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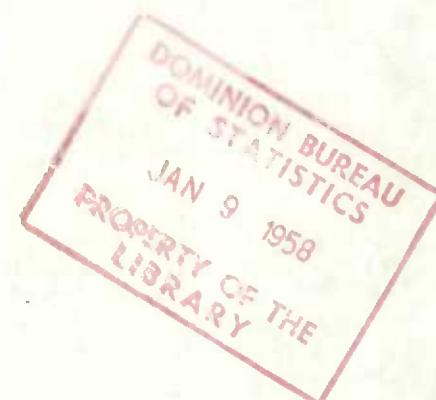


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# THE FELDSPAR AND QUARTZ MINING INDUSTRY

## 1956



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## NOTICE

The annual reports prepared by the Industry and Merchandising Division of the Bureau of Statistics are divided into 3 volumes, as follows: **Volume I** — The Primary Industries, including mining, forestry and fisheries; **Volume II** — Manufacturing; **Volume III** — Merchandising and Services. The volumes are made up of parts, and the parts in turn are subdivided according to the industries which comprise.

Volume I consists of the following parts:

- Part I — Mineral Statistics
- Part II — Forestry Statistics — Operations in the Woods
- Part III — Fisheries Statistics

Part I includes the following reports which constitute the complete series on Mineral Statistics of Canada. Individual reports are issued as the information becomes available; they are arranged in a form suitable for binding.

- A — General Review of the Mining Industry, 50¢
- B — The Gold Mining Industry, 50¢
- C — The Silver-Lead-Zinc Mining Industry, 25¢
- D — The Nickel-Copper Mining, Smelting and Refining Industry, 25¢
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- T — The Sand and Gravel Industry, 25¢
- U — The Stone Industry, 25¢
- V — Contract Drilling in the Mining Industry, 25¢

# THE FELDSPAR AND QUARTZ MINING INDUSTRY

## 1956

Owing to the very close physical association of feldspar and quartz in many Canadian deposits (pegmatites), it is difficult for some operators to make a separation of all data pertaining to the mining of each individual mineral; for this reason, the general statistics relating to employment, fuel and electricity, etc., have been combined in this report. Since 1936 corresponding statistics relating to the production of nepheline syenite have been included with those pertaining to the commercial production of feldspar and quartz.

Quebec produced feldspar; nepheline syenite output came from Ontario only; quartz (silica) in various forms was produced in Nova Scotia, Quebec, Ontario, Manitoba, Saskatchewan and British Columbia.

The industry employed an average of 502 persons who received \$1,792,484 in salaries and wages. Fuel cost \$162,586 and 17,586,202 kwh of electricity were purchased for \$189,481. Process supplies, containers and freight amounted to \$407,422.

**TABLE 1. Principal Statistics of the Feldspar and Quartz Mining Industry<sup>1</sup>, Significant Years, 1921-1956**

Year	Establishments <sup>2</sup>	Employees	Salaries and Wages	Cost of fuel and electricity at works	Cost of process supplies and containers at works	Gross selling value of products (f.o.b. works)	Net <sup>3</sup> value of production
	No.	No.	\$	\$	\$	\$	\$
1921 .....	31	244	166,253	20,212	N.A.	543,701	N.A.
1929 .....	40	488	353,891	41,462	"	901,998	"
1931 .....	36	166	135,809	20,996	"	490,119	"
1933 .....	28	146	117,037	26,327	"	402,937	"
1937 .....	39	445	384,698	82,611	103,859	1,428,714	1,242,244
1939 .....	43	338	330,170	79,114	99,607	1,352,671	1,173,950
1941 .....	38	506	610,489	91,165	159,818	1,838,054	1,587,071
1944 .....	41	529	772,385	166,501	241,400	2,104,030	1,636,093
1946 .....	30	517	876,034	161,208	180,207	2,168,673	1,727,972
1949 .....	27	442	946,268	146,379	216,206	2,650,035	2,184,782
1950 .....	33	476	1,056,129	179,445	173,123	3,021,555	2,553,587
1951 .....	30	532	1,402,294	263,586	318,493	3,926,523	3,184,952
1953 .....	29	431	1,358,308	245,160	239,602	4,010,191	3,375,154
1954 .....	28	377	1,193,766	204,695	290,080	3,662,181	3,107,993
1955 .....	33	414	1,359,695	236,024	262,907	4,510,375	3,734,690
1956 .....	30	502	1,792,484	352,067	309,799	6,017,744	5,258,255

1. Includes nepheline syenite.

2. Small shippers, whose production is recorded from consumers' returns, are sometimes not included in the total.

3. Gross value less cost of fuel, electricity, process supplies, containers and freight.

**TABLE 2. Employees and Their Earnings in the Feldspar and Quartz Mining Industry, 1952-1956**

Year	Number of employees					Number of man-hours worked (all employees)	Earnings			
	Office and administrative		Workmen		Total		Office and administrative	Workmen	Total	
	Male	Female	Male	Female						
1952 .....	44	5	377	-	426	1,014,210	201,777	1,050,166	1,251,943	
1953 .....	57	8	365	1	431	936,964	328,208	1,030,100	1,358,308	
1954 .....	49	9	313	6	377	800,373	208,691	985,075	1,193,766	
1955 .....	61	9	344	-	414	891,274	315,211	1,044,484	1,359,695	
1956 .....	56	12	428	6	502	1,152,215	404,071	1,388,413	1,792,484	

**TABLE 3. Number of Workmen, by Months, 1955 and 1956**

Month	1955 Total	1956					Total	
		Surface		Underground	Mill	Male		
		Male	Female	Male	Male			
January .....	233	159	5	53	121	121	338	
February .....	238	161	5	53	118	118	337	
March .....	245	166	5	53	137	137	361	
April .....	285	187	5	55	155	155	402	
May .....	357	215	5	61	168	168	449	
June .....	393	253	5	53	215	215	526	
July .....	405	262	6	46	221	221	535	
August .....	387	246	6	46	214	214	512	
September .....	400	221	6	44	208	208	479	
October .....	391	222	6	44	160	160	432	
November .....	373	190	6	40	170	170	406	
December .....	365	173	6	38	163	163	380	
Average .....	344	208	6	49	171	171	434	
Man-hours worked .....	737,036							

**TABLE 4. Fuel and Electricity Used in the Feldspar and Quartz Mining Industry, 1956**

Kind	Unit of Measure	Quantity	Cost at plant
Bituminous coal (a) From Canadian Mines .....	short ton	-	-
(b) Imported .....	"	4	113
Sub-bituminous coal (from Alberta mines only) .....	"	-	-
Anthracite coal .....	"	6	153
Lignite coal .....	"	-	-
Coke (for fuel only) .....	"	...	4
Gasoline, (includes gasoline used in cars and trucks) .....	Imp. gal.	90,873	34,907
Kerosene or coal oil .....	"	1,349	292
Fuel oil .....	"	753,306	126,409
Wood (cords of 128 cubic feet of piled wood) .....	cord	64	676
Gas (a) Liquefied petroleum gases (propane, etc.) .....	Imp. gal.	70	32
(b) Other manufactured gas .....	M cu. ft.	-	-
(c) Natural gas .....	"	-	-
Other fuel .....	-	-	-
Electricity purchased for power and lighting .....	k.w.h.	13,586,202	189,481
Electricity purchased for other purposes .....	-	-	-
Total (cost only) .....	-	...	352,067
Electricity generated (a) For own use .....	k.w.h.	27,931	...
(b) For sale .....	"	-	-

## FELDSPAR

During 1956 the shipments of feldspar by the producers in Canada were 18,153 short tons valued at \$364,849 which was the same volume as in 1955 but a slightly higher value. In 1955 shipments were 18,152 tons valued at \$355,879. All of the production came from Quebec mines in 1955 and 1956.

The greater part of the production of feldspar is used in the pottery, glass, enamelware, and other ceramic trades, and the remainder mainly in scouring soaps and cleansers and for bonding of fired abrasive wheels and other shapes. Some coarsely-crushed spar, usually made from impure waste or

quarry fines, is sold for stucco dash, artificial stone, chicken grit, etc. Small tonnages of specially selected crude (dental spar) are used in the manufacture of artificial teeth, and such material commands a large premium.

Most of the feldspar used is of the high-potash type, though some high-soda spar is used for blending purposes and in low-fired enamels and glazes. Practically all colours are equally acceptable for ceramic uses, but for cleanser purposes the pale shades of white to buff are demanded.

TABLE 5. Production of Feldspar, Crude and Ground, by Provinces, 1947-1956

	Quebec		Ontario		Canada	
	Tons	Value	Tons	Value	Tons	Value <sup>1</sup>
1947 .....	29,146	\$320,964	6,958	\$60,396	36,104	\$381,360
1948 .....	42,800	464,926	12,051	99,511	54,851	564,437
1949 .....	31,848	384,892	5,100	43,610	36,948	428,502
1950 .....	29,788	378,782	5,760	49,619	35,548	428,401
1951 .....	28,000	425,370	12,749	125,727	40,749	551,097
1952 .....	16,645	293,007	3,622	37,628	20,267	330,635
1953 .....	18,591	319,146	2,655	28,018	21,246	347,164
1954 .....	14,305	278,997	1,791	22,052	16,096	301,049
1955 .....	18,152	355,879	—	—	18,152	355,879
1956 .....	18,153	364,849	—	—	18,153	364,849

1. Excluding the value of containers.

TABLE 6. Consumption of Ground Feldspar, 1951-1955

		1951	1952	1953	1954	1955
		Tons				
<b>(a) By uses</b>						
Glass .....	3,484	4,042	3,892	4,037	4,612	
Scouring powders, cleansers .....	1,701	1,807	1,568	933	1,399	
Abrasives .....	32	61	23	5	11	
Clay products (pottery, tile, insulators, etc.) .....	5,828	4,936	4,689	5,291	5,839	
Enamelling .....	1,105	798	930	703	874	
Heating and cooking apparatus .....	137	208	115	105	1,663	
Iron castings .....	75	90	42	19	22	
Electrical apparatus .....	958	680	650	180	767	
<b>Total .....</b>	<b>13,320</b>	<b>12,622</b>	<b>11,909</b>	<b>11,273</b>	<b>15,187</b>	
<b>(b) By provinces</b>						
Nova Scotia .....	6	6	—	—	—	
Quebec .....	7,135	6,776	7,349	6,617	6,975	
Ontario .....	5,771	5,405	4,096	4,210	8,029	
Alberta .....	408	404	464	446	183	
British Columbia .....	—	31	—	—	—	
<b>Canada .....</b>	<b>13,320</b>	<b>12,622</b>	<b>11,909</b>	<b>11,273</b>	<b>15,187</b>	

TABLE 7. Imports and Exports of Feldspar, 1954-1956

	1954		1955		1956	
	Tons	Value	Tons	Value	Tons	Value
Imports:		\$		\$		\$
Crude feldspar .....	—	—	—	—	5	228
Ground feldspar .....	393	8,078	137	3,106	191	4,530
Exports:						
Feldspar .....	1,056	28,206	1,426	38,125	1,804	48,368

TABLE 8. World Production of Feldspar, by Countries<sup>1</sup>, 1951-1955  
(Taken from the "Minerals Yearbook" published by the United States Bureau of Mines)

Country <sup>1</sup>	1951	1952	1953	1954	1955
North America:			Long tons <sup>2</sup>		
Canada (sales) .....	36,383	18,096	18,970	14,371	16,207
United States (sold or used) .....	400,439	420,831	452,600	411,018	570,577
Total .....	436,822	438,927	471,570	425,389	586,784
South America:					
Argentina .....	3	3	3	3	4,220
Brazil .....	11,800	3	3	3	3
Chile .....	1,181	592	2,047	3	3
Peru .....	129	—	—	—	—
Uruguay .....	664	884	779	696	381
Total <sup>4</sup> .....	19,000	20,000	21,000	22,000	20,000
Europe:					
Austria .....	3,692	2,537	1,332	2,137	2,510
Czechoslovakia .....	3	3	3	3	3
Finland .....	8,069	9,635	9,180	12,062	12,529
France .....	58,830	63,974	59,053	61,021	71,847
Germany, West .....	96,680	101,284	94,190	138,323	169,718
Italy .....	28,684	21,249	24,342	30,373	42,687
Norway .....	30,627	28,834	18,411	27,764	26,574
Portugal .....	463	689	59	—	—
Spain (quarry) <sup>5</sup> .....	1,732	—	—	—	3
Sweden .....	40,423	47,115	37,333	48,454	50,102
Total <sup>4</sup> .....	274,000	280,000	249,000	325,000	381,000
Asia:					
India .....	3,385	2,020	3,881	6,476	5,900 <sup>4</sup>
Japan <sup>6</sup> .....	26,109	23,812	24,682	33,627	30,619
Total .....	29,494	25,832	28,563	40,103	36,519
Africa:					
Eritrea .....	—	—	3	6	—
Madagascar .....	—	—	24	—	—
Southern Rhodesia .....	1,130	—	—	—	—
Union of South Africa .....	3,290	7,361	5,480	3,525	6,421
Total .....	4,420	7,361	5,507	3,531	6,421
Australia <sup>7</sup> .....	14,842	13,589	6,883	16,384	20,589
World total (estimate) <sup>1</sup> .....	780,000	790,000	780,000	830,000	1,050,000

1. In addition to countries listed, feldspar is produced in China, Rumania and U.S.S.R., but data are not available; estimates are included in the total except for China and U.S.S.R.

2. This table incorporates a number of revisions of data published in previous feldspar chapters.

3. Data not available; included in total.

4. Estimate.

5. In addition, the following quantities of feldspar are reported as ground, but there are no crude production data to support this ground figure: 1951, 10,869 tons; 1952, 10,195 tons; 1953, 10,495 tons; 1954, 8,160 tons; 1955, data not available.

6. In addition, the following quantities of aplite and other feldspathic rock were produced: 1951, 58,973 tons; 1952, 70,287 tons; 1953, 71,263 tons; 1954, 74,817 tons; 1955, data not available.

7. Includes some china stone.

## NEPHELINE SYENITE

Nepheline syenite shipped by Canadian producers in 1956 amounted to 180,006 tons valued at \$2,574,140 compared with 146,068 tons valued at \$2,099,512 in the preceding year. All of Canada's output of nepheline syenite was mined in the Blue Mountain area, Peterborough county, Ontario, by two firms, the American Nepheline Limited and the International Minerals and Chemical Corporation (Canada) Limited.

Nepheline syenite is a quartz-free crystalline rock consisting principally of nephelite (a silicate of alumina, potash, and soda), albite, and microcline feldspar. To be of commercial interest it must be amenable to treatment for the removal of iron-bearing impurities such as magnetite, biotite, hornblende, and tourmaline, so that the iron-oxide ( $Fe_2O_3$ ) content can be reduced to under 0.08 per cent. Finely divided iron impurities frequently cannot be removed by dry milling methods, and render otherwise promising deposits of nepheline syenite useless for commercial operation.

Specifications for glass-grade nepheline syenite call for all minus 28 mesh material, and, for pottery grade, all through 200 mesh or finer. High-intensity magnetic separation reduces the iron-oxide content from about 1.50 per cent in the feed to under 0.08 per cent in the finished product. Dry milling methods are used throughout the processing.

Nepheline syenite finds wide use in the ceramic industry where it replaces feldspar as a source of alumina and the alkalis in making glass, pottery, floor and wall tile, refractory cements, whiteware and porcelain products, enamels, and varied ceramic products. The lower fusibility and greater fluxing action of nepheline syenite as compared with that of the traditional vitrifying agents enables a manufacturer to either fire the ware at lower temperature or use a reduced amount of vitrifying agent and still attain the desired properties. In glass batches, the low iron content (0.06 to 0.08 per cent  $Fe_2O_3$ ) of nepheline syenite, combined with its high alumina and alkali content, make it a desirable means of introducing alumina, especially where low iron is important.

TABLE 9. Production of Nepheline Syenite, 1947-1956

Year	Quantity	Selling value, f.o.b. shipping point	Year	Quantity	Selling value, <sup>1</sup> f.o.b. shipping point
	Tons	\$		Tons	\$
1947 .....	66,995	341,635	1952 .....	82,681	1,111,950
1948 .....	74,386	506,462	1953 .....	113,345	1,576,271
1949 .....	78,783	623,002	1954 .....	123,669	1,770,528
1950 .....	65,638	842,886	1955 .....	146,068	2,099,512
1951 .....	81,108	1,114,943	1956 .....	180,006	2,574,140

1. Value of containers excluded.

TABLE 10. Consumption of Ground Nepheline Syenite, 1950-1954

	1950	1951	1952	1953	1954	1955
Tons						
(a) By uses						
Glass and glass wool .....	12,523	13,849	11,042	14,545	13,607	25,765
Clay products .....	1,289	1,767	1,125	1,273	2,063	1,520
Miscellaneous non-metallics .....	...	...	...	13	...	...
Stone products .....	...	...	...	...	...	3,362
Total accounted for .....	13,812	15,616	12,167	15,831	15,670	30,647
(b) By provinces						
Quebec .....	2,137	2,918	3,031	4,324	3,839	16,321
Ontario .....	9,914	10,889	7,132	9,225	9,812	11,792
Other .....	1,761	1,809	2,004	2,282	2,019	2,534
Total accounted for .....	13,812	15,616	12,167	15,831	15,670	30,647

TABLE 11. Exports of Nepheline Syenite, 1947-1956

Year	Quantity	Value	Year		
				Quantity	Value
	Tons	\$		Tons	\$
1947 .....	52,198	188,352	1952 .....	56,323	802,376
1948 .....	61,107	327,518	1953 .....	76,375	1,120,781
1949 .....	57,291	386,954	1954 .....	83,952	1,269,098
1950 .....	54,351	619,202	1955 .....	118,275	1,753,117
1951 .....	59,777	857,236	1956 .....	139,305	1,935,315

## QUARTZ (SILICA)

Shipments of quartz or siliceous material during 1956 amounted to 2,142,234 tons valued at \$3,036,543 compared with 1,869,913 tons worth \$2,039,575 shipped in the preceding year. The production included crude and crushed quartz, quartzite and sandstone, as well as natural silica sands and gravels which were used as fluxes.

In Nova Scotia shipments of silica were made to steel plants chiefly for use in making silica brick; the quantity and value of this material are

not shown in this review but are included in the silica-brick industry. In Quebec substantial tonnages of silica rock were crushed and screened for use in the manufacture of ferrosilicon or further milled to produce sand for silicon carbide. In Ontario most of the shipments were for use in making silica-brick, silicon carbide and ferrosilicon, and for the fluxing of nickel-copper ores. In Saskatchewan the output consisted of low-grade natural silica sands or gravels for use as flux at the Flin Flon smelter of the Hudson Bay Mining and Smelting Co., Ltd.

TABLE 12. Production of Quartz (Silica), 1947-1956

Year	Tons	Value	Year		
				Tons	Value <sup>1</sup>
		\$			\$
1947 .....	1,836,428	1,796,612	1952 .....	1,783,081	2,253,500
1948 .....	2,017,262	2,082,573	1953 .....	1,785,574	2,070,617
1949 .....	1,722,476	1,588,531	1954 .....	1,716,151	1,574,893
1950 .....	1,730,695	1,740,268	1955 .....	1,869,913	2,039,575
1951 .....	1,904,885	2,258,468	1956 .....	2,142,234	3,036,543

1. Value of containers is excluded.

TABLE 13. Production of Quartz, by Provinces, 1955 and 1956

	1955		1956	
	Tons	Value	Tons	Value
Production (shipments) <sup>1</sup> :		\$		\$
Quebec .....	244,702	791,606	320,955	1,243,465
Ontario .....	1,421,302	1,032,938	1,571,819	1,413,192
Manitoba .....	—	—	2,580	9,030
Saskatchewan .....	175,640	87,820	183,563	91,782
British Columbia .....	28,269	127,211	63,317	279,074
Canada .....	1,869,913	2,039,575	2,142,234	3,036,543

1. Includes both crude and crushed quartz, crushed sandstone and quartzite and natural silica sands.

TABLE 14. Production<sup>1</sup> of Natural Low-grade Silica Sand and Silica Gravel as Non-ferrous Smelter Flux, 1954-1956

	1954		1955		1956	
	Tons	Value	Tons	Value	Tons	Value
		\$		\$		\$
Ontario .....	752,456	142,342	770,377	140,623	793,507	153,297
Saskatchewan .....	155,899	70,155	175,640	87,820	183,563	91,782
Canada .....	908,355	212,497	946,017	228,443	977,070	255,079

1. Included in totals shown in Table 1.

TABLE 15. Imports and Exports of Silica, 1955 and 1956

	1955		1956	
	Tons	Value	Tons	Value
Imports:		\$		\$
Ground flint stone .....	803	25,549	616	15,076
Ganister .....	456	8,163	562	6,572
Silica sand for manufacturing .....	735,458	2,146,088	840,374	2,597,302
Silex or crystallized quartz .....	24,517	252,237	26,892	326,620
Silica fire-brick .....	...	1,765,608	...	1,916,638
Quartz, piezo electric .....	10	292,936	8	218,255
Exports:				
Quartzite .....	87,622	265,374	181,196	564,173

TABLE 16. Available Statistics on the Consumption of Silica Sand and Ground Quartz,  
1951-1955

	1951	1952	1953	1954	1955
Tons of 2,000 pounds					
By industries					
Paints, pigments and varnishes .....	1,882	1,492	1,352	1,333	1,320
Soaps and cleaning compounds .....	7,464	8,146	9,286	10,876	9,936
Clay products .....	7,911	6,916	6,541	5,995	6,608
Asbestos products .....	7,345	6,770	9,088	9,364	396
Miscellaneous non-metallic minerals .....	786	156	1,836	1,464	2,219
Roofing paper .....	3,372	2,835	3,703	3,842	4,094
Glass .....	192,238	196,939	234,176	226,430	243,691
Artificial abrasives .....	114,616	99,349	85,493	81,616	97,968
Iron castings .....	4,363	5,875	7,351	3,673	7,717
Cooking and heating apparatus .....	710	1,050	1,271	467	469
Boilers, tanks and plate work .....	113	1,020 <sup>1</sup>	409	681	468
Farm implements .....	396	405	794	207	235
Railway rolling stock .....	6,012	5,010	...	14,383	8,700
Steel castings .....	93,000	135,439	91,578	73,918	53,082
Heavy chemicals .....	24,796	16,565	21,012	21,250	21,700
Miscellaneous chemicals .....	580	751	943	774	810
Stone products .....	1,147	1,055	1,304	2,974	1,438
Machinery .....	3,957	5,682	1,176	2,369	2,132
Electrical apparatus .....	10	—	...	14,383	8,700
Cement manufacturing .....	60,015	57,906	58,548	69,870	91,407
Cement products .....	—	—	664	207	2,729
Miscellaneous iron and steel .....	450	1,230	458	569	763
Ferro-alloys .....	3,828	4,934	4,452	1,628	2,846
Brass and copper products .....	3,538	4,031	1,896	3,085	1,257
Rolled steel products .....	...	...	458	367	558
Pulp and paper .....	...	...	...	929	1,021
Petroleum refining .....	...	...	...	240	254
Enamelling .....	...	...	...	244	...
Polishes and dressings .....	...	...	...	...	16
Gypsum products .....	...	...	...	...	242
<b>Total accounted for .....</b>	<b>538,530</b>	<b>563,556</b>	<b>543,789</b>	<b>538,755</b>	<b>564,076</b>
By provinces					
Nova Scotia .....	2,691	2,712	1,825	3,286	3,054
New Brunswick .....	67	126	152	99	155
Quebec .....	260,506	310,397	283,687	264,493	265,585
Ontario .....	217,310	198,088	200,353	209,965	228,341
Manitoba .....	27,089	19,642	20,567	26,725	31,756
Saskatchewan .....	6	7	5	5	1
Alberta .....	24,362	27,340	31,732	28,070	27,774
British Columbia .....	6,499	5,244	5,468	6,112	7,410
<b>Canada .....</b>	<b>538,530</b>	<b>563,556</b>	<b>543,789</b>	<b>538,755</b>	<b>564,076</b>

1. Includes other foundry sands.

## List of Firms in the Feldspar and Quartz Mining Industry, 1956

Name of firm	Head office address	Location of mine or mill
<b>Nova Scotia:</b>		
Dominion Steel & Coal Corp. Ltd. <sup>1</sup>	Sydney .....	Chegoggan Point
<b>Quebec:</b>		
Assad, Adelard <sup>1</sup>	Buckingham .....	St. Pierre de Wakefield
Bigelow, Gordon <sup>2</sup>	Box 759, Buckingham .....	Derry Twp.
Bigelow, Robt. <sup>2,1</sup>	Glen Almond .....	Templeton
Bigelow, Venard <sup>2</sup>	Glen Almond .....	Derry Twp.
Bon Ami Ltd. <sup>3</sup>	13719 Notre Dame St. E., Montreal .....	Montreal
Buckingham Cartage Reg'd. <sup>1,2</sup>	Glen Almond .....	Glen Almond
Burke Bros. <sup>2</sup>	R.R. No. 1, Thurso .....	Buckingham Twp.
Canadian Silica Corp Ltd. <sup>1</sup>	100 Adelaide St. W., Toronto, Ontario .....	St. Canut
Charette & Desgagnes <sup>1,2</sup>	Glen Almond .....	Derry
Couture and Hill <sup>1,2</sup>	Glen Almond .....	Buckingham Twp.
Dominion Silica Corp. Ltd. <sup>1</sup>	25 St. Joseph St., Lachine .....	St. Donat de Montcalm
Electro Metallurgical Co. <sup>1</sup>	Canal Road, Beauharnois .....	Melocheville
Gauthier, Palma <sup>1</sup>	Glen Almond .....	Buckingham Twp.
Goyer, E., & Frere	St-Bruno .....	St-Hilaire
International Minerals & Chemicals Corp. Ltd. <sup>1,2,3</sup>	77 Metcalfe St., Ottawa, Ontario .....	Derry Twp.
Lachaine, Regis <sup>2,1</sup>	R.R. # 1 Wilson's Corners .....	St. Pierre de Wakefield
Montpetit, E., & Fils <sup>1</sup>	133, rue Principale, Melocheville .....	Melocheville, Huntingdon
Parcher, Earl <sup>1,2</sup>	Glen Almond .....	Derry Twp.
Radius Exploration Ltd. <sup>1</sup>	5188 Hutchinson Ave., Outremont .....	St. Clotilde
Standard Lime <sup>1</sup>	Box 380, Joliette .....	Ste-Emelie
Siscoe Vermiculite Mines Ltd. <sup>1</sup>	Box 1234, Cornwall, Ontario .....	Suzorite
Theoret, Yvon <sup>2</sup>	Glen Almond .....	Glen Almond
Valley, Percy <sup>1,2</sup>	Buckingham .....	Buckingham Twp.
Wallingford, Wm. & A.O. <sup>1</sup>	Gatineau Point .....	Templeton
<b>Ontario:</b>		
American Nepheline Corp. <sup>3,4</sup>	Nephton .....	Methuen Twp.
Algoma Steel Corporation Ltd. <sup>1</sup>	Sault Ste. Marie .....	Deroche Twp.
Canadian Silica Corp. (Ltd.) <sup>1,3</sup>	100 Adelaide St. W., Toronto .....	Little Current, Whitby
Electro Metallurgical Co.	2221 Yonge St., Toronto .....	Killarney
Falconbridge Nickel Mines Ltd. <sup>1</sup>	Falconbridge .....	Falconbridge
International Nickel Co. of Canada Ltd. <sup>1</sup>	Copper Cliff .....	Lawson Twp.
International Minerals & Chemicals Corp. Ltd. <sup>3,4</sup>	77 Metcalfe St., Ottawa .....	Blue Mountain
<b>Manitoba:</b>		
Winnipeg Selkirk Sand Co. Ltd. <sup>1</sup>	265 Portage Ave., Winnipeg 2 .....	Black Island
<b>Saskatchewan:</b>		
Hudson Bay Mining & Smelting Co. <sup>1</sup>	Flin Flon, Manitoba .....	Flin Flon
<b>Alberta:</b>		
May Wallace <sup>5</sup>	Elkwater Lake .....	Elkwater
<b>British Columbia:</b>		
Consolidated Mining & Smelting Co. Ltd. <sup>1</sup>	Trail .....	Fairview
Pacific Silica Ltd.	Box 397, Oliver .....	Oliver

1. Produces silica.
2. Produces feldspar.
3. Operates a mill.
4. Produces nepheline syenite.
5. Produces grinding pebbles.

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