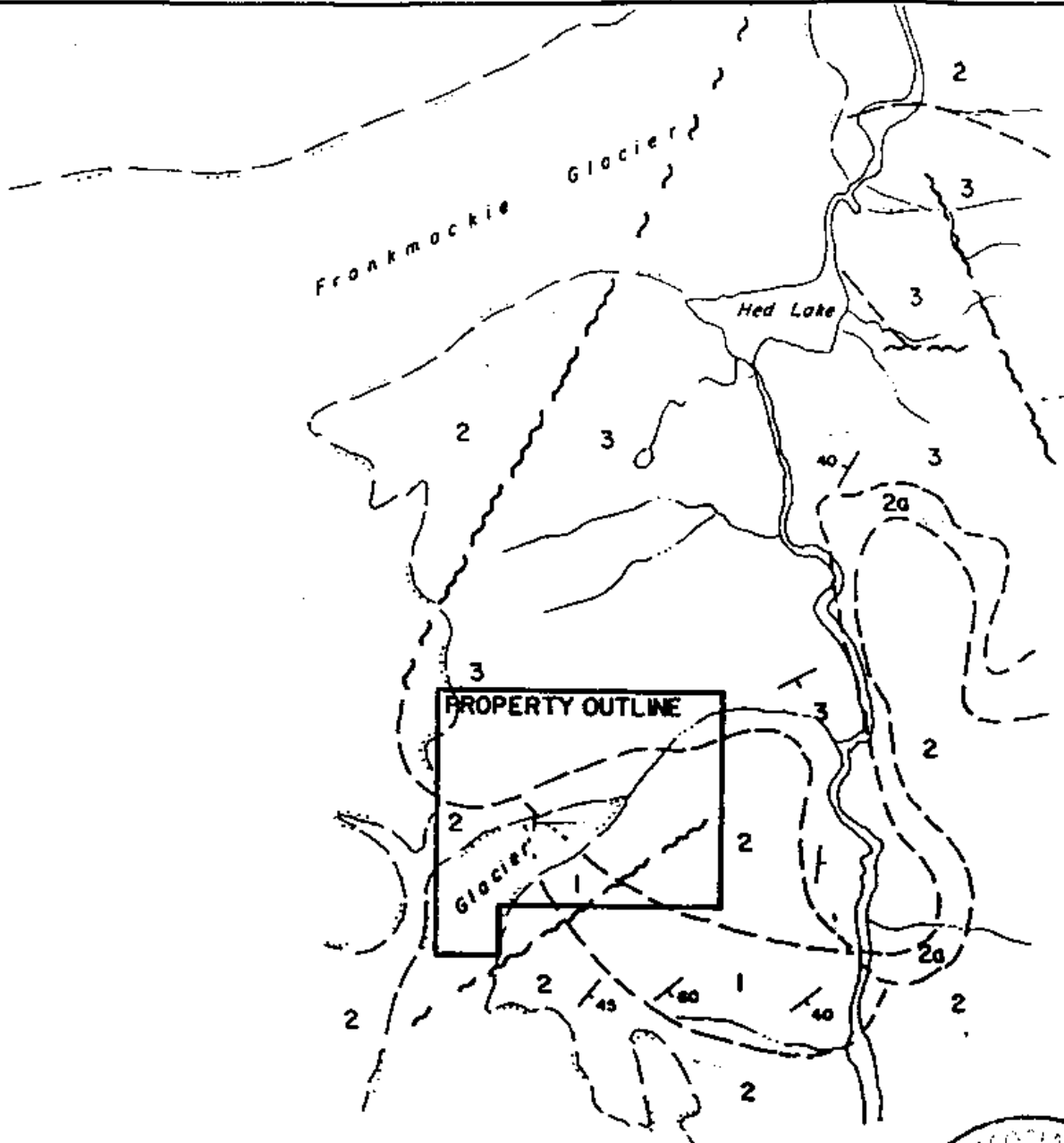
HISTORY

The property originally called the Tide Lake Portland Mine was staked in 1928 by Mr. Alphonse Thomas of Stewart, B.C. who remained the sole owner of the property for many years. The property was examined in 1939 by Premier Gold Mining Company who undertook surface stripping, open cuts and a 50 metre (162 foot) adit in 1940. The results of this work was evidently discouraging because of grade indications and the economic conditions of the time. Mr. Thomas maintained the claims for a number of years during which time further surface and short underground exploration was undertaken. Silver Standard Mines acquired the Haida #1 mineral claim in 1967. During 1980 Northair Mines Ltd. undertook a limited geochemical soil sampling program about the main surface and underground workings on the Haida #1 mineral claim.

Elan Exploration Ltd. of Calgary, Alberta staked the surrounding Catspaw mineral claim in 1980. During the period 1980-82 E & B Explorations of Calgary, Alberta performed some geological mapping, sampling and prospecting on the Catspaw claim. In 1983 Teuton Resources Corp. optioned the Catspaw claim which they optioned to Wedgewood Resources in 1987 at which time prospecting, rock trenching and sampling and a geochemical soil and/or rock sampling program was undertaken. Several zones of intense surface arsenic-gold mineralization were uncovered, subsequently trenched and sampled.

In 1990 Big I Developments Ltd. optioned both the Haida #1 and





**LEGEND**

- 1 Jurassic - metamorphics, schist, phyllite & semi schist, black argillite & siltstone
- 2 Lower Jurassic : Unuk River Fm., volcanic breccia (2a), conglomerate, greywacke, siltstone
- 3 Middle Jurassic : Salmon River Fm., siltstone, greywacke, argillite & conglomerate

After E.W. Grove (1964-1970)

- Geological contact
- ~~~~~ Fault
- Bedding
- Glacier or ice field

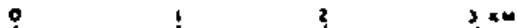


**BIG I DEVELOPMENTS LTD.**

**CATSPA W-HAIDA CLAIMS  
PROPERTY GEOLOGY**

N.T.S. 104B-8E

SKEENA M.D., B.C.



SCALE : 1:50,000

FIG. 3

Catspaw mineral claims and performed the present program during the summer of 1990.

## REGIONAL GEOLOGY

The general area occurs between the eastern margin of the Coast Plutonic Complex and the western boundary of the Bowser Basin. The Bowser Basin is described as a tectonic basin bounded by the Cassiar Crystalline Belt on the north and east and the Coast Crystalline Belt (Complex) on the west. This border area between the Coast Plutonic Complex and the Bowser Basin is underlain by deformed sediments, volcanics and metamorphic rocks which comprise the Stewart Complex. The Stewart Complex extends from the Alice Arm area south of Stewart, B.C. to the Iskut River area. In our general area of interest the underlying rocks have been assigned to the upper Triassic to lower Jurassic Hazelton Group and the middle Jurassic Spatsizi Group. In this area the Hazelton Group has been subdivided into three formations and the Spatsizi Group comprised of one formation which are listed from oldest to youngest as follows:

a) Hazelton Group: 1) Unuk River Formation, 2) Betty Creek Formation and 3) Mount Dillworth Formation.

b) Spatsizi Group: 1) Salmon River Formation.

The following synopsis is derived from works on the area by Grove, E.W., 1971 and 1986 and Alldrick, D.J., 1987 for the British Columbia Ministry of Mines and Petroleum Resources and from other property reports and publications (see References).

a) Hazelton Group:

1) Unuk River Formation:

The Unuk River Formation of upper Triassic to lower Jurassic age is thought to have formed in an island arc setting to shallow-water marine environment with alternating periods of submergence-emergence with siltstone markers (Alldrick) bracketing periods of emergence and predominantly sub-aerial epiclastic and volcanoclastic accumulations. This style of deposition could evolve behind an island arc with the siltstone deposition marking relatively short periods of volcanic quiescence. The direction of sediment transport appears to be from an offshore topographic high toward the east. Grove (1987) divided the Unuk into the lower, middle and upper members with intervening (dividing) unconformities. Alldrick made seven sub-divisions of the Unuk River Formation on lithological distinctions often with an upper and lower bracketing siltstone unit marking a change of depositional character. The Unuk River Formation of interbedded sediments and volcanics can generally be divided into a lower sedimentary and upper volcanic sequence.

In this area the upper and lower sequences appear to form a continuous depositional period although erosional periods may have existed and as yet remain unrecognized. The formation is thought to be in excess of 2,000 metres in thickness. This formation has been characterized as the "Andesitic Sequence".

## 2) Betty Creek Formation:

This early Jurassic unit unconformably (angular) overlies the Unuk River Formation and although similar lithologically it is markedly more epiclastic. The basal dacite member attains 1200 metres in thickness and is seen to be laterally traceable for 170 km. from Alice Arm in the south to the Iskut River valley in the north (Grove, E.W., 1987). The upper sedimentary member is composed of a series of conglomerates, sandstones and siltstones. It is thought that the sediment comprising this unit is locally derived. This is a trough-filling formation which has been termed the "Epiclastic Sequence".

## 3) Mount Dillworth Formation:

This early Jurassic felsic volcanic unit, although relatively thin has considerable areal extent with marked lateral compositional and facies variation hence its distinctiveness as a regional facies marker. Added is the distinction of being intimately associated with a major precious-base discovery (possibly a Kuroko-type of mineral occurrence) at Eskay creek 48 km. northwest of the property. The Mount Dillworth formation has been divided into six members which from oldest to youngest are the basal pumice, massive aphanitic dust (lithic) tuff, welded ash flow tuff, silaceous lapilli (breccia) tuff, a relatively thick black tuff - carbonaceous crystal, lithic lapilli tuff and the upper most pyritic felsic tuff which have been observed to contain normal to bedding fumarolic, pyrite encrusted vents. This formation is characterized as the "Felsic Volcanic Sequence".

## b) Spatsizi Group:

### 1) Salmon River Formation:

This early to middle Jurassic unit is described as disconformably overlying the Betty Creek and Mount Dillworth Formations and unconformably overlying the Unuk River Formation. The essentially sedimentary unit is seen to be comprised of siltstone, greywacke, sandstone, minor limestone, argillite and conglomerate, volcanic sediments and flows exhibiting lithologic uniformity, distinctive bedding and complex fold patterns. The appearance of the formation displays a trend of subsidence from coarser clastic sedimentation of sandstones and turbidites to siltstone units. The formation is described as being in excess of 1,000 metres in thickness and has been termed the "Siltstone Sequence".

### Intrusive Rocks:

The sedimentary, volcanic and metamorphic rocks of the general area have been effected several times by intrusive events. The following generalizations are made:

a) The larger intrusive bodies as described on the westside of the Stewart Complex area are more or less of a granodiorite composition which is maintained in the overlying generally andesitic volcanic pile. The Hyder Pluton is more quartz monzonite to granodiorite in composition and this area also hosts numerous quartz-sulphide mineral occurrences which are more anomalous to this area.

b) Two major intrusive events appear to have most effected the general area; late Triassic (210-195 million years) - Texas Creek granodiorite, Premier porphyry, Summit Lake granodiorite, 'Mill Porphyry' at the Scottie Gold Mine. The other are Tertiary (Eocene) granodiorites (approx. 50 million years) - Boundary granodiorite, Hyder quartz monzonite and various crosscutting? dyke swarms in both the southwest and northwest side of the Stewart Complex.

The following table is derived from (Alldick, D.J., 1985) to illustrate a possible general geological history of the area:

Age (million years)	Event
Eocene (approx. 50 Ma)	Formation of argentiferous vein deposits and spatially associated molybdenum and tungsten deposits.
Eocene (50 Ma)	Intrusion of Hyder quartz monzonite and Boundary granodiorite stocks.
Eocene (approx. 50 Ma)	Crustal extension and intrusion of major dyke swarms.
?	Deformation, north-trending fold axis.
Lower Jurassic (approx. 180 Ma)	Marine transgression, onset of sedimentation. Spatsizi Group - Salmon River Formation. "Siltstone Sequence".
Early Jurassic (approx. 180 Ma?)	Formation of gold-silver deposits. Haida-Catspaw mineralization?
Early Jurassic (approx. 180 Ma)	Felsic volcanism, predominantly subaerial. Hazelton Group - Mount Dillworth Formation. "Felsic Volcanic Sequence".
Early Jurassic	Deposition of epiclastic sediments and

- (190 Ma) interbedded dacitic tuffs and flows. Betty Creek Formation. "Epiclastic Sequence".
- Early Jurassic to late Triassic (approx. 200 Ma) Emplacement of Premier porphyry dykes and flows.
- Late Triassic (210 Ma) Intrusion of Texas Creek granodiorite and Summit Lake granodiorite stocks.
- Early Jurassic to late Triassic (200-230 Ma) Andesitic volcanic activity; predominantly subaerial, with two periods of marine transgression (subsidence?). Unuk River Formation. "Andesitic Sequence".

Note the implication that the Texas Creek granodiorite and related intrusions as described are integral to the "Andesitic Sequence" and not part of the Coast Plutonic Complex.

Note: Figure 3 - Property Geology is after E.W. Grove (1964-70).

**LOCAL GEOLOGY**

The Haida-Catspaw property is underlain by interbedded sediments, volcanics and metamorphic rocks of the Hazelton Group which have been assigned to the late Triassic - early Jurassic Unuk River Formation. Several intrusive rock occurrences are observed crosscutting the stratigraphic units and expressed by alteration generally as quartz-epidote-calcite-sericite with minor skarn and minor hornfels occurrences. Mineralization is found to occur most often with quartz; as crosscutting veins or siliceous zones on the southeast portion of the property and what may be a contact related occurrence at the Haida (Premier Adit) zone. Several replacement skarn massive sulphide occurrences were observed at various locations throughout the property. One massive sulphide showing occurs in a black siltstone approximately 150 metres northeast of Camp #2. The mineralization observed was as pyrite, pyrrhotite, arsenopyrite, black iron-rich sphalerite, chalcopyrite and galena with some accompanying gold and silver values up to 1.160 oz/t. and 132.0 oz/t., respectively.

The interbedded sediments and volcanics exhibit local variations in dip, but generally are found dipping easterly with a northerly strike (on the western-limb of a northerly trending syncline?). The best view of this is looking south from the vicinity of the Haida workings toward the southeast at the rock exposures on the southside of the Thomas Gulch, where a small-tongue of the Frank Mackie glacier is presently receding, where the freshly-scoured bedrock offers a good view of the relatively thick stratigraphic section ie. at least 1000 metres?

Some of the rock exposures on the southeast-side of the property, immediately east and north of Camp #1 are seen to be a very fine grained grey mica schist and very fine grained, greenish andesitic? volcanic (which may be dykes) both of which are observed in places to vary to a rusty quartz-sericite schist near E-W trending shear or fault zones. This quartz-sericite zone apparently trends from the East Gold Mine which is immediately southeast of the claim area. These east-west zones may be epithermal "feeders" from the underlying intrusive source as indicated by the anomalous values in arsenic, cadmium, antimony, copper, gold and silver and sometimes lead and zinc.

As we proceed to the west from Camp #1 the rock exposures are seen to be a stratigraphic sediment-volcanic succession with a northerly striking easterly dipping trend. The sediments are mainly aphanitic black siltstone, locally varying to shales and rarely slates, which may be a contact metamorphic effect as opposed to an original textural difference; occasional fine grained, grey coloured sandstone which can exhibit micro-structures such as, graded bedding, flute casts and ripple markings; rarely limestone lenses within the siltstone which in one location at L2N - 8+75W was altered to a mottled brown-green (garnet-pyroxene?) skarn, this is very close to an exposure of medium grained, greyish feldspar-hornblende-pyroxene phyric quartz diorite or granodiorite observed at L3N - 8+00 to 8+75W. East and south of Camp #1 are a number of occurrences of a one metre wide dyke which is discordant to the bedded rocks and trends -75 degree to vertical toward the west within the range N250 - N265 degrees. This dyke is light grey to greenish in colour, white feldspar phyric to 1.0 - 1.5 mm. in an aphanitic groundmass which can exhibit chilled margins and "scabbing" of the enclosing wallrock i.e. containing elongate, stretched, sub-angular siltstone particles parallel to the walls. Dykes with this orientation in this area may be of Tertiary age. This same dyke material may occur near the east-west fault areas north of Camp #1, although these may actually be remnants of bedded andesitic volcanic rocks.

The northwestern portion of the property, the Camp #2 (Haida) area is seen to be underlain by a sediment-volcanic sequence that has some similarities of rock types to the southeastern portion of the property. The sequence of rock exposures from south of the Premier adit toward the north i.e. from oldest to youngest? are aphanitic banded tuff approximately 50 metres southeast of the entrance of the Premier adit, some of the darker layers of this tuffaceous rock are observed to contain disseminated pyrite. The area between this rock exposure and the Premier adit is occupied by a fine grained greenish-grey, white feldspar phyric crystalline rock with a color index (CI) of 15-20. The mafic mineral(s) are approximately 0.2 mm. in length and the feldspar phenocrysts are 2 mm. in length. The less altered rock contains about 10% quartz (primary?), but as the adit area and Alphonse creek is approached, the rock is highly

brecciated, often containing angular argillite fragments and extensively quartz-welded. Alphonse creek appears to roughly follow the shear-contact at N290 degrees which is also found to dip 80 degrees to the south-southwest near the Premier adit. On the north-fork of Alphonse creek at elevation 1110 m. the fine grained laminated rocks exhibit slump folding of 2 cm. wide layers which are bounded by parallel non-folded layers. At the top of Alphonse creek (where the stream ceases to run on the surface) at approximately 1200 m. elevation is glacial till boundary which roughly occurs in a northerly direction from this point marking a crude bench effect from west to east which probably marks some previous glacial course toward the northeast.

The interlayered sediments and volcanics continue to the northern boundary of the Catspaw mineral claim and generally exhibit northwesterly strike and eastward dip except at the extreme northern boundary where the stratigraphy strikes northeasterly and dips to the southeast. This could indicate a syncline whose axis plunges to the northeast? Also along the northern boundary of the claim near the northwest corner a vertical fault zone (crushed gougy material containing abundant calcite) is observed trending N015 degrees. This is a similar trend to a fracture zone or fault observed between the north and south forks of Alphonse creek at elevation 1150 m. (see Figure 9).

There is a strong east-west trend of fracture or fault zones observed throughout the areas of the property examined to date. These zones often crosscut the stratigraphic sections and in some instances occurs sub-parallel to the strike of the units while crosscutting the bedding i.e. at the Premier adit area on the Haida claim. The overall cause of this structural style is not known although they may be tension fractures related to the development of some larger form such as a synclinal structure trending to the northwest along the Bowser River valley. These east-west structures appear to be a focus of hydrothermal alteration and the accompanying mineralization.

#### ALTERATION AND MINERALIZATION

The alteration minerals observed by the writer in order of decreasing abundance are; quartz, sericite, calcite, epidote and chlorite. A small garnet-pyroxene skarn zone is developed by contact metamorphism of a limey section within the stratigraphic sequence by a nearby igneous intrusive. Throughout parts of the southeastern portion of the property are a number of occurrences of a strongly indurated rocks which are termed by the writer to be hornfelsed. These occurrences are thought to be caused by a fairly close-at-hand igneous intrusive which has "crackled" (tight blocky fracture) and hardened the fine grained volcanics and locally changed the mudrocks to slates. The alteration products with which we are most concerned from the economic

mineralization point of view are quartz-sericite.

Mineralization noted on the property generally occurs as two types; the first is disseminated to massive replacements? in selected stratigraphic horizons by iron sulphides (pyrite) and the second and most important to us are the structurally controlled quartz fissure-veins often accompanied by sericite and observed to contain the following mineralization in order of decreasing abundance: pyrite, pyrrhotite, arsenopyrite, orpiment? - a yellow coloured arsenic sulphide which may be an alteration product of arsenopyrite?, chalcopyrite, galena and dark-brown coloured sphalerite. Much rusty iron staining is evident in the more highly fractured and mineralized areas, as well as, black manganese oxide veneer-staining in some of the same areas. While stibnite has not been identified it may be present in the galena and could account for the high antimony and possibly silver values encountered. The precious metal values (gold and silver) are most abundant in the sulphide-bearing quartz-fissure zones. Gold values from a previous soil/rock fragment survey have been found in anomalous areas to range from 0.003 to 0.13 oz/t., while the writer has sampled a number of mineralized bedrock occurrences which have returned values ranging from 0.012 to 1.16 oz/t. gold and up to 132.0 oz/t. silver.

#### PRESENT WORK PROGRAM

The present work program was conducted by the writer during the months of July and August 1990. The equipment and supplies for the two camps was transported by truck and trailer from Vancouver, B.C. to the Tide Lake airstrip. From here the material and personnel were transported the 3-4 km. by helicopter to the two camps, one in the southeast corner of the property and the other in the northwest portion of the property. Tent camps were established on fairly level ground near good running water.

The program began with a general reconnaissance in both areas. Two grids were established to tie-in with known mineralized zones. In the Camp (C2) area several days were spent cutting-out a 300 metre long trail to the Premier adit area because of the rough terrain (see Figure 9). A total of 0.4 km. of baseline and 6.0 km. of gridline were installed (see Figures 4-9).

A total of 6 km. of VLF-EM survey was completed utilizing a Geonics EM-16, serial no. 89 was completed with line-spacing of 50 metres and a station interval of 25 metres. The survey includes reading of the in-phase and quadrature-phase components of the vertical magnetic field as a percentage of the horizontal primary field from the fixed signal transmitters at both Seattle, Washington, USA (NLK) - frequency 17.8 kHz. and Cutler, Maine, USA (NAA) - frequency 24.8 kHz. The in-phase data was



Fraser filtered and plotted with the quadrature data in profile form (see Figures 4-7, inclusive).

A total of 5 km. of magnetometer survey was completed utilizing a Geonics - Model G-100 instrument with serial no. M 101 using a line-spacing of 50 metres and a station interval of 25 metres (see Figure 8).

Two zones in the southeastern (Camp #1) area underwent a trenching program using a gasoline operated Pioneer rock drill and dynamite which are listed as follows: (see Figure 9)

a) Location: 38650N - 32675E; volume - 58 cubic metres.

b) Location: 36400N - 32400E; volume - 40 cubic metres.

Total            98 cubic metres

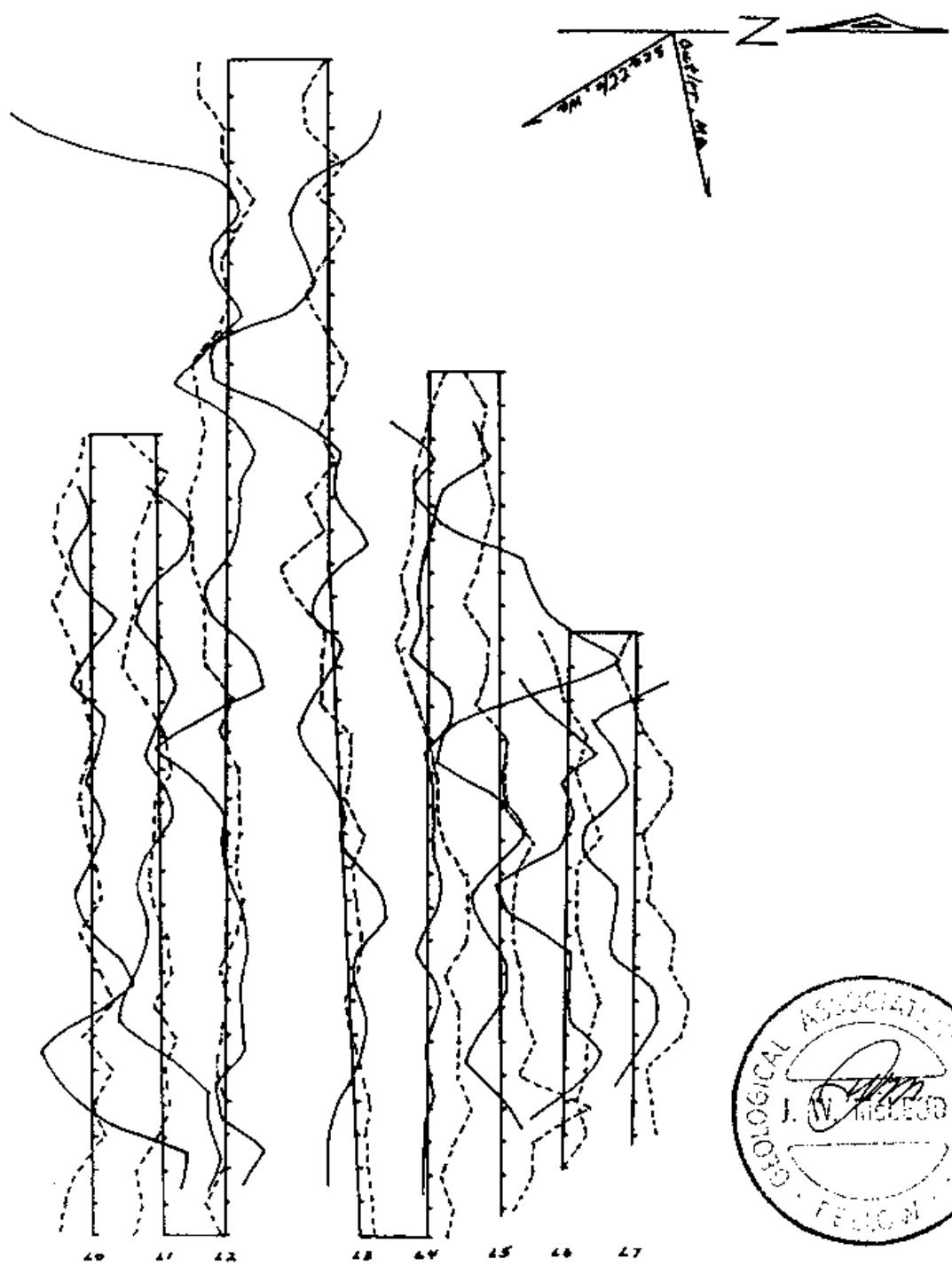
An XRP manual-feed diamond core hole was drilled a total of 17.7 m. (58') using a JKS-Boyles - 4M Packsack drill. The core was logged (see Appendices) and several sections were cut longitudinally using a diamond saw (see Figures 10 and 11).

A total of 44 samples, including 6 core samples and 38 rock samples were bagged and sent to the Eco-Tech Laboratories Ltd. in Kamloops, B.C. where they were dry crushed to -10 mesh, a 250 gm. split was then ring pulverized to -140 mesh. The -140 mesh fractions were then subjected to aqua regia digestion and multi-element induction coupled plasma analyses (ICP) and/or wet chemical digestion and atomic absorption (AA) analyses and/or fire assay and AA analyses. Three samples found to assay > 6 gm. of gold underwent coarse and metallic gold assays which includes the +140 mesh fraction (see Appendices).

Two areas of the property underwent reconnaissance rock exposure mapping and this information was plotted on a 1:5,000 scale base map (see Figure 9).

## CONCLUSIONS

The two areas of the property which have undergone past and current exploration programs have revealed a number of areas of interest. These anomalous areas were, of the main part, previously discovered, but by no means should they be considered to totally represent the entire surface mineralization of the property. A large portion of the property (at least 30% in the northeast quadrant) remains to be explored and a considerable number of geochemical anomalies from a previous work program have yet to be checked-out. There are also considerable rock exposures and a great view through the stratigraphic section along both sides of Thomas Gulch which for the most part would have to be checked-out by a crew well versed in rock climbing. In this same area any water courses (and they are abundant)



LEGEND

- / - In-phase (Fischer Filtered)
- - - - - Quadrature

Vertical Scale  
 +10%  
 0  
 -10%

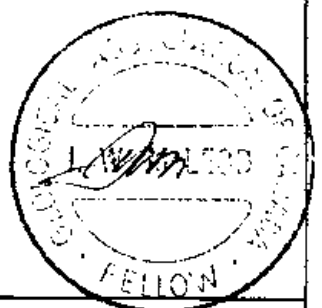
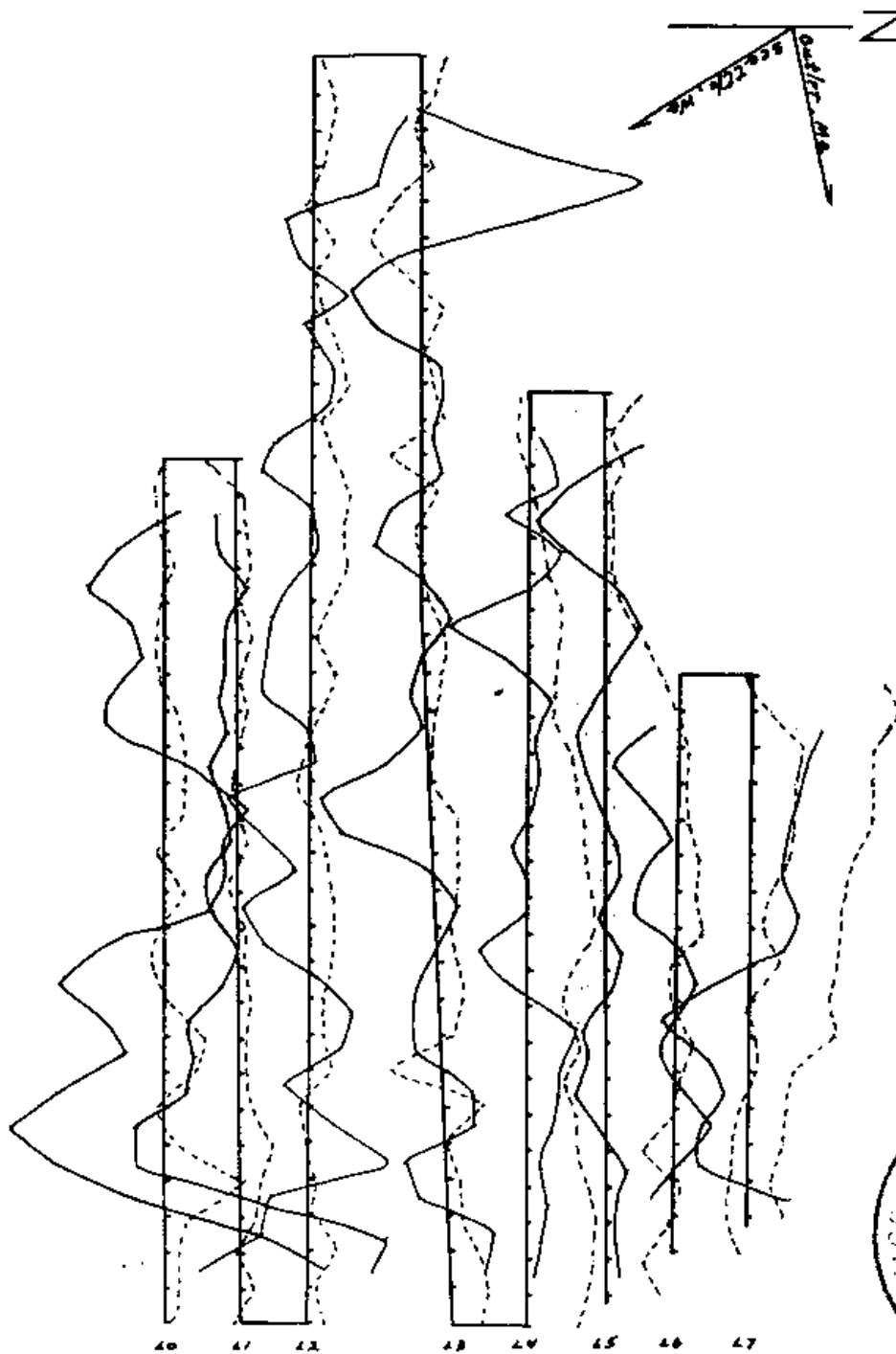
0 100 200  
 Metres  
 Scale - 1:5,000

BIG I DEVELOPMENTS LTD.  
 Haida-Catapaw Property  
 VLF-EM DATA  
 Cutler Transmitter

Skeena Mining Division, B.C.  
 NTS: 104B/1BE

Figure: 4

JWM 1990-91



LEGEND

- In-phase (Fraser Filtered)
- Quadrature

+10%  
0  
-10%  
-Vertical Scale

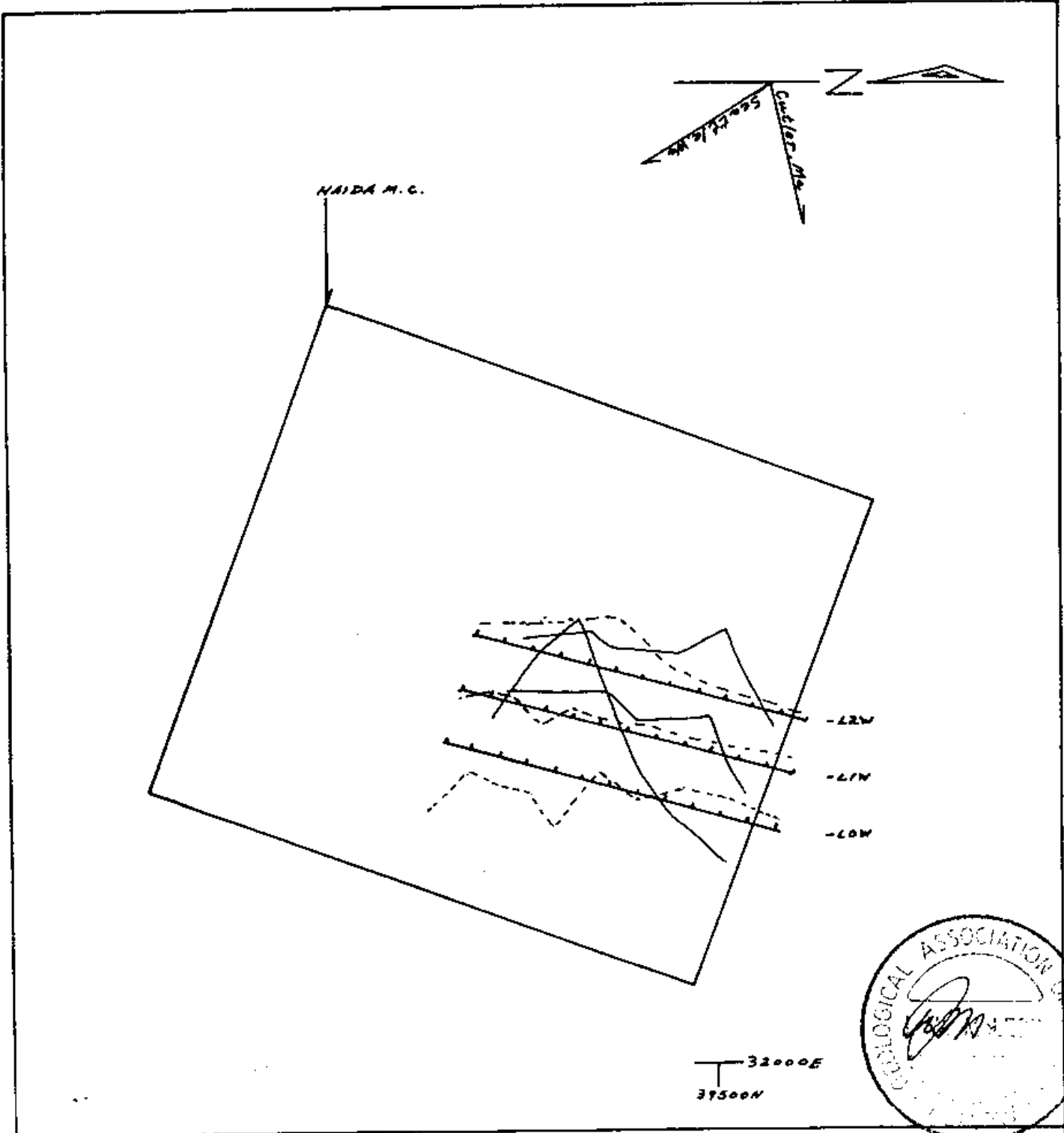
0 100 200  
Metres  
Scale - 1:5,000

BIG I DEVELOPMENTS LTD.  
Haida-Catspaw Property  
VLF-EM DATA -  
Seattle Transmitter

Skeena Mining Division, B.C.  
NTS: 104B19E

Figure: 5

JWA 1990-91



LEGEND

- / - In-phase (Fraser Filtered)
- - - - - Quadrature

$\pm 10\%$   
 0  
 $-10\%$   
 - Vertical Scale

0      100      200  
 metres  
 Scale - 1:5,000

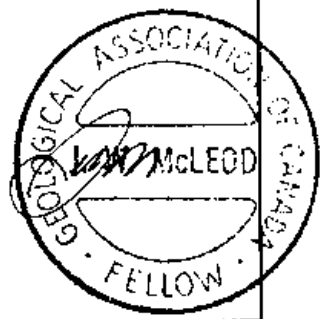
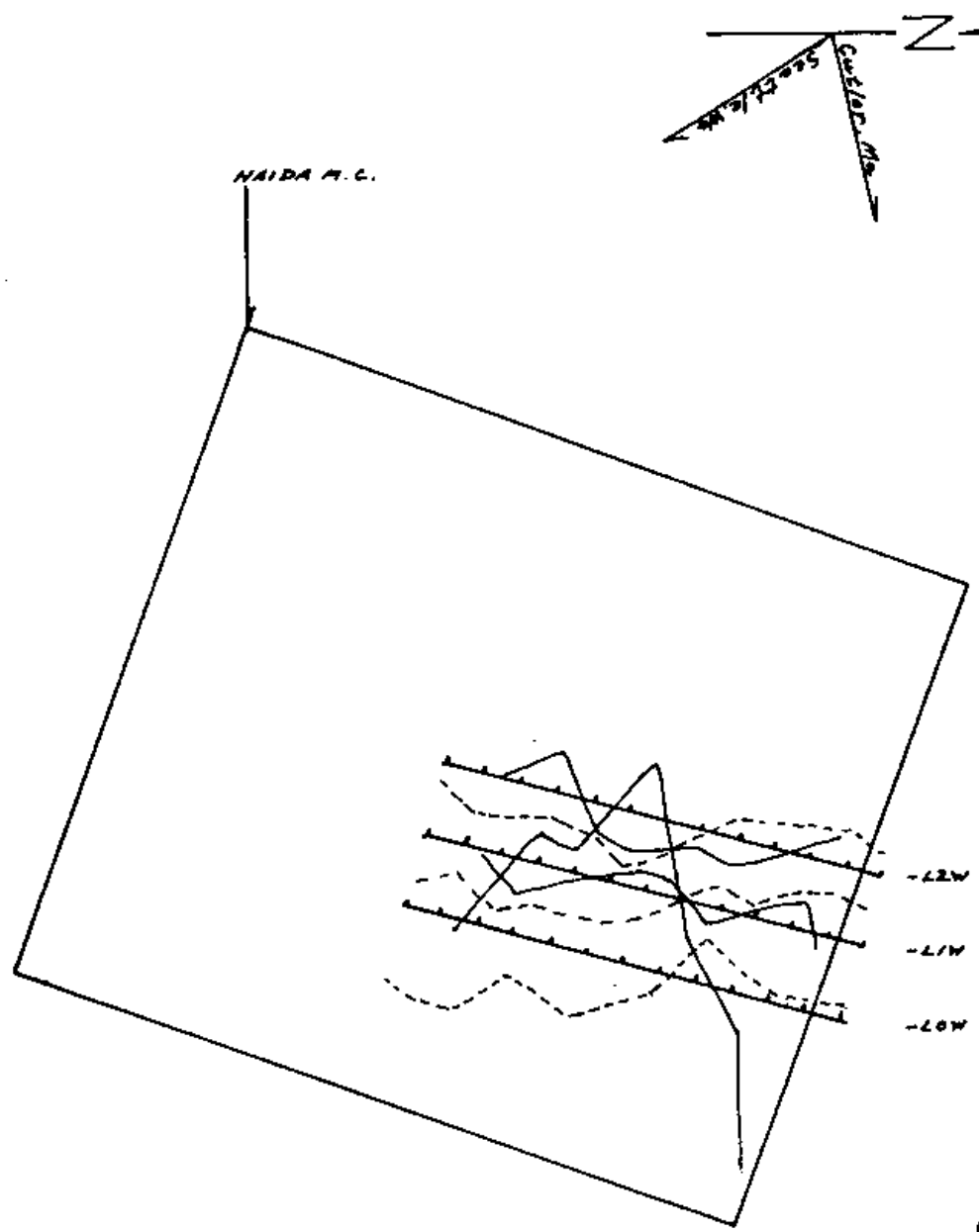
BIG I DEVELOPMENTS LTD.  
 Haida-Catspaw Property  
 VLF-EM DATA  
 CUTLER TRANSMITTER

Skeena Mining Division, B.C.  
 NTS: 104 B 18E

Figure: 6

JWM 1990-91





LEGEND

- / - In-phase (Fraser Filtered)
- - - - - Quadrature

Vertical Scale  
 0  
 -10%

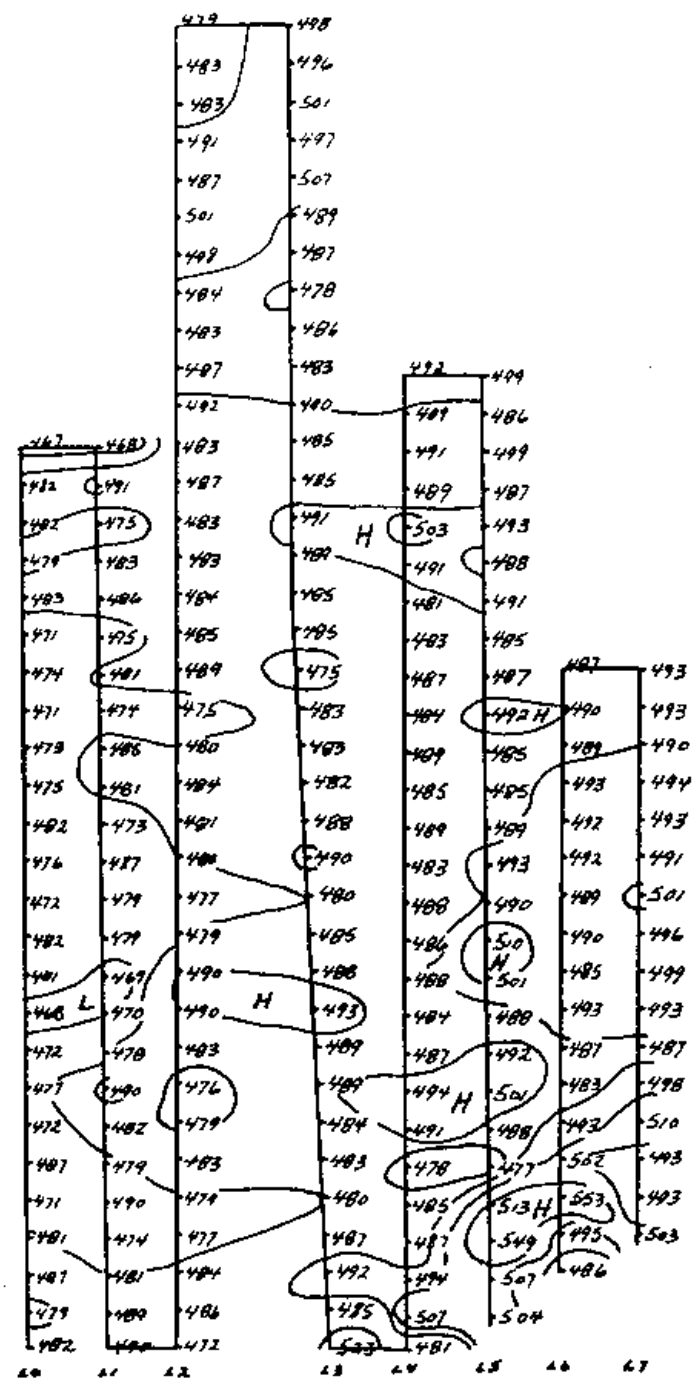
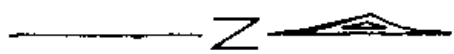
100 200  
 metres  
 Scale - 1:5,000

BIG I DEVELOPMENTS LTD.  
 Haide-Catspaw Property  
 VLF-EM DATA  
 SEATTLE TRANSMITTER

Skeena Mining Division, B.C.  
 NTS: 104818E

Figure: 7

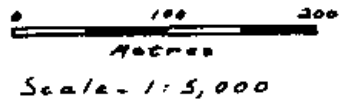
JWM/1990-91



LEGEND

- (H) -  $\geq 54,900$  gamma
- (L) -  $\leq 54,700$  gamma

BIG I DEVELOPMENTS LTD.  
 Haida-Catspaw Property  
 Magnetometer Survey



Skeena Mining Division, B.C.  
 NTS: 104 B 18E

Figure: B

JWA 1990-91

should be examined and sampled i.e. heavy mineral screenings or pan concentrates, the area requires detailed prospecting to check for crosscutting mineralized structures which in this area is often accompanied by a visually outstanding iron oxide stain or gossan.

The work performed in the current program has confirmed that there are strong indications of economically significant precious metal values. In at least four separate zones all of which reveal a similar structural trend, N250-N290 degrees with a steep westerly dip which cuts obliquely across the bedding of the stratigraphic rocks while being sub-parallel to the strike. This steeply-dipping style of the quartz-fissure zones could offer structures with considerable depth potential and replacement possibilities. Also, there is much room for discovering other such zones in the untested covered areas and in fact the previous geochemical survey indicates this possibility. Not all of the arsenic (gold-silver) anomalies from the previous geochemical survey have been checked-out.

The four main mineralized zones referred to in this report are as follows: (see Figures 9 and 10)

Location (Coords)	Interval (metres)	Sample No.	Gold (oz/t)	Silver (oz/t)
<b>a) 15 m. x 5 m. trenched area:</b>				
38640N - 32675E	2.0	107156	0.028	1.80
38640N - 32675E	2.0	107157	0.012	1.00
38640N - 32675E	1.0	107167	0.021	0.98
<b>b) Quartz-fissure zone varying from 1-6 m. wide and discontinuously over 100 m. in length:</b>				
38400N - 32400E	2.0	107159	0.021	-
38400N - 32400E	1.0	107160	0.136	6.30
38400N - 32400E	1.0	107161	0.042	4.00
38400N - 32400E	1.0	107162	0.028	18.10
38400N - 32400E	6.0	107163	0.040	3.40
38400N - 32400E	2.0	107164	0.012	2.20
38400N - 32400E	2.0	107165	0.223	132.46
<b>c) Quartz-breccia zone in siltstone-andesite mixture 5 m. wide:</b>				
38350N - 32250E	1.0	107155	0.175	1.72
<b>d) Quartz-fissure zone 125m. x 100m. x 10m. (Premier adit):</b>				
39300N - 31600E	2.0	107184	0.120	-
39275N - 31725E	2.5	107188	0.070	-
39275N - 31725E	1.0	107189	1.160	2.23

## Geophysical Results

### Camp #1 Area:

The VLF-EM data was collected using two stations, Cutler and Seattle, since the survey it was hoped, would reveal patterns that could be related to areas of known surface mineralization and/or geochemical anomalies indicated from a previous work program.

Both sets of data show a crossover trend (peaks in the filtered data) which appears to possibly coincide with the general strike of the bedrock stratigraphy and a more gentle slope of the peaks in the general direction of the dip of the strata. The Cutler quadrature polarity seems to conform better (negatively) to areas of observed pyritization, namely the southwest-side of the grid, near the intrusive rock occurrences and near the northeast corner of the grid, where intense quartz-sericitization and pyritization has taken place. Both the Cutler and Seattle data reveal in-phase - quadrature crossovers which trend to the north-northwest suggesting a possible underlying conductive zone having this configuration. The Seattle in-phase - quadrature crossovers seem to conform better to areas of known surface mineralization.

The magnetometer data also reveals a northerly trend of Highs which roughly coincide with the VLF-EM in-phase - quadrature crossover trends, but in one area, the eastside of the grid a series of Highs conform in several places with a northerly trending andesitic dyke which crosscuts the bedrock strata.

### Camp #2 Area:

The data from this area is not of sufficient size to draw many conclusions except to say that there are indications of possible E-W conductive structures as indicated by the strong polarity of quadrature and the in-phase - quadrature crossovers.

The Premier adit zone which the writer found in places to contain gold values which ranged from 0.07oz/t. from a 2.5 metre sample to 1.160 oz/t. from a one metre sample is underlain by what appears to be a large quartz-sericite-iron oxide stained area along the north-side of Thomas Gulch. This gold-bearing quartz-fissure zone occurs along or sub-parallel to the andesite feldspar porphyry - black siltstone contact. The zone as indicated by examination and sampling of the mineralization at the adit and from anomalous gold values from the short diamond core drill hole suggested the mineralized structure is at least 10 metres wide on the hangingwall-side (southside) of the vein? A gold value of 0.130 oz/t. over 2 metres from what appears to be the same structure was taken from an area 125 metres west and 100 metres vertically above the Premier adit area.



There are a number of anomalous samples taken from this general area which require further investigations to determine their size and extent.

### RECOMMENDATIONS

On the basis of the encouraging results obtained to date on the Haida-Catspaw property the writer recommends the following outlined exploration program.

#### Phase I

A four hole diamond core drilling program is recommended to test the two main discovery zones: 1) located at 38400N - 32400E - two x 100 metres in length. 2) Premier adit area - two x 150 metres in length for a total of 500 metres.

The reconnaissance program including mapping, prospecting, VLF-EM and magnetometer surveys, rock trenching mineralized areas and heavy mineral stream sediment sampling should be continued throughout the property depending upon the results obtained by the initial drilling or at the same time the drilling program is underway.

#### Phase II

A Phase II drilling program would be initiated conditional on the results of the Phase I program.

### COST ESTIMATE

#### Phase I

500 metres of AQ diamond core drilling, including camp, mobilization, site prep., de-mobilization, transportation @ \$120/m.	\$ 60,000
Geology and supervision	10,000
Transportation	5,000
Camp and board	3,000
Core preparation and assaying	5,000
Report and maps	2,500
Contingency	12,500
Sub-Total	\$ 98,000

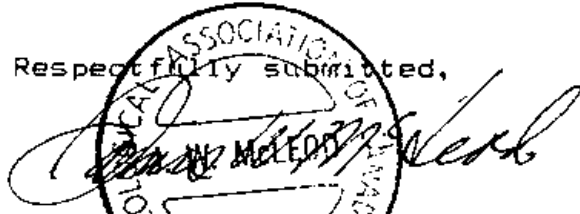

Phase II

Continuing reconnaissance program including, mapping, prospecting, VLF-EM and magnetometer surveys over accessible areas of the property, stream sediment sampling, three camp set-ups, helicopter support, all inclusive.

\$100,000

Total

\$200,000

Respectfully submitted,  
  
James W. McLeod, Geologist  


## STATEMENT OF COSTS

Engineering and supervision	\$ 2,000
Geologist @ \$300/day for 40 days	12,000
Two field assistants - geophysical operators, line installation, rock and core drilling for 40 days @ \$275/day	11,000
Instrument rental for 33 days @ \$80/day	2,640
Camp and board for 99 mandays @ \$50/day	4,950
Analyses	1,200
Truck rental for 33 days @ \$55/day plus \$0.20/km	2,615
Trailer rental for 33 days @ \$25/day plus \$0.15/km	1,425
Equipment rental - Pionjar, radio telephone, JKS-Boyles 4M Packsack drill	2,750
Fuel supplies - gasoline, oil, naptha, etc.	400
Supplies - Drill bits, dynamite, fuel, etc.	1,500
Helicopter support	2,569
Accomodation and travelling expenses	870
Licence and fees	875
Maps - 1:5,000 topo. from air photos	2,450
Report	<u>2,100</u>
Total	\$51,344

## REFERENCES


1. Alldrick, D.J. (1984): Geological Setting of the Precious Metals Deposits in the Stewart Area, Paper 84-1, Geological Fieldwork 1983, B.C. Ministry of Energy Mines and Petroleum Resources.
2. Arnold, R. (1980): Prospecting Report, Bowser-Unuk Project, Knipple Lake Area, 1980, for E&B Explorations Ltd., by CanLake Explorations Ltd.
3. Grove, E.W. ET AL (1982) : Unuk River-Salmon River-Anyox Area. Geological Mapping 1:1000000, B.C.M. of E.M.P.R.
4. Grove, E.W. (1971): Geology of Mineral Deposits of the Stewart Area. Bulletin 58, B.C.M. of E.M.P.R.
5. Groves, W.D. (1988): Geological Report on the Frank Mackie Property on behalf of Wedgewood Resources Ltd.
6. Hensworth, F.J., P.Eng., Report on the Tide Lake Portland Mine, Bowser River Area, Stewart, British Columbia. August 1953.
7. Kruchkowski, E.R. (1988): Report on the Catspaw Claim, Stewart, British Columbia, January 1988 for Wedgewood Resources Ltd.

## CERTIFICATE

I, JAMES W. McLEOD, of the Village of Ladner, Province of British Columbia, hereby certify as follows:

- 1) I am a Consulting Geologist with an office at 5303 River Road, Delta, B.C., V4K 1S8.
- 2) I am a Fellow of the Geological Association of Canada.
- 3) I graduated with a degree of Bachelor of Science, Major in Geology, from the University of British Columbia in 1969.
- 4) I have practised my profession since 1969.
- 5) I do not own any direct or indirect interest in the Haida-Catspaw property.
- 6) I am the President of Big I Developments Ltd.
- 7) The above report is based on personal field experience gained by myself in the general area in 1969 and by conducting the current exploration program during the summer of 1990.

DATED at Ladner, Province of British Columbia, this 8th day of April, 1991

  
 James W. McLeod, B.Sc.  
 FELLOW  
 GEOLOGICAL ASSOCIATION OF CANADA

APPENDIX I

ROCK SAMPLE RECORD SHEETS

# SAMPLE RECORD SHEET

Page 1

SAMPLER: J. McLEOD

PROJECT: CATSPAN

MAP SHEET: 104 B/8E

AREA: CAMP #1

PROPERTY: HAIDA-CATSPAN

COMPANY: B.G.I. DEV. LTD.

DATE: JULY-SEPT/80

No. of Ss.: \_\_\_\_\_

Sample No.	LOCATION DESCRIPTION	TYPE OF Ss.	WIDTH	NOTEBOOK REF.	Remarks	TYPE
Δ1	B.L.-1475N-S. of Camp #1	Rix	O.C.	3b.	L. grain. fgn. volc. & dia	Andesite(a)
1a	B.L.-1450N-	Rix	O.C.	3b	Hornbl. volc. & mag. & dia	(a)
Δ2	B.L.-0+75N	Rix	O.C.	3b	OK. Ashen. shaly sed.	Siltstone
Δ3	38130N - 32940E	Rix	O.C.	3b+4	Blk ash. silt. & volc. & dia	(a.s)
Δ4	38140N - 32925E	Rix	O.C.	4	L. grain. fgn. and E. calcs, py & Mn.	(a)(s.s)
Δ5	38150N - 32875E	Rix	O.C.	4	S.S. - a mix - Bd ✓	(s.s)
Δ6	38130N - 32825E	Rix	O.C.	4	S.S. Bd ✓ Silt - Plunge 32° to N95°	(s.s.)
Δ7	38160N - 32800E	Rix	O.C.	4b	S.S. (traccia) E and f. & ph. ch. & vol.	(s.s.) & d.
Δ8	38245N - 32610E	Rix	O.C.	4b	S.S. (shaly) Bd ✓	(s.s.)
Δ9	38495N - 32835E	Rix	O.C.	4b	Schist, mica, gneiss, alt. (s.s.)	(s.c)
Δ10	38575N - 32800E	Rix	O.C.	5	Schist, altered & dykes (d)	(s.c)
Δ11	38710N - 32835E	Rix	O.C.	5	Rusty mica schist: g'ta - s.c.	(s.c) & ss
Δ12	38650N - 32675E	Rix	O.C.	5	Mix of SC - SS - a, Bd ✓	(ss)
Δ13	38710N - 32715E	Rix	O.C.	5b	Rusty f. yr. and. & g'ta & py	(a)
Δ14	38770N - 32580E	Rix	O.C.	5b	SS. & a mix & mol. chl - ep - gneiss	(ss)
Δ15	38650N - 32620E	Rix	O.C.	5b	SS. + sd. Sandstone & gneiss <sup>up</sup> & mica	(ss)
Δ16	38570N - 32650E	Rix	O.C.	6, 12b	S.S. mix & SC. S2 fol'n 60° → N200°	(ss)
Δ17	38425N - 32675E	Rix	O.C.	6	SS(a) gneiss & breccia & g - ep.	(ss)
Δ18	38400N - 32750E	Rix	O.C.	6, 6b	S.S. (shaly) & Bd + (a) dyke	(ss)
Δ19	38160N - 32720E	Rix	O.C.	7	S.S. + (a), Bd ✓	(ss)
20	L0-1+00W	Rix	O.C.	7	S.S. & SL Bd ✓	(ss)

# SAMPLE RECORD SHEET

Page 2

SAMPLER: J. McLEOD

PROJECT: CATSPAW

MAP SHEET: 104 B/8E

AREA: CAMP #1

PROPERTY: HAIDA-CATSPAW

COMPANY: BIG E DEV. LTD.

DATE: JULY-SEPT./90

No. of Sa.: \_\_\_\_\_

Sample No.	DESCRIPTION	TYPE OF Sa.	WIDTH	Notebook Ref.	Remarks	TYPE
21	L0-2+67W	Rix	O.C.	76	Siltstone E facies and interst.	SS
22	L0-1+00W(SW)	Rix	O.C.	7	Sandstone (S) 80% graded	Sh
23	L0-3+25W	Rix	O.C.	76	SS (a) mix. Gl. strat.	SS
24	L1-5+00W	Rix	O.C.	76	Shaley-vale. mix. Bd.	SS
25	L1-5+25W	Rix	O.C.	76	Coarse-lithic and. tuff. 1/22	a
26	L2-5+00W.	Rix	O.C.	106	Felsic and. E shaley near.	a
27	L2-6+00W.	Rix	O.C.	106	X'tal-lithic and. tuff. Pyrit	a
28	L2-7+00W	Rix	O.C.	106	Min and (columns) E min SS. Bd	a
29	L2-9+50W	Rix	O.C.	116	SS-a mix E skarn (car-pyrit)	SS
30	L3-9+50-9+00W	Rix	O.C.	116	M. gr. grey, phix. tuff. horn-pyrit granodiorite - qtz diorite	E
31	L3-8+75W	Rix	O.C.		Fels. Schist	SC
32	L3-6+15W	Rix	O.C.	116	qtz breccia in a-SS 5m.	a-SS
33	L4-2+00W	Rix	O.C.	136	Shaley SS. Bd + Fel.	SS
34	L6-3+65W	Rix	O.C.	19	ast-shale and. E qtz & arsen.	(a)
35	L7-4+50W to 2+00W	Rix	O.C.	19	F. gr. qtz and. vale-brooklin placcs	(a)
36	L7-0+00	Rix	O.C.	19	qtz-acc. schist + a tpy	(a)



SAMPLE RECORD SHEET

Page 3

SAMPLER: JIM McLEOD

PROJECT: HAIDA

AREA: CAMP #2

MAP SHEET: 104B/8E

COMPANY: BIG E DEV. LTD.

PROPERTY: HAIDA-CATPAW

DATE: AUGUST-SEPT 90

No. of Ss.: \_\_\_\_\_

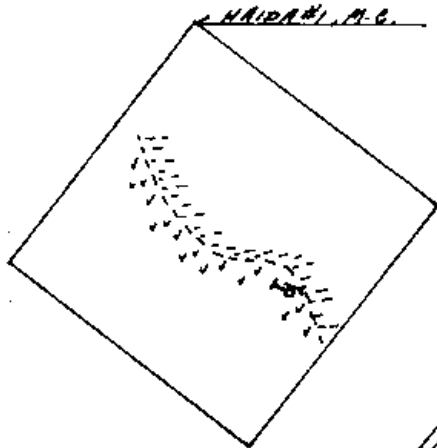
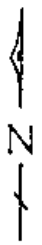
Sample No.	DESCRIPTION	TYPE OF Ss.	WIDTH	Notebook Ref.	Remarks	Type
37	39270N - 31700E	Rix	0.c.	21	Fgn. lg. in clay soil (red) (a)	(a)
38	39225N - 31755E	Rix	0.c.	21, 26	bdm. banded buff E py	(a)
39	39880N - 31715E	Rix	0.c.	22b	dk. siltst. & py. Bd	ss.
40	39945N - 31675E	Rix	0.c.	22b	grey fgn. ss - s/d'tn grey under	sl.
41	40070N - 31975E	Rix	0.c.	24	bdm. lg. in - blk banded buff (a)	(a)
42	40045N - 31900E	Rix	0.c.	24	F-c. g.c. & 10' lg. pyrox. Inter.	I
43	39630N - 31330E	Rix	0.c.	24b	F. g. dk - grey & white lens	SL
44	39525N - 31475E	Rix	1 metre	26b	Silic zone @ fault - maybe silt? I	I
45	39510N - 31470E	Rix	30m. g-chip	26b	Mix (hornbl. cl) ss - a pendul?	SS
46	39600N - 31710E	Rix	0.c.	27b, 28	F. g. in sil. bracia & blk siltst. <sup>with fault?</sup>	SS.

APPENDIX II

DRILL CORE LOG

N.W. CORNER CATSPAW, M.C.

Surface



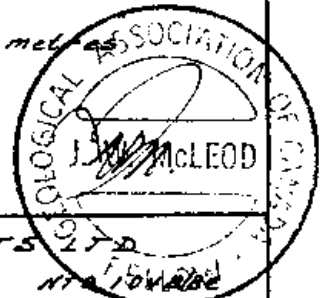
vv v q-  
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 po-cpy-ars.  
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 v-v po-py  
 v-v q-ep  
 v-v py-po  
 v-  
 v-v q  
 v-  
 v-v q  
 v-  
 v-v q  
 v-v  
 v-  
 v-v  
 v-v q-po-ep  
 v-  
 vv q-ep-po  
 v cal-s-ch  
 vv  
 v q-py-po-gn  
 v-v ch-ep-py  
 v-v q  
 v-v q-py-ep-po  
 vv  
 vv  
 v  
 vv q-py-po  
 v ep-po.  
 vv  
 vv  
 v  
 v q-py-po-  
 vv cpy  
 v .py  
 vv  
 vv

Vertical Scale 1:100

Depth of Hole 17.7 metres

Legend

- SSS - Black siltstone and fine grained volcanic mix-Beds?
- SSS - Crystalline feld-phyrlic intrusive Andasite
- Premier Adit
- H-C DDH 90-1 N290° E - 50°
- Fissure zone mixture, often breccia particles (b)
- q - Alteration: q - quartz, cal - calcite, ep - epidote, ch - chlorite, s - sericite.
- cpy - Mineralization: py - pyrite, po - pyrrhotite, cpy - Chalcopyrite, gn - galena, ars - arsenopyrite.
- SSS - Quartz-welded zone.



BIG I DEVELOPMENTS LTD.

Skeena Mining Division, B.C.      H-100-1

Diagrammatic Drill Hole (H-DDH-90-1)  
Cross Section

metres

Figure 11			JWM 1990-91
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# SAMPLE RECORD SHEET

DRILL CORE LOG

Page 1

SAMPLER: J. M. LEOD

PROJECT: HAIDA - H.C. DDH 90-1

MAP SHEET: 104 B/8E

AREA: PREMIER ADIT

PROPERTY: HAIDA-CATSPAW

COMPANY: AG I DEV.

DATE: DEC. 1990

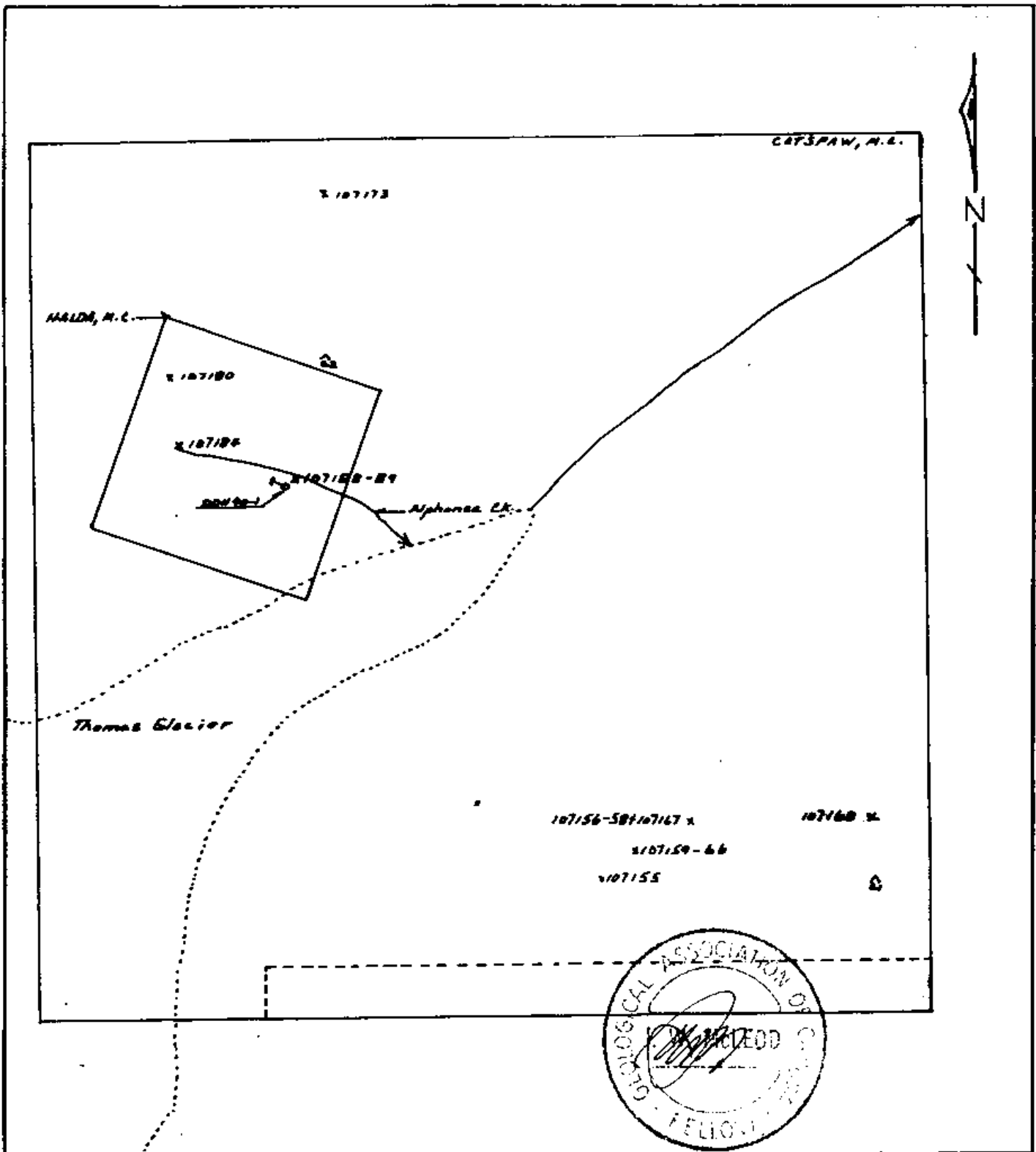
NO. OF SE.: 0-17.7m. (58')

ATTITUDE N290° - 50°

INTERVAL Sample No.	DESCRIPTION	TYPE of Se.	RECOVERY	Notebook Ref.	ALTERATION & MINERALIN	Rock Type
0-1.8m	Very f. gr. to ophanitic white feld. phyic. Phenos. - matrix and fill. to 2mm. Green colour	Core	95-100%	I, II	Abund. q'tz weld. frags. @ 45° to core axis (ca). Very minor calcite (cal) when with epidote (ep). Pyrite (py), Aragonite (ara), galena? (gn), bronze colour, pyrite (py), chalcopyrite (cpy)	Andesite Porphyry
1.8-3.0	Andesite porphyry - blk. siltstone mic. The outstone particles are highly altered (sericite? -sl).	core	100%	II	Abund. q'tz frags (welded) Ep - chlorite (ch) - py - po	Ap - ss mix
3.0-9.2	Andesite hornblende - feldspar phyic; green colour, ophan. groundmass			IIb	q - ep - cal on frags - py - po - ap	
9.2-17.1	And. tuff - And. porphyry mix	core	100%	II, II, II	Some brecciated frags. @ 9.8m frags 10° to ca. q - ep - ch - s - cal, py - po - gn? @ 14m frags 45° to ca. and ch - ep - po - minor cal.	Ap - ss mix
17.1-17.7	Andesite porphyry	core	95-100%	II	Abund. q. Rel. unalt. Ep - py	ap

APPENDIX III

ANALYSES



**Legend**

- p - Drill Hole collar
- x - Sample locations (No. No: Appendices)
- - Boundary of Glacier
- - Stream
- - camp

0 metres 500  
Scale 1: 12,500

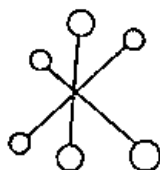
**BIG I DEVELOPMENTS LTD.**

Haida-Catspaw Property  
Skeena M.D., B.C.

Sample Plan and  
Drill Hole Location

Figure: 10

J.W.M. 1990-91



# ECO-TECH LABORATORIES LTD.

ASSAYING - ENVIRONMENTAL TESTING

10041 East Trans Canada Hwy. Kamloops, B.C. V2C 2J3 (604) 573-5700 Fax 573-4557

AUGUST 1, 1990

CERTIFICATE OF ANALYSIS ETS 90-9021

=====

OMEGA SERVICES  
#207-1318 56th ST.  
DELTA, B.C.

A S S A Y S

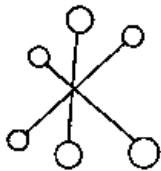
SAMPLE IDENTIFICATION: 17 ROCK samples received JULY 26, 1990  
-----  
PROJECT: CAMP I

ET#	Description	AU (g/t)	AU (oz/t)	AG (g/t)	AS (%)
9021 - 1	107151				1.26
9021 - 2	107152				
9021 - 3	107153				
9021 - 4	107154				
9021 - 5	107155	6.00*	.175	53.6	6.96
9021 - 6	107156			56.8	2.37
9021 - 7	107157			32.4	1.99
9021 - 8	107158				
9021 - 9	107159				
9021 - 10	107160	4.68	.136	194.6	2.96
9021 - 11	107161	1.44	.042	124.2	1.92
9021 - 12	107162			563.2	.72
9021 - 13	107164	1.36	.040	106.4	-
9021 - 14	107165			66.8	.32
9021 - 15	107166	7.63*	.223	4120.0	.92
9021 - 16	107167			30.4	1.30
9021 - 17	107168			19.2	.52

*Jutta Jealous*  
\_\_\_\_\_  
ECO-TECH LABORATORIES LTD.  
JUTTA JEALOUSE  
B.C. Certified Assayer

FAX: STEWART

SC90/OMEGA



**ECO-TECH LABORATORIES LTD.**

ASSAYING - ENVIRONMENTAL TESTING

10041 East Trans Canada Hwy. Kamloops, B.C. V2C 2J3 (604) 573-5700 Fax 573-4557

AUGUST 8, 1990


**CERTIFICATE OF ANALYSIS ETS 90-9021**

OMEGA SERVICES  
#207-1318 56th ST.  
DELTA, B.C.

SAMPLE IDENTIFICATION: 17 ROCK samples received JULY 26, 1990  
----- PROJECT: CAMP I

ET#	Description	AU (ppb)	AG (ppm)	AS (ppm)	SB (ppm)	PB (ppm)
9021 - 9	107159	665	8.5	-	-	-
9021 - 10	107160	>1000	>30.0	>10000	404.3	-
9021 - 11	107161	>1000	>30.0	>10000	275.6	-
9021 - 12	107162	950	>30.0	8098	268.5	>1000
9021 - 13	107164	>1000	>30.0	-	-	-
9021 - 14	107165	390	>30.0	3452	70.6	-
9021 - 15	107166	>1000	>30.0	9086	1664.0	-
9021 - 16	107167	660	19.4	>10000	117.6	-
9021 - 17	107168	285	14.6	5647	98.5	-

NOTE: > = GREATER THAN

  
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 B.C. Certified Assayer

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SC90/OMEGA



ECO-TECH LABORATORIES LTD.

OMEGA SERVICES - ETS 90-9021

10041 EAST TRAMS CANADA HWY.  
 KAMLOOPS, B.C. V2C 2J3  
 PHONE - 604-573-5700  
 FAX - 604-573-4557

OMEGA SERVICES  
 #207-1318 5616 ST.  
 DELTA, B.C.

AUGUST 8, 1990

VALUES IN PPM UNLESS OTHERWISE REPORTED

PROJECT: CAMP 1  
 SHIPMENT # 1  
 17 ROCK SAMPLES RECEIVED JULY 26, 1990

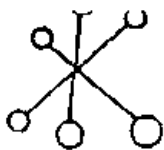
ETA	DESCRIPTION	AU(ppb)	AG AL(Z)	AS	B	BA	BI CA(Z)	CD	CO	CR	CU	FE(Z)	K(Z)	LA NG(Z)	MN	MO NA(Z)	NI	P	PB	SB	SN	SP T(Z)	U	V	W	Y	Zn					
9021 - 1	107151	215	3.4	2.39	>10000	26	45	<5	1.36	409	21	125	63	5.49	.09	<10	1.73	730	<1	.04	106	1280	24	190	<20	11	<.01	10	96	10	2	100
9021 - 2	107152	40	13.0	2.51	2270	32	60	5	1.15	82	8	96	337	9.02	.13	<10	1.66	805	<1	.02	22	1680	54	10	<20	8	<.01	10	76	<10	1	194
9021 - 3	107153	5	1.6	2.97	65	34	45	5	6.14	4	5	22	13	6.57	.07	110	1.66	4147	<1	.02	3	910	26	<5	<20	302	.01	<10	17	10	8	55
9021 - 4	107154	10	.6	1.70	40	26	10	<5	.66	2	22	30	17	8.83	.02	<10	1.37	524	<1	.05	<1	1560	10	15	<20	30	.19	10	140	10	2	41
9021 - 5	107155	>1000	130.0	1.24	>10000	22	15	<5	1.18	>1000	3	22	41	9.67	.11	<10	1.01	81	<1	.03	11	1080	84	565	<20	7	<.01	25	17	10	1	248
9021 - 6	107156	845	130.0	2.10	>10000	26	15	190	1.41	773	216	76	1927	>15.00	.06	<10	1.36	967	<1	.02	125	1490	178	70	<20	13	<.01	10	87	10	1	160
9021 - 7	107157	275	130.0	2.61	>10000	20	30	65	3.98	879	570	91	1199	>15.00	.06	10	1.86	1555	<1	.03	213	1320	112	40	<20	146	.01	<10	107	10	4	127
9021 - 8	107158	160	22.8	2.98	6200	20	25	40	1.54	228	158	101	1148	12.73	.07	<10	2.06	1141	<1	.03	110	1350	74	15	<20	16	.01	116	119	16	2	145

NOTE: < LESS THAN

FAX: STEWART LAB

*Jutta Jealous*  
 ECO-TECH LABORATORIES LTD.  
 JUTTA JEALOUSE  
 B.C. CERTIFIED ASSAYER

SC93/OMEGA



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10041 East Trans Canada Hwy., Kamloops, B.C. V2C 2J3 (604) 673-5700 Fax 573-4557

46

SEPTEMBER 4, 1990

## CERTIFICATE OF ANALYSIS ETK 90-484

=====

OMEGA SERVICES  
207 - 1318 56TH STREET  
DELTA, B.C.  
V4L 2A4

### PARTIALS

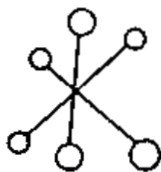
SAMPLE IDENTIFICATION: 27 ROCK/CORE samples received AUGUST 24, 1990

ET#	Description	AU (ppb)	AU (g/t)	AU (oz/t)
484 -	1 107169	<5		
484 -	2 107170	<5		
484 -	3 107171	10		
484 -	4 107172	5		
484 -	5 107173	40		
484 -	6 107174	<5		
484 -	7 107175	15		
484 -	8 107176	5		
484 -	9 107177	60		
484 -	10 107178	50		
484 -	11 107179	10		
484 -	12 107180	<5		
484 -	13 107181	55		
484 -	14 107182	45		
484 -	15 107183	30		
484 -	16 107184	>1000	4.08	.12
484 -	17 107185	35		
484 -	18 107186	45		
484 -	19 107187	85		
484 -	20 107188	>1000	2.45	.07
484 -	21 107189	>1000	39.86 *	1.16
484 -	22 DDH1 - 1 FOOT	340		
484 -	23 DDH1 - #6	>1000	1.03	.03
484 -	24 DDH1 - #29	125		
484 -	25 DDH1 - #39	35		
484 -	26 DDH1 - #57.5	115		
484 -	27 DDH1 - #58	15		

NOTE: > = GREATER THAN  
\* = SAMPLE SCREENED & METALLICS ASSAYED

*Jutta Jealouse*  
ECO-TECH LABORATORIES LTD.  
JUTTA JEALOUSE  
B.C. Certified Assayer

FAX: 1-943-3063



# ECO-TECH LABORATORIES LTD.

ASSAYING - ENVIRONMENTAL TESTING  
10041 East Trans Canada Hwy., Kamloops, B.C. V2C 2J3 (804) 573-5700 Fax 573-4557

SEPTEMBER 12, 1990

## CERTIFICATE OF ANALYSIS ETK 90-484

=====

OMEGA SERVICES  
207 - 1318 56TH STREET  
DELTA, B.C.  
V4L 2A4

SAMPLE IDENTIFICATION: 27 ROCK/CORE samples received AUGUST 24, 1990

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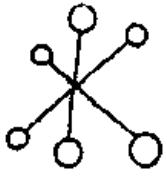
ET#	Description	AU (g/t)	AU (oz/t)	AG (g/t)	PB (%)	ZN (%)	AS (%)
484 - 6	107174			.5			
484 - 16	107184	4.08	.120				1.10
484 - 20	107188	2.45	.070	5.5			2.21
484 - 21	107189	39.86*	1.160	84.6	2.23	1.06	3.07
484 - 22	DDH1-D1			1.1			
484 - 23	DDH1 #6	1.03	.030	.8			
484 - 24	DDH1-#29			.6			
484 - 25	DDH1-#37			.5			
484 - 26	DDH1-#57.5			.8			
484 - 27	DDH1-#58			1.2			

NOTE: < = LESS THAN

\* = SAMPLE SCREENED AND METALLIC ASSAYED

  
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**ECO-TECH LABORATORIES LTD.**

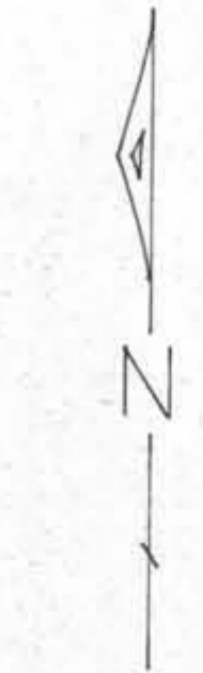
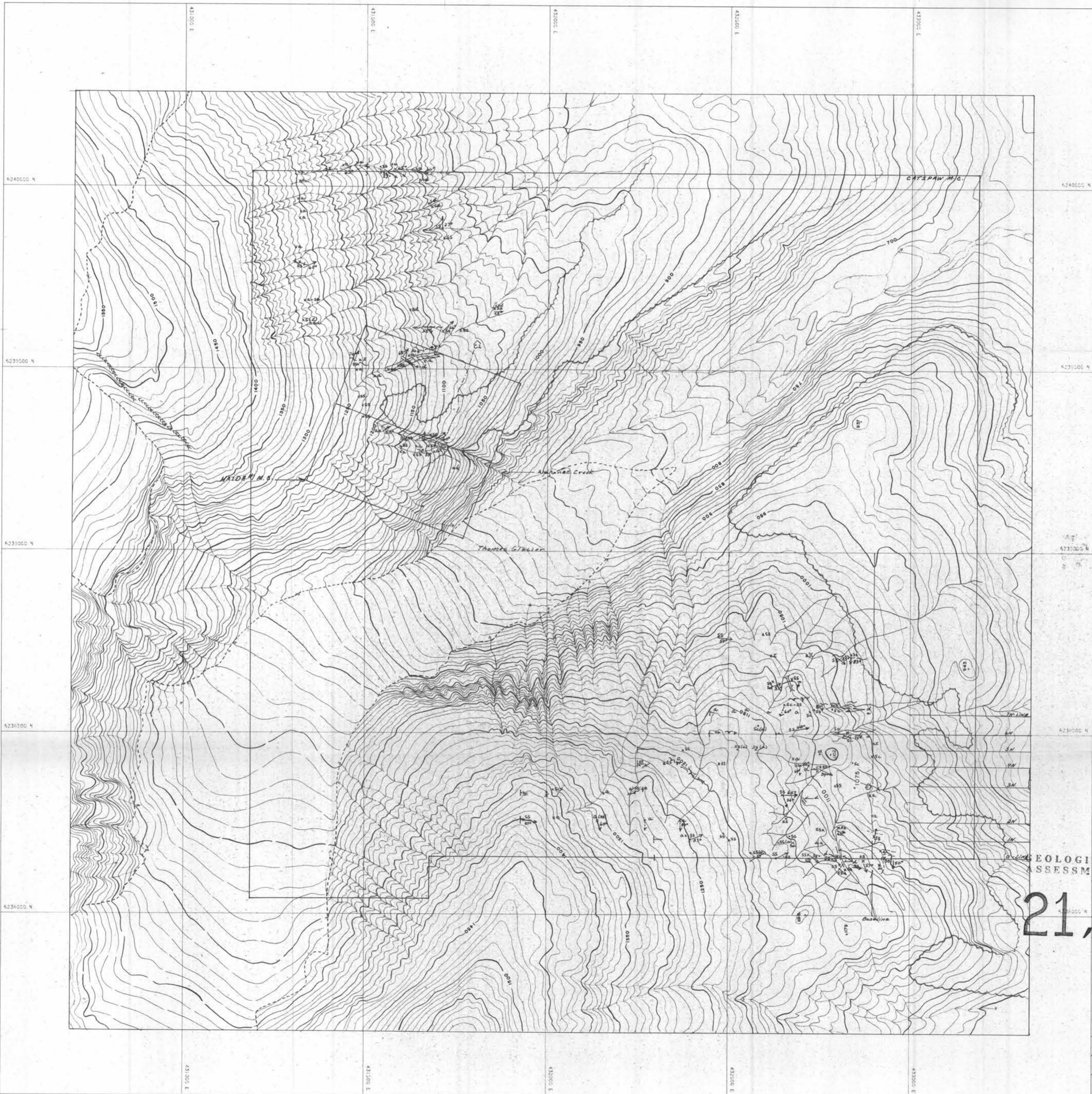
**ASSAYING - ENVIRONMENTAL TESTING**

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**METALLIC CALCULATION**

<b>SAMPLE NUMBER</b>	<b>-140 VALUE</b>	<b>+140 VALUE</b>	<b>CALCULATED VALUE</b>
484-21	32.27	1229.849	39.85821





Legend

- SS - Blk. aphanitic siltstone, shale, slate, most often interbedded E and W/Cs; some banded E py. X. - Amstone.
- a - Andesitic fine grained, green colour, most often E siltstone, may be crystalline, 1.5% of fragments. These are early N. - derived.
- S2 - Gray mica schist, often gytz-carinite, often rusty. Appears altered SS' and 'a'.
- S4 - Sandstone (arkosic?) often exhibits graded bedding and micro-structure. Some appear aluminous.
- F - med to gr. gray feld. horn-pyrox. pyrox. granodiorite, may be syenitic near di-stone.
- x - Rock exposure location
- Bedding dip direction, measured and assumed, (S).
- Contact, observed, assumed.
- Glacial striation
- Fault E dip, assumed.
- Adit, open, inaccessible
- Rock trench
- camp
- Foliation - Direct of dip. (S2).
- Quartz veins E dip.
- End of guideline.
- Fault - shear zone, added - often gytz - sericite Fe - silicate. Dip marked.
- Glacier or very late snowpack.
- Vegetation limit.
- Moraine (lateral).
- Trail

GEOLOGICAL BRANCH  
 ASSESSMENT REPORT  
 MAP SCALE 1:5000  
 HORIZONTAL INTERVAL 10 METRES  
 RECONNAISSANCE TYPE MAPPING  
 BIG I DEVELOPMENTS LIMITED



21,212

HAIDA-CATSPAW CLAIMS  
 Rock exposure map - claim  
 and grid locations



FIGURE-9 JMM-1990-91

OPTIMUM MAPPING LIMITED  
 DATE: JUNE 1990 JOB NO: 90-15  
 COMPILED FROM AERIAL PHOTOS TAKEN IN 1985  
 ROLL NO BC82018 EXPOSURES 137,138