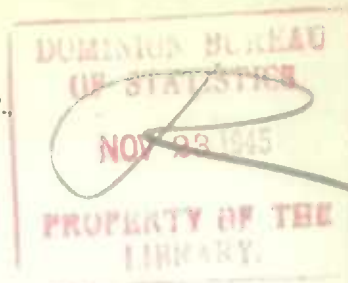


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**DEPARTMENT OF TRADE AND COMMERCE**

**DOMINION BUREAU OF STATISTICS**

**CENSUS OF INDUSTRY**

**MINING, METALLURGICAL & CHEMICAL BRANCH**

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**THE**  
**FELDSPAR & QUARTZ MINING INDUSTRY**  
**IN**  
**CANADA**  
**1944**

(including data relating to Nepheline-Syenite)



**OTTAWA**  
**1945**

**Price 25 cents**

THE ... OF ...

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... ..

Dominion Statistician:  
 Chief - Mining, Metallurgical and Chemical Branch:  
 Mining Statistician:

Herbert Marshall, B.A., F.S.S.  
 W. H. Losee, B.Sc.  
 R. J. McDowall, B.Sc.

### THE FELDSPAR AND QUARTZ MINING INDUSTRY, 1944

Owing to the very close physical association of these minerals in many Canadian deposits (pegmatites), it has been found difficult for some operators to make a separation of all data pertaining to the mining of each individual mineral and, for this reason, the general statistics relating to capital, employment, fuel and electricity, etc., have been combined in this bulletin by the Mining, Metallurgical and Chemical Branch of the Dominion Bureau of Statistics at Ottawa. 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.

During 1944 the gross value of production by the industry, and comprising the value of feldspar, quartz and nepheline syenite sold, totalled \$2,104,030 compared with corresponding values of \$2,138,229 in 1943 and \$1,998,996 in 1942. In 1944 commercial shipments of feldspar were made only from properties located in Ontario and Quebec; quartz (silica) in various forms was produced in Nova Scotia, Quebec, Ontario, Saskatchewan and British Columbia, while production of nepheline syenite was confined to the province of Ontario.

The number of firms reported as active in the industry in 1944 totalled 41; employees numbered 529; salaries and wages amounted to \$772,385 and the value of fuel, electricity and process supplies consumed aggregated \$407,901. The net value of all products sold in 1944 was estimated at \$1,636,093 compared with \$1,681,377 in 1943.

### FELDSPAR

Production (producers' sales) of feldspar, crude and ground, during 1944 totalled 23,509 short tons valued at \$227,632 compared with 23,858 short tons worth \$237,771 in 1943. Of the 1944 output 17,842 tons worth \$177,271 were shipped from Quebec properties and 5,667 tons valued at \$50,361 from quarries in Ontario. The following information is from a recent report prepared by the Bureau of Mines, Ottawa:

"Most of the feldspar mined in Canada is of high-potash grade, though some operators also ship small amounts of soda spar. The latter type is rather uncommon as large deposits, but is sometimes encountered as zonal bodies along the walls of potash feldspar pegmatites. Canada has large reserves of feldspar, and production could be increased to meet any likely demand.

"There were no important new developments in 1944, and production continued at about the same level as during the preceding four-year period. As in former years about half the output went to the domestic market, and the other half was exported to the United States.

"In recent years, the entire production of feldspar has come from adjacent sections of western Quebec and eastern Ontario, in the general Ottawa region. Until 1942, mine output was about equally divided between the two provinces, but in that year Quebec gained a substantial lead and has since supplied 70 to 80 per cent of the total. In 1944, there were eight major producing mines, five in Quebec, and three in Ontario.

"In Quebec, most of the production came from three properties operated by Canadian Flint and Spar Company in Derry and Buckingham townships, in the Lièvre River section, and in Templeton township, all in Papineau county. The only other important producer was United Mining Industries, Limited, operating two properties in Buckingham and West Portland townships, respectively, in the same area. Both of these companies shipped a small tonnage of dental spar in addition to their regular ceramic grade.

"In Ontario, the bulk of the output came from operations of Bathurst Feldspar Mines, in Bathurst township, Lanark county; and Madawaska Feldspar Company, Keystone Contractors, Limited, and Canspar Mines, Limited, in Murchison township, Nipissing District. Keystone Contractors worked its property until midyear, when it was taken over by Canspar Mines, a subsidiary of Lapa Cadillac Gold Mines, Limited.

"Feldspar for domestic use was ground in mills operated by the following:

Canadian Flint and Spar Company, Buckingham, Quebec.  
 Frontenac Floor and Wall Tile Company, Kingston, Ontario.  
 Bon Ami, Limited 13,719 Notre Dame Street East, Montreal, Quebec.

"The first two companies ground material mainly for ceramic purposes; the Bon Ami product is employed solely in cleanser compounds. Production of ground feldspar in 1944 totalled 10,902 tons, compared with 12,290 tons in 1943.

## Feldspar and Quartz

"World production of crude feldspar in 1937, the latest year for which complete statistics are available, totalled about half a million tons, of which the United States furnished over 50 per cent. In 1941, production in that country achieved a record of 338,860 long tons, valued at \$1,519,456, but declined slightly in subsequent years, the estimate for 1944 being 325,000 tons. The leading producing States are North Carolina, South Dakota, New Hampshire, Colorado, and Virginia. The production of ground spar in the United States in 1944 was about the same as in 1943, when shipments totalled 335,810 short tons. In 1937, Canada was fifth on the list of world producers, following Sweden, Norway, and Czechoslovakia.

"Domestic requirements for feldspar are relatively small, and a considerable part of the annual output of crude spar is exported to grinding mills in the United States. In 1943, domestic consumption of ground feldspar was 13,178 tons, distribution by industries being: cleansers, 45 per cent; pottery, 22 per cent; glass, 20 per cent; enamel, 13 per cent.

"All of the feldspar used in industry consists of ground material, usually prepared either in mills run in conjunction with mining operations or in merchant mills supplied from independent mines. Some manufacturers of ceramic products mine or buy crude spar and grind it for their own use. By far the greater part of the production (over 95 per cent in the United States in 1943) is employed for ceramic purposes, including pottery, glass, and enamelware. The remainder is used 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.

"Most of the feldspar used is of the high-potash type, but a certain amount of high-soda spar also is in demand for blending purposes and for use in low-fired enamels and glazes. Practically all colours of feldspar are equally acceptable for ceramic uses, but for cleanser purposes, pale shades of white to buff are demanded. Nepheline syenite and aplite (an impure feldspathic rock) are to some extent competitive with feldspar for certain ceramic uses, notably in the glass trade.

"Until recently, the universal practice has been that all of the feldspar supplied to grinding mills has consisted of crude lump produced by picking and cobbing methods. As a result of threatened shortages in the eastern United States attention has been given in the past few years to the milling and concentrating of sub-grade rock to fill grinders' requirements. The Golding-Keene Company installed a concentrator at Keene, New Hampshire, a few years ago, and in 1943 a 30-ton pilot mill was placed in operation at Erwin, Tennessee, by Consolidated Feldspar Corporation. In 1944, the same company started construction of a 200-ton mill at Kona, North Carolina, which is expected to come into production early in 1945. All the above mills employ flotation methods. Recently, also, there has been a small recovery of by-product feldspar from American mills engaged in concentrating the lithium mineral spodumene from pegmatite, and at Monterey, California, the Del Monte Properties Company lowers the feldspar content of its glass sand by flotation.

"Prices of Canadian crude feldspar in 1944 ranged from \$6 to \$7.50 a ton, according to grade, f.o.b. rail for export or shipment to domestic mills. Selected crude dental grade sold for \$45 to \$53 a ton in carload lots, for United States sale. Domestic ground spar was quoted at \$12.50 a ton for granular glass grade, and \$16.50 to \$20 for 200-mesh pottery grades, all in carload lots, f.o.b. mill.

"On crude feldspar entering the United States there is a duty of 25 cents a long ton. The duty on ground feldspar is 15 per cent ad valorem.



Feldspar and Quartz

Table 1 - PRODUCTION OF FELDSPAR, CRUDE AND GROUND, IN CANADA, BY PROVINCES, 1930-1944

Year	Quebec		Ontario		Manitoba	
	Tons	\$	Tons	\$	Tons	\$
1930 .....	17,074	163,802	9,722	104,667	...	...
1931 .....	10,381	86,842	7,962	100,119	...	...
1932 .....	3,390	39,063	3,657	42,920	...	...
1933 .....	6,183	59,283	4,387	45,350	88	484
1934 .....	9,207	78,853	7,302	61,665	1,793	6,763
1935 .....	7,002	63,075	8,656	75,003	2,084	6,252
1936 .....	8,115	75,703	8,409	70,840	1,322	7,932
1937 .....	12,285	105,612	9,061	72,610	...	...
1938 .....	5,874	62,878	8,106	65,964	78	451
1939 .....	5,399	60,923	7,061	51,056	40	330
1940 .....	8,548	89,004	12,907	98,619	...	...
1941 .....	14,218	137,160	11,822	107,124	...	...
1942 .....	16,802	164,588	5,468	49,353	...	...
1943 .....	17,199	176,222	6,659	61,549	...	...
1944 .....	17,842	177,271	5,667	50,361	...	...

Table 2 - FELDSPAR CONSUMED IN SPECIFIED CANADIAN INDUSTRIES, 1941, 1942 and 1943

Industries	1941		1942		1943	
	Tons	\$	Tons	\$	Tons	\$
Abrasive products .....	84	3,127	119	4,113	117	5,776
Imported clay products .....	3,333	74,247	2,799	62,525	2,352	50,794
Soaps and cleaning preparations ...	3,593	34,411	4,249	43,904	12,733	63,283
Iron and steel products .....	(x)	15,683	...	...	509	10,824
Glass .....	909	16,656	2,874	45,231	2,598	41,454
Enamelling materials .....	523	7,845	331	4,965	265	3,840

(x) Quantity statistics not available.

NEPHELINE SYENITE

Producers' sales of nepheline syenite in 1944 were valued at \$217,989 compared with \$292,010 in 1943. Shipments during the year under review were made solely by the American Nepheline Corporation Limited. The deposit of this company is located in Methuen township, Peterborough county, Ontario. A report "Nepheline Syenite in 1944" as prepared by the Bureau of Mines, Ottawa, contains the following information:

"Nepheline syenite is a quartz-free crystalline rock consisting essentially of the feldspathoid mineral nephelinite (a silicate of alumina, potash, and soda) with albite and microcline feldspars. It often contains varying amounts of iron-bearing minerals, chiefly black mica and magnetite, together with such accessory minerals as zircon, corundum, calcite, scapolite, etc. It has no free silica, and is high in alumina (20 to 30 per cent in average commercial rock) as compared with straight feldspar (17 to 20 per cent), and it has thus found favour in the ceramic industries, particularly in the glass trade.

"Canada and Russia are the only countries that are known to produce nepheline syenite on a commercial scale. Canadian reserves are large, and production can be increased greatly if necessary.

"The developed occurrences of nepheline syenite in Canada are confined to Ontario, where deposits have been worked in Peterborough, Hastings, and Haliburton counties. The large operation of American Nepheline Corporation at Blue Mountain, near Lakefield, in Peterborough county, has accounted for most of the output and has been the only producer since 1942. Prior to that year small tonnages were produced intermittently from deposits near Bancroft, in Hastings county, and near Gooderham, in Haliburton county, and the material was shipped in the crude state to grinding mills in the United States. The rock of the Blue Mountain occurrence is massive and medium-textured, whereas most of the production from the Bancroft and Gooderham areas has consisted of coarse pegmatitic material. Other known, but undeveloped, occurrences in Ontario are in the French River area, Georgian Bay district, and at Port Coldwell, Thunder Bay district, on the north shore of Lake Superior. In Quebec, nephelinite is a constituent of syenites of the Montreal, Labelle-Annonciation, and other areas. In British Columbia, there are extensive bodies in the Ice River district, near Field.

"Very large tonnages of nepheline syenite are milled in Russia for the recovery of the contained phosphate (apatite), with the production of by-product nephelinite. Deposits of commercial grade are reported to occur in British India, but have not as yet been developed. A number of occurrences are known in the United States, but most of the material contains too much inseparable, finely divided iron to be suitable for use in higher grade ceramic products.

"Nepheline syenite is essentially a substitute for feldspar and continues to be used chiefly in the glass trade, where it is preferred to straight feldspar because of its higher content of alumina. Most Canadian glass companies, and several large American plants, now use the material. Some feldspar grinding plants in the United States use the syenite for blending with their granular glass spar. In the glass batch, 3 tons of syenite will replace 4 tons of feldspar, on the basis of relative alumina content, and the higher content of alkalis reduces the temperature of melting, with resultant saving of fuel and longer tank life. Research has been proceeding steadily on applications for nepheline syenite in other branches of ceramics, and it has been found of advantage, owing to its higher fluxing action, as a body ingredient in a variety of products, including pottery, semi-vitreous ware, sanitary and electrical porcelain, floor and wall tile, and structural clay products, as well as in enamels. Increased vitrification, translucency, and mechanical strength, improved glaze-fit, and reduced absorption, warpage, thermal expansion, and crazing, are among the desirable properties claimed for the various types of ware made from it. For ceramic use the crude rock must be freed of its iron-bearing constituents, removal of which can often be readily effected by a relatively cheap process of magnetic separation at about 20-mesh size.

"Because of its relatively high alumina content, nepheline syenite has attracted attention as a possible source of pure alumina for the production of aluminium, to replace bauxite, and commercial methods of treatment have been worked out. At present however, the process is being used on other more adaptable raw materials.

"Glass-grade nepheline syenite for sale in Canada remained at \$11.75 per ton, bulk, in carload lots, f.o.b. Lakefield, and ground, 200-mesh, ceramic grade was quoted at \$16.50. Grade B (dust sold for \$13 l.w.l. American prices also remained unchanged at \$12 for glass grade, and \$15.50 for ceramic grade, all bulk, in carload lots, f.o.b. Rochester, New York. Crude nepheline syenite enters the United States free of duty, provided that total imports of crude and ground material do not exceed 50,000 long tons in any calendar year. The duty on ground material is 15 per cent ad valorem."

Table 3 - PRODUCTION OF NEPHELINE-SYENITE IN CANADA (x). 1936-1944.

Year	Quantity	Value	Year	Quantity	Value
		\$			\$
1936 .....	(a)	37,426 (b)	1941 .....	(a)	227,583
1937 .....	(a)	121,481	1942 .....	(a)	246,893
1938 .....	(a)	142,737	1943 .....	(a)	292,010
1939 .....	(a)	140,148	1944 .....	(a)	217,989
1940 .....	(a)	117,849			

(x) Produced in Ontario only. (a) Quantity not published. (b) First commercial production in Canada.

Nepheline-syenite used in Canada in the manufacture of glass totalled 3,472 tons valued at \$58,629 in 1939, 4,233 tons at \$69,619 in 1940, 5,834 tons worth \$94,091 in 1941, 6,144 tons worth \$100,417 in 1942 and 5,630 tons valued at \$93,528 in 1943.

Table 4 - IMPORTS AND EXPORTS OF FELDSPAR AND NEPHELINE-SYENITE, 1943-1944.

	1943		1944	
Imports	Tons	\$	Tons	\$
Feldspar crude	-	-	-	-
Feldspar-ground	526	866	546	658
Exports				
Feldspar	12,724	96,453	13,081	102,918
Nepheline-syenite	36,240	129,826	35,310	123,905

#### QUARTZ (SILICA)

The production of natural silica or quartz in Canada during 1944 totalled 1,740,262 short tons valued at \$1,658,409 compared with 1,776,749 tons at \$1,608,448 in 1943. Output of primary silica products by the Canadian quartz mining industry includes crude and crushed dyke quartz, quartzite, sandstone and natural silica sands and gravels. The mineral in one or more of the forms thus defined was produced during 1944 in Nova Scotia, Quebec, Ontario, Saskatchewan and British Columbia. Shipments of silica in Nova Scotia were made to steel plants largely for the making of silica brick. In Quebec, high-grade silica sands were produced for the manufacture of glass and chemicals while a considerable tonnage of these same sands was sold for sand-blasting, moulding and various other purposes; in the same province relatively large quantities of crushed quartzite were mined and milled for the manufacture of silicon carbide and other products. The greater part of the tonnage of silica shipped in Ontario during 1944 represented material intended for use in the production of silica brick, cement and ferro-silicon and for the fluxing of nickel-copper ores. Quartz production as recorded for Saskatchewan represented low-grade natural silica sands or gravels shipped as flux to the Flin Flon smelter of the Hudson Bay Mining and Smelting Co. Ltd. Production in British Columbia in 1944 consisted of quartz shipped to the Trail smelter from the Bailey deposits located, in the Greenwood Mining district.

Quotations as given by "Canadian Chemistry and Process Industries" are: silica sand, various grades, in car lots \$9.00 to \$9.50 a ton; silica, quartz, 99 per cent, 110-220 grade, in car lots, \$14.00 to \$20.00 per ton; silica, soft decomposed, 325 mesh, car lots \$30.00 to \$35.00 per ton.



Table 5 - PRODUCTION IN CANADA OF QUARTZ, 1943 and 1944.

	1943		1944	
	Short tons	Value \$	Short tons	Value \$
PRODUCTION(x) (SHIPMENTS)				
Nova Scotia .....	9,486	16,126	10,100	27,350
Quebec .....	214,959	605,916	236,091	639,429
Ontario .....	1,350,640	852,196	1,326,288	868,389
Saskatchewan .....	163,102	57,086	143,101	50,085
British Columbia .....	38,562	77,124	24,682	73,156
CANADA .....	1,776,749	1,608,448	1,740,262	1,658,409

(x) Includes both crude and crushed quartz, crushed sandstone and quartzite, and natural silica sands.

Table 6 - PRODUCTION(x) (USE) OF NATURAL LOW-GRADE SILICA SAND AND SILICA GRAVEL AS NON-FERROUS SMELTER FLUX, 1942-1944

	1942		1943		1944	
	Tons	\$	Tons	\$	Tons	\$
Ontario .....	644,529	225,585	666,452(✓)	233,258	608,403(✓)	212,840
Saskatchewan .....	155,699	54,495	163,102	57,086	143,101	50,085
CANADA .....	800,228	280,080	829,554	290,344	751,504	262,925

(x) Included in totals shown in Tables 5 and 7.

(✓) Exclusive of low cost quartzite used in smelting nickel-copper ores.

Table 7 - PRODUCTION OF QUARTZ (SILICA) IN CANADA, 1929-1944

Year	Ton	\$	Year	Ton	\$
1929 .....	265,949	561,527	1937 (x) .....	1,377,448	1,129,011
1930 .....	226,200	418,127	1938 (x) .....	1,380,011	961,617
1931 .....	195,724	303,158	1939 (x) .....	1,582,935	1,100,214
1932 .....	189,132	276,147	1940 (x) .....	1,858,302	1,203,527
1933 .....	185,783	297,820	1941 (x) .....	2,052,878	1,366,187
1934 .....	272,563	482,265	1942 (x) .....	1,738,174	1,538,162
1935 .....	233,002	424,882	1943 (x) .....	1,776,749	1,608,448
1936 (x) .....	1,046,649	597,781	1944 (x) .....	1,740,262	1,658,409

(x) Complete data for production of this material in Ontario previous to 1936 are not available.

PRICES - UNITED STATES (August, 1945) - Silica, per ton, water ground and floated, in bags, f.o.b. Illinois: 325 mesh, \$21 to \$40 for 92 to 99½ per cent grades. Dry ground, air floated, 325 mesh, 92 to 99½ per cent silica, \$18 to \$30. Glass sand, f.o.b. producing plant, \$1.25 to \$5 per ton. Quartz rock crystals for fusing, all sizes, \$100 to \$150 per ton; prisms for piezoelectrical and optical use command premium. (Engineering and Mining Journal's "Metal and Mineral Markets" - New York).

The following information was obtained from the annual report "Silica in 1944" as prepared by the Bureau of Mines, Ottawa:

"The demand for high-grade silica sand was steady and large quantities are still imported. Silica sand for the manufacture of glass and silicate of soda has to be of a high degree of purity and uniformity, and Canadian producers must adhere rigidly to specifications and must guarantee regularity of shipments in order to take advantage of these markets. The use of Canadian sand for sandblasting is increasing.

"Silica sand is generally prepared from a friable sandstone by crushing, washing, drying, and screening to recover different grades of material according to the use for which it is required. In the manufacture of glass, for instance, the material should range between 20 and 100 mesh. Silica sand may also be obtained from naturally occurring sands, the required grade being recovered by screening. In special cases it can be prepared from a friable quartz and from vein quartz.

"Silica, known as "potter's flint" for use in the ceramic industry must be 150 mesh or finer, whereas in the paint industry, air-floated material 250 mesh or finer is required.

"In the use of silica as a flux, smelter operators endeavour to obtain their material from the nearest possible source, and in many cases use a siliceous ore containing recoverable amounts of the precious metals. The silica requirements for the manufacture of ferrosilicon and silica brick depend upon the market for the finished products.

"Quartz, quartzite, or sandstone, in sizes from ½ inch to 6 inches is used in the manufacture of ferrosilicon and pure silicon, and quartz and quartzite are used also as a smelter flux. For silica brick, quartzite is crushed to about 8 mesh. Some quartz is also crushed to make silica sand.

"The price per ton of the several grades of silica varies greatly depending on its purity and on the purpose for which it is to be used. Silica generally is a low-priced commodity, and therefore the location of a deposit with respect to markets is of great importance. The largest markets for silica are in Quebec and Ontario, and new deposits to be of interest to these markets should be within economic reach of either Toronto or Montreal. In Western Canada the main markets are in Alberta and Manitoba. West of Winnipeg the needs of silica are met almost entirely by imported material."

Table 8 - CONSUMPTION OF QUARTZ, SILICA SAND, ETC., IN CANADA, BY INDUSTRIES, ACCORDING TO CENSUS OF INDUSTRY REPORTS, 1943 (x)

Industry	Quantity	Cost at works
Silica sand and silica (including ground quartz) -		\$
Soaps and cleaning preparations .....	3,640	128,981
Acids and salts .....	39,406	145,366
Paints .....	1,388	45,075
Refractories .....	1,021	10,240
Roofing paper .....	2,135	21,015
Abrasives (silica sand) .....	89,022	511,649
Abrasives (quartz) .....	175	5,410
Glass .....	132,992	870,454
Enamelling materials .....	253	3,795
Products from imported clays .....	3,597	54,812
Foundry facings and supplies .....	62	609
Non-ferrous smelters (x) .....	868,116	367,468
Steel industry (silica sand) .....	116,374	868,316
Ferro-alloys (quartzite) .....	188,636	526,676
TOTAL ACCOUNTED FOR .....	1,446,817	3,559,866

Note: Consumption values are costs at works.

(x) The quantities reported under this industry usually contain low-grade natural silicious sands for fluxing purposes.

(x) In addition to the quantities shown, a relatively large quantity of quartz and quartzite is consumed in the manufacture of silica brick.

Data not yet complete for 1944.

Table 9 - IMPORTS OF SILICA INTO CANADA, 1943-1944.

Kind	1 9 4 3			1 9 4 4		
	Quantity	\$		Quantity	\$	
Ground Flint stone .....	884	17,617		1,481	30,487	
Ganister .....	484	3,970		346	2,463	
Silica sand for manufacturing .....	509,043	1,011,117		457,602	914,390	
Silex or crystallized quartz .....	11,411	945,967		8,774	530,200	
Silica Fire Brick .....	-	847,456		-	713,538	

Note: Exports of silica are not classified separately as such in Canadian Trade Reports; Exports of quartzite from Canada in 1944 totalled 126,608 short tons valued at \$260,181 compared with 68,555 tons worth \$124,345 in 1943.

Modern mechanized warfare depends upon instantaneous two-way radio communication, which, to be effective, must rely upon accurately ground wafers of crystal, two in each circuit; dozens are needed for a single tank or airplane. Brazil remained at the close of 1944 the only known commercial source of quartz suitable for radio-frequency control, and radio quartz crystal has been classified as a strategic mineral. No commercial production of domestic quartz crystals was reported in Canada during 1944; however, The Quartz Crystals Mining Company of Canada reported development work during the year on a quartz crystal deposit located north of Gananoque, in the province of Ontario. Imported crystals have been dressed in Canada for war use since the beginning of the second World War.

Table 10 - PRINCIPAL STATISTICS OF THE FELDSPAR AND QUARTZ MINING INDUSTRY, 1943 and 1944.

	Ontario (c) (b)		Quebec	
	1943	1944	1943	1944
Number of firms (a) .....	19	22	16	19
Capital employed .....	1,632,379	(d)	1,262,752	(d)
Number of employees - On salary .....	41	34	27	26
On wages .....	227	231	240	238
Total .....	268	265	267	264
Salaries and wages - Salaries .....	69,702	61,742	49,001	36,518
Wages .....	324,248	334,729	325,248	339,396
Total .....	393,950	396,471	374,249	375,914
Selling value of products (gross) .....	1,356,091	1,287,330	782,138	816,700
Cost of fuel and purchased electricity .....	61,648	78,687	72,599	87,814
Cost of process supplies, freight & containers .....	234,759	182,661	87,846	118,775
Net value of sales .....	1,059,684	1,025,982	621,693	610,111

(a) Small shippers from whom reports were unobtainable and whose production is recorded from consumers' returns are sometimes not included in the total. (b) Includes data relating to production of nepheline-syenite. (c) In 1943 includes 1 firm in Nova Scotia, 1 in British Columbia and 1 in Saskatchewan, and in 1944 2 in Nova Scotia, 2 in British Columbia and 1 in Saskatchewan. (d) Data not recorded in 1944.



Table 11 - NUMBER OF WAGE-EARNERS ON PAY ROLL, BY MONTHS, 1943 and 1944

Month	1943 TOTALS	1 9 4 4								
		Quebec			Ontario					CANADA (x) TOTAL
		Surface Male	Under- ground	Mill Male	Surface Male	Female	Under- ground	Mill Male	Female	
January .....	422	187	-	80	94	2	14	26	1	405
February .....	450	225	-	82	95	2	13	25	1	444
March .....	438	221	-	77	154	2	15	26	1	497
April .....	418	161	-	78	167	2	15	27	1	452
May .....	474	129	-	73	184	2	34	38	1	475
June .....	503	150	-	73	184	3	33	37	1	506
July .....	485	137	-	73	167	3	33	36	1	476
August .....	506	154	-	71	180	3	35	38	1	509
September ...	520	144	-	74	171	3	33	40	1	492
October .....	488	149	-	74	159	3	43	38	1	493
November .....	479	141	-	76	150	3	42	31	1	470
December .....	416	121	-	74	100	2	15	34	1	361

(x) Includes a few employees in some months in Nova Scotia and British Columbia.

Table 12 - WAGE-EARNERS WORKING THE HOURS SPECIFIED DURING ONE WEEK IN MONTH OF HIGHEST EMPLOYMENT, 1944

Hours	Number		Hours	Number	
	Male	Female		Male	Female
30 hours or less .....	41	-	49-50 hours .....	54	-
31-43 hours .....	48	2	51-54 hours .....	55	-
44 hours .....	13	-	55 hours .....	36	-
45-47 hours .....	29	-	56-64 hours .....	169	2
48 hours .....	144	1	65 hours and over .....	57	-
Grand total employees in week specified .....				646	5
Total wages paid in week specified .....				19,687	93

Table 13 - FUEL AND ELECTRICITY USED, 1944 (b)

Kind	Unit of measure	CANADA		Ontario (a)			
		Quantity	Cost at works \$	Quantity	Cost at works \$	Quantity	Cost at works \$
Bituminous coal -							
Canadian .....	short ton	34	386	7	70	27	316
Foreign .....	short ton	6,174	54,571	3,661	29,798	2,513	24,773
Anthracite coal -							
United States .....	short ton	11	188	2	32	9	156
Lignite coal .....	short ton	1	10	1	10	-	-
Coke .....	short ton	30	398	30	398	-	-
Gasoline .....	Imp. gal.	135,892	43,444	82,482	26,584	53,410	16,860
Kerosene .....	Imp. gal.	2,552	415	2,462	398	90	17
Fuel oil .....	Imp. gal.	283,199	33,761	88,033	10,785	195,166	22,976
Wood .....	cord (✓)	792	4,988	-	-	792	4,988
Gas - Manufactured .....	M. cu. ft.	-	-	-	-	-	-
Other fuel .....	...	-	-	-	-	-	-
Electricity purchased .....	K. W. H.	3,311,024	28,340	1,705,733	10,612	1,605,291	17,728
TOTAL .....	...	-	166,501	-	78,687	-	87,814
Electricity generated for own use K.W.H.		2,326,433	-	127,633	-	2,198,800	-

(✓) 128 cubic feet.

(a) Includes data for 2 properties in Nova Scotia.

(b) Data relating to production of silica flux by some smelting companies are included with those of the non-ferrous smelting and refining industry or the sand and gravel industry.

Table 14 - POWER EQUIPMENT INSTALLATION, 1944.

Description	Quebec		Ontario (x)	
	Number	Horse power	Number	Horse power
<u>Ordinarily in Use</u>				
Steam engines .....	-	-	8	508
Steam turbines .....	-	-	-	-
Diesel engines .....	12	1,585	12	997
Other internal combustion engines .....	22	793	27	1,587
Electric motors operated by purchased power .....	44	883	55	1,155
Electric motors operated by establishment power ..	119	1,179	5	19
Stationary boilers .....	1	150	9	715
Motor generator sets .....	10	66	7	267
<u>In Reserve or Idle</u>				
Steam engines .....	-	-	-	-
Steam turbines .....	-	-	-	-
Diesel engines .....	-	-	-	-
Other internal combustion engines .....	4	76	-	-
Electric motors operated by purchased power .....	4	21	1	50
Electric motors operated by establishment power ..	16	99	4	21

(x) Includes 1 property in Nova Scotia.

## DIRECTORY OF FELDSPAR AND QUARTZ MINING INDUSTRY, 1944

- (a) Produces silica. (e) Produces nepheline syenite.  
 (b) Produces feldspar. (f) Produces grinding pebbles.  
 (c) Operates a mill. (g) Contractor.  
 (d) Also produces kaolin. (h) Produces scapolite.

Name of Firm	Head Office Address	Location of Mine or Mill
<u>NOVA SCOTIA-</u>		
Nairn, J. (a)	24 Whitney Ave., Sydney	Leitches Creek
Stevens, Archie (a)	11 McKenzie St., Glace Bay	Melford
<u>QUEBEC -</u>		
Bigelow, Gordon (b) (g)	Glen Almond	Derry Tp.
Bon Ami Ltd., (b) (c)	13719 Notre Dame St. E., Montreal	Montreal
Couture, T. (f)	Glen Almond	Glen Almond
Canadian Carborundum Co. Ltd., (a) (c)	Box 57, Niagara Falls, Ont.	St. Canut
Canada China Clay & Silica Ltd. (a) (d)	1600 Royal Bank Bldg., Toronto, Ont.	Amherst Tp.
Canadian Flint & Spar Co. Ltd. (a) (b) (c)	Room 512 Victoria Bldg., Ottawa, Ont.	Buckingham
Excavators (Rook) Ltd. (a) (g)	Noranda	Lac Bouchette
Hart, Rodrique (a)	Notre Dame de la Salette	Portland W. Tp.
Hill, Wm. (a) (f)	Glen Almond	Buckingham Tp.
Industrial Silica Corp. (a)	Room 408 - 266 St. James St. Montreal	Roberval Co.
Lafrance, Ovide (a)	Angers	Buckingham Tp.
Law, S. H. (a) (b)	Room 28 - 14 Toronto St., Toronto, Ont.	Derry Tp.
Micaspar Industries Ltd. (b)	16 James St. S., Hamilton, Ont.	Portland W. Tp.
McGill, Lawrence (h)	R.R. #1, Pointe au Chene	Grenville Tp.
Montpetit, Euclide (a)	Melochville	Beauharnois Co.
Morin, A. H. (a) (b)	Box 3, Buckingham	Buckingham Tp.
Parcher, Earl (b)	Glen Almond	Portland E. Tp.
St. Lawrence Allays & Metals Ltd. (a) (c)	Beauharnois	Beauharnois Co.
United Mining Industries Ltd. (a) (b)	1451 Notre Dame St. W., Montreal	Buckingham
<u>ONTARIO -</u>		
American Nepheline Corp. (e)	Lakefield	Methuen Tp.
Bancroft Mica & Stone Products (b) (c)	Bancroft	Faraday Tp.
Bathurst Feldspar Mines Ltd. (b)	Room 508 - 21 King St. E., Toronto	Bathurst Tp.
Buffalo Ankerite Gold Mines Ltd. (f)	Box 533, South Porcupine	Deloro Tp.
Canapar Mines Ltd. (b)	100 Adelaide St. W., Toronto	Barry's Bay
Craig, T. H. (b)	Perth	Bathurst Tp.
Dominion Mines & Quarries Ltd. (a) (c)	Canada Life Bldg., Toronto	Killarney
Frontenac Floor & Wall Tile Co. Ltd. (b) (c)	Kingston	Kingston
International Nickel Co. of Canada Ltd. (a)	Copper Cliff	Lawson Tp.
Kingston Silica Mines Ltd. (a) (c)	R.R. #1, Kingston	Pittsburg Tp.
Keystone Contractors Ltd. (a) (b) (c)	732 Langlois Ave., Windsor	Murchison Tp.

DIRECTORY OF FELDSPAR AND QUARTZ MINING INDUSTRY, 1944 - Cont'd.

Name of Firm	Head Office Address	Location of Mine or Mill
<u>ONTARIO - Cont'd.</u>		
Madawaska Feldspar Co. (a) (b)	275 St. James St. Montreal	Murohison Tp.
Manitoulin Quartzite Co. (a) (c)	732 Langlois Ave., Windsor	Manitoulin Island
Quartz Crystals Mining Co. of Canada Ltd. (a)	712 Federal Bldg., Toronto	Landsdowne Tp.
Verona Rock Products Ltd. (a) (b)	330 Bay St. Toronto	Verona
Wright and Co. (a) (c)	960 Queen St., Sault Ste. Marie, Ont.	Deroche Tp.
<u>BRITISH COLUMBIA</u>		
Consolidated Mining & Smelting Co. of Canada Ltd. (a)	Trail	Grand Forks

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