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EVALUATION OF THE MOUNT OGDEN  
MOLYBDENITE PROSPECT,  
ATLIN MINING DISTRICT, B. C., CANADA

for

OMNI RESOURCES, INC.

Stewart R. Wallace  
Lakewood, Colorado  
April 15, 1980

STEWART R. WALLACE

8700 WEST 14TH AVENUE  
LAKEWOOD, COLORADO 80215

(303) 233-0585

April 15, 1980

Mr. Frank Coolbaugh  
8700 West 14th Avenue  
Lakewood, Colorado 80215

Dear Mr. Coolbaugh:

Transmitted herewith is my review of material on the Mount Ogden molybdenite prospect of Omni Resources. As you will see, I am quite pessimistic about the potential of the molybdenite showings within what appears to be a large stock of granitic and aplitic alaskite. I find the quartz porphyritic rock in the Y Zone of much more interest and certainly, on the basis of existing information, of much greater potential. All things considered, I think it would be prudent to complete drill hole Y-1, possibly drill one or more additional holes in that same area, and do some ground reconnaissance in the surrounding territory.

I would like to thank you and Omni Resources for the opportunity of looking at the data on this very interesting prospect and am just sorry that I couldn't give it my unqualified endorsement. In fairness, I should note that I seldom if ever do this until after the ore body has been found.

Respectfully submitted,



Stewart R. Wallace

SRW:ap

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EVALUATION OF THE MOUNT OGDEN MOLYBDENITE PROSPECT,

ATLIN MINING DISTRICT, B. C., CANADA

SUMMARY AND CONCLUSIONS

The large size of the parent alaskite intrusion and the erratic but wide-spread distribution of molybdenite near its upper contact suggest the lack of the proper chemical and mechanical processes during late stages of crystallization necessary for the formation of a coherent zone of mineralized rock with average grade sufficient to qualify as an ore body. This assessment is reinforced by the intensity and type of alteration, the nature and habit of the mineral-bearing structures, and the almost universal occurrence of molybdenite as coarsely-crystalline material in open fractures containing little gangue and with sharp contacts with fresh host rock.

The total amount of molybdenum in the alaskite body is probably very large and would seem to be ample to form an ore body were it properly concentrated. The amount of water in the magma also seems to have been adequate and the bulk composition of the rock is good. On the other hand, content of mineralizers (F and S) other than water for help in complexing and transport does not appear to have been great. In sum, I see little hope for a stockwork type deposit in this environment unless there is something in the way of a younger intrusive event that might provide some mechanism for concentrating the mineralizers and metals.

The alaskite porphyry could possibly be a rock that indicates just such an event. Its texture is much better for ore development than the equigranular phases of the "main" stock, and the alteration is more intense (though still very weak) and of the right kind. If the alaskite

porphyry is a late phase, which I presume it to be, it may have been able at depth to generate an ore-forming event.

Drill hole Y-1 was laid out to provide a first test of this hypothesis, and I recommend deepening this hole to at least twice its present depth if the machine is big enough. On the premise that it is inefficient to drill just one hole during a drilling season in this area, I would search for other areas nearby from which you might be able to reach the same rock body, e.g., from one or more locations on the ice and/or from a location on the other side of the valley if Gerry Clouthier's suspicion is confirmed on the presence there of another exposure of the alaskite porphyry. Because of time constraints two or more holes will have to be drilling simultaneously.

Finally, I would consider reconnaissance of nearby areas to search for quartz porphyries and other zones of alteration and molybdenite mineralization. An obvious place to start is the exposure mentioned on page 5 of this report.

## INTRODUCTION

This report is based in part on a review of reports by Andrew Nevin (1978) and Bertram Taylor (1979) on the Mount Ogden Molybdenite Prospect, Atlin Mining District in northwestern British Columbia, written for Omni Resources, Inc. In addition, it reflects conversations with Robert Hoye and Gerry Clouthier of Omni Resources, consideration of published reports by the GSC, and examination of specimens and thin sections from the property.

### Location, Etc.

Location of the prospect area, terrane, access, "ways and means", etc., etc., are adequately discussed in reports by Nevin and Taylor, and I have not repeated them here.

## GEOLOGIC SETTING

Country rock in the vicinity of Mount Ogden consists of generally fine-grained clastic and carbonate sedimentary rocks with interbedded andesitic and basaltic volcanic rocks of Permo-Triassic age. These rocks strike northwesterly, dip moderately to steeply to the northeast, and have been regionally metamorphosed to phyllite and greenstone. Within the prospect area this sequence of rocks was intruded in Cretaceous-

Tertiary time by dikes, plugs, and stocks ranging in composition from gabbro to rhyolite and alaskite. Zones on and adjacent to contacts between the metasediments and rhyolite and andesite intrusives are in many places marked by the development of hornfels or skarn.

Molybdenite is associated with a stock of fine-to medium-grained slightly porphyritic alaskite. The main stock as known appears to be about two kilometers long in a northwesterly direction and perhaps 700 to 1,200 meters wide. These dimensions are based on the position of the upper contact of the stock with the phyllite as exposed just above the level of the ice at seven or eight localities in the headwall area and along the sides of a glacial valley. These "localities" are referred to as Zones, and on the maps that accompany Taylor's report are designated by letters of the alphabet. About 750 meters to the southeast of the headwall is another small isolated exposure of alaskite; this is referred to as the Y Zone and it appears to be the most promising area discovered to date. Mineralogically this rock is identical to the "main phase" alaskite but here is definitely porphyritic and contains numerous but small phenocrysts of quartz (1 to 2 mm) and K-spar (2 to 4 mm). Whether the porphyritic alaskite is an entirely separate body or whether the stock extends this far south and is present beneath the ice is not known.

#### STRUCTURE

The prospect is located at the intersection of two structural trends that are evidenced by faults, fractures, photolinears, and by

dikes. By all odds, the best-developed trend is NNE to NE, and this direction is marked by a swarm of andesite, rhyolite, and rhyolite porphyry dikes. The other trend, W to NW, is expressed by the same types of feature but is not so pronounced; the suggested northwesterly elongation of the alaskite stock may also reflect this trend. It should be noted here that Gerry Clouthier told me that several years ago he had seen a small intrusive mass of alaskite mineralized with molybdenite four to five kilometers northwest of the Mount Ogden showings. I do not suppose that this is part of the "main" alaskite intrusion, but it is "on trend."

#### PETROGRAPHY OF THE ALASKITE

The description herein is based in large part on the petrographic examination of nine thin sections provided by Omni Resources; of these, eight are of the alaskite and one of metasedimentary rock. Except for differences in texture, all alaskitic rocks are the same and consist of essential quartz, K-feldspar, and plagioclase ( $An_{94}$  to  $An_{97}$ ). Biotite, in large part chloritized, is so fine-grained and so sparsely distributed as to qualify as an accessory mineral; other such minerals are magnetite, apatite, and zircon.

Three major subdivisions of the alaskite can be made on the basis of the texture; granite, aplite, and porphyry. All these varieties exhibit micrographic textures. In a general way the coarser-grained rocks tend to have coarser graphic intergrowths. A notable exception to this is



seen in one specimen of aplite containing small ovoid clots which at first glance appear to be phenocrysts; examination with a hand lens suggests that they may be clasts of a coarser-grained rock; microscopic examination shows them to be aggregates of coarsely crystalline quartz and feldspar, in part granophyric and in part not. These appear to have formed in place and probably represent slow growth of crystals in small residual pockets of water-rich melt.

I do not know the distribution or relative amounts of the different textural phases, the size and shape of the individual bodies that contain them, or their relative ages and the nature of the contacts between them. What can be said is this:

- 1) Chemically and mineralogically the textural phases are essentially the same.
- 2) The major element rock chemistry is of the right kind to concentrate and produce molybdenite.
- 3) The rocks are essentially fresh.
- 4) I interpret the micrographic textures as indicating a higher than average water content. This is consistent with the observation in the report by Taylor that miarolitic cavities are present in the rocks.
- 5) Although that is good, these features also suggest that the magma retained its water until a very late stage in its crystallization history and that the water was thus not available for hydrothermal solutions.
- 6) I interpret the alteration affects described in the next section to be largely the result of late orthomagmatic and deuteric reactions.

## ALTERATION AND MINERALIZATION

The most obvious alteration is an almost universal argillic alteration of the feldspar. In general, this alteration is not intense, but in one specimen of aplite it can be described as a "very heavy dusting." There may well be more than one type of clay mineral present, but at least some of it appears to be allophane. Oddly enough the potassium feldspar has been more strongly attacked than has the plagioclase. This is definitely anomalous for hydrothermal alteration, and the only other rocks in which I have seen this are a highly alkaline granite and related rhyolite dikes in central Montana; and in these rocks also, I interpreted the alteration as deuteric.\*

Sericite is notable by its essential absence except in specimens of the porphyritic alaskite where it replaces both K-spar and albite and even some of the quartz phenocrysts. Where it attacks and embays the quartz, a thin border of beady K-spar is present between the two minerals. Very fine-grained pyrite is sparsely disseminated in these specimens, but the total volume is small--less than 1/2% by weight, I would think. Sphalerite has a similar mode of occurrence but is more common than the pyrite. Other minerals that seem to be present both in veinlets and as rock-forming minerals are: fluorite, apatite, zircon, and carbonate. Taylor describes envelopes of replacement K-spar as much as 20 cm in width developed along some fractures; these are not present in any of the specimens I have examined.

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\*It should be noted that deuteric alteration commonly follows the same patterns as that in hydrothermal systems.

The one thin section of phyllite is cut by a veinlet containing coarse-grained hydromica with much lesser amounts of epidote, quartz and pyrrhotite.

All in all, the alteration is weak, alteration types are mixed, and they do not form good overall patterns. Pyrite is sparse, and this plus the presence of pyrrhotite in some specimens suggests a sulfur-poor system. I should note here that photographs of the area taken in the right light do show a distinct iron stained zone along and above the upper contact of the alaskite stock where exposed, and this, I presume, results in large part from the oxidation of introduced pyrite and/or pyrrhotite.

#### ORE MINERALS

Molybdenite, as of the moment, is the only "ore" mineral of importance; tungsten, as scheelite, is present in low grade but definitely anomalous concentrations in and near the Y Zone.

Molybdenite is present as:

- 1) Fine- to medium-grained "paint" that coats dry fractures
- 2) Coarse- to very coarse-grained crystals and rosettes scattered, with sparse to moderate density, along joint surfaces
- 3) Coarse "books" and "sheaves" as cockscomb type open-fracture fillings
- 4) Coarse crystals sparsely disseminated within small pegmatitic lenses and pockets
- 5) Massive molybdenite in veins containing a gangue of coarse-grained quartz and K-spar

- 6) Fine-grained crystals sparsely disseminated in the rock near some veinlets.

With the exception of (6) all of the molybdenite is "free" and readily "streaks" the finger. Gangue minerals are quartz and K-spar in some of the larger veins; fine-grained quartz with or without sericite is associated with the surface coatings. But, except for a few (?) veins with well-developed K-spar selvages noted by Taylor, mineral-bearing openings have sharp walls and the adjacent rock is essentially fresh; mineralized structures result from open filling and not from replacement. Where mineral is present, it is "high grade." The overall density of mineral-bearing fractures is very low, and the molybdenite content of the intervening rock is very nearly "zero"; as with the alteration, the mineralization is more nearly deuteric than it is hydrothermal in the classic sense.

#### DISTRIBUTION OF VALUES

Not enough is yet known to define the detailed pattern of molybdenite distribution. In a general way it appears to be erratically distributed over a wide area and is concentrated in various types of open fractures and joints both above and below but near the upper contact of the alaskite stock; the "highest grade" material is in flat to gently-dipping open structures.

One example of the erratic distribution of values is shown by assay results of samples collected from the N Zone adit and from core holes drilled on various bearings and inclinations from underground. The adit

was driven for a number of reasons among which were the following:

(1) to get a good representative sample of one of the better veins known on the property (the Serious Vein) and of the rock adjacent to it, and (2) to provide a safe place from which to drill. The adit is 158.8 meters long and a total of 589.3 meters of adjacent ground was probed in six diamond drill holes.

The Serious Vein was cut by the adit and by three of the drill holes. In addition chip samples of the vein were taken from an exposure on the cliff face about 15 meters southwest of the portal. At these five "sample sites" the vein varied in true thickness from 0.6 meters to 5.0 meters and averaged 3.05 meters containing 0.884%  $\text{MoS}_2$ . The average grade, weighted by sample length, of "all" samples taken in and near the adit\* is 0.105%  $\text{MoS}_2$  over a total length of 610.5 sample meters shown on the sample plan that accompanies Taylor's report. Thus, there is a greater than an eight-fold difference between the high grade and the average (which includes the high grade); the largest variation between adjacent core samples is more than 600 fold.

Because essentially all the mineral is in fractures, the size, distribution, and availability of fractures to mineralizing fluids was paramount to the overall pattern of mineralization. Unfortunately, at least as I interpret the fractures, they are due to cooling and contraction and to a relaxation of vertical pressures (from below). This makes

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\*Does not include overlapping or duplicate samples taken by different methods. Samples of cuttings seem very clearly to be much too high and were used only where other types were not available.

for larger but fewer openings than is common with classical stockworks where fractures result from a concentration and application of pressure, either magmatic or hydrothermal, upward from below. The application may be intermittent with one or more pulses interrupted by periods of release of pressure between maxima. Stockwork fractures tend to be smaller but more closely spaced and are more uniformly distributed.

### MINERALIZATION OF THE ALASKITE---

#### SUMMARY STATEMENT

There are a number of things wrong with the large alaskite stock as an ore-producing system:

- 1) The intrusive mass was "too large" for its level in the crust and there was no mechanism for concentrating the contained fluid-making elements in order to generate a really good hydrothermal event.
- 2) The mineralizing solutions were deuteric rather than hydrothermal; they were part and parcel of the rock from which they originated, they were retained in the magma-rock system until a very late stage in the crystallization history, and they did not migrate far from their source.
- 3) Thus, there was no "trap" in which to create a "point source" pressure.
- 4) Concentrations of fluorine at 300 to 1100 ppm are somewhat low for good molybdenum source rocks.

In contrast to the above, there are several things that are right about the alaskite:

- 1) The major oxide composition of the rock is good--high in silica and the alkalies.
- 2) Total water and molybdenum contents were very probably large.

- 3) Given the right "mechanics" and timing of intrusion and fractionation, it could have produced an ore body.
- 4) It is possible that the porphyritic phase is an indication that it may have done so.

#### EXPLORATION POTENTIAL

The best exploration target known within the claim block is the Y Zone. This is the area in which the alaskite is porphyritic, containing small but numerous phenocrysts of quartz and K-spar. I would prefer to see larger phenocrysts and a still finer-grained matrix; but the rock is still a real porphyry and that is good in that the crystallization history that produces a porphyry may also result in the separation of a water phase.

Hand specimens and thin sections that I have examined show the porphyritic phase, in comparison with the granitic and aplitic phases, to have the following features:

- 1) More alteration: Many fractures are iron stained and others are coated with sericite. Pyrite is disseminated in the rock albeit sparsely and is concentrated near veinlets. Both plagioclase and K-spar (and even some quartz) have been partly replaced by sericite.
- 2) Molybdenite is finer-grained than in the other rocks.
- 3) Definitely anomalous tungsten content: Six bulk samples contain from 240 to 1,100 ppm W (average, 627 ppm). Anomalous tungsten is also present in and near rhyolite dikes cut by DDH Y-1 about 100 meters "in back of" the porphyry outcrop. These dikes may be fine-grained alaskite porphyry.

Still, in all, much of the rock seems to be pretty fresh, and I expect

that a conventional type stockwork would be a minimum of 2,000 feet distant.

I think DDH Y-1 is a very good drill hole, and it should be continued. I would hope that it will penetrate the porphyry contact within 100 meters and that there is "enough left" on the drill to go another 100 meters beyond that. I don't expect that this hole will find ore, but it might provide some information--positive or negative.

Although the known showings within the present claim block may not lead to an ore discovery, the regional environment would seem to be favorable enough to justify a limited reconnaissance program.



# Omni Resources Inc.

Suite 1409 - 675 West Hastings St., Vancouver, B.C. V6B 1N2 • 684-5827

March 24, 1980.

Mr. Frank Coobaugh  
8700 W. 14th Ave.,  
Lakewood, Colorado.  
80215 U.S.A.

Dear Frank:

As we discussed, the other day in Denver, Omni would like to have included in your report a general outline of the program we have planned for Mt. Ogden this summer. I think that we were all in agreement that despite a limited data base the project has some merit and that we should continue with it. Stew has a rough draft of what I have planned for this season.

In addition I have prepared a budget for this work program based as much as possible at this time, on fixed costs I've obtained. The other cost estimates are based to some extent on last years experience at Mt. Ogden, but also on my personal experience running similar programs over the past four years. I've also inclosed a financial statement prepared for Omni for last years work. This may provide you with some comparative information when reviewing my proposed budget.

Every year when I prepare these things I am shaken by the totals, but I guess I shouldn't be. If the project was less isolated and had a longer working season, I would be recommending a more stepped program, however, the costs of support and mobilization are such that it becomes much more economical to hit these things hard and fast. If you can give us a positive opinion on the program and include our budget in your report, it would greatly assist our financing for this year. If you have any questions about anything, please call me and many thanks for the hospitality during my stay in Denver.

Yours truly,



G.A. Clouthier  
Exploration Manager.

GAC:jp

OMNI RESOURCES INC.

PROPOSED BUDGET MT. OGDEN PROJECT

1 9 8 0

Exploration Costs:

Capital Costs	- Diesel Generator for Camp	\$ 5,000.00	
	- Misc. equipment and material for the camp	15,000.00	
	- Radio Telephones 1,SB-121, 2,SBX-11's	6,000.00	
			\$ 26,000.00

Drilling	- 10,000 feet of NQ wire-line diamond drilling @ \$40.00/ft direct costs (Note 1)		400,000.00
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Helicopter	- Contract Hughs 500D 350 hours @\$360.00/hour	119,000.00	
	- Misc. supplies	1,000.00	
	- 30 hours with Bell 205 heavy lift machine @ \$800.00/hour	24,000.00	
			144,000.00

Fixed Wing Air Support

- Atlin to Border Lake (Beaver Aircraft 39 trips (3/week) for 13wks @ \$333.00/week	13,000.00	
- larger wheel and float equipped Aircraft (DC-3 or Otter) Whitehorse to Border Lake or Tulsequah	12,000.00	25,000.00

Mountaineering and Avalanche Control Consultants (Note 2) 240 man days @ \$165.00/day		39,600.00
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Camp Costs (Note 3)

<u>Personnel</u>	<u>Days</u>	<u>Man Days</u>
4 Drillers	70	280
2 Geologists	100	200
Manager/1st aid man		120
2 Cooks	100	200

Camp Costs (Note 3) Cont'd...

<u>Personnel</u>	<u>Days</u>	<u>Man Days</u>	
Assistant Cook	75	100	
Pilot		120	
Mechanic		120	
2 Mountaineers	120	240	
Surveyor/Prospector		120	
3 Geological Assist.	100	300	
2 Prospectors	120	120	
Other Personnel		<u>150</u>	
		2070	
@\$20.00/day			\$ 41,400.00

Salaries:

Permanent:

1 Geologist	7 months		\$ 20,417.00	
1 Geologist	5 months		14,583.00	
1 Camp Manager	7 months		<u>14,583.00</u>	
			49,583.00	
		+15% Fringe	<u>7,438.00</u>	
				57,020.00

Temporary:

Cook	100 Man/days	@\$75/	7,500.00	
2nd Cook	100 "	@\$65/	6,500.00	
Assistant Cook	120 "	@\$50/	7,800.00	
Surveyor/Prospector	120 "	@\$65/	15,000.00	
3 Geological Assistants	300 "	@\$50/	19,200.00	
2 Prospectors	240 "	@\$80/	<u>6,000.00</u>	
			62,000.00	
		+15% Fringe	<u>9,300.00</u>	
				71,300.00

Engineering and Geological Consultants				
60 days averaging \$400.00/day				24,000.00
Assaying 1500 samples @ \$10.00 each				15,000.00
Report Preparation and Assessment fees				10,000.00
Contingencies				<u>50,000.00</u>

		<u>Total</u>		<u>\$903,320.00</u>
Administrative Expenses				
12 mo. @ \$6,000.00/month				<u>72,000.00</u>
Combined Total:				<u>\$975,320.00</u>

Note 1: This figure is based on costs for similar projects in British Columbia. A ground supported program of similar magnitude would probably cost out at between \$18 and \$25/foot. Extra costs are related to weather and logistical delays caused by reliance on air support. A further cost at Mt. Ogden is the necessity of building emergency camp facilities at each drill site.

Note 2: Because of the terrain this facet of the program is absolutely necessary in order to maintain safety conditions for the work force. I might comment that Omni was commended for their efforts in maintaining a high standard in this area of operations last season by the regulatory agencies. We intend to continue this policy.

Note 3: The figure of \$20.00/man day for camp costs includes the following: food, consumable supplies, fuel, an expediting service in Atlin and Whitehorse, radio-telephone costs, maintenance and rentals on two vehicles for necessary land transportation. I have been using inflation adjusted figures of this amount for the past four years for similar air supported projects and have found them to be quite accurate despite variations in specific item costs.



G.A. Clouthier  
Exploration Manager

GAC: jp

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when it was cut off last September, I would hope that you would be able to reach the exposed rock face across the canyon east of the Y Zone and obtain some good samples which would confirm your belief that a similar porphyry to that of the Y Zone existed at this new site. Should this be the case, I believe it should be imperative that a drill station be set up without delay on the ice somewhere midway between the Y Zone and the new zone. When the drill itself was set and serviced, it should be activated to test the depth of the ice pack, and as soon as possible thereafter to punch a hole as deep and as quickly as possible into bedrock before it becomes apparent that it was being pinched off by the movement of the glacier. If this drilling attempt through the ice proved to be productive, I would experiment with a set of fan holes at approximately  $55^{\circ}$  to  $60^{\circ}$  from horizontal. If luck was to run with us in this drilling effort, we should obtain the maximum footage possible in our summer's effort. If we were unable to obtain effective rock penetration except by continued vertical drilling through the ice layer, we would, of course, have to sacrifice an important amount of drill footage, and core, to allow for the more frequent setups of the drill station.

When the effective stepout drilling has been accomplished from the drill stations on the ridge above Y Zone, Stew and I would like to see one drill moved to the bottom of the slope at the Y Zone exposure and set up there if at all possible, with drill hole direction being governed by the results of the drilling which had been completed from the ridge. We would also like to see the second drill from the ridge moved to the site of the new zone, should it have been confirmed as a porphyry occurrence and target. Again, we would be assuming that it would be possible to prepare a drill site at that location. The drilling from that station would be directed both into the rock face and downward into the canyon floor.

I have grave doubts that we would be able to complete this drilling program in the time which will be allotted to us during the coming short summer season. The program I have outlined has been based on the assumption that the early drilling and sampling confirms the existence of a favorable porphyry occurrence not only in the immediate vicinity of the Y Zone but also across the valley in the rock face exposure there. From a practical sense, I believe we might be accused here of grasping at straws. Be that as it may, only by basing our outline for the summer program on the most favorable results of the early drilling and sampling effort would we be prepared to carry out the necessary exploration effort with which to substantiate the existence of that important porphyry body for which we have been searching.

Mr. Gerry Clouthier  
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Without the favorable results of the early drilling, I am sure you will have to reduce the footage requirements which you have projected unless you have plans for additional drilling at other sites on the property.

I have been over your budget figures many times, and I have questioned myself as to the extent to which you have gone in cutting--to the bone--many of your cost centers.

You are working from the best figures that anyone could hope to have for ready reference--the experience figures and factors related to the last two seasons of work at Mount Ogden. I am sure you have cranked into your latest estimates all of the necessary inflation factors to bring them current.

I still feel that your overall estimated budget figures are on the tight side if they are to provide full opportunity for you to carry out an aggressive program of exploration and development at Mount Ogden this season. On the other hand, I am equally sure that you can live within these guideline figures by careful planning and supervisory oversight as the program progresses.

Sincerely,



Frank Coolbaugh

FC:ap

**FRANK COOLBAUGH**

8700 WEST 14TH AVENUE

LAKWOOD, COLORADO 80215

303 - 233-5290

April 18, 1980

Mr. Robert Hoye  
Vice President, Treasurer  
Omni Resources, Incorporated  
675 West Hastings Street, Suite 1409  
Vancouver, B. C. V6B 1N2  
CANADA

Dear Bob:

I would not normally care to make a positive judgment or evaluation of the potential of a property such as we are confronted with here, within the Omni Claim Group, without having had at least a cursory on-the-ground look. Circumstances have not made that possible, however, and I doubt that I could have come away from such a reconnoitering visit with any better feel for its potential or promise than by our assimilation of the data you have provided from the last two seasons of exploration work.

In Stewart Wallace's accompanying report he has certainly not been overly optimistic as to the probability of your encountering a sizable molybdenum orebody within this mineralized province.

As Stew had commented earlier to you and to me, because of the extremely difficult conditions which the exploration crews have encountered in their sampling of the mineralized exposures on the Mount Ogden property, the resultant data accumulation and the available representative rock and mineral specimens have been sketchy and of limited value in forming an accurate picture as to the potential of this property. Now after receipt and analysis of the latest data and rock samples, he feels that he can be somewhat more objective in his evaluation. However, he remains cautious because there have been so few encouraging signs of the presence of the necessary mineralizers and other conditions considered beneficial in the concentration and deposition of the mineral solutions into a sizable economic ore target.

While expressing his disappointment that the exploration effort to date has not turned up more promising leads to the

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presence of a large disseminated molybdenum ore deposit, I would interpret from his conclusions that this property still holds a certain fascination for him, as it does for me. Consequently, he is not recommending that the program be abandoned, but for the current season, at least, that a concerted drilling effort be carried out in the vicinity of the Y Zone where one small exposed rock face has indicated the existence of a porphyry body not heretofore encountered elsewhere on the property, and which might be considered as a favorable host rock for ore development. Except for the more-or-less crash drilling program in the Y Zone area for the purpose of delineating a sizable porphyry stock, Stew Wallace's only other recommendation would be to carry out a reconnaissance and mapping program in other areas of this property where favorable rocks have been exposed.

I endorse the findings and conclusions as contained in Stewart Wallace's report. He has put a lot of thought and study into this analysis in spite of the fact that there has been so little meaningful data to work with.

While I come basically to the same conclusions on Mount Ogden as Stew, I am inclined to be more optimistic as to its ultimate potential to encompass a viable orebody, given the necessary time and capital to complete the search. If Stew's analysis, on the other hand, had indicated that the proper geological environment just did not exist here for the formation of an orebody, I would have had no further interest or expectation for its development. Other than that, I have to be highly influenced by the fact that the occurrence of molybdenum is very widespread throughout the alaskite intrusive covering a large part of this property. After the effort and expense which has gone into this explorative campaign during the past two or three years, I would hate to see it left hanging without a more carefully directed search of its underlying structure. This is not to say that it could be accomplished quickly or without considerable additional expense. Drilling through the ice cap is like probing for the proverbial needle in the haystack. If from additional sampling of the alaskite intrusive above the snow line more porphyry intersections are revealed, drilling programs could be effectively directed to the location of any potential underlying ore zones. If any considerable amount of drilling was to be planned through the glacial ice, geophysical techniques would probably be required to determine bedrock depths.



Mr. Robert Hoyer  
Page three  
April 18, 1980

This project is both complicated and risky, but mining is generally considered to be a risk business; and where the stakes are high, as they are with this Mount Ogden venture, we should expect to be able to assume a reasonable number of risks in the performance of the exploration task.

Sincerely,

A handwritten signature in cursive script that reads "Frank Coolbaugh". The signature is written in dark ink and is positioned centrally below the word "Sincerely,".

Frank Coolbaugh

FC:ap

STEWART R. WALLACE

8700 WEST 14TH AVENUE  
LAKEWOOD, COLORADO 80215

(303) 233-0585

April 15, 1980

Mr. Gerry Clouthier  
Omni Resources, Incorporated  
675 West Hastings Street, Suite 1409  
Vancouver, B. C., V6B 1N2  
CANADA

Dear Gerry:

At last, and after having spent one week getting figures together for the dear old tax collector, I have finished my report on Mount Ogden and given it to Frank Coolbaugh. I'm sure that he will transmit this, along with a report on his own observations, in the very near future.

I would like to thank you very much for sending me GSC Memoir 362 and Map 1418A--certainly very useful, almost invaluable for "orientation," etc., and represent a tremendous amount of work by Souther. Are these for my files or should I return them to you? I am sending back the photographs, the thin section chips, and the thin sections--one of which I broke. I am very sorry about this. I did it before I even had a look down the tube and results from the fact that many of today's scopes "drive backwards" for old timers like me. Fortunately, I was able to use one of the larger pieces for study.

I hope my report is not too negative and that you and Bob Hoyer will find it useful. Good luck, and I look forward to the possibility of seeing you this summer.

Sincerely yours,



Stewart R. Wallace

SRW:ap

Copy to Frank Coolbaugh

RECOMMENDATIONS

Basic Program

1. Continue drilling at Y zone to the maximum capacity of the drill:

Y-1 is at 200.1 m and should be deepened to 609.6 m. 408.5 m

At least one more hole from this location to further test this area 609.6 m

2. The Y-zone area should be tested further to the east and probably the only available set-up will be on the glacier. If possible a 457.2 m. hole should be drilled approximately 450 m. east of Y-1. If difficulties are encountered with deep drilling through the glacier several shorter holes may have to suffice

457.2 m

3. A vertical hole should be spotted approximately 500 metres north of the N-zone portal on the glacier and drilled to a depth of:

457.2 m

TOTAL 1,932.5 m

(6,340 feet)

4. Geologic mapping and prospecting should be continued at a scale of 1:5000 with particular emphasis placed on mineral alteration distribution, structural orientations and intensities, and phase relationships and distributions within the alaskite.

Accelerated Program

1. A further 1828.8 m. of drilling in locations indicated by results of the basic program. Possible rehabilitation of adit for further drilling.
2. More extensive geologic mapping perhaps in more detail in areas of interest, and over a larger area.
3. Initiation of a basic ground surveying program using electronic distance measuring equipment to tie in claim markers and work areas.

*B. Taylor.*

PROPOSED BUDGET MOLY-TAKU PROJECT

Basic Program

Capital Costs - Misc. equipment and material to rehabilitate the base camp		16,000.00
Drilling - 6,000 feet of NQ @ \$40.00/foot		240,000.00
Helicopter - Contract Hughes 500D 250 hours @ \$360.00/hr.	90,000.00	
Misc. Supplies	1,000.00	
- 10 hrs. Bell 205 Helicopter for heavy lift @ \$800.00/hr.	<u>8,000.00</u>	
		99,000.00
Fixed Wing Aircraft		
- Beaver Aircraft 3 trips/week for 10 weeks @ \$333.00/trip	9,990.00	
- larger wheel and float equipped Aircraft from Whitehorse to Border Lake or Tulsequah	<u>8,000.00</u>	
		17,990.00
Mountaineering and Avalanche Control Consultants		
- 150 man days @ \$160.00/day		24,000.00
Camp Costs		
<u>Personnel</u>	<u>Days</u>	<u>Man Days</u>
4 Drillers	70	280
Geologist		100
Manager/1st aid		100
Cook		100
Cook		65
Assist. Cook		100
Pilot/Eng.		100
2 Mountaineers	75	150
Surveyor/Prosp.		100
3 Geol. Assist.	100	300
2 Prospectors	100	200
Other Personnel		<u>150</u>
		1745
@ \$20.00/day		34,900.00

Salaries

Permanent

1 Geologist 4 months 11,666.66  
1 Camp Manager 4 months 8,333.33

+ 15% Fringe 2,999.99

22,999.98

Temporary

Cook 100 man days @ \$75.00/ 7,500.00  
Cook 65 man days @ \$75.00/ 4,875.00  
Assist. Cook 100 man days @ \$50.00/ 5,000.00  
Surveyor Prosp. 100 man days @ \$65.00/ 6,500.00  
3 Geol. Assist. 300 man days @ \$50.00/ 15,000.00  
2 Prospectors 200 man days @ \$80.00/ 16,000.00

54,875.00

+ 15% Fringe 8,231.00

63,106.00

Engineering & Geological Consultants

60 days averaging 400.00 /day 24,000.00

Assaying

1000 samples @ \$10.00 each 10,000.00

Report Preparation and Assessment Fees

10,000.00

Vehicles

2 pickups @ \$600.00/month for 3.5 months 4,200.00

Personnel transportation to and from project

30 trips @ 350.00/trip 10,500.00

Contingencies

25,000.00

TOTAL

\$ 601,695.98

say \$ 602,000.00

Accelerated Program

Capital Costs	- Misc. equipment and material to rehabilitate the base camp	16,000.00	
	- Misc. expendable equipment for longer larger program	<u>10,000.00</u>	26,000.00
Drilling	- 12,000 feet of NQ and BQ wireline drilling @ \$40.00/foot		480,000.00
Helicopter	- Contract Hughes 500D 400 Hours @ \$360.00/hour	144,000.00	
	- Misc. Supplies 30 hours with Bell 205 @ \$800.00/hr	2,000.00 <u>24,000.00</u>	
			170,000.00
Fixed Wing Aircraft	- Atlin to Border Lake Beaver aircraft 39 trips (3/week) for 13 weeks	13,000.00	
	- Larger wheel and float equipped aircraft (DC-3 Otter) from Whitehorse to Border Lake or Tulsequah	<u>12,000.00</u>	
			25,000.00
Camp Costs			
	<u>Personnel</u>	<u>Days</u>	<u>Man Days</u>
	4 Drillers	100	400
	4 Drillers	30	120
	1 Geologist		120
	Manager/1st aidman		120
	Cook		120
	Cook		95
	Assist. Cook		100
	Pilot		120
	2 Mountaineers	105	210
	Surveyor/Prosp.		120
	3 Geol. Assist.	100	300
	2 Prospectors	120	240
	Other Personnel		<u>200</u>
			2265
	@20.00/day		45,300.00

Mountaineering and Avalanche Control Consultants			
- 210 man days @ \$160.00/day			33,600.00
Salaries			
Permanent			
1 Geologist	7 months	20,417.00	
1 Camp Manager	7 months	14,583.00	
	+ 15% Fringe	<u>5,250.00</u>	
			40,250.00
Temporary			
Cook	120 man days @ \$75.00/	9,000.00	
Cook	95 man days @ \$75.00/	7,125.00	
Assist. Cook	100 man days @ \$50.00/	5,000.00	
Surveyor/prosp.	120 man days @ \$65.00/	7,800.00	
3 Geol. Assist.	300 man days @ \$50.00/	15,000.00	
2 Prospectors	240 man days @ \$80.00/	<u>19,200.00</u>	
		63,125.00	
	+ 15% Fringe	<u>9,468.00</u>	
			72,593.75
Engineering and Geological Consultants			
120 days averaging \$400.00/day			48,000.00
Assaying			
1800 samples @ \$10.00 each			18,000.00
Report Preparation and Assessment Fees			15,000.00
Vehicles			
2 pickups @ \$600.00/month for 5 months			6,000.00
Personnel Transportation to and from the project			
45 trips @ \$350.00/trip			15,750.00
Surveying Contractor with surveyor, rodman			
and Electronic Distance Measuring			
equipment 10 days			
@ \$800.00/day		8,000.00	
Mob and demob expenses		<u>2,000.00</u>	
			10,000.00
Contingencies			<u>50,000.00</u>
TOTAL		\$	<u><u>1,055,493.75</u></u>
		say \$	1,060,000.00

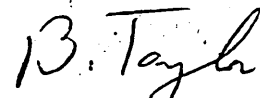
B. Taylor

CERTIFICATE

1, Bertram Taylor, hereby certify as follows:

1. I am a Geological Engineer residing at 1981 Hyannis Drive, North Vancouver district, British Columbia, V7H 2E5.
2. I graduated from the University of Saskatchewan in 1941 with a Bachelor of Science in Geological Engineering degree.
3. I am a Professional Engineer registered in the Province of British Columbia, Registration No. 7879.
4. I have practised my profession for 35 years.
5. I hold no direct or indirect beneficial interest in the Moly-Taku claims nor in the securities of Omni Resources Inc.
6. This report is based on personal knowledge, having worked on the ground for two months in 1979.

DATED at VANCOUVER, B.C. this 14th day of May, 1980.

  
B. TAYLOR, P. Eng.