

marketed for chemical uses. There is a particular demand for it in the processing of uranium ores. The uranium mills of the Blind River district of Ontario alone will require an estimated 700 tons of lime per day when they are all in operation. To supply this lime the plant of Gypsum Lime and Alabastine Canada Limited at Beachville, Ont., has been enlarged and a new lime plant has been built by North American Cyanamid Limited also at Beachville. Lime for uranium processing is also obtained as a co-product at the magnesia plant of Aluminum Company of Canada at Wakefield, Que.

Spodumene.—A new industrial mineral product was added to the list of those produced in Canada late in 1955 when Quebec Lithium Corporation brought its spodumene deposit near Val d'Or into steady production. Production of lithia in 1956 amounted to 4,789,360 lb. valued at \$2,643,950. The entire production of about 200 tons of concentrates per day is sold under a five-year contract to Lithium Corporation of America at Bessemer, North Carolina. The flotation process that produces the spodumene concentrates also produces feldspar as a co-product. This feldspar, which is a mixture of the soda and potash varieties, can be produced at the rate of 175 tons per day.

Salt.—Production and exports of salt have risen very rapidly since 1954. In 1956 a record 1,590,804 tons valued at \$12,144,476 was produced and a record 333,935 tons valued at \$2,286,830 was exported. Prior to 1955 exports of salt from Canada were very small. In that year Canadian Rock Salt Company started production of rock salt from a new mine at Ojibway, Ont., at the rate of 500 tons per hour, which accounts for the greatly increased annual output. Another rock salt mine is being developed at Pugwash, N.S., by the Malagash Salt Company. Difficulties in sinking the shaft to the salt, which is at a depth of 400 feet, have delayed the opening of this mine which was originally planned for 1957. Dominion Tar and Chemical Company Limited of Montreal through its subsidiary, Sifto Salt Limited, has also started shaft sinking near Goderich, Ont., with the intention of mining a 20-foot bed of pure rock salt found in that locality.

The mining of rock salt on a large scale brings about a major change in the salt industry of this country. Heretofore most of the salt has been obtained by introducing water to deeply buried salt beds and pumping up the resultant brine. The brine was either used as such by nearby industries or the salt was recovered from it by evaporation. Rock salt is a much cheaper product and can be employed for most industrial purposes. Its availability will aid the salt-using chemical industries of Canada.

Sand and Gravel.—The quantity of sand and gravel used in Canada in 1956 was 148,801,268 tons, which far exceeds the tonnage of any other mineral substance marketed. Its value at \$81,457,352 was exceeded by that of only eight mineral products. Favoured by the steadily increasing strictness of specifications for sand for use in concrete, and by the increasing difficulty of obtaining suitable material in quantity from natural deposits, a new industry has developed recently. This is the industry engaged in the manufacture of sand from suitable rocks adjacent to major construction projects, and adjacent to cities where large quantities of sand are required. The requirement of nearly 3,000,000 tons of sand for the concrete of the St. Lawrence Seaway and Power Project was largely filled by manufacturing it from limestone and sandstone obtained nearby. The same deposits also supplied most of the 4,000,000 tons of crushed stone used.

Subsection 3.—Petroleum and Natural Gas*

The rapid development of Canada's petroleum and natural gas resources, initiated by the Leduc oil field discovery of 1947, continues unabated. At the end of 1956 proved reserves of crude oil and natural gas liquids totalled 3,129,304,000 bbl. compared with 72,000,000 bbl. at the end of 1946 and during the intervening ten-year period production amounted to 657,605,839 bbl. In 1956 the new oil found was more than three times the actual production which, at 170,569,200 bbl., was more than twenty-two times the 1946 output. Natural gas reserves in 1956 were in excess of 23 trillion cu. feet compared with

* Prepared under the direction of Dr. Marc Boyer, Deputy Minister of the Department of Mines and Technical Surveys, by R. B. Toombs, Head, Mineral Economics Section, Mineral Resources Division. A survey of oil and gas pipelines will be found in the Transportation Chapter.