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# DIAMOND DRILLING ASSESSMENT REPORT

# **HAGAS CLAIMS**

# NEAR HOUSTON, OMINECA MINING DIVISION

### **BRITISH COLUMBIA**

Latitude: 540 09'N Longitude: 1270 012W N.T.S. 93-L-3E ZC <u>...</u> [--for  $\mathbf{Z}$ C PROGOLD RESOURCES LIMITED 860-789 WEST PENDER STREET 🗢 ഗ VANCOUVER, B.C. (604) 681-4100 00 国场 じゅ

Vancouver, B.C. 30 December, 1989

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#### **HAGAS PROPERTY**

#### **SUMMARY**

Progold Resources Limited hold the 95 metric unit Hagas claim group situated 32 kilometres south of Houston, B.C. in the Omenica Mining Division.

The claim group is underlain by Lower Jurassic Hazelton group volcanics and Eocene Buck Creek volcanics which have been intruded by an Eocene alkaline gabbro. The geology of the claim group thus closely resembles that on the nearby Equity Silver Mines property where silver-copper ore bodies have been mined since 1979. Pre-production reserves were quoted at 30.8 million tons, 3.4 oz/ton silver, 0.03 oz/ton Au.

A series of geochemical and geophysical surveys have been done on the Hagas property since 1970 in a search for an Equity Silver type ore body. Four short diamond drill hole were drilled in 1973 and 1977. Silver, copper values were encountered in pyrite in hole 77-1 and further copper, silver values were located in a quartz stringer uncovered by trenching. Tetrahedrite bearing float is apparently present on the southwestern part of the claim group.

During November/December, 1989, Progold Resources drilled four NQ diamond holes, totalling 955 m (3130 ft) to explore anomalies which had been located by an I.P. survey in 1987.

Two of the holes 1989-1 and 1989-3 drilled on the central (and strongest) I.P. anomaly intersected significant mineralization in altered volcanic rocks:

Hole	Depth	Assay
89-1	180.69 - 182.44 (1.75 m)	0.334% Cadmium, 0.857% Lead 0.982% Zinc
89-3	100.65 - 102.65 (2.00 m)	1.25 oz/ton silver, 1.23% Copper
	Includes 101.65 - 102.15 (0.5 m)	4.43 oz/ton silver, 3.78% Copper

#### CONCLUSIONS

- 1. The November/December, 1989 exploratory drilling by Progold successfully intersected copper, silver, lead, zinc and cadmium mineralization in altered Jurassic (Hazelton) volcanics.
- 2. The drilling has shown that the I.P. anomalies are caused by fracture filling mineralization and alteration. The four holes explored only a very limited part of the I.P. targets.

- 3. The metals present (copper, silver, lead, zinc, cadmium and arsenic), style of mineralization (veinlets and fractures), alteration and host rocks are all very similar to those occurring at the nearby Equity Silver Mines deposit. i.e. the drilling results indicate strongly that an Equity Silver type ore body could occur on the Hagas claims.
- 4. Drill Section Figure 8c shows that Aquitaine's Hole 77-1 should have intersected the same 2m zone intersected by 89-1 (assuming that location of 77-1 is correct). The various anomalous values encountered in 77-1 (see section on Economic Mineralization) were higher up the hole and correspond to various anomalous metal values seen in the upper part of 89-1. The main area of mineralization located by 89-1 is not noted in the 77-1 logs and may have been missed. (A reexamination of the last 20 m of 77-1 core is recommended).

#### RECOMMENDATIONS

As originally proposed in Sampson's 1987 Report a follow up program of diamond drilling is recommended.

Since the 1989 drilling program was successful and less extensive than originally proposed (955 m - 3130 ft of diamond drilling compared with the originally planned 2750 m - 9000 ft of rotary drilling), it is recommended that the Phase 2 diamond drilling program currently proposed should be expanded to 3600 m (12,000 ft). These holes would be 150 m to 300 m length drilled along strike, i.e. along the I.P. anomaly, at 100 m intervals parallel with holes 89-1, 3. Additional holes should be drilled from locations north west of holes 89-1, 3 to establish whether dip is to the north west and intersect the mineralization down dip.

COST ESTIMATES	Cost
3600 m (12,000 ft) of NQ diamond drilling (15 - 20 holes) at \$66/m (\$20/ft)	\$240,000
Analyses and Assays (500 samples)	10,000
Field supervision: Geologist and assistant (40 days @ \$300/day)	12,000
Truck Rental, Freight, Field Supplies, Accommodation	8,000
Report Preparation, Etc.	5,000
	\$285,000

#### **INTRODUCTION**

This report describes results of diamond drilling, 24 November to 6 December, 1989, carried out by Progold Resources on their Hagas claims near Houston, B.C.

"Report on Geology, Geophysics and Exploration Potential, Hagas claims" 28 September, 1987 by Chris J. Sampson had recommended an initial program of rotary drilling



followed by diamond drilling to explore the geophysical and geochemical targets on the property. Rotary drilling was originally proposed rather than diamond drilling from the initial program because the property is of low relief with a network of roads, i.e., accessible by rotary drilling equipment and because rotary drilling is usually less expensive per foot than diamond drilling. More of the I.P. targets could thus be explored for the same exploration budget.

It has since been shown, however, than in central B.C. rotary drilling has little price advantage over diamond drilling and provides significantly less data about the style of mineralization, alteration, etc. Progold therefore decided on an initial diamond drilling program.

The drill program was run by Les Demczuk who logged and sampled the core. Drilling contractor was J.T. Thomas of Smithers, who used NQ drilling equipment for each of the four holes.

Total footage was 955 m (3130 ft), from which 114 samples were split. Sample lengths were dependent on mineralogical and lithological boundaries and were taken over 0.5, 1.0 or 2.0 m lengths. All samples were analyzed for 8 elements (silver, arsenic, barium, cadmium, copper, lead, antimony and zinc) by I.C.P. and for gold by fire assay at Min En Laboratories, North Vancouver, B.C. Eleven of the most strongly mineralized samples were analyzed for 32 elements to establish whether other significant metals are present.

All the core from the 1989 drilling program has been stored at Min En Labs in Smithers, B.C.

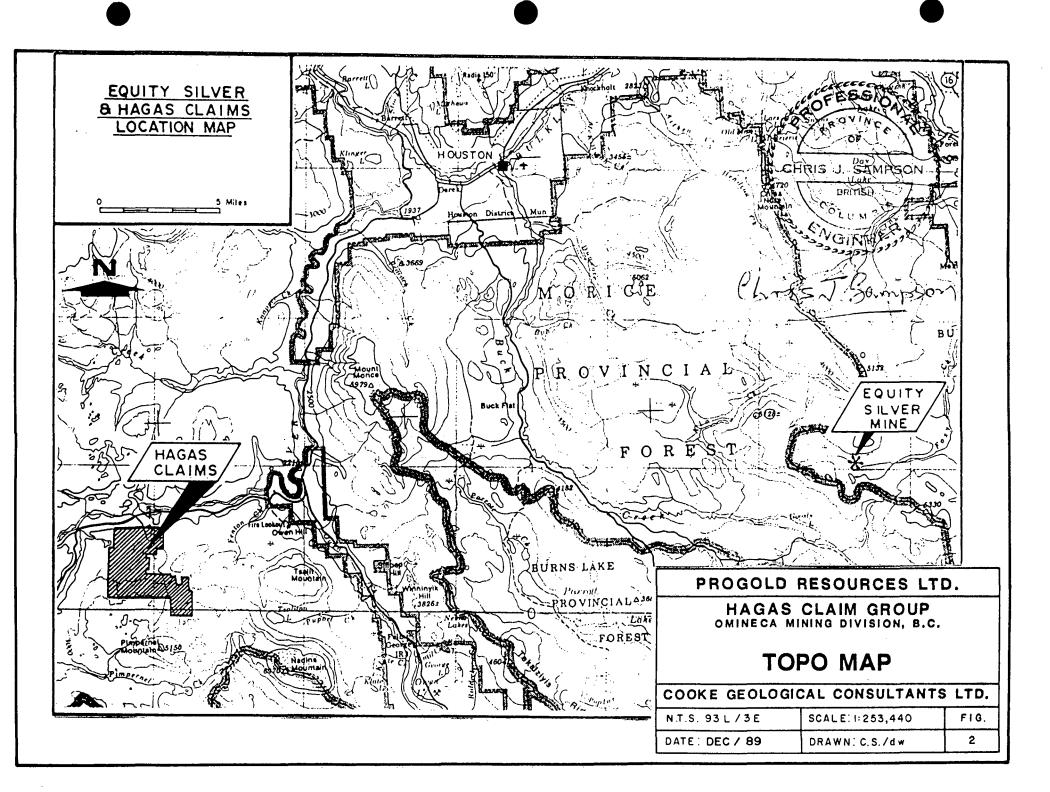
Results of geophysical, geochemical and trenching programs (from Sampson, C.J. 1987) which were the targets of the 1989 drilling program are also included in this report.

#### PROPERTY, LOCATION, TOPOGRAPHY & CLIMATE

The Hagas Property which Progold Resources hold under option is located within the Omineca Mining Division in the central interior of British Columbia, approximately 32 km (20 miles) southwest of Houston, B.C. Geodetic coordinates are 54° 09' N and 127° 01' W, N.T.S. 93-L-3E.

The property is easily accessible from Houston via the Morice River Road to Mile 26 (Km 41.6) and then via a good logging road for 3 kilometres. The Hagas Property is entered just beyond Frypan Lake. For much of the year a two wheel-drive vehicle can be used but during spring or winter, four wheel-drive may be necessary.

Topographically, the property consists of rounded hills and broad open valleys with one major flat swampy area in the centre of the claim group. Approximately 30% of the property has been logged off and the remainder is covered by moderate stands of mature spruce and fir. Relief is moderate and ranges from a low elevation of 830 m (2700 ft) ASL on the northern edge of the claim group to a high point of 1160 m (3800 ft) in the south-central part of the claims. Claim details are as follows:



#### **CLAIM DETAILS**

Claim Name	1	Units	Record Number	Record Date	Expiry Date
Hagas 1		1	108688	17 Apr. 72	1990
Hag 2	(2Ex1S)	2	5548	13 Jul. 83	1990
Hagas 3		1	108690	17 Apr. 72	1990
Hagas 4		1	108691	17 Apr. 72	1990
Hagas 5		1	108692	17 Apr. 72	1990
Hagas 76	(2Ex2N)	4	507	22 Nov. 76	1990
Hagas 77	(1Sx4S)	4	564	14 Apr. 77	1990
Hagas 78	(6Sx3W)	18	7804	22 Aug. 86	1990
Hagas 79	(1Nx3W)	3	1161	12 May 78	1990
Hagas 80	(2Ex4N)	8	1162	12 May 78	1990
Hagas 81FR		1	1163	12 May 78	1990
Hagas 85	(3Ex6S)	18	2073	19 Oct. 79	1990
HEM	(4Ex3S)	12	826	26 Oct. 77	1990
Frost	(3Nx2W)	6	6735	17 Oct. 84	1990
Frost II	(3Nx5E)	15	8690	18 Aug. 87	1991

95 units

#### HISTORY OF THE PROPERTY

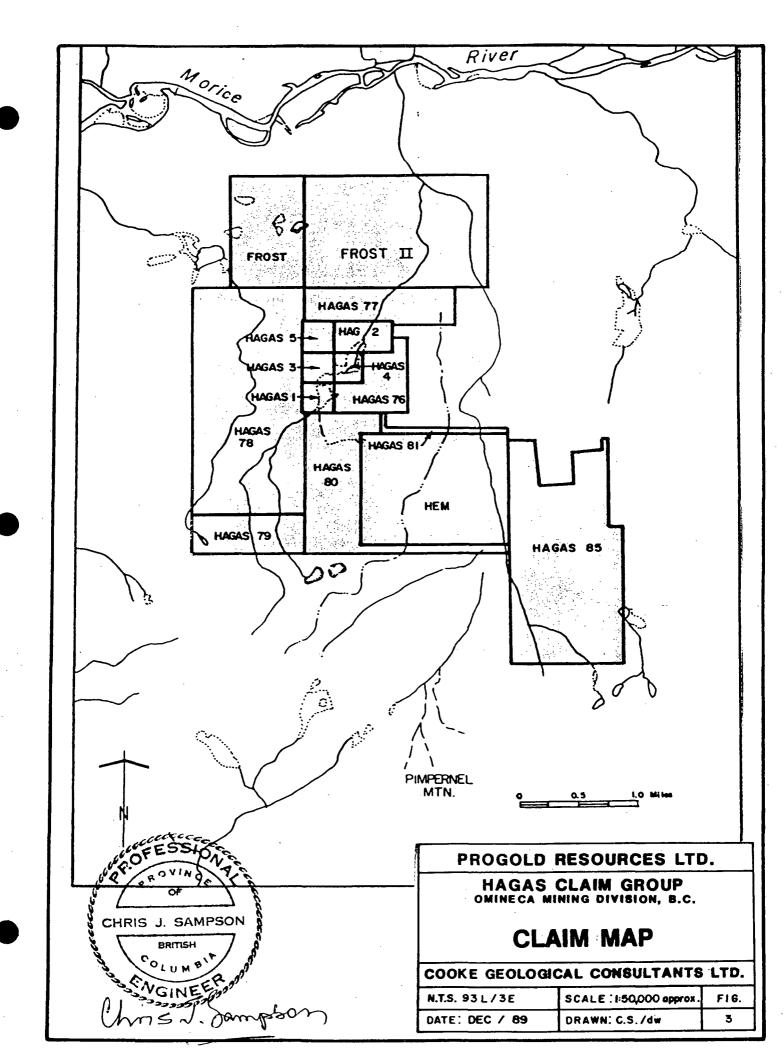
The area of the central interior plateau around Smithers and Houston was the subject of extensive prophyry-copper and molybdenum searches during the 1960's. The large regional programs carried out by major porphyry-copper producing companies, such as Anaconda and Kennecot, resulted in the discovery of several porphyry-copper-molybdenum deposits in the area south and southwest of Houston between Ootsa and Morice Lakes. It also resulted in discovery of a silver ore body near Sam Goosley Lake which was brought into production in 1979 as Equity Silver Mines.

Recognition of the size and grade of the Equity ore body in the early 1970's (preproduction reserves were quoted in 1979 at 30.8 M tons grading 3.4 oz/ton Ag, 0.03 oz/ton Au) led to extensive exploration activity in the general areas south and west of Houston. Exploration was particularly intense in those areas where gabbroic stocks cutting the Jurassic Hazelton volcanics were present.

In 1970 Anaconda conducted regional geochemical surveys in the general area of the Hagas claims and located arsenic, zinc and mercury anomalies along the swamp in the center of the claim group.

During 1971, Dr. B.N. Church of the B.C. Department of Mines mapped the area and described a 0.5 km diameter basic intrusive south of Morice River which is included in the Hagas claims. The stock was identified as being chemically similar to the Goosley basic intrusive.

In 1972, Perry, Knox, Kaufman & Associates optioned the ground from prospectors who had staked on the basis of Dr. Church's mapping. Field work by P.K.K. confirmed the earlier geochemical anomalies of arsenic-zinc, but mercury was not confirmed due to analytical difficulties. A Turam EM survey by Scintrex located a 1,000 metre strike length north-easterly trending, steeply dipping conductor.



In 1973, two 90 m 60° dip diamond holes were drilled from locations on the east side of the swamp to test the conductor. The drilling failed to intersect conductive material.

By 1977, the Hagas property was held by Aquitaine Company of Canada Ltd. They reinterpreted the 1973 Turam results and recognized that the conductive body probably dips to the north-west and thus the 1973 drill holes by Perry Knox Kaufman had been drilled in the wrong direction. Aquitaine relogged the core and found that Hole 73-1 had intersected a highly altered zone with 1-2% sulphides in fractured, fine grained tuffs.

In March 1977, Aquitaine commissioned a Max-Min II survey on three 100 metre spaced NW-SE lines, running across the area of the original Turam conductor. This survey located a moderately conductive anomaly striking north-easterly and dipping to the north-west.

In October 1977, the Scintrex airborne HEM 801 system was flown across the property and Aquitaine also drilled the Turam conductor from the north-west. Hole 77-1 (154.6 m) intersected both massive and fracture filling pyrite with an aggregate thickness of 8 metres over a 31 metre core length. Several sections of the pyrite were assayed. The most significant intersection being 99-101 ft which assayed 0.36 oz/ton Ag, trace Au, 0.17% As and 0.005% Cu. Hole 77-2 (154.2 m) which was drilled on the eastern side of the property penetrated a conductor in overburden and encountered no mineralization. (See Figure 4B).

Aquitaine staked the HEM claim at this time to cover airborne geophysical anomalies south of the Hagas group. Kenting Surveys carried out a program of Max-Min II geophysics on three lines, 1000 SW, 1000 NE and 00 over the HEM claims. Aquitaine subsequently dropped their option on the Hagas ground but in May 1978 they staked the Fry & Pan claims west and north of the Hagas to cover airborne geophysical conductors indicated by the HEM 801, October 1977 survey. They carried out programs of soil geochemical sampling on these claims and in August 1978 Max-Min EM and magnetic surveys located a good deep seated conductor on the Fry claim.

In February 1979, Aquitaine drilled the Fry 79-1 (182.9 m) hole, which encountered a 6 metre wide fault zone which is possibly the explanation for the geophysical conductor. The drill hole intersected a few pyrite stringers. A sample of galena assayed trace gold, 0.66 oz/ton Ag, 0.005% Cu.

In 1979, the claim group was optioned by the Catre-Ben Joint Venture.

In April 1980, this group commissioned an Aerodat airborne EM survey over the claim group which was interpreted by Excalibur International Consultants who highlighted six conductors. These appear to be on trend to the south-west of the 1973 Turam anomaly and on the northern flank of the Gabbroic stock. In August 1980, Max-Min and magnetometer surveys were done on the property by Peter E. Walcott and Associates in order to evaluate the six conductors located by the airborne Aerodat EM survey. Walcott suggested that some of the conductors located by the airborne geophysics were due to conductive material in the glacial overburden. In addition, the Catre-Ben Joint Venture commissioned Holt Engineering to carry out programs of geochemical sampling and reconnaissance geological mapping plus trenching during the summer of 1980.

This program located one quartz stringer in outcrop from which a sample assayed 2.03% Cu, 0.12 oz/ton Ag and 0.002 oz/ton Au. The trenches encountered strong chlorite, epidote alteration, but mineralization was generally rare to absent. Geochemical soil

sampling located zinc and copper anomalies but other than the limited trenching program the Catre-Ben Joint Venture did not follow up the programs of geophysics and geochemistry.

In July 1983 part of the claim group was re-staked by Zastavnikovich as the Hag 2 claims. He conducted programs of geochemical stream sediment sampling and sporadic outcrop rock chip sampling. These were analyzed for gold, silver, lead, zinc, arsenic, and antimony.

By 1984, the property was controlled by Petrostone Resources who collected 167 heavy mineral soil samples, 144 regular geochemical soil samples and 20 rock samples. Their work apparently located coincident, multi-element geochemical anomalies in the B & C soil horizons and indicated good correlation of C horizon anomalies with known EM conductors and drill hole rock anomalies.

In January 1985, M. Vulimiri summarized the history of exploration results on the property and recommended extensions of geochemical work, further airborne geophysics and diamond drilling. Also during that year, Zastavnikovich, on behalf of Petrostone Resources collected 20 further geochemical soil samples as follow up on gold anomalies located by previous surveys. Heavy mineral analysis of 47 core samples from drill hole 77-1 indicated that the intermediate volcanics in the upper part of the hole are highly enriched with respect to arsenic, mercury, zinc and manganese.

In June 1986, Zastavnikovich carried out programs of geochemical soil sampling on the Hag 2 claim.

In August 1986, a further 120 soil samples were collected and analyzed by heavy mineral separation techniques. Anomalous values correlated well with known EM conductors and fault structures.

In summer 1987, Cooke Geological cut a north-east/south-west trending baseline across the central part of the Hagas claim group and ran NW/SE 100 metre spaced lines. Pacific Geophysical carried out an Induced Polarization survey across this grid. In addition, a program of backhoe trenching was done partly on previously located geochemical targets and also on those areas where previous prospecting had indicated presence of mineralization, such as the quartz stringer originally sampled by Holt Engineering.

#### **REGIONAL GEOLOGY**

The Smithers-Houston area of central B.C. is situated in the central interior plateau, physiographic division of the Cordillera. The region consists predominantly of rolling country, showing gentle to moderate relief with low rounded hills interspersed by flat bottomed valleys which are generally filled with variable thicknesses of glacial debris. Outcrop is generally scarce and can be misleading as the softer, more recessive units are sometimes completely unrepresented in outcrop.

The geology of the area is shown on Geological Survey of Canada Map 971A (Smithers-Ft. St. James) and Geological Survey Open File, Smithers, B.C. 351. The geology of the area immediately east of the Hagas claims which contains the Equity Silver and the Silver Queen deposits near Owen Lake is shown on the B.C.D.M. Preliminary Map No. 11 by B.N. Church, May 1973. The oldest rocks in the region forming what may be referred to as the basement belonging to the Lower to Middle Jurassic Hazelton group

which in turn is subdivided into the Sinemurian and lower Pliensbachian Telkwa formation which consists of variagated red, maroon, grey-green breccias, tuffs and flows of basaltic to andesitic composition. This in turn is overlain by middle Toarcian Nilkitkwa formation which consists mostly of red to brick red fine grained tuffs and breccias. This is in turn overlain by the upper Nilkitkwa formation consisting of dark grey shale and andesitic to rhyolitic tuff and minor greywacke and these are in turn are overlain by the upper part of the Hazelton group which is the Smithers formation of lower Bajocian to lower Callovian age and consists of grey-brown to greenish grey or grey greywackes, sandstone, siltstone, shale, tuff, glauconitic sandstone and minor conglomerate. The Hazelton has been extensively faulted. The major block faults strike NW-SE.

The Hazelton group, which is mostly volcanic, is considered to be of middle to lower Jurassic age and is in turn overlain by the Middle and Upper Jurassic mostly sedimentary Bowser Lake group, by the volcanic and sedimentary lower Cretaceous Skeena group and the later Tertiary volcanic Endako and Ootsa Lake groups.

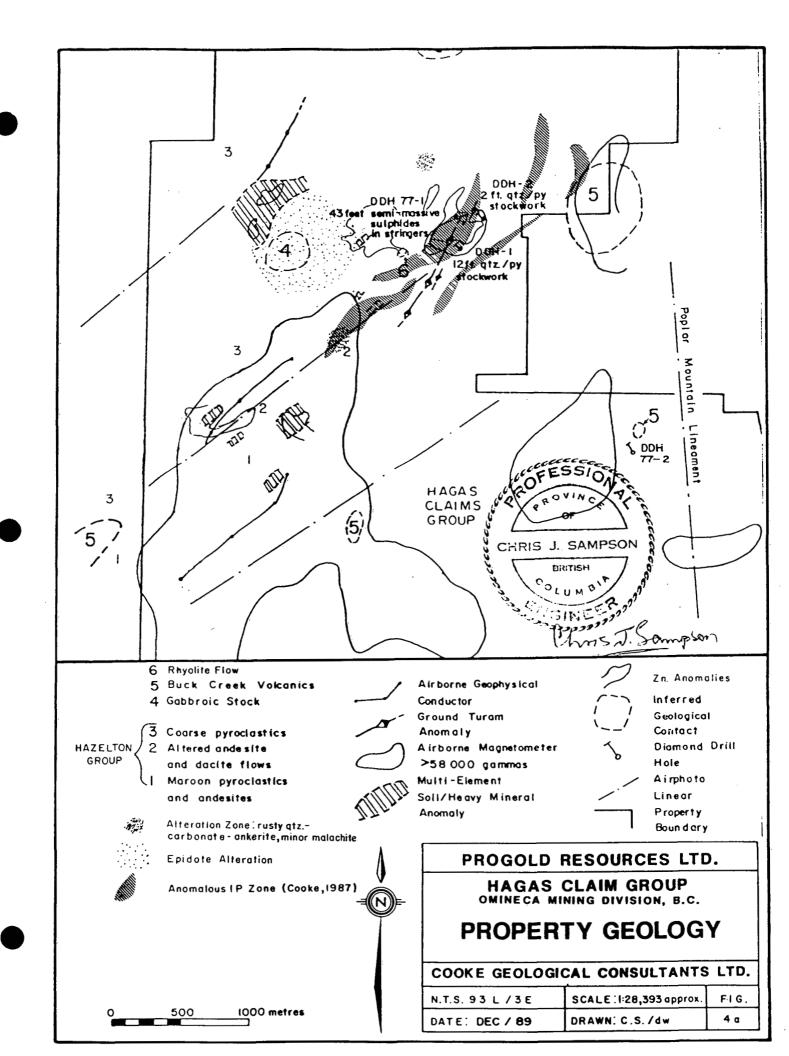
Unfortunately in outcrop the Tertiary volcanics can be easily confused with some of the Jurassic units making field mapping difficult. The early Jurassic Topley intrusions cut the lower part of the Hazelton group and a variety of intermediate to acidic plutons of late Cretaceous to Eocene age intrude most older units throughout the area.

Structurally, the area is dominated by a multitude of steep normal faults. Few contacts between map units are unfaulted and these are mainly intrusive or contacts between younger map units. Folding is common only in a few sedimentary units and is spacially and genetically related to the Eocene thrust faults.

In the Goosley Lake area, shown on Church's BCDM Preliminary Map 11, a series of lower Jurassic acid to intermediate lavas and pyroclastics is overlain uncomformably by flat lying Eocene volcanic rocks of the Goosley Lake and Buck Creek formations. The Goosley Lake volcanics consists mainly of biotite-pyroxene-plagioclase trachy andesite lavas and thick sills or flows. The Buck Creek volcanics are predominantly flows, mostly aphanitic andesites, some dacites and basalts. The assemblage has been intruded by syeno-monzonite alkalic gabbro stocks referred to as the Parrott Lake and Goosley Lake intrusions. These are of Eocene age and are probable coeval with the volcanics.

#### PROPERTY GEOLOGY

Rock outcrop is generally scarce in the central and northern part of the property but is more abundant at higher elevations to the south and west. Mostly overburden consists of dense glacial till containing up to 15% rounded boulders. Although the till is extensive, it is often shallow because in many cases logging road construction has exposed bedrock. The oldest rocks exposed on the property are the lower Jurassic Hazelton group which underlies most of the central and northern part of the property and is mostly volcanics. H. Salat of Aquitaine divided them into two successive volcanic assemblages. At the base, a series of green andesite breccias and pyroclastics, outcrop over the entire southwestern corner of the claim group and these show a strong pervasive epidotization associated with chlorite, calcite and quartz. Salat interpreted this as regional metamorphic alteration. The top of this unit is marked by dark green fragmental volcanic rocks interlayered with red brown argillite containing green flattened fragments, similar to volcanic material seen in the underlying flows.



Overlying this predominantly dark green volcanic breccia and pyroclastic assemblage are a series of bedded maroon and brown andesite flows, lapilli tuffs and andesitic pyroclastics which outcrop in nearly horizontal horizons in the northern part of the property. These units also show the same epidote alteration. Aquitaine interpreted these units as sub-aerially deposited and thin sections and other studies identified tephra, welded tuffs, hematized flow tops and numerous vesicles, etc. The underlying unit was interpreted as of a more subaqueous depositional nature.

Uncomformably overlying the Hazelton group volcanics are a series of brown weathering aphanitic hornblende andesites of the Buck Creek Eocene volcanic group. These outcrop in the eastern and southern parts of the property and form conspicuous rounded knolls emerging from the generally flat lying landscape.

In the north-eastern part of the Hagas 78 claim a small gabbroic stock intrudes the Hazelton volcanics. It is composed of green coarse grained gabbro with well developed plagioclase laths and poikilitic augite. Several small dykes of very fine grained diorite cut through the property. These generally strike in an NW-SE direction. The gabbro intrusive is believed to be of Eocene age and of similar composition to that occurring at the Equity Silver Mine property.

#### ECONOMIC MINERALIZATION (LOCATED PRIOR TO 1989 DRILLING)

Due to the sparse distribution of outcrop economic mineralization has generally been rarely encountered. The pyritic units in Aquitaine's 77-1 drill hole did contain low values in silver, copper and arsenic. Assay values taken from Salats report are as follows:

Sample No.	Oz/ton Au	Oz/ton Ag	% Cu	% Pb	% Zn	% As
Hagas 41-48	Trace	.24	.01	Nil	.01	.09
Hagas 74-74.5	Trace	.24	.005	.02	.02	.06
Hagas 76	Trace	.14	.005	.04	.01	.05
Hagas 78-78.5	Trace	.28	.005	.02	.02	.18
Hagas 79.5	Trace	.04	.005	.02	.01	.03
Hagas 99-101	Trace	.36	.005	.02	.01	.17
Hagas 107-111	Trace	.34	.005	.02	.02	.74
Hagas 114-117	Trace	.10	NIL	.04	.04	.09
Hagas 136.5-137.8	Trace	.10	.02	.02	.04	.69
Hagas 142-143	Trace	Trace	.005	.02	.02	.51

Detailed mapping by Holt on behalf of Catre-Ben Joint Venture did encounter one minor occurrence of disseminated chalcopyrite and native copper in a quartz stringer in an andesitic flow at 32+50N, 22+20E on the Catre-Ben grid (shown in Figure 4B). Samples from the mineralized quartz stringer assayed:

	% Cu	Oz/ton Au	Oz/ton Ag
Sample 2404	1.98	0.002	0.09
Sample 2322	2.03	0.002	0.12

The stringer is up to 20 cms wide, strikes approximately east/west, dips 75°S and was exposed over a strike length of approximately 6 metres. The surrounding andesitic flow material shows strong epidote alteration.

Catre-Ben excavated 11 bulldozer trenches around the showing, 4 of which encountered bedrock. This consisted of grey-green andesitic flow showing strong epidotization and minor calcite and hematite similar to that seen in the discovery outcrop but with no associated mineralization.

Vulimiri (1985) mentions presence of sulphide mineralization in float in the southwestern part of the claim group. These he identified as chalcopyrite and spalerite occurring as disseminations and stringers in andesitic flow material and tetrahedrite stringers occurring as veinlets within breccias in fine grained tuff. These occurrences remain as yet undocumented.

#### **GEOPHYSICAL SURVEYS**

During January, February 1973 Perry Knox Kaufman commissioned Scintrex Limited to carry out a program of Turam EM surveys over what is now held as the Hagas 3, 4 & 5 and Hag 2 claims. A north-west/south-east trending 400 ft spaced line grid, was run over the area of the large swamp and the Turam survey located in areas where Perry Knox Kaufman had earlier located VLF EM conductors and geochemical soil anomalies which in turn had probably been indicated by earlier surveys by Anaconda. Although the Turam survey covered only 2.4 line miles, it did locate several anomalous electromagnetic responses which likely reflect moderately conducting, steeply dipping bedrock conductors. Scintrex recommended drilling two diamond drill holes to test the conductive bodies.

In March 1977, an Aquitaine geophysical crew carried out an Electromagnetic survey using a Max-Min II instrument over the area located by the original Scintrex Turam survey. Magnetometer surveys were also run. The Acquitaine crew ran three 100 m spaced NW-SE lines across the area of the Turam conductor. They had concluded "there was a good chance the previous owner of this property had drilled the anomaly from the wrong side. The effects of conductive overburden often makes conductors appear more vertical than they really are. Horizontal loop electromagnetic surveys generally give a good indication of dip", but as a result of the survey, they concluded "interpretation of the dip is not as easy as was hoped. There are conflicting indications of dip. However, all the evidence on hand is slightly in favour of a west dip". And in conclusion "this anomaly has now been studied with two geophysical methods both capable of good depth

penetration. Both surveys have indicated an anomaly of moderate conductivity which is yet to be explained by drilling. The next drill hole should be drilled from the west side of line 2N to intersect the anomaly 50 metres below the surface".

During September, October 1977 Aquitaine commissioned a Scintrex HEM 801 airborne electromagnetic and magnetometer survey over the claim group. As a result of the airborne survey, Aquitaine staked the HEM claims to the southeast of the Hagas group and carried out a program of Max-Min on three 1000 metre spaced NW-SE trending lines across the present Hagas 78, 79, 80 and HEM claims. The survey located several anomalies. One conductor was found to be located in overburden.

As a result of the airborne EM survey, Aquitaine had staked the Pan claims on the west side of the present Hagas 78 claim and Fry claim over what is now covered by Frost & Frost 2 claims. They conducted programs of Max-Min, EM, magnetometer and geochemical soil sampling of these two claim groups and located a good deep seated conductor on the Fry claim. This was subsequently drilled in February 1979 by a BQ size hole 183 m (600 ft) which intersected predominantly volcanic tuffs, rhyolite and andesite with some stringers of pyrite and iron-manganese oxides. The hole did encounter a 6 metre thick fault zone which is the probable explanation of the geophysical conductor. At 165.8 m (544 ft) specks of galena were noted. The various pyritic sections were split and assayed. These carried silver, copper and lead values:

Sample No.	Oz/ton Au	Oz/tom Ag	% Cu	% Pb	% Zn
Fry 79-1 42-44 ft	Trace	.38	.01	.06	.03
51-54 ft	Trace	.18	.005	.02	.01
239.5-240 ft	Trace	.44	.05	.02	.02
249-250 ft	Trace	.42	.005	.02	.01
273-274 ft	Trace	.66	.005	.04	.02
544 ft	Trace	.28	.005	.04	.01

In April 1980, as part of a regional airborne EM survey using the Aerodat helicopter mounted system, Equity Mines overflew the Hagas claim group. The airborne results were interpreted by John Bonniwell of Excalibur International Consultants. he highlighted six anomalies which trend NE-SW across the Hagas 78 claims (see Figure 4B). He particularly recommended anomaly 10A for ground follow up.

In August 1980 Peter E. Walcott & Associates carried out 42 kms of Max-Min and magnetometer surveys over the anomalies which had been located by the Aerodat survey. He concluded "Results of the EM work on the grid were very disappointing." The anomalous responses obtained, although numerous in quantity were poor in quality.... All of the anomalies obtained generally strike across the grid lines and are of poor conductivity... They are in the writer's opinion due to conductive material within the glacial cover or to material of glacial origin."

In summer 1987, Cooke Geological contracted Pacific Geophysical Ltd. to carry out an I.P. and Resistivity Survey over an area 750 x 2400 m (Figure 4B). The following description was supplied by Paul Cartwright of Pacific Geophysical Ltd.

"I.P. effects are recorded as Percent Frequency Effects (P.F.E.) using frequencies of 4.0 and 0.25 hertz while apparent resistivity values are calculated in units of ohm-metres, at the 4.0 hertz frequency. A Phoenix Model IPV-1 receiver unit together with a Phoenix Model IPT-1 transmitter and a Phoenix Model M6-2 motor-generator were used to make the measurements. Dipole-dipole array was employed exclusively, using a basic interelectrode distance of 50 metres. Line 3100 N was also evaluated utilizing 100 meter, 75 metre and 25 metre interelectrode spacing, in addition to the 50 metre coverage. Four separations are recorded in all cases.

Field work commenced on August 14, 1987 and was completed on September 8, 1987.

Five zones of anomalous I.P. effects are interpreted in the data, and are illustrated on Figure 5, and Figure 6, plan maps of the contoured N=1 I.P. effects and resistivity values respectively. The I.P. anomalies shown, are, however, derived using all available data, that is, N=1 through N=4.

I.P. Zone 1 has been drilled previously, with encouraging intersections of massive to semi-massive mineralization being reported. Therefore, it is recommended that additional drilling be carried out to test the source of I.P. Zone 1 along strike from the area of earlier drilling. A first priority diamond drill hole located on Line 3400N so as to pass approximately 50 metres beneath Station 875E is recommended to better evaluate the northern part of the zone. The southwestern extent of Zone 1 could best be tested by a second priority diamond drill hole collared in the vicinity of Line 2500 E, Station 925 E, and drilled -45° northwest for a distance of 125 metres.

Diamond drilling should also be considered to test the source of I.P. Zone 2, with a hole collared near Line 2500 N, Station 1050 E, and drilled at -450 northwest for a distance of approximately 125 metres, on a second priority basis.

The southwestern end of I.P. Zone 2 should also be drilled as a third priority target, by a drill hole situated so as to pass approximately 50 metres beneath Line 1900 N, Station 910 E.

Drill testing of I.P. Zones 3, 4 & 5 should await the results of drilling carried out to evaluate the causative sources of I.P. Zone 1, and I.P. Zone 2."

#### GEOCHEMICAL SAMPLING RESULTS

As a result of geochemical surveys Anaconda located arsenic, zinc and mercury geochemical soil anomalies along the swamp across the central part of the Hagas claim. In 1972, Perry Knox Kaufman reconfirmed arsenic and zinc geochemical anomalies. Although Aquitaine did not carry out programs of geochemical soil sampling over the Hagas claim group itself, they did collect B horizon soil samples from the Pan & Fry claims. These were analyzed for copper, lead, zinc and silver. Probably due to thick glacial overburden no significant anomalies were detected by this work.

In the summer of 1980 the Catre-Ben Joint Venture collected 287 B horizon soil samples at 100 metre intervals across their survey grid. These were analyzed for copper, lead

and zinc. They detected one weak zinc anomaly but copper values were generally too scattered to indicate anomalies.

In 1984 on behalf of Petrostone Resources, Zastavnikovich collected 167 heavy mineral separated soil samples and another 144 soil samples which were analyzed for copper, silver, lead, zinc, cadmium, arsenic, antimony, mercury, barium and gold. concluded that good correlations were obtained from heavy mineral samples from the C horizon with the known EM conductors. Some coincident multi-element anomalies were detected in both B and C horizons. Subsequent geochemical surveys by Petrostone in 1985 and 1986 concentrated on following up gold anomalies which had been located by the 1984 work. In particular 1986 surveys collected 120, 2 kgs soil samples of the B & C horizons. The -40 to +80 mesh and the -80 mesh sizes from the large soil samples were processed by heavy liquid separation at Min En Laboratories, North Vancouver. Both of the heavy mineral fractions as well as the standard -80 mesh fractions were analyzed for 31 trace and minor elements by I.C.P. plus mercury, total barium and geochemical fire gold. The I.C.P. multi-element analytical results indicated a high degree of correlation among all three size fractions at clearly anomalous sites but less uniformity at sites with subtle element enrichment. It was concluded that the total -80 mesh fraction is adequate for I.C.P. trace element analyses but prior to geochemical analyses for gold, preconcentration methods such as heavy mineral separation are warranted. It was felt that there was good correlation between the I.C.P. analyzed trace elements and gold analysis in heavy minerals with the known EM conductors and fault structures on the property, indicating that comprehensive soil sampling surveys are a valid exploration method in the claim area.

#### TRENCHING RESULTS

During August 1987, Cooke Geological Consultants Ltd. excavated 7 trenches on the Hagas claims (Figure 4B). These were sited on geochemical anomalies and other targets from previous work programs. Trenches 1 and 7 exposed bedrock. 5 m chip samples were collected from Trench 1 along a pronounced alteration zone. Analytical results are shown in Appendix A. Some elevated arsenic values were encountered.

Trench 7 was excavated on the site of an old trench by Catre-Ben Joint Venture where sampling of a 20 cm wide quartz stringer in altered volcanics containing epidote, calcite and hematite, had assayed 1.98% Cu, 0.002 oz/ton Au, 0.09 oz/ton Ag, and 2.03% Cu, 0.002 oz/ton Au, and 0.12 oz/ton Ag.

Two grab samples taken by Cooke Geological from Trench 7 showed strong copper values at 7461 ppm and 2143 ppm. 10 m chip samples along the alteration zone showed only moderate copper and silver values.

#### 1989 DIAMOND DRILLING RESULTS

A synopsis of the results obtained from each hole is as follows:

#### DDH 89-1

Grid Coordinates: 3100 N/850 E	Depth:	305.00	m	(1000	ft)
Dip: 50 <sup>0</sup>	Casing:	4.56	m	(15	ft)
Azimuth: 1350	•				

The target for this hole was a sulphide mineralized breccia zone coincident with a very strong I.P. and Turam anomaly (Figures 4b, 5, 6). Four main rock types were recognized in this hole. The top (4.56-55.60 m) is a series of interbedded fine grained tuffs and massive flows of dacitic and rhyodacitic composition. These are strongly Epidote, calcite and quartz veins fractured, sheared and occasionally brecciated. commonly fill fractures and occasionally crosscut this unit. Disseminated pyrite is common throughout the section, especially strong pyrite mineralization up to 5% was recorded in the core from 30.0 to 50.85 m. The middle and lower portion of the hole consists of a series of interbedded intermediate porphyritic volcanic (andesite) and fine grained tuffs. These contain recrystallized pyrite associated with minor shear planes. All this unit has been weakly silicified, propylitically altered and occasionally brecciated. Crystalline rhyolite flow is present from 231.60 to 246.05 metres and has been cut by several quartz-carbonate veins containing minor pyrite and galena. A well mineralized zone extends from 180.69 to 182.44 metres and averages .334% cadmium, .857 % lead and .982% zinc. This is hosted by andesite flow and breccia. The sulphides, which range up to 5%, are pyrite, galena, hemimorphite and some sphalerite. Fifty samples were collected for analysis. Most of the high base metal and cadmium values were recorded in the core from 175.65 m to 187.92 m. Other metal values except arsenic were below anomalous levels. (Drill hole section Figure 8c)

#### **DDH 89-2**

Grid coordinates: 3900 N / 860 E

Dip: 50<sup>0</sup> Depth: 193.15 (630')
Azimuth: 135<sup>0</sup> Casing: 57.15 m (175')

This hole was designed to test the north-east end of I.P. anomaly 5. The upper part of the hole consists of interbedded sequences of mudstone, sandstone and conglomerate. These are highly chlorite and sericite altered and sulphide poor. Below this unit from 113.10 m is massive dacite flow occasionally brecciated and also sulphide poor. Due to caving this hole was abandoned at 195.50 m. Only three split core samples were taken. These returned no anomalous metals values. (Drill hole section Figure 8d)

#### DDH 89-3

Grid Coordinates: 3010 N/840 E

Dip: 50<sup>0</sup> Depth: 289.75 m (950') Azimuth: 135<sup>0</sup> Casing: 6.10 m (19')

This hole was collared approximately 100 m west of hole 89-1 and was designed to investigate a possible extension of the mineralized zone intersected in 89-1 and coincident I.P. and Turam anomalies. Lithologically this hole is similar to diamond drill hole 89-1 and consists mostly of massive, silicified sequences of porphyritic andesite and interbedded tuffaceous banded volcanic units occasionally strongly brecciated. Pyrite mineralization is present throughout the whole section but the best mineralization zone extends from 100.65 to 102.65 m and consists of pyrite, tetrahedrite, chalcopyrite, and argentite. Native copper was noted at 107.00 m, 193.20 and 259.56 m and disseminated chalcopyrite mostly from 245.00 to the bottom of the hole.

Fifty one samples were collected. One anomalous gold assay was obtained (.006 oz/ton). Anomalous silver values exceeding 1.9 ppm were recorded in thirteen samples, the

highest value, 4.43 oz/ton Ag, was recorded in sample 35079 (.5 m wide), which was also strongly anomalous in copper 3.780 % and gold .006 oz/ton. This high grade section is part of a 2 m wide intersection (100.65 - 102.65 m) which assays 1.23 % copper and 1.25 oz/ton silver. Anomalous copper values exceeding 300 ppm were recorded in seventeen samples. Arsenic values in general were strongly anomalous. Lead, zinc, cadmium and antimony values are relatively low (Drill hole section, 8b).

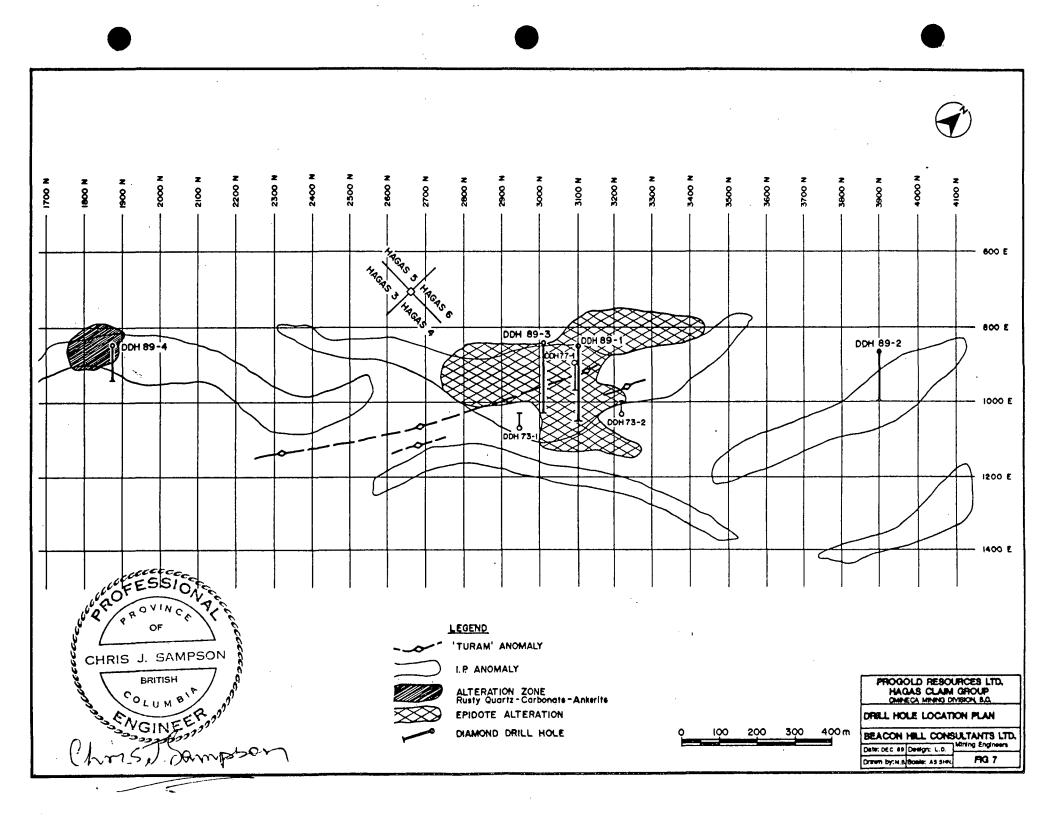
#### **DDH 89-4**

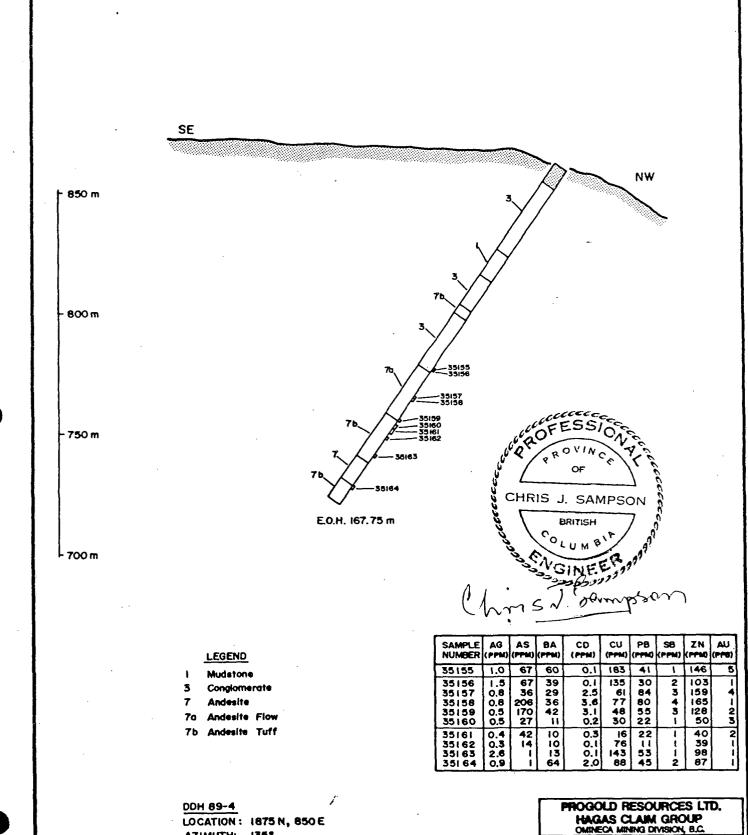
Grid coordinates: 1875 N/850 E

Dip: 55<sup>0</sup>
Azimuth: 1350

Depth: 167.75 m (550') Casing: 9.70 m (30')

This hole was aimed to explore at depth the south-east end of I.P. anomaly 2. In general the lithology is similar to hole 89-2 and consists of sedimentary and volcanic units. The upper part of the hole (from 9.70 to 100.83 m) is a series of interbedded poorly sorted conglomerate and fine mudstone occasionally cut by calcite veins and propylitic alteration. The lower portion of the hole consists of massive, weakly silicified pyroclastic andesite and tuffaceous sequences. No significant mineralization was noted in the core. Ten samples were taken. All metals values were below anomalous levels. (Drill hole section Figure 8a)





10 20 30 40 50m

DRILL HOLE SECTION DOH 89-4

BEACON HILL CONSULTANTS LTD.

Date: DEC. 89 Dealgn: L.D.

MT by: MB Scale: AS SH

Mining Engineers

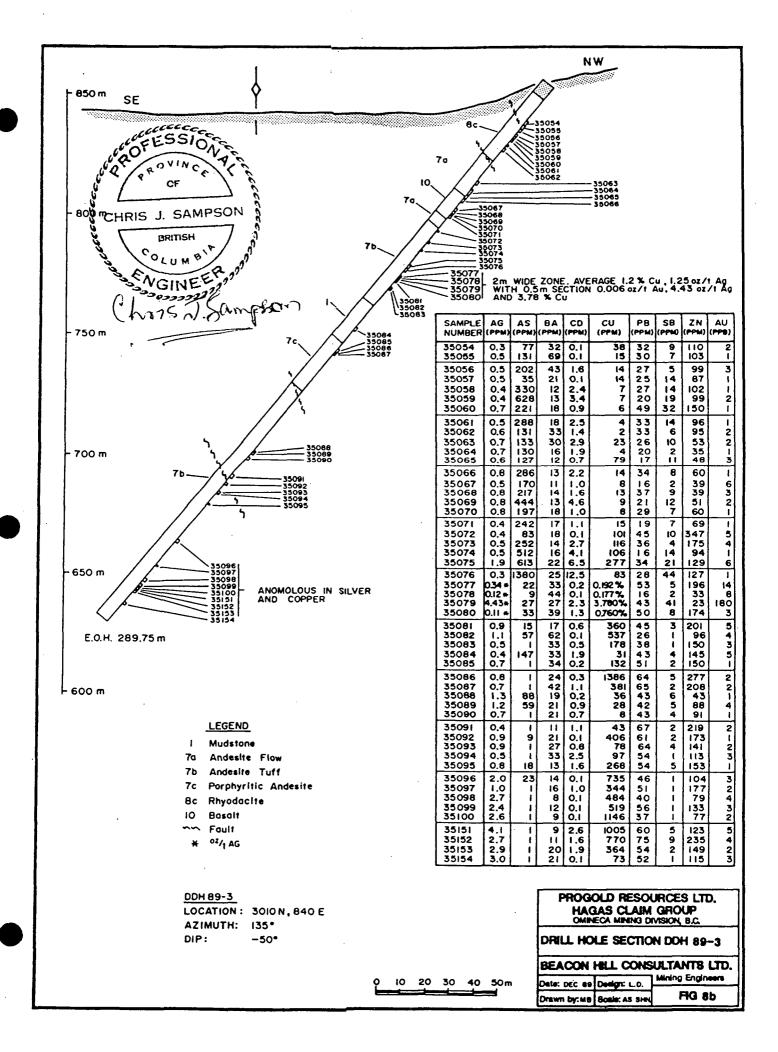
FIG 8a

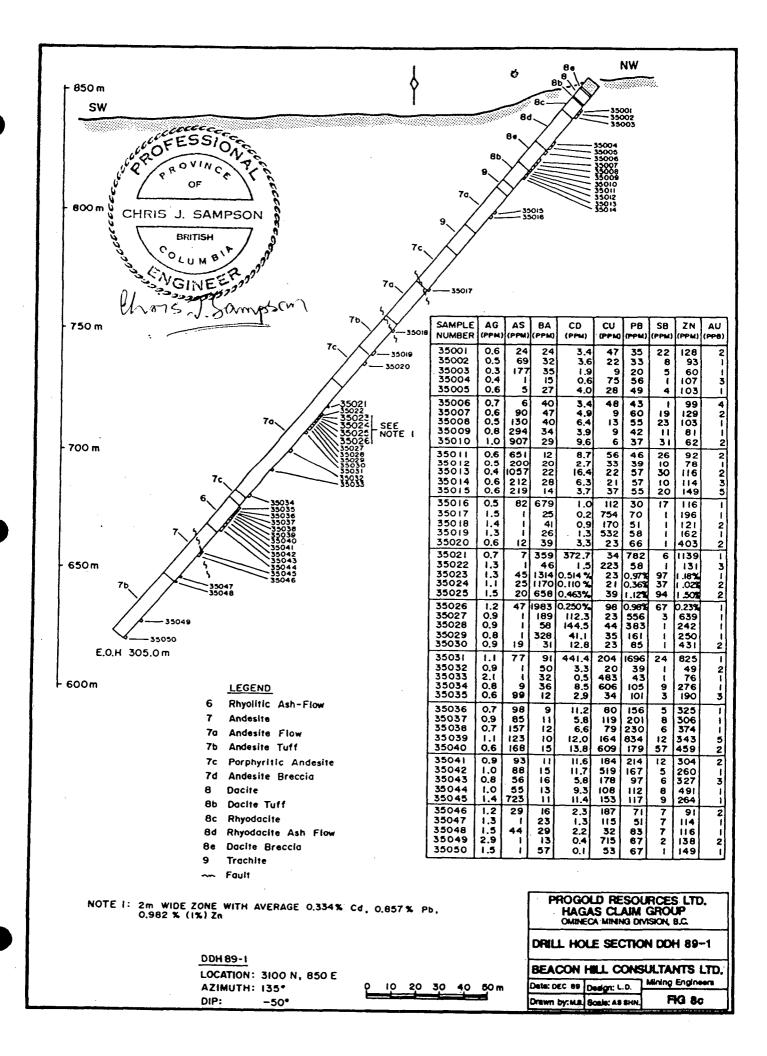
LOCATION: 1875 N, 850 E

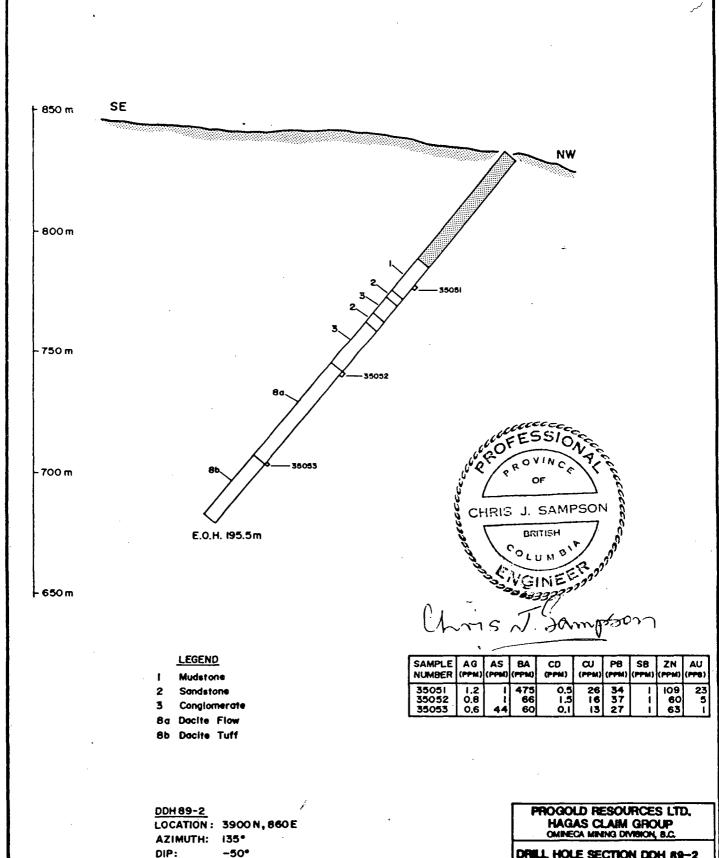
-55°

AZIMUTH: 135°

DIP:







DRILL HOLE SECTION DOH 89-2

BEACON HILL CONSULTANTS LTD. Mining Engineers Date: DEC 69 Design: L.D.

Drawn by: M.B. Scale: AS SIEN

10 20 30 40 50m

FIG 8d

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#### STATEMENT OF QUALIFICATIONS

- I, Les Demczuk, of the City of Vancouver, Province of British Columbia, hereby certify that:
- 1. I am a Mining Geological Engineer residing at 1835 East 13th Avenue, Vancouver, British Columbia.
- 2. I graduated from University of Mining and Metallurgy, Krakow, Poland in 1977 with Master of Science degree in Geology.
- 3. I have worked in mineral and coal exploration since 1977 and have practised my profession since 1977.
- 4. I am a Fellow of the Geological Association of Canada.
- 5. This report is based upon field work carried out by myself and a review of published and privately held literature pertaining to the claim area.
- 6. I have no interest in any claims mentioned in this report, nor in securities of any company associated with the property, nor do I expect to receive any such interest.
- 7. I consent to the use of this report in or in connection with, a prospectus, or statement of Material Facts relating to the raising of funds for this project.

Les Demczuk, M.Sc., F.G.A.C. December 30, 1989

#### CERTIFICATE

- I, Christopher J. Sampson, of 2696 West 11th Avenue, Vancouver, British Columbia, V6K 2L6, hereby certify that:
- 1. I am a graduate (1966) of the Royal School of Mines, London University, England with a Bachelor of Science degree (Honors) in Economic Geology.
- 2. I have practiced my profession of mining exploration for the past 23 years in Canada, Europe, United States and Central America. For the past 13 years I have been based in British Columbia.
- 3. I am a consulting geologist. I am a registered member in good standing of the Association of Professional Engineers of British Columbia.
- 4. The present report is based on knowledge gained from a visit to the property in September 1987, study of published and unpublished reports, and supervision of the 1989 drill program.
- 5. I have not received, nor do I expect to receive, any interest, direct or indirect, in the properties or securities of Progold Resources Ltd. or in those of its associated companies.
- 6. Progold Resources Ltd., and its affiliates are hereby authorized to use this report in, or in conjunction with, any prospectus or statement of material facts.
- 7. I have no interest in any other property or company holding property within 10 kilometres of the Hagas group of claims.

Vancouver, B.C. 30 December, 1989

Christopher J. Sampson, P.Eng Consulting Geologist

# APPENDIX A ANALYTICAL RESULTS: SAMPLES FROM TRENCHES AND DRILL HOLE 73-1

COMPANY: COOKE GEOLG	DGICAL D	ONSULTAN	115	H	IN-EN LA	RS ICP R	EPORT	(AET:F31) PAGE 1 OF 1
PROJECT NO: PG87HP			705 WEST	15TH	ST., NOF	TH VANCE	DUVER, B.C. V7M 172	FILE NO: 7-1170
ATTENTION: B.COOKE				(604)	980-5814	OR 1604	11988-4524 • TYPE ROCK GEOCHEN	• DATE: AUGUST 27, 1787
(VALUES IN PPN )	AG	AŠ	CU	PB	58	ZN A	NU-PPB	
JRHP-SA	1.2	877	105	65	55	733	1 TRENCH I SM CHID	)(
JAHR- 5B	1.7	147	16	42	21	240	7 TRENCH I SM CHIP	
JRHF-5C	1.1	2	51	37	18	919	1 TRENCH I IM CHIP	
JRHP-5D	1.0	10	17	41	10	364	2 Trenem 1 5M CAIP	Jl .
JRIIP-9	2.2		7461	27	6	144	5 TRENCH 7 GRAD MALACHITE	E, RUSTY RUBBLE VOLCANICS
JRHP-7A	1.3	26	228	11	6	178	5 TRENCH 7 GRAS ANERLIE	. MALAGISEE RUSTY PUBLIC VOLCAR
JRHP-9B	.8	39	523	19	i	85	6 TROJEH + 10M ENIP	
JRHP-15	1.9	14	2143	Ь	2	9	8 10cm QUARTZ VEIN MALL	Knite + chibote
DH73-1-175-177	.7	557	44	13	11	210	3 DH72-1 175'-177' A	DERNINATED DELL'AND GORATI
DH73-1-206-208	. 9	21	11	16	1	229	7 OH 73-1 202'- 208'	SULPHILES
DH73-1-243-248	.5	705	13	12	15	21	2 DH 73-1 243'- 248	}
DH73-1-248-253	.5	859	38	11	30	48	1 DH 73-1 248' - 255'	
DH73-1-253-256	.5	289	55	10	9	55	5 DH 73.1 252 256"	
DH73-1-268-268.5	1.0	690	48	28	16	400	2 DH 73.1 268 - 268 5'	
DH73-1-275-276	.8	178	531	37	49	213	2 04731 275'-276'	
DH73-1-303	1.0	11	49	59	3	241	3 DH 73-1 302' END OF	HOE V

# APPENDIX B 1989 DRILL LOGS AND ASSAY RESULTS

COMP: PROGOLD RESOURCES

PROJ:

#### MIN-EN LABS — ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2

FILE NO: 95-0340-RJ1+2

DATE: DEC-03-89

ATTN: PETER STOKES	(604)980-5814 OR (604)988-4524	* TYPE ROCK GEOCHEM *	(ACT:F31)

SAMPLE NUMBER	AG PPM	AS PPM	BA PPM	CD PPM	CU PPM	P8 PPM	SB PPM	ZN PPM	AU PPB	
35 001 35 002 35 003 35 004	.6 .5 .3 .4	24 69 177 1	24 32 35 15	3.4 3.6 1.9	47 22 9 75	35 33 20 56	22 8 5 1	128 93 60 107	2 1 1 3	
35 005 35 006 35 007 35 008 35 009	.6 .7 .6 .5	5 90 130 294	40 47 40 34	4.0 3.4 4.9 6.4 3.9	28 48 9 13 9	49 43 60 55 42	1 19 23 11	99 129 103 81	1 4 2 1 1	
35 010 35 011 35 012 35 013 35 014 35 015	1.0 .6 .5 .4	907 651 200 1057 212	29 12 20 22 28	9.6 8.7 2.7 16.4 6.3	56 33 22 21	37 46 39 57 57	26 10 30 10	92 78 116 114	2 1 2 3	
35 016 35 017 35 018 35 019 35 020	.6 1.5 1.4 1.3	82 1 1 1 1	679 25 41 26 39	3.7 1.0 .2 .9 1.3 3.3	37 112 754 170 532 23	55 30 70 51 58 66	20 17 1 1 1	149 116 196 121 162 403	5 1 1 2 1 2	
35 021 35 022 35 023 35 024 35 025	.7 1.3 1.3 1.1 1.1	7 1 45 25 20	359 46 1314 1170 658	372.7 1.5 5037.6 1062.9 4220.5	34 223 23 21 39	782 58 6811 2322 7898	6 1 97 37 94	1139 131 7637 6450 9413	1 3 1 2 2	HULE # 1
35 026 35 027 35 028 35 029 35 030	1.2 .9 .9 .8	47 1 1 1 19	1983 189 58 328 31	2340.8 112.3 144.5 41.1 12.8	98 23 44 35 23	6598 556 383 161 85	67 3 1 1	1484 639 242 250 431	1 1 1 1 2	
35 031 35 032 35 033 35 034 35 035	1.1 .9 2.1 .8	77 1 1 9 99	91 50 32 36 12	441.4 3.3 .5 8.5 2.9	204 20 483 606 34	1696 39 43 105 101	24 1 1 9	825 49 76 276 190	1 2 1 1 3	
35 036 35 037 35 038 35 039 35 040	.7 .9 .7 1.1	98 85 157 123 168	9 11 12 10 15	11.2 5.8 6.6 12.0 13.8	80 119 79 164 609	156 201 230 834 179	5 8 6 12 57	325 306 374 343 459	1 1 1 5 2	
35 041 35 042 35 043 35 044 35 045	.9 1.0 .8 1.0 1.4	93 88 56 55 723	11 15 16 13 11	11.6 11.7 5.8 9.3 11.4	184 519 178 108 153	214 167 97 112 117	12 5 6 8 9	304 260 327 491 264	2 1 3 1 1	
35 046 35 047 35 048 35 049 35 050	1.2 1.3 1.5 2.9 1.5	29 1 44 1	16 23 29 13 57	2.3 1.3 2.2 .4 .1	187 115 32 715 53	71 51 83 67 67	7 7 7 2 1	91 114 116 138 149	2 1 1 2 1	
\- <u>-</u>										

COMP: PROGOLD RESOURCES LTD.

ATTN: P.STOCKES

#### MIN-EN LABS - ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2

DATE: DEC-09-89

FILE NO: 9S-0342-RJ1+2

(604)980-5814 OR (604)988-4524 \* TYPE ROCK GEOCHEM \* (ACT:F31)

SAMPLE NUMBER	AG PPM	AS PPM	BA PPM	CD PPM	CU PPM	PB PPM	SB PPM	ZN PPM	AU PPB		
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35 053 35 054 35 055	.6 .3 .5	77 131	60 32 69	1 1 1	13 38 15	27 32 30	9 7	63 110 103	1 2 1		
35 056 35 057	.5	202 35	43 21	1.6	14 14	27 25	5 14	99 87	3		
35 058 35 059 35 060	.4 .4 .7	330 628 221	12 13 18	2.4 3.4 .9	7 7 6	27 20 49	14 19 32	102 99 150	1 2 1		
35 061 35 062	.5	288 131	18 33	2.5	4 2	33 33	14	96 95	1 2		
35 063 35 064 35 065	.7 .7 .6	133 130 127	30 16 12	2.9 1.9 .7	23 4 79	26 20 17	10 2 11	53 35 48	2 1 3		
35 066 35 067	.8 .5 .8	286 170	13 11	2.2 1.0	14 8	34 16	8 2	60 39	1 6		
35 068 35 069 35 070	.8 .8 .8	217 444 197	14 13 18	1.6 4.6 1.0	13 9 8	37. 21 29	9 12 7	39 51 60	3 2 1		
35 071 35 072	4	242 83	17 18	1.1	15 101	19 45	7 10	69 347	1 5		
35 073 35 074 35 075	.5 .5 1.9	252 512 613	14 16 22	2.7 4.1 6.5	116 106 277	36 16 34	4 14 21	175 94 129	4 1 6		
35 076 35 077	.3 11.8	1380	25 33	12.5	83 1702	. 28 53	44	127 196	1 14		
35 078 35 079 35 080	3.3 148.0 3.1	9 27 33	44 27 39	.1 2.3 1.3	1484 29027 1569	16 43 50	2 41 8	33 23 174	8 180 3	Hole #	
35 081 35 082	.9 1.1	15 57	17 62	.6 .1	360 537	45 26	3	201 96	5 4		<del>}</del>
35 083 35 084 35 085	.5 .4 .7	1 147 1	33 33 34	.5 1.9 .2	178 31 132	38 <sup>-</sup> 43 51	1 4 2	150 145 150	3 5 1		
35 086 35 087	.8	1	24 42	.3 1.1	1386 381	64 65	5 2	277 208	2		
35 088 35 089 35 090	1.3 1.2 .7	88 59 1	19 21 21	.2 .9 .7	36 28 8	43 42 43	6 5 4	43 88 91	1 4 1		
35 091 35 092	.4	1 9	11 21	1.1	43 406	67 61	2 2	219 173	2		
35 093 35 094 35 095	.9 .5 .8	1 1 18	27 33 13	.8 2.5 1.6	78 97 268	64 54 54	4 1 5	141 113 153	2 3 1		
35 096 35 097	2.0	23	14 16	.1 1.0	735 344	46 51	1	104 177	3 2		
35 098 35 099 35 100	2.7 2.4 2.6	1 1 1	8 12 9	.1 .1 .1	484 519 1146	40 56 37	1 1 1	79 133 77	4 3 2		
35 151 35 152	4.1 2.7	1 1	9 11	2.6 1.6	1005 770	60 75	5 9	123 235	5 4		
35 153 35 154 35 155	2.9 3.0 1.0	1 1 67	20 21 60	1.9 	364 <u>73</u> 183	54 52 41	2 1 1	149 115 146	2 3 5		•
35 156 35 157	1.5	67 36	39 29	.1 2.5	135 61	30 84	2 3	103 159	1 4	Hot #	.E_
35 158 35 159 35 160	.8	206 170 27	36 42 11	3.6 3.1 .2	77 48 30	80 55 22	4 3 1	165 128 50	1 2 3	#	4

COMP: PROGOLD RESOURCES LTD.

#### MIN-EN LABS - ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2

ATTN: P.STOCKES

PROJ:

(604)980-5814 OR (604)988-4524

FILE NO: 9V-0342-RJ3

DATE: DEC-09-89

\* TYPE ROCK GEOCHEM \* (ACT:F31)

SAMPLE NUMBER	AG PPM	AS PPM	BA PPM	CD PPM	CU PPM	PB PPM	SB PPM	ZN PPM	AU PPB	
35 161 35 162 35 163 35 164	.4 .3 2.6 .9	42 14 1 1	10 10 13 64	.3 .1 .1 2.0	16 76 143 88	22 11 53 45	1 1 1 2	40 39 98 87	2 1 1	HOLE #4
									··········	·
		- <u></u>							· · · · · · · · · · · · · · · · · · ·	
			······							
				<u>-</u>						·
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SPECIALISTS IN MINERAL ENVIRONMENTS CHEMISTS - ASSAYERS - ANALYSTS - GEOCHEMISTS

NORTH VANCOUVER, B.C. CANADA V7M 1T2 TELEPHONE (604) 980-5814 OR (604) 988-4524 TELEX: VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE: 33 EAST IROQUOIS ROAD P.O. BOX 867

TIMMINS, ONTARIO CANADA P4N 7G7 TELEPHONE: (705) 264-9996

## Assay Certificate

9S-0340-PA1

Company: PROGOLD RESOURCES LTD.

Project:

Attn:

P. STOCKES

Date: DEC-08-89

Copy 1. PROGOLD RESOURCES LTD., VANCOUVER, B.C.

2. PROGOLD RESOURCES LTD., C/O MIN-EN LABS

He hereby certify the following Assay of 4 PULP samples submitted DEC-06-89 by P.STOCKES.

Sample	CD	FB	ZN
Number	%	%	%
35023	.514	.97	1.18
35024	.110	.36	1.02
35025	.463	1.12	1.50
35026	.250	.98	.23

Certified by\_

MIN-EN LABORATORIES



## SPECIALISTS IN MINERAL ENVIRONMENTS

CHEMISTS - ASSAYERS - ANALYSTS - GEOCHEMISTS

705 WEST 15TH STREET NORTH VANCOUVER, B.C. CANADA V7M 1T2 TELEPHONE (604) 980-5814 OR (604) 988-4524 TELEX: VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE:

33 EAST IROQUOIS ROAD P.O. BOX 867 TIMMINS, ONTARIO CANADA P4N 7G7 TELEPHONE: (705) 264-9996

## Assay Certificate

9S-0342-RA1

Company: PROGOLD RESOURCES LTD.

Project:

PETER STOCKES

Date: DEC-09-89 Copy 1. PROGOLD RESOURCES LTD., VANCOUVER, B.C.

2. PROGOLD RESOURCES LTD., C/O MIN-EN LABS

He hereby certify the following Assay of 1 ROCK samples submitted DEC-06-89 by LES DEMCZAK.

Sample

Attn:

CU

Number

7.

35 079

3.780

Certified by\_

MIN-EN LABORATORIES



# LABORATORIES TO

#### SPECIALISTS IN MINERAL ENVIRONMENTS CHEMISTS - ASSAYERS - ANALYSIS - GEOCHEMISTS

NORTH VANCOUVER, B.C. CANADA V7M 1T2 TELEPHONE (604) 980-5814 OR (604) 988-4524 TELEX: VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE: 33 EAST IROQUOIS ROAD

P.O. BOX 867 TIMMINS, ONTARIO CANADA P4N 7G7 TELEPHONE: (705) 264-9996

## Assay Certificate

9S-0342-PA1

Company: PROGOLD RESOURCES LTD.

PETER STOCKES

Project: Attn:

Date: DEC-14-89

CODY 1. PROGOLD RESOURCES LTD., VANCOUVER, B.C.

He hereby certify the following Assay of 4 PULP samples

submitted DEC-06-89 by LES DEMEZAK.

Sample	AU	AU	AG	AG	CU
Number	G/TONNE	OZ/TON	G/TONNE	OZ/TON	%
35 077 35 078 35 079** 35 080	.19	. 006	11.6 4.2 152.0 3.9	.34 .12 4.43 .11	.192 .177 3.780 .76

Certified by

MIN-EN LABORATORIES

COMP: PROGOLD RESOURCES LTD.

PROJ:

#### MIN-EN LABS — ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2

ATTN: PETER STOCKES (604)980-5814 OR (604)988-4524

FILE NO: 9S-0342-RJ1+2

DATE: DEC-16-89

\* TYPE ROCK GEOCHEM \* (ACT:F31)

Alin: Peick Si	UCKES				(004//0		(004)700 4724			THE ROCK GEOCHEN	(//01.131)
SAMPLE NUMBER	AG AL PPM PPM	AS B	PPM PPM	BI CA CD PPM PPM PPM	CO CU F PPM PPM PP	M PPM F	LI MG MN PPM PPM PPM	MO NA PPM PPM	NI P PPM PPM	PPM	
35 077 35 078 35 079 35 080 35 100	11.8 29460 3.3 20120 148.0 17770 3.1 17990 2.6 27050	22 1 9 1 27 1 33 1 1 1	33 .7 44 .5 27 .4 39 .8 9 .5	5 46610 .2 2 37050 .1 1 32550 2.3 5 42800 1.3 12 45720 .1	36 1702 5982 8 1484 2838 6 29027 2621 25 1569 5582 31 1146 4039	0 250	17 23400 2453 6 3610 819 10 2090 543 14 15100 2147 6 13370 1425	9 370 3 300 2 590 8 250 9 260	11 620 1 410 1 120 4 960 20 470	53 5 39 1 1 140.3 196 1 1 4 16 2 119 1 1 100.2 33 1 1 1 43 41 131 1 2 96.0 23 1 1 2 50 8 20 1 1 137.2 174 2 2 2 37 1 67 1 1 184.8 77 1 1 2	25 14 57 8 39 180 10 3 79 2
35 151 35 152	4.1 40250 2.7 39970	1 1	9 .7 11 1.0	27 57030 2.6 22 36230 1.6	53 1005 5766 65 770 7946	50 170 50 180	9 22180 2110 25 37850 3174	7 310 12 530	27 740 25 780	60 5 97 1 1 282.7 123 2 3 2 75 9 18 1 1 342.7 235 1 3 3	58 5 60 4
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										DEC 2 1 1989	
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					<u>,,</u>						

COMP: PROGOLD RESOURCES LTD.

ATTN: PETER STOCKES

PROJ:

## MIN-EN LABS - ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2

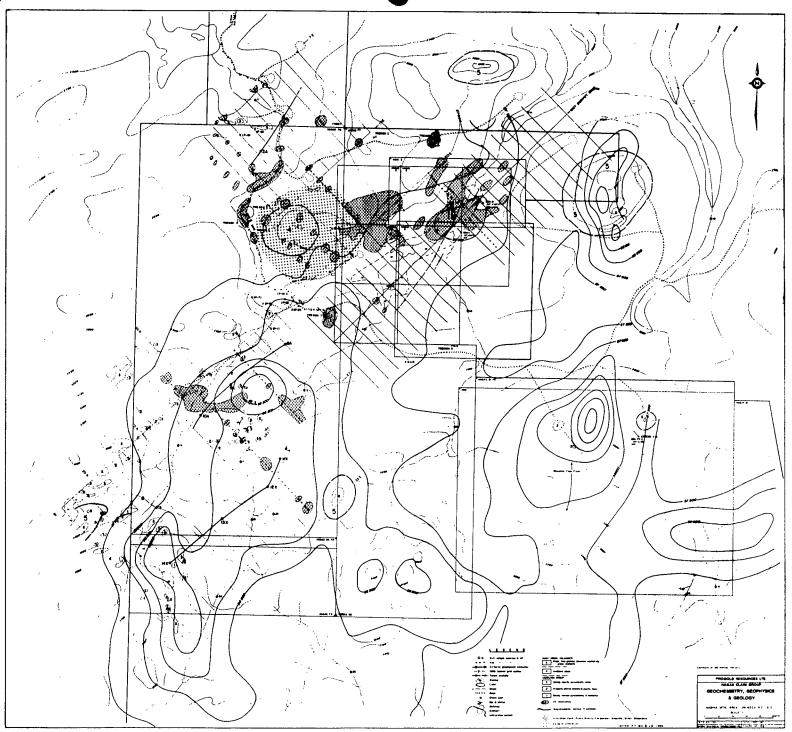
(604)980-5814 OR (604)988-4524

FILE NO: 98-0340-RJ1

· DATE: DEC-16-89

\* TYPE ROCK GEOCHEM \* (ACT:F31)

	UCKES		4.0													20-4224											ROCK				(ACT	
SAMPLE NUMBER	AG PPM	PPM	AS PPM	PPM	BA PPM	BE PPM	BI PPM	CA PPM	PPM	PPM	CU PPM	PPM	PPM	LI PPM	MI PPI	G MN M PPM	MO PPM	NA PPM	NI PPM	P PPM	PB PPM	SB PPM	SR PPM	. TH PPM f	U Mqc	V PPM	. ZN PPM	GA PPM	SN PPM	W PPM	CR PPM	AU PPB
35 023 35 024 35 025 35 026	1.3 1.1 1.5 1.2	9160 8270 7840 11300	45 25 20 47	10 10 8 5	1314 1170 658 1983	1.0 1.2 1.0 1.0	10 11 11 10	65520 72110 71510 50730	5037.6 1062.9 4220.5 2340.8	56 44 46 45	23 21 39 98	75300 93680 61080 45170	950 880 800 960	6 5 7	2133 2474 2359 1682	3393 0 4462 0 3151 0 2298	11 13 14 10	1070 950 880 1380	17 15 16 18	440 360 410 410	6811 2322 7898 6598	97 37 94 67	57 57 53 66	7 6 7 6	1 1	214.3 208.9 196.6 204.6	7637 6450 9413 1484	1 1 1 2	4 5 4 3	2 2 1	20 20 20 24	1 2 2
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	<u></u>											<u> </u>									· · · · · · · · · · · · · · · · · · ·							·•				
	<del></del>			<u></u>						2.14	· · · · · ·		·													· <u>····</u> ·····	····					
· .							<u> </u>					<u>-</u>					, · · · · · ·	··	<u></u>	·		<del></del>							· • · · · · · · · · · · · · · · · · · ·			
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	• •• • • • • • • • • • • • • • • • • •									,		, <del>.</del>							···						·							



3008 4189N. . 3700% 3680N 3500N. 3400N. 3300N\_\_ 3200N.... 3100N\_\_\_\_ 2700N\_\_\_\_ 2500N\_\_\_\_ 2400N\_\_\_

## COOKE GEOLOGICAL CONSULTANTS

RESISTIVITY SURVEY

(71,1000 ONTO PRESENTED )

PROJECT: HRORS PROPERTY PROJECT • 1 POS7NP

BRSELINE RZIMUTH : 45 Deg.

DATE : DEC 89 SURVEY BY : K.C./H.H.H. HTS : 1
FILE: HPV18000
Paotfic Geophysical Ltd.

COOKE GEOLOGICAL CONSULTANTS

INDUCED POLARIZATION SURVEY

(Almo come resonate)

PROJECT: MIGHS PROPERTY PROJECT + 1 POSYMP

BRISELINE RETRUTH: 46 Dag.

大学·蒙蒙特别的第三人称:1995年1997年

SURVEY BY I. K.C./N.N.N. NTS : DEC 89
FILE: NFWEXCOO
Pacific Geophysical Ltd.

Drilling	Compan	У		Core Size		Hole	No.		<u></u>		Sheet	: 1 of	- 6	3					
J.T. Thor	mas			NQ		89 00	OH 01												
Date Col	lared	Date	Completed	Field Co-ordinates		Dip	Bearing		Logge	d By		Owner/Opera	tor		·				
Nov.24/89	9	Nov.	28/89	3100N/850E		-50 <sup>0</sup>	135°		L. De	emczuk		Progold Reso	ource:	s Ltd					
Symbol	Dept	th	Descrip	otion	C/A	×	Sample	Int	erval	Mineraliza	tion	Alteration		<u></u>	Assa	y Res	ult		
	м	}				Rec.	No.	Fro	m To				Au	Ag	Cu	Pb	Zn	Cd	As
							<del> </del>	ļ	<del></del>				ppb	ppm	ррш	ppm	ppiii	ppii	Ppii
	0		Casing/Ove	rhurden							ļ								
	4.56	6	ous mg, ove	, par deri	Ì							,							
8d		i		strongly brecciated rom 4.94-5.04		84					i								
80		ĺ	fault zone			04					ĺ								
	5.04	4																	-
,				ight grey to brownish: d microgranular		95		!		}									
8		į	texture sm	all calcite veins		1	ļ												
	9.55	5	throughout	the section															
,	,,,,,			f: very fine		97													
8b		Ì	grained gr microcrysh					İ		t 									
	10.0	00	ilitei oci ysit	otanic															
		į		Rhyodacite			75004	42	0 47 0							75.4	2.0	7.	24
8c	}			ments of dacite y silica and feldspar		100	35001 35002	1	0-13.0 0-15.0	0.5% py		Moderately	2	.6 .5	47 22	35 1 33		34 3.6	24 69
		į	quite a fe	w large crystals of			35003	1	0-17.0	1% py		Silicified	1	.3	9	20		1.9	177
				tr. of pyrite small qtz. veins,				!											
				iron oxidised and in															
			filling wi	th very fine sulphide				}											
						J		<u> </u>		L			L						

Drilling	Compan	У		Core Size		Hole	No.				She	et 2 of	-	6	.—		·		
J.T. Tho	mas			NQ		89 00	OH 01												
Date Col	lared	Date Completed	Field	Co-ordinates		Dip	Bearing		Logge	ed By		Owner/Opera	tor						
Nov.24/8	9	Nov.28/89	3100N	/850E		-50°	135°		L. De	emczuk		Progold Res	ource	s Ltd	i <b>.</b>				
Symbol	Dep	th Descri	ption		C/A	1 %	Sample	Inte	erval	Mineraliza	tion	Alteration			Assa	y Re	sult		
	м		•			Rec.	No.	Fro	n To				Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Cd ppr	As n ppm
	17.	Rhyodacit		ow dark maroon ey, fine grained															:
8d		·		with chlorite	,	100	35004	30.0	0-32.0	0.5% py		clay,serici	. 3	.4	75	56	107	.6	1
		and qtz.	some ca	lcite veining			35005	32.	0-34.0	0.5% py			1	.6	28	49	103	4.0	5
	34.0	1				1	1						}						
				: dark red		1	35006		05-37.05	ι ''			4	.7	48	43		3.4	6
	1			tuff, aphanitic		96	35007		00-41.00	tr. of py			2	.6	9			4.9	90
8c	ļ	L L		crysts of orthoc		}	35008		00-43.00	<b></b>		1	1	.5	13		103		
	1		oclase,	very fine graine	3		35009 35010		00-45.00	, , ,		ļ	1	.8	9 6	42 37		3.9	294 907
	45.	quartz					35010	43.0	00-45.75	tr. of py		İ	2	1.0	0	37	02	9.0	907
	45.	Dacite tu		wnish to e tuff, strongly	•			٠											
	}			re fill with pyr			35011	45.	75-46.75	1%py			: 2	.6	56	46	92	8.7	651
	į.			pyrite througho	-	95	35012	46.	75-47.89	1% py		1	1	.5	33	39	78	2.7	200
8b				k of calcite, qt			35013	47.	39-49.09	>5% py		Į	2	.4	22	57	116	16.4	1057
	1	veining.	From 54	.6 to 55.6 fault			35014	49.	09-50.85	1% py		i	3	.6	21	57	114	6.3	212
	ŀ	zone stro	ngly she	ared and breccia	ted					1		<u> </u>	1						
		rock										ĺ	"			• •	140-11		
	55.											]							
	Į	1		light brown			1						{						
!		)		uff with flow		100				Sericite			[						
9				nally brecciated															
İ		and fract	ured, so	me chlorite in f	racture		[ ]						<u> </u>						

Drilling	Compan	у		Core Size		Hole	No.				Sheet 3 of		6					
J.T. Tha	mas			NQ		89 D	DH 01											
Date Col	lared	Date Completed	Field	Co-ordinates		Dip	Bearing		Logge	ed By	Owner/Opera	ator						
Nov.24/8	9	Nov.28/89	3100N/	'850E		-50 <sup>0</sup>	135°		L. De	emczuk	Progold Res	source	s Lt	d.				
Symbol	Dept	th Descri	ption		C/A	*	Sample	Int	erval	Mineraliza	tion Alteration			Ass	ay Re	sul t		
	М					Rec.	No.	Fro	m To			Au ppb	Ag ppn	Cu n ppn		Zn ppm	Cd ppm	As ppm
	59.0	Andesitic dark grey	green s	trongly														
7a		brecciated fracture,		of pyrite in the		100	35015	68.10	-69.10	2% py		5	.6	37	55	149	3.7	219
		•	d. From	76.60-78.60			35016	70.60	-72.0	3% py		1	.5	112	<b>3</b> 0	116	1.0	82
9	80.6	Trachy-And and grey I brecciated some graph tr. of pyt	neavily I d and fra nite in s	actured,		100												
	92.5	Porpyrition soft, she in fracture	ared, gra res and l			97												
7c		zone	30 to 11'	1.10 m fault	·		35017	110.3	0-111.10			1	1.5	754	70	196	.2	2 1
7a	111.	Andesitic dark grey	green m	light to assive weakly tic appearance		96				chloritic								

Drilling	Compan	у		Core Size		Hole	No.				Sheet 4 o	f	6			···		
J.T. Tho	mas			NQ		89 00	OH 01											
Date Col	lared	Date Comple	eted	Field Co-ordinates		Dip	Bearing		Logge	d By	Owner/Oper	ator						
Nov.24/8	9	Nov.28/89	3	3100N/850E		-50 <sup>0</sup>	135°	:	L. De	mczuk	Progold Re	source	s Ltc	i.				
Symbol	Dept	th De	scripti	ion	C/A	×	Sample	Inte	erval	Mineraliza	tion Alteration	T		Ass	ay Res	ult		
	М					Rec.	No.	Fro	n To			Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Cd ppm	As ppm
7Ъ	130	Andes strong appear tuff (From Sheare infill Some cricks	yiy met rance): (very f (33.25) ed, bre with: calcite spots.	m to 134.58 strongly cciated fault zone gouge veining and epidote From 145.43 to 148.1	5	99	35018 35019		5-134.56 3-147.83	chloritic			.4 1		51 58		.9	
7c	148.	networ Porphy to dar sheare	k vein ritic k gree d unit	atized and calcite ing rich unit  Andesite: light n, massive, weakly occassionally pidote.		92	35020	151.7	4-153.20			2	.6	23	66	403	3.3	12
	165.	Andesidark system some some some some some some some so	ite Flo green, m of ca galena 176.15 iated u	u: massive weakly silcified lcite veining <45 <sup>0</sup> specks in veining to 182.44 strongly nit with up to d hemimorphite		96	35021 35022 35023 35024 35025 35026	179.9 180.6 181.1 181.6	5-176.15 5-180.69 9-181.19 9-181.69 9-182.19 9-182.44	tr. of py 3-5% galen <2% galena <2% galena	, hemimorphite , hemimorphite	3 1 1 1 2 1 2 1	.3 2 .3 .1		782 1 58 .97%1. .36%1. .12% 1	131 .18% .02%	.11% .463%	1 45 25 20

Drilling	Compan	У	Core Size		Hole	No.			She	et 5 of		6					
J.T. The	mas		NQ		89 DI	OH 01			1								
Date Col	lared	Date Completed	Field Co-ordinates		Dip	Bearing		Logge	d By	Owner/Opera	tor						
Nov.24/8	19	Nov.28/89	3100N/850E		-50 <sup>0</sup>	135°		L. De	mczuk	Progold Res	ource	s Ltc	i.				
Symbol	Dept	th Descrip	otion	C/A	1 %	Sample	Inte	erval	Mineralization	Alteration			Ass	ay Re	sult		-
ŕ	М				Rec.	No.	Fron	п То			Au ppb	Ag ppm	Cu ppr	Pb n ppm	Zn ppm	Cd ppm	As ppm
7a		From 198.5	0 to 203.10 strongly			35027	182.4	4-183.09	tr. of galena		1	.9	23	556	639	112.3	1
•		silicified	and propylitic altered	d l		35028	183.0	9-185.09	tr. of galena		1	.9	44	383	242	114.5	1
	)	(green)		]		35029	185.0	9-186.50	tr. of galena		1	.8	35	169	250	41.1	1
	1	From 204.3	5 to 205.15 strongly	İ		35030	186.5	0-187.92	tr. of galena		2	.9	23	85	431	12.8	19
	}	prophyliti	c altered	l		35031	190.7	7-191.47	0.5% galena		1	1.1	204	1696	825	441.4	77
		From 208.4	0 to 209.30 strongly			35032	198.9	5-200.95	str. propyliti	d propylitic	2	.9	20	39	49	3.3	1,
		propylitic	altered			35033	210.7	6-211.26	1% py		1	2.1	483	43	76	.5	1
	1				İ	35034	225.2	-226.70	breccia		1	.9	606	105	276	8.5	9
	227	.30		1			1									•	
	•	1 ' '	c Andesite: dark			1											
			ssive, a few small calc		100												
7c		, , , , , , , , , , , , , , , , , , ,	asionally garnet and e	dote													*
	231				Ì	1	1										
		1 .	Ash-flow: very	ļ ·	-	35035	1		tr. of galena		3	.6	34	101	190		99
		1 ' '	staline and massive	1		35036		8-234.08			1	.7	80	156		11.2	
		ash				35037	1		2% galena	clay	1	.9	119	201	306	_	85
			i8 to 235.08 specks of		100	35038	1		1-3% galena		1	.7	79	230			157
	1	galena		1	Ì	35039		i	1-2% galena		5	1.1	164	834		12.0	
6			weakly brecciated	-		35040			up to 2% sulph		2	.6	609	179	459	13.8	
		and metamo	orphosed, some epidote			35041	236.7	8-237.90	tr. of galena,	ру	2		184	214	304	11.6	95

Hole No. Sheet 6 of 6	
89 DDH 01	
Dip Bearing Logged By Owner/Operator	
-50° 135° L. Demczuk Progold Resources Ltd.	
C/A % Sample Interval Mineralization Alteration Assay Result	¢ .
Rec. No. From To Au Ag Cu Pb Zr	-
35042 238.00-240.00) tr. of galena 1 1.0 519 167 260 35043 240.00-242.00) and py 3 .8 178 97 327	
35044 242.00-244.00)   1 1.0 108 112 491	
35045 256.20-256.70 massive py 5% epidote 1 1.4 153 117 264	
96   35046   257.11-259.11 gouge   2 1.2 187 71 91   35047   270.00-270.50 tr. of chalcopy   1 1.3 115 51 114	1 2.3 29
	4 1.3 1 1 6 2.2 44 1
100	
35049 294.20-295.52 diss py maybe chalcopy 2 2.9 715 67 138	3 .4 1
35050 304.00-305.00 tr. of py 1 1.5 53 67 149	9 .1 1%
2-3%	' 145

Drilling	Compan	У		Core Size		Hole	No.				She	et 1 of		3					
J.T. Tho	mas			NQ		89 DI	OH 02												
Date Col	lared	Date Completed	Field	Co-ordinates		Dip	Bearing		Logge	ed By		Owner/Opera	tor						
Nov.28/8	9	Nov.30/89	3900N	/860E		-50 <sup>0</sup>	135°		L. De	emczuk		Progold Res	ource	s Ltd	١.				
Symbol	Dept	h Descrip	otion		C/A	*	Sample	1	erval	Mineraliza	ation	Alteration			Assa	y Res	sult		
	M					Rec.	No.	Fro	n To				Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Cd ppm	As ppm
	0				<del></del>								1						
	57.1	Casing																	
ł	37.	Mudstone:	dark g	ırey,		100	35051	66.	50-68.60	tr. of py			23	1.2	26	34	109	.5	1
1		blackish s decomposed		ongly ine sediment															
	74.5	52																	
		Sandstone:	_			100													İ
,		from fine grained, m																	
2			ŕ																
	77.9	0     Conglomera	ite dark	grev-		98													
		greenish p	oorly s	orted, some									i						
				s, weakely soft, some															
3		muddy sequ		Sort, Sone															
	86.6	53																	
		Sandstone:	_			95													
				ne with some Hences, poorly															

Drilling	Compan	у		Core Size		Hole	No.				Sheet 2	of	3					
J.T. Thom	mas			NQ		89 DC	н 02											
Date Coll	lared	Date Comp	pleted	Field Co-ordinates		Dip	Bearing		Logge	d By	Owner/Ope	rator						
Nov.28/89	9	Nov.30/89	9	3900N/860E		-50 <sup>0</sup>	135 <sup>0</sup>		L. De	mczuk	Progold R	esource	s Ltd	•				
Symbol	Dept M	th l	Descript	tion	C/A	% Rec.	Sample No.	1	rval n To	Mineraliza	tion Alteration	Au	Ag ppm	Cu	y Res	Zn	Cd	
3	90.7	Congocca interpoor fragmatr.	glomerat asionaly erbedded rly sort gment in rix ite Flow	tly soft  e: red-brown greenish, I mudstone, congomerate ed large volcanic fine soft  : light grey, ed rock, strongly		95	35052	113.19	9-115.19			5				60		
8a		alto hem From bree no v	ered mor atized m 157.2 cciated visable	to 121.65 strongly re like phyllite  to 158.25 weakly qtz. filling fracture mineralization  to 163.50 brecciated		88	35053	162.0	0-163.50			1	.6	13	27	63	.1	44

	Drilling	Compan	у			Core Size		Hole	No.				Shee	t 3 of	:	3					
	J.T. Thor	nas				NQ		89 DI	OH 02												
	Date Coll	lared	Date C	completed	Field	Co-ordinates		Dip	Bearing		Logge	ed By		Owner/Opera	tor						
	Nov.28/89	,	Nov.30	789	3900N,	/860E		-50°	135°		L. De	emczuk		Progold Res	ource	s Ltd					
	Symbol	Dept	:h	Descrip	tion		C/A	×	Sample	Int	erval	Mineraliza	tion	Alteration			Assa	y Res	ult		
		M						Rec.	No.	Fro	m To				Au	Ag	Cu			Cd	As
L							<u> </u>			ļ					ppb	ppm	ppm	ppm	ppm	ppm	ppm
		163.	.50		T																
						light grey (ly slicified															
	8b			(very m															•		
				Hole st	opped s	after caving															
		192.	.15	11010 31	оррош с	inter curring															
ŀ				END OF	HOLE		1														
			İ																		
		٠																			
	-																•				
İ			•					'													
										l											
				•																	
							-														
L							1	-L	<del> </del>	<b></b>	<del></del>	ļ	L		L				<del> </del>		

Drilling	Compan	У		Core Size		Hole	No.			s	heet 1 of		5					
J.T. Tho	mas			NQ		89 DI	DH 03											
Date Col	lared	Date Comp	eted	Field Co-ordinates		Dip	Bearing		Logge	ed By	Owner/Opera	tor	· · · · ·					
Nov.30/8	19	Dec.02/89		3010N/840E		-50°	135°		L. De	emczuk	Progold Res	ource	s Ltc	i.				
Symbol	Dep	th D	escrip	tion	C/A	*	Sample	Int	erval	Mineralizati	on Alteration			Ass	ay Res	sult		
	М					Rec.	No.	Fro	п То			Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Cd ppm	As ppm
	0		· ·									†						
		Casir	ng							·								
	6.1					1		}										
		I		Rhyodacite:		95		ĺ										
		1 -		to dark brown racture filled with		1												
		i i		ite and some chlorite														
8c																		
		From	17.10	-17.40 fault zone		}												
		From	15.25	strongly hemotized														
		<b>†</b>		some sericite in the	1	1		1										
		fract	ure				35054		-19.40	tr. of py		2	.3	38	32	110	.1	
							35055 35056		-21.40 -22.75	tr. of sulph shear, fault		3	.5 .5	15 14	30 27	103 99	.1	131
ı		j			1		35057		-25.00	2% py	ZOTIE	1	.5	14	25	87	1.6	202 35
							35058	1	-26.00	5% py		1	.4	7	27	102	2.4	
					ļ	-	35059	26.00	-26.50	3.5% py		2	.4	7	20	99	3.4	628
					ļ		35060		-28.50	tr. of py	:	1	.7	6	49	150	.9	
							35061	1	-30.90	2.3% py		1 2	.5	4	33			228
	39.	50					35062	31.60	-33.60	st.sericite	alt sericite	2	.6	2	33	95	1.4	151
	39.	1	sitic	Flow: light		94											,	
ļ				ey-green, weakly														
7a		brece	iated	, fine grained,														

Drilling	Compan	У			Core Size		Hole	No.				She	et 2 of		5					
J.T. The	mas				NQ		89 DC	он 03												
Date Col	lared	Date	Completed	Field	Co-ordinates		Dip	Bearing	******	Logge	d By		Owner/Opera	tor					·····	
Nov.30/8	9	Dec.0	2/89	3010N	/840E		-50 <sup>0</sup>	135°		L. De	emczuk		Progold Res	ource	s Ltd					
Symbol	Dept	th	Descrip	tion		C/A	X	Sample	Int	erval	Mineraliza	tion	Alteration			Assa	y Res	ult		
•/,	M					,,,,	Rec.	No.		n To	,			Au	Ag	Cu	Pb	Zn	Cd	As
														ppb	ppm	ppm	ppm	ppm	ppm	ppm
			moderately	silici	fied	•														
			occasional	y netwo	ork of									ł						
			quartz vei	ns																
	48.8	80	Bazoltic T		taale baarin															
					nark prown- ne, strongly															
			•	•	ionally brecciat	ed.		35063	50.00	-52.00				2	.7	23	26	53 2	2.9	133
				•	w stockwork of			35064	54.10	-57.30	very broke	n cor	e	1	.7	4	20	35	1.9	130
10		1	qtz. veins	, disse	minated pyrite		81	35065	57.30	-59.30				3	.6	79	17	48		127
		- 1			nit but some up			35066		-61.63				1	.8	14	34			286
					of massive sulphi	de,	1 .	35067		-65.94	2% py			6	.5	8	16		1.0	
	ļ		mostly pyr	ite, at	: 64.75 m			35068	1	-66.44	3-5% py			3	.8	13	37			217
1								35069 35070	{	-67.44 -67.95	3-5% py 3% py			2	.8 .8	9 8	21 29			444 · 197 '
1								35070		-68.45	3% py			;	.4	15	19			242 :
	70.9	90						3507 1	0, .,,	00.43	3 A P)				•				•	
		-	Andesitic	flow:	dark		100													
			green stro	ngly si	licified															
70		1									,									
	75.	50																		
			Andesitic							-, -r	5.00			_	,	101	, -	7/7	4	07
		ŀ	strongly s	ilicifi	ed (muddy appear	ence)		35072	76.25	-76.75	5% py			)	.4	101	45	347	.1	83

J	Compan	У			Core Size		Hole	No.		-		Shee	et 4 of		5					
J.T. Thom	nas				NQ		89 DI	DH 03												
Date Coll	lared	Date Comp	eted	Field	Co-ordinates		Dip	Bearing		Logge	d By		Owner/Opera	tor						
Nov.30/89	,	Dec.02/89		3010N,	/840E		-50 <sup>0</sup>	135°		L. De	mczuk		Progold Res	ource	s Ltd	i.				
Symbol	Dept	:h D	escript	tion		C/A	*	Sample	Inte	erval	Mineraliza	tion	Alteration			Assa	y Res	sult		
	М						Rec.	No.	Fron	п То				Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Cd ppm	As ppm
	138.	50					-	<u> </u>						<del>                                     </del>			•		<del></del>	
	.55.		yritic	Andes	ite	,	100													
							1	35085	141.2	0-143.20			!	1	.7	132	51	150	34	1
							}	35086		1	native cop	per		ا 2		1386		277	24	1
7c								35087	143.4	5-144.65				2	.7	381	65	208	42	1
' <sup>c</sup>		From	148.45	to 15	1.70 m a									ļ						
		1 '	–		e tuff (chlorite	rich)														•
		From	163.80	to 16	4.70 strongly		85													
			ed fau	ılt zon	e		}													
	164.	· · · · · · · · · · · · · · · · · · ·							40/ 7											00
		Andes	itic I	uff:	dark green			35088 35089		5-197.35 5-200.25	qtz., brec shear zone			1	1.3	36 28	43 42	43 88	19 21	88 59
		Ì						35090	l	5-201.80				1	.7	8	43	91	.7	1
7b		From	203.70	dark	tuff with															
		netwo	rk of	small	clorite veins															
ļ		From	209 to	212 f	ault zone		89													
		stron	igly br	oken 2	0% recovery			35091	210.1	0-212.00	fault zone			2	.4	43	67	219	1.1	1
							]	35092	l	0-215.10				1		406		173	. 1	9
								35093	į	0-220.00				2	.9	78		141	.8	1
								35094	220.1	5-220.40	native cop	per	i	3	.5	97	54	113	2.5	1

Drilling	Compan	У		Core Size		Hole	No.				Sheet 3 o	f	5					
J.T. Tho	mas			NQ		89 DI	он 03											
Date Col	lared	Date	Completed	Field Co-ordinates		Dip	Bearing		Logge	d By	Owner/Oper	ator						
Nov.30/8	9	Dec.	02/89	3010N/840E		-50 <sup>0</sup>	135 <sup>0</sup>		L. De	mczuk	Progold Re	source	es Lt	ď.				
Symbol	Dept	:h	Descrip	otion	C/A	*	Sample	Int	erval	Mineralizat	ion Alteration			Assa	y Res	ult		
	М		·			Rec.	No.	Fro	п То			Au	Ag	Cu	Pb	Zn	Cď	As
												ppb	ppt	п ррт	ppm	ppm	ppm	ppm
		1	ocassional	y weakly brecciated			35073	82.48	-83.75	3% py		4	.5	116	36	175	2.7	' 252
			dark grey	tr. of pyrite	ļ		35074	87.00	-88.00	2% py		1	.5	106	16	94	4.1	512
			From 101.1	5 to 102.00 strongly			35075	94.60	-96.60	2-3% py		6	1.9	277	34	129	6.5	613
			epidote al	tered (patches of epido	te)		35076	96.60	-98.60	3-4% py		1	.3	83	28	127	12.5	1380
			and massi	ve sulphide up to 5%		98	35077	100.6	5-101.15	tr. of arse /tetrahedri		14 .	34*	.192%	53	196	.2	. 22
7b							35078	101.1	5-101.65	3% arsenopy /tetrahedri	i i	8.	12*	. 177%	16	33	.1	9
							35079	101.6	5-102.15	• • •	rite	.006*	4.43*	3.780%	43	23	2.3	27
			From 107.0	0-107.25 m dark brown						/ Cott ancar i								
			rock with	spots of native copper			35080	102.1	5-102.65	1% sulphide		3.	11*	.76%	50	174	1.3	33
		- 1					35081	102.6	5-103.65			5	.9	360	45	201	.6	15
		1	From 107.2	5 to 110.00 strongly		}	35082	107.0	0-107.25	native copp	er	4	1.1	537	26	96	.1	57
			propylitic	altered			35083	107.2	5-109.25									
			From 113.8	0 to 114.50 up to	ŀ													
			30% epidot	e e														
	118.	.00									1							
3		i	Conglomera	te, poorly sorted														
			volcanic f	ragments intermixed	Į.	-	35084	129.3	0-131.30			5	.4	31	43	145	1.9	147
	1	.	with muddy	sequences	1													
				0 to 129.35 very fine		99						1					****	T
				, clorite rich sheared														
1	1	ŀ	with netwo	rk of small calcite vei	hs								* :	= oz/t				

Drilling	Company	,	Core Size		Hole	No.				Sheet 5 c	f	5					
J.T. Thor	mas		NQ		89 DE	он 03											ĺ
Date Col	lared	Date Completed	Field Co-ordinates		Dip	Bearing	-	Logge	d By	Owner/Oper	ator						
Nov.30/89	9	Dec.02/89	3010N/840E		-50 <sup>0</sup>	135°		L. De	mczuk	Progold Re	sourc	es Lto	d.				
Symbol	Dept	h Descrip	otion	C/A	%	Sample	Int	erval	Mineraliza	tion Alteration	1		Assa	y Res	sult		
	M				Rec.	No.	Fro	л То	:		Au	Ag	Cu		Zn		As .
					ļ						ppb	ppm	pprii	ppm	ppm	ppm	ppm
		İ				35095	225.4	8-225.80	tr. of py	1	1	.8	268		113	2.5	1 1
		From 245.0	0 to 247.05 breccia			35096	245.0	0-247.05	tr. of cha	lcopyrite		2.0		46		.1	23
		with 40% q	tz. 6-10% epidote			35097	259.5	6-259.81	tr. of nat	. сор.	- 1	1.0			177	1.0	1 '
		tr. of py			ļ	35098	266.7	0-268.10			1	2.7		40	79	. 1	1 /
ŀ		1	0 to 268.10			35099	269.4	5-270.55	tr. of sul	phide brecc. wi	1	2.4	519	56	133	.1	1
		breccia 40	% epidote							chalcopyrit	•						:
						35100	270.5	5-271.20	tr. of sul	phide epidote	; 2	2.6	1146	37	77	. 1	1
										tr. of Ch							
				1	1	35151			0.5% chalc			4.1			123		1.
						35152	1	5-272.50				2.7			235		. !
						35153	1		tr. of cha	lcopy	2	2.9			149		<u> </u>
						35154	279.6	0-280.60	1-2% py		3	3	73	52	115	. 1	1
	289.		_			l		ĺ								4	
		END OF HOL	E								İ						
										ļ							
					!		ļ				-						
							İ										
1					}	}	1				1						
				İ					•								
					<u> </u>												

Drilling	Compan	y		Core Size		Hole	No.	 	T	Sheet	t 1 of		3					
J.T. Thom	nas			NQ		89 DI	DH 04											
Date Coll	lared	Date Completed	Field	Co-ordinates	T	Dip	Bearing	Logg	ed By		Owner/Opera	tor			<del></del>			
Dec.03/89	,	Dec.05/89	1875N	/850E		-55 <sup>0</sup>	135°	L. D	emczuk		Progold Res	ource	s Ltd	•				
Symbol	Dept M	th Descrip	otion		· C/A	% Rec.	Sample No.	 erval n To	Mineraliza	ation	Alteration	Au ppb	Ag ppm	Cu	y Res	Zn	Cd ppm	As
3	9.70	Conglomera maroon-red bedding po pebbles mo mostly san matrix, oc and epidot	dish, p orly de stly la dy-calc casiona e veins	olygenetic,	<u> </u>	97			Epidote Calcite Quartz				· ·		FF			FF
1	43.C	Mudstone: bedded, ve network of throughout occasional Conglomera poorly sor	and ep dark t ry fine small the ur ly cong te: ma ted uni onally	7.70 m strongly idote altered  rown-reddish grained unit, calcite veins it, mostly soft, lomeritic sequent roon, dark brown t. Chlorite up small calcite ve	, to	95			Calcite									

 $\mu_{i,i,j}$ 

Drilli	ng Compan	У	Core Size		Hole	No.			s	neet 2 of		3	77-01-0-0-0				
J.T. T	homas		NQ		89 DO	OH 04											
Date C	ollared	Date Completed	Field Co-ordinates	1	Dip	Bearing		Logged	в Ву	Owner/Opera	tor						
Dec.03	/89	Dec.05/89	1875N/850E		-5 <sup>50</sup>	135°		L. Den	nczuk	Progold Res	ource	es Ltd	١.				İ
Symbol	Dept	th Descrip	otion	C/A	%	Sample	Inte	rval	Mineralizati	on Alteration			Assa	y Res	ult		
	М	ļ			Rec.	No.	From	To			Au	Ag	Cu	РЬ	Źn	Cd	As
<u> </u>				-	-		-		· · · · · · · · · · · · · · · · · · ·		ppb	ppm	ppm	ррп	ppm	ppm	ppm
	70.	· 1	fault zone														
	70.7		desitic origin?) light														
7b			very fine of phylitic	1	100												
			e, chlorite rich, mostly ricite, mica and calci														
	74.3		. Torto, miles and ester	]													
			te: brown-maroon						0.11.								
		1 ' '	ted, matrix supported asionally muddy sequen	ces				İ	Silica Calcite								
		1	e veins some epidote s	1		1			Epidote								
3		From 88.0	to 97.60 strongly		89	35155	98.05-	99.05	brecciated	chlorite	5	1.0	183	41	146	. 1	67
		propylitic				35156		101.05	brecciated		1 -	1.5	135	30	103		67
		From 98.05	to 101.05 weakly shea	red								•					
			fied sediment on the														
	100.		th volcanic														
			Flow: dark green-	}													
		1 1	-grained, massive			75457	142 (0	447 70			,	۰		0./	150	2 5	7,
			of quartz and e in fine quartz		96	35157 35158		-113.70 -115.16	tr. of sulph	i i de	1		61 77		159 165	2.5 3.6	36 206
		matrix	4							chlorite							
	<u> </u>			<u> </u>													

Drilling	Compan	У		Core Size		Hole	No.		····		Sheet	t 3 of		3					
J.T. Tho	mas			NQ		89 DE	OH 04												
Date Col	lared	Date Completed	Field	Co-ordinates		Dip	Bearing		Logge	d By		Owner/Opera	tor					· · · · · · · · · · · · · · · · · · ·	
Dec.03/8	9	Dec.05/89	1875N	/850E		-55°	135 <sup>0</sup>		L. De	mczuk		Progold Res	ource	s Ltd	i <b>.</b>				
Symbol	Dept	th Descrip	otion		C/A	*	Sample	Int	erval	Mineraliza	ation	Alteration			Assa	y Res	sult		
,	M					Rec.	No.	Fro	oT m				Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Cd ppm	As ppm
7a		From 112.6	0 m to	113.70 m clay		1									·				
		altered fe		ch sequence e			35159	123.9	0-124.90	2-3% Sulph breccia	nide		2	.5	48	55	128	3.1	170 [
		From 113.7 soft gouge		115.16 m fault z	one								2	.5	48	55	128	<b>3</b> 1	170
	125.00	0									i		-	. ,	40	,,	12.0	3.1	1,0
				green-maroon									_	_				•	27
		very fine strongly s				89	35160 35161	1	0-128.50 0-131.75		ed	Silica	3 2	.5 .4	30 16	22 22	50 40	.2	27 42
		strongty s	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				35162	1	-134.20	Dieccia			1	.3	76	11	39	.1	14
<b>7</b> b .		From 126.5		143.15			35163	1	0-143.15	1% py				2.6		53	98	.1	1
	146.00																		
		·		ite: maroon-															
7		muddy unit	of con	ared, soft glomeritic			35164	157.7	0-159.70	shear zone	2	clay	1	.9	88	45	87 	2.0	1
	157.70	appearance	•			·													
		Andesitic		•															
•		1		ined, occasional		95													i
7b		narrow cal	cite ve	ins and weakly s	neared				i										İ
1	167.7	5																	ļ
		END OF HOL	.Е																

# APPENDIX C COSTS OF DRILLING PROGRAM

## **HAGAS CLAIMS**

## COSTS OF DRILLING PROGRAM

Nov. 17, 1989 - Dec. 13, 1989

## Personnel:

L. Demczuk, M.Sc., Geologist, 32.5 days @ \$300.00/day	\$9,750.00
J. Dahroge, B.Sc., Helper, 22.0 days @ \$150.00/day	\$3,300.00
Drilling, 3130 ft.	\$61,886.33
Expenses	6,848.82
Assaying	1,885.00
Sampson Report	1,529.40
Report preparation (estimated)	1,200.00
Core relocation	675.00
Management Fee	\$5,000.00
Total	\$92,074.55



3400N\_\_\_ 3203N\_\_\_ 25**0**2N\_\_\_\_ 2400N 2200N\_\_\_ 2100N\_\_\_\_ GEOLOGICAL BRANCH ASSESSMENT REPORT 2000N\_\_\_\_ 1900N\_ 1800N\_\_ 1700N\_ CHRIS J. SAMPSON COOKE GEOLOGICAL CONSULTANTS INDUCED POLARIZATION SURVEY ANOMALY CLASS. :Definite :Probable :Possible ---( FILTERED CONTOUR PRESENTATION ) PROJECT: HAGAS PROPERTY PROJECT # : PG87HP

Outline Of Anomalous IP Zone

Contour Interval : 1% PFE

Dipole-Dipole Array X=50m N=1

(1 pass through a 9 pt. Hanning Filter.) (1 pass through a 3 pt. Hanning Filter.)

Fig. 5

DATE : 9/16/87

NTS : 93L/3

BASELINE AZIMUTH : 45 Deg.

FILE: MPVA1COO Pacific Geophysical Ltd.

SCALE = 1: 5000

SURVEY BY : K.C./M.M.M.

4100N\_\_\_\_ 3900N\_ 3800N\_\_\_ 3600N\_\_\_ 3500N\_ 3400N\_\_\_ 3300N\_\_\_\_ 114 3200N\_\_\_\_ 15**0** 3100N\_\_\_\_ 126 3000N\_\_\_\_ 2700N\_\_\_ 2600N\_\_\_\_ 2500N\_\_\_\_ 2400N\_\_\_\_ 2200N\_\_ 2100N\_\_\_\_ 2000N\_\_\_\_ 1900N\_\_\_\_ 1800N\_\_\_\_ 1700N\_\_\_\_

GEOLOGICAL BRANCH ASSESSMENT REPORT



ANOMALY CLASS. :Definite -----:Probable :Possible ----

Outline Of Anomalous IF Zone Contour Interval:1.2.3.5.7.18.15 ohmm etc ( 1 pass through a 9 pt. Hanning Eilter.) (1 page through a 3 pt. Hanning Filter.)

Dipole-Dipole Array X=50m N=1

# COOKE GEOLOGICAL CONSULTANTS

RESISTIVITY SURVEY

( FILTERED CONTOUR PRESENTATION ) PROJECT: HAGAS PROPERTY PROJECT # : PG87HP BASELINE AZIMUTH : 45 Deg.

DATE: 9/16/87 SCALE = 1: 5000 NTS : 93L/3 SURVEY BY : K.C./M.M.M. FILE: MPV18C00

Pacific Geophysical Ltd.

