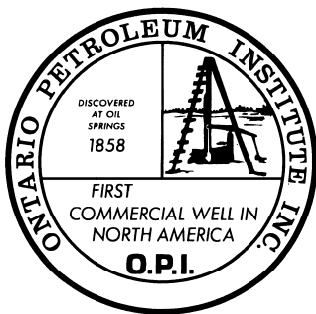


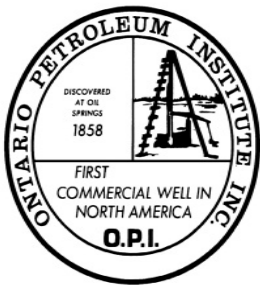


Ontario Oil Gas & Salt Resources Trust



2011 Annual Report





Ontario Petroleum Institute

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June 30, 2012

Hon. Michael Gravelle
Minister of Natural Resources
6th Floor, Whitney Block
6630 Wellesley Street West
Toronto, ON M7A 1W3

Dear Minister Gravelle,

Re: 2012 Annual Report Ontario Oil, Gas & Salt Resources Trust

The Ontario Petroleum Institute (OPI) as the sole shareholder of the Ontario Oil, Gas and Salt Resources Corporation is pleased to submit the 2011 Annual Report of the Ontario Oil, Gas and Salt Resources Trust (Trust).

The Trust is a non-profit organization, established by the Oil, Gas and Salt Resources Act, which funds information management relating to the oil, gas and salt resources of Ontario. The Trust's main function is the management of the Ontario Oil, Gas & Salt Resources Library (Library), an important resource centre offering its members and the public a highly sophisticated virtual website that provides the most up-to-date geological information for the exploration and development of crude oil, salt, geological storage of hydrocarbons, and natural gas in Ontario. This same information is of increasing value for the evaluation of groundwater resources and installation of vertical ground-sourced heat pump systems.

Oil continues to flow from wells in the area of the original discovery some 150 years ago. Presently, about 140 private and public companies of differing size and scope produce oil and gas throughout southwestern Ontario. These producers are supported by drilling contractors, well and oilfield services, and a range of professional consulting services, geologists and engineers. As well, southwestern Ontario is also home to significant natural gas storage, cavern storage of liquefied hydrocarbons and petrochemicals, and salt solution mining.

The Board of Trustees with the guidance of the Trust Advisory Committee (TAC) and the support of a dedicated professional staff at the Ontario Oil, Gas & Salt Resources Library are committed to providing cost-effective services to meet the requests of clients from Ontario, across Canada, and internationally.

Sincerely,

Ian Colquhoun
President

Oil, Gas and Salt Resources Trust

Mission

The Oil, Gas and Salt Resources Trust is a non-profit organization, established by the Oil, Gas and Salt Resources Act to provide information management relating to oil, gas and salt resources, and fund research, surveys, and laboratory facilities and operations relating to oil or gas exploration, drilling or production, the storage of oil, gas and other hydrocarbons in geological formations, and the disposal of oil field fluid in geological formations.

Objectives

The Oil, Gas, and Salt Resources Trust's mandate is to maintain and improve access to existing data, and to develop programs to improve client access to information, develop new data products, and to generate new revenue to sustain operations.

The Trust provides services to companies and individuals involved in oil and gas exploration, drilling or production, the storage of hydrocarbons in geological formations, the disposal of oil field fluid in geological formations, and solution mining. Services are also available to the general public, universities and other clients on a cost recovery basis.

The Trust manages the Oil, Gas and Salt Resources Library as a resource centre for oil and gas exploration, salt solution mining, and subsurface storage and fluid disposal in Ontario. The Library provides its clients in these resource industries with the data they need to conduct their business in the most orderly, safe and efficient way possible. It also provides public access to this data at reasonable cost.

Executive Summary

The Oil, Gas and Salt Resources Trust was formed by the Ontario Ministry of Natural Resources (MNR) pursuant to amendments made to the Oil, Gas and Salt Resources Act in 1997. A Trust Agreement, dated February 16, 1998, was signed with the original Trustee, the Ontario Oil Gas & Salt Resources Corporation and responsibilities for operation of the Library were transferred to the Trustee. The OPI is the sole shareholder of the Ontario Oil Gas & Salt Resources Corporation. The Executive of the OPI are the Trustees of the Corporation and the Managing Director of the Trust is the Executive Director of OPI.

Requirements for a Trust Advisory Committee (TAC) exist within the Act and the Trust Agreement. The TAC is comprised of four representatives from the oil and natural gas exploration and production industry, and one representative from each of the natural gas storage, hydrocarbon cavern storage, and salt solution mining industry. Committee members are appointed by the Trustee to a two-year term. The TAC meets on a quarterly basis to advise the Trustees on policy, budgets and operations of the Library.

The Library is the key resource centre for the study of Ontario's geological subsurface and continues to invest in an expanding portfolio of digital products to attract investment and interest in Ontario's petroleum, natural gas resources, solution mining and hydrocarbon storage industries. It also funds research, surveys, and laboratory facilities and operations relating to hydrocarbon exploration, drilling, production, the storage of hydrocarbons in geological formations, and the disposal of oil field fluids in geological formations.

The Library can trace its origin to the late 1800's when the Geological Survey of Canada solicited voluntary submissions of drill cuttings and core from oil and gas wells drilled in Ontario and other parts of the country. This informal collection evolved into the establishment of a core and drill cuttings sample processing, storage and study facility in Ottawa. In 1950, a similar facility was established in Calgary and all Western Canada drill cuttings samples were transferred to Calgary. In 1971, the Ontario cores and drill cuttings samples were shipped to the new Petroleum Resource Laboratory in London, Ontario. The lab was owned and operated by the Ontario Ministry of Natural Resources. In 1987, the collection was moved to its current location in London, Ontario. In 2007, the facility underwent an expansion to provide capacity for an estimated 30 years of continued collection of drill core and samples.

Declining revenues from well licence fees continued in 2011 and resulted in a significant deficit in the 2011 financial results. The Trust Advisory Committee will recommend that the Trustee renew its request to the Ministry of Natural Resources for an amended fee table for well licence fees in 2012. Amendments to the fee table require an amendment to O. Reg. 245/97 S.5.

The Library has a staff complement of five.

Oil, Gas & Salt Resources Corporation

The Corporation is an entity led by partners and stakeholders and in a defined area of economic activity, the mandate of which includes:

- Oil exploration and production
- Natural gas exploration and production
- Salt solution mining and production
- Natural gas storage
- Cavern storage of hydrocarbon products

The structure of the Corporation:

Ontario Ministry of Natural Resources	Trustees (OPI Executive) ↓ Managing Director ↓ Facilities and Program Administrator ↓ Staff and Contractors	Trust Advisory Committee
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Oil Gas and Salt Resources Trust

Trustees (Ontario Petroleum Institute Executive)

Ian Colquhoun, President

Peter Miller, First Vice President

Frank Kuri, Second Vice President

Ray Neal, Treasurer

Kerry O'Shea, Secretary

Trust Advisory Committee

Land: Dale Norman, Elexco Ltd.

Producer: Frank Kuri, Dundee Energy

Salt: Bill Cocchio, Windsor Salt

Storage: Peter Johnston, Union Gas

Geological

Consulting: Neil Hoey, Mike Dorland

Government: Terry Carter, Ministry of Natural Resources

Environment: Dean Edwardson, Sarnia-Lambton Environmental Association

Trustee: Hugh Moran, Ontario Petroleum Institute

Oil, Gas and Salt Resources Library

Hugh Moran, Managing Director

Richard Ostrowski, Facilities and Program Administrator

Jordan Clark, Operations Technician

Stephanie Ramsahai, Data Entry Operator

Nicole Ramesar-Fortner, Data Entry Operator

Corporation Data

Resources

The Oil, Gas and Salt Resources Library houses resources and data available for study including: (i) drill cuttings samples from over 13,100 wells; (ii) cores from over 1,027 wells; (iii) file information on approximately 27,000 wells including geophysical logs, formations tops, well history and construction; (iv) oil/gas/water zones, initial completion results; (v) core analyses, (vi) oil/gas/water analyses; and (vii) an extensive collection of reference books, periodicals and reprints on the subsurface geology of oil, gas, salt and subsurface storage resources of Ontario.

The digitizing of geophysical well logs stands at 4,126 new digital logs in LAS format, and 19,000 scanned images of logs. All 650 Sonic logs are now scanned and digitized.

The Ontario Petroleum Data System (OPDS) data entry project is complete with a total count of approximately 26,500 wells on record. The second phase “Data Integrity” project has further enhanced data accuracy and is an ongoing project.

Another ongoing project is the Oil & Gas Production Module accounting for 70,000 annual production reports scanned with operator name and year of registration complete between 1897 and 2011, and 100% of wells registered with a license number between 1992 and 2011. The latest project under contract from MNR accomplished a complete backup in electronic form of all 19,000 geophysical logs.

Services

The Library is visited by industry participants wanting to view data files relating to wells drilled in Ontario (i.e., well cards, production information, plugging information, etc.), core and drill cutting samples for wells drilled in Ontario, maps of well locations, and open file reports on the industry. Clients can review materials in the Library, and if relevant, take copies of the data files for studying outside of the Library. An ArcGIS workstation is available for client use and is equipped with MNR’s proprietary PetroGIS software for performing spatial queries on the digital petroleum well database and with Surfer 8© digital gridding and contouring software for subsurface geological mapping. The Library also provides a drill cutting sample preparation service and a core cutting service.

The Library also operates a dynamic website (www.ogsrlibrary.com) which contains summaries of reference materials and a growing list of regularly updated reports (drilling activity reports, new well licenses). Member access includes individual well history complete with geology, analysis, production, plugging and stimulation.

Basic digital petroleum well data for all counties in Ontario is posted to the Library website for complimentary downloading (well location and historical data). A set of enhanced and value-added subsurface data for all counties is available for purchase. The website is updated regularly with verified county data and digital data products. The Library staff utilizes this digital data for plotting sophisticated maps which combine different data types including well locations, bedrock geology, bedrock topography, oil and gas pools, and digital elevation models for Ontario as well as incorporating results from data queries and filters.

Marketing Strategy

The Library focuses on geographical markets in Ontario, Alberta, mid-western and northeastern United States. The target client is usually the operator of oil, gas, solution mining, natural gas storage, oil field fluid disposal or petroleum product storage wells in Ontario, or a consultant providing services to these operators. Outside of Ontario the target clients are resource exploration companies considering new locations for investment or activity. The principal focus will continue to be providing information services to the oil, gas, salt, and hydrocarbon storage resources industries that include operators, service providers, consultants, government, and academia.

The Library will also look to support the resolution of Ontario's environmental issues. With the changes in water protection legislation, in particular the Clean Water Act, there is a market for the knowledge and products available at the Library. Environmental geoscientists with the Association of Professional Geoscientists of Ontario are also potential clients for the Library's data services. Further, the Library is well positioned to support land redevelopment initiatives under the Brownfield Legislation, and geological data to support drilling of vertical heat pump wells.

Other marketing opportunities include the OPI's Ontario Oil and Gas Magazine that has a wide distribution beyond its core Ontario market. Further opportunities exist in industries beyond oil and gas that include geothermal and ground water projects throughout Ontario.

In 2012 the Library in conjunction with the OPI will be attending regional conferences and events that include:

- International Association of Hydrogeologists in Niagara Falls, Ontario
- American Association of Petroleum Geologists – Eastern Section, Cleveland, Ohio
- OPI Conference, Niagara Falls, Ontario

The Library attended a number of regional conferences in 2011. These included:

- OPI Conference, London, Ontario
- American Association of Petroleum Geologists – Eastern Section, Washington, DC
- Mineral and Petroleum Show, Fredericton, New Brunswick
- Canadian Society of Petroleum Geologists, Calgary, Alberta

Pricing Strategy

The funding for the Trust is derived from revenue generated by the Library. There are three sources of fee revenue: (1) annual well license fees based on oil/gas production and/or well type; (2) drill sample processing fees, and (3) client service fees and publication and data sales. Well license fees are collected by the MNR under the requirements of the Oil, Gas and Salt Resources Act and Ontario Regulation 245/97 and are due by February 15 of each year. Sample processing fees are mandated by the Provincial Operating Standards and set by the MNR in consultation with industry and the TAC. Sample processing fees are required from well operators when drill samples are delivered to the Library.

Fees identified in the Oil, Gas and Salt Resources Act are reviewed annually by the TAC and recommendations for changes provided to MNR. Client service fees are set by the TAC.

User service fees are priced to increase the overall client base as well as to promote access to information and knowledge for a wide cross-section of clients. Daily and weekly fees are priced higher to encourage regular clients to purchase annual memberships. To enhance the value and use of the Library and to build future membership the fees for students and academics are offered at lower rates. Publications and programs initiated by the Library are priced to recover printing, distribution, and preparation costs.

As more digital products become available, on-line pricing will reflect cost and competition to enable the Library to operate on a sustainable footing.

Promotion Strategy

The Library will continue to focus its efforts on collecting and preparing information for publication in 2012 promoting services in two key areas: (1) building general awareness of the Library's mandate among current and lapsed users; and (2) targeting all potential user groups through promoting the Library's progress in digital publishing. The Library's objective is to have potential users view the Library as the best one-stop provider of geological information and data in Ontario.

Distribution Strategy

Clients generally have obtained data and information from personal visits to the Library or by telephone inquiries followed up by mailing or faxing file information, maps, publications, and invoices for services rendered.

As information is now readily available in digital form, the Internet has become increasingly important as the preferred choice for the distribution of files. Digital requests now exceed walk-in requests for data. Digital files are mailed on CD, e-mailed over the Internet or downloaded from the Library's website. Content on the Library website continues to grow and remains a priority for publishing and marketing new information and for presenting existing information in an easily accessible format.

Strategic Alliances

The Library, while managed by the OPI, is an integral part of the value and benefits the OPI provides to its members. It is an important resource for any company in the business of exploring and developing oil and gas in Ontario. The Library participates in all OPI functions.

Equally important is the Library's continuing close working and business relationship with the Ontario Ministry of Natural Resources, Petroleum Operations Section. In addition, through its contacts at the Ontario Geological Survey, the Library has established itself with Ministry of Northern Development and Mines and developed a strategic alliance with the Geological Survey of Canada.

Financial Objectives

The Trust's financial objective through its Library operations was to build a reserve fund equal to one year of expenditures. That goal has been achieved. The reserve serves as a contingency against fluctuations in revenue due to production declines or unforeseen expenditures that occur from time to time.

The Trust derives most of its revenues from annual well licence fees paid to the Trust by operators of wells licenced under the Oil, Gas and Salt Resources Act. The fees are established by a fee table in Ontario Regulation 245/97 S.5. The fees have not changed since 2005. The rates in the fee table for oil and gas wells are based on production volumes of crude oil and natural gas. Production has declined each year since 2005, with resulting declines in licence fee revenue to the Trust. In 2005, the Trust derived 61% of its revenue from well licence fees, a total of \$140,876. In 2011, the Trust received \$93,490 from well licence fees, accounting for 31% of its total revenues. Adequate revenue is necessary for the Oil, Gas and Salt Resources Library to operate on a sustainable long-term footing. The Trustee submitted a request to the Ministry of Natural Resources for an amendment to the fee table in 2010. A renewal of this request is being considered by the Trustee.

The completion of the well data digitization program will reduce costs. Offsetting this reduction, however, are reduced revenues from sample processing and well license fees due to decreases in well drilling and therefore less oil and gas production.

User fees and data/publication sales have historically contributed about 10% of the operating revenue. To mitigate declining well-related fees, the Library developed a strategy that increased user related fees to generate 20% of overall revenues. Revenues have exceeded the 20% target consistently.

The Trust's fiscal year is January 1st – December 31st.

On-Going Initiatives

Well Logging and Digitization

Well logging and digitization was completed in 2009. The Library will market the availability of digitized files as broadly possible through the Internet and various industry magazines.

Seismic Shot Lines

All paper records describing geophysical and geochemical surveys have been processed and digitized capturing seismic shot lines throughout Ontario. As an ongoing initiative the library will attempt to reestablish a link between the seismic shot lines and the actual seismic data.

Log Digitizing

On-going contracts provide budget for hardware/software to scan and digitize hard-copy geophysical well logs, plus funding for personnel to acquire select project logs. Staff has been trained on digital acquisition and can digitize logs upon client request. A fee is charged for this work. There is a continuous review of digital data pricing. There are on-going requests to ensure that digital log submissions are part of the next Operating Standards update. To date, 19,000 geophysical well logs have been scanned and catalogued as TIFF files and 4,126 well logs have been digitized as LAS files.

Digital Data Publishing

The Library will continue to work in partnership with the MNR to build, maintain and market a digital database of geological and engineering information on wells drilled in Ontario. The Library will be the data point of sale for information on Ontario oil, gas, salt and storage resources, based on the Data Resale Agreement with MNR.

(i) Current Activity

- MNR has an operational database of all licenced wells in Ontario recorded within the Ontario Petroleum Data System (OPDS). All new wells and well information, with the exception of production information, are entered into OPDS. The Library, in conjunction with MNR, has populated the database with historical well information.
- On a county-by-county basis the Library has been harmonizing the data between MNR's source well files and the Library's public access files and at the same time verifying data in OPDS. This project was finished in late 2009.
- Sale of value-added subsurface data from OPDS by the Library began in 2003. Sales continued through 2011. Data consists of geological formation tops, logging records, and oil/gas/water/casing interval records.
- A data sharing agreement has been signed between the MNR Information Access Section and the Ontario Oil Gas and Salt Resources Corporation. The agreement allows corporate members of the Library to use MNR Digital Base Maps.

(ii) Future Activity

- Well production history is one of the most sought after items by Library users. It is the Library's goal to move forward and continue adding field data as it becomes available each year. This project will be intensive as it will bring to life many thousands of forms in a digital format.
- Data verification and updating of well location and subsurface data was on-going in 2010. This project will continue in 2011. Quality assurance testing of the edited data set will continue to identify and correct remaining errors.
- New GIS layers are being added to the Ontario digital base maps by MNR. These layers are spacing orders, designated gas storage areas, unit areas, and historical oil fields.
- Resale data agreements are to be negotiated with local, national or international vendors to market Ontario data.
- Further cooperative projects are proposed with the Ontario Geological Survey which would improve the quality of subsurface geological data in the database.

Recently completed:

- (1) Log digitizing: completion of the second contract from OGS yielded 2,100 new Digital logs in LAS format and 3,500 scanned images of logs.
- (2) Main data entry project: complete with a total count of approximately 26,000 wells on record. Second phase "Data Integrity" in progress.

(iii) Digital Data Distribution Summary

- Free on the Library website (well locations, history, status)
- Research by Library staff on a fee basis with “well card” printouts and well location mapping
- Ontario Digital Base Maps are available to members
- Paid data sets (geological formation tops, logging records, and oil/gas/water/casing intervals, monthly production data)
- Geological GIS capabilities for subsurface mapping
- Digital log capabilities are available to clients upon request

New Initiatives

As directed by the Trustees, it is important for the Library to continue its relationship with both the Canadian and Ontario geological surveys and to be aware of any projects such as the TGI (Tarfetted Geoscience Initiative) project that would further enhance the availability and type of data available from the Library. Discussions are underway with the Ontario Geological Survey for participation in future projects.

The Library needs to identify and develop new revenue-generating products to offset declining revenue from petroleum well drilling activity. Discussions are occurring with MNR to identify options.

Ontario One Call

In April of 2011, Private Member’s Bill 180, an Act related to Ontario One Call Ltd, was introduced by MPP Robert Bailey. The Bill did not pass but it is anticipated that it will be re-introduced in 2012. Presently it is a voluntary system for utility location in Ontario.

The purpose of the Bill is to establish Ontario One Call Ltd (On1Call is a corporation which is currently operating in Ontario) as a not-for-profit call centre to serve as a single point-of-contact for all underground utility location services in Ontario.

All owners or operators of underground infrastructure would be required to join the Ontario One Call Network including:

- Hydro One Inc.
- Ontario Power Generation Inc.
- Gas distributors and transmitter
- Operator of an electrical distribution system
- Pipeline owner or operator
- Ontario Municipalities

All registered entities or persons under the *Oil, Gas, and Salt Resources Act*

The Library will work with Ontario One Call to ensure the seamless development of a data system that will incorporate the infrastructure required by such legislation.

The Library looks forward to partnering with the MNR on this project.

Industry Summary

Ontario's petroleum and salt solution mining industry includes the following activities:

- (i) oil exploration and production;
- (ii) natural gas exploration and production;
- (iii) natural gas underground storage;
- (iv) salt solution mining; and
- (v) hydrocarbon underground storage associated with the petrochemical refining industry

These activities provide Ontario consumers with the following:

- (i) storage of natural gas imported to Ontario from sources in Saskatchewan, Alberta and British Columbia by pipeline and held in reserve to supplement times of peak demand. This becomes very important with the switch from coal to natural gas generation of electricity;
- (ii) table salt and industrial salt – Ontario is a net exporter of salt produced from salt solution mining;
- (iii) underground storage caverns of product necessary for Ontario's petrochemical refining industry;
- (iv) a small percentage of Ontario's demand for oil and related products; and
- (v) a small percentage of Ontario's demand for natural gas

An estimate of the oil and gas industry's contribution to the Ontario economy:

- (i) approximately 1,000 plus people directly employed in exploration, production, storage and salt solution mining in Ontario;
- (ii) industry assets = \$650 million;
- (iii) personal total taxable income = \$55 million;
- (iv) services and goods purchased by the industry = \$90 million;
- (v) lease payments and royalties paid to land owners and the crown = \$10.4 million; and
- (vi) municipal taxes = >\$4 million per year.

The value of production and storage in Ontario in 2011:

- (i) 78,717 m³ of oil produced = \$47.8 million;
- (ii) 224 million m³ of natural gas = \$35.7 million;
- (iii) 6,900 million m³ of natural gas storage capacity = \$2 billion in value;
- (iv) 3.5 million m³ of hydrocarbon storage capacity = ± \$2 billion in value; and
- (v) Solution Salt Value – no data available.

Overall annual value of oil and gas sector to the Ontario is about \$5 billion.

Oil and Gas Exploration and Development Activity in Ontario in 2011

L. Fortner¹ and T. R. Carter²

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

²Chief Geologist, Petroleum Operations Section, Ministry of Natural Resources, London, Ontario

INTRODUCTION

Drilling activity in southern Ontario in 2011 decreased compared to 2010. Production volumes also continued to fall as they have for several years. The average price of oil sold in Ontario in January was \$87 per barrel. It reached a monthly average peak of \$108 in April, finishing the year at \$102 for December. The average price for the year was just under \$96, which was significantly higher than the average for 2010 of just under \$81. The price of natural gas in Ontario averaged \$4.87 per MMBtu in January 2011 and remained fairly consistent during the year, with an average December price of \$4.65. High production volumes of recently exploited shale gas continue to suppress prices in the North American market.

Data compiled from annual production reports submitted to the Petroleum Operations Section indicate that annual oil production declined 5.7% to 78 987 m³ in 2011 with an estimated value of \$47.8 million, compared to 83 779 m³ with an estimated value of \$42.6 million in the previous year. Natural gas production declined 4% to 224,781 10³ m³ with an estimated value of \$34.9 million, compared to 233,987 10³ m³ with an estimated value of \$40.4 million in 2010.

The 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 existing wells. The cash value of oil production decreased substantially from 2008 to 2009 due to a dramatic drop in unit price, but increased in 2010 and again in 2011.

EXPLORATION ACTIVITY

A total of 25 licences to drill and operate new wells were issued by the Ministry of Natural Resources in 2011, compared to 15 in 2010. An additional 29 licences were issued for plugging of existing wells.

Drilling of 19 new wells and 1 deepening were reported in 2011, compared to 24 new wells in 2010. These consisted of 3 exploratory wells and 1 exploratory re-entry, 7 development wells and 9 stratigraphic tests. Two of the development wells were drilled as horizontal wells.

Successful development drilling in 2011 resulted in 2 wells reported to be active gas producers, 1 active oil and gas well, 2 suspended gas wells, 1 potential gas well and 1 active private gas wells. This was a greater commercial success rate than in 2010, which yielded only 1 well reported to be a potential oil producer, 1 suspended natural gas well, 1 capped well with gas show and 6 active private gas wells at the time of writing the 2010 report.

Exploratory drilling in 2011 resulted in 1 potential oil well (Table 1; Figure 1), 2 dry holes and 1 dry deeper pool test. In comparison, exploratory drilling results in 2010 were significantly more positive, with 1 well reported as an active gas producer, 1 active oil producer, 2 potential oil wells, and 1 potential gas well and 1 dry hole at the time of writing the 2010 report.

Cambrian Play

One exploratory well was drilled in Kent County to test Cambrian targets for oil and gas in 2011. It was subsequently plugged and abandoned. There had also been only 1 Cambrian exploratory test in 2010.

There were no development wells drilled to Cambrian targets in 2011. One Cambrian development well had been drilled in 2010.

Ordovician Play

One deeper pool test was drilled to Ordovician targets in Essex County in 2011. It was reported as unsuccessful.

Two development wells were drilled in Essex County to test the Ordovician in 2011, resulting in 1 active oil and gas producer and 1 suspended gas well.

No exploration or development wells targeted the Ordovician in 2010.

Silurian Sandstone Play

One exploration well tested Silurian sandstone targets in 2011 in Elgin County and was abandoned as a dry hole. There were no exploration wells testing Silurian sandstone targets in 2010.

Two development wells were drilled for Silurian sandstones in 2011. One was reported as an active commercial gas producer on Lake Erie and the other as an active private gas well in Welland County. In 2010, 6 private gas wells and 2 commercial wells targeted this play.

Silurian Carbonate Play

No exploratory wells were drilled to test Silurian Guelph reef and/or Salina Group targets in 2011. Five exploratory wells were drilled for these targets in 2010, all in Lambton County.

Three development wells were drilled to these targets in 2011, resulting in 1 active gas producer in Kent County, 1 suspended gas well in Essex County and 1 potential gas well in Huron County. There were no development wells drilled for Silurian Guelph–Salina targets in 2010.

Devonian Play

One exploration well tested Devonian targets in 2011 and was reported as a potential oil well in Elgin County. No exploration wells were drilled for the Devonian play in 2010.

As in 2010, no development wells were drilled to test Devonian targets in 2011.

EXPLORATION TRENDS

Recent exploration has been focussed on the proven Silurian sandstone and carbonate reservoirs. High natural gas prices greatly enhance the economics of all gas plays in Ontario. Unfortunately, North American natural gas prices dropped dramatically during 2009 and remained relatively low through 2010 and 2011. Exploration activity focussing on oil has not increased in spite of oil prices that have been consistently robust for more than 2 years.

Activity in Ontario has been reduced to a minimum by the constraints of commodity prices. Low natural gas prices have a dramatic impact on exploration and development activity in the province. Ironically, sustained higher oil prices may also negatively impact activity in Ontario by increasing the attractiveness of larger and more expensive projects in other provinces as well as internationally. Recommendations for future exploration have not changed in this report for several years and will remain unchanged until exploration activity increases and new plays and fairways are tested by industry.

There is considerable remaining untested potential for natural gas in the Ordovician play beneath the eastern basin of Lake Erie and onshore east and north from Kent County to the Niagara Escarpment. A 2005 re-assessment of potential in this play by the Ministry of Natural Resources indicates potential remaining undiscovered resources totalling 201 billion cubic feet (5.7 billion m³) of natural gas and 16.6 million barrels (2.64 million m³) of oil. Potential exists for trapping of natural gas in sandy facies of the Ordovician Shadow Lake Formation over the crest of the Algonquin Arch.

Gas or oil accumulations are also possible in stratigraphic traps along the pinch-out edge of the Cambrian sandstone, or in Cambrian reservoirs within fault-controlled structures. There may also be considerable unrealized potential in fault-related structural traps in the Salina A-1 and A-2 carbonate units in Kent, Elgin and Middlesex counties. There was a significant increase in drilling in the Lower Silurian sandstone play in 2006, but that activity has declined from 2007 onward.

Table 1. Successful oil and gas exploration wells in southern Ontario in 2011 (*see* Figure 1 for well locations).

Well #	Well Name	Results	Target	TD	Latitude	Longitude	TD Date
1	Clearbeach et al. #40, Dunwich 1-4-24-A	OS - POT	DEV	108.0	42.71165944	-81.44440306	29/07/2011

Abbreviations: DEV = Devonian; OS = oil show; POT = potential; TD = total depth (in metres).

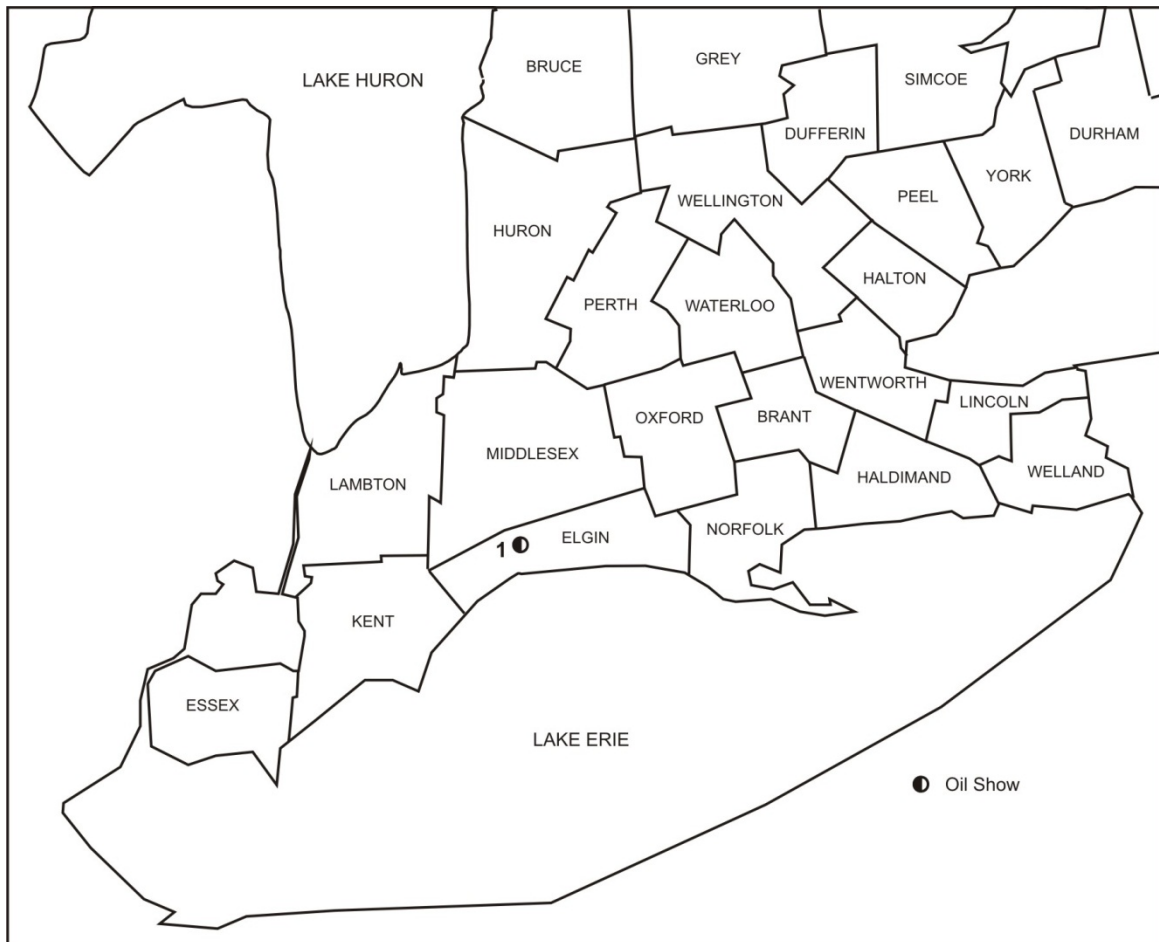


Figure 1. Successful oil and gas exploration wells in southern Ontario in 2011.

For questions related to the Ontario Oil, Gas and Salt Resources Trust please contact:

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