



OPI NEWSLETTER

THE VOICE OF THE ONTARIO OIL AND NATURAL GAS INDUSTRY

FALL 2020

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Baker Hughes, a GE Company
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Harold Marcus Limited
Lagasco Inc.
Pembina Pipeline Corporation
Weatherford Canada Ltd.

SUSTAINING MEMBERS

Barnes Oil Co.

Ontario Petroleum Institute Inc.

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Lorraine Fillmore, Office Manager

Encouraging responsible exploration and
development of the oil, gas, hydrocarbon
storage and solution-mining industries in
Ontario

ISSN 14802201

OPI elects a new Board of Directors

At the Annual General Meeting held on November 5th at the Best Western Stoneridge Inn and Conference Centre the members elected a new Board of Directors for 2021.

Lonnie Barnes, Barnes Oil Co.; Niki Clarke, Elexco Land Services, Ltd.; Michael Hunter, Resources Link; Scott Lewis, Lagasco Inc.; Jeff Luckovitch, Integral Pumping Services Inc.; Denis Marcus, Harold Marcus Limited; and David Thompson, Northern Cross Energy Limited were all elected for a two-year term.

The following Board Members have agreed to fulfill the second year of their two-year term: Ben Barnes, Double B Well Service Ltd.; Mike Dorland, Mike Dorland Consulting; Frank Kuri, Consultant; Jim McIntosh, Jim McIntosh Petroleum Engineering Ltd.; Jack Norman, Jamcin Holdings (fulfilling Ian Colquhoun's 2nd year) and Peter Rowe, Consultant.

We had one 25-year pin recipient, congratulations Jon Chilian of Metalore Resources Ltd., and thank you for your continued support of OPI.

Members approved Ontario Petroleum Institute's Financial Statements for the year end August 31, 2020, and appointed Scrimgeour & Company, Chartered Accountant auditor for OPI and OOGSRT for the next fiscal year.

A huge thank you to our Breakfast Sponsors at the AGM:

Double B Well Service Ltd.
Elexco Land Services, Ltd.
Lagasco Inc.

OPI Board of Directors

Chairman

Jim McIntosh
Jim McIntosh Petroleum
Engineering Ltd.
(519) 657-2176

Vice Chairman

Scott Lewis
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(519) 871-0876

Ben Barnes
Double B Well Services Ltd.
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Lonnie Barnes
Barnes Oil Co.
(519) 834-2339

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Mike Dorland Consulting
(519) 532-3469

Mike Hunter
Resource Link
(519) 426-5089

Frank Kuri
Consultant
(226) 926-9464

Jeff Luckovitch
Integral Pumping Services Inc.
(226) 234-5362

Denis Marcus
Harold Marcus Limited
(519) 695-3735

Jack Norman
Jamcin Holdings.
(519) 461-0809

Peter Rowe
Consultant
(519) 671-9532

David Thompson
Northern Cross Energy Limited
(403) 870-1524

OPI elects new Leadership

The Ontario Petroleum Institute Board of Directors, at its November 20th meeting chose a new slate of officers.

Jim McIntosh, Jim McIntosh Petroleum Engineering Ltd. was elected Chairman of the OPI for 2021 and Scott Lewis, Lagasco Inc. was elected Vice-Chairman.

Standing Committee Chairs:

Conference: Niki Clarke, Elexco Land Services, Ltd.

Finance: Lonnie Barnes, Barnes Oil Co.

Governance: Jack Norman, Jamcin Holdings

Nominating: Ben Barnes, Double B Well Service Ltd.

Regulatory: Peter Rowe, Consultant

The officers of the Ontario Oil, Gas & Salt Resources Corporation for 2021 are: Jim McIntosh, Scott Lewis, Jack Norman, Peter Rowe and Jeff Luckovitch.

The OPI also has several AD-HOC Committee's, the newest AD-HOC Committee is the ***Rebranding Committee***, chaired by David Thompson. The purpose of this committee is to explore the idea of rebranding the OPI into something more up-to-date. Please email any suggestions or ideas to David at dt@northerncross.ca



Photostory #335:

S.S. "Simcoe" Sails Again As Drilling Ship: Exploring Lake Erie For Offshore Gas

Photographer J. Marshall

National Film Board Photostory No. 335 (April 16, 1963)

Canadian Museum of Contemporary Photography fonds,

National Gallery of Canada Library and Archives

National Film Board Photostory No. 335 For Release on or after Tuesday, April 16, 1963

S.S. "Simcoe" Sails Again As Drilling Ship

Exploring Lake Erie For Offshore Gas



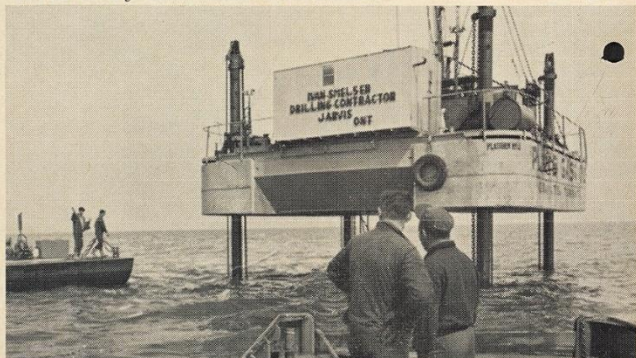
Crew members of drilling ship *Simcoe* tighten head onto length of pipe as production well is sunk towards gas reservoir a thousand feet down in sandstone.

Hull down over the Lake Erie horizon from the lush farmland of the Ontario shore, the drilling ship *Simcoe* sails on venturesome voyages of discovery. Making ready for the coming summer season, her crew of gas-exploring seamen keep weather eyes open as they prepare to sink their drills down through Erie's shallow but easily-aroused waters. Last year, as Canada's total natural gas production zoomed 44 per cent to 2.6 billion cubic feet per day, Lake Erie gas drillers put down 47 new holes into the 400-million-year-old *Silurian* strata deposits a thousand feet beneath the lake bed. While these operations are but a fraction (less than three per cent compared to Alberta's nearly 80 per cent) of Canada's overall, thriving gas industry, Ontario gas production is economically very important. Close to heavily-populated areas, the gas from southern Ontario has a value four times that of gas from

more remote regions. Gas from the new wells will replace present provincial daily imports of 14 million cubic feet from the U.S., due to terminate in 1967. Today, with Canada exporting in return a billion cubic feet per day, the nation's estimated recoverable reserves are counted in the tens of thousands of billions. This year the converted freighter *Simcoe*, in her third season of off-shore drilling, will add more wells to the 200 already in production in Lake Erie, will add to the significant shoreward flow of gas through a 15-mile underwater piping system, play a major role in bringing the long-hidden energy under Lake Erie to the heart of Canada's industrial south.



Drillers stand by during tense moment in final operations. From left: Stan Boyt, Sarnia; "Duke" Wilson, Windsor; Doug McKinnon, Sarnia, and Joe Shelton of *Simcoe*.



This Texas Tower drilling rig is serviced by *Simcoe* with crew and equipment needs. Above, diver Brian Cooper of Port Dover signals for diving barge to move closer as he prepares to go down and cap new well.



Another section of production pipe is brought to drilling tower from the stock piled on the deck of the *Simcoe*. In 1961 the drilling ship lost her 90-foot tower and superstructure in a gale of wind.

National Film Board Photostory

This photo story was published fifty-seven years ago about the same time the Ontario Petroleum Institute was founded. It documents the drilling of some of the first wells drilled on Lake Erie using rotary drilling equipment. From 1913 to 1960 roughly two hundred and sixty wells were drilled on the lake using cable tool drilling rigs mounted on temporary platforms or towers. In the fall of 1960, the first floating drill ship the *M.V. Submarex* was being moved from Long Beach, California into the Great Lakes to perform

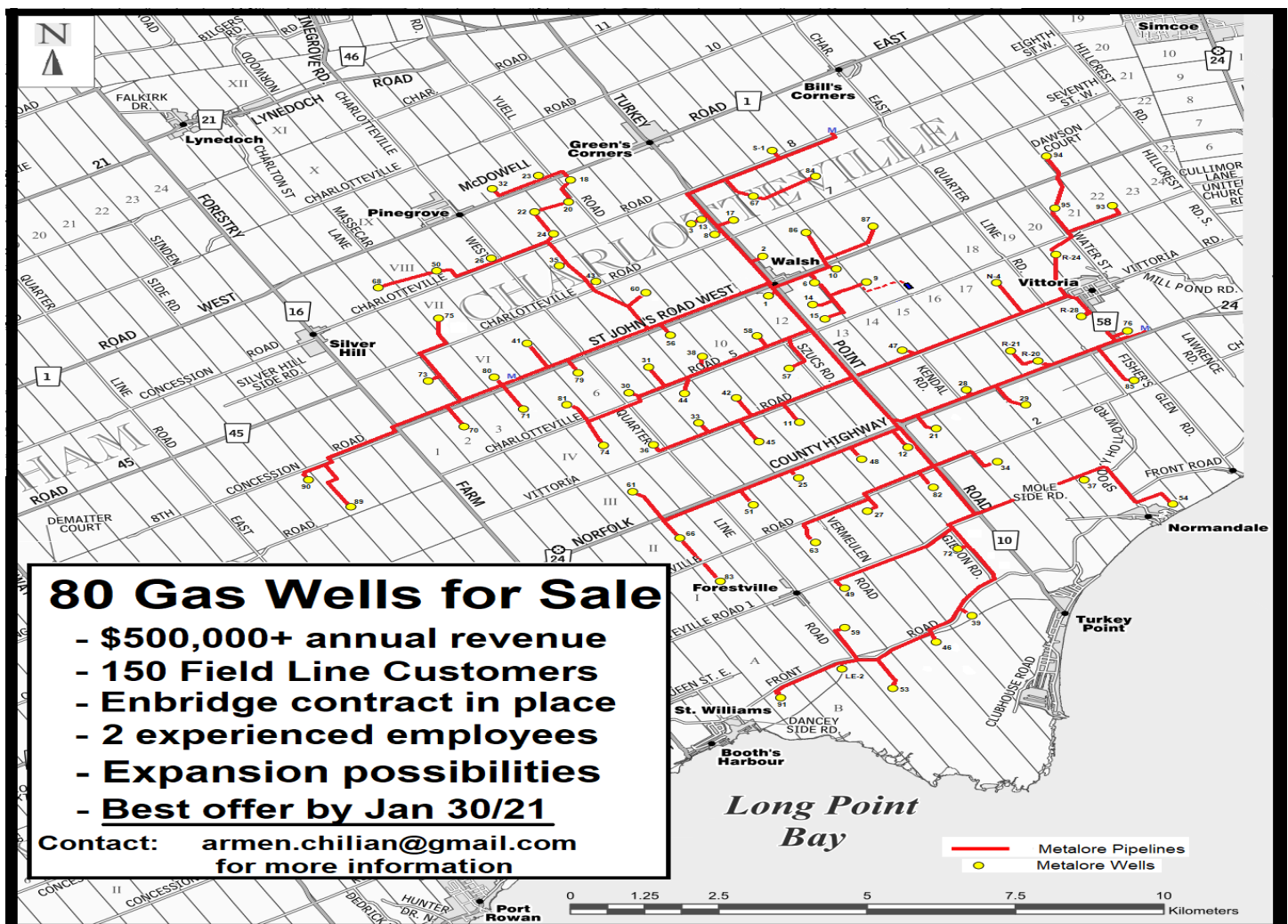
research work. The El Paso Corporation took advantage of this occurrence and used the drill ship to drill the first gas well in Lake Erie using rotary tools. El Paso Lake Erie No. 01-2 (T000581) was drilled off Port Maitland in Block 22 Tract U. This experiment proved that gas wells could be drilled in about one week with this type of equipment. Northern Offshore Drilling took this idea and converted the canal size bulk carrier *Glencorrie* to a floating drill ship the *Simcoe*, prior to the 1961

drilling season. The *Simcoe* drilled fourteen wells from June to September 1961 inside Long Point Bay for the El Paso Natural Gas Products Company. In late September while drilling the El Paso Lake Erie No. 89-17 well (T001176) eight miles off Port Maitland the rig was caught in violent storm that blew the rig off location and buckled the derrick. The rig was towed to shore and repaired in preparation for next years' drilling season. From April until October 1962 the rig drilled 21 wells in the eastern portion of Lake Erie between Port Maitland and Nanticoke. Well depths averaged about 1100' (335m) and took about one week to drill, complete and stimulate all using the drill ship *Simcoe*. During the 1963 drilling season the *Simcoe* drilled 13 wells for Mitchell & Mitchell Properties from May through August. The rig ventured out from behind Long Point into the open waters of eastern and central Lake Erie drilling wells from Nanticoke around the tip of Long Point to Port Burwell. These early exploration wells

proved up gas pools in Lake Erie that would be further developed in later years by Consumers' Gas, Anschutz Exploration, Pembina Resources, and others for the next five decades. The drill ship *Simcoe* was sold a few years later and renamed *Nordrill* ending up part of the Underwater Gas Developers fleet until retirement at the end of the 1973 drilling season. The drill ship was scrapped in 1974-75 at Humberstone, Ontario ending a short but colourful saga.

Allan Phillips
Clinton-Medina Group
December 2, 2020

<https://photostories.ca/explore/photostory-335-ss-simcoe-sails-again-drilling-ship-exploring-lake-erie-offshore-gas>





Digitalization and Self-Monitoring of an Emergency Shutdown Valve

By: Hugh Flesher, Product Manager, Surface Safety Systems, Stream-Flo Industries Ltd.

Hossam Gharib, Senior Product Engineer, Surface Safety Systems, Stream-Flo Industries Ltd.

Stream-Flo Industries Ltd., a family-owned Canadian company established in 1962 and manufacturer of wellhead and flowline equipment for the global energy market, has been working with the gas transmission and storage stakeholders in North America for well over a decade, developing automated valve safety systems that ensure fail-safe operation of shut-in equipment. Working closely with the end user, the experience and proficiency of the Stream-Flo Surface Safety System team promotes a collaborative approach to developing suitable engineered solutions.

This article discusses the emerging technologies that Stream-Flo is developing for the next generation of Emergency Shutdown Valve systems (ESDV) – the Smart ESDV. An intelligent ESDV, as part of an advanced safety system, will provide condition monitoring, partial stroke testing (PST), and autonomous decision making for predictive maintenance and protection against hazardous incidents. A self-contained ESDV design enables the integration of sensors, instrumentation, and predictive analytics/logic in a cost-effective manner without the need for full system replacement, while maintaining the core system reliability and providing remote access and reporting.

An ESDV typically provides an immediate closure of the well in the event of an emergency. A hydraulically actuated ESDV includes a control circuit that is considered the last line of defence. This circuit is composed of hydraulic control elements that provide a fully operational self-contained system and where regular inspection of the health of these components is critical to ensure reliability upon demand. Conventional routine visual inspection of these elements can be costly, which often requires the physical presence of personnel at the wellsite, adding to the operational budget amid a trend in recent years to significantly reduce costs.





The autonomous condition monitoring system integrates to a hydraulic controlled actuator that manually opens and automatically closes the ESDV. The digitalization of the system is achieved through instrumentation with pressure transmitters, position transmitter, temperature detector and solenoid valve connected to a datalogger and process controller. The process controller includes on-board logic software and connects to a wireless transmitter/receiver.

The system, fully developed and tested at Stream-Flo Group of Companies, is capable of logging data at high frequency during an Emergency Shutdown (ESD) event to self-monitor the condition of the control elements using Edge Computing. This approach only sends critical data remotely after performing necessary computation, thus optimizing telemetry bandwidth and power usage. The system also has the ability to initiate an ESD event from a remote location and provides visibility to the safety valve function and status without the need for a site visit.



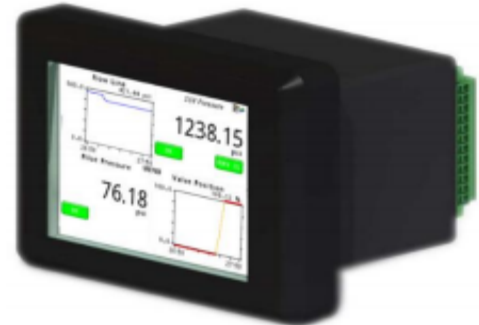
As an example of the type of condition-based monitoring available with the smart ESDV system, the response time of the solenoid valve operation during an ESD closure event is evaluated through comparison to a healthy response. The solenoid valve response time varies depending on the signal pressure, but within a relatively fast response time of around 50ms. Also, diagnostic algorithms include leak detection and over-pressure in the hydraulic system pressure reducing valve. Moreover, probable malfunctioning of the hydraulic pressure safety valve is determined based on over-pressure of the signal control circuit. In order to identify the triggering source of the ESD event, the system uses data analytics of valve position and pressure gradients to differentiate an electric from manual closure. The health of the valve actuator is monitored through an algorithm that combines line pressure, hydraulic pressure, and response time. This is compared to a healthy known relationship that is saved on the logic controller's memory for condition-based maintenance evaluation. These results provide confidence in the ability to monitor and provide digitized feedback to well operators to support predictive maintenance plans.

The development work done by the Stream-Flo Group of Companies demonstrates the successful integration of the reliable hydraulically actuated ESDV with instrumentation and logic to create an autonomous condition monitored safety valve. In addition to its ability to monitor the health of the safety valve, the developed system monitors the performance of the actuator's signal control circuit, which is a critical element that ensures the valve consistently remains in the open position and, with a very high degree of probability, shuts down upon demand.



Features of the Digitalized Emergency Shutdown Valve:

- Condition-Based monitoring (from Windows Desktop)
- Hydraulic Circuit and Gate Valve/Actuator Condition Monitoring
- Process Monitoring
- Data logging and Diagnostics
- Advanced Failure Prediction
- Hydraulic Pump Controller
- Wi-Fi and VPN Communications
- Local Reset and Re-Open
- Remote and Local ESD
- Full Stroke Testing and Analysis



The Stream-Flo Group of Companies is heavily involved in bringing innovative technologies to the gas storage market. Optimization of our customers' operations with remote supervision and control of the ESDV safety system is one innovation that the Stream-Flo Group of Companies is bringing to the gas storage market. We remain committed to continue providing engineered solutions and local support to meet the unique challenges of the gas storage industry.



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Upcoming Events

TAC Meeting

December 16, 2020

Via Zoom Video Conferencing

OOGSR Corporation Meeting

January 20, 2021

Via Zoom Video Conferencing

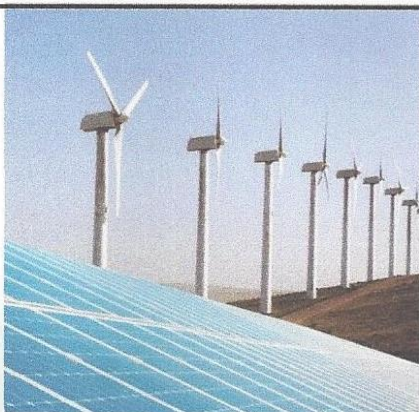
Board of Director's Meeting

January 22, 2021

Via ZOOM Video Conferencing



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