

(MMMMcf) of gas. These potential reserves include, in addition to amounts already produced and proven, amounts "yet to be discovered on the basis of geological predictions".

According to an appraisal of Alberta's oil sands completed in 1973 by the Alberta Energy Resources Conservation Board, the ultimate recoverable reserves of synthetic crude oil from all of Alberta's bituminous deposits amount to 250 billion bbl. Of this total, approximately 26.5 billion bbl is considered recoverable by open cast mining methods similar to those now in use at the Great Canadian Oil Sands Limited's plant near Fort McMurray. The bulk of the oil located in deeper formations will only be recovered by in situ thermal or other techniques still being developed.

Natural gas. Raw natural gas may vary widely in composition. In addition to the usually predominant methane, varying proportions of ethane, propane, butanes and pentanes plus may be present. Hydrogen sulphide may be so abundant as to be an important source of sulphur. After processing has removed the water content, hydrogen sulphide, pentanes plus and other petroleum gases, the marketable gas consists mainly of methane, some ethane and small amounts of propane and butanes. The heating value of the marketed gas averages about 1,000 Btu per cu ft of gas.

The most important use of natural gas is as a fuel for space and water heating. Domestically, it is finding increasing use as fuel in larger home appliances. In the industrial sector natural gas is used by the automobile, steel, metal-working, glass and food-processing industries and in metallurgical processing where its clean, easily controlled flow makes it possible to attain precise temperatures for rolling, shaping, drawing and tempering steel.

The constituents of natural gas have become major sources of feedstock for the petrochemical industry. Natural gas supplies the basic raw material for ammonia, plastics, synthetic rubber, insecticides, detergents, dyes and synthetic fibres such as nylon, orlon and terylene.

Canada's proven reserves of natural gas have been estimated at 134.5 MMMMcf of gas in place, most of it in the western provinces of Alberta and British Columbia. After deducting reservoir losses and processing shrinkage (much of the gas has a hydrogen sulphide content and therefore a high processing shrinkage), 80.1 MMMMcf is estimated as ultimately recoverable. Cumulative production to the end of 1974 was 23.4 MMMMcf, leaving 56.7 MMMMcf available to meet future demand. On the basis of 1974 production of marketable gas, the reserves-to-production ratio is 23.7 years. Gas reserves rose 6.6 MMMMcf in 1974 compared to a year earlier but included gas formerly considered uneconomic and was not attributable to new discoveries. All these new reserves are located in Alberta and have been added to the proven and recoverable category as a direct result of recent increases in Alberta wellhead and plant-gate gas prices.

13.2.2 Exploration and development

13.2.2.1 Oil

The level of exploratory drilling activity in the conventional producing areas of western Canada in 1974 was substantially below that of 1973. Preliminary estimates indicate that some 1,700 exploratory wells were drilled in 1974 compared with nearly 2,050 in 1973, a decline of nearly 20%. Exploratory drilling activity in the frontier area also declined considerably; 63 wells were drilled in 1974 in the Mackenzie Delta area, the Arctic islands and the east coast off-shore areas, 16 less than in 1973. Details of drilling activity by region appear in Table 13.6.

Western provinces. In spite of the Alberta incentive programs, exploratory drilling in 1974 decreased by 17% in number of wells drilled and resulted in no significant finds. The decline in exploratory drilling was offset by a 12% increase in development drilling, reflecting increased interest in the shallow gas fields of southeastern Alberta. The net decline in drilling activities in that province was therefore only 2%.

In Saskatchewan, 275 wells were drilled, 50% fewer than in 1973. Exploratory drilling decreased by 36% and development by 65% — a sharp decline attributable in part to industry uncertainty regarding government measures and incentives during 1974.

British Columbia registered a minor decline of 6.4%. Activity in Manitoba was nominal. No significant developments were indicated, but two joint government/industry programs were initiated.