Exploration and development results obtained in western Canada during the first half of 1955 indicated a new high level of activity. About 280 companies planned expenditures for the year amounting to $400,000,000; an average of 124 seismic crews were at work covering about 260,000 sq. miles of territory, 90 of them in Alberta, the principal region of activity. There was also an increase in exploration in eastern Canada. Early in 1955 over 36,000 sq. miles were held under licence or lease by oil exploration companies and developments in southwestern Ontario oilfields and in the single field in New Brunswick showed signs of increasing the production from these sections of the country.

Details of western Canada activities in the first half of 1955 are given by provinces in the following paragraphs.

Alberta.—In Alberta exploratory drilling was carried out with success in the west-central region on the flank of the Alberta Syncline where formations of Cretaceous, Mississippian and Devonian ages were tested. Drilling in that area led to the development of the Sundre and Westward Ho oilfields and by mid-1955 pipeline transportation for these fields was being planned. West of Edmonton exploratory drilling in the Cardium sand of Upper Cretaceous age resulted in extensions to the Pembina oil area. In the Gilwood and Clear Hills districts of the Alberta Peace River region significant finds of oil were made in a formation of pre-Devonian age. In general the 1954 exploratory program was characterized by a trend from the search for Devonian reef fields towards more emphasis on exploration for Upper Cretaceous sand reservoirs of the broad stratigraphic type. In 1955 there was an important shift in exploratory drilling activity from the Pembina area westward into the area of the foothills.

Successful gas exploration in Alberta included the drilling of a well on the Savanna Creek structure, 60 miles southeast of Calgary. In this well large quantities of gas were discovered in Mississippian rocks within the eastern limits of the Canadian Rockies. Another important Mississippian gas discovery was made 13 miles south of Calgary and midway between the Turner Valley and Jumping Pound fields. Several other Mississippian gas discoveries in the foothills and adjacent areas increased the interest in exploration in this area. Within a radius of 60 miles of Edmonton a number of gas wells were successfully completed in formations of Lower Cretaceous age. One well between the Leduc and Acheson fields yielded 189,000,000 cu. feet of natural gas a day on test. Extensive drilling to test Lower Cretaceous formations was done with good results in the southeastern part of Alberta near the proposed route of the gathering system for the trans-Canada gas pipeline. A significant gas discovery was made in the Devonian D3 reef zone near Whitecourt, 110 miles northwest of Edmonton and 70 miles southeast of the Devonian oilfield at Sturgeon Lake.

Drilling to develop previously discovered oilfields was actively continued. In fact in 1955 there was more emphasis on field development drilling than on exploratory drilling, largely because of the interest in the Pembina area. The Pembina field, discovered in 1953, had over 350 oil wells by mid-1955 and was Alberta's second largest producer. This Upper Cretaceous Cardium sand field covers the greatest area of any oilfield so far discovered in the Western Hemisphere and its oil reserves may prove second only among North American fields to those of the East Texas field. By mid-1955 the field had a proven area of 670 sq. miles and half of all the drilling rigs being used for field development in Alberta were located there. Well depths ranged from 4,600 to 5,800 feet. The light gravity oil, valued at $2.48 per bbl., is shipped to Edmonton by the 72 mile Pembina pipeline.* In the Sturgeon Lake oilfield sufficient reserves were developed to warrant construction of a pipeline to connect the field with the Trans Mountain pipeline. Drilling in the Fenn-Big Valley fields in central Alberta was the most active Devonian field work in Alberta in 1954. The Lower Cretaceous Viking sand trend, southeast of Edmonton, proved continuous and three fields were joined to form the Joarcam field. The Joffre field, six miles east of Red Deer, was a principal centre of drilling activity in 1955 and became the second largest known oil reservoir in the Viking sand.

* Details on pipelines are given in Chapter XIX, Transportation.