

Property File

092GNW081

Sechelt Carbonate

APPENDIX A

008163

**Magnetherm Process for Magnesium
Capital and Operating Cost Estimates**

Prepared for

CANDOL DEVELOPMENTS, LTD.

Bechtel Job No. 18289



*Bechtel, Inc.
San Francisco*

May 1986

(EXCERPTS ONLY - COMPLETE REPORT AVAILABLE UPON REQUEST)

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CANDOL DEVELOPMENTS LTD. BUSINESS PLAN

SUMMARY

Candol Developments Ltd. (Candol) is an industrial minerals company with a new discovery containing large amounts of calcite and dolomite. The property has geologic reserves of 117,500,000 tons of magnesian dolomite and 27,000,000 tons of calcite with an estimated retail value of \$7.45 billion (CDN).

The property is unusual for several reasons. It has large reserves, high quality, a strategic location and two premium products that can be produced from the same mining operation. Candol is conducting development feasibility studies on the deposit which is located near tidewater about 40 miles north of Vancouver, near Sechelt, British Columbia. The reserves are exposed on the surface and could be inexpensively mined. No reserves of similar quality are known to exist in the Pacific Northwest region.

A preliminary assessment has been completed by Bechtel for a magnesium smelter which would utilize the dolomite resource as magnesium ore. The preliminary assessment assumed an initial production rate of 15,000 tons of magnesium metal per year. Indicated annual net revenues would be approximately \$10 million (CDN) per year. The production rate would be expanded to 50,000 tons per year, increasing with net revenues to \$34 million. Major factors in the projected profitability for the magnesium smelter are the high magnesium content of the dolomite and the availability of very low cost electric power in British Columbia.

The Sechelt property is also an outstanding source of calcite for industrial applications. Marketing work indicates that calcite products which could be produced from the property would have quality and delivered cost advantages over existing sources of supply, especially in the high value specialty filler markets. Profits from a modest initial production level are projected to be \$2 million (CDN) per year, with growth in annual profits to \$7 million within a few years.

Results of the Bechtel magnesium study will be incorporated into an ongoing project feasibility determination, and will be coordinated with product and marketing feasibility studies for the calcite. A decision to develop the project is expected by February, 1987. The first industrial minerals production could begin by 1988. Initial magnesium production could begin during the second half of 1989.

In anticipation of favorable results from the project feasibility studies, Candol has acquired a strong management team with international experience. The Corporate management has experience in the evaluation and development of large projects and in marketing. With the recent addition of Bechtel Inc. as Candol's primary project consultant, Candol can benefit from Bechtel's broad range of engineering, construction and project financing expertise.

The following is a projected 10 year cash flow summary. It should be noted that the projection is based on development of only the Sechelt property. Candol intends to acquire and develop additional complementary projects.

The property has key advantages. It is only about three miles from tide water. It is in an area of established infrastructure; and it will be able to utilize low cost British Columbia electric power from a transmission grid which crosses the property. With the report from Bechtel and the calcite marketing information, Candol management believes it is now in a position to obtain major financing to allow formal feasibility evaluations and prompt development.

COMBINED INDUSTRIAL MINERALS AND MAGNESIUM

CASH FLOW TO 1995 (000'S 1986 CDN\$)

| | 1987 | 1988 | 1989 | 1990 | 1991 |
|----------------------|---------|--------|---------|---------|--------|
| Magnesium | -0- | -0- | 5,124 | 10,248 | 10,248 |
| Industrial Minerals | (2,760) | 2,448 | 1,068 | 3,948 | 2,568 |
| | ----- | ----- | ----- | ----- | ----- |
| Combined Cash Flow | (2,760) | 2,448 | 6,192 | 14,196 | 12,816 |
| Cumulative Cash Flow | (2,760) | (312) | 5,880 | 20,076 | 32,892 |
| | | | | | |
| | 1992 | 1993 | 1994 | 1995 | |
| Magnesium | 20,496 | 20,496 | 34,160 | 34,160 | |
| Industrial Minerals | 5,448 | 4,068 | 6,948 | 6,948 | |
| | ----- | ----- | ----- | ----- | |
| Combined Cash Flow | 25,944 | 24,564 | 41,108 | 41,108 | |
| Cumulative Cash Flow | 58,836 | 83,400 | 124,508 | 165,616 | |

1:0 INTRODUCTION

Candol Developments Ltd. (Candol) is a new Pacific Rim oriented industrial minerals company which is evaluating, for development, a large high quality calcite and dolomite property 40 miles north of Vancouver, British Columbia near the town of Sechelt. The Sechelt property has several advantages which make it an excellent industrial minerals deposit and an attractive site for a magnesium production facility.

1.1 Location and Access

The property is located in southwestern British Columbia on the Sechelt Peninsula about 57 kilometres (42 miles) northwest of Vancouver. The property, about 4,000 acres in size, consists of 63 mineral claim units as follows:

| Mineral Claims | Units | Record Number |
|----------------|-------|---------------|
| Plain | 18 | 92 |
| Till | 20 | 1140 |
| Zinc | 9 | 1226 |
| Base | 12 | 1225 |
| Adit 1 | 1 | 1177 |
| Adit 2 | 1 | 1178 |
| Adit 3 | 1 | 1179 |
| Adit 4 | 1 | 1180 |

In addition to the mineral claims comprising the Property, the Issuer has applied for leases in the Land Recording District of New Westminster with the Ministry of Lands, Parks and Housing of British Columbia for the express purpose of dolomite and limestone exploration.

The property is currently in good standing. Present access to the Property is 10 kilometres from Halfmoon Bay on paved road and on gravel logging road. Halfmoon Bay is 35 kilometres by paved highway from Langdale which is served by ferry from Horseshoe Bay near West Vancouver.

The Property is about 750 to 1000 metres above sea level on a gently rolling plateau of the Caren Range hills. The annual mean temperature is about 10 degrees centigrade (50 F). Precipitation is moderate.

There is infrastructure in the area for mining and development. A high voltage transmission line crosses the Property. Timber and water are available for construction on the site. Labour, materials, equipment, transport and communications are all available at Halfmoon Bay or in Vancouver. Adequate accommodation is available in the area.

2.0 GEOLOGY

The basic formations on the Property are Coast Range Intrusives of granodiorite, quartzdiorite, metasediments and metavolcanics, locally designated as the Jervis Group of the Triassic Period. The geological units have northwest strikes and steep dips to the east.

2.1 Industrial Minerals Geology

On the surface of the Property, widths of limestone and dolomite of 150 metres or more are exposed, with the member strata extending along strike for two to three miles. Outcrops are common because the dolomite is erosion resistant. Generally, the overburden is shallow. Shallow peat and clay deposits occur in the low lying areas.

2.2 Reserves

Bechtel has reviewed reserve and quality information which was completed on the property by Wright Engineers, Waymark Engineering and Kaiser Resources. Follow-up reserve evaluations, which were recommended by Bechtel, will be conducted in the summer and fall of 1986. Surface geology, summarized in a September, 1983 report of Wright Engineers Ltd., an independent engineering firm, indicates probable reserves of 117,500,000 tons of dolomite and 27,000,000 tons of calcite.

The "indicated" and "inferred" reserves, reported in the Wright Engineers Limited study, projected the outcrops to a minimum depth of 50 metres and to a more probable depth of 300 metres respectively on the basis of strata sequences and dip angles observed on the surface. The projected reserves are as follows:

Geological Reserves (tonnes)

| Mineral | Indicated | Inferred | Total |
|-----------|------------|-------------|-------------|
| Dolomite | 17,500,000 | 100,000,000 | 117,500,000 |
| Limestone | 7,500,000 | 20,000,000 | 27,500,000 |

The reserves extend under thin alluvial cover and are very probably greater. These reserves are surface exposed and therefore, minimal stripping will be involved.

A drilling program of 2,800 feet has been completed to verify the extensive surface sampling and the cores have been assayed. The results of this program have been reviewed by Bechtel, Inc.

2.3 Reserve Quality

The assays of composite chip samples taken from outcrops indicated better than "high purity" dolomite and calcite quality. Wright Engineers Limited collected a group of five composite chip samples in the field at various locations. The assay results for the dolomite are as follows:

| Mineral | S A M P L E S | | | | | Average | "High Purity" Limit | Theoretical Max. Purity |
|----------------------|---------------|--------|--------|--------|--------|---------|---------------------|-------------------------|
| | A | B | C | D | E | | | |
| MgO | 21.40 | 19.90 | 17.10 | 18.20 | 21.80 | 19.68 | 20.70 | 21.81 |
| CaO | 31.60 | 31.00 | 30.20 | 34.20 | 31.80 | 31.76 | 29.80 | 32.60 |
| SiO2 | 0.40 | 1.03 | 0.70 | 0.89 | 0.98 | 0.80 | 1.30 | --- |
| Fe2O3 | 0.42 | 0.43 | 0.36 | 0.42 | 0.37 | 0.40 | 0.70 | --- |
| Al2O3 | 0.57 | 0.59 | 0.89 | 0.76 | 0.78 | 0.72 | 2.00 | --- |
| Na2O | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.05 | --- |
| K2O | 0.01 | 0.01 | 0.05 | 0.02 | 0.01 | 0.02 | 0.05 | --- |
| Others | 0.64 | 0.83 | 0.66 | 0.84 | 0.84 | 0.76 | 0.90 | --- |
| L.O.I. | 44.94 | 46.12 | 50.02 | 44.65 | 43.40 | 45.84 | 44.50 | 45.60 |
| | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Purity of CaMg(CO3)2 | 97.94 | 97.09 | 97.32 | 97.05 | 97.00 | 97.28 | 95.00 | 100.00 |

Wright Engineers Limited have stated that based on these samples, to the best of their knowledge, there are no known dolomite deposits of equal quality in the western United States or western Canada.

The analyses also confirm the high purity of the calcite.

Typical laboratory analyses for the calcite are as follows:

| | |
|--------|-------|
| CaO | 55.3% |
| MgO | 0.5% |
| SiO2 | 0.7% |
| R2O3 | 0.2% |
| L.O.I. | 43.3% |

3.0 LOCATION ADVANTAGE OF THE PROPERTY

When quarried and processed, the dolomite and calcite have various applications including use in plastics, paint, paper, glue, explosives, adhesives, ceramics, glass, gum and the coating

market. The Sechelt deposit has a projected transportation cost advantage to Pacific Northwest manufacturers of these products over competitive high grade calcite and dolomite deposits. High quality limestone, a source material for several industrial products, is very rare in the Pacific Northwest, especially near low cost tidewater transportation. Some of the high grades of calcite which are consumed for use as fillers in paint and plastics, as filler and coating for paper, and for several other specialty uses are imported into the Northwest from the Midwest and the East Coast because similar grades of product are not currently available in the Northwest. The shipping distances involved add as much as 100 dollars (CDN) per ton to the initial prices which range from 55 to more than 275 dollars per ton. Products sold from the Sechelt property should be able to use the transportation cost advantage to Northwest consumers to gain market share and to establish favorable sales prices.

3.1 Quality Advantage of the Property

The Sechelt property also has a projected quality advantage over the limited number of current Northwest producers which supply specialty calcite markets. Some consumers are utilizing lower quality Northwest calcium carbonate in place of the preferred higher quality products, to avoid the high transportation costs and thereby reduce manufacturing costs. It is likely that high quality calcite products from Candol's property would displace these local sources of supply because of Candol's higher projected quality and consequent better product performance. The superior quality of the Sechelt products will also give them a performance edge and marketing advantage in other industries which consume calcium carbonate, such as glass factories, rubber mills and the fertilizer industry.

4.0 INDUSTRIAL MINERAL FILLERS

Mineral fillers are finely ground materials used in a wide range of industrial applications as low cost additives to enhance the physical properties of many commercial products and to increase their bulk. They include minerals such as kaolin, silica, talc, limestone and dolomite.

4.1 Carbonate Fillers and Their Uses

The carbonate minerals are the most extensively used mineral fillers, finding application in a large variety of industrial products. Calcium carbonate, often referred to as limestone or calcite, is CaCO_3 . Dolomite is $\text{CaCO}_3 \cdot \text{MgCO}_3$, a combination of calcium carbonate and magnesium carbonate. The ratio of calcium to magnesium can vary considerably in dolomite.

High purity white dolomite could substitute for calcium carbonate in most filler uses, as it commonly does in Europe, but North American preference has rather arbitrarily favoured calcium

carbonate.

The three prime attributes of carbonate fillers that determine their usefulness in industrial applications are:

1. particle size (fineness) and shape
2. whiteness (brightness)
3. mineralogical and chemical purity

Because of its purity, the Candol deposit has the potential to produce a range of calcium carbonate and dolomite products differing primarily in fineness and brightness. The following table lists some uses for carbonate products of increasing fineness:

| | | |
|-------------------|---|---|
| Dolomite products | 2" minus 30u - 40u * | aggregate soil conditioning |
| Calcite products | 2" minus 30u - 40u 15u 20u 3u 1u | aggregate adhesives, field marking coatings coatings, paper paints, caulks plastics, paper |

*u = micron = 0.001 millimeters

In addition, finely ground and classified carbonate has applications in rubber, vinyl floor coverings, glue, pesticides, explosives, wire insulation, dentifrices, baking powder, ceramics, glass and chewing gum.

4.2 The Fillers Market

The industrial fillers market is in fact several markets, the main ones being plastics and paper. Most of the filler markets are growing at up to 10% per year, with plastics at up to 15% and more. The plastics industry uses 5% by volume of calcium carbonate, with a potential to increase calcium carbonate content to as high as 40%. The use of fillers in plastic lowers the usage of more expensive petroleum based materials and adds certain desirable characteristics to the plastic product.

The paper industry uses kaolin as a paper filler and coating. Some paper is 30% kaolin. In recent years, the paper industry has begun partial replacement of kaolin clay by calcium carbonate as a paper filler. Such a replacement requires a large capital expenditure by the paper companies which is offset by lower operating costs, stronger paper and fewer environmental problems. Experts believe that eventually calcium carbonate filler could capture 30% to 40% of the paper filler and coating market. This industry will be a major consumer of high priced high brightness calcium carbonate, such as can be produced from the Candol

deposit.

4.3 Candol's Market

Candol's industrial minerals market area initially will be British Columbia, Alberta, Washington, Oregon and California. Once established in these regions, the Company will extend its marketing to other Pacific Rim countries, and possibly Europe.

The following industrial minerals market summary is being revised. Although initial projections, given below, of penetration into mid-continent markets may be optimistic, the projection for U.S. West Coast markets may be conservative.

The following table is a seven year estimate of total market area consumption of specialty carbonate products. Some of the figures will be updated as additional market studies are completed. The paper filler market, for example, already exists, is growing, and has considerably higher prices than the charts indicate.

| | | TOTAL CONSUMPTION (1000 Tons) | | | | | | |
|----------|----------|-------------------------------|------|------|------|------|------|------|
| REGION | USE | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 |
| BC/Alta | General | | | | | | | |
| | Fillers | 80 | 84 | 88 | 93 | 97 | 102 | 107 |
| | Coatings | 16 | 18 | 19 | 21 | 23 | 26 | 28 |
| | Plastics | 1 | 1 | 1 | 2 | 2 | 3 | 3 |
| | Drywall | 10 | 11 | 12 | 13 | 15 | 16 | 18 |
| Man/Sask | General | | | | | | | |
| | Fillers | 50 | 53 | 55 | 58 | 61 | 64 | 67 |
| USA | Fillers | 250 | 268 | 286 | 306 | 328 | 350 | 375 |
| | Paper | 0 | 0 | 0 | 0 | 0 | 200 | 200 |
| | | --- | --- | --- | --- | --- | --- | -- |
| TOTAL | | 407 | 435 | 461 | 493 | 526 | 761 | 798 |
| | | === | === | === | === | === | === | === |

Note: drywall includes adhesives and field marking
general fillers are ground dolomite.

The company estimates the Asian market to be at least double the above market and the European market to be larger again. Access to deep sea shipping and barging facilities will make entry by Candol into these markets feasible.

4.4 Projected Shipments

The following table indicates Candol's projected annual market share by region.

| CANDOL MARKET SHARE (%) | | | | | |
|-------------------------|------|------|------|------|------|
| REGION | 1987 | 1988 | 1989 | 1990 | 1991 |
| BC/Alta | 20 | 30 | 40 | 50 | 50 |
| Man/Sask | 10 | 15 | 15 | 15 | 15 |
| USA | 10 | 15 | 15 | 15 | 15 |

Applying the above market shares to the total market consumption set out in Section 4.3, the company has forecast the following annual shipments. In addition the Company expects to obtain a major portion of the paper market as it develops in the Pacific Northwest. The paper market is expected to be a major growth market within the next few years. None of the above figures include sales to the cement industry or of bulk construction aggregates for roads and general construction. Further, the above does not include the various ranges of by-products produceable from the crushing plant as the crushing operation is undertaken. These include stucco chips, plaster sand, white sand and architectural stone.

CANDOL SHIPMENT FORECAST (1000 tons)

| REGION | PRODUCT | 1988 | 1989 | 1990 | 1991 | 1992 |
|----------|-----------------|------|------|------|------|------|
| BC/Alta | General fillers | 18 | 28 | 39 | 51 | 54 |
| | Coatings | 4 | 6 | 9 | 13 | 14 |
| | Plastics | 1 | 1 | 1 | 1 | 2 |
| | Drywall | 2 | 4 | 6 | 8 | 10 |
| Man/Sask | General fillers | 6 | 8 | 9 | 10 | 10 |
| USA | Fillers | 29 | 46 | 49 | 53 | 56 |
| | Paper | 0 | 0 | 0 | 100 | 100 |
| | | --- | --- | --- | --- | --- |
| TOTAL | | 60 | 93 | 113 | 236 | 245 |
| | | === | === | === | === | === |

These products have the following F.O.B. selling prices.

| PRODUCT | FINENESS (MICRONS) | #C/TON |
|-----------------|--------------------|--------|
| Plastic | 1 | 260 |
| Coatings | 3 | 180 |
| | 10 | 140 |
| | 15 | 110 |
| Paper | 1-10 | 70 |
| Adhesives | 30-40 | 70 |
| Field Marking | 30-40 | 70 |
| General fillers | 30-40 | 70 |

4.5 Competition

The following companies are considered to be Candol's competitors:

| | |
|-------------------------|--------------------|
| J. M. Huber Corporation | Seattle, Wa. |
| Imasco | Surrey, B.C. |
| Imasco | Creston, B.C. |
| Pfizer Industries | Lucern Valley, Ca. |
| Omya | Lucern Valley, Ca. |
| Georgia Marble | Georgia |
| Thompson & Weinman | Georgia |

Results to date indicate Candol has a superior quality rock to that of its Northwest competitors. It is whiter and brighter, and contains less silica and iron. In addition, the plant may be located in a "Special Enterprise Zone" set up by the Provincial Government. Such a zone has lower energy costs, reduced tax base and low land costs. Transportation costs will be lower to the marketplace than those of the American competitors. Additionally, currency exchange rates are currently very favourable for Canadian exports.

Two of Candol's above-mentioned competitors have expressed interest in purchasing crushed rock from Candol for their own finished products.

5.0 PROPOSED MAGNESIUM SMELTER

In addition to the calcite, the Candol property contains a very large reserve of magnesium-rich dolomite which is a potentially inexpensive source of magnesium metal. The mineable dolomite could exceed 100 million recoverable tons, and could supply a new magnesium smelter. Approximately 10 tons of dolomite will produce one ton of magnesium metal. Research by Wright Engineers Ltd. indicates that there are no known dolomite deposits of equal quality in the Western United States or Western Canada.

Because magnesium smelters are energy intensive, the combination of high magnesium content, the location of the property near tidewater infrastructure, and the availability of low cost power in British Columbia gives Candol's dolomite project a potential advantage over other sources of magnesium. Interest in participating in the magnesium project has been expressed by major companies. Candol recently authorized Bechtel Civil & Minerals, Inc. to conduct an initial magnesium production feasibility study, for an initial magnesium production rate of 15,000 tons per year. This production rate can be expanded to 50,000 tons per year.

5.1 Magnesium Markets

World magnesium production in 1985 was 330,000 tons. The current price is \$2.04 (CDN) per pound. Projections for magnesium are for significant future growth in consumption:

Magnesium and its alloys, offering light weight and strength, have evolved as substitutes and colleagues of aluminium in die casting and structural applications, along with uses in ductile iron reduction processes.

The aluminium industry is the largest single consumer of magnesium, accounting for about 57% of the total market for use in aluminium based alloys.

Alloys with aluminium and cast iron contain about 10% magnesium to increase strength, hardness, ductility and corrosion resistance. Aluminium soft drink cans contain 1.9% magnesium. Light weight structural parts in automobiles, bicycles and aircraft account for 25% of magnesium usage. New applications in these markets are continually being developed. For example, magnesium is used in automobiles for wheels, housings, covers, brackets and crankcases.

5.2 North American Competition

There are four producers of magnesium in North America as listed below.

| | COMPANY | LOCATION | CAPACITY |
|----------|-----------------------|-----------------|--------------|
| Canada - | Chromasco Limited | Hawley, Ont. | 10,000 tons |
| USA - | Dow Chemical Co. | Freeport, Texas | 120,000 |
| | Amax Specialty Metals | Rowley, Utah | 27,000 |
| | Northwest Alloys Inc. | Addey, Wash. | 24,000 |
| | | | ----- |
| | Total capacity | | 181,000 tons |

The American Magnesium Co. plant in Snyder, Texas is no longer in operation because of age and obsolescence. Many of the other plants are old and inefficient with high manpower requirements.

5.3 Candol Advantages for Magnesium Production

Although there is abundant dolomite throughout the world there are few deposits as high grade as Candol's and fewer yet located on tidewater. The key cost factor in economic magnesium production is the price of energy. The production of magnesium metal is energy intensive and future industry expansion favours Canada, and in particular British Columbia, with its low cost energy. Energy costs in British Columbia are among the lowest in the world. For example, the industrial rate of electricity is approximately \$0.0279 (CDN) per kwh compared to costs which are two to four times higher throughout the USA. Electricity in British Columbia can be obtained for as low as \$0.02 per kwh in selected circumstances. The Candol smelter may qualify for this very low cost power. Candol will use this energy cost advantage to enter the magnesium market.

5.4 Bechtel Cost Estimate for Magnesium Production

A cost estimate has been completed by Bechtel for an initial 15,000 t/yr magnesium facility. The cost estimate which was preliminary and generalized in nature, used conservative assumptions and was still very encouraging in its conclusions. The estimate projected capital costs of approximately \$82 million (CDN) for the 15,000 ton facility and operating costs of \$1.21 per pound of magnesium. Bechtel estimated a capital recovery cost, at 18%/yr, of \$0.49 per pound. The result showed a potential profit margin of \$0.34 per pound of produced magnesium. The 15,000 ton initial plant could thus have an annual profit of \$10.2 million.

Candol believes two factors can potentially improve the project cash flow further. First, refinement of the cost estimates during a detailed feasibility study can very possibly improve the profit margins from the generalized estimates. Second, it is Candol's intent to expand the 15,000 t/yr assumed production rate to 50,000 t/yr. This would increase the estimated annual profit to \$34 million, based on the \$0.34 per pound margin.

6.0 DEVELOPMENT SCHEDULE

Candol's current development schedule for the magnesium and industrial minerals projects includes planned completion of prefeasibility studies before September of 1986, and of final feasibility determinations by February of 1987. If the final feasibility determinations support the initial studies,

development of the project can begin by summer of 1987.

6.1 Business Objectives

Preliminary evaluations of the carbonate industrial minerals markets, particularly the filler markets, have been favorable. The preliminary cost estimates for a magnesium smelter are also very attractive. Candol is conducting studies to determine the most effective and profitable ways to produce mineral products for these markets.

The corporate development schedule includes:

1. Completion of prefeasibility studies for the production of high quality carbonate products and for the magnesium smelter by October 1, 1986.
2. Completion of final feasibility studies for industrial minerals production and the magnesium smelter by February 1, 1987.
3. Initiation of on-site work by June 1, 1987.
4. Initiation of industrial minerals production by May 1, 1988.
5. Initiation of magnesium production by December 1, 1989.
6. Evaluation and development of additional business opportunities, which will compliment the Sechelt project, will be undertaken in an orderly manner. Management's ultimate goal is to build Candol into a diversified Pacific Rim resources company.

It is hoped that the tasks outlined in this development schedule can be completed in a shorter time frame, but it is also possible that portions of the schedule could be delayed.

7.0 MANAGEMENT

Initial economic assessments for both the carbonate production and magnesium smelter are very encouraging. Because of its commitment to push the project forward, Candol has acquired a strong, experienced management team with the background to complete the ongoing program and to bring the project into production. Candol's management has experience in evaluation and development of large projects and in marketing. With the recent addition of Bechtel, Inc. as Candol's primary project consultant, Candol can benefit from Bechtel's broad range of engineering, construction and project financing expertise.

The corporate Management is as follows:

Board of Directors

DONALD W. BUSBY, Chairman/Director

Since 1981, Mr. Busby has been a director and officer of several public mining companies trading on both the Vancouver Stock Exchange and NASDAQ. He is currently President of three mining companies. All with major North American gold discoveries. He is in charge of a \$40 million project to get one of these companies into production. Prior to this, Mr. Busby lived in South Africa and was chairman and Chief Executive officer of a private company supplying equipment and consulting services to the mining industry.

RAUNO K. PERTTU, President/Director

Mr. Perttu is a registered Engineering Geologist, with a Masters Degree in Geology from Portland State University. He has almost twenty years of international experience in mining, exploration and engineering geology. The majority of his experience was gained working in management of several large firms such as Kennecott Corporation, Pacific Power & Light and Gulf Minerals Resources Company. The last several years of his career have been in management positions.

ANTON HENDRIKSZ, Director

Mr. Hendriksz has a seventeen year background in the mining industry both nationally and internationally. Mr. Hendriksz started his career as a Chemical Engineer in South Africa and was intimately involved with all aspects of the South African mining and gold industry for approximately 10 years. Since emigrating to North America, Mr. Hendriksz was employed in a management capacity with two well known firms, Bateman Process Services and Bechtel Civil & Minerals, Inc. In early February of this year, Mr. Hendriksz left Bechtel to become President and Chief Operating Officer of North Lily Mining Company, a U.S. based corporation with several interesting mining properties.

OTTWIN SCHMIDT, Director

Mr. Ottwin Schmidt, a Chemist, specializing in industrial minerals, has for the past several years been President of Horizon Chemicals Ltd., an industrial chemical and filler sales and distributing company.

RUDOLPH C. RIEPE, Director

Mr. Riepe, a mining contractor is currently President of Pacific Dolomite Corporation and Bay Gravel Ltd. Mr. Riepe is responsible for originally acquiring the Sechelt property for CANDOL.

DARRYL J. YEA, Director

Mr. Yea, President of Western Ventures Corporation is a certified Management Consultant for the Province of British Columbia.

KENNETH MACLEOD, Director

Mr. MacLeod, an independent Engineering consultant is also president of Canadian & Overseas Management Corp., a company which performs management consulting for several companies trading on the Vancouver Stock Exchange.

GARY M. CAMPBELL, Director

Mr. Campbell is a practicing Vancouver Securities lawyer and a partner in the law firm of Holmes, Campbell & Greenslade.

GREGORY HOWE, Director

Mr. Howe is a practicing Attorney at Law and businessman in Portland, Oregon.

CORPORATE STRUCTURE

Corporate Headquarters

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8.0 10 MONTH BUSINESS PLAN

The table on page 19 summarizes Candol's intended development program for the period from June, 1986 through January, 1987. The program will complete the necessary feasibility work, project financing arrangements, and will initiate project construction.

The program is designed to minimize repetitious work and risk. Individual studies will build on previously completed work.

9.0 9 YEAR ECONOMIC PROJECTION

Although multi-year business projections are difficult to make accurately, a very generalized nine year cash flow projection is included to show Management's expectation for long term growth of the company. Both the industrial minerals and magnesium markets are growth markets. The carbonate filler market in particular is expected to grow much more rapidly than the general economy. Candol's limestone and dolomite deposit is very large and can accommodate major expansion. Candol's Management believes that a concerted effort should be made to establish market share and to expand with the market.

Although the following projection is limited to development of the Sechelt property, Candol's management is confident that other properties and business opportunities will be identified, acquired, and placed into production in the nine year period. The projection is therefore believed to be a conservative projection.

10.0 PROJECT FINANCING

The ten month budget on page 19 summarizes Candol's program to complete project feasibility. The budgeted cost to completion of the prefeasibility studies will be approximately \$500,000. The studies will be completed in September of 1986. The final feasibility determination will cost an additional \$1.5 million and will take an additional five months to complete. As in most projects of this type, it is very unlikely that the additional \$1.5 million of feasibility work, which will be necessary to obtain bank financing, will change the prefeasibility determinations.

Candol will obtain the required financing to complete the feasibility work through a series of private placements or a secondary underwriting. Upon completion of the prefeasibility determinations, Candol will have the option to either bring in a joint venture partner which would provide the subsequent feasibility and development financing, or to continue independent development. The independent development would consist of raising the \$2 million for the feasibility studies by the above mentioned methods, to complete a bank financing document. Upon completion of the document, Candol would obtain bank financing with the assistance of Bechtel Civil & Minerals, Inc.

Because the calcite industrial minerals development and the magnesium development are separate projects, Candol will consider them independently. Only a small portion of the feasibility

costs will be for the calcite evaluation. Additionally, the calcite operation can be developed for a total cost of approximately \$2 million, and can be in production in less than one year. Because of the low cost of initiating industrial minerals production, Candol will consider the alternative of joint venturing the magnesium development and independently developing the calcite.

11.0 STOCK DATA (June, 1986)

Trading Symbol CJD - V

| | |
|-------------------------------|----------------|
| Shares Authorized | 10,000,000 |
| Shares Issued | 3,350,000 |
| Shares Free-trading | 2,475,000 |
| Shares Restricted | 875,000 |
| 1986 (to date) Price Range | \$.45 - \$1.95 |
| Present Market Capitalization | \$ 5,360,000 |

CANDOL DEVELOPMENTS LTD.
DRAFT 10-MONTH BUDGET PLAN

| | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Cost to Feas' lty |
|---------------------------|-------------|-------------|--------------|--------------|--------------|--------------|----------------|----------------|----------------|----------------|-------------------------|
| Engineering | | | | | | | | | | | |
| Mag study | | | 41.4 | | | 27.6 | 41.4 | 55.2 | 41.4 | 41.4 | 248.4 |
| Ind min | | | | 13.8 | 41.4 | | 27.6 | 41.4 | 27.6 | 6.9 | 158.7 |
| Feasibility | | | | 13.8 | 27.6 | | | 6.9 | 13.8 | 27.6 | 89.7 |
| Permit/envir | | | | 13.8 | | 13.8 | 13.8 | 27.6 | 55.2 | 13.8 | 138.0 |
| | 0.0 | 0.0 | 41.4 | 41.4 | 69.0 | 41.4 | 82.8 | 131.1 | 138.0 | 89.7 | 634.8 |
| Reserve evaluation | | | | | | | | | | | |
| Mine plan | | 4.1 | | | 27.6 | | | 13.8 | 27.6 | 27.6 | 188.7 |
| Reserve drilling | | | 6.9 | 41.4 | 6.9 | 183.5 | 172.5 | 55.2 | | | 386.4 |
| Geology-data int | | | 11.0 | 16.6 | | | 8.3 | 28.7 | | | 56.6 |
| Analysis | | | 6.9 | 13.8 | | | 27.6 | 28.0 | 28.7 | | 89.0 |
| | 0.0 | 4.1 | 24.8 | 71.8 | 34.5 | 183.5 | 208.4 | 189.7 | 48.3 | 27.6 | 632.7 |
| Marketing | | | | | | | | | | | |
| Sales contract | | 4.1 | 6.9 | 27.6 | 34.5 | 13.8 | 27.6 | 55.2 | 41.4 | 27.6 | 238.7 |
| Promotion | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 69.0 |
| | 6.9 | 11.0 | 13.8 | 34.5 | 41.4 | 28.7 | 34.5 | 62.1 | 48.3 | 34.5 | 387.7 |
| Overhead | | | | | | | | | | | |
| Financing | | | | | | | | | 13.8 | 13.8 | 27.6 |
| Legal | | | 6.9 | | | | 13.8 | 13.8 | 27.6 | 27.6 | 89.7 |
| Salary | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 41.4 |
| Expenses | 4.1 | 4.1 | 4.1 | 5.5 | 5.5 | 4.1 | 6.9 | 6.9 | 6.9 | 6.9 | 55.2 |
| Office | | 18.8 | 18.8 | 18.8 | 18.8 | 18.8 | 18.8 | 18.8 | 18.8 | 18.8 | 96.9 |
| Insurance | | 13.8 | | | | | 6.9 | | | | 28.7 |
| Ingot | | 5.5 | 5.5 | 4.8 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 48.7 |
| | 8.3 | 38.4 | 31.5 | 25.3 | 24.6 | 23.2 | 46.6 | 39.7 | 67.3 | 67.3 | 372.2 |
| Total | 15.2 | 53.5 | 111.5 | 172.9 | 169.5 | 188.8 | 372.3 | 342.6 | 381.9 | 219.1 | 1,947.4 |
| Cumulative | 15.2 | 68.7 | 180.2 | 353.1 | 522.6 | 711.4 | 1,083.7 | 1,426.4 | 1,728.3 | 1,947.4 | |

CANDOL DEVELOPMENTS LTD.

9 YEAR CASH FLOW -- MAGNESIUM

(CDN \$, 000, s)

| Year | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 9 Year Total |
|------------------------------|--------|--------|---------|----------|----------|----------|----------|-----------|-----------|-----------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| Production (tons/yr) | 0 | 0 | 7,500 | 15,000 | 15,000 | 30,000 | 30,000 | 50,000 | 50,000 | 197,500 |
| Revenue | | | | | | | | | | |
| Price x lbs/yr (\$2.0424/lb) | | | 30,636 | 61,272 | 61,272 | 122,544 | 122,544 | 204,240 | 204,240 | 806,748 |
| Operating cost | | | | | | | | | | |
| Directs (\$1.209/lb) | | | 18,135 | 36,270 | 36,270 | 72,540 | 72,540 | 120,900 | 120,900 | 477,555 |
| Cap. Rec.-18% (0.4918/lb) | | | 7,377 | 14,754 | 14,754 | 29,508 | 29,508 | 49,180 | 49,180 | 194,261 |
| Total op cost (\$1.7008/lb) | | | 25,512 | 51,024 | 51,024 | 102,048 | 102,048 | 170,080 | 170,080 | 671,816 |
| Gross Income | 0 | 0 | 5,124 | 10,248 | 10,248 | 20,496 | 20,496 | 34,160 | 34,160 | \$134,932 |
| Financing | 27,600 | 34,500 | 19,872 | | | | | | | \$81,972 |
| Capital Expenditures | 27,600 | 34,500 | 19,872 | | | | | | | \$81,972 |
| Pre-tax Cash Flow | \$0 | \$0 | \$5,124 | \$10,248 | \$10,248 | \$20,496 | \$20,496 | \$34,160 | \$34,160 | \$134,932 |
| Cumul Pre-tax Cash Flow | \$0 | \$0 | \$5,124 | \$15,372 | \$25,620 | \$46,116 | \$66,612 | \$100,772 | \$134,932 | |

CANDOL DEVELOPMENTS LTD.

9 YEAR CASH FLOW — INDUSTRIAL MINERALS

(CDN \$, 000, s)

| Year | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 9 Year Total |
|-------------------------|-----------|---------|---------|---------|---------|----------|----------|----------|----------|--------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| Production (tpy) | 0 | 100,000 | 100,000 | 150,000 | 150,000 | 200,000 | 200,000 | 250,000 | 250,000 | 1,400,000 |
| Revenue | | | | | | | | | | |
| Price x tpy (\$100/T) | 0 | 10,000 | 10,000 | 15,000 | 15,000 | 20,000 | 20,000 | 25,000 | 25,000 | 140,000 |
| Operating cost | | | | | | | | | | |
| Cost per ton | | 70.00 | 70.00 | 70.00 | 70.00 | 70.00 | 70.00 | 70.00 | 70.00 | |
| Total op cost | 0 | 7,000 | 7,000 | 10,500 | 10,500 | 14,000 | 14,000 | 17,500 | 17,500 | 98,000 |
| Gross Income | 0 | 3,000 | 3,000 | 4,500 | 4,500 | 6,000 | 6,000 | 7,500 | 7,500 | 42,000 |
| Mgt Fees, Admin Expens | 0 | 552 | 552 | 552 | 552 | 552 | 552 | 552 | 552 | 4,416 |
| Capital Expenditures | 2760 | | 1,380 | | 1,380 | | 1,380 | | | 6,900 |
| Sub-total | 2,760 | 552 | 1,932 | 552 | 1,932 | 552 | 1,932 | 552 | 552 | 11,316 |
| Pre-tax Cash Flow | (\$2,760) | \$2,448 | \$1,068 | \$3,948 | \$2,568 | \$5,448 | \$4,068 | \$6,948 | \$6,948 | \$30,684 |
| Cumul Pre-tax Cash Flow | (\$2,760) | (\$312) | \$756 | \$4,704 | \$7,272 | \$12,720 | \$16,788 | \$23,736 | \$30,684 | |

CANDOL DEVELOPMENTS LTD.

CASH FLOW 1987 - 1995 - INDUST. MIN'LS + MAGNESIUM

(CDN\$, 000, s)

| Year | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 9 Year Total |
|---------------------------------------|-----------|---------|---------|----------|----------|----------|----------|-----------|-----------|--------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| Production | | | | | | | | | | |
| Magnesium - tpy | 0 | 0 | 7,500 | 15,000 | 15,000 | 30,000 | 30,000 | 50,000 | 50,000 | 197,500 |
| Industrial minerals - tpy | 0 | 100,000 | 100,000 | 150,000 | 150,000 | 200,000 | 200,000 | 250,000 | 250,000 | 1,400,000 |
| | 0 | 100,000 | 107,500 | 165,000 | 165,000 | 230,000 | 230,000 | 300,000 | 300,000 | 1,597,500 |
| Revenue | | | | | | | | | | |
| Magnesium | | | 30,636 | 61,272 | 61,272 | 122,544 | 122,544 | 204,240 | 204,240 | 806,748 |
| Industrial minerals | 0 | 10,000 | 10,000 | 15,000 | 15,000 | 20,000 | 20,000 | 25,000 | 25,000 | 140,000 |
| | 0 | 10,000 | 40,636 | 76,272 | 76,272 | 142,544 | 142,544 | 229,240 | 229,240 | 946,748 |
| Operating cost | | | | | | | | | | |
| Magnesium | | | 18,135 | 36,270 | 36,270 | 72,540 | 72,540 | 120,900 | 120,900 | 477,555 |
| Industrial minerals | 0 | 7,000 | 7,000 | 10,500 | 10,500 | 14,000 | 14,000 | 17,500 | 17,500 | 98,000 |
| | 0 | 7,000 | 25,135 | 46,770 | 46,770 | 86,540 | 86,540 | 138,400 | 138,400 | 575,555 |
| Cap. Rec. -Magnesium | 0 | 0 | 7,377 | 14,754 | 14,754 | 29,508 | 29,508 | 49,100 | 49,100 | 194,261 |
| As Income | | | | | | | | | | |
| Magnesium | 0 | 0 | 5,124 | 10,248 | 10,248 | 20,496 | 20,496 | 34,160 | 34,160 | \$134,932 |
| Industrial minerals | 0 | 3,000 | 3,000 | 4,500 | 4,500 | 6,000 | 6,000 | 7,500 | 7,500 | 42,000 |
| | 0 | 3,000 | 8,124 | 14,748 | 14,748 | 26,496 | 26,496 | 41,660 | 41,660 | 176,932 |
| Financing - Magnesium | 27,600 | 34,500 | 19,872 | | | | | | | |
| Capital Expenditures | | | | | | | | | | |
| Magnesium | 27,600 | 34,500 | 19,872 | | | | | | | 81,972 |
| Industrial minerals | 2,760 | | 1,380 | | 1,380 | | 1,380 | | | 6,900 |
| | 30,360 | 34,500 | 21,252 | | | | | | | 88,872 |
| Mgmt & Admin - Industrial | 0 | 552 | 552 | 552 | 552 | 552 | 552 | 552 | 552 | 4,416 |
| Pre-tax Cash Flow | | | | | | | | | | |
| Magnesium | \$0 | \$0 | \$5,124 | \$10,248 | \$10,248 | \$20,496 | \$20,496 | \$34,160 | \$34,160 | \$134,932 |
| Industrial minerals | (\$2,760) | \$2,448 | \$1,068 | \$3,948 | \$2,568 | \$5,448 | \$4,068 | \$6,948 | \$6,948 | \$30,684 |
| Cumulative Pre-tax Cash Flow | | | | | | | | | | |
| Magnesium | \$0 | \$0 | \$5,124 | \$15,372 | \$25,620 | \$46,116 | \$66,612 | \$100,772 | \$134,932 | |
| Industrial minerals | (\$2,760) | (\$312) | \$756 | \$4,704 | \$7,272 | \$12,720 | \$16,788 | \$23,736 | \$30,684 | |
| Grand Total Pre-tax Cash Flow | (\$2,760) | \$2,448 | \$6,192 | \$14,196 | \$12,816 | \$25,944 | \$24,564 | \$41,100 | \$41,100 | \$165,616 |
| Grand Total Cumulative Pre-tax | (\$2,760) | (\$312) | \$5,800 | \$20,076 | \$32,892 | \$58,836 | \$83,400 | \$124,500 | \$165,616 | |