GEOLOGICAL REPORT
AU CLAIMS
GERMANSEN RIVER - MANSON RIVER GOLD CAMP
BRITISH COLUMBIA

N.T.S. MAP-AREA 93-N-10 E
55°41' N 124°35' W

by

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Calgary, Alberta

CERTIFICATE

I, Michael Fox, of 120 Hawkwood Hill N.W., Calgary, Alberta certify that:

1. I am a member of the Association of Professional Engineers, Geologists, and Geophysicists of Alberta.
2. I am a graduate of the University of British Columbia and hold a Bachelor of Science Degree in Geology (1974).
3. I have practised my profession continuously since 1974 and I have worked in the field of mineral exploration since 1965.
4. I am the owner of the AU 1 - 12 claims described in this report.
5. I supervised and participated in work carried out at the property and described in this report.

Michael Fox, B.Sc., P.Geol.

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SUMMARY

The AU 1 - 12 claims cover an extensive zone of stockwork type (and possibly stratabound) gold mineralization and related hydrothermal alteration developed in mafic volcanic rocks and related epiclastic rocks in the Manson River - Germansen River gold camp of northern central British Columbia. Regional mapping indicates that these rocks form part of the Takla Group and Slide Mountain Group.

Exploration carried out previously over the mineralized zone includes geochemical soil and rock sampling, geological mapping, geophysical surveys, and percussion, diamond and reverse circulation drilling,. This work has outlined an area 300 m long by up to 130 m wide containing average values of approximately 600 ppb Au to a depth of 80 m. This would correspond to a drill indicated estimated reserve of 8,268,000 metric tonnes of mineralization with approximately 160,000 ounces of contained gold.. Within this zone are numerous higher grade intersections, including a 36.5 m section averaging 1.31 g/tonne Au in PDH-14, a 27.4 m section averaging approximately 1.0 g/tonne Au in PDH 18, a 29 m section averaging 0.7 g/tonne Au in PDH-21, and a 21 m section averaging 0.73 g/tonne Au in PDH-05. Other more restricted higher grade intervals (assays of 2 to 8 g/tonne) are also present in these relatively widely spaced drill holes, suggesting that further work may outline significant tonnages of higher grade mineralization.

These gold values occur within a zone of intense carbonate-quartz-pyrite alteration, which has been overprinted by a stockwork of quartz±ankerite±pyrite stringers. The gold values do not show a consistent relationship with either pyrite content, or shear zones, or quartz stringers, suggesting that the gold may also occur in disseminated form in the zone of pervasive carbonate alteration. The ankeritic carbonate content is (within the drilled area) consistently greater in finer grained sandy epiclastic rocks as opposed to more rapidly deposited coarser grained conglomeratic and/or turbiditic depositional units, suggesting that precipitation of carbonate may have been occurring at the same time as sedimentation, since permeability does not appear to be a factor in the intensity of carbonate development. In certain areas, thin, almost monominerallic beds of fine to coarse grained ankeritie are interlayered with unaltered sediment. The ankeritic beds decrease up-section, and above a cherty layer, no other ankerite bearing beds were seen. These relationships suggest syndepositional seafloor hydrothermal activity. Slide Mountain Group rocks in Quesnel Lake area are considered to represent basinal facies deposited in a Permian-Carboniferous rift basin developed between the cratonic edge and the proto-Takla-Nicola volcanic-plutonic arc (Struik, 1988). A similar relationship probably holds for Slide Mountain Group equivalent rocks in the Manson Creek - Germansen River area where they may represent oceanic supracrustal facies and dismembered ophiolite preserved in a tectonically active basin developed between a volcanic-magmatic arc on the west (built on oceanic crust) represented by the Mesozoic Takla Group, and Hadrynian-Paleozoic platform sediments built up on the craton to the east. The gold mineralization described in this report could have been developed in Takla arc related epiclastic rocks that were infilling the still tectonically active rift basin, accounting for the syndepositional hydrothermal activity.

Although considerable work has been done to date at this property, the geology of the property and the ore forming environment are poorly understood, and assay correlations between different types of drill holes (diamond, percussion, reverse circulation) are poor, suggesting that sampling errors may have affected the reported grades. A program of remapping the geology, analysis of existing data, and re-evaluating controls of mineralization was commenced late in the field season in 1994 and continued in 1995. Approximately four line kilometres of grid lines were re-established at the property to provide ground control for reexamination of outcrops. The results of this work are described in the following report.

INTRODUCTION

Location and Access

The property is located in the Germansen River area, approximately 400 km by road northwest of Prince George, B.C., with approximate coordinates of 55°41' N 124°35' W in N.T.S. map-area 93-N-10 E. The Omineca Road passes within one kilometre of the west boundary of the claim block and the claims can be accessed via a short four wheel drive trail that connects with the Omineca Road.

Property and Ownership

The claims are registered in the name of and owned 100% by Michael Fox of Calgary, Alberta.

The property currently consists of the AU 1 - 12 claims, twelve contiguous "2-post" claims, staked in 1993 by the owner. Pertinent claims data is listed in the table below.

Claim	No. of Units	Record Number	Date of Staking
AU 1	1	320756	August 22, 1993
AU 2	1	320757	August 22, 1993
AU 3	1	320758	August 22, 1993
AU 4	1	320759	August 22, 1993
AU 5	1	321647	September 30, 1993
AU 6	1	321648	September 30, 1993
AU 7	1	321649	September 30, 1993
AU 8	1	321650	September 30, 1993
AU 9	1	321651	September 30, 1993
AU 10	1	321652	September 30, 1993
AU 11	1	321653	September 30, 1993
AU 12	1	321654	September 30, 1993

Physiography and Glaciation

The claims lie within the Omineca Mountains subdivision of the Interior Plateau. Topographic relief at the property varies from approximately 955 m to 1230 m above sea level. Topography at the property is subdued, with moderate to steep slopes on both sides of the ridge that occupies the central part of the claim block. Outcrop is scarce, even along the crest of the ridge. A few exposures occur on the lower slopes of the ridge and along a stream gully northeast of the ridge. There is good exposure along the walls of a canyon along the Germanseen River immediately north of the claims The area was glaciated by eastward and southeastward moving ice sheets during the Pleistocene. Glacial erosion modified the uplands, and glacial deposition infilled the lowlands with till and glaciofluvial deposits up to 40 m in thickness. The claims are covered with a mantle of till which averages less than ten metres in thickness along the flanks of the ridge, and, at higher elevations, has been partly eroded and replaced by colluvium derived from the underlying bedrock.

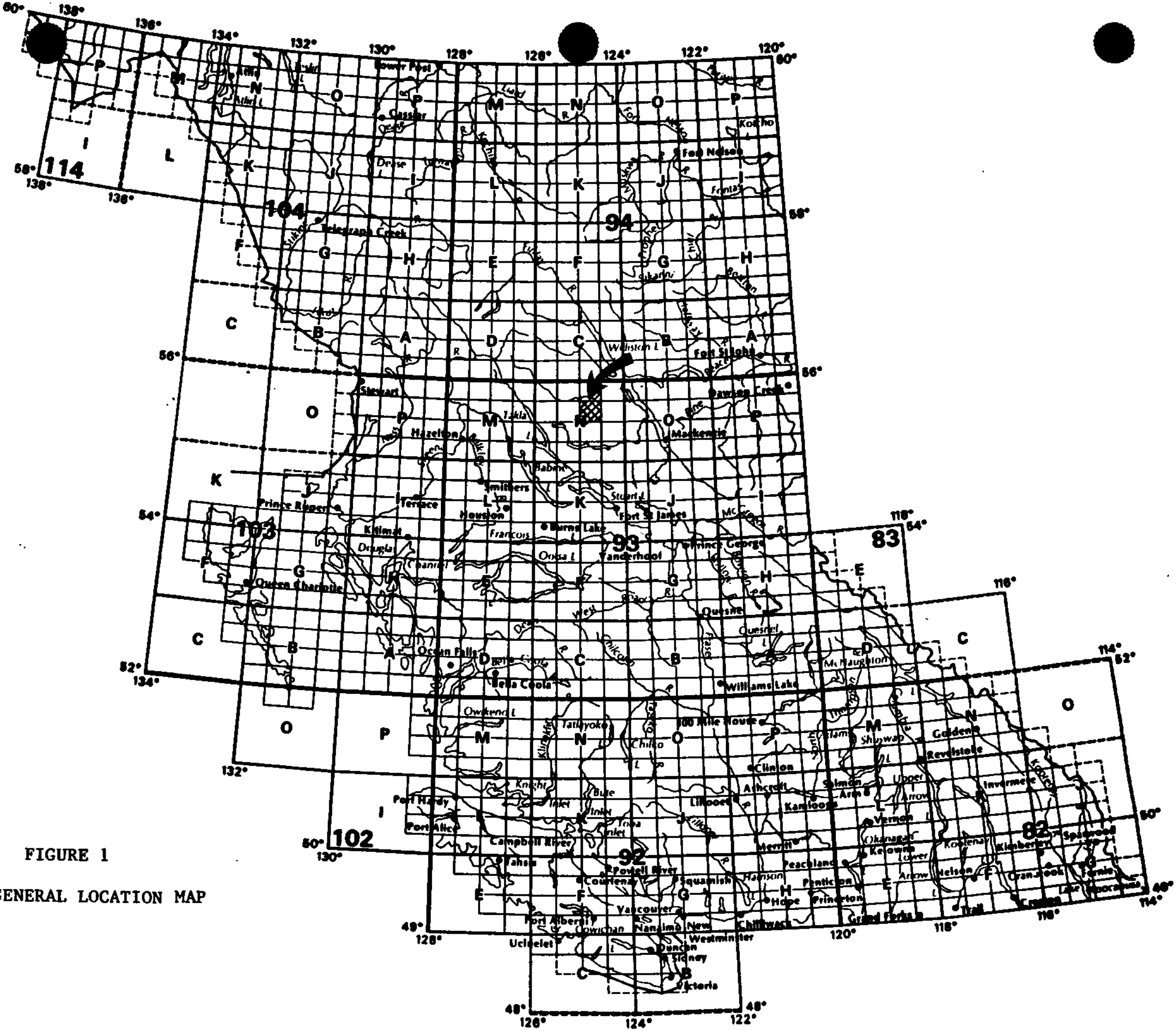

FIGURE 1

GENERAL LOCATION MAP

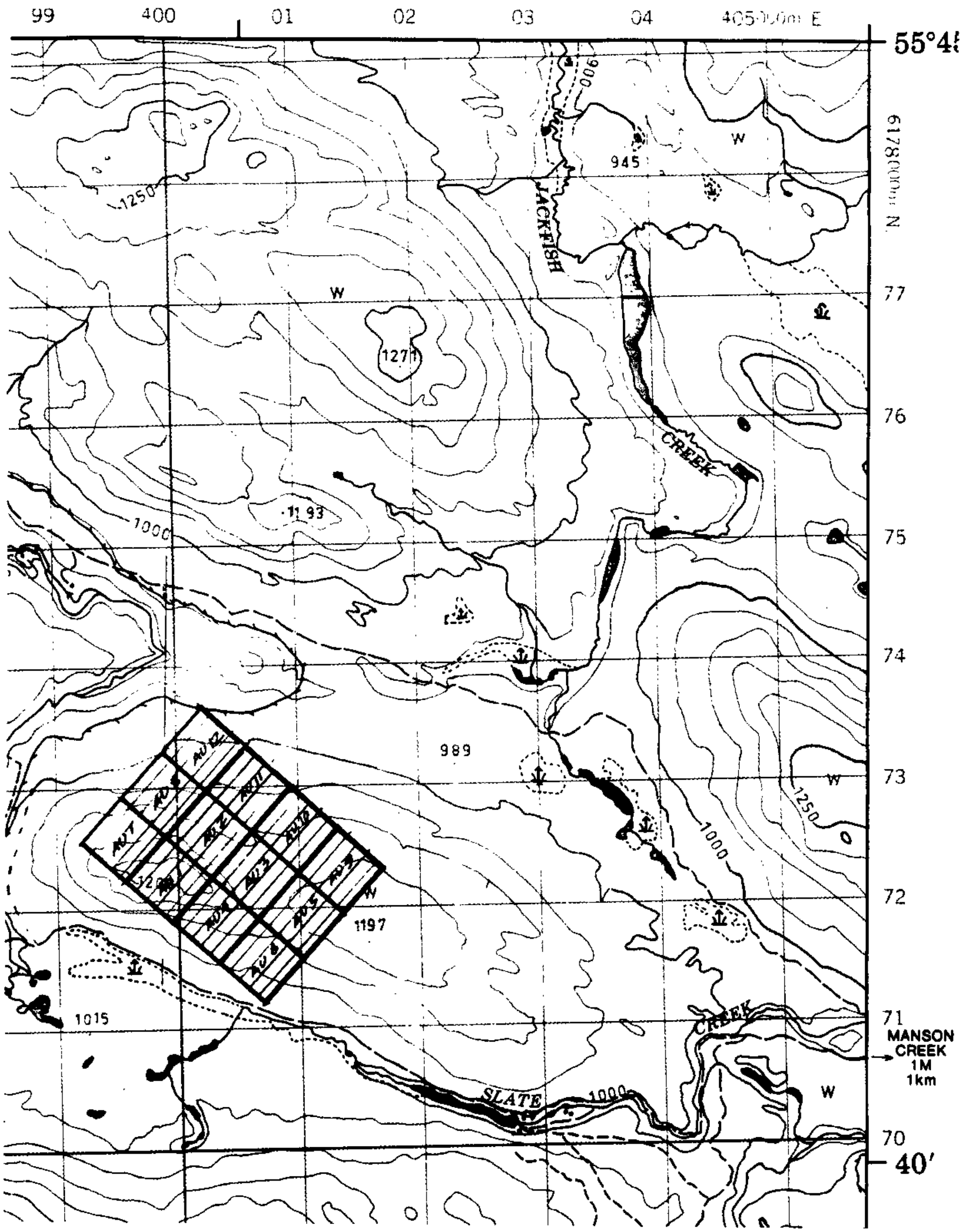

FIGURE 2. PROPERTY LOCATION MAP
AU CLAIMS
N.T.S. MAP SHEET 93 N 10E
SCALE 1: 50,000

Previous Work

The property was staked by Sullivan & Rogers, Geological Consultants, in 1972, who acquired the then unexplored property on the premise that the height of land dividing the drainages of the placer gold-bearing Germansen and Manson Rivers would be a logical place to explore for the source of the placer gold.

Under their direction, geochemical soil sampling (Au,Ag,Cu,Zn) and Induced Polarization surveys were carried out over 100 km of grid lines with the result that several extensive chargeability and resistivity anomalies were identified as well as two extensive anomalous gold trends, each more than one thousand metres long, with gold-in-soils values ranging up to 2.95 g/tonne. (Gold was valued at $1.12/g in 1972.) Six diamond drill holes were drilled at the property in 1973 by Rio Tinto while the property was under option. Drill targets appear to have been the chargeability anomalies, possibly with the intent of assessing the base metal potential of the property. The results of this drilling are not available in the B.C. assessment files, but it has been reported that one of the holes, which intersected the more easterly of two major carbonate alteration zones, intersected a 0.79 m wide zone grading 4.25 g/tonne gold.

The property was subsequently staked by Vital Mines Ltd. who allowed the claims to lapse in 1980. The property was recommended for acquisition by the writer to Golden Rule Resources Ltd. and was restaked. Golden Rule carried out some geochemical sampling and geological mapping at the property in 1981 and subsequently optioned the claims to Anaconda Exploration Ltd. Anaconda carried out orientation geochemical surveys under the supervision of L. Riccio, Ph.D., followed by a limited amount of trenching, 32 percussion drill holes, 4 reverse circulation drill holes, and three diamond drill holes. The option was still in effect when Anaconda made a decision to cease operations in Canada, and the property was returned to Golden Rule. Golden Rule allowed the claims to lapse in 1992 and the property was restaked by the present owner in 1993.

Most of Anaconda's drilling was concentrated in the area of the AU 1-4 claims, where an extensive zone of gold mineralization some 300 m long, up to 130 m wide, and up to 80 m deep, open in all directions, and containing gold values in the hundreds to thousands of ppb was outlined. The mineralization is associated with a stockwork of quartz-pyrite stringers in a zone of pervasive carbonate alteration in coarse epiclastic sediments derived from the local volcanic pile. Reverse circulation and diamond drilling confirmed the gold mineralization, but returned more erratic values than the percussion drilling, with samples ranging up to 8.47 g/tonne over 1 m. Numerous rock samples collected from surface exposures of the zone returned geochemical values of several hundred ppb to several thousand ppb gold.

REGIONAL GEOLOGY

The Germansen River - Manson River gold camp is underlain by an oceanic crustal assemblage of ultramafic rocks (dunite, peridotite, and serpentinized, steatitized, and carbonatized alteration products), mafic to intermediate volcanic rocks and related volcaniclastic sediments, and fine-grained clastic and chemical sediments (graphitic/chloritic/siliceous phyllites, siltstone, limestone, and chert), metamorphosed to sub-greenschist and lower greenschist facies. This assemblage has been correlated with the Slide Mountain Group (Monger, 1973) in the Quesnel Lake area, where it is considered to represent basinal facies deposited in a Permian-Carboniferous rift basin developed between the cratonic edge and the proto-Takla-Nicola volcanic-plutonic arc (Struik, 1988). In the Manson Creek - Germansen River area, rocks considered to be the equivalents of the Slide Mountain Group rocks are in structural contact on the east and northeast with Proterozoic to lower Paleozoic schists and gneisses of the Omineca Crystalline Belt, and are in stratigraphic/structural contact to the southwest and west with rocks of the volcanic-plutonic island arc assemblage of the Mesozoic Takla Group.

Geological mapping of the Manson Creek - Germansen River area was carried out in the early 1940's and published at a scale of 1:253,440 (Armstrong, 1949). At that time the Slide Mountain equivalent rocks were considered to be correlatable with rocks of the Cache Creek Group. Later work (Monger, 1973) correlated these rocks with rocks of the Slide Mountain Group in the Quesnel - Cariboo region and rocks of the Sylvester Group in the McDame - Cassiar area.. More recent mapping (Ferri et al, 1988, 1989) investigated the Manson Creek - Germansen River area in greater detail, and subdivided the Slide Mountain Group equivalent rocks into upper, middle, and lower divisions.

The lower division is comprised of phyllite, argillite, calcareous phyllite and carbonate with subordinate quartzose siltstone or quartz wacke, ribbon chert, and carbonate. Dark grey to black, thinly-bedded, graphitic phyllites at the base of this division display a well-developed penetrative cleavage and grade upwards into and are interbedded with more thickly-bedded siliceous argillites exhibiting a less well developed cleavage. The lower division also contains dark grey, graphitic, argillaceous to silty limestone which exhibits gradational contacts with the enclosing graphitic phyllite and argillite. Thin beds of quartz-rich dacitic tuff are also interbedded with the phyllite and argillite.

The middle division consists of argillite, siliceous argillite, siltstone, and chert, with subordinate mafic volcanics, volcaniclastics, sandstone, conglomerate, and ribbon chert as well as numerous bodies of gabbro and diabase. Grey to grey-green, sometimes massively bedded argillites and siliceous argillites are interlayered and/or grade into grey-green to green, massively bedded siltstones which may in places be mafic crystal tuffs. Light grey to grey, sometimes massively bedded chert is interbedded with the argillites and siltstones. Strongly chloritized, epidotized and sericitized dark green to green, massive mafic to intermediate flows are common in the upper part of the middle division and may contain plagioclase or pyroxene phenocrysts. Probably genetically-related Sills and sill-like bodies of coarse-grained gabbro, a few metres to more than several hundred metres in thickness, probably genetically related to the flows, are intercalated with the sedimentary rocks and are most abundant in the upper part of the middle division.

The upper division is comprised of massive to pillowed basalt and volcanic breccia, with minor, thin intercalations of argillite and chert.

In the vicinity of the claims described in this report, Ferri (1989) places basal/distal epiclastic units of the Takla Group, consisting of volcanic sandstone, volcanic wacke, and conglomerate, siltstone, argillite, chert, and limestone, in structural contact with Slide Mountain Group equivalent rocks. North of Quesnel Lake in the Spanish Lake area Bloodgood (1987) mapped a volcanic sandstone/wacke unit at the base of Takla Group rocks where they overlie a Triassic black phyllite which resembles the graphitic phyllites of the lower division of Slide Mountain Group equivalent rocks in the Manson Creek - Germansen River area. Struik (1988) described field relationships in the Spanish Lake area that indicated that a late Middle to early Late Triassic volcanic unit consisting of fragmental basalt with minor pillow lavas, greywacke, siltite, and pelite is in fault contact with the underlying Triassic black phyllite, is in part older than the underlying phyllite, and has been thrust eastwards over the phyllite, along the Spanish Thrust which has been traced for a distance of at least 125 km. In places the thrust is marked by zones of weakly to strongly foliated, highly altered siliceous sericite schist with alteration consisting of pyrite and ankerite porphyroblasts in a matrix of chlorite, quartz, plagioclase, and sericite. Finely crystalline to aphanitic basalt above the contact contains porphyroblasts of ankerite and pyrite in the aphanitic matrix. Similar rock types are present within and adjacent to the property described in this report (see Unit 4) and may mark the trace of a similar fault zone.

Structural relationships between the different divisions of the Slide Mountain Group equivalent rocks and contact/structural relationships of the Slide Mountain Group equivalent rocks with the metamorphic rocks of the Wolverine Complex on the east and the volcanic-plutonic island arc assemblage of the Takla Group on the west are still not well understood in the Manson Creek - Germansen River area. In the Eureka Peak - Spanish Lake area in the Cariboo region, detailed mapping (Bloodgood, 1987, 1988, and Struik, 1988) has shown that the contact between

Quesnel Terrane or Quesnellia on the west and metamorphosed Proterozoic-early Paleozoic supracrustal rocks on the east is a thrust fault (Eureka Thrust) marked by a serpentine-amphibolite unit known as the Crooked Amphibolite. The Crooked Amphibolite is comprised of amphibolite, serpentine, and sheared ultramafic rocks; the ultramafics occur as lenses of serpentinite and partially serpentized ultramafic rocks in contact with or enclosed by the strongly foliated amphibolite which consists of chlorite, epidote, actinolite, and hornblende. The Crooked Amphibolite has been tentatively correlated with pillow basalts and ribbon cherts of the Antler Formation of the Slide Mountain Group. Lithologies similar to the Crooked Amphibolite occur in the Manson Creek - Germansen River area (for example, tectonically emplaced slices of altered ultramafic rocks in the Manson Fault zone), but may in part mark the loci of internal thrusting within the Slide Mountain Group equivalent rocks. Neither Struik nor Bloodgood correlate the black phyllite unit in the Eureka Peak - Spanish Lake area with Slide Mountain Group rocks. Struik's interpretation of structural and stratigraphic relationships indicates that the black phyllite unit was deposited over Slide Mountain Group rocks.

Two major phases of deformation have been recognized in the rocks of the Triassic black phyllite unit in the Spanish Lakes - Eureka Peak area.. Phase I deformation is represented by northeastwards verging folding, with well developed axial planar penetrative slaty to phyllitic foliation. Phase 2 deformation is represented by southwestwards verging folding, with associated well-developed non-penetrative crenulation cleavage axial planar to Phase 2 folds. A third phase of deformation was also recognized at lower structural levels, but is apparently absent at higher structural levels. Thrust faults are apparently synchronous with Phase 1 deformation and are overprinted and deformed by structures related to the Phase 2 deformational event. In the Manson Creek - Germansen River area, similar structures have not been elucidated, although Ferri recognized that a major structural and metamorphic discontinuity existed at the contact of Slide Mountain Group equivalent rocks and the rocks of the Wolverine Complex. Within the Slide Mountain Group equivalent rocks, intense folding was recognized, and it is considered probable that thrust faults parallel to bedding planes are present, and may invert the stratigraphy in places, but delineation of major structures was difficult due to lack of marker horizons and scarce outcrop. Variations in bedding attitudes indicate the presence of broad, gently southeastwards-plunging folds. A penetrative cleavage is well-developed in the phyllites of the lower division and dips vertically to steeply northeastwards. Ferri (1988) suggested that there was structural evidence of one phase (and locally, two) of deformation in Slide Mountain Group equivalent rocks in the Manson Creek area.

Slide Mountain Group equivalent rocks in the Manson Creek - Germansen River area are transected by major faults that strike transversely and subparallel to the belt.. Northeastwards striking normal(?) faults have juxtaposed different structural and stratigraphic levels of the group. Ferri et al (1989) stated that the Manson Creek fault, which strikes northwesterly, subparallel to structural elements in Slide Mountain Group, separates Takla Group rocks and Slide Mountain Group equivalent rocks in the Germansen River area. Although this appears to be the case along the drainage of Nina Creek, contact relationships between the two groups appear to more complex in the vicinity of the AU claims, and south of Manson Creek, the continuation of the Manson Fault separates different divisions of the Slide Mountain Group (Ferri, 1988).

The Manson Fault is characterized by weak to strong foliation, and intense carbonate alteration over widths of a few hundred metres to more than one kilometre. Ferri (1988) observed subhorizontally stretched fault breccia clasts, and subhorizontal slickensides, indicating strike-slip motion along the fault zone. Small lenses of ultramafic rocks and their alteration products occur within the zone of deformation. Armstrong (1965) observed drag folding in exposures along the Manson River and along Nina Creek, which indicated sinistral displacement, and possibly vertical movement, with the east side of the deformation zone displaced upwards relative to the west side. Armstrong also noted that massive assemblages of carbonate, quartz, chlorite, and mariposite in places were massive and had obliterated the structural planes within the fault zone.

PROPERTY GEOLOGY

Geological mapping was carried out over a four line kilometre grid on the property using a 1:2,500 scale topographic base. This work was mainly within the AU 1 to 4 claims, but exposures within the AU 7, 8 and 12 claims were also examined. This work is integrated with earlier mapping at the property on the accompanying map. Bedrock exposures are scarce and outcrops occur mainly along stream drainages and ridge crests. Average overburden depths are only a few metres in areas of higher elevations, but a thin, even mantle of till and colluvium effectively masks most outcrop. Geological mapping carried out at the property is generally in agreement with earlier mapping done at the property, with the addition of some new details. The main value of the work described in this report is to better characterize the mineralized environment, by attempting to reconcile the current data with the regional geological setting Brief descriptions of lithologic units recognized to date are included below, commencing with a series of exposures along the Germansen River just beyond the boundary of the claims, which . are described here to provide additional detail for a hypothetical NE-SW cross section through the AU claim block, extending from the trace of the Manson Fault zone, just northeast of the property, southwestwards across the property.

Structures at the property strike northwesterly and dip southwesterly. Bedrock units are described below in order from structurally lowest to structurally highest, roughly corresponding to a cross section from northeast to southwest through the claims.

Unit 1: Altered Ultramafic Rocks

Exposures of massive quartz-ankeritic carbonate-mariposite-pyrite alteration, which are considered to be part of the Manson Fault zone, occur along the east rim of the Germansen River canyon at the "big bend" of the Germansen River, where it changes course from an easterly direction to a northerly direction, approximately twelve kilometres above its confluence with the Omineca River, approximately 300 metres northerly from the northeast corner of the AU 12 claim,. The rocks are a fine to coarse grained assemblage of light grey quartz, brownish-orange weathering ankeritic carbonate and bright green mariposite. Trace to 3% very fine grained to coarse grained cubes of pyrite and pyritohedra occur disseminated through the alteration assemblage. Abundant mariposite in the siliceous and carbonate rich assemblage give the rock a bright green color. Numerous white quartz stringers vein the rock in a sparse stockwork.

Unit 2: Deformed Black Graphitic Phyllite

Along the west contact of the alteration assemblage described above (and structurally/stratigraphically higher than?), are exposures of strongly foliated black graphitic phyllite, which also outcrops on both sides of the river approximately 75 m upstream from the "big bend". Attitudes of foliation vary from 120/ 60 NE to 120/90.

Unit 3: Altered Mafic Volcanic Rocks

In the northeastern corner of the claim group, near the northeastern side of the AU 12 claim, fine-grained mafic volcanic rocks are exposed and exhibit a weak foliation of 120/52 SW. These rocks display a partial or incipient development of ankeritic carbonate and are similar to altered mafic volcanic rocks which outcrop 100 m to 300 m beyond the northwest boundary of the AU 12 claim and along the south side of the Germansen River. These exposures lie to the west of the Manson Fault, where it is exposed at the "big bend" of the Germansen River, and therefore may be part of the Takla Group, which is believed to be separated from the Slide Mountain Group by the Manson Fault (Ferri, 1989). The mafic volcanic rocks are basaltic in composition and are comprised of green to greenish-grey, massive to locally pillowed rocks. Primary volcanic features such as hyaloclastite, flow-top features, and vesicles are locally well-preserved. The basaltic rocks are characterized by mafic phenocrysts, probably originally pyroxene, now replaced by tremolite, chlorite, sericite, quartz, and carbonate, indicating greenschist facies metamorphism.

Unit 4: Deformed Sedimentary Rocks (graphitic phyllite, ankeritic graphitic phyllite, sericite-ankerite schist)

Further upstream along the Germansen River, and structurally (and stratigraphically?) higher than the altered mafic volcanic rocks described above, are exposures of intensely deformed, strongly foliated black graphitic phyllite. Attitudes of foliation vary from 091/14 S to 115/ 65 SW to 120/40 SW. Deformation in these rocks increases towards the west, where in several exposures in the vicinity of the Motherlode gold occurrence, they are tightly folded adjacent to the faulted(?) contact with a thick quartz-ankeritic carbonate-mariposite ± pyrite zone of alteration. Near the contact, the black graphitic phyllites grade into a distinctive black phyllite with coarse grained (0.2 to 1.0 cm diameter), rusty orange weathering ankerite porphyroblasts developed along phyllitic partings. Closer to and immediately adjacent to the contact these porphyroblastic "spotted phyllites" grade into a very distinctive, light grey, sericitie-ankerite schist (similar to that described by Struik, 1989) which also contains 5 % to 30 % rusty orange weathering ankerite porphyroblasts. Structural planes are parallel and subparallel to the contact.

Unit 5: Quartz-Ankeritic Carbonate-Mariposite±Pyrite Assemblage

Structurally above the deformed black graphitic phyllites is a massive, finely to coarsely crystalline quartz-ankeritic carbonate-mariposite±pyrite assemblage which can be traced obliquely across strike for approximately 200 metres in exposures along the south side of the Germansen River. These rocks are light grey on freshly broken surfaces, but the ankeritic carbonate weathers to a brownish orange iron oxide rich rind which gives the ankeritic carbonate-bearing rocks of the belt their characteristic brownish-orange color. The rocks contain from a trace to 10 % bright green mariposite, and a trace to 2% or 3 % disseminated pyrite euhedra. The alteration zone can be traced through intermittent outcrops to the northwestern sector of the AU 12 claim where there are several good exposures. Exposures of the alteration zone display a fairly consistent weak foliation trending 120-130/50-60 SW.

Unit 6: Deformed Black Graphitic Phyllite (graphitic phyllite, ankeritic graphitic phyllite, sericite-ankerite schist)

Structurally/stratigraphically above the quartz-ankeritic carbonate-mariposite±pyrite alteration zone is a another (thin?) zone of deformed, strongly foliated black graphitic phyllites similar to those described above. Only one exposure of these rocks was seen, along the boundary of the AU 12 and AU 8 claims, in a small stream gully. The foliation trends 150/56 SW and the black phyllites vary from strongly foliated black phyllites with lustrous graphitic partings, to similar rocks which contain distinctive rusty orange weathering coarse grained ankeritic carbonate porphyroblasts, flattened subparallel to the foliation. A short distance to the north, float and subcrop of a distinctive light grey sericite-ankerite carbonate schist, almost identical in appearance to that described above (see Unit 4), is present along a road cut which follows the stream gully. The presence of the ankerite-bearing phyllite and sericite-ankerite schist suggests proximity to the west contact with the quartz-ankeritic carbonate alteration zone described above (see Unit 5). Further along strike to the northwest, and probably in the same structural/stratigraphic position are a number of exposures of black, siliceous, silty, graphitic phyllites, which outcrop along the steeply sloping south wall of the Germansen River canyon.

Unit 7: Feldspar Porphyritic Mafic Volcanic Rocks

Intercalated with the deformed phyllite unit described immediately above are a series of flows(?) of feldspar porphyritic mafic volcanics. These are dark to medium green rocks with a microporphyritic texture produced by a small percentage of light greyish-green to green feldspar phenocrysts and crystal fragments set in an aphanitic green matrix. The distribution of the two rock types in outcrop suggests that sedimentary rocks are subordinate to volcanic rocks in this unit, and possibly the feldpar porphyritic volcanic rocks and sedimentary rocks described above constitute a single map unit. This unit appears to thin to the southeast, and pinches out or may be terminated at surface against a fault in the northeast sector of the AU 8 claim.

Unit 8: Mafic Tuffs

Structurally/stratigraphically above units 6 and 7 is a sequence of fine grained to aphanitic, medium to dark green mafic volcanic tuffs of basaltic composition. The tuffs are probably waterlain, and are massive in outcrop. Minor exposures of these rocks occur in the northern part of the AU 7 claim, as well as just northwest of the northern boundary of the AU 7 claim, and a few scattered exposures of the same rock type occur further to the northwest along the steeply sloping south side of the Germansen River canyon. A single exposure of this rock type occurs approximately 400 m southeasterly from and on the west side of the same small stream gully where exposures of Unit 6 occur (see Unit 6 above). This unit appears to thin to the southeast, and pinches out or may be terminated at surface against a fault in the northeast sector of the AU 2 claim.

Unit 9: Altered and Unaltered Mafic Epiclastic Volcanic Rocks

Further up the same small stream gully, in the central sector of the AU 2 claim are exposures of dark to medium green and medium greyish-green to light grey, fine-grained to coarse grained epiclastic rocks composed of erosional products of mafic volcanic rocks. These rocks are principally volcanic arenites, but silty intervals are present and at several locations. beds are present which contain dark angular cherty and shaley fragments, suggesting a turbulent environment of deposition. This map unit is probably several hundred metres in thickness, as all of the exposures examined along the crest and west-facing slopes of the hill that occupies the AU 1, 4, and 7 claims consist of these rock types, and this map unit is apparently structurally/stratigraphically higher than Units 6 and 7 (which may be absent in this area). Approximately 1000 m to the northwest the contact between Unit 8 and Unit 9 has been mapped in exposures along the south side of the Germansen River canyon. There, the volcanic rocks are overlain by a package of clastic rocks derived by erosion of the volcanic pile. These epiclastic rocks range from fine-grained siltstone and shale to sandstone and conglomerate; the volcanic sandstones are the most abundant lithology. The package has an overall fining upwards trend. Sedimentary structures, such as crude banding of sandstone and siltstone layers and graded bedding are present. These indicate general southwesterly dips. Thin interbeds of siltstone commonly show soft sediment deformation structures such as slumps, flames, rip-ups, and disrupted bedding, as well as graded bedding.

Along the boundary between the AU 1 and 2 claims, these rocks have been weakly to intensely carbonatized over an area approximately 25 m to 200 m wide in a northeast-southwest sense across strike, and for a distance of at least 300 m along strike, possibly much further. The carbonatized rocks are cut by a weakly developed stockwork of quartz±ankerite±pyrite stringers, which sometimes display ankeritic selvages. The zone is described in greater detail below (see section on "Alteration and Mineralization").

Structure

In the vicinity of the AU claims, the attitude of the epiclastic rocks (Unit 9) is usually obscure due to the massive bedding and generally small exposures, but orientation of larger clasts, and sometimes graded bedding, have been used to determine a northwesterly to west-northwesterly (095° to 125°) strike and dips to the southwest of approximately 30° to 60°. In the vicinity of the area drilled by Anaconda in 1983 (AU 1-4 claims), quartz veins and stringers occur predominantly in a subvertical to southerly dipping joint set trending northeasterly to east-northeasterly. Schistosity trends 115° to 140°, subparallel to the strike of bedding, but dips steeply to the south. Also present are quartz vein sets with attitudes of 90° to 100° and steep dips to the east and 160° to 170° with steep dips to the south.

Large scale structures such as major folds and faults have not been defined at the property, but highly deformed graphitic phyllites and sericite-ankerite schists undoubtedly mark the traces of major faults. It is considered likely that some of these faults are thrust faults. Even though schistosity within these zones dips steeply southwestwards, this might be explained by a steepening of structural planes by a Phase 2 deformational event, and stacking of the different lithological units by these (hypothesized) thrusts has also probably occurred. This would be consistent with the stuctures documented elsewhere along the boundary between the cratonic Omineca Crystalline Belt and Takla-Nicola volcanic-plutonic arc, such as in the Quesnel Lake area, where thrust faults related to a Phase 1 deformational event have been deformed by a Phase 2 deformation (Struik, 1988), Bloodgood, 1987, 1988).

ALTERATION AND MINERALIZATION

The principal feature of economic interest at the AU claims is an extensive zone of gold mineralization associated with an area of intense carbonate alteration with dimensions of at least 25 m to 200 m wide by 300 m long, which is overprinted by a weak stockwork of quartz±ankerite±pyrite stringers. This zone is exposed intermittently in outcrop in a broad area along the boundary between the AU 1 and 2 claims. A total of 23 rotary percussion drill holes, four reverse circulation drill holes and three diamond drill holes were drilled in 1983 by Anaconda to investigate this mineralized zone. There was generally poor agreement in the grades reported by samples from the different types of drilling, perhaps in part explainable by a high percentage of lost core through mineralized sections of the diamond drill holes, and perhaps in part due to statistical sampling errors related to small sample size (20 g) and the so-called "nugget" effect.. Based on the more consistent assays reported by samples from percussion drill holes, Anaconda personnel estimated that there was a zone of mineralization present with dimensions of 300 m long by up to 130 m wide averaging 0.6 g/tonne Au to a depth of 80 m. Within this zone are numerous higher grade intersections, including a 36.5 m section averaging 1.31 g/tonne Au in PDH-14, a 27.4 m section averaging approximately 1.0 g/tonne Au in PDH 18, a 29 m section averaging 0.7 g/tonne Au in PDH-21, and a 21 m section averaging 0.73 g/tonne Au in PDH-05. Other more restricted higher grade intervals (assays of 2 to 8 g/tonne) are also present, suggesting that further work may outline significant tonnages of higher grade mineralization.

Due to the relatively wide spacing of the drill holes, it was not possible to correlate higher grade intervals from hole to hole, and no conclusions were arrived at regarding the probable presence of higher grade zones of smaller tonnage, even though many of the holes reported intervals several metres long averaging in excess of 1 g/tonne Au, with assays ranging up to a high of 8.47 g/tonne Au.

Rock geochemical sampling of available outcrops suggests a relationshio between higher gold assays and quartz±pyrite stringers, but close inspection of diamond drill hole data indicates that this is not always a consistent relationship, and a number of samples from outcrops returned high gold assays even when no quartz stringers were present. Nor does there appear to be any consistent relationship between pyrite content and gold assays, as some well pyritized samples returned low gold assays and some weakly pyritized samples returned higher gold assays. Assays of percussion drill hole samples indicate that throughout the zone there seems to be a background level of mineralization of 200 ppb to 300 ppb gold, with numerous intervals, sometimes many metres long, of values ranging from 400 ppb to 1000 ppb, with occasional erratically distributed values ranging from 1 g/tonne to 4 g/tonne. This dicrepancy between percussion drill hole assays and diamond drill core assays has not been explained. Unfortunately, diamond drill core is no longer available for examination, and percussion drill hole cuttings provided no structural information.

Reverse circulation drill sample rejects were panned by Anaconda staff and pyrite concentrates were selectively assayed. Sieve fractions in the -40 to +80 mesh particle size range returned assays ranging from 1385 to 5675 ppb; those in the -80 to +150 range returned assays ranging from 1450 to 4850 ppb, and those in the -150 mesh size range returned assays ranging from 3095 to >10,000 ppb. These figures seem to establish a correlation between pyrite and gold content, which contradicts other observations.

CONCLUSIONS AND RECOMMENDATIONS

Based on assays reported by samples from percussion drill holes, Anaconda personnel estimated that there is a zone of mineralization present with dimensions of 300 m long by up to 130 m wide averaging 0.6 g/tonne Au to a depth of 80 m. Without taking into consideration possible structural and stratigraphic/lithological controls of mineralization, which could affect the assay envelope, this would correspond to a drill indicated estimated reserve of 8,268,000 metric tonnes of mineralization grading 0.6 g/tonne, with approximately 5,000,000 grams of contained gold. This is a significant potential gold resource which justifies further exploration of the property.

.There are a statistically significant number of assays grading greater than 1 g/tonne gold to more than 8 g/tonne gold in the zone. A careful analysis of assaying and sampling methods used to dateis required to determine the reasons for discrepancies between percusiion drill hole assays and diamond and reverse circulation drill hole assays. Selective analysis of panned concentrates of reverse circulation drill hole sample rejects suggests a positive correlation between pyrite and gold content, but other observations contradict this. At the present time, the nature of the gold mineralization and its mineralogical associations, if any, are not understood. Polished thin section analysis might be useful in determining the mode of occurrence of the gold.

A program of additional geological mapping is recommended, with a focus on identifying kinematic indicators in possible fault zones. A limited amount of trenching should be carried out in the vicinity of percussion drill hole PDH-14 to obtain bulk samples for comparative assay analysis and for mineralographic study.

Contingent on the results of this work, more detailed drilling should be undertaken to better delineate higher grade zones, which are indicated to be present by the results of several of the percussion drill holes.

STATEMENT OF EXPENDITURES

M. Fox, professional services	9 days @ 300/day	2700.00
Vehicle rental and mileage		1375.00
Gridlines	4 line km @ 100/km	400.00
Field accommodation and meals	3 men x 7 days @ 50/man/day	1050.00
Travel expenses	3 men x 2 days @ 70/man/day	420.00
Drafting services	9 hours @ 35/hour	315.00
Secretarial services		60.00
Reproductions		16.05
	SUBTOTAL	6336.05
	GST on 6320.00	442.40
	TOTAL	$6778.45

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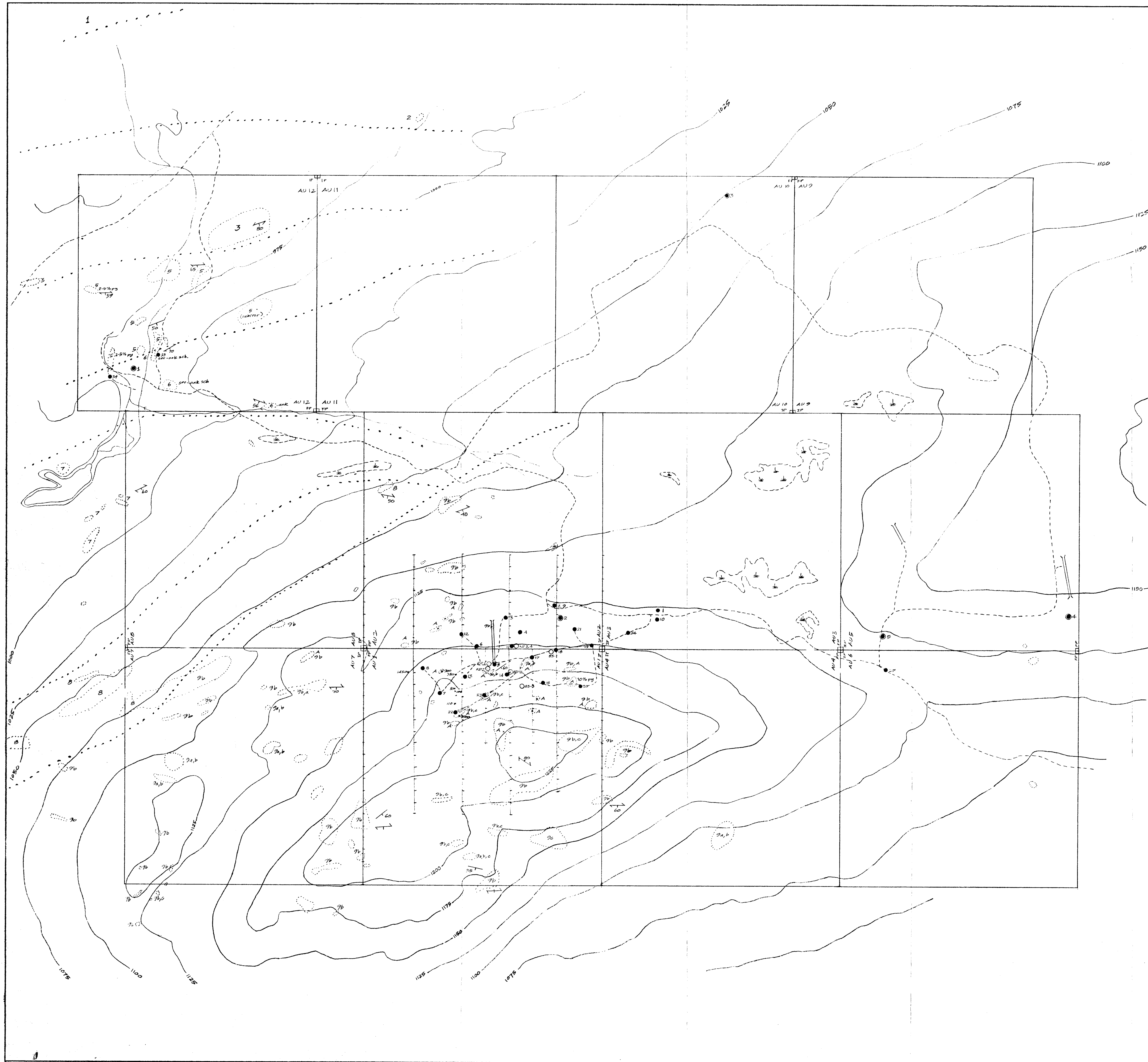

LEGEND

1	ULTRAMAFIC ROCKS, IN PART SERPENTINIZED, STEATITIZED, IN PART ALTERED TO QUARTZ-ANKERITE-MARIPOSITE ± PYRITE
2	PHYLLITE, BLACK, GRAPHITIC, STRONGLY FOLIATED ALONG MANSON FAULT
3	MAFIC VOLCANIC ROCKS, GREEN TO GREENISH-GREY, MASSIVE, LOCALLY PILLOWED, ALTERED TO TREMOLITE, CHLORITE, SERICITE, QUARTZ AND CARBONATE, IN PART ANKERITIZED
4	PHYLLITE, BLACK, GRAPHITIC, IN PART ANKERITIC, SERICITE-ANKERITE SCHIST
5	QUARTZ-ANKERITE ± MARIPOSITE ± PYRITE, LIGHT GREY, MASSIVE, ORANGE WEATHERING
6	PHYLLITE, BLACK, GRAPHITIC, IN PART ANKERITIC, SERICITE-ANKERITE SCHIST
7	MAFIC VOLCANIC ROCKS, FELDSPAR PORPHYRITIC, IN PART INTERCALATED WITH UNIT 6.
8	MAFIC TUFF, BASALTIC, MEDIUM TO DARK GREEN, FINE-GRAINED TO APHANITIC
9	EPICLASTIC ROCKS: a) VOLCANIC SILTSTONE, b) VOLCANIC ARENITE, c) CONGLOMERATE
A	QUARTZ-ANKERITIC CARBONATE ± PYRITE ALTERATION SUPERIMPOSED ON OR SYNDEPOSITIONAL WITH UNIT 9

SYMBOLS & ABBREVIATIONS

	OUTCROP, SUBCROP
59	FOLIATION, DIP
60	STRIKE, DIP
• • • •	CONTACT (INFERRED)
14	PERCUSSION DRILL HOLE
83-3	DIAMOND DRILL HOLE
RD-1	REVERSE CIRCULATION DRILL HOLE
2	DIAMOND DRILL HOLE (1973)
py	PYRITE
ank	ANKERITE
ser	SERICITE
sch	SCHIST
×3500	ROCK SAMPLE (GOLD IN ppb)

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GEOLOGY
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N.T.S. 93-N-10E
SCALE: 1:2500
MAP No. 1