



NORA T. STEWART, P.Eng.

Associate

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Nora Stewart is an Associate of Sproule. She also lectures at the University of Calgary and to the petroleum industry through Sproule's inhouse course on the "Evaluation of Canadian Oil and Gas Properties". Nora is responsible for all energy price analysis and forecast development at Sproule. Her expertise is primarily in the area of natural gas supply and demand, including storage, marketing, contracts and economic analyses. Nora has co-authored a number of papers on petroleum economics and the Canadian petroleum industry. She has extensive experience in Australia, Canada, China, Egypt, Slovakia, and the United States.

Diplomas and Degrees

- ❖ B.A.Sc. Civil Engineering (1976), University of Toronto, Toronto, Ontario, Canada

Continuing Education

- ❖ Advanced Income Taxes in the Oil and Gas Industry (1999)

Memberships

- ❖ Association of Professional Engineers, Geologists and Geophysicists of Alberta (APEGGA)
- ❖ Society of Petroleum Evaluation Engineers (SPEE)
- ❖ Association of Professional Engineers of Ontario

Work Responsibilities

- ❖ Evaluate and develop special projects concerning natural gas storage, energy pricing, natural gas marketing and contracts, and supply and demand forecasting.
- ❖ Serve as expert technical witness at regulatory hearings and in courts of law.
- ❖ Assist companies in assessments of undiscovered resources using statistical methods.

- ❖ Mediate negotiations through comprehensive analysis of reserves value.
- ❖ Analyze and prepare energy price forecasts for natural gas, natural gas by-products and various grades of oil.
- ❖ Develop rate structures for the cost recovery of natural gas and related assets.
- ❖ Evaluate oil and gas properties and companies, including estimating reserves and analyzing economics.
- ❖ Teach petroleum economics and energy pricing to participants of Sproule's courses, in-house and through the Department of Continuing Education at the University of Calgary, and through the Petroleum Society of CIM; also internationally.

Previous Employers

- ❖ 1981-1989 **Canadian Western Natural Gas Company Ltd. and Northwestern Utilities Limited**, Calgary, Alberta — *Manager, Gas Supply Planning*
 - ❖ Involved in planning and analysis of gas supply as it relates to economics, contracts, markets, pricing and rates.
- ❖ 1976-1978 **TransCanada PipeLines Limited**, Toronto, Ontario — *Engineer*
 - ❖ Involved in facilities planning related to pipeline and compressor development.

Special Expertise

- ❖ My considerable experience in analyzing information and my understanding of the regulatory process, together with my knowledge of reserves value in the market place, contribute to my standing in the petroleum community as a highly credible expert technical witness. I use the human resources available at Sproule to support clients in the regulatory arena, in the courts, and in difficult negotiated settlements.

Selected Projects

- ❖ Since 1989, I have been responsible for energy price forecasts for use in the upstream oil and gas industry. This involves an in-depth analysis of historical trends, full- and half-cycle finding and development costs, and the impact of competitive fuels. These price forecasts are used in value assessments produced by Sproule, and are developed on a monthly basis and available on the company web site.

Publications and Presentations

- ❖ Carlson, J.D., Cleland, N.A., and Stewart, N.T. (1991) "Future Gas Reserves and Production in Western Canada." Presented to Petroleum Society of CIM, Calgary Section, May 13.

- ❖ Carlson, J.D., Cleland, N.A., and Stewart, N.T. (1991) "A Forecast of Western Canadian Supply and Demand." Presented to the Canadian Society of Petroleum Geologists, Calgary, May 14.
- ❖ Carlson, J.D., Cleland, N.A., and Stewart, N.T. (1991) "The Effect of Price on Western Canadian Gas Supply." Presented to Society of Petroleum Engineers, Canadian Well Logging Society, Calgary Sections, September 11.
- ❖ Carlson, J.D., Cleland, N.A., and Stewart, N.T. (1991) "The Effect of Price on Western Canadian Gas Supply — Updated October 1991." Presented to Petroleum Services Association of Canada, Calgary, October 25.
- ❖ Cleland, N.A. and Stewart, N.T. (1991) "Petroleum Industry Prospects in the Next Decade." Presented at Insight Seminar, Calgary, October 28.]
- ❖ Stewart, N.T. and Cleland, N.A. (1992) "Petroleum Reinvestment — Is There a Future for our Industry." Presented to the Petroleum Society of CIM, Calgary Section, January 22.
- ❖ Stewart, N.T. and Cleland, N.A. (1992) "Is There a Future for the Canadian Petroleum Industry?" Presented to Petroleum Society of CIM, Regina Section, March 25.
- ❖ Stewart, N.T. and Cleland, N.A. (1992) "Looking Over the Horizon: The Future of the Industry." Presented for Insight Educational Services, April 2.
- ❖ Carlson, J.D., Cleland, N.A., and Stewart, N.T. (1992) "The Outlook for Western Canadian Gas Deliverability." April 28.
- ❖ Cleland, N.A. and Stewart, N.T. (1993) "Counting the Remaining Barrels." Presented to Petroleum Joint Venture Association, Calgary, March 24.
- ❖ Cleland, N.A. and Stewart, N.T. (1994) "Western Canadian Gas Supply." Presented to Economic Society of Calgary, January 26.
- ❖ Cleland, N.A. and Stewart, N.T. (1994) "Canadian Gas Supply Outlook." Presented at CERI North American Natural Gas Conference, Calgary, February 28.
- ❖ Stewart, N.T. (1994) "Value of Oil and Gas Reserves." Presented for Ziff Energy, Calgary, December 1994.
- ❖ Stewart, N.T. (1995) "Canadian Gas Supply - The Good, The Bad and The Ugly." Presented at CERI North American Natural Gas Conference, Calgary, March 13–14.
- ❖ Stewart, N.T. (1995) "Gas Supply in Western Canada." Presented at CSPG Conference, Calgary, May 29.

- ❖ Stewart, N.T. (1996) "Natural Gas De-Regulation Workshop." Presented to Gas and Fuel Corporation, Melbourne, Australia, March 1996.
- ❖ Stewart, N.T. (1996) "The Future Supply Capability, Western Canada Sedimentary Basin." Presented to Foothills PipeLines Ltd., June 7.
- ❖ Stewart, N.T. (1996) "Natural Gas Supply and Demand: We Must Strike a Better Balance." Presented at CSPG Conference, Calgary, June 16–19.
- ❖ Stewart, N.T. (1996) "Canadian Natural Gas — Executive Overview." Presented to J. M. Huber Corporation, August 21.
- ❖ Stewart, N.T. and Cleland, N.A. (1996) "The Valuation of Oil and Gas Assets." October.
- ❖ Stewart, N.T. (1997) "Reserve Additions Forecasting." CERI Conference, Calgary, February 26.
- ❖ Stewart, N.T. (1998) "Valuing Reserves in Western Canada." CERI Conference, Calgary, February 24.
- ❖ Stewart, N.T. (1998) "The Historical Record: Natural Gas Supply/Demand in Canada." Society of Petroleum Engineers, Gas Technology Symposium, Calgary, March 14.
- ❖ Stewart, N.T. (1998) "The Ultimate Question: Forecasting Natural Gas Reserve Additions." Canadian Institute: Optimizing Your Midstream Assets, Calgary, November 10.
- ❖ Stewart, N. T. (1998) "It's My Call: An Outlook on Natural Gas Pricing." Canadian Enerdata Ltd.: The 1999 Natural Gas Outlook and Strategies, Toronto, September 10, 1998. Petroleum Society of CIM, Calgary, January 1999.