

**BACON & CROWHURST LTD.**  
**CONSULTING ENGINEERS**

671266

November 27th, 1970.

Dear Sirs:

The N.B.C. Syndicate, managed by Dr. W.R. Bacon of Bacon & Crowhurst Ltd., plans to surface diamond drill the Jean West property during the 1970-71 winter season. It is located north of Fort St. James, B.C., in the Nation Lakes area.

The contract will be for approximately 3600' of BQ drilling composed of relatively short holes.

We enclose detailed specifications for the job.

We invite you to place a bid for the contract. Please direct any inquiries to:

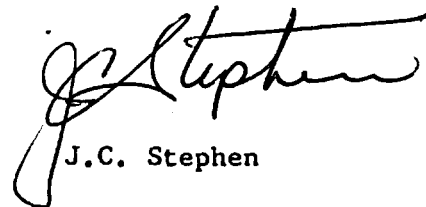
Mr. J.C. Stephen,  
Exploration Superintendent,  
N.B.C. Syndicate.  
Telephone 987-4943

or

Mr. R.W. Phendler,  
Bacon & Crowhurst Ltd.,  
Telephone 688-5485.

Yours very truly,

N.B.C. SYNDICATE



J.C. Stephen

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N.B.C. SYNDICATE

JW DRILLING PROJECT

N.B.C. Syndicate requests bids for 3500' BQ wireline diamond drilling to be carried out on its JW claim group located 50 miles north of Fort St. James. See Figure I, Topographic Map 1:250,000. It is proposed that this drilling be done during January, February and March, 1971.

The following is a summary of information available and specifications of the work proposed:

LOCATION:

JW claim group, 50 miles north of Fort St. James and approximately 10 miles south of Tchentlo Lake.

ELEVATION:

Main creek and camp area approx. 3700'.

Drilling area from 3700' to 4000'.

ACCESS:

During summer, the road to the east end of Chuchi Lake is passable. Barge to heliport on Chuchi Lake and helicopter to property. Figure I. During winter it should be possible to land Beaver and Otter aircraft on the swamp at the campsite. Beaver aircraft available at Fort St. James. Winter cat trail possible from P.G.E. right-of-way at Trembleur Lake. An estimated 21 miles cat trail required. Grades moderate. Timber variable from open swamp to mature timber. See Figure II, Air Photo Enlargement.

WATER:

The main creek is the only apparent adequate source of water. The small lake within the swamp appears shallow and may freeze to bottom. Maximum pumping distance would then be approximately 4000 feet. Maximum head approximately 300 feet. See Figure II, Air Photo Enlargement.

The pH of water in small creeks in the drill area during the summer was about 5.5. It is assumed the main creek water will have a pH of about 6.

FOOTAGE:

12 BQ wireline holes are proposed. These are to be vertical holes to a standard depth of 300 feet. 500 feet of rod should be provided in case of one or several holes being required to a depth greater than 300 feet. Limitation on program is budgetary, not drill footage. 10 of the proposed holes are shown on Figure II (Air Photo Enlargement). If the two remaining holes are over 1000' beyond the area encompassed by these ten holes, the move or moves will be at field cost. Footage may be made up by deepening one or more of the original ten holes.

OVERBURDEN:

Shallow overburden, to depths of 10-30 feet, is expected for all holes except -

- (1) One hole in the swamp area near camp where depth of overburden is unknown but could be in the order of 100 feet.
- (2) The most westerly holes shown on Figure II which approach the swamp area where overburden depths are unknown.

TOPOGRAPHY:

The swamp area indicated as a possible landing field is open and slopes gently to the east.

The present camp area on the north side of this swamp is on a narrow flat pine covered rise relatively ideal as a camp but rather distant from drill sites.

The south side of the swamp is generally water logged and heavily timbered with hemlock, balsam, spruce and pine. A camp-site is possible and though more distant from aircraft landing site, is closer to drill and pump sites.

The hillside from swamp to drill sites is covered with mature timber up to 3' diameter, reasonably well spaced. Slopes are moderate, generally 10% to 15% grades with only very local steep irregularities which can be avoided during moves. Small north flowing creeks are inadequate for water supply and are expected to present no great difficulty in moving equipment. Soil is wet and organic.

ROCK:

Low-grade copper and molybdenum mineralization is expected in highly fractured and altered granitic rock. A significant portion of the drilling may, however, encounter masses of relatively fresh granitic rock as unfractured zones or as dykes. The rock is quartz-poor except for minor quartz veining.

Strong fault zones with several feet of gouge were indicated in preliminary work.

Several sets of fractures are present, two of them nearly vertical and another at about -20° southeast. Other sets are less well developed.

PREVIOUS EXPERIENCE:

Two AQ wireline holes were drilled from one drill site with a Longyear 24 drill. Drill and camp were moved in August 21st, finished and torn down September 1st.

#1 -45°, S25°W, 300', 43% overall core recovery, better recovery in soft ground and gouge than in fractured hard ground, 18' casing. Some faults and some cave material with sludge. Hole completed.

#2 -50°, N25°E, 166', 80% overall core recovery, 15' casing, return water lost for most of hole, inadequate sludge recovery, appearance of water flow on ground near casing led to advancing casing 3' in attempt to achieve better seal and increase return water, no increase, rods seized in hole at 166', jacked out, repeated washing and drilling led to repeated seizure of rods. Hole abandoned.

EQUIPMENT REQUIRED:

One drill and auxiliary equipment adequate for 500' BQ core drilling and possibly 150' casing required.

Pumps and coil heaters for 4000'± water line and 350' head.

Adequate rods and casing to depths indicated. Rods in excess of 300' may be brought in gradually by periodic supply flights. Chrome core tubes may be requested by the company engineer to improve core recovery.

Equipment for mud circulation will be necessary.

Core boxes to be provided at drill site by contractor.

Please quote price per box delivered in Fort St. James in contract.

CAMP:

The contractor to erect, maintain and supply all camp facilities for the drilling operation plus a 12' x 14' x 5' tent with fly, on plywood floor, or equivalent, adequately heated, to accommodate the company engineer and assistant. One 3' x 6' x ½" sheet plywood requested for drafting table.

A 14' x 16' tent on plywood floor and 4' plywood walls was left erected at the old campsite. There should be two 9' x 12' tents and one 12' x 14' tent stored there. Two small airtight heaters with stove pipes were left on the property. These may be of use for the initial moving in but are not considered to be part of the projected camp facilities. One or more tents may be used by the contractor for storage and the company will use one as a core shack.

MOVES:

Locations of holes are shown on Figure II. No significant change in this pattern is expected but if encouraging results are obtained, additional holes may be drilled in the vicinity resulting in shorter moves. The locations shown are considered part of the minimum program. Costs of moving should be included in the bid price.

Distance between holes shown averages about 1200 feet.

Contractors are requested to bid the following items to facilitate comparison:

- (1) Mobilization - to be bid from Fort St. James to drill area.
- (2) Demobilization - to be bid from drill area to Fort St. James.
- (3) Overburden - 0' - 30'  
30' - 50'  
Over 50' at field cost.
- (4) Drilling in bedrock - 0' - 300'  
300' - 500'  
500' - 1000'
- (5) Reaming hole for casing - to be bid including cost of casing.
- (6) Field cost - to be bid - per man hour  
per machine hour - operating  
non-operating.
- (7) Caves - If normal drilling operations impractical, including cementing, mud circulation, hole abandonment - at field cost.
- (8) Pipe or casing loss at company cost. Here it is suggested the company's cost for lost casing shoes will be the depreciated value of the shoe.
- (9) Dip tests - none contemplated but a price should be included for acid test.
- (10) Water - should be included in bid price for hole locations shown and hence will apply to any additional holes within this range.
- (11) Moves - should be included in bid price based on locations shown.
- (12) Site transportation - to be supplied by contractor.
- (13) Drill site access and preparation - contractor's account. Every reasonable effort will be made by the company engineer to spot the proposed holes in the order and at the time requested by the

contractor. It is proposed that the company engineer will survey all drill sites during the first week of operations.

- (14) Waiting time for orders - Time lost waiting for orders to be charged to company at field cost.
- (15) Core - Every reasonable effort to be made to provide maximum core recovery. Core to be placed in adequate boxes, carefully numbered as to hole and box number with a footage marker at the end of each and every run. Core to be delivered to company representative at ~~drill~~<sup>Camp</sup> site. Company prefers grooved boxes as supplied by Hodgens Distributors, 3237 W. 27th Ave., Vancouver, telephone 732-6472.

Core will be logged to show actual recovery for each run. This may facilitate possible bonus arrangements. Core box price to be stated.

- (16) Sludge - Sludge collection facilities to be provided on the property by the contractor for possible collection, if found necessary. Indication of equipment types requested.
- (17) Core splitter - The company will provide a core splitter.
- (18) Board - For two company men full time plus sufficient accommodation for occasional visits by up to two additional company men - daily rate requested.
- (19) Stumpage - The company to assume responsibility for possible assessment for stumpage; the contractor to use reasonable care to avoid unnecessary cutting or damage of trees.



- (20) Holes less than 300' - If the company engineer stops a hole at less than the company will reimburse the contractor for undrilled footage at the rate of \$1.50 per foot.
- (21) Personnel - Incompetent personnel or those otherwise unsatisfactory to the company will be replaced at the contractor's cost.
- (22) Insurance, etc. - Generally accepted limitations.
- (23) Workmen's Compensation, etc. - All applicable fringe benefits for contractor's employees to be carried by contractor.
- (24) Daily Reports, Payments - Daily reports to be signed by company representative. Invoices from contractor to be submitted on or about the first and fifteenth of each month.
- (25) Communication - The contractor should provide such radio or radio telephone communication as deemed necessary.

The company owns PRT-20 radios on the Northern Mountain Airlines frequency and will have one for its own use or such combined use as may be convenient.

- (26) Transportation & Supply - The contractor is to arrange such periodic transportation as is necessary for his operation.

The company will pay a proportionate amount on those aircraft charters it may use for shipping samples or personnel or will make its own separate charter arrangements as required.

- (27) The company, of course, prefers to have the job run on a 3 8-hour shift basis - 7 days per week - with consequent price reduction but this may not be practical. We will not consider a contract that suggests 12-hour shifts.

Note: Because the company expects to encounter molybdenum mineralization, it will be impractical to use cutting oils. Molybdenum free greases should be used.