

**Era Aviation, Inc.**  
CELEBRATING 50 YEARS OF FLIGHT

From pipelines to power lines, glacier fields to forest fires, Era Aviation, Inc. has transported passengers and equipment around the world for 50 years. It started in 1948 when Carl Brady flew his first commercial helicopter in Alaska, while working on a mapping contract. Today, Era is the world's oldest independent helicopter operator, and one of the largest aviation businesses worldwide. The industry's best pilots have logged over 2 million company flight hours with a fleet of 120 helicopters and fixed-wing aircraft. From the Arctic Circle to the equator, from South America to the Far East, Era sets the standards for safety and efficiency.

*Carl Brady with his Bell 47B (1948)*

**Era Aviation, Inc.**  
FLYING INTO THE NEXT MILLENNIUM.

ANCHORAGE, AK • 1 800-478-1947    LAKE CHARLES, LA • 1 800-655-1414    RENO, NV • 1 800-331-0960

Resource Development Council  
121 W. Fireweed, Suite 250  
Anchorage, AK 99503  
ADDRESS SERVICE REQUESTED

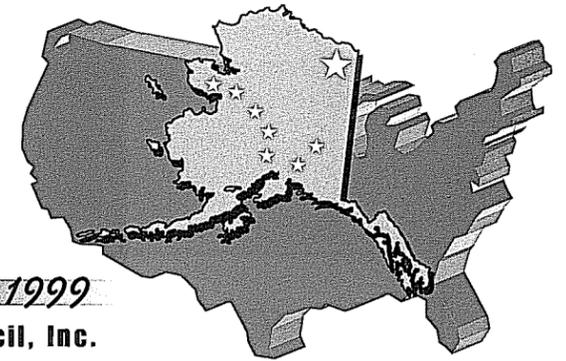
Bulk Rate  
U.S. Postage  
PAID  
Anchorage, AK  
Permit No. 377

This Edition Sponsored by: Era Aviation

# Resource Review

January 1999

A periodic publication of the Resource Development Council, Inc.



## Education program provides balance on natural resource issues

Private-public partnership provides Alaska students with information on state's natural resources

By Tadd Owens

From Florida to Alaska, children know all about global warming, acid rain, nuclear power, deforestation and endangered species. Throughout the nation, there's a heavy emphasis in classroom textbooks on why America must protect the environment and preserve the earth's resources, but little on the public benefits derived from the responsible development and use of natural resources.

In Alaska, however, a unique education program, created by educators in conjunction with industry, is helping provide a balanced perspective on natural resource issues.

AMEREF, the Alaska Mineral and Energy Resource Education Fund, provides teachers with an Alaska-specific, resource education program that prepares students to make informed decisions about Alaska's natural resources.

At the heart of the AMEREF program is the "Alaska Resources Kit: Minerals and Energy." This interdisciplinary set of curriculum modules, lessons, activities and support materials provides students with information about Alaska's rich heritage with minerals and energy. Hundreds of



Governor Tony Knowles is recognized at RDC's recent conference by former AMEREF president Paul Glavinovich for his support of resource education.

teachers and thousands of students throughout Alaska have been exposed to the Alaska Resources Kit over the past 12 years. More than 450 kits are currently in use throughout the state.

"AMEREF is a time-tested, public-private partnership that provides teachers and students with accurate and objective information to make informed decisions about development issues in our state," said House Speaker Gail Phillips, who was recognized recently for her long-time support of AMEREF.

Governor Tony Knowles, a strong advocate of education, praised joint efforts by the public and private sectors

"AMEREF is a time-tested, public-private partnership that provides teachers and students with accurate and objective information to make informed decisions about development issues in our state."

- House Speaker Gail Phillips

to make AMEREF successful.

"My administration is dedicated to providing Alaska's young people with the best possible education," Knowles explained. "The AMEREF program is an excellent example of the public and private sectors coming together to provide students and teachers with a unique, high-quality curriculum."

The AMEREF kits, modules, support materials and training programs are funded through private sector grants, donations and special events, while the State funds a part-time coordinator in the Department of Education to oversee curriculum development and interface directly with teachers and school administrators.

The program's five modules are written by a contractor hired by the Department of Education and overseen by a teachers advisory board.

In recent years, AMEREF has expanded to include a new module, "Energy and the Environment." In 1998, AMEREF continued to improve and revise its modules, conducted multiple teacher training workshops, and created a web site.

(Continued to page 6)



**Message from the Executive Director**  
by Ken Freeman

## RDC voices concern over changes to nationwide permits

Recently the Corps of Engineers proposed substantial changes to the Nationwide Permitting (NWP) system. The system serves as a means of streamlining permitting for many community and resource development activities that have minimal adverse environmental impacts in wetlands and waters of the United States.

Wetlands permitting in Alaska can be extremely far-reaching, considering that of all the wetlands in the United States, approximately 64% are in the 49th state. In line with changes the Corps is planning for the NWP program, the agency recently sought comments on a regional basis to its proposed revisions.

In its comments to the Corps, RDC

questioned the need for changes to the NWP program in order to further environmental protection. No compelling argument has been made to show activities authorized under the NWPs have had more than minimal adverse effects on the environment - especially in Alaska.

RDC asked the Corps to consider Alaska's unique circumstances with respect to many of its proposed changes. In particular, Alaska has 174 million acres of wetlands, which represents nearly half of the state. Nearly all community and infrastructure development in Alaska involves wetlands.

Some of the proposed changes restricting the use of NWPs include prohibiting the use of any of the proposed replacement permits for NWP 26 in the 100-year floodplain. In addition, the changes also ban the use of any of the NWPs in "critical resource" waters and adjacent wetlands, or wetlands near impaired waterbodies.

These proposed changes create a more arduous wetlands permitting program given the increased costs and time delays associated with the process of determining if a wetland is in or near a critical or impaired waterbody. If a proposed project is found to be associated with a critical or impaired waterbody, the project would then be bound by the individual permit process.

Limiting the use of NWPs will increase demand for individual permits which require the rigid sequencing steps of avoidance, minimization, and compensatory mitigation. These obligations are unusually burdensome for Alaskans. Avoidance is almost impossible in a state where nearly all the remaining land for community or resource development is defined as jurisdictional wetlands. Furthermore,

### Pollock fishery limited to aid Steller sea lions

Federal fisheries managers have approved new no-fishing zones, catch limits and plans to break up the fishing season for the pollock fishing fleet to protect the endangered Steller sea lion.

Impact on commercial fishing and coastal communities will be severe. Pollock is Alaska's most valuable fishery, worth about \$670 million annually.

Fishermen predict the measures will cost industry at least \$100 million.

Environmentalists do not believe the changes go far enough in protecting the sea lions while fishermen insist there is no solid scientific evidence or justification to support the sweeping changes.

Although the pollock fishery is healthy, federal biologists contend fishing is depleting pollock in critical sea lion habitat areas. The sea lions, which biologists claim are undernourished, feed on pollock.

The limits to the fishery were announced at press time of this publication. A more thorough report will follow in the next Resource Review.

due to the abundance of wetlands in Alaska, compensatory mitigation is frequently unavailable on-site and makes little biological or economic sense off-site.

Alaska's unique situation (abundant wetlands and significant community and infrastructure development needs) magnifies the effects of any new wetlands restrictions. Changes to the Corps' NWPs risk impeding essential community and economic development in Alaska. Constructing safe water and sewage systems, upgrading rural air strips and port facilities, and building adequate housing, schools, and clinics must take priority in Alaska.

The Corps' proposed changes to its NWP program that restrict wetlands permitting will hamper Alaska's ability to provide for quality of life and economic development.

**Resource Review** is the official periodic publication of the Resource Development Council (RDC), Alaska's largest privately funded nonprofit economic development organization working to develop Alaska's natural resources in an orderly manner and to create a broad-based, diversified economy while protecting and enhancing the environment.

#### Executive Committee Officers

President ..... Allen Bingham  
Sr. Vice President ..... Jim Branch  
Vice President ..... Robert Stiles  
Secretary ..... Uwe Gross  
Treasurer ..... John Sturgeon  
Past President ..... Scott Thorson

#### Staff

Executive Director ..... Ken Freeman  
Deputy Director ..... Carl R. Portman  
Finance/Membership ..... Steven Dougherty  
Special Assistant ..... Tadd Owens

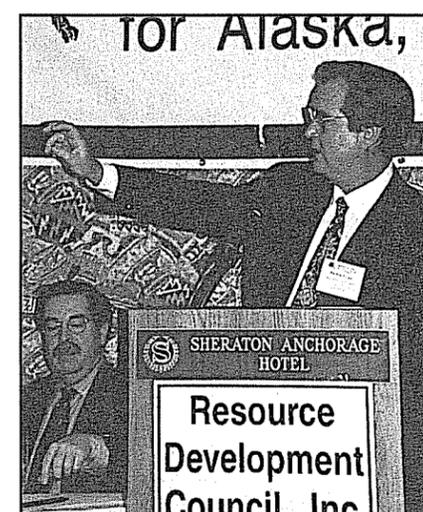
RDC is located at 121 W. Fireweed, Suite 250, Anchorage, AK 99503, (907) 276-0700. Fax: 276-3887. Material in this publication may be reprinted without permission provided appropriate credit is given.

RDC's e-mail address:  
[resources@akrdc.org](mailto:resources@akrdc.org)  
Writer & Editor  
Carl Portman

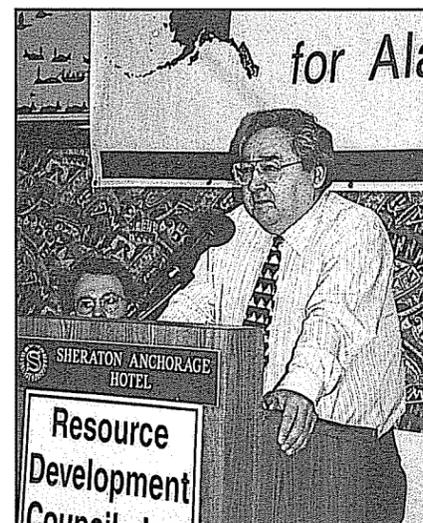
## RDC members gather for Alaska Resources 2000



Governor Tony Knowles and ARCO's Frank Brown discuss Alaska energy issues with Bob Gee, Assistant Secretary of Energy.



Steffen Palko, President and Vice Chairman of Cross Timbers Oil Company, addresses a luncheon crowd of more than 200 RDC members on his company's newly acquired interests in Alaska.



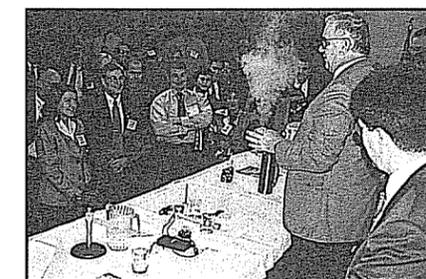
Charlie Curtis, President of NANA Development Corporation, joined other Native leaders in discussing future prospects for Native industry.



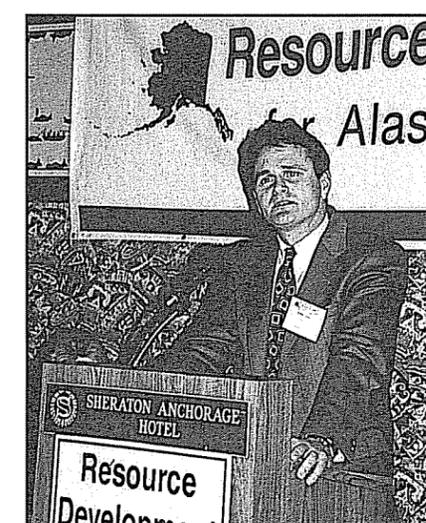
Rhonda Thompson talks on line with the Russian Far East at the Sakhalin Alaska Consulting Group exhibit. Partners Dave Parish and Todd Croffett assist Thompson.



Sealaska's Rick Harris makes a point.



Phillips Petroleum's Larry Porter presents an LNG demonstration experiment before conference attendees.



John Iani, Vice President of Corporate Affairs for UniSea, focuses his comments on emerging trends shaping the fishing industry.



Conference exhibitor Grant Yutzenka pitches the Grand Aleutian Hotel.

## Despite low oil prices, ARCO moves forward with Alpine development

(Continued from page 5)

100 engineering and procurement personnel are also at work in Anchorage, completing design of Alpine facilities, organizing the 1999 construction effort and acquiring necessary materials for Alpine development.

We will soon begin construction of an

extensive network of ice roads to support our 1999 construction effort. This winter, we will finish building the Alpine airstrip and the gravel road and pads required for Alpine development--including the gravel pad that will serve as Alpine Drill Site No. 2. This winter, skilled craftsmen dispatched from

Fairbanks union halls will install 120 miles of Alpine pipeline. This winter, we will move a Doyon drilling rig and 1,500 truckloads of supplies to the field. This winter, five years of Alpine development drilling will begin.

We're not backing off the Alpine project. We're pushing ahead.

# AMEREF revises, improves modules

(Continued from page 1)

In January 1998, "Elbow Deep in Mudpies and Minerals: A Primary Adaptation for K-4 Classrooms," was completed and more than 100 copies have since been distributed to teachers across the state. The Primary Adaptation rewrites many of the most popular lessons from other modules for use by the youngest students.

The final draft of "Alaska's Minerals and Mining" was also recently completed and sent to teachers across the state for pilot testing. Revisions to "Alaska's Geology," AMEREF's most popular module, will begin this spring. The latest revisions will incorporate the Learning Cycle Model and Assessments in order to comply with the state's new Quality Schools Initiative.

"The revision process illustrates the uniqueness of the program," said Paul Glavinovich, a geologist and immediate past president of AMEREF. "Private sector representatives review the content of the draft modules to ensure technical accuracy," he explained. "Meanwhile, the Department of Education applies the state's latest educational standards to the revised module and teachers pilot test the draft in their classrooms. The result is a product desired by teachers both for its



Teachers gather for a training session on how to use the Alaska Resources Kit.



Former AMEREF President Paul Glavinovich receives an \$11,000 check from Bob Stiles, President of the Alaska Coal Association. The donation came from the proceeds of the association's golf tournament, held each summer to benefit the AMEREF program.

scientific merit and its adherence to the latest educational methodology."

Juneau primary school teacher Cheryl Cooper noted that AMEREF's materials are designed for a busy teacher's convenience. "The modules are written in a very teacher-friendly format and are used in classrooms across the state," Cooper said.

To ensure the curriculum modules and Alaska Resources Kit are used effectively, AMEREF holds teacher training workshops and training of trainers throughout the state. In conjunction with the Department of Education, seven workshops were held throughout the state in 1998. Two one-credit courses for teachers were also offered.

In order to take advantage of Alaskan schools' increasing access to the internet, an AMEREF web site has been established to enhance teacher and student access to the program's materials. Included on the site, located at [www.ameref.org](http://www.ameref.org), are the program's mission, an inventory of the Resources Kit, curriculum module texts, links to related industry, government and education sites, and a survey page in order to improve communication among teachers, the AMEREF board and the Department of Education.

AMEREF is the beneficiary of two major annual fund raising efforts, the

Alaska Coal Association's Coal Classic Golf Tournament and an annual raffle held at the Alaska Miners Association's (AMA) annual convention.

"The Alaska Coal Association strongly believes in AMEREF's mission and is committed to keeping the program viable," said Bob Stiles, the association's president.

Glavinovich noted that the AMA convention and raffle is an event which epitomizes the diversity and strength of support from the mining community.

"Individuals, corporations, and mining districts throughout the state form the backbone of private support for the program," Glavinovich said.

According to Teresa Imm, AMEREF has ambitious goals for the new year. A long-time AMEREF board member, Imm succeeded Glavinovich as president in November. Imm will oversee a survey of AMEREF kit holders in order to assess the program's effectiveness and explore areas where the curriculum can be improved.

"Currently we are searching for ways to better utilize technology to improve the delivery of our materials, as well as increase communication with teachers," said Imm. "With support from industry and the state, AMEREF will continue to provide a one-of-a-kind educational program for Alaskans."



## Thoughts from the President by Allen Bingham

# The greening of the classroom

A new report illustrates how textbooks, widely-used in grades 6-12 across the U.S., mislead students with biased information about environmental issues.

"Textbook Trash: The Polluting of Environmental Education," was released by the Center for the New West, a Denver think-tank, and written by Michael Sanera, director of the Center's Environmental Education Research Institute in Tucson.

The 16-page report is published in an unusual format, using graphic, side-by-side examples to compare specific textbook passages about environmental issues with data and research that dispute each textbook explanation.

"Too often textbooks propagandize kids and oversimplify environmental issues," Sanera writes in an introduction to the study.

In reviewing the textbook, Sanera followed guidelines for fairness and accuracy published by the Troy, Ohio-based North American Association for Environmental Education, the nation's largest association of professional environmental educators. Sanera found that the textbooks repeatedly violate these guidelines.

Sanera's report provides numerous examples of these violations, focusing on issues ranging from global warming and air pollution to population growth and ozone depletion. In many cases, Sanera said textbooks fail to teach the complexity of the issues and instead opt for scare tactics and propaganda while purporting to explain Earth-in-the-balance issues.

Most of the textbooks are one-sided, Sanera claims. They also fail to explain basic economics, such as prices, which affect demand for and supply of natural resources and energy. He pointed out that many texts ignore sound science.

Some books have an advocacy tone and often favor socialist solutions to problems over capitalist ones.

"With few exceptions, textbook treatment of environmental issues is influenced by an ideological view that presents human beings as evil and blames the U.S. in particular and Western industrial societies in general for every environmental ill," Sanera said.

One example of "misleading and one-sided information" is a lesson on timber cutting in U.S. forests. Sanera singled-out the text, "Ecology: Earth's Living Resources" for leaving the impression that America's forests are declining. What is missing, he says, is the fact that forests have grown more timber than has been cut. Another point Sanera made is the text's failure to inform students that the spotted owl can survive in new growth forests, as well as the remarkable recovery of other species.

Because few things are more precious than the education of our children, the Alaska Mineral and Energy Resource Education Fund (AMEREF) works in partnership with the Alaska Department of Education (DOE) to ensure Alaska students get objective information on complex, diverse issues and that they develop critical thinking skills. AMEREF produces the highly-acclaimed Alaska Resources Kit which includes student lessons, activities and support materials for teachers.

At the heart of the AMEREF program are five modules focusing on Alaska resource issues and the environment. These modules are updated and revised by DOE curriculum professionals and reviewed by scientists, educators and industry representatives. Teacher training and support is provided through the DOE, but funded by AMEREF, which also

pays for module development and revision, the kits and their distribution.

State oversight of the program ensures objectivity and the compliance of all materials to strict guidelines and standards.

AMEREF is not a pro-development curriculum. It is specific to Alaska and focuses on the role natural resources play in everyday life. When it addresses controversial issues, like oil and gas development in ANWR, both sides of the issue are clearly presented so the student can make an informed decision. AMEREF encourages a teacher to consider all aspects of an issue. It also emphasizes the economic side of the issue, especially since such considerations are lacking in many textbooks.

Governor Tony Knowles, House Speaker Gail Phillips, Senator Mike Miller and many other legislators are to be congratulated for their bipartisan support of this Alaska-based education program. A big thank you also to private sector benefactors for their continuing support and confidence in AMEREF.

## NPR-A lease sale this spring

The Interior Department will hold an oil and gas lease sale for 4 million acres in the National Petroleum Reserve - Alaska (NPR-A) in late April or early May.

The announcement comes as a lawsuit filed by eight environmental groups seeks to block oil exploration and development in the 23-million acre reserve. The State has intervened in the lawsuit, claiming leasing plans represent a balanced approach to development and environmental protection.

# Tarn sets speed record

*Satellite accumulation comes into production  
16 months after field deemed commercial*

On January 1, 1998 a cold breeze blew across the dark and frozen tundra at a barren site nine miles southwest of the Kuparuk oil field on Alaska's North Slope. Eight months later under a brilliant sun, a new oil field with only a small surface footprint on the wide expanse of green tundra has come to life, pumping oil to domestic markets.

The Tarn oil field is now producing more than 22,000 barrels of oil per day from 20 wells located on two small gravel pads. The field is expected to reach peak production of more than 30,000 barrels per day by late 1999, ranking it among the top 30 domestic oil fields.

Tarn is a 50 million barrel oil field and the second satellite accumulation to begin production in the Kuparuk River Unit since December 1997. It sits as a model of a new generation of oil fields which virtually eliminate new emissions into the environment.

ARCO owns 55 percent of the field while BP holds a 39 percent interest, followed by Unocal, Mobil and Chevron.

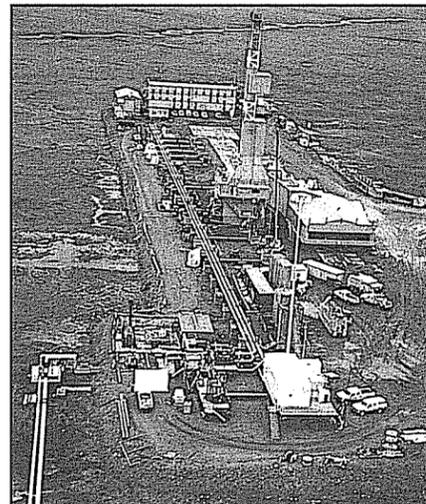
"For the industry and state these new satellite fields will mean new re-

serves, new production and new state revenue," said Kevin Meyers, President of ARCO Alaska. "For ARCO, Tarn is one more step toward achieving our Alaska production goal of 'No Decline After 99.'"

For BP, satellite developments like Tarn play an important role to grow the company's Alaska production over the next several years, according to President Richard Campbell. "They're also an important new source of jobs and business opportunities for Alaskans," Campbell said.

Full development of the Tarn oil field will include 40 wells from two drill pads, averaging 6.5 acres each. Field development cost \$150 million. Tarn oil is transported to Kuparuk by two 10-mile pipelines. The oil is then processed and sent to Pump Station One at Prudhoe for shipment down the 800-mile Trans-Alaska Pipeline to Valdez.

Tarn was brought quickly into production because of an alignment agreement between ARCO and BP that allows production from satellite oil accumulations like West Sak and Tarn to be processed through existing



*A Doyon drilling rig operates on one of Tarn's two gravel pads.*

facilities at Kuparuk. The agreement allows industry to unlock the full potential of the Greater Kuparuk area by encouraging exploration, facilitating development and maximizing use of existing facilities, according to Frank Brown, ARCO's Vice President for Alpine.

"When we have successes like Tarn, the agreement will allow us to move new production quickly to market," Brown said.

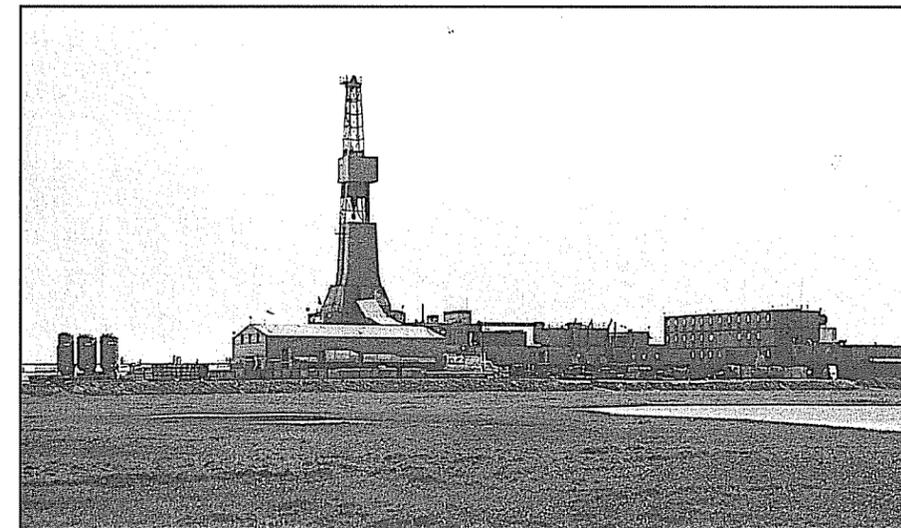
Scott Jepson, ARCO's Development Manager for the Greater Kuparuk Business Unit, noted the real achievement of Tarn was the record speed in which the field was brought into production. Jepson explained that only 16 months passed from the time Tarn was deemed a commercial prospect to production start-up. He credited teamwork among contractors and a cooperative relationship of industry partners with the quick response.

Technology was another major factor in Tarn's success, providing industry with better tools to find new oil reserves. Technology has also lowered exploration and production costs, enhancing the economics of small, marginal fields. Moreover, new technologies have diminished the footprint of development on the Arctic landscape.

"Technologies used at Tarn reflect ARCO's and BP's commitment to minimize environmental impact," said David Blackwood, Manager of BP's Western North Slope Business Unit.

*"Tarn had a very positive impact on the outcome of our first North Slope areawide lease sale. Industry is definitely interested in this area."*

**-Commissioner John Shively**  
Alaska Department of Natural Resources



*Tarn is a satellite accumulation located nine miles southwest of Kuparuk. The field is ranked among the top 30 domestic oil fields.*

In exploration, high-tech 3-dimensional seismic surveys played a big role in Tarn's discovery and is assisting industry in identifying numerous satellite prospects near Prudhoe Bay and Kuparuk with significant reserve potential.

In the case of Tarn, conventional exploration efforts were first launched in 1991 with the drilling of the Bermuda well. According to Mike Richer, ARCO's Vice President of Exploration and Lands, Bermuda showed some oil in the area, but subsequent drilling came up dry. It wasn't until 3-d was shot in 1996 that the picture became clear. With fresh information from 3-d, ARCO was successful in drilling four follow-up wells and Tarn was deemed a commercial prospect in March 1997.

"We were absolutely saved by 3-d in 1996," Richter said. "It has saved exploration on the North Slope."

John Shively, Commissioner of the Alaska Department of Natural Resources, credited 3-d seismic surveys with keeping industry interested in Alaska's North Slope. "Without

technological advances like 3-d seismic, the interest wouldn't be there because of the high cost of doing business," Shively pointed out.

That's the good news about 3-d, the downside for Alaska is that it's working all too well across the world.

"Unfortunately, 3-d doesn't work just in Alaska," Shively noted as he pointed out major new oil discoveries abroad. "It is a factor in why world oil supply is so high and prices are so low."

The worldwide price of oil has fallen sharply and Alaska crude has plummeted to less than \$10 a barrel. Oil revenues pay for about two-thirds of Alaska's general fund budget.

Because Tarn is further inland than other North Slope fields, it has spurred greater interest in lands outside the traditional oil producing coastal areas, as indicated by the volume and specific areas leased in Areawide Lease Sale 87.

"Tarn had a very positive impact on the outcome of our first North Slope areawide lease sale," Shively said. "Industry is definitely interested in this area."

## ARCO moves forward with Alpine

*by Frank Brown*  
Vice President, Alpine  
ARCO Alaska, Inc.

Contrary to recent press reports, ARCO is not "backing off" Alpine or slowing development of this 365-million barrel North Slope oil field. The Alpine field will begin production at expected rates, on schedule, in mid-2000.

In completing a large and complex project like Alpine, it is standard procedure to challenge plans made in the design phase and to make changes that improve the project or reduce its overall cost. Because oil prices are so low, and expected to remain low for an extended period, we are working this process very hard on the Alpine project. Our goal is to reduce 1999 Alpine spending by cutting project cost and delaying some expenditures.

For example, we have suspended construction of Alpine living quarters while we determine if there is a lower-cost option for providing camp facilities. We have also adjusted plans for accomplishing full development of the Alpine reservoir, a process that will take at least five years. By focusing early development drilling at Alpine Drill Site No. 1, we can defer construction of some facilities destined for Alpine Drill Site No. 2 and still achieve scheduled production of 40,000 barrels of oil per day in mid-2000, increasing to 70,000 barrels of oil per day in 2001.

This kind of project optimization is a prudent and necessary response to record-low oil prices. We regret that taking these steps is making it necessary for our contractors to lay off some workers. However, the number of people at work on Alpine will soon begin to increase. This winter, more than 1,000 Alaskans will be employed on the project. It's going to be a very busy year.

More than 300 people are already at work in Nikiski and Anchorage, fabricating production and processing facilities that will be delivered by sealift to the North Slope in August. These are the first sealift-scale oil-processing facilities fabricated in Alaska. More than

*(Continued to page 7)*



*ARCO's Dana Linquist and Wyche Ford crank up well 2N 323 at the start-up of the Tarn field on July 8, 1998. (Photos by Frank Brown)*