Cement in Ontario

Cement Production and Quarrying in Ontario

Introduction

Cement, one of the oldest construction materials, is also among the newest and most innovative.

Canada uses approximately 31.2 million cubic metres of concrete per year, one cubic metre per person, in a wide variety of construction projects. Research continues to make cement more versatile and adaptable, widening the range of uses and improving properties, such as strength, electrical conductivity, and even pollution control. New products include cork-cement composites, mudcrete for road bases and land reclamation, glass concrete for aesthetics, rubberized concrete, polymer concrete, geopolymer green concrete, limecrete, strong and light hempcrete with good insulating properties, papercrete, and smog-eating concrete.

Cement production in Ontario in 2008 was valued at $635 million, over 40% of the total value of cement produced in Canada. Canadian exports of cement and clinker declined in 2008 due largely to the major decline in the residential housing market in the United States. Several North American operations have reduced or shut down clinker production.

In 2008, the Cement Association of Canada documented environmental improvements by cement producers. From 2003 to 2006, sulphur dioxide emissions decreased by 14%, and nitrogen oxides by 23%. Between 1990 and 2006, energy efficiency improved by 11% and greenhouse gas production was reduced by 6.4%.

There are 6 quarries and 7 modern processing plants in southern Ontario between Kingston in the east and St. Marys in the west. The major producers are St. Marys Cement Inc., St. Lawrence Cement Inc., Lafarge Canada Inc. and Essroc Canada Inc. each with port facilities for Great Lakes shipping. An additional plant at Woodstock, manufactures white architectural cement. Combined, the companies have eleven cement kilns with a total clinker production capacity of over 8 million tonnes per year.

Production

Raw materials for cement manufacture include limestone, alumina, silica and iron oxide. Approximately 1.6 tonnes of raw materials are required to produce one tonne of cement. The raw materials are burned at 1,500°C to produce clinker. The clinker is ground to a fine powder with gypsum and other additives, to produce portland cement. Cement is shipped in powdered form to ready-mix concrete plants where it is combined with aggregate and water to form concrete.

Cement Stone Deposits

Ontario cement quarries extract limestone from the Ordovician age Verulam and Lindsay formations in eastern Ontario, and the Devonian age Amherstburg, Lucas and Dundee formations in the southwest.

Ontario Cement Producers 2009

Map No.	Company	Plant (P) and/or Quarry (Q)
1	Lafarge Canada Inc.	Woodstock P/Q
2	Lafarge Canada Inc.	Bath P/Q
3	Federal White Cement Ltd.	Woodstock P
4	Essroc Canada Inc. (Italcementi Group)	Picton P/Q
5	St. Lawrence Cement Inc. (Holcim AG)	Mississauga P
6	St. Lawrence Cement Inc. (Holcim AG)	Ogden Point (Colborne) Q
7	St. Marys Cement (Canada) Inc. (Votorantim Cimentos)	Bowmanville P/Q
8	St. Marys Cement (Canada) Inc. (Votorantim Cimentos)	St. Marys P/Q

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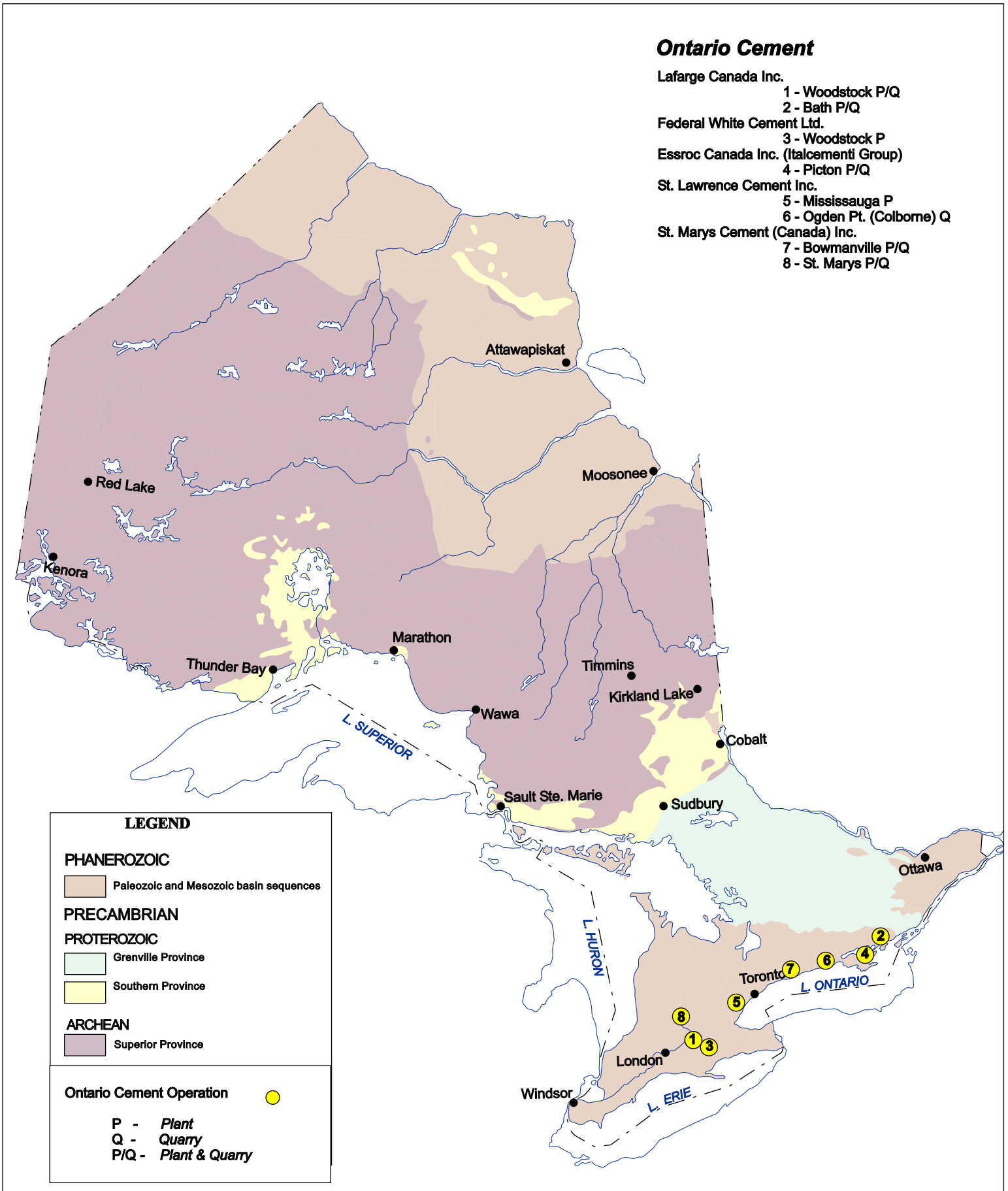
Ontario Cement
Lafarge Canada Inc.
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Federal White Cement Ltd.
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7 - Bowmanville P/Q
8 - St. Marys P/Q
Attawapiskat
Red Lake
Moosonee
Kenora
Marathon
Thunder Bay
Timmins
Kirkland Lake
Wawa
Cobalt
L. SUPERIOR
Sault Ste. Marie
Sudbury
Ottawa
L. HURON
Toronto
L. ONTARIO
London
Windsor
L. ERIE
LEGEND
PHANEROZOIC
Paleozoic and Mesozoic basin sequences
PRECAMBRIAN
PROTEROZOIC
Grenville Province
Southern Province
ARCHEAN
Superior Province
Ontario Cement Operation
P - Plant
Q - Quarry
P/Q - Plant & Quarry