Eleventh Annual Report

For the year ended December 31

1954

PURVIS HALL

MAY 18 1955

McGILL UNIVERSITY



25 KING STREET WEST, TORONTO, CANADA HEAD OFFICE T. LINDSLEY President OFFICERS A. J. ANDERSON Vice-President H. H. HEMMING Vice-President W. B. MAXWELL \_\_\_\_Vice-President G. T. N. WOODROOFFE Secretary and Treasurer S. F. TAIT Assistant Treasurer A. C. KILGOUR Assistant Secretary A. G. DARLING DIRECTORS T. LINDSLEY L. J. LICHTY A. J. ANDERSON W. B. MAXWELL I. D. BATEMAN J. R. TOLMIE A. C. CALLOW NATIONAL TRUST COMPANY LIMITED, TRANSFER AGENTS 225 St. James Street, 20 King Street East, AND REGISTRARS and Montreal, Quebec. Toronto, Ontario. REGISTRAR AND TRANSFER COMPANY, 15 Exchange Place, 50 Church Street, and Jersey City 2, N.J. New York 7, N.Y. THE CANADIAN BANK OF COMMERCE, Toronto, Ontario. BANKERS CLARKSON, GORDON & CO., Toronto, Ontario. AUDITORS W. B. MAXWELL A. J. ANDERSON MINING ENGINEERS E. V. NEELANDS R. C. BACON B. G. EDWARD A. E. PUGSLEY W. J. TOUGH J. D. McCLINTOCK J. B. GORDON J. D. BATEMAN GEOLOGISTS W. H. GROSS D. H. BROWN J. A. HARQUAIL S. N. CHARTERIS W. G. ROBINSON A. S. DADSON D. C. SHARPSTONE A. G. DARLING ALEXANDER SMITH G. M. LEE F. R. ARCHIBALD METALLURGISTS L. J. LICHTY W. G. HUBLER

I. M. MORTIMER

# Report of the Directors

TO THE SHAREHOLDERS:

Your Directors respectfully submit herewith the Eleventh Annual Report, together with the Auditors' Report and Financial Statements for the year ended December 31, 1954.

### FINANCIAL

During the year, your Company's holdings in Giant Yellowknife Gold Mines Limited were reduced by 330,000 shares, due largely to the sale of 300,000 shares to Ventures Limited in return for 150,000 shares of Falconbridge Nickel Mines Limited. This sale was approved by the shareholders at the Annual and Special General Meeting held in June, 1954. The Falconbridge shares have been pledged as partial security for the 4% Convertible Debentures. An additional 30,000 shares of Giant Yellowknife Gold Mines Limited were sold to Ventures Limited in September for \$255,000 to enable your Company to meet certain of its undertakings in connection with its Kilembe project.

The arrangements mentioned in the 1953 Annual Report were concluded and your Company's commitment to Williston Oil and Gas Co. was adjusted so that \$1,500,000 was paid on July 1, 1954 and the balance of \$1,750,000 postponed until July 1, 1955. Your Company sold 300,000 shares of Williston Oil and Gas Company to Ventures Limited at \$5.00 per share to provide the funds required to meet the 1954 payment.

It will be noted that the buildings, plant and equipment are shown in 1954 at values considerably less than those on the 1953 Balance Sheet. This arises from the fact that during the year the Black Donald Graphite mine was closed down and the buildings, plant and equipment sold.

### GENERAL

During the year, gratifying progress has been made with a number of your enterprises, as set out in the body of this report.

Financing arrangements have been completed for Quebec Metallurgical Industries Ltd. which will permit immediate formulation of production plans for its Temagami (Copper) and Cobalt Chemicals projects.

PAGE Two

The production plan for *Kilembe Mines Limited* is being put into effect rapidly and smoothly. Essentially all the production machinery has been ordered, construction of the permanent camp and working buildings has virtually been completed, and excavations for the hydro power station and the concentrator foundations are well advanced.

Geoil Limited has been formed to consolidate the oil assets of your Company with those of associated companies (details of the transaction being given on pages 9 and 10 of the following report) and has assumed full responsibility for all future commitments on the various oil projects as they fall due. A substantial portion of such required funds will come out of revenues from producing wells.

Your Company is carrying on negotiations with a number of strong groups who have shown interest in joining us in the early establishment of the *Northwest Power Industries* project. It is hoped that before the end of 1955, contracts will have been entered into with the British Columbia Government for the development of the first power unit.

Active development work will be carried on during the coming year at Seal Lake in Labrador, and Mijerma in North-west Africa.

With respect to your producing mines, conditions continue to be satisfactory. Ore reserves at *Giant Yellowknife* are being maintained at high levels and, while a recent increase in the refractoriness of the ore has led to certain metallurgical problems, we are encouraged to think that their solution is now within sight. *United Keno Hill* continues to grow and the management plans an active development program to test out promising indications on both Keno and Galena Hills.

It is with deep regret that your Directors record the death, last September, of Mr. M. A. Thomson, who for the past five years has been a valued member of the Board.

Your Directors take pleasure in again recording with sincere appreciation their recognition of the excellent work done by the personnel in all departments of both Frobisher Limited and its Associated Companies.

On behalf of the Board,

T. LINDSLEY,

President.

Toronto, Ont., May 5, 1955.

# Report of Operations - Year 1954

	Classification	COMPANY NAME	Frobisher Interest	REFER TO PAGE No.
PF	CODUCING COMPANI	ES		
	Silver - lead - zinc	United Keno Hill Mines Limited	32.8%	6
	Gold	Giant Yellowknife Gold Mines Limited	20.8%	5
	Oil	Geoil Limited	54.1%	9
	Zinc - lead	New Calumet Mines Limited	27.7%	7
	Gold	Connemara Division	100.0%	8
DI	EVELOPMENT PROJE	CTS		
	Copper-cobalt	Kilembe Mines Limited (1)	71.1%	12
	Cobalt - nickel - rare metals	Quebec Metallurgical Industries Ltd.	31.8%	13
	Hydro-electric power	Northwest Power Industries Limited (2)	30.0%	14
	High-grade hematite	Miferma	34.0%	15
	Copper - silver	Seal Lake (Labrador) Concession	100.0%	15
07	THER PROJECTS			
	Copper	Rainville Mines Limited	33.3%	16
	Tin - rare metals	Uis Tin Mining Co. (SWA) Limited (3)	64.6%	16
	Uranium	Consolidated Ranwick Uranium Mines Limited	16.3%	16
	Gold	Akaitcho Yellowknife Gold Mines Limited	35.7%	17
	Magnetic iron	Canada Iron Mining Limited	100.0%	17
	Copper - iron - rare metals	St. Eugene Mining Corporation Limited	34.8%	17

### Notes:

- (1) Controlled through Kilembe Copper Cobalt Ltd. in which Frobisher Limited holds 93.0% of the issued capital.
- (2) Contingent upon the exercise of certain options.
- (3) Controlled through Associated Tin Mines (S.W.A.) Limited in which Frobisher Limited holds 60.0% of the issued capital.

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# Producing Companies

### GIANT YELLOWKNIFE GOLD MINES LIMITED

### PROPERTY AND INTERESTS:

- 1. Main property, 26 claims, Yellowknife Bay Area, N.W.T.
- 2. 87.5% interest Lolor Mines Limited, adjoining to East.

### SCALE OF OPERATIONS:

MILL CAPACITY: 800 tons per day. TREATMENT RATE 1954: 800 tons per day.

PRODUCTION RECORD:	Tons Milled	Gold Ounces	Silver
Total to June 30, 1953Year ended June 30, 1954	774,319 275,985	532,313 177,420	163,166 31,105
Total	1,050,304	709,733	194,271

### ORE RESERVES:

Gold Oz. per Ton Tons 1,696,200 0.78

Developed Ore above 750 Level (June 30, 1954)

Note: Diamond drilling below present bottom level at 750 ft. indicates at least 1,000,000 tons of comparable grade may be anticipated on next three levels.

### **DEVELOPMENTS IN 1954:**

Development during the year was directed toward the proving of orebodies previously indicated by diamond drilling with the result that the reserves were maintained at the high and healthy level shown above. The main, or "C" Shaft was deepened during the year to 1,530 ft. and preparations are now in progress for the establishment of a new main haulage level at 1,250 ft. to serve the new levels below 750 ft. Larger amounts of the more refractory type of ore being treated and excessive dust losses from the roasting plant resulted in a drop in the overall recovery compared with previous years. A hot Cottrell unit, now under construction, will be in operation early in 1955 and is designed to largely correct present excessive dust losses; while the major problem of improved cyanide extraction is being given urgent attention by the Company's metallurgists.

EARNINGS RECORD:	1954	Total
Metal Sales and Other Revenue Total Cost of Operation	\$7,092,611 5,584,536	\$28,756,093 23,683,687
Net Profit	\$1,508,075	\$ 5,072,406

#### MANAGEMENT:

P. N. PITCHER—General Manager.

### UNITED KENO HILL MINES LIMITED

### PROPERTY AND INTERESTS:

- 1. 419 claims in the Keno Hill-Galena Hill area, Mayo District, Yukon Territory, on which a number of former mines are situated including the No Cash, Bermingham, Onek, Elsa, Shamrock, etc. Production operations are confined to the re-opened Hector and Calumet Mines but certain others are under development.
- 2. 100% ownership of the Yukon Coal Co., Carmacks, Yukon.
- 3. 50% ownership (with Cassiar Asbestos Corporation Limited) of the Territorial Supply Co.

### SCALE OF OPERATIONS:

Mill Capacity: 500 tons per day. Treatment Rate 1954: 515 tons per day.

PRODUCTION RECORD:  To Sept. 30, 1953 Year ended Sept. 30, 1954 Total	Tons Milled 512,411 180,249 692,660	Silver Ounces 20,539,084 6,191,599 26,730,683	Lead Pounds 81,279,084 30,663,549 111,943,455	Zinc Pounds 48,013,357 26,134,700 74,148,057	Cadmium Pounds 619,569 312,931 932,500	
ORE RESERVES:  Hector-Calumet MineOnek Mine	Tons 616,868 123,491	Silver Oz. per to 38.2 10.3	Lead Per Cent 8.8 4.4	Zinc Per Ce 7.7 13.0	nt	

### **DEVELOPMENTS IN 1954:**

The Hector-Calumet mine supplied essentially all the milling ore throughout the year and new development was concentrated here on all levels down to and including the 900. The results of this work were most encouraging and sufficient high-grade ore was developed to replace ore milled during the year. The reserves shown above are therefore essentially in the same tonnage as those reported a year ago.

The Hector internal shaft was deepened below the 900 level and new levels established at 1040, 1165 and 1300 ft. Lateral work on the new levels is scheduled to start early in 1955.

During the summer months development of the Shamrock mine, on Keno Hill, was started by means of an adit designed to intersect the vein structure 100 ft. below the old workings. Work to date has shown a length of 85 ft. of high-grade ore running 70 ounces per ton silver and 20% lead with the shoot remaining open at one end. Further exploration is proposed for the summer of 1955.

EARNINGS RECORD:	1954	Total
Metal Sales and Other Revenue	\$ 7,081,730.36	\$ 30,501,384.54
Total Cost of Operation	6,202,043.77	22,447,309.54
Net Profits	\$ 879,686.59	\$ 8,054,075.00

### MANAGEMENT:

C. E. White—General Manager. A. E. Pike—Resident Manager.

### NEW CALUMET MINES LIMITED

### PROPERTY AND INTERESTS:

- 1. Main property of 370 acres, plus adjoining Grand Calumet Mining Company Limited property (15 claims adjoining to East).
- 2. Controlling interest in Jarviston Mines Limited, near Sault Ste. Marie, Ontario; and in Cadieux Mines Limited near Renfrew, Ontario.
- 3. 47 claims, Tetagouche Group, in New Brunswick.

### SCALE OF OPERATIONS:

MILL CAPACITY: 800 tons per day. TREATMENT RATE, 1954: 385 tons per day.

PRODUCTION RECORD:  To Sept. 30, 1953 Year ended Sept. 30, 1954  Total		Zinc Pounds 236,461,298 12,863,914 249,325,212	Lead Pounds 67,666,473 3,612,830 71,279,303	Silver Ounces 5,369,062 319,218 5,688,280	Gold Ounces 30,202 1,834 32,036
	ons 2,074	Zinc Per Cent 7.09	Lead Per Cent 1.48	Silver oz. per ton 3.07	Gold oz. per ton 0.015

### **DEVELOPMENTS IN 1954:**

Shaft deepening to 2,200 ft. was completed and good progress was made on the development of new levels below the 1500 ft. level, with the result that a substantial portion of the 1955 production will come from the higher grade orebodies lying in this new mine area. Accordingly, it is anticipated that 1955 earnings will be substantially higher than those in the current year.

EARNINGS RECORD:	1954	Total
Metal Sales and Non-operating Revenue Total Cost of Operation	\$1,013,865 1,066,261	\$23,104,688 18,908,615
Loss for year and Net Profit to date	\$ 52,396	\$ 4,196,073

### MANAGEMENT:

J. M. Cunningham-Dunlop—Managing Director.

### CONNEMARA DIVISION

### PROPERTY AND INTERESTS:

- 1. Gold properties at Hunter's Road, Southern Rhodesia, on which active mining and milling operations are conducted.
- 2. A variety of prospects and properties under option acquired by the Division's aggressive exploration department.

### SCALE OF OPERATIONS:

MILL CAPACITY: 600 tons per day. TREATMENT RATE, 1954: 445 tons per day.

### PRODUCTION RECORD:

To Dec. 31, 1953 Year ended Dec. 31, 1954	8	s Milled Gold Ounces 44,415 158,079 55,740 33,327
Total	1,0	191,406
ORE RESERVES:	Tons	Gold oz. per ton
Total Proven	455,000	

### **DEVELOPMENTS IN 1954:**

The results of extensive underground development carried out during the year were generally disappointing and produced no substantial addition to the known ore reserves. A point has now been reached where it seems advisable to discontinue the relatively fruitless, and fairly expensive, search for new ore and concentrate on the most economical extraction of the remaining ore blocks as they are now known. A period of  $2\frac{1}{2}$  years, at least, will be required for completion of this programme.

### EARNINGS RECORD:

Metal Sales and Other Revenue  Total Cost of Operation	1954 \$1,133,115 1,140,322	Total \$7,021,615 7,318,888	
Net Loss	\$ 7,207	\$ 297,273	

### MANAGEMENT:

D. L. COULTER-Resident Manager.

### GEOIL LIMITED

### HISTORY:

This company was formed in December, 1954, for the purpose of taking over, under a single corporate body, the management and further disposition of the various petroleum interests of Ventures Limited and Associated Companies. The authorized capital of Geoil Limited was set at 6,000,000 shares of par value one dollar each, of which 3,000,000 shares were issued for the assets acquired on the basis of a realistic comparative evaluation made of the various properties and holdings.

As a result, Frobisher Limited now holds 54.06% of the issued capital of Geoil Limited, replacing its previous holdings in Seaoil Limited and Williston Oil and Gas Company. In addition, and also as a result of the merger of interests, Frobisher Limited has acquired, through Geoil Limited, a participation in two important petroleum projects with which it had no previous connection.

### SUMMARY OF ASSETS AND INTERESTS OF GEOIL LIMITED

- 1. 50% interest (with Federated Petroleums Ltd.) in Trans-Border Oils Ltd.
- 2. 100% interest in Seaoil Limited.
- 3. 34% interest in Lake St. Clair Syndicate.
- 4. 50% interest in certain oil projects in Caddo Parish, Louisiana, U.S.A.

### TRANS-BORDER OILS LTD.

### PROPERTY AND INTERESTS:

- 1. 100% ownership of Williston Oil and Gas Company.
- 2. 20% working interest in 72,353 acres in Cremona area of the Alberta Foothills District.
- 3. 10.36% interest in the 79,982-acre South Alhambra block about 18 miles north of the Cremona acreage.
- 4. 50% interest in the Abbey drilling reservation of 83,520 acres in southwestern Saskatchewan.
- 5. 25% interest in two drilling reservations totalling 148,960 acres between Regina and Weyburn in eastern Saskatchewan.

### **DEVELOPMENTS IN 1954:**

This company was formed about the middle of 1954 to take over and exploit the holdings in Canada of Williston Oil and Gas Co. (a Delaware corporation) to avoid the possibility of tax difficulties arising as a result of future Canadian production. Preliminary development of acreages in Alberta and Saskatchewan continued and seismic work carried out on the Cremona and Alhambra blocks was productive of highly encouraging results. Information obtained from subsequent exploratory tests in the Cremona area, on and adjacent to our acreage, is indicative that further development may well prove the existence in the Mississippian horizon of a major light gravity oil field within our block. As of the end of March 1955, one well has been completed on our ground with an initial potential of over 1,000 bbls. per day of 35° API oil on restricted flow, and an additional five wells are drilling within two miles of this discovery. The discovery well is being produced at 265 bbls. per day and it is estimated that 20 to 25 development wells will have been completed by the end of 1955.

On the South Alhambra block, a Devonian reef structure about 10 miles in length has been indicated by the seismic work. The first exploratory test on this structure found oil showings in the D-3, but as it entered the reef below the water line some distance down flank, it had to be abandoned. More detailed seismic work is now being done to determine a higher point on the reef structure on which to drill another test.

### WILLISTON OIL & GAS COMPANY

### PROPERTY AND INTERESTS:

- 1. 50% interest in 6,500 acres in the producing Badger Basin field, Park Co., Wyoming, U.S.A.
- 2. 100% interest in 220,926 acres in the Williston Basin in Montana, North and South Dakota, U.S.A.
- 3. Working interests, averaging about 20%, in 69,986 acres in the same Williston Basin area.
- 4. 100% interest in 18,191 acres in various favourable areas of Wyoming, U.S.A.
- 5. 71/2% carried interest in 320 acres of proven production in the South Clareton Area, Wyoming, U.S.A.
- 50% working interest in 320 acres (including 2 producing wells) in the Forget Area, eastern Saskatchewan.

#### **DEVELOPMENTS IN 1954:**

Revenue continued to be received from producing wells at Glendive Montana, South Clareton Wyoming, Forget Saskatchewan, and Badger Basin Wyoming. In the latter field oil reserves in the productive 3rd Frontier Horizon are estimated to be on the order of 4,000,000 barrels.

During the year the company elected to pursue a policy of conserving funds, by restriction of direct development operations, in favour of the retention of reduced carried interests in certain of its high-potential acreages on which farm-out agreements could be negotiated. The most important of these involves a free exploratory well, being drilled by Husky Oil and Refining Company to test the deeper horizons below the Dakota sandstone in the Badger Basin, in return for a 50% interest in all future production at depth. As a result of similar arrangements concluded with respect to properties in both the South Clareton, Wyoming area and in the Williston Basin other promising ground has been, or is being, given active test at little or no expense to the company.

### SEAOIL LIMITED

### PROPERTY AND INTERESTS:

- 1. 50% interest (with International Petroleum Co., Ltd.) in 500,000 acres in the Sechura Desert, Northern Peru, South America.
- 2. 100% interest in concessions of 275,000 acres in the Pisco Basin, south of Lima, Peru.
- 3. 40% interest in concessions embracing the main structure in the Sacramento Dome area of Eastern Peru.

#### **DEVELOPMENTS IN 1954:**

Most of the company's endeavour has been concentrated in the Sechura Desert where, following completion of geological and geophysical studies, three exploratory tests were drilled in which small quantities of dry gas were encountered but no oil was found. Further exploratory drilling is under consideration. In the Pisco Basin a similar programme has now been started and work to date has indicated favourable conditions for petroleum accumulations. A farm-out agreement has been concluded whereby, for the consideration of a 50% interest in the concession, further geophysical work and one exploratory drill test will be done at no cost to Seaoil Limited.

### LAKE ST. CLAIR SYNDICATE

### PROPERTY AND INTERESTS:

Exploration rights for oil and gas on an 87,600-acre concession of off-shore ground in a strip 5 miles wide along the south and east shores of Lake St. Clair.

### **DEVELOPMENTS IN 1954:**

Results of a gravity meter survey carried out on the eastern portion of the concession have been sufficiently encouraging to warrant undertaking a 10 well minimum exploratory drilling programme and extension of the gravity work, as soon as weather conditions permit in the month of May. The structural features indicated by the gravity study are similar in character to others in this section of Southern Ontario from which oil and gas are produced at shallow depths, and high hopes are held for this project as a substantial source of quick revenue.

### GEOIL PROJECTS IN CADDO PARISH, LOUISIANA

- A 50% working interest in 10 acres of proven ground in the Pine Island field. Seven wells are capable
  of producing about 4,800 barrels per month from the Annona Chalk at 1,550 feet and three additional
  proven sites remain to be drilled. Reserves are estimated at 525,000 bbls.
- 2. A 50% working interest in 447 acres near Vivian. Successful wells have been reported recently on adjoining acreage and an exploratory test on our ground is now under consideration.
- 3. A 50% working interest in 630 acres on the south side of the Rodessa field. Consideration is presently being given to drilling an exploratory test on a known oil-bearing structure on this ground.

### **DEVONIAN LIMITED**

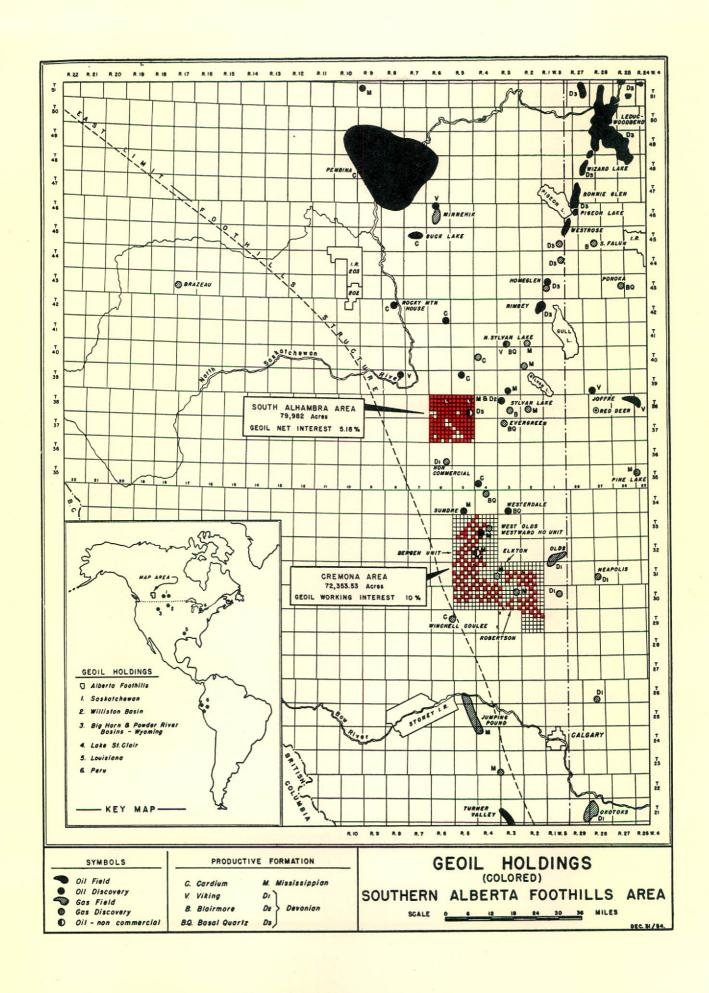
This company held an investment portfolio valued at \$393,714 which is at present in the process of liquidation, to provide initial working capital for Geoil Limited.

GEOIL LIMITED FINANCIAL RECORD Representing funds expended to date on all projects, less amounts written off. Valuation of Assets December 31, 1954 \$5,383,947

#### MANAGEMENT:

J. D. BATEMAN-Vice-President. A. G. DARLING-Consultant.

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# Development Projects

### KILEMBE MINES LIMITED

(Controlled through Kilembe Copper Cobalt Ltd.)

### PROPERTY AND INTERESTS:

Copper - cobalt property with extensive acreage (26.4 square miles) in the eastern foothills of the Ruwenzori Mountains, Uganda, British East Africa.

### SCALE OF OPERATIONS:

PROPOSED MILL CAPACITY: 1,335 tons per day. PRODUCTION TO COMMENCE 1956.

ORE RESERVES:	Т	Copper	Cobalt
Developed and Proven	Tons	Percent	Percent
	11,321,000	2.12	0.18

NOTE:

It is the opinion of both company and independent consultants that many million additional tons of comparable grade will likely be found beyond the limits of the presently proven reserves.

### **DEVELOPMENTS IN 1954:**

Engineering design, the preparation of construction and erection plans, and the ordering of necessary supplies and equipment, constituted a major portion of the company's activities during the year. This phase of the undertaking reached a sufficient stage of completion by the fourth quarter, to permit work to be started on the 5700 H.P. Mobuku River Power Development; on excavation for concentrator foundations at the mine, and on the necessary underground mine preparation preliminary to production. Meanwhile, throughout the year, a vigorous construction programme was carried out at the property to provide housing for both married and single Europeans and for some 2,000 native African employees. As part of this same programme, the property has now been equipped with all necessary permanent working and service buildings requisite to the ultimate operation. Metallurgical plant sites were selected at Kasese, the contemplated western terminus of a new railway line now in construction from Kampala, and at Jinja, on the north shore of Lake Victoria, where electric smelting facilities will be located in close proximity to the Owen Falls Hydro Station of the Uganda Electricity Board.

Plans are therefore well advanced, and important progress has already been made toward the early establishment of Uganda's first, major metal-producing industry.

FINANCIAL	RECORD	•		
		·	Year 1954	Total to Date
Funds	expended		£1,900,000	£3,900,000
			(\$5,320,000)	(\$10,020,000)

Note:

The total cost of bringing the property into production is estimated at £6,500,000 (\$18,200,000); additional funds being provided by Frobisher Limited, Colonial Development Corporation and Uganda Development Corporation.

### MANAGEMENT:

D. C. Sharpstone—Managing Director. A. E. Pugsley—General Manager.

### QUEBEC METALLURGICAL INDUSTRIES LTD.

### PROPERTY AND INTERESTS:

- 1. Metallurgical laboratory and research facilities at Billings Bridge, Ottawa, Ontario.
- 2. Patent rights on several metallurgical reduction processes.
- 3. A 30% interest (with Ventures Limited and Frobisher Limited) in Northwest Power Industries Limited.
- 4. A widely diversified investment portfolio of which the most important components are: a minority position in S. A. Minerals Corporation (a chromite and manganese producer); a one-third interest, through an associated company, in Tororo Exploration Company Limited (investigating deposits of phosphate and columbium in Uganda); a participation in Temagami Mining Company Limited (a high-grade copper prospect).
- 5. Ownership or control of a large number of mining properties which cover a wide range of minerals and metals, including extensive placer deposits containing economic amounts of columbium and uranium in British Columbia, large deposits of cobalt in New Caledonia, nickel-bearing lateritic iron ores in the Philippines, and magnetic iron ore in Alaska.
- 6. 100% ownership of Cobalt Chemicals, which is now a division of the Company.

### **DEVELOPMENTS IN 1954:**

The Company's attention in 1954 was chiefly centered on the Northwest Power Industries project, with special emphasis being placed on the future ore supply for projected concentrating, smelting and refining plants. As a result of an intensive exploration campaign conducted on the west coast by the Company's engineers, extensive placer deposits of columbium and uranium were discovered and staked. Laboratory test work is indicating an effective procedure for the economic recovery of the valuable minerals from the placer ores. Concentration tests were also carried out on the magnetic ores from the Klukwan deposits in Alaska, demonstrating that it is possible to make a high-grade low-cost product.

Progress was made on the development of plans for establishing pilot plants in Vancouver to produce pig iron and to treat lateritic ores, in preparation for the contemplated future large scale operations. A process for the extraction of nickel, cobalt, chromium, alumina and iron from ores of the latter type has already been developed in the laboratory and is now being proven on a somewhat larger scale.

At Cobalt, the Cobalt Chemicals process for arsenical ores has been given preliminary test. Further research is now in progress, which is directed toward the end of simplifying the operating procedures and so effecting economies in the cost of production.

FINANCIAL RECORD:	1954	Total
Acquisition and Development of mineral properties	\$404,430	\$1,614,452
Metallurgical Research	181,446	807,885
Northwest Power Project	150,000	250,000
Total Funds Expended	\$735,876	\$2,672,337

#### MANAGEMENT:

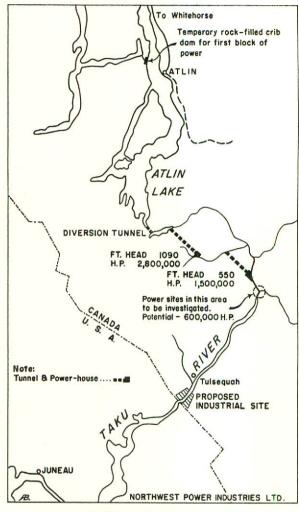
L. J. LICHTY—General Manager.

### NORTHWEST POWER INDUSTRIES LIMITED

Field surveys and engineering studies relative to the Company's proposed major power development in northern British Columbia and the southern Yukon were continued during 1954 and have entirely confirmed the feasibility of the tentative plans developed in the preceding year.

It has now been shown definitely that a minimum of 4,300,000 h.p. can be developed in stages, at two sites between the south end of Atlin Lake and the Taku River, with the further possibility that an additional 500,000 h.p. can be economically developed on the Taku River itself. The scheme, as now conceived, envisages diversion of the waters of the Yukon watershed, by means of dams, into natural storage basins at elevations about 2,000 ft. The water reserves thus created will then be available, on a year-round basis, to maintain a large uniform flow out of Atlin Lake through rock tunnels to generating stations located in the Taku River valley below. A feature of major importance in this development is the fact that at any particular stage the capital expenditure involved is approximately proportional to the amount of power to be developed at that stage. In other words, blocks of power need only be developed as required, without increasing the total cost of the ultimate development.

The Government of British Columbia has extended, for a further period of one year, the temporary survey permit under which the Company has been carrying on these investigations. Northwest Power Industries Limited has undertaken to spend an additional \$550,000 during 1955 for definitive engineering studies of the project. As evidence of good faith, and as a guarantee that the Company will pursue its investigations with dispatch, a performance bond, in the amount of \$2.5 million, has been deposited with, and accepted by, the British



PROPOSED DEVELOPMENTS

Columbia Government. Part of these monies can be used to defray the cost of the 1955 engineering program, and the deposit is refundable in full in the event that a Conditional Water Licence is not granted, or the Company abandons the project.

The Government of Canada has granted to Northwest Power Industries Limited a Priority Permit under the Dominion Water Power Regulations Act, giving the Company exclusive rights, pro tem, to the water power in this area.

### FINANCIAL RECORD:

Engineering Surveys and Plans Performance Bond (recoverable)	\$ 300,000 2,500,000	\$ 500,000 2,500,000
	\$2,800,000	\$3,000,000

### MANAGEMENT:

J. M. Wardle—Consulting Engineer.

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### MIFERMA

(Societe Anonyme des Mines de Fer de Mauritanie)

### PROPERTY AND INTERESTS:

This Company, whose chief shareholders are Frobisher Limited, Bureau Minier de France, and British Iron & Steel Corporation (Ore) Limited, controls huge iron ore concessions granted by the Government of Mauritania at Fort Gouraud in French West Africa.

### **DEVELOPMENTS IN 1954:**

Negotiations initiated more than a year ago on the question of a railroad to transport Miferma ores to seaboard were successful to the extent that formal legislation was passed by the Mauritanian Government permitting the company to export their products, by the most direct route, through Spanish territory. Conferences are now being held with the Spanish authorities to explore the ways and means of reaching a satisfactory working arrangement with them in this connection. Meanwhile a survey has been completed by two independent groups of consulting engineers as to the economics and feasibility of the proposed 250-mile railroad and its ancillary port facilities. Their reports on both scores, were most encouraging. At the property, detailed examination of several of the largest orebodies, by drilling and tunnelling, was resumed in October, 1954, and it is the intention to continue this programme until June, 1955. It is hoped that this further work will increase the known ore reserves on the property to a minimum of 100,000,000 tons of premium grade iron ore; which tonnage is considered, by the Technical Committee, to be a prerequisite before the major expenditures required to bring the property to production can be contemplated.

FINANCIAL RECORD	):	1954	Total
Funds expended		\$330,000	\$1,300,000

### SEAL LAKE (LABRADOR) CONCESSION

### PROPERTY AND INTERESTS:

Under a concession from the Government of Newfoundland, prospecting rights are held on 500 square miles, in three blocks, in and around the Seal Lake Area, for a three-year period ending in April, 1958. These properties represent a careful selection of the most attractive ground chosen from a previous concession of some 3,600 square miles, after some years of previous field work.

### **DEVELOPMENTS IN 1954:**

Active field operations were again carried out by the geological and prospecting staff throughout the entire open season, making many important additions to the fund of information already built up on this highly metallogenic area. More than 300 individual copper-bearing exposures have been discovered scattered over an area some 25 miles long, east and west from Seal Lake; some of which show signs of possible continuity and near-ore concentrations of copper minerals. A most encouraging geological structural picture has been evolved from work to date which, coupled with the numerous known copper occurrences, offers tantalizing promise in the way of ore-making possibilities.

It is the intention in 1955 to concentrate attention on the known areas of highest metal concentration and to explore in detail the highly plausible theories developed by the geological staff. To this end, arrangements have been made for a geophysical survey of portions of the concession to be carried out in the late winter months. Further geophysical work, detailed prospecting and mapping, and diamond drilling if justified, is also planned when flying resumes after 'break-up'.

FINANCIAL RECORD	:	1954	Total
Funds expended		\$28,918	\$305,585

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# Other Projects

### RAINVILLE MINES LIMITED

At this property, which consists of 67 claims in Louvicourt Twp., Val d'Or District, Quebec, the first phase of underground exploration was terminated in June, 1953, after 352,736 tons of copper ore grading 2.32% had been proven. Following re-organization of the Company's capital structure and negotiation of an agreement with Canadian Malartic Gold Mines Limited, the Company was provided with \$153,000, which enabled it to resume underground development in October, 1954. Whereas previous work, and all the presently known ore reserves were concentrated in a single ore zone, known as the #4, the present programme has as its chief object investigation of the #2 zone, which lies about 1,000 ft. north and parallel to the #4. A thousand foot crosscut has been driven on the 550 ft. level in which drill stations have been established, and diamond drill investigation of the new zone is now in progress.

### UIS TIN MINING CO. (SOUTH WEST AFRICA) LIMITED

(UNDER JUDICIAL MANAGEMENT)

(Controlled through Associated Tin Mines (South West Africa) Limited)

Sufficient work has now been done on the Uis Property in the Brandberg District of South West Africa to confirm the uniform and widespread occurrence of tin in pegmatite dikes of huge size and remarkable regularity; but no accurate estimate of ore reserves, nor the grade thereof, can yet be calculated. It is the considered opinion of the Company's consultants, however, that reserves in excess of 10 million tons, grading 2 to 3 lbs. metallic tin per ton will be available for open-cast mining.

Late in 1953 a large pilot concentrator was installed and during 1954, tune-up being completed, the rate of treatment was gradually worked up until the rated capacity of 1,000 tons per day was being utilized. On this scale of operation the project is nearly able to pay its own way and, in its present phase, has as its object a clear demonstration of the recovery of tin that can be effected from the several largest dikes on the property.

### CONSOLIDATED RANWICK URANIUM MINES LIMITED

Under a financing agreement, Consolidated Ranwick provided funds for the development of the Centre Lake property in the Bancroft, Ontario, area during the first three quarters of the year. The overall results were not considered sufficiently encouraging to warrant a continuing participation in the project.

The Company directors have been giving serious study to the rapidly expanding uranium industry in the western U.S.A. and are now planning the early institution of a large-scale exploration programme on the Colorado Plateau. As a first step in this direction the Company has established an exploration office in Denver, Colorado.

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### AKAITCHO YELLOWKNIFE GOLD MINES LIMITED

This Company controls a group of 24 mining claims, adjoining Giant Yellowknife Gold Mines to the north, on which an ore zone containing an estimated 375,000 tons grading 0.75 ounces per ton of gold has been indicated by surface diamond drilling. Underground development is now required to prove the existence of sufficient additional tonnage of ore to justify putting the property into production. Some years ago the property was provided with a 90-foot steel headframe, hoist, compressor, boiler, etc., and all the necessary service buildings to permit underground operations to be begun on short notice. Since that time, however, conditions in the gold mining industry have not been encouraging for the investment of new capital and it accordingly has been the Directors' advised policy to await better times.

### CANADA IRON MINING LIMITED

In the early years of World War II it seemed likely that a critical shortage of iron ore might develop on the American continent and as part of the Frobisher contribution to the war effort, Canada Iron Mining Limited was formed to acquire all the properties in southeastern Ontario, known at that time to have been previous producers of concentrating iron ores. Before the emergency ended, considerable in the way of geological investigation and diamond drilling was done on several of the properties—sufficient to indicate that substantial tonnages of low-grade magnetite ore did, in fact, occur thereon. Since the war years without the spur of strategic necessity, more urgent activities elsewhere have prevented resumption of work on the ground. However, in the light of recent iron developments at Marmora and elsewhere in southeastern Ontario, this group of semi-proven properties has taken on new importance and the consideration of your Directors is now being seriously given to the possibility of an exhaustive exploratory programme.

### ST. EUGENE MINING CORPORATION LIMITED

In 1937, St. Eugene Mining Corporation was formed to investigate, under a 20-year lease arrangement, the old St. Eugene silver-lead-zinc mine at Moyie, B.C. Several seasons of detailed geological investigation demonstrated that while excellent chances definitely existed for the ultimate discovery of new orebodies, the exploration programme required was likely to be very costly. The Company's effort was, therefore, diverted into an active search for other promising mine-making prospects on the west coast; and as a result of this policy over a period of 15 years, a number of properties of merit have been acquired from Alaska down to the U.S. border. In these acquisitions, the emphasis has been placed on iron, copper and the rare earths, but St. Eugene's interests include as well deposits of coal, clay, limestone and other industrial minerals. With the industrial development of the Canadian west coast, which is inevitable and assured in time, these properties will constitute an asset of major importance in the future of Frobisher Limited.

# FROBISHER

(Incorporated under

# Consolidated Balance Sheet

(with comparative figure

### ASSETS

ASSETS		
	December 31, 1954	December 31, 1953
Current:		
Cash on hand and in banks Bullion in transit Accounts receivable Inventory of graphite valued at 50% of selling price	. 57,795 177,036	\$ 128,223 43,081 65,045 67,735
	\$ 660,925	\$ 304,084
Interest in Subsidiary, Associated and Other Companies (Statement 4) (Note 3): Subsidiary companies —		
Shareholding at cost less amounts written off	\$ 6,756,142 667,228	\$ 8,688,966 435,603
	\$ 7,423,370	\$ 9,124,569
Associated and other companies — Shareholdings at cost less amounts written off Advances	\$13,609,493 1,031,806	\$13,169,185 1,115,137
	\$14,641,299	\$14,284,322
Fixed:	\$22,064,669	\$23,408,891
Buildings, plant and equipment, at cost  Less accumulated depreciation	\$ 1,394,835 1,109,148	\$ 1,807,704 1,376,611
Mining properties at cost	\$ 285,687 379,795	\$ 431,093 374,863
	\$ 665,482	\$ 805,956
OTHER:  Exploration expenditures carried forward  Deferred development expenses less amounts written off  Supplies and spare parts at cost  Sundry prepayments and deferred charges	234,509	\$ 1,244,761 7,674 306,021 27,464
	\$ 1,641,679	\$ 1,585,920
	\$25,032,755	\$26,104,851

The notes to financial statements are an integral part of the above

# LIMITED

the laws of Ontario)

# December 31, 1954

for December 31, 1953)

LIABILITIES		
	December 31, 1954	December 31, 1953
Current:		
Bank loans (secured)Bank overdraft	\$ 1,480,910	\$ 1,641,239 28,863
Accounts payable and accrued chargesAmounts owing to associated companiesIncome taxes payable	286,541 32,521	\$ 1,670,102 208,784 46,529 3,020
	\$ 1,799,972	\$ 1,928,435
COMMITMENTS AND CONTINGENT LIABILITIES — see Notes 3 and 4		
Advances from Ventures Limited (Note 6)	\$ 6,532,638	\$ 6,600,087
4% Convertible Debentures Due February 15, 1968 (Note 3)	\$ 5,000,000	\$ 5,000,000
Provision for Depletion on Shares of Associated Companies	\$ 376,000	\$ 226,000
Capital and Deficit: Capital (Notes 5 and 6) Authorized — 7,500,000 shares of no par value Issued — 5,549,488 shares	\$14,919,489	\$14,739,489
Less—	,	
Deficit (Statement 2) Special deficit (Statement 2)	\$ 473,333 3,122,011	\$ 652,578 1,736,582
	\$ 3,595,344	\$ 2,389,160
		\$12,350,329
Approved on behalf of the Board:		
T. LINDSLEY, Director.		
W. B. MAXWELL, Director.		
	\$25,032,755	\$26,104,851

## STATEMENT OF CONSOLIDATED DEFICIT FOR THE YEAR ENDED DECEMBER 31, 1954

Balance December 31, 1953	\$ 652,578
Net profit transferred from statement of consolidated profit and loss (statement 3)	179,245
Balance December 31, 1954	\$ 473,333

### STATEMENT OF CONSOLIDATED SPECIAL DEFICIT

(Consisting of the amounts written off exploration and research expenditures and interest in and advances to associated and other companies less the profit (net) on sales of securities.)

### FOR THE YEAR ENDED DECEMBER 31, 1954

Balance December 31, 1953		\$1,736,582
Add:		
Net loss on sales of securities (note 7)	\$ 713,200	
Amounts written off —		
Securities	487,859	
Advances to associated companies	92,088	
Exploration expenses	203,829	1,496,976
		\$3,233,558
Deduct:		
Profit on conversion of the net foreign currency assets of exploration subsidiaries	\$ 1,847	
Net profit on disposal of fixed and other assets at Black Donald Graphite Division	76,872	
Service fees earned by an exploration subsidiary less administration expenses	32,828	111,547
Balance December 31, 1954		\$3,122,011

The notes to financial statements are an integral part of the above statements of consolidated deficit and special deficit and should be read in conjunction therewith.

### STATEMENT OF CONSOLIDATED PROFIT AND LOSS FOR THE YEAR ENDED DECEMBER 31, 1954

HEAD OFFICE:			
Interest earned and dividends received from associated companies —			
Falconbridge Nickel Mines Limited	\$ 37,500		
Giant Yellowknife Gold Mines Limited	464,894		
United Keno Hill Mines Limited	244,922		
Other	5,257	\$ 752,573	
Less portion of dividends received transferred to provision for depletion		150,000	
Dividends received from other companies		\$ 602,573 101	
Deduct:		\$ 602,674	
Administrative and general expenses	\$ 120.863		
Interest on debentures	200,000		
Interest on bank loan and overdraft	66,596		
Interest on advances from Ventures Limited	and the same of th	467,586	
Net profit of Head Office			\$ 135,088
CONNEMARA DIVISION (Southern Rhodesia):			
Net proceeds from production	\$1,122,601		
Sundry income	10,514	\$1,133,115	
Deduct:			
Operating expenses (excluding allowance for depreciation and deferred development)	\$ 966.076		
Allowance for depreciation and deferred development			
Loss on conversion of foreign currencies		1,140,322	
Net loss (-) of Connemara Division			7,207 —
BLACK DONALD GRAPHITE DIVISION:			
Net sales	\$ 264,806		
Sundry income	6,829	\$ 271,635	
Deduct:			
Operating expenses (excluding allowance for depreciation)		220,271	
Net profit of Black Donald Graphite Division		-	51,364
Net profit for the year (excluding items in consolidated special deficit)			\$ 179,245

The notes to financial statements are an integral part of the above statement of consolidated profit and loss and should be read in conjunction therewith.

## CONSOLIDATED STATEMENT OF INTEREST IN SUBSIDIARY, ASSOCIATED AND OTHER COMPANIES AS AT DECEMBER 31, 1954

Indicated market	Number of shares or	% of out- standing		Cost less amounts	
values	par value	capital	Company	written off	Advances
	720,000 1,500 1,487,733 £ 173,635	60.0% 75.0 92.9	Subsidiary companies: Associated Tin Mines (South West Africa) Ltd. Chavin Mines Corporation Kilembe Copper Cobalt Ltd. Kilembe Mines Limited—6% first mortgage debentures due 1959-1975	\$ 577,858 735,000 4,904,852 473,609	\$ 664,352
			Miscellaneous participations of less than \$40,000 each	64,823	2,876
				\$ 6,756,142	\$ 667,228
		,	* Controlled through a subsidiary company.		
			Associated and other companies:		
\$ 757,399 28,280	1,165,230 200,000 50,500 86,900	35.7% 40.0 2.4 4.1	Akaitcho Yellowknife Gold Mines Limited  Anyox Metals Limited  Beaver Lodge Uranium Mines Limited  British Newfoundland Corporation Limited	\$ 380,243 63,125 86,900	\$ 78,117
200,016 154,754 99,926	714,343 315,825 7,334	28.0 16.3 1.6	Consolidated Guayana Mines Limited Consolidated Ranwick Uranium Mines Limited Dominion Magnesium Limited Dupresnoy Mines Limited	538,048 246,108 58,672 78,580	251,195
181,757 3,525,000	746,802 166,750 150,000	27.0 2.0 4.0	Eureka Corporation Limited	195,337 722,091	63,168
			Ferrum Limited—	}	
	26,265	216	Ferrum Limited— Shares 5% debentures due 1957/1960	105,693	
C 401 440	\$ 111,667	34.6 20.8	Giant Yellowknife Gold Mines Limited	177,748	
6,491,440 79,347	832,236 881,634	33.8	Horne Fault Mines Limited	84,900	6,400
474,628	1,031,800	20.1	Joliet-Quebec Mines Limited	134,602	20,7,000,00
	204,963	27.5	Lakefield Research Limited	81,985	
100000-1212020	874,111	32.6	Michipicoten Iron Mines Limited	304,819 348,767	90,786
718,278	1,282,639	27.7	New Calumet Mines Limited New Larder "U" Island Mines Limited	64,150	
32,864	31,600 2,250	15.0	Northern Mining Company	317,873	
	20,004	19.0	Northfield Canada Limited	90,004	
17,760	222,000	7.4	Pershcourt Goldfields Ltd.	133,920	
	600,000	50.0	Pilley's Island Copper Pyrite Limited	125,000	
2,075,882	638,733	31.7 33.3	Quebec Metallurgical Industries Ltd.	2,006,700 404,894	
232,614	612,143 841,185	34.8	Rainville Mines Limited St. Eugene Mining Corporation Limited	319,989	447,913
	426,364	35.0	Seaoil Limited Societe Anonyme des Mines de Fer de Mauritanie—	426,364	7,669
	17,000 6,778	34.0	Ordinary sharesFounders shares	481,989	60,600
*	487,880	31.0	Trans-Border Oils Ltd. (including shares received in exchange for shares of Williston Oil and Gas Company)	4,025,010	
5,247,404	807,293	32.7	United Keno Hill Mines Limited Miscellaneous participations of less than \$60,000 each—	540,328	
474,177			those without market value	494,951 570,703	1,516 24,442
\$20,791,526				\$13,609,493	\$1,031,806

## Notes to Financial Statements

AS AT DECEMBER 31, 1954

1. The consolidated financial statements reflect the financial position and operating results of the company and its wholly-owned subsidiaries, Bushveld Limited, Canada Iron Mining Limited, Frobrican Exploration Company Limited and Mines Incorporated. The company's interest in its other subsidiaries is shown as a separate item in the balance sheet; they have not been consolidated because of substantial minority interests. A portion of the company's holdings in two of the subsidiaries is under option to Ventures Limited at the cost thereof to the company.

No dividends were received from the unconsolidated subsidiaries during the year ended December 31, 1954. The interest of Frobisher Limited in the current year's losses less profits of these subsidiaries amounted to \$198,405, no portion of which has been provided for in the accounts of Frobisher Limited. The interest of Frobisher Limited in the aggregate of the losses less profits of unconsolidated subsidiaries accumulated from the date of their acquisition to December 31, 1954, not provided for in its accounts, amounted to \$129,241.

2. Assets and liabilities in currencies other than Canadian dollars are converted into Canadian funds at the current quoted rates of exchange at December 31, 1954, except fixed assets (and the related accumulated depreciation), exploration expenditures and deferred development expenses which are converted at the rates of exchange prevailing when the expenditures on the assets were made.

Revenues and expenses in currencies other than Canadian dollars are converted into Canadian funds at approximately the average monthly quoted rates of exchange, except the provision for depreciation and deferred development which is converted at the rates of exchange prevailing when the expenditures on the related assets were made.

The company has pledged 500,000 shares of Giant Yellowknife Gold Mines Limited, 500,000 shares
of United Keno Hill Mines Limited and 150,000 shares of Falconbridge Nickel Mines Limited under
the trust indenture securing the 4% convertible debentures.

The company has loaned 49,000 shares of United Keno Hill Mines Limited and 5,000 shares of Giant Yellowknife Gold Mines Limited to associated companies.

4. The company has agreed to make expenditures subsequent to December 31, 1954, amounting to approximately \$6,000,000. These expenditures include the following:

Purchase of 212,120 shares of Trans-Border Oils Ltd. not later than	
July 1, 1955	\$1,749,990
Purchase of 37,553 shares of Quebec Metallurgical Industries Limited	
prior to May 1, 1955	281,648
Purchase at par of shares of Kilembe Copper Cobalt Ltd. and debentures of Kilembe Mines Limited during the next 11/2	,-(
years (£1,402,730)	3,784,565
	\$5,816,203

- 5. During 1954, 45,000 shares of capital stock were issued for \$180,000 cash.
- 6. Share purchase warrants outstanding at December 31, 1954 entitle the holders to purchase 495,512 shares at \$10 per share on or before June 26, 1956. Ventures Limited has agreed to purchase at \$10 per share any shares not taken up by the holders of share warrants. Advances from Ventures Limited at December 31, 1954 were in excess of the maximum amount which might be receivable from that company under the agreement.

  There is also an option outstanding to sell 500,000 shares of capital stock to Ventures Limited at \$8 per share on or before February 12, 1957.
- 7. The net loss on sale of securities includes a loss of \$975,750 arising from the sale of 300,000 shares of Williston Oil and Gas Company to Ventures Limited at \$5 per share.

## Auditors' Report

To the Shareholders of Frobisher Limited:

We have examined the consolidated balance sheet of Frobisher Limited and its wholly-owned subsidiary companies as at December 31, 1954 and the statements of consolidated profit and loss, deficit and special deficit for the year ended on that date. Our examination included a general review of the accounting procedures and such tests of accounting records and other supporting evidence as we considered necessary in the circumstances.

In our opinion the accompanying consolidated balance sheet and statements of consolidated profit and loss, deficit and special deficit, when read in conjunction with the notes appended thereto, present fairly the financial position of the companies consolidated therein as at December 31, 1954 and the results of their operations for the year ended on that date.

CLARKSON, GORDON & CO.,

Toronto, Canada, May 2, 1955. Chartered Accountants.

