



**Ontario Geological Survey
Regional Resident Geologist Program**

Petroleum Operations Section—2014

by

L. Fortner

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Petroleum Operations Section—2014

L. Fortner¹

¹Geologist, Petroleum Operations Section, Ministry of Natural Resources and Forestry, London, Ontario

INTRODUCTION

After a perceived plateau in the decline of drilling activity in southern Ontario from 2011 to 2013, drilling frequency surprised to the downside again in 2014.

The average price of oil sold in Ontario during the year was \$98 per barrel: the same average value as in 2013. The price of natural gas in Ontario averaged \$5.52 per MMBtu in 2014, significantly higher than the average of \$3.88 in 2013.

Produced oil volumes fell to a new low in 2014. Data compiled from annual production reports submitted to the Petroleum Operations Section indicate that annual oil production dropped 2.8% to 68 212 m³ in 2014 with an estimated value of \$42.3 million, compared to 70 187 m³ with an estimated value of \$43.3 million in the previous year.

The continuing decline in oil production is directly related to reduced levels of drilling activity since 2004, such that there is insufficient new production to replace that from older existing wells.

Natural gas production declined another 14.4% in volume to 159 183 × 10³ m³ in 2014 from 186 016 × 10³ m³ in 2013. However, higher unit gas prices resulted in an increase in value to an estimated \$31.7 million in 2014, compared to \$26.1 million in 2013.

ACTIVITY

A total of 10 licences to drill and operate new wells were issued by the Ministry of Natural Resources and Forestry in 2014, compared to 21 in 2013. An additional 20 licences were issued to plug or operate existing wells, compared to 76 in 2013.

Drilling of 7 new wells was reported in 2014, a surprising drop from the 20 drilled in 2013. These consisted of 1 exploratory well, 4 development wells, 1 solution mining well, and 1 observation well. One of the development wells was horizontal. This activity contrasts with 9 exploratory wells, 8 development wells, 1 stratigraphic test, and 2 service wells drilled in 2013.

All development drilling efforts in 2014 were technical successes, resulting in 1 well reported to be an active oil producer, 2 potential oil wells, and 1 active private gas well. The commercial development success rate in 2014 was on par with 2013.

The only exploratory well drilled in 2014 was reported as a potential oil well. This is a notable drop in exploration activity and success from 2013 which had resulted in 5 active wells or potential producers.

Cambrian Play

No exploratory wells were drilled to test Cambrian targets for oil and gas in 2014. Two exploratory wells had been drilled to the Cambrian in 2013.

One development well was drilled in Elgin County to test the Cambrian in 2014. It was reported as a potential oil producer. Until this past year, there had been no development wells drilled to Cambrian targets since 2010.

Ordovician Play

There was 1 exploration well drilled to an Ordovician target in 2014. It occurred in Essex County and was reported as a potential oil well. There were 4 exploration wells drilled to Ordovician targets in 2013: one potential oil producer, one active gas well, one potential gas well, and one dry hole.

One horizontal development well was drilled in Essex County to test the Ordovician in 2014. It was reported as an active oil producer. One development well had been drilled to the Ordovician in 2013.

Silurian Sandstone Play

No exploration wells have been drilled to test Silurian sandstone targets since 2011.

One development well was drilled for Silurian sandstones in 2014 and was reported as a successful private gas producer in Lincoln County. Six development wells targeted Silurian sandstones in 2013. All were private gas wells.

Silurian Carbonate Play

There were no exploratory wells drilled to test Silurian Guelph Formation reef and/or Salina Group targets in 2014. One exploratory well had been drilled for this target in 2013.

There were also no development wells drilled for Silurian Guelph Formation reef and/or Salina Group targets in 2014. One development well targeted the Silurian Guelph Formation reef and/or Salina Group in 2013.

Devonian Play

No exploration wells tested Devonian targets in 2014. Two exploration wells were drilled for Devonian targets in 2013.

One development well was drilled to test the Devonian in 2014. It was reported as a potential oil well in Lambton County. No development wells had been drilled to test Devonian targets in 2013.

EXPLORATION TRENDS

North American natural gas prices have remained relatively weak during the past year due to oversupply from the United States. Low natural gas prices have a dramatic impact on exploration and development activity, which has declined to an historic low in Ontario. Exploration activity focussing on oil had not increased significantly in the past few years in spite of oil prices that remained robust until very recently. In 2014, that activity also declined in concert with gas exploration, but this is not likely a direct result of falling oil prices that occurred only within the last few months of the year.

Exploration activity, especially that targeting new play types, is not expected to increase significantly under the current economic pressure. The development of unconventional gas and oil, which has progressed rapidly in the United States during the last few years, has not occurred in Ontario. Equivalent targets of organic-rich facies, including the Georgian Bay–Blue Mountain Formation, that have been explored and/or exploited in other jurisdictions remain unevaluated in the province.