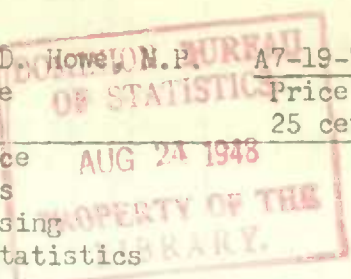


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### THE ASBESTOS MINING INDUSTRY IN CANADA, 1947

Asbestos production (shipments) in Canada during 1947 totalled 661,821 short tons valued at \$33,005,748, compared with 558,181 tons worth \$25,240,562 in 1946. All production came from the province of Quebec.

The 9 firms engaged in asbestos mining during 1947 employed 4,885 persons who were paid \$9,165,450 in salaries and wages. Expenditures for fuel and electricity amounted to \$2,031,045 and process supplies, plus containers, cost \$4,793,420. In addition, the industry paid \$2,911,088 in taxes and spent \$1,528,018 on new equipment or plant extensions.

Shipments of asbestos in 1947 included 958 tons of crudes valued at \$503,137; 222,196 tons of milled fibres worth \$20,221,444, and 438,667 tons of shorts and refuse valued at \$12,281,167.

The following statement concerning asbestos mining in Canada has been abstracted from a review prepared by the Bureau of Mines, Ottawa:

"Asbestos of commerce consists mostly of the three varieties known as chrysotile, amosite, and crocidolite or blue asbestos, chrysotile being by far the most important and most widely used. Three other varieties, namely fibrous actinolite, fibrous tremolite, and anthophyllite, have only a limited field of usefulness.

"The asbestos produced in Canada is practically all of the chrysotile variety and comes almost entirely from areas of serpentized rock in the Eastern Townships, Quebec, where the producing centres are Thetford Mines, Black Lake, East Broughton, Vimy Ridge, Asbestos and St. Remi de Tingwick. The Canadian deposits are the largest known in the world. Small deposits of chrysotile asbestos are known in other parts of Quebec and also in Ontario and British Columbia, and several of them have been worked from time to time.

"No amosite or crocidolite has been found in Canada, but there are numerous deposits of fibrous tremolite, fibrous actinolite, and anthophyllite, which varieties are commercially termed amphibole asbestos. The fibres of these varieties are harsher and weaker than those of chrysotile and there is little demand for them at present. None of these deposits is being worked, although formerly fibrous actinolite was quarried near the village of Actinolite, Hastings County, Ontario, for use in the making of roofing materials. Asbestos deposits reported as having been found in recent years in Manitoba and in northern and western Ontario are of the amphibole varieties. The amphibole fibres are too harsh and brittle to be spun, but they have a higher resistance to acids than has chrysotile,

This report was prepared by A. R. Deir, Mining Statistician

and it is possible that material from some of the deposits is suitable for use in acid filters and for other purposes where long harsh fibres are required.

"Production has been continuous from the Thetford area since 1878 and reserves of asbestos-bearing rock are huge. Core-drilling to depths greater than 1,700 feet has revealed the presence of fibre comparable in quantity and quality with that in the present workings. Most of the output consists of vein fibre obtained from veins  $\frac{1}{4}$  to  $\frac{1}{2}$  inch in width, though veins exceeding 5 inches in width occur. The fibres run crosswise of the vein and thus the width of the vein determines the length of fibre. Slip fibre, occurring in fault planes, is obtained largely in the East Broughton area.

"The asbestos-bearing rock is mined in open pits and underground. The block-caving method of underground mining is coming into general use. This method was put into operation at the King mine of Asbestos Corporation in 1934. Johnson's Company is now using the same method, and Bell Asbestos Mines and Canadian Johns-Manville are sinking shafts preparatory to recovering rock by block-caving operations.

"Asbestos is used for a great variety of purposes, the principal products being: cloth, brake linings, clutch facings, packings, insulation, mill-board, siding, shingles, roofing, tile and pipes."

Price quotations, December 1947, on asbestos show variations depending on grade: crude No. 1, \$800 per ton; crude No. 2 and crude run-of-mine, \$300 to \$410; spinning or textile fibre, \$170 to \$230; shingle fibre, \$75 to \$102; paper fibre, \$43 to \$65; waste, stucco or plaster, \$39; refuse or shorts, \$17 to \$34.

Table 1 - PRINCIPAL STATISTICS OF THE ASBESTOS MINING INDUSTRY IN CANADA, 1945-1947

	1945	1946	1947
Number of firms .....	11	11	9
Number of employees: Administrative..	429	465	488
Workmen .....	3,808	4,082	4,397
Total .....	<b>4,237</b>	<b>4,547</b>	<b>4,885</b>
Salaries and wages: Salaries .....	\$ 820,164	998,539	1,234,624
Wages .....	\$ 5,859,721	6,773,382	7,930,826
Total .....	\$ <b>6,679,885</b>	<b>7,771,921</b>	<b>9,165,450</b>
Selling value of products (a) .....	\$ 24,092,799	25,245,579	33,015,965
Cost of purchased fuel and electricity .....	\$ 1,684,017	1,759,462	2,031,045
Cost of process supplies (b) .....	\$ 1,267,960	1,670,496	2,650,382
Cost of containers .....	\$ 1,283,748	1,545,934	2,143,038
Net value of sales .....	\$ 19,857,074	20,269,687	<b>26,191,500</b>

(a) Includes value of sand and gravel.

(b) Explosives, drill steel, etc.

Table 2 - SHIPMENTS OF ASBESTOS BY CANADIAN MINES, BY GRADES, 1945-1947

	1945		1946		1947	
	Tons	\$	Tons	\$	Tons	\$
Crudes .....	981	415,203	742	335,204	958	503,137
Fibres .....	219,767	16,628,467	228,234	17,181,400	222,196	20,221,444
Shorts .....	246,148	5,761,487	329,205	7,724,237	438,667	12,281,167
	466,896	22,805,157	558,181	25,240,562	661,821	33,005,748
Sand, gravel and stone (waste rock only) (*) .....	5,109	3,894	6,337	5,017	9,610	10,217

(\*) This production is included under the Sand and Gravel Industry.

Table 3 - SHIPMENTS OF ASBESTOS BY CANADIAN MINES, 1938-1947

Year	Tons	Selling value at works	Year	Tons	Selling value at works
		\$			\$
1938 .....	289,793	12,890,195	1943 .....	467,196	23,169,505
1939 .....	364,472	15,859,212	1944 .....	419,265	20,619,516
1940 .....	346,805	15,619,865	1945 .....	466,896	22,805,157
1941 .....	477,846	21,468,840	1946 .....	558,181	25,240,562
1942 .....	439,459	22,663,283	1947 .....	661,821	33,005,748

Table 4 - TONNAGE OF ASBESTOS ROCK MINED AND MILLED, 1945-1947

	1945	1946	1947
		(Tons)	
Rock mined .....	8,765,370	9,127,859	9,837,045
Rock milled .....	6,459,813	7,027,483	7,740,828

Table 5 - SHIPMENTS OF ASBESTOS BY CANADIAN MINES, BY MONTHS, 1947

Month	Short tons	Month	Short tons
January .....	44,058	August .....	53,361
February .....	42,207	September .....	58,356
March .....	57,157	October .....	59,461
April .....	60,517	November .....	65,754
May .....	60,036	December .....	57,378
June .....	50,102		
July .....	53,434	TOTAL .....	661,821



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Table 6 - NUMBER OF WORKMEN, BY MONTHS, 1946 and 1947 (Administration and Office Employees Not Included)

Month	M i n e			M i l l	
	Surface		Underground	Male	Female
	Male	Female	Male		
<u>1 9 4 6</u>					
January .....	1,718	25	458	1,692	2
February .....	1,684	19	461	1,729	2
March .....	1,755	26	448	1,755	2
April .....	1,856	26	453	1,766	2
May .....	1,948	23	433	1,749	2
June .....	1,944	24	439	1,761	2
July .....	1,863	26	452	1,795	2
August .....	1,893	27	438	1,836	2
September .....	1,823	20	428	1,855	2
October .....	1,836	27	412	1,865	2
November .....	1,823	29	414	1,892	2
December .....	1,771	25	396	1,845	2
Average .....	1,826	25	435	1,794	2
<u>1 9 4 7</u>					
January .....	1,830	33	403	1,874	2
February .....	1,842	32	431	1,896	2
March .....	1,860	32	430	1,877	2
April .....	1,886	32	474	1,874	2
May .....	1,914	33	490	1,894	2
June .....	1,949	33	509	1,876	2
July .....	1,987	33	526	1,915	2
August .....	1,952	26	581	1,903	2
September .....	1,955	27	560	1,925	2
October .....	1,985	25	630	1,961	2
November .....	1,986	32	616	1,987	2
December .....	1,905	31	611	1,966	2
Average .....	1,924	31	528	1,912	2

Table 7 - FUEL AND ELECTRICITY USED, 1946 and 1947

Kind	Unit of measure	1 9 4 6		1 9 4 7	
		Quantity	Value	Quantity	Value
			\$		\$
Bituminous coal -					
From Canadian mines ..	short ton	585	5,286	...	...
Imported .....	short ton	30,779	314,687	37,850	385,076
Anthracite coal -					
From United States ...	short ton	19,898	180,281	22,778	233,005
Coke .....	short ton	...	...	150	2,100
Gasoline .....	Imp. gal.	200,053	60,250	237,221	77,922
Kerosene or coal oil ..	Imp. gal.	5,929	995	9,738	1,741
Fuel oil and diesel oil	Imp. gal.	147,871	27,062	189,877	40,470
Electricity purchased, including service charges .....	K.W.H	154,652,815	1,170,901	169,720,467	1,290,731
TOTAL .....	...	...	1,759,462	...	2,031,045

Table 8 - POWER EQUIPMENT, 1947

	Ordinarily in Use		In Reserve or Idle	
	Number of units	Total horse power	Number of units	Total horse power
Steam engines .....	...	...	1	100
Steam turbines .....	...	...	...	...
Diesel engines .....	4	394	...	...
Gasoline, gas and oil engines, other than Diesel engines ...	11	1,058	1	100
Electric motors--Operated by purchased power .....	1,752	74,120	75	4,790
TOTAL .....	1,767	75,572	77	4,990
Stationary boilers .....	9	495	...	...
Motor-generator sets .....	17	4,690	2	310

Table 9 - TAXES PAID BY THE ASBESTOS MINING INDUSTRY, 1946 and 1947

	1 9 4 6	1 9 4 7
	\$	\$
Dominion income tax, including tax on non- operating revenue .....	1,677,219	1,286,270
Dominion excess profits tax .....	1,039,846	1,008,476
Provincial taxes -		
Mining taxes paid on net profits from production, including portion paid to municipality .....	374,992	380,855
Corporation income tax where levied in addition to mining tax .....	...	1,111
Taxes paid on capital and places of business .....	193	13,596
Acreage taxes .....	133	218
Total Provincial .....	375,318	395,780
Municipal taxes -		
Based on property valuation .....	190,651	220,562
Based on non-operating revenue .....	21	...
Total Municipal .....	190,672	220,562
GRAND TOTAL TAXES PAID .....	3,283,055	2,911,088

Table 10 - SPECIFIED MISCELLANEOUS EXPENDITURES BY THE ASBESTOS MINING INDUSTRY,  
1945-1947

	1 9 4 5	1 9 4 6	1 9 4 7
	\$	\$	\$
Workmen's compensation .....	384,536	450,248	516,892
Unemployment insurance .....	51,254	55,237	61,206
Aggregate cost of all supplies purchased..	4,076,750	4,557,898	5,537,967
Aggregate cost of plant and equipment pur- chased .....	934,294	2,279,382	1,528,018
Cost of buildings, machinery and equipment erected or installed during the year ...	1,361,763	2,635,758	2,529,932



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Table 11 - IMPORTS INTO CANADA AND EXPORTS OF ASBESTOS AND ASBESTOS PRODUCTS.  
1946 and 1947

	1946		1947	
	Tons	\$	Tons	\$
<u>Imports</u>				
Asbestos clutch facings for automobiles, motor vehicles and chassis .....	...	179,480	...	244,205
Asbestos brake linings for automobiles, motor vehicles and chassis .....	...	444,409	...	584,530
Asbestos brake linings and clutch facings, n.o.p. ....	...	47,296	...	93,929
Asbestos in any form other than crude, and all manufactures of, n.o.p. ....	...	1,434,680	...	2,620,342
Asbestos packing .....	113	124,146	124	137,295
TOTAL .....	...	2,230,011	...	3,680,301
<u>Exports</u>				
Asbestos (crude) .....	639	293,901	953	445,150
Asbestos milled fibres .....	215,233	16,215,579	223,693	20,275,533
Asbestos waste, refuse and shorts .....	304,312	7,329,708	412,250	11,570,606
Asbestos manufactures, including asbestos roofing .....	...	634,230	...	677,974
TOTAL .....	...	24,473,418	...	32,969,263

DIRECTORY OF FIRMS IN THE CANADIAN ASBESTOS MINING INDUSTRY, 1947

Name of Firm	Head Office or General Office	Location of Mine
Asbestos Producers Corporation (*)	1410 Stanley St., Montreal, Quebec	Coleraine, Quebec
Asbestos Corporation Ltd.	Thetford Mines, Quebec	Thetford Mines, Quebec Black Lake, Quebec Coleraine, Quebec Coleraine, Quebec
Asbestos Crude & Fibre Mines Ltd. (*)	1410 Stanley St., Montreal, Quebec	Coleraine, Quebec
Bell Asbestos Mines Ltd.	Thetford Mines, Quebec	Thetford Tp., Quebec
Canadian Johns-Manville Co. Ltd.	Sun Life Bldg., Montreal, Quebec	Asbestos, Quebec
Flintkote Mines Ltd.	Thetford Mines, Quebec	Thetford Mines, Quebec
Johnson's Company	Thetford Mines, Quebec	Thetford Mines, Quebec Coleraine, Quebec
Nicolet Asbestos Mines Ltd.	820 Transportation Bldg., Montreal, Quebec	Norbestos, Quebec
Quebec Asbestos Corp. Ltd.	East Broughton Station, Quebec	East Broughton Station, Quebec
Standard Asbestos Mines, Ltd. (*)	111 Mountain Hill, Quebec	Beauceville, Quebec

(\*) Carried on exploration or development work only.