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# **GEDDES RESOURCES LIMITED**

ANNUAL REPORT 1990

### **HIGHLIGHTS OF 1990**

- \$9.7 million spent on exploration, development, environment and related studies
- Feasibility study of mine development started and identifies Optimum Development approach
- Revised Mine Plan incorporates open pit and underground mining and a comprehensive plan for prevention of Acid Rock Drainage.
- Drilling of the wall rocks for the proposed open pit discovers a third deposit, the Ridge Zone
- Mining and milling plans anticipate full scale production rate of 30,000 tonnes per day producing an average of 140,000 tonnes per year of copper contained in concentrate
- Environmental studies move through Stage I of the British Columbia government review process after submission of a Revised Mine Plan
- \$4.0 million of new equity capital raised through private placements
- Share ownership positions of Northgate Exploration Limited and Cominco Ltd. in the company stand at 39.2% and 19.8% respectively.

### **CORPORATE PROFILE**

Incorporated in Ontario in 1981, Geddes Resources Limited is a Canadian-controlled mining exploration and development company whose principal focus is the development of its Windy Craggy property in northwestern British Columbia. Surface and underground exploration has outlined two very large massive sulphide copper deposits which also contain gold, silver, cobalt and zinc.

The company has initiated a feasibility study into developing a 30,000 tonnes per day mine and mill producing an average of 140,000 tonnes of copper annually. Mining would be initially by open pit methods with supplementary underground production beginning in the tenth year.

Environmental permitting is underway for both the mine facilities in British Columbia and the accompanying port and support facilities in Alaska.

The shares of Geddes Resources Limited are listed on the Toronto Stock Exchange; stock symbol GDD. The company has offices in Toronto and Vancouver as well as facilities at the Windy Craggy site.

### REPORT TO SHAREHOLDERS

In 1990 Geddes Resources activities on its Windy Craggy copper, cobalt, gold, silver, zinc deposits in northwestern British Columbia emphasized engineering and feasibility studies in conjunction with environmental permitting. The optimum approach to development was identified which includes revised plans for mining, incorporating open pit and underground mining. A comprehensive plan for prevention of Acid Rock Drainage was developed for the Revised Mine Plan and submitted to government for environmental review. Terms of reference for the Stage II environmental studies are expected in May, 1991.

### **Exploration**

As the total reserves outlined previously are more than adequate to support at least a fifteen year mine life exploration objectives shifted from definition of additional reserves to providing greater detail of the reserves to be mined in the early years of operation. Underground and surface drilling provided more information on the extent and grade of the near surface portions of the North and South Zones and defined the waste rock adjacent to the deposit. In the course of the latter drilling, a third deposit, the Ridge Zone was discovered.

### Reserves

While total reserves have increased as a result of discovery of the Ridge Zone and areas of lower grade mineralization peripheral to the North and South Zones, new calculations of geological reserves were deferred and emphasis placed on mineable reserves. Montgomery Consultants calculated updated geostatistical reserves incorporating early 1990 dtill results as 161 million tonnes grading 1.8% copper above a 1% copper cutoff grade. The Revised Mine Plan developed with these reserves includes 131 million tonnes of ore grading 1.8% copper to be mined in the first 14 years of mine life. Recoverable copper content amounts to 4.3 billion pounds over the 14 years. For comparison the gross copper content in the geologic reserve of 210 million tonnes grading 1.66% copper, based on a 0.5% copper cutoff grade is, 7.7 billion pounds.

### **Engineering**

A comprehensive feasibility study of the Windy Craggy Project was started in July and by October the first phase was largely complete with the various engineering options having been examined and reduced to two development concepts. To determine the single optimum approach additional studies are in progress relating to slurry pipelines for transportation of ore from the mine to

the mill and concentrate from the mill to the port at Haines, Alaska.

### **Environmental Permitting**

With the distribution of the Stage I Environmental and Socioeconomic Impact Assessment Report in January, 1990 and a Stage I Addendum Report describing the Revised Mine Plan in December, 1990, Geddes Resources is now waiting for the terms of reference for the Stage II study. The British Columbia Mine Development Steering Committee, the lead government agency, has advised the company that a complete compendium of Stage I review comments and terms of reference for Stage II will be prepared by May, 1991.

Collection of baseline environmental data for water quality, wildlife and weather conditions is being continued in the area potentially affected by the project in order that impacts can be fully evaluated and mitigated. A major Acid Rock Drainage Test Program is underway to establish criteria for waste rock disposal and to confirm the quality of drainage from the mining and impoundment areas. Environmental studies related to the Alaskan components of the project are underway in preparation for applications for the required state and federal permits.

Geddes Resources staff and consultants have held numerous public meetings in communities in British Columbia, Yukon and Alaska to keep the public advised of project developments. The company analyzes all the public comments and questions to determine whether changes can be made to improve the project and respond to concerns. The most frequently voiced concerns relate to Acid Rock Drainage, earthquake safety of the tailings impoundment dams, lifestyle change in Haines, Alaska and wilderness value of the Tatshenshini Valley. The first two are technical issues which thorough research and engineering design approved by the responsible government agencies will address.

The lifestyle impact on Haines and impacts on the nearby Chilkat Bald Eagle Preserve relate largely to the frequency of truck traffic supplying the mine. If technical issues relating to the company's alternative of buried concentrate slurry pipeline and fuel oil pipeline can be resolved then the trucking related concerns are mostly eliminated.

The Tatshenshini Valley wilderness value is largely an emotional issue rooted in competing commercial usage of the area. Wilderness tourism companies operate rafting tours down the Tatshenshini River to gain access to the lower Alsek River in Alaska, where there is spectacular glacier and mountain scenery. They contend that their business would be affected by competing demands on the valley resulting from the presence of the Windy Craggy access road. The company's offers to discuss routing, design of and operating procedures for the access road have met with intransigence. While disappointed by this narrow-minded attitude towards this multiple-use area the company is moving ahead with the wildlife and other studies required to verify the best location and design for the access route in conjunction with government agencies.

### Outlook

In spite of the slowdown in international economic activity that occurred in the latter half of 1990 the spot price of copper on world markets remained firm, averaging U.S.\$1.21 per pound compared with \$1.29 in 1989. There was little if any increase in net production capacity during the year. Since the year end the spot price of copper has eentinued to hold around U.S.\$1.10 confirming demand for the metal. The combination of economic recession and new mine capacity in Chile is likely to cause a decline in price during the next one to two years. Thereafter supply and demand should stay in reasonable balance as there are few major new copper mine facilities under development around the world but several older mines which will be exhausted. The company remains confident that demand for copper will be good in the mid 1990s when initial production from Windy Craggy is anticipated.

Priorities for the company in 1991 will be to progress the environmental permitting and the detailed engineering and costing required for the feasibility study. Financing options will be examined for the major capital investment required to bring Windy Craggy into production.

### **Financial**

Geddes Resources successfully raised \$4.0 million of new equity capital in 1990 and spent \$9.7 million on the Windy Craggy project. Working capital decreased by \$6.4 million to \$1.0 million at year end.

Only \$1.0 inillion of the funds raised were derived from flow-through share placements compared with \$8.6

million in 1989. Federal legislation which became effective in mid-1990 effectively terminated the attractiveness of flow through shares to potential investors and eliminated the company's ability to raise exploration and development funds in this manner.

### Corporate

During the year Northgate Exploration Limited increased its interest in the company from 37% to 39%. Early in 1991 Cominco Limited increased its interest in Geddes to 20%. We believe this support is a testimonial to the future of Windy Craggy as a major source of metals to meet the world's demands.

Mr. Keith Somerville was appointed Vice President, Mine Development of Geddes Resources Limited in April 1990. He is responsible for directing the feasibility study, environmental permitting and engineering program for the development of the Windy Craggy Project.

On behalf of the Board of Directors we would like to express our appreciation to the company's employees who worked so hard during 1990. Their accomplishments resulted in considerable progress in the exploration, engineering and environmental permitting of Windy Craggy.

John F. Kearney Chairman of the Board

> Gerald Harper President and Chief Executive Officer

> > Toronto, Ontario May 1, 1991

Geddes Resources comprehensive program on its Windy Craggy copper deposit in 1990 was directed at confirming site conditions for engineering design and environmental permitting. Surface and underground drilling investigated the deposits and the surrounding waste rocks. In the course of this testing of the waste rocks a new mineralized zone, the Ridge Zone was discovered. Drilling and test pitting of the proposed tailings impoundment area, mill and airport sites provided geotechnical information. Glacier studies included surveys of movement rates, subglacial water flow, depths of ice and accumulation and melting rates. A Revised Mine Plan detailing newly developed plans for mining waste rock and water management was submitted to agencies of the governments of British Columbia, Canada, Alaska and the United States as part of the Stage I environmental assessment. Agency comments on their Stage I review along with terms of reference for Stage II studies are expected in May, 1991. Engineering and environmental studies were initiated for the port and support facilities in Alaska in preparation for the permitting process there. The company spent \$9.7 million to advance the development of the property in the course of the year.

### Location

The Windy Craggy property lies in the extreme northwest of British Columbia, at the southermend of the St. Elias Mountains near the Yukon and Alaska borders. Whitehorse is 190 kilometres to the northeast. The nearest road, the Haines Highway which links the port of Haines in Alaska to Haines Junction in Yukon, is 60 kilometres to the east. Present access to the property is by aircraft generally flying out of Whitehorse. The project's 1,000 metre gravel airstrip is close to the exploration camp in Tats Creek Valley. The deposits are reached by a 10 kilometre road built from the camp in part over the Tats glacier and leading to the adit portal at an elevation of 1,400 metres on the southwest side of Windy Craggy mountain. The access road continues a further 3 kilometres up the south side of the mountain to the outcrops of the deposits.

Geddes Resources holds mineral claims covering approximately 17,930 hectares in this area. They consist of the Windy Craggy and Tats groups, which are wholly-owned, subject to a 22.5% net proceeds royalty; the Corridor claims; and the three Alsek claims which are held under option.

### **Exploration History**

Prospectors working for the Falconbridge organization discovered the Windy Craggy deposits in 1958. They identified the 2,040 metre high Windy Craggy Mountain as the source of copper-mineralized boulders strewn on the adjacent glaciers. Geddes Resources optioned the property in 1981 and acquired the Windy Craggy and Tats claims outright in 1983, subject to the 22.5% net proceeds royalty.

Surface drilling programs were carried out in 1981 and 1983, and in 1987 the company began driving an adit from the southwest ridge of Windy Craggy Mountain, to permit access for underground drilling. By the end of 1989, the adit had been completed to a length of 1,852.3 metres, and drifts had been driven 458.8 metres to the south and 1,059.9 metres to the north. The latter broke out to the north side of the mountain. Crosscuts driven east for 309.0 metres from the south drift and 459.0 metres from the north drift cut through the South and North Zones respectively. The crosscuts provided bulk samples for pilot plant scale metallurgical testing and large scale environmental testing.

Underground drilling totalling 39,698.9 metres in 131 holes was completed. The drill holes consisted primarily of upward and downward fans, concentrated in 18 sections over a strike length of 1,140 metres. Construction of an access road from the adit portal up the south side of the mountain to the outcrop area of the deposits in 1989 assisted surface drilling of 1,702.9 metres in eight holes.

Initial reserve calculations were completed and incorporated into a preliminary mine plan and engineering studies for development of the Windy Craggy deposits. Alternate locations were examined for the access road, tailings impoundments and other facilities. Together with the results of environmental surveys a Stage I Environmental and Socioeconomic Impact Assessment report on the proposed development of the Windy Craggy deposits was prepared and submitted to agencies of the governments of British Columbia, Canada, Alaska and the United States in January 1990 as required for environmental permitting.

### Development in 1990

The 1990 exploration program at the Windy Craggy site commenced in March with additional underground

diamond drilling, switching to surface drilling for the summer months and then continuing with underground drilling until late October. Twenty six holes, totalling 9,321.3 metres were drilled underground and 21 holes totalling 4,921.7 metres were completed on surface. Of the latter, 5 holes were drilled to delineate a limestone deposit near the proposed mill site and 2 holes were drilled in the proposed tailings impoundment area to investigate bedrock conditions in areas where a geophysical survey had identified conductors which might be an expression of bedrock faults. The forty diamond drill holes completed at the deposit had two primary objectives; to provide more detailed knowledge of the extent and grade of the near surface portions of the North and South Zones and to define the waste rock adjacent to the deposits.

Trenching, pitting and overburden drilling was undertaken in the proposed tailings impoundment area, mill and airport sites. Thirteen holes amounting to 602.2 metres provided information on overburden types and groundwater conditions. Six holes totalling 1,064.9 metres were drilled through the Tats and Marie Glaciers to confirm ice depth, sample the underlying gravel and rock and install recording devices to determine subglacial water flow and pressure.

Bulk samples were taken from the waste rocks adjacent to the deposits for an Acid Rock Drainage test program to investigate the potential of different rock types to generate acid or alkaline drainage. Samples from the limestone deposit were collected for testwork to confirm suitability for production of lime for use in processing the Windy Craggy ore.

Location and alignment surveys for the access road were completed on the ground except for the section along the Tatshenshini River valley where aerial photogrammetry was used to facilitate road alignment selection. Environmental surveys of biological, climatic, geological, hydrological and surficial conditions continued, covering the mine area and the aecess corridor.

### Geology

Windy Craggy Mountain comprises a series of alternating bands of volcanic rocks and lime-rich, fine grained sediments, with a near vertical attitude, trending north-westerly for the two kilometre length of the mountain. Crossing the mountain just to the northeast of the peak, interbedded with the volcanic and sedimentary rocks is the mineralized zone identified by intermittent outcrops over the two kilometre length and a width in excess of 200 metres. Drilling has shown that this mineralized zone contains two very large massive sulphide deposits, known

as the South and North Zones. They are separated by a barren area, under the mountain peak, which widens from about 100 metres near surface to about 300 metres at the 1,400 metre adit elevation. The South Zone has been drill defined in detail for 360 metres along strike and is known to continue for at least another 400 metres to the southeast. The North Zone has been drill defined in detail for 480 metres along strike and is known to continue for at least another 120 metres. The Zones range up to 200 metres in thickness and average 75-100 metres. The vertical extent of each zone has been demonstrated from surface to the 1,100 metre elevation, the limit of drilling penetration.

On either side of the massive sulphide zones are intermittently distributed volumes of lower grade, disseminated and stringer mineralization within the volcanic and sedimentary rocks. The 1990 drilling program provided important information on the disseminated and stringer mineralization and the volcanic and sedimentary waste rocks surrounding the massive sulphide zones. In the course of this drilling the Ridge Zone massive sulphides were intersected north east of the North Zone. By the end of the program 5 holes had penetrated this new zone indicating it has a length of at least 450 metres, a vertical extent of 335 metres and a thickness up to 80 metres.

The mineralization consists of varying proportions of the iron sulphide minerals pyrite and pyrrhotite, the copper-containing sulphide chalcopyrite, the zinc-containing sulphide sphalerite and discrete minute grains of gold and a gold-silver mixture, electrum. Near surface, natural weathering has caused the alteration of the pyrite and pyrrhotite to iron oxides, sometimes referred to as gossan, and the chalcopyrite to copper metal, copper oxides and copper carbonates. This natural oxidation of the sulphide minerals is generating Acid Rock Drainage.

Surface sampling over the North Zone identified copper, gold and silver values in the gossan while surface drilling into the upper part of the North Zone discovered extensive core lengths with sphalerite. Hole 183 intersected 262 metres averaging 1.2% copper, 1.0% zinc, 0.46 grams per tonne of gold and 11.9 grams per tonne of silver.

#### Reserves

Using all the information available to the end of 1989, consultants Derry, Michener, Booth and Wahl calculated the geological reserves and reported in April 1990, that above a 1% copper cutoff grade, proven, probable and possible reserves are 166.2 million tonnes grading 1.89% copper, 0.08% cobalt, 0.21 grams of gold and 3.9 grams

of silver per tonne. A geostatistical study, incorporating additional early 1990 drilling was completed by Montgomery Consultants in June 1990. It identified total reserves above a 1% copper cutoff grade of 160.9 million tonnes grading 1.82% copper. This geostatistical reserve provided the basis for the Revised Mine Plan.

### Metallurgy

Pilot plant scale testwork on 220 tonnes of bulk samples at Lakefield Research was completed in February. This established grinding characteristics and confirmed copper concentrate grade and recoveries established by earlier laboratory testwork. Copper concentrate grade and composition are suitable for custom copper smelters. Subsequent work considered alternative reagents that would be environmentally preferable. Further work is planned to investigate alternative grinding and flotation systems which could improve the recovery and cost of production of copper concentrate.

On completion of the pilot plant work a small portion of the tailings was used for initial testwork on cobalt recovery. The sample was subjected to roasting and then leached with dilute sulphuric acid. The method was shown to be effective in recovering a portion of the cobalt and additional copper.

During the summer a surface sample of gossan material grading 3.3 grams of gold per tonne was collected for bench scale testwork. Cyanide leaching yielded 50% gold recovery, however cyanide consumption was high, probably due to complexing with copper in the sample. Flotation testing of the same material indicated 45% gold recovery to a concentrate grading 51 grams of gold per tonne. This indicates a possibility that gossan could be milled with the sulphide ore, potentially increasing the overall amounts of gold in the copper concentrate.

#### Engineering

The international engineering company, Fluor Daniel Wright was selected to undertake a comprehensive feasibility study of the Windy Craggy Project. Work was started in July by the Fluor Daniel Wright mining group based in Vancouver, B.C., and drawing on specialist expertise from the worldwide Fluor Daniel Wright organization and specialist groups from other consulting firms, who had been involved in pre-feasibility level studies. By October the first phase of the study was largely complete with the various engineering options having been examined and reduced to two development concepts requiring additional study before the optimum approach could be confirmed. The options relate to

transportation between mine and mill and between the mill and the port of Haines, Alaska. Slurry pipelines are being investigated for both distances. The concentrate pipeline to Haines and a parallel fuel oil pipe have specific right-of-way and environmental permitting requirements which are presently being investigated. Work on the feasibility study has been slowed to allow for the completion of these investigations and to correspond with the progress of environmental permitting.

### **Development Concept**

Initial mining will be carried out by open pit methods. The North Zone would be mined down to the elevation of the current exploration workings along with the upper portion of the South Zone. In the tenth year of pit production underground mining would be initiated from the South Zone to supplement open pit output. Reserves of 131 million tonnes of ore grading 1.8 percent copper with an overall waste to ore stripping ratio of 1.9:1 will be mined over the first 14 years.

The open pit design anticipates an initial daily output of 15,000 tonnes of ore in the first year rising to 30,000 tonnes per day in 3-4 years. Following primary crushing in the open pit, ore will be dropped down ore passes leading to the underground exploration workings, and conveyed along the adit to the portal. Here it will be ground to a fine consistency, slurried with mine drainage water supplemented by water recycled from the tailings pond, and then delivered by pipeline to the mill in the Tats Valley area, site of the present airstrip and exploration camp.

The Acid Rock Drainage Test Program presently underway will establish criteria for characterizing the waste rock as potentially acid generating or acid consuming. As the waste rock is drilled, blasted and loaded in the pit it will be separated according to these criteria. The potentially acid generating rock will be transported to the portal by similar methods as the ore, from where it will be trucked to the tailings impoundment for permanent submerged disposal. Acid consuming waste rock will be trucked directly from the pit to nearby waste dumps primarily on the Marie and N Cirque glaciers.

In the mill, flotation will be used to concentrate the copper minerals from the very finely ground ore. The waste material, or tailings, will be pumped to the nearby tailings impoundment facility. The tailings impoundment will be created by construction of two earth and rock fill dams across the broad valley of Upper Tats Creek.

Maintenance of a water cover over tailings and waste rock

in the impoundment will eliminate exposure to air and consequent oxidation of sulphides.

The copper concentrate, essentially chalcopyrite mineral grains containing about 28% copper with some byproduct gold and silver, in slurry form will be pumped through a pipeline to Haines, Alaska. There a filtration plant will dewater the concentrate prior to ocean shipping to custom smelters. Annual output is expected to average 520,000 dry tonnes of copper concentrates containing 140,000 tonnes of copper metal.

In November Geddes and West Coast Stevedoring Corporation of Juneau, Alaska signed a Letter of Intent to negotiate an agreement to establish a business venture to develop and operate a marine terminal facility in the vicinity of Haines, Alaska. West Coast Stevedoring Corporation is a subsidiary of Klukwar Inc. one of the village corporations established pursuant to the Alaska Native Claims Settlement Act.

### **Environmental Permitting**

Initial responses to the Stage I Environmental Report from the reviewing agencies indicated that the proposed techniques for the prevention and control of Acid Rock Drainage were not sufficiently proven. The company reviewed the more detailed technical information that had been accumulated, evaluated alternative mining approaches, determined what Acid Rock Drainage prevention methods were proven and concluded that a Revised Mine Plan could be developed. An extensive sampling and testwork program was initiated to characterize the wall rocks to the deposits; identifying their potentially acid generating or consuming capacity, distribution and facility to be segregated. Technical and economic evaluations indicated that by reducing the size of the ultimate open pit and introducing underground mining in Year 10 of production, the total quantities of waste rock were reduced to about one half the previously estimated quantity. The Revised Mine Plan incorporating methods of separating and disposing of the potentially acid generating waste rock, a comprehensive water management plan and conceptual plans for the closure conditions at the mine and the impoundment was submitted as a Stage I Addendum Report in December, 1990.

The British Columbia Mine Development Steering Committee, the lead government agency has advised the company that a complete compendium of Stage I review comments will be prepared by May, 1991. With this, Geddes Resources will receive terms of reference for the topics requiring more detailed studies for a Stage II report. Gathering of additional environmental information is continuing with emphasis on the topics already identified by the company as requiring more extensive study.

In May 1990 public information meetings about the Windy Craggy Project were held in nine communities in British Columbia, Yukon and Alaska. Public attendance and interest were high. Additional meetings and information displays have been held in northern communities throughout the rest of the year to keep residents advised of project developments. The company analyzes all the public comments and questions to determine whether changes can be made to improve the project and respond to concerns.

One significant change to the project design relates to transportation of copper concentrate from and supplies to the mine. With the mine production rate increased to 30,000 tonnes of ore per day from the pre-feasibility 20,000 tonnes per day described a year ago the quantity of concentrate has reached the level where costs and environmental considerations favour a concentrate slurry pipeline rather than trucking.

Environmental reports relating to the Haines, Alaska port and infrastructure were submitted in draft form to the Alaska and United States permitting agencies in February 1991. Trucking of concentrate was incorporated in the plans. Late in January 1991 the company was advised by the U.S. Environmental Protection Agency that a concentrate pipeline might be permittable. The environmental reports are therefore being revised to incorporate a buried concentrate pipeline, dewatering facility, a fuel oil pipeline paralleling the concentrate pipeline and substantially reduced trucking.

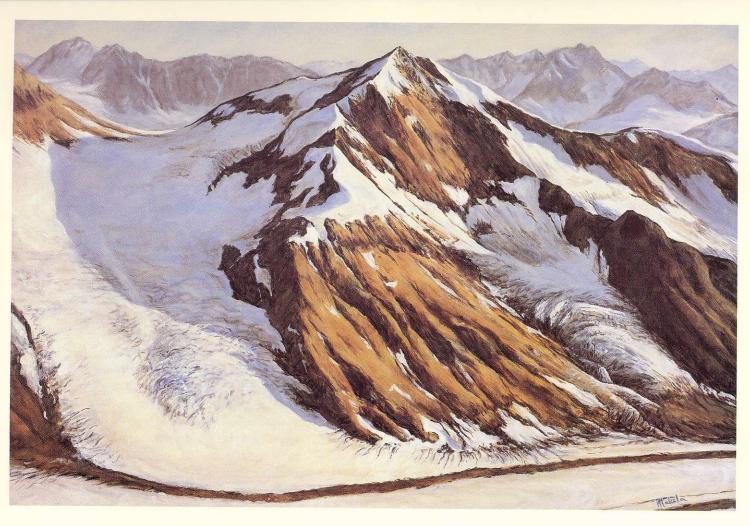
Geddes Resources Board of Directors, employees and contractors are committed to responsible environmental practice. They are determined that the economic benefits resulting from the Windy Craggy development will be balanced with good stewardship in the protection of human health and the natural environment.

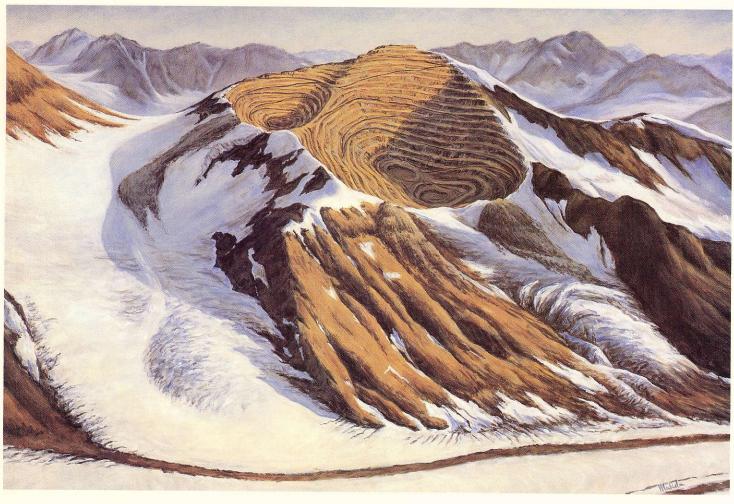
### WINDY CRAGGY

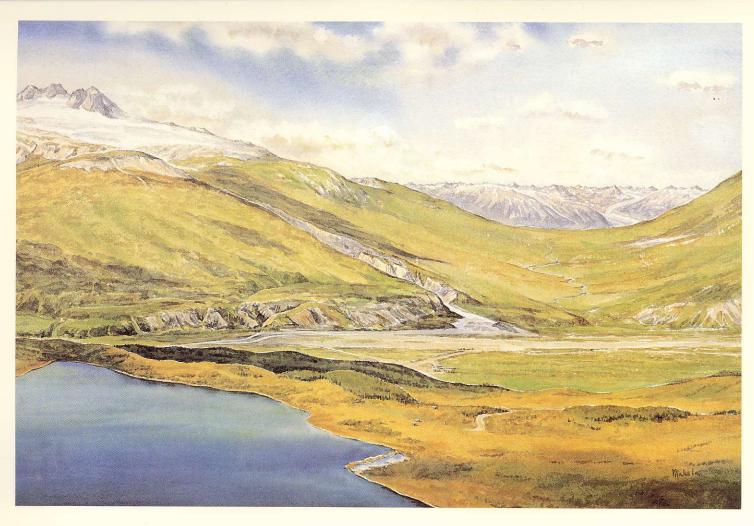
### **Today and Tomorrow**

On the following pages British Columbia artist Don Makela has captured with water colours and acrylics the environment of Windy Craggy as it is today and will be near the end of open pit mining.

- 1. Windy Craggy mountain viewed from the north, one of a multitude of 2,000 metre peaks stretching into the distance. Thirty kilometres to the south and beyond three ranges of mountains is the Tatshenshini River. Marie Glacier on the left flows down to the moraine strewn Frobisher Glacier. Beneath Windy Craggy peak is the remnant N Cirque hanging glacier shedding mineralized boulders onto the Frobisher Glacier, eroded from the north face where the North Zone deposit outcrops over hundreds of square metres.
- 2. Windy Craggy mountain from the same perspective as in #1 but after open pit mining more than 100 million tonnes of high grade copper, cobalt, gold, silver and zinc ore from the North Zone (right) and South zone (left). Waste dumps, containing only acid consuming waste on N Cirque, and Marie Glaciers and the intervening mountain slopes blend with the existing talus and moraine accumulations. Ore and potentially acid generating waste rock has been removed through tunnels beneath the pit bottom.
- 3. Ten kilometres south of Windy Craggy mountain are the flats of Tats Creek viewed westerly across the north end of Tats Lake. Twelve hundred metres lower in elevation than Windy Craggy Peak the flats are below the vegetation line but still above the tree line. The 1,000 metre gravel airstrip that provides access to the adjacent exploration camp are visible in the centre. In the right hand middle distance the tributary valley of Upper Tats Creek meanders down from its watershed source.
- 4. The Tats Creek flats viewed from the same location as in #3 will be the site of the mill and other facilities. Entering from lower right is the access road, passing the employee accommodation area before arriving at the mill, warehouse, maintenance shops, laboratory and office site. One road to the left around Tats Lake leads to the site of the new airport while two roads behind the plant site lead to the mine, off to the right, and to the tailings impoundment area in Upper Tats Creek. The impoundment area comprises a lake contained between two earth and rock fill dams. Tailings, the ground-up rock fragments rejected in the milling process, and coarse, potentially acid-generating waste rock from the open pit mine will be deposited under water in the impoundment area. Permanently submerged storage will prevent the occurrence of acid rock drainage.









Don Makela, who makes his home in Kelowna, British Columbia, has developed a well deserved reputation for his series of "mining" paintings which depict the character of the industry from gold dredges in Alaska to gaunt wooden headframes in Nevada. Geddes Resources commissioned a series of water colours and acrylics to capture the sense of Windy Craggy. Don visited the Windy Craggy project area in late August 1990 to record these scenes.

Geddes Resources Limited is a Canadian-controlled mining exploration and development company whose principal focus is the development of its Windy Craggy property in northwestern British Columbia. Surface and underground exploration has outlined two very large massive sulphide copper deposits which also contain gold, silver, cobalt and zinc.

The company has initiated a feasibility study into developing a 30,000 tonnes per day mine and mill producing an average of 140,000 tonnes of copper annually. Mining would be initially by open pit methods with supplementary underground production beginning in the tenth year.

Environmental permitting is underway for both the mine facilities in British Columbia and the accompanying port and support facilities in Alaska.

Further information on the Windy Craggy project and the artist's work can be obtained from **Geddes Resources Limited** offices at:

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Tel: 416-363-1135 Fax: 416-363-8078 Suite 1400-Pender Place 700 West Pender Street Vancouver, British Columbia V6C 1G8

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### GEDDES RESOURCES LIMITED MANAGEMENT DISCUSSION AND ANALYSIS 1990

### General

The sole activity of Geddes Resources Limited during the last four years has been the exploration and development of its Windy Craggy property in northwestern British Columbia. During 1990 the focus of activities shifted from exploration and definition drilling of the deposit to mine development embracing mine planning, engineering and environmental studies. In the latter part of 1990 the first phase of a feasibility study was carried out to further refine the plans for development of the property. Exploration and development costs aggregated \$9,655,000 in 1990 and \$13,515,000 in 1989.

### Results of Operations

The 1990 program of exploration and development on the Windy Craggy project was budgeted at a cost of \$12 million which included completion of the feasibility study, undertaking Stage II environmental studies and reporting, confirmatory exploration and metallurgical testwork and geotechnical and other surveys of the site area and access route. A supplementary work program costing another \$4 million was planned, providing the environmental review process was proceeding expeditiously. Slower progress on the environmental process resulted in the cancellation of the supplementary work program and delaying completion of the feasibility study. Actual expenditures were therefore proportionately reduced from the planned \$12 million to \$9,655,000.

Exploration and development activities in 1989 cost \$13,515,000 compared with a planned program cost of \$11 million. The planned 1989 program included underground tunnelling and drilling to explore the deposits as well as preliminary studies of mining methods, mineralogical and metallurgical characteristics, plant site locations, access routes, environmental implications and economic assessment. This program was all achieved and expanded to include more exploration. The extent of the Windy Craggy deposits was demonstrated to be much larger than could be tested by the 1989 planned program and even after the expanded program the deposits limits have still not been reached.

### Liquidity and Capital Resources

As the company has no revenue other than minor interest earned on its cash reserves, its activities have been financed almost exclusively by the issue of common shares. During 1989 and 1990 net proceeds of common share issues aggregated \$14.8 million and \$4.0 million respectively. The ability to raise funds in the form of equity has, in the past, been greatly enhanced by the existence of the flow-through shares mechanism provided for by the Income Tax Act whereby exploration expenditures made by the company may be transferred to investors acquiring flow-through common shares and used by such investors as deductions in determining taxable income. In 1989 and 1990, 52% and 23% respectively, of the net proceeds of common stock were attributable to flow-through shares. Federal legislation which became effective in mid-1990 effectively terminated the attractiveness of flow-through shares to potential investors and eliminated the company's ability to raise funds in this manner.

The timing of progress in developing the Windy Craggy deposits for production will be determined to a considerable extent by the environmental review process. Until government agencies reviews of the Stage I environmental submission are completed and terms of reference for the Stage II study provided, the company cannot plan or cost its 1991 work program. As these responses are not anticipated before May, 1991 the company has reduced its activity level in the interim. Year end working capital of \$1,036,205 is insufficient to support a substantial development program on Windy Craggy in 1991 but adequate to sustain the reduced activity level in early 1991. Management anticipate issuance of additional common shares will be required in 1991 to finance the development program. Management is also considering other financing approaches for the very substantial capital expenditures that will be required subsequently. Warrior International Ltd. has been retained to provide financial advisory services in connection with the anticipated major financing requirements for the Windy Craggy Project.

## CONSOLIDATED BALANCE SHEET

	December 31	
	1990	1989
Assets		
Current assets:		
Cash and short-term investments	\$ 1,204,987	\$ 7,976,545
CEIP grant receivable	300,000	600,000
Other assets	126,229	56,931
	1,631,216	8,633,476
Deferred exploration and development costs (Note 2)	43,272,054	33,717,309
Fixed and other assets, net	658,994	686,780
	\$45,562,264	\$43,037,565
Liabilities		
Current liabilities:		
Accounts payable and accrued liabilities	\$ 595,011	\$ 1,204,333
Shareholders' Equity		
Capital stock (Note 3)	49,695,506	45,714,581
Deficit	(4,728,253)	(3,881,349)
	44,967,253	41,833,232
	\$45,562,264	\$43,037,565

(See accompanying notes)

Joh Klemey Director Approved by the board:

## CONSOLIDATED STATEMENT OF OPERATIONS AND DEFICIT

	Year ended December 31	
	1990	1989
Interest and other income	\$ 711,180	\$ 634,653
Administrative expenses	1,469,689	1,212,028
Federal tax on large corporations	88,395	<del>_</del>
	1,558,084	1,212,028
Net loss before the following	846,904	577,375
Deferred exploration costs written off	-	192,453
Provision for loss on other assets		381,530
		573,983
Net loss for the year	846,904	1,151,358
Deficit at beginning of year	3,881,349	2,729,991
Deficit at end of year	\$4,728,253	\$3,881,349
Net loss per share	\$0.03	\$0.06

## CONSOLIDATED STATEMENT OF CHANGES IN FINANCIAL POSITION

	Year ended December 31	
	1990	1989
Cash used for operating activities:		
Net loss for the year	\$ (846,904)	\$ (1,151,358)
Add items not involving cash:		
Depreciation and amortization	25,666	82,800
Deferred exploration costs written off	<del>-</del> 193	
Provision for loss on marketable securities	_	381,530
Net change in non-cash working capital items	(378,620)	(164,663)
	(1,199,858)	(659,238)
Cash provided by financing activities:		
Net proceeds of issue of capital stock	4,080,925	15,606,175
Cash provided by (used for) investment activities:		
Increase in fixed and other assets	(72,476)	(253,579)
Deferred exploration and development costs,		
net of depreciation of \$74,596 (1989 — nil)	(9,580,149)	(13,515,499)
	(9,652,625)	(13,769,078)
Net increase (decrease) in cash during the year	(6,771,558)	1,177,859
Cash and short-term investments at beginning of year	7,976,545	6,798,686
Cash and short-term investments at end of year	\$ 1,204,987	\$ 7,976,545

# CONSOLIDATED STATEMENT OF DEFERRED EXPLORATION AND DEVELOPMENT COSTS

	Year ended December 31	
	1990	1989
Deferred exploration and development costs at beginning of year	\$33,717,309	\$21,249,263
Field exploration and drilling costs	4,851,454	10,915,477
Other exploration and development costs	4,803,291	2,600,022
	9,654,745	13,515,499
Premium on flow-through shares	(100,000)	(855,000)
Deferred exploration costs written off	_	(192,453)
Deferred exploration and development costs at end of year	<b>\$43,272,054</b> \$33,717,309	

January 26, 1991

### **AUDITORS' REPORT**

To the Shareholders of Geddes Resources Limited:

We have audited the consolidated balance sheets of Geddes Resources Limited as at December 31, 1990 and 1989 and the consolidated statements of operations and deficit, changes in financial position and deferred exploration and development costs for the two years then ended. These financial statements are the responsibility of the company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with generally accepted auditing standards. Those standards require that we plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

In our opinion, these consolidated financial statements present fairly, in all material respects, the financial position of the company as at December 31, 1990 and 1989 and the results of its operations and changes in its financial position and deferred exploration and development costs for the two years then ended in accordance with generally accepted accounting principles.

Chartered Accountants

Price Waterhouse

North York, Ontario

# NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

December 31, 1990

### 1. Significant accounting policies:

### (a) Basis of consolidation

The consolidated financial statements include the accounts of Geddes Resources Limited and its inactive whollyowned subsidiary companies.

### (b) Deferred exploration and development costs

The company's principal activity is the exploration and development of mineral properties, the major property at this time being the Windy Craggy property in northwestern British Columbia. The expenditures relating to this activity are deferred and the ultimate recovery of the company's investment is dependent upon the development of commercially exploitable mineral deposits including the receipt of development approval from environmental and other regulatory authorities and the arrangement of project financing.

When it is determined that work on a particular property or working interest will be discontinued, the related exploration and development costs are written off.

As and when commercial production from a particular property or working interest begins, the related exploration and development costs will be depleted.

### (c) Flow-through shares

Common shares which transfer the tax deductibility of mineral exploration expenditures to investors are included in capital stock at the market value of the company's common shares at the time of pricing of the flow-through shares. Any premium received above the market price of the shares as a result of transferring the tax benefits to the investor is reflected as a reduction of the related exploration expenditures.

### 2. Windy Craggy property:

The company has a 100% interest in a block of mineral claims in northwestern British Columbia collectively known as the "Windy Craggy" property. The company's interest in this property is subject to a 22½% interest, held by a subsidiary of Falconbridge Limited, in the net income before income taxes after recovery of exploration, capital and interest costs.

### 3. Capital stock:

### (a) Authorized and issued

The share capital of the company consists of an unlimited number of common shares without par value.

Changes in issued capital stock during the two years ended December 31, 1990 were as follows:

,	Number of	
	Shares	Amount
Balance at December 31, 1988	14,801,897	\$30,963,406
Issued during the year for cash: Upon exercise of		
rights (Note 3(c))	3,011,702	4,517,553
Upon exercise of options Upon discharge of purchase	153,500	179,440
obligation Private placement of	60,000	84,000
flow-through shares	4,983,771	8,550,000
Private placement of shares	1,850,000	2,960,000
Expenses of share issues Premium on flow-through		(684,818)
shares		(855,000)
	10,058,973	14,751,175
Balance at December 31, 1989	24,860,870	45,714,581
Issued during the year for cash:		
Private placement of shares Private placement of	1,500,000	3,075,000
flow-through shares	640,205	1,000,000
Upon exercise of options Premium on flow-through	3,750	5,925
shares		(100,000)
	2,143,955	3,980,925
Balance at December 31,1990	27,004,825	\$49,695,506

### (b) Stock options

During 1990 options were granted to directors, officers and employees of the company to acquire 55,000 shares at \$0.94 per share, 25,000 shares at \$2.13 per share and 100,000 shares at \$1.90 per share. During the year options on 36,250 shares were cancelled and options on 3,750 shares were exercised. At December 31, 1990 options to acquire 616,500 shares at prices from \$0.94 to \$2.13, exercisable up to November 21, 1995 were outstanding and, accordingly, 616,500 shares of capital stock were reserved for issue upon exercise of options.

### (c) Share purchase warrants

On September 26, 1989 the company issued rights to its shareholders to acquire units consisting of one common share and one common share purchase warrant at a price of \$1.50 per unit. Each two warrants entitled their holders to purchase one common share at a price of \$2.00 per share until October 31, 1992. All of the rights issued were exercised in 1989 and, as a result, 3,011,702 common shares and 3,011,702 common share purchase warrants were issued and the total consideration, net of expenses of issue, was ascribed to the shares.

On October 4, 1989 the company made a private placement of 1,850,000 units to Northgate Exploration Limited ("Northgate") at a price of \$1.60 per unit with each unit consisting of one common share and one share purchase warrant. Each warrant entitles its holder to purchase one common share at a price of \$2.00 per share until December 31, 1992.

As of December 31, 1990 and December 31, 1989 there were 4,861,702 common share purchase warrants outstanding entitling their holders to purchase 3,355,851 common shares for an aggregate consideration of \$6,711,702.

### 4. Income taxes:

### (a) Deductibility of costs

Costs of determining the existence, location, extent and quality of mineral resources in Canada, which are incurred on behalf of or are renounced to some of the company's shareholders, will not be deductible by the company for income tax purposes to the extent that such costs are deductible in arriving at taxable income by those shareholders. To December 31, 1990, \$31,360 679 (1989 — \$30,660,679) of the gross exploration costs of the company have been incurred on behalf of, or have been renounced to some of its shareholders.

### (b) Timing differences

There are timing differences between accounting and taxable income which include the excess of cumulative Canadian exploration expenses over deferred exploration costs of approximately \$5,358,000 (1989 — \$4,362,000) which can be carried forward indefinitely. Future tax benefits of timing differences have not been reflected in these financial statements.

### 5. Related party transactions:

- (a) In 1990 the company paid an aggregate of \$383,000 (1989 \$87,500 for seven months) to Northgate Exploration Limited in respect of fees for management, administrative and technical services and office occupancy costs. As of December 31, 1990 Northgate controlled approximately 39% of the outstanding shares of the company.
- (b) During the year the company paid fees to a director aggregating \$9,500 (1989 \$62,372) for consulting services.
- (c) The company has a loan outstanding of \$40,000 (1989 \$60,000) to Geddes M. Webster, Honorary Chairman of the Board by way of a non-interest bearing demand note. The loan is secured by shares of the company and is being retired in annual payments of \$20,000. The company also has an agreement with Mr. Webster which calls for the payment to him of \$500,000 under certain circumstances including commencement of commercial production from the Windy Craggy property.

### 6. Commitments and Contingencies:

Because of the company's commitments and planned programs principally in relation to the Windy Craggy project, it will be necessary for the company to raise additional funding. In this regard management is currently in discussions with various parties in order to put in place appropriate financing arrangements to enable the company to meet its obligations in a timely manner.

### 7. Comparative Figures:

Certain 1989 comparative figures have been reclassified to conform with the financial statement presentation adopted in 1990.

### **CORPORATE INFORMATION**

DIRECTORS

Sylvester P. Boland\*

Michael F.K. Carter\*

J. Peter Foster\*

Gerald Harper

John F. Kearney

John Kostuik

J. Douglas Little

Gordon H. Montgomery

Alan C. Savage

Geddes M. Webster Honorary Chairman

\*Member of the Audit Committee

HONORARY DIRECTOR

William M. Gilchrist

**OFFICERS** 

John F. Kearney Chairman of the Board

Gerald Harper

President and Chief Executive Officer

Keith L. Somerville

Vice President, Mine Development

G. Samuel Carpenter Secretary-Treasurer

Patrick D. Downey Chief Financial Officer **HEAD OFFICE** 

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TRANSFER AGENT AND REGISTRAR

Central Guaranty Trust Company — Toronto, Calgary and Vancouver

**SHARE LISTING** 

The Toronto Stock Exchange — Symbol GDD

**AUDITORS** 

Price Waterhouse

**SOLICITORS** 

Lang Michener Lawrence & Shaw — Toronto

Davis & Company — Vancouver

Robertson, Monagle & Eastaugh — Juneau

ANNUAL MEETING OF SHAREHOLDERS

Thursday, June 27, 1991 11:00 A.M. Wentworth Room The Sheraton Centre Hotel 123 Queen Street West Toronto, Ontario