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CANADA  
DEPARTMENT OF TRADE AND COMMERCE  
DOMINION BUREAU OF STATISTICS  
CENSUS OF INDUSTRY  
MINING, METALLURGICAL & CHEMICAL BRANCH

1935

Report

on

THE MISCELLANEOUS NON-METALLIC MINERALS  
IN CANADA, 1935

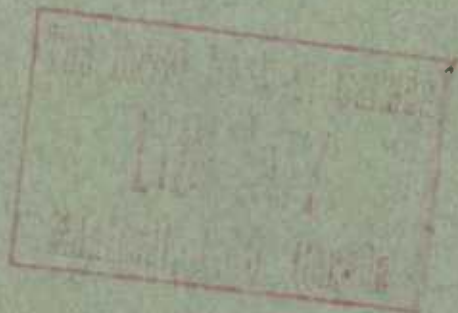
including

Actinolite  
Barytes  
Bituminous Sands  
Fluorspar  
Graphite  
Magnesitic Dolomite  
Magnesium Sulphate  
Bog Manganese

Natural Mineral Waters  
Peat  
Phosphate  
Silica Brick  
Sodium Carbonate  
Sodium Sulphate  
Sulphur

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DEPARTMENT OF TRADE AND COMMERCE  
DOMINION BUREAU OF STATISTICS  
MINING, METALLURGICAL AND CHEMICAL BRANCH  
OTTAWA - CANADA

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MISCELLANEOUS NON-METALLIC MINERALS IN CANADA, 1935.

Canadian operators producing certain non-metallic minerals and who are usually relatively few in number have been segregated for statistical purposes into a single group designated as the miscellaneous non-metal mining industry. Minerals or primary mineral products produced by this industry during 1935 included: fluorspar, graphite, magnesitic-dolomite (crude and refined), magnesium sulphate, mineral waters, phosphate, silica brick, sodium carbonate and sodium sulphate. For convenience, the sulphur content of pyrites shipped, sulphur recovered from smelter gas, and peat are recorded with the various miscellaneous minerals listed above.

The total value of production in this industry during 1935 amounted to \$1,674,967 as compared with \$1,678,482 in 1934. A comparison of the values for individual products with those of the previous year reveals decreases for bituminous sands, fluorspar, mineral waters, peat and sodium sulphate. Of production values showing increases, those for magnesitic-dolomite, magnesium sulphate, and sulphur were particularly pronounced.

**ACTINOLITE** - Commercial production of actinolite ( $\text{CaMgFe}$ ) in Canada has originated entirely in the townships of Elzevir and Kaladar in Hastings and Addington counties of Ontario. No shipments of the mineral were reported during 1935; in 1934, however, 30 tons valued at \$365 were produced near Kaladar, Ontario; the output in 1934 was marketed in the ground state and contained a relatively high percentage of added mica flake. Actinolite is employed chiefly in the manufacture of roofing materials.

**BARITE** - Barite production in Canada during past years came largely from deposits in Nova Scotia, Quebec and Ontario and in recent years more particularly from deposits in the Lake Ainslie district, Nova Scotia. The last commercial shipments from Canadian deposits were made in 1933 in which year 20 tons valued at \$60 was produced and shipped at the Tionaga mine, Penhorwood township, Ontario. A modern mill was installed a few years ago at a deposit in Langmuir township, Ontario; this property, however, was closed down without coming into commercial production. The Department of Mines, Ottawa, reports that some interest was taken recently in the possibility of shipping barite from this region for export to Trinidad for oil drilling, the material being used for weighing the drilling mud. There being no lithopone or barium chemicals industry in Canada, no demand exists at the present time for crude ore.

The British Columbia Department of Mines recently reported the discovery of barite at the head of Sulphurets Creek, in the neighbourhood of Brucejock lake, Unuk River area.

During 1935 crude barite, both domestic and imported, used in the United States totalled 290,344 short tons of which 93,692 tons was utilized in the manufacture of ground barite; 146,164 tons for lithopone and 50,488 tons for barium chemicals.

United States barite quotations f.o.b. mines, October, 1936 were: Georgia barite ore, crude, \$7 per long ton. Missouri: per ton, water ground and floated, bleached, \$23, car lots, f.o.b. works. Crude ore, minimum 95 per cent BaSO<sub>4</sub>, less than 1 per cent iron, \$7; 1 per cent iron and 93 per cent BaSO<sub>4</sub>, \$6.50; 90 per cent BaSO<sub>4</sub>, \$6, f.o.b. mines.

Imports of barite during 1935 totalled 2,139 tons valued at \$33,739 as compared with 1,557 tons worth \$26,397 in 1934 and of the 1935 imports 1,166 tons valued at \$15,794 came from Germany; 344 tons at \$7,477 from the United States and 335 tons at \$5,547 from the United Kingdom.

BARITE AND BLANC FIXE USED BY THE CANADIAN PAINTS, PIGMENTS AND VARNISHES INDUSTRY  
IN CANADA, 1931 - 1935.

Year	B A R I T E		BLANC FIXE	
	Pounds	\$	Pounds	\$
1931 .....	2,304,119	39,361	146,025	12,915
1932 .....	2,064,303	35,138	23,353	817
1933 .....	2,062,957	33,578	47,793	1,471
1934 .....	2,393,330	44,690	93,918	2,481
1935 .....	2,308,628	43,702	141,975	4,223

IMPORTS OF BLANC FIXE AND BARITE INTO CANADA, 1931 - 1935.

Year	B A R I T E		BLANC FIXE	
	Pounds	\$	Pounds	\$
1931 .....	3,372,600	32,712	1,596,173	34,483
1932 .....	2,583,400	22,989	932,168	20,932
1933 .....	3,174,700	28,255	552,801	11,390
1934 .....	3,113,800	26,397	968,201	21,638
1935 .....	4,278,400	33,739	1,139,106	25,759

In 1935 lithopone imported into Canada totalled 17,383,273 pounds valued at \$620,615 as compared with 14,530,612 pounds worth \$510,558 in 1934.

WORLD PRODUCTION OF BARIUM MINERALS

(Taken from the Imperial Institute's publication "The Mineral Industry of the British Empire and Foreign Countries.") (long tons)

Producing Country and Description	1932	1933	1934
BRITISH EMPIRE			
United Kingdom -			
Barytes, unground .....	35,713	39,943	37,719
Witherite, unground .....	6,258	5,111	10,412
Barytes- Ground, bleached .....	1,881	7,623	5,548
Do. unbleached .....	12,787	13,943	20,315
Southern Rhodesia .....	...	...	13
Canada (sales) .....	...	18	...
India .....	2,957	5,651	3,813
Australia .....	2,005	2,095	2,492



WORLD PRODUCTION OF BARIUM MINERALS. (concluded)

(Taken from the Imperial Institute's publication "The Mineral Industry of the British Empire and Foreign Countries") (Long tons)

Producing Country and Description	1932	1933	1934
<u>FOREIGN COUNTRIES</u>			
Austria .....	271	1,014	1,009
France .....	10,200	(a)	(a)
Germany - Baden .....	(a)	(a)	19,370
Bavaria .....	5,761	4,081	8,253
Prussia .....	100,553	141,199	321,164
Saxony .....	2,408	128	476
Italy .....	21,516	23,074	31,896
Spain (b) .....	8,612	4,193	16,856
Algeria .....	876	10	...
Egypt .....	...	...	49
United States .....	119,261	130,716	159,251
Brazil .....	1,210	877	(a)
Korea .....	6,465	4,891	5,841

Barytes is also produced in U. S. S. R. (Russia).

(a) Information not available.

(b) In addition 40 cubic metres were produced in quarries during 1932, 75 cubic metres during 1933, and 147 cubic metres during 1934.

BITUMINOUS SANDS - Commercial production of bituminous sands in Canada is confined to the province of Alberta. Large deposits of the material occur along the Athabaska river in the northern part of the province. Output during 1935 totalled 40 tons valued at \$160 as compared with a production of 862 tons valued at \$3,449 in 1934.

The Department of Mines, Ottawa, has conducted a comprehensive investigation of these deposits of natural asphalt. In addition to field exploration during fifteen field seasons, extensive laboratory studies of the bituminous sand and of bitumen separated from it have been made. Various industrial applications for the separated bitumen, as for example, in the manufacture of paints and varnishes and in the manufacture of certain rubber goods, are also being investigated. Representatives of private capital have recently completed further studies with a view to commercial development. Products which may be derived, reports the Department of Mines, include motor fuels and other liquid hydrocarbons as well as certain solid and semi-solid bitumens.

The total value of petroleum, asphalt and their products imported into Canada during 1935 totalled \$44,092,526 as compared with \$41,326,516 in 1934. Included in the 1935 imports were 120,024 cwt. of solid asphalt valued at \$126,979; 113,104 gallons of liquid asphalt valued at \$12,265; 29,035 gallons of asphaltum for paving valued at \$2,338, and crude petroleum in its natural state, 7900 specific gravity or heavier at 60 degrees temperature for refining, 1,156,788,480 gallons valued at \$33,816,433.

FLUORSPAR - Canadian mine shipments of fluorspar during 1935 totalled 75 tons valued at \$900 as compared with 150 tons worth \$2,100 in 1934. Output for both years came from deposits located in the Madoc area, Hastings County, Ontario. Fluorspar has also been produced at the Rock Candy Mine, in British Columbia, by the Consolidated Mining and Smelting Company of Canada, Limited; this property, however, was not in production during 1935.

The following figures show the relative dependence of the United States fluorspar industry upon the different industries in which fluorspar is used in that country.

FLUORSPAR SHIPPED FROM MINES IN THE UNITED STATES - BY USES- 1935. (United States Bureau of Mines)

Industry	short tons	Average value per ton
		\$
Steel .....	100,988	13.77
Foundry .....	2,336	12.44
Glass .....	10,256	22.22
Enamel and Vitrolite .....	4,087	24.64
Hydrofluoric acid and derivatives ..	3,333	22.42
Miscellaneous .....	2,248	13.76
	123,248	15.04
Exported .....	313	14.86
	123,561	15.04

PRODUCTION OF FLUORSPAR IN CANADA, 1926 - 1935.

Year	short tons	value	Year	short tons	value
		\$			\$
1926 .....	...	...	1931 .....	40	620
1927 .....	...	...	1932 .....	32	464
1928 .....	...	...	1933 .....	73	1,064
1929 (a) ...	17,870	268,120	1934 .....	150	2,100
1930 .....	80	1,240	1935 .....	75	900

(a) 17,800 tons valued at \$267,000 produced in British Columbia; production since 1929 entirely from Ontario mines.

Imports of fluorspar into Canada during 1935 totalled 231,827 cwt. valued at \$92,775 as compared with 144,396 cwt. worth \$56,628 in 1934. Of the 1935 imports 103,362 cwt. came from the United Kingdom; 66,485 cwt. from the United States; 21,897 cwt. from Newfoundland, and 6,483 cwt. from Germany.

FLUORSPAR USED IN THE CANADIAN GLASS INDUSTRY, 1930 - 1935.

Year	short tons	\$
1930 .....	179	6,458
1931 .....	96	4,815
1932 .....	125	4,989
1933 .....	115	7,803
1934 .....	119	4,472
1935 .....	98	3,357

FLUORSPAR USED IN CANADIAN STEEL FURNACES, 1930 - 1935.

Year	short tons	\$
1930 .....	6,486	92,743
1931 .....	4,969	66,471
1932 .....	2,253	27,939
1933 .....	2,949	31,657
1934 .....	4,555	55,643
1935 .....	(a)	(a)

(a) Data not complete for 1935.



United States fluorspar prices, October, 1936, were: per net ton, 85 per cent  $\text{CaF}_2$  and not over 5 per cent  $\text{SiO}_2$ , Kentucky and Illinois, in bulk f.o.b. mines, washed gravel, \$18 for all rail movement; \$19 for barge movement. No. 2 lump, \$20 f.o.b. mines. Ground fluorspar, f.o.b. Illinois mines, 95 to 98 per cent  $\text{CaF}_2$  and not over  $2\frac{1}{2}$  per cent  $\text{SiO}_2$ , \$35 in bulk; \$37 in bags or barrels. Foreign fluorspar, gravel, 85 - 5, \$21.50 per gross ton, duty paid, Baltimore or Philadelphia.

# WORLD'S PRODUCTION OF FLUORSPAR

(Taken from the Imperial Institute's publication "The Mineral Industry of the British Empire and Foreign Countries")  
(Long tons)

Producing Country	1932	1933	1934
<b>BRITISH EMPIRE</b>			
United Kingdom .....	15,427	28,058	34,216
Union of South Africa .....	1,197	463	1,371
Canada .....	29	65	134
Australia .....	1,260	985	1,737
Newfoundland (c) .....	...	...	2,400
<b>FOREIGN COUNTRIES</b>			
France .....	15,000	(a)	(a)
Germany - Anhalt .....	(a)	(a)	7,241
Baden .....	(a)	(a)	6,424
Bavaria .....	21,569	25,948	29,193
Prussia .....	7,671	10,485	21,215
Saxony .....	1,274	3,614	6,424
Italy .....	6,348	7,592	(a)
Norway .....	562	499	662
Spain (b) .....	6,402	3,130	5,400
Mexico .....	151	(a)	(a)
United States .....	18,800	52,300	78,000
Argentina .....	10	197	(a)
China (estimated) .....	7,000	7,000	7,000
Korea .....	7,457	8,933	11,908

Fluorspar is also produced in U. S. S. R. (Russia).

(a) Information not available.

(b) In addition 160 cubic metres were produced from quarries during 1932 and 120 cubic metres during 1933.

(c) Exports for year ended June 30.

**GRAPHITE** -- Canadian mine production of graphite during 1935 was valued at \$79,781 as compared with \$71,424 in 1934 and \$18,367 in 1933. Production in 1935, as for several years past, came chiefly from the Black Donald mine, Renfrew county, Ontario; relatively small shipments of Quebec graphite have also been made during recent years.

The Department of Mines, Ottawa, describes the deposit worked by the Black Donald Graphite Company as containing exceptionally high-grade graphite, unsuitable for crucibles, but well adapted for lubricants and foundry purposes; Black Donald graphite is now being satisfactorily used in pencils, the higher-grade concentrate being reduced to extremely fine powder in a new type of pulverizer, making a product comparable in fineness to the amorphous graphite hitherto preferred for pencil purposes. The Department of Mines, Ottawa, also reports that inquiries are sometimes received regarding possible markets for amorphous graphite, deposits of which exist in the Maritime Provinces and other parts of Canada; on account of its finely-divided character, natural low-grade amorphous

graphite usually cannot be satisfactorily freed from admixed impurities and must be employed in the natural state; such amorphous graphites, with 35 to 45 per cent carbon content, are employed chiefly for structural paints; they are available in quantity and command but a relatively low price.

Crystalline graphite is obtained chiefly from Ceylon, Germany, Madagascar and Norway; the United States Bureau of Mines states that United States consumption of natural graphite, which probably parallels world conditions, is roughly 20 per cent in crucibles, 40 per cent for general foundry work, 15 per cent in pencils or crayons, 15 per cent in lubricants, and 10 per cent in paints, stove polishes, and miscellaneous uses; Crucible making, which requires the more costly varieties of graphite, was formerly the most important outlet, but crucible melting has been abandoned at many foundries and steel works in favor of electric furnaces or other processes; at present the consumption of natural graphite is about evenly divided between crystalline and amorphous varieties.

According to the United States Department of Commerce, the total shipments of graphite from Madagascar during the first quarter of 1936 amounted to 2,300 metric tons, of which quantity Great Britain took 1,675 tons, the United States, 312, France, 207, and Germany, 95. During the corresponding quarter of 1935 total exports amounted to 2,102 tons, while during the entire year 1935 shipments totalled 8,045 tons.

GEYLON GRAPHITE TAKEN BY CHIEF PURCHASING COUNTRIES, 1930 - 1935.

Year	JAPAN	UNITED STATES	UNITED KINGDOM	GERMANY
	cwt.	cwt.	cwt.	cwt.
1930 .....	26,341	63,845	28,154	29,737
1931 .....	24,937	53,308	17,345	19,951
1932 .....	32,655	24,233	23,846	13,745
1933 .....	71,614	44,226	29,592	16,822
1934 .....	78,500	67,078	32,567	19,457
1935 .....	82,820	88,800	51,669	20,297

VALUE OF PRODUCTION OF GRAPHITE IN CANADA, 1926 - 1935.

Year	Value \$	Year	Value \$
1926 .....	194,860	1931 .....	32,149
1927 .....	111,656	1932 .....	18,483
1928 .....	57,041	1933 .....	18,367
1929 .....	103,174	1934 .....	71,424
1930 .....	96,392	1935 .....	79,781

IMPORTS OF GRAPHITE INTO CANADA, 1933 - 1935.

	1933	1934	1935
Plumbago, not ground or otherwise manufactured ..	4,729	2,989	6,559
Plumbago crucibles .....	26,521	36,363	38,066
Plumbago, ground, and manufactures of, n.o.p. ....	69,003	103,652	92,852
Total Graphite and Its Products .....	100,253	143,004	137,477



EXPORTS OF GRAPHITE FROM CANADA, 1934 and 1935.

	1	9	3	4		1	9	3	5
	Cwt.					Cwt.			
					\$				
Graphite or plumbago, crude and refined ...	38,699				90,129	70,965			145,772
Carbon and graphite electrodes .....					564,432	...			488,188

GRAPHITE USED IN CANADIAN PAINTS, PIGMENTS AND VARNISHES INDUSTRY, 1931 - 1935.

Year	Pounds	\$
1931 .....	184,742	6,761
1932 .....	87,960	3,837
1933 .....	93,740	3,706
1934 .....	110,582	4,643
1935 .....	128,681	5,293

GRAPHITE USED IN CANADIAN POLISHES AND DRESSINGS INDUSTRY, 1931 - 1935.

Year	Pounds	\$
1931 .....	119,297	6,794
1932 .....	118,027	5,838
1933 .....	114,541	6,224
1934 .....	121,694	6,853
1935 .....	113,475	6,679

PLUMBAGO USED IN CANADIAN IRON AND STEEL (AND THEIR PRODUCTS) INDUSTRY, 1930 - 1934.

Year	Pounds	\$
1930 .....	388,353	26,228
1931 .....	248,294	17,194
1932 .....	142,176	10,755
1933 .....	223,504	12,235
1934 .....	296,624	18,859

GRAPHITE USED IN OTHER CHEMICAL INDUSTRIES, 1934 and 1935.

Year	Value
	\$
1934 .....	8,089
1935 .....	11,834

United States graphite quotations, October, 1936: per pound, f.o.b. New York Ceylon lump, 6½ to 7½ cents; Carbon lump, 4 to 6 cents; chip, 5 to 6 cents; dust, 5 to 4 cents; Madagascar flake, 6 to 7½ cents. No. 1 flake, 9½ to 17 cents; No. 2, 5½ upward. Crude amorphous graphite, \$12 to \$23 per ton, according to grade.

Canadian production of graphite during the first six months of 1936 was valued at \$41,738 as compared with \$39,087 for the corresponding period of 1935.

# WORLD PRODUCTION OF GRAPHITE

Taken from the Imperial Institute's publication "The Mineral Industry of the British Empire and Foreign Countries". (Long tons)

Producing Country	1932	1933	1934
<b>BRITISH EMPIRE</b>			
Union of South Africa .....	49	58	62
Canada (sales) .....	309	362	1,355
Ceylon (exports) .....	6,100	9,559	11,569
India .....	5	...	337
Australia .....	70	30	6
<b>FOREIGN COUNTRIES</b>			
Austria (crude) .....	10,431	14,537	17,858
Czechoslovakia .....	907	120	3,448
Germany (crude) .....	20,479	19,443	17,256
Italy .....	2,898	3,149	3,846
Norway .....	661	1,951	2,245
Madagascar .....	2,691	3,518	8,343
Morocco (French zone) .....	236	...	...
Mexico .....	2,013	2,643	3,827
Japan .....	487	855	954
Korea - Flake .....	(	1,906	2,394
Other .....	16,548	20,412	28,406

NOTE- Graphite is also produced in U. S. S. R. ( Russia) and the United States.  
(a) Information not available.

**MAGNESITIC DOLOMITE** -- Magnesitic-dolomite products to the value of \$486,084 were produced in Canada during 1935 as compared with \$382,927 in 1934.

"No magnesite, within the strict meaning of the term, is being produced in Canada at the present time, but magnesitic-dolomite, composed of an intimate mixture of magnesite and dolomite, which, when properly processed, is proving more suitable than magnesite for many purposes, is quarried and processed at Kilmar and Harrington East, in Argenteuil county, Quebec. It is marketed in the caustic and in the dead-burned states; in the form of bricks; as finely ground refractory cement; and also in combination with chrome as an ingredient in certain types of refractories---one of the newest Canadian developments is the production of chemically bonded unburned bricks and shapes, which are proving satisfactory for the lining of rotary kilns and metallurgical furnaces; a number of new cements and refractory basic plastics have also been developed. The deposits of magnesitic dolomite in Argenteuil county, Quebec, are ample to supply magnesia products for domestic requirements for many years and also to support a large export trade; no other deposits of magnesitic-dolomite or of magnesite of commercial grade are known in the eastern part of North America--recent trends in the making of magnesia products have been toward making of products which combine a high degree of refractoriness with ability to resist shock and to carry load at high temperature, and also toward the further development of chemically bonded unburned brick and shapes for lining metallurgical furnaces and cement kilns. Caustic-calcined magnesia is used for fettling the bottoms of basic, open-hearth furnaces, and for the construction of floors and floor tiles." (report No. 773 - Department of Mines, Ottawa.)



The United States Bureau of Mines reports that "owing to further recovery in the steel industry and minor expansion of other consuming industries, consumption of magnesite in the United States during 1935 increased 50 per cent over 1934. As imports remained at approximately the same level in 1935 as in 1934, domestic producers enjoyed the full benefit of the increased demand; prices were virtually unchanged, and the status of magnesite compared with other high-grade refractories tended to improve; magnesite seems to be gaining ground for kiln linings in copper reverberatories and for several other types of high temperature service outside the steel industry, and in the steel industry it seems to be holding its own or even recapturing some of the business that had been taken by competitive materials. Increased demand for periclase, the super-quality of dead-burned magnesite, was reported, particularly in the manufacture of special alloy steels." (U. S. Bureau of Mines - Mineral Yearbook 1936.)

"In view of the facts that the steel industry is a large user of sintered magnesite and magnesite refractory bricks, at present wholly imported, and that magnesite occurs in considerable quantity in the north-eastern Transvaal, an investigation has been undertaken as to the possibility of producing suitable magnesite refractories from the Transvaal material. The results obtained so far have been very encouraging and the work is still in progress." (Department of Mines, 1935 report Union of South Africa)

A report issued by the United States Department of Commerce contains the following particulars: "The total production of crude magnesite in Austria, both amorphous and crystalline, indicated a 16 per cent increase during 1935 over the previous year; production in 1935 amounted to 300,312 metric tons; production of dead-burned magnesite totalled 94,522 tons or a 46 per cent increase over the previous year's production of 64,726 tons. Caustic-calcined production in 1935 amounted to 43,733 tons. Austrian production of magnesite bricks and plates during 1935 amounted to 38,785 tons, about 35 per cent higher than in 1934. The dead-burned magnesite used for raw material for these products is included in the production figures for dead-burned.

"During 1935 crude magnesite was exported from Czechoslovakia to the amount of 9,539 metric tons, while shipments of the dead-burned totalled 30,307 tons; total exports of the two varieties during 1934 amounted to 8,848 and 24,236 tons, respectively.

"Official statistics indicate that exports of crude magnesite from Greece during 1935 amounted to 33,502 metric tons; calcined magnesite exports totalled 22,502 tons while those of dead-burned amounted to 9,191 metric tons."

PRODUCTION OF MAGNESITIC-DOLOMITE AND ITS PRODUCTS IN CANADA, 1926 to 1935.

Year	Value \$	Year	Value \$
1926 .....	137,431	1931 .....	295,579
1927 .....	230,309	1932 .....	262,860
1928 .....	346,990	1933 .....	360,128
1929 .....	491,170	1934 .....	382,927
1930 .....	338,182	1935 .....	486,084

The total value of magnesitic-dolomite products produced in Canada during the first six months of 1936 amounted to \$295,177 as compared with \$216,216 in the corresponding period of 1935.

MAGNESITE AND DOLOMITE USED IN THE MANUFACTURE OF IRON AND STEEL AND THEIR PRODUCTS IN CANADA, 1931 - 1934.

Year	D O L O M I T E		M A G N E S I T E	
	Short tons	Value \$	Short tons	Value \$
1931 .....	15,773	76,317	(a)	(a)
1932 .....	6,725	32,523	420	14,500
1933 .....	6,874	30,557	399	14,798
1934 .....	14,748	69,104	2,733	105,072

(a) Information not available.

NOTE - In addition to dolomite and magnesite the Canadian steel industry consumes large quantities of fire brick; these totalled 1,846 M valued at \$141,784 in 1933 (kind unspecified.)

IMPORTS OF MAGNESITE AND MAGNESITE FIRE BRICK INTO CANADA, 1931 - 1935.

Year	Magnesite, dead burned, sintered caustic calcined or plastic magnesia		Magnesite fire brick.	
	Cwt.	\$		\$
1931 .....	35,741	40,628	152,435	
1932 .....	21,302	28,626	71,077	
1933 .....	28,053	43,229	246,855	
1934 .....	9,439	26,740	396,915	
1935 .....	15,296	42,644	384,141	

Exports of magnesite, calcined, dead-burned, etc. from Canada during 1935 totalled 31,531 cwt. valued at \$43,338 as compared with 39,933 cwt. at \$56,670 in 1934. Of the 1935 exports, 30,183 cwt. were consigned to the United Kingdom and 1,348 cwt. to the United States.

United States quotations for magnesite, October, 1936, were: per ton, f.o.b. California, dead-burned, \$25. Artificial periclase, 94 per cent MgO, \$65; 90 per cent, \$35. Caustic, 95 per cent MgO, white color, \$40; 85 per cent MgO, white color \$40; 85 per cent MgO, no color standard, \$37.50. Washington, dead-burned grain magnesite, \$22.

WORLD PRODUCTION OF MAGNESITE

(Taken from the Imperial Institute's publication "The Mineral Industry of the British Empire and Foreign Countries. (Long Tons)

Producing Country and Description	1932	1933	1934
<b>BRITISH EMPIRE</b>			
Southern Rhodesia- Crude .....	13	...	...
Union of South Africa - Crude .....	1,396	1,471	1,641
Canada - Crude .....	2,788	26,729	(a)
India - Crude .....	13,864	15,206	14,975
Australia - Crude .....	5,391	9,720	15,897
<b>FOREIGN COUNTRIES</b>			
Austria - Crude .....	132,286	161,736	254,301
Caustic (c) .....	30,412	23,462	35,247
Dead-burnt (c) .....	28,298	63,260	63,704
Bricks (c) .....	15,283	24,970	28,325
Czechoslovakia- Calcined (b) .....	13,014	18,988	23,151



WORLD PRODUCTION OF MAGNESITE (concluded)

(Taken from the Imperial Institute's publication "The Mineral Industry of the British Empire and Foreign Countries") (long tons)

Producing Country and Description	1932	1933	1934
<u>FOREIGN COUNTRIES - concluded</u>			
Greece - Crude .....	43,993	44,013	(a)
Caustic (c) .....	9,047	16,039	(a)
Dead-burnt (c) .....	1,605	2,605	(a)
Italy - Crude .....	453	2,152	(a)
Germany (Prussia) - Crude .....	(a)	(a)	10,836
Norway - Crude .....	1,290	1,975	2,461
Calcined (c) .....	512	579	659
Bricks (c) .....	537	483	660
U. S. S. R. (Russia)-Crude .....	(a)	361,000	474,000
Yugoslavia (Serbia only) - Crude ...	16,467	14,371	24,690
Calcined .....	7,633	5,561	10,312
United States - Crude .....	34,341	96,596	90,154
Caustic (sales)(c)...	3,013	7,269	6,721
Dead-burnt (sales)(c)	13,246	38,940	34,406
Korea - Crude .....	(a)	(a)	3,118
"Manchoukuo" - Crude .....	54,511	70,249	(a)
Turkey - Crude .....	305	936	618

(a) Information not available.

(b) Exports less imports.

(c) Derived from crude shown, and not additional

MAGNESIUM SULPHATE (Epsom Salts - Natural) - The commercial production of natural magnesium sulphate in Canada is confined at present to the province of British Columbia. Production during 1935 totalled 340 tons valued at \$7,965 as compared with 42 tons at \$1,100 in 1934; the output in both years represents material recovered by the Epsom Refineries Ltd. from deposits located in the Kamloops district. Operations were conducted at the deposits from August 1 to September 15, while refining was carried on at Ashcroft during the months of January, February, March, October and November; 575 tons of crude material was treated and various grades of refined products marketed. Magnesium sulphate has a medicinal value under the name of Epsom salts and it is also employed in the finishing of cotton fabrics and for weighting paper, silk and leather.

Canadian prices July, 1936 for magnesium sulphate were: B. P. bbls., 2½ to 3 cents per pound; technical, \$30 to \$40 per ton.

PRODUCTION OF NATURAL MAGNESIUM SULPHATE IN CANADA, 1933 - 1935.

Year	tons	value
		\$
1933 .....	120	3,360
1934 .....	42	1,100
1935 .....	340	7,965

Production of natural magnesium sulphate in Canada during the first half of 1936 totalled 415 tons valued at \$8,517 as compared with 129 tons worth \$3,212 in the corresponding months of the preceding year.

IMPORTS INTO CANADA OF MAGNESIUM SULPHATE (EPSOM SALTS) 1931 - 1935.

<u>YEARS</u>	<u>POUNDS</u>	<u>\$</u>
1931 .....	4,120,086	43,807
1932 .....	4,383,115	47,679
1933 .....	4,269,852	49,808
1934 .....	4,599,518	48,459
1935 .....	3,684,390	40,407

MAGNESIUM SULPHATE USED IN CANADIAN MEDICINAL AND PHARMACEUTICAL PREPARATIONS, 1931 - 1935

<u>YEARS</u>	<u>POUNDS</u>	<u>\$</u>
1931 .....	553,291	21,252
1932 .....	622,459	28,073
1933 .....	851,355	24,629
1934 .....	816,830	33,793
1935 .....	(a)	(a)

(a) Data not yet complete

EPSOM SALTS USED IN THE CANADIAN TANNING INDUSTRY(x), 1931 - 1935

<u>YEARS</u>	<u>POUNDS</u>	<u>\$</u>
1931 .....	158,040	1,858
1932 .....	181,811	2,418
1933 .....	396,424	4,467
1934 .....	228,281	4,789
1935 .....	759,744	12,254

(x) Production for years 1931-1935 not necessarily complete.

MANGANESE BOG - Bog manganese consists mainly of oxide of manganese and water with usually some oxide of iron and often silica, alumina and baryta. Shipments of bog manganese from Dawson Settlement, Albert County, New Brunswick, during 1931 amounted to 77 tons valued at \$462. Some development work in 1934 was reported on a bog manganese deposit located at North Renous, New Brunswick. No commercial shipments of bog manganese have been made since 1931. The mineral is utilized chiefly in the ceramic industry.

MINERAL WATERS - Shipments of natural mineral waters from Canadian springs totalled 146,516 imperial gallons valued at \$16,590 in 1935 compared with 97,440 imperial gallons worth \$17,738 in the preceding year. Production during both years originated in Ontario and Quebec. Some of the more prominent Canadian mineral waters possessing special therapeutic or hygienic properties include the following: in Quebec the Abenakis springs on the St. Francois river in Yamaska county; Porton springs in Brome county and the Coulombia spring at L'Epiphanie. In Ontario, saline, sulphur and gas springs occur at Caledonia Springs and at Carlsbad Springs near Ottawa; the waters range from alkaline to strongly saline. St. Catharines, near Niagara, is one of the oldest Canadian mineral water resorts and sulphur waters are found at the Preston mineral springs in Waterloo county. The most famous of all Canadian springs is undoubtedly the group of hot sulphur springs at Banff, Alberta. In British Columbia the Harrison Hot springs in the Fraser Valley and the Halcyon Hot springs on Arrow Lake are noted for their curative properties.



The total number of firms reporting production of natural mineral waters in the Dominion totalled 17 in 1935, of which 14 were located in the province of Quebec and 3 in Ontario.

SHIPMENTS OF NATURAL MINERAL WATERS FROM CANADIAN SPRINGS, 1930 - 1935.

Years	Q U E B E C		O N T A R I O		C A N A D A	
	Imp. gals.	\$	Imp. gals.	\$	Imp. gals.	\$
1930 .....	12,941	3,727	214,200	20,754	227,141	24,481
1931 .....	19,868	4,746	197,540	8,578	217,408	13,324
1932 .....	15,506	4,697	61,208	2,473	76,714	7,170
1933 .....	9,024	3,094	29,794	2,347	38,818	5,441
1934 .....	75,665	16,116	21,775	1,622	97,440	17,738
1935 .....	126,616	15,113	19,900	1,477	146,516	16,590

Shipments of natural mineral waters from Canadian springs totalled 41,512 Imperial gallons valued at \$6,882 during the first six months of 1936 as compared with 46,564 gallons at \$10,229 for the corresponding months of 1935.

Imports of natural mineral waters, not in bottles, amounted to 83 gallons valued at \$46 in 1935, as compared with 30 gallons at \$24 in 1934. Imports of mineral and aerated waters n.o.p. were valued at \$85,040 in 1935 as compared with \$86,865 in the preceding year. Exports of mineral and aerated waters from Canada in 1935 totalled \$4,627 in value as against \$5,322 in 1934.

SALES OF NATURAL MINERAL WATERS (x) BY THE CANADIAN AERATED WATERS INDUSTRY, 1930-1935.

Years	\$
1930 .....	178,348
1931 .....	140,730
1932 .....	92,066
1933 .....	77,125
1934 .....	52,113
1935 .....	45,100

(x) Whether fortified or not.

PEAT - Peat produced for fuel in Canada during 1935 totalled 1,340 tons valued at \$5,761 as compared with 1,878 tons at \$7,343 in 1934. Commercial production in 1935 was credited entirely to Ontario, from which province returns were received from 7 operators. In addition to the output recorded above moss litter and moss insulative material were produced at five bogs located respectively in the provinces of New Brunswick, Quebec, Manitoba, Alberta, and British Columbia. Salaries and wages paid in the peat fuel industry during 1935 amounted to \$3,739 and the average number of employees totalled 7.

PHOSPHATE - Shipments of Canadian mined phosphate during 1935 totalled 186 tons valued at \$1,103 as compared with 81 tons worth \$683 in 1934. Production in 1935 represented apatite recovered chiefly as a by-product mineral in the mining or dressing of mica in the provinces of Ontario and Quebec. No production of phosphate rock was reported in British Columbia in 1935.

The only important recorded occurrences of phosphate rock in Canada are the Precambrian apatite deposits of the Ottawa-Kingston region, in Ontario and Quebec, and the rather low-grade sedimentary phosphate of the Crowsnest district just west of the boundary between southern Alberta and British Columbia.

Phosphate rock is consumed largely in the production of superphosphate (for fertilizer), while the apatite mined in eastern Canada is utilized in the manufacture of phosphorus.

United States quotations for phosphate per long ton, f.o.b. mines, December, 1935, were: Florida, pebble, for export, 77 to 76 per cent, \$7.25; 75 per cent, \$6.50; 75 to 74 per cent, \$6.25; 70 per cent, \$5; 68 per cent, \$4.50. Tennessee, ground lime phosphate, 85 per cent through 300 mesh, 34.30 per cent P<sub>2</sub>O<sub>5</sub>, \$8.25 per short ton, bags extra.

PRODUCTION OF PHOSPHATE IN CANADA, 1926 - 1935.

Years	short tons	\$	Years	short tons	\$
1926 .....	40	800	1931 .....	...	...
1927 .....	151	1,717	1932 .....	1,316	12,333
1928 .....	641	8,276	1933 .....	2,214	5,475
1929 .....	1,185	5,380	1934 .....	81	683
1930 .....	40	760	1935 .....	186	1,103

IMPORTS OF PHOSPHATE ROCK INTO CANADA, 1931 - 1935.

Years	Cwt.	\$
1931 .....	2,834,458	619,079
1932 .....	1,428,657	346,907
1933 .....	367,020	74,527
1934 .....	635,494	165,240
1935 .....	1,270,284	234,580 (x)

(x) Of the 1935 imports, 1,270,060 cwt. valued at \$234,288 came from the United States.

Imports of acid phosphate, not medicinal, totalled 794,233 pounds valued at \$55,449 in 1935 while those of soda phosphate for the same year totalled 3,739,007 pounds valued at \$124,328.

PHOSPHATE ROCK AND SUPERPHOSPHATE USED IN THE MANUFACTURE OF CANADIAN FERTILIZERS, 1931 - 1935

Years	SUPERPHOSPHATE		PHOSPHATE ROCK	
	short tons	\$	short tons	\$
1931 .....	51,639	595,789	48,373	395,547
1932 .....	36,005	366,462	41,114	316,518
1933 .....	59,443	657,123	21,961	164,614
1934 .....	73,182	839,980	48,007	396,133
1935 .....	86,701	986,674	74,507	610,118

WORLD PRODUCTION OF PHOSPHATE ROCK

(Taken from the Imperial Institute's publication "The Mineral Industry of the British Empire and Foreign Countries") (Long tons)

Producing Country	1932	1933	1934
<u>BRITISH EMPIRE</u>			
Tanganyika .....	...	...	205
Seychelles (exports) .....	13,989	12,113	11,871
Union of South Africa .....	1,164	1,163	76
Canada .....	1,175	1,977	72



WORLD PRODUCTION OF PHOSPHATE ROCK (concluded)

(Taken from the Imperial Institute's publication "The Mineral Industry of the British Empire and Foreign Countries") (Long tons.)

Producing Country	1932	1933	1934
<u>BRITISH EMPIRE - concluded</u>			
India .....	121	37	59
Christmas Island .....	84,197	91,280	128,010
Australia .....	869	96	207
Nauru Island .....	418,180	363,680	418,950
Ocean Island .....	196,875	185,575	211,250
TOTAL .....	717,000	656,000	771,000
<u>FOREIGN COUNTRIES</u>			
Belgium (b) .....	25,402	24,733	(a)
Estonia .....	1,115	8,809	10,441
France .....	81,400	70,000	78,000
Germany (Prussia) .....	(a)	(a)	723
Poland .....	(a)	6,250	(a)
Spain .....	9,822	14,278	(a)
U. S. S. R. (Russia) (d) .....	100,000	200,000	376,000
Algeria .....	560,288	578,470	523,804
Egypt .....	344,256	433,673	431,016
Madagascar .....	7,012	13,000	8,208
Morocco (French) .....	988,162	1,048,822	1,180,992
Tunis .....	1,651,000	1,780,000	1,738,000
Netherlands West Indies (exports)	63,390	84,199	99,038
United States .....	1,739,197	2,309,269	2,871,099
French Indo-China .....	400	...	4,000
China .....	8,000	(a)	(a)
Japan .....	18,461	34,193	55,600
Netherlands East Indies .....	2,681	7,821	4,934
Philippine Islands (c) .....	817	3,048	(a)
Angaur Island (exports) .....	54,347	73,250	63,783
Makatea .....	118,745	77,797	80,700
New Caledonia .....	1,000	6,000	2,000
TOTAL .....	5,800,000	6,700,000	7,500,000
WORLD'S TOTAL .....	6,500,000	7,400,000	8,300,000

(a) Information not available.

(b) In addition phosphatic chalk was produced as follows:--

1932 .....51,740 long tons.

1933 .....59,840 " "

(c) Including guano.

(d) Apatite concentrate. In addition a quantity of low grade phosphate rock is produced.

SILICA BRICK - Production of silica brick in Canada during 1935 totalled 2,461 M valued at \$96,194 as compared with 2,528 M worth \$85,945 in 1934. The output in both 1934 and 1935 originated in the plants of the Dominion Steel and Coal Company, Limited, Sydney, Nova Scotia, and the Algoma Steel Corporation Limited, Sault Ste. Marie, Ontario. The brick manufactured by both of these companies are processed from crushed silica rock and are utilized as a refractory in furnace construction.

PRODUCTION OF SILICA BRICK IN CANADA, 1926 - 1935.

Years	M	\$	Years	M	\$
1926 .....	2,665	130,702	1931 .....	900	35,746
1927 .....	1,791	79,527	1932 .....	93	4,304
1928 .....	3,224	155,502	1933 .....	636	23,185
1929 .....	3,951	173,581	1934 .....	2,528	85,945
1930 .....	2,418	97,379	1935 .....	2,461	96,194

IMPORTS OF SILICA BRICK (x) INTO CANADA, 1931 - 1935.

Years	\$
1931 .....	234,909
1932 .....	122,952
1933 .....	147,901
1934 .....	210,190
1935 .....	215,500

(x) Containing not less than 90 per cent silica.

SODIUM CARBONATE (natural) - Commercial shipments of natural sodium carbonate from Canadian deposits totalled 242 tons valued at \$2,430 in 1935 as compared with 244 tons worth \$1,920, in 1934. Production of this mineral comes entirely from British Columbia where the B. C. Sodium Syndicate, with headquarters at Cherry Creek, 12 miles west of Kamloops, continued the operation of its sodium-carbonate plant located at a small lake two miles north-east of the Kamloops-Ashcroft highway. Several car loads of sodium-carbonate crystal were shipped to Calgary and Vancouver soap factories during 1935.

Sodium Carbonate, or soda ash, has many industrial uses, being employed in the manufacture of glass, soap, and in the purification of oils, etc.

PRODUCTION OF SODIUM CARBONATE (NATURAL) IN CANADA, 1926 - 1935.

Year	tons	\$	Year	Tons	\$
1926 .....	595	5,370	1931 .....	712	7,351
1927 .....	805	9,995	1932 .....	495	5,450
1928 .....	519	4,922	1933 .....	559	5,773
1929 .....	600	8,100	1934 .....	244	1,920
1930 .....	364	4,550	1935 .....	242	2,430

IMPORTS OF SODA ASH OR BARILLA INTO CANADA, 1931 - 1935.

Years	Pounds	\$
1931 .....	1,647,304	25,771
1932 .....	1,803,951	27,751
1933 .....	1,616,483	23,256
1934 .....	2,311,498	32,258
1935 .....	2,647,572	37,995



IMPORTS OF BICARBONATE OF SODA INTO CANADA, 1931 - 1935.

<u>Years</u>	<u>Pounds</u>	<u>\$</u>
1931 .....	10,931,335	188,268
1932 .....	10,592,208	196,841
1933 .....	11,716,431	211,065
1934 .....	11,918,011	205,058
1935 .....	12,009,724	207,325

BICARBONATE OF SODA AND SODIUM CARBONATE (SODA ASH) USED IN THE CANADIAN CHEMICALS AND ALLIED PRODUCTS INDUSTRIES, 1931 - 1934.

<u>Years</u>	<u>BICARBONATE OF SODA</u>		<u>SODA</u>	<u>ASH</u>
	<u>Pounds</u>	<u>\$</u>	<u>Pounds</u>	<u>\$</u>
1931 .....	2,969,198	75,334	12,439,458	201,654
1932 .....	2,973,707	94,941	11,421,879	193,422
1933 .....	949,430	27,663	12,221,928	191,639
1934 .....	1,221,665	35,482	21,879,170	327,214

SODA ASH USED IN CANADIAN MANUFACTURES (x) OF NON-METALLIC MINERALS IN CANADA, 1931-1935

<u>Years</u>	<u>Pounds</u>	<u>\$</u>
1931 .....	47,763,713	694,806
1932 .....	43,545,840	598,884
1933 .....	38,336,000	505,152
1934 .....	49,259,418	644,655
1935 .....	47,847,466	632,715

(x) Includes coke and gas, glass and petroleum refining.

SODIUM SULPHATE (natural) (Glauber's Salt and Salt Cake) - Production of natural sodium sulphate in Canada is confined to the province of Saskatchewan, where production in 1935 totalled 44,817 short tons valued at \$343,764 as compared with 66,821 tons at \$587,986 in 1934.

The material mined is either hydrated sodium sulphate, known as Glauber's salt, or anhydrous sodium sulphate, known to the trade as "Salt Cake." It occurs as crystals (Glauber's Salt) or in the form of partially saturated or saturated brines in many lakes throughout western Canada.

Sodium sulphate finds its principal use in the pulp and paper industry for the manufacture of "Kraft paper" by the sulphate process, in the manufacture of glass in the dyes industry, in the smelting of nickel-copper ores, and as one of the raw materials in the manufacture of sodium carbonate.

It is encouraging to note the progress made in this industry in the past few years. The investigation of these deposits was started by the Mines Branch, Ottawa, in 1921, and over 120,000,000 tons of hydrous salt were proved in the few deposits examined in detail. At the present time the operating plants are capable of producing over 600 tons of dried salt per day.

The Mines Branch, Department of Mines, Ottawa, states that "the product from these western deposits should find a rapidly extending market, as the by-product material from the manufacture of hydrochloric acid is each year decreasing in volume owing to the manufacture of the acid synthetically; with the steady improvements being made in methods of refining, thus bettering quality of the product and reducing costs of production and with improved facilities for shipment via Churchill, Manitoba, the possibility of the product from these deposits competing in European and other foreign markets looks decidedly promising."

Returns were received from 6 firms engaged in the production of natural sodium sulphate in Saskatchewan during 1935; the industry reported an average of 104 employees and distributed \$87,355 in salaries and wages. The value of fuel and process supplies consumed during 1935 amounted to \$157,221.

PRODUCTION OF NATURAL SODIUM SULPHATE (x) IN CANADA, 1926 - 1935.

Year	short tons	\$	Year	short tons	\$
1926 .....	6,775	13,550	1931 .....	44,957	421,097
1927 .....	5,659	11,319	1932 .....	22,466	271,736
1928 .....	6,016	68,804	1933 .....	50,080	485,416
1929 .....	5,018	64,112	1934 .....	66,821	587,986
1930 .....	31,571	293,847	1935 .....	44,817	343,764

(x) Produced in the province of Saskatchewan.

Production of sodium sulphate in Canada during the first six months of 1936 totalled 30,610 short tons valued at \$235,158 as compared with 25,688 short tons at \$171,336 in the corresponding months of 1935.

IMPORTS INTO CANADA OF SALT CAKE (SULPHATE OF SODA), 1931 - 1935.

Years	Pounds	\$
1931 .....	17,321,652	97,215
1932 .....	8,865,730	51,925
1933 .....	5,191,036	34,371
1934 .....	21,154,815	123,980
(x) 1935 .....	10,352,070	49,354

(x) Of the 1935 imports 6,512,848 pounds came from the United States, 2,239,872 pounds from Germany, and 1,599,350 pounds from the United Kingdom.

IMPORTS INTO CANADA OF GLAUBER SALTS, 1931 - 1935.

Years	Pounds	\$
1931 .....	1,999,042	10,838
1932 .....	1,806,882	11,027
1933 .....	1,791,011	13,237
1934 .....	1,266,665	8,853
(x) 1935 .....	3,167,715	26,591

(x) 2,507,439 pounds from Germany and 242,446 pounds from the United States.



SALT CAKE USED IN THE MANUFACTURE OF CANADIAN WOOD PULP, 1930 - 1935.

<u>Years</u>	<u>Tons</u>	<u>\$</u>
1930 .....	33,119	676,597
1931 .....	24,756	503,560
1932 .....	24,301	489,343
1933 .....	29,563	580,251
1934 .....	34,559	655,905
1935 .....	35,524	645,001

SODIUM SULPHATE USED IN THE CANADIAN ACIDS, ALKALIES AND SALTS, AND MEDICINAL AND PHARMACEUTICAL INDUSTRIES, 1932 - 1935.

<u>Years</u>	<u>ACIDS, ALKALIES and SALTS</u>		<u>MEDICINAL and PHARMACEUTICAL</u>	
	<u>tons</u>	<u>\$</u>	<u>tons</u>	<u>\$</u>
1932 .....	94	1,811	...	...
1933 .....	9,929	141,322	39	4,879
1934 .....	26,075	368,576	51	7,278
1935 .....	22,485	316,734	(a)	(a)

(a) Information not available.

NOTE - In addition to the consumption listed above, there is a relatively large quantity of natural sodium sulphate employed in the manufacture of nitre cake for use in the nickel-copper mining and smelting industry.

SULPHUR - The sulphur content of pyrites shipped and sulphur recovered (SO<sub>2</sub>) from non-ferrous smelter gas amounted in 1935 to 67,446 short tons valued at \$634,235 as compared with 51,537 tons worth \$515,502 in 1934. Production during both years came from the provinces of Quebec, Ontario and British Columbia.

Sulphur employed in the manufacture of sulphuric acid was recovered from salvaged smelter gas in Ontario and British Columbia. In Ontario Canadian Industries Limited continued the operation of its acid plant at Copper Cliff, using sulphur dioxide obtained from the smelter of the International Nickel Company, while in British Columbia the Consolidated Mining and Smelting Company of Canada, Limited, manufactured sulphuric acid at Trail, using the by-product gases of its metallurgical plants; this Company announced that a new plant to recover the remaining sulphur dioxide emitted from the zinc roasters was under construction in 1936. This plant consists of a waste heat recovery boiler plant, an absorption plant, additional ammonia capacity, additional ammonium sulphate capacity and a sulphur reduction plant. It was expected that this plant would commence operation in June, 1936, when practically all the sulphur dioxide from the zinc plant operations would be recovered and marketed; the zinc plant gases contain approximately sixty per cent of the sulphur dioxide produced at Tadanac.

At Eustis, Quebec, the Consolidated Copper and Sulphur Co. Limited produced and shipped iron pyrites concentrates during 1935; these were consigned to chemical and other pyrites-consuming industries. In British Columbia, shipments of iron pyrites concentrates were made to both foreign and Canadian plants from Britannia Beach by the Britannia Mining and Smelting Company Limited.

Mining operations were resumed in August, 1936 at the Aldermac Mine located in Quebec; it was announced that the present indicated ore reserves were sufficient to ensure a ten year output on the basis of 100 tons of sulphur per day (from pyrites) and that the operation of the Pilot Mill at Niagara Falls (testing the new sulphur process) had been successful thus far. (June, 1936.)

The use of anhydrite in England for the manufacture of sulphuric acid, ammonium sulphate, and special plasters is rapidly increasing. Canada is fortunate in having extensive deposits of this material favourably situated for commercial exploitation, the material from which has been proven by tests carried out by the Department of Mines, Ottawa, to be of excellent grade for the above purposes.

United States quotations for pyrites, December, 1935, were: per long ton unit of sulphur, C. I. F. United States ports, guaranteed 48 per cent sulphur, Spanish 12 to 12½ cents nominal. Sulphur: per long ton for domestic market, \$18 f.o.b. Texas mines.

PRODUCTION OF SULPHUR IN CANADA, 1932 - 1935.

Years	Sulphur content of pyrites shipped (x)		Sulphur content of smelter gases		TOTAL SULPHUR CONTENT	
	short tons	\$	short tons	\$	short tons	\$
1932 .....	25,956	197,854	27,216	272,160	53,172	470,014
1933 .....	28,178	218,349	29,195	291,950	57,373	510,299
1934 .....	5,501	55,142	46,036	460,360	51,537	515,502
1935 .....	14,522	104,995	52,924(a)	529,240	67,446	634,235

(x) Recovered from copper ores.

(a) Contains 312 tons of sulphur recovered in elemental form.

Production of sulphur from the same sources as listed above totalled 48,652 tons valued at \$442,631 during the first six months of 1936 as compared with 28,555 tons at \$289,746 in the corresponding period of 1935.

IMPORTS INTO CANADA OF BRIMSTONE AND SULPHUR, 1931 - 1935.

Years	Cwt.	\$
1931 .....	2,483,842	2,281,654
1932 .....	2,099,895	2,023,085
1933 .....	2,816,202	2,529,920
1934 .....	3,153,943	2,589,311
1935 .....	2,733,499	2,297,650

Of the 1935 imports of sulphur, 2,731,123 cwt. came from the United States.

SULPHUR USED IN THE MANUFACTURE OF CANADIAN WOOD PULP, 1931 - 1935.

Years	Tons	\$
1931 .....	129,402	3,118,471
1932 .....	105,521	2,495,137
1933 .....	121,400	2,828,686
1934 .....	127,541	2,932,928
1935 .....	126,958	2,960,761



SULPHUR (x) USED IN CANADIAN CHEMICALS AND ALLIED PRODUCTS INDUSTRIES, 1931 - 1934.

Years	Pounds	\$
1931 .....	32,823,534	371,413
1932 .....	21,207,500	228,805
1933 .....	26,703,964	300,564
1934 .....	37,389,211	404,117

(x) Does not include use of sulphur recovered from smelter gases.

WORLD PRODUCTION OF SULPHUR

(Taken from the Imperial Institute's publication "The Mineral Industry of the British Empire and Foreign Countries") (Long tons)

Producing Country and Description	1932	1933	1934
<b>BRITISH EMPIRE</b>			
United Kingdom and Irish Free State			
Spent oxide (b) .....	129,000	132,700	156,000
Canada			
Smelter gas (d) .....	24,300	26,067	4,110
<b>FOREIGN COUNTRIES</b>			
France			
Sulphur rock .....	807	(a)	(a)
Germany (estimated)			
Sulphur recovered from gases ..	12,000	12,000	15,000
Greece			
Refined sulphur .....	300	...	(a)
Italy			
Sulphur ore .....	2,127,000	2,283,381	2,071,265
Crude sulphur (c) -			
Fused .....	344,449	370,675	337,965
Ground .....	25,119	24,569	21,820
Norway (estimated)			
Sulphur recovered from pyrites.	60,000	(a)	(a)
Portugal			
Sulphur .....	...	...	1,411
Spain			
Sulphur rock .....	52,423	53,184	54,065
Refined sulphur (g) .....	17,151	37,871	42,372
Sulphur recovered from pyrites	4,500	(a)	(a)
Sweden			
Sulphur .....	...	624	497
United States			
Crude sulphur .....	890,440	1,406,063	1,421,473
Sulphur ore .....	100	...	(a)
Slurry sulphur content (e) ..	2,500	2,500	2,500
Smelter gas (f) .....	220,000	220,000	220,000
Chile			
Sulphur .....	11,770	12,557	(a)
China (estimated)			
Sulphur .....	6,000	6,000	6,000
Formosa			
Sulphur .....	544	(a)	(a)

WORLD PRODUCTION OF SULPHUR (concluded)

(Taken from the Imperial Institute's publication "The Mineral Industry of the British Empire and Foreign Countries.") (Long tons)

Producing Country and Description	1932	1933	1934
<b>FOREIGN COUNTRIES - concluded</b>			
Japan -			
Sulphur rock .....	2,591	2,657	4,700
Refined sulphur .....	83,195	112,619	133,273
Netherlands East -			
Indics -			
Sulphur .....	7,517	11,036	12,047
Turkey -			
Sulphur .....	25	148	198

- (a) Information not available.
- (b) Consumed by the sulphuric acid industry.
- (c) Derived from sulphur rock above.
- (d) Estimated sulphur content of gas used in acid making.
- (e) The result of the purification of manufactured fuel gases.
- (f) Estimated sulphur content of gas driven off in the smelting of zinc and copper concentrates, chiefly used in acid making.
- (g) Derived partly from sulphur rock above and partly from imported crude sulphur.

PRODUCTION OF MISCELLANEOUS NON-METALLIC MINERALS IN CANADA, 1934 and 1935.

Item	Unit of measure	1	9	3	4	1	9	3	5
		Quantity				Value			
Actinolite .....	ton			30	365			...	...
Barytes .....	ton			...	...			...	...
Bituminous sands .....	ton			862	3,449			40	160
Fluorspar .....	ton			150	2,100			75	900
Graphite .....	xxx			...	71,424			...	79,781
Magnesitic dolomite .....	xxx			...	382,927			...	486,084
Magnesium sulphate .....	ton			42	1,100			340	7,965
Mineral waters .....	Imp. gal.			97,440	17,738			146,516	16,590
Peat .....	ton			1,878	7,343			1,340	5,761
Phosphate (a) .....	ton			81	683			186	1,103
Silica brick .....	M			2,528	85,945			2,461	96,194
Sodium carbonate .....	ton			244	1,920			242	2,430
Sodium sulphate .....	ton			66,821	587,986			44,817	343,764
Sulphur (x) .....	ton			51,537	515,502			67,446	634,235
TOTAL .....	xxx			...	1,678,482			...	1,674,967

- (a) represents apatite mined in Quebec and Ontario.
- (x) Includes sulphur content of pyrites at its sales value and estimated figures for quantity and value of sulphur in smelter gases used for acid making or recovered as elemental sulphur.



PRINCIPAL STATISTICS RELATING TO MISCELLANEOUS NON-METAL MINING INDUSTRIES IN CANADA,  
1933, 1934 and 1935.

	1933	1934	1935
Number of plants .....	40	53	44
Capital employed ..... \$	4,202,736	3,291,842	2,555,124
Number of employees - On salary .....	44	45	49
On wages .....	253	348	317
TOTAL .....	297	393	366
Salaries and wages - Salaries . \$ .....	62,364	79,333	91,736
Wages .... \$ .....	179,635	292,429	266,101
TOTAL . \$ .....	241,999	371,762	357,837
Cost of fuel and electricity .. \$ .....	176,512	240,224	219,057
Cost of process supplies used . \$ .....	(a)	(a)	35,891
Selling value of products ..... \$	1,423,679	1,678,482	1,674,967

WAGE-EARNERS, BY MONTHS, 1932, 1933, 1934 and 1935.

Month	1932	1933	1934	1935
January .....	80	89	239	161
February .....	87	94	253	154
March .....	98	117	269	205
April .....	166	156	243	222
May .....	229	175	446	328
June .....	226	234	498	419
July .....	197	344	460	429
August .....	151	378	431	420
September .....	157	369	402	418
October .....	175	363	340	372
November .....	165	322	286	378
December .....	91	318	283	228
AVERAGE .....	147	253	348	317

FUEL AND ELECTRICITY USED IN THE MISCELLANEOUS NON-METAL MINING INDUSTRIES IN CANADA  
1934 and 1935.

Kind	Unit of measure	1934		1935	
		Quantity	Cost	Quantity	Cost
			\$		\$
Bituminous coal - Canadian ...	tons	8,904	48,957	9,521	55,730
Imported ...	tons	631	2,845	943	4,527
Anthracite .....	tons	21	232	12	180
Lignite coal .....	tons	22,331	59,660	16,010	39,476
Gasoline (exclusive of that used in motor cars) .....	Imp. gal.	25,487	5,741	47,403	9,209
Fuel oil and diesel oil .....	Imp. gal.	1,611,003	96,578	1,377,925	75,484
Kerosene or coal oil .....	Imp. gal.	...	...	792	177
Wood (cords of 128 cubic feet) .....	cords	1,154	4,243	1,733	6,573
Gas - Manufactured .....	M. cu. ft.	37,245	3,501	87,410	8,652
Other fuel .....	xxx	...	27	...	611
Electricity purchased .....	K. W. H.	1,927,711	18,440	2,029,225	18,438
TOTAL .....	xxx	...	240,224	...	219,057
Electricity generated for own use K. W. H.		1,323,750	...	1,569,321	...

POWER EQUIPMENT EMPLOYED IN THE MISCELLANEOUS NON-METAL MINING INDUSTRIES, 1934 and 1935

Kind	1	9	3	4	1	9	3	5
	Number of units		Total horse power		Number of units		Total horse power	
Steam engines and steam turbines .....	5		670		5		880	
Diesel engines .....	3		700		4		885	
Gasoline, gas and oil engines .....	10		666		17		898	
Hydraulic turbines or water wheels ...	2		200		3		240	
Electric motors .....	133		3,224		206		3,845	
Boilers .....	9		875		7		667	

NOTE - Prices quoted in this report have been taken from "Metal and Mineral Markets" - New York, and "Canadian Chemistry and Metallurgy" - Toronto.

DIRECTORY OF FIRMS IN THE MISCELLANEOUS NON-METAL MINING INDUSTRIES IN CANADA, 1935.

<u>Name of Operator and Province</u>	<u>Office Address</u>
<u>ACTINOLITE</u>	
<u>ONTARIO</u> - The Actinolite Mining Co. (x)	1529 Macgregor St., Montreal, P. Q.
<u>BARYTES</u>	
<u>ONTARIO</u> - Bellew Barytes Mine Ltd. (x)	132 Hillcrest Ave., Montreal W., P. Q.
<u>BITUMINOUS SANDS</u>	
<u>ALBERTA</u> - Absand Oils Ltd. (a)	3703 Northern Ontario Bldg., Toronto, Ont.
Bituminous Sand Extraction Co. Ltd. (a)	507 MacLean Block, Calgary, Alta.
McMurray Asphaltum & Oil Ltd.	Petrolia, Ont.
<u>FLUORSPAR</u>	
<u>ONTARIO</u> - Stoklosar, Chas. A.	Box 198, Madoc, Ontario.
<u>GRAPHITE</u>	
<u>QUEBEC</u> Canadian Graphite Corp. (x)	1193 Phillips Place, Montreal, P. Q.
<u>ONTARIO</u> - Black Donald Graphite Co. Ltd.	Calabogie, Ontario.
<u>MAGNESITIC DOLOMITE</u>	
<u>QUEBEC</u> - International Magnesite Co. Ltd. Canadian Refractories Ltd.	Calumet, P. Q. 1050 Canada Cement Bldg., Montreal, P. Q.
<u>MAGNESIUM SULPHATE</u>	
<u>BRITISH COLUMBIA</u> - Epsom Refineries Ltd.	395 Main St., Winnipeg, Man.



DIRECTORY OF FIRMS IN THE MISCELLANEOUS NON-METAL MINING INDUSTRIES IN CANADA,  
1935 (continued)

Name of Operator and Province

Office Address

MINERAL WATERS (NATURAL)

QUEBEC

Abenakis Springs Co.  
Ballemarre, Josaphat  
Eau Minerale Etoile  
Gurd, Chas., & Co. Ltd.  
La Certe Adélard  
La Cie Embouteillage Ideal  
La Cie d'Embouteillage St. Laurent  
La Cie d'Eau Minerale  
L'Eau Naturelle Purgative de Chamford  
Maski Bottling Works  
Pellerin, Albert and Sons  
Radnor Mineral Water Springs  
Richard, Girard  
Source, Coulombia

Blondin, Quebec.  
St. Barnabé Nord, Que.  
Ste. Genevieve de Batiscan, Que.  
1016 Bleury St., Montreal, Que.  
St. Sévere, Que.  
3 St. Germain St., St. Hyacinthe, Que.  
64 St. Pierre St., St. Hyacinthe, Que.  
148 Concorde St., St. Hyacinthe, Que.  
Desbiens, Que.  
Maskinongé, Que.  
St. Barnabé Nord  
St. Maurice, Que.  
St. Gregoire, Que.  
L Epiphanie, Que.

ONTARIO

Boyd, T. R.  
Deneault, F.  
Gurd, Chas., & Co. Ltd.

Carlsbad Springs, Ont.  
Bourget, Ont.  
1016 Bleury St., Montreal, Que.

QUEBEC

PHOSPHATE

Bigelow, Venard  
Cameron, Wm.  
Cross, W. C.

Glen Almond, P. Q.  
Buckingham, P. Q.  
Hull, P. Q.

ONTARIO

Loughborough Mining Co. Ltd., The

Sydenham, Ont.

SILICA BRICK

NOVA SCOTIA

Dominion Steel and Coal Corp. Ltd.

Sydney, N. S.

ONTARIO

Algoma Steel Corp. Ltd.

Sault Ste. Marie, Ont.

SODIUM CARBONATE

BRITISH COLUMBIA

B. C. Sodium Syndicate

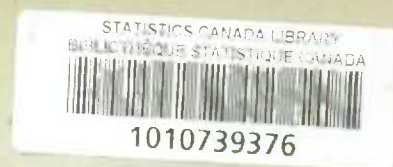
Kamloops, B. C.

SODIUM SULPHATE

SASKATCHEWAN

Alexander, W. R.  
Dominion Sodium Refineries, Ltd.  
Horseshoe Lake Mining Co. Ltd.  
Midwest Chemical Co.  
Muskiki Sulphates Ltd. (a)  
Natural Sodium Products Ltd.  
Oban Salt Co. Ltd.

831 D. North, Saskatoon, Sask.  
513 Lougheed Bldg., Calgary, Alta.  
Ormiston, Sask.  
Pale, Sask.  
Chinook, Alberta.  
Expanse, Sask.  
Oban, Sask.



DIRECTORY OF FIRMS IN THE MISCELLANEOUS NON-METAL MINING INDUSTRIES IN CANADA;  
1935 (concluded)

Name of Operator and ProvinceOffice AddressSODIUM SULPHATE --concludedSASKATCHEWAN -- concluded

Saskasal Ltd.

513 Westman Chambers, Regina, Sask.

Sodium Corporation Ltd.

372 Bay St., Toronto, Ontario.

Sodium Sulphate Co. of Sask. Ltd. (a)

1753 Rose St., Regina, Sask.

White Shore Salts &amp; Chemicals Co. Ltd.

1371 George St., North Battleford, Sask.

SULPHURQUEBEC --

Aldermac Mines Ltd. (b) (a)

941 Dominion Square Bldg., Montreal, Que.

Consolidated Copper and Sulphur Co. Ltd. (b)

Eustis, Que.

ONTARIO --

International Nickel Co. of Canada, Ltd. (c)

Copper Cliff, Ont.

BRITISH COLUMBIA --

Consolidated Mining &amp; Smelting Co. of Canada

Ltd. (c)

Trail, B. C.

Britannia Mining &amp; Smelting Co. Ltd. (b)

Britannia Beach, B. C.

- (x) Company now inactive.  
(a) Active, but no shipments made.  
(b) Pyrites.  
(c) Salvaged smelter gas.