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MEMORANDUM

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Economics & Planning Division

FROM THE Lorne Sivertson

DEPARTMENT OF MINES
AND PETROLEUM RESOURCES

VICTORIA, B.C., April 1, 1975

WHEN REPLYING PLEASE REFER
TO FILE NO.

Re: Imperial Metals & Power Ltd.
Iron and Coal Properties

I met today with James Ball, President of Imperial Metals and Power Ltd. of Vancouver. He came to Victoria to discuss his company's deposits of coal and iron ore situated between Princeton and Merritt, B.C.

Imperial has a deposit with 6.6 million tons of proven sub-bituminous coal and another 6.6 million tons of probable reserves. The coal apparently is low in volatiles and contains about 24 million BTU's per ton. It is not metallurgical grade and is thought to be ideal for use in cement plants, which are energy intensive and are now converting from gas and fuel oil to coal. Ball says that cement plants in the Vancouver area are now paying $1.70 MM BTU's and will consider conversion to coal if the price is about $1.00 MM BTU's. This means a delivered price of $24 per ton at 24 million BTU's per ton of coal. Ball believes he can get at least $20 per ton for his coal. That price would cover a mining cost of $4.35 per metric ton (a 1970 cost estimate which is probably somewhat higher now), a freight cost to Vancouver of $8.64 per ton (which is very high because CPR must improve their tracks to carry the material), capital recovery and a profit that Ball says could be no more than $1 per ton. The production rate would be 0.5 million tons per year for 15 years, which is too low to justify a unit train. It would be an underground mine. 092HSE 157

Ball says that Island Cement's new plant in the Lower Mainland will probably be coal fired and will require 300 thousand tons of coal per year. Columbia Cement in Bellingham, Washington are converting to coal and Imperial would like to supply them 100 thousand tons per year. The Bamberton, B.C. cement plant may convert to coal, taking another 200 thousand tons per year. The current price of fuel oil is $1.70 MM BTU's, or, $10.70 per barrel. A rise of $2 per barrel, which is expected, will put fuel oil at more than $2 MM BTU's which should encourage alot of conversion in old plants and new.

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Next Ball talked about his firm's magnetite deposit in the same general area. They have 93 million tons of proven reserves grading 17.3% iron and feel that they probably have another 500 million tons of additional reserves. There is almost no overburden for an open pit mining operation, the stripping ratio is .047 to 1 ton of iron ore. Estimated mining costs are in the 25-30¢ per ton range. Ball says Cleveland Cliffs have done a feasibility study on the deposit looking at: 1) production and shipment of iron concentrates; or, 2) production and shipment of iron oxide pellets; or 3) direct reduction and shipment of sponge iron at a rate of 900 thousand tons per year.

36% Fe in silicates not >17%
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+ titanium

Ball feels that there is a great opportunity in western Canada for a producer of sponge iron. At present there are electric steel furnaces with a capacity of 600 thousand tons in Regina; in Edmonton the capacity is 300 thousand tons; in Calgary 75 thousand tons; in Vancouver 120 thousand tons; and in Seattle 700 thousand tons. In total there is then an electric furnace capacity of 1.795 million tons in the west. All of this capacity is using scrap feed but could use sponge steel, which is desirable because of its purity. The resulting product could be used in applications where scrap based steel cannot. Ball feels that B.C. has a potential market of from 0.5 to 1 million tons of sponge steel in the west.

Ball says this route is infinity more intelligent than building a large 4-8 million ton per year BOF operation. He says that the only logical source for iron for a B.C. blast furnace would be Australia, 8,000 miles away, because it would be folly to depend over the long run on iron from South America. Further, he says B.C. or the west just do not have the markets for this much steel and most of it would have to be exported in a crude state. Higher fabrication is possible here, but then transportation costs get out of hand in export sales. In his opinion the Japannese want a steel mill here so we can absorb the smoke rather than the people in Osaka. A steel industry, he says, would have to be located in the Lower Mainland -- how else are you going to get workers -- and would be fairly dirty. The coking operation probably would be close by and coking is always extremely dirty.

Direct reduction on the other hand is clean, can be small scale, versatile and can be very competitive. The world is short of metallurgical grade coal reserves. This coal is now selling for $65/ton in Virginia. The conversion cost is maybe $6 per ton. With losses, that means coke at $80-$85 per ton. At .5 tons per ton of iron that is $40 alone for coke. Ball feels that increases in energy prices and coking coal prices will favor small scale direct reduction operations in the future. He says that even if all the new steel capacity that is built in the future is direct reduction, there will still be pressure on coking coal reserves.

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FEB 5/87 **TIFFANY RESOURCES INC.** (TFO-V) GCNL #25

GOLD-PLATINUM CLAIMS IN - TULAMEEN AREA ACQUIRED

92H General.

William B.Warke, president, announces that Tiffany Resources Inc. has acquired an option from Imperial Metals Corporation on the Lodestone property in the Tulameen - Lodestone Mt. belt some 18 miles west of Princeton, B.C. Tiffany has paid Imperial $20,000 and will advance 100,000 free trading shares of Tiffany, subject to regulatory approval. If these shares are not freely tradeable by Imperial by 27May87, Tiffany will pay a further $20,000 to Imperial. Imperial will retain the 100,000 shares. Tiffany will pay a further $1,500,000 in 5 instalments with the last on 27May91 and at that time will have 50% interest in the property. Tiffany may then elect to pay a further $500,000 by 11Feb92, to increase its interest to 75%. If Imperial subsequently elects not to participate in financing the project, it will be reduced to a 15% net carried interest.

The Lodestone property has long been known for its gold and platinum - bearing placer deposits in streams draining Lodestone Mountain and adjacent areas. Imperial has reported in the past that the Lodestone property contains proven and possible reserves estimated to be 205,970,000 tons averaging 17.56% iron and 3 pounds of vanadium per ton with interesting platinum values. The property comprises 47 claim units totalling 2,500 acres.

Mr.Warke says this acquisition complements the nearby, previously acquired J.D. group of six 2-post claims on which, during an examination, representatives of a major company cut a sample across 0.5 m of bedrock which assayed 0.128 oz.platinum/ton.

GCNL **TIFFANY RESOURCES INC.** (TFO-V) 092H SE 0[illegible]

PLATINUM SOUGHT NEAR PRINCETON

DEC 7/87

Tiffany has negotiated the sale of 650,000 treasury shares at 15.4¢ each by private placement, subject to regulatory authority approval. The company proposes to use the funds to explore a gold-platinum property on Lodestone Mountain, 35 kms northwest of Princeton, B.C. The prime soil sample anomalous area is 1,000 meters long by 600 meters wide. Within this anomalous zone platinum values up to 300 parts per billion and gold values up to 83 parts per billion were reported.

Tiffany has collected 3,000 soil samples on lines 100 meters apart with stations at 25-meter intervals. The follow-up soil sample survey confirmed consistent and constant platinum values over 1 km long and up to 100 meters wide each, with values of over 360 parts per billion platinum. The project has shown that native platinum and platinum-iron alloys are the main source of platinum on the Lodestone claims. 92H GEN

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The company has dropped claims held under option from John McAndrew on Vancouver Island but retains ground in La Ronge, Sask. and on Texada Island, B.C.

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GCNL 173 Sept 9/87

TIFFANY RESOURCES INC. (TFO-V)

WORK STARTS ON TULAMEEN RIVER PLATINUM PROSPECT

92H SE Gen

Wm.B.Warke, president, reports that Tiffany Resources Inc. has commissioned Dolmage Campbell & Associates to explore Tiffany's platinum properties in the Tulameen complex near Princeton, B.C. Joseph Chamberlain, Ph.D., P.Eng., a specialist in ultra mafic rock, will manage the project.

Work has started on the Lodestone properties and some soil samples have already been sent for assay. Work will start this week on the nearby R&D claims from which previous chip samples returned values up to 40% chromium and 0.128 oz.platinum/t.

Apr 8 '87 **TIFFANY RESOURCES INC.** (TFO-V) GCNL 69

TULAMEEN PLATINUM SEARCH PLAN

92 H Gen

092HSE 034

Dr.Jos.Chamberlain, P.Eng., consultant, has reported on the ultra basic rocks on the Lodestone property held by Tiffany Resources Inc. in the Tulameen area, B.C. He reported that a major iron body occupying 10% of the holdings includes a large tonnage of titanium and vanadium with traces of platinum group elements. He recommends exploration of the balance of the 90% of the property seeking the cooler margins of the ultramafic body where accumulations and enrichments of platinum group metals could occur. A program will be planned and started as weather conditions permit.

GCNL #202 Oct.22/75 IMPERIAL METALS AND POWER LTD. NTS 92H / NE

STUDIES CONTINUE ON IRON & COAL DEPOSITS -- At the annual meeting of Imperial Metals and Power Ltd. on Oct.15/75, directors were re-elected: James Ball, president, owning 167,867 shs.; Douglas L.Price, 91,516 and Chester F.Millar, 84,017.

In presenting financial statements for the year to 30Apr75, Mr. Ball reported that, although no substantial progress had been made toward early production, the company continued to hold in B.C. and Alberta major, proven reserves of both coal and iron - resources that are continually increasing in value.

At Tulameen in the Princeton area, B.C., Imperial Metals & Power hold the Tulameen coal deposit and the Lodestone iron deposit. Mr. Ball said that, because low cost natural gas continued to be available in B.C. and because the cost of converting large oil-burning plants to coal is high, the market for thermal coal in B.C. has not been as strong as it appeared a year ago. Thus, the anticipated development of Tulameen coal has not yet been achieved. 092HSE173 The fuel value of washed Tulameen coal equivalent to natural gas at the base interruptible rate of about 65¢ per million BTU's is less than $15 per short ton(2,000 pounds). The value of the coal equivalent to heavy fuel oil at 30¢ per imperial gallon is about $38 per ton. However, in the northwestern U.S., conditions are more favorable in that the gas price is much higher than in B.C. and the use of gas by heavy industry is severely restricted. A substantial market being apparent there, Imperial has requested B.C. government permission to export 550,000 tons per year to the U.S.

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Concerning the Lodestone iron property, leased to Dofasco, Mr. Ball noted that the B.C. government is now studying the feasibility of a mini steel mill using electric furnaces charged with mixed scrap and sponge iron. He says he believes the Lodestone would be the best source of the iron units. Noting that about 9 1/3 pounds of vanadium pentoxide are present in each short ton of iron concentrate from the Lodestone property, Mr. Ball said the increasing demand for vanadium as a steel-strengthing alloy improves the possibility of a by-product operation.

Of five iron leases previously held in the Clear Hills area of the Peace River district of Alberta, Imperial retain three on which are proven reserves of 226,750,000 tons grading 34% iron. Mr. Ball reported that testing of this material for possible methods of steelmaking is expected to be completed by federal and Alberta government agencies by October 1976.

Regarding the Merritt coal, Mr. Ball said that the future need for energy will ensure its ultimate development, but, being mineable by relatively expensive underground methods, it appears less profitable to develop at present than Tulameen coal.

In the year to 30Apr75, $1,500 were received. Applied were $41,799, the chief items being shown as $45,940 exploration(largely $40,052 property lease, license and tax payments) and $38,463 administration from which were deducted receipts totalling $41,224, mostly $40,000 lease revenue. The $40,299 excess applied, reduced working capital to $12,813 at 30Apr75 when 3,526,298 shs. were outstanding, unchanged at 15Sep75.

IMPERIAL METALS & POWER LTD.

MERRITT COAL PROPERTY OPTIONED TO SHELL CANADA RESOURCES -PROGRESS ON PRINCETON COAL OPTION REPORTED - Shell Canada Resources Ltd. have been granted an option on the Merritt,B.C. coal property of Imperial Metals & Power Ltd. A tentative agreement has been reached regarding Imperial's Peace River iron leases in Alberta. Cyprus Anvil Mining Corporation are continuing their development work on Imperial's Tulameen,B,C, coal property.

Imperial's president James Ball says,"These agreements with major companies which have the financial strength to develop and bring the properties into production will provide the company with a significant amount of working capital, a continuing income, and may provide very substantial royalty income in the future."

Under the agreement,Shell can purchase the 1,250-acre property located adjacent to and immediately south of Merritt for $100,000 plus a royalty of one-twentieth of the selling price or $1.00 per share whichever is greater. The agreement also provides that if Shell should mine coal from property outside the property optioned from Imperial, but in the area, then Shell willpay to Imperial a royalty of 10¢ per ton on that coal mined. Shell is also to pay a royalty to previous lease holders in the amount of 5¢ per ton.

Shell has paid Imperial $25,000 in consideration for granting the option and will also pay $25,000 on or before Nov.1, of each year until it exercises the option. During the term of the option and until production from the property, Shell will also make advance royalty payments of $25,000 on Dec.31 of each year from 1979 to 1982 and $50,000 on Dec.31,1983 and each year thereafter until commercial production. The advance royalty payments will be deducted from future earned royalties but not so as to reduce payments to less than $50,000 per year.

Cyprus Anvil Mining has completed 4,859 feet of diamond drilling in 12 holes on the Tulameen thermal coal property near Princeton, B.C. held under option from Imperial Metals. Tonnage potential in the area drilled is from 7,000,000 to 10,000,000 metric t ns with stripping ratios ranging from 2.1 to 1 to 3.5 to 1. Areas south of Mullin's pit and on the southeast side of the basin were mapped and prospected and continuity of the main seam is indicated. Followup investigation of these areas is planned for 1978. Washability and recovery methods are being investigated and basic data are being assembled for a feasibility study. Preliminary pit layouts are being studied and consultants have been engaged to prepare preliminary designs for a washing plant and the required services.

Mr.Ball also reported that a tentative agreement has been reached with a corporation having the financial strength and incentive to develop this resource. It is expected that provisions of the tentative agreement will be met and a firm commitment obtained early in 1978.

The president concludes by stating,"The company now seems reasonably assured of receiving an annual income in the form of rental and prepaid royalties which will more than cover its administration, corporate and property expenses, and it will earn a modest annual profit from these sources. If one or more of the properties is brought into production, profits could be substantially increased and would probably be sustained for a long time."

During the six months ended Oct.31,1977 the company received $5,245 new funds from rental recovery,etc. spent $27,420 on exploration and development and ended the period with a working capital of $13,065 .