



Northern Pipeline Options: Not if, When!

Within this decade, newly constructed Northern pipelines may contribute 5% of the North American 30 Tcf/year gas market. While some may have scoffed and dismissed this as “white elephant dreaming” several years ago, Ziff Energy believes it is a matter of when - not “if” - in this decade Northern gas becomes a reality.

The four main gas-prone regions that will be developed include one in the USA (North Slope, Alaska) and three in Canada (the Ft. Liard and Mackenzie Delta basins, both in the Northwest Territories, and Eagle Plain in the Yukon). While other Northern regions, such as the Arctic Islands, show potential, the remoteness, incremental connection cost, and technology challenges suggest that they will be developed after the Alaska and Mackenzie Delta discoveries. The location of the major northern basins is highlighted.

Production Possibilities

While exploration of the North Slope and Mackenzie Delta began over a quarter century ago, commercial gas development of this northern frontier area has essentially just started. Considering that the Northern regions contain large quantities of gas reserves (over 44 Tcf of proven and 165 Tcf potential), new pipelines could potentially be designed to transport proven gas reserves of up to 2 Tcf/year (3 to 5 Bcf/d) for a minimum of several decades. At Ft. Liard in the

Southern Northwest Territories, where gas wells show excellent initial deliverability (flowing at rates up to 100 MMcf/d), new gas transport was not initially required because surplus capacity (about 300 MMcf/d) was available on the 20-inch Westcoast sour pipeline system.

New Gas Pipeline Options

New transport capacity will be required to transport the frontier gas reserves from the Alaska North Slope and the Mackenzie Delta. Yukon gas production from Eagle Plain will supplement gas deliveries for one of these new transport pipelines. Technological advances such as automated welding, inspection, telemetry, trenching, boring machines, and high pressure pipe will reduce pipeline transport costs. While many transport alternatives are being evaluated, Ziff Energy believes one or two pipelines will be constructed prior to the end of this decade.

The timeframe required for North Slope and Mackenzie Delta includes three phases: evaluation, construction, and flowing. Overall we believe gas production is possible within 7 years (North Slope) to 10 years (Mackenzie Delta). The difference in timing relates to the initial evaluation stage. For further information, contact Bill Gwozd at (403) 234-4299, or bgwozd@ziffenergy.com, or Rick DeWolf at (403) 234-4275, or rdewolf@ziffenergy.com.

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INDEX

1. Northern Pipeline Options
2. E&P Services Expands
4. Positioning for eBusiness
6. 3rd Permian RFOC Study
7. Beyond the Midwest Study
8. Paying Too Much Tax?
9. SPE Distinguished Lecturer
9. Conference News
10. New Senior Executives

(continued on page 11)

E&P Services Division Expands Scope of Products

Many of our North American clients will be familiar with the E&P Services division's two lead products – Finding and Development (F&D) analysis, and the Reducing Field Operating Costs/Best Practices (RFOC) studies. Ziff Energy has been performing F&D studies annually in Canada since 1987 and introduced their “strategy level” methodologies to the Gulf of Mexico in 1999. Clients use the F&D studies to determine their performance in a particular strategy area compared to peer companies and industry. This product has also been used as a planning tool as companies look to evaluate key strategy areas of the basin to maximize future return.

The RFOC project began seven years ago to help operators reduce their operating costs by building a database of detailed field-level costs. By utilizing this database, and by participating in regional/focused multi-client operating cost benchmarking studies, clients have been able to acquire the information they need to measure and benchmark individual field performance. They have been able to identify high-cost line items on lease operating expense statements by comparing their results to similar “fields” from other operators. As this project evolved, we developed a *database of leading North American operating practices by region*. To date, more than 100 E&P companies have participated in the project, and the database now includes detailed operating cost and practices information on over 2,500 fields.

Less familiar to our clients, the firm has recently undertaken work in other areas, primarily:

- International Expansion of the RFOC project
- Custom Consulting/Benchmarking studies
- Portfolio Analysis.

International Expansion of the RFOC Project

Leveraging off the field-level operating cost database, international clients have been able to reduce their operating costs and increase production volumes by benchmarking their operations against similar fields from

other companies. Unlike our North American work that usually takes the form of multi-client studies, the international work typically follows a *phased custom approach*.

In Phase One of a study, the subject company's fields are benchmarked against similar fields (usually North American and similar local fields) to identify the operating cost/practices “gaps” where opportunity areas exist. Once the gaps have been identified, Phase Two of the study begins with our engineers conducting field interviews to obtain greater understanding of the client's current field practices. Then leading North American practices are transferred to their operations. Finally, Phase Three of the study evaluates the competitiveness of their field and head office G&A costs. To date, international projects have been completed or are underway in South American, Asia, Europe and the Caribbean.

Merger and Acquisition & Asset Management

Leveraging off our competitive advantages, primarily our database of operating costs and senior contacts in the E&P industry, particularly at the executive and operating levels, Ziff Energy has been able to add value to other client activities, primarily in three ways.

Cross Border M&A – Specialists into Canada. For E&P and Midstream companies evaluating expansion into Canada, or Canadian companies evaluating expansion into the US, we can utilize our extensive databases to increase clients' knowledge of the target areas. It should be pointed out that in all of Ziff Energy's services, confidentiality of client data is maintained absolutely. The databases have been used for the benefit of the industry while upholding the trust of our clients, which is essential to our business.

Deal facilitation – Identifying assets for trade, purchase or sale. Through our unique ability to identify a company's strengths/weaknesses at the individual field or basin level, Ziff Energy can facilitate introductions to create non-competitive situations between parties to negotiate

transactions.

Value Maximization – Quantifying the Operating Cost Upside when companies are buying or selling assets. The operating costs of the assets for sale are compared against the database to identify future cost-reduction potential.

Custom Consulting/Benchmarking Studies

Clients have been leveraging off Ziff's expertise in the benchmarking process, the operating experience of our staff (most with 20+ years experience) and the "operating practices" database that has been developed over the

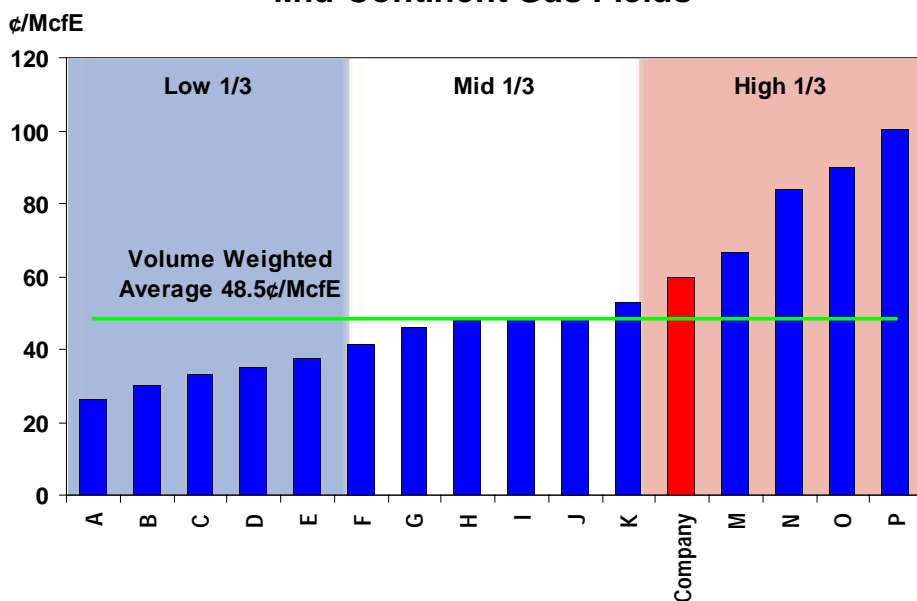
severance) analysis study to identify potential tax savings for the client (see separate related article), or our customized G&A analysis for international clients with a production sharing contract (PSC) to determine the optimum balance of nationals versus expatriate employees for their operations.

Portfolio Analysis Work

Sophisticated users of the benchmarking process have been able to use benchmarking data to assist with internal portfolio analysis of their properties. By doing this, they are able to establish their company's strengths/weaknesses

compared to their competitors, either at the company/region level or right down at the field level. For example, we recently completed an assignment for a large U.S. independent with assets in numerous basins. In one go, we benchmarked the majority of this company's assets against similar fields from other operators in the database, thereby allowing this particular company a snapshot on how competitive their operations are. As a result, this company is in a position to decide what assets to keep/sell and where to focus their resources to add the most value to their operations.

Operator Average Operating Costs Mid-Continent Gas Fields



years. For example, our staff have been involved with a variety of projects that include working with a company's operating staff, and assisting them in implementing best practices within their field operations as a follow-up to closing the "gaps" that were identified by the company's participation in a benchmarking study. Additionally, at the request of clients, we have designed custom benchmarking studies such as our tax (ad valorem and

In another assignment, a Major was more interested in comparing their performance at the company/region level rather than at the field level. By rolling-up field level data in the database we created an effective a regional/ company comparison.

If your company is interested in learning more about how benchmarking data or the benchmarking process can help you add value to your operations, please call Richard Tucker, Vice President, Marketing at (713) 627-8282.

Positioning Your Company for the E-business Transformation

The new electric economy will greatly impact the day to day workflow processes of the upstream energy industry. New business-to-business (B2B) products and services covering the areas of procurement and trading, acquisitions and divestiture (A&D), are inundating the energy sector at an unprecedented rate. In an effort to thoroughly explore the dynamics of these "e" sectors and to introduce eBusiness companies to the Canadian energy sector, Ziff Energy Group held its first Energy & eBusiness Conference & Trade Show in Calgary on November 15 and 16, 2000.

Satish Pai, President of IndigoPool.com said "Online collaboration will foster innovation....and further increase the value of information. The whole point of the technology is to allow people to work together, [it's] not just implementation for its own sake. We envision 'virtual teams' of engineers, explorationists, consultants and accountants working together to evaluate properties and plan investment."



Satish Pai, President of IndigoPool.com

"Integrating collaboration and administration workflow patterns is another way of adding value", said Rich Couillard, President of Oilsphere.com, a Calgary-based neutral e-marketplace. "The domestic oil industry spends about \$25 billion per year planning and purchasing materials for facilities. By focusing on the transaction chain, buyers and sellers can achieve significant savings by reducing cycle times," Couillard said.

Conference Objectives

eBusiness conferences are now quite common in the U.S., especially in Houston and other energy centers. However, the Canadian energy industry, although about a quarter to

a third the size of the U.S., had not held a major conference and related tradeshow.

Ziff Energy Group, the largest energy consulting firm in Canada, has for many years presented major gas industry conferences in Calgary and Houston that draw executives from over 40 cities in Canada and the U.S. Based on this experience, Ziff Energy Group decided that it was timely to present the *first comprehensive overview of the e-commerce revolution for the Canadian energy industry* --- including oil, gas, and electricity.

Our goal was to introduce new eBusiness strategies and eBusiness companies to the Canadian energy sector. According to comments from many of the 230 participants, we did much more than deliver information --- we also stimulated the advancement of eBusiness strategy, and paved the way for a number of our sponsors and trade show participants to establish their products and services with energy companies in Canada.

What We Learned

The promise of "e" is often mired in obtuse terminology or jargon. The best way to understand the "e" process and its potential benefits is to hear speakers from energy companies who have experienced e-transformation, and have learned the realities of genuine technologies. Consequently, they can translate first-hand the real meanings of business to business terminology, such as marketplaces, portals and application service providers (ASPs). Once the mystery is taken out of the nomenclature, the energy sector will have a clear path to understanding the real benefits of eBusiness.

Many energy executives are reluctant to act on new eBusiness opportunities because of the costs involved in the transformation process. We were fortunate to hear from many energy company speakers and investment bankers who addressed the bottom-line economics of e-transformation. Shell Canada's Dave Collyer told the audience "None of you should expect all eBusiness

projects to pay out immediately on a very short term. There needs to be a willingness to put money into projects that have a long term payout."

Steve Kahl, VP of Goldman Sachs, told the audience "The energy sector has always embraced new technology." "The one thing we know is this industry continues to adapt over time. E-commerce is just a simple extension of earlier innovation, like horizontal drilling and steam-assisted gravity drainage."



*Dave Collyer,
General Manager,
Marketing & Transportation
and e-Business of
Shell Canada Limited*

"Most petroleum companies don't have a choice - they need to belong to an e-marketplace or risk getting left behind" said Greg Vesey, Vice-President of eBusiness for Texaco, Inc. "It's about reinventing your business or going out of business." Vesey said. "E-procurement will initially save Texaco about \$50 million (US) a year through efficiencies."

Although administrative processes were the first to be streamlined by the Internet, the newest and perhaps greatest opportunity presented by eBusiness is **collaborative e-marketplaces**, which offer geological and

engineering consulting and interpretive services along with supply chain management tools at one site.

Jeff Sakaguchi, a partner in Andersen Consulting's global energy strategy practice in El Segundo, California, said that e-commerce has been a tough sell in the United States, too, although U.S. companies are about six months ahead of Canada in the e-commerce curve. "We had a pretty unreceptive audience," he said. "There wasn't a whole lot of interest." He said many oil and gas executives couldn't see how e-commerce would help them. "We're sort of getting back in a situation where the oil companies are letting their traditional mindsets take over," Sakaguchi said. "People are committed to doing something, it's just a matter of sorting out what 'something' is."

[The Sequel - May 23-25, 2001](#)

Drawing on these success, we are planning the second energy & eBusiness Conference in Canada for spring 2001. We believe a condensed timeframe of less than a year is more appropriate due to the advent of rapidly advancing technologies, and the continuous introduction of new products and services for the energy sector. Ziff Energy Group will continue to serve its clients and the Canadian energy sector by providing timely information and an extraordinary meeting place for energy executives determining corporate e-strategy. If you are interested in the eBusiness service or consulting, please contact Janet Lynch at (504) 243-2221 to learn about the opportunities.

Are You Looking to Develop Gas Storage in California?

The Ziff Energy Group is providing marketing assistance for a client who owns storage rights in a large depleted gas reservoir in California. The characteristics of this reservoir are *ideal for gas storage*. The field has a strong water drive (which may help to minimize the base gas requirements), high gas deliverability potential, with assumed full geological containment, and is in close proximity to existing gas transmission infrastructure. Our client plans to divest these gas assets in California for approximately US\$ 10 million. This may represent a potential attractive business development opportunity. A short Confidentiality Agreement is required prior to release of additional business/technical information. For additional information, please call Bill Gwozd at (403) 234-4299, or email bgwozd@ziffenergy.com.

3rd Permian RFOC Study Completed

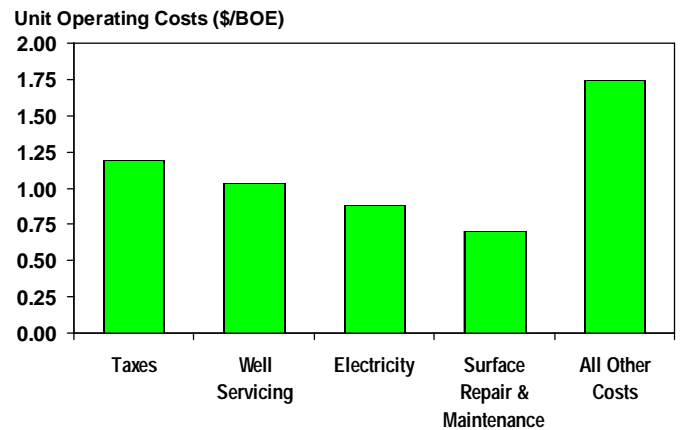
Ziff Energy applied its innovative and unique Reducing Field Operating Costs/Best Practices (RFOC) study process to the Permian Basin. In the 3rd edition, published in November 2000, 134 fields were analyzed within five oil asset groups and three gas groups, ensuring that fields were compared on a like-kind basis. Waterflood fields were directly compared based on the geologic formation produced, while tertiary (CO₂ flood) fields were analyzed within a separate group. Comparisons made within these asset groups ensure that each field is measured against fields with similar key characteristics.

Ziff Energy's benchmarking process is also unique in its in-depth analysis of Best Operating Practices. Practice areas analyzed in the 1st edition and 2nd editions of the Permian study included *field automation, personnel effectiveness and well servicing*. The focus of the 3rd edition was on *field electricity* and *root cause failure analysis* of surface and downhole problems. Practices are shared with clients in a variety of ways including a full-day *Operating Practices Workshop*. At the workshop, 40 field representatives from the study participants presented their innovative and leading practices.

For the latest RFOC study, a Client Advisory Group initially met in Midland, Texas to finalize the scope and design of the study and identify areas of focus. Participating companies received confidential, "blinded" asset level comparisons of their fields to peer group fields. The new study reached several conclusions:

- the average operating cost for primary oil production is \$6.00/BOE, with a range of \$3.00 to \$10.00 (including production and ad valorem taxes)
- the average operating cost for secondary (waterflood) production is less than primary oil. It ranges from \$2.50 to \$10.00 (including production and ad valorem taxes)
- the average operating cost for gas production is 55¢/McfE, with a range of 30¢ to \$1.00 (including taxes and external processing).

**Breakdown of Oil Field Operating Costs
Permian Basin**



Ziff Energy Group's Permian database includes **more than 300 fields** operated by **26 companies**, which represent about half of the basin's production. This database includes precise cost data on oil and gas fields with a wide range of completion depths, and incorporates oil fields under primary, secondary, and tertiary production.

Since many of these fields were also analyzed in the 2nd edition, a *trend comparison* over time of costs and production volumes was provided. *Between 1996 and 1999, production decreased in 88% of the fields analyzed, but the industry was able to offset much of this negative trend by lowering total operating costs in 78% of the fields.* Operators achieved unit operating cost reductions in 44% of the fields – a significant accomplishment. From 1996 to 1999, the unit operating cost for the largest production sector, waterfloods, decreased 1%; however the unit operating cost for primary production increased 15%.

"Leader" practices are identified via a *survey questionnaire* completed by each study participant's field operations staff. Ziff Energy analyzes the correlation of various practices in a functional area (such as compression) to low unit cost performance in that area. As part of the process, an *interview* with each participant's field personnel permits a review of specific practices that may be related to lower operating costs. These interviews expand and elaborate on the information gathered via the survey.

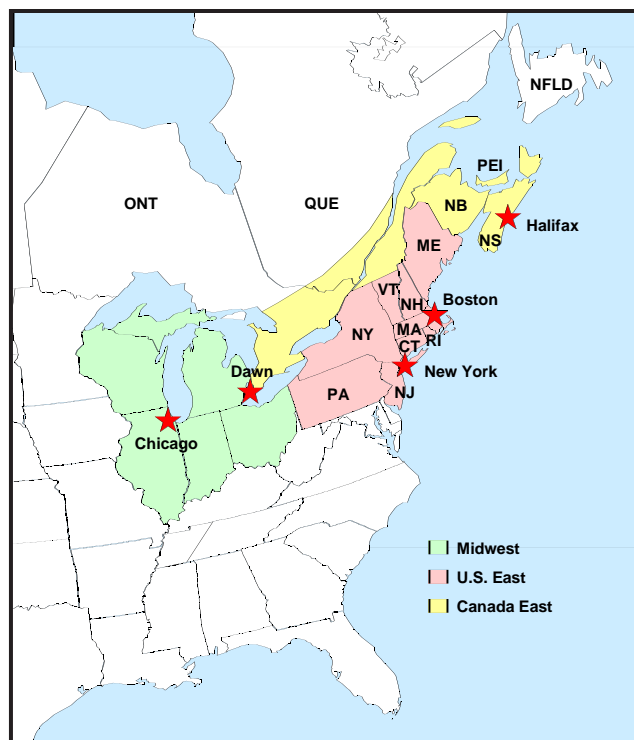
“Beyond the Midwest” - New Multi-Client Gas Study (Spring 2001)

Are you active in the Eastern markets as a gas producer, marketer, transporter, storage operator, LDC, regulator or large end user? If so, you may want to consider participating in the new Ziff Energy multi-client study. “Beyond the Midwest” (100 pages) follows in the footsteps of the recent in-depth multi-client Midwest Study (135 pages) and will contain 5 chapters: Executive Summary, Market/Demand Outlook - Growing, Supply Alternatives - New Choices, Pipelines - ‘Get Ready to Rumble’, and our Outlook for Basis Differentials to 2006.

Our focus is fundamentals such as demand assessment at higher gas prices, potential new markets in the Maritimes, gas storage markets, awakening of LNG, pipeline capacity utilization, impact of regulatory/political issues, and our forecast of natural gas basis differentials (Henry Hub). We expect to identify opportunities for our study subscribers and provide our unique and practical insight into this active region. Our project team is exceptionally strong with a good balance of former operating executives, experienced line managers, and analysts.

The map summarizes the geographical study area. For further information (proposed table of contents and detailed brochure on the current Beyond the Midwest study or the Midwest study), call Bill Gwozd at (403) 234-4299 or email bgwozd@ziffenergy.com, or call Ron Ford at (713) 985-5196 or email rford@ziffenergy.com.

Beyond the Midwest



Siemens Canada Poised to Grow in Western Canada

Siemens Canada, a leading supplier of electrical systems including equipment such as motors, drives and power distribution, recently retained Ziff Energy to gain additional insight to the Western Canadian oil and gas industry, with an emphasis on fundamentals. Siemens Canada is very well regarded for its expertise, and is able to utilize its specialty know-how to regularly exceed customer expectations. Our customized presentation will assist Siemens Canada to further enhance their customer focus and improve their servicing for the oil and gas industry.

Gord Clarke, Senior Associate and Bill Gwozd, Manager, Gas Services led a full-day seminar in Calgary. Future briefings and materials will focus on providing Siemens Canada staff with key information to enhance sales and client satisfaction. If you need access to industry trends and fundamentals to assist your company to grow, contact Bill Gwozd at (403) 234-4299 or bgwozd@ziffenergy.com, or call Gord Clarke at (403) 234-4298 or email gclarke@ziffenergy.com.

U.S. Operators, Are You Paying Too Much Tax?

For most onshore operators, taxes typically represent one of the largest components of field operating costs; in the Permian basin, they do indeed constitute the largest cost category. For Permian oil and gas fields taxes account for a whopping 27% of costs; however the split between ad valorem and severance taxes on the two products is quite different. For oil, severance taxes are 15% of total operating costs and ad valorem taxes are 12%; for gas, severance taxes are 19% and ad valorem taxes are 8% of total operating costs.

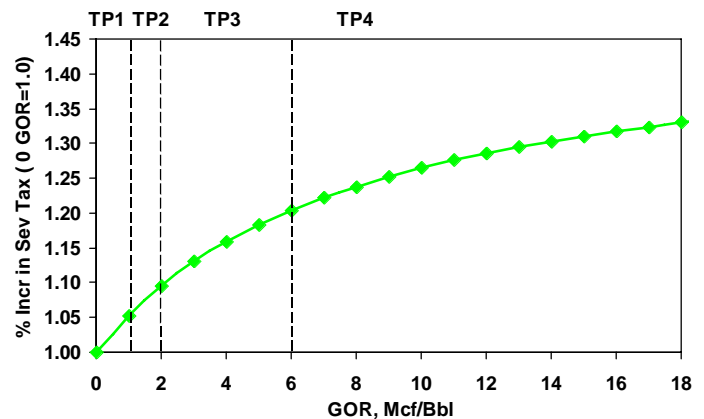
Many company personnel, especially field operations staff, consider taxes a “non-controllable” cost. However, careful tax management by the company’s tax professionals and asset management teams frequently leads to major cost savings and also reduces the likelihood of early field abandonment. **Significant tax savings** (up to seven figures annually!) have been realized by operators in past Ziff Energy benchmarking studies, which compare the tax bill for each field (on a blinded basis) to other similar properties, and identify anomalies. Past studies have identified over-assessment of ad valorem taxes, miscalculation of severance taxes (both by internal company tax departments and/or by external tax consultants) and failure to claim all reduced tax rates for special projects (e.g. EOR projects for oil, or re-activating wells).

The key when comparing taxes among fields is to group fields into comparable *Asset Groups*, which allows a more precise and relevant comparison of costs. Asset groups must be precise enough to highlight essential differences, yet large enough to validate the benchmark statistically. For example, in a recent *customized tax analysis* for a client in the Permian basin, fields were initially segregated for the two Permian basin states, Texas and New Mexico, since they tax oil and gas production at different tax rates. The next level of distinction was based on product type (oil versus gas) since states typically tax oil and gas production

at different rates (e.g. in Texas, gas is taxed at 7.5% of revenue while oil is taxed at 4.6%).

While the state and product level is usually sufficient to establish the gas asset group, further sub-division of the oil assets was essential for optimal results. Oil properties were separated into primary, secondary, and tertiary production. The final subdivision involved the gas/oil ratio (GOR) of the production in the Texas fields. This further addresses the differing tax rates for Texas oil and gas production in a single field’s revenue stream, and to divide the large group of Texas primary and secondary producers into smaller, more relevant groups. The effect of GOR on severance tax is shown below.

Effect of GOR on Unit Prod Tax, Texas
Asset Group Classification - Texas Primary Oil Fields



Ziff Energy Group also support the efforts of the industry (through Tipro) regarding the permanent elimination of severance tax in the State of Texas, and has presented our findings to the Standing Committee on Ways and Means Texas House of Representatives.

For information on Ziff Energy Group’s tax analysis service, please contact Mike Erpenbeck at (713) 627-8282, or email merpenbeck@ziffenergy.com.

Adrian Goodisman Named SPE Distinguished Lecturer for 2001-2002 Season

The Society of Petroleum Engineers (SPE) Distinguished Lecturer program is one of the most popular SPE administered programs. Its purpose is to provide sections with outstanding speakers who are experts in their fields, and to recognize the professional contributions of the persons selected as Distinguished Lecturers. Our Sr. VP, E&P Services, Adrian Goodisman, has been named an SPE Distinguished Lecturer for fall 2001 to spring 2002. He is the second Ziff executive to be so honored. Dr. Tom Woods, VP Gas Research, was a Distinguished Lecturer two years ago.

Adrian's lecture will be on "Ideas to help you reduce Field Operating Costs". His presentation will primarily share findings from a variety of Ziff Energy's Reducing Field Operating Costs/Best Practices (RFOC) studies. Ziff Energy's RFOC studies are the only large scale "field level" benchmarking analyses of operating costs and best operating practices in the industry. These studies have been conducted for over 100 E&P companies covering the

majority of North American basins, as well as international regions including South America, Asia, Europe and the Caribbean. Adrian has been actively involved with the SPE since 1987 having served on numerous committees including Chairman of the National Membership Committee, Chairman of the Board of Directors (Canadian Section), and a Director of the Gulf Coast (Houston) Section.

The SPE is an international technical/professional organization dedicated to advancing technology associated with the recovery of energy resources from wellbores. It is one of the largest technical/professional associations in the world with 50,000+ members residing on six continents in more than 100 countries. Through a vast array of SPE programs, from publications to international and regional conferences to section meetings, new technical information and technology is exchanged among society members and other industry professionals.

Conference News

The year 2000 was one of growth and expansion for ZEG's Conference Division. *Two new conferences* were introduced. The Conference Division expanded to accommodate this growth and ensure that these events maintain the high standards our attendees have come to expect.

In addition to our two established North American Gas Strategies conferences, in early June ZEG produced the first **Pacific Northwest Gas Strategies Conference** in Seattle to address the issues confronting the regional natural gas & power industry. For 2001, ZEG, in a cooperative effort with the Northwest Gas Association, will hold the 2nd annual PNW conference in early October.

In November, the inaugural **Energy & eBusiness Conference** took place in Calgary to help introduce the executives of Canadian energy companies to the latest developments in eBusiness. With the support of key sponsors, Andersen Consulting (now Accenture), IndigoPool.com, EDS, and Oilsphere.com, this program was a tremendous success. Plans for the next eBusiness conference in late May 2001 are well underway.

The North American Gas Strategies Conferences in Houston (spring) and Calgary (fall) hosted a record number

of senior energy executives, who came to hear top industry experts offer their perspectives and discuss their experiences. Keynote speakers included Walter van de Vijver, Shell E&P; Steve Bergstrom, Dynegey; Bill Haener, CMS Gas Transmission; and Kevin Meyers, Phillips Alaska.

For the most up-to-date perspectives on the energy industry in North America, plan to participate in one or more of our upcoming conferences in 2001.

April 2&3	Houston - North American Gas Strategies Conference
May 23-25	Calgary - Energy & eBusiness Conference (#2)
Early October	Portland - Pacific Northwest Conference (#2)
November 5&6	Calgary - North American Gas Strategies Conference

For details on these events and more, please visit our website at www.ziffenergyconferences.com or call (403) 234-4284/6555.

Senior Executives Join Ziff Energy Group



Luis V. Bacigalupo, B.Sc.
- Vice President, Latin America

Mr. Bacigalupo has over 30 years of experience in the international petroleum industry, including executive corporate management to practically all phases of petroleum engineering, production operations, strategy planning and business development. He has in-depth familiarity with the petroleum industry in Latin America. His previous experience includes terms as: President of Tierra Nueva Resources, an E&P company with niche activity in Latin America; President and CEO of Mercantile International Petroleum, with properties in Latin America and South East Asia; and Vice President Latin America for Gaffney, Cline & Associates.

Mr. Bacigalupo graduated from the University of Belgrade, with a B.Sc. degree in petroleum engineering. He is fluent in English, Spanish and Serbo-Croatian and proficient in Italian, Swedish, Portuguese and Russian languages.

Given Mr. Bacigalupo's extensive E&P experience in Latin America, he has joined the E&P Services team to help expand Ziff Energy's benchmarking and consulting services.



Vinod Jindal, M.Sc.
- Senior E&P Associate

Mr. Jindal has over 30 years experience in the E&P industry in a variety of U.S. and International locations. He is a results orientated executive with significant production, drilling and operations experience, as well as expertise in P&L management, building and growing organizations, and developing strategies to create a positive impact on a company's bottom-line. His previous International experience includes General Manager, Production, Enron Global Exploration and Production Inc., Drilling and Production Manager (UK) and Production Manager, International Division (Nigeria, Indonesia, Netherlands) for Phillips Petroleum Company. His Gulf of Mexico experience includes work for Aminoil and Halliburton Energy Services. Given Mr. Jindal's extensive offshore operations experience, he has joined the E&P Services team to add value to Ziff Energy's Gulf of Mexico and International benchmarking and consulting services.

Mr. Jindal has a B.Sc. in petroleum engineering from the Indian School of Mines, and also graduated from Louisiana State University with a M.Sc. degree in petroleum engineering. He is fluent in English and Hindi.



Bob Reid, B.Sc.
- Senior Gas Associate

Mr. Reid joined the Ziff Energy Group in 2000, bringing over three decades of hands-on experience and a broad knowledge of the dynamics of the North American natural gas industry. Mr. Reid came to Ziff Energy Group from TransCanada PipeLines, where he served as President, Energy Transmission, and most recently as Senior Vice President, Northern Development, responsible for implementing a plan to access frontier supplies of natural gas.

During his career at TransCanada, Mr. Reid was instrumental in negotiating the first deregulated price for natural gas in Canada, and also consummated the first Incentive Rate Settlement for a natural gas pipeline in North America. As President of Iroquois Gas Transmission, Mr. Reid successfully overcame significant public opposition and political controversy to connect western Canadian gas to growing markets in the U.S. Northeast.

Bob brings his extensive pipeline and marketing experience and expertise to Ziff's natural gas clients in Canada and the United States. Bob will be assisting the gas team regarding Ziff's multi-client study Beyond the Midwest. Bob can be reached at breid@ziffenergy.com.

Ziff Energy Group Bursaries - Promoting Energy Education

University of Calgary - Ms. **Elizabeth Logan** has been awarded Ziff Energy Group's **Jack A. Sandercock Bursary** for a second-year student enrolled in the engineering program at the University of Calgary. Elizabeth is studying chemical engineering. Mr. **Brent Robinson** has been awarded Ziff Energy Group's **G. Gordon Clarke Bursary** for students in the Faculty of Social Sciences with a major in Economics. Brent is currently in his fourth year of economics.

Mount Royal College - Ms. **Lori Ann Grecko** has been awarded our **Tom J. Clay Bursary** for a student enrolled in the School for Business & Entrepreneurial Studies.

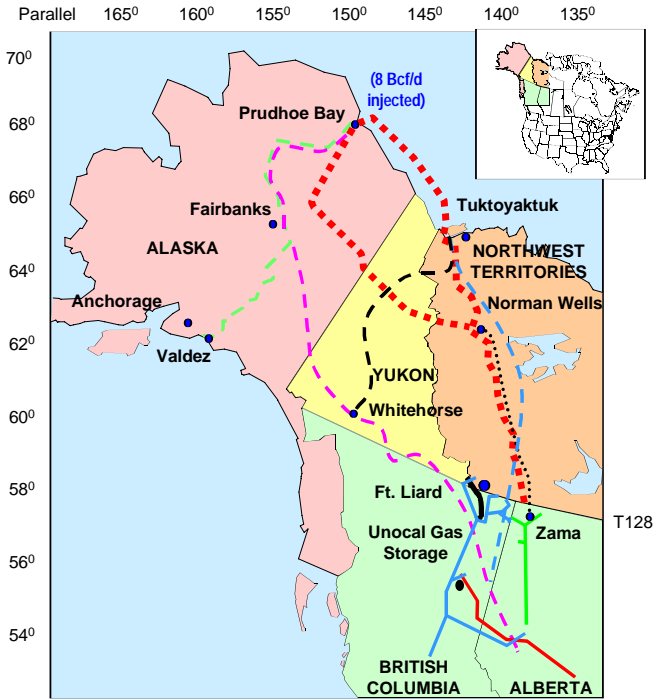
Both the University of Calgary and Mount Royal College offer a broad spectrum of educational opportunities, serving the petroleum industry and the Calgary community. Congratulations to all.

Mississippi State University - In the U.S. Ziff Energy is funding the Hank Kelly Scholarship Fund at Mississippi State University in honor of Hank Kelly, our first Vice President, Offshore. Ziff Energy Group also supports the Independent Petroleum Association of America (IPAA).

Northern Pipeline Options: Not if, When!

(continued from page 1)

Existing and Proposed Pipelines

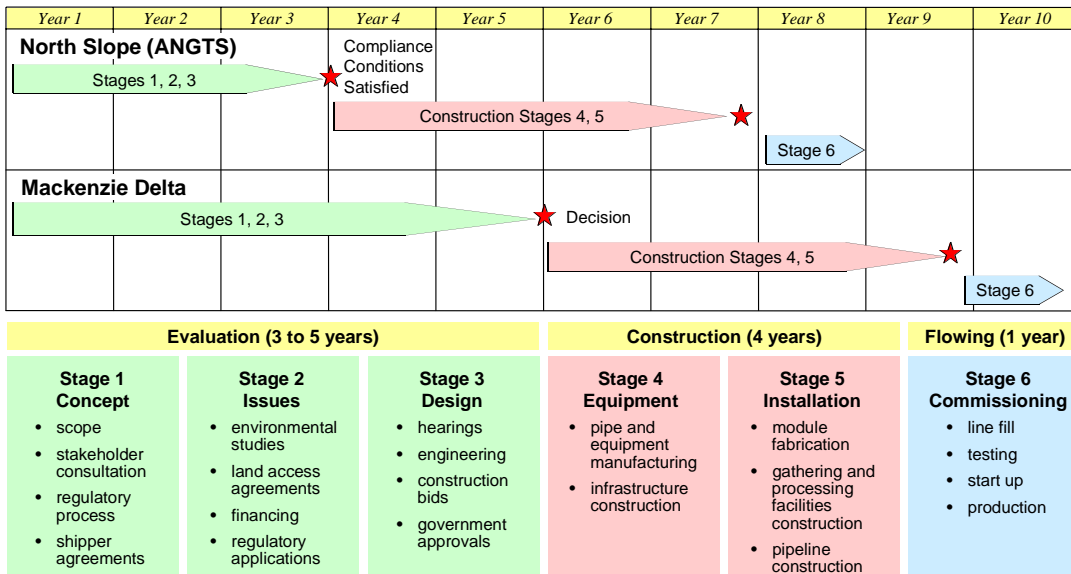


Northern Basins with Gas Discoveries



- | Existing Pipelines | | Proposed Pipelines | |
|--------------------|-------------------------|--------------------|--------------------------------------|
| | NOVA (TCPL) | | Alaska Resource Co. (over and under) |
| | Westcoast | | Foothills - Mackenzie |
| | Enbridge - Norman Wells | | Foothills - Dempster |
| | TransAlaska (Oil) | | ANGTS |
| | Alliance | | |
| | Shiha Transmission | | |

Potential Time Table for North Slope and Mackenzie Delta Projects



(source: various industry presentations and Ziff Energy)



Register Now!*

NORTH AMERICAN GAS STRATEGIES CONFERENCE
"Winter's Aftermath: A New Era for Northern & Frontier Gas"
Houston, Texas April 2 - 3, 2001

Hear 21 Renowned Executives Including:

John Somerhalder, President, El Paso • Tony Fountain, President, NA Gas & Power Business, BP
Kevin Meyers, President, Phillips Alaska • Premier Pat Duncan, Yukon Territory • Premier Stephen Kakfwi,
Northwest Territories • Pat Daniel, CEO, Enbridge • Forest Hoglund, Chairman & CEO, Arctic Resources
Michael Economides, Professor, University of Houston • Tammy Norman, VP Marketing & Origination, Dynegy

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