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August 27, 1970

Mr. H. H. Armstrong, President
Vernon Mining Company
10417 - 14th Avenue S. W.
Seattle, Washington 98146

CH61100

Dear Mr. Armstrong:

As per your arrangement with Mr. Lawrence J. West, a consultant in our Seattle office, I visited your company's White Elephant mining claim on August 1 and 2, 1970. Mr. Jack Biggs accompanied me on August 1 during a reconnaissance examination of the old surface workings and the immediately adjacent area; and on August 2, I reconnoitered the neighboring terrain. I examined the former production data, photos, maps, and correspondence in detail, both before and after my visit to the property.

As you know, the mine workings are flooded to within ten feet of the surface and nothing remains of the surface plant. It is unfortunate that no plans of the underground workings are available to provide information on the direction and extent of the mine openings; even the surface exposures give little clue as to the actual strike of the mineralized outcrop. In fact, the geologic relationships at surface are quite obscure, although the dip of the vein may be inferred. A cross-sectional drawing in Mr. Brindle's 1949 report on the property obviously required up-dating at the time of writing, and so it is not very useful. Another more serious information gap exists in the absence of any sampling records and reliable assay data. Nevertheless, it is possible to make some evaluation of the mine.

Firstly, the mining history at this property is similar to many others of the same period (i.e., early 1930's) in that insufficient exploration and development work was done to determine ore reserves prior to putting a mill on the property. For example, no diamond drilling was carried out and, apparently, a flow sheet was not worked out before purchasing the milling equipment. Insufficient capital was generated because the stock issue was too small; this led to debt financing and - more seriously perhaps - little if

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any working capital was provided. I suspect that the ore body was "high-graded" to keep up the mill feed which leads to some doubt as to how much mineable ore remains in the present workings.

Secondly, in the absence of sample and assay records, I judge the grade of ore in the mill feed to have been in the range of 0.37 - 0.40 ounces per ton. This is good grade for a gold ore but I have no way of knowing how representative my figures really are, or whether this is the grade after sorting either on surface or underground. The figures are based on the old smelter returns and the mine superintendent's memorandum.

Thirdly, the geology of the area appears favorable to mineralization. The country rocks are mainly biotite-hornblende granite and granodiorite, cut by lamprophyric dikes. Faulting is present but the pattern is unknown. It would be important to determine which faults and/or dikes are post-ore, and which are pre-ore. The relationship of the quartz body to structural events is obscure but it might be determined by detailed field work.

The old reports indicate that the gold is associated with a bismuth telluride which, in turn, is associated with massive pyrrhotite and disseminated pyrite which occur within the quartz but close to the granitic wall rock. This is an important form of occurrence in other gold districts. The reports which I have seen make no mention of copper but specimens of granodiorite on the waste dump (which came from somewhere underground) contain minor amounts of chalcopyrite and possibly other copper sulphides.

I must admit that my first impressions on visiting the old mine site were discouraging. The history of gold-mining on a small scale has always been one of discouragement, and this is particularly true at the present time when there is likely to be only a small margin, if any, between costs of production and the fixed sale price. I speak with some knowledge as I was engaged in gold-mining for several years just prior to World War II.

Therefore, with such scanty information at hand in regard to your property, and particularly the underground portion, my first impression was that the property was uneconomic. However, I would revise my earlier opinion in view of the property's past, (though meagre), record of production; a favorable geologic environment; and a possibly significant association of mineralization. This

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opinion is reinforced by the relatively small amount of work actually done on a formerly productive deposit.

The key to the question whether or not the property has a production potential lies in determining the continuity of the gold-bearing quartz body. The records suggest two possibilities: (1) that the quartz is a pipe-like mass wholly confined within the granitic rock and thus limited in dimension and (2) that it is part of a definite fissure system related to faulting and/or dike intrusion which might lead to continuity of the gold-bearing host.

This is not a recommendation but merely a suggestion; if, bearing in mind the precarious nature of gold-mining, you wish to confirm the possibility of continuity of the quartz body, the only way to find out would be to dewater the mine workings and to map the geology underground and sample the workings. Having done that, you would then be in a position to undertake further exploration and development by surface work, diamond-drilling, drifting and cross-cutting, etc.

I estimate that dewatering, restoration of manways, installation of a small compressed air hoist, air supply, and a minimum mapping and sampling program would cost approximately \$15,000. This provides for the rental of necessary equipment (portable diesel generator and 25 kva set, compressor, truck, etc.), supplies, and wages for a two-or three-man crew, plus geologic costs.

If you wish to pursue such a program in anticipation of a more comprehensive exploration program based on an inspection of the workings, I would recommend that you obtain the services of a thoroughly experienced geologic consultant to guide your work. Dames & Moore would be prepared to recommend such an individual or firm, or we could undertake the assignment ourselves.

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I hope this letter, which should not be construed as a formal report, provides the information you sought in your conversations with Mr. West. I shall be pleased to amplify my statements should you have any questions concerning them.

Yours very truly

DAMES & MOORE

James M. Neilson, PhD, P.Eng.
Technical Advisor

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