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**CANADA**

**DEPARTMENT OF TRADE AND COMMERCE**

**DOMINION BUREAU OF STATISTICS**

**CENSUS OF INDUSTRY**

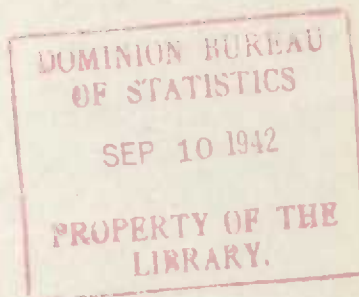
**MINING, METALLURGICAL & CHEMICAL BRANCH**

**THE SALT INDUSTRY**

**IN**

**CANADA**

**1941**



**OTTAWA  
1942**

Price 25 cents



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SALT, 1941

Commercial production of common salt or sodium chloride in Canada during 1941 totalled 560,845 short tons valued at \$3,196,165 compared with 464,714 short tons at \$2,823,269 in 1940. In 1941 salt was produced in Nova Scotia, Ontario, Manitoba and Alberta and of the total Canadian output in 1941 Ontario contributed 477,170 short tons or 92 per cent. Statistics of Canadian salt production represent the recovery of the mineral from brine wells with the exception of Nova Scotia where the output comes entirely from the underground mining of rock salt deposits. The quantity and value of Canadian salt produced in 1941 are the greatest ever recorded.

Of the total salt sold or used by producers in 1941, 258,711 short tons, or 46.1 per cent, was consumed directly by the producers themselves in the manufacture of caustic soda and other chemicals. Sales of salt during 1941 included 78,901 short tons of table and dairy grades; 131,001 short tons of common fine and 35,838 tons of common coarse. The balance of Canadian shipments in 1941 consisted of various other grades, including salt for agriculture and for highway maintenance.

The number of Canadian firms reporting primary salt production in 1941 totalled 9; capital employed by the industry amounted to \$5,559,307, of which \$3,538,827 represented the value of buildings, machinery, etc., and \$261,237 the value of land. Employees numbered 668, including 72 females. Salaries and wages totalled \$1,018,652; \$450,291 were expended for fuel and electricity and \$69,341 for chemicals and other process supplies.

Data relating to imports and exports of salt by countries are available only for confidential use during the continuation of the present war, but the "apparent" consumption of salt in Canada in 1941 was estimated at 629,754 short tons valued at \$3,524,285 compared with 570,876 short tons worth \$3,319,115 in 1940.

Statistics relating to Canadian salt production are available only since 1886 and salt production in the Dominion since that year to the end of 1941 totalled 9,439,546 short tons valued at \$54,070,274. Statistics relating to World production of salt have not been available since 1938.

TABLE 1 - PRODUCTION OF SALT IN CANADA, BY GRADES, 1940 AND 1941.

	1940			1941		
	1	9	4	1	9	4
	Manu- factured	Sold	Value of salt sold (Not inclu- ding con- tainers)	Manu- factured	Sold	Value of salt sold (Not inclu- ding con- tainers)
	Tons	Tons	\$	Tons	Tons	\$
Table, dairy and pressed blocks .....	73,907	75,166	1,421,832	79,683	78,901	1,372,409
Common, fine .....	93,831	94,817	549,410	133,103	131,001	733,072
Common, coarse .....	24,143	24,259	263,754	36,807	35,838	360,772
Highway salt .....	6,689	6,689	34,264	7,069	7,069	36,986
Land salt .....	673	708	4,528	626	641	4,254
Other grades .....	40,795	39,066	190,509	47,208	48,684	258,019
Brine for chemical works (Salt equivalent sold or used) .....	224,009	224,009	358,972	258,711	258,711	430,653
TOTAL .....	464,047	464,714	2,823,269	563,207	560,845	3,196,165
Value of containers ...	...	...	498,981	...	...	656,334
GRAND TOTAL ...	464,047	464,714	3,322,250	563,207	560,845	3,852,499

TABLE 2 - PRODUCTION OF SALT BY PROVINCES<sup>(x)</sup>, 1932 - 1941.

Year	NOVA SCOTIA		ONTARIO		MANITOBA		ALBERTA	
	Tons	\$	Tons	\$	Tons	\$	Tons	\$
1932 ..	31,897	150,708	231,138	1,789,751	508	7,092	...	...
1933 ..	34,278	161,389	244,107	1,755,087	1,499	18,388	...	...
1934 ..	42,886	191,917	276,751	1,734,196	1,664	20,137	...	...
1935 ..	38,701	161,659	320,003	1,698,508	1,538	18,765	...	...
1936 ..	38,774	183,915	350,044	1,557,078	2,498	32,151	...	...
1937 ..	47,865	216,401	407,701	1,539,599	3,391	43,465	...	...
1938 ..	44,950	194,759	388,130	1,657,140	2,920	34,979	4,045	446,035
1939 ..	47,885	213,029	370,843	2,200,189	2,453	35,888	3,319	37,526
1940 ..	42,495	220,328	412,401	2,371,780	3,076	45,731	6,742	185,430
1941 ..	54,007	307,637	477,170	2,512,166	13,051	115,367	16,617	260,995

(x) In addition, Saskatchewan produced 231 tons valued at \$4,510 in 1933, 452 tons at \$8,703 in 1934 and 101 tons at \$2,046 in 1935.

TABLE 3 - TOTAL PRODUCTION OF SALT IN CANADA FOR YEARS SPECIFIED, 1886 - 1941.

Year	Tons	\$	Year	Tons	\$
1886 .....	62,359	227,195	1929 .....	330,264	1,578,036
1890 .....	43,754	193,857	1931 .....	259,047	1,904,149
1900 .....	62,055	279,458	1932 .....	263,543	1,947,551
1913 .....	100,791	491,280	1933 .....	280,115	1,939,874
1914 .....	107,038	493,648	1934 .....	321,753	1,954,953
1915 .....	119,900	600,226	1935 .....	360,343	1,380,978
1916 .....	132,903	717,653	1936 .....	391,316	1,773,144
1917 .....	138,909	1,047,792	1937 .....	458,957	1,799,465
1918 .....	131,727	1,285,039	1938 .....	440,045	1,912,913
1919 .....	148,301	1,397,929	1939 .....	424,500	2,486,632
1920 .....	209,855	1,544,724	1940 .....	464,714	2,823,269
1921 .....	164,658	1,673,685	1941 .....	560,845	3,196,165

TABLE 4 - SALT PRODUCED FOR CHEMICAL PURPOSES<sup>(/)</sup>, 1927 - 1941.

Year	Quantity Tons (2000 lbs.)	Per cent of total salt output	Year	Quantity Tons (2000 lbs.)	Per cent of total salt output
1927 .....	115,995	43	1935 .....	145,433	40
1928 .....	135,138	45	1936 .....	165,882	42
1929 .....	168,327	51	1937 .....	205,149	45
1930 .....	114,737	42	1938 .....	170,938	39
1931 .....	97,958	38	1939 .....	187,958	44
1932 .....	96,242	37	1940 .....	224,009	48
1933 .....	104,740	37	1941 .....	258,711	46
1934 .....	124,132	39			

(/) Used in the manufacture of chemicals by producers of salt.

TABLE 5 - AVAILABLE STATISTICS ON CONSUMPTION OF SALT, IN SPECIFIED CANADIAN INDUSTRIES, 1939 AND 1940 (x)

Industries	1 9 3 9		1 9 4 0	
	Quantity used	Cost at works	Quantity used	Cost at works
	Pounds	\$	Pounds	\$
Fish canning and curing (factories only) .....	42,939,300	212,325	47,546,400	273,818
Slaughtering and meat packing ..	77,119,352	405,238	94,220,916	588,536
Acids, alkalies and salts - Brine (salt content) and dry salt ...	333,004,000	331,797	415,425,401	541,914
Soaps and cleaning preparations .	4,215,720	17,386	4,926,412	18,661
Dyeing, cleaning and laundry work.	5,105,994	38,043	5,070,363	42,354
Dyeing and finishing of textiles .	2,263,589	11,640	3,162,844	14,181
Artificial ice .....	1,782,233	7,685	457,096	3,245
Abrasives - artificial .....	520,000	2,265	786,000	4,002
Waterworks .....	3,888,000	(a)	1,000,000	(a)
Leather tanneries .....	12,514,496	55,389	14,301,972	67,025
Pulp and paper mills .....	25,652,000	87,385	25,258,000	96,351
Stock and poultry foods .....	5,428,000	42,439	5,278,000	44,247
Bread and other bakery products ..	15,730,960	144,129	12,744,255	153,264
Fruit and vegetable preparations .	9,999,969	68,956	9,377,683	70,918
Biscuits, confectionery, etc. ...	1,485,960	13,222	1,648,845	16,487
Foods, breakfast .....	1,528,023	10,207	1,165,733	8,630
Sausage and sausage casings ....	564,139	6,016	635,106	6,524
Ice cream industry (b) .....	1,680,840	12,154	1,508,345	8,682
Breweries .....	412,823	3,434	543,811	5,304
Malt and malt products .....	258,623	1,173	228,100	1,257
Macaroni, vermicelli, etc. ....	109,337	1,074	100,506	943
Ice cream cones .....	9,010	91	3,959	125
Foods, miscellaneous, including coffee, tea, etc. ....	1,255,111	12,483	1,868,795	19,774
Butter and cheese .....	...	122,786	...	190,729
Starch and glucose .....	455,019	1,607	482,783	2,102
Animal oils and fats .....	180,000	760	314,000	1,400
Condensed milk .....	...	658	...	670
Woollen textiles .....	...	950	...	...

(x) In addition, large quantities of salt are used on highways.

(a) Value not compiled (b) Not available.

TABLE 6 - POTASH SALTS USED IN THE MANUFACTURE OF CANADIAN MIXED FERTILIZERS, 1939 AND 1940.

	1 9 3 9		1 9 4 0	
	Tons	Cost at works	Tons	Cost at works
		\$		\$
Nitrate of potash .....	53	2,049	23	1,338
Kainite and potash manure salts ..	6	155	...	...
Muriate of potash .....	40,320	1,158,559	43,902	1,348,413
Sulphate of potash .....	4,452	166,322	5,220	206,309

NOTE: Data for 1941 not yet complete.

TABLE 7. - SALES OF POTASH SALTS FOR FERTILIZER PURPOSES, OTHER THAN FOR THE MANUFACTURE OF MIXED FERTILIZERS, YEARS ENDED JUNE 30, 1940 AND 1941.

	1 9 4 0	1 9 4 1
	(short tons)	
Muriate of potash .....	7,808	7,425
Sulphate of potash .....	185	132

Complete statistics relating to world production of potash are not available for 1941 as publication of potash production statistics by European governments virtually ceased in the summer of 1939, and no adequate data are available since.

Natural potash salts are not yet mined or recovered on an extensive commercial scale in Canada. Potash occurs in small quantities in rock salt strata at Malagash, Cumberland County, Nova Scotia, and at Gautreau, Westmorland County, New Brunswick. Potassium chloride occurs at Malagash in a number of definite bands in the salt mass in the form of crystalline beds of pink and yellowish green sylvite in the matrix of halite.

Caustic soda, chlorine and hydrochloric acid are now manufactured by Canadian Industries Limited from salt obtained from the Company's wells located at Sandwich. This Company operates chemical plants at Windsor, Cornwall, Shawinigan Falls and Quebec.

The Brunner, Mond Canada, Limited, located at Amherstburg, Ontario, manufactures soda ash from natural brine; calcium chloride is also recovered as a by-product by this Company.

The United States Bureau of Mines, Minerals Year Book for 1940 states:

"The United States is the world's largest producer of bromine and, although figures are not available, exports are considerable. Germany and Palestine also are large producers, and appreciable amounts are produced in Japan, France, Tunisia, Italy, Russia and the United Kingdom. Plants for recovering bromine from sea water are reported to be operating in France and in England.

"Fourteen plants reported production of bromine or bromine compounds from natural sources during 1940. The Ethyl-Dow Co. produced the largest quantity, recovering bromine from raw sea water near Wilmington, N.C. The second largest producer was the Dow Chemical Co., which recovered bromine from natural brines in Michigan. This Company has also begun to produce bromine at its Freeport (Tex.) plant where magnesium compounds are recovered from raw sea water. The American Potash and Chemical Corporation - a newcomer into the bromine field - also supplied an important quantity of bromine during 1940, having recovered this element from some of the more concentrated process liquors derived from Searles Lake brines. Equipment for producing bromine compounds as well as liquid bromine was being installed early in 1941, and actual output of these compounds was expected to begin by early summer."

TABLE 8 - PRINCIPAL STATISTICS OF THE SALT INDUSTRY IN CANADA, 1939 - 1941.

	1939	1940	1941
Number of firms (f) .....	9	9	9
Capital employed .....	\$ 4,447,204	4,993,914	5,559,307
Number of employees - On salary .....	113	120	148
On wages .....	434	466	520
Total ..	547	586	668
Salaries and wages - Salaries .....	\$ 285,023	299,521	361,661
Wages .....	\$ 456,713	536,985	656,991
Total ..	\$ 741,736	836,506	1,018,652
Selling value of products (gross) .....	\$ 2,957,982	3,322,250	3,852,499
Cost of purchased process materials ...	\$ 37,161	40,198	69,341
Cost of fuel and electricity .....	\$ 276,267	321,589	450,291
Value of containers .....	\$ 471,350	498,981	656,334
Net value of sales .....	\$ 2,173,204	2,461,482	2,676,533

(f) 6 in Ontario; 1 in Nova Scotia; 1 in Manitoba; 1 in Alberta.

TABLE 9 - WAGE-EARNERS, BY MONTHS, 1937 - 1941 (On 15th or nearest representative date).

Month	1937	1938	1939	1940	1941		
					Male		Female
					Surface	Under-ground	Surface
January .....	348	411	440	431	372	30	26
February .....	370	446	426	439	368	41	26
March .....	376	441	407	442	379	42	28
April .....	401	452	424	463	404	50	30
May .....	429	448	439	490	440	48	28
June .....	427	423	459	477	465	50	28
July .....	452	439	460	493	480	49	29
August .....	444	438	416	503	480	53	31
September .....	451	477	431	490	476	57	32
October .....	437	487	458	483	485	55	34
November .....	456	474	449	492	476	56	31
December .....	371	426	408	396	470	55	31
AVERAGE ....	416	447	434	466	441	49	30

TABLE 10.- NUMBERS OF WAGE-EARNERS WHO WORKED THE NUMBER OF HOURS (x) SPECIFIED DURING ONE WEEK IN MONTH OF NORMAL EMPLOYMENT, 1941.

Hours	Number		Hours	Number	
	Male	Female		Male	Female
30 or less .....	18	5	49 - 50 .....	17	2
31 - 43 .....	45	3	51 - 54 .....	32	3
44 .....	33	-	55 .....	25	-
45 - 47 .....	25	2	56 - 64 .....	171	13
48 .....	131	3	65 (f) .....	60	-

(x) Grand total employees in week specified; male, 557, female, 31.

(f) Total wages paid in week specified, \$16,132.

TABLE 11 FUEL AND ELECTRICITY USED IN THE CANADIAN SALT INDUSTRY, 1940 - 1941.

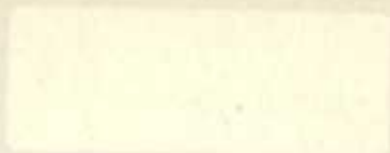
Kind	Unit of Measure	1940		1941	
		Quantity	Cost at works	Quantity	Cost at works
			\$		\$
Bituminous coal - Canadian	short ton	15,469	71,904	14,773	91,298
Imported	short ton	35,862	159,985	49,331	268,492
Anthracite coal	short ton	7,081	38,516	...	...
Lignite coal	short ton	6,616	22,812	14,091	48,744
Gasoline	Imp. Gal.	25,844	5,926	90,225	21,429
Kerosene	Imp. Gal.	57	16	33	9
Fuel oil	Imp. Gal.	90,197	9,904	48,930	5,422
Gas, natural	M cu. ft.	45	24	39	21
Electricity purchased	K. W. H.	2,318,990	12,502	2,755,387	14,876
TOTAL	\$	...	321,589	...	450,291
Electricity generated for own use	K. W. H.	1,496,290	...	5,198,019	...

TABLE 12 - POWER INSTALLATION, 1941

Description	Ordinarily in use		In reserve or idle	
	Number of units	Total horse power	Number of units	Total horse power
Steam engines and steam turbines	27	3,328	7	190
Diesel engines	1	180	..	...
Gasoline, gas and oil engines, other than diesel engines	5	246	1	120
Hydraulic turbines or water wheels	..	...	..	...
Electric motors -				
(a) operated by purchased power	137	980	3	11
Total	170	4,734	11	321
(b) operated by power generated by the establishment	197	2,097	3	15
Stationary boilers	7	3,836	7	1,135

LIST OF FIRMS IN CANADIAN SALT INDUSTRY, 1941.

Name of Firm	Head Office	Location of Plant
<u>NOVA SCOTIA</u> -		
Malagash Salt Co. Ltd.	196 Provost St., New Glasgow	Malagash
<u>ONTARIO</u> -		
Brunner, Mond Canada, Ltd.	Canadian Bank of Commerce Bldg., Toronto	Amherstburg
Canadian Industries Limited	P.O. Box 10, Montreal, Que.	Windsor
Goderich Salt Co., Ltd.	Goderich	Goderich
Sifto Salt Co., Ltd.	Canada Cement Bldg., Montreal, Que.	Sarnia
Warwick Pure Salt Co., Ltd.	R. R. 5, Watford	Lambton Co.
Western Canada Flour Mills Co. Ltd.	287 MacPherson Ave., Toronto, Ont.	Goderich
<u>MANITOBA</u> -		
Neepawa Salt, Ltd.	P.O. Box 10, Montreal, Que.	Neepawa
<u>ALBERTA</u> -		
Industrial Minerals, Ltd.	423 Canada Cement Bldg., Montreal, Que.	Waterways.



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