

MAP No.

116-C-2

RELEASED

ASSESSMENT REPORT
PROSPECTUS
CONFIDENTIAL
OPEN FILE

TYPE OF

WORK: Geology

Dawson MD

REPORT FILED UNDER	Abac Resources Limited	DOCUMENT NO. 092487
DATE PERFORMED	June 19, 1987	DATE FILED: July 20, 1988.
LOCATION - LAT.	64° 11' N	AREABrowns Creek, Yukon.
LONG.	140° 47' W	
CLAIM NO.	PAN 1-6 (placer Claims)	
VALUE \$		
WORK DONE BY	G.P. Krueckl (Krueckl & Associates Mining Consultants Ltd.)	
WORK DONE FOR	Abac Resources Ltd.	
REMARKS	The property has the potential to contain an estimated 250 000 cubic yards of pay gravels averaging \$15 per cubic yard. Two test sites returned values of \$20.60 and \$12.70 in gold per cubic yard.	

PROSPECTUS
July 20, 1988.
092487

ENGINEERING REPORT
ON THE
PAN 1 TO 6 PLACER CLAIMS
BROWNS CREEK, FORTY MILE RIVER AREA
DAWSON CITY, YUKON

North Latitude ⁶64° 11' / East Longitude 140° 47'
N.T.S. 116 - C- 2

Prepared for

ABAC RESOURCES LTD.
#212 - 615 St. Georges Avenue
North Vancouver, B.C.
V7L 3H4

Prepared by

G. KRUECKL, P.ENG.
Vancouver, B.C.

June 19, 1987

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SUMMARY

Abac Resources Ltd. of Vancouver propose to carry out a two phase placer exploration and bulk testing program on the Pan 1 to 6 claims that are located on Browns Creek near Dawson City, Yukon. The Phase 1 program would consist of test pit and trench sampling of 10 to 20 sites and the Phase 2 program would consist of bulk testing of one or two sites. It is proposed that each of the test pit and trench sites would process 10 to 20 cubic yards of material and on the basis of this testing, select one or two sites for the bulk testing of 5,000 to 10,000 cubic yards of pay materials. The program envisaged would be adequate to prepare a report that would define sufficiently the feasibility of placing this property into production.

The property consists of six (6) placer claims totalling approximately 138 acres. The agreement between the property owner and Abac Resources Ltd. gives the company the right to explore the claims with an option to purchase the ground should testing prove up adequate reserves to conduct a viable mining operation.

The property has the potential for an estimated 250,000 cubic yards of pay material averaging approximately \$15 per cubic yard. A stripping ratio of 1½ cubic yards surficial waste to 1 cubic yard of pay material is anticipated. The waste and pay material are covered by a thin layer of moss and black soil. At the creek level the surficial materials appear to be unfrozen whereas on the adjacent benches above creek level all of the material below a thin veneer of moss and black top soil is totally in permafrost. Due to permafrost the materials would require specific handling procedures for waste disposal and processing. These procedures are known and have been well developed over the years for the Yukon area.

The pay materials occur near the overburden and bedrock interface, representing 3 to 6 feet of vertical pay, of which 2 to 4 feet are gravels on light to heavily leached and decomposed bedrock which has a pay thickness of 1/2 to 2 feet. The pay materials are covered by 2 to 8 feet of sands and gravel and/or slide debris and/or fluvial outwash from tributary streams. These would require removal and disposal prior to mining the pay gravels and bedrock interface.

A two-phase exploration program is anticipated, the first involving test pit sampling at an estimated cost of \$36,700 and the second consisting of bulk sampling at an estimated cost of \$45,300. It is anticipated that the second phase would provide gold recovery to defray some of the cost of the test. The samples for both test programs would be processed at the mine site under the supervision of an engineer and the concentrates would be processed at an independent laboratory.

INTRODUCTION

This report was prepared at the request of the directors of Abac Resources Ltd. of North Vancouver, B.C. The purpose of this report, is to describe the Pan 1 to 6 claims, review all available information on the site and describe the writer's testing and mapping program that was conducted to assess the potential for finding significant placer reserves. Based on the writer's preliminary findings a program of testing to define grade and volume of reserves would be recommended.

The writer visited the Pan 1 to 6 claims site on June 7th, 8th and 9th, 1987 and concentrated samples taken from the site were processed at the Pacific Rim Research Ltd.'s metallurgical laboratory in Vancouver.

THE PROPERTY

Placer Mining Claims

The property consists of 6 claims that are located on Browns Creek and recorded in the name of Blagota Djurovic of Montreal, Quebec. The claims are listed in Table I following and their location is shown in Figure 2.

TABLE I
Placer Claims

<u>Claim Name</u>	<u>Tag Numbers</u>	<u>Creek</u>	<u>NTS</u>	<u>Expiry Date</u>
Pan #1-6	P28562-67	Browns	116-C-2	June 26/88

Although the writer has examined the claim records at the Gold Commissioner's office in Dawson City, Yukon, any investigation into the legal status of the claims is beyond the scope of work for this report and the writer therefore does not accept responsibility for the legal status of the claims.

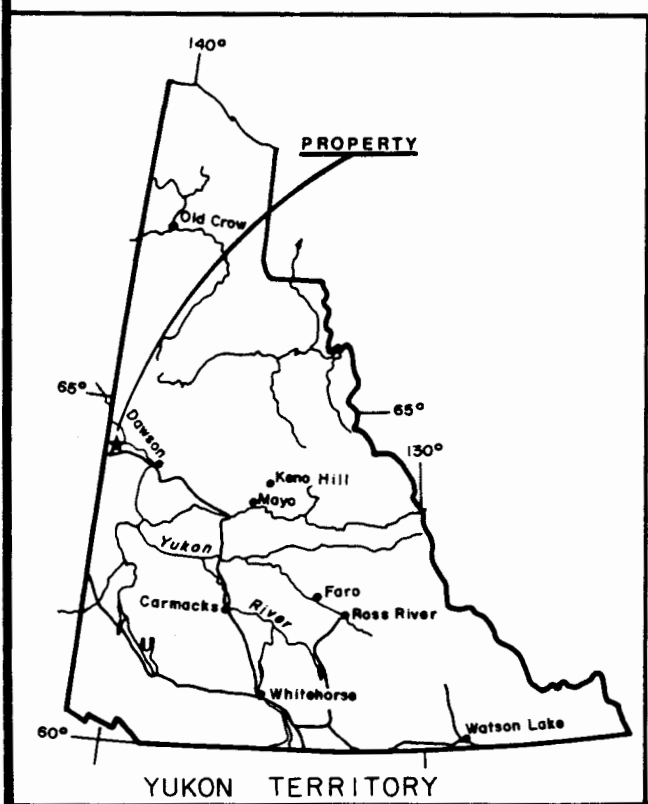
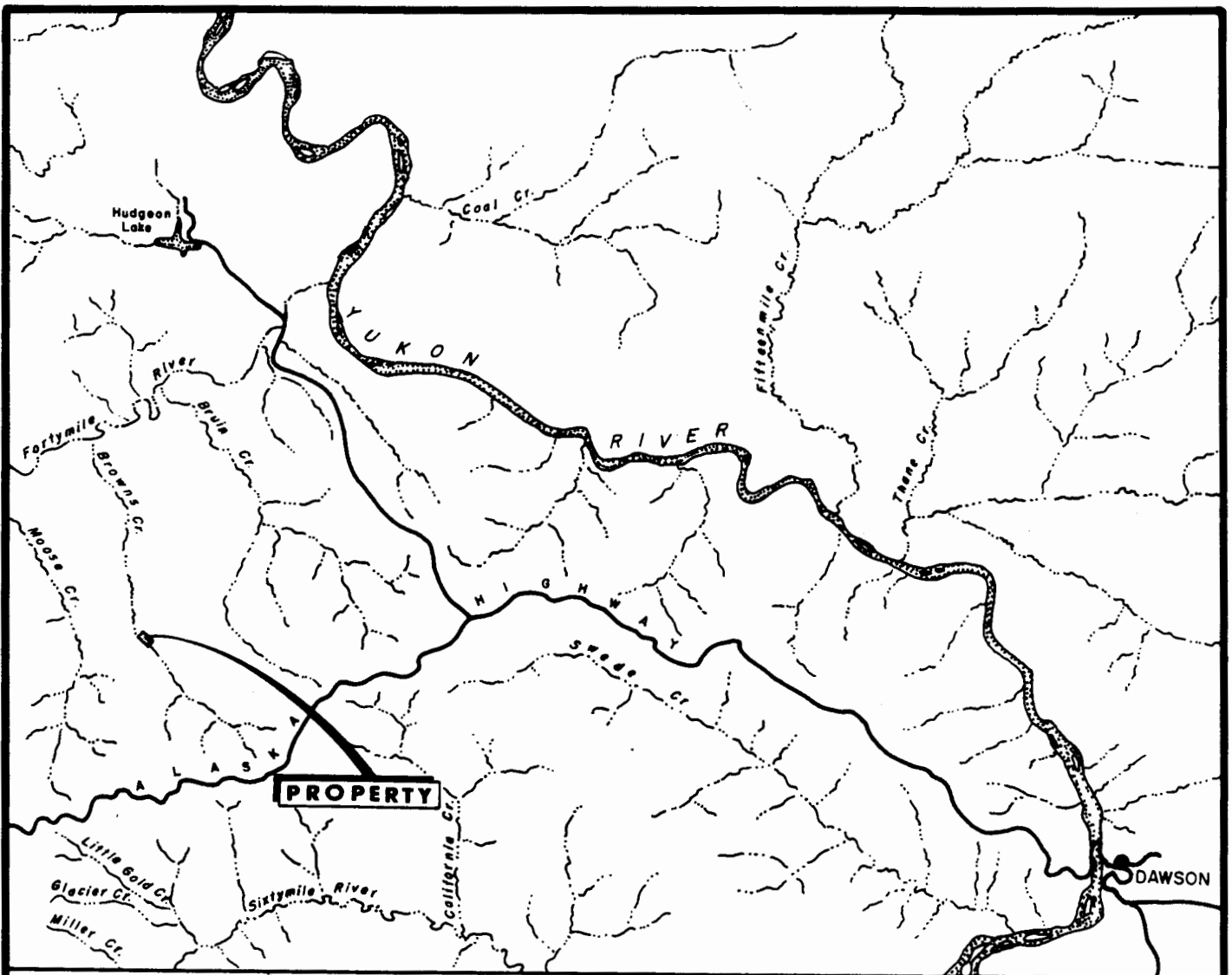
Location and Access

The Pan #1-6 claims, having geographic co-ordinates 64° 11' North Latitude and 140° 47' East Longitude, are located in the Dawson Placer Mining District of the Yukon Territories approximately 42 miles west of Dawson City. The claims are located on Browns Creek, a tributary of Forty Mile River, at a location on Browns Creek 10 miles upstream of its confluence with Forty Mile River (Figures 1, and 2).

The property is accessed by a bush road located off the Stewart Crossing-Dawson Road shown as Highway #3, a distance of 46 miles west of Dawson City. The bush road extends northwest 10 miles on the ridge between Browns and Bruin Creeks. A paved highway joins Dawson City with Whitehorse 370 miles to the east.

Whitehorse is the major supply and services centre for the area and is serviced daily by major airlines from Edmonton, Alberta and Vancouver, B.C. Dawson City also has airline service with Whitehorse.

The property is accessible by 4 x 4 pick-up truck from late May to the end of September depending on local weather conditions.



G. Krueckl
#12308

ABAC RESOURCES LTD.
PAN 1 to 6 CLAIMS
LOCATION MAP

KRUECKL & ASSOC. MINING CONSULTANTS LTD.
N.T.S. 116 / 2 SCALE: 1:452,571 approx. FIG.
DATE: JUNE, 1987 DRAWN: G.K./dw 1

YUKON TERRITORY

Physiography and Climate

The property is located in the Klondike Plateau near the Alaska boundary and south of the Yukon River which is located approximately on the Tintina Trench. The Klondike Plateau is marked by long, twisted, irregular main and spur ridges, that have not been glaciated and were produced by a highly developed dendritic stream pattern.

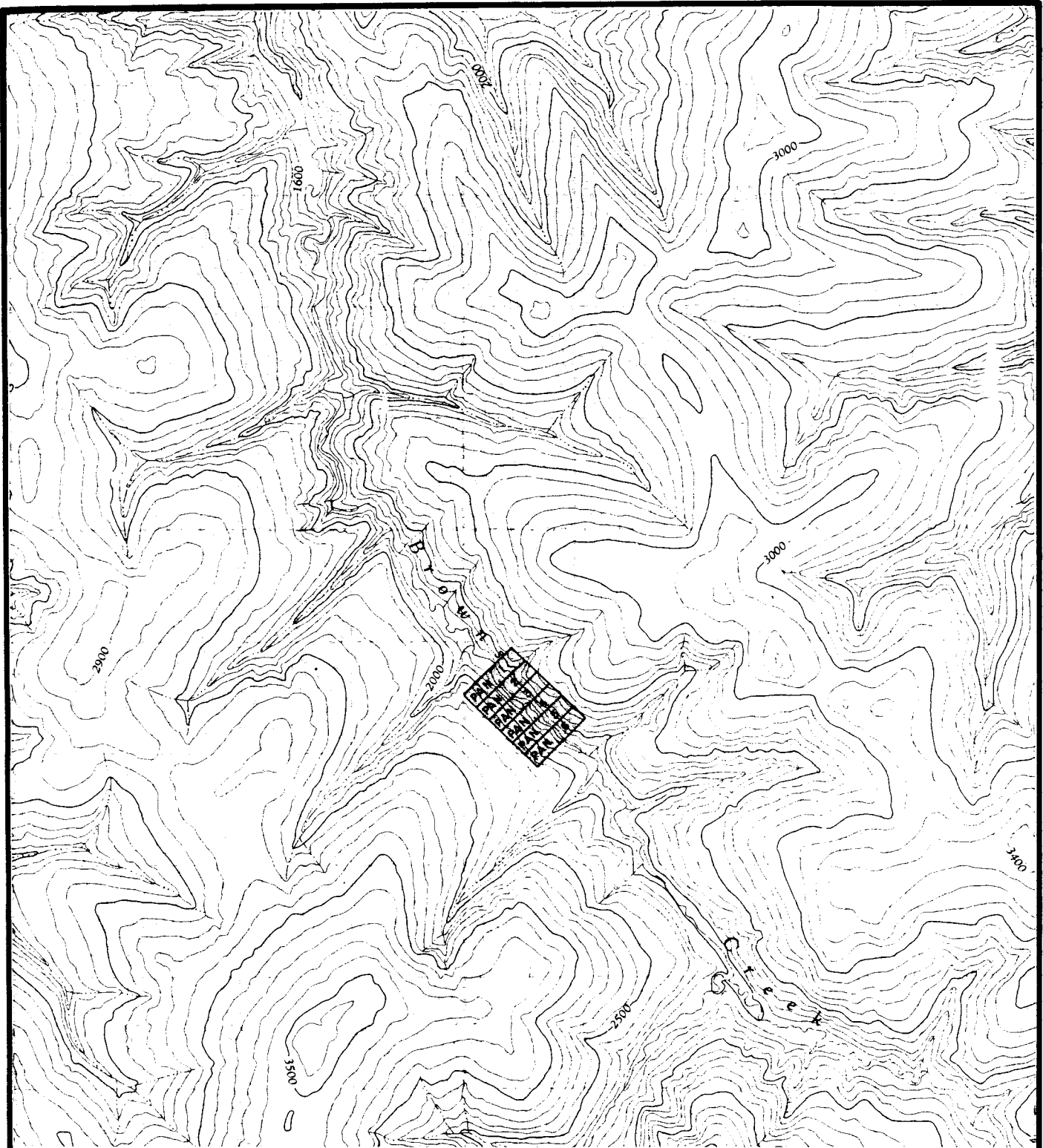
The crest of most of the ridges are between 3,000 and 4,000 feet elevation (the ridge between Browns and Bruin Creek is at about 3,400 feet elevation) and probably represent an old uplifted erosion surface. Locally, broad domes rise a few hundred feet above the upland surface. The main streams and rivers have gentle gradients and are slow-flowing whereas the tributary streams occupy narrow 'V' shaped valleys with steeper stream gradients.

The valley bottoms and hillsides are timbered with stunted black spruce and small stands of birch. The upland surface above 3,300 to 3,500 feet are covered with dwarf birch and scattered willow, both about 5 to 8 feet high.

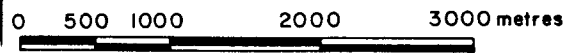
The area has a continental climate characterized by low precipitation and a wide temperature range. Winters are cold and long but the short summer is generally pleasant with almost continuous daylight during June and July. The field season for placer mining generally extends from late May to the end of September approximately 100 to 120 days. The mean daily temperature for this period ranges from 31 to 67 degrees fahrenheit.

HISTORY

The history of the Forty Mile River and its tributaries goes back to prior the Klondike gold rush. The deposits of the upper Forty Mile River (mainly located in Alaska) were discovered in 1886 and the Sixty mile gold fields in 1893. The town of Forty Mile, located at the mouth of Forty Mile River, dating from about 1886, served as the supply point for both gold fields. The lower Forty Mile portion of the river and its tributaries had not been investigated adequately prior to the Klondike gold rush.



Shueell
#12308



ABAC RESOURCES LTD.		
PAN 1 to 6 CLAIMS		
CLAIM MAP		
KRUECKL & ASSOC. MINING CONSULTANTS LTD.		
N.T.S. 116 C/2	SCALE: 1:50,000	FIG.
DATE: JUNE, 1987	DRAWN: G.K. /dw	2

Several hundred miners at the time had staked claims and were starting to extract gold from the upper Forty Mile River area when news of the rich strike on Bonanza Creek reached them in 1896. Since the miners on the upper Forty Mile River were the first to receive news of the strike, they, of course, staked most of the best ground on Bonanza, Eldorado, Hunker and Bear Creeks. Although some discoveries of lesser pay material had been made in the lower Forty Mile River area prior to the Klondike discoveries, the miners who knew about these, had lost interest and the lower Forty Mile River and its tributaries were for many years known by the local miners as an area with low placer gold potential. This together with the destruction by fire of mining records for the portion of the Forty Mile River area located in the Yukon in later years resulted in no exploration activities until the late 1970's and early 1980's.

As a result of the increase in price of gold in the early 1980's, and the efforts of a greater number of gold seekers and their search for new placer areas renewed interest in the Forty Mile River area. Staking and testing of these rivers and creeks has lead to new discoveries, some as high as one ounce gold per cubic yard. All of Browns Creek was staked by 1983 and, although test work and production of significant proportions have to date not been carried out, the writer and others have evaluated some of the materials in the area and have obtained consistently good to excellent results.

GEOLOGY

Bedrock Geology

Rocks in the area of Forty Mile River and the site of the Pan claims on Browns Creek are assigned to the geological rock type described as Unit A (Figure 3) and consist generally of low rank metamorphosed sedimentary rocks, principally quartzite, quartz-mica schist and limestone.

Much of the area underlain by unit A is unglaciated and characterized by rounded hills, plateau surfaces, and V-shaped valleys with interlocking spurs. Bedrock

LEGEND

SOUTHERN PART

QUATERNARY

26 Unconsolidated glacial and alluvial deposits

TERTIARY

25 Quartz porphyry

24 Dark grey and brown andesite and basalt, commonly porphyritic; minor shale, sandstone, and conglomerate

23 Poorly consolidated, brown, buff, and grey, arkosic and micaceous sandstone, light and dark shale, poorly sorted conglomerate; minor lignite

CRETACEOUS

21 21a, fine- to coarse-grained, uneven textured, biotite granodiorite and biotite quartz monzonite; 21b, mainly hornblende and hornblende/biotite syenite, commonly porphyritic (potassium feldspar phenocrysts), uneven textured, mostly medium grained, locally fine or coarse grained; minor diorite

20 Orange- to brown-weathering diorite and gabbro; altered equivalents; 20a, may be older

19 Mottled green and maroon shale and brown-weathering, thin-bedded, brown siltstone, coarsely silty

18 KENO HILL QUARTZITE, grey and blue-grey, massive quartzite; minor slate and phyllite, commonly graphitic, argillaceous quartzite; 18a, thin-bedded and phyllitic quartzite, graphitic and chloritic slate and phyllite; minor limestone and massive quartzite; 18b, as 18 but may be older

METAMORPHIC ROCKS SOUTHWEST OF TINTINA TRENCH

(occurs only on Map 1284A, Dawson)

- E** Reddish brown-weathering, dark green serpentized ultrabasic rocks
- D** Fine- to medium-grained, granitic textured, quartz-biotite gneiss; minor quartzite, quartz-mica and biotite-chlorite schist, and quartz-feldspar pegmatite
- C** Dark weathering greenstone and banded amphibolite gneiss; minor chloritic quartz-mica schist, graphitic quartz-mica schist, quartzite, and limestone
- B** KLONDIKE "SCHIST": mainly buff weathering, light pale green quartz-muscovite-chlorite schist, and schistose, chloritic quartzite, with all intermediate rock types also present, minor silvery muscovite schist, fine-grained quartz-biotite gneiss, thinly laminated quartz-graphite-sericite schist and quartzite
- A** NASINA "SERIES": grey and grey-green, micaceous quartzite; dark grey, light grey and silvery quartz-mica schist; minor fine-grained quartz biotite gneiss, graphitic schist and quartz-muscovite-chlorite schist; Aa, higher rank metamorphic rocks with biotite and garnet; Ab, coarsely crystalline, whitish limestone

- Geological boundary (defined, approximate, assumed)
- Bedding, tops known (horizontal, inclined, vertical)
- Bedding, tops unknown (dip known)
- Bedding, estimated attitudes, may in part be of foliation: horizontal, inclined, vertical (dip: g, gentle; m, medium; s, steep)
- Foliation (horizontal, inclined, vertical)
- Fault (defined, approximate, assumed)
- Thrust fault (teeth in direction of dip: defined, approximate, assumed)
- Anticline (defined, approximate; arrow indicates plunge)
- Syncline (defined, approximate; arrow indicates plunge)
- Anticline, syncline (overturned)
- Fossil locality
- Mineral occurrence
- Goldfield

24 asb X



AFTER: L.H. GREEN, 1961



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#12308



ABAC RESOURCES LTD.		
PAN 1 to 6 CLAIMS		
REGIONAL GEOLOGY		
KRUECKL & ASSOC. MINING CONSULTANTS LTD.		
NTS. 116 C/2	SCALE: 1:250,000	FIG.
DATE: JUNE, 1987	DRAWN: G.K./dw	3

exposures on the upland surfaces are poor with the exception of light grey bands of vegetation-free limestone and scattered black lichen-covered tors of resistant quartzite. Cover on these surfaces is thin and the nature of the bedrock can often be ascertained from float. Outcrops are reasonably common along many of the smaller stream valleys.

More specifically the rock types in this map-unit include massive quartzite, thin-bedded quartzite, quartz-muscovite, and graphitic quartz-muscovite schist, greenstone, and limestone. Much of the quartzite is dark grey to blue grey and the interbedded schist dark grey to black.

In most outcrops the rock is strongly foliated and tend to break into flags with glistening mica surfaces. The foliation surface is generally parallel to the original bedding as indicated by primary compositional banding in the rock but in some outcrops the foliation has cut the bedding into a series of S-shaped remnants ('Gleitbrett' structure). Lenses and veins of milky to light grey quartz, usually a few inches or less wide and few feet long, are common following the foliation of the enclosing rock.

Much of the limestone (map-unit Ab) is a pale grey or banded grey and white rock with a grain size of about 3 mm. It frequently forms bands as much as several hundred feet, and some of the larger bands can be traced for a mile or more. Typical lithology of the unit is well shown, both as outcrop and float, along parts of the Sixty mile road between Dawson and the International Boundary. A thick-bedded, dark grey quartzite, very similar to the quartzite of the Keno Hill area (unit 18), is particularly well exposed just north of the Highway #3 at the Alaska Boundary.

Higher rank metamorphic rock assigned to unit Aa include quartzite, quartz-mica schist, marble, and greenstone, with biotite, hornblende and garnet as common metamorphic minerals. Most of the rocks included in the subunit are clearly of sedimentary origin but contain little of the dark grey quartzite and carbonaceous or graphitic quartz-mica schist common to many outcrops of unit A.

Surficial Geology

The unconsolidated deposits overlying bedrock consists of silts, sands, gravels, cobbles and boulders resulting from fluvial outwash deposits and/or slide debris. No glaciation took place in the area and therefore the typical section for surficial materials consists of the following:

<u>Description</u>	<u>Thickness</u>
- moss cover	
- thin layer of black soil	6" to 12"
- variety of barren overburden materials including silt and sand layers, gravel layers, slide debris and fluvial outwash from tributary streams	↙ 2' to 8'
- consistently coarse to fine gravels with many cobbles and small stone all well rounded. Matrix material had very little clay	↙ 2' to 4'
- bedrock often consisting of decomposed quartz-mica schist that has the consistency of fairly compact silt and clay which appears to break up readily in a normal sluicing operation	↙ 1/2' to 2'

REFERENCES

GSC Memoir 364, Geology of Nash Creek, Larsen Creek and Dawson Map Areas, Yukon Territory by L.H. Green.

TESTING AND MAPPING OF THE PROPERTY

During 1985 and 1986, the Pan #1 to 6 property owner, together with the downstream operators, carried out several small sample and bulk testing programs. The purpose of these tests was to: a) determine which materials in the total section of materials from surface to bedrock carried gold; b) determine what mining techniques would be required to extract gold values and what equipment would best handle the pay materials releasing most of the contained gold; c) determine which materials handling methods and procedures would cope best

with permafrost; d) determine the extent of gold values in bedrock and how these materials would be excavated and processed.

This preliminary work had concluded the following:

- 1) initial exposure of the permafrost by dozer blading of moss, vegetation and black humus, followed several days later by a successive series of dozing one to two feet of thawed material allowed the operator to reach more quickly the pay material located directly above the bedrock;
- 2) pay material consisted of uncompacted coarse gravels located 2 to 4 feet above bedrock and into the bedrock 1/2 to 2 feet;
- 3) barren silts, sands, gravels and slide material in most instances covered the pay material. These materials range in thickness from 2 to 8 feet, the stripping ratio therefore being about 1½ cubic yard barren material to 1 cubic yard pay material;
- 4) surficial pay material was nearly always located above bedrock and had a distinct and easily recognizable appearance, this being coarse to fine gravels with many cobbles and small stones all well rounded. The matrix consisted of fine to coarse sands and very little clay;
- 5) bedrock pay materials were usually decomposed or fractured and would in general be easy to blade with a dozer, ripping for the most part being not required;
- 6) gold values were nearly always found at the overburden-bedrock interface both at creek level and on benches located on either side. The extent of the bench gravels up the valley sides was not determined. Mining of bench pay material was more difficult since permafrost covered by moss was always present;

- 7) it appeared that permafrost did not occur at creek level, however, all other areas were frozen;
- 8) it would seem that the most practical and cost effective equipment for preparing the pay material for processing was determined to be an RMS Ross Derocker and that ordinary sluicing with a live bottom feature was considered adequate to recover the major portion of the gold. However, should the operator require increased sluice box through-put and improved fine gold recovery, screening of sluice tailings followed by jigging is considered advisable.

To further develop the Browns Creek placer potential the writer visited the Pan #1-6 claims on June 7th to 9th, 1987, to review all available information, and to carry out testing and mapping of the ground and report on these for the purpose of recommending further testing and to prepare a qualifying report for the Vancouver Stock Exchange.

In carrying out this task the following was undertaken:

- 1) A small bulk sampling and sluicing test taken on site of two exposed (thawed) benches. Although 4 sites were initially tested only two were sufficiently thawed to carry out a meaningful test.
- 2) Volume of material processed was 1½ and 2½ cubic yards at each of the two sites: since previous testing had been carried out in Browns Creek at the creek level and it was generally known that this ran well, it was determined to test the benches for two reasons: a) to have carry out small bulk tests by trenching at creek level and at the same time adequately sample the bedrock was considered impractical for the short time on the site considering the dewatering difficulties that would be encountered; b) to show that the benches carried high gold values would increase the potential reserves and therefore enhance the value of the property considerably.

- 3) The physiographic features of the valley were mapped showing the location of Browns Creek, benches, claim posts, topography, the writer's test sites, old workings, roads, stream gradient, bedrock exposures, permafrost areas, boundary of potential placer on benches and where possible an interpretation of the location of the surficial material to bedrock interface.
- 4) Visited the mining recorder's office and carried out various discussions with local experienced placer miners to find out the practical knowledge that had to date been gained from having worked for many years in the area. This information was assessed by the writer either by actually visiting sites or checking confirming literature as to its validity and was then duly recorded for this report.

The two small bulk tests carried out on bench material were located approximately 1,700 feet apart on claims P28562 and P28565 (see Figure 4). Two to three feet of surficial coarse gravels and about 1/2 feet of bedrock was processed over a small sluice box (see photographs in Appendix A). The concentrate from these tests were carried by the writer to Vancouver and submitted to Pacific Rim Research Ltd. metallurgical laboratory for processing. Table II shows the test results and the photographs in Appendix 2 show the gold recovered.

TABLE II

Test Results

<u>Test Site</u>	<u>Volume</u>	<u>Weight of Gold (milligrams)</u>	<u>Milligrams Per Cubic Yard</u>	<u>Value Per Cubic Yard</u>
#1	1½ yd ³	1,844.8	1,230	\$20.60
#2	2½ yd ³	1,895.0	758	\$12.70

Mapping of the property was carried out using the chain and compass method. Figure 4 is a compilation of the information obtained.

POTENTIAL RESERVES

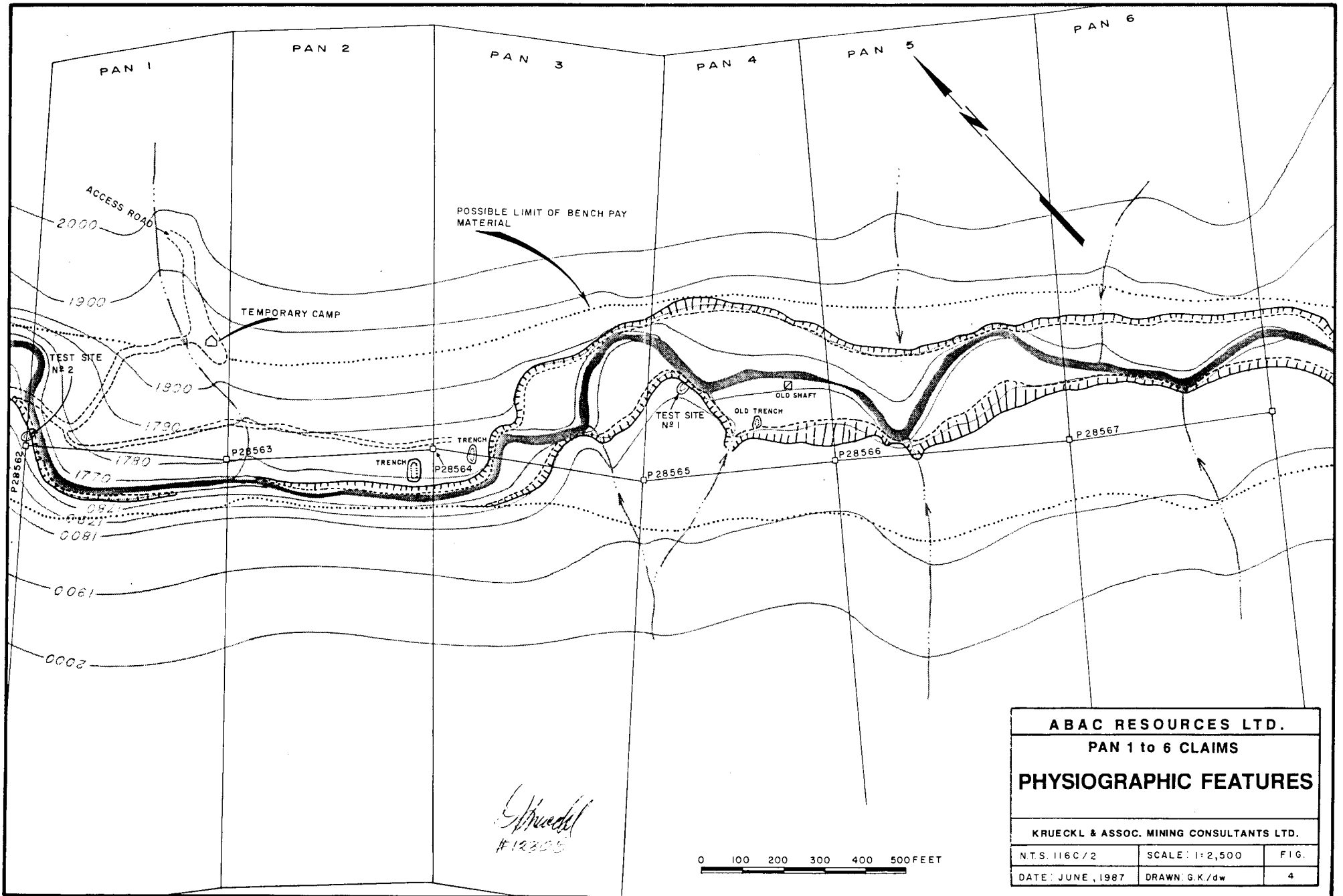
The Browns Creek channel gravels located at creek level and on benches have only had preliminary investigations. However, from the writer's observations which involved testing and mapping, some estimates as to reserves both thawed and frozen can be made. Also, values of gold per cubic yard that may be recovered on this property have been projected. This projection was based on panning tests and small bulk tests carried out to-date which appeared to give fairly consistent results. Although test results from others were noted, these were not recorded since there was no means for the writer to substantiate the results during the short site visit undertaken.

Figure 5 shows the areas projected to contain channel gravels and bedrock pay materials. Pay materials were projected to range in thickness from 4 to 6 feet, the barren overburden cover estimated to be an additional 2 to 8 feet. Total reserves are estimated at 250,000 cubic yards, 75,000 of which are on the valley floor at creek level and the balance being in permafrost on elevated benches. The projected grade for the potential reserves is approximately 3/4 gm per cubic yard, the gross value of contained gold being approximately \$4,000,000.

CONCLUSIONS AND RECOMMENDATIONS

Based on information obtained from operators in the area and from limited testing carried out by the writer the following can be concluded.

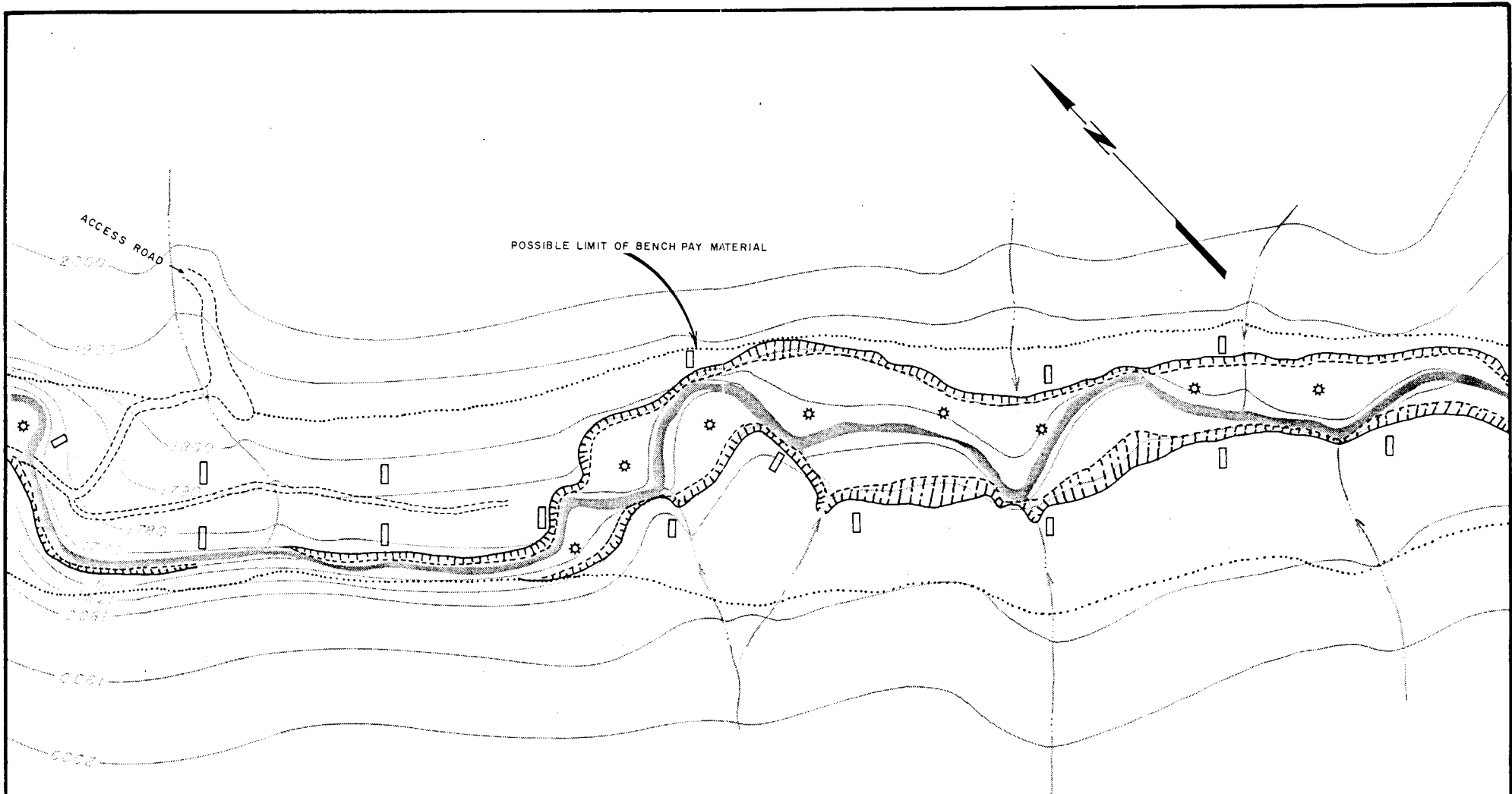
1. The Pan 1 to 6 claims cover approximately 3,000 feet of Browns Creek that has potential pay gravels situated directly above bedrock. The bedrock surface up to 2 feet also contain gold. These pay materials are projected to range from 3 to 6 feet in thickness. The width of the valley floor including elevated benches that contain pay gravels varies from 300 to 500 feet, resulting in potential reserves estimated to be about 250,000 cubic yards.



ABAC RESOURCES LTD.
PAN 1 to 6 CLAIMS
PHYSIOGRAPHIC FEATURES

KRUECKL & ASSOC. MINING CONSULTANTS LTD.

N.T.S. 116C/2	SCALE: 1:2,500	FIG.
DATE: JUNE, 1987	DRAWN: G.K./dw	4



LEGEND

- TRENCH ON LEVEL OF BENCH
- ⊛ TEST PIT ON VALLEY FLOOR

G. Krueckl
#12308

0 100 200 300 400 500 FEET

ABAC RESOURCES LTD.		
PAN 1 to 6 CLAIMS		
POTENTIAL RESERVES & PROPOSED TEST SITES		
KRUECKL & ASSOC. MINING CONSULTANTS LTD.		
N.T.S. 116 C/2	SCALE: 1:2,500	FIG.
DATE: JUNE, 1987	DRAWN: G.K./dw	5

2. From tests carried out by the writer and others it has been projected that the average grade of the pay materials is about 3/4 grams per cubic yard. Based on the current price of gold an estimated 4 million dollars of gold would be contained in these materials.
3. Surficial barren sands, gravels, slide debris and fluvial outwash materials cover most of the gravel beds ranging in thickness from 2 to 8 feet, the stripping ratio therefore projected to be in the order of 1 1/2 cubic yards waste to one cubic yard of pay materials.
4. Approximately 70 percent of the potential reserves and surficial waste materials are in permafrost, therefore requiring specific handling procedures that are known and have been well developed over the years for the Yukon area.
5. It would appear that the most practical and cost effective equipment for preparing the pay material for processing would be a RMS Ross Derocker. Further an ordinary sluicing with a live bottom feature would be considered adequate to recover the major portion of the gold.
6. A two phase program involving test pit sampling, trench sampling and a bulk sampling program would be required to develop proven reserves.

A two phase testing program is recommended in the first phase involving about 10 to 20 test pits and trenching site and based on the results of the first phase, a bulk testing program should then be carried out to determine the feasibility of going into full production.

PROPOSED WORK PROGRAM

The proposed work program for this property is divided into two parts, Phase 1 involving road building, backhoe test pit sampling and dozer trench sampling and Phase 2 involving bulk sampling. Since the property is accessible for large equipment a dozer tractor will be used to build roads and prepare test sites for Phase 1. A small sluice box having a live bottom feature and pre-screening to minus one inch is proposed for processing the samples. The Phase 1 samples should range in size from 10 to 20 cubic yards. All of the backhoe test pits should be located in the valley floor at creek level where the ground is assumed to be unfrozen. The dozer excavated trenches should be located on the permafrost benches.

The excavations in Phase 1 would be geologically logged and processing of samples would be carried out where the pay material becomes evident based on hand panning gravels as the pit is being dug. The dozer excavated trenches should be located both near the bench crests and at least 100 feet up slope away from the crests. The trenching would also define areas that have low overburden cover and also areas that are accessible mainly due to lack of slide debris.

Phase 2 would be contingent on the results of Phase 1 and would involve bulk sampling one or two sites, processing about 5 to 10 thousand cubic yards of material at each site. The equipment proposed would be a Derocker, a sluice box, F.E. loader and a dozer tractor. It is anticipated that Phase 2 would have some revenue from the gold recovered, however, to start the program working capital would be required. All equipment used for Phase 1 and 2 would be leased or rented.

COST OF TEST PROGRAMS

Phase 1 - Test Pits and Trenching

Road building, D-7 for 40 hours at \$105/hr	\$ 4,200
Trenching, D-7 for 75 hours at \$105/hr	7,875
Test Pits, backhoe for 40 hours at \$65/hr	2,600
Sluicing Operation	
Sluice rent, 2 weeks at \$500	500
Small loader, 75 hours at \$75	5,625
Labour, 2 men at \$300 per day, 6 days/week	3,600
Sluice Conc. processing, 15 samples at \$200 each	3,000
Camp Costs	2,800
Site Engineer, 2 weeks at \$250/day, 6 days/week	3,000
Report Preparation	3,500
Total Phase 1	\$ 36,700

Phase 2

D-7 tractor, 80 hours at \$105/hr	\$ 8,400
Sluicing Operation	
Derocker rental, 3 weeks at \$500/week	1,500
F.E. loader, 80 hours at \$150/hr	12,000
Labour, 2 men at \$300/day, 6 days/week for 2 weeks	3,600
Supplies	2,000
Sluice Conc. processing, 75 yd ³ @ 15 yd ³ /day	
Y.T. Jig operation, incl. rent.	1,500
Jig conc. screening and tabling of black sands (3 yd ³)	5,000
Camp costs	2,800
Site Engineer, 2 weeks at \$250/day, 6 days/week	3,000
Feasibility report	5,500
Total Phase 2	\$ 45,300

TOTAL PHASE 1 AND 2 **\$ 82,000**

CERTIFICATE

I, George P. Krueckl, with residence in of the City of Richmond, Province of British Columbia, hereby certify as follows:

1. I am a Consulting Geological Engineer with an office at #308 - 543 Granville Street, Vancouver, B.C. V6C 1X8, (604) 685-5272.
2. I am a registered Professional Engineer of the Province of British Columbia.
3. I graduated with a degree of Bachelor of Science, Geological Engineering, from the University of Saskatchewan, 1962.
4. I have practised my profession for 25 years.
5. I have no direct interest in the shares of Abac Resources Ltd. or in the Pan #1 to #6; Co-Disc Wolf; Pan 17-24; Wolf 31-40 claims, subject of this report, nor do I intend to have any interest.
6. Permission is granted to publish the letter to W. Redwick, C.G.A., dated February 10, 1988 as an addendum to the Engineering Report dated June 19, 1987, in a Statement of Material Facts or in the Prospectus for Abac Resources Ltd. Written permission from the author is required to publish this report for any other purpose.

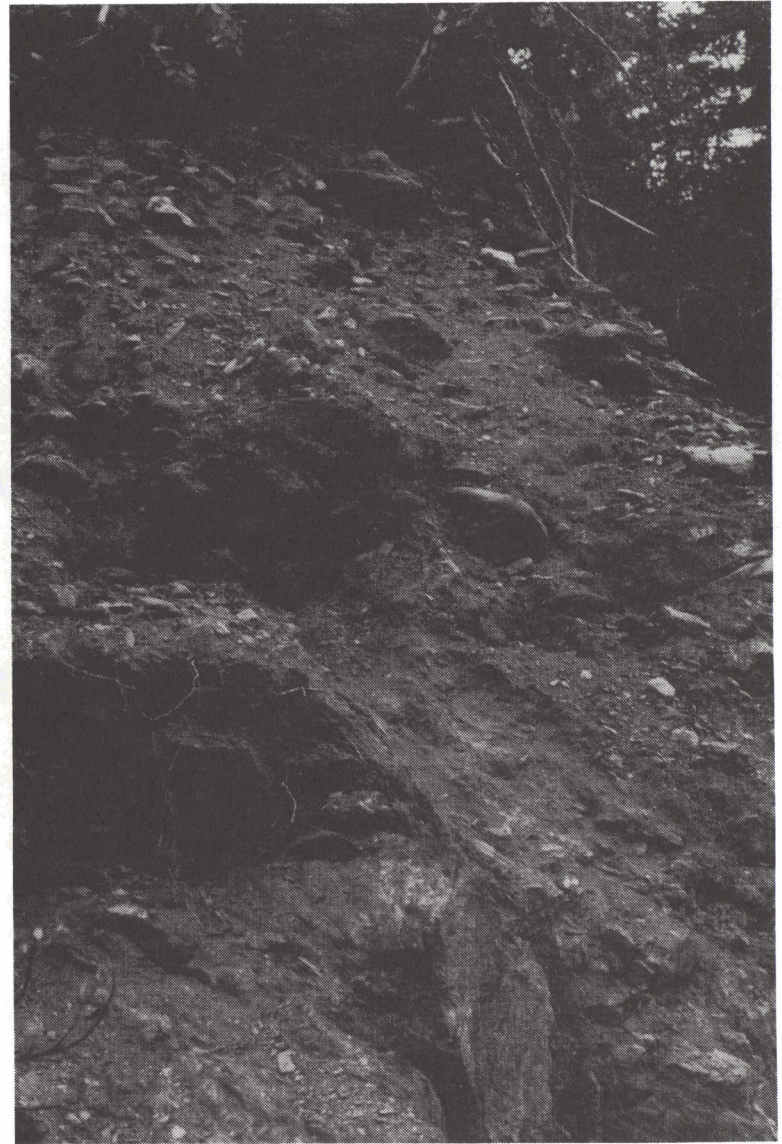
Dated at Richmond, Province of British Columbia, this 11th day of May, 1988.


George P. Krueckl, P. Eng.
Consulting Engineer

APPENDIX A

PHOTOGRAPHS

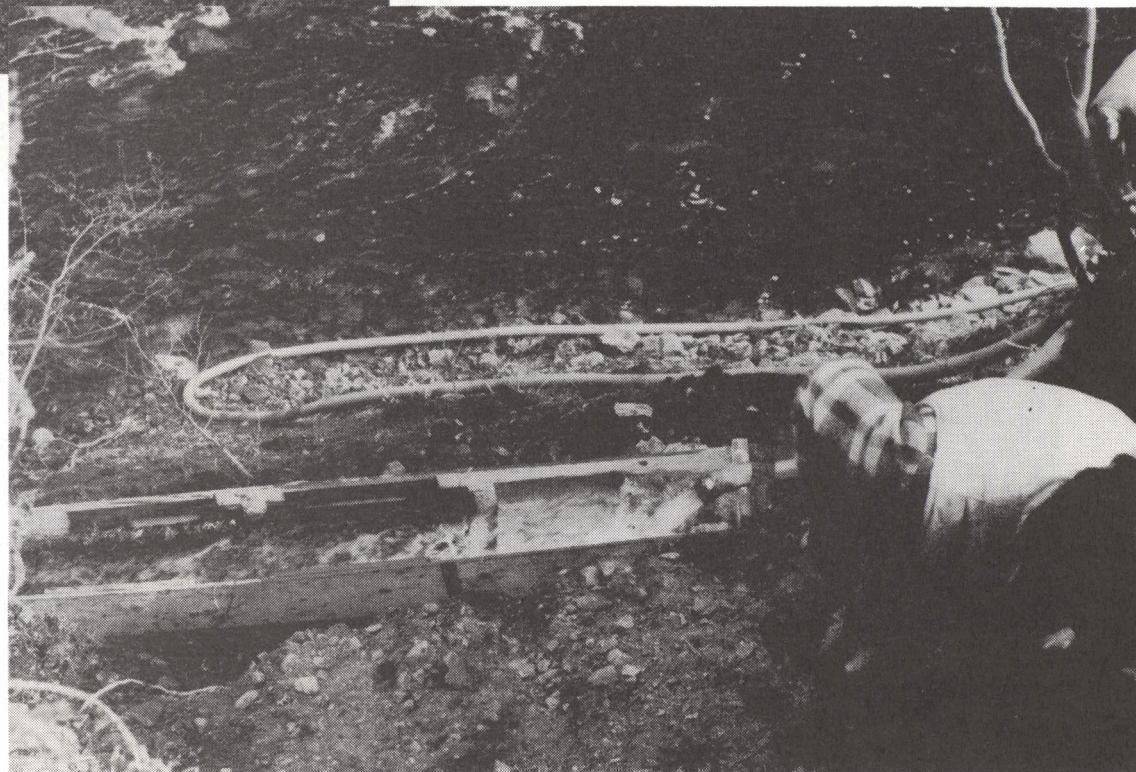
1. Typical section of Pay material and Bedrock Interface.
2. Preparing test site #1.
3. Sluicing operation at test site #1
4. View of test site #2.
5. Sluicing operation at test site #2.
6. Processing of sluice concentrates.
7. Gold recovered.



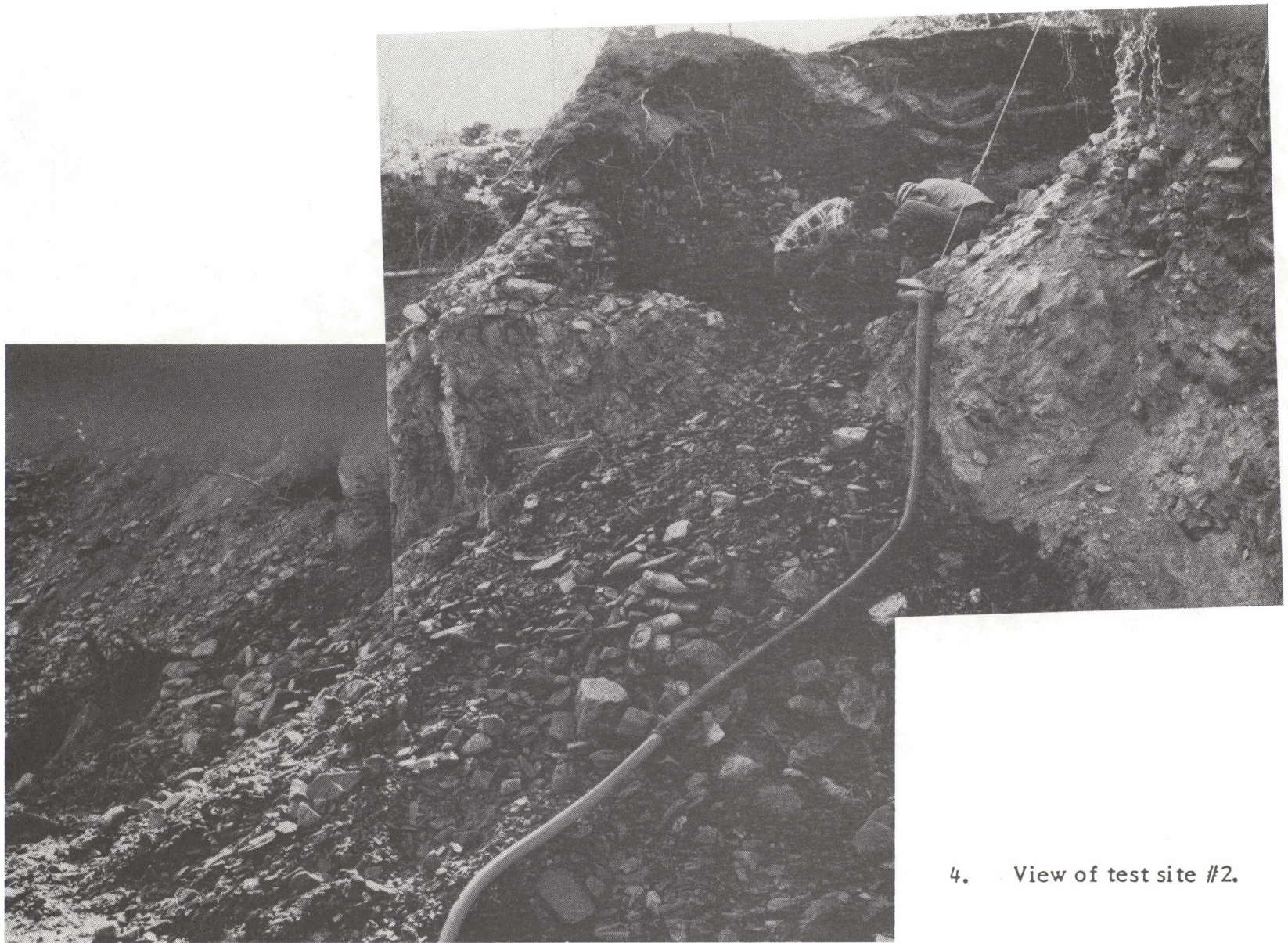
1. Typical section of Pay material and Bedrock Interface.



2. Preparing test site #1.



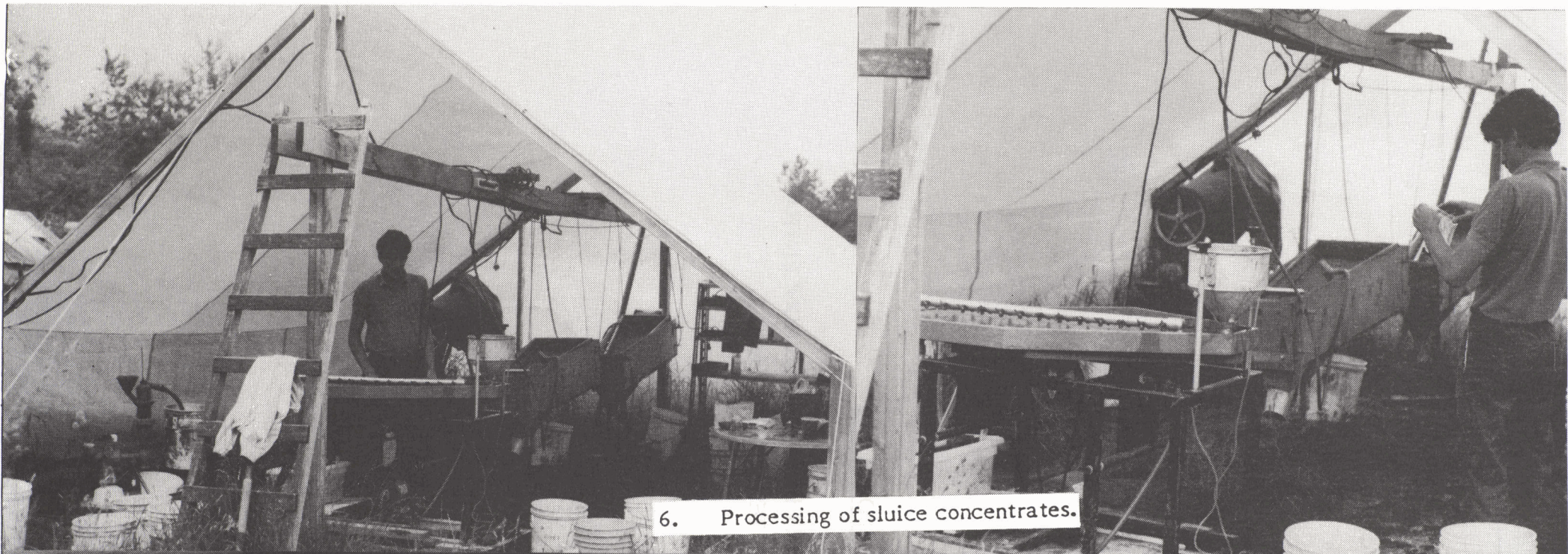
3. Sluicing operation at test site #1



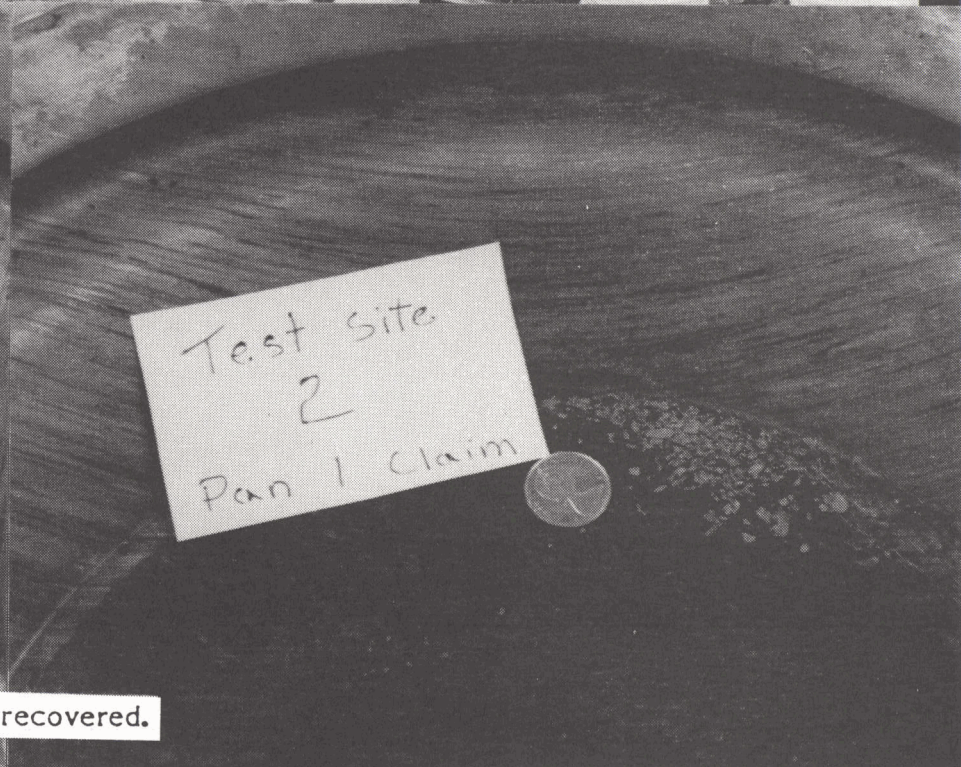
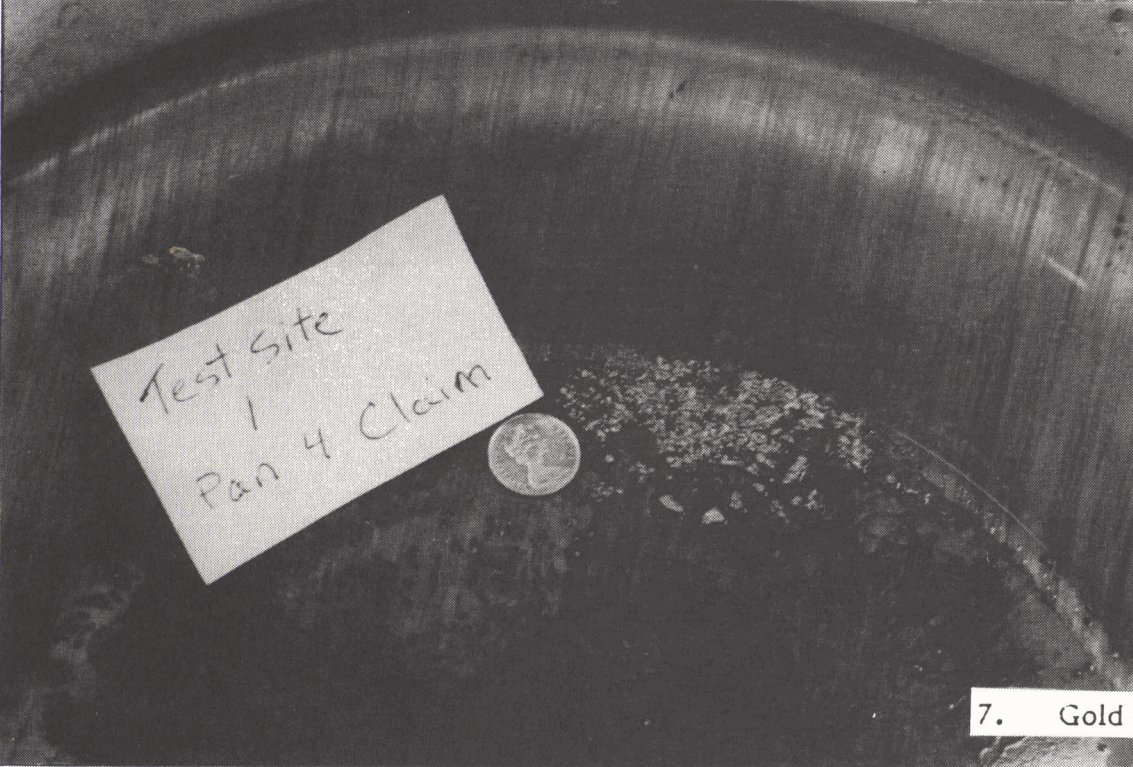
4. View of test site #2.



5. Sluicing operation at test site #2.



6. Processing of sluice concentrates.



7. Gold recovered.

APPENDIX B

CERTIFICATE OF LABORATORY RESULTS FOR CONCENTRATE
PROCESSED FROM TEST SITES #1 AND 2.



PACIFIC RIM RESEARCH Ltd.

Office: 811-543 Granville St., Vancouver, B.C. V6C 1X8 Ph: 682-5211

June 23, 1987

Abaca Resources Ltd.
212 - 615 St. Georges Avenue
North Vancouver, B.C. V7L 3H4

Dear Sirs:

We received two sluice concentrate samples from Krueckl & Associates for Jig and Table processing for gold recovery:

Test Site #1 - Pan 4 Claim - 3' gravels & 1/2' bedrock - 1 1/2 cubic yards

Test Site #2 - Pan 1 Claim - 3' gravels & 1/2' bedrock - 2 1/2 cubic yards

Each of the samples was processed as follows:

1. Wet screened at 8 mesh - the plus 8 mesh discarded into its original container.
2. The minus 8 mesh was jigged to produce two concentrates, the lower hutch consisting of fine gold particles and some black sands, and the upper hutch consisting of coarse sand, black sands and sulphides. The upper hutch was panned for coarse gold. Both the upper and lower hutch concentrates were saved.
3. The jig over-flow was wet screened at 20 mesh, the over size saved and placed in the original container. The under size was tabled over a Gemini table, three concentrate fractions were saved.
4. All 5 concentrate fractions were then panned by hand to recover the gold.
5. The gold for each sample was weighted to the nearest 1/10th of one milligram.

The assay results when adjusted for sample size gave the following information:

<u>Sample Size</u>	<u>Milligram Gold</u>	<u>Gold Content/grams/cubic yard</u>
1) 1 1/2 cubic yards	1,844.8	1230
2) 2 1/2 cubic yards	1,895.0	758

The gold recovered was photographed and placed in small plastic containers and then forwarded to Krueckl & Associates.

Yours truly

PACIFIC RIM RESEARCH LTD.

Wayne M. Ash, P.Eng.
President

KRUECKL & ASSOCIATES MINING CONSULTANTS LTD.
#704 - 626 West Pender Street
Vancouver, B.C.
Phone: 685-5272

February 10, 1988

W. Redwick, C.G.A.
Manager, Corporate Finance
B.C. Securities Commission
1100 - 865 Hornby Street
Vancouver, B.C.
V6Z 2H4

Dear Sirs:

Abac Resources Ltd.

In reference to your letter dated January 29, 1988 to George Neumann, which describes five points of possible deficiency concerning the property in my June 19, 1987 report, I have the following additional comments:

1. Abac has concluded negotiations with the owners to option 19 upstream and downstream leases to increase the size of the property and in so doing also increase the potential for additional reserves and profits. The reason Abac only took on six leases at the prospectus stage was to reduce the cost of the initial investigations. They did plan however, with positive test results to increase the number of leases at a later stage. These additional leases or the agreement to acquire leases can be included in the June 19 report at this time to increase the gross profit potential of the property.
2. Since writing the report the author has obtained additional information from the adjoining downstream operators who completed during 1987 a 5,000 cubic yard test program on a bench similar to that which is seen throughout the length of Brown Creek. Their operation utilized a simple Ross Box which is considered less efficient than most test equipment. The results from this testing yielded \$9.00 gold per cubic yard. This supports the test results obtained by the writer. The report will also be changed to stress that the potential reserves quoted represent only the target reserve volumes envisaged.
3. The writer has prepared an estimate of operating and capital costs that may be required for the production phase. These estimates are based on the writer's experience and information obtained since writing the report from the adjoining downstream operator.

Capital Cost Estimate

Preproduction exploration expense		\$ 200,000
Production equipment and ancilliary facilities		
Derocker (used)	\$ 30,000	
Sluice box	10,000	
Pumps (new)	15,000	
Gen set (used)	25,000	
Camp (used)	20,000	
1-D7 dozer (rent)		
1-4 yd ³ F.E.L. (rent)		
Pick-up trucks (used)	20,000	
Clean up jig, etc.	<u>5,000</u>	
		125,000
Site preparation (including roads)		25,000
Contingency		<u>25,000</u>
TOTAL		<u><u>\$ 375,000</u></u>

Operating Cost Estimate, 1,000 cubic yards/day

D8 Dozer, 10 hours/day @ \$125.00/hr	\$ 1,250
D7 Dozer, 5 hours/day @ \$95.00/hr	475
F.E.L., 20 hours/day @ \$75.00/hr	1,500
Plant and Operator 20 hours/day @ \$40.00/hr	800
Camp, 7 men two shifts/day @ \$30.00/day each	210
Pumps, 3 @ \$75/day each	225
Gen set, 20 hours/day @ \$10.00/hr	200
Contingency 15%	<u>680</u>
Sub-total	5,340 /day
Administration (including travel), \$40,000/year	<u>500 /day</u>
TOTAL	<u><u>\$ 5,840</u></u>
Cost/cubic yard processed	\$ 5.84

4. The issuer has spent \$9,575 on geological; \$12,624 on trenching and testing; \$6,312 on camp operations and supplies and \$40,260 (including depreciation of a D8 Dozer) on eight miles of access road; totalling \$68,771. The road was constructed by the issuer's men and equipment which includes a D8 Dozer. If the road construction had been contracted out on a lump sum cost per mile basis it would have cost approximately \$95,000 based on current Yukon road construction costs. The road was a very essential part of the exploration and mine development program.
5. The writer feels that this property has merit and the foregoing information may be helpful in your discussions with the committee.

The writer would prefer to have this letter attached to the June 19, 1987 report as an addendum should this be agreeable with the committee. Also should you require additional information, please do not hesitate to contact me at Suite 704 - 626 W. Pender Street, telephone 685-5272.

Yours truly,



G. Krueckl, P.Eng.

cc: George J. Neumann

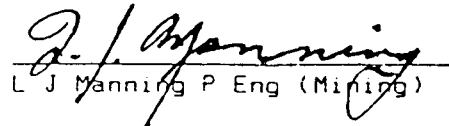
A summary of Operating Profit Potential of the "Conceptual Operation" at 750 milligrams of "payable gold per yard recovered" follows at various gold prices:

US\$/Troy oz	350.00	400.00	450.00	500.00
Can\$/oz @ 1.25	437.50	500.00	562.50	625.00
Value/yd @ 0.75 gm/yd	10.55	12.06	13.56	15.07
Op Cost/yd Can\$	6.71	6.71	6.71	6.71
Operating Profit/yd	3.84	5.35	6.85	8.36
Op profit as a % of Op cost	57	80	102	124
Op Profit on 250,000 yds				
Millions \$	0.96	1.34	1.71	2.09

As can be seen, Operating Profits are adequate to cover contemplated capital even at what is presently considered a low price for gold. Annual operating profits at 1,000 yards per day for 110 days or 110,000 yards would range from \$422,000 to \$20,000 for the field season. These profits must be reduced by the costs required to operate a public company in Vancouver, probably about \$150,000 per annum.

In summary, because of the results of the mapping and two test pits completed in June 1987, and because of the obvious operating success of the downstream neighbours, I believe the property has sufficient economic potential to be rated as a good prospect. Additional testing as outlined by Mr Krueckl must be completed before establishing production.

Yours Truly,



L J Manning P Eng (Mining)

CERTIFICATE OF QUALIFICATIONS

I, Luard J. Manning, P.Eng.(Mining), of 945 Belvedere Drive, North Vancouver, B.C., certify as follows:

1. That I am a graduate of the University of British Columbia and hold a Bachelor of Applied Science degree in Mining Engineering.
2. That I have been a member of the Association of Professional Engineers of Ontario since 1959 and a member of the Association of Professional Engineers of British Columbia since 1966.
3. That I have been engaged in the mining industry for over 30 years.
4. That during these 30 years I have been employed in mining occupations from mucker to manager, and that I have practised as a professional mining engineer in administering exploration programs, operating mines, and conducting feasibility studies, as well as acting as a general mining consultant.
5. That I am at present, the principal in the firm of L.J.Manning & Associates Ltd.
6. That my letter report on the Pan 1 - 6 Placer Claims for Abac Resources Ltd, dated 19 June, 1987 is based on a review of reports made available by Abac Resources Ltd.
7. That I do not hold any financial or other interest in the properties or stock of Abac Resources Ltd. or any of its affiliates, nor do I expect to do so in the future.
8. That I hereby consent to the publication of this letter report in a prospectus or a statement of material facts.

DATED AT VANCOUVER, B.C. this 06 day of May, 1988.


L.J. Manning P.Eng.(Mining)