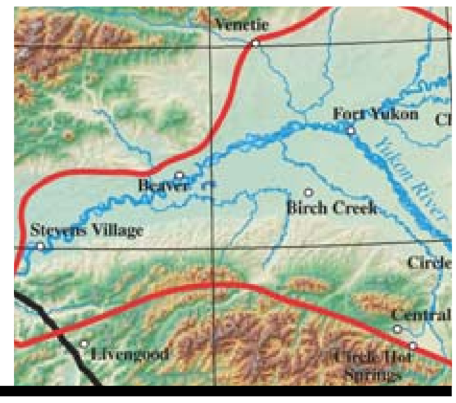
# Petroleum news


page 9 Resource estimates up for unexplored Yukon Flats basin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## Happy Holidays from our staff!


JUDY PATRICK

## State denies Trustees request on Bristol Bay exploration license

The state of Alaska has denied a reconsideration request from Trustees for Alaska regarding its best interest finding for Bristol Bay basin exploration license No. 1. Although disappointed in the state's decision, the environmental legal group says it will not take its concerns to court.


TOM IRWIN

Alaska Department of Natural Resources Commissioner Tom Irwin said in a letter dated Dec. 15 that he has ordered the best interest finding amended to include a mitigation measure against offshore oil and gas facilities, a recommendation in Trustees' request for reconsideration, but Irwin said he does not find the additional analysis requested by Trustees to be necessary.

Pat Galvin, petroleum land manager for DNR's Division of

see **TRUSTEES** page 15

## Chevron Canada, BP Canada spud Arctic gas exploration well

A joint venture by Chevron Canada Resources and BP Canada Energy has made a quick start to winter drilling in the Canadian Arctic, spudding the season's first well.

*The Olivier H-1 gas exploration well, on Exploration License 422 about 60 miles northwest of Inuvik, Northwest Territories, started drilling on Dec. 19.*

The Olivier H-1 gas exploration well, on Exploration License 422 about 60 miles northwest of Inuvik, Northwest Territories, started drilling on Dec. 19.

Dave Pommer, a spokesman for operator Chevron Canada, told Petroleum News that the well is expected to take 100 days to com-

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## BREAKING NEWS

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**7 Conoco sanctions Alpine satellites:** Fiord, Nanuq winter work to include ice roads, pad and road gravel and first development wells

**7 Orphan could be drilled in 2006:** Chevron Canada says seismic analysis, rig availability, hearings will impact decision on basin

COPPER RIVER, ALASKA

# Stranded no more

*Rutter to drill this winter near Glennallen in undeveloped Alaska basin*

**By KAY CASHMAN**

*Petroleum News Publisher & Managing Editor*

Midland, Texas-based Rutter and Wilbanks Corp. plans to drill a single gas exploration well near Glennallen, Alaska, this winter. It will be the first well in Alaska's undeveloped Copper River basin since Copper Valley Machine Works drilled the Alicia No. 1 well in 1983.


BILL RUTTER III

The independent has filed an application for an oil discharge prevention and contingency plan with

see **STRANDED** page 13

## Usibelli, Doyon, ASRC invest in Andex's Nenana project

Andex Resources said Dec. 20 that it has signed agreements with investors to explore for natural gas in Interior Alaska's Nenana basin.

Investors include Usibelli Energy, an affiliate of Usibelli Coal Mine of Healy, Alaska, and two Native regional corporations, Fairbanks-based Doyon Ltd. and Barrow-based Arctic Slope Regional Corp.

Under the agreement Andex, which has

see **INVEST** page 13

CANADA

# Bold budgets for 2005

*Smith Barney, Lehman surveys reinforce expectations of strong E&P year in Canada; overall total should top US$18 billion*

**By GARY PARK**

*Petroleum News Calgary Correspondent*

Sales of exploration rights have Canada's drilling contractors pointing to an aggressive start to 2005, with two leading firms predicting a sharp rise in E&P spending.

U.S. brokerage and investment banker Smith Barney is targeting US$18.74 billion, up 11 percent from its forecast US$16.88 billion in 2004, while Lehman Brothers is targeting an 8.6 percent increase to US$18.6 billion from US$17.1 billion this year.

The Smith Barney survey of 66 companies concluded that E&P spending for 2004 will be far ahead of a year-ago forecast of a 1 percent hike, largely because commodity prices exceeded industry assumptions by 50 percent.

The projections are bolstered by a late flurry of land buying that pushed the 2004 total in Alberta to C$1.11 billion, the second best year on record, and expectations that the industry will set a new benchmark by completing more than 23,000 wells.

Land sales are one of the strongest barometers of industry confidence.

### Drilling held back only by lack of trained rig hands

Don Herring, president of the Canadian Association of Oilwell Drilling Contractors, said his sector is operating full blast and expects to end 2004

see **BUDGETS** page 12

ALASKA

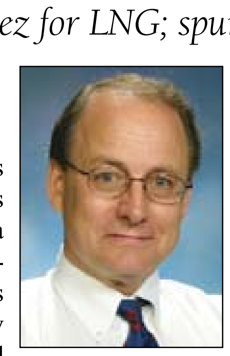
# Gas pipeline port authority teams with Sempra Energy

*Project would take gas to Valdez for LNG; spur line would serve Southcentral*

**By KRISTEN NELSON**

*Petroleum News Editor-in-Chief*

The Alaska Gasline Port Authority's "All-Alaska Gas Pipeline Project" has taken two steps forward, securing a potential West Coast market for liquefied natural gas and access to the permits Yukon Pacific developed for a right of way adjacent to the trans-Alaska oil pipeline and for a liquefaction facility site at Anderson Bay near Valdez.


JIM WHITAKER

The port authority said Dec. 20 that it has signed a development agreement with Sempra LNG, a unit of San Diego-based Sempra Energy, to assist in a pipeline and LNG marketing project.

The port authority also said it has been granted the option to purchase rights of way and associated permits from Yukon Pacific for building the gas pipeline parallel to the existing trans-Alaska oil pipeline.

"With access to key permits and rights of way from Yukon Pacific, and the assistance of Sempra LNG, this project is positioned to deliver natural gas to market faster than any other alternative," Fairbanks North Star Borough

see **GASLINE** page 13

● CANADA

# Indians get landmark ruling over royalties

*Canadian government ordered to return C$360 million in royalties to Alberta First Nation; impact could be widespread*

**By GARY PARK**

*Petroleum News Calgary Correspondent*

The Canadian government has been ordered to return C$360 million in oil and gas royalties to an Alberta Indian band in a ruling that could have widespread implications for First Nations across the country.

In a legal dispute that has stretched over 15 years, including the past four years before the Federal Court of Canada, Justice Max Teitelbaum said Dec, 17 that he wants the government to make the payment to a third party trustee without any delay.

He issued the order before final arguments were scheduled to wrap up and months before a final judgment is expected.

"I want to get the money out of the hands of the Crown (the government) and into the hands of the (Samson Cree) First Nation as soon as possible," Teitelbaum said in court.

The Samson Cree, a community of 5,000 about 65 miles southeast of Edmonton, occupy land where the Bonnie Glen gas field has accounted for up to 75 percent of all gas produced on Indian reservations across Canada.

All oil and gas flowing from Indian land and the collection of royalties is managed by the federal government.

### Samson Cree based argument on self-government

But the Samson Cree has argued that since it has a right to self-government it should also have been controlling the resources and revenues.

It has alleged that $1.385 billion in royalties has been misappropriated from the band and accused the government of not properly tracking gas produced, failing to charge adequate royalties, not investing the money wisely and taxing the revenues even though First Nations are exempt from paying taxes.

The government has argued that the Samson Cree ceded mineral rights in 1946 "forever in trust" and insisted it has acted in good faith in managing those resources and ensured a "reasonable return" to the band.

In a case that has compiled more than 50,000 pages of transcript, the Samson Cree said a treaty between the band and the government in 1876 did not give up control of natural resources.

Samson Cree attorney James O'Reilly said the final verdict in the case will determine the impact of treaties on present-day legislation, including how royalty revenues are handled and the future of oil and gas development on First Nations land across Canada.

He said on Dec. 17 that he believes Teitelbaum's order is the first time a First Nation has been able to wrestle control of its monies away from the Canadian government.

### Chrétien testified for Samson Cree

The case included testimony from former Prime Minister Jean Chrétien, the first time a former or current prime minister has appeared in a trial.

Chrétien said that during his time as Indian Affairs minister he pushed to change policies that left a "white superintendent" governing Indian land.

On Nov. 24 the Samson Cree demanded an apology from Prime Minister Paul Martin because of comments made in closing written arguments by federal lawyers.

Chief Victor Buffalo wrote to Martin that the briefs "contain disparaging and demeaning descriptions of the testimony of our respected elders and other witnesses who testified on behalf of our nation."

Reacting to Teitelbaum's order, Marilyn Buffalo, policy advisor to the Samson Cree, said: "History is being corrected. This is the Samson's money and we're finally getting it back." ●

## VANCOUVER ISLAND

# Natural gas pipeline to Vancouver Island scuttled

Five years of work on plans to build a natural gas pipeline to Vancouver Island from the United States have collapsed, with the proponents unable to secure competitive gas supplies.

BC Hydro and U.S.-based Williams Gas Pipelines, joint partners in the Georgia Strait Crossing, said Dec. 20 they had cancelled plans for the C$340 million pipeline.

The Canadian portion of the 16-inch pipeline was designed to carry 96 million cubic feet per day to gas-fired electricity generation plants on Vancouver Island by October 2005.

Gas was also destined for Williams' customers in northwestern Washington state.

The project had already experienced a rough ride in public hearings, with opponents citing a litany of concerns ranging from the impact on marine life, the dangers of a major earthquake under the southern Strait of Georgia and the project's economic justification.

An environmental review panel approved the project a year ago, but expressed concern about the pipeline's environmental effects, safety and reliability, suggesting any failure in the marine section could take months to fix.

In the end, BC Hydro decided that a "large capacity pipeline like GSX is no longer a competitive supply option because the large gas supply requirements it was designed to meet have not materialized," said Executive Vice President Dawn Farrell.

The alternatives to the Georgia Strait Crossing include plans by Terasen to build a thermal-electric plant near Nanaimo. Terasen had already argued GSX was unnecessary.

**—GARY PARK**

## ALASKA/CANADA

# Petro-Canada keeps lid on Alaska North Slope, Mackenzie Delta plans

Petro-Canada plans to invest C$445 million in 2005 developing "long-term" natural gas supply opportunities on Alaska's North Slope, the Mackenzie Delta/Corridor and a liquefied natural gas project in Quebec.

But a spokeswoman for the Calgary-based company told Petroleum News it was not ready to disclose any details of the spending.

The C$445 million is part of a C$760 million budget for North American gas and an overall C$3.2 billion capital and exploration program.

Other gas spending targets include C$485 million to replace reserves in Western Canada and C$230 million for new unconventional growth opportunities, such as coalbed methane and tight gas in Western Canada and the U.S. Rockies.

Chief Executive Officer Ron Brenneman told a conference call Dec. 16 that 2005 will be a "building year" as Petro-Canada puts its emphasis on production growth over the next three years.

During the transition, the company is projecting average output of 415,000-440,000 barrels of oil equivalent per day, down from its estimated 445,000-460,000 boe per day in 2004.

The decline stems mainly from operations in Syria, Northwest Europe, turnarounds at the Hibernia and Terra Nova oilfields offshore Newfoundland and North American gas.

But Brenneman is confident there will be a rebound in 2005 and 2006 as new projects come on stream.

Petro-Canada has been building its land position on Alaska's North Slope since the mid-1990s and participating in some drilling and exploration activities in the Mackenzie Delta, in anticipation of gas lines from both areas.

As of Oct. 15 the company had a North Slope oil and gas lease position of almost 700,000 acres. But the company has said it is waiting on two things to hap-

*see* **PETRO-CANADA** *page 4*

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## SUGAR LAND, TEXAS

### Shell signs multi-year contract for deepwater rig for Gulf of Mexico work

Shell Exploration and Production Co. has signed a two-year contract for Noble's Clyde Boudreaux deepwater semi-submersible drilling rig, Noble said Dec. 20. The contract is for work in the Gulf of Mexico and was valued at between $142 million and $153 million.

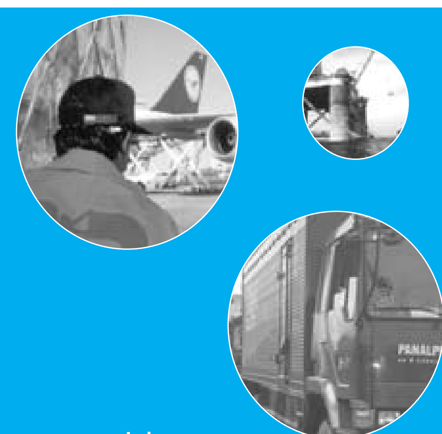
The Clyde Boudreaux, capable of drilling to 35,000 feet in waters depths up to 10,000 feet, is scheduled to begin working for Shell in the third quarter of 2006, Noble said.

The rig is currently at Signal Shipyard in Pascagoula, Miss., where Noble suspended a planned upgrade project in mid-2003 pending an operator commitment. However, substantially all major steel work on the hull was completed prior to suspension, Noble said, adding that work on what remains would begin immediately.

Separately, Noble said that Shell wants to extend the contract for the Noble Jim Thompson, another deepwater semi-submersible rig, for a period not less than 90 days after conclusion of its current 200-day contract. The current contract for the Jim Thompson extends through June 2005.

—RAY TYSON







● NORTH AMERICA

# U.S. offshore gas estimate increased 12% to 406 tcf

By RAY TYSON

*Petroleum News Houston Correspondent*

Offshore areas of the United States hold about 12 percent more undiscovered natural gas reserves than last estimated by the federal government in 2000, according to the U.S. Minerals Management Service.

Based on information gleaned from new exploration activities in the Gulf of Mexico and Canada's Scotian basin, MMS now estimates a mean 406 trillion cubic feet of gas of natural are "technically recoverable" from federal offshore areas of the U.S. East and West coasts, Alaska, and in the Gulf of Mexico.

"About 91 percent of the this increase in the natural gas estimate is due to new information obtained from recent exploration activities in the Gulf of Mexico," MMS said Dec. 21.

Oil reserves that could be recovered from offshore areas of the United States were estimated to be an average 76 billion barrels, roughly the same as forecasted in 2000. MMS officially updates its oil and gas reserve estimates every five years.

At year-end 2002, the U.S. offshore supplied more than 25 percent of the country's natural gas production and more than 30 percent of total domestic oil production.

MMS also believes that offshore areas of the United States contain the majority of future oil and gas resources and estimates that 60 percent of the oil and 59 percent of the gas yet to be discovered are located offshore.

However, the agency cautioned that its oil and gas reserve estimates represent "potential hydrocarbons of an area that can be produced using current technology, without any consideration to economic feasibility."

*Based on information gleaned from new exploration activities in the Gulf of Mexico and Canada's Scotian basin, MMS now estimates a mean 406 trillion cubic feet of gas of natural are "technically recoverable" from federal offshore areas of the U.S. East and West coasts, Alaska, and in the Gulf of Mexico*

On the gas side, combined estimates for all U.S. offshore areas range from a low of 326.2 tcf to a high of 520 tcf, with a mean of 406.1 tcf.

Estimates for the Gulf of Mexico alone ranged from 208.9 tcf to 267.6 tcf, with a mean of 232.5 tcf.

Offshore areas of Alaska could hold as little as 54.6 tcf and as much as 226.2 tcf, with a mean of 122.1 tcf.

Estimates for the Atlantic region ranged from 19.8 tcf to 50.6 tcf, with a mean of 33.3 tcf. Estimates for the Pacific region ranged from 7.4 tcf to 38.2 tcf, with a mean of 18.2 tcf.

On the oil side, combined estimates ranged from as low as 62.1 billion barrels to a high of 93 billion barrels, with a mean of 76 billion barrels.

Estimates for the Gulf of Mexico ranged from 31.5 billion barrels to 44 billion barrels, with a mean of 36.9 billion barrels.

Offshore areas of Alaska could contain from 16.6 billion barrels of reserves to as much as 35.9 billion barrels, with a mean of 25.1 billion barrels.

Estimates for the Atlantic region ranged from 1.9 billion barrels to 5.3 billion barrels, with a mean of 3.5 billion barrels. The Pacific region could contain 4.4 billion barrels to 21.8 billion barrels, with a mean of 10.5 billion barrels.●



*continued from page 3*

## PETRO-CANADA

pen before it decides what to do with that acreage, which lies in two areas — the gas-prone Brooks Range Foothills and the oil-prone area close to the Arctic coast in the northeastern quadrant of the National Petroleum Reserve-Alaska.

In the foothills Petro-Canada has said its exploration plans are on hold as it waits for a definite signal that a gas pipeline will be built from the North Slope, giving the company an outlet for any gas it discovers.

In NPR-A, Petro-Canada is waiting on the outcome of a lawsuit filed by environmentalists against the U.S. Bureau of Land Management that involves the planning area in which it won leases at a U.S. Bureau of Land Management lease sale in June.

Its LNG plans include a joint venture with TransCanada to build a C$660 million regasification terminal on the St. Lawrence River in Quebec.

The proposal calls for projected volumes of 500 million cubic feet per day, starting operation in 2009.

—GARY PARK & KAY CASHMAN

## IRVING, TEXAS

### Magnum Hunter hikes capital budget 11% to $245 million

Exploration and production independent Magnum Hunter said Dec. 20 that it increased its 2004 capital budget by $25 million to $245 million, an 11 percent increase.

Most of the increase will be used for drilling activities on the Gulf of Mexico's outer continental shelf, Magnum Hunter said, adding that it wanted to boost drilling largely to take advantage of the high commodity price environment and the company's large prospect inventory.

Of the $245 million budget, $150 million will be spent in the Gulf of Mexico, $37 million in southeast New Mexico, $28 million in West Texas, $14 million in the U.S. Midcontinent, and $16 million onshore Gulf Coast.

Magnum Hunter's 2004 capital budget is being financed entirely from the company's record high levels of cash flows from operating activities, the company said.

The company plans to drill about 170 new wells this year, including 25 wells in shallow waters of the U.S. Gulf and 145 onshore wells, with a large percentage located in New Mexico, West Texas and the Texas Panhandle.

—RAY TYSON

## HOUSTON

### Offshore rig economics surged 11.1 percent in November

GlobalSantaFe's worldwide Score, or worldwide summary of current offshore rig economics, for November rocketed 11.1 percent from the previous month, with the Gulf of Mexico leading all major producing regions with a huge 16.3 percent increase for the month.

The Score compares the profitability of current mobile offshore drilling rig day rates to the profitability of day rates at the 1980-81 peak of the offshore drilling cycle, when the index averaged 100 points.

In November, the worldwide Score averaged 52.9 vs. 47.7 in October, an 11.1 percent increase, according to the index compiled by contract driller GlobalSantaFe.

"The Score reflects improving market conditions," the company concluded in its monthly report.

The Gulf of Mexico registered 53.6 in November compared to 46.1 for the previous month, a 16.3 percent increase. For the same periods, the North Sea registered 53 compared to 48, a 10.2 percent increase, while West Africa scored 53.4 vs. 50.1, a 6.7 percent increase. Southeast Asia scored 54 compared to 52.7, a 2.4 percent increase.

The use of deepwater semi-submersible drilling rigs weighed in with a hefty 48.2 points in November, a 15.4 percent increase over October's 41.8 points on the Score. Jack-up rigs registered a 58 in November, a 5.6 percent increase over October's 55 points.

—RAY TYSON

● NEW YORK

# ChevronTexaco projects to add 850,000 bpd by 2009

*'Big 5' include Tahiti in Gulf, Nigeria's deepwater Agbami field, four deepwater Angola fields, Caspian Sea fields and Greater Gorgon in Australia*

**By RAY TYSON**

*Petroleum News Houston Correspondent*

ChevronTexaco has unveiled an ambitious plan to add roughly 850,000 barrels of oil equivalent production per day over the next five years, an effort the major says will be anchored by "Big 5" development projects in Angola, Nigeria, Kazakhstan, Australia and the U.S. Gulf of Mexico.

On the Big 5 list is Tahiti, which ranks among the largest discoveries ever in deepwater Gulf of Mexico with a current but likely under estimated 400 to 500 million barrels of reserves. First production is expected in 2008, ChevronTexaco said Dec. 14 at the company's annual analyst meeting in New York.

"We believe this has a very large resource base," George Kirkland, a ChevronTexaco vice president, said, adding that the company now believes Tahiti development wells would each be capable of producing far more than the tested 15,000 barrels a day.

***Located in about 4,000 feet of water, Tahiti will cost about $2.5 billion to develop and will include a truss spar production facility capable of processing 125,000 barrels of oil per day, said ChevronTexaco, which operates Tahiti with a 58 percent interest.***

Located in about 4,000 feet of water, Tahiti will cost about $2.5 billion to develop and will include a truss spar production facility capable of processing 125,000 barrels of oil per day, said

see CHEVRONTEXACO page 6

● HOUSTON

# $3.4 billion merger brings balance to Noble's portfolio

*Patina Oil & Gas active in U.S. onshore, with more than half of production from Colorado, with rest in Oklahoma, Texas and New Mexico*

**By RAY TYSON**

*Petroleum News Houston Correspondent*

Exploration and production independents Noble Energy and Patina Oil & Gas, which had been quietly talking merger since July, finally tied the knot on a $3.4 billion agreement touted by the management of both companies as a corporate marriage made in heaven.

There's little doubt that fast-growing Patina, which increased 16 fold in size over the past eight years, was grooming itself to be a worthy bride. The company said it had a dozen "serious discussions" with prospective buyers prior to taking Noble's offer.

As the company began to approach $5 billion in enterprise value, based entirely on its strong U.S. onshore position, Patina began contemplating, "as any good independent would," expanding into the offshore and international arenas, Thomas Edelman, Patina's chief executive officer, said in a Dec. 16 conference call with industry analysts.

"And that is a daunting prospect to do from scratch," he added. "By doing this transaction, we not only receive an attractive price and potential for liquidity for our shareholders, but we've

see NOBLE page 6

*continued from page 5*

## NOBLE

aligned ourselves with someone with unusually strong … international and offshore portfolios."

Houston-based Noble has immersed itself in international projects in Ecuador, China, West Africa, Israel and the North Sea. The company also has become increasingly active in the deepwater Gulf of Mexico.

On the other hand, Noble was looking to balance its investment portfolio by strengthening the company's U.S. onshore position, especially in the gas-rich Rocky Mountains and Mid-continent.

"This is a significant repositioning of the company," said Charles Davidson, Noble's chief executive officer. "For one, it really fills a niche that we have been looking to fill for some time. It introduces new cores in some very important basins, especially gas basins here in the U.S."

### Acquisition would boost production and reserves

The acquisition, pending shareholder and government approvals, would boost Noble's production and reserves by more than 50 percent. It also would give Noble a more weighted U.S. portfolio (55 percent versus 45 percent) compared to Noble's current 70 percent international and 30 percent domestic.

"Another thing that was really attractive to us and very exiting was the multi-year project inventory — seven or eight years of projects identified now that really gives this tremendous running room," Davidson said.

"Also, with the high return Patina projects that are predominantly exploitation and development projects, it reduces our risk and reduces our reliance so much for growth here in the U.S. on exploration."

Patina currently produces about 55,700 barrels of oil equivalent per day, with 2005 production expected to increase 12 percent over the 2004 average. Upon completion of the acquisition, Noble's daily production would jump about 53 percent to 161,700 barrels of equivalent. Roughly 60 percent of the combined company's daily production would be natural gas.

### More than half of Patina's production from Wattenberg

Roughly 54 percent of Patina's 253 million barrels of oil equivalent reserves at year-end 2003 were located in Colorado's Wattenberg field in the Denver-Julesburg basin, with the rest located in various fields in Oklahoma, the Texas Panhandle and New Mexico.

Patina currently estimates that its proved reserves will grow to about 263 million barrels of equivalent by the end of this year. Patina also has an additional 214 million barrels of probable and possible reserves.

Under terms of the transaction, Patina shareholders would receive $1.8 billion in Noble stock and $1.1 billion in cash. Additionally, Noble would assume about $500 million in debt, $300 million of which is current Patina debt, plus $200 million of debt incurred due to the termination of existing price hedges on Patina production prior to closing.

Based on the closing prices of Noble and Patina shares on Dec. 15, the acquisition price of $37.89 per share means Noble would be paying a nearly 19 percent premium for Patina. Upon closing, expected next March or April, Patina would become a subsidiary of Noble.

Davidson would remain as Noble's chairman, president and chief executive officer. Edelman would join Noble's board of directors, as well as one other director from Patina's board of directors.

It is also expected that several of Patina's existing officers would join Noble's leadership team. Patina's current headquarters in Denver would be retained as a regional office for Noble. ●



*continued from page 5*

## CHEVRONTEXACO

ChevronTexaco, which operates Tahiti with a 58 percent interest.

Tahiti will be developed from two subsea drill centers located near two appraisal wells, the company said. Production is expected to peak in 2009.

### Largest project Agbami in Nigeria

However, the largest of the Big 5 is Nigeria's deepwater Agbami field, said to contain 800 million barrels of recoverable oil. ChevronTexaco is operator with a 68 percent stake.

"This is a huge project for us and it will move the production needle," Kirkland said. "It's a huge geologic structure."

Agbami, located 70 miles offshore in 4,800 feet of water, is scheduled to come on line in late 2007 and reach peak production of 250,000 barrels per day in 2008. The price tag: $4.5 billion.

*ChevronTexaco's third major deepwater project involves four fields in Angola. First production from Benguela and Belize is scheduled for the fourth quarter of 2005 and the first quarter of 2006. Lobito and Tomboco are expected to come on line in the third quarter of 2006.*

ChevronTexaco's third major deepwater project involves four fields in Angola. First production from Benguela and Belize is scheduled for the fourth quarter of 2005 and the first quarter of 2006. Lobito and Tomboco are expected to come on line in the third quarter of 2006.

Together, the four Angola fields, situated in more than 1,250 feet of water, are expected to average about 200,000 barrels per day at peak in 2009. ChevronTexaco holds a 31 percent interest in the project. Total development cost should reach $2.3 billion, the company said.

### Two Caspian fields could see production boosted

In Kazakhstan's portion of the oil-rich Caspian Sea, ChevronTexaco and its partners are looking to boost production from two fields, including the huge Tengiz accumulation, by injecting sour gas into the reservoirs.

The two-stage project, expected to cost $4 billion, is expected to increase field output from a current 280,000 barrels per day to 500,000 barrels per day by the second half of 2006. ChevronTexaco holds a 50 percent stake in the project.

"In the sour gas injection facility we use new technology to enable us to inject ultra high pressure sour gas into the reservoir," Kirkland said. "We believe this will be the largest single train sour (gas) oil production unit in the world."

The last of the Big 5 is the so-called Greater Gorgon Project in Australia, a $10 billion liquefied natural gas development that is expected to come on line in 2009-2010 producing about 10 million tons of LNG a year.

Upstream gas initially will be supplied from the two largest of 12 gas fields in the area, Gorgon and Jansz. The 12 fields contain an estimated 40 trillion cubic feet of reserves. ChevronTexaco's interest in Gorgon and Jansz alone ranges from 50 to 57 percent.

### Projects will contribute some 350,000 bpd

The Big 5 projects will contribute more than 350,000 barrels of oil equivalent per day over the next five years, with the remaining 500,000 barrels per day of anticipated future ChevronTexaco production coming from an array of other developments around the globe, including the Hamaca project in Venezuela and LNG and oil projects in Angola.

"These projects and their anticipated additions to our production and reserves over the coming years are critical … to our success," Kirkland said.

ChevronTexaco Vice Chairman Peter Robertson said the major intends to increase production 3 percent a year over the next five years, an effort that would raise the company's daily production rate to around 3 million barrels of oil equivalent per day from a year-end 2004 average of about 2.5 million bpd.

However, he said to maintain the company's annual 3 percent growth target it must minimize natural production declines in core areas where it already operates.

"We have an intensive focus under way in both our North American and our overseas operations to improve the performance of our base business," Robertson said, adding that ChevronTexaco expects to decrease its annual production decline rate by about 1.5 percent in 2006 and 2007.

### Capex up 18 percent

Meanwhile, ChevronTexaco announced a $10 billion capital and exploratory spending program for 2005, an 18 percent increase from 2004.

About 74 percent of total capital spending, or $7.4 billion, is targeted for upstream investment in exploration, production and global gas-related projects, including $2.5 billion in the United States.

About $1.9 billion, or 19 percent of total spending, has been aside for ChevronTexaco's downstream, or refining and marketing, operations while about $700 million will be spent on its chemicals, technology and power divisions.

"Our capital program continues to target our strategies to focus on high-return upstream growth projects, to commercialize our company's large natural gas resource base and to enhance the financial returns in our downstream business," said Dave O'Reilly, ChevronTexaco's chairman and chief executive officer. ●

exploration&production




## NORTH AMERICA

### Canada picks up 24 rigs, U.S. loses 16 rigs in weeky count

The number of rotary drilling rigs operating in North America during the week ending Dec. 17 stood at 1,758, up by a net eight rigs compared to the previous week and up by a net 151 rigs vs. the same period last year, according to rig monitor Baker Hughes.

Canada's rig count, compared to the previous week, increased by 24 to 524 rigs, and also increased 29 compared to the same period a year earlier.

The number of rigs operating in the United States during the recent week stood at 1,234, a decrease of 16 rigs from the prior week but an increase of 122 rigs vs. the same period last year. Compared to the previous week, land rigs alone decreased by 16 to 1,106, while inland water rigs increased by one to 21 and offshore rigs decreased by one to 107. Of the total number of rigs operating in the United States during the recent week, 1,050 were drilling for natural gas and 182 for oil, while two were being used for miscellaneous purposes. Of the total, 793 were vertical wells, 315 directional wells, and 126 horizontal wells.

Among the leading U.S. producing states, Louisiana's rig count during the recent week fell by seven to 166, while Oklahoma's decreased by five to 142. Wyoming lost three rigs to total 74. California lost two rigs to total 25. And Texas lost one rig to total 532. New Mexico gained two rigs to total 75, while Alaska picked up one rig to total 11.

—RAY TYSON

## GULF OF MEXICO

### Cal Dive takes 20% stake in Independence Hub gas project

Marine construction company Cal Dive International has taken a 20 percent interest in the $385 million Independence Hub, which will serve as a central production platform for seven anchor fields in the remote eastern Gulf of Mexico, according to Enterprise Products Partners.

Enterprise, a leading provider of midstream energy services, was selected to design, construct and install the hub on behalf of field owners Anadarko Petroleum, Kerr-McGee, Devon Energy, Dominion Exploration & Production and Spinnaker Exploration.

The platform actually will be operated by Anadarko, the largest stakeholder with major interests in four of the seven anchor fields: Atlas, Atlas NW, Jubilee and Spiderman. The other anchor fields are Merganser, Vortex and San Jacinto.

The Atwater Valley Producers Group concluded early on that none of the anchor fields to be included in the hub project was large enough to justify its own stand-alone production facility.

Cal Dive took a similar equity position in the Anadarko-operated Marco Polo development in the Central Gulf, where the production platform is jointly owned by Cal Dive and GulfTerra Energy Partners.


*see* **CAL DIVE** *page 9*


● WESTERN NORTH SLOPE

# ConocoPhillips, Anadarko sanction first Alpine satellites

*Fiord and Nanuq North Slope winter work will include ice roads, pad and road gravel, and first development wells; big ice road season planned*

**By KRISTEN NELSON**

*Petroleum News Editor-in-Chief*

ConocoPhillips and Anadarko Petroleum Corp. have sanctioned the first two Alpine satellites, Fiord and Nanuq, and will lay pad and road gravel this winter and begin development drilling.

The companies said Dec. 20 that they approved development of the two Alpine satellite oil fields following recent favorable record of decision rulings from the Bureau of Land Management and the Corps of Engineers on the Alpine satellites environmental impact statement.

John Whitehead, ConocoPhillips Alaska's vice president, western North Slope, told Petroleum News the company has "a big ice road season planned," with "a little over 80 miles of ice road" for both exploration and satellite work. Work this winter includes "laying all the gravel for the road to Nanuq and the gravel pads at both Nanuq and Fiord," Whitehead said. Pipeline work will also be started this winter. "We won't be putting any pipelines in," he said, "but we'll be putting all the pilings and VSMs (vertical support members) to Fiord" as well as pilings on the Fiord and Nanuq pads and some on the Alpine pad.

The VSMs for Nanuq will be put in during the 2005-06 winter season, which is when pipelines will be welded and put on the VSMs, he said.

#### Two satellite drill sites

The project includes two satellite drill sites, CD-3 on the Fiord oil field and CD-4 on the Nanuq oil field, both within an eight-mile radius from the ConocoPhillips Alaska-operated Alpine oil field on the border of the National Petroleum Reserve-Alaska.


*see* **SATELLITES** *page 8*


● NEWFOUNDLAND

# Keeping options open in offshore Newfoundland

*Co-venturers file plans pointing to possible exploration well in 2006*

**By GARY PARK**

*Petroleum News Calgary Correspondent*

There is a "long way to go," a Chevron Canada Resources spokesman cautioned, but the last year has seen considerable advances towards exploration of what could be Canada's largest offshore oil project.

Before a decision is made to start drilling the Orphan basin, 210 to 300 miles northeast of St. John's, Newfoundland, the Chevron Canada-led partnership has a full plate of matters to resolve, spokesman Dave Pommer told Petroleum News.

He said a verdict on when and where to drill hinges on analysis of seismic data from this past summer, decisions on gathering further seismic in 2005, rig availability and the completion of environmental hearings in 2005.

But Chevron Canada, the 50 percent operator, and its partners, Imperial Oil and ExxonMobil Canada, each holding 25 percent, made filings in November with the Canada-Newfoundland Offshore Petroleum Board outlining a possible program to open up a largely untouched basin.

They indicated the first exploratory well could be drilled in 2006, followed by 11 exploratory or delineation holes over seven years.

#### Filings not a final commitment to drill

Pommer said the filings were necessary for the co-


*see* **NEWFOUNDLAND** *page 8*

*continued from page 7*

## NEWFOUNDLAND

venturers to "hold open our options," but were not a final commitment to drill.

However, the three companies signaled a strong interest in Orphan a year ago when they bid a record C$673 million to obtain eight exploration licenses covering 5.25 million acres, or about 20 percent of the entire basin.

Although unwilling to comment on speculation that Orphan may contain 6 billion to 8 billion barrels, Pommer did concede the exploration program confirms Chevron Canada's "long-term commitment" to the Newfoundland offshore, where the company drilled the Hibernia discovery well in 1979 to launch development of the Jeanne d'Arc Basin.

He also said Chevron Canada firmly believes the basin "represents a significant opportunity" in the context of the worldwide operations of parent company ChevronTexaco.

At 8 billion barrels, Orphan would be three times the size of Jeanne d'Arc, where Hibernia and Terra Nova are producing and White Rose is expected to start operations within about a year.

### Hebron-Ben Nevis could also move into development

Also on the horizon is the Hebron-Ben Nevis field, which has a possible 600 million barrels of recoverable oil and could move into the development stream early in 2005.

Ron Brenneman, chief executive officer of Petro-Canada, a 24 percent partner in Hebron-Ben Nevis, said Dec. 16 there has been progress on a joint operating agreement and production system — two of the key issues standing in the way of a go-ahead.

One of the most upbeat assessments of Orphan's potential has been made by Geophysical Services Inc., a Calgary-based seismic surveying company that has independently acquired extensive 2-D and 3-D seismic.

The company said its work points to oil bearing sand that is three to four times the size of Jeanne d'Arc.

In mid-2003, Jerry Smee, a geophysicist and president of G&G Exploration, told a convention that the data gathered by Geophysical Services even up to that stage suggested Orphan could become a "significant" petroleum producing region, despite the harsh climate and deep water.

He also said improvements in acquisition techniques had greatly enhanced the quality of modern seismic data recorded in the basin.

Orphan's water depths range from 3,300 feet to 6,600 feet, about 10 to 25 times greater than Jeanne d'Arc, which is only 190 miles from St. John's.

Icebergs in the region could be four to five times larger than any in the Jeanne d'Arc, but they do not pose insurmountable obstacles, said Don Walker, president of Oceanic Consulting of St. John's.

He said the deeper waters are actually an advantage, because icebergs are less likely to run aground and they provide rigs with more room to move on their moorings. ●

*continued from page 7*

## SATELLITES

The satellite oil fields will be developed exclusively with horizontal well technology and employ enhanced oil recovery, similar to the Alpine field, ConocoPhillips said.

Oil from Fiord and Nanuq will be processed through existing Alpine facilities. Production at Alpine, which came on line in November 2000, was originally estimated at 80,000 barrels per day, the company said, but the field is currently producing an average of 115,000 bpd.

ConocoPhillips said plans call for drilling some 40 wells at Fiord and Nanuq, with first production scheduled for late 2006 and peak production of approximately 35,000 bpd expected in 2008. Combined production from Alpine, Fiord and Nanuq is expected to peak at 135,000 bpd in late 2007, the company said.

### Drilling to begin this winter

Whitehead said other work this winter will include fabricating drill site buildings.

"Plans are to fabricate modules in Alaska," he said. Modules will be trucked to the North Slope and go out to the satellites on the 2005-06 ice road. In early to middle 2006 the drill site buildings at Nanuq and Fiord will be installed and hooked up.

Development drilling will also start at the Fiord and Nanuq pads this winter, he said.

Alpine, Badami and Northstar are roadless production facilities, and Fiord "will be the first roadless drill site" on the North Slope, Whitehead said. Access will be by ice road and plane. The rig to Fiord will go out each year on an ice road, and be taken off the pad at the end of the winter season. ConocoPhillips will use the rig that's working at Alpine, Whitehead said. In 2005 that rig will drill more wells at Alpine, a couple of wells at Fiord over the winter, and later in the year it will drill at Nanuq. Nanuq will be connected to the main Alpine pad by a gravel road.

Between ice road construction, gravel work and VSM work for the new satellites and other work at Alpine, it will be a busy winter season, Whitehead said. Satellite-related jobs are expected to peak at 500, including onsite construction work, engineering work and fabrication jobs at facilities in Alaska, he said.

Ice road work began with some pre-packing between Kuparuk and the Colville River, Whitehead said, and work is "ramping up now on all of the ice roads."

ConocoPhillips Alaska spokeswoman Dawn Patience told Petroleum News that some satellite work was awarded recently and some of the work has started, including engineering for facilities and pipelines by VECO; civil engineering by PND Inc. Engineering Consultants; and VSM work at The Weld Shop in Fairbanks. Patience said contracts have not yet been awarded for fabrication work.

### Fiord drilling began in 1992

ConocoPhillips Alaska predecessor ARCO Alaska and partner Anadarko said in July 1999 that Fiord was estimated to contain more than 50 million barrels of proven and potential reserves. The companies said the Fiord No. 5 exploration well, drilled in the winter of 1998-99, encountered a 60-foot vertical section of oil-bearing sand in a Jurassic reservoir and a 15-foot vertical section of oil-bearing sand in the Kuparuk formation.

The Jurassic reservoir tested 1,400 bpd of 29 degree API gravity oil and 0.65 million standard cubic feet a day of gas after fracture stimulation. A subsequent combined flow test of the Jurassic and unstimulated Kuparuk reservoir yielded 2,500 bpd of 30 degree API gravity oil and 1.2 million standard cubic feet of gas per day.

ARCO began drilling at Fiord in 1992 and in December of that year announced a discovery at the Fiord No. 1 well. ARCO said the Fiord No. 1 was productive from two intervals.

ConocoPhillips Alaska predecessor Phillips Alaska and partner Anadarko announced the 40 million barrel Nanuq discovery in July 2001. The field was discovered in April 2000 with the Nanuq No. 2 exploration well and delineated from the Alpine CD-1 drill site in 2001.

The Alpine, Nanuq and Fiord oil fields are owned 78 percent by ConocoPhillips and 22 percent by Anadarko.

ConocoPhillips said the companies will continue to pursue state, local and federal permits for the three remaining Alpine satellite developments, which are in NPR-A. "A final decision to move forward on these three satellite oil fields will not be sanctioned until after the outcomes of remaining permits are known." ●

## ALBERTA/BRITISH COLUMBIA

### Natural gas discoveries send Alberta land sales soaring

Shell Canada's early-December report of a big-league natural gas find in Alberta's Foothills region helped trigger the province's largest land auction of 2004 and pushed the annual sales over C$1 billion for the sixth time.

Raking in C$109 million from the final sale, the government tallied C$1.11 billion for 2004, just C$40 million short of the 1997 record.

Shell's claims of a discovery in the range of 500 billion to 800 billion cubic feet, using advances in 3-D seismic technology, gave the biggest lift in years to those who have argued that the Western Canada Sedimentary basin is far from a spent force.

The optimism spilled over to the Dec. 13 land sale when 268,075 hectares (one hectare equals 2.471 acres) changed hands at an average C$406.37 per hectare, or C$50 above the average for the entire year.

The Pembina Nisku area west of Edmonton set the pace in the wrap-up sale, with Appaloosa Resources paying C$5.06 million, or an almost unprecedented C$21,889 per hectare, for 256 hectares about 6 miles northeast of Drayton Valley.

A smaller offering went for C$1.3 million or C$20,886 per hectare.

Finishing on such a high note gave added impetus to what was already an upbeat year, with sales generating an average C$355 per hectare for 3.12 million hectares, compared with 2003's per-hectare average of C$288 for 3.14 million hectares.

Gregg Scott, president of Scott Land & Lease, which bids on behalf of unidentified buyers, said the Shell Canada discovery so close to Calgary gives a shot of confidence to the industry.

British Columbia posted a more normal year, collecting C$232 million for 540,427 hectares at an average C$430 per hectare.

That was a sharp drop from last year's total of C$647 million from 737,000 hectares at an average C$882.

But 2003's numbers included an anomaly when EnCana paid C$418 million for about 200,000 hectares at its Cutbank Ridge gas play in northeastern British Columbia.

—GARY PARK

*continued from page 7*

### CAL DIVE

The 105 foot deep draft, semi-submersible Independence Hub platform will be capable of processing 850 million cubic feet of gas per day. The facility also will have excess payload capacity to tie back up to 10 additional fields.

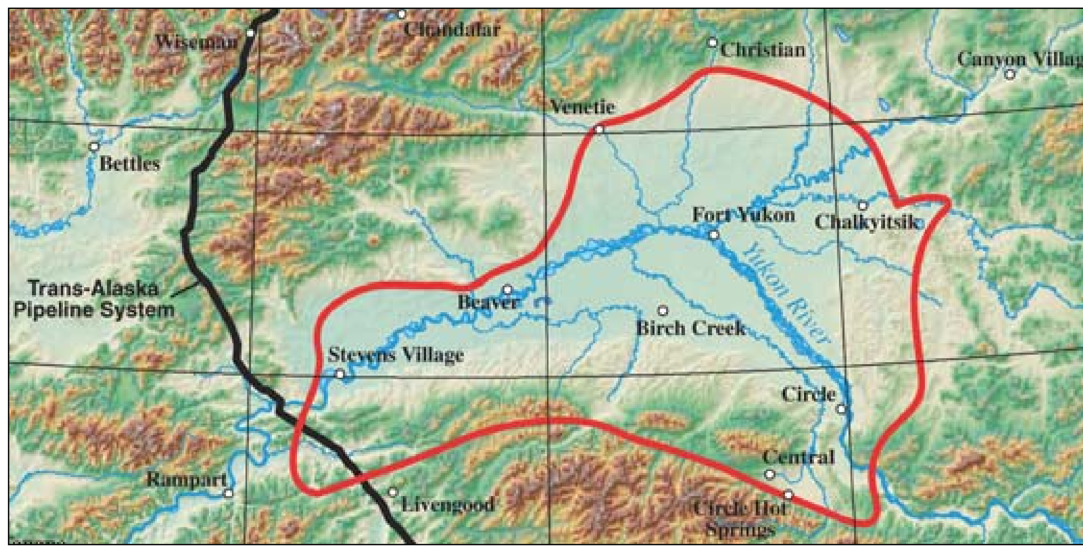
Independence Hub, to be located on Mississippi Canyon Block 920, will be moored in about 8,000 feet of water, qualifying it as the deepest development in the U.S. Gulf. It will process gas from fields located in nearby Atwater Valley, DeSoto Canyon and Lloyd Ridge.

The producers also have dedicated future production from a number of undeveloped blocks in the eastern Gulf area for processing.

Key engineering and fabrication contracts for the Independence Hub platform already have been awarded.

—RAY TYSON

● INTERIOR ALASKA




COURTESY USGS

**The Yukon Flats, a 13,500 square mile lowland area around the Yukon River, sits between the trans-Alaska pipeline and the Canadian border.**

# Resource estimates up for Alaska's Yukon Flats

*USGS: East central basin may contain similar amounts of gas to Cook Inlet*

By **ALAN BAILEY**
*Petroleum News Staff Writer*

The oil and gas potential of the Yukon Flats in east central Alaska has long intrigued geologists. This 13,500 square mile lowland area around the Yukon River, between the trans-Alaska pipeline and the Canadian border, lies over a deep basin of sediments that probably contain natural gas and might contain oil.

Last week Richard Stanley from the U.S. Geological Survey visited Anchorage to present the results of a new USGS assessment of the Yukon Flats basin. The assessment has concluded that there may be much more oil and gas in the basin than previously thought. However, the assessment supports previous views that the basin is more likely to yield gas than oil.

But, with almost no well data within the basin, there's considerable uncertainty how much hydrocarbon resource the basin might contain. The assessment has estimated that technically recoverable oil reserves could lie anywhere within a range of zero to almost 600 million barrels, with a mean of about 173 million barrels. The corresponding figures for natural gas consist of a range from zero to almost 15 trillion cubic feet, with a mean of about 5.5 trillion cubic feet. Natural gas liquids range from zero to 350 million barrels, with a mean of almost 127 million barrels.

The estimates for gas reserves include biogenic gas stored in rock reservoirs but do not include unconventional gas such as coalbed methane, Stanley said.

Two previous USGS assessments in 1995 and 1989 covered a vast swathe of land across the whole of central Alaska and included several oil and gas basins in addition to the Yukon Flats basin. However, the new estimates for oil and gas in the Yukon Flats basin by itself exceed the total estimates for the whole of central Alaska in the earlier assessments. For example, the 1995 assessment for central Alaska estimated a mean of just 2.76 trillion cubic feet of conventional gas.

Stanley attributes the increased estimates to better data.

"This time around we have much better data for the Yukon Flats — we have much better geological information from this area than we did from anywhere in central Alaska during the previous assessments," he said.

#### Gas from a core hole

Lake and river deposits obscure the bedrock in the flats, so there's little means other than drilling to find evidence of an active petroleum system in the basin. The USGS team did investigate a report-

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## ALASKA

### Tentatively scheduled Alaska lease sales

| Agency | Sale and Area | Proposed Date |
|---|---|---|
| MMS | Sale 195 Beaufort Sea | March 30, 2005 |
| DNR | Cook Inlet Areawide | May 2005 |
| DNR | Foothills Areawide | May 2005 |
| BLM | NE NPR-A | June 2005 |
| DNR | North Slope Areawide | October 2005 |
| DNR | Beaufort Sea Areawide | October 2005 |
| DNR | Alaska Peninsula Areawide | October 2005 |
| MMS | Sale 199 Cook Inlet | 2006 |
| MMS | Sale 202 Beaufort Sea | 2007 |
| MMS | Chukchi Sea/Hope Basin | interest based |
| MMS | Norton Basin | interest based |

*Agency key: BLM, U.S. Department of the Interior's Bureau of Land Management, manages leasing in the National Petroleum Reserve-Alaska; DNR, Alaska Department of Natural Resources, Division of Oil and Gas, manages state oil and gas lease sales onshore and in state waters; MHT, Alaska Mental Health Trust Land Office, manages sales on trust lands; MMS, U.S. Department of the Interior's Minerals Management Service, Alaska region outer continental shelf office, manages sales in federal waters offshore Alaska.*





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## YUKON FLATS

ed oil seep on the Porcupine River at the east end of the basin but chemical analysis proved that the apparent oil at this location is in fact pond scum from some form of pollution.

Three wells drilled to the east of the basin in the 1970s failed to find any oil or gas shows but some occurrences of bitumen and oil shale have been found to the southeast of the basin.

It's long been known that loose pieces of a very organic-rich shale known as tasmanite lie in the uplands northeast of the Yukon Flats. Many people have speculated about the possibility of this tasmanite occurring as a hydrocarbon source rock under the Yukon Flats basin. But not enough is known about the subsurface geology to support this idea.

A tantalizing indication of the hydrocarbon potential of the area turned up in 1994 when gas bubbled from coal pulled up from a 1,281-foot core hole at Fort Yukon. A well drilled at the same site earlier this year should provide some interesting information about the subsurface.

"Earlier this year that hole was re-entered by a consortium of federal and state agencies and other groups as a well and it was deepened to a total depth of 2,287 feet," Stanley said. "The results from that hole are not published yet."

### Re-evaluating the seismic

Almost all the subsurface information for the Yukon Flats comes from seismic data — oil companies have shot 10 seismic lines within the flats, Stanley said. Five of the lines, shot in 1972, are of poor to moderate quality but can be purchased through a broker. The other five lines date from 1988; they're of excellent quality but remain confidential. To carry out its assessment, the USGS obtained access to all of the seismic data through purchase or confidentiality agreement. Total line length for the seismic amounts to 418 miles.

USGS geoscientists did new interpretations of all of the lines, while Petrotechnical Resources of Alaska and Doyon also made interpretations of some of the lines.

"For five of those lines we have three different interpretations, for eight of those lines we have two different interpretations, and there are only two lines for which we have only one set of interpretations," Stanley said.

One particularly telling seismic section from the older survey shows about 25,000 feet of sediment in south-sloping strata in the southern part of the basin. These strata abut the so-called Tintina fault system at the south side of the basin. To the north the sediments thin to 3,000 feet. Geologists believe that the sediments are Cenozoic and possibly late Cretaceous mudstones, sandstones and shales that were deposited from ancient rivers and lakes.

"They were deposited some time between about 70 million years ago and now," Stanley said.

From the seismic section it's possible to pick out some folds within the strata. And Stanley said that the more recent, higher-quality sections show a multitude of structures that could trap hydrocarbons.

The Tintina fault along the south perimeter of the basin marks a zone along which the earth's crust has probably slipped sideways for hundreds of kilometers over the past 60 to 70 million years — it is a fault system that is very similar to the San Andreas fault in California, Stanley said. The seismic evidence indicates that folding and tilting of the sediments in the Yukon Flats basin resulted from movement along the fault.

USGS scientists have been able to use a so-called cloud map, a map that uses colors to depict a combination of gravity and magnetic data, to assess what lies under the Cenozoic sediments at the bottom of the basin. Areas of distinctive color and texture on the map show the existence of domains that contain rocks with consistent characteristics.

"There's a single domain of dense and magnetic rocks that underlies nearly the entire flats," Stanley said.

It is possible to trace that domain to areas where the rocks of the domain appear at the surface outside the Yukon Flats. It turns out that this particular domain consists of oceanic sediments of the so-called Angayucham and Tozitna terranes. Past alteration of these rocks as a result of high temperatures and pressures have all but eliminated any possibility of finding oil and gas in them. So, the USGS has concluded that there's little or no oil and gas potential in the rocks below the Cenozoic under the Yukon Flats basin.

### Sources and reservoirs

But what's the potential of the Cenozoic sediments?

To help answer this question the USGS team sampled Cenozoic surface rocks around the edges of the basin and also obtained data from previous research in the area. The idea was to find surface rocks that are directly analogous to what geologists believe lies deep in the basin.

"In total we have in our database now more than 600 rock samples from outcrop

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*continued from page 10*

# YUKON FLATS

and shallow core holes from the margins of the Yukon Flats basin," Stanley said.

The team found abundant examples of coal seams and organic-rich shales that range in age from 24 million to 65 million years. These rocks exhibit strong potential to act as petroleum source rocks, mainly for gas but some with oil potential, Stanley said.

The team also found sandstones and conglomerates that would make excellent oil or gas reservoirs. For example, the Yukon River downstream from the Yukon Flats has cut down through Eocene sandstone and conglomerate with good reservoir properties.

The close juxtaposition of potential reservoir sandstone and potential hydrocarbon source rock also suggests that there could be a very simple petroleum system within the Yukon Flats basin — the oil or gas wouldn't have to migrate far to reach a reservoir from a source.

"In a number of outcrops we noticed that the sandstones and conglomerates, the potential reservoir rocks, are in close association with the coals and the mudstones," Stanley said.

In assessing the petroleum potential of the Cenozoic sediments in the basin, the team also looked at equivalent strata exposed at the surface elsewhere in Alaska. For example, very similar sediments of similar age occur around the Healy coal mining area, about 200 miles southwest of the Yukon Flats. On hillsides near Healy it is possible to see thousands of feet of nonmarine Cenozoic sediments that include sandstone and shale strata with coal seams.

"We believe rocks like this … are good analogues of what might occur in the Yukon Flats," Stanley said.

Perhaps even more intriguing are comparisons with similar geology around the Cook Inlet, where river-deposited conglomerates and lake sediments of similar age to the Yukon Flats sediments have created excellent reservoirs for major oil and gas fields.

## Oil and gas kitchens

The operation of an effective petroleum system depends on the burial of the source rocks to depths where the temperatures are high enough to cook organic material into oil and gas. The oil and gas then flows from the hot "kitchens" into the reservoir rocks. It is possible to model the subsurface temperatures in a basin such as Yukon Flats, to determine the burial depths needed to form oil and gas kitchens.

"According to some modeling, you'd have to bury these rocks to depths of about 2,500 to 3,000 meters before they'll start generating oil and gas," Stanley said.

The USGS used gravity measurements to determine where the Cenozoic sediments might lie deep enough for oil and gas to generate. Because the sediments are less dense than the surrounding rocks, a thick section of the sediments causes a relatively low gravity reading at the surface. A gravity map of the Yukon Flats shows several areas where the sediments sit more than 3,000 meters deep; the most extensive area lies in the south of the basin, around the 25,000 feet deep section near the Tintina fault system.

So it is likely that oil and gas have formed deep within the basin.

## Estimating the reserves

But how much oil and gas might there be?

That depends on the quantity and size of potential reservoirs containing hydrocarbon accumulations — the USGS geologists used the seismic and geological data to identify some possible oil and gas accumulation scenarios and estimate the quantities of oil and gas in these scenarios.

To extrapolate these scenario estimates into estimated reserves for the whole basin, the geologists had to perform some statistical analysis using distributions of numbers and sizes of known hydrocarbon accumulations in established oil and gas provinces.

For this analysis the USGS looked at the distributions of actual oil and gas accumulations in the Cook Inlet and on the coast of California. The Cook Inlet Cenozoic geology bears striking similarities to that of the Yukon Flats. The geological setting below the California Coast near the San Andreas fault seems similar to that of the Yukon Flats basin near the Tintina fault: the geological structures of the two areas should hold hydrocarbon accumulations with similar styles of size distribution.

By plugging estimated accumulation numbers and sizes from Yukon Flats into real accumulation number and size trends from the established provinces the USGS geologists could make their statistical predictions of 173 million barrels of oil and 5.5 trillion cubic feet of gas for the Yukon Flats basin.

To put these numbers into some perspective Stanley made comparisons between the Yukon Flats and other areas of Alaska. In recent years the USGS has performed assessments of the National Petroleum Reserve-Alaska and the Arctic National Wildlife Refuge 1002 area in northern Alaska. Both of these areas probably hold substantially more oil that the Yukon Flats basin — 10.6 billion barrels of oil in NPR-A, for example. And, with estimated reserves of 61 trillion cubic feet, NPR-A probably holds much more gas than the Yukon Flats. However, the Yukon Flats may actually hold more gas than the ANWR 1002 area, partly because of a larger land area in the flats.

It is particularly interesting to note that the estimated gas reserves for the Yukon Flats have now come in fairly close to the 6.4 trillion cubic feet of gas produced in the Cook Inlet by 2003, Stanley said.

"The Yukon Flats is no North Slope but could very well be comparable to Cook Inlet," Stanley said. ●

*continued from page 1*

## BUDGETS

with an average 613 rigs in the field.

He said that total could be pushed as high as 640 or 650 rigs if trained rig hands were available.

Herring expects land sales will continue at a lively pace into 2005 because there is so much undeveloped land available.

Smith Barney said the outlook for pricing, business mix and individual service sectors are the strongest it has seen since the most recent industry peaks in 1997 and 2001.

The survey found that Canadian E&P companies overspent their budget forecasts by 1 percent from a poll taken at the end of 2003 and by 8.9 percent in a survey taken this month.

By mid-2004, 61 percent of Canadian companies had exceeded their original budgets, 31 percent were in line with forecasts and only 8 percent had come up short.

Of the Canadian respondents, 69 percent said their spending plans were determined by attractive drilling prospects, up from 54 percent entering 2004.

Other key factors for 2005 were: operating cash flow 63 percent, commodity prices 57 percent, targeted production growth 31 percent, availability of capital 14 percent, recent drilling successes 9 percent and operating costs 3 percent.

However, only 17 percent said they would hike their budgets if oil prices rose $3 per barrel above the survey's average assumption of $36.99, while 17 percent also said they would change their spending plans if prices fell by $3 below the base level.

### Companies plan to under spend cash flow

For the sixth straight year, a majority of Canadian companies — 55 percent in 2005 — said they would under spend their cash flow.

The survey also pointed to a shift back to oil-related project from gas-targeted operations, with 47 percent of the firms planning a move to oil, including the oil sands.

On exploration vs. development spending, 48 percent said they would not change in 2005, 26 percent plan a shift to greater exploration and 26 percent said they will increase development spending.

The economics of drilling were better than purchasing reserves in 2004, 95 percent said, while 60 percent said they are actively trying to buy reserves, down from 70 percent a year ago.

Asked to list the three regions with the greatest exploration potential, the respondents listed Canada at 76 percent, Gulf of Mexico/U.S. at 33 percent, Europe 24 percent and Latin America 10 percent.

In Canada the economics of oil exploration were rated as favorable by 59 percent, up from 40 percent a year ago, while gas got a 75 percent favorable rating, compared with 77 percent in 2003 and 90 percent in 2000.

Finding and development costs were said to be on the rise by 55 percent of the companies, stable by 21 percent and lower by 24 percent.

### Largest gains from Canadian Natural Resources

The Lehman survey of 75 Canadian companies found that the largest gains would come from Canadian Natural Resources, up 37 percent, Shell Canada 33 percent, Devon Canada 29 percent, Burlington Resources Canada Energy 29 percent, Nexen 17 percent, Husky Energy 15 percent, Penn West Petroleum 15 percent and Petro-Canada 13 percent.

On the international front, Nexen, after buying EnCana's North Sea assets, plans an 86 percent hike in its 2005 spending, followed by Canadian Natural Resources at 46 percent, Talisman Energy at 45 percent and PetroKazakhstan at 9 percent.

Drilling was preferred over buying assets by 81 percent of the respondents, compared with 76 percent a year ago.

Drilling economics were seen as good or excellent by 53 percent of the companies, down from 59 percent a year earlier, although 91 percent expect drilling costs will grow, the bulk anticipating a rise of 10-20 percent.

The average budgeted price for oil by the Lehman respondents is $35.81 per barrel for West Texas Intermediate and $5.39 per thousand cubic feet (Henry Hub).

Only 20 percent said they will invest more than their cash flow in E&P in 2005.

Lehman said the key factors in determining E&P spending, in order of priority, are: cash flow, prospect availability,, natural gas prices, oil prices and drilling success. ●

*continued from page 1*

## GASLINE

Mayor Jim Whitaker, chairman of the Alaska Gasline Port Authority, said in a press release. "We're convinced that this project can deliver Alaskan gas to a comparable marketplace, while providing much greater benefits to Alaskans than alternative projects," he said.

Donald Felsinger, president and chief operating officer of Sempra Energy, said in the port authority release: "It is important that the vast natural gas resources of Alaska be delivered to the U.S. markets as quickly and efficiently as possible, and we think this project has the best potential of doing that."

The port authority estimates that the project could be ready to deliver LNG to the West Coast as early as 2011.

Port authority members include the City of Valdez, the Fairbanks North Star Borough and the North Slope Borough.

### Project would start at 3 bcf

Whitaker told Petroleum News Dec. 21 that the project is planned to take 3 billion cubic feet a day off the North Slope in a 48-inch pipeline, but could easily ramp up to 4 bcf to 4.5 bcf a day.

Of the initial volume, Whitaker said not less than 2.5 bcf a day would go to Sempra.

The size of a spur line to Southcentral Alaska, part of the port authority's plan to provide gas for in-state use, has not been determined, he said. But, he said, part of the port authority's agreement with Sempra is that "Alaska needs will be met first. They fully understand the need for in-state usage." In-state usage of gas is "a core component to our project," he said.

The port authority would need to acquire gas, and Whitaker said the authority is "preparing an offer for the producers and our intention is to present them with an offer as soon as possible … within the next couple of months." The port authority is also in "ongoing discussions with the state on royalty gas," he said, based on the authority's protocol agreement with the state.

The North Slope Borough is still technically a member of the port authority, Whitaker said, although they have requested out of the group based on what the borough believes is a conflict of interest. Whitaker said the port authority and the borough have resolved the situation and will seek a statutory change allowing a member of a port authority to withdraw. The question, he said, is whether one of the entities in a port authority can, by state law drop out, and a statutory change would allow the North Slope Borough to exit without damaging the port authority.

### Authority believes it has a time advantage

Whitaker said that with the acquisition of Yukon Pacific's rights of way and permits, "we think that we have acquired a significant time advantage. With the development agreement with Sempra, we think that we have linked ourselves with the market."

He said the authority believes these events give it a "significant advantage."

Whitaker said the authority's deal with Yukon Pacific is a purchase option, "our option is for stock and therefore the assets of the company," and he said the authority wants "to move forward as quickly as possible." Jeff Lowenfels, former head of Yukon Pacific, told Petroleum News, "I spent a long time working on the LNG project. I'd like to see it completed. Now I know I will."

People always said the problem with the "LNG project was that the market wasn't there. Now the market is there," Lowenfels said.

### Agreement to try to develop project jointly

Sempra Energy spokesman Doug Cline told Petroleum News this is basically "an agreement to move forward together and try to develop this project jointly.

"Our exact role is still being determined," he said.

Sempra is developing an LNG receiving terminal in Baja California, Energia Costa Azul, which is expected to be the first LNG receiving terminal on the West Coast when it comes online in 2008, he said.

"The current processing capacity is 1 billion cubic feet a day of gas: that capacity is spoken for," Cline said. But that terminal can be expanded, he said, and LNG from Alaska would be an "ideal source" for the terminal expansion.

As to what role Sempra could play in the port authority project, Cline said Sempra could assist the port authority "in securing the necessary permits for the process since we've gone through the permitting process on a number of pipelines and LNG terminals." In addition to the Baja California LNG receiving terminal, Sempra is developing two other receiving terminals, one near Lake Charles, La., and the other near Port Arthur, Texas. Baja is the furthest along, Cline said, and will probably be the first new onshore LNG receiving terminal in North America.

"We think there is a strong potential for Alaska LNG in the U.S. market," Cline said. ●

*continued from page 1*

## WELL

plete. The targeted depth is not being disclosed.He said a combination of favorable weather and the joint venture's decision to barge a rig to the region before freeze-up will "allow us to make an earlier start and hopefully finish earlier."

By positioning equipment and supplies, Chevron Canada believes it can add about seven weeks to the Arctic operating season.

Olivier H-1 will be the major portion of Chevron Canada's plans to spend about C$100 million in the Mackenzie Delta/Beaufort Sea region this winter.

The program is expected to include two 3-D seismic programs and possibly testing of some earlier wells.

A second well by a partnership of EnCana, Anadarko Canada and ConocoPhillips Canada has been tentatively scheduled to start in December.

—GARY PARK

*continued from page 1*

## STRANDED

the Alaska Department of Environmental Conservation for the well, which will be approximately 12 miles west of Glennallen and approximately 2,000 feet north of the highway on Ahtna Native land.

A rotary drilling rig from Kuukpik Drilling or Nabors Alaska Drilling will be used for the well, which the company plans to drill in February to a depth of 7,500 feet. It will be the deepest well ever drilled in the region, Rutter and Wilbanks executive Bill Rutter III told Petroleum News Dec. 21.

"We hope to take a look at some rocks no one's ever drilled out there before. We'll be drilling down into the Jurassic, which could offer new potential. … We hope find what we're looking for and something more," Rutter said.

The company, which has never operated in the state before, has hired long-time Alaska contractor The Fairweather Companies to handle its operations. Permitting is being handled by Bob Britch of Anchorage-based Northern Consulting.

### Forest Oil backs down

In its April 11 edition Petroleum News reported that Rutter and Wilbanks and partner Delphi International were shopping for investors in the 398,445-acre Copper River block. The acreage, under a five-year exploration license agreement with the state of Alaska since 2000, was won by Anschutz Exploration. Kevin Corbett, new ventures manager for Anschutz, told Petroleum News that subsequent to winning the exploration license, Anschutz entered into an agreement with Forcenergy — now Forest Oil — to jointly explore the area.

The 50-50 partners signed an exploration agreement covering the 398,445 acres with Rutter and Wilbanks and Delphi earlier this year.

In April, Forest was going to be the operator, but the permit applications list applicant Rutter and Wilbanks as the operator.

Forest and Anschutz each have one-eighth of the project, Rutter said Oct. 21.

"They had satisfied $1 million of the $1.4 million work commitment and then decided they didn't want to do the project. They've given up the lion's share to us — 50 percent — which Rutter and Wilbanks shares with Delphi," he said.

"We lined up a lot of our regular investors — they, Forest and Anschutz have 50 percent of the project. … There are a few more people looking at it, but if we don't get anymore partners we'll still go ahead and drill it."

Rutter and Wilbanks and its investment partners have already satisfied the $400, 000 remaining work commitment with seismic shot by PGS Onshore.

"This is a risky deal, but we have a long history of taking risks. We have been wildcatters for three generations, and see no reason to stop now. We have a shot at some really big reserves on this deal," Rutter told Petroleum News in April.

He said in the most recent interview that he is "impressed with competency of Fairweather, Britch and the people in the bureaucracies in Alaska. I really do believe Alaska wants to see more exploration."

Rutter and Wilbanks is "looking for gas. … We'd love to find oil, but we're expecting just gas." Nonetheless, Rutter said the company has a contingency oil spill plan. "It's better to err on the side of caution. We're spending a lot of extra money on casing design. We do not want to take any chances on having a blow out."

And what if the company does find commercial quantities of gas?

### Discovery might 'spur' North Slope spur line

If natural gas is found, additional drilling may occur year-round, Rutter and Wilbanks' DEC application said.

More important, Rutter hopes a major gas discovery will "stimulate the North Slope spur line concept" and convince the state to first build a section of the line from Glennallen to Palmer to get Copper River gas into the Enstar system for Southcentral Alaska. "That could eventually lead to a spur line north to tap into a North Slope gas pipeline.

"The governor and a lot of other people like the idea of having access to North Slope gas for the Anchorage market. Anchorage needs gas and in 10 years will need it a lot more," he said. "The way I see this unfolding if we do make a big discovery, is the state will say 'the Copper River discovery is half way (to) where we want to go with a spur line. Let's pre-build the first half of it and take that gas and when a North Slope gas pipeline is built let's finish the spur line up to it.'"

A pipeline from Glennallen to Anchorage via Palmer will cost $60-70 million, Rutter said, and "that's just one option. Taking it to an LNG facility in Valdez is another or building a gas-to-liquids plant."

The price tag on the pipeline seems like a lot of money, he said, "but if you find 200 bcf of gas and it's the only way to get it out of there, than that's what you do."

### Heinze says line could be first step

The top man at the Alaska Natural Gas Development Authority, Chief Executive Officer Harold Heinze, shares Rutter's vision.

"We are interested in building a spur line to bring gas into Southcentral Alaska. Ballot 3 directed us to look at the economic viability of such a line. Basically we found it was not only highly desirable but, given the gas situation in Cook Inlet, a priority."

Rutter, Heinze said, was surprised ANGDA would consider building a line north to Glennallen.

"Our plan is based on getting North Slope gas to Southcentral. The Palmer to Glennallen stretch gets you to the TAPS right of way and if you go northward you can intercept" the North Slope gas pipeline. "If they (Rutter and Wilbanks) found something of significance it is a fit with what might happen," Heinze said.

Currently ANGDA is "aiming just slightly north of Glennallen. We're preparing applications to the state for the right of way that links Glennallen to Enstar's system in the Palmer area. … If a North Slope pipeline is built to Valdez that's where we'd hook up but if the line (goes through Canada, which is the route preferred by North Slope gas owners), we'd have to go north another 140 miles with a spur line to Delta Junction," he said.

Glennallen to Palmer is the "only piece of the puzzle where a right of way doesn't exist. Our contractors are starting work on it right after first of the year. We should have our applications into the state of Alaska by April 1," Heinze said.

Michael Baker Jr. has teamed with Enstar to do the engineering, he said. "Enstar is taking the lead on the … right of way and they have teamed with Michael Baker the other way around way around to do the land. Lynx is doing the environmental and public outreach process," he said. "Even though we're not required to, we're going to get a lot of public input before we file the application with DNR."

How will ANGDA fund the spur line?

"I expect at some point in the project … some companies would want to join us; some have already expressed interest," Heinze said.

"ANGDA … as a state utility can debt finance the whole spur line for about $300 million," he said. "As a gas transmission utility with a large customer base in this area utility type financing is relatively easy.

"Lord love them if they find gas. We'll be in a scoring position by the time Rutter and Wilbanks know something. They'll make my life more exciting and more interesting," Heinze said. "But you can't call them until you drill them. And see the test." ●

*continued from page 1*

## INVEST

offices in Houston and Denver, will continue to be the operator of the project, and, according the Usibelli Vice President Steve Denton, continues to own "the lion's share of the project."

JUDY PATRICK

STEVE DENTON

Andex said an exploration program is planned to assess the natural gas resources of more than 500,000 acres it has under lease through both an exploration license and leases from the state of Alaska, the Mental Health Lands Trust and Doyon.

"Completion of approximately 218 miles of 2D seismic line is scheduled for the winter of 2004-05. Results of the seismic program are expected to identify potential drilling targets for future exploratory wells," Andex said in a statement.

Why did Usibelli decide to invest in the Nenana project, which is just west of the community of Nenana?

"We made the decision a couple of years ago to dabble in the natural gas business. Once we crossed that bridge it was natural for us to look at other things close by," Denton said.

"We are very pleased to have our new Alaskan partners on board," said Andex President Tom Dodds. "This project has the potential to provide significant benefits to Alaska, especially the Interior region, and Andex is fortunate to have local partners who can help us develop the resource in a manner that all Alaskans can be proud of."

Andex has said in the past that it hopes to find commercial quantities of natural gas in the Nenana basin for delivery to Fairbanks and possibly Anchorage.

Bob Mason in Andex's Denver office is still exploration manager for the Nenana project.

—KAY CASHMAN

# Companies involved in North America's oil and gas industry



*All of the companies listed above advertise on a regular basis with Petroleum News*

## Petroleum news Business Spotlight

By **PAULA EASLEY**

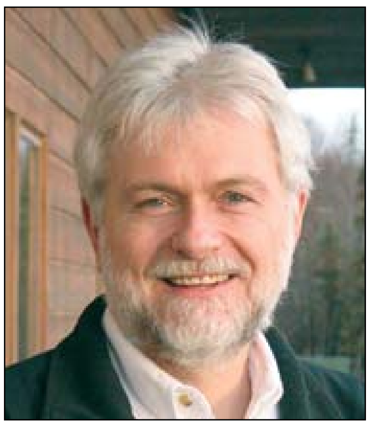
FORREST CRANE

**Robert 'Taco' Sandoval**, outside sales

### U.S. Bearings and Drives

The highly qualified staff at U.S. Bearings and Drives consistently offers quality components and onsite training. Customers enjoy the firm's commitment to hands-on problem-solving solutions that save downtime and expensive repairs. It recently introduced 24/7 Internet ordering to accommodate customer needs.

Robert "Taco" Sandoval was an HD mechanic for 17 years, wanted a change and joined USB two years ago. He loves transforming big problems into solutions ("nothing to it when you know what you're doing") and sharing the latest new product innovations. He has a secret fishing place when friends come seeking a good mechanic for help with their cars and trucks. Taco and wife Sally have five children and 7-1/2 grandchildren. Spoiling the grandchildren is his life goal.



FORREST CRANE

**William Laxson**, president

### North Slope Telecom Inc.

North Slope Telecom's 35 employees engineer, furnish, and install telecommunication systems ranging in size from $50,000 to $5 million. Systems incorporate satellite, microwave, fiber and wireless technology. The company also builds infrastructure, installs inside/outside plant fiber and copper, installs and commissions telecom equipment and performs maintenance.

Bill Laxson, an electrical engineer, founded North Slope Telecom in 1980. He and wife Jay are pilots who enjoy flying their Helio Courier throughout Alaska and Canada with Will and Carrie, students at Service High. Bill has spent 25 years performing volunteer search and rescue with Alaska Mountain Rescue Group. The family takes an annual 50-plus mile hike and participates in rock climbing, skiing, white-water canoeing/kayaking and ocean kayaking.

*continued from page 1*

## TRUSTEES

Oil and Gas, said exploration license applicant Bristol Shores LLC has "30 days from the receipt of the commissioner's final decision … to give us an executed license (sign the license form); pay a fee of $1 per acre, which is just over $329,000; and give us a bond to secure the first year of a work commitment."

Bristol Shores, owned by four Native elders from the Bristol Bay Region, will commit to a $3.2 million work commitment if the company goes ahead and accepts the seven-year license. In addition to paying $329,000 up front for the $1 per acre fee, the company has to put up a bond of $450,000 to cover its one-seventh of its work commitment.

If Bristol Shores is unable to get a bonding company to post the bond, then Galvin says the state requires the cash equivalent of $450,000, such as "a CD, a certificate of deposit, with a one-year maturation, or some other type of security."

At the end of the first year, Bristol Shores would submit proof of monies spent in that year and it would be subtracted from the $3.2 million. The amount of the bond for the second year's work would be the total remaining work commitment divided by six, and so forth for each year until the license expiration.

### Bristol Shores' potential investors concerned

Jere Allan, who heads the management group that is working with Bristol Shores, told Petroleum News Dec. 21 that Bristol Shores intends to move forward on the license.

"The only thing over our heads is whether these Trustees take Irwin up on his invitation to go to Superior Court if they disagree with his ruling," Allan said a few hours before Trustees staff attorney Vicki Clark told Petroleum News that the group will not pursue legal action.

"I've been told there are some people in Southwest Alaska who are very upset with the Trustees. … Something like 21 villages called up Bristol Shores to see what they could do to help us," Allan said, noting that the company's potential investors in the project were concerned there would be a lawsuit.

"These people (Trustees) are like corporate gadflies who buy a share of stock and raise hell at shareholder meetings. The indigenous people of Southwest Alaska take the Trustees action as a personal affront. It's the indigenous people who land up out on the street and out of a job" when groups like the Trustees file against development projects.

"What Trustees don't realize in going up against the DNR that what they have done is cost our clients money and time. We have lost investors because of this," Allan said.

Bristol Shores "isn't a big corporation that can sit around and cool their heels," he said.

The Trustees filing for reconsideration, which Allan calls a "frivolous appeal" has "already cost us a year. We could have been shooting seismic this winter," he said.

Bristol Shores has some "very serious but very edgy" potential investors, Allan said. "We're continuing to talk to them, we're keeping them on the line … but they're concerned Trustees could go to Superior Court. … We're stuck between a rock and a hard spot again."

*see* **TRUSTEES** *page 16*

*continued from page 15*

## TRUSTEES

Plus, he noted, "This is wonderful time of the year to try to get someone on the phone."

When asked if Allan would ask DNR for more than 30 days to accept the exploration license and come up with the funds, he said he didn't know.

But he did say DNR has been "very good to work with … very helpful through the entire process.

"Right now we're concentrating on getting a letter of intent from this one investor group indicating they're willing to go along with us. But I understand their reluctance with the Trustees involved. I would feel the same way," Allan said.

"I'd like to ask Trustees, 'who died and made you trustee?' That's what all these folks in Southwest Alaska are asking," he said.

Shade told Petroleum News Oct. 10 that the Trustees' filing caused consternation and anger among Bristol Bay residents.


"We're not taking it sitting down," Shade said. "The impact on these remote areas is more severe than these guys realize ... this is flat discrimination — this is probably one of the biggest paintball attacks I've ever seen."

Trustees' request for reconsideration cited several concerns, including the importance of the Bristol Bay area as a wildlife habitat, as a salmon fishery and as a location for subsistence fishing and hunting.

Shade said that the indigenous people around Bristol Bay understand the environmental issues in the region and that they pay great attention to protecting the environment. He said that several years ago he himself formed a non-profit organization for raising environmental awareness in the Bristol Bay area.

All of the owners of Bristol Shores have been or are fishermen, Allan said. "They're very concerned about the environmental aspects of the operation and protecting the migrating routes of the animals as well as the migration of the salmon."

Shade told the state his company planned to help the environment as well as the economy, "to boost jobs and basically concentrate on local hire."

Bristol Shores planned to spend some of the money earned from natural gas sales to clean up mercury and chemical pollution in the area caused in the 1940s and 1950s by the military.

The company has also earmarked some of its future profits for educational and cultural support.

### Trustees open door to locals

Clark, the Trustees staff attorney, told Petroleum News Dec. 21 that Trustees filed the request for reconsideration because the group did not think DNR had done enough analysis.

"We were seeking more information and a little more analysis, but it sounds like they plan to move forward without it. … We're very disappointed given the fishery that's out there. It's a world-class fishery. But we're glad they did acknowledge the need for a mitigation measure to prevent offshore operations. It was the silver lining of DNR's decision," she said.

Clark said at this time the Trustees do not plan to file a lawsuit contesting the DNR commissioner's decision.

She said she had received a call from an area resident "who was angry" about the Trustees reconsideration request, but "who has since called us on another issue. I hope folks will give us a call and talk to us. There are concerns about outsiders coming in and doing this. They are concerned that our request for reconsideration is shooting down this local group (Bristol Shores)."

Clark said she has been in touch with George Shade, president of Bristol Shores. "We hope to have a meeting.

"My understanding is that funding from the (Bristol Shores) project, if they're successful … will be used to help with a lot of contamination out there. It's a very laudable goal," she said.

### A little history

In 2003, the people living in the Bristol Bay region of Southwest Alaska asked Alaska Gov. Frank Murkowski to open their area to oil and gas leasing. Their goal was to eradicate the poverty brought on by the decline of the Bristol Bay fisheries by creating new jobs and finding local sources of cheap energy.

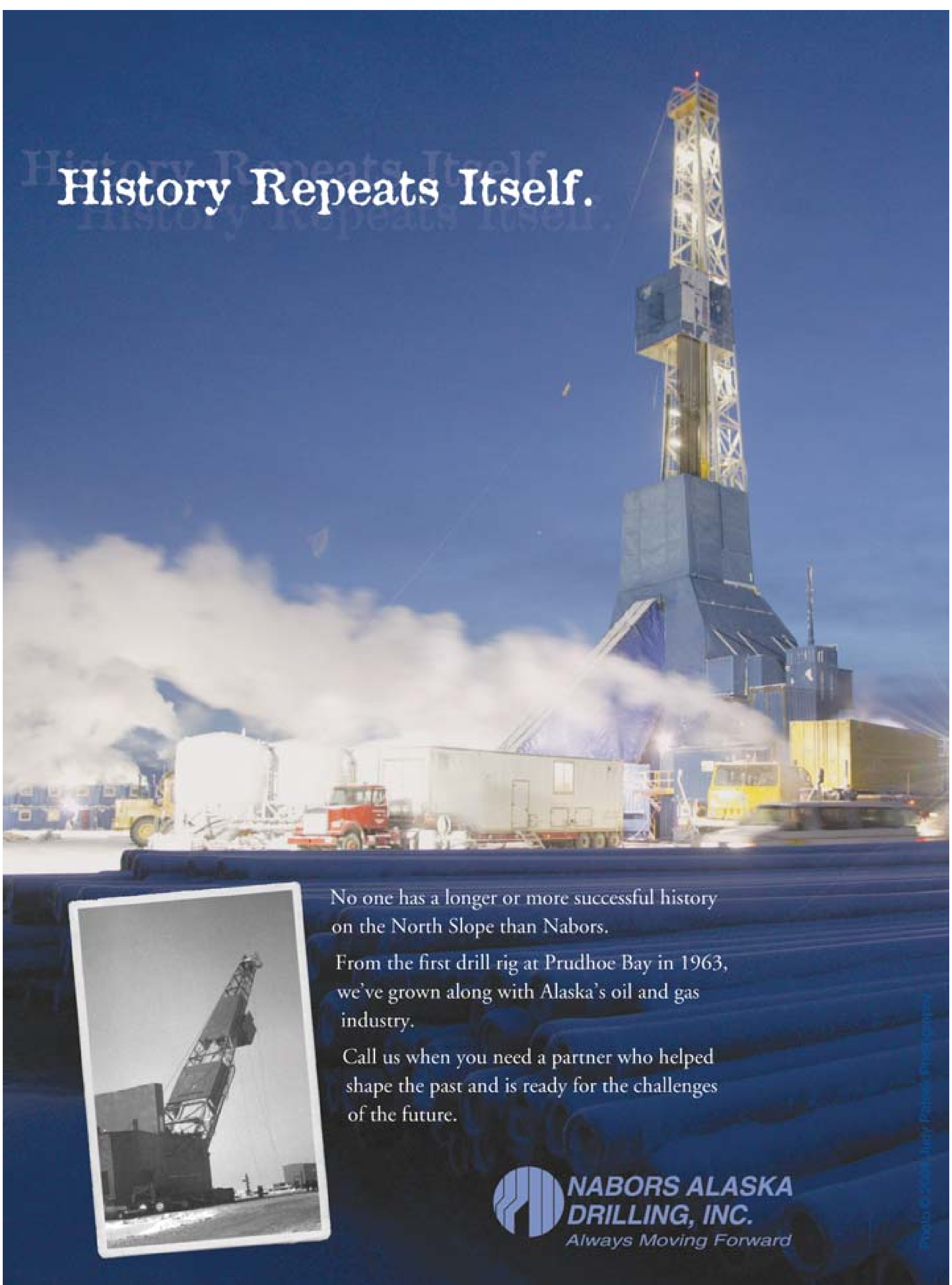
The governor and Alaska's congressional delegation responded enthusiastically and a number of things began to happen. One was designation by the Alaska Division of Oil and Gas in July 2003 of a study area in the northern portion of the Bristol Bay basin in which the division solicited exploration license proposals for 3 million acres.

Bristol Shores and Evergreen Resources filed for licenses; Evergreen later dropped out.

In the division's March 2004 preliminary best interest finding on Bristol Shores proposed license, the agency proposed amending a 1996 ruling by the Alaska Department of Natural Resources that excluded "all submerged land in and around Bristol Bay, from Ugashik Bay north to the western boundary of Kulukak Bay…" from exploration licensing — a ruling which excluded what industry observers believe is a prospective area for gas, and possibly oil.

A portion of Nushagak Bay was in the exclusion area in the 1996 ruling, and was included in Bristol Shores; proposed exploration license. The division proposed to allow exploration licensing within the bay, but with the stipulation that exploratory drilling could only be conducted "directionally" from onshore locations.

—KAY CASHMAN




# NORTH OF 60 MINING NEWS

LOADING COAL AT THE USIBELLI MINE, HEALY, ALASKA

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*Final chapter in multi-billion dollar mining hoax; chief geologist back on trial*

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*Alaska's efforts to export coal to Taiwan bogged down in political scandal*

## 5 Boast high Tide results

*Gold-silver property in British Columbia has potential for open-pit mine*

*A special supplement to Petroleum News*
WEEK OF
**December 26, 2004**
Petroleum news

PHOTO BY CHRIS AREND/COURTESY USIBELLI COAL MINE

## HEALY, ALASKA

### Second shipment of Usibelli coal headed to Chile; another load likely in January

Usibelli Coal Mine has secured a sales contract for a second shipment of coal to Chile with Glencore Ltd. The ship was scheduled to begin loading approximately 45,000 metric tons on Dec. 21.

This load, Usibelli said in a Dec. 20 press release coal is destined to be burned in a different company's power plant than the cargo shipped to Chile in August.

"Preliminary indications are that the first customer will take an additional" cargo load of coal in January, Usibelli said.

The company attributed the significant interest in Alaska coal in recent months to the rising cost of energy worldwide. Chile is the furthest distance Alaska coal has been shipped, Usibelli said.

"Glencore and its customer in Chile have been very good to work with," said Steve Denton, vice president of business development for Usibelli. "We hope these initial shipments are the beginning of a long term relationship in this sector of the export coal market."

Usibelli is headquartered in Healy, Alaska, where it mines approximately 1.2 million tons of coal annually. Approximately 800,000 tons provides fuel for the generation of power and heat throughout Interior Alaska. The remainder, about 400,000 tons, is exported to South Korea via rail to Seward, where it is loaded into ocean-going vessels at the Alaska Railroad's Seward Coal Terminal.

—MINING NEWS

## RUSSIA

### Kremlin tightens grip on diamond monopoly; Alrosa gets new chief executive

Russia's diamond monopoly Alrosa, based in the Sakha Republic, has a new chief executive, the company announced in a release Dec. 17. Alexander Nichiporuk, previously Alrosa's chief operating officer, will take the reins from Vladimir Kalitin, who becomes a deputy chairman of the supervisory board. Alrosa produces nearly 100 percent of Russia's diamonds and accounts for around 20 percent of the world's rough diamonds.


ALEXANDER NICHIPORUK

The reshuffle strengthens Moscow's control over the company, as Nichiporuk was President Vladimir Putin's favored candidate. The chairman of the supervisory board, which made the decision to appoint Nichiporuk, is Russian Finance Minister Alexei Kudrin. Over the past few years there has been a power struggle within Alrosa between federal government loyalists and senior figures in the Sakha administration, who formerly held sway. Kalitin was a compromise candidate who became tired of arbitrating between the two factions.

The Sakha administration has also gained some additional influence in this reshuffle, with Sakha Prime Minister Yegor Borisov being appointed first deputy chairman of the supervisory board. Ernst Berezkin replaces Nichiporuk as chief operating officer. Alrosa's shareholders have been anticipating privatization of the company for some time, but this can only occur with the approval of Putin, who placed it on a list of "strategic" Russian companies earlier this year.

—SARAH HURST

● SOUTHEAST ALASKA

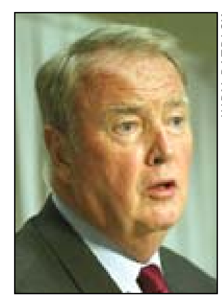
# Forest Service gives Kensington green light

*Coeur's plan to develop the underground gold mine near Juneau wins federal approval; environmentalists will continue to fight*

By KAY CASHMAN

*Mining News Publisher & Managing Editor*

The U.S. Forest Service has approved Coeur Alaska's plan for its Kensington underground gold mine in Southeast Alaska, releasing its record of decision Dec. 17 for the project's final supplemental environmental impact statement.


JUDY PATRICK

Alaska Gov. Frank Murkowski

The EIS includes four different plans that were evaluated for the mine, which is about 45 miles north-northwest of Juneau in the Tongass National Forest, including Coeur's first development plan that was permitted in 1997.

Citing economic feasibility problems, Coeur changed its development plan and re-applied in 2001. Coeur's latest proposal moves the mine's facilities closer to Berners Bay, allowing the daily transport of workers and materials from Juneau by ferry across the bay.

The Kensington deposit, thought to contain approximately 1.9 million ounces of gold, will employ about 250 workers for at least 10 years, the company said

"Kensington will be one of the most significant resource development projects undertaken in Southeast Alaska in many years and demonstrates this administration's efforts to revitalize the economy of Alaska through responsible resource development," said Alaska Gov. Frank Murkowski in a press release. "State and federal agencies have been working cooperatively to complete the EIS. The result is a thorough evaluation which clearly shows the mine can be developed with minimal effects on the environment."

#### ROD signed Dec. 9

The record of decision, signed by Tongass National Forest Supervisor Forrest Cole on Dec. 9, approves a modification of Coeur's current plan of operations that includes elimination of tailings disposal along the Lynn Canal side of the Kensington Mine and sets the stage for disposal of tailings in Lower Slate Lake, pending issuance of permits by the U.S. Army Corps of Engineers, Environmental Protection Agency and Alaska Department of Natural Resources.

The governor's office said the EIS will be used to "guide state and federal agencies as they finish the permitting process. Agencies are expected to make decisions on the issuance of mine permits in the coming months. The state will continue to work with the Environmental Protection Agency and the National Marine Fisheries Service to resolve any remaining concerns they have over permitting issues."

The Forest Service, the Environmental Protection Agency, the U.S. Army Corps of Engineers, the Alaska Department of Natural Resources, the Alaska Department of Environmental Conservation, and the Alaska Department of Fish and Game prepared the EIS.

According to a Dec. 18 story in the Juneau Empire, the Forest Service's decision was "panned" by environmentalists, who said they will continue to fight the Kensington project.

Kat Hall, a grassroots organizer for the Southeast Alaska Conservation Council, was quoted as saying, "This project is a long way from being a done deal."

Opponents of the project have 45 days from the date the first legal notice about the decision is published to appeal the Forest Service's decision. ●



## CANADA

### Expatriate shake-up paves way for Yukon mine; new VP on board

Shareholders of Vancouver-based Expatriate Resources approved a plan to reorganize the company at an extraordinary meeting Dec. 14. Under the new arrangement, Expatriate's non-Finlayson district, Yukon Territory exploration properties will be transferred to a new exploration company, Pacifica Resources Ltd. On completion of the reorganization, Expatriate will change its name to Yukon Zinc Corp.

Expatriate has also appointed a new vice president of mining, Richard Goodwin, to manage all aspects of the development of the Yukon silver-zinc project into a mine and all the company's other mining activities. Most recently Goodwin was general manager for Snowden in Vancouver.

Pacifica has now acquired the advanced stage Blue Moon base-precious metal property in California, the Yava polymetallic massive sulfide property in Nunavut, Expatriate's zinc-lead-silver properties in the Selwyn Basin area of the Yukon, the Tillex copper prospect in Ontario, various copper projects in Chile and Expatriate's holdings of shares and warrants in StrataGold Corp.

According to an Expatriate release Dec. 15, both companies will have a clear direction. Yukon Zinc Corp. will focus on the development of the Wolverine deposit and its large surrounding land holdings in the Finlayson district and the Logan Joint Venture property, both in the Yukon Territory; Pacifica will focus on base-precious metals exploration in the Americas. Initially, Expatriate will retain a 25.2-percent interest in Pacifica.

—SARAH HURST

● CANADA

# Bre-X trial resumes long journey in Ontario

*Trial of former chief geologist starts again after 31-month lapse; final chapter in multi-billion dollar mining hoax*

**By GARY PARK**

*Mining News Calgary Correspondent*

The world's largest mining hoax fades for long periods, without ever disappearing completely.

Now the insider trading case against John Felderhof, former chief geologist of Bre-X Minerals, is back before the Ontario Superior Court, seven years after the scam was exposed and 31 months after it was adjourned amid deep acrimony between rival attorneys.

Felderhof has been charged with unloading Bre-X shares worth C$84 million in 1996 based on information not disclosed to investors who were immersed in a share-buying frenzy, drawn by claims of a possible 200 million ounce gold find (worth US$90 million these days) in Indonesia.

If convicted, Felderhof faces a maximum two-year sentence and a C$150 million fine.

Calgary-based Bre-X, whose shares peaked at C$201.75 in mid-1996, collapsed in 1997 after independent samples taken from the Busang mine in the Indonesian jungle showed that its much-touted gold find was a swindle.

### Battle over development rights

At the time, Bre-X was immersed in a battle with Toronto-based Barrick Gold over rights from the Indonesian government to develop Busang.

Since resuming the trial in December, the Ontario court has heard that Barrick, which wanted a 75 percent stake, "threatened and coerced" Bre-X during negotiations on a possible joint venture.

Felderhof's defense attorney Joseph Groia said Barrick suggested to Bre-X during the talks that the junior company might have trouble getting Indonesian approval without Barrick as a partner.

Groia suggested to Rolando Francisco, the former chief financial officer of Bre-X, that the terms Barrick was offering got progressively worse as the talks advanced.

He said in a letter to then-Chief Executive Officer David Walsh, who died of a stroke in mid-1998, that Barrick Chairman Peter Munk was close to pulling out of the proposed joint venture.

### Felderhof anxious to salvage reputation

Groia has told the Toronto Sun that Felderhof is anxious to try and salvage his reputation.

He said Felderhof "feels he has not done anything wrong from a legal standpoint … I think he would say that he, like so many other people, regrets very much not figuring out earlier there were problems in the process."

Millions of investors, many of them in the United States, feel differently.

From holders of shares in a company that was once valued at C$5 billion, they suddenly saw their paper fortunes go up in smoke, although many had long since sold their shares and become multi-millionaires.

Those who were left behind wanted Felderhof's scalp, but the Royal Canadian Mounted Police, the U.S. Securities and Exchange Commission and the FBI all passed up the chance to prosecute.

### Fewer witnesses, computer access

That left the Ontario Securities Commission, often accused of using a feather-duster to fight fraud, to take up the case, which it did by filing eight criminal charges of insider trading and issuing misleading press releases against Felderhof.

The initial 70 days of proceedings were notable mostly for clashes between Groia and commission prosecutor Jay Naster, allowing time for only two witnesses to take the stand.

The commission has since brought in a respected Toronto attorney Frank Marrocco as its lead lawyer for the remainder of the trial, after both sides had been ordered by the Ontario Court of Appeal to get back to business and act like professionals.

The securities regulator now plans to call fewer witnesses in the hope that the tangled case can be unraveled within three months.

Computers have also been installed to speed up proceedings by giving the judge, attorneys and spectators quick access to more than 300 boxes of evidence and data.

Even so, Groia is arguing that the commission is unfairly trying to pin all of the Bre-X blame on Felderhof, when Walsh and former Bre-X geologist Michael de Guzman are both dead. In addition, Francisco has already struggled with a fading memory, telling the court he was unable to recall names, findings and meetings — a problem many observers think will reduce the chances of justice being served. ●

## NORTHWEST TERRITORIES

### Tiffany quits NT diamond mine

The name that is synonymous with diamonds wants no part of digging for the gems in the Northwest Territories. Tiffany & Co. unloaded its 14 percent holding on Aber Diamond, the co-owner of Diavik, Canada's second diamond mine.

The U.S. jewelry retailer will, however, retain a sales agreement with Aber, except that a previously applied discount to open-market diamond prices has been scrapped.

That leaves Aber free to sell all of its 40 percent share of Diavik diamonds at full market prices.

Tiffany is expected to raise about US$268 million from the sale of its 8 million shares and will book a US$194 million gain for the quarter ending Jan. 31, 2005.

Tiffany's initial investment gave Toronto-based Aber the money to develop the Diavik mine, which is now controlled 60 percent and operated by a subsidiary of Rio Tinto of London.

—GARY PARK

Petroleum news

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● ALASKA

# Haze surrounds Alaska-Taiwan coal talks

*State investigation looks at Alaska attorney general's role in promoting KFx 's experimental coal-drying technology*

**By SARAH HURST**

*Mining News Contributing Writer*


KFx is building a coal processing plant in Gillette, Wyo.

The state of Alaska's attempts to export coal to Taiwan have become bogged down in a political scandal, with a prosecutor investigating Attorney General Gregg Renkes' role in the negotiations. The Anchorage Daily News alleged that Renkes owned stock and traded shares in KFx, the Denver-based company that is developing technology to remove moisture from sub-bituminous coal. Documents show that Renkes and Gov. Frank Murkowski pushed the participation of KFx to the Taiwanese government.

Ted Venners, chairman and CEO of KFx

Murkowski has appointed former federal prosecutor Robert Bundy to investigate whether Renkes violated state ethics rules. Renkes was the state of Alaska's trade promoter in discussions with Taiwan, but after the allegations became public, he recused himself and in November was replaced by Mike Barry, chairman of the board of directors for the Alaska Industrial Development and Export Authority and the Alaska Energy Authority.

## MOU signed in September

The Taiwanese government did not make a firm commitment to purchase coal from the undeveloped Beluga deposit on the west side of Cook Inlet, near Anchorage. Instead, in a memorandum of understanding signed on Sept. 18, Taiwan's Ministry of Economic Affairs agreed "that it will in good faith use its best effort to facilitate state utility companies of the Republic of China having a need to secure the supply of steaming coal in large quantities on a long-term basis to consider the purchase of the Processed Coal from the Processed Coal Supplier."

Taiwan's national electric utility, TaiPower, will need up to 4 million tons of coal a year. The Beluga field holds more than 1 billion tons of proven reserves. But the sub-bituminous coal is 25 percent moisture, and it would be uneconomical to ship coal with this level of moisture to Taiwan. KFx has been working on its experimental K-Fuel coal-drying for more than two decades, but has not yet built a successful processing plant or made any money from K-Fuel.

"The MOU clearly states that it's the user of the coal, TaiPower, that will make the decision," Barry told Mining News. "The Taiwanese government and the state of Alaska believe that the K-Fuel technology has promise. TaiPower will trust their own recognizance, not the Anchorage Daily News or some state official, but what they can see with their own eyes." The next step will be for TaiPower to look at the processing plant KFx is building in Gillette, Wyo., Barry added.

## Kanturk would build processing plant

According to Ted Venners, chairman and CEO of KFx, the Hong Kong-Washington merchant bank Kanturk would be responsible for building a K-fuel processing plant in Alaska, if TaiPower agreed to buy the coal. Kanturk is purchasing a license from KFx, with a fee of $7.2 million due by Christmas and subsequently another $32.5 million to be paid. "We're not involved in the business development side, we're just providing the technology," Venners told Mining News. "The Taiwanese have checked the due diligence on our technology." The process has only recently become economically viable with the price of coal rising to $50 and $60 per tonne on international markets, Venners said.

Ted Venners' brother John is a consultant to KFx in Washington, D.C., and is also managing director of Kanturk. John Venners has known Gregg Renkes for around 16 years. "When the facts really come out they'll speak for themselves and it won't be as big of an issue as it's been made out to be," John Venners said of the investigation into Renkes. "I hope that for everyone's benefit there is some patience to wait for Bundy's report. This has been an ugly political witch-hunt. It's very unfortunate that it has taken the focus away from the benefits of K-fuel."

Kanturk is very confident that it will enter into a formal agreement with the Taiwanese, Venners said. "I am convinced that the processing plant will be built in Alaska," he told Mining News. "The time is right. The market is right. The Pacific Rim basin is starving for premium bituminous coal. KFx technology is the only upgrading process that's being built on a commercial scale." Kanturk Partners has been in existence since 2001, but its U.S. branch was only formed officially in February 2004.

## Placer Dome not a party

Vancouver-based mining company Placer Dome is one of the leaseholders of the Beluga deposit. "We're not a party to what's going on in Taiwan. We're not at the table," Jim Chavis, Placer Dome's vice president for government relations, told Mining News. However, Kanturk has published documents on its website showing that Gregg Bush of Placer Dome's Alaska operation has been in touch with Kanturk about developing the Beluga coal. In response to an inquiry about this from Mining News, James Fueg, a geologist with Placer Dome in Anchorage said the company had no comment.

"Beluga is not a priority of ours, we're primarily a gold company," Chavis said. "People out there are trying to develop methodologies to dry the coal, and their efforts are probably commendable. But the Taiwan discussion is government-to-government. We don't want to be involved in this mess." Placer Dome is the majority

see **KFX** page 6

● BRITISH COLUMBIA

# Canadian partners boast high Tide results

*Rimfire's gold-silver property in B.C. has potential for open-pit mine*

**By SARAH HURST**
*Mining News Contributing Writer*

An initial investment of $10 in a gold-silver property by Vancouver-based Rimfire Minerals might pay off handsomely in the long term. Rimfire purchased the Tide property in British Columbia from Newmont Exploration in 2001 for that nominal fee, and last year partnered with another Vancouver company, Serengeti Resources, to push forward a drilling and fieldwork program. Serengeti is earning a 51 percent interest in Tide by spending C$1.4 million on exploration. The results so far have been very promising.

High-grade gold and silver mineralization was found within the limits of a "600 by 450 metre greater than 90 ppb gold-in-soil anomaly," Rimfire and Serengeti said in a Nov. 28 release. This new mineralization, termed the 52 Zone, assayed 593 grams per tonne gold and 14,708 grams per tonne silver, and 360 grams per tonne gold and 7,920 grams per tonne silver from two samples of an 0.5 meter-wide vein, taken two meters apart.

*High-grade gold and silver mineralization was found within the limits of a "600 by 450 metre greater than 90 ppb gold-in-soil anomaly," Rimfire and Serengeti said in a Nov. 28 release.*

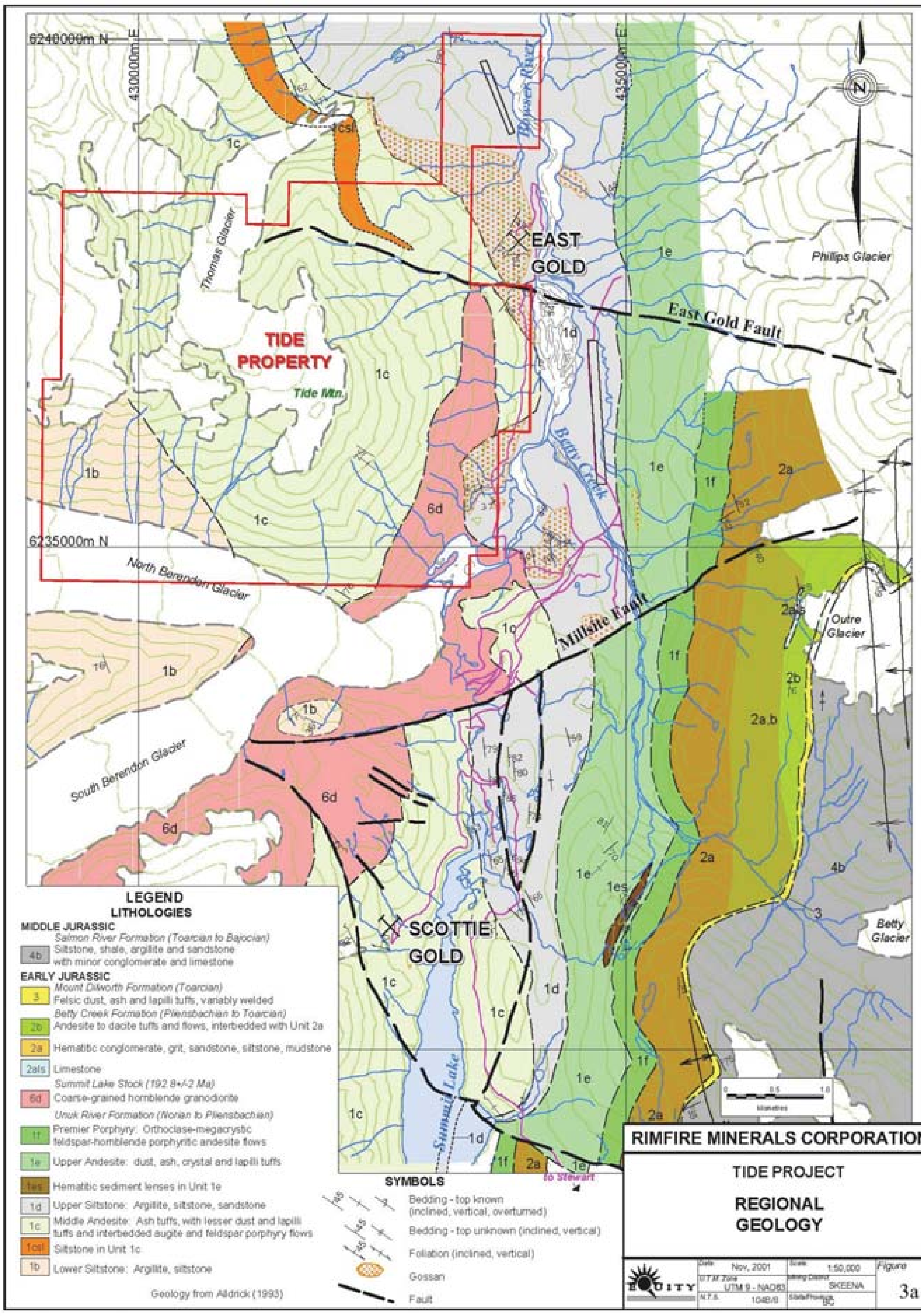
In addition to the 52 Zone, a diamond drilling program also resulted in the discovery of a potential bulk tonnage gold mineralized zone at the 36 Zone. The only hole to test the 36 Zone assayed 1.92 grams per tonne gold over 39.6 meters within a 129.4-meter interval averaging 1.0 grams per tonne gold. The 52 Zone is just over a mile northeast of the 36 Zone discovery drill hole.

"One gram per tonne of gold is relatively low grade, but it's right from the surface — that raises the prospect of it potentially being open-pittable," Serengeti President and CEO David Moore told Mining News, referring to the 36 Zone. "The entire drill hole was mineralized, with very even grade distribution." The 52 Zone was "just a good old-fashioned prospecting discovery," he said. "It was relatively low down on the mountain in a partially covered vegetated area, which is why it wasn't discovered before. The numbers are truly exceptional."

## Six new properties added since July

Moore came to Serengeti in mid-2004, taking

see **TIDE** page 6




Tide is easily accessible, located on the Granduc Mine Road, 22 miles north of the deepwater port facilities at Stewart. This is a very active exploration area, in the middle of an old mining district. The Stewart-Sulphurets-Iskut gold camp hosts such deposits as the Eskay Creek mine, the Kerr-Sulphurets gold deposits and the historically significant Silbak-Premier mine, which opened in 1919.

continued from page 5

# TIDE

over the top job in July. "I joined with a view to reactivating the company," he said. "Tide was the only project we had. I added six new properties, one in this area, and the others in the copper-gold belt." Moore had been with Teck Cominco and related companies for 30 years, including four years in Alaska at the Red Dog zinc mine, assisting its transition from exploration to development. "Now I'm learning the ropes and running a junior," he added. Moore's responsibilities cover everything from assessing geological samples to financing a small business.

"We knew there was potential in the 36 Zone, but we were pleasantly surprised by the results," said Jason Weber, Rimfire's corporate communications manager. "As for the gold grades in the 52 Zone, I'd never seen numbers that high." Paul Wojdak, a geologist at the British Columbia Ministry of Energy and Mines, introduced a note of caution. "The surface samples are high grade, but the vein is narrow and its extent, at present, is unknown," he said of the 52 Zone. "Gold can occur in rich 'pockets' — the challenge will be to find areas extensive enough to warrant a mine."

Tide is easily accessible, located on the Granduc Mine Road, 22 miles north of the deepwater port facilities at Stewart. This is a very active exploration area, in the middle of an old mining district. The Stewart-Sulphurets-Iskut gold camp hosts such deposits as the Eskay Creek mine, the Kerr-Sulphurets gold deposits and the historically significant Silbak-Premier mine, which opened in 1919.

At Serengeti's Twin property, 2.5 miles south of Tide, the company located a surface showing with elevated gold-silver values, according to a Dec. 7 release. Two old trenches, 15 meters apart, returned values in chip samples of 11.5 grams per tonne gold, 93 grams per tonne silver over 1.7 meters and 11.6 grams per tonne gold, 141 grams per tonne silver over three meters. Sampling elsewhere on the 2.9-square mile Twin property returned values from trace to 0.71 grams per tonne of gold in 15 rock samples. ●

COURTESY OF RIMFIRE MINERALS

View looking southeast from the 36 zone with the Granduc Mill foundation and mine road in sight.

COURTESY OF RIMFIRE MINERALS

Driftwood Diamond Drilling's rig drilling TIDE-04-03 at the 36 zone. Looking east-northeast.



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# KFX

owner of the Donlin Creek project, developing Alaska's largest known gold deposit.

## KFx needs to prove technology works

If the Renkes investigation doesn't derail the negotiations with Taiwan, KFx still has to prove that its technology works and that the amount of energy consumed in the processing of the coal will not outweigh the benefits gained from reducing the moisture level. KFx had to close its previous Gillette plant in 1999, and the current plant is being built nearly a year behind schedule.

KFx "is a somewhat controversial investment due primarily to its past failures to commercialize its K-fuel concept," a research report by Andreas Vietor of Stifel, Nicolaus & Co. stated on Nov. 29. "Nevertheless, in anticipation of management's ability to execute on its near-term production goals and ability to ultimately mass produce and market K-Fuel at a profit, the time is right for investors to consider taking positions in KFx," Vietor wrote.

The hiring of Karel Vlok on Nov. 15 as KFx's managing director is a positive development, according to Vietor's report. Vlok is the former managing director of Lurgi South Africa, which has more than 50 years' commercial experience in designing and building coal gasification plants. Even the resignation of Mark Sexton, the former chairman and CEO of Evergreen Resources, from the KFx board of directors on Nov. 16 is not necessarily a setback, Vietor wrote, as Sexton intends to form a joint venture with KFx to develop and finance several new plants for the production of K-Fuel. How the Taiwanese will interpret all this remains to be seen. ●

● NORTH AMERICA

# Price jump sparks uranium mining boom

*Juniors and majors scramble to acquire, exploit promising acreage across North America*

By ROSE RAGSDALE

*Mining News Contributing Writer*

An explosion in demand for nuclear energy in the face of chronically short supplies is sending long-time mining companies and a growing cadre of new players scurrying across North America in search of new uranium hot spots.

Annual demand for uranium, used primarily for nuclear power generation, has climbed to more than 160 million pounds.

Saskatchewan-based Cameco Corp., the world's largest uranium miner, estimates that even without the potential for higher demand due to rising oil and natural gas prices, global uranium demand will average 194 million pounds per year from 2003 to 2012, with the United States using 40 million pounds of that amount from 2006 onwards.

Uranium supplies, on the other hand, are running at about 135 million pounds per year, with mines contributing only 79.2 million pounds per year, according to analyst Doug Casey, editor of the Financial Speculator. The remainder comes from secondary supply such as the drawdown of excess inventory still left over from the 1970s, dismantling of Russian nuclear warheads, re-enrichment of spent reactor fuels and, more recently, the enrichment of uranium tailings.

Most of the secondary supply, with the exception of weapons-grade uranium being procured from Russia, is not expected to last for much longer than a few more years.

## Growing appetite for nuclear power

Currently, some 438 nuclear power reactors operate in 31 countries and provide 16 percent of the world's electricity. In several Asian and European countries the percentage of electricity generated from nuclear power exceeds 35 percent, with France leading the way by deriving 80 percent of its power from nuclear energy. U.S. consumers derive 22 percent of their electricity needs from uranium-powered nuclear reactors.

In recent years, many existing nuclear power plants have increased capacity. China, for example, intends to quadruple its nuclear power generation by 2020.

Some industry analysts say the world's strong and growing appetite for nuclear power will spur demand for uranium, also called the other yellow metal, by 66 percent to 300 million pounds yearly by 2020.

"The other metal you should be paying attention to is uranium," analyst Paul van Eeden told investors in a recent newsletter. "The big expense in a nuclear power plant is the capital cost to actually build the plant. Because the price of uranium accounts for a small portion of the cost of generating electricity, the utilities cannot afford to run out of fuel: they have to keep operating. So they are likely to start hoarding uranium at the first sign of a potential supply shortage — it won't be the first time."

Van Eeden recounted uranium's price history, which peaked at $43 per pound in 1979 on fears of supply shortages before plummeting to less than $8 a pound by 1992. Uranium prices have seesawed since, between $16.50 in 1996 and $7.10 in 2000, as nuclear power plants have hoarded uranium. In 2003, supply concerns again sparked a sustained run-up in prices to nearly $20.50

**Analysts say economics is one key to uranium's growing popularity. One pound of uranium at $20 is equal in power generation capability to 40 barrels of oil at about $1,600.**

in mid-December, up nearly 75 percent from $11.75 nearly 18 months ago.

## Why uranium?

Analysts say economics is one key to uranium's growing popularity. One pound of uranium at $20 is equal in power generation capability to 40 barrels of oil at about $1,600.

Moreover, uranium is more abundant than tin and 10 times more abundant than silver. Yet a chronic supply/demand imbalance persists in yellowcake, as U3O8 — the marketable form of the mineral — is known. The best evidence: The industry has been living on inventory since 1985, analysts say.

They predict that 100 nuclear power plants will be built in the next 10 years, with 40 of them in Asia. By year 2050, the world will need 900 more plants.

Lastly, nuclear power is the only Kyoto-compliant solution to large-scale electrical power generation, as environmentalists are beginning to recognize.

## New exploration in early stages

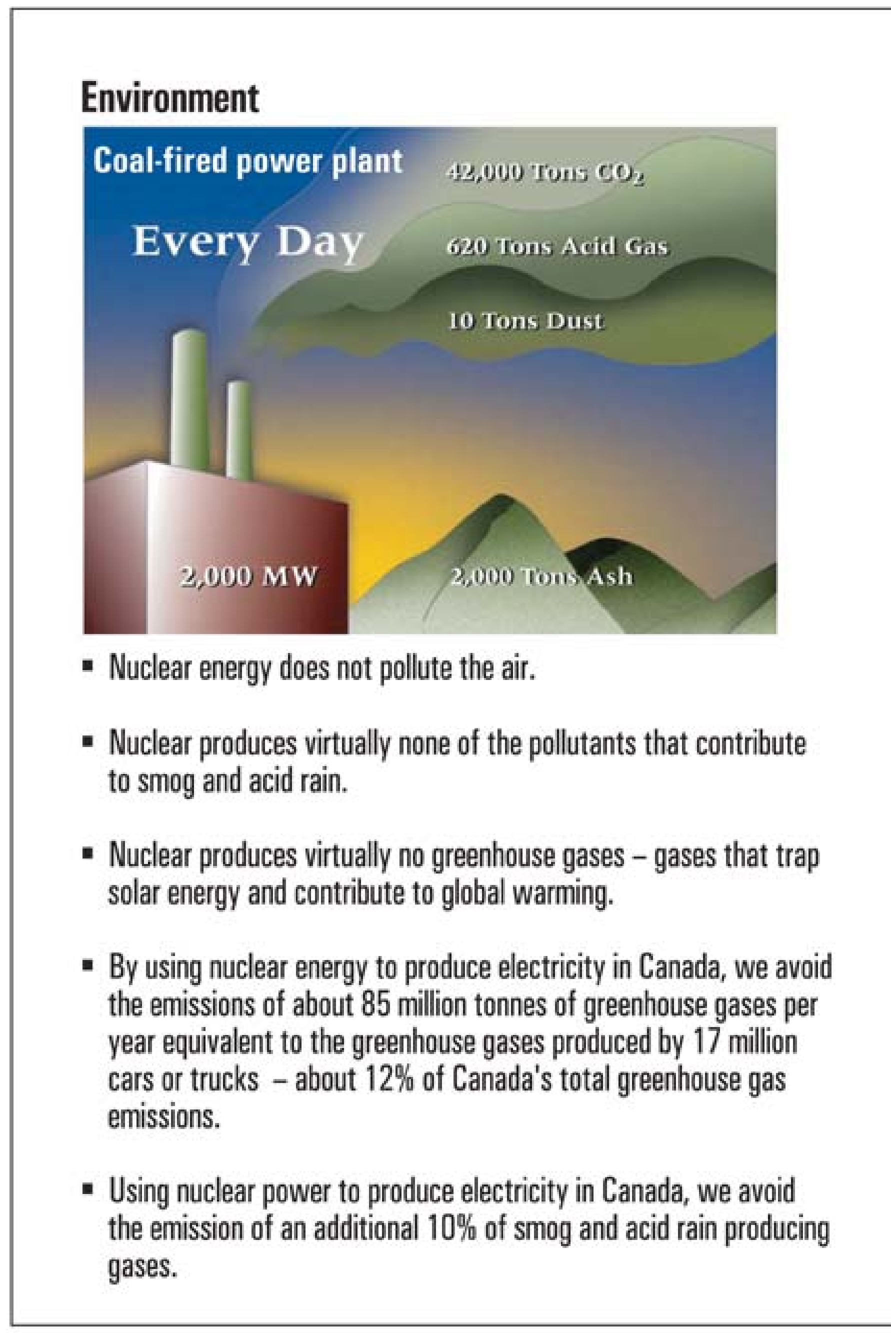
In Canada and Australia, the big dogs in uranium, few new mines have come on stream, Casey said. About half of global uranium production comes from Canada and Australia, with the North American country accounting for 30 percent. Uranium production in Canada totaled 10,455 tons in 2003 and producer shipments amounted to 9,906 tons.

The number of companies with major exploration programs in Canada is increasing as the uranium price rises, though most spending is focused on advanced projects. Last year, for example, only $13 million of some $36 million went to basic "grassroots" uranium exploration in Saskatchewan. The top three operators, accounting for the majority of the $36 million were: Cameco, Cogema Resources Inc. and UEX Corp.

In the United States, Wyoming, Nebraska and Texas are the only states with current production, though New Mexico, Arizona, Florida and Utah also boast known uranium resources, said Greg Barnes, a mining analyst for Canaccord Capital in Toronto.

As one would expect the recent jump in uranium prices sparked new activity in the industry, said Steve Bonnyman, a mining analyst for CIBC World Markets in Toronto.

see URANIUM page 9




COURTESY OF THE CANADIAN NUCLEAR ASSOCIATION

● ALASKA

# Red Dog's standards put it ahead of the pack

*Environmental auditors praise world's largest zinc mine in western Alaska for exceptional stewardship in tough conditions*

**By SARAH HURST**
*Mining News Contributing Writer*

Alaska's Red Dog zinc mine has received environmental certification under ISO 14001, becoming one of a handful of mines in North America to achieve this status. Malcolm Ting of the international inspection and certification agency SGS presented a banner to Teck Cominco and NANA Corp. representatives at an Alaska Support Industry Alliance event in Anchorage Dec. 10. When the banner flies at Red Dog, in the Arctic 90 miles north of Kotzebue, it will be the farthest north symbol of a certified mine.

"It doesn't contain specific requirements, but it's a performance-based standard requiring organizational commitment to the prevention of pollution. That's the key goal," said Ting. Red Dog, the world's largest zinc mine, was awarded the certification for successfully introducing its environmental management system (EMS). "Implementing a management system and having it certified takes commitment from everyone in the organization. Not only top management to start the initiative, to provide the impetus and the resources to get it going, but also from every employee in the organization," said Ting.

SGS visited Red Dog for an audit in March 2004, two years and 25,000 man-hours after the EMS project began. They looked at the operation, staff and records to ensure that the mine was in compliance with ISO 14001. "Red Dog's management system demonstrates improvement and growth in areas such as fugitive dust control, water quality, wildlife impact and energy consumption," said Ting. Red Dog will have to work continuously with SGS to keep current, as the international standards are updated every three years in Geneva, and the latest standards were just published in November.

Red Dog is owned and operated by Teck Cominco, under a development agreement with NANA, an Alaska Native corporation. A subsistence committee of eight Inupiat hunters, not employed by Teck Cominco or NANA, advises the companies on environmental issues. These elders from Noatak and Kivalina, the two villages nearest to the mine, can recommend that mining operations be shut down if subsistence resources are adversely affected, such as during the annual caribou migrations. "It has been a privilege working with that group," said Walter Sampson, NANA's vice president for lands and resources, and an Inupiat himself.

COURTESY OF TECK COMINCO LIMITED

**Red Dog is owned and operated by Teck Cominco, under a development agreement with NANA, an Alaska Native corporation. A subsistence committee of eight Inupiat hunters, not employed by Teck Cominco or NANA, advises the companies on environmental issues.**

> *"In order to be successful, every summer when we're discharging water we're making over 1,200 measurements. There's not a drop of water that hits the site that we don't track and monitor and control."*
> **—Jim Kulas, environmental superintendent at Red Dog**

## NANA opposed all development in the '70s

After the Alaska Native Claims Settlement Act of 1971, when Native corporations were formed and selected their lands, NANA's initial position was to oppose all development, Sampson said. "Until one day the shareholders of the region started to realize that services were coming into the region — light switches, telephones, TVs. Somebody had to pay for those services. Now we needed to develop something to create an opportunity for jobs for the shareholders." Production at Red Dog mine began in 1989 and today around 53 percent of the employees are NANA shareholders. The long-term aim is to reach 100 percent.

Through his experience at Red Dog, Doug Horswill, Teck Cominco's senior vice president for corporate and environment affairs, has been learning about Alaska Native culture. "One of the old salts in our business once said in a meeting that we're walking one path in two sets of moccasins," said Horswill. "It's a partnership that brings together very different perspectives. Once we give the go button in terms of a project construction, time is all-important. Time is very different in the traditional world. Time is a resource to be husbanded: you can take time to make decisions."

## Mining has to be compatible with nature

The days of miners disregarding the opinions of local people and leaving a trail of pollution are gone, said Horswill. "Today mining has to be compatible with nature. It's often in remote parts of the world, still, but now the recognition of the rights of the people that live there to protect their environment, to protect their culture, are at the forefront of our business. People today are not prepared just to sit idly by and let the bureaucrats, well-meaning as they may be, make decisions for them in respect of the company, they want to be part of that decision process."

In addition to the mine, there is a port, a road, an airport and two large accommodation facilities at Red Dog. Teck Cominco generates its own power with two power plants. The challenges include moving 1.2 million tons of concentrate away from the plant in a three-month ice-free season, in unpredictable weather conditions, and in an environmentally responsible way.

"We comply with over 155 permits, regulations and agreements," said Jim Kulas, the environmental superintendent at Red Dog. "In that body there are over 3,000 individual requirements that we have to meet on a daily, ongoing basis. That number just keeps growing, too." The water discharge permit regulations alone are more than 50 pages long. "In order to be successful, every summer when we're discharging water we're making over 1,200 measurements," said Kulas. "There's not a drop of water that hits the site that we don't track and monitor and control." ●

● SOUTHWEST ALASKA

# Pebble 2004 drilling yields promising results

*Northern Dynasty Minerals awaits revised resource estimate for huge gold-copper-molybdenum deposit*

**By ROSE RAGSDALE**

*Mining News Contributing Writer*

As its 2004 drilling program draws to a close, Northern Dynasty Minerals Ltd. is awaiting a revised independent estimate of the size of its Pebble gold-copper-molybdenum deposit in Southwest Alaska, Ronald W. Thiessen, the company's president and CEO announced in mid-December.

Northern Dynasty said it spent C$33.5 million to drill 173 holes that include the new East Zone discovery holes, which intercepted substantial higher-grade gold-copper-molybdenum mineralization outside of the previous resource boundary.

Earlier this year, Norwest Corp. established in an independent estimate that the Pebble prospect is the largest deposit of contained gold and the second-largest deposit of contained copper resources in North America.

A new estimate, due in the first quarter of 2005, will incorporate results from this year's drilling.

Northern Dynasty believes the results demonstrate and confirm exceptional uniformity and continuity of Pebble's deposit mineralization in a near-surface configuration with almost no internal waste over a broad area measuring at least 3 kilometers east-west and 2 kilometers north-south, Thiessen said.

A complete tabulation of assay results from the 173 core holes (numbered 4136 through 4309) drilled during 2004, along with drill hole location maps, is posted on the Internet at www.northerndynasty.com.

### Additional mineralization 15 kilometers southwest

Thiessen said another highlight of the 2004 drilling program is the discovery of additional gold-copper mineralization in a single hole drilled about 15 kilometers southwest of the Pebble deposit.

The 89-square-kilometer Pebble mineral system, which is known to host several substantial gold-copper deposits and occurrences, has been listed by the U.S. Geological Survey as the world's most extensive system of its type.

Norwest's estimate of the Pebble resource was 26.5 million ounces of gold and 16.5 billion pounds of copper within an inferred mineral resource of 2.74 billion tons grading 0.55 percent copper-equivalent (0.30 grams gold per ton, 0.27 percent copper and 0.015 percent molybdenum above a cut-off grade of 0.30 percent copper-equivalent).

The 2004 work program was designed to collect detailed engineering, environmental and socioeconomic data for completion in 2005 of a feasibility study and permit applications for a long-life, large-scale, open pit, gold-copper-molybdenum mine, Thiessen said.

A recent preliminary assessment indicates that the Pebble project could generate very attractive rates of return at production rates of 100,000 to 200,000 tons per day over a 30- to 60-year mine life.

In November, Northern Dynasty exercised options that could result in the company acquiring up to a 100 percent interest in Pebble and at least 50 percent interest in the surrounding exploration lands. ●

*continued from page 7*

## URANIUM

"There has been a lot more exploration and a lot more announcement this year from the juniors. But with any commodity this kind of thing happens," he added.

If prices continue to rise, that could change as prospectors redouble their efforts to find new deposits. Still, it typically takes up to 10 years from discovery to production for a well-sized mine, Casey observed.

### Handful of major companies have production

Uranium production is concentrated in a handful of major companies, including Cogema Resources and Cameco.

Cameco has four operating mines in Canada and the United States. It controls the world's largest high-grade reserves and low-cost operations in northern Saskatchewan, with ore grades 100 times the world average. It also has two new mines being developed in Canada and Central Asia and 550 million pounds of proven and probable reserves.

In 2004, Cameco's uranium sales volumes, for example, are expected to total about 32 million pounds.

Cogema produced 8.9 million pounds of uranium concentrate last year, down nearly 37 percent from about 14.1 million pounds in 2002. The decrease was primarily due to ceasing operations at Canada's Cluff Lake mine and lower production from its McArthur River mine.

A number of major and junior mining companies have launched exploration programs in recent years, most notably in the Athabasca basin of northern Saskatchewan, Labrador, Wyoming and New Mexico.

"It's very early days yet," Barnes said. "But a few companies have had encouraging results."

UEX, a Canadian uranium exploration company formed under agreement between Cameco and Pioneer Metals Corp., is one such company. UEX began trading on the Toronto Stock Exchange in July 2002. It is an active explorer in the Athabasca basin, which is about 100,000 square kilometers and host to the largest and highest-grade uranium deposits in the world.

UEX has a total of 13 projects either 100 percent-owned, joint ventured or under option, totaling about 613,000 acres in the eastern, western and northern perimeters of the Athabasca basin.

In October, UEX announced a discovery of uranium at the Black Lake Uranium Project in the northeast section of the Athabasca. Black Lake is a 70/30 joint venture between UEX and Cogema and UEX is the operator.

UEX staked more acreage surrounding Black Lake on behalf of the joint venture and it will continue exploration at Black Lake this winter.

### Others exploring in Canada, Wyoming

At a recent mining conference in New Orleans, analysts drew attention to Western Prospector Group, International Uranium Corp. and Strathmore Minerals Corp., all Canadian public companies with international exposure to uranium and holding interests in actual uranium deposits.

JNR Resources Inc. and International Uranium jointly announced Dec. 9 the completion of their summer diamond drilling program for the Moore Lake uranium project, in the Athabasca basin. The summer program was completed in late October and consisted of 33 holes (ML-47 to ML-71 and ML-501 to ML-508), totaling 12,437 meters.

Pleased with these results, the companies have approved an extensive exploration program for the winter of 2004-05.

"JNR and IUC's work at Moore Lake looks really interesting," Barnes observed.

Strathmore Minerals Corp. is another exploration company that began to acquire properties in the Athabasca region in late 2003. The company's landholdings total more than 800,000 acres within three separate areas: Waterbury Lake, Patterson Lake and Maybelle River.

Strathmore also announced last month acquisition of the PT Claims in the Powder River basin of Wyoming, some 600 acres. Wyoming has produced more than 80,000 tons, or 200-plus million pounds, of U308. The Powder River basin is home to two operating uranium mines and other known uranium resources.

Bonnyman of CIBC said Strathmore's work had come to his attention though he normally follows the majors.

### Production possible at current prices

Some uranium industry experts say few new deposits discovered in current exploration will be economic to produce at $20 a pound, but Barnes disagrees. "It depends on what they find, where they find it and how much they find," he said.

A number of companies have found new deposits this year that may prove economic to produce at current prices, particularly in the United States, he said. In addition to the Powder River basin in northern Wyoming, he said New Mexico appears to be a hot area that mining companies are exploring.

"I believe Altius Minerals is also looking in Labrador and found interesting trace minerals on the surface and is trying to track down where it's coming from," he added.

One junior mining company that is high on uranium's prospects is CanAlaska Ventures Ltd., which has rapidly acquired more than 444,000 acres in the Athabasca basin this year.

"Our objective is simply to control one of the largest uranium exploration portfolios in the Athabasca basin," said CanAlaska Chairman Harry Barr in the October/November 2004 issue of The Bull & Bear newsletter.

In January 2004, following the sharp upturn in the price of uranium, CanAlaska began a serious evaluation of uranium prospects, and by March, the company started assessing projects and prospects in the Athabasca basin just ahead of the market's confirmation of a new boom in uranium, he added. ●

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● ALASKA

# China, metals prices ignite stampede in Alaska

*2003 annual minerals industry report tallies lull before the storm in most sectors*

**By ROSE RAGSDALE**

*Mining News Contributing Writer*

What a difference a year makes ... along with a few things like rebounding metals prices, China's voracious appetite for minerals and investors' enduring love affair worldwide with gold.

That's the assessment of Alaska officials after reviewing the state's annual report on mining industry activity in 2003, released in late October.

The cumulative value of Alaska's mining industry in 2003 dipped slightly to $1.067 billion, down about $6 million from the $1.073 billion reported in 2002, according to the report, the 23rd in an annual series compiled by personnel from the divisions of Geological and Geophysical Surveys and Mining, Land and Water in the Alaska Department of Natural Resources and the Office of Economic Development in the state Department of Commerce, Community and Economic Development.

The annual value of Alaska's mineral industry has topped $1 billion for eight consecutive years. Rich Hughes, a state minerals development specialist, said the mining industry's cumulative value could climb nearly 50 percent this year to almost $1.5 billion thanks to a stampede of activity across the state.

## China the driving force

The driving force behind the acceleration is China, which is buying metal concentrates around the world, officials say.

Both precious metals and base metals are affected by the higher demand, according to Steve Borell, executive director of the Alaska Miners Association.

Gold, which is selling for nearly $450 per ounce — up from $391 per ounce a year ago — is luring investors wary of paper currencies, especially from India and the Arabic countries as well as China, Borell said in a recent interview.

Silver, copper and zinc also have seen substantial price hikes this year. But lead prices have jumped sharply during the past 12 months, up to nearly 45 cents per pound, compared with 16 cents last year.

"Buyers are paying more for lead now than they did for zinc a year ago," Borell said.

Mining companies responded to the higher prices by rushing to explore, develop and produce more in Alaska this year. Development friendly administrations in Washington, D.C., and Juneau helped the trend.

Borell said U.S. Forest Service lands in Southeast Alaska have seen a lot of new players recently, while mining companies stayed away from Bureau of Land Management and Forest Service lands in the past because of all the "hassles with the Clinton administration."

The Murkowski administration's work on improving permitting, speeding the process to get state title to streambeds and obtaining rights of way under RS2477 has encouraged miners to pursue projects in the state, he added.

## Alaska potential compared to Nevada

"Alaska has the potential of being as big as Nevada; it's equally mineralized, Hughes said.

Nevada produced about $3 billion in mineral commodities in 2003 and led the nation in the production of gold, barite, lithium carbonate and mined magnesite, and was second in the production of diatomite.

Alaska, by comparison, produced slightly more than $1 billion in mineral commodities in 2003, including sand and gravel. Metals, with a value of $888 million, accounted for 89 percent of total production; and zinc continued to be the state's most valuable metal.

Industry employment in 2003 totaled 1,906 full-time-equivalent jobs, a drop of about 900 jobs from the 2,824 jobs reported in 2002. Hughes said mining employment likely rebounded with the higher prices in 2004.

Last year, Alaska tallied 2,443 new state mining claims (296,800 acres), 92 new state prospecting sites (14,720 acres), and 676 new federal claims (595 lode, 81 placer, for a total of 13,520 acres). State claim staking increased dramatically from 2002 levels, while the number of new federal mining claims almost tripled from 2002 levels and reached staking levels not seen since 1997.

The amount of land in Alaska under claim increased from 2002 to 2003, with approximately 2.9 million acres of land covered by claims or prospecting sites in 2003. The largest groups of claims (mostly state claims) in Alaska occur in the Fairbanks, Pogo, Tangle Lakes (Denali block), and Pebble areas.

Drilling was conducted during all phases of mining (exploration, development, and production) and drilling totals for 2003 are 270,456 feet of core drilling and 100,178 feet of reverse-circulation drilling. The eastern interior region had the most drilling of all Alaska regions, followed by the southeastern and southwestern regions.

## Gold major exploration commodity

Exploration during 2003 occurred across most regions of the state, with the exception of the Alaska Peninsula area, in which there was no known mineral exploration. Several large projects accounted for most of the exploration expenditures and drill footage: Donlin Creek gold project (Placer Dome Inc.), Pebble copper-gold project (Northern Dynasty Minerals Ltd.), Greens Creek mine exploration (Kennecott Minerals Co./Hecla Mining Co.), Tintina Gold belt projects (Anglo Alaska Gold Corp.), Union Bay platinum-nickel-copper project (Freegold Ventures Ltd./Lonmin PLC) in southeastern Alaska, Nixon Fork gold-copper mine project (St. Andrew Goldfields Ltd.) and Fairbanks mining district gold projects (Kinross Gold Corp.).

About 41 percent and about 26 percent of the 2003 Alaska exploration expenditures were spent in southwestern Alaska and eastern Interior Alaska, respectively. Gold remained the major exploration commodity, with more than $19 million spent on precious metal exploration in 2003, but polymetallic and platinum-group-element exploration also increased from recent levels. Platinum-group-element exploration increased to almost four times the 2002 levels. Base-metal exploration in 2003 was at historic lows, reflecting continued low zinc and lead prices through much of the year. Higher metal prices during the latter parts of 2003 significantly extended Alaska's field season, with several large projects beginning during the normally waning parts of the exploration season.

## Most exploration funds Canadian

As in years past, most exploration funds, more than 68 percent, were derived from Canadian sources.

Reported and estimated 2003 mine development expenditures totaled $39.2 million, a slight increase of $5.7 million from the $33.5 million reported for 2002.

Mining development projects in 2003 included lode projects at the Kensington (gold) project in southeastern Alaska, Rock Creek (gold) project in western Alaska, and Pogo (gold) project in the eastern interior region. Significant development in the placer sector occurred at the Nolan Creek (gold) project in northern Alaska and Nome placer project in the western region. These projects consisted primarily of feasibility studies and permitting but included substantial drilling at Rock Creek and underground development and drilling.

In addition to high-profile projects such as Donlin Creek, Kensington, Pebble and Rock Creek, companies also explored lesser known prospects such as Mystery Creek, Gaines Creek, and Golden Zone near Cantwell, Hughes said. One company, in fact, is looked for diamonds outside Talkeetna, he added.

Illinois Creek, Fort Knox and Greens Creek mines, and more than 60 placer mines produced gold in 2003. Red Dog and Greens Creek produced silver. Greens Creek Mine achieved record production for the second consecutive year, while tons milled at Red Dog and Fort Knox decreased very slightly from robust 2002 levels. Placer gold production increased by about 750 ounces compared to 2002 production, while sand, gravel, rock, and other industrial materials saw a significant decrease.

Usibelli Coal Mine also marked its 60th year of operation last year, producing 1,088,000 tons of coal. The company signed a new two-year 400,000-tons-per-year contract with South Korean power companies. ●


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