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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

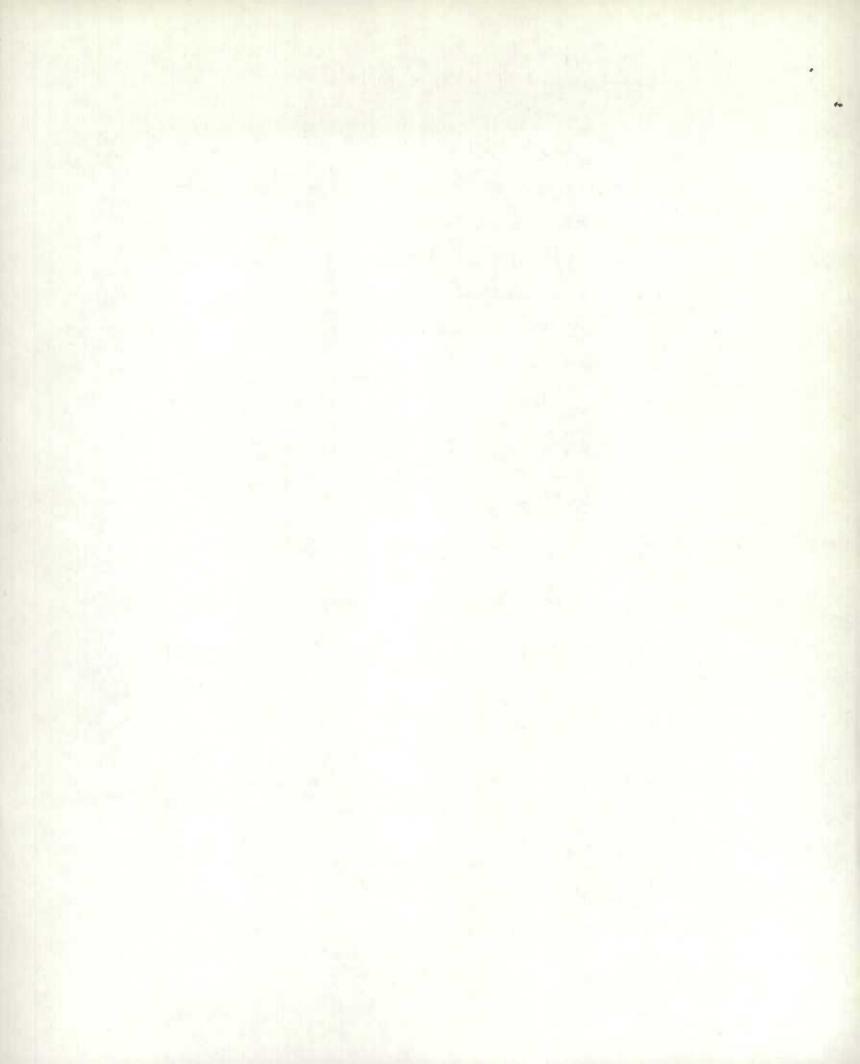
CANADA

1939



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

Dominion Statistician: Chief - Mining, Metallurgical and Chemical Branch: W. H. Loses, B.Sc. Mining Statistician: R. H. Coats, LL.D., F.R.S.C., F.S.S. (Hon.) R. H. Coats, LL.D., F.R.S.C., F.S.S. (Hon.)

SALT, 1939.

Commercial production of common salt or sodium chloride in Canada during 1939 totalled 424,500 short tons valued at \$2,486,632 compared with 440,045 short tons at \$1,912,913 in 1938. In 1959 salt was produced in Nova Scotia, Ontario, Manitoba and Alberta and of the total Canadian output in 1939 Ontario contributed 370,843 short tons or 87 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.

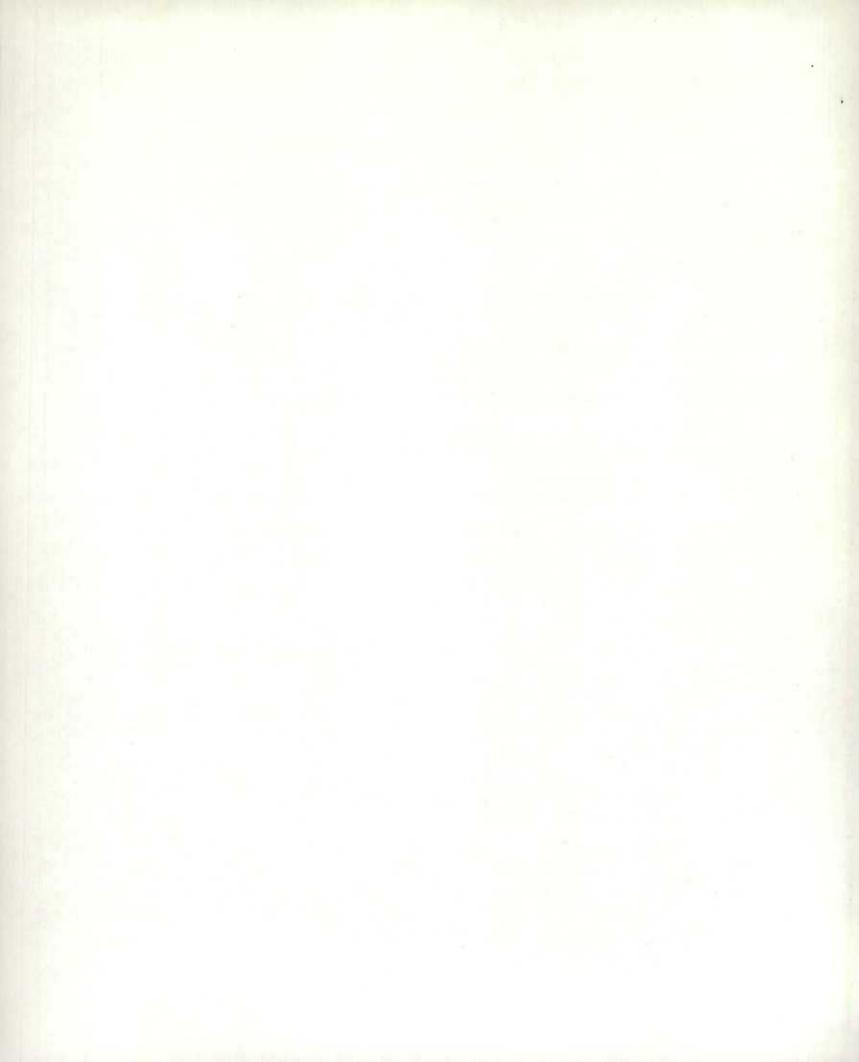
Of the total salt used or sold in 1939 there were 187,958 short tons or 44 per cent consumed directly by the producers themselves in the manufacture of caustic soda and other chemicals. Table and dairy grades sold were recorded at 70,390 short tons, 8,156 tons were reported as sold as highway salt while the balance of production totalling 157,996 short tons included common fine, common coarse and various other grades.

The number of Canadian firms reporting primary salt production in 1939 totalled 9; capital employed by the industry amounted to \$4,447,204 of which \$3,085,024 represented the value of buildings, machinery, etc., and \$274,326 the value of land. Employees numbered 547, including 65 female workers. Salaries and wages totalled 741,736; \$276,267 were expended for fuel and electricity and \$37,161 for chemicals and other process supplies.

Imports of salt into Canada during 1939 totalled 117,629 short tons valued at \$507,368 compared with 108,131 short tons at \$453,765 in 1938. Included in the 1939 imports were 34,646 short tons for the use of sea and gulf fisheries. Exports of Canadian salt during 1939 totalled 10,656 short tons appraised at \$76,287. The total "apparent" consumption of salt in Canada in 1939, for all purposes, and in all forms was estimated at 531,475 short tons valued at \$2,917,713 compared with 536,332 short tons worth \$2,298,385 in 1938.

Statistics relating to Canadian salt production are available only since 1886 and Canadian salt production since that year to the end of 1939 totalled 8,413,987 short tons valued at \$48,050,840.

In a review of the Canadian salt industry in 1939 L.H. Cole, of the Bureau of Mines, Ottawa states in part: - "In Nova Scotia, the Malagash Salt Company continued underground development by diamond drilling, cross cutting, and drifting. Definite zones in which indications of Potash salts occur have been correlated from the second level to the twenty-sixth level and there seems to be an increase in the potash content with depth. The study of these zones is being continued.



Further drilling by New Brunswick Gas and Oilfields Limited, near Weldon, New Brunswick, extended the area known to be underlain by glauborite-salt strata, so that to date a deposit of salt is already indicated more than l_2^{\pm} miles wide and 4 or more miles long; the greatest thickness so far encountered being 1,500 feat. There are many millions of tons of salt in this basin, available for future development.

"Soil stabilization with salt and clay for the foundations of highways, and for a surface veneer for gravel roads is now firmly established, and this use of salt showed a decided increase during the year. The development of soil stabilized bases for runways at Canadian airports continued and several new airfields were so prepared.

"The eastern half of Canada is well supplied with deposits of salt, and already two plants are in operation west of Winnipeg."

| | 1 | 9 3 8 | | 1 | 9 3 9 | |
|--|----------------------|---------|---|---------------------|---------|---|
| | Manu- factured | Sold | Value of salt sold (Not includ- ing con- tainers) | Manu- - factured | l Sold | Value of salt sold (Not includ- ing con- tainers) |
| | Tons | Tons | \$ | Tons | Tons | \$ |
| Table dairy and pressed | | | | | | |
| blocks | 83,323 | 85,422 | 876,204 | 68,629 | 70,390 | 1,223,433 |
| Common, fine | 101,949 | 104,174 | 416,810 | 85,921 | 84,106 | 503,589 |
| ommon, coarse | 32,446 | 30,613 | 253,384 | 27,733 | 28,704 | 286,179 |
| ighway salt | 5,778 | 10,174 | 34,689 | 8,156 | 8,156 | 40,501 |
| and salt | 88 | 71 | 397 | 288 | 268 | 1,697 |
| Other grades Brine for chemical works (Salt equivalent sold or | 44,214 | 38,653 | 158,491 | 46. 313 | 44,918 | 185,274 |
| used) | 170,938 | 170,938 | 170,938 | 187,958 | 187,958 | 245,959 |
| TOTAL | 438 ₉ 736 | 440,045 | 1,912,913 | 424,998 | 424,500 | 2,486,632 |
| Value of containers | | en | 576,806 | | - | 471,350 |
| GRAND TOTAL | 438,736 | 440,045 | 2,489,719 | 424,998 | 424,500 | 2,957,98,2 |

TABLE 1 - PRODUCTION OF SALT IN CANADA, BY GRADES, 1938 and 1939

- 2 -



| Year | | NOVA SCOTIA | | OF | PARIO . | HAN | ITOBA | ALBERTA | | |
|------|--|-------------|----------|----------|-----------|-------|--------|---------|--------|--|
| | | Tons | 8 | Tons | 3 | Tons | \$ | Tons | \$ | |
| | | | | | | | - | a (87) | | |
| 1930 | | 23,058 | 136,226 | 248,637 | 1,558,405 | 0.00 | | | | |
| 1931 | | 27,718 | 143,761 | 231, 329 | 1,760,388 | | 0 * * | | | |
| 1932 | | 51,897 | 150,708 | 231,139 | 1,789,751 | 508 | 7,092 | | | |
| 1933 | | 34,278 | | | 1,755,087 | 1,499 | 18,388 | | | |
| 934 | | 42,885 | | | 1,734,198 | 1,664 | 20,137 | | 0.4.4 | |
| | | 38,701 | - | ~ | 1,698,508 | 1,558 | 18,765 | 0.0.0 | | |
| | | 38,774 | <i>v</i> | | 1,557,078 | 2,498 | 32,151 | 000 | | |
| | | 47,885 | | | 1,539,599 | 5,391 | 43,465 | 200 | 200 | |
| | | 44,950 | | | 1,857,140 | 2,920 | 54,979 | 4.045 | 46,035 | |
| | | 47,885 | | | 2,200,189 | 2,453 | 35,888 | 3,319 | 37,526 | |

TABLE 2. - PRODUCTION OF SALT BY PROVINCES (x), 1930 - 1939.

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

| TABLE 3 TOTAL | PRODUCTION | OF SALT | IN CANADA | FOR YEAR | S SPECIFIED, | 1886 - | - 1939. |
|---------------|------------|---------|-----------|----------|--------------|--------|---------|
| | | | | | | | |

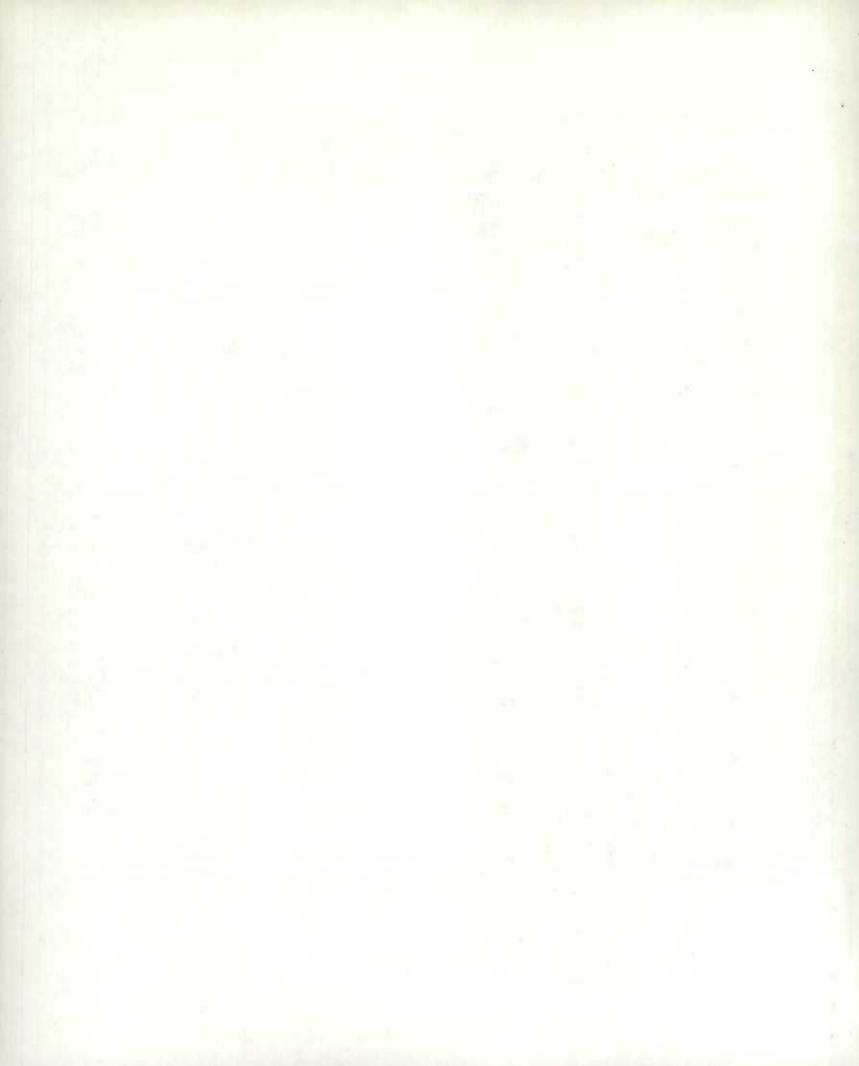
| Year | Tons | \$ | Year | Tome | \$ |
|------|----------|-----------|-------|----------|-----------|
| 1886 | 62, 559 | 227,195 | 1921 | 164,658 | 1,673,685 |
| 1890 | 43,754 | 198,857 | 1929 | 330,264 | 1,578,086 |
| 1895 | 52, 376 | 160,455 | 1930 | 271,695 | 1,694,631 |
| 1900 | 62,055 | 279,458 | 1931 | 259,047 | 1,904,149 |
| 1913 | 100,791 | 491,280 | 1932 | 263,543 | 1,947,551 |
| 1914 | 1.07,038 | 493,648 | 1933 | 280,115 | 1,939,874 |
| 1915 | 119,900 | 600,225 | 1.934 | 321,753 | 1,954,953 |
| 1916 | 132,903 | 717,653 | 1935 | 360, 343 | 1,880,978 |
| 1917 | 1.38,909 | 1,047,792 | 1936 | 391,316 | 1,773,144 |
| 1918 | 131,727 | 1,285,039 | 1937 | 458,857 | 1,799,465 |
| 1919 | 148,301 | 1,397,929 | 1938 | 440,045 | 1,912,918 |
| 1920 | 209,855 | 1.544.724 | 1939 | 424, 500 | 2,486,632 |

In 1914 the average number of men employed by the Canadian salt industry was 253 and the amount of wages paid amounted to \$178,277; in 1918 men employed totalled 302 and wages paid aggregated \$286,781. Caustic soda and chloride of lime were manufactured for brine throughout the war of 1914-1918 at Sandwich, Ontario by the Canadian Salt Company and following cessation of hostilities.Brunner, Mond Canada, Ltd., was constructing a plant at Amherstburg Ontario for the production of soda ash from brine.

TABLE 4 - SALT PRODUCED FOR CHEMICAL PURPOSES. / 1925-1939.

| | Quantity | Per cent of | | Quantity | Per cent of | |
|------|--|----------------------|------|--------------------|----------------------|--|
| Year | Tons (2000 lb.) | total salt output | Year | Tons (2000 1b.) | total salt output | |
| 1925 | 93,500 | 40 | 1932 | 96,242 | 37 | |
| 1926 | 113,020 | 43 | 1953 | 104,740 | 37 | |
| 1927 | 115,995 | 43 | 1934 | 124,132 | 39 | |
| 1928 | 135,138 | 45 | 1935 | 145,433 | 40 | |
| 1929 | 168,327 | 51 | 1936 | 165,882 | . 42 | |
| 1930 | 114,737 | 42 | 1937 | 205,149 | 45 | |
| 1931 | 97,958 | 38 | 1938 | 170,938 | 39 | |
| Tett | د. ومقامه دارد و اطلاح ما منط الراب | | 1939 | 187,958 | 44 | |

7 Used in the manufacture of chemicals by producers of salt.



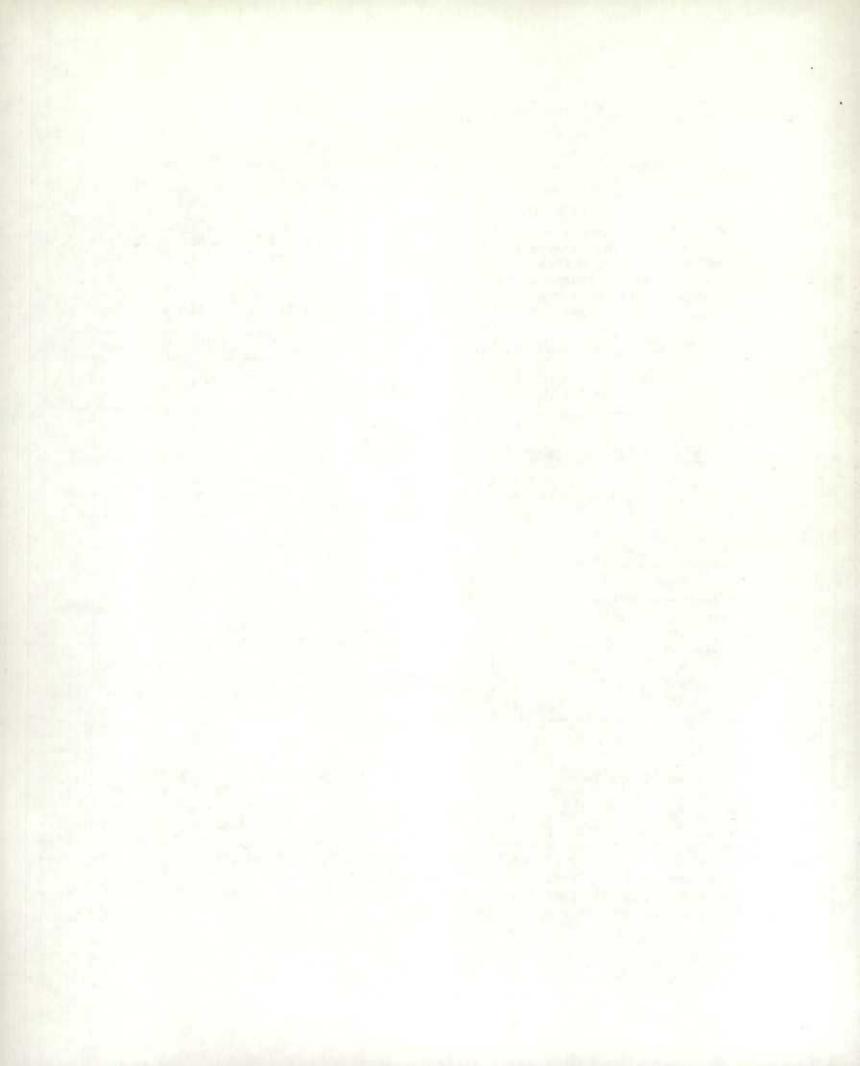
| | 1938 1939 | | | | | |
|--|-----------|---------|---------|---------|--|--|
| | Tons | Value | Tons | Value | | |
| | | \$ | | \$ | | |
| PORTS - | | | | | | |
| Salt, for use of the sea of gulf | | | | | | |
| fisheries | 39,016 | 110,808 | 34,646 | 97,598 | | |
| Salt, in bulk, n.o.p | 44,692 | 169,039 | 54,659 | 193,233 | | |
| Salt, n.o.p. in bags, barrels, etc Salt, table, made by an admixture of other ingredients, when containing | 24, 384 | 172,742 | 28,313 | 216,171 | | |
| not less than 90 per cent of pure salt | 41 | 1,176 | 11 | 366 | | |
| TOTAL | 108,133 | 453,765 | 117,629 | 507,368 | | |
| XPORTS - | | | | | | |
| TOTAL | 11,844 | 68,293 | 10,656 | 76,287 | | |

TABLE 5. - IMPORTS INTO CANADA AND EXPORTS OF SALT , 1938 AND 1939.

TABLE 6 - TOTAL CANADIAN IMPORTS AND EXPORTS OF SALT, 1930 - 1939.

| Year | EXPO | DRTS | IMPORTS | | |
|---|----------|--------|----------|---------|--|
| | Quantity | Value | Quantity | Value | |
| ann ann an 1970 | Tons | \$ | Tons | \$ | |
| 1930 | 8,758 | 74.397 | 128,385 | 660,903 | |
| 1931 | 6,126 | 55,110 | 130,890 | 751,938 | |
| 1932 | 5,627 | 36,248 | 102,033 | 595,954 | |
| 933 | 5,335 | 43,461 | 135,620 | 651,237 | |
| .934 | 6,597 | 48,097 | 138,794 | 586,033 | |
| 935 | 9,045 | 51,239 | 128,247 | 526,740 | |
| 936 | 5,549 | 46,601 | 108,925 | 460,998 | |
| 1937 | 9,329 | 61,522 | 116,460 | 466,190 | |
| 1938 | 11.844 | 68,293 | 108,131 | 453,765 | |
| 1939 | 10,656 | 76,287 | 117,629 | 507,368 | |

World production of salt in 1938, the last year for which data are available, was computed at 32,000,000 long tons by the Imperial Institute, London. Of this quantity, the British Empire accounted for 5,200,000 long tons or 16.2 per cent. In the order of output the United Kingdom, India and Canada were the largest Empire producers of the mineral. The leading producers among the foreign countries were the United States, Russia, China, Germany, France, Italy, Poland, Roumania, and Manchoukuo; the total figure for world output included rock salt, brine (wells) salt, and sea salt. In 1937 production in Germany totalled 3,312,128 long tons; in Great Britain 3,083,755 and in France 2,301,151.



| | 1 9 | 37 | 19 | 38 |
|------------------------------------|------------------|------------------|------------------|------------------|
| Industries | Quantity used | Cost at works | Quantity used | Cost at works |
| | Pounds | \$ | Pounds | Ş |
| Fish canning and curing (factories | | | | H |
| only) | 40,634,000 | 208,510 | 38,146,100 | 206,797 |
| Slaughtering and meat packing | 80,296,715 | 460,248 | 72,938,200 | 391,772 |
| Acids, alkalies and salts - Brine | | | | |
| (salt content) and dry salt | 475, 553, 413 | 383,549 | 398,870,603 | 332,411 |
| Soaps and cleaning preparations | 4,017,429 | 14,958 | 3,833,557 | 14,015 |
| Dyeing, cleaning and laundry work. | 5,106,053 | 36,238 | 5,155,651 | 35,282 |
| Dyeing and finishing of textiles. | 2,086,511 | 8,330 | 1,971,890 | 7,972 |
| Artificial ice | 1,998,376 | 7,176 | 1,435,067 | 6,212 |
| Abrasives - artificial | 676,000 | 2,786 | 406,000 | 1,784 |
| Waterworks | 1,600,000 | | (a) | (a) |
| Leather tanneries | 9,480,760 | 39,288 | 10,868,261 | 40,280 |
| Pulp and paper mills | (c) | 63,787 | 20,686,000 | 68,485 |
| Stock and poultry foods | 3,454,000 | 22,505 | 4,150,000 | 27,016 |
| Bread and other bakery products | 16,919,700 | 150,569 | 11,076,372 | 140,230 |
| Fruit and vegetable preparations . | 9,547,982 | 63,585 | 10,108,280 | 59,102 |
| Biscuits, confectionery, etc | 1,551,300 | 13,056 | 1,771,000 | 19,043 |
| Foods, breakfast | 1,693,494 | 11,864 | 1,655,734 | 10,768 |
| Sausage and sausage casings | 655,897 | 6,311 | 545,923 | 7,958 |
| Ice cream industry (b) | 1,314,500 | 10,516 | 1,200,000 | 9,561 |
| Brewerles | 602,351 | 8,355 | 280,544 | 2,809 |
| Malt and malt products | 261,119 | 1,370 | 265,605 | 1,179 |
| Coffee, tea and spices | 368,491 | 3,036 | 237,863 | 2,371 |
| Macaroni, vermicelli, etc | 78,796 | 728 | 94,940 | 770 |
| Ice cream cones | 4,127 | 30 | 4,279 | 33 |
| Foods, miscellaneous | 823,172 | 8,581 | 937,764 | 9,596 |
| Buttér and cheese | *** | 156,356 | 0.0 | 164,815 |
| Starch and glucose | 396,090 | 1,198 | 386,043 | 1,189 |

TABLE 7 - AVAILABLE STATISTICS ON CONSUMPTION OF SALT, IN SPECIFIED CANADIAN INDUSTRIES, 1937 and 1938. (x)

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

- (a) Not compiled in 1938.
- (b) Quantities estimated.
- (c) Not available.

NOTE: - In addition a relatively small quantity of salt is used in the manufacture of woollen textiles. Also corresponding data for 1939 not yet complete.

TABLE 8 - POTASH SALTS USED IN THE MANUFACTURE OF CANADIAN MIXED FERTILIZERS, 1937

and 1938.

| | 19 | 37 | 1938 | | |
|---------------------------------|--------|---------|--------|-----------|--|
| | | Cost at | | Cost at | |
| | Tons | works | Tons | works | |
| | | \$ | | \$ | |
| Nitrate of potash | 624 | 32,421 | 637 | 33,426* | |
| fainite and potash manure salts | 75 | 2,500 | 75 | 2,500 | |
| luriate of potash | 28,899 | 795,733 | 37,174 | 1,068,820 | |
| Sulphate of potach | 3,925 | 142,312 | 5,866 | 220,512 | |

NOTE - Data for 1939 not yet complete.



| | 1938 | 1939 |
|---|---------------------------|---------------------|
| Muriate of potash Sulphate of potash | (Short to 9,449 700 | ns) 8,643 534 |

TABLE 9 - SALES OF POTASH SALTS FOR FERTILIZER PURPOSES, OTHER THAN FOR THE MANU-FACTURE OF MIXED FERTILIZERS, Years ended June 30, 1938, 1939.

TABLE 10 - IMPORTS INTO CANADA OF SPECIFIED POTASSIUM COMPOUNDS, 1938 and 1939

| | 1 9 | 3 3 8 | ŕ 1 | 939 |
|-------------------------------------|------------|-----------|------------|-----------|
| | Pounds | \$ | Pounds | |
| Potash bicarbonate | 10,488 | 924 | 13,584 | 1,310 |
| Potash compounds, other | 391, 521 | 75,158 | 536,844 | 80,466 |
| Kainite, or German potash salts and | | | | |
| mineral | 240,400 | 3,850 | 11,000 | 187 |
| Cream of tartar (orystals) | 641,344 | 109,407 | 727,852 | 143,032 |
| Potash and pearl ash | 195,042 | 10,591 | 276,227 | 17,341 |
| Potash, caustic | 782,956 | 47,526 | 1,348,568 | 77,004 |
| Potash, chlorate of | ,133,844 | 48,404 | 302, 51.8 | 16,357 |
| Saltpetre or nitrate of potash | 2,310,365 | 73,030 | 1,486,526 | 55,512 |
| Muriate of potash (fertilizer)96 | 3,779,500/ | 1,108,897 | 90,782,200 | 1,135,151 |
| Potash, sulphate of, crude, | - | | | 4 |
| (fertilizer) | 2,198,600 | 173,859 | 12,795,300 | 193,652 |
| Potash, bichromate, crude | 121,531 | 10,435 | 188,479 | 16,819 |
| Potash prussiate | 26,731 | 3,768 | 50,859 | 10,881 |
| 7 36.030.300 lb. from France. | | | | |

| | TABLE | 11 | - APPROXIMATE | WORLD | PRODUCTION | OF | POTASH | IN | MARKETABLE | SALTS | 1937-38 | |
|--|-------|----|---------------|-------|------------|----|--------|----|------------|-------|---------|--|
|--|-------|----|---------------|-------|------------|----|--------|----|------------|-------|---------|--|

| and the standard of the standa | 1 9 3 | 8 | 1 9 | 3 7 |
|--|--------------------|----------------------|--------------------|----------------------|
| | Metric tons K20 | Per cent of Total | Metric tons K20 | Per cent of Total |
| Germany | 1,860,000 | 59.9 | 1,689,500 | 60.6 |
| France | 581,815 | 18.7 | 489,800 | 17.6 |
| United States | 287, 532 | 9.3 | 258,090 | 9.2 |
| U.S.S.R | 275,000 | 8.8 | 266,000 | 9.5 |
| Poland | 72,139 | 2.3 | 62,489 | 2.2 |
| Palestine | 24,000 | 0.8 | 18,234 | 0.7 |
| Other Countries | 5,000 | 0.2 | 5,000 | 0.2 |



| | 1938 | 1939 |
|---|-------------|-----------|
| PRODUCTION: | | |
| Potassium saltsshort tons | 534,945 | 524,986 |
| Approximate equivalent, K20 " " " SALES BY PRODUCERS: | 316,951 | 307,051 |
| Potassium salts " " | 398,189 | 634,014 |
| Approximate equivalent, K20 " | 286,437 | |
| Value at plant | \$9,748,290 | |
| Average per ton | \$19.57 | \$18.97 |
| Crude and refinedshort tons | 450.387 | 254,692 |
| Approximate equivalent, K20 " " | - | 99,569 |
| XPORTS: | | |
| Fertilizer materialsshort tons | 84,137 | 136,750 |
| Approximate equivalent, K20 " | 50,500 | 82,000 |
| Value | \$2,599,772 | |
| Othershort tons | 2,616 | 3,579 |
| Approximate equivalent, K20 " " | 1,300 | 1,800 |
| Value | \$485,672 | \$807,987 |

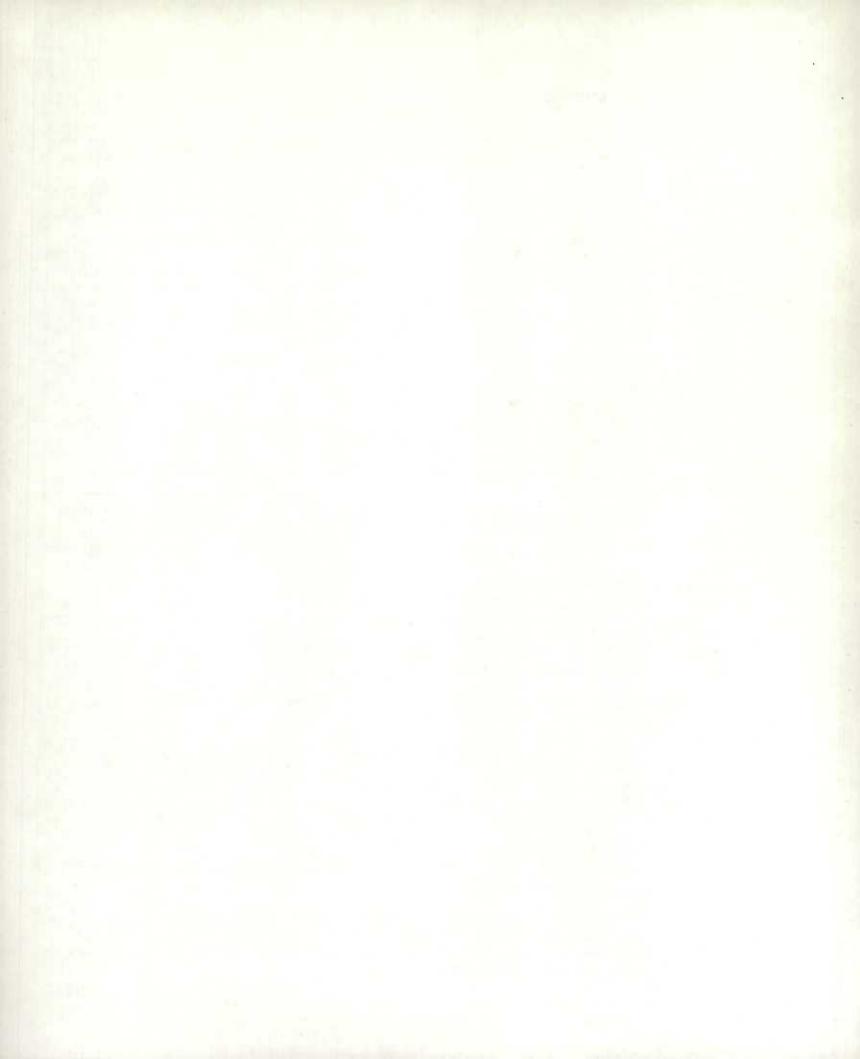
TABLE 12 - SALIENT STATISTICS OF THE POTASH INDUSTRY (crude and refined potash materials) IN THE UNITED STATES, 1938-39

The minerals yearbook of the United States Bureau of Mines for 1940 contains the following informations: - "With Europe again at war, no potash shortage now threatens the United States; there is no prospect that the farmer will have to pay exorbitant prices for his potash. This fortunate situation is directly attributable to the foresight that led the Federal Government to Pioneer in the search for Potash resources and to encourage and foster the building of a domestic industry that can now supply cheaply all the potash required for essential needs. In 1939 american producers supplied 634,000 short tons of potash salts, for which they realized an average of \$18.97 per ton at the plants. Natural brines and bedded saline deposits were the sources from which nearly 99 percent of the 1939 output of potash was drawn. As in the past a small tonnage was derived from cement-plant dust and distillery waste. The potential capacity of american producers, without major additions to plants or equipment. has been estimated by the Federal Geological survey to be approximately 540,000 tons of K20 per year, considerably more than probable needs. Any deficiency in high-grade salts that might develop can be made up by increased output of manure salts, which can be mined in New Mexico to average around 25 percent K20. Some apprehension has been expressed concerning the supply of sulfate, for which the United States formerly. depended almost entirely on imports; however this salt is now being produced by three companies.

"Publication of production statistics by European governments virtually ceased in the summer of 1939, and no adequate data are available for the latter half of the year."

In the United States a senate investigation of the potash industry was started in 1936. It was instituted to determine whether unfair or illegal practices were being employed in the exploitation of potash resources and the extent of foreigh ownership or control of American potash companies.

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. The 1938 annual report of the Department of Public Works and Minee, Nova Scotia, refers to the Malagash occurrence as follows: - "There are two white seams of salt roughly parallel to each other called the Lucas and the McKay and which are being operated by the company, Approximately midway between these two seams a new zone was found in the upper levels carrying potash. This zone was not wide enough to be of commercial value but recent drilling from one seam to the other on the bottom levels has shown a considerable increase in the width of this potesh zone and an increase in the potash content".

TABLE 13 - IMPORTS INTO CANADA OF SODA ASH, SODA BICARBONATE AND CAUSTIC SODA, 1938 and

| and the second | 1939. | | | |
|---|------------|---------------------------------------|------------|---------|
| | 19 | 3 8 | 1 9 | 3 9 |
| and a subscription of the | Pounds | · · · · · · · · · · · · · · · · · · · | Pounds | \$ |
| Soda, caustic | 6,667,057 | 180,106 | 6,286,192 | 168,280 |
| Soda, caustic, in solution, | 12,565,941 | 182,286 | 13,126,564 | 248,635 |
| Soda ash or barilla | 2,908,564 | 41,831 | 3,145,499 | 45,377 |
| Soda bi.carbonate | 12,456,313 | 185,940 | 16,645,777 | 269,756 |

Canadian imports of soda ash in 1918 totalled 91,138,000 pounds valued at \$1,973,641; caustic soda 12,360,000 pounds at \$623,023 and sal soda 11,382,000 pounds at \$174,555.

TABLE 14 - IMPORTS INTO CANADA OF CHLORINE, BROMINE AND IODINE, ETC. 1938 and 1939.

| | 1 9 | 3 8 | 1 9 | 3 9 |
|---|-----------|----------------|-----------------|-------------------|
| Augusta an air-an air an Anna Anna Anna Anna Anna Anna Anna | Pounds | \$ | Pounde | \$ |
| Chlorine, liquid or gas | 7,721,550 | 165,982 | 10,692,096 | 213,207 |
| Bromine | 3,632 | 1,929 | 72,883 | 16,199 |
| Indine, crude | 78,638 | 67,636 | 79,982 | 90,340 |
| Bromides crude for bromine | | | | |
| production | 2,625 | 2,807 | - | 644 |
| Tetraethyl lead compounds f | 5,486,418 | 2,485,032 | 6,373,494 | 2,927,449 |
| Consider imports of oblamide of | | totallad 9 79/ | 1 000 nounda va | Jund at \$162 7/8 |

Canadian imports of chloride of lime in 1918 totalled 9,784,000 pounds valued at \$162,748. 4 In which tetraethyl lead is the preponderant constituent by weight; the entire imports came from the United States.

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.

| TABLE 15 - PRINCIPAL STATISTICS OF THE SALT | INDUSTRY IN CANADA. | 1937, 1938 | and 1939. |
|---|---------------------|------------|-----------|
| | 1 9.3 7 | 1938 | 1939 |
| Number of firms / | 9 | 9 | 9 |
| Capital employed | 4,001,568 | 4,270,795 | 4,447,204 |
| Number of employees - On salary | 127 | 115 | 113 |
| On wages | 416 | 447 | 434 |
| Total | 543 | 562 | 547 |
| Salaries and wages - Salaries\$ | 260,753 | 278,478 | 285,023 |
| Wages | 392,383 | 508,242 | 456,713 |
| Total\$ | 653,136 | 786,720 | 741,736 |
| Selling value of products (gross)\$ | 2,334,016 | 2,489,719 | 2,957,982 |
| Cost of purchased process materials \$ | 75,947 | 30,369 | 37,161 |
| Cost of fuel and electricity | 183,117 | 278,711 | 276,267 |
| Value of containers\$ | 534,551 | 576,806 | 471,350 |
| Net value of sales | 1,540,401 | 1,603,833 | 2,173,204 |



| | | | | | | date) 1939 | |
|-----------|-----------------------------------|------|------|------|---------|---------------|---------|
| Month | 1935 | 1936 | 1937 | 1938 | | <u>le</u> | Female |
| | and the state of the state of the | | | | Surface | Underground | Surface |
| January | 336 | 340 | 348 | 411 | 359 | 54 | 27 |
| February | 311 | 301 | 370 | 446 | 348 | 54 | 24 |
| March | 356 . | 362 | 376 | 441 | 329 | 51 | 27 |
| April | 324 | 379 | 401 | 452 | 342 | 53 | 29 |
| May | 400 | 380 | 429 | 448 | 356 | 52 | 31 |
| June | 396 | 396 | 427 | 423 | 370 | 53 | 36 |
| July | 396 | 413 | 452 | 439 | 372 | 53 | 35 |
| August | 385 | 413 | 444 | 438 | 335 | 53 | 28 |
| September | 391 | 418 | 451 | 477 | 345 | 54 | 32 |
| October | 357 | 423 | 437 | 487 | 366 | 52 | 40 |
| November | 392 | 427 | 456 | 474 | 363 | 53 | 33 |
| December | 383 | 356 | 371 | 426 | 332 | 53 | 23 |
| AVERAGE | 372 | 384 | 416 | 447 | 351 | 53 | 30 |

TABLE 16 - WAGE-EARNERS, BY MONTHS, 1935-1939. (On 15th or nearest representative

TABLE 17 - NUMBERS OF WAGE-EARNERS WHO WORKED THE NUMBER OF HOURS x SPECIFIED DURING ONE WEEK IN MONTH OF NORMAL EMPLOYMENT, 1939.

| | Number | | | | |
|------------|--------|--------|-------|------|--------|
| Hours | Male | Female | Hours | Male | Female |
| 30 or less | 5 | 4 | 49-50 | 12 | - |
| 31-43 | 11 | 7 | 51-54 | 10 | |
| 44 • | 84 | 13 | 55 | 12 | |
| 45-47 | 5 | 2 | 56-74 | 136 | _ |
| 48 | 111 | 6 | 65 / | 31 | - |

x Grand total employees in week specified; male 417; female 32. / Total wages paid in week specified \$7,780.

| TABLE 18 - FUEL | AND | ELECTRICITY | USED | IN | THE | CANADIAN | SALT | INDUSTRY. | 1938 | and | 1939. | |
|-----------------|-----|-------------|------|----|-----|----------|------|-----------|------|-----|-------|--|
|-----------------|-----|-------------|------|----|-----|----------|------|-----------|------|-----|-------|--|

| na da anta ang ng mga ng mg N | and a second of the second second second | . 1 9 . | 3.8 | 193 | 9 |
|--|--|-----------|---------|-----------|---------|
| Kind | Unit of | | Cost at | | Cost at |
| | measure | Quantity | works | Quantity | works |
| | | | \$ | | \$1 |
| Bituminous coal - Canadian sl | hort ton | 8,671 | 36,779 | 17,827 | 78,506 |
| Imported sl | hort ton | 42,855 | 179,550 | 33,725 | 137,305 |
| Anthracite coal sh | hort ton | 4,241 | 18,820 | 4,712 | 21,617 |
| ignite coal sl | hort ton | 6,633 | 21,833 | 5,180 | 17,754 |
| loke | hort ton. | | | | |
| asoline In | mp. gal. | 4,350 | 704 | 5,575 | 933 |
| lerosene In | ap. gal. | | 0.0 | 88 | 22 |
| ruel oil In | np. gal. | 6,582 | 540 | 84,541 | 9,265 |
| lood | | | | | |
| as natural M | | | | 47 | 25 |
| Electricity purchased K | | 2,123,280 | 12,496 | 1,767,603 | 10,840 |
| TOTAL | ii ii | 299 | 278,711 | 0.00 | 276,267 |
| Electricity generated for own use K | | 3.731.534 | 2.9.2 | 4,212,996 | 999 |



TA BLE 19 - POWER INSTALLATION, 1939

| | and - base de al alle de la de de la construir de la desta de la desta de la de la de la de la de la de la dest | Ordin | In reserve | e or idle | | |
|-----|---|--------------------|----------------------|---------------------------------------|----------------------|--|
| Des | oription | Number of units | Total horse power | Number of units | Total horse power | |
| 1 | Steam engines and steam turbines | 18 | 2,210 | 6 | 190 | |
| 2. | Diesel engines | 3 | 555 | - | - | |
| 3. | Gasoline, gas and oil engines, | | | | | |
| | other than diesel engines | 2 | 24 | - | | |
| 4. | Rydraulic turbines or water | | | | | |
| | wheels | - | - | - | - | |
| 5. | Electric motors - | | | | | |
| | (a) Operated by purchased | | | | | |
| | power | 108 | 909 | 2 | 41 | |
| | Total 1, 2, 3, 4 and 5(a). | 131 | 3,698 | 8 | 231 | |
| | (b) Operated by power generated | | | | | |
| | by the establishment | 130 | 1,642 | | | |
| Boi | llers | 8 | 3,300 | a 4.444 at 14.444 at 14.444 at 14.444 | | |
| | | | | | | |

LIST OF FIRMS IN CANADIAN SALT INDUSTRY, 1939.

Bldg., Toronto

Name of Firm

Head Office

Location of Plant

NOVA SCOTIA -Malagash Salt Co. Ltd.

196 Provost St., New Glasgow

Canadian Bank of Commerce

Malagash

Sarnia

Goderich

Goderich

Amherstburg Windsor

Lambton Co.

ONTARIO -

Brunner, Mond Canada, Ltd.

Canadian Industries LimitedP.O. Box 10, Montreal, P.Q.The Dominion Salt Co. Ltd.SarniaGoderich Salt Co. Ltd.GederichWarwick Pure Salt Co. Ltd.R.R. 5, WatfordWestern Canada Flour Mills Co.Ltd.287 MacPherson Ave., Toronto

MANITOBA -

Neepawa Salt Ltd.

P. O. Box 10, Montreal, P.Q.

Neepawa

ALBERTA -Industrial Minerals Ltd.

423 Canada Cement Bldg., Montreal, Que. Waterways

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