

Canadian production of cement in 1973 was 11.1 million tons, an increase of 10.8% over the previous year (Table 12.23). Current production capacity is 15.7 million tons a year of cement. Cement was produced in all provinces except Prince Edward Island with Ontario and Quebec accounting for 69.1% of the Canadian total. Late in 1973 Canada Cement Lafarge Ltd. opened a 1.1 million ton-a-year plant at Bath, Ont. and expanded its plant at Havelock, NB by 100,000 tons a year. In addition, Lake Ontario Cement Limited expanded its capacity at Picton, Ont. by adding two roller mills in 1973.

Production of sand and gravel in 1973 was 233.5 million tons valued at \$213.4 million (Table 12.24). Sand and gravel must be quarried, screened, washed, stockpiled and transported in large volumes to compensate for the low unit value received. Transportation and handling often double the plant cost, making it economically desirable to establish plants close to major consuming centres. Urban expansion has greatly accelerated the demand for sand and gravel, but many pits and quarries have been overrun by growing communities. Sand and gravel are used as fill, as granular base course and finish course in highway construction and as aggregate in concrete and asphalt.

Production of stone in 1973 was 91.9 million tons valued at \$127.6 million (Table 12.25). Dimension stone, for use as building and ornamental stone accounts for about 1% of total stone production. Crushed stone for use as aggregate in concrete and asphalt, as railroad ballast and road metal accounts for about 80% and the remainder is used in the metallurgical, chemical and allied industries.

Shipments of clay and clay products in 1973 were valued at \$61.2 million, a 16.4% increase over the previous year (Table 12.26). Deposits of clay for use in the manufacture of papers, refractories, high quality whitewares and stoneware products are scarce in Canada. Consequently china clay (kaolin), fire clay, ball clay and stoneware clay are mostly imported. In Canada common clays and shales, higher in alkalis and lower in alumina than the other clays, are used to manufacture brick and tile products.

12.1.4 Oil and natural gas

Canadian production of crude oil and natural gas liquids increased 15% to 772 million barrels (bbl). Crude oil output, including synthetic crude oil from the Athabasca tar sands amounted to 656 million barrels or 1.8 million barrels a day (b/d) (Table 12.27). Gas plant production of natural gas liquids totalled 116 million bbl or 318,000 b/d. Natural gas production rose 7% in 1973 to 3,119,461 million cubic feet (MMcf) or 8,546 million cubic feet a day (MMcf/d) (Table 12.28).

At the end of 1973 Canada's proven liquid hydrocarbon reserves, which include conventional crude oil and natural gas liquids (propane, butane and pentanes plus), amounted to 9.26 billion bbl. This is comprised of 7.67 billion bbl of crude oil and 1.59 billion bbl of natural gas liquids. At the 1973 annual production level of 754 million bbl, the life index (reserves to production ratio) for conventional crude oil and natural gas liquids dropped for the fourth consecutive year to 12.3 years as production outstripped newly discovered oil by 454 million bbl. Reserves added in 1973 totalled 283 million bbl, and of this amount, 237 million bbl were attributable to revisions, 34 million bbl to extensions of established fields and 12 million bbl to new discoveries. According to the Canadian Petroleum Association (CPA), proved remaining marketable reserves of natural gas declined by about 500 MMMcf (billion cubic feet) to a total of 52.9 MMMcf (trillion cubic feet) in 1973. Using the 1973 level of production, the life index for natural gas dropped to 17 years. In compiling its reserve estimates, the CPA did not take into account recent rises in the wellhead price of natural gas which would produce an upward revision of 4.5 MMMcf by the addition of substantial volumes of gas formerly considered to be beyond economic reach. The estimates of oil and gas reserves do not include any allowance for the recent discoveries in the Mackenzie Delta, the Arctic islands or off-shore areas.

Canadian refinery capacity increased by 127,000 b/d in 1973, due primarily to the addition of the large new refinery at Come By Chance, Nfld. At the end of 1973, crude oil refining capacity of Canada's 41 operating refineries totalled 1,857,300 b/d.

Alberta. Crude oil production in Alberta increased by 21% to 1,484,000 b/d and accounted for 82% of total Canadian crude oil production. Of this amount, synthetic crude oil production