

## **Exploration History**

In 1909, a commercial discovery of oil and natural gas was made at the Stoney Creek Field 15 km south of Moncton. The Stoney Creek reservoir, which is in the Lower Carboniferous Albert Formation, produced oil and natural gas for 80 years. Production was suspended in 1991. In 1998, a new and potentially commercial discovery of natural gas was made by MariCo Oil and Gas Corporation in its Downey No. 1 well, which lies 5 km south the Stoney Creek Field. This discovery, along with the construction in 1999 by Maritimes and Northeast Pipelines of the first natural gas pipeline in New Brunswick, had sparked a renewed interest in oil and gas exploration in the Carboniferous Subbasins in the southern part of the province. In 1981, Irving Oil Ltd. and Chevron Canada Resources Ltd. formed a partnership and signed a farm-in agreement on the 29 licences to search held by Western Decalta Petroleum. Under that agreement, Chevron undertook 1906 km of seismic reflection studies on-land in southeastern New Brunswick from 1981 to 1984 (St. Peter and Phillips, 2000). The Irving/Chevron partnership drilled three exploration wells in the Moncton Subbasin in the early to mid-1980's based on seismically defined targets in the Albert Formation. A sub-commercial natural gas discovery was made south of the Stoney Creek Field in their Hillsborough No. 1 well in 1985. The partners decided not to produce the Hillsborough well; they cemented and abandoned it in 1993. Irving/Chevron also drilled two wells on Irving's Stoney Creek lease during 1985.

## **Production History**

A number of the better gas wells had an initial production of 10 000 mcf per day and the best well had an initial flow of 18,000 mcf per day (Henderson, 1940). Several oil wells had initial production greater than 30 barrels per day. The best well yielded 110 barrels per day. It is apparent that the gas production very quickly climbed to a peak by 1914 and remained fairly constant at 600 000–700 000 mcf per year until 1947. During this time wells were being drilled to offset the decline in production of earlier producers. By the late 1940's the reservoir had been quite thoroughly drilled. During the 1950's the field underwent a very rapid decline in gas production. From about 1962 to closure in 1991 the total gas output was at about 100,000 mcf per year. The total natural gas production from Stoney Creek is estimated at 28.7 bcf. The history of oil production from Stoney Creek assumed a more typical bell shape distribution. Production gradually grew from 1021 barrels in 1915 to a high of 30 370 barrels in 1945. Like the trend with gas, oil suffered a major decline in production in the late 1940's and 1950's. By 1965 the annual output had slumped to 4103 barrels. In the late 1960's and 1970's oil production saw a modest rejuvenation. In 1988 the few remaining active oil wells were shut-in and no production has been taken since. The total oil production from the field is recorded at 803,809 barrels.

## 80 Years of Production



PetroWorth Resources technical team has concluded that the field has been developed many years ago without the aid of modern geophysics. The original 2D seismic was acquired by Chevron in the early 80's is able to image the larger structure but due to antiquated instrumentation has limited value by modern standards. The data is unable to delineate the structural and stratigraphic complexities of the reservoir with any degree of accuracy. Therefore, the understanding of the reservoir is limited to the 163 wells drilled within the area. We strongly believe that a high quality 3D acquired with the latest technology would provide structural integrity in imaging the reservoir. In addition to this, it is probable that additional drillable targets exist within the field. The dramatically improved resolving power would able PetroWorth to pursue the existing stratigraphic play with confidence. The development of Corridor Resources, McCully field in Sussex has added to the understanding of the "water sensitive" sands and the specific frac stimulation methods for the geology of the Moncton Subbasin. The results of a high quality 3D survey would able PetroWorth to qualify special drilling technologies such as horizontal drilling or secondary recovery methods to bring production back to the Stoney Creek field.