The Oil, Gas and Salt Resources Library: A Model for Groundwater Data Sharing in Ontario?

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Guelph, ON
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Oil, Gas and Salt Resources Library

- Not-for-profit centre for management of publicly accessible data on oil, gas, salt, hydrocarbon storage resources, and subsurface Paleozoic geology of Ontario
- Industry-operated
- Both free and fee-based access to data
- 669 Exeter Road, London, ON
- www.ogsrlibrary.com
Library History

• Originated as voluntary submission of drill cuttings and well drilling reports to Geological Survey of Canada in late 1800’s, early 1900’s
• 1971 - All Ontario drill samples and well records moved to Petroleum Resources Laboratory in London, ON, managed by Ministry of Natural Resources and Forestry (MNRF).
• 1987 - Move to new purpose-built facility at present location
• 1996 - Provincial government cuts funding and declares staff redundant. Possible closure of Laboratory.
• New Oil, Gas and Salt Resources Act requires creation of Oil, Gas and Salt Resources Trust
• Funding formula negotiated with oil, gas, salt and hydrocarbon storage industries
• 1998 - Operation of Library transferred to oil and gas industry as Original Trustee, MNRF oversight
Oil, Gas, Salt Resources Trust

Oil, Gas & Salt Resources Act s.16 requires Minister to establish Trust to provide funding for:

- information management relating to oil, gas & salt resources
- research, surveys & lab facilities (Library) and operations relating to
  - oil/gas exploration, drilling, production
  - geological storage of hydrocarbons
  - geological disposal of oil field fluids
  - solution mining

Trust Agreement with Ontario Oil, Gas & Salt Resources Corp effective Jan.1, 1998
Governance

Trustee: Ontario Oil, Gas & Salt Resources Corporation – wholly-owned subsidiary of Ontario Petroleum Institute

7 member Trust Advisory Committee

- 4 from oil & gas industry
- 1 from natural gas storage
- 1 from cavern storage
- 1 from solution mining
- 1 from MNRF (non-voting)
Trust Mission Statement

The Trust specializes in the collection, generation, and dissemination of information and knowledge about the subsurface geology and oil, gas, salt and underground hydrocarbon storage resources of Ontario. It will provide its clients in these resource industries with the data they need to conduct their business in the most orderly, safe and efficient way possible, and provides public access to this data at reasonable cost.
Library Funding 2013

43% mandatory well licence fees
26% data enhancement projects
16% memberships
15% data sales & services
0% government subsidy

Total revenue: $291,000
## Mandatory Fees – Ontario Regulation 245/97

<table>
<thead>
<tr>
<th>Item</th>
<th>Column 1 Type of Well</th>
<th>Column 2 Amount Payable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Natural gas storage well</td>
<td>$250.00</td>
</tr>
<tr>
<td>2.</td>
<td>Observation well</td>
<td>$100.00</td>
</tr>
<tr>
<td>3.</td>
<td>Salt cavern storage well</td>
<td>$250.00</td>
</tr>
<tr>
<td>4.</td>
<td>Solution mining well</td>
<td>$250.00</td>
</tr>
<tr>
<td>5.</td>
<td>Brine producing well</td>
<td>$100.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Column 1 Type of Well</th>
<th>Column 2 Amount Payable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Natural gas producing well</td>
<td>$0.15 for each 1000 cubic metres of natural gas</td>
</tr>
<tr>
<td></td>
<td></td>
<td>produced from the wells operated during the</td>
</tr>
<tr>
<td></td>
<td></td>
<td>previous calendar year</td>
</tr>
<tr>
<td>2.</td>
<td>Oil producing well</td>
<td>$0.50 for each cubic metre of oil produced from the</td>
</tr>
<tr>
<td></td>
<td></td>
<td>wells operated during the previous calendar year</td>
</tr>
</tbody>
</table>
Library Membership

- Annual Library “memberships” provide unlimited access and reduced fees. Reduces Library administrative costs - $660 individual (29), $1925 corporate (13)

- Companies and individuals in the petroleum industry
  - Drillers
  - Producers
  - Storage companies
  - Salt solution mining
  - Consultants

- MNRF, MOECC, MNDM (Ontario Geological Survey)
- Universities
- Water well drillers
- Geothermal well drillers
- Environmental consultants
## Data Resources

<table>
<thead>
<tr>
<th>Resource</th>
<th>Quantity/Annual Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum well files</td>
<td>26,500 +20/yr</td>
</tr>
<tr>
<td>Scanned well file images</td>
<td>500,000+</td>
</tr>
<tr>
<td>Drill cuttings</td>
<td>11,000 wells +20/yr</td>
</tr>
<tr>
<td>Drill core</td>
<td>1,100 +4/yr</td>
</tr>
<tr>
<td>Monthly production reports</td>
<td>40,000 +2,000/yr</td>
</tr>
<tr>
<td>Injection+disposal reports</td>
<td>10,000 +150/yr</td>
</tr>
<tr>
<td>Maps &amp; Reports</td>
<td>2,500 +10/yr</td>
</tr>
<tr>
<td>Geophysical logs</td>
<td>21,000</td>
</tr>
<tr>
<td>Oil and gas pool map</td>
<td></td>
</tr>
<tr>
<td>Journals, reprints, government reports</td>
<td></td>
</tr>
<tr>
<td>ArcGIS workstation</td>
<td></td>
</tr>
<tr>
<td>Digital petroleum well database</td>
<td></td>
</tr>
<tr>
<td>Oil, gas, water analyses, isotopic analyses</td>
<td></td>
</tr>
<tr>
<td>Deep groundwater maps</td>
<td></td>
</tr>
<tr>
<td>89 water type, 17 potentiometric</td>
<td></td>
</tr>
</tbody>
</table>
Drill Core
Drill Cuttings
Sample Examination room
Digital Data: www.ogsrlibrary.com
Data accessible at www.ogsrlibrary.com

- Well records: well data, geology, oil, gas, water, analyses, plugging records
- Production Data: digital and scanned
- Oil, Gas, Water Analyses
- Scanned records: well files, reports
- Geophysical logs
- Maps & Google Earth overlays
- Proceedings Ontario Petroleum Institute
- Water type, static level maps
Digital Petroleum Well Record

**Licence #: TO10000**
**Wellname: GGOL #42**

**Operator:** On-Energy Corp.
**CTY:** Norfolk
**TWP:** North Walsingham
**LOT:** 6
**CON:** IX
**LE BLOCK:**
**LE TRACT:**
**Well Type:** Natural Gas Well
**Class:** Dev
**Well Mode:** Active Well
**Target:** CLI
**TD Form:** Thorold

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**Drilling Data**

- **Rig Type:** Rotary & Cable
- **GRND ELEV:** 211.10
- **KB ELEV:** 214.45
- **TVD:** 415.30
- **PBTD:**

**Dates**

- **Lic. Issued:** 2001-05-07
- **SPUD Date:**
- **TD Date:** 2001-05-29
- **CMP Date:**
- **WO Date:**
- **Plug Date:**

**Coordinates**

- **N/S Boundary:** 382.70 N
- **E/W Boundary:** 199.30 E

**NAD 83**

- **SUR LAT:** 42.6940000
- **SUR LONG:** -80.59812861
- **BOT LAT:** 42.6940000
- **BOT LONG:** -80.59812861

**Location Comments**

- **Date:**
- **Accuracy:** Within 5 metres
- **Method Obtained:** Survey Drawing (post 1997)

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**Initial Gas Record - (1)**

<table>
<thead>
<tr>
<th>Internal (m)</th>
<th>Flow (m³/day)</th>
<th>SP (kPag)</th>
</tr>
</thead>
<tbody>
<tr>
<td>413.0 - 415.30</td>
<td>1250</td>
<td>4210.00</td>
</tr>
</tbody>
</table>

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**Initial Oil Record - (2)**
Geophysical Log Viewer (TIFF)
Google Earth Layers: Oil&Gas Pools
Key Features

1. It is a not-for-profit organization managed by and funded by industry with government oversight and coordination.
2. Source records are mandated, prescriptive reports, collected by the provincial government, almost entirely from industry activities at industry expense.
3. No government funding.
4. The Oil, Gas and Salt Resources Trust governance framework is established by legislation. Dissolution requires an amendment to the Oil, Gas and Salt Resources Act.
5. Advisory Committee to set operating budgets, fees, and direct policy with respect to expenditures.
6. Funded with user fees and legislatively mandated payment of fees by industry.
7. Data access is a combination of both fee-based and free access to data.
8. Source records and digital records are centralized and can be viewed by clients.
9. Drill core and drill cuttings samples are collected and catalogued and available for client use to verify critical data.
10. The Library is a specialized data management service with its own staff.
11. Digital data access is the primary means of service delivery.
Water Interval Records
Petroleum Wells

<table>
<thead>
<tr>
<th>INTERVAL</th>
<th>STATIC LEVEL</th>
<th>TYPE</th>
<th>Anal</th>
<th>Analysis Formation</th>
</tr>
</thead>
<tbody>
<tr>
<td>141-</td>
<td>36.00</td>
<td>Sulphur</td>
<td>N</td>
<td>Lucas</td>
</tr>
<tr>
<td>20-</td>
<td>11.00</td>
<td>Fresh</td>
<td>N</td>
<td>Kettle Point</td>
</tr>
</tbody>
</table>

- Water type, static level, geological formation and top depth of water intervals as recorded by driller for petroleum wells *drilled by cable tool method*
- 35,000 water records in petroleum well database
Static Level Map

Guelph

Salt Water

Legend

<table>
<thead>
<tr>
<th>Value</th>
<th>Static Level (m.a.s.l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>320.094</td>
</tr>
<tr>
<td>Low</td>
<td>-606.988</td>
</tr>
</tbody>
</table>

Contour Interval: 50m

http://www.ogsrlibrary.com/publications_index_ontario_oil_gas#ofdr
Digital Data: Water Wells
www.ontariогroundwater.com
Some Options for Groundwater Data Sharing

- Expand regulatory requirement for mandatory reporting of groundwater data
- Prescriptive standards for reporting – quality assurance
- Groundwater data listing service – index to all available sources of groundwater data – at www.ontariogroundwater.com
- Establish dedicated facility for data management, quality control, and data access – expand mandate of Library?
- Advisory committee to set operating budgets, fee schedules, and policy with respect to expenditures
- Funding formula should include base funding from mandated fees or data sharing agreement, and fees for data services
Questions?