

87-571-16242

GEOLOGICAL REPORT
PUNCH - BOWL PROPERTY
GOLDEN MINING DIVISION, B.C.

NTS Location 83D/8E

9/88

52°22'N latitude / 118°09'W longitude
23'06" 10'18"

Mineral Claims

Blocks: Punch 1 - Punch 8 (inclusive)

Claims: Bowl 1, Bowl 2

FILMED

Owners: G. Forman
B. Fowler
R. Klettl

Operator: Gamsan Resources Ltd.
Edmonton, Alberta

Consultant/Author: J.D. Godfrey
R.P. Shaw

Author: S.J. Foster

Date Submitted: September 1987

GEOLOGICAL BRANCH
ASSESSMENT REPORT

16,242

TABLE OF CONTENTS

PAGE

I.	Introduction	
1.	Physiographic/Geographic Position	1
2.	Property Definition	1
3.	Summary of Work Done i) geochemical survey	2
	ii) geological survey	2
4.	Claims on which work was actually performed	2
II.	Technical Data and Interpretation	
1.	Purpose	3
2.	Results and Interpretation	3
	i) general geological setting	3
	ii) local geology	3
	(a) lithology	
	(b) metamorphism	
	(c) deformation	
	iii) mineralization	4
	iv) recommendations	6
	v) general references	7

APPENDICES

I	Geochemical Analyses - Stream Sediment
II	Geochemical Analyses - Rocks
III	Rock Sample Descriptions
IV	Punch Bowl Claims Summary to June 1987
	Petrology of the Punch Bowl Specimens
V	Itemized Cost Statement
VI	Statement of Qualifications

ILLUSTRATIONS

Figure 1.	Punch Bowl property location
Figure 2.	General geology of Punch Bowl property
Figure 3.	Sketch of geology looking north toward south face of McGillivray Ridge
Figure 4.	Sketchmap of part of Main (Discovery) showing
Figure 5.	Stream sediment sample locations on Punch Bowl property
Figure 6.	Rock sample locations

I. Introduction

1. Geographic & Physiographic Position

The Punch Bowl Property consists of 8 blocks of Punch Claims (Punch 1 through Punch 8) comprising 122 mineral claims and 2 irregularly-shaped Bowl claims (figure 1).

The Punch claim blocks are centred at 52°22'N and 118°09'W. They are situated 95 km southeast from Valemount, B.C., which in turn is 500 km west of Edmonton, Alberta. Access to the property was gained by helicopter, based at Valemount. The nearest road (Highway 23) terminates at the Mica Dam, approximately 50 km southeast of the claims.

2. Property Definition

The area has essentially no mining history. The Wood Arm, south of the claim area, and Hugh Allan Creek to the northwest have a history of minor placer working, the remains of which, (abandoned sluicing equipment), may apparently still be found along Hugh Allan Creek. These workings are said to date from the 1920's.

The current interest in the property results from the findings of Mr. Klettl Sr. (father of one of the claim proprietors) who discovered gold-bearing talus during the course of his work as a Jasper Park Ranger, in the late 1960's. This talus was later traced to an outcrop showing (figure 2).

The current owners of the property are Robert Klettl, Garry Forman, Brian Fowler. The property is optioned to Gamsan Resources Ltd., the operator of the exploration work undertaken during the summer of 1987.

3. Summary of Work

i) Geochemical Survey

A stream-sediment sampling program was carried out on Pacific Creek and other drainage channels on and adjacent to the Punch Bowl property. A total of 20 samples were collected and assayed for gold; 15 of these from within the property boundary. These are listed in Appendix I.

ii) Geological Survey

Two reconnaissance exploration field trips were undertaken by Gamsan Resources Ltd. Reconnaissance mapping was done on Claim Blocks; Punch 1, 3, 4, 6, 7 and the claims Bowl 1 and Bowl 2; approximately 3300 hectares. Punch 2 is covered by glacial ice and Punch 5 and 8 proved inaccessible to helicopter-supported crews. Geological mapping of the property was done at a scale of 1:50,000.

Prior to embarking on the field program a preliminary review of the regional geology of the area was assembled by R.P. Shaw. Petrographic study of thin-sections was also done at this time by R.P. Shaw. The results of these studies are included in Appendix IV.

4. Claims on which work was actually performed:

Claim Blocks	-	Punch 1
	-	Punch 3
	-	Punch 4
	-	Punch 6
	-	Punch 7
Claims	-	Bowl 1
	-	Bowl 2

II. Technical Data and Interpretation

1. Purpose

The purpose of the field program was to map the property at a reconnaissance scale and assess the potentials for gold mineralization.

2. Results and Interpretation

i) General Geological Setting

The Punch Bowl Property is located in the Park Ranges of the western Main Ranges of the Rocky Mountains. The bedrock is made up of L. Paleozoic miogeosynclinal-platform sediments consisting mainly of carbonates, shales and mature sandstones which have been subjected to low-grade regional metamorphism.

ii) Local Geology

(a) Lithology

The strata (presumed to correlate with the Cambrian Gog Group,) consist of a fluvial/littoral sequence dominated by meta-arenites with minor meta-pelites.

The meta-arenites are characterized by clean, quartz-rich clastic meta-sediments of coarse grain-size, ranging from coarse sand to grit with 3cm pebbles locally. The more conglomeratic phase tends to be most abundant towards the top of the succession. These pale buff, to green, to pink and mauve meta-arenites are cross-bedded and show minor graded-bedding, indicating tops to the east. Therefore, this sequence is over-turned. They are quartz-rich and represent a thick accumulation of mature clastic sediments. In hand specimen they are dense, well-cemented and compact, with little or no apparent porosity. The meta-arenites form massive, structurally competent beds and are cliff-formers.

Interbedded in the meta-arenites are narrow bands and lenses of pelitic metasediments (argillites). The meta-pelites are typically dark green (chloritic), from 15cm to 60cm, and can be traced along strike for up to 46m. The beds tend to be rusty on weathered surfaces and commonly contain pyrite. Slaty cleavage, very well-developed in the meta-pelite, has a marked angular relationship with the bedding along both strike and dip directions. The meta-pelite makes up between 1 and 5 percent of the package exposed on the mountainside of McGillivray Ridge. The narrow bands of meta-pelite are commonly separated by intervals of 3 to 15m of meta-arenite.

A carbonate sequence, found in the south central part of the property (figure 2, exposed upslope eastward from the campsite) consists of a fine-grained, grey dolomite and subordinate rusty-weathering, ribbon (silty clay laminations?) thin bedded carbonate.

(b) Metamorphism

The sequence of meta-arenites and meta-pelites have attained greenschist facies metamorphism, chlorite and sericite being particularly evident in the meta-pelite. A metamorphic foliation is well expressed in the meta-pelite and is evident as fracture cleavage in the meta-arenite.

(c) Deformation

On a regional scale, the rocks of the McGillivray Ridge strike northwesterly and dip steeply to the east. They may form part of the eastern limb of the Porcupine Creek anticlinorium. A schematic diagram looking north along strike at the south face of the McGillivray Ridge is shown in figure 3. This section reveals a stack of thrust slices bounded by westward-dipping, high-angle reverse faults. The reverse fault movement is established by drag folding observed within the overlying thrust slices against the fault surfaces.

The discontinuity between the meta-arenite-pelite sequence to the north and the carbonate sequence to the south can be explained by either an overthrust relationship (as shown in figure 3) or an easterly-trending fault with lateral displacement at the south end of McGillivray Ridge passing beneath Kane Glacier (figure 2). Large-scale kink- and S-folding is observed within the thrust slices (figure 3) representing a stage of deformation prior to the reverse faulting.

Rocky Mountain deformation has left a northwest-trending general strike and most of the strata are inclined at steep to moderate dips (figure 2).

iii) Mineralization

Milky quartz veins are the most abundant evidence of epigenetic mineralization. Discontinuous "stockworks" of dilatent quartz veins cross the metasedimentary succession approximately easterly and dip vertically. Individual veins from 2.5 to 7cm in thickness are arranged in a branching network within zones 3 to 9m in width. This system of milky quartz veins is apparently barren of sulphides. These quartz veins tend to be restricted to the meta-arenite and uncommonly cut the much less competent meta-pelite.

The wide distribution of the quartz vein system suggests their origin as a dilation of possible tension fractures associated with the mountain building event.

In the course of that same deformation the contrasting ductile behaviour of the meta-pelite bands within the competent massive quartzites led to localized bedding surface dilatency and the formation of conduits for circulating fluids.

Mineralization within the stratiform quartz veins associated with the meta-pelite (e.g. the discovery Main Showing) includes: abundant pyrite, sparse galena, sphalerite (?), and native gold. Figure 4 shows the essential geological features of the Main Showing (elevation 2165m above sea level).

Assays of grab samples taken from this showing by one of the claim proprietors, Robert Klettli, (Appendix 1) show a maximum value of 87 oz. Au/s.t. and 16 oz Ag/s.t.

Deformation within the meta-pelite is evident in the zone of host-rock breccia clasts which envelopes the central milky quartz vein. The euhedral pyrite cubes and pyritohedrons measure 2-3 mm across, and isolated galena crystals are 3 mm in diameter. Pyrite is also abundant as fine-grained masses in the metapelite and is directly associated with the rusty stained sections. The native gold is fine-grained, has bright lustre, and is typically enclosed in the vein quartz.

Hydrothermal alteration effects are not immediately apparent adjacent to the mineralized veins, although further work could refine these observations.

iv) Recommendations

a) Main Showing, establish grades and extent of the mineralization by trenching and channel sampling. This program requires construction of a heliport in such alpine-glaciated terrain of high relief and steel-walled U-shaped valleys;

b) Detailed geological mapping and sampling of the west face of McGillivray Ridge. Other rusty meta-pelite lenses with vein quartz occur in the face and their distribution and geometry should be clearly understood. A grid needs to be established, with about 50 m spacing.

c) Reconnaissance mapping, prospecting and geochemical sampling should be extended both within the property and the surrounding region.

d) As is the norm, particularly in an early phase of exploration, the program should remain flexible and open to review pending the outcome of findings as the project evolves.

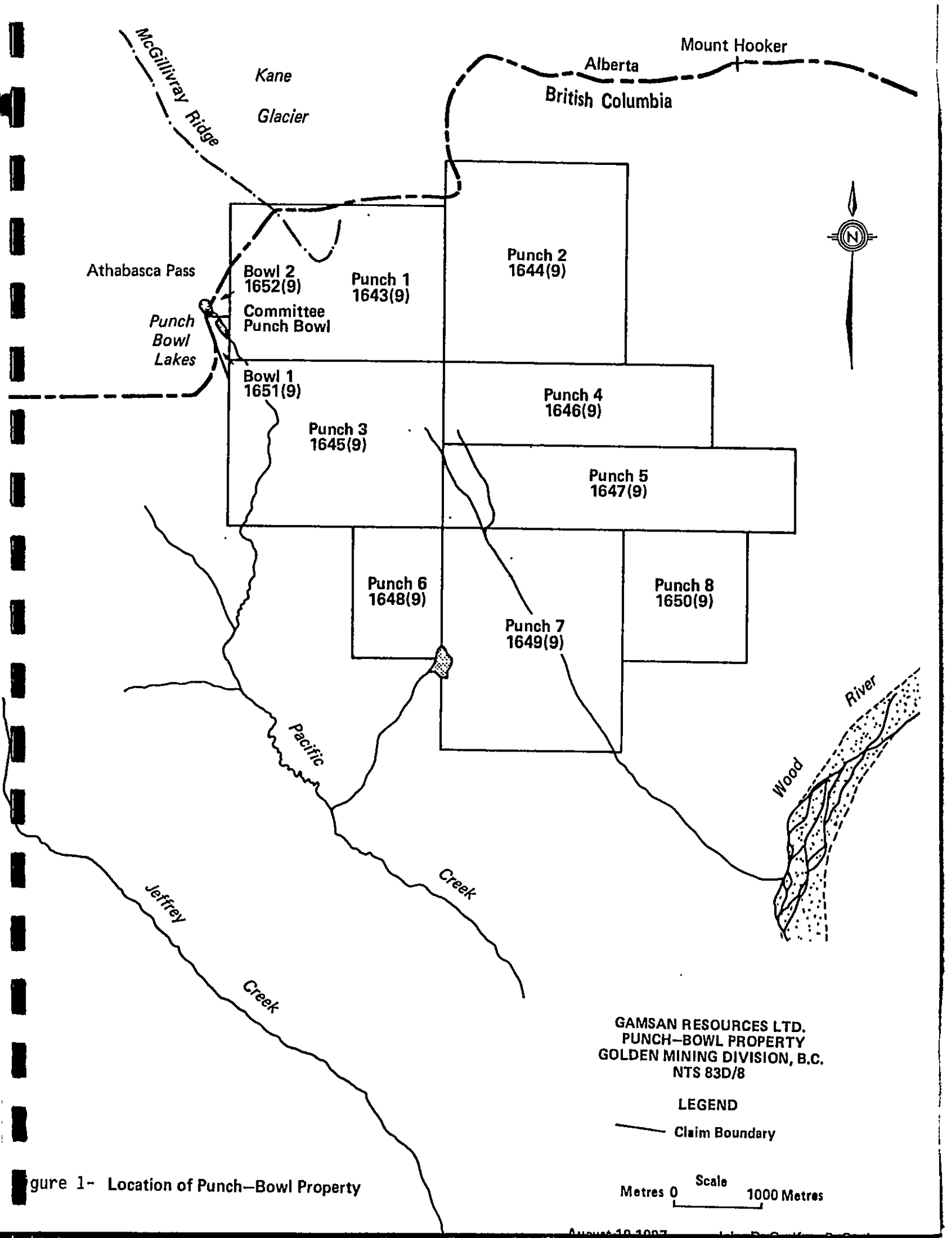


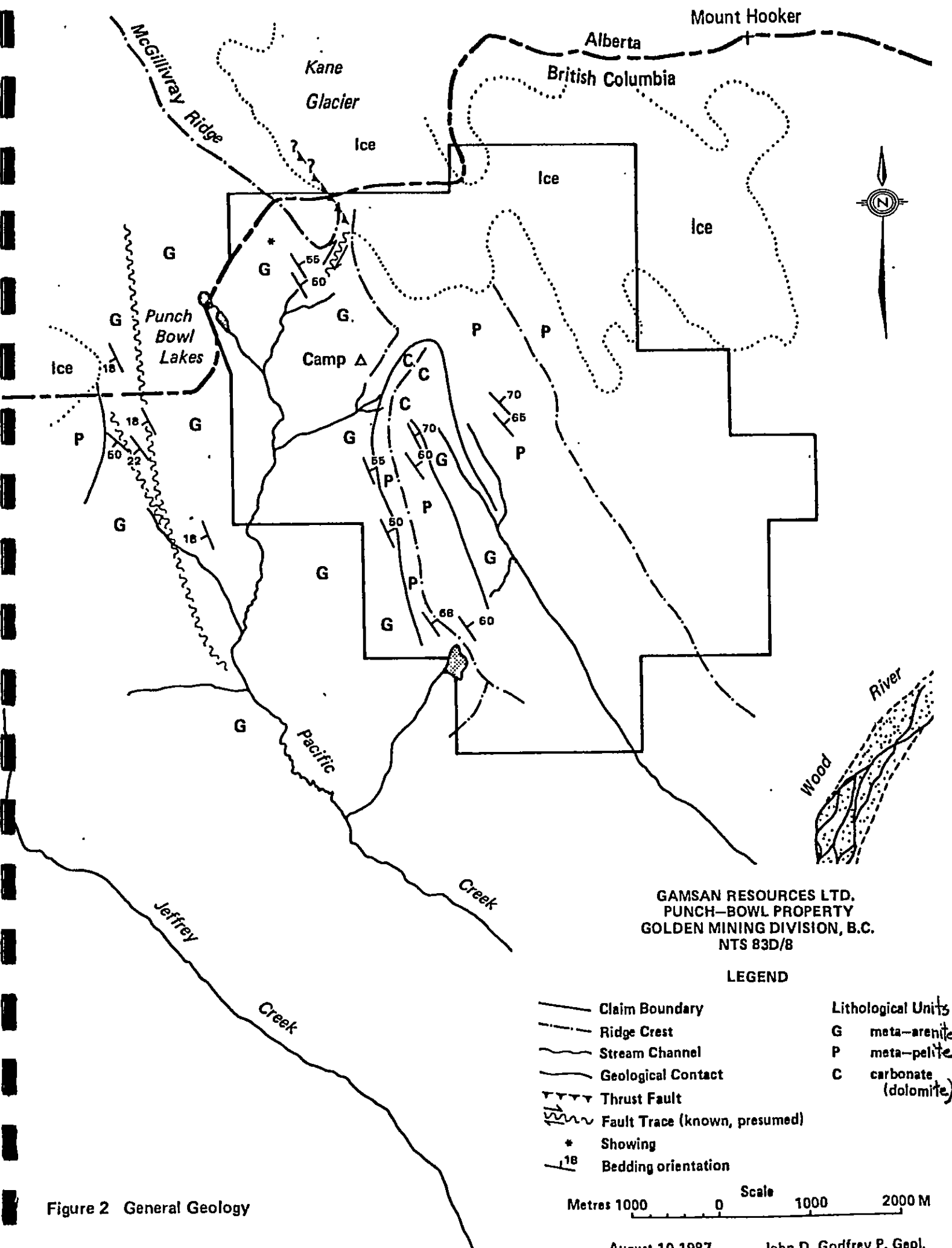
Figure 1- Location of Punch-Bowl Property

GAMSAN RESOURCES LTD.
 PUNCH-BOWL PROPERTY
 GOLDEN MINING DIVISION, B.C.
 NTS 83D/8

LEGEND

— Claim Boundary

Scale
 Metres 0 1000 Metres



GAMSAN RESOURCES LTD.
 PUNCH-BOWL PROPERTY
 GOLDEN MINING DIVISION, B.C.
 NTS 83D/8

LEGEND

- | | | | |
|-------|-------------------------------|---|----------------------|
| — | Claim Boundary | | Lithological Units |
| - - - | Ridge Crest | G | meta-arenite |
| ~~~~~ | Stream Channel | P | meta-pelite |
| — — | Geological Contact | C | carbonate (dolomite) |
| ▾▾▾▾ | Thrust Fault | | |
| ~~~~~ | Fault Trace (known, presumed) | | |
| * | Showing | | |
| — — | Bedding orientation | | |

Metres 1000 0 1000 2000 M
 Scale

Figure 2 General Geology

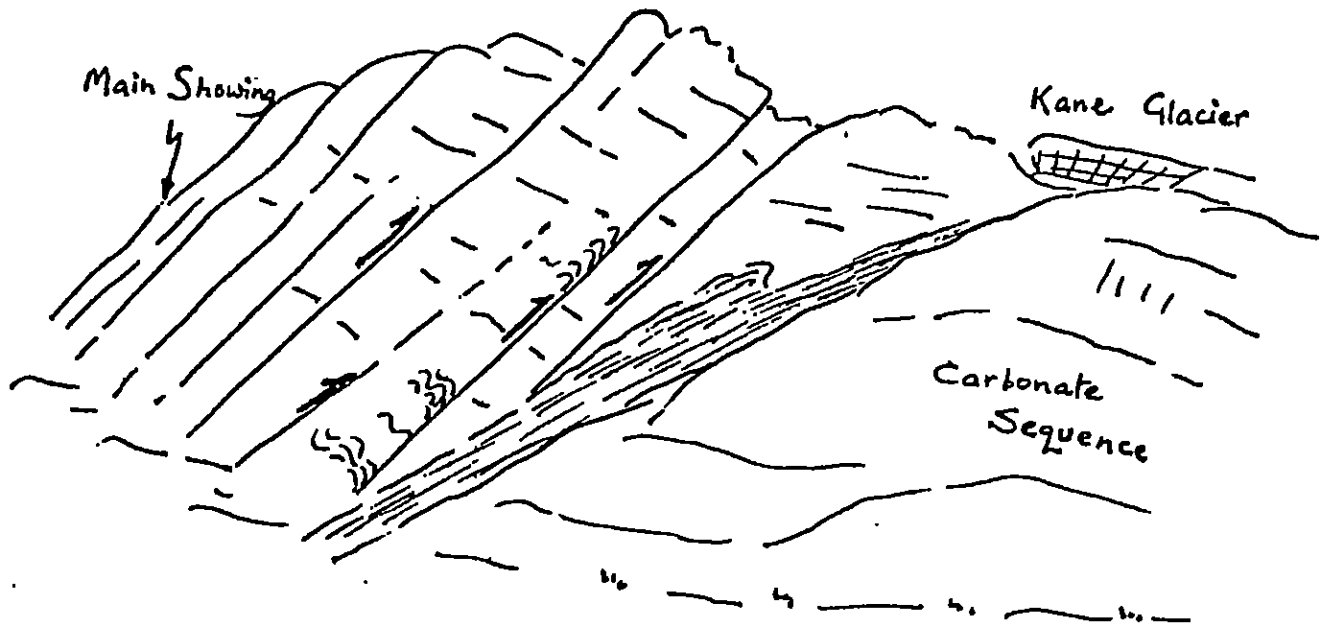


Figure 3. Sketch of geology looking north toward south face of McGillivray Ridge

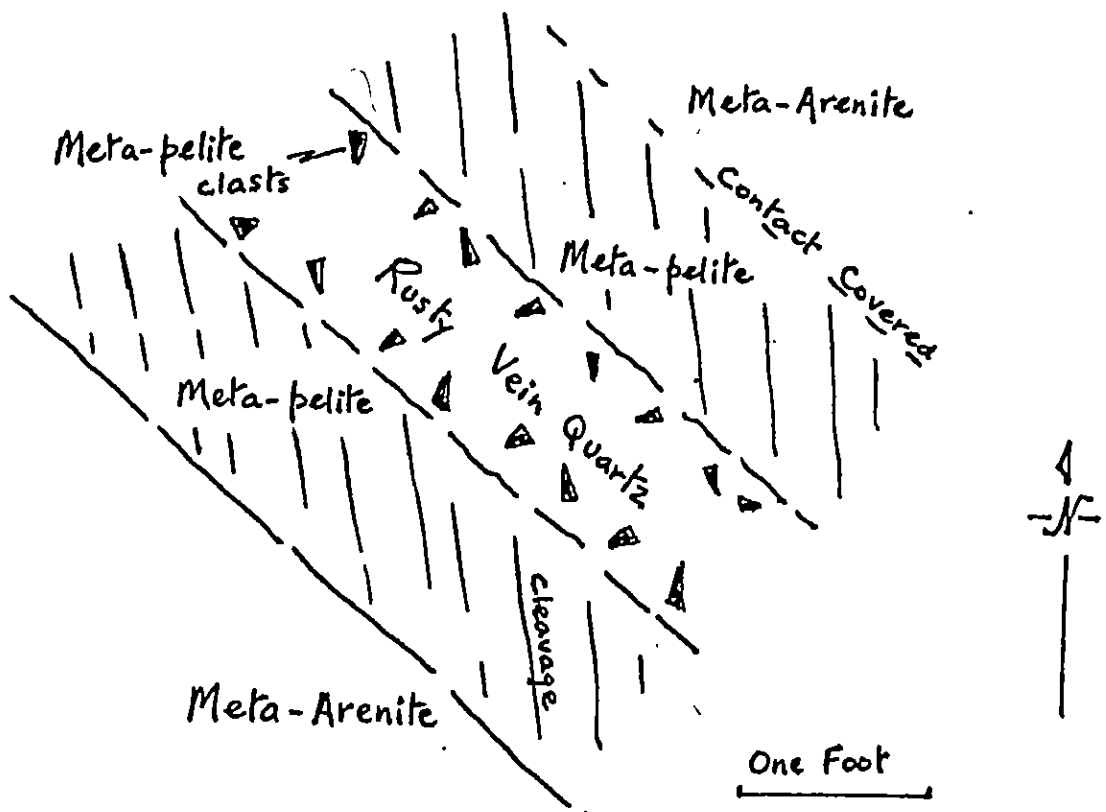
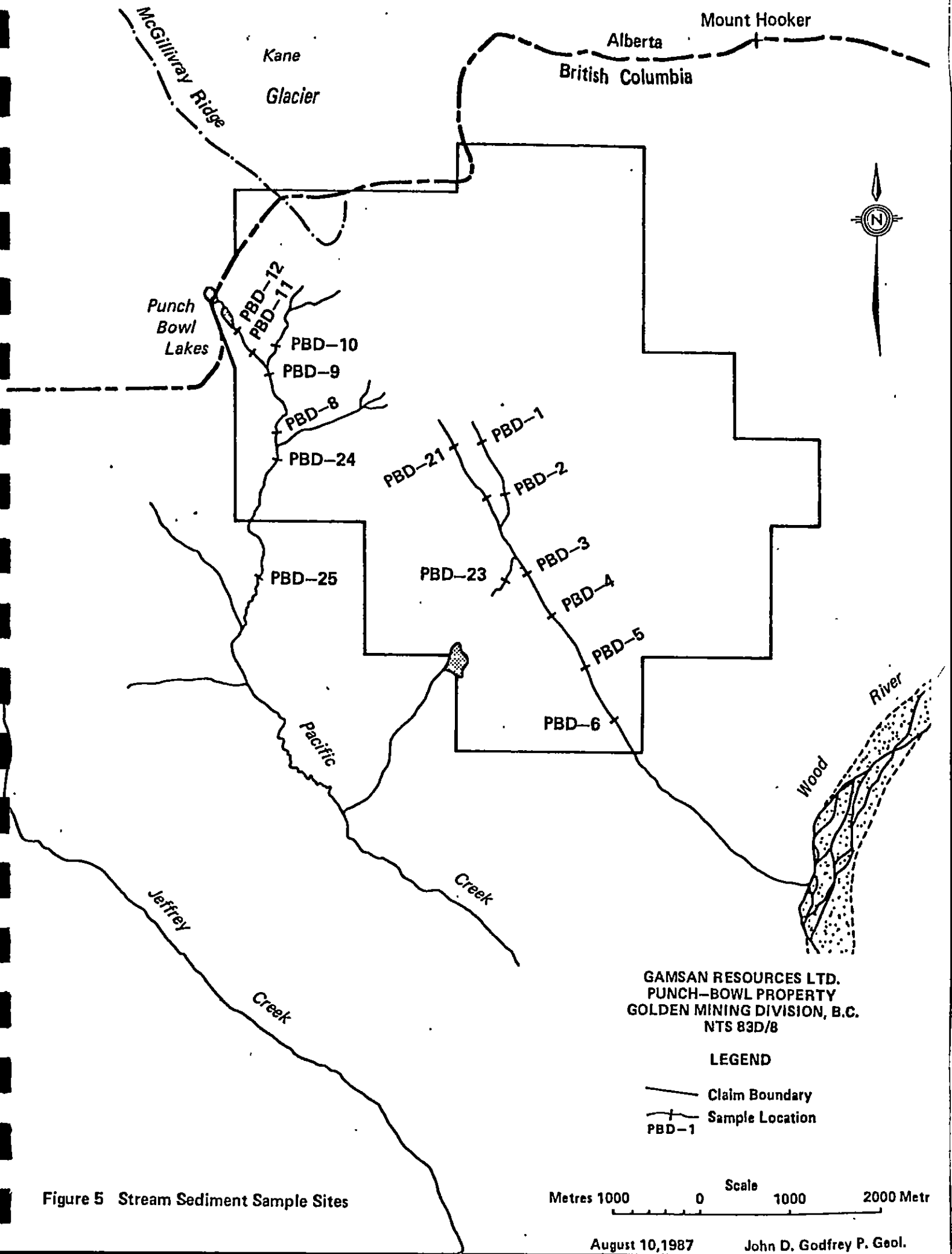


Figure 4. Sketchmap of part of Main (Discovery) Showing



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 PUNCH-BOWL PROPERTY
 GOLDEN MINING DIVISION, B.C.
 NTS 83D/8

LEGEND

- Claim Boundary
- Sample Location
- PBD-1

Metres 1000 0 Scale 1000 2000 Metr

Figure 5 Stream Sediment Sample Sites

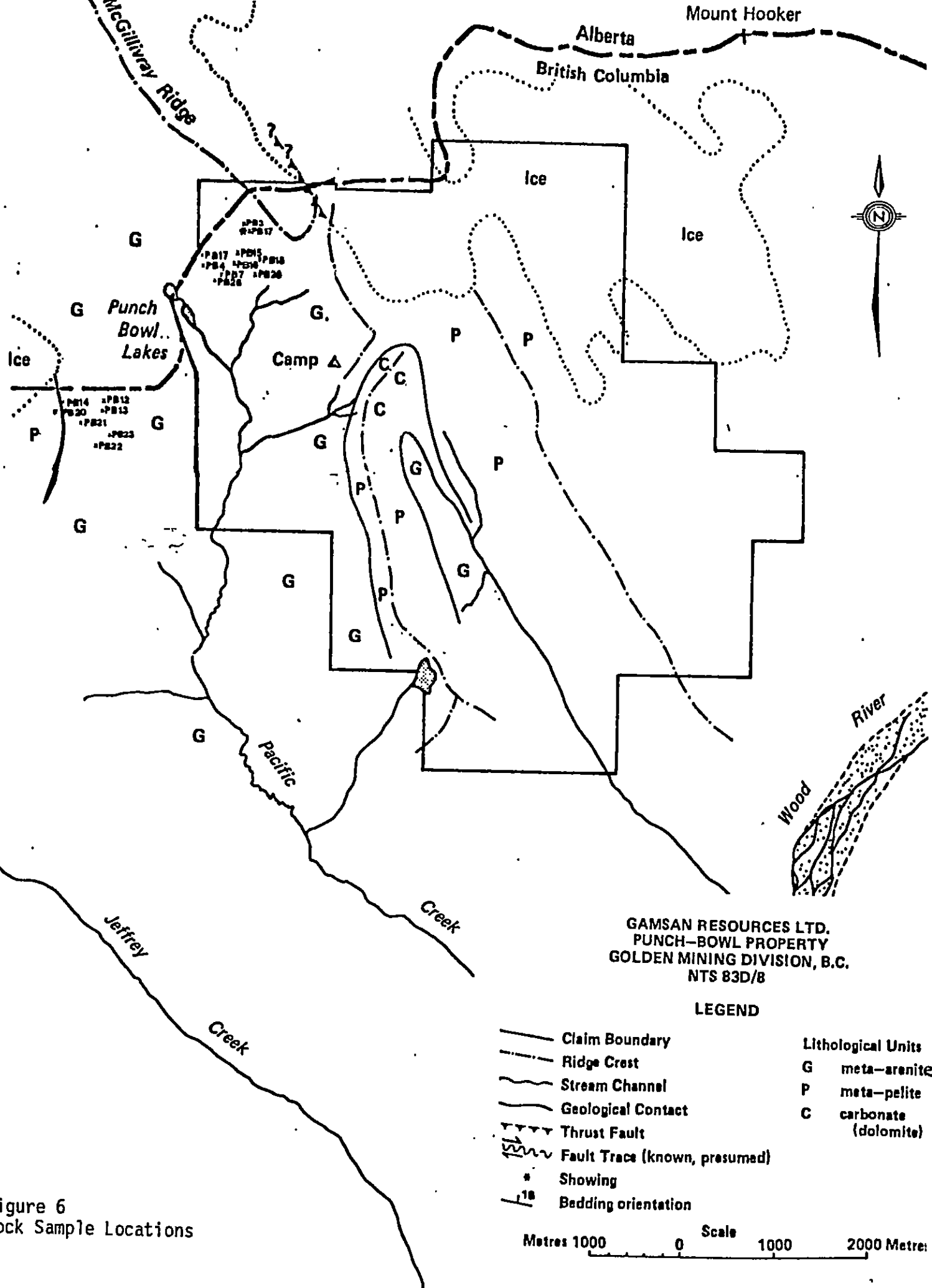


Figure 6
Rock Sample Locations

GAMSAN RESOURCES LTD.
PUNCH-BOWL PROPERTY
GOLDEN MINING DIVISION, B.C.
NTS 83D/8

LEGEND

- | | | |
|---------|-------------------------------|------------------------|
| — | Claim Boundary | Lithological Units |
| - - - | Ridge Crest | G meta-arenite |
| ~ ~ ~ | Stream Channel | P meta-pelite |
| — — | Geological Contact | C carbonate (dolomite) |
| ▾ ▾ ▾ ▾ | Thrust Fault | |
| ~ ~ ~ | Fault Trace (known, presumed) | |
| * | Showing | |
| — — | Bedding orientation | |

Metres 1000 0 Scale 1000 2000 Metres

v) General References

Forest, R. and Mountjoy, E.W., 1986; Revised structural interpretation, Selwyn Range between Ptarmigan and Hugh Allan Creeks, British Columbia - An antiformal stack of thrusts, in Current Research, Part A, Geological Survey of Canada, Paper 86-1A, p. 177-183.

Mountjoy, E.W. et al., 1987; Structure and stratigraphy of the Northern Porcupine Creek Anticlinorium, Abstract, GAC-MAC conference 1987, Saskatoon, Saskatchewan

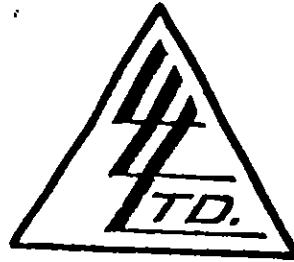
Price, R.A., and Mountjoy, E.W., 1970; Geologic structure of the Canadian Rocky Mountains between Bow and Athabasca Rivers. Geological Association of Canada Special Paper Number 6, p. 7-25.

Shaw, Robert P., 1987; Punch Bowl Claims, Park Ranges B.C., Summary to June 20, 1987, unpublished Gamsan Report

Shaw, Robert P., 1987; Petrology of Punch Bowl Specimens, unpublished Gamsan Report

APPENDIX I

To: GAMSAN RESOURCES LTD.,
 1720, 10130 - 103rd Street,
 Edmonton, Alberta T5J 3R2



File No. 30241
 Date August 27, 1987
 Samples Stream Sediment

ATTN: Mr. Bob Shaw

Certificate of
ASSAY OF
LORING LABORATORIES LTD.

Page # 1

SAMPLE No.	PPB Au
<u>"Stream Sediments"</u>	
PBD- 1	NIL
2	5
3	NIL
4	5
5	NIL
6	NIL
7	NIL
8	5
9	NIL
10	NIL
11	NIL
12	NIL
13	NIL
21	NIL
22	10
23	NIL
24	5
25	5
26	5
27	NIL

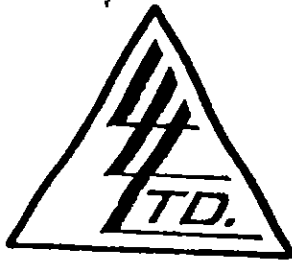
I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE
 ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES

Rejects Retained one month.
 Pulp Retained one month
 unless specific arrangements
 made in advance.

.....
Bob Shaw
 Assayer

APPENDIX II

To: GANSON RESOURCES LTD.,
1720, 10130 - 103rd Street,
Edmonton, Alberta T5J 3R2



File No. 30152
Date August 17, 1987
Samples Rock

ATTN: Sandra Foster

Certificate of
ASSAY
LORING LABORATORIES LTD.

SAMPLE No.	OZ./TON GOLD	OZ./TON SILVER
<u>"Rock Samples"</u>		
PB- 1	.006	.06
PB- 2	.014	.08
PB- 3	.002	.06
PB- 4	.004	.09
PB- 5	.018	.09
PB- 6	.366	.01
PB- 7	.006	Trace
PB- 8	.324	Trace
PB- 9	.070	.02
PB-10	.072	.03

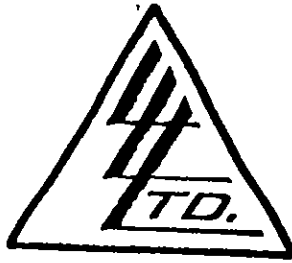
I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE
ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES

Rejects Retained one month.

Residues Retained one month
unless specific arrangements
made in advance.

[Signature]
ASSAYOR

To: GAMSAN RESOURCES LTD.,
 1720, 10130 - 103rd Street,
 Edmonton, Alberta T5J 3R2



File No. 30241
 Date August 27, 1987
 Samples Rock

ATTN: Mr. Bob Shaw

Certificate of
ASSAY OF
LORING LABORATORIES LTD.

Page # 2

SAMPLE No.	OZ./TON GOLD	OZ./TON SILVER
<u>"Rock Samples"</u>		
PB-11	.006	.05
12	.004	Trace
13	.010	Trace
14	Trace	Trace
15	.004	.06
16	.132	Trace
17	.004	Trace
18	.024	Trace
19	.008	.04
20	Trace	.04
21	Trace	.05
22	Trace	Trace
23	Trace	.03
24	.982	.10
25	.074	.05
26	.004	.02
27	5.272	.10
28	.942	.02
29	.078	.10

I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE
 ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES

Rejects Retained one month.

Pulps Retained one month
 unless specific arrangements
 made in advance.

Bob Shaw
 Assayer

APPENDIX III

ROCK SAMPLE DESCRIPTIONS

- PB-1 main showing - mineralized quartz vein with shaly clasts
- PB-2 main showing - mineralized quartz vein with shaly clasts
- PB-3 upper vein - white milky quartz-fine carbonate
fine sulphide (galena)
- PB-4 quartz vein in grab sample (landing site)
- PB-5 quartz vein main showing
- PB-6 from main showing - shaly component
- PB-7 grab sample (landing site) coarse grit-conglomerate host rock
- PB-8 main showing - quartz vein, visible gold, high grade sample/not
representative
- PB-9 main showing - quartz vein with shaly clasts, euhedral pyrite
- PB-10 main showing - quartz vein with shaly clasts, euhedral pyrite
- PB-11 milky quartz vein with shale, clasts and minor carbonate rusty-
oxide stain (Grab Sample - S. Ridge 1st Valley talus)
- PB-12 chip sample (outcrop) milky quartz vein - Fe stain, Fe carbonate
minor pelitic clasts and minor mica (muscovite ?), sulphide
(arsenopyrite ?? very minor) (Mt. Brown)
- PB-13 quartz vein, granular, open space filling character meta-arenite
host rock, Fe oxide stain, Fe carbonate, minor (Mt. Brown) chip
- PB-14 Mt. Brown - milky quartz vein, very minor carbonate and galena,
chip
- PB-15 McGillivray Ridge - below main showing - meta-pelite/quartz vein
occurrence (200m below main showing) hematite, limonite stain,
meta-pelite clasts in the quartz. Pyrite associated (abundant)
with meta-pelite, chip
- PB-16 McGillivray Ridge - green meta-pelite, minor disseminated pyrite,
chip
- PB-17 grit, hematitic, meta-arenite, medium grained (McGillivray Ridge)
chip
- PB-18 pyritic meta-arenite, medium grained, green colour, medium rust
weathering, chlorite, minor mica (no ref. sample retained)
(McGillivray Ridge) chip

- PB-19 meta-pelite clasts in milky quartz vein structure, above main showing, minor hydrothermal mica, pyrite, Fe stain
- PB-20 Mt. Brown - chip sample - milky quartz vein in meta-pelite and Fe carbonate
- PB-21 Mt. Brown - chip sample - milky quartz-meta pelite clasts minor carbonate, Fe oxide stain, minor sulphide in meta-pelite (shear fault zone)
- PB-22 Mt. Brown - (shear fault structure) - milky quartz and smoky quartz with meta-pelite and minor carbonate
- PB-23 Mt. Brown - grab sample - talus, milky quartz vein, meta-pelite clasts, minor carbonate, possibly minor sulphide
- PB-24 main showing - "Banded" quartz vein hematite-limonite stain, meta-pelite fragments - chip from out-crop, minor pyrite and galena
- PB-25 main showing - quartz vein, minor meta-pelite, Fe oxide stain-late quartz vein has abundant visible pyrite, minor hydrothermal mica, small chip sample
- PB-26 typical coarse grit - conglomerate with hydrothermal mica chlorite, muscovite, shale (meta-pelite) grab from landing site
- PB-27 main showing - typical quartz vein material "banded", Fe stain, meta-pelite fragments and host central, Fe oxide - sulfide horizon, possible VG in sample - chip
- PB-28 main showing - typical quartz vein with meta-pelite, Fe-oxide, hydrothermal mica, minor pyrite chip
- PB-29 grab sample - talus - medium coarse grit with late quartz vein and coarse euhedral to subhedral pyrite "vuggy" pore space, surficial Fe oxide stain, abundant interstitial chlorite gives green colour minor meta-pelite attachment

APPENDIX IV

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PUNCH BOWL CLAIMS
PARK RANGES - B.C.
SUMMARY TO JUNE 20, 1987

The author has compiled this report for Gamsan Resources Ltd. of Edmonton, Alberta in view of the aforementioned company obtaining an option on a block of mineral claims forthwith referred to as the Punch-Bowl claims. The Punch-Bowl Property consists of 8 blocks of Punch Claims (Punch 1 through Punch 8) comprising a total of 122 mineral claims, and 2 odd shaped Bowl claim units (Figures 1 & 2). The claims are currently held in good standing by Garry Forman, Brian Fowler and Robert Klettli of Valemont, B.C., having been registered with the Gold Commissioner at Golden, B.C., on September 25, 1986. This lease expires in September, 1987.

The information herein contained has been compiled from a review of available literature, air photos, maps and Landsat data, as well as some personal communication with the claim proprietors. The author has yet to personally visit the Punch-Bowl Property. A precise reference to the above mentioned information sources is appended and the back of this document.

Location and Access

The Punch-Bowl claim blocks have their approximate centre at 52° 22' N and 118° 09' W. The claims are located within the Park Rangers of the B.C. Rocky Mountains lying approximately 95km from the town of Valemont on a bearing of N 122° E or, alternately, 60km due south of the Jasper townsite. The claim area may be located on the NTS map sheet 83D/8 entitled Athabasca Pass.

At present, the only practical means of access to the claims is by helicopter out of Valemont (or Jasper). The nearest road access is via B.C. Highway 23 which terminates at the Mica Dam, approximately 50km SE of the claims. A well tended hiking/horse trail leads directly from the Jasper townsite, through Jasper National Park, to the Committee Punch Bowl. The trail is apparently a historical demarcation of the North West Fir Trading route.

Topography and Climate

Assessment of air photos and NTS maps indicates the topography of the claim area is extreme, being typical of the western main ranges of the Rocky Mountains. Elevation is very erratic, ranging between about 4500' and 9000' above sea level with the majority of the property being greater than 5500' above sea level. Ridges and drainage in the claim area generally trend in a NW-SE direction.

Much of the property is above the tree line. Rock exposure is excellent in the middle elevations although many of the valleys contain abundant talus, landslide debris, and likely, glacial deposits. A significant portion of the northernmost claim blocks - Punch 1 and Punch 2 - is covered by the semi-permanent ice of the Kane Glacier and Hooker Icefield.

Inspection of landsat photos from 1984 through 1986 indicates the claim area is generally entirely snow covered until mid-to late June with exposure of the lower elevations commencing in early to mid-July and the higher elevations in late July to early August. Precipitation throughout the summer months in the region is not known but may be significant based upon elevation and location in the Western-Main Ranges.

History

The recorded history of the Athabasca Pass-Committee Punch Bowl begins in 1811 with the passage of the David Thompson party pioneering a route through the Main Ranges. The committee Punch-Bowl subsequently became a rendezvous point-trading post for trappers and merchants to the north and south of the pass.

The area has essentially no mining history. Some rumour circulates around the Jasper-Valemont area (and apparently may be recorded at the Archives in Victoria, B.C.), of a prospector who struck gold 2 days south of Jasper. After much toil, he reached Victoria where he died in hospital, never revealing the location of his gold find. The Wood Arm, south of the claim area, and Hugh Allan Creek to the northwest have a history of minor (and unsuccessful) placer working, the remainder of which, abandoned sluicing equipment, may still be found along Hugh Allan Creek. These workings apparently date from the 1920's.

The current interest in the area stems from the findings of Mr. Klettl Sr. (father of one of the claim proprietors). Mr. Klettl, now retired, was a Jasper Park Ranger for more than twenty years. One day in the late 1960's he was "climbing in talus" near the Committee Punch Bowl when he found a rock containing visible gold. His son, Robert Klettl, a recent graduate of the Earth Resources Program at NAIT, recognized the significance of the find and had the area staked, nearly 20 years after Mr. Klettl's original discovery.

Regional Geology

The Park Ranges are located in the western Main Ranges of the Rocky Mountains. Petrologically this regions is comprised dominantly of miogeoclinal-platform sediments consisting mainly of carbonates, shales, and mature sandstones which are divisible into 4 distinct assemblages (Figure 3);

- 1) Purcell (Middle Proterozoic or Helikian)
-A sequence of shallow water clastics, possibly a prograding delta complex
- 2) Windermere (Late Proterozoic or Hadrynian)
-heterogenous, poorly sorted clastics derived from the craton and rapidly deposited in a subtidal environment of moderate depth
- 3) The Gog Group (Late Proterozoic to Early Cambrian)
-Mature, quartz rich sandstones deposited under shallow water conditions

- 4) Early Paleozoic Carbonate Shelf (Middle Cambrian to Silurian)
-An abrupt facies change from earlier clastics to mainly carbonates resulting from bevelling of the Canadian Shield. Massive carbonates, calcareous shales and slates.

The structures in the western sector of the Main Ranges are generally developed in the thick, relatively homogeneous, and less competent shale and slate horizons and are characterized by the widespread occurrence of cleavage and complex patterns of folding.

In contrast with other parts of the Rocky Mountains, large thrust faults are less common, and significant penetrative deformation on the hand specimen scale is widespread. Intersecting fold trends and cleavages are common in the more highly metamorphosed rocks in the region between Kinbasket (McNaughton) Lake and Fraser River. Northeast of Golden, the structure is dominated by the Porcupine Creek Anticlinorium, a large asymmetric fan-shaped fold.

Local Geology

At this time, it would appear that a comprehensive geologic map of the claim area does not exist. Detailed geologic mapping by Eric Mountjoy and co-workers extends from the north, southwards, to the head of Hugh Allan Creek, approximately 8km northwest of the Punch-Bowl claim area. Preliminary mapping south of Hugh Allan Creek, into the region west of the claim area indicates that stratigraphic correlation southwards across Hugh Allan Creek is difficult. Mountjoy et al. (1987) indicate the stratigraphy of this region appears to consist of Middle Miette Group grits and intercalated pelites, and Upper Miette Group, and Gog Group sandy carbonates and calcareous pebble conglomerates. The structure appears to be dominated by the northern portion of the Porcupine Creek Anticlinorium, within the core of which the aforementioned sedimentary units are exposed. The Porcupine Creek Anticlinorium consists of a broad and upright double anticline associated with both NE and SW verging thrust faults. The western flank is less faulted and folded than the core and eastern flank of the structure.

Rock-type and structure in the immediate vicinity of the Punch-Bowl claim area is essentially unmapped, thus the nature of these elements remains speculative. Based on the work of Mountjoy et al. (1987), lithology is likely dominated by the sediments of the Miette and/or Gog Groups.

Economic Geology

At present, the known mineral inventory of the Punch-Bowl claim area consists of a number of grab and chip samples containing rather spectacular assays of up to 80 oz/ton gold, and, a vein structure on McGillvray Ridge, NE of the Committee Punch Bowl, which has been traced over a length of approximately 150ft.

The chip and grab samples examined by the author are granular vein quartz. They contain accessory hydrothermal mica, and iron-manganese oxides

(dominant goethite-hematite). The ore mineralogy consists of galena, disseminated pyrite and visible native gold. The reader is referred to the report "Petrology of the Punch-Bowl Specimens" for a detailed description of these samples.

The mineralized structure is apparently a strataform, concordant bedding plane vein hosted by quartzites. It exhibits a pinch and swell structure reaching a maximum of 2 feet in width and has been traced over a length of about 150 feet. Assays of up to 0.5 oz/ton gold have been obtained from the vein. At this time mineralization has been defined only in the quartzite unit.

Recommendations

At this preliminary stage, priority should be given to better definition of the nature of gold mineralization on the Punch-Bowl claims in view of targeting and acquiring further potentially mineralized ground in the area. A relatively detailed prospecting-mapping program supported by rock geochemistry is recommended. The principle target appears to be the "Gog Group quartzite" although the surrounding stata should also be sampled to determine if mineralization is confined stratigraphically.

At present the ridge-forming "Gog Group quartzite" is the key to targeting further potentially mineralized ground. Although unmapped geologically, the area along strike, both to the north-west and to the south-east of McGillvray Ridge are targets. Immediately to the NW of the claim blocks lies Jasper National Park, thus further staking in this direction suffers a gap of between 5 and 10km of parkland. The area north and west of the claim blocks adjacent to the Alberta-B.C. boundary, between Mallard Peak and Mount Brown comprises the headwaters of Hugh Allan Creek and is considered potentially good ground. The region to the SW of the claim blocks, comprising the headwaters of Pacific and Jeffrey Creek should also be considered.

SOURCES OF INFORMATION

Literature

- Forest, R., and Mountjoy, E.W., 1986; Revised structural interpretation, Selwyn Range between Ptarmigan and Hugh Allan Creeks, British Columbia - An antiformal stack of thrusts, in Current Research, Part A, Geological Survey of Canada, Paper 86-1A p. 177-183.
- Mountjoy, E.W., et al., 1987, Structure and stratigraphy of the Northern Porcupine Creek Anticlinorium, Abstract, GAC-MAC conference 1987, Saskatoon, Saskatchewan.
- Price, R.A., and Mountjoy, E.W., 1970, Geologic structure of the Canadian Rocky Mountains between Bow and Athabasca Rivers. Geological Association of Canada Special Paper Number 6, p. 7-25.
- Wheeler, J.O., et al., 1972, Structural style in the southern Canadian Cordillera; Guidebook; XXIV International Geological Congress, Montreal Quebec, 1972.

Maps

NIS map sheet 83D/8, Athabasca Pass; Topography, scale 1:50000

Air Photos

Government of Alberta, 1948, Roll AS-152, photo #'s 135-139 inclusive

Landsat

Alberta Remote Sensing Centre; 11th Floor, 9820-109 Street Edmonton, Alberta
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PETROLOGY OF THE PUNCH-BOWL SPECIMENS

Two hand specimens (G-01, G-02) from the Punch-Bowl claim area have been examined by the author. The specimens have been subjected to macroscopic examination, as well, they have been thin sectioned and examined using the petrographic microscope.

Sample G-01

Hand Specimen

The rock is light grey-buff to medium rust brown, weathering to a medium to dark rust and black color. Observed mineral phases include primarily quartz (90-95%) which occurs as fractured, anhedral to subhedral, subequant grains ranging from less than 1mm to 10mm in size and averaging 3.5mm in size. Accessory minerals include fine greenish-tinted mica (3-5%), oxides of iron and manganese (primarily goethite and hematite, 3-5%), sulfides (probably pyrite 1%), and visible native gold. The iron and manganese oxides account for the rust to black weathered color of the rock occurring mainly as surficial coatings, lining the grain boundaries and fractures in the quartz. The sulfides appear as very sparsely distributed euhedral cubes averaging less than .5mm in size. Many appear oxidized or weathered from the surface of the specimen. Native gold is clearly visible in the specimen. It occurs as relatively coarse accumulations scattered about the rock. It appears to show no preferred association with the sulfides or other accessory minerals, vugs or specific fracture patterns in the sample.

Overall, the rock appears to be a section of a small quartz vein or a thin sedimentary horizon. A small "concordant" inclusion of an alternate rock type (which hosts 5-8% sulfide minerals and visible gold) on one side of the specimen would tend to support this. Texturally the rock appears to be quartz vein exhibiting a vague vein filling texture.

The rock sample is apparently a grab sample from the talus slopes at the base of McGillivrey Ridge, approximately 500m NE of the Committee Punch Bowl.

Sample G-02

Hand Specimen

The rock is a patchy cream white to medium orange-rust in color, weathering to a darker rust. Contained mineral phases include primarily quartz (93-97%) which occurs as a fractured, rust-stained, anhedral subequant, crystalline aggregate fine greenish-tinted mica which occurs as isolated grain aggregates. Fractured grains range up to 7mm in size. Accessory mineral phases include fine mica which occurs as isolated anhedral grains (2-3%), sulfide (probably galena 1%), a single inclusion of which appears to fill a vug 5mm in size, iron-manganese oxides (1-2%) which coat the surface and line fractures and grains of the specimen, and visible, native gold seen associated with the galena.

Overall, the rock appears to be a portion of vein-quartz. It exhibits a massive texture although an oriented fracture system highlighted by Fe-oxides is quite pronounced. The contained mineralization is relatively coarse grained and appears entirely confined to the 5mm vug referred to earlier.

This sample is also apparently a grab sample from NE of the Committee Punch Bowl.

APPENDIX V

ITEMIZED COST STATEMENT

1.	Field Staff			
	2 geologists	July 12 - July 16	20 man days @ 150.00	\$ 3,000.00
		Aug. 5 - Aug. 9		
	2 assistants	Aug. 5 - Aug. 9	10 man days @ 65.00	\$ 650.00
2.	Field Supplies			\$ 1,800.00
3.	Radio Rental			\$ 175.00
4.	Food (Aug. 5 - Aug. 9)	4 men X 25.00 x 5 days		\$ 500.00
5.	Hotel/Meals (July 12 - July 15)	2 men x 50.00/day		\$ 400.00
6.	Transportation to and from claims (truck rentals)			\$ 840.00
7.	Transportation - helicopter			\$ 9,055.05
8.	Consultant - field work	2 days x 500.00		\$ 1,000.00
	report	32 hrs. x 60.00/hr.		\$ 1,920.00
9.	Cartography			\$ 181.00
10.	Assays	29 rock samples @ 13.75/sample		\$ 398.75
		15 stream sediments @ 7.05/sample		\$ 105.75
11.	Management/administration 10%			\$ 195.75
			TOTAL	\$20,221.30
				=====

APPENDIX VI

STATEMENT OF QUALIFICATIONS

I, Sandra Jean Foster, Professional Geologist of 5, 10725-79 Ave., Edmonton do hereby state as follows:

- 1) That I am a Professional Geologist registered in the province of Alberta.
- 2) That I am a graduate of the University of Saskatchewan, year 1980 and have been practicing my profession since that time.
- 3) That I have received no interest either directly or indirectly, nor do I expect to receive any interest in this property.
- 4) That the foregoing report is on the Punch-Bowl Property is based on the information contained in the cited reports and upon results of the field exploration program.


Sandra J. Foster, P. Geol.
September, 1987

DECLARATION

I, JOHN DERRICK GODFREY, of the Municipality of Edmonton, Alberta, do hereby certify that:

- (1) I am a professional geologist, residing at 8208 - 139 Street, Edmonton Alberta, T5R 0G4.
- (2) I am a graduate of the University of Nottingham (1950) into a Bachelor of Science (B.Sc.) degree in the combined subjects of Geology and Physics; and a graduate of the University of Chicago with a Master of Science (M.S.) degree in Geology (1955) and a Doctor of Philosophy (Ph.D.) degree in Geology (1962).
- (3) I have practised my profession continuously since graduation whilst being employed by such agencies as The University of Chicago, The University of Alberta, Research Council of Alberta, and the Canadian International Development Agency. I have also undertaken numerous short-term independent projects during the past thirty-seven (37) years.
- (4) I have no interest, either direct or indirect, in the properties reported in this document, nor do I expect to acquire any such interest.
- (5) I am a member in good standing of the Association of Professional Engineers, Geologists, and Geophysicists of Alberta, Edmonton.

Dated at the City of Edmonton)
in the Province of Alberta,)
this 10th day of August, 1987)

