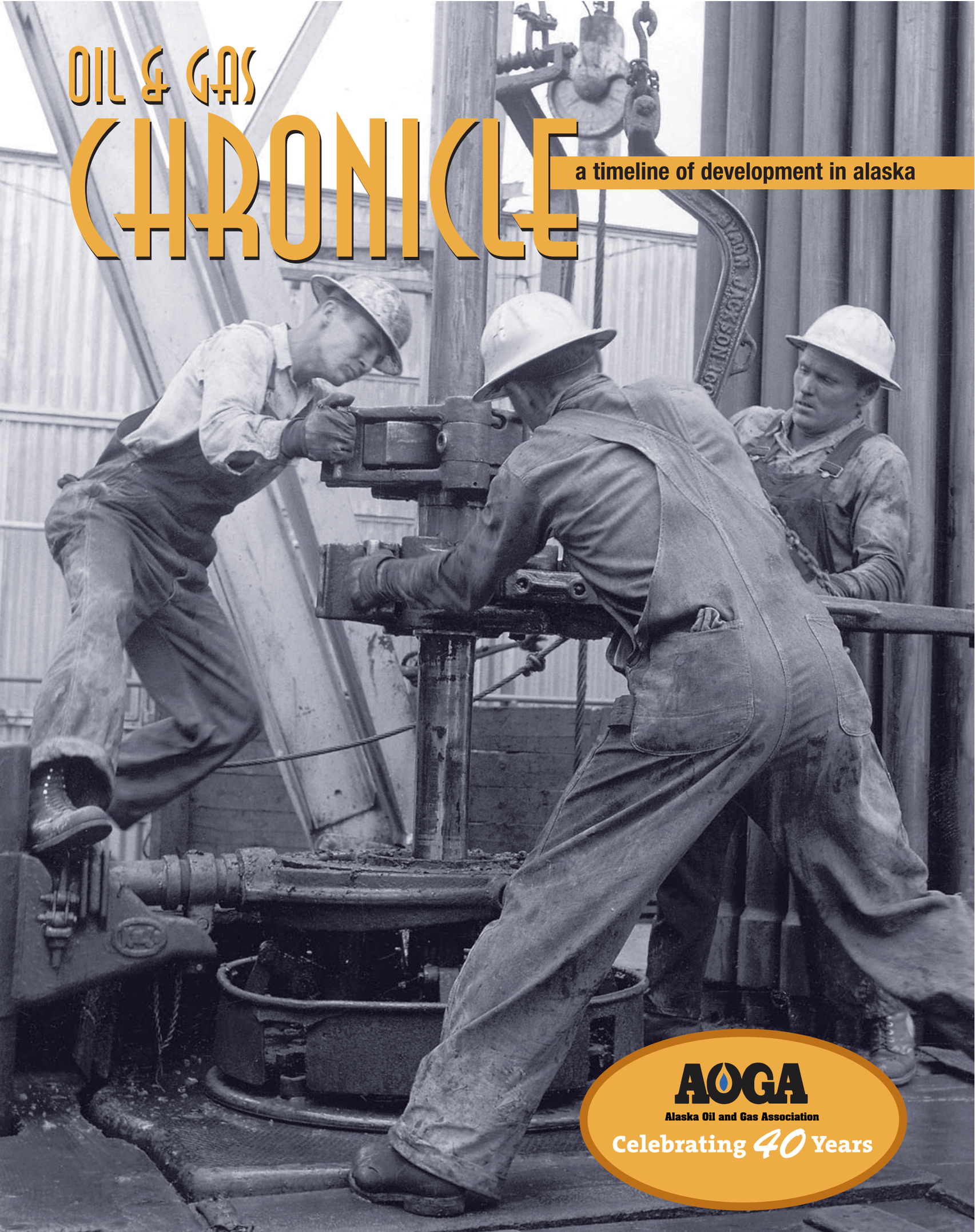
OIL & GAS CHRONICLE

a timeline of development in alaska

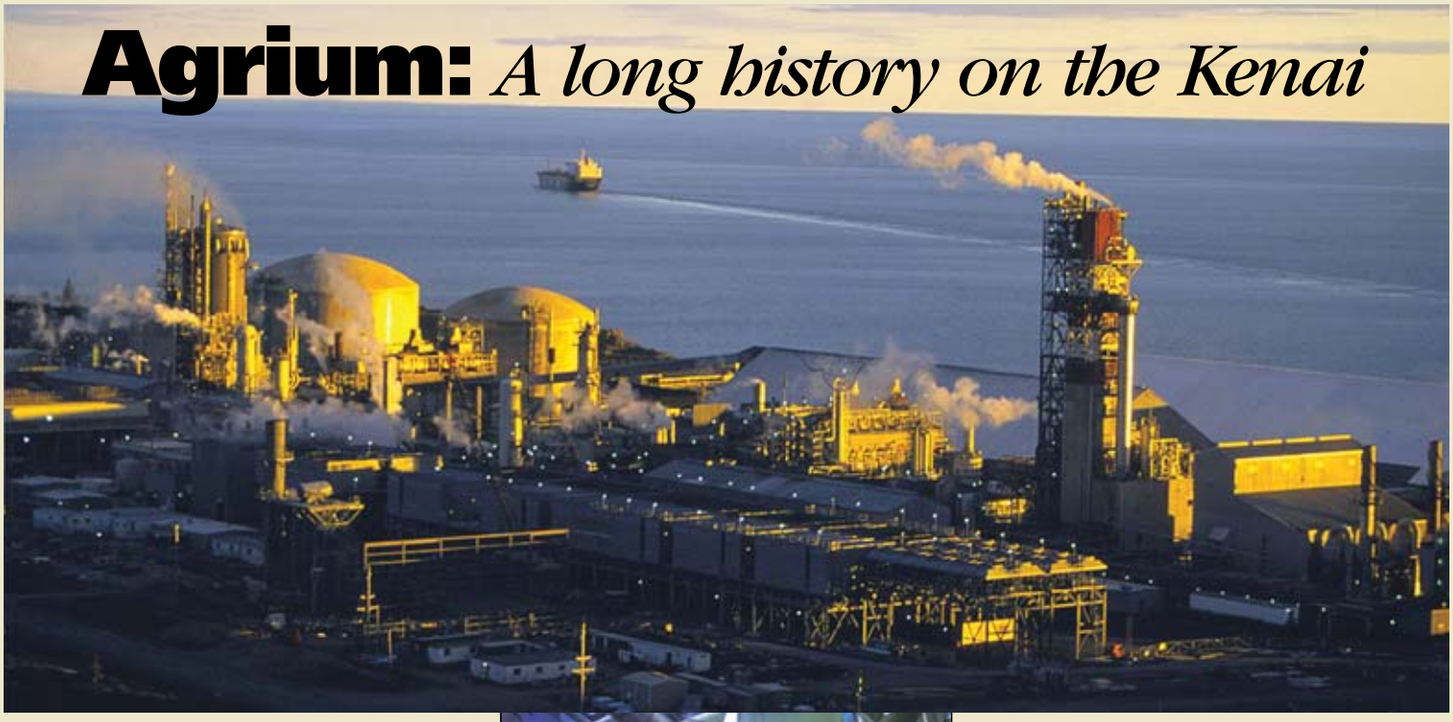


AOGA

Alaska Oil and Gas Association

Celebrating 40 Years

Agrium: *A long history on the Kenai*



The natural gas industry in Cook Inlet is changing. Relationships that paid dividends to Alaska for years now face an uncharted future. Agrium Kenai Nitrogen Operations is caught in this evolution because it needs a new, long-term supply of feedstock in order to keep its plant operational.

The fertilizer plant provides a strong economic anchor through its commitment to Alaska hire and local purchases. Few businesses equal its economic impact because it returns over $9.00 to the economy for every 1,000 cubic feet of natural gas it buys.

For 38 years, the plant has turned Cook Inlet natural gas into ammonia and urea for export primarily to countries around the Pacific Rim. The facility is the second largest nitrogen production complex in the United States, and accounts for about 6 percent of North American nitrogen production.

The Agrium plant is located 10 miles north of the City of Kenai on Cook Inlet. Accessible by air, water and land, the complex is made up of two ammonia plants and two urea plants. The ammonia plants have a combined annual production capacity of about 700,000 tons of anhydrous ammonia and 1.1 million tons of urea per year. That's enough to fertilize a strip of farmland 16 miles wide stretching from Los Angeles to New York.

The principal raw materials for the ammonia and urea are natural gas, water and air. The gas is piped to the facility from nearby gas fields. The original plant was completed in 1968 and its size almost doubled in 1977.

Due to declining natural gas supplies in Cook Inlet Agrium has had to operate at less than capacity for the past two years. This has also resulted in the layoff of one-third of our workforce. Since December 2004 the plant has operated on a series of short-term contracts as it searched for a long-term solution. Today only 50% of the complex is operating.

The McDowell report on the closure of Agrium paints a glum picture for the Kenai Peninsula:

- Immediate loss of some of the community's highest-paying, year-round jobs.
- Immediate population loss with gradual, long-term population decline.
- Declining average wages as manufacturing jobs are replaced by lower-paying service sector jobs.
- Declining business sales and sales tax revenues.
- Declining property tax base that results in declining tax revenues.
- Increased tax burden on residents and businesses that remain.

Cook Inlet – which supplies gas to power and heat Rail belt Alaska - is running out of gas. In 1970, gas reserves in Cook Inlet stood at about 8 trillion feet (tcf) with production around 145 billion cubic feet (bcf). Over time, the Cook Inlet reserves have been slowly consumed. Today the reserves are around 2.3 tcf and consumption is about 200 bcf. As demand has increased, most producing fields have long passed their peak production, which has led to a dramatic decline in known gas reserves.

While there is now an active exploration program in Cook Inlet, it is highly unlikely a new discovery large enough to fulfill Agrium's needs will be made anytime in the immediate future.

A study completed by the McDowell Group found that Agrium was a major anchor of the Kenai Peninsula economy and a major contributor to the state economy.

"By Alaska economic standards, the Agrium operation is exceptional for its combination of high pay levels, amount and concentration of expenditures in the local level, and the degree of value-added manufacturing that occurs in Alaska prior to export. The result is a high multiplier impact," according to the McDowell study.

Last year, Agrium purchased $75 million of goods and services from 200 Alaska businesses.

Agrium is a major supporter of educational and non-profit activities, and its employees are deeply involved in activities that enrich the lives of all its citizens. They coach sports, serve in leadership roles in major youth organizations and as teachers at the Kenai Peninsula College, as advisors in the Junior Achievement program and as first aid instructors and Sunday school teachers.

Today Agrium seeks new short-term gas supplies and a long-term solution for Alaska, for Kenai, for the industry. Stay tuned.

The Past: Risk. Challenge. Promise. The Future: Go For It

BY JUDY BRADY

Executive director, Alaska Oil & Gas Association

The history of oil and gas in Alaska is the story of huge risks, daunting challenges, and a promise kept to provide a secure economic base for Alaska and its people.

The history of Alaska took a new path with the discovery of oil at Swanson River in 1957. That discovery was viewed by the U.S. Congress and the people of Alaska as the promise of a secure economic base—and Statehood was granted in 1959. With the discovery of Prudhoe Bay and the building of the Trans Alaska Pipeline System (TAPS), oil and gas development became, and continues to be, the economic linchpin for Alaska's past, present and future.

JUDY PATRICK

JUDY BRADY

From 1957 to today, revenues from oil and gas development benefit every Alaskan by providing thousands of jobs; financing schools, roads, harbors and rural airports; supporting urban and rural community growth, health and safety. Since 1980 no Alaskan pays a state income tax and since 1982 every individual in every family shares in Alaska's oil revenues in a very personal way through the Permanent Fund dividend.

The Alaska Oil and Gas Association (AOGA) is honored to celebrate its 40th anniversary and we are grateful to Petroleum News for helping us share some of the milestones that changed Alaska and the companies that operate here.

AOGA is a private, non-profit trade association whose 18 member companies represent the majority of oil and gas exploration, production, transportation, refining and marketing activities in Alaska. Our role is to provide a forum for discussion and a point of decision on issues that affect the industry; our goal is a vital oil and gas industry that contributes to a vibrant economy in the State of Alaska.

Thirteen of the Association's member companies are explorers/producers on the North Slope and/or Cook Inlet.

Several of these companies — as you will read about in this anniversary edition — have been exploring and producing in Alaska since the 1950s and 1960s. They are the pioneers. They took the first risks; they made the first discoveries; they have continued to take the risks and make investments over the past 40 plus years. They are the explorers/producers of the legacy fields that produce almost 90 percent of Alaska's oil on the North Slope as well as over 90 percent of the oil and gas in Cook Inlet: ConocoPhillips, BP, ExxonMobil on the North Slope; Chevron and Marathon in Cook Inlet. And a pioneer company showing renewed interest in Alaska, Shell.

Other members include independent companies newer to Alaska — Anadarko, Pioneer, Kerr-

see page 4

AOGA
Alaska Oil and Gas Association

Oil & Gas Chronicle: A timeline of development in Alaska

This special publication was released July 2006. It was produced by Petroleum News for the Alaska Oil & Gas Association.

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Cover photo: Workers at the Swanson River field, circa 1957 Courtesy of Marathon Oil Co.

Petroleum news

A word of thanks from Judy Brady

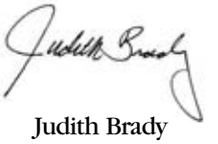
Thank you Petroleum News. What started out as a small 40th anniversary celebration for the Alaska Oil & Gas Association emerged as a gigantic, fascinating, milestone tribute to the pioneering companies and the hundreds of thousands of Alaskan men and women who played a role in the history of oil and gas in Alaska.

The timeline contained in this Anniversary Edition will undoubtedly provide the basis for future histories related to oil and gas. The timeline, along with the dozens of background stories, provide an intriguing snapshot of the incredible challenges and daunting public policy debates that are part and parcel of the history of the oil and gas industry in Alaska.

What is so special about this edition is that it grew out of the great knowledge and appreciation for the oil and gas industry held by Kay Cashman, publisher and executive editor, and Kristen Nelson, editor-in-chief. It was these two newspaperwomen who had the dream, the energy and the knowledge to create the Petroleum News in the first place and it is their love of the industry (always "tough love" in their straight reporting) that made this edition possible.

Thank you Kay and Kristen. Thank you Petroleum News reporter Alan Bailey, special publications editor Amy Spittler, freelance writer Steve Sutherlin, designers Steven Merritt and Tom Kearney and individuals such as Ken Boyd, Ken Thompson, Jim Palmer, Jim Weeks, Al Hastings, Mark Myers and Arlen Ehm who Kay said lent insight and provided information for the project.

Also special thanks to Kara Moriarty who was the lead from AOGA's staff and the individuals from our member companies who took the time to review the timeline.



Judith Brady
Executive Director
Alaska Oil & Gas Association

Companies with profiles in this issue

Thank you for your support!

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McGee, Petro-Canada, and our newest member, ENI, on the North Slope; XTO and Forest Oil in Cook Inlet.

AOGA's members also include the value added companies that came into being because of the discovery of oil and gas: Alaska's three in-state refineries, Tesoro, Petro Star and Flint Hills; Agrium Kenai Nitrogen Operations and Alyeska Pipeline Service Company.

The challenges have been enormous and so have the contributions.

• The State of Alaska has collected over $72 billion from the oil and gas industry since the 1957 Swanson River discovery.

• More than 34,000 jobs are generated each year in Alaska by the oil and gas industry.

• Since completion of the trans-Alaska oil pipeline in 1977 petroleum revenues have averaged 84 percent of the state's unrestricted general fund.

• The Alaska Permanent Fund, now worth over $34 billion, sets aside a portion of oil revenues for future generations and provides an annual dividend to every Alaskan.

• State petroleum revenues are projected to reach a record of $4 billion in FY 2006, nearly 90 percent of the state's unrestricted general fund.

Forty years from now

What about Alaska's future? What will we be celebrating 40 years from now?

In 2006, as we remember the milestones of the past, we are directly and immediately faced with the new challenges of the future. Today, as in 1957, Alaska is facing a new path — forced to it because of declining production. The biggest threat to Alaska's future is declining production. Maturing North Slope "super giant" fields are in natural decline. Even with massive multi-billion investments by ConocoPhillips, ExxonMobil and BP, production through TAPS is less than half of what it was in 1989. The TAPS oil pipeline that provides almost 90 percent of the unrestricted revenue to the state's general fund — is running half empty.

A natural gas pipeline and new oil production are absolutely essential to Alaska's future. New investment is absolutely essential for both to occur.

What is the future for Alaska? A natural gas pipeline is the key. The critical factors are: heavy oil, in-field development, offshore, satellite development, ANWR, wildcat, National Petroleum Reserve-Alaska, new basins. Each of these require millions, and in the case of the gas pipeline, billions of dollars of new investment. We must attract that investment.

We celebrate the past today, even as legislators make the decisions that will shape the future.

Risk. Challenge. Promise. Go for it.

Ahtna Construction & Primary Products Corporation

In 1973 Ahtna Incorporated, one of the 13 Alaska Native Regional Corporations, created Ahtna Construction & Primary Products Corporation, as a wholly-owned subsidiary to pursue construction opportunities while also providing employment and training opportunities for the shareholders of the region.

Ahtna Construction Corporation is headquartered in Glennallen, Alaska, at the intersection of the Glenn and Richardson Hwys, with offices in Anchorage and Fairbanks. A union company in business for over 32 years, it offers a broad range of services; road/hwy construction, heavy/industrial contracting, electrical/mechanical contracting, rock/gravel products, crushing/hauling services and pipeline maintenance.

From 1973 to 1977 Ahtna Construction joint ventured with Rogers & Babler Construction and more than $40 million of pipeline related civil construction work was performed. In late 1979 Ahtna Construction reevaluated their market posture based on experience and financial capital and decided to pursue future contracts on its own.

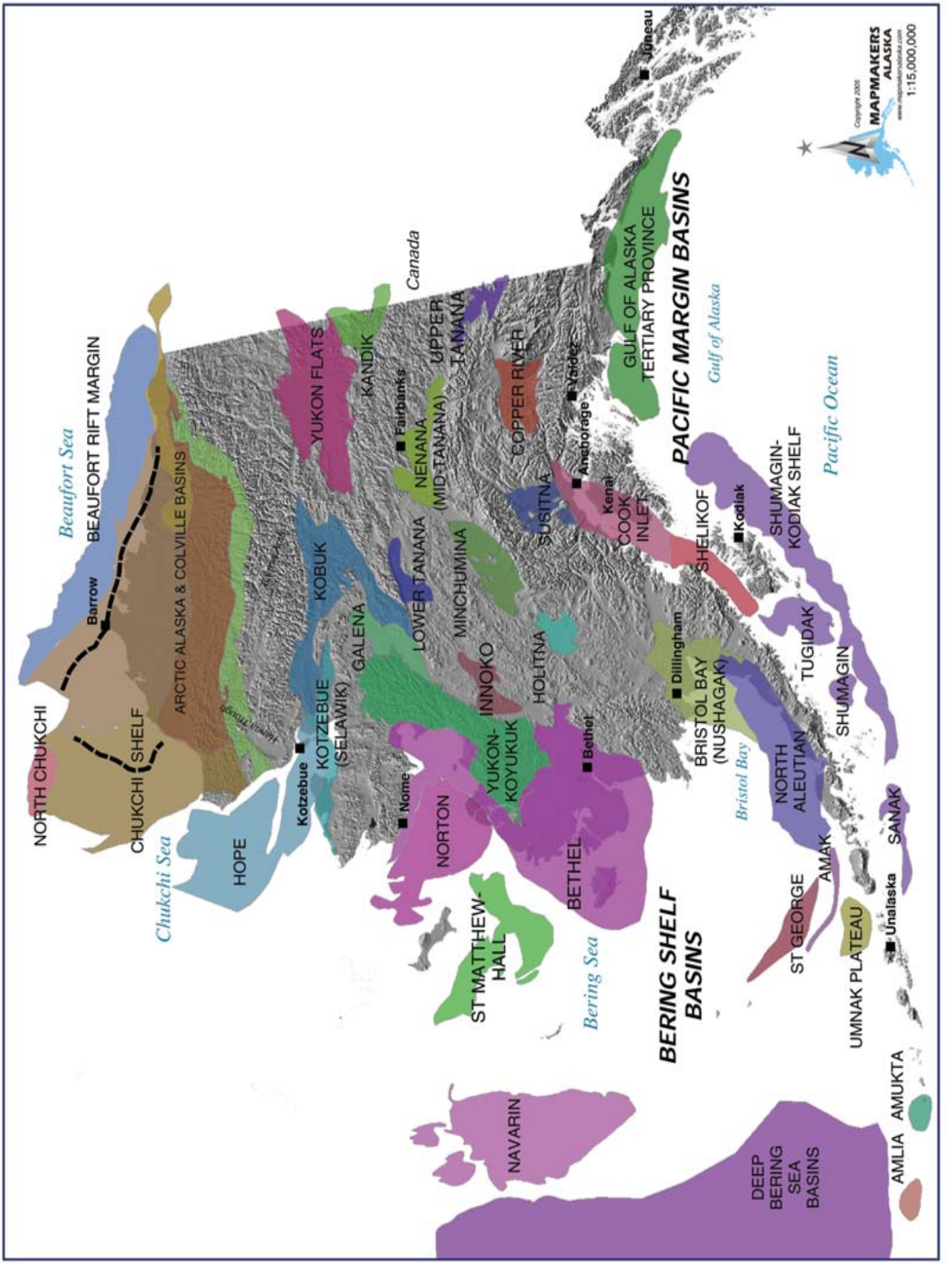
In March of 1979 a contract was signed with Alyeska for pipeline maintenance at PS 12, with an original crew of three Ahtna shareholders, which increased to six. In 1996 with the ramp down of both Pump Stations 8 and 10, Ahtna Construction became certified as an Oil Spill Response Action Contractor for Alyeska, and a six-member Oil Spill Response crew was formed at Pump Station 11. During this same period Ahtna Construction joint ventured with H.C. Price Company and formed Price/Ahtna. From 1992 through 1998 Price/Ahtna held the line-wide maintenance contract for Alyeska.

Today, Ahtna Construction performs baseline maintenance at the Valdez Marine Terminal in Valdez, Alaska and baseline maintenance and oil spill response at the Glennallen Response base, in Glennallen, (formerly known as PS 11). In addition, Ahtna Construction has an extensive and diverse history of project work up and down the pipeline.

Ahtna Construction's other clients include, Department of Transportation – crushing/material processing services; British Aerospace Systems Advanced Technologies, Inc. – High Frequency Active Auroral Research Program (HAARP); and work with the Corp of Engineers at the Missile Defense site, Ft. Greely, Alaska.

Ahtna is a contractor that works with safety as a key consideration. Ahtna Construction, from executive management to craft employees, has adopted the philosophies of S.A.F.E. (Shaping Accident Free Environments). S.A.F.E. is a behavioral driven process that dictates how we devote our time and energies to the "Left hand side of Zero" being proactive. All employees are committed to making the "Incident and Injury Free" vision a reality.

Ahtna Construction is proud to have been the recipient of the "Governors Safety Award of Excellence" two years in a row, 2003 and 2004.


GENERALIZED OIL AND GAS BASINS/PROVINCES
ALASKA
Beaufort Sea
Chukchi Sea
Bering Sea
Gulf of Alaska
Pacific Ocean
Canada
NORTH CHUKCHI
CHUKCHI SHELF
BEAUFORT RIFT MARGIN
ARCTIC ALASKA & COLVILLE BASINS
HOPE
KOTZEBUE (SELAWIK)
KOBUK
GALENA
YUKON FLATS
KANDIK
NENANA (MID-TANANA)
UPPER TANANA
LOWER TANANA
MINCHUMINA
INNOKO
NORTON
YUKON-KOYUKUK
ST MATTHEW-HALL
BETHEL
HOLITNA
SUSITNA
COPPER RIVER
COOK INLET
SHELIKOF
BRISTOL BAY (NUSHAGAK)
GULF OF ALASKA TERTIARY PROVINCE
PACIFIC MARGIN BASINS
SHUMAGIN-KODIAK SHELF
TUGIDAK
SHUMAGIN
NORTH ALEUTIAN
AMAK
ST GEORGE
UMNAK PLATEAU
SANAK
BERING SHELF BASINS
NAVARIN
DEEP BERING SEA BASINS
AMLIA
AMUKTA
Barrow
Kotzebue
Nome
Bethel
Dillingham
Fairbanks
Anchorage
Kenai
Valdez
Kodiak
Unalaska
Juneau
MAPMAKERS ALASKA
1:15,000,000

1950-55

• Iran and other Middle Eastern countries nationalize oil and gas industry
• Oil companies look for new prospective areas, including Venezuela and Alaska

1950-59

• Havenstrite Oil Co. and others drill wells in Iniskin-Tuxedni region on west side of Cook Inlet, three wells tap minor quantities of oil and gas
• Mike Halbouty, Standard Oil Co. of California, Richfield Oil Corp., use horses to haul seismic equipment in Kenai National Moose Range, motorized vehicles outlawed

1951

• Sterling Highway completed, connecting Kenai Peninsula to rest of Southcentral Alaska

1953

• Phillips Petroleum obtains acreage in Katalla and Yakataga areas
• First exploration phase in NPR-A ends (started 1943); between 1923-1953 U.S. Navy drilled 37 wells, only two of nine discoveries considered sizable — Umiat and Gubik

Phillips geologist remembers icy camp

When Phillips Petroleum Co. first came to Alaska in 1953, the exploration party used an old LST warship to bring supplies into the Katalla-Yakataga region 50 miles east of Cordova.

Al Schlottman, the exploration party's associate geologist, told Petroleum News about one particular incident surrounding the glaciers and icebergs during his first Alaska assignment:

The LST warship

"Ah yes, the glaciers," he said. "I recall a fly camp that we had set up far back in the mountains. The only relatively flat spot that we could find for our tent was out on the ice near the edge of the glacier. And, to our pleasure, not too far away from the tent site there was a very narrow, deep crack in the ice that formed a perfect natural garbage depository and an ideal slit-trench outhouse. Remember, this was before the days of being 'environmentally correct.' During the day, we listened to the creaks and groans emanating from the glacier itself and would watch, as the day warmed up, the occasional small icefalls that came down the mountain faces surrounding us, followed soon after by what sounded like distant cannon fire," Schlottman said.

"We stayed in that camp only a few days, but we did happen to fly back over it again a short time later. Imagine our surprise to see that our 'flat' tent site was now completely riddled by huge cracks in the ice. And our 'outhouse' crevasse had opened up so that it was now three-or-four-feet wide!

"Talk about good timing..."

Phillips geologist recalls non-typical day in Katalla-Yakataga region

Charles Betton was one of the few lucky geologists chosen for the surface exploration project group that explored Phillips Petroleum Co.'s 1 million acres of federal leases in the Katalla-Yakataga region of Alaska in 1954 for potential sources of oil.

Betton's job was to provide adequate background on the rock formations in the Katalla area, by use of field exploration and aerial photography, in order to determine the best areas for Phillips to begin drilling. The group used USGS maps of the area to recheck the geological structures of the area, which were extremely complex.

"We checked weathered beds which were upside-down," said Betton. "There was lots of folding, which could influence what we were looking at."

This was not the first time that oil exploration and drilling had occurred in the Katalla-Yakataga region. More than 50 wells had been drilled in the area between 1901 and 1932. Of those wells, approximately 18 produced oil at Katalla. An oil refinery built near the Katalla field refined the crude, which was then poured into wooden barrels and transported via horse-drawn railway about a mile to the Katalla wharf. They were then shipped to Cordova, where the oil was used in Copper River Railway locomotives as a lubricant.

At Katalla, a low tide brought excellent clam digging. Here, the expert clam cleaners begin the process of preparing the feast.

In 1933, Katalla's refinery burned and oil production ceased until Phillips and partner Kerr-McGee Oil Industries took interest in the 1950s.

Betton was part of the second team to visit the Katalla-Yakataga region through Phillips. In 1953, another group of surface exploration geologists headed to Alaska.

Betton was a field geologist in the Katalla camp. The exploration party arrived in May of 1954 and, according to Betton, lived in a rather upscale camp for the time period.

Precut and assembled on site, the prefab cabins were 16 foot squared plywood tents that housed four men each. The camp included shower and bathing facilities, larger tents for eating and cooking facilities and the camp headquarters, where the radio and filing system were kept. Along with the geologists, a camp cook, helicopter pilot, mechanic and guides all lived in the camp, located on the banks of the Katalla River.

Camp cozy, but Gulf of Alaska area wet

Betton said that the geologic work was done during the breaks in the bad weather.

"We had three-sixer-niners in the way of storms," said Betton in a recent phone interview. "These storms came in and lasted either three, six or nine days; we just had to sit in the clouds and rain and work on notes, waiting."

Once the storms broke, however, groups of two to four geologists covered two to three outcrop areas a day, making use of the helicopter. Garbed in hip boots, tin coat and pants (a type of heavy duty, waterproof raingear used by loggers), netted headgear and goatskin gloves, the surface exploration team

1954

- Standard Oil explores in southern Kenai Peninsula
- Phillips Petroleum opens first oil company office in Anchorage in 1954, others followed
- Humble Oil explores in Southeast Alaska
- Union Oil explores Kenai Peninsula
- Secretary of the Interior Douglas McKay declares that all federally withdrawn lands will be managed for multiple use — allowing exploration on the Kenai Moose Range (now Kenai National Wildlife Refuge)

1955

- More than 5 million acres of leases filed by oil companies and individuals in southern Alaska
- Territorial Legislature passes first oil tax
- National environmental groups oppose multiple use on wildlife refuges and ranges
- Senate Committee on Interior and Insular Affairs holds hearings, drafts regulations on exploration in the Kenai Moose Range

1956

- Secretary of the Interior Fred A. Seaton declares moratorium on oil and gas leasing in federal wildlife refuges and ranges including the Kenai Moose Range

would land atop one of the mountains, then use the natural "elevator" to cover the surface of the mountain on the trip back down.

The trip down included a lot of creek wading and bushwhacking, although the first 500 to 1,000 feet down was usually vegetation free.

The party also carried rifles, and Betton recalled one time that they unexpectedly met up with a bear.

"We had to use a rifle to scare him off," said Betton. "He ran ,and we ran, and everybody got away."

Other close encounters with the ever-present bears included bear prints on the helicopter bubble and a crushed five-gallon tank of gasoline. Betton said the can was crushed like a paper bag.

Seeps do not equal good reservoirs

Each evening the groups would be picked up at a pre-chosen spot and returned home to camp to eat, shower and regroup before the next day. The camp was supplied by a light plane, which flew out of Cordova weekly to land on a curved beach.

But one particular evening the surface exploration team had to rough it overnight. The helicopter batteries died and the geologists and pilot sat patiently, waiting for a battery drop from one of the camps smaller planes. Unfortunately, the force of the fall crushed the battery, but the tent, food and cooking supplies were much appreciated, according to Betton.

"They dropped a can of sardines from about 100 feet up," said Betton. "The force of the fall impacted the key (to open the can) into the can lid like it had been hammered in."

Betton kept the can as a souvenir for more than 20 years, too afraid to open it.

Some of the food made it down safely, however, and the crew waited it out until the next morning, when the helicopter from the Yakataga camp brought a spare battery.

The team returned to the states in September with a report of plenty of oil seeps but not necessarily great reservoir quality. Betton is now retired and is residing in the state of Colorado.

Alaska's commercial oil production begins at Swanson River

The modern oil and natural gas industry began in Alaska when Richfield Oil Corp. discovered oil in the Cook Inlet Basin near the Swanson River in the Kenai National Moose Range in 1957.

Since that time Richfield has become ConocoPhillips and the moose range is now the Kenai National Wildlife Refuge.

COURTESY MARATHON

The 1957 Swanson River oil field discovery on the Kenai Peninsula was Alaska's first big oil discovery.

And although oil exploration in the state began in 1896 on the Iniskin Peninsula and limited production at Katalla, Swanson River was the first major commercial discovery in the territory.

In 1957, Richfield was a small California oil company, predecessor to ARCO.

W.C. "Bill" Bishop, a Richfield geologist who first started studying Alaska with topographic maps from Saudi Arabia in 1954, is often credited with the discovery.

Before Richfield could drill in the Kenai National Moose Range, the company had to assure Congress that the wildlife refuge would be protected. The U.S. Senate Committee on Interior and Insular Affairs granted approval in 1956 based on Richfield's promises to follow government guidelines and clear all development plans with the U.S. Fish and Wildlife Service.

Richfield made a successful offer for leases on the acreage and formed the Swanson River unit with partners Ohio Oil Co., predecessor to Marathon, and Union Oil of California, predecessor to Unocal, which in 2005 was acquired by Chevron.

Ingenuity conquers challenges

In March 1955, Bishop traveled to Alaska to help plot the first well location where Richfield hoped to drill the following year. He and his seismic crew used a helicopter and a Grumman Widgeon amphibious plane to reach the area.

But the geophones Bishop planned to use to shoot seismic would not deliver adequate information. He had to improvise.

The crew finally got the data it needed by suspending hydrophones in a lake from children's balloons. The signal from the hydrophones was weak, but it successfully recorded 33 shot points. Though scant, the data was promising enough to convince Richfield to commit to a wildcat well.

Bishop took the data to headquarters, and over a 10-day period he and Mason Hill, Richfield's chief geologist, plotted the well location using one seismic line and several aerial photographs.

Venezuela threatened Alaska budget

But then Venezuela unexpectedly opened up oil concessions for the first time in 20 years.

1957

- Average WTI crude price in 1957 is $3.09 per barrel
- Richfield discovers 250 million barrel Swanson River oil field in Cook Inlet Basin's Kenai National Moose Range (Swanson River Unit 1 well)
- Department of Interior holds hearings on Kenai Moose Range moratorium.
- Aledo Oil Co. completes Eureka No. 1 well in Copper River Basin (spud in 1953)

1958

- President Dwight D. Eisenhower signs Alaska statehood bill, July 7, 1958
- Department of Interior re-opens half of the Kenai Moose Range to oil and gas development
- Department of Interior, Bureau of Land Management, opens North Slope lands for competitive bidding — 16,000 acres offered in area of Gubik gas field
- BLM opens 4 million acres south, southeast of NPR-A (then named NPR-4) for simultaneous filing and subsequent drawing

1959

- Alaska becomes nation's 49th state, its constitution takes effect

"It was a hard battle for me to save enough of that budget for a well in Alaska that would cost some 10 times what a similar well would cost in California," Bishop said in a 1985 speech.

Bishop argued and won

Yet he argued for Alaska and won. In October 1956, when the ground was hard enough to support bulldozers, construction began on a 23-mile road to the well site.

"We took advantage of the gravel beds the trees grew on," Bishop told Petroleum News in 1996. "The route zigzagged from tree patch to tree patch. That's why the road is so crooked."

Because the well site was deep in the forest, Bishop and his crew needed a way to mark the trail for the bulldozers. They decided to use toilet paper. At that time helicopters were not used in Alaska in the winter, so Richfield's foreman used a Super Cub and several cases of toilet paper to lace the treetops along the route with tissue.

"The trick is to unroll several feet, loosely re-roll it and, with a spin, drop it out the window," Bishop said. Various toilet paper colors were used to pinpoint exact locations.

Bishop, his foreman and two local homesteaders then hiked though several feet of new snow to the well location. One of the homesteaders noticed the distinctive red bark of a hemlock tree, standing at the well location.

Bishop later named the producing zone of the well the Hemlock Zone.

Big news for Richfield, Bishop, Alaska

Richfield spud Swanson River No. 1 on April 3, 1957. Geologist Ray Arnett sat on the well to analyze drill core samples as the drilling proceeded.

By early July, drilling had reached a depth of more than 10,000 feet. Nearing the predetermined target well depth, Arnett is said to have ordered roughnecks to "drill a few more feet."

Richfield struck oil!

Company mergers, acquisitions and name changes

Over the years oil and gas companies have merged or been acquired by larger companies; some have simply sold their assets or changed their names. On the left of this chart is the company name as it first appeared in Alaska; to the right is the name it does business under today. All of the companies listed on the right are active today in Alaska, except EnCana.

Formerly	Now
Alberta Energy	EnCana
Amoco	BP
ARCO Alaska assets	ConocoPhillips
Atlantic	ConocoPhillips
Burlington	ConocoPhillips
Conoco	ConocoPhillips
Cross Timbers	XTO
Evergreen Resources	Pioneer
Exxon	ExxonMobil
Forcenergy	Forest Oil
Gulf Oil	Chevron
Humble Oil	ExxonMobil
Louisiana Land and Exploration	ConocoPhillips
Mapco	Flint Hills
Mobil	ExxonMobil
Pan American	BP
Pennzoil	Shell
Phillips Petroleum	ConocoPhillips
Richfield	ConocoPhillips
Sinclair	ConocoPhillips
Sohio	BP
Standard Oil Co. of California	Chevron
Tenneco	Chevron
Texaco	Chevron
The Ohio Oil Co.	Marathon
Union Oil Co. of California; Unocal	Chevron
Union Texas Petroleum	ConocoPhillips

Richfield's Swanson River prospect was about 20 miles northeast of the tiny settlement of Kenai, population 500. Moose were more plentiful in the area than people. The only way for Arnett to get drilling news quickly to Bishop in California was to use the existing system of relaying radio messages from town to town, culminating in a telegram from Anchorage.

Cryptic communications needed

The radio transmissions were open for anyone in range to hear, so Bishop had given Arnett a secret code to notify him in the event of significant drilling developments.

Arnett sent a momentous 3 a.m. wire July 15 to Bishop at his home in Inglewood, Calif.

"We are cutting wood," Arnett transmitted.

"Hope you have enough wood to make a short table," Bishop wired back, telling Arnett to extract a core sample large enough for testing. The sample was saturated with oil.

Swanson River No. 1 tested at 900 barrels a day of crude. The field would later prove to hold nearly 231 million barrels of recoverable oil.

An industry is born

The discovery prompted a flurry of activity by numerous other oil companies such as Phillips Petroleum Co., The Ohio Oil Co. (Marathon), Union Oil Co. of California (Unocal, now Chevron), General Petroleum (Mobil, now ExxonMobil), Standard Oil Co. of California (Chevron), Shell Oil, Sunray and Texaco (now Chevron).

Richfield then cut a deal with Standard to take a 50 percent interest and become operator of the partnership on the entire Kenai Peninsula.

In that same year, Alaska conducted its first oil and gas lease sale for tracts in the sea inlet called Cook Inlet, which lies to the west of the Kenai Peninsula.

Both the Kenai Peninsula and the inlet are part of the Cook Inlet Basin. Additional wells were drilled in the Swanson River area, and more leases were taken on both sides of Cook Inlet.

- William Egan (D) sworn in as state's first governor (1959-1966)
- Alaska conducts first oil and gas lease sale offshore Kenai Peninsula
- First major Cook Inlet Basin natural gas discovery at Kenai gas field by Union Oil and The Ohio Oil Co.
- First oil and gas revenues in Alaska generate $3 million, 12% of state's unrestricted general fund
- Richfield and other oil companies send first surface geological mapping parties to North Slope
- Humble Oil and Shell drill the Bear Creek No. 1 well on Alaska Peninsula
- General Petroleum drills Great Basins No. 1 and No. 2 wells on Alaska Peninsula
- Kenai gas production starts as a by-product of Swanson River oil field

1960

- Kenai gas field natural gas production begins, operator Union Oil
- Construction begins on pipeline to bring natural gas from Kenai fields to Anchorage
- Alaska population 226,167
- BP and Sinclair conduct North Slope, Yakutat, Alaska Peninsula, Cook Inlet, Lower Yukon River geological surveys

Please don't shoot horses or men

In the fall of 1959, Standard Oil Co. of California (Socal, now Chevron) posted a sign next to its seismic operations in the Kenai National Moose Range that said, "Please don't shoot horses or men."

Motorized vehicles were outlawed when the tundra was likely to be soft, so the company was using horses to haul seismic equipment in the range, which during moose hunting season that year was full of eager hunters.

Today the Kenai National Moose Range is known as the Kenai National Wildlife Refuge.

Independent oilman Mike Halbouty was the first person to use horses to haul seismic equipment in the range, followed by Richfield Oil (later ARCO, now ConocoPhillips) and Standard Oil.

Helicopters were allowed in the range, but not always available, newspaper reports said of the time.

Alaska fights to win statehood

Alaska's fight for self-determination is nothing new; in fact, even the quest for statehood set the stage for a bitter fight in Congress, according to U.S. Sen. Ted Stevens. The threat of filibuster hung over Senate debate on the issue.

"When we got statehood, we went around the rules of the House; we went right to the floor; we had a bill considered and voted on without going though the rules committee. When we went to the Senate, we had to get the Senate to vote on that bill without amendment," he said.


EXTRA Anchorage Daily Times EXTRA

WE'RE IN

64-20 VOTE MAKES ALASKA 49th STATE

Victory Brings Quick Reactions

She Goes Up Tonight

Historic Vote Ends 6 Days Of Debate

Alaska statehood had vociferous opponents, just as ANWR drilling does today.

"People like Strom Thurmond held us up for days upon days with amendments, delaying us, but we finally got people to vote them down," Stevens said.

In effect, senators were challenged to not filibuster the bill, he said.

The statehood strategy took three years to work out, Stevens said.

The Swanson River field convinced Congress that the oil industry could provide the economic basis for statehood and Alaska became the 49th state in 1959.

"Swanson River discovery provided the economic justification for statehood for Alaska, and indirectly Hawaii," said Bill Egan, Alaska's first governor.


GIL MULL

Left to right: Richfield geologist Milt Norton and Harry Jamison, who was directing exploration from Richfield's Los Angeles office. Jamison was the first Alaska district manager for ARCO.

Jamison credited with Prudhoe find

According to veteran geologist Gil Mull, teamwork, perceptive leadership, and Richfield Oil Corp.'s 1957 Kenai Peninsula discovery set the pace for oil exploration in Alaska. During the summer of 1959 Richfield already had its first geological field party on the North Slope.

Mull was a member of the team of geologists and geophysicists that found North America's largest oil field and described the events leading up to March 12, 1968, when the Prudhoe Bay State No. 1 well tested at a measured flow of more than 1,000 barrels per day.

Little activity followed Richfield's initial 1959 North Slope exploration until 1963 when Harry Jamison, Richfield's exploration director out of Los Angeles, dispatched Mull, Gar Pessel and two additional geologists from California to Umiat, to the northern foothills of the Brooks Range, asking them to do some mapping and "to get a feel for what the geology was," Mull said. "I guess you could say that he had sort of an intuition that it looked like a good prospective petroleum basin."

The team covered an area from Umiat eastward into the Arctic National Wildlife Refuge, in a three-month field season.

The field team used a Bell G2 helicopter to access rock outcrops, and a Cessna 180 to stage fuel caches and set up camp.

"We had seen an oil sand over in ANWR — a really good oil sand," Mull said. "We had also seen oil sand in the river bank … at Sagwon."

The field team used a Bell G2 helicopter to access rock outcrops, and a Cessna 180 to stage fuel caches and set up camp.

"Using the air photos from the previous reconnaissance mapping and doing our own reconnaissance work we could

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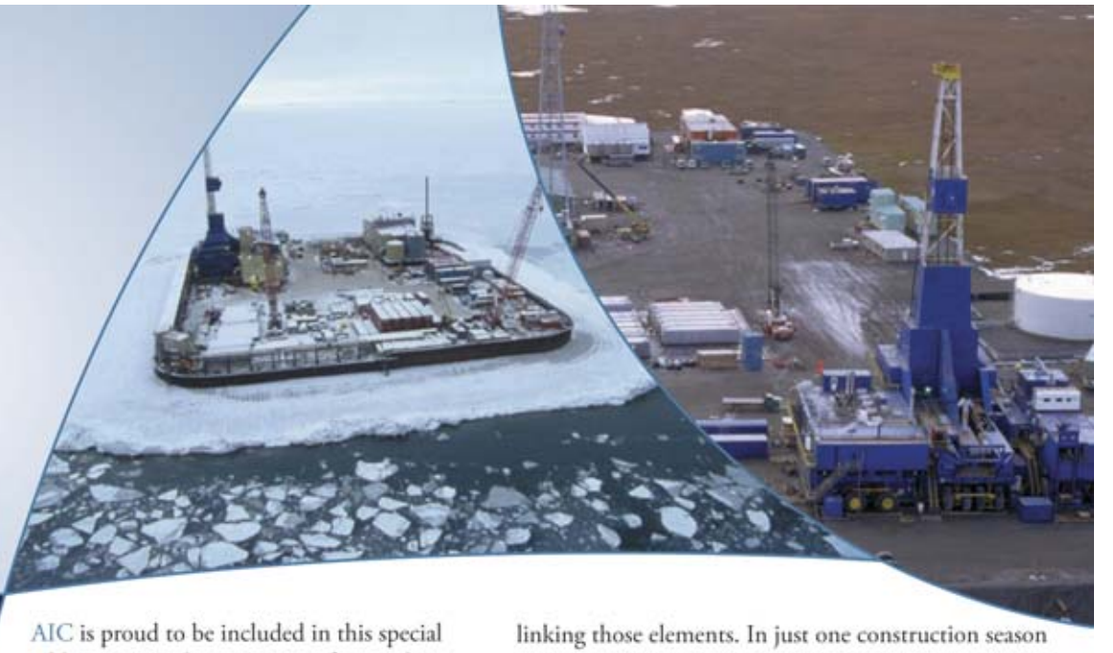
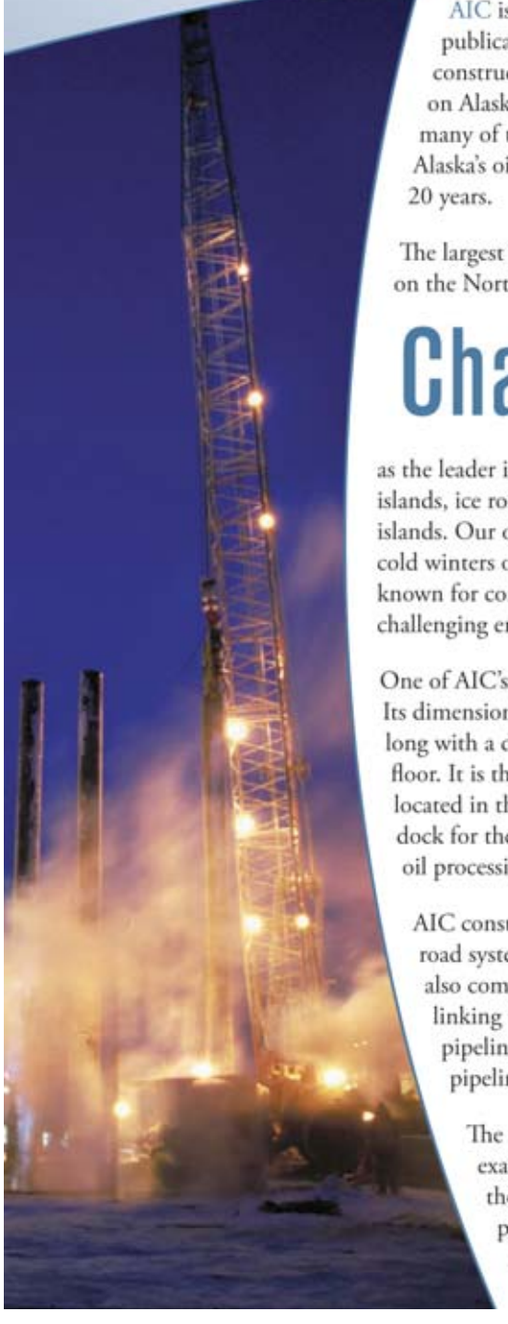




Challenge Leads to Innovation

AIC is proud to be included in this special publication. With a reputation for timely construction of large-scale oil and gas projects on Alaska's North Slope, AIC is responsible for many of the projects that have come to identify Alaska's oil and gas industry over the past 20 years.

The largest independent civil construction entity on the North Slope, AIC is recognized worldwide as the leader in the construction of offshore gravel islands, ice roads, remote access development and ice islands. Our organization thrives during the harsh cold winters of Alaska's northernmost region – we are known for completing the toughest jobs in the most challenging environments on earth.

One of AIC's flagship projects was Northstar Island. Its dimensions stretched 421 feet wide by 465 feet long with a depth of 40 feet to the Beaufort Sea floor. It is the first offshore oil production facility located in the Alaskan Beaufort Sea and includes a dock for the sealift, approximately 30 wells, crude oil processing modules and a personnel camp.

AIC constructed a 29-mile-long temporary ice road system from the shoreline to the island. We also completed the first sub-sea arctic pipeline linking the Northstar field to the trans-Alaska pipeline, installing more than seven miles of pipeline and leak detection system.

The Badami Development is another lasting example of AIC's capabilities. During the winter months, AIC built a 20-acre pad, a dock and an airstrip as well as approximately nine miles of gravel road linking those elements. In just one construction season the work was completed, with a 28-mile-long ice road providing access to the site. The project supported oil facilities east of the main North Slope infrastructure in Prudhoe Bay. After starting construction in January, AIC turned over control of the site to Drilling Operations on September 1.

Not only does AIC build roads, we span rivers as well. To access the Kuparuk Oil Field from Prudhoe Bay, three channels of the Kuparuk River must be crossed. Historically, during annual spring breakup, the flood water and ice breach two of the crossings, eliminating all road access for six to eight weeks. After constructing two new crossings, the closure period between the two fields was reduced to a maximum of one week per year. AIC completed the construction of the Kuparuk River Low Water Crossing during winter, when ambient temperatures reached lows of -40˚F, and wind chills reached -100˚F.

From groundbreaking concepts to cost-effective construction solutions, AIC takes a pioneering idea and turns it into finished development. We have helped build Alaska's oil and gas industry into what it is today. With significant growth we have diversified our suite of construction services which includes our oil and gas, mining and public works business units. Our clients range from large international Fortune 500 companies and government agencies, to small private developers. We proudly provide world-class services throughout Alaska and internationally, in locations such as Sakhalin Island, Russia and Kashagan Oil Field in Kazakhstan.

• First modern Alaska oil pipeline built, Swanson River to Nikiski, by Richfield and Standard Oil
• Pan American drills Napatuk Creek core holes Nos. 2 and 2A west of Bethel

1961

• Swanson River oil field begins production, Richfield operator
• In January Gov. Egan says Alaska will face $15 million budget deficit by 1963
• Legislature increases personal income tax and taxes on liquor, cigarettes, motor fuel
• Union Oil discovers Sterling gas field in Cook Inlet Basin on Kenai Peninsula
• Production begins from Kenai gas field; operator is Ohio Oil
• Pure Oil drills Canoe Bay Unit No. 1 well on Alaska Peninsula
• Pan American drills Napatuk Creek No. 1 well west of Bethel
• In December Cook Inlet lease sale brings in $14 million rather than $1-7 million expected
• Many Alaskans believe fiscal crisis over; call for repeal of January tax increases, as well as construction of schools and some special projects, such as Turnagain Arm Causeway at Anchorage

locate where the good (rock) exposures were and land on the outcrop," Mull said. The geologists would assess the rocks at the outcrop, and follow the outcrops by helicopter.

The geology looked good.

On Aug. 2, 1963, Pessel, co-party chief of the field team, summarized the party's conclusions: "We have a good section with excellent reservoir possibilities and positive proof of the petroliferous nature of these sands. If one cannot get an oil field out of these conditions, I give up!"

The party recommended a seismic survey to investigate geological structures north of Sagwon where the surface rocks disappear beneath the North Slope coastal plain.

Jamison presented the findings to Richfield management in California and quickly received the go-ahead to mobilize a seismic crew for that same winter.

Jamison's drive, followed by promising seismic, led to the first Prudhoe Bay lease sale in 1964, the second occurring the following year.

"The seismic crew started shooting long, north-south reconnaissance lines," Mull said. They shot three lines, he said. "The second line … ran over a pretty good looking anticline, called Susie." Susie, located north of Sagwon, on the Sagavanirktok River, was the site of the first Richfield exploration well on the North Slope.

Once successful drilling began in 1968 Harry Jamison went down in history according to Mull, "and nearly 40 years later we continue to see the results of Jamison's persistence."

Two good wells deserve another

1960

Union Oil Co. of California's (today Chevron) third well in its massive Kenai gas field, circa 1960. The 1959 discovery of the first and most prolific of Cook Inlet Basin's roughly 25 commercial gas fields was initially a disappointment, as Unocal was looking for oil.

The company placed image ads in Newsweek and Sports Illustrated however, saying the find was "a source of wealth for the common good."

Union Oil also said, "The big gamble in Alaska has started to pay off — and the story is not yet over."

Cat train Catskinner

In 1964 John C. "Tennessee" Miller, founder of the Frontier Companies of Alaska Inc., wanted to prove the feasibility of using a "cat train" of bulldozers for overland transport to the Arctic. Cat trains had been used in the 1950s to build the Distant Early Warning Line, but Miller wanted to make the first such trip to support the oil industry.

Miller was a veteran catskinner — a virtuoso of heavy equipment — and a salesman; he found an oil man to back the experiment.

Charlie Selman, then division geophysicist for Richfield Oil Corp., wanted to add a second geophysical crew on the North Slope. The crew would need a cook shack, bunkhouse and three D-7 Caterpillar tractors to plow snow and haul supplies on logging sleds. Selman agreed to use Miller's tractors, and in the bargain Miller would use them to haul the camp and supplies from Fairbanks to Sagwon, on the North Slope.

John C. "Tennessee" Miller, instigator of 1964 North Slope cat train

The cat train crew arrived in Fairbanks Feb. 26, 1964, and encountered 70 below temperatures when staging the equipment and scouting trail. The weather stayed brutal for the entire 40-day expedition according to crew accounts of the trip. Just 18 days were spent traveling, the rest were used for preparation and unforeseen setbacks.

By Feb. 29, the entire crew was consumed with efforts to free a dozer that broke through the ice of a swamp into six feet of water. Towing, melting with fire, and dynamite blasting ensued for four days before the dozer came free of the ice and the train got on track.

Mechanical delays, a Yukon River crossing on creaking ice, and some close calls kept the going interesting at speeds averaging 3 miles per hour — on a good day. The open cabs of the tractors were only partially screened, leaving the upper bodies of the operators exposed to cold blinding winds and snow.

The cat train made Sagwon in mid-April, proving both the difficulty and the possibility of overland transport to the North Slope.

Prudhoe Bay beckons

In the winter of 1964-65, the Richfield Oil Corp. (today ConocoPhillips) and Humble (today ExxonMobil) seismic crew worked north toward the coast of the Arctic Ocean and found the Prudhoe Bay structure.

When the Prudhoe Bay area was offered in a July 1965 state lease sale, Richfield and Humble bid aggressively. A bid of $94 per

1962

- Standard Oil of California discovers Beluga River gas field on west side of Cook Inlet
- State petroleum revenues double in two years, from $10 million in 1960 to $26 million in 1961
- Union Oil drills Nenana No. 1 well in Nenana Basin
- In celebration of 75th anniversary, The Ohio Oil Co. changes name to Marathon Oil Co.
- Union Oil drills Tazlina No. 1 well in Copper River Basin
- Pan American discovers Middle Ground Shoal, first offshore field in Cook Inlet Basin

1963

- Chevron oil refinery in Nikiski begins operation
- Richfield geologists find oil-saturated sandstone outcrops near Sagavanirktok River, some in ANWR's 1002 area
- Richfield drills Wide Bay Unit No. 1 well on Alaska Peninsula
- Gulf Oil drills Sandy River Federal No. 1 well on Alaska Peninsula
- Pan American drills Johnson River Core Hole No. 1 near Bethel
- Aledo Oil Co. drills Eureka No. 2 well in Copper River Basin

acre bested BP, Atlantic Refining (now ConocoPhillips), Chevron, Shell, Mobil and Phillips (now ConocoPhillips) for the coastal tracts.

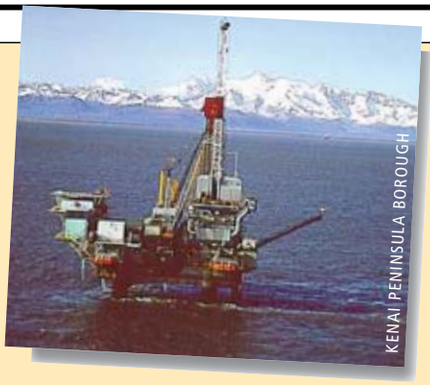
BP, however, spread its bids across the entire structure, and ended up with more than half of the oil in Prudhoe Bay, according to Jack Roderick in "Crude Dreams: A Personal History of Oil & Politics in Alaska." Atlantic Refining picked up leases on the southern flank of the structure.

Later in 1965 Atlantic Refining purchased Richfield and in 1966 the companies became Atlantic Richfield Co. or ARCO, and eventually ConocoPhillips. The company named North Slope booster Harry Jamison as its first Alaska district manager.

The stage was set for one of the most remarkable oil finds in North American history.

But first — and later — oil companies would spend huge amounts of money on exploration drilling. Without modern day technology this translated into lots of dry holes.

According to a 2006 IHS Energy report on Alaska's Arctic, there were 10 dry holes drilled on the North Slope between 1964 and 1968 when Prudhoe Bay was discovered, and 53 dry holes compared to four discovery wells (including Kuparuk and Milne Point) between 1969 and 1971.

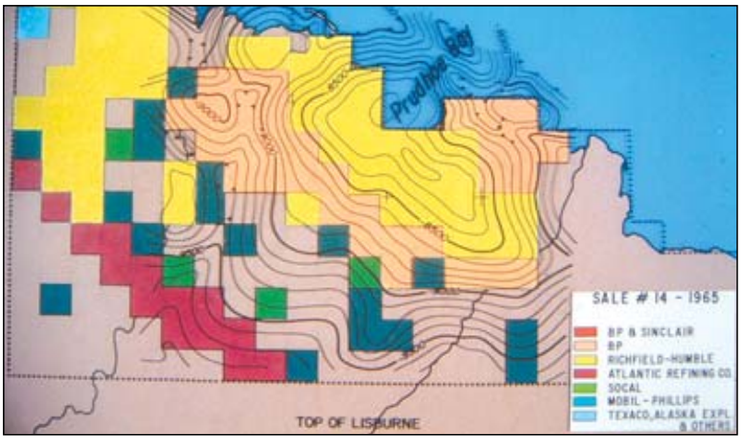


Baker platform debuts

1965

The Baker Platform in Cook Inlet, built at Kaiser Steel, Oakland, Calif., was installed in 1965 and originally operated by Amoco in the Middle Ground Shoal field. It was shut in by Unocal in 2003 due to declining oil production.

GIL MULL



Map shows Prudhoe Bay leases after July 1965 lease sale. Richfield outbid BP, Atlantic Refining, Chevron, Shell, Mobil and Phillips for its leases on the crest of the Prudhoe Bay structure.

Humble buys in; competition heats up

In the summer of 1964 Richfield Oil Corp. (today ConocoPhillips) geologists extended North Slope field mapping west to Cape Lisburne, and more seismic followed that winter.

In the meantime, other companies were acquiring leases that were part of the Kuparuk River field. Sinclair Oil and Gas (today ConocoPhillips), British Petroleum (BP) and Atlantic Refining Co. (predecessor to ARCO, today ConocoPhillips) obtained positions on the North Slope.

Richfield entered a 50 percent joint agreement on its North Slope interests with Humble Refining Co. (predecessor to ExxonMobil). Humble became a full participating partner, with its geologists and geophysicists joining field studies.

"Humble bought a half interest in everything that Richfield had gotten," geologist Gil Mull said, "a half interest in the surface work, half interest in the seismic work and in the federal leases that Richfield had acquired in the foothills, for what had to be the all-time best deal ever — $5 million."

Sinclair quits on partner too soon

Before the discovery at Prudhoe Bay, BP and Sinclair drilled a dry hole at their Colville River leases. BP was in partnership with Sinclair on North Slope activities.

Because of the Colville failure, Sinclair dropped out of the bidding on the next North Slope lease sale. BP ended up bidding at Prudhoe Bay alone. Sinclair went away.

"They got faint of heart," said Gil Mull. "Sinclair bailed at exactly the wrong time; basically, as a result of that decision, Sinclair ceased to exist."

ARCO ended up swallowing Sinclair, a company that could have been a very large part of things at Prudhoe Bay, he said.

"A couple of people at Sinclair were disappointed that management let them down," Mull said. "They were sick about it."

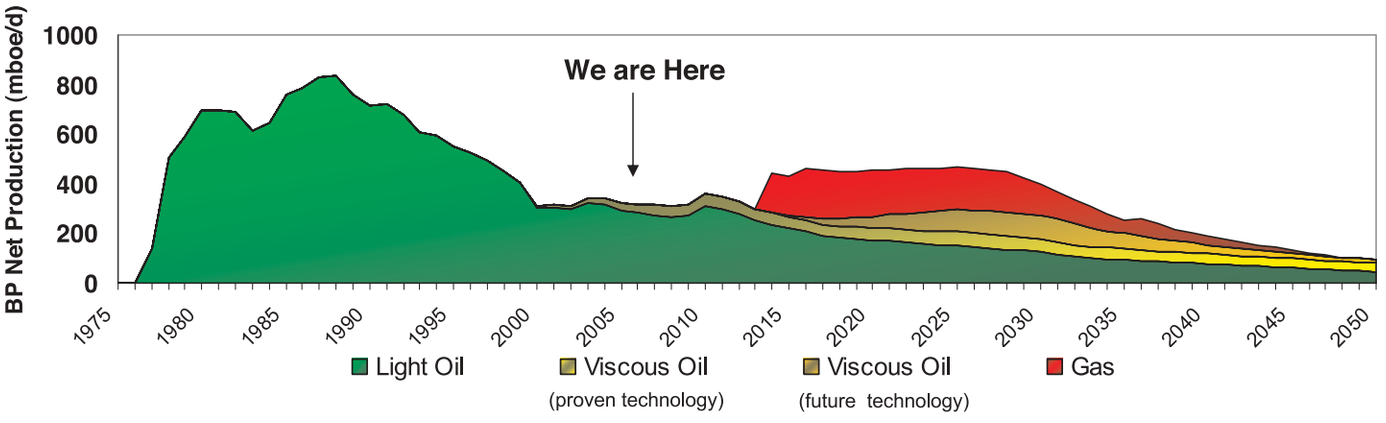
Bidding alone at Prudhoe Bay, BP scooped up rich leases Richfield and Humble Oil missed using a flat bidding profile, Mull said.

"They spread out the bids, thinking that way they would end up with something no matter what," he said. "They spent the same amount on the flank as they did on the crest; as it turned out, the flank had 50 percent of the oil."

With that development, BP and Sinclair were each poised to follow dramatically different paths into the future.

"That was a very significant turning point in the fortunes of both companies," Mull said.

BP's 50-year Outlook in Alaska



After nearly a half century of investing in Alaska, BP is working hard planning for yet another 50 years or more of building its Alaska business.

BP's presence in the state began in 1959 when the company first acquired federal leases, and just ten years later confirmed the Prudhoe Bay field discovery with its Put River No. 1 well. Since then the company has invested well over $20 billion dollars to build the business that we currently see on the North Slope.

BP remains a cornerstone of the state's economy and a vital thread in its social fabric, just as Alaska remains a cornerstone of BP's worldwide operations, accounting for about 8% of the company's global oil production. Some of the statistics include:

BP is one of Alaska's top investors, with an annual capital budget of more than $600 million.

The company ranks among the state's largest employers, with about 1,400 employees.

At about $1 billion in annual spending with contractors and suppliers, BP is one of the largest supporters of Alaska businesses.

In 2006, BP and its employees are on track to contribute over $10 million to Alaska charitable organizations.

Today, the company is focused on shaping its Alaska business to compete successfully for the investments that will underpin its long-term future in Alaska. The challenge of attracting billions of dollars of investments to sustain a strong and competitive business is formidable due to Alaska's high costs and complex regulatory environment.

But Alaska's potential is enormous, too. It remains the single-largest source of known oil and gas resources in the company's global portfolio. There are over 17 billion barrels of known recoverable oil and gas reserves on the North Slope. The key to unlocking this resource is the creation of an investment climate in Alaska that enables further oil investment and the construction of a $25 billion gas pipeline project. With the right kind of fiscal regime, BP is looking to invest $15 billion over the next decade.

North Slope gas is one of the largest undeveloped resources in BP's global portfolio, and the company is working with industry partners and the State, U.S. federal and Canadian governments to bring it to market. A successful gas project depends on a strong and sustainable oil business as well … and that depends on billions of dollars in new investments that must compete with options around the world.

A key element of sustaining oil production on the Slope is tapping the multibillion-barrel viscous oil resource – a resource that rivals Prudhoe Bay in size, but is costly and technically difficult to recover. New investments also create job and business opportunities for Alaskans, as well as revenues for state and local governments. With a healthy and competitive investment climate, BP will remain one of Alaska's largest investors, employers and supporters of Alaskan communities and businesses for many years to come.

Carlile
TRANSPORTATION SYSTEMS

Carlile keeps freight moving in and out of Alaska

NEW ROUTES DELIVER MORE OPTIONS FOR ALASKA COMMERCE.

As the Alaska Oil & Gas Association celebrates a milestone 40th anniversary, Carlile Transportation is working to stay ahead of Alaska's shipping and transportation needs.

A new terminal was opened in January 2006 in Tacoma, Washington, featuring cutting edge technology and 65,000 square feet of cross dock space. "The new facility positions Carlile to stay ahead of growing demand," said Harry McDonald, Carlile president. "It's part of our ongoing commitment to building the infrastructure that will keep Alaska shipments moving seamlessly."

Providing the best equipment and transportation network has been at the core of Carlile's success over the past 30 years. Harry and John McDonald, brothers started Harry McDonald Trucking, their first trucking company in 1975.

"We saw an opportunity to move Alaska forward. It's been an amazing trip," said Harry McDonald.

The McDonalds landed their first major contract in 1980 hauling urea from Agrium's Nikiski plant. By then, their fleet included three trucks. They renamed their company Carlile - John's middle name - and opened their first office in Anchorage.

▲ *Vintage McDonald Trucking*

▲ *Current Carlile Kenworth Truck*

The oil and gas industry became an increasingly important customer. In 1987 Carlile hauled its first shipment to Prudhoe Bay and secured a contract with ARCO, now ConocoPhillips. Its first North Slope terminal opened in 1988.

Carlile added a hazardous waste division in 1990 and purchased a new Fairbanks facility the following year.

Several acquisitions enabled the company to expand its services. Carlile became an interstate hauler in 1994 when it purchased K & W trucking and opened its Federal Way office in Washington. It expanded into heavy haul and winch trucks in 2001 when it acquired Asay Trucking.

▲ *Staff outside the new Tacoma facility January, 2006*

Carlile purchased Markair's North Slope facility in 1991 and developed a bulk storage yard to help service its new account with Alyeska Pipeline Service Co. It added a logistics division in 1996 to better service TRW, Alyeska and Unocal.

In Anchorage, Carlile outgrew its original Ship Creek facility in 1998 and moved to a much larger headquarters and terminal on First Avenue. Additional offices and terminals support interstate logistics in Seward, along with Houston, Texas, and Edmonton, Alberta.

In April 2006 Carlile opened for business in Minnesota with expanded freight services and customer shipping to and from Alaska. The new routes allow Carlile to service the Midwest and East Coast through the Minnesota or Tacoma gateway, with expedited highway or water service.

Also during the spring of 2006 Carlile acquired the assets of Alaska-based Keytrans, Inc, a transportation company with a 30-year history serving Alaska and the Pacific Northwest.

From consumer goods or construction materials, Carlile is a fully integrated transportation and logistics company that can get your goods across North America to Alaska. ***Customer committed for the long-haul.***

To learn more about Carlile Transportation Systems visit: www.carlile.biz

• Pan American drills Moose Creek Unit No. 1 well in Copper River Basin

1964

• Pan Am. discovers North Cook Inlet gas field
• State selects land on North Slope under Alaska Statehood Act
• Richfield and Humble join forces as partners to explore on North Slope
• Alaska hit by 9.2 magnitude earthquake, largest recorded in North America
• First oil industry cat train expedition hauls seismic equipment overland from Fairbanks to North Slope
• First of 16 production platforms installed in Cook Inlet to produce from inlet's offshore fields
• First exploration wells in Brooks Range foothills by BP and Sinclair, dry holes
• State's first North Slope lease sale, Colville area; BP, Sinclair acquire large block
• Pan American Petroleum drills 11,566 ft. Romig Park No. 1 Anchorage; not commercially viable
• Mobil completes the Salmonberry Lake Unit No. 1 well in Copper River Basin
• Union Texas Petroleum drills Pure Kahiltna Unit No. 1 well in Susitna Basin

Herculean lift for Arctic exploration

In January 1966 ARCO obtained U.S. Department of Defense approval to use a Lockheed C-130 Hercules cargo aircraft for civilian purposes: to fly in the drill rig, camp, and supplies for the Susie No. 1 well in the Brooks Range Foothills south of Alaska's North Slope. It was the first time an aircraft had ever been used to mobilize a drill rig in a remote location.

"They got approval from the Defense Department to lease a Lockheed C-130 Hercules, which up to that time was strictly a military plane," pioneering North Slope geologist Gil Mull said of the airlift. "Nobody had ever done anything like this. They flew the entire drill rig … all the camp, all the casing, everything to the North Slope from Fairbanks."


GIL MULL

The Lockheed C-130 Hercules is a military bird that adapted readily to Alaska's oil patch

The rig move required more than 80 flights over three weeks using the C-130 and another cargo plane.

Before the airlift could proceed, an airstrip was needed at the Susie well site. Construction equipment was landed on a river bar gravel airstrip at Sagwon for overland transport to the Susie location where crews constructed a winter strip out of snow and ice.

The Herc, as the big birds are affectionately called in the oil patch, is a workhorse that can carry 48,000 pounds of outsized cargo. The C-130 design employs a 10 by 55-foot cargo floor at truck-bed height above the ground — also accessed from a "roll on/roll off" rear loading ramp. The fully pressurized cargo hold is unobstructed, with nine feet of headroom. With its straight-in loading and ability to transport oversized cargo and heavy machinery the Herc seemed born for the North Slope oil fields.

Designed as a military attack transport, the first C-130s flew in the mid-1950s. Today the Herc continues to perform its vital and singular role in supplying Alaska's oil and gas industry. The profile of the C-130 Hercules in the development of Alaska and its oil fields is legendary.

Dry hole at Susie

ARCO (today ConocoPhillips) and Humble (today ExxonMobil) got off to an inauspicious drilling start on the North Slope, spending $4.5 million to drill the Susie No. 1 well near the Sagavanirktok River. It had shows but not in commercial quantities, and it was abandoned Jan. 9, 1967.

The companies decided to try one more well, this time in Prudhoe Bay.


GIL MULL

Susie #1 well at midnight, with Nodwell vehicle in foreground

"If the Prudhoe well had been dry, we were going home," ARCO Chairman Bob Anderson told Jack Roderick in "Crude Dreams." "It was our last shot."

The drilling rig was hauled 65 miles north by cat train to Prudhoe Bay, to drill Prudhoe Bay State No. 1 — the well that first tapped North America's largest oil field.

Creating jobs for Alaskans


JUDY PATRICK

Prudhoe Bay is the largest producing oil field in North America. Pictured is the first drill site. The buildings in the background are at the Deadhorse location. BP, the operator of Prudhoe, employs approximately 1,300 people in Alaska year-round.

How Prudhoe Bay was named

The first mention of the name "Prudhoe Bay" was a brief entry in the journal of British explorer Sir John Franklin, dated Aug. 16, 1826. Franklin saw the bay during an expedition by boat down the Mackenzie River in Canada (the river flows from south to north) and then west along the Arctic coast.

The name honors a fellow naval officer and explorer-scientist, Captain Algernon Percy, Baron of Prudhoe.

The word "prudhoe" itself is a Saxon term meaning "proud height," and a Prudhoe castle was built in the 12th century on a hill overlooking the river Tyne in Northumberland, England.

1965

- Union Oil discovers McArthur River oil field, the largest discovery in Cook Inlet
- Union Oil discovers Granite Point and Trading Bay oil and gas fields in Cook Inlet
- State's second North Slope lease sale, Prudhoe area; Richfield and Humble acquire large lease block
- Atlantic Refining drills Rainbow Fed No. 1 well in Copper River Basin

1966

- ARCO gets Department of Defense nod for civilian use of C-130 cargo aircraft
- ARCO flies rig, camp, supplies to North Slope for Susie No. 1, first time aircraft used to mobilize drill rig in remote location
- Susie No. 1 spud by ARCO and Humble in February and plugged as dry hole in late December
- Walter Hickel (R) elected governor (1966-1969)
- Thirty-six exploration wells drilled in Cook Inlet (all time high)
- Union Oil installs world's first monopod platform to produce Cook Inlet's Trading Bay field
- Union Oil installs Grayling platform to produce the McArthur River oil field in Cook Inlet
- Interior Secretary Stewart Udall imposes "land freeze"

GIL MULL

Drill stem test No. 5 on Feb. 18, 1968, recovered both gas and oil and clearly showed that oil could be produced from Prudhoe Bay State No. 1

GIL MULL

The derrick of the Prudhoe Bay discovery well, Prudhoe Bay State No. 1, stands in stark contrast to miles of treeless frozen tundra

ARCO, Humble discover Prudhoe Bay

Prudhoe Bay State No. 1 looked promising right from the start. Geologist Gil Mull, by then working for Humble, analyzed rock samples from the well.

"Early on in drilling that hole we started to get some really good oil shows … and some gas shows," Mull said.

As drilling went on, the well looked even better, Mull said.

Mull's notes tell the story: "The top of the Sadlerochit formation (also known as the Ivishak) was encountered on Dec. 14, 1967, with a large amount of gas in the drilling mud. A drill stem test (DST #2), a way of testing to see what was actually in the formation, was run on Dec. 26-27, at a depth of 8,410 to 8,493 feet, in which there was an immediate strong flow of gas to the surface, which flowed through a flow pipe into the wind with a flare that was about 35 feet long (not straight up). The roar and vibration of it was something like that of a jet airplane right overhead. The first oil in the Sadlerochit was seen at a depth of about 8,630 feet and sampled with a core. Another drill stem test (DST #5) of an interval from 8,688 to 8,883 feet on Feb. 18, 1968, recovered both gas and oil and clearly showed that oil could be produced from the well."

GIL MULL

In December 1967, at 8,200 feet the well entered the sandstones and conglomerates of the Ivishak formation — what is now the main Prudhoe Bay reservoir formation.

"The mud logging readings — the gas readings on the drilling mud and drill cuttings that were coming out of the hole — just went off-scale," Mull said.

When a well stem test was run in late December, mud pressure in the hole was relieved to see whether gas or oil flowed into the well bore, with extraordinary results.

"Usually when you run a drill stem test there's a brief puff of gas and then it dies," Mull said. "This one was not that … there was an immediate huge flow of gas to the surface, which was diverted off into a flow pipe and ignited.

"It was like listening to a jet plane, with the pressure and the roar of this gas flowing."

Drilling went on to an oil column in the base of the Ivishak formation, 400 feet below the top of the gas. Another drill stem test in January, after oil was encountered, flowed a mixture of gas and oil.

On March 12, 1968, a flow of 1,100 barrels of oil per day from dolomite in the Lisburne formation resulted in an oil flare that looked like a gigantic, horizontal blowtorch.

Sag River well confirms discovery

After the strike at Prudhoe Bay, ARCO (today ConocoPhillips) and Humble (today ExxonMobil) decided to drill a confirmation well, Sag River State No. 1, seven miles southeast from the discovery well and 400 feet downdip to help confirm the size of the field.

GIL MULL

The Sag River No. 1 well was significant because ARCO needed confirmation of the Prudhoe Bay find

ARCO hauled in Nabors Rig No. 9 by cat train from the Colville River.

"This was a rig that BP and Sinclair Oil had hauled in by barge from the Mackenzie River in Canada and drilled a (dry) hole on the Colville structure west of Prudhoe Bay," Gil Mull said.

Chevron's history in Alaska

1888 — Alaska Commercial Company first brings Standard Oil (Jersey Standard) products to light territorial mines and camps.

1896 — Standard Oil makes its first offer to buy the assets of Union Oil Company of California.

1911 — Union Oil begins selling petroleum products on the Kenai Peninsula. Union Oil's Lansing delivers the first shipment of 44,000 barrels of fuel oil to the Alaska Gold Mining Company at Treadwell, near Juneau.

1913 — Standard Oil Company of California explores Alaska for oil. No wells are drilled.

1922 — Standard Oil begins oil exploration drilling near Portage Bay, Alaska. Lee No. 1 is a dry hole.

1937 — Union Oil explores for oil in Alaska.

1938 — Standard Oil, Union Oil and Tide Water Associated conduct a joint venture and drill a well in Kanatak district of Alaska, four miles inland from Jute Bay.

1946 — Union Oil enters markets in southwestern Alaska, establishing a distribution terminal in Whittier and marketing stations in Anchorage and Fairbanks. District headquarters are located in Juneau.

1957 — Swanson River oil field is discovered by consortium of Richfield Oil Company (now ConocoPhillips), Standard Oil Company of California (Socal), Union Oil, and Ohio Oil Company (now Marathon).

1958 — Kenai Peninsula's first natural gas deposit is discovered by Union Oil.

1960 — Socal's Richfield Kenai pipeline is completed.

1963 — Socal's Kenai refinery is completed. It is the first modern facility of its kind to provide finished oil products made in Alaska from Alaska crude to the Alaska market.

1964 — Socal's Platform A in place in Alaska's Cook Inlet — a partnership with Shell and Atlantic Refining Company.

1964 — The Good Friday, March 27 earthquake strikes the Alaska coast. Union Oil's rigs and pipelines withstand the shaking.

1965-66 — In Alaska's Cook Inlet four new oil fields are discovered. Union Oil holds substantial interests in three of them: Granite Point, Trading Bay, and McArthur River.

1966 — Collier Carbon and Chemical Company, a Union Oil subsidiary, signs contracts to construct an agricultural fertilizer complex to be built near the Kenai gas field.

1966 — Union Oil installs the world's first monopod platform to produce Cook Inlet's Trading Bay field, and Grayling Platform to produce the McArthur River field.

1968 — The Prudhoe Bay field is discovered on the North Slope of Alaska. Union Oil's investment amounted to $76 million.

1968 — Collier opens its new agricultural fertilizer complex in Kenai which use more than 60 million cubic feet of natural gas per day to produce 1,500 tons of anhydrous ammonia and 1,000 tons of urea each day.

1970 — Union Oil acquires a 2 percent interest in the Trans-Alaska Pipeline System (TAPS). Later that year, the seven owners of TAPS form the Alyeska Pipeline Service Company to assume responsibility for design, construction, operation, and maintenance.

1976 — Two new plants, costing more than $235 million, more than double the output of the Collier agricultural fertilizer complex in Kenai, producing 1,500 tons of anhydrous ammonia and 1,200 tons of urea per day.

1988 — Union Oil exchanges properties with Chevron, in part acquiring Chevron's interest in the Swanson River Field.

1989 — Union Oil participates in initial exploration drilling in Alaska's highly prospective Chukchi Sea.

Mid-1990s — Union Oil extends its holdings in southern Alaska through the acquisition of Amoco's 62.5 percent interest in the Chakachatna Group, owner of four platforms in the Cook Inlet. Combined production averages about 5,100 barrels of oil per day.

2001 — Union Oil participates with Marathon Oil in Ninilchik Unit gas discovery

2002 — Union Oil explores the southern Kenai Peninsula for natural gas. Gas is discovered at Ninilchik (with Marathon) and at Happy Valley, driving the construction of the Kenai Kachemak Pipeline.

2005 — Unocal Corporation (the parent company of Union Oil Company of California) is acquired by Chevron.

ConocoPhillips

ConocoPhillips is proud to be part of the Alaska Oil and Gas Associations' proud 40 years of history in the 49th state. From the time the first wells were drilled at Prudhoe Bay, Alaska has been home to world-class oil and gas development.

Our long history began in 1952, when Phillips Petroleum became one of the first American companies approved by the U.S. Department of the Interior to drill in Alaska. We have deep roots in Alaska and with the combined history of our heritage companies, Phillips Petroleum and ARCO Alaska. ConocoPhillips Alaska has been a part of every major discovery and development in Alaska for nearly five decades, including:

- **The 1957 discovery of the Swanson River field**
- **The 1968 discovery of Prudhoe Bay**
- **The 1969 launch the Liquefied Natural Gas (LNG) Plant on the Kenai Peninsula**
- **The 1981 discovery of the Kuparuk field**
- **The 1994 discovery of Alpine**

In March 2000, Phillips purchased the Alaska assets of Atlantic Richfield Company, creating Phillips Alaska. In 2002, the company expanded again with the ConocoPhillips merger.

Today, ConocoPhillips is the largest producer of oil and gas in Alaska. In 2005 ConocoPhillips' oil production in Alaska was 314,000 BOD (barrels of oil per day) and gas production of 169 MMcfd (million cubic feet per day). With 2.8 million undeveloped acres, our company is also the most aggressive explorer and the largest owner of state and federal leases.

ConocoPhillips has major ownership in the Prudhoe Bay Unit, the Kuparuk River Unit and the Colville River Unit (Alpine). ConocoPhillips operates the Greater Kuparuk Area and Alpine oil fields, the Kenai Liquefied Natural Gas Plant, North Cook Inlet platform and Beluga River Unit gas field. The company also owns 28 percent of the Trans-Alaska Pipeline System (TAPS).

Investments by the petroleum industry fuel our economy by creating jobs and generating revenue for the state. This year ConocoPhillips will invest approximately $800 million for new and ongoing capital projects like Alpine satellite development, the West Sak heavy-oil field, and further development in Prudhoe Bay and Kuparuk.

ConocoPhillips is committed to environmentally responsible and sustainable resource development. In Alaska, we are setting the standard for applying advanced technology to reduce our impact on the environment while increasing oil and gas recovery. We also believe in helping our community, so we contributed more than $40 million to that end from 2000 to 2205.

Alaska operations are a vital to ConocoPhillips, contributing 17 percent of the company's worldwide production. To maintain our production, we must keep Alaska a competitive place to explore and develop. The state of Alaska can do its part by fostering a pro-investment climate, stable fiscal environment and efficient permitting system to encourage future exploration and development. Everyone benefits from the responsible development of Alaska's oil and gas resources, through jobs and new revenues.

We anticipate new and exciting opportunities for continued exploration on Alaska's North Slope. At ConocoPhillips, we are committed to developing Alaska's resources and bringing them to market.

That's why we're prepared to move forward with the Alaska Natural Gas Pipeline. We've worked in Alaska, and with Alaskans, for 50 years. The challenges are significant but if we're successful, together we can sustain a strong and competitive North Slope oil and gas business.

The Alaska Natural Gas Pipeline will represent a significant financial commitment by the oil and gas industry and will provide a solid economic foundation for Alaska's next 50 years. The North Slope gas reserves will create jobs, revenue and a domestic source of much-needed natural gas for Alaska.

ConocoPhillips has spent years and millions of dollars studying the prospects of a natural gas pipeline. We have arrived at a fiscal contract with the state and expect to move forward through a public review process that will allow Alaskans to be informed about all that we bring to the table, and the commitment ConocoPhillips is prepared to make to Alaska's future.

to protect Native use, occupancy of Alaska lands
• Great Basins Petroleum drills Ugashik No. 1 well on Alaska Peninsula
• Atlantic Richfield drills Rainbow Fed No. 2 well in Copper River Basin

1967

• State's third North Slope sale, offshore Prudhoe Bay area, ARCO and Humble pick up leases
• Drill rig moves by cat train from Susie No.1 to Prudhoe Bay discovery site
• Marathon discovers Beaver Creek gas field on Kenai Peninsula in Cook Inlet Basin
• Chena River floods Fairbanks; Legislature adopts temporary 1% severance tax increase for flood relief
• Interior Secretary Stewart Udall unveils plans for Gulf of Alaska continental shelf oil and gas exploration
• Cook Inlet production begins at Middle Ground Shoal, McArthur River, Trading Bay, Granite Point
• Cities Service Oil drills Painter Creek No. 1 well on Alaska Peninsula
• Pennzoil drills Starichkof No. 1 well off southwest coast of the Kenai Peninsula, oil prospect later unitized as Cosmopolitan
• Prudhoe Bay State No. 1 discovery well tests first gas from main reservoir (Dec.27)
• Average WTI crude oil price in 1967 is $3.12 per barrel

Alaska Airlines flew equipment in around the clock with Hercules C-130 aircraft.

Sag River No. 1 confirmed the Prudhoe Bay discovery. An independent evaluation by DeGolyer and MacNaughton, an internationally recognized consulting firm, assessed a five-to-10 billion barrel find.

"None of us in our wildest imagination would have dreamed it would be a structure that large and that there would be a 400-foot gas cap on top of a 400-foot oil column in the structure," Mull said. "As it turned out, the leases that BP had down the flank actually contain about half of the oil."

The Sag River No. 1 well was significant because the company needed confirmation of the find. Former ARCO geologist Marvin Mangus said, "The confirmation well was drilled in June of 1968. … When we hit that, we couldn't believe it; it was just loaded with oil. That's the one that was estimated at a 9 billion (barrels) well. Sag River had no gas cap. It was all oil, and oil is worth a lot more than gas.

"We were just all elated. We couldn't believe it. When you find the biggest oil reserve in North America, you are happy. Everyone gets into the act. Finding that was like finding a $100 gold piece in your Christmas stocking instead of a lump of coal."


COURTESY TESORO

Alaska's first refinery

1969

Tesoro's Kenai refinery opened in 1969 to process crude oil from Kenai Peninsula and Cook Inlet oil fields. It produces jet fuel, diesel fuel, heating oil, gasoline, liquefied petroleum gas, heavy oils, bunker fuels and liquid asphalt.

Future banker flies high with oil money

As a child, First National Bank Alaska COO Betsy Cuddy Lawer rode to Alaska bush communities in a Piper Super Cub to do bank business with her father, D.H. Cuddy, the bank's president and CEO.


BETSY LAWER

However, it was an oil industry inspired jet airplane ride she took as a college student in 1969 that had the most dramatic effect on her future career.

In 1969, money couldn't be transferred with the click of a mouse, so when Alaska garnered a record $900 million from its North Slope lease sale, a jet was chartered to fly lease proceeds to East Coast financial markets. First National aided in supervising the transaction. Lawer needed a ride back to school so she and her mother Betti caught a ride on the jet with the royalty payment checks.

Lawer was impressed by the fact that an extra day's interest gained on the $900 million by rushing it to the bank for deposit covered the cost of the jet and more. She had seen the power of money firsthand, and it altered her career direction.

"I went to Duke and changed my major from interior design to economics," Lawer said. Lawer worked for First National during summer vacations, progressing through a wide variety of jobs. After graduation, Lawer returned to Alaska from Duke and went to work at the bank full time.

Superlative supertanker SS Manhattan

When icebreaker supertanker S.S. Manhattan crunched her way from the Atlantic through the Canadian Arctic icepack to the Beaufort Sea in 1969, she was the first commercial ship ever to traverse the Northwest Passage. The voyage was a $40 million feasibility test for shipping North Slope oil to the east coast by supertanker, mounted by Humble Oil Co. (Exxon).

The Manhattan was nothing if not a ship of superlatives. She was the largest merchant ship ever to fly the American flag and the largest commercial ship ever constructed in the United States.

Built in 1962 in the Bethlehem Steel shipyard in Quincy, Mass., she was 951 feet in length, 132 feet abeam and 68 feet deep.


U.S. NAVAL HISTORICAL CENTER

Among the 120 passengers on the S.S. Manhattan's historic 1969 Northwest passage voyage was a team of researchers gathering information on ice thickness, temperature, consistency, movement and other variables

That was before the Manhattan underwent a seven-month-long conversion to icebreaking tanker. She was fitted with steel belts along the hull and a new icebreaking bow to lift up and over the ice until the ship's weight broke through. The modifications added 9,000 tons for a total of 151,500 tons.

The modification also lengthened the Manhattan from 940 feet to 1,005 feet, and widened her 16 feet to a total finished width of 148 feet.

1968

- Atlantic Richfield and Humble announce Prudhoe Bay discovery on North Slope, largest oil field in North America, estimated 9.6 billion barrels
- Largest fertilizer plant on West Coast opens in Kenai using Cook Inlet gas to manufacture fertilizers
- State petroleum revenues double in six years to $52 million; 46% of state's unrestricted general fund

1969

- ARCO, Exxon, BP announce plans for trans-Alaska pipeline (Feb. 10, 1969)
- State holds lease sale No. 23, fourth North Slope sale, record $900 million
- Alaska Gov. Walter Hickel appointed Secretary of Interior by President Richard Nixon
- Keith H. Miller succeeds Hickel as governor of Alaska
- Congress passes National Environmental Policy Act; U.S. enters new era of environmental awareness
- Tesoro Refinery in Nikiski begins production with 17,500 barrels per day nameplate capacity
- Liquefied natural gas plant in Nikiski, only one in North America, begins exporting to Japan
- Pending settlement of Native land claims delays Congressional OK of TAPS construction
- Secretary of Interior Hickel orders Alaska land "freeze"

The Manhattan boasted a 43,000 shaft horsepower power plant, more than twice the power of a typical ship twice her size. The Manhattan maneuvered with grace as well, due to twin five-bladed propellers and twin rudders.

On her maiden icebreaking voyage, the Manhattan smoothly slashed through 14 foot icepack, leaving half-acre floes in her wake. As the ice got thicker, more power was required; still the Manhattan broke through ice as thick as 60 feet. In the McClure strait, ice towering 15 to 20 feet high, and as deep as 100 feet halted her progress. She had to back up repeatedly to take a run at the thick sections, making very little headway.

Finally her companion ships — the U.S. Coast Guard icebreaker Westwind and the Canadian icebreaker John A. McDonald — had to break a parallel path to relieve the pressure on The Manhattan's hull so she could move forward.

On Nov. 12, when the Manhattan sailed into New York Harbor she carried a symbolic barrel of oil taken aboard at Prudhoe Bay. It was quite possibly the highest shipping cost ever for a barrel of oil.

In reality, the Manhattan's most valuable cargo was the data acquired during the voyage. With the Manhattan's second trip to Prudhoe Bay in 1970, costs of the project reached a reported $54 million, and Humble acquired enough data to decide to join the other oil companies in building the trans-Alaska pipeline.

Creating jobs for Alaskans

VECO drilling and well support service employees at Prudhoe Bay are trained in wireline work, well stimulation, flowline and wellhead maintenance, coiled-tubing drilling support, corrosion treating, downhole diagnostics, fluid transfers, drill site maintenance, hot water and drilling fluid handling, welding and management of drilling tool house resources. VECO employs approximately 2,500-plus people in Alaska on a year-round basis, and in excess of 5,000 for their operations worldwide.

Similarity of structures draws BP

The similarities between structures in the Middle East and structures on the North Slope drew BP's attention to Alaska in the early 1950s.

Small oil and gas discoveries had been made by the U.S. Geological Survey in exploratory drilling in the 1920s and when the agency returned to the search for strategic oil reserves during and after World War II.

Alaska drew the attention of exploration companies after Richfield Oil found the Swanson River field on the Kenai Peninsula in Southcentral Alaska in 1957.

COURTESY BP

BP exploration geological survey camp in the foothills of the Brooks Range

BP's exploration department had included the North Slope of Alaska on a world survey of exploration opportunities in 1952, so while others focused in the southern part of the State, BP's chief geologist, Peter Cox, took a look at the North Slope, and reported a similarity between the foothills of the Brooks Range and the Zagros mountains in Iran. He reported "a wealth of drillable anticlines on the Iranian scale," and in 1958 BP teamed with Sinclair, which had some experience in Alaska.

In 1959 BP opened its first office in Anchorage; the first team of geologists arrived in 1960.

Although the company's main interest was in the North Slope, for a few years the company also explored near Yakutat, on the Alaska Peninsula, in the Cook Inlet area and on the lower Yukon River near Nulato.

COURTESY BP

Member of drilling team, BP's Put River No. 1 Prudhoe confirmation well

Roger Herrera, now retired from BP, was a member of the first geological survey team the company sent to the North Slope. The field party lived in tents and moved by float plane from site to site, landing on the small lakes on the slope, he recalled, or by helicopter.

Geoff Larmanie, the company's Anchorage-based exploration manager, said it got rough working in the mountains (especially when weathered in) in cramped

Crowley

Serving the oil industry in Alaska since 1957

The company was formed in 1892 when founder Thomas Crowley purchased an 18-foot Whitehall boat to provide transportation of personnel and supplies to ships anchored on San Francisco Bay.

Within a few years, services broadened to include bay towing and ship assist services. In addition to acquiring larger vessels, the company expanded in the 1920s into Los Angeles Harbor with tugboats for ship assists and into Puget sound with tug and barge transportation. Bulk petroleum transportation joined the list of company services in 1939.

In 1957, Crowley moved into arctic transportation with an agreement to resupply the U.S. government's Distant Early Warning Line on the Alaska coastline. It was the first penetration of the Arctic by commercial tug and barge services. This led to Crowley's Alaska common carrier services whereby railcar, breakbulk, containerized and bulk petroleum cargoes were delivered to more than 130 villages, many of which lacked docking facilities.

Beginning in 1968, utilizing the earlier pioneering experience in the Arctic, Crowley began summer sealifts of equipment, supplies, buildings and production modules to Prudhoe Bay. Since then, 334 barges carrying nearly 1.3 million tons of cargo have been successfully delivered to the North Slope, including modules the size of ten story buildings and weighing nearly 6000 tons.

In the 1970s, Crowley began transporting cargo between the U.S. and Puerto Rico and later expanded into the rest of the Caribbean, Central America and South America. The service primarily consisted of ships and large, triple-deck barges, some of which were 730 feet in length, carrying cargo in trailers and containers.

In 1989, Crowley tugs were first on the scene of the crippled tanker Exxon Valdez in Prince William Sound, Alaska. Soon after the clean-up Alyeska Pipeline Service Company contracted with Crowley to provide tanker assist and escort work in Valdez and Prince William Sound using tugs with the "best available technology."

In mid-1994, the top leadership of the corporation changed for only the second time in more than 100 years. Following the passing of his father Thomas B. Crowley, Jr. was unanimously elected president, chairman of the board, and chief executive officer.

Petroleum Services

Crowley had expanded its petroleum carrying capabilities in recent years with the construction of four new 155,000-barrel articulated tug barge (ATB) tank vessels. The company resently took delivery of the first of six 185,000-barrel ATBs with the balance of delivery spread out by the end of 2008.

Crowley operates both petroleum barges and tankers in the United States. The company provides chemical parcel transportation and bulk petroleum transportation throughout the North American coasts, Alaska, Hawaii, Puerto Rico and to a lesser degree internationally. Crowley's tank vessels include ships, articulated tug and barge units (ATBs), and conventional tugs and barges. Crowley also deploys some of the newest ATBs in the industry to carry various petroleum products on the U.S. West Coast.

Today, Crowley tugs, barges, cranes, and personnel continue to support North Slope oil development and the protection of the environment, selling and delivering various fuels, packaged petroleum products, lubricants and oil spill cleanup products. The company also transports general cargo on combination fuel and freight barges between marine/fuel terminals and remote sites. Crowley is the marine contractor for Alaska Clean Seas, an industry oil spill response cooperative funded by North Slope producers and the Alyeska Pipeline Service Company.

Over the past half-century its unique expertise and equipment have propelled Crowley into a position as a leader of quality, reliable and environmentally sound services for the petroleum industry in Alaska. People who know Crowley rely on Crowley to get the job done right.

Contact

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Dowland-Bach: High-tech fabrication, built Alaska tough.

This instrumentation and specialty stainless steel fabricator has what it takes to handle the extremes of Alaska - and the rest of the world.

Services and products

Dowland-Bach is one of the leading stainless steel fabrication manufacturers in Alaska. Now in its 31st year, Dowland-Bach offers innovative stainless steel solutions for the oil and gas industry.

The company supplies raw stainless steel pipe, sheet and fittings along with design and manufacturing of custom products for clients on the North Slope and around the world. Clients include government, restaurants, industrial facilities, commercial fishing boats, utility and construction companies, fish-processing plants, the telecommunications industry, cruise lines, resorts and lodges as well as other industries.

Specialty and custom manufacturing are the order of the day for Dowland-Bach. A recent example was the request by the 2006 Arctic Winter Games for the design and production of an Olympic cauldron to burn throughout the Games on the Kenai Peninsula. The nine foot torch was designed and built in the Dowland-Bach shop out of stainless steel with a propane flame and control system. The Cauldron was lit in Soldotna during the opening ceremonies of the Games by Olympic Bronze Medal winner Rosie Fletcher. The Cauldron burned reliably throughout the week long international games and is destined to spend the next thirty years in front of the Kenai Peninsula Borough building commemorating the Games.

Stainless isn't the company's only forte. Its custom industrial control panels are hard at work throughout Alaska's oil and gas industry, from the wellhead at Prudhoe Bay to the fuel transfer stations at the Port of Anchorage. Dowland-Bach is an Underwriter's Laboratories listed panel shop and is qualified to build industrial control panels for use in hazardous environments.

Design and engineering

Dowland-Bach employs four engineers and a specialist in AutoCAD 3-D modeling. The expanded engineering staff, together with investments in 3-D modeling, has accelerated the company's pace of innovation. With this technology designers can see moving parts and alignment and can tweak the product electronically.

Hydraulic custom equipment packages.

Headquartered in Anchorage, serving the world

The company's Anchorage location has positioned it to compete against firms in larger markets outside the state, according to co-founder Lynn Johnson. Customers can drop by for a face-to-face meeting with Dowland-Bach engineers, or to see 3-D modeling of their designs on the company's AutoDesk Inventor AutoCAD system. Slight changes suggested at this stage can result in major savings in the field.

Meeting customers' needs

This front-line responsiveness to clients needs — combined with Dowland-Bach's stainless steel manufacturing capabilities — has won major business for the firm. From international pipeline companies to North Slope producers and contractors, Dowland-Bach is proud to support the oil and gas industry.

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until Native claims settled
• Energy Company of Alaska begins construction of North Pole refinery
• America's second largest oil field, Kuparuk River, discovered on North Slope
• Conoco discovers Milne Point field east of Prudhoe Bay
• First shipment of 48-inch pipe for trans-Alaska oil pipeline arrives at Valdez
• First sealift to Prudhoe Bay delivers 70,000 tons
• Icebreaker supertanker S.S. Manhattan to Beaufort Sea from East Coast via Northwest Passage
• Pan American drills David River No. 1 and No. 1A wells on Alaska Peninsula

1970

• Alyeska Pipeline Service Co. founded to construct, operate trans-Alaska pipeline
• William Egan (D) elected again as governor (1970-1974)
• State petroleum revenues leap to 88% of state's unrestricted general fund
• Cook Inlet Basin oil production peaks at 225,000 barrels per day
• Alaska population 300,382
• Pan American drills Hoodo Lake No. 1 and No. 2 wells on Alaska Peninsula

conditions, with both work and reading material in short supply.

Seismic work a challenge

BP began doing seismic work on the North Slope in 1963, a challenge since geophysicists had little experience in seismic reflection surveys in permafrost.

The Alaska team recommended drilling and by the end of 1963, BP and Sinclair had acquired options to lease some 150,000 acres. Logistics were a challenge: the first drilling rig was moved by rail from Calgary, Alberta, to the Hay River in the Northwest Territories and was then barged down the Hay River to the Mackenzie River and to the Beaufort Sea, west to the Colville River and then upstream.

COURTESY BP

A BP party leader takes notes on the geological structure in a streambed in the northern slopes of the Brooks Range

This early drilling was in the foothills of the Brooks Range and in the Colville River delta — it proved unproductive. Nine dry holes were drilled and the effort cost $30 million.

Mike Savage, a senior BP executive, remarked on those early efforts at a 1987 ceremony recognizing the 10th year of Prudhoe Bay production.

"It's remarkable how little notice people take of you when you're drilling dry holes," he said. "The odds of success in an entirely new exploration area were at least 20 to 1 against."

Oil workers go to Kenai, and stay

Mayor John J. Williams of the Kenai Peninsula Borough has seen firsthand how much a community can be transformed by oil and gas development. Williams was sworn in as the borough mayor in January 2006, coming to the post after a long residency in Kenai.

In 1970, Williams was the first full-time instructor at Kenai Peninsula Community College. The staff consisted of five people in those days, Williams said. Today the Kenai Peninsula College system, a unit of the University of Alaska Anchorage, has several locations and serves more than 2,000 students.

JOHN J. WILLIAMS

Like the college, the Kenai Peninsula community has been transformed by the economic transfusion flowing from oil and gas development.

STEVE SUTHERLIN

1906 log chapel honors Father Igumen Nikolai, who in 1845 started the first permanent parish in Kenai and baptized 1432 Kenaitze Indians. The Russians inoculated Native people against smallpox in 1860. 1973 photo

In 1968, when Williams moved to Kenai, the town was little more than an outpost serving a scattered rural population, but the town was embarking on a new growth trajectory, as oil and gas discoveries around the area pushed employment and income higher.

It was one of those high-paying oil-related jobs that brought Williams to the Kenai area.

He did instrumentation and controls work at the Collier chemical plant and later did the same type of work at the Tesoro refinery in Nikiski.

Before the modern Alaska oil industry emerged, many of the best jobs in the state were the result of government largesse.

"It was mostly government jobs back then — federal — not a lot of private industry in those days," Williams said.

Williams' career was a case in point. Military activity in Alaska and an increasingly high-technology military machine created an opportunity for Williams to do instrumentation and controls work in a pristine corner of the nation. Before moving to Kenai, Williams lived in Fairbanks and worked at Fort Wainwright. Later he went to Clear to work on the intercontinental ballistic missile early warning system.

Working at Clear was the best job in the state in those days, Williams said.

Making Kenai home

Like many oil industry workers called to Kenai's oil patch jobs, Williams made Kenai his home and stayed to help to build the community. He has seen many changes over the years.

"The government has grown; the infrastructure has grown; we have more of everything — schools hospitals, roads," Williams said. "There was one high school, Kenai Central High; now there are four high schools in the area."

When Williams got to Kenai in 1968 the population was 10,000. Today the population stands at 50,000.

The first hospital came to the Kenai in the early 1970s, and the facility has seen several additions since, Williams said,

• Consolidated Allied Embassy completes Tawawe Lake Unit No. 1 well in Copper River Basin
• Icebreaker supertanker S.S. Manhattan makes second Northwest Passage voyage
• Industry determines S.S. Manhattan too small; larger tanker not economically feasible
• Largest sealift in state history delivers 187,000 tons of equipment to Prudhoe Bay
• West Sak River State No. 1 discovery announced 25 miles west of Prudhoe Bay
• In Mackenzie Delta area of Canada (300 miles east of Prudhoe) exploration drilling from 1970-1989 discovered 53 oil and gas pools onshore and offshore

1971

• Congress passes Alaska Native Claims Settlement Act, 44 million acres to go to newly established Native corporations
• ANCSA clears way for congressional passage of legislation authorizing trans-Alaska pipeline
• Gov. Egan considers $1.5 billion plan to have state own trans-Alaska pipeline using tax-exempt bonds

1972

• New environmental impact statement drafted for trans-Alaska oil pipeline

adding that a $50 million addition to the hospital is now nearing completion.

The airport wasn't too impressive either when Williams showed up in Kenai.

"The airport had a gravel runway with one little building, Williams said. "You came in one door and out the other."

Back in 1968 most of the population lived in Kenai or Nikiski because that is where the oil industry jobs were, Williams said. Soldotna — today a bustling retail crossroads of the peninsula — was very sparsely populated.

Industrial users adjust

Oil and a large stranded supply of natural gas made the Kenai area home to some of Alaska's largest industrial users of gas and oil. As the world markets have changed for these industrial users, the companies have made continued investments to stay in business.

The original Tesoro refinery was built at a cost of $14 million, primarily to supply jet fuel to Anchorage International Airport, Williams said, adding that the new $45 million low sulfur unit currently being installed at the refinery exceeds the plant's original cost.

When Phillips Petroleum's Tyonek platform first provided gas to the nation's only liquefied natural gas export terminal at Nikiski, Japan got 100 percent of its natural gas imports from there, Williams said. Now the plant accounts for only 3 percent of Japan's imports even though the present ConocoPhillips-Marathon LNG plant is producing more today than it was when it opened.

There is still a lot of promise in Alaska, Williams said, noting that projects such as the North Slope natural gas pipeline, coal gasification, and Pebble mine bode well for the future, and will provide jobs.

"The gas line will have a tremendous financial impact," Williams said. "It will take the permanent fund to levels we've never dreamed of."

Superlative sealift

1970

Crowley's 1970 transport of 187,000 tons of cargo to Prudhoe Bay was the largest commercial sealift in maritime history. The 400 foot barges were towed 4,000 miles from the Puget Sound to the Beaufort Sea.

Bering Sea exploration disappoints

In the 1970s a surge of interest in the various sedimentary basins in the Bering Sea outer continental shelf led to an extensive effort to acquire 2D seismic data — according to Minerals Management Service data about 271,000 line miles of data were acquired between 1970 and 1985 from the Norton, St. Matthew Hall, Navarin, St. George and North Aleutian basins of the Bering Sea.

The seismic data confirmed the existence of substantial thicknesses of Tertiary strata in the basins. And large geologic structures offered enticing possibilities for petroleum traps. Enthusiasm about the possibility of establishing a significant offshore oil province led to a series of MMS lease sales in the early to mid-1980s. And between 1976 and 1983 ARCO, with funding from several companies, drilled six continental shelf stratigraphic test wells in the basins to obtain information about the basin geology.

In a flurry of activity in 1984 and 1985 several companies drilled exploration wells in the basins: Exxon and ARCO drilled six wells in the Norton Basin; Mobil, ARCO, Chevron, Exxon, Shell and Gulf Oil drilled nine wells in the St. George Basin; and Amoco, Exxon and ARCO drilled eight wells in the Navarin Basin.

Hopes were dashed when the explorers found little or no oil potential in these basins, mainly because of a lack of suitable oil-prone source rocks. And there has been no further drilling in the Bering Sea outer continental shelf since 1985.

The North Aleutian Basin (also known as the Bristol Bay Basin) is one Bering Sea basin that does show good potential for oil and gas. ARCO drilled a stratigraphic test well in this basin, offshore Port Moller, in 1983. But as a consequence of environmental concerns, especially about possible impacts on salmon fishing, no other wells have been drilled offshore in the basin. In 1989 the U.S. Congress placed a moratorium on offshore oil and gas leasing in the Bristol Bay and North Aleutians area. That moratorium has remained in place ever since.

1973: Agnew breaks deadlock on pipeline act

In the early 1970s, Vice President Spiro T. Agnew became a pivotal figure in Alaska politics when he broke a Senate deadlock on approval of a bill that called for construction of the trans-Alaska oil pipeline.

As Congress worked in 1971 to solve Native land claims issues, environmental groups filed suit to stop construction of the trans-Alaska oil pipeline. The groups complained that industry plans for the line did not meet requirements of the newly passed National Environmental Policy Act. A federal judge grant-

Doyon Drilling: Proud To Be Part Of Alaska's Oil And Gas Industry

DOYON
Limited

Congratulations to AOGA, the oil and gas sector

Alaska has a proud history in oil and gas development and a spectacular future with the proposed gas pipeline, ANWR and new development in several regions across the state. Doyon Drilling, Inc., an Alaska-owned contractor is ready to join forces with the oil industry to contribute to the growth in this key sector of Alaska's economy.

It's only appropriate that Doyon Drilling, Inc., and Doyon, Limited congratulate the Alaska Oil and Gas Association (AOGA) on a strong 40 years in Alaska, providing leadership and support to the oil and gas companies who have contributed greatly to our local, regional and statewide economies.

Doyon Drilling history

DDI was formed in 1982 as a joint venture between Doyon, Limited, an Alaska Native regional corporation, and Nugget Alaska Inc. Doyon, Limited is one of the 13 regional corporations created under the Alaska Native Claims Settlement Act (ANCSA) of 1971.

Today DDI is wholly owned and operates six unique drilling rigs on Alaska's North Slope. All six of our drilling rigs are specially designed to drill in northern Alaska conditions. We are a proven leader and are setting the standards in drilling technology, environmental awareness, safety and profitability.

Leader in all we do

DDI has been proud to celebrate a number of "firsts" in the industry. Our Rig 9 was the first self-propelled, wheel-mounted rig developed for the North Slope. We later applied that same moving system to Rigs 14, 15 and 16. We were also the first drilling company on the North Slope to use highline power and dual fuel turbines. We installed a Ross Hill Power Factor Corrector, which reduced electrical load requirements and all but eliminated electrical brown outs at power facilities.

DDI Rig 15 was the only land rig on the North Slope operating dual fuel turbines for per generation at Endicott Island. Rig 15 was built and designed to have three 1,600 BHP turbines with dual fuel burning capabilities, providing a surplus of available power when performing maintenance on one of the turbines. Burning gas produced from adjacent wells provides significant cost savings to the customer. Heat recovered from turbine exhaust reduces fuel requirements, air emissions and also eliminates the need for large air heaters. In 2005, Rig 15 was moved off Endicott Island with modifications and upgrades, allowing the rig to work in Kuparuk oil field for ConocoPhillips. Part of the major modifications done to Rig 15 included the gas turbines being replaced with three 3516 HD generator sets. The rig was also equipped with a power factor corrector and transformer, which enabled the Rig to operate from Highline power.

Superior Arctic experience

Doyon Drilling is among the companies that have been helping oilfield operators refine their methods to go after unconventional finds. Much recent effort has focused on heavy oil deposits in shallow Arctic sands, using horizontal drilling.

Cutting drilling costs has also become a critical factor on the North Slope. Doyon Drilling's efficient rigs and experienced drilling teams translate directly into cost savings.

For example, the company made extensive modifications to its Rig 19 to enable this rig to cross ice bridges over land routes. The use of land routes eliminates the extra cost and time required to move the rig across the sea ice.

Another example, Doyon Drilling was approached by Pioneer Drilling to design and develop a light, mobile exploration rig to drill in remote areas. Doyon working with Akita Drilling developed the Arctic Fox 1, a joint venture and newest addition to our fleet. The rig design was successful and completed three exploration wells for Pioneer Natural Resources. The timely manner in which the wells were drilled allowed the rig to drill an additional well for ConocoPhillips.

Bright future

Alaska faces a bright future in oil and gas development. Doyon Drilling can respond to whatever the industry needs. The company's depth of experience on the North Slope enables it to meet the challenges of Arctic drilling.

Leader In All We Do

• Gulf Oil drills Port Heiden Unit No. 1 well on Alaska Peninsula
• Northwest Eileen State No. 2 well above Prudhoe Bay field discovers Eileen gas hydrate trend

1973

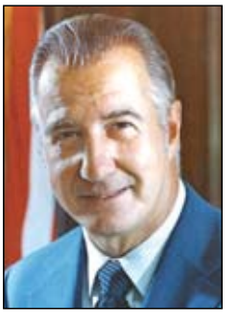
• Arab Oil Embargo reduces America's oil supply and causes gasoline shortages
• U.S. Congress: Tiebreak vote by Vice President Agnew OKs Trans-Alaska Pipeline Authorization Act
• BP's first permanent base camp shipped in modular form from Seattle to Prudhoe Bay

1974

• Jay Hammond (R) elected governor (1974-1978)
• Legislature, during a special session, passes property tax on oil and gas production and transportation facilities at 20 mills — Alaska's only state property tax
• Construction begins on 800-mile trans-Alaska oil pipeline, original costs estimated at $900 million
• Haul Road (Dalton Highway) construction begins, 360 miles, 154 days, 3 million man-hours
• Central power station arrives in Prudhoe Bay
• Amoco drills Cathedral River No. 1 well on Alaska Peninsula
• Standard Oil drills Nimiuk Point No. 1 well in Kotzebue Basin

ed an injunction to stop pipeline construction.

The oil industry pushed forward with an expensive planning process to answer the unprecedented environmental and engineering challenges, under a cloud of debate in Washington, D.C., about whether or not there should be a pipeline at all. Environmentalists pressed the idea that America's last great wilderness should remain untouched by industry in order to be preserved for future generations.


SPIRO AGNEW

Congress held Alaska's destiny in its hands. The House of Representatives approved pipeline construction in 1973, but the issue bogged down in the Senate. Senators ground to a 49-49 deadlock on the issue. In the end, Agnew cast the deciding vote to approve the Alaska Pipeline Authorization Act on July 17, 1973.

Atigun Pass challenges Haul Road builders

At 68 degrees north latitude, 4,800-foot Atigun Pass is the northernmost highway pass in Alaska, where the 414-mile haul road snakes under 2,000-foot mountain faces and 40 to 50 avalanche paths. Construction of the Haul Road, also known as the Dalton Highway, was begun April 29, 1974, and completed Sept. 29, at a cost of $125 million.

It was named for James B. Dalton, an expert in Arctic engineering and logistics who supervised construction of the Distant Early Warning Line, and served as consultant in early oil exploration in northern Alaska.

Early exploration of NPR-A disappointing

People have long known about the petroleum potential of the area of northwestern Alaska now known as the National Petroleum Reserve-Alaska.

In fact, in 1923 President Harding established the area, then named Naval Petroleum Reserve No. 4, as a potential source of oil supplies for the U.S. Navy. From 1943 through 1953 the U.S. Navy explored for oil and gas in the area, finding the Umiat oil field, the Gubik gas field and the south Barrow gas field.

In 1974 the Navy authorized a new exploration program in the reserve under a contract with Husky Oil.

But in 1976 the U.S. Congress renamed the reserve as the National Petroleum Reserve-Alaska and transferred management of the reserve to the U.S. Department of the Interior. The U.S. Geological Survey took over coordination of the NPR-A exploration program, with a focus on gaining a better understanding of the regional geology.

That exploration program ended in 1982, by which time 14,000 line miles of seismic surveys had been shot and 126 wells drilled in the reserve. No major oil or gas field was found.

The Bureau of Land Management held four lease sales between 1982 and 1984. Although several companies acquired leases in these sales, only one exploration well, ARCO's 1985 Brontosaurus well, was drilled. That well tested a Sadlerochit prospect but proved dry.

No further oil and gas exploration occurred in NPR-A until BLM restarted leasing in the northeastern sector of the reserve in 1999.

Separation of gas and oil at Prudhoe Bay

When crude oil production began at Prudhoe Bay in 1977, so did separation of the natural gas and water that came out of the reservoir along with the oil.

Since the beginning, natural gas and water have been injected back into the reservoir for pressure maintenance. Some natural gas is used as fuel, both on the North Slope and at the most northerly of the trans-Alaska oil pipeline pump stations. Natural gas is also used to produce miscible injectant for enhanced oil recovery and some natural gas liquids are sent

see page 41

• 515 federal and 832 state permits required for trans-Alaska pipeline construction

1975

• Trans-Alaska oil pipeline project 50% complete
• State of Alaska's annual budget exceeds $500 million
• BP completes two Prudhoe Bay gathering centers — capacity 600,000 barrels per day each
• Standard Oil drills the Cape Espenberg No. 1 well in Kotzebue Basin
• First Alaska Continental Offshore Stratigraphic Test (COST) well drilled in Gulf of Alaska
• Trans-Alaska pipeline workforce peaks at 28,072 in October
• Husky drills Navy test well at Cape Halkett in NPR-A
• Federal Power Commission, predecessor to FERC, orders hearing to select among gas projects

1976

• Constitutional Amendment passed by Alaskans establishing Alaska Permanent Fund to receive "at least 25%" of petroleum royalties
• U.S. Minerals Management Service conducts OCS lease sale No. 39 for Gulf of Alaska
• First Alaska OCS exploratory well drilled by Shell in Gulf of Alaska

THE TRANS-ALASKA PIPLINE

COURTESY ALYESKA PIPELINE SERVICE CO.

A man-made wonder: the trans-Alaska pipeline system

"A silken thread, half hidden across the palace carpet," former University of Alaska President William R. Wood wrote about the 800 mile trans-Alaska oil pipeline.

Constructed by its operator, Alyeska Pipeline Service Co., in a three year period beginning in April 1974 and ending with the final weld in May 1977, the trans-Alaska pipeline system was built to transport petroleum from the North Slope oil fields to the marine terminal in Valdez where it is loaded aboard tankers for the journey to U.S refineries.

This story and accompanying photo feature first appeared in the June 23, 2002, issue of Petroleum News

The cost to build this manmade wonder? $8 billion, Alyeska said. And that doesn't include interest on capital investment or capital construction after 1977.

Five hundred and fifteen federal and 832 state permits were required to build the pipeline.

Two thousand contractors and subcontractors worked on it.

During the peak of construction in October 1975, approximately 28,072 people were employed by Alyeska and its contractors to build the pipeline.

Twenty-nine temporary camps were set up, used and dismantled in the three-year construction period. The largest was at the marine terminal. It had 3,480 beds. Seven airports were constructed — two airports, Prospect and Galbraith Lake, continue to be used for pipeline purposes.

The total weight of the materials shipped to Alaska for the construction of the trans-Alaska pipeline system was approximately 3 million tons, the largest being a floating tanker berth at 3,250 tons.

Forty-two thousand, double joint, welds and 66,000 field girth welds were made along the line.

Finally, and something that is seldom mentioned, 31 lives were lost in construction-related incidents during the three-year period.

ExxonMobil

ExxonMobil has been in Alaska for over fifty years, starting with exploration drilling on the Alaska Peninsula in the mid-1950's, the discovery and development of the Granite Point oil field in Cook Inlet in the mid-1960's, partnering in the discovery and subsequent development of Prudhoe Bay in 1968, the development of the Trans Alaska Pipeline System, and the discovery of the Point Thomson Field in 1977. Since Prudhoe Bay production began flowing on June 20, 1977, over 15 billion barrels of North Slope oil have passed through TAPS. We also have interests in the Kuparuk and Endicott fields.

ExxonMobil is proud of the active role our company has played in these activities. A distinguishing feature of ExxonMobil is our ongoing corporate commitment to developing and using technology. This is evidenced by over 70 years of Arctic experience in Canada and Alaska and our ongoing Arctic research programs in Alaska, Canada, Norway, Greenland, and Russia. More broadly, we maintain industry leadership through dedicated ongoing research efforts in all aspects of the upstream business, such as seismic acquisition, processing and interpretation; reservoir modeling and simulation; drilling and facilities technology and operations, and gas commercialization technologies.

Advancements in Arctic technology have increased the economic viability and life of the North Slope fields by reducing costs and the time to develop oil field projects, which improve profitability and allow previously high-cost resources to be competitive. ExxonMobil's assessment of remaining oil resources suggests future Alaska growth opportunities will require significant technology and capital investments in complex enhanced oil recovery projects; development of smaller, more marginal oil accumulations, and the innovative development of viscous and heavy oil resources.

On the gas front, Alaska is well positioned to play a leadership role in helping meet the growing demand for clean energy across North America. As the largest owner of the Prudhoe Bay and Point Thomson fields, ExxonMobil is also the largest holder of North Slope gas, and we are working hard to commercialize Alaska's North Slope gas. Over the past several years, we have worked with the producer group to progress a pipeline project to serve North American gas markets. ExxonMobil has invested billions of dollars in Alaska and our plans for oil and gas development and the Alaska Gas Pipeline will see billions of dollars of further investment.

We reinforce our commitment to Alaska through active membership in organizations such as the Resource Development Council, the Alaska Oil & Gas Association, the State Chamber of Commerce, and by providing funding to numerous nonprofit organizations throughout Alaska.

We look forward to investing and working in partnership with Alaska for the next 50 years and beyond.

• Louisiana Land and Exploration Co. drills Doyon No. 1 well in Kandik Basin
• Alaska receives nearly $400 million in petroleum taxes and royalties
• Federal Land Policy and Management Act adopted
• Tesoro constructs a products pipeline from the Nikiski refinery to the Anchorage airport and port
• Nabors 18-E, first specially designed Arctic rig, barged down Mackenzie River for BP for use in Alaska
• Northwest Alaskan Pipeline and Foothills Pipe Lines propose gas pipeline along AlCan Highway
• Federal hearing to select ANS gas pipeline project
• Alaska Natural Gas Transportation Act to expedite ANS gas pipeline

1977

• Legislature creates Alaska Coastal Management Act (1979 becomes Alaska Coastal Management Program)
• State changes severance tax to include an Economic Limit Factor to adjust the rate of tax to a field's economic circumstance
• Trans-Alaska oil pipeline completed on May 31, largest construction project ever undertaken by private industry
• Union Oil constructs world's first ice island in U.S. side of Beaufort Sea
• First oil into Pump Station 1 on June 20, reached Valdez July 28; time delay due to fire and explosion on

THE TRANS-ALASKA PIPLINE

COURTESY ALYESKA PIPELINE SERVICE CO.

COURTESY ALYESKA PIPELINE SERVICE CO.

Far left, "Big Mama." Left, the trans Alaska pipeline was constructed across Thompson Pass with the aid of cable systems and radio communications to place and line-up pipe for welding. The pass in the Chugach Mountains, about 25 miles northeast of Valdez. Below, March 27, 1975, the first pipe is laid at Tonsina River. A total of 534 rivers and streams were crossed in the construction of the trans-Alaska oil pipeline.

COURTESY ALYESKA PIPELINE SERVICE CO.

PS 8 on July 8
• Prudhoe Bay production begins and soon reaches 1.5 million barrels per day
• First tanker load of North Slope crude oil departs Valdez Aug. 1 aboard ARCO Juneau
• North Pole refinery comes online August 11 to take 30,000 barrels of oil per day from TAPS
• Exxon hits oil and gas at Point Thomson No. 1 well 40 miles east of Prudhoe
• Congress transfers NPR-A to Department of Interior
• Husky shoots seismic grid, drills test wells for U.S. Geological Survey (USGS) in NPR-A
• (COST) well drilled in lower Cook Inlet
• Phillips drills Big River No. A-1 well on Alaska Peninsula
• ARCO, Shell, Texaco, Exxon and Gulf Oil complete seven wells in Gulf of Alaska
• Louisiana Land and Exploration drills Doyon Nos. 2 and 3 wells in Kandik Basin
• State of Alaska's annual budget exceeds $700 million
• Alaska Permanent Fund receives first deposit of dedicated oil revenues: $734,000

1978

• President Carter invokes Antiquities Act to create 17 national monuments in Alaska

THE TRANS-ALASKA PIPLINE

COURTESY ALYESKA PIPELINE SERVICE CO.

Pipe being buried during construction. In most cases, pipelines are buried, but almost half of the trans-Alaska oil pipeline is above ground because a lot of the ground where it runs is underlain by permafrost. The heat from the oil, which comes out of the ground at 150-180° F, could thaw the frozen soil if the 48 inch pipeline was buried, possibly causing the pipe to buckle and break. The pipeline runs approximately 420 miles above ground and approximately 380 miles underground.

COURTESY ALYESKA PIPELINE SERVICE CO.

A VSM (vertical support member) driller.

COURTESY ALYESKA PIPELINE SERVICE CO.

May 31, 1977: Final pipeline weld near Pump Station 3.

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Frontier operates 19 seat Beechcraft 1900c turboprop aircraft at the highest airline safety level, FAR part 121, the only passenger airline of that type based north of the Alaska Range. Other aircraft in the Frontier fleet include Beechcraft 99c and Piper Navajo Chieftains which transport passengers from villages to the major hubs served by the larger 1900 aircraft.

Frontier Flying Service has been in operation for over 50 years. In 2005, the airline transported over 150,000 passengers and over ten million pounds of freight and mail.

Frontier offers multiple daily flights between Anchorage and Fairbanks. Direct six day a week service from Fairbanks to Barrow is the latest addition to Frontier's route system. Serving more than 50 communities through out the interior, southwest, western, northwest and northern Alaska, Frontier strives to provide the most reliable and safest level of service to its' customers.

H.C. Price: A construction industry leader

"A number of pipeline companies have come and gone over the past 30 years, but we've remained and further developed as a successful heavy industrial building and trades construction contractor," said David Matthews, vice president and Alaska general manager for H.C. Price. "Our core business is pipeline construction, but in Alaska we're more diversified to respond to the constantly changing market."

H.C. Price first established an Alaska division in 1975 to complete construction of a 144-mile section of the trans-Alaska pipeline—which stretches across two fault zones from the Yukon River to Fairbanks. That was just the start for H.C. Price in Alaska. Between 1978 and 1994 the company completed more than half of all the pipeline construction work and approximately one quarter of the facility construction in Prudhoe Bay and Kuparuk. H.C. Price also provided maintenance and project construction on the pipeline for 10 consecutive years, worth over $500 million, for Alyeska Pipeline Service Company.

A new expertise

As construction work slowed on the North Slope in the late 1980s, H.C. Price parlayed its construction experience into a number of large power plant projects, culminating in construction of the Bradey Lake Hydroelectric Plant (1989-91) and the experimental Healy Clean Coal Project (1994-1997).

Continuing to look for other markets to utilize its expertise, the Alaska division has grown its experience as a contracting company during slow construction times in the oil and gas industry. New markets included work on proposed power projects in Alaska, participation in construction of the national missile defense system near Delta Junction, military contracts, oil and gas projects in other parts of Alaska, local government construction and similar projects outside of Alaska.

Pipeline innovation

Although construction of the trans-Alaska Pipeline originally brought pipeline-building specialist H.C. Price Company to the state more than 30 years ago, the company has a long history of pipeline construction innovation.

The company was founded in 1921 when Hal Price borrowed $2,500 to pursue the development of electric arc welding. Initially the welding technique was used for tank repairs, but by 1928, Price had completed a 169-mile section of 8-inch-diameter pipeline in Texas, thus starting a new era of pipeline construction. That innovation continues today with new pipeline construction methods, technologies and an active role in training of a new cadre of pipeline professionals to support Alaska's construction projects.

Gas pipeline project

One of the key projects that H.C. Price is anticipating is start-up of a commercialized North Slope natural gas pipeline system. In regard to this mega-sized project, Matthews said, "It's not if, but when. We've been involved in a lot of studies on the proposed Alaska gas pipeline, as we're sought for our expertise," he added.

He is confident that H.C. Price will be involved with the Alaska gas pipeline project due to the company's past experience in the field and presence in Alaska. "We'll certainly figure into portions of it," he said.

Furthermore, the company could be involved on both sides of the U.S.-Canada border, as H.C. Price owns one of the largest pipeline companies in Canada, O.J. Pipeline in Nisku, Alberta and is the sole North American distributor and full-service contractor for RMS mechanized welding systems.

Other oil and gas potential

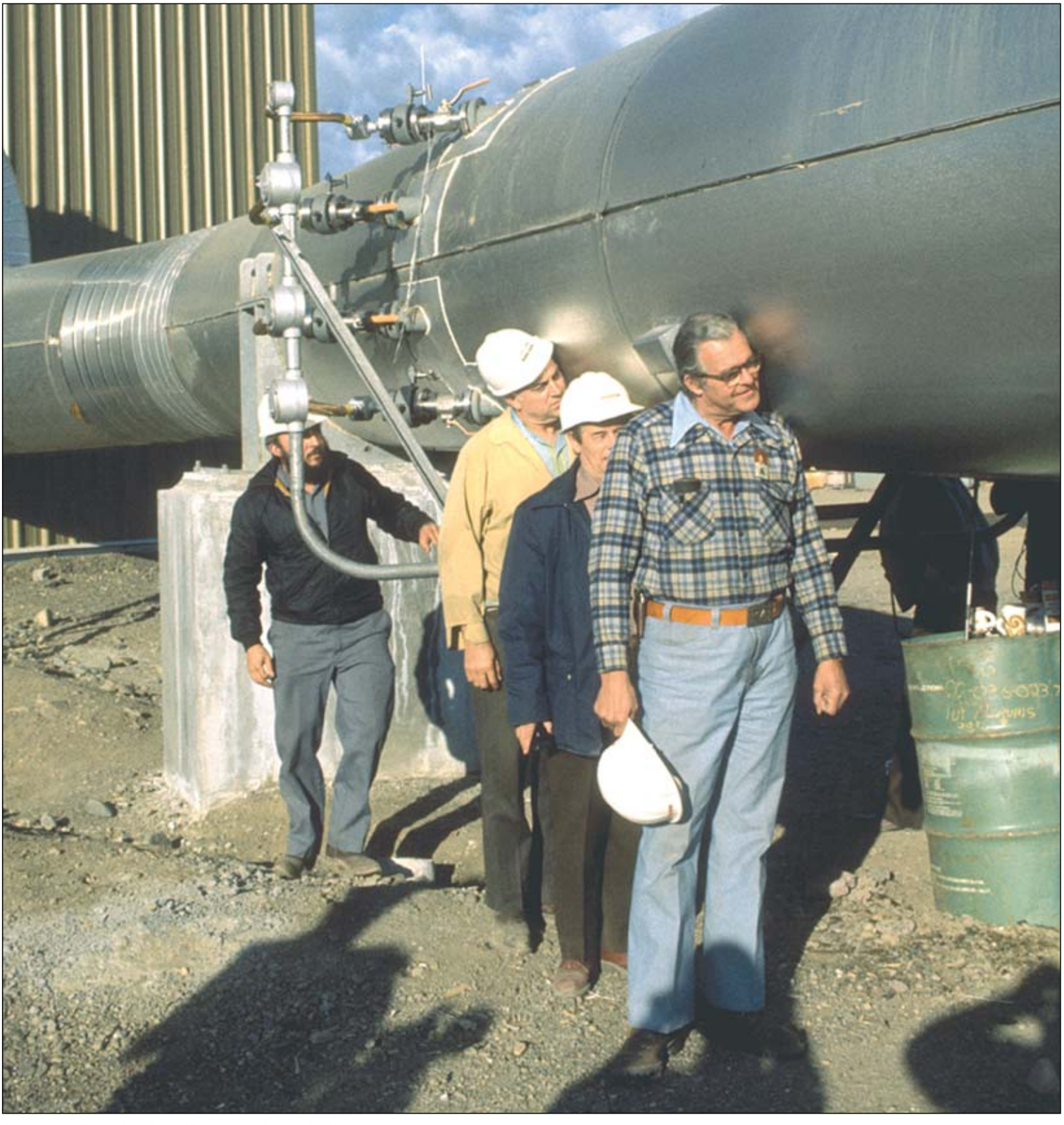
Construction of a natural gas pipeline, Exxon Mobil's Point Thomson project, the opening of the coastal plain of the Arctic National Wildlife Refuge for exploration, and development of known accumulations in the National Petroleum Reserve-Alaska – all are big-ticket projects that contractors prepare for, and sometimes patiently await for years. The independent oil companies coming to explore oil and gas are giving H.C. Price an opportunity to continue to stay at the forefront of new technologies and new construction methodologies. "We're building our experience in construction, while utilizing our time wisely to stay close to new technologies and best practices to be prepared when the times does come for these projects," remarks Matthews, "We have 85 years of pipeline experience with nearly half of that in Alaska and we look forward to continuing to serve as a valuable resource to build and maintain world-class oil and gas construction projects throughout Alaska."

• Jay Hammond (R) elected governor for second term (1978-1982)
• Endicott oil field in Beaufort Sea discovered, first offshore oil field in U.S. Arctic
• ARCO and Phillips drill two wells in lower Cook Inlet
• Legislature changes severance tax to separate accounting
• Texaco and Exxon complete four wells in Gulf of Alaska
• Union Oil increases size of Nikiski fertilizer plant, becomes largest West Coast producer of fertilizer by 1979
• Natural Gas Policy Act ends federal control over wellhead price of new gas effective Jan. 1, 1985

1979

• Iranian revolution causes second oil embargo and oil supply shortage
• State Beaufort Sea lease sale uses net profit share as bid variable
• State, MMS hold first Beaufort Sea lease sales jointly, receive bids totaling more than $1 billion
• State of Alaska receives $821 million in petroleum revenues, 73% of unrestricted revenues
• State's annual budget exceeds $1 billion
• Cannery Loop gas field discovery made on Kenai Peninsula by Union Oil and Marathon

THE TRANS-ALASKA PIPLINE



COURTESY ALYESKA PIPELINE SERVICE CO.

People are "listening for oil" to come down the line

- Phillips, Marathon drill four wells in lower Cook Inlet

1980

- Average WTI crude oil price in 1980 is $37.42
- Congress passes Alaska National Interest Lands Conservation Act (ANILCA)
- ANILCA adds 106 million acres of Alaska lands to federal conservation status
- Alaska's personal income tax repealed
- Legislature creates Alaska Permanent Fund Corp., makes $900 million special appropriation from oil revenues
- Permanent fund's share of oil royalties goes from 25 to 50% for oil fields leased after 1979
- Alaska Permanent Fund dividend program approved to distribute permanent fund earnings to Alaska residents
- Alaska receives $2.3 billion in petroleum revenue, 90% of unrestricted revenue
- Alaska population 401,851
- North Pole refinery undergoes debottlenecking process to run 45,000 barrels per day
- Kenai National Moose Range renamed Kenai National Wildlife Refuge
- ARCO and Phillips drill four wells in lower Cook Inlet
- (COST) well drilled in Norton Sound
- Amoco completes Ahtna No. 1 and A-01 wells in Copper River Basin

THE TRANS-ALASKA PIPLINE

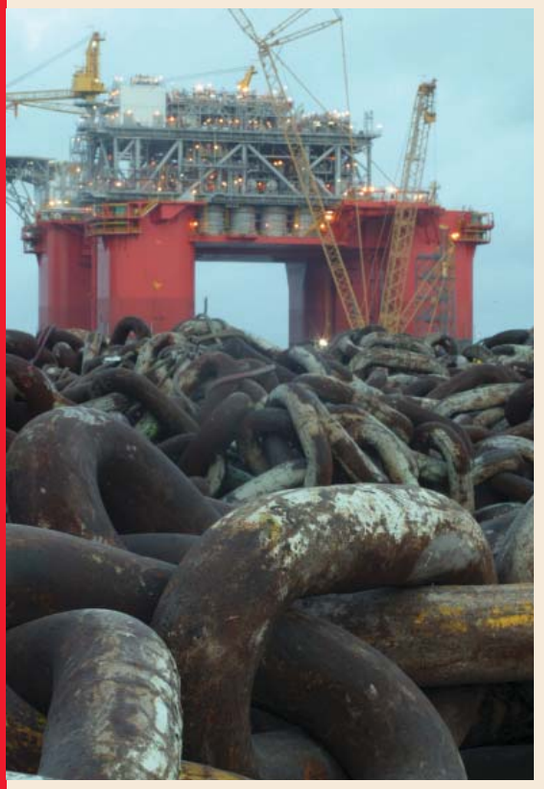
COURTESY ALYESKA PIPELINE SERVICE CO.

The first oil is shipped on the ARCO Juneau from Valdez on Aug. 1, 1977.

COURTESY ALYESKA PIPELINE SERVICE CO.

The first barrel of oil reached the marine terminal in Valdez at 11:02 p.m., July 28, 1977.

Judy Patrick's experience helps her adapt to the changing oil and gas scene



Photographer Judy Patrick's evocative images depict the beautiful but challenging world of Alaska oil exploration and production. Through her photographs of environmentally sensitive development, Patrick has become something of a champion of the oil industry as well as providing a valuable service for her clients.

Patrick's career in industrial photography stretches back more than 15 years, since then Patrick has established a busy industrial photography service and has expanded her business interests into graphic design and advertising.

Patrick's business is located in downtown Anchorage, where she shares an office suite with Salt + Light Creative, her graphic design business, and with Lyford Strategy and Communications, owned by Willis Lyford.

Salt + Light designs and publishes printed material such as brochures and advertisements. Lyford, Strategy and Communications is an advertising agency that works in a wide range of advertising media — Willis Lyford is a talented writer. Together, the three businesses enjoy considerable synergy. With low officeoverhead and a wide breadth of skills, the three businesses produce high quality advertising material at very competitive prices.

Although hiring a professional photographer might seem expensive, the cost of the photography more than pays off in the quality of the images, plus Patrick's depth of experience gives her a good sense of what her clients are looking for. "There's a balance that you have to strike between the beauty shots, the people shots, and the technical/industrial nature of it, the photos have to represent all those things."

JUDY **PATRICK**
PHOTOGRAPHY

907.258.4704
www.judypatrickphotography.com

Kuukpik/Veritas

Treading lightly, seismically speaking

With over 36 years of operating experience, more than 3,000 employees in 19 countries on six continents, and revenues of US$634 million for fiscal 2005, Veritas is one of the world's leading providers of advanced geophysical technologies.

In 2000, Veritas DGC Land entered into agreement to purchase the outstanding shares of Fairweather Geophysical LLC, and completed the three-year transition of ownership in September 2003.

The initial partnership was formed in 1998 between Fairweather and the village corporation in Nuiqsut, Alaska, to provide seismic services on the North Slope. The Kuukpik/Veritas partnership will continue these operations with a commitment to raising the bar with respect to health, safety and environment.

By supplying clients with integrated services using the most current technologies for accurate imaging of sub-surface geology, Kuukpik/Veritas can choose drilling locations with confidence, providing solutions by acting as a technology partner, not just a service provider.

And if the geophysical industry is founded on technology, then the industry's growth is determined by the pace of technological improvements. Kuukpik/Veritas is a company that aggressively pursues innovation and new technologies through ongoing research and development efforts.

Accuracy, reliability and speed are crucial to the seismic data processing that links data acquisition to geophysical interpretation. To this end, Kuukpik/Veritas develops and maintains its own seismic processing software, giving them the flexibility to evaluate and incorporate the latest technological innovations.

The company believes that excellence is achieved through the commitment and cooperation of dedicated, responsive and competent employees, and that consistent communication is crucial. To keep everyone on the same page, the company developed the Veritas Integrity Management System, or VIMS.

The standards, procedures, plans, responsibilities and goals described in VIMS, and the contents of their health, safety and environmental policies gives them an agreed upon standard that encourages continuous improvement in all aspects of the business.

Helping customers reduce risk and achieve their exploration goals is a core philosophy at Veritas: "We listen, deliver and build long-term relationships based on mutual integrity."

• Union Oil drills Trail Ridge Unit No. 1 well in Susitna Basin

1981

• Average WTI crude oil price in 1981 is $35.75
• Legislature decrees state gets all seismic data shot on its lands
• Legislature repeals separate accounting; returns to an ELF formula; increasing production tax to 15% — the highest in the United States
• ARCO-operated North Slope Kuparuk River oil field begins production
• Chevron drills Koniag No. 1 well on Alaska Peninsula
• State petroleum revenue exceeds $3 billion, 90% of total unrestricted revenue
• State of Alaska's annual budget exceeds $2.5 billion

1982

• Average WTI crude oil price in 1982 is $31.83
• Bill Sheffield (D) elected governor (1982-1986)
• Interior conducts OCS lease sale No. 71 in Beaufort Sea, record bids of $2 billion-plus
• First Alaska Permanent Fund dividend check distributed: $1,000
• Exxon completes Beaufort Beechey Point wells

Continued from page 29

down the trans-Alaska oil pipeline as part of the crude oil stream.

Over time the proportion of both gas and water increased and oil production has been constrained by the rate at which separating plants could process gas and water.

The field's gas and water handling facilities were expanded in 1986, 1991 and 1993-94.

Kuparuk: Prudhoe's big little sister developed

In 1979, prompted by rising oil prices, ARCO management approved a $450 million development of the Kuparuk River oil field — 10 years after the field's discovery.

Kuparuk seems destined to live in the shadow of its North Slope neighbor, the Prudhoe Bay field. Kuparuk, originally thought to hold 1.6 billion barrels of oil, is large enough to have started a North Slope oil rush on its own. It is the second-largest oil field in North America.

Kuparuk was discovered in 1969 by the Sinclair-BP Ugnu No. 1 well. Since ARCO and Sinclair had merged earlier that year, ARCO had a strong ownership position in the field and would become the field operator. Field expansion brought Union Oil of California, Exxon, Mobil Oil Corp., Phillips Petroleum Co. and Chevron Corp. into the fold. Ultimately, however, ARCO would hold more than 50 percent of the leases in Kuparuk.

In addition to being smaller than Prudhoe Bay, the Kuparuk field was tougher to develop.

The development wasn't really instituted until the middle 1970s, primarily because in comparison with Prudhoe, "the production was considerably lower, the oil was more difficult to get out of the ground and it was another 35 miles away, so it required a separate development pattern and distribution system," ARCO's Harry Jamison recalled.

Initial production was from 40 wells on five gravel sites. A 16-inch diameter, 26-mile pipeline was built to pump station 1 of the trans-Alaska pipeline.

Field startup occurred Dec. 13, 1981, three months ahead of schedule. A year later, ARCO said the field was averaging 87,000 barrels a day, nicely bettering initial projections of 60,000.

Spring breakup at the Kuparuk River oil field

Nikiski nitrogen plant expanded

1978

In 1978 Union Oil (Unocal, now Chevron) increased the size of its Nikiski ammonia and urea plant on Alaska's Kenai Peninsula to become largest West Coast producer and supplier of fertilizer. (The plant was purchased by Agrium in 2000.)

1980s include ANWR drilling

The 1980s were an odd mixture of success and calamity for Alaska, beginning with the 1 billionth barrel of crude coming through TAPS on Jan. 22, 1980, and ending in 1989 with the Valdez oil spill.

In 1981, the Kuparuk River oil field came on line — both the second largest field in North America next to Prudhoe Bay and the second largest in Alaska. The North Slope fields of Milne Point, Lisburne and Endicott followed, but in 1987 Milne was shut down due, in part, to the collapse of oil prices. The field was brought back online in 1989.

The trans-Alaska oil pipeline hit its peak in 1988, transporting 2 million barrels per day. (Today, it is down to around 830,000 barrels per day.)

Starting in the early 1980s and running through the oil price collapse which began in 1986, Shell, Exxon and others were drilling a rash of exploration wells in the Beaufort Sea.

ARCO continued drilling into the early part of the next decade, despite the fact the industry was wary of Alaska's Beaufort Sea after BP drilled the most expensive dry hole in history, the Mukluk — total price tag including drilling and leasing was $2 billion.

- Shell drills exploratory Brinkerhoff No. 84, discovery well at Tern oil prospect in Beaufort Sea (BP later acquires and renames prospect Liberty)
- A second COST well drilled in Norton Sound
- State petroleum revenue exceeds $3.5 billion, 87% of unrestricted revenue

1983

- Average WTI crude oil price in 1983 is $29.08
- $2 billion water flood project adds 1 billion barrels to Prudhoe Bay recoverable reserves
- Tesoro Refinery expands nameplate capacity to 72,000 barrels per day
- COST well drilled in North Aleutian Basin
- ARCO drills exploration well near Yakutat in Gulf of Alaska
- Copper Valley Machine Works completes Alicia No. 1 well in Copper River Basin
- Alaska North Slope gas pipeline project suspended

1984

- Average WTI crude oil price in 1984 is $28.75
- ARCO begins West Sak (viscous oil) pilot program
- Interior conducts OCS lease sale No. 83 (Navarin Basin) and 84 (Beaufort Sea)
- BP completes Beaufort Sea Mukluk well — cost almost $2 billion, most expensive dry hole in history

In 1985, operator Chevron and partner BP began drilling the first oil well in the 1002 area (coastal plain) of the Arctic National Wildlife Refuge, completing it in 1986. The 15th platform, Steelhead, was installed in Cook Inlet.

In 1986, as oil prices were collapsing, Crowley Maritime undertook the largest sealift to the North Slope in 25 years, transporting 103,000 tons of cargo north — a shipment that included the central gas facility for Prudhoe Bay.

The trans-Alaska oil pipeline hit its peak in 1988, transporting 2 million barrels per day. (Today, it is down to around 830,000 barrels per day.)

There was an exodus of oil companies from Alaska during the last half of the 1980s, partly because of the crash in oil prices, partly due to a number of unsuccessful wells and partly because of the growing number of exploration opportunities around the world.

STATE OF ALASKA

Citizens cash in

1982

The first permanent fund dividend checks were issued in 1982 by the State of Alaska, in the amount of $1,000.

By January 1986, ultimate recovery was projected to be 10.2 billion barrels. By December 2002, that number was bumped to 13 billion barrels. By mid 2006, estimated recovery was up to 14.2 billion barrels, a combination of the Alaska Division of Oil and Gas 2006 report numbers for total Prudhoe Bay unit oil reserves, 2.9 billion barrels, and crude oil produced from Prudhoe Bay through the end of 2005, 11.3 billion barrels.

Barrow uses natural gas

Natural gas went into production on the North Slope before oil, with gas production on the western North Slope near Barrow in the mid-1940s to fuel a nearby military base.

After World War II, service from the South Barrow gas field was extended to Barrow.

The East Barrow gas field was developed in the 1980s and the Walakpa field in the 1990s to provide more gas for Barrow.

KAY CASHMAN

Gross gas production on the North Slope in 2005 was 3.5 trillion cubic feet (9.4 billion cubic feet per day) but 92 percent of this was re-injected into oil producing reservoirs. The remaining gas was consumed locally on the North Slope at Barrow, used to fuel oil field equipment, operations and pipelines or shipped down the trans-Alaska oil pipeline as natural gas liquids.

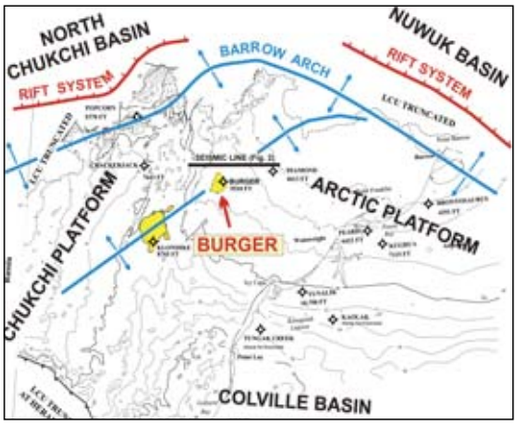
Prudhoe production a moving target

The estimate for total recoverable crude oil from the Prudhoe Bay unit has grown through the years from an early 1980s estimate of 7 billion to 9 billion barrels.

Early Chukchi exploration targets Prudhoe look-alikes

Following the major oil discoveries in the central North Slope in the late 1960s some oil companies started taking an interest in the Chukchi Sea, an area presumed to contain a continuation of the prolific petroleum system of the North Slope and its giant Prudhoe Bay field.

Seismic surveying of the Chukchi started around 1970. But the possibility of a Chukchi Sea lease sale triggered a surge in seismic work in 1982. By 1987 about 100,000 line-miles of 2-D seismic had been shot in the Chukchi, with line spacing of as little as one mile over some of the more interesting geologic structures.



The seismic data revealed large geologic structures with stratigraphy appearing similar to that at Prudhoe Bay.

The U.S. Minerals Management Service eventually held a lease sale for the Chukchi in May 1988. Companies paid $478 million for 350 leases, hoping to find a mirror image of the Prudhoe Bay field under the Chukchi — viable oil development in the remote offshore Arctic sea would require the discovery of a giant field. The remarkable success of the sale not long after the 1986 oil price crash probably indicates the level of optimism about finding such a giant.

Marathon and Alaska — Partners in Progress for more than 50 years

Developing — Resources for South Central Alaska

Managing — Environmental Resources for Multiple Uses

Supporting — Economic Growth & Community Involvement

Since 1954 Marathon has been actively exploring and developing oil and gas resources in the Cook Inlet region of south central Alaska. Marathon's Alaskan operations are based in Anchorage, and the company ranks as one of the largest gas producers in the Cook Inlet.

Constantly seeking new resources, Marathon has drilled more than 50 gas wells in the Cook Inlet since 1998, and to offset the effects of limited availability and relatively high day rates for drilling rigs, Marathon acquired its own onshore drilling rig. The Glacier Drilling Rig #1 was delivered in the second quarter of 2000, and to date has drilled more than 40 wells and more than 355,000 feet.

In early 2002, Marathon announced a discovery on its 25,000-acre Ninilchik prospect. As operator, Marathon holds a 60 percent working interest in this significant gas resource that is currently producing more than 50 million gross cubic feet per day (mmcfd). The company and its co-venturer formed the Kenai-Kachemak Pipeline LLC (KKPL) to tie this discovery and other potential gas resources to the existing market infrastructure. KKPL is Alaska's first new gas transmission pipeline in more than a decade.

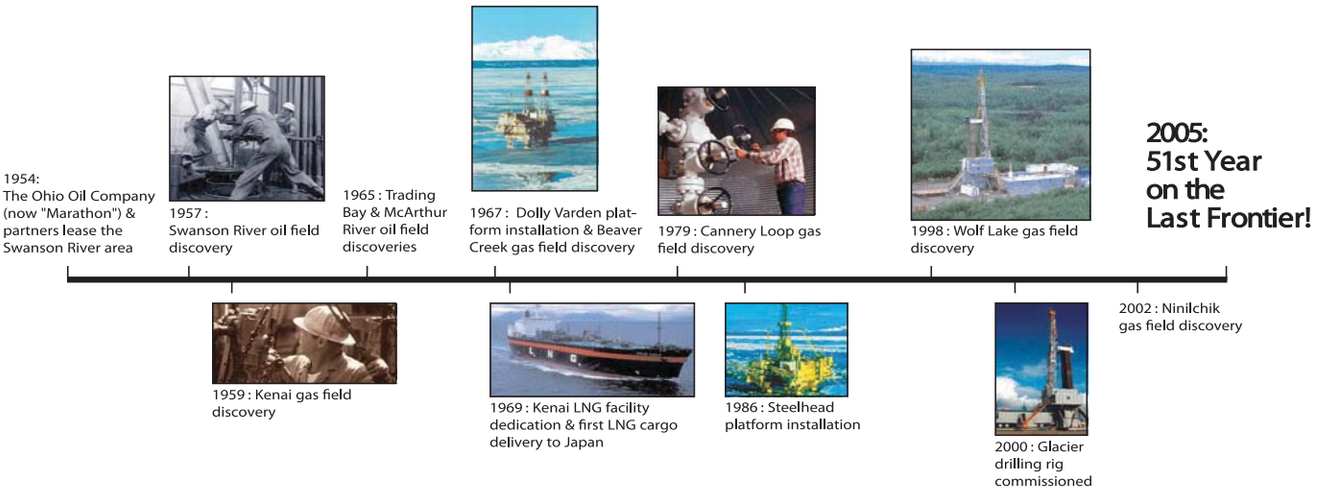
Currently, Marathon is developing Kasilof, the Company's newest gas field, where first production is expected by the end of 2006. In addition, Marathon has enjoyed particular success in the development of existing fields at its Cannery Loop field, south of the town of Kenai, where gas production has been increasing for several years. These successes are being made possible primarily due to better identification of pay zones in the Beluga formation, and the use of the Company's Excape completion technology, which allows multiple pay intervals to be efficiently stimulated in a single well. Marathon also is currently applying this important technology in its Kenai gas field to help maintain production.

Throughout its time in Alaska, Marathon has been acknowledged as a leader in its commitment to excellence in the areas of Health, Environment and Safety (HES). The Company views HES as a shared responsibility, integral to all aspects of Marathon's business, in a spirit of collaboration with employees, business partners and the communities where it operates.

Marathon has also demonstrated its commitment to be a responsible member of the community, providing support to many charitable, educational and community programs in south central Alaska. The Company was the first corporate sponsor of the Project GRAD Summer Institute on the Kenai Peninsula, a program designed to enhance public education for all children in economically challenged communities, to increase high school graduation rates and prepare graduates to be successful in college. Marathon is proud to be a part of the last frontier and it looks forward to continuing its role in helping fuel south central Alaska's energy needs.

Marathon Alaska Quick Facts

- Operates seven producing gas fields in the Cook Inlet region
- Sells to all major market segments
- Partner in the world's longest running LNG export business to Asia
- Produces approximately one-third of the Cook Inlet's total annual gas production
- 2005 sales averaged 167 net mmcfd, representing 29 percent of Marathon's total U.S. net natural gas sales
- Operates approximately 130 miles of gathering /transmission gas pipelines



• Shell completes Beaufort Sea Seal Island well, at the time oil accumulation uneconomic, later BP develops, renames Northstar
• Chevron drills two wells in lower Cook Inlet
• Exxon and ARCO drill three wells in Norton Sound
• Mobil, ARCO, Chevron and Exxon complete six wells in Bering Sea's St. George Basin
• ARCO drills Totek Hills West No. 1 stratigraphic test well in Nenana Basin
• Prudhoe Bay waterflood pilot project begins
• Four federal NPR-A lease sales between 1982 and 1984 — 1.4 million acres leased, one well drilled

1985

• Average WTI crude oil price in 1985 is $26.92 per barrel
• First 3D seismic survey done in Alaska at Prudhoe Bay, providing more detailed images, enabling additional hydrocarbons to be tapped, thus extending life of mature fields
• First (and last) seismic shot (2D) in ANWR's coastal plain (1002 area)
• Milne Point field east of Prudhoe Bay begins production
• BP drills North America,s first horizontal well in Prudhoe; technology allows more access to thin sands than a vertical well, thus increasing production

In fact the five most promising prospects seen in the seismic sections accounted for much of the bonus bid payments. Four of these prospects involved the Sadlerochit formation, the main reservoir rock at Prudhoe Bay. The fifth prospect, known as Burger, involved geology similar to the Kuparuk River field.

The companies drilled one well in each of the five prospects: the Klondike well in 1989; the Popcorn and Burger wells in 1990; and the Crackerjack and Diamond wells in 1991. Shell drilled all of the wells except the Diamond well, which Chevron drilled.

All of the wells found hydrocarbons in promising geology. And two oil pools were found. But none of the discoveries proved commercially viable. The Burger well found a major natural gas field but, at the time, there was no interest in developing gas.

Perhaps the biggest disappointment of the Chukchi drilling was the discovery that the Sadlerochit formation under the Chukchi consists mainly of shale rather than the reservoir sandstone that is found at Prudhoe Bay.

So, with hopes dashed for an immediate find of another Prudhoe Bay, explorers lost interest in the Chukchi Sea.

A second MMS lease sale in 1991 sold only 28 leases and within the next few years all of the Chukchi leases expired.

3D seismic increases chances of discovery

When three dimensional seismic data was first shot at Prudhoe Bay in 1985 it began to revolutionize Alaska oil and gas development.

Shooting a 3D survey requires placing seismic receivers at more closely spaced intervals than in shooting a traditional two dimensional survey. And a 3D survey involves recording across a grid of receivers, rather than along a single line as in a 2D survey.

COURTESY WESTERN GECO

Recent 3D seismic work on Alaska's North Slope

The 3D techniques provide geophysicists and geologists with much more detailed and complete images of the subsurface geological structures than is possible with 2D seismic lines. As a consequence, 3D seismic enables the discovery of subtle exploration drilling targets and the precise identification of relatively small petroleum traps. This is important from the perspective of both exploration for petroleum accumulations and the development of oil and gas fields.

On the exploration side, 3D seismic is critical to the discovery of subtle oil and gas traps, especially in stratigraphic plays. This is particularly important in northern Alaska where much of the remaining undiscovered oil and gas may lie in stratigraphic traps. And in the Cook Inlet basin 3D seismic can greatly help in the delineation of the multiple relatively small traps that typify many of the fields in the Tertiary rocks of that region.

From a development perspective, 3D seismic coupled with well data enables the construction of detailed geologic models of the subsurface. These models guide the drilling of new development wells and enable small pockets of oil and gas to be exploited, a critical factor in extending the recoverable reserves in mature fields such as Prudhoe Bay.

In fact, taken together with other technology advances such as precision directional drilling, 3D seismic is playing a vital role in extending the production of Alaska's oil and gas fields and in bringing new fields on line.

Creating jobs for Alaskans

COURTESY UDELHOVEN

A privately owned Alaska business for over 35 years, Udelhoven Oilfield System Services has provided construction and maintenance support for oilfield development in all of Alaska's oilfields. The company employs approximately 400 people year-round.

State buys Alaska Railroad from feds

On Jan. 5, 1985, the Federal Railroad Administration transferred the federal government's interest in the Alaska Railroad to the Alaska Railroad Corp., a public corporation of the State of Alaska chartered to own and operate the line. Alaska paid $22.3 million and assumed $10 million in payroll and benefit liabilities — fair market value of the railroad — under the terms of the Alaska Railroad Transfer Act of 1982.

The United States built, owned and operated the Alaska Railroad from 1914 until 1985 under a congressional directive

- Exxon drills Beaufort Orion and Antares wells
- Union Oil discovers Hammerhead oil field in Beaufort Sea
- Chevron drills another well in lower Cook Inlet
- Mapco completes $57 million expansion to take 90,000 barrels per day, adds gasoline production, acquires asphalt storage, distribution facility to sell in Anchorage, Western Alaska
- Amoco drills Becharof No. 1 well on Alaska Peninsula
- Exxon drills three wells in Norton Sound
- Amoco, Exxon and ARCO drill eight wells in Bering Sea's Navarin Basin
- Shell, Gulf Oil and ARCO complete three wells in Bering Sea's St. George Basin
- Petro Star begins operation of second North Pole refinery
- Operator Chevron and partner BP spud KIC well southeast of Kaktovik, only well ever drilled in ANWR; results confidential
- Marathon installs Steelhead platform for McArthur River oil and gas, Cook Inlet's 15th offshore platform

1986

- Saudi Arabia increases oil exports — wellhead price of U.S. crude falls from $24 to $12 per barrel, then below $10

to facilitate economic development and access to minerals in the Territory of Alaska.

In 1923, President Warren Harding drove the final spike near Nenana. The railroad was managed by the Department of the Interior until the Department of Transportation was formed, and the railroad became part of the FRA.

In 2003, the Alaska Railroad moved more than 8 million tons of freight over 525 miles of track. It offers a combination rail-barge service to transport freight to and from Alaska, connecting by water with the U.S. rail network on the West Coast.

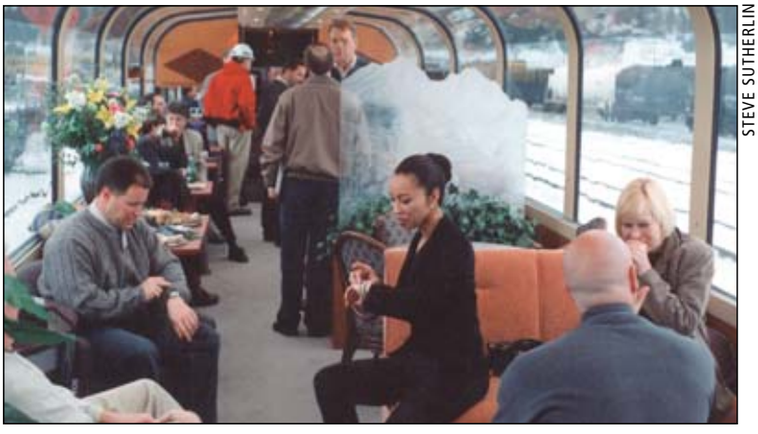
Today the Alaska Railroad employs more than 700 people without any operating subsidy from the state. Freight shipments bring in 75 percent of the railroad's revenue, dwarfing the passenger revenue contribution of 13 percent, according to a 2005 study by the University of Alaska Anchorage Institute of Social and Economic Research. The railroad earns an additional 11 percent of revenue from real estate activities. Petroleum products (including jet fuel and unleaded gasoline) account for almost half the revenue from freight.


PETRO STAR VALDEZ

Petro Star processes ANS crude

1985

Petro Star's North Pole refinery opened in 1985 with an initial capacity of 4,500 barrels a day producing heating oil and diesel. Positioned on the trans-Alaska pipeline, it returns the portion of the crude it cannot use.


STEVE SUTHERLIN

The Alaska Railroad was built for freight, but the passenger routes are among the state's most popular tourist attractions.

Environmental efforts at Endicott

The man-made, 45-acre Endicott Island's location 2.5 miles offshore in the Beaufort Sea created an unprecedented level of environmental challenges, as great as or greater than those of engineering and construction.

When the Endicott field began production in late 1987, BP had established the world's first continuous commercial production from an offshore area in the Arctic, along with the largest environmental monitoring program of its kind ever conducted in the Arctic.

An unprecedented number of government approvals and environmental permits established that the project could be developed with a breached causeway for access, which would allow fish migration through three breached gaps.

The environmental monitoring program ran for 10 years at a cost of $50 million.

It included a seven-year assessment of fish movement, distribution and prey; an oceanography program to evaluate water quality; and a terrestrial program directed at caribou and snow geese.

News from the program was encouraging. The studies revealed no significant changes in near-shore water quality or in fish movements, while the local snow geese population increased steadily. The Endicott road and pipeline were not observed to pose a barrier to snow geese or caribou movements.

Endicott has also served as a base for a number of scientific studies such as polar bear research.

Resolution of Endicott's environmental issues led to the successful development of the Point McIntyre field by ARCO, BP and Exxon on the shoreline of Prudhoe Bay.

Creating jobs for Alaskans


COURTESY PROCOMM

Tim Strango, a ProComm RF technician 1, doing remote site preparation work at Saddle Mountain outside of Juneau. ProComm credits its success to the technical expertise of its employees, who hold extensive certifications and have diverse experience in integration and implementation, as well as the ability to provide immediate project and customer support.

MARKETING SOLUTIONS GENERATES RESULTS FOR ALASKA BUSINESSES.

For more than a decade, Anchorage-based Marketing Solutions has been helping a wide variety of clients to communicate effectively. Whether its a business-to-business campaign, retail advertising plan, non-profit fundraising drive, or a grassroots public outreach effort, this full-service agency has one primary goal in mind: results.

"Our focus is not on producing advertising materials — it's on generating results for our clients," says Laurie Fagnani, founder and president of Marketing Solutions. "We start each new client relationship by identifying marketing goals and developing strategies to reach campaign objectives. This process ensures our recommendations are strategy driven - and generate results."

An Experienced Team with a Defined Plan

With a staff of twelve marketing and creative professionals, Marketing Solutions brings just the right amount of quality experience to the table. Many of the firm's employees have direct and indirect experience in the industries served including oil and gas, mining, health care, non-profits, transportation, and tourism. They understand these industries and the competitive dynamics that clients face daily. With this knowledge they develop strategies to get important messages delivered to very specific audiences.

Fagnani thinks that one of the keys to her company's success is its emphasis on doing initial planning rather than diving straight into the design of advertisements or other media tools. The production of a marketing plan involves clarifying marketing goals, identifying target markets and preparing a marketing strategy.

With a marketing plan in place, Marketing Solutions' creativity swings into action designing and preparing brochures, advertisements and other communications materials. A variety of media, such as advertising, become tools for implementing the marketing plan.

"We're worried. You should be, too."

During the recent Petroleum Production Tax debate, Marketing Solutions developed a strategy and plan to help the Alaska Oil & Gas Association (AOGA) raise public awareness about the significant contributions made to Alaska by the oil and gas industry. The theme – "We're worried, you should be, too" communicated the seriousness of the debate and encouraged the public to learn more about the issue and how they could participate in the discussion. Through a combination of print and television ads, a series of specific messages were communicated to select regions of the state. The firm is also helping AOGA celebrate its 40th anniversary by developing collateral materials and redesigning its web site.

That Sweet Spot

Marketing Solutions prides itself on delivering quality campaigns that exceed client expectations.

"We immerse ourselves in key industries and develop a keen awareness of our clients' unique market situations," explains Fagnani. "Our team finds that sweet spot where the campaign generates the desired results and the process is managed on-time while staying within budget."

Marketing Solutions serves a variety of Alaska businesses including the Alaska Oil & Gas Association, American Red Cross of Alaska, ScanHome, Teck Cominco, Hilton Anchorage, Phillips Cruises and Tours, Anchorage Convention and Visitors Bureau, Northern Air Cargo, Carlile Transportation, BP Exploration (Alaska) Inc., Agrium and VECO.

marketing solutions
advertising ▪ public relations

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- Average WTI crude oil price in 1986 is $14.44 per barrel
- Steve Cowper (D) elected governor (1986-1990)
- During 1985-1987 recession nearly one in 10 jobs disappear from Alaska economy
- 5 billionth barrel of oil from North Slope arrives in Valdez
- Amoco drills Mars well in Beaufort Sea
- Tenneco drills Phoenix exploration well in Beaufort Sea
- Shell drills Corona exploration well in Beaufort Sea
- Shell drills the Harvard exploration well in Beaufort Sea, discovers Sandpiper field
- Amoco drills Sandpiper exploration well in Beaufort Sea
- World's largest miscible gas enhanced oil recovery project installed at Prudhoe Bay
- Lisburne field adjacent to Prudhoe Bay field begins production
- Alaska receives $2.7 billion in petroleum revenues, 86% of $3.1 billion in total unrestricted revenues
- State of Alaska's annual budget drops to $2.8 billion

1987

- Average WTI crude oil price in 1987 is $17.75 per barrel
- Economic doldrums from oil prices continue to affect state, causing banks to foreclose on property

North Slope production at less than half of peak

Crude oil production from the North Slope peaked at 2 million barrels per day in 1988.

By June 2006 production was less than 800,000 bpd — the 12-month average through June was 836,000 bpd.

By the end of the State of Alaska's forecast period in 2015, production will have dropped to 732,000 bpd unless areas such as the 1002 area (coastal plain) of the Arctic National Wildlife Refuge, the Beaufort Sea outer continental shelf, the National Petroleum Reserve-Alaska and the Chukchi Sea go into production and take up the slack.

Oil pioneers enhance Alaska

"Many Alaskans first came here with the military and others came to search for black gold. These early oil pioneers built the foundation of today's industry. While Alaskans expected them to go back home after making a quick buck, many of them stayed to raise their families here. A generation later, many have chosen to retire here, and Alaska has certainly benefited from their hard work and service to our communities."

Carl Portman grew up in a homestead in northern Alaska; today he is deputy director of the RDC

"As an Alaskan raised on a homestead in the Interior, my life-time experience has convinced me Alaska is absolutely a much better place today, thanks to the oil pioneers and the new petroleum economy they built."

—Carl Portman, deputy director, Resource Development Council for Alaska

Summer oil job impacts career

As a college student Robert Corbisier took what he thought was a temporary detour into a summer North Slope job with the external affairs department of BP. The 1995 summer job blossomed into a string of summers, and what Corbisier saw in his work with BP prompted him to follow a new vector in his professional life.

Corbisier majored in architecture at MIT with the help of a BP scholarship. He credits his BP summer job with leading him to a job in the U.S. Senate, a law degree, and now his current position as one of the governor's special assistants in Alaska's capital city of Juneau.

NATIONAL PARK SERVICE

Robert Corbisier watches Secretary of the Interior Gale Norton cut the ribbon at a Glacier Bay building dedication ceremony. Left to right: Mark Foster, Glacier Bay facilities manager; Corbisier, representing the governor; Norton; Tomie Lee, Glacier Bay superintendent; Marcia Blaszak, National Park Service acting Alaska regional director; and Ray Cozby, former Glacier Bay facilities manager.

Working at Prudhoe Bay led Corbisier to an interest in law and policy, he said.

Corbisier was amazed by the clever technology that overcame the extremes of arctic oil and gas exploration and production. He was intrigued by the challenges of protecting the fragile arctic ecosystem.

"Here we were, maintaining industrial activity there out in the middle of nowhere, and it's spotless," he said.

Corbisier saw no shortage of opportunities for dealing in environmental issues in the arctic oil patch. He began to think a career in environmental law might be for him.

"There were legal disputes about natural gas liquids injection into the pipeline stream, between ARCO and BP," Corbisier said. "I thought, hmmm, maybe I should go to law school."

BP mentors Paul Quesnel and Brian Miller told him to go to Washington, D.C., if he was interested in that sort of thing.

In Washington, Corbisier went to work for Sen. Frank Murkowski in the U.S. Senate. He started at the bottom.

"I spent the first day of the 106th Congress in the mailroom," he said.

To Corbisier, the key to the Senator's mailroom was like the key for the backdoor of a candy store. It was 1999, the dawn of a new millennium. Lots of exciting debate was in the air around Murkowski's Senate offices.

"There was debate over the ARCO/BP merger, the Alaska-Canada railroad, OCS revenue sharing; there was the impeachment of Clinton," he said.

As his responsibilities grew, Corbisier had a chance to see more of Alaska's oil infrastructure firsthand. He led a delegation from the Chinese Petroleum Association to the North Slope, then on a flight southbound for the opportunity to wave a

and businesses to go bankrupt
• Production of Milne Point becomes uneconomic; operator Conoco suspends due to oil price collapse
• BP-operated Endicott oil field starts up, first Arctic offshore oil field
• Secretary of Interior recommends Congress open 1002 area of ANWR for oil and gas leasing
• Alaska receives $1.4 billion in petroleum revenues, 77% of unrestricted revenues of $1.8 billion

1988

• Average WTI crude oil prices in 1998 is $14.87 per barrel
• State's economic woes continue and Anchorage loses 30,000 in population
• Production from North Slope oil fields peaks at 2.1 million barrels per day
• Tenneco drills Beaufort Sea Aurora exploration well
• Amoco drills Beaufort Sea Belcher exploration well
• Interior holds OCS sale No. 109 for Chukchi Sea, bringing in more than $478 million
• ARCO discovers 575 million barrel Point McIntyre oil field north of Prudhoe Bay

1989

• Average WTI oil price in 1989 is $18.33 per barrel
• Alaska Permanent Fund passes $10 billion mark

tanker of Alaska North Slope crude oil out of the Port of Valdez.

In 2002, Frank Murkowski became governor of Alaska. Corbisier got a call from Murkowski's attorney general, Greg Renkes, to come to work in Juneau as a special assistant to the governor.

Corbisier is with the governor's policy staff today.

Plans change

Corbisier left high school in the seacoast town of Homer with a desire to pursue a career in computer animation in California. He applied for an internship at Industrial Light and Magic his sophomore year. After having spent the summer of his freshman year with BP at the North Slope, however, Corbisier was strongly encouraged by BP management to return the next year.

"BP training implied a commitment to the program and return to work for BP," he said. Corbisier ended up working for BP on the North Slope the summers of 1995-1998.

Corbisier's summer job on the North Slope was just a part of the contribution BP made to his education.

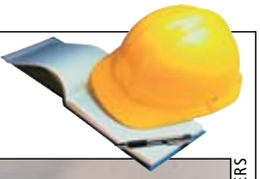
At Homer High, Corbisier was awarded one of 25 BP principals' scholarships. That award was followed by the BP commissioner's scholarship, awarded on merit to one of the 25 principals' nominees by the state commissioner of education. The scholarships provided a total of $20,000 for Corbisier's studies.

BP wasn't the only company to help Corbisier pursue his education; he also collected a scholarship from ARCO.

With the BP scholarships came the opportunity for internship, and a ticket to change.

"Working on the North Slope completely changed my career path," Corbisier said.

Creating jobs for Alaskans



COURTESY EVERGREEN HELICOPTERS

Evergreen's Bell 205, supporting petroleum explorations over Alaska's tundra. Serving the state of Alaska since 1963, Evergreen helicopters of Alaska has done everything from delivering mail and supplies to remote locations, to servicing the oil and gas industry, to rescue operations.

Alpine: turning point for North Slope oil industry and NPR-A

ARCO's 1996 announcement of the discovery of the Alpine field in the Colville River delta on Alaska's North Slope marked the start of a new era for the North Slope oil industry. In particular the

COURTESY CONOCO PHILLIPS

Exploration drilling in NPR-A. ConocoPhillips and partner Anadarko Petroleum have made Alpine-style oil discoveries at Spark 1 and 1A; Moose's Tooth C; Lookout 1; and Rendezvous (pictured) A and 2.

Alpine field involved a previously undiscovered oil play — a pure stratigraphic trap in Jurassic sands. The success of the field proved the economic viability of this type of play in a region that had hitherto been dominated by the large combined structural/stratigraphic traps typified by the Prudhoe Bay and Kuparuk River fields.

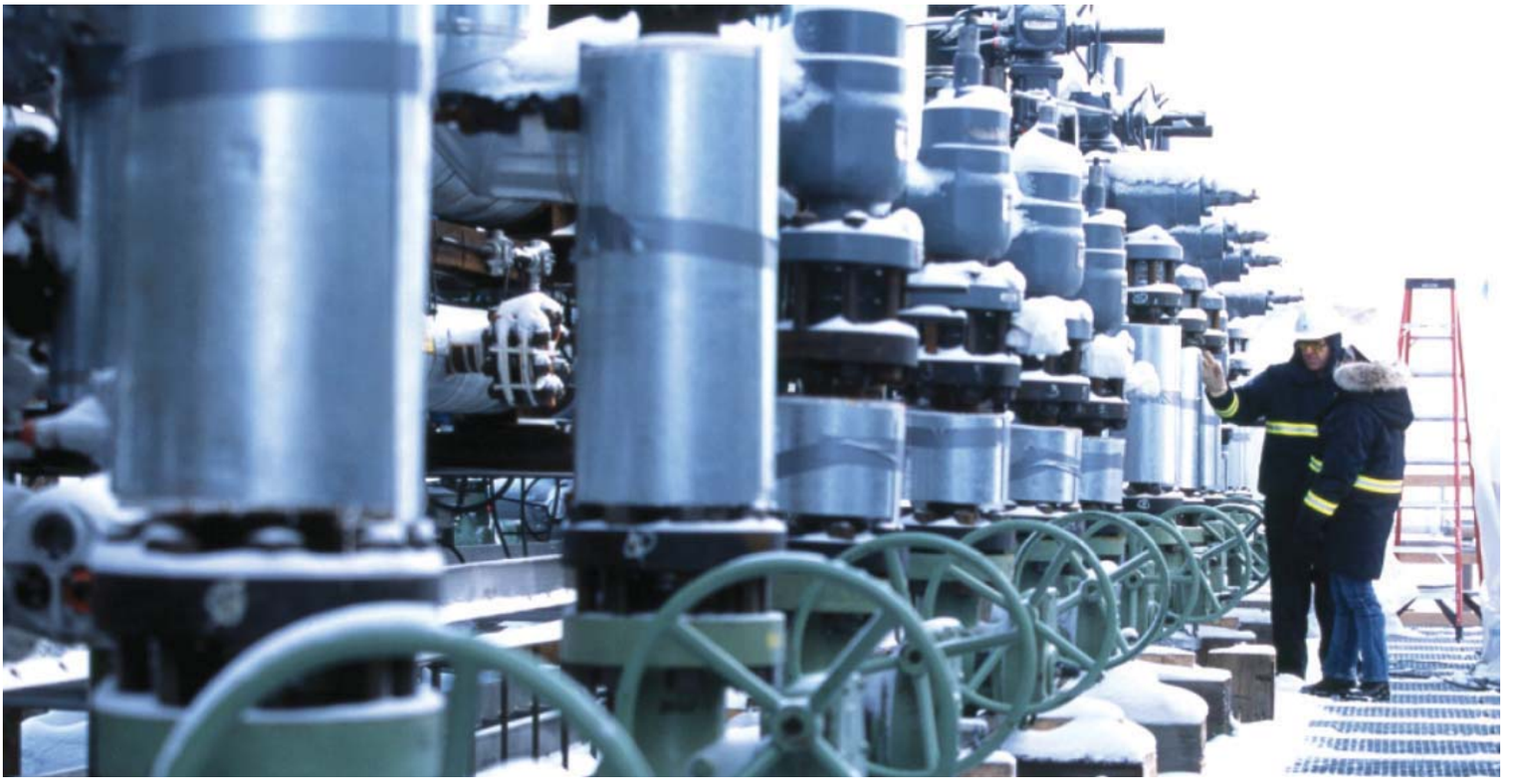
And that success led to the calibration of seismic techniques to locate subtle stratigraphic traps on the North Slope.

In addition, Alpine successfully demonstrated the use of horizontal drilling to produce oil from a relatively poor reservoir. The sandstone reservoir at Alpine has low permeability, primarily because of the fine grain size of the sand. But the light oil in the reservoir combined with horizontal well completions has made the field very prolific — a horizontal well bore exposes a relative large area of reservoir sand to a well, thus enabling good oil production rates.

Oilfield development from a small surface "footprint" translates into both reduced development costs and reduced environmental impacts, potentially opening the way for oil or gas field development in increasingly remote areas.

And the roadless development at Alpine pioneered the use on the North Slope of precision directional drilling to access distant points in a reservoir from a relatively small, central drilling pad. In 2003, Mike Erwin, a vice president with ConocoPhillips Alaska (which acquired ARCO's Alaska assets), said that pad 2 at Alpine has 54 wells in a surface area of 13 acres — that compared with the use of two acres per well in the original development of Prudhoe Bay, he said.

Oilfield development from a small surface "footprint" translates into both reduced development costs and reduced environmental impacts, potentially opening the way for oil or gas field development in increasingly remote areas.



Innovation: The key to Alaska's future

NANA/Colt was formed in November 1997 as a partnership between NANA Development Corp. and Colt Engineering, a large Canadian oil and gas contractor. NANA/Colt Engineering has since established an exemplary reputation for innovative engineering design and project management. The company also provides operation and maintenance support for existing oil and gas facilities.

NANA/Colt's technical leadership in engineering design supports the company's innovative design work. The use of new technology enables engineers to work faster and smarter than ever before —which translates to reduced costs and better products for the customers. NANA/Colt Engineering LLC provides significant engineering services for major and smaller oil and gas producers in Alaska. NANA/Colt has provided engineering support to all producing fields on the North Slope and several in the Cook Inlet area.

Our oil and gas expertise includes:

- Feasibility & Conceptual Engineering Studies
- Oil & Gas Transportation & Distribution Systems
- Project / Facility Development
- Procurement and Construction Management
- Facility Engineering

NANA Development Corporation is one of the parent companies of NANA/Colt. NANA currently has over 11,000 shareholders and employs approximately 1,750 people in Alaska and another 1,400 within the NANA companies outside of Alaska.

NANAColt Engineering, LLC
700 G Street, 5th Floor, Anchorage, Anchorage, Alaska 99501
Ph: (907) 273-3900 Fx: (907) 273-3990 www.nana-colt.com

INNOVATION

NANAColt Engineering, LLC

A Creative Solutions for Today's Dynamic Workforce

Welcome to Employee Leasing

Employee leasing organizations are growing at a rate of over 30% per year. Outsourcing non-productive employee administration responsibilities have become more and more popular. Employee Leasing has taken many forms, including PEO's (Professional Employer Organizations), ASO's (Administrative Service Organizations), Administrative Employers and more.

It is estimated that more than 2 million American workers are currently employed by professional employer organizations; NMS Employee Leasing is a growing member of this effective new human resource management group. The employees of leasing organizations represent every facet of the workforce, from receptionists to attorneys.

NMS Employee Leasing provides short-term and long-term personnel services throughout Alaska. We pride ourselves in meeting the needs of our clients through our ability to place skilled employees in administrative, professional, technical, mechanical and industrial positions on a contractual basis.

Solutions for Today's Workplace

We provide innovative workforce solutions to companies of all sizes to meet the challenges of today's changing business environment.

- Complete reference check, 10-year criminal background check,
- 5-panel drug screen and evaluation required for every employee
- Quality assessment, computer-based testing for virtually any type of job

The Employee Leasing Concept

Both small and large business owners are faced with limited time and resources. The Employee Leasing concept allows employers to outsource non-revenue generating employee administrative responsibilities to allow for greater time and focus on the core of their business.

An effective Employee Leasing organization is able to provide expert guidance in the areas of human resources, compliance, and safety as well as minimize employee turnover with enhanced employee benefits. In many cases, employer liability can be significantly reduced.

Innovative Workforce Solutions

We place accomplished employees in professional, administrative, technical, mechanical and industrial positions on a contractual basis in every facet of the labor force, diminishing paperwork, ensuring compliance with state and federal laws and regulations, and providing better employee benefits packages and professional human resource services. To ensure our clients receive only well-trained, experience staff, our leasing program utilizes both traditional recruiting methods and proven computer-based testing programs to conduct pre-employment screening.

We never forget we are managing a finite budget; every recommendation and expenditure is scrutinized to ensure that we meet our commitment of fiscal responsibility.

Our Commitment

We are dedicated to ensuring diversity in the work place through our human resource development; by contributing to the communities we work in and by training both our management and employees, we provide leadership in employee resource management.

Our Business

NANA Management Services embodies the wisdom, strength and adventuresome spirit of its Alaskan roots. We bring a myriad of familiar services to our clients every day, enhancing daily operations through a silent backdrop of activity; we free our client's valuable time, enabling them to focus on the essence of their business.

Alaska Native owned, NANA Management Services, is continually seeking opportunities to expand services beyond Alaska. Our horizon for conveying exceptional, value-based services to clients in and beyond Alaska is limitless; our ability to provide superior service in difficult climates and challenging geographic locations is second to none.

Our Ownership

NANA Management Services is a limited liability corporation, owned by NANA Development Corporation and Sodexho, combining services unmatched by any other company. NANA Development Corporation brings to NMS the know-how of doing business in Alaska for over "ten thousand years." Sodexho is a $14 billion international services firm that blends award winning employee training and knowledge together with cost reduction derived from economy of scale. NANA Management Services.

NMS Employee Leasing is proud to be Alaska's premier provider of professional contract employees. Our corporate offices are located at 5600 B Street in Anchorage.

NMS Employee Leasing is proud to deliver comprehensive solutions to the complex challenges facing business owner's everyday.

NMS Employee Leasing
a division of NANA Management Services

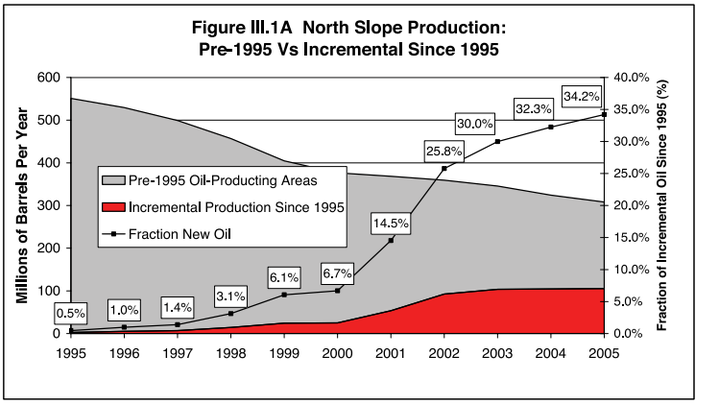
- North Slope production starts to decline
- Shell drills Klondike well in Chukchi Sea
- Production starts back up again Conoco's Milne Point oil field on North Slope
- Valdez oil spill occurs March 24 in Prince William Sound
- Industry ups oil spill prevention, response capabilities: Prince William Sound, Cook Inlet, North Slope
- State changes production tax economic limit factor (ELF) to substantially increase taxes on Prudhoe Bay and Kuparuk while limiting or eliminating taxes on other fields
- Natural Gas Wellhead Decontrol Act completes deregulation of gas prices

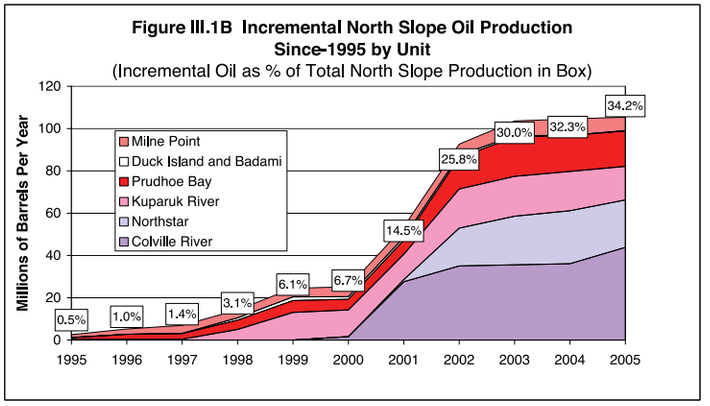
1990

- Average WTI crude oil price in 1990 is $24.50
- Walter Hickel (AIP) elected governor (1990-1994)
- GHX I gas handling facility installed at Prudhoe Bay, boosting daily production by 100,000 barrels
- ARCO drills Beaufort Sea Fireweed, Stinson No. 1 wells
- Shell completes Chukchi Sea Popcorn and Burger wells, major gas accumulation at Burger
- Lisburne output peaks at 45,000 barrels per day
- Conoco discovers 120 million barrel Badami oil field east of North Slope producing fields
- Iraq invades Kuwait, starting Persian Gulf War caus-

ALASKA DIVISION OF OIL AND GAS

Incremental North Slope production





Alpine led to opening NPR-A

ConocoPhillips' success at the Alpine field (part of the Colville River unit) encouraged the U.S. Bureau of Land Management in 1999 to hold a lease sale in northeastern NPR-A, just a few miles west of Alpine.

Since that time there have been two additional lease sales in northeastern NPR-A and one sale in northwestern NPR-A.

ConocoPhillips and its partner Anadarko led the charge into northeastern NPR-A by drilling a series of wells west from Alpine. An initial well at Clover A was followed by the Moose's Tooth and Rendezvous wells. The companies have now made Alpine-style oil discoveries at Spark 1 and 1A; Moose's Tooth C; Lookout 1; and Rendezvous A and 2.

In 2002 the results from the Alpine field caused the U.S. Geological Survey to up its estimate of undiscovered, technically recoverable oil in NPR-A from 2.1 billion barrels to 9.3 billion barrels. USGS geologist Ken Bird said that the Alpine play accounted for much of this increase, although the estimates also included an assessment of potential oil in younger Brookian reservoirs as typified by the Meltwater and Tarn satellites of the Kuparuk River field.

USGS has also suggested that discovery of especially light oil with high gas to oil ratios at Spark and Rendezvous may indicate that NPR-A may be more gas prone than was previously thought.

In 2003 NPR-A drilling moved further west, with ConocoPhillips' Puviaq exploration well to the west of Teshekpuk Lake. And in the following year the company drilled at Kokoda, some 70 miles west of the road system in the Kuparuk River unit.

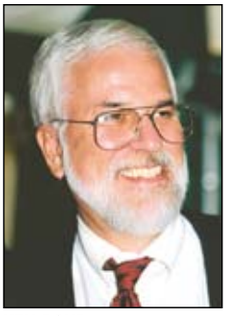
In the winter of 2005/2006 FEX, a subsidiary of Talisman Energy, drilled near Cape Simpson in northwestern NPR-A, an area where the exploration plays are likely to involve Brookian and Ellesmerian targets, rather than the Jurassic sands associated with Alpine.

FEX has plans to do additional exploration drilling in NPR-A during the winter of 2006-2007.

Areawide leasing increases availability of state leases

In 1996 the Alaska Legislature enacted an areawide leasing program to make the state's leasing schedule predictable and to allow more frequent lease sales. Areawide leasing applies to the more prospective regions of the state.

The first areawide sale applied to the North Slope and took place in 1998. Cook Inlet joined the program in 1999, the Beaufort Sea in 2000, the Brooks Range Foothills in 2001 and the Alaska Peninsula in 2005. Areawide lease sales for each region occur annually.


KEN BOYD

The areawide sales have significantly improved the availability of state land for oil and gas exploration — Ken Boyd, the director of the Division of Oil and Gas who spearheaded the areawide program, thinks that, of the programs he worked on as director, the areawide leasing program was "the most important and has the most use and means the most."

In the areawide leasing program, the state prepares a best interest finding for each of the prospective regions and offers for lease all available tracts in a sale area (previously the division would solicit interest in specific tracts). Each best interest finding lasts for 10 years, with amendments, thus enabling the division to hold frequent lease sales without incurring an excessive workload. Boyd likens the procedure to the purchase of an encyclopedia.

"It's like having an encyclopedia, which you buy in a particular year and it's very new and very good and it's right up to date," Boyd said. "But then a year later — obviously things happen — so they issue supplements."

ing oil prices to top $20 per barrel

1991

- Average WTI crude oil price in 1991 is $21.50
- Sixth North Slope field, Sag Delta North, begins production
- ARCO strikes oil at Sunfish (Tyonek Deep) oil prospect in Cook Inlet; jack-ups also used to drill delineation wells in 1992
- Amoco drills Beaufort Sea Galahad exploration well
- Shell drills Chukchi Sea Crackerjack exploration well
- Chevron drills Chukchi Diamond exploration well

1992

- Average WTI crude oil price in 1992 is $20.60
- Endicott field peaks at 115,000 barrels per day
- Kuparuk field peaks at 322,000 barrels per day
- Petro Star builds Valdez refinery, last refinery built in United States
- ARCO drills Beaufort Sea Cabot and Kuvlum exploration wells, discovers Kuvlum oil field
- Final repercussions of Alaska's recession felt as oil industry retrenches with major job losses

1993

- Average WTI crude oil price in 1993 is $18.50
- U.S. production falls below 6.9 million barrels per

Legislature honors Tom Marshall

The Alaska Legislature approved a citation in 1997 recognizing Thomas R. Marshall for 18 years of service to the state. Shortly after signing on in 1960 as a land selection officer with the Department of Natural Resources, Marshall made his most notable contribution to Alaska: he selected North Slope coastal acreage around Prudhoe Bay for state ownership as part of the state's land entitlement under the Alaska Statehood Act.

The 1.5 million acre selection on the Arctic coast, which Marshall made based on his knowledge of regional geology and his practical field experience, was opposed by many in DNR, the state Legislature, and the oil companies.

It was called "Marshall's folly."

"I wasn't winning any popularity contests," Marshall said.

The federal Bureau of Land Management also opposed the selection because it wanted to keep selections in neat, square blocks.

STEVE SUTHERLIN

An avid apple grower, Marshall has succeeded with apple varieties others said couldn't be grown in Alaska's climate and is characteristically undeterred by naysayers.

The selection was finally approved in time for the land title to be transferred to the state before land claim settlement controversies froze selection activity.

COURTESY XTO

XTO buys Cook Inlet properties

1998

Cross Timbers Oil (later renamed XTO Energy) purchased producing properties in the Middle Ground Shoal field in 1998 from Shell, including two platforms set in 70 feet of water with 39 active wells (as of 2006)

Alyeska enters fiber optic age

In 1998 Alyeska Pipeline Service Co. began converting from its microwave communications system to a newly installed fiber optic network. The change was the most extensive communications upgrade in company history, designed to provide secure and reliable communications, greater data-carrying capacity and allow for new applications such as real-time video conferencing.

The 847 mile fiber optic cable runs along the pipeline right of way and the Dalton Highway, linking Valdez and the North Slope.

In addition to voice communications, the system was designed to host a company-wide intranet system as well as linking mission-critical controls such as the remote gate valves that minimize discharge from the pipeline in the event of an oil spill. In addition, Alyeska employees and the Joint Pipeline Office would have access to aerial photos of the line showing land ownership, corrosion measurements and current status, dig sites, rivers, topography and history without leaving their computer terminals.

The change was the most extensive communications upgrade in company history, designed to provide secure and reliable communications, greater data-carrying capacity and allow for new applications such as real-time video conferencing.

Alyeska's analog system was 20 years old and historically problematic north of Valdez due to snow buildup on microwave dishes, however the satellite backup feature of the original system remains in operation to provide backup for the fiber line.

Charter for North Slope development

Following an announcement in April 1999 that BP Amoco PLC was buying ARCO, the state of Alaska negotiated with the two companies on how to ensure competition, diversity and balance in the North Slope oil industry. The upshot of these negotiations was "The Charter for Development of the Alaskan North Slope," signed by the companies and the state on Dec. 2 1999.

JUDY PATRICK

KEN THOMPSON

As well as including terms requiring the two companies to divest some of their interests on the North Slope, the charter required the companies to make seismic and well data available to other companies wishing to explore on the slope. There were also provisions to facilitate access to the existing North Slope oilfield facilities for companies developing new North Slope fields and to require the two oil majors to buy some oil production from small independent producers.

Subsequent to the signing of the charter, BP sold ARCO's North Slope assets to Phillips Petroleum Co., thus obviating the

Peak Oilfield Service Company

One of today's most successful Alaska based general contractors

Providing oilfield services to the North Slope, Valdez, the Cook Inlet, and along the Trans-Alaska Pipeline, Peak is a general partnership between Nabors Industries, the largest land-based drilling contractor in the world, and Cook Inlet Region, Inc. (CIRI), a diversified Native American company with holdings in real estate, construction, heavy equipment, oilfield services, communications, tourism and natural resource development across the United States.

Peak was formed in December 1987 when Kodiak Oilfield Haulers, an organization that had specialized in rig moves, rig support, road and runway maintenance and general oilfield trucking services on the North Slope since 1963, sold their parts and equipment to Peak Alaska Ventures, Inc, and then merged with Peak Maintenance and Equipment, which had been responsible for providing personnel to Arco and Sohio for equipment and camp maintenance. An agreement was then signed between Peak Maintenance and Equipment Company and Anglo Alaska Services Company creating PEAK OILFIELD SERVICE COMPANY.

Since its inception Peak has built ice roads for infield construction projects, re-supply of remote sites and exploration. Peak has made many advances in the ice road process and has progressed from the smaller projects of the Kodiak days to building in excess of 100 miles of ice road in single seasons. Projects have ranged from infield to remote locations and have varied from tundra ice roads to sea ice roads and sea ice islands.

In 1992 Peak started its tank cleaning services in the Cook Inlet Area, the North Slope and Valdez, and has also expanded into the Cook Inlet petrochemical industry by providing their construction and maintenance services both onshore and offshore. The company has also entered the lower 48 market by acquiring Ploss Industries, Inc., a Texas Gulf Coast company that specializes in tank cleaning and related waste hauling and environmental disposal services.

In June of 1999 Precision Power became part of Peak's history, operating as a subsidiary business owned by Peak, designing and constructing remote power generation systems and providing energy solutions ranging from remote arctic oil fields to isolated rural villages.

One of Peak's most recent investments includes the purchase of three "All Terrain Vehicles" to transport heavy loads over the tundra. The smallest of the three rigs can haul up to 60,000 pounds, while the two heavy haul units are capable of hauling more than 100,000 pounds and are the largest capacity all terrain vehicles on the North Slope.

Another recent series of equipment acquisitions allows Peak to offer full service crane and rigging support in the Cook Inlet area.

In 2000 Peak boldly started the WASP Process, an award winning behavioral based safety program. Peak is the only contractor in Alaska to have its own in-house behavioral based safety process, which is available to approximately 600 employees throughout the state. Management is completely committed to having all employees work safely for both the duration of their shifts and after they've traveled home to their families.

Peak has had a strong company wide commitment to environmental excellence since its inception and has built on this commitment by enrolling in the Green Star Program. In 2005 Peak met all of the requirements of the program and was presented the Green Star Award for introducing a recycling program to reduce solid waste and educating the general public about better environmental practices.

day, lowest since 1958
• Point McIntyre and West Beach oil fields start up
• Alaska Permanent Fund reaches $15 billion
• Tesoro Nikiski Refinery begins producing clean gasoline, meeting EPA's 2007 standards
• Anadarko Petroleum enters Alaska
• Conoco to leave Alaska, swaps oil-producing properties with BP in Alaska and Gulf of Mexico, Alaska assets include 64% of Milne Point, 40% of Badami
• ARCO drills Beaufort Sea Wild Weasel wells
• West McArthur River unit begins oil production
• Coiled tubing first used for drilling in Alaska on North Slope, dramatically reduces drilling costs for certain types of development wells

1994

• Average WTI crude oil price in 1994 is $17.20
• Tony Knowles (D) elected governor (1994-1998)
• Alaska becomes nation's top oil producer for part of 1994, only time Alaska beats Texas
• Congress opens ANWR to exploration; President Clinton vetoes
• Ten billionth barrel of oil via TAPS arrives in Valdez
• U.S. imports exceed 50% of petroleum demand
• Tenth North Slope oil field, Niakuk, starts up
• ARCO and partners Anadarko and Union Texas

need for the companies to divest their North Slope assets. But Phillips, later to merge with Conoco as ConocoPhillips, signed an addendum committing the company to the charter.

Jim Weeks, managing member of Ultrastar Petroleum and sister company Winstar Petroleum, has told Petroleum News that the charter has been critical to his company's operations on the North Slope. Weeks sees the charter as particularly important for obtaining access to seismic data, for negotiating reasonable terms for the use of production and pipeline facilities and for marketing oil without needing to establish shipping arrangements through Valdez.


JUDY PATRICK
JIM WEEKS

"Without the charter we wouldn't even be here," Weeks said.

And Ken Thompson, managing director of Alaska Venture Capital Group, another small company with North Slope interests, has told Petroleum News that the importance of the charter stems from "increased competition by mandating the sale of certain seismic and well data by the majors, (enabling) facilities access and the purchase of crude from small producers." Thompson also commented on the value of a section of the charter that requires certain charitable funding from the major companies.


JUDY PATRICK

MIX module completed in Anchorage

The MIX module, the largest oil field production module ever assembled in Alaska sailed from Anchorage July 19, 1999 on a barge bound for the North Slope.

ARCO, BP, Exxon and the other Prudhoe Bay unit owners invested $80 million in the 2,700-ton compressor module, nine stories high and more than 150 feet in length.

The massive module is the key to the $160 million Prudhoe Bay miscible injectant expansion project, which utilizes a solvent injected into the Prudhoe Bay reservoir to increase oil recovery.

The module was built at the North Star Terminal at Anderson Dock in Anchorage, managed by a team of ARCO, BP, Parsons and VECO personnel.

Greg Sills, ARCO Alaska project manager for the project, said at launch ceremonies that the work force at the module site peaked at 120; statewide, including the module site, the MIX work force peaked at 215.

MIX was designed to add 20,000 barrels per day of incremental production at Prudhoe Bay and increase ultimate Prudhoe Bay liquids recovery by 50 million barrels.

Jim Branch, Alaska production manager for Exxon, called the MIX module "an excellent example of what can be built here in Alaska" with the producers and the service companies working together.

Aurora Gas: an Alaska success story

Anyone who thinks that the Alaska oil and gas industry is the exclusive preserve of major oil companies might want to look at the story of Aurora Gas LLC. Formed in 2000 to look for natural gas opportunities in Alaska, the company has mainly focused on relatively shallow gas plays on land on the west side of the Cook Inlet in the Cook Inlet Basin.


JUDY PATRICK
SCOTT PFOFF

And a strategy of exploring close to known oil or gas fields has paid off handsomely — the company now operates five fields on the west side of the Inlet: the Koala, Lone Creek, Moquawkie, Three Mile Creek and Nicolai Creek fields. Aurora operates its own drilling rig for its gas exploration and development.

In the past couple of years the company has expanded its exploration efforts into some raw wildcat drilling, in unproven locations.

In 2005 the company's Aspen well, three miles inland from Tyonek on the west side of Cook Inlet, tested multiple zones in the Tertiary but failed to find commercial quantities of gas. The company also announced its intent to explore for oil, starting with a wildcat well at the Endeavour prospect in the southwest Kenai Peninsula. Aurora also plans to drill deep for oil at Aspen.

And in April 2006 Aurora formed a joint venture with Swift Energy Co. for future exploration in the Cook Inlet region. The joint venture's initial well at Endeavour proved to be a dry hole. But that's all part of the ups and downs of oil and gas exploration.

"This is a rank wildcat, so you know the averages for that,

Petroleum discover 429 million barrel Alpine field
• Governor signs bill enabling exploration licensing

1995

• Average WTI crude oil price in 1995 is $18.40
• Alaska oil production dips to 1.5 million barrels per day
• GHX II gas handling facility, largest in world, installed at Prudhoe Bay, increasing daily oil production by 100,000 barrels, ultimately by 400 million barrels
• Construction of Kuparuk large-scale enhanced recovery project approved to increase oil recovery by 200 million barrels

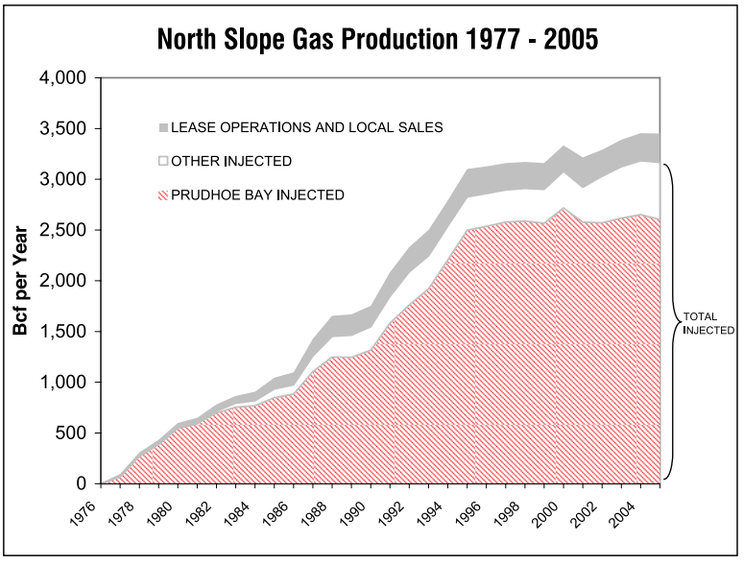
1996

• Average WTI crude oil price in 1996 is $22.20
• Cook Inlet Basin gas output peaks at 223 bcf per year
• U.S. Congress lifts ban on export of Alaska crude oil
• Governor signs coalbed methane leasing bill
• State starts areawide leasing, speeds up exploration because all available state acreage within North Slope, Beaufort Sea, Cook Inlet offered annually
• ARCO and BP set U.S. extended reach drilling record at Niakuk, four mile well bore hits bottom 3.4 miles from drill site
• ARCO and BP complete world's first well using

but hopefully we will have a discovery," Scott Pfoff, Aurora's president, said before the Endeavour drilling. "… After Endeavour we will use what we've learned from it and see which prospect looks best, and most likely drill another."

Editor's note: Aurora was founded in 1994 to market gas in Southcentral Alaska. Becoming a Cook Inlet producer was always a company goal. In 1997 Aurora acquired its first leases and in 1998 it gained production, acquiring Chevron's working interest in the Marathon-operated Kenai and Cannery Loop natural gas fields.

ALASKA DIVISION OF OIL AND GAS



Looking for gas on 'purpose'

Go back a decade or so on Alaska's North Slope and companies drilled exclusively for oil. Natural gas had some value in maintaining the reservoir pressure in oil fields but, with no access to gas markets, people considered finding anything other than liquid hydrocarbons as a bust.

That situation seemed to start to change around 2000, presumably because people saw the prospect of a North Slope gas export pipeline. Following the State of Alaska's November 2000 North Slope lease sale, Ken Boyd, then director of the Division of Oil and Gas, commented to Petroleum News on how partners Anadarko Petroleum Corp. and AEC Oil & Gas (USA) Inc. were bidding in areas where natural gas finds were much more probable than oil finds. Boyd characterized these bids as "a real change in the whole picture of leasing on the North Slope."

"They're out looking for gas on purpose," Boyd said. "The acreage they are bidding on is clearly gas prone. … It's not oil country."

Boyd was referring to bids on tracts well south of the North Slope oil fields — geologists have long thought the southern North Slope and Brooks Range foothills to be gas prone because of the relatively high thermal maturity of the rocks in those areas.

And Anadarko's Mark Hanley confirmed his company's interest in gas prospects, saying that the company's new leases in the southeast of the sale area together with some neighboring leases on Arctic Slope Regional Corp. land represented a gas play.

However, gas interest really seemed to take off in the state's first Foothills areawide lease sale in 2001, when eight entities bid $9.7 million for 858,811 acres of leases on land within the gas-prone region. Boyd still sees that lease sale as a turning point in the history of oil and gas in northern Alaska.

"This was not just another sale; this sale ushered in … the search for gas on the slope," Boyd said. "These leases were purchased as having potential for gas almost exclusively. This is the first time this happened. Up to then gas discoveries were basically dry holes.

"This was the beginning of the gas era in Alaska," Boyd said, adding, "This story has yet to be written."

Since the 2001 lease sale Anadarko, in particular, has consolidated its position in the Foothills and has formed a partnership with Petro-Canada and BG Group to explore for gas in the region.

Creating jobs for Alaskans

COURTESY LYNDEN

Lynden Transport entered the market in 1954 when their trucks pioneered the newly completed Alcan highway and began providing scheduled over-the-road services to major Alaskan communities. Currently the Lynden companies provide transportation services that include land, air, and water, or any combination of the three.

Prudhoe ownership alignment resolves longstanding issues

In April 2000 Phillips Petroleum Co. (later to merge with Conoco to become ConocoPhillips) bought ARCO's Alaska assets. The purchase opened the way to the Federal Trade Commission's approval of BP Amoco's 1999 purchase of ARCO. But the purchase also provided an opportunity to align the ownership and operating arrangements for the giant

Petrotechnical Resources of Alaska

In 1997 five independent consultants in the Alaska petroleum industry understood that their marketplace needed to change to meet client needs. The two present-day co-owners, Tom Walsh and Chris Livesey, will tell you that the choice to form PRA and the type of business model used happened out of good fortune.

Industry demands "forced us to create this company, basically," says Walsh. "It just turns out that the model we landed upon seems to be very accommodating to a lot of very talented people. The chosen model supports a firm with depth and breadth of expertise but with minimal overhead costs. Its efficient design allows the real assets of the company, the people, to shine."

Chris Livesey, Ph.D., is a co-owner of PRA

Providential consultants

Lucky coincidences and reputation support each other at PRA. After all, high-level professionals don't look for work just anywhere. Says Walsh: "People with broad skill bases and great depth of knowledge tend to gravitate toward PRA." Part of the attraction lies in the high ethical standards at the company. The firm "takes great care to protect our clients' data and ideas, and our reputation in the community," Walsh elaborates.

Walsh says that Livesey and he "feel very fortunate to work with a great team of people. I think we've got some of the most talented people in the oil industry."

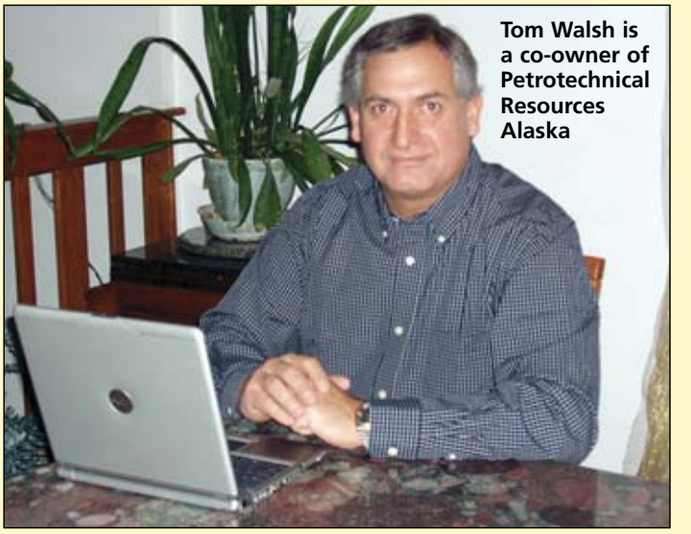
Fortunate clients

The firm caters to the geoscience, engineering and project management needs of corporate clients of every shape and size. The company also offers valuable services to government agencies. All of PRA's offerings hinge on a common theme. According to Walsh, "we feel we're here to very strongly promote the growth of the oil and gas industry in Alaska."

Ray Oakley, one of PRA's talented petroleum engineers

Impressive services

The large oil producers that hold the major existing stakes in Alaska's petroleum industry tend to call upon PRA to extend the life of oil fields. From Prudhoe Bay expansion and advancement projects to Cook Inlet gas storage and development jobs, PRA professionals in every field of expertise work with companies such as BP, Chevron, and ConocoPhillips to keep petroleum products flowing from wells that naturally decline in productivity over time.



Tom Walsh is a co-owner of Petrotechnical Resources Alaska

As part of a natural market cycle, smaller oil companies continue to emerge in Alaska. These new stakeholders encounter barriers in their transition to this market that PRA helps ease. For instance, PRA facilitates land access by "supporting these companies' review of lease-sale activity, helping state and federal agencies put together lease sales and working with Native corporations on the management of their lands," Walsh explains. A single professional or a complete team of consultants from PRA can be brought on board to give a newcomer to Alaska's industry a firm footing in the oilfields. PRA also provides services for well data and seismic data.

Chantal Walsh, petroleum engineer and Bill Bredar, geologist.

PRA is heavily involved in the discussions around the new tax structure and the gas pipeline contract. Given this exciting time in the industry, with high oil prices and the prospects of gas development, PRA continues to identify new opportunities to present to their clients.

PGS Onshore: Superior geophysical imaging solutions

PGS Onshore is a leading seismic acquisition contractor providing best in class service in land, transition zone and shallow water worldwide. We have built our company to provide superior geophysical imaging solutions in challenging and complex environments by equipping highly experienced people with proven operating abilities around the world with the best equipment available.

PGS Onshore has pioneered the most environmentally sensitive crews operating on the Arctic North Slope by developing and deploying innovative seismic acquisition systems and equipment. This equipment allows our crews to operate efficiently in arctic extremes while leaving an extremely light footprint. PGS Onshore provides solutions, acquiring high quality seismic data at high production rates even with a limited recording season, remote access, and challenging climate and terrain conditions. Through joint technology development partnerships, PGS has implemented specialized rubber-tracked equipment

PGS Onshore uses superior technology, innovative equipment applications and powerful HD3D™ designs to fulfill our clients' geophysical imaging needs. Today, PGS Onshore operates between 9 to 11 crews equipped with versatile field equipment to record land vibroseis or dynamite data worldwide in arctic, mountains, swamp, and desert terrains.

PGS Onshore's specialized fully rubber tracked equipment received environmental recognition from the Alaska Department of Natural Resources.

HD3D™

PGS Onshore has developed HD3D™ to image increasingly complex structural and stratigraphic geologic objectives. HD3D™ surveys are acquired by deploying large channel counts in customized designs. PGS Onshore's high-density acquisition techniques deliver 3D data with unequaled fidelity and resolving power while maintaining operational efficiency. HD3D™ data are optimized for advanced processing algorithms and are "4D ready" for reservoir characterization and monitoring applications

HD3D™ benefits include:

- HD3D™ solutions provide incomparable imaging in the most challenging reservoirs,
- Order of magnitude greater trace density,
- Competitive pricing with conventional surveys,
- Longlife datasets through G&G cycle, and
- Unparralleled P wave information with excellent offset sampling at all azimuths for pre-stack analysis (AVA, AVO).

PGS Onshore is a highly regarded provider of superior, high-technology 3D designs. Our 3D design team provides innovative and cost-effective 3D design solutions that are tuned to our clients' geologic objectives.

Arctic operations

In Alaska's rugged Brooks Range Foothills, our highly specialized HD3D™ arctic crew recorded over 77,500 VPs to generate 297,600,000 traces of high density 3D in a single season; two times more traces than any other crew has recorded in a single North Slope season. Equally as important, PGS Onshore's specialized fully rubber tracked equipment developments enabled us to complete this stand out performance with environmental recognition from the Department of Natural Resources. DNR stated that our operation resulted in the least tundra impact (effectively none) ever observed on artic tundra. After testing and post survey follow-up, Harry Bader, Northern Region Land Manager, Alaska Dept. of Natural Resources had ringing praise of PGS Onshore's work:

"I am pleased to inform you that both the winter field inspections and the intensive site investigation this summer found no significant tundra damage associated with seismic activity that exceeds the acceptable range of disturbance. PGS is to be congratulated for their close cooperation and collaboration with DNR in making this project a resounding success."

PGS Onshore was recently awarded a certificate of "Partner in Development and Stewardship" by the Alaska Department of Natural Resources for contribution of equipment and logistical support to the North Slope Tundra Modeling Project. The North Slope Tundra Modeling Project is the first joint research effort by industry, government and academia integrating real time environmental variables to determine the conditions for tundra travel season.

In collaboration with PGS Onshore and other private industry, and financial support from the U.S. Dept. of Energy and Alaska DNR, an ecological model is being developed to take into account the affects of snow depth, snow density, ground hardness, and vegetation to predict tundra resistance to ultimately replace the current tundra travel standards. The current standards were adopted in the 1970's without the benefit of a systematic investigation or foundation in science. The new model is designed to provide a refined understanding of tundra resistance to disturbance, so that increased exploration and development activity can take place concurrently with enhanced environmental protection.

Alaska is just one of the regions where equipment and procedures that minimize environmental impact is offering PGS Onshore a significant competitive advantage.

For more information on PGS Onshore's seismic capabilities please contact Larry Watt in Anchorage at 907-569-4049 or James Bogardus in Houston at 281-509-8124.

through tubing rotary drilling at Prudhoe Bay
• Kuparuk large scale EOR project starts up
• Forcenergy enters state, buys Marathon's interests in McArthur River and Trading Bay fields
• TAPS pump stations 8 and 10 placed in ramped down status due to declining pipeline throughput

1997

• Average WTI crude oil price in 1997 is $20.60
• TAPS pump stations 2 and 6 placed in ramped down status due to declining pipeline throughput
• Alaska Permanent Fund exceeds $22 billion
• BP begins appraisal drilling at Liberty prospect from man-made gravel island, confirms discovery
• ARCO's Tarn discovery announced
• ARCO drills 1 Warthog exploration well in Beaufort Sea
• Shell announces pulling out of Alaska

1998

• Average WTI crude oil price in 1998 is $14.40
• Tony Knowles (D) re-elected governor (1998-2002)
• Alaska Permanent Fund exceeds $25 billion
• Marathon discovers Wolf Lake gas field
• ARCO discovers Prudhoe Bay satellite Aurora
• Cross Timbers purchases Middle Ground Shoal field in Cook Inlet from Shell

Prudhoe Bay field.

When ARCO and Humble Oil (later Exxon) discovered the Prudhoe Bay field in late 1967, early 1968, the companies first discovered a huge gas accumulation. Only when they continued drilling the discovery well did they establish that the gas formed a cap on top of a vast oil accumulation.

For many years the huge Prudhoe Bay gas cap complicated the ownership and operation of the field.

Two participating and operating areas

Because the field owners had no way of marketing the gas they formed two participating areas, one for the gas cap and one for the oil rim. And, based on the configuration and ownership of the various leases when the field was discovered, the field was divided into two operating areas, the western operating area and the eastern operating area. Each operating area had different working interest owner arrangements and each operating area had a different operator — BP operated the western operating area while ARCO operated the eastern operating area.

"Ideally, we would also like to see a single operator in a Prudhoe Bay. A single operator could maximize production and efficiencies while substantially reducing costs."

—Rick Halford, chairman of the Alaska Legislatures's Joint Special Committee on Mergers

The problem was that, although technically the field acted as a single entity, the eastern operating area contained a different proportion of the gas cap from the western operating area. So, a system of trades was established to balance any competing interests between the two operating areas and thus produce consensus on major development issues. And over the years the two operators combined many services, such as drilling and air transportation.

But, although the system of trades worked initially, changes in oil prices, field costs and reservoir performance over time caused operational complications and difficulties. And, despite the shared services arrangements, there was duplication in management functions between the two operating areas.

Move to single operator

So, when BP Amoco purchased ARCO in 1999, BP identified having a single Prudhoe Bay operator as an efficiency benefit that could be achieved from the takeover. And, when Phillips later announced that it was purchasing ARCO's Alaska assets, Jim Mulva, president and CEO of Phillips, said that Phillips had discussed with BP Amoco the possibility of establishing a single operator at Prudhoe Bay.

"Conceptually moving in that direction makes a lot of sense as the right thing to do in terms of accomplishing efficiency and that creates value not only for the companies but also for the state," Mulva said.

The closure of the BP Amoco purchase of ARCO and the sale of ARCO Alaska Inc. to Phillips quickly triggered an alignment of the ownership interests in the Prudhoe Bay field. On April 13, 2000, ARCO, BP Amoco, Exxon Mobil Corp. and Phillips jointly announced that they had "reached an agreement to resolve outstanding issues relating to the ownership and operation" of both Prudhoe Bay and Point Thomson.

"Ideally, we would also like to see a single operator in Prudhoe Bay. A single operator could maximize production and efficiencies while substantially reducing costs," said Rick Halford, chairman of the Alaska Legislature's Joint Special Committee on Mergers.

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"The agreement," the companies said, "will optimize operations, reduce costs and facilitate new oil and gas developments in the state for the benefit of the unit owners, the State of Alaska and its residents." At Prudhoe Bay, disparate oil rim and gas cap ownership would be replaced by combined equities: 36.8 percent for ExxonMobil; 36.5 percent for Phillips; 26.7 percent for BP. BP would become the field operator.

Phillips would be operator of the Kuparuk River and Alpine fields.

The companies also agreed to work towards an alignment of interests at Point Thomson.

The companies said that the Prudhoe Bay alignment "would remove the need for lengthy and complex agreements between parties with different interests. The elimination of that step may contribute to improved timelines for new economic developments within the PBU." The companies also thought that the alignment would facilitate future Alaska development, including gas commercialization.

Oil fuels Alaskan sports programs

Dean Larson's jersey — No. 18, from his professional hockey playing days with the Anchorage Aces — hangs from the rafters in Anchorage's Sullivan Arena. It is one of only two jerseys retired in the history of the team, the other being that of No. 8 Keith Street.

In college, Larson was the top-scoring player of all time for the University of Alaska Anchorage Seawolves. He was elected to the Seawolf Hall of Fame in 2003.

On leaving the Seawolves, Larson played in Germany for two

- Anadarko signs agreement with Arctic Slope Regional Corp. for exploration rights to 3.3 million acres in gas-prone Brooks Range Foothills
- Mapco partners with Lynx Group to build Alaska CargoPort at Anchorage International Airport
- State's first areawide lease sale, North Slope No. 87, 518,689 acres leased, $51.8 million
- BP-operated Badami oil field begins production
- USGS ANWR assessment says there are between 6-16 billion barrels of recoverable oil in 1002 area
- Williams completes $70 million, 17,000 barrel per day jet fuel refining expansion at North Pole
- ARCO-led Alaska North Slope LNG pipeline begins Stage 1 of study
- ARCO and partner Exxon discover Midnight Sun, a Prudhoe Bay satellite
- Voters in Valdez, Fairbanks, and North Slope Borough approve formation of Port Authority to build All-Alaska Gas Pipeline

1999

- Average WTI crude oil price in 1999 is $19.30
- ARCO discovers Fiord oil pool north of Alpine
- Miscible injectant "MIX" project increases Prudhoe Bay liquids recovery by 50 million barrels
- BLM holds first NPR-A sale since 1985; 867,721

years. In 1995 he joined the Aces. Larson retired in 2003 as the West Coast Hockey League's all-time leading scorer and recipient of the WCHL 2003 Man of the Year award.

Larson is a sports icon in Alaska, long involved in youth hockey programs. He is head coach of the Alaska Avalanche, a new Alaska-based Junior A team in the North American Hockey League that plays on Wasilla's Menard Arena ice. The NAHL is a high-level development league for players under 21 that functions as a springboard to college hockey or the pros.

Avalanche players come from all over the world, but Alaskan players are well represented on the team. The Alaskan kids that make the team are the product of an extensive network of youth hockey programs that introduce kids to the sport, and allow competitive-minded kids to compete at the highest levels in their age groups.

The current opportunities for local player development exist in no small part because of oil and gas development in the state, according to Larson.

Larson said that oil company sponsorship and support for sports in Alaska is noticed and appreciated by the sporting community.

The Alaska sports scene is much richer due to the presence of the oil companies, Larson said, particularly because of the human and economic contribution to youth sporting programs. Oil companies and people in the oil industry have been generous to youth sport programs on a corporate and personal level, ensuring a variety of quality sports choices for Alaskan kids.

"Their sponsorship and involvement in youth sports has been tremendous," Larson said.

UNIVERSITY OF ALASKA ANCHORAGE

Alaska hockey icon Dean Larson says oil companies have made a tremendous contribution to youth sport programs in Alaska.

STEVE SUTHERLIN

Artistic HQ in Fairbanks

2000

Doyon Plaza, completed in 2000, is the headquarters of Native regional corporation Doyon Ltd., parent company of Doyon Drilling. The 32,000 square foot office structure features a substantial collection of Alaska Native art.

People and progress benefit state

PAULA EASLEY

Public policy consultant Paula Easley served 12 years as the executive director of the Resource Development Council for Alaska. Today she is on RDC's board and she serves on Arctic Power's executive committee.

In her years of involvement in the oil and gas industry, Easley has valued most the people oil development has brought to Alaska, and the progress those people have made for mankind in its search for resources.

People have been the greatest benefit to the state from oil and gas development, Easley said. "Above all, the people that have come to the state as a result of oil development, and the contributions they have made, and the tremendous strides in environmental improvement that have resulted from the research that has taken place in Alaska that people elsewhere have been able to use."

Crash claims last flying swingtail

When a Northern Air Cargo DC-6B veered off the Alpine oil field airstrip Sept. 25, 2001, no serious injuries occurred. The loss of the aircraft, however, dealt a blow to Alaska's cargo fleet because the swingtail-modified plane was the only one of its kind flying in the world. Only three swingtail DC-6 planes were built.

The swingtail cargo opening on Northern Air Cargo's N867TA allowed straight-in loading of pipe up to 40 feet long, and drive-on loading of vehicles exceeding 16 feet in length.

Now, longer loads require the use of a Lockheed C130 Hercules transport, considerably more expensive to operate than the DC-6. Oilfield and bush shippers can still get outsized things to remote places, but will miss the pocketbook-friendly swingtail DC-6 for loads under 28,000 pounds.

Pioneer Natural Resources

The Arctic Fox #1, designed to withstand the arctic conditions of the North Slope while reducing size and construction costs, can be transported with fewer than 35 truckloads while other rigs require approximately 120 loads.

PIONEER NATURAL RESOURCES is a large U.S. independent exploration and production company with a long history of successful drilling, efficient development and cost-conscious operations. The Company currently has activities in the United States, Canada and Africa.

Approximately 98 percent of Pioneer's reserves are in North America. The Company is anchored by five North American long-lived fields that provide consistent and dependable production growth, cash flow and ongoing development opportunities. Two larger-scale field development projects are underway on the North Slope and offshore South Africa. In the lower 48, Pioneer's exploration program targets new lower-risk resource plays, similar to its legacy fields. Pioneer's higher-impact exploration program focuses on the North Slope of Alaska and West Africa.

Pioneer drilled 820 wells during 2005 with 95 percent success and plans to increase its drilling program to more than 1,000 wells during 2006. The Company plans to invest approximately $1.3 billion in 2006 field development and exploration activities.

Setting New Precedents on the North Slope of Alaska

As one of the first independents to operate on the North Slope, Pioneer demonstrated a capacity to operate in extreme environments by building ice islands in subzero temperatures and drilling during an abbreviated winter season leading to the discovery of the Oooguruk field.

Pioneer began its investment in Alaska in early 2003 with the drilling of three exploration wells in the shallow waters of the Beaufort Sea. Pioneer significantly expanded its Alaska inventory at the October 2003 State Lease Sale where it was the largest participant and successful bidder on approximately 150,000 acres. An office was opened in Anchorage in early 2004 and now employs 30 professionals.

In 2004, Pioneer concluded exploration agreements with ConocoPhillips and Anadarko. The Company has assembled a substantial portfolio with an interest in approximately 1.7 million acres on the North Slope of Alaska. More recently, Pioneer has acquired a 50 percent working interest and succeeded ConocoPhillips as the operator of the Cosmopolitan unit located in the Cook Inlet.

Pioneer is an active explorer in Alaska having participated in six exploration wells over the past two winter seasons. In December 2005, Pioneer mobilized a new fit-for-purpose exploration rig to the North Slope named the "Arctic Fox". The light weight, highly mobile rig successfully completed a three well drilling program during the latest winter season.

In February 2006, Pioneer announced that it approved and was commencing the development of the Oooguruk field on the North Slope. Pioneer is the operator of the field, which is in the shallow waters of the Beaufort Sea approximately eight miles northwest of the Kuparuk River Unit. In April 2006, Pioneer completed gravel hauling operations associated with the installation of an offshore gravel drilling and production site.

In the first quarter of 2007, a subsea flowline and facilities will be installed to carry produced liquids to existing onshore processing facilities at the Kuparuk River Unit. Pioneer plans to drill approximately 40 horizontal wells to develop 50 million to 90 million barrels of estimated gross oil resources. Total gross capital invested, including projected drilling and facility costs, is expected to range from $450 million to $525 million. The wells are expected to be brought on production as drilling progresses, with peak rates of approximately 15,000 to 20,000 barrels of oil per day expected by 2010. Using current oil prices, the field is expected to produce for at least 25 years before reaching its economic limit.

Pioneer is driving a step-change in the North Slope operating mentality, tackling complex field development with an emphasis on lowering costs and maximizing recoverable reserves.

Serving Alaska

Professional. Progressive. Proficient. ProComm Alaska! The words and the business have a great affinity for one another. For this reason, ProComm Alaska's CEO, Gary Peters, purposely named and organized his company to epitomize its motto: "Professional communications for Productive Alaskans."

Peters is President and Chief Executive Officer of ProComm Alaska, the state's award winning supplier of Motorola communications systems. When Peters purchased the former ASRC Communications in October of 2000, he opened his doors to customers with a new name and new goals.

Gary Peters, CEO/President & Linda Peters, CAO/General Manager of ProComm Alaska

Still the Best for Commercial Communications

With the innovative advance in communication technology, two-way radio remains the best solution for business, industrial and commercial communication. "Touch" to instantly connect with one individual, a select group or an entire crew. No dialing numbers, no busy signals, no voice-mail-jail or dropped calls. In addition, Motorola Privacy-Plus delivers instant access giving users significant increases in productivity over cellular. Like cellular and PCS, two-way radio has kept pace with technological advances. Smaller, lighter, longer battery life and a multitude of features maintain radio's important place in business communications.

Much More then Radio

ProComm Alaska is the only dealer in Alaska providing the complete line of Motorola products and Factory Authorized Service. In addition, ProComm Alaska is the only authorized Motorola Service Station (MSS) serving the entire state of Alaska with Factory trained technicians who are certified in all Motorola product offerings. The company serves all federal, state, and local government entities out of our 3 statewide locations: Anchorage, Fairbanks, and Soldotna. ProComm Alaska offers the latest two-way radio technologies to public safety, state and local governments, oil field and pipeline service companies, mining, utilities, and business-industrial-commercial enterprises. Exclusive Select Systems Dealer, Authorized Radio Systems Specialist, ALMR Console, and Radio Site Certification appointments allow ProComm Alaska to offer comprehensive safety and homeland security systems, such as the Centracom Gold Elite consoles, E911, SmartNet/Smart Zone Omnilink P25 Digital, and Factory Mutual approved accessories for hazardous spaces protection systems to Alaska. High capacity, digital Voice Logging Recorders, mobile data and standalone, and in-car digital mobile video systems enhance the lines. Complete RF communications engineering for SCADA, Towers, Microwave, and prefabricated Communications Shelters are also ProComm Alaska's specialties. Furthermore, the company excels in complete grounding systems, antenna systems, and field installation for turnkey operations.

Over-the-Air Data and Control

In exciting wireless applications, the professionals at ProComm are helping Alaskans remotely monitor and control critical systems from central supervisory stations across substantial distances. "Virtually anything that can be measured, monitored or controlled can be done wirelessly," says Peters. "The challenges of Alaska's extreme of climate, terrain and distance make these essential assets to control applications."

For more information visit:
www.procommak.com
or call (800) 478-9191

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Professional Communications for Productive Alaskans

From locations in Anchorage, Fairbanks & Soldotna

acres sold in Northeast NPR-A, generates $104 million
• Horizontal wells first utilized to develop viscous oil by BP at Schrader Bluff
• Nikiski LNG plant export license extended to 2009
• AVCG acquires leases in Colville River area
• Unocal taps Ocean Energy as partner in Pioneer unit coalbed methane project, wells planned in Mat-Su
• State offers "one-stop shopping" for DEC permitting
• State, BP, ARCO sign Charter for the Development of the Alaskan North Slope, clause binds successors

2000

• Average WTI crude oil price in 2000 is $27.40
• Alaska daily oil output falls to 1.03 million barrels
• Alberta Energy enters Alaska
• Alpine begins production — largest onshore oil field discovered in North America in past decade
• Alpine, accessible only by ice road or air, is the western most development on North Slope
• Alaska population reaches 626,932 — equivalent of 1.1 persons per square mile
• State's first Beaufort Sea areawide lease sale held, generating $339,000
• State leases 713,600 acres in its third North Slope areawide sale, near record amount of land involved
• Permanent Fund check hits all-time high: $1,963.86
• Alaska Stranded Gas Development Act passes

COURTESY CONOCO PHILLIPS

Polar Endeavour, first of the millennium-class tankers built for ConocoPhillips subsidiary Polar Tankers Inc. Litton Avondale Industries built the massive oil tanker at its West Jefferson, La., shipyard for delivery in early 2001.

Double-hull tanker debut

The first of the new, state-of-the-art, double-hulled oil tankers built for the Alaska trade sailed in 2000 for Tesoro, followed by the Polar Endeavour, one of five millennium-class tankers ordered by Phillips subsidiary Polar Tankers.

Built specifically for the transport of Alaska crude from the terminus of the trans-Alaska oil pipeline in Valdez to the West Coast and Hawaii, the tankers are designed to withstand some of the most severe weather and sea conditions in the world, the company said.

COURTESY BP

National Steel and Shipbuilding Co., San Diego, made a 2004 delivery of the Alaskan Frontier, first of four Alaska-class double-hull oil tankers being built for BP Oil Shipping Company USA, a subsidiary of BP p.l.c.

Meanwhile, BP was working toward the 2004 launch of its first Alaska-class tanker, The Alaskan Frontier.

"Not only will this new generation of tankers add greater spill protection, but they also play a significant role in reducing costs, making Alaskan investments more attractive and transforming Alaska's huge remaining potential into new production," Steve Marshall, president of BP Exploration (Alaska) Inc. said at a 2004 ceremony. "This in turn means higher revenues for the state of Alaska."

BP said it will invest a total of $1 billion in four Alaska-class tankers, paring operating costs while increasing efficiency and performance. They are more fuel efficient than older tankers, capable of loading and discharging faster, and less costly to maintain. The Alaska-class ships have a length of 941 feet, a beam of 164 feet and a capacity of 1.3 million barrels of oil.

The $200 million millennium-class vessels are 895 feet long by 152 feet wide by 86 feet deep, holding just over 1 million barrels of oil at full capacity.

Earthquake rocks oil pipeline

A 7.9 magnitude earthquake Nov. 3, 2002, prompted Alyeska Pipeline Service Co. to temporarily shut down the trans-Alaska oil pipeline. The quake occurred at approximately 1:12 p.m. (Alaska standard time) on the Denali fault in Interior Alaska some 45 miles east-northeast of Cantwell.

The pipeline was restarted shortly after 8 a.m. Nov. 6 and by afternoon was moving crude oil at a rate of 750,000 barrels a day.

Alyeska said that work on repairing damaged sections of the pipeline would continue, but all priority work tasks were completed prior to restart.

A 7.9 magnitude earthquake in November 2002 prompted a temporary shutdown of the trans-Alaska oil pipeline.

By Nov. 5, officials at the state-federal Joint Pipeline said five tankers were stacked up in Valdez waiting to load.

The senior federal and state officials at the JPO, Jerry Brossia, authorized officer for the U.S. Department of the Interior's Bureau of Land Management, and John Kerrigan, state pipeline coordinator with the Alaska Department of Natural Resources, said Nov. 5 that what happened to the pipeline Nov. 3 was exactly what was supposed to happen.

When the quake hit, the pipeline support system did "exactly what it was built and designed to do," Brossia said.

The worst case projected was for a magnitude 8 earthquake on the Denali fault: crossbeams were projected to break with the pipe remaining intact: "That's what happened," he said.

Kerrigan also said the quake demonstrated the success of the design of this pipeline: It "sheared according to design," he said.

Rockin' for ANWR

Anchorage-based rock and roll band ANWR believes in music with a message, and its message in the 2002 song, "Drilling — Yes or No" is that the nation needs oil from the Arctic National Wildlife Refuge, and Alaskans have a right to develop their resources.

There are lots of good reasons to drill in the 1002 area of ANWR, but many people haven't become engaged enough with the issue to understand, the band said. That's where music comes in.

- Phillips discovers Nanuq oil pool near Alpine
- Phillips announces North Slope Meltwater 50 million barrel oil find
- Prudhoe Bay unit owners realign equity in oil rim, gas cap,
- Forcenergy sets Osprey platform at Redoubt Shoal field, first offshore Cook Inlet platform in 14 years
- Agrium buys Unocal fertilizer plant at Nikiski
- First modules built in Anchorage for Northstar
- Marathon drills onshore in Cook Inlet Basin for gas with own truck-mounted rig, Glacier Drilling No. 1
- Tesoro first to ship oil from Valdez in double-hulled tankers, 15 years ahead of federal mandate
- Phillips and partner Anadarko drill first NPR-A wildcat in more than 20 years

2001

- Average WTI crude oil price in 2001 is $23
- State's first North Slope Foothills areawide lease sale held, generates $9.8 million in bids
- BP's gas-to-liquids demonstration plant begins operation on Kenai Peninsula
- North Slope LNG Project disbands, concluding LNG at economic disadvantage to overland pipeline
- BP, ExxonMobil, Phillips form North American Natural Gas Pipeline Group
- Technology helps BP tap shallow, viscous Schrader

STEVE SUTHERLIN

ANWR band members pictured from left to right: Joan Massart-Paden, Don Webster and Connie Wilhelm

"Music touches the core of a person," said Joan Massart-Paden, ANWR keyboardist.

If America hears through music that real people support ANWR development, politicians blocking drilling might change their votes, she said.

"People won't listen to a debate or read a well-written article, but they'll listen to a four minute song," said Connie Wilhelm, vocalist and co-writer of "Drilling — Yes or No."

Creating jobs for Alaskans

JUDY PATRICK

Roughnecks on the rig floor of Nabors 7ES. The company currently operates 17 highly specialized arctic drilling rigs and workover/redrilling rigs on the North Slope, including one coiled tubing drilling rig and two more conventional land rigs in the Kenai/Cook Inlet area.

BP GTL plant starts up in Nikiski

First production at BP's Nikiski gas-to-liquids test plant on July 26, 2003 represented a significant milestone for the company and Davy Process Technology, partners in new technologies being tested at the facility.

GTL technology is used to convert methane gas into high-quality, clean-burning synthetic crude oil, BP said, and could help commercialize stranded natural gas resources.

EAGLE EYE HELICOPTERS

When the location was announced BP said it had considered sites in the Lower 48 and in the United Kingdom, as well as other sites in Alaska.

"Alaska was chosen because it represents the largest reserve of undeveloped gas in BP Amoco's portfolio and we have an ongoing commitment to the stakeholders in Alaska to monetize this resource," the company said in August 2000.

BP said it would dismantle the plant once the company had proved out the GTL technology because the plant is too small for commercial operation.

At the time of startup BP said that it thought that proving the technology would take 12 to 18 months. But, despite successfully demonstrating the GTL technology by the end of 2003, the plant continued running.

BP said it would continue operating as long as the work done at the plant added value to BP's worldwide GTL initiatives.

The Nikiski plant has been converting about 3 million cubic feet of natural gas per day into 300 barrels of syncrude. BP trucks the syncrude to Tesoro in Nikiski for refining.

Native hire pact renewed

A renewal of the Alaska Native Utilization Agreement was signed in Anchorage Oct. 15, 2004, by U.S. Department of the Interior Secretary Gale Norton, officials of Alyeska Pipeline Service Co. and Native leaders.

The utilization agreement was mandated by the 1974 Agreement and Grant of Right of Way for the trans-Alaska pipeline which was renewed in early 2003 for an additional 30 years.

"Among other things, this renewal will ensure continued employment and even better training programs for the nearly 450 Alaska Natives who currently work on the pipeline," Norton said.

As part of the renewal, Alyeska agreed to provide funding for programs designed to employ, train and advance Alaska Native employees on the trans-Alaska oil pipeline that it operates, while continuing efforts to recruit and retain qualified Native candidates.

The company will also continue to award $750,000 in scholarships each year and set up an intern program for entry-level Native employees.

Badami forges new approaches

Although BP's Badami field at the eastern end of the North Slope has been plagued by production problems since field startup in 1998, the field led the way in some respects for subsequent developments of other North Slope fields such as

Seekins Ford-Lincoln-Mercury

Meeting the challenges of Alaska's extreme climate and remote geography

Customer service brings a whole set of unique challenges when operating a car dealership in Alaska's Interior and north. Supplying, maintaining and repairing vehicles in a vast area with few interconnecting roads and with some of the world's most extreme weather requires specialist knowledge and an innovative approach to business.

Seekins Ford-Lincoln-Mercury has been operating in the Interior since Ralph Seekins purchased the Fairbanks-based Ford franchise from Jim Thompson Ford Sales in 1977.

Large inventory

To be able to respond rapidly to customer needs, Seekins Ford carries a large inventory of both cars and spare parts. On the maintenance and repair side of the business, the company's well-stocked parts inventory helps ensure that a customer's vehicle can be fixed and back on the road as quickly as possible.

Weather extremes

Winter is probably the biggest challenge, and Seekins Ford has learned some tricks to keeping vehicles going in climates that other dealerships probably aren't faced with.

In fact, the vehicle manufacturers sometimes use Alaska as a test bed for cold weather conditions. Ford has used the Seekins Ford facility in the past to do cold weather testing, helping make changes to vehicle

designs. As well as outfitting for the weather, the company takes pride in its high level of expertise in working with its customers to specify custom vehicle outfitting for specialist applications. The company's experts know what type of upfit has been done and which outfitting companies do what kind of work.

Commercial sales and service

On the commercial side of its business, Seekins Ford serves a wide range of businesses and government entities. Although some customers like to lease vehicles, many commercial customers purchase vehicles through retail contracts. Seekins Ford can also arrange Ford extended service plans for the maintenance and servicing of commercial fleets, and a lot of the oil companies on the North Slope take advantage of that program

Services to remote areas

Seekins Ford maintains a sales presence in Barrow and has done some business in Nome, Kotzebue and some of the smaller Alaska communities, and in certain instances have gone out and done repairs on vehicles that were under warranty out in some of these villages. During the summer the company sometimes uses barges to ship vehicles for servicing or repair.

Skilled personnel

Seekins Ford's excellent services depend on the company's cadre of skilled staff. Sales consultants, for example, participate in a Ford certification program.

As well as retaining its experienced technicians, Seekins constantly encourages new people to enter the trade, especially through the Ford Motor Co. ASSET program, a 24-month associate degree university course through UAA in Anchorage.

The company emphasizes the importance of employing technicians who can repair things right the first time, and a knowledgeable sales staff to supply the right kind of information and customize each order to fit a client's needs.

Tesoro Alaska

Tesoro's Strong Commitment to Alaska

Tesoro and Alaska have enjoyed a 36- year partnership. In 1969, the Kenai refinery opened to process crude oil from Kenai Peninsula and Cook Inlet oil fields, and just a few years later was the first to refine North Slope crude.

Today, more than 600 Alaskans on the Tesoro team produce and sell the fuels and products to keep Alaskans going. Tesoro also has made the necessary investments to provide all of Alaska clean gasoline and diesel years ahead of the government requirement.

Tesoro's Partnership with the Community

Operating a refinery in Alaska's sensitive environment takes special care. Tesoro Alaska's commitment to the local environment has been recognized with the Legacy Award for Oil Spill Prevention, Preparedness and Response from the Pacific States/British Columbia Oil Spill Task Force.

Tesoro Alaska also took the lead in the development of the Geographic Response Strategies in Alaska and plans more for the future. Tesoro's Industry Response Team personnel have conducted response training exercises on Kodiak Island, training and deploying equipment alongside the Cook Inlet Spill Prevention and Response personnel.

Tesoro has been very active with the Cook Inlet Regional Citizens Advisory Council, providing vessel and facility tours, and including members in Spill Management Team activities. In a letter supporting Tesoro's Legacy Award nomination, the council stated that "The success of the Cook Inlet Geographic Response Strategies work is directly related to the efforts of Tesoro Alaska Company."

Tesoro Alaska employees actively support many local events and programs from United Way's Days of Caring program to local youth sports, and the company gives to programs that maintain healthy communities and, a healthy environment, and educate our youth.

Community Snapshot: Gallons for Grades

Tesoro offers a program to encourage academic excellence among Alaska's students called Gallons for Grades. Students who participate in the program receive free gasoline from Tesoro retail stations for every "A" and "B" they earn. Due to the program's tremendous success, Gallons for Grades has expanded to the other states in which Tesoro operates retail gas locations.

Looking Forward to the Next 36 Years!

Tesoro looks forward to maintaining the company's strong 36-year community and business services relationship with the citizens of Alaska.

TESORO

Bluff crude at Milne Point, average well production jumps from 300 to 1,000 barrels per day
• Seven natural gas exploration wells drilled in Cook Inlet; previous record: three
• Phillips discovers Kuparuk Palm satellite
• Phillips first double-hull tanker, Polar Endeavour, enters service, first of "Endeavor Class"
• Unocal, Marathon launch Kenai Kachemak pipeline project
• Unocal sets Cook Inlet well production record at King Salmon platform
• ConocoPhillips and Anadarko announce first discoveries in NPR-A since opened to leasing — area now referred to as Greater Moose's Tooth Area
• 50 million barrel Meltwater field goes on line

2002

• Average WTI crude oil price in 2002 is $22.81
• Frank Murkowski (R) elected governor (2002-2006)
• Anadarko operates its first exploration well in NPR-A
• BP begins production of Beaufort Sea Northstar field from a 5-acre man-made island
• State renews TAPS right of way for 30 years
• Unocal shuts in Dillon and Baker platforms in Cook Inlet
• North Slope Foothills sale generates bids on 1,119,360 acres, sets state acreage record

JUDY PATRICK

BP's Badami field

Alpine and Tarn.

Badami, with a reservoir in Tertiary age rocks called turbidites, was the first producing oil field on the slope that involved a purely stratigraphic trap — earlier fields such as Prudhoe Bay and Kuparuk River involved large combined structural and stratigraphic traps.

Badami also pioneered the "small footprint" approach to North Slope oil and gas development, in which wells are drilled from a relatively small central pad rather than being dispersed across a large surface area.

But because the Badami reservoir consists of large numbers of relatively small sandstone compartments, oil production from the field dropped precipitously after initial startup. And in 2003 BP suspended production from the field. The company restarted the field in 2005, with plans to study new technologies (e.g. horizontal drilling techniques) to assess if field redevelopment is warranted.

Pioneering pentalateral well produces

BP Exploration (Alaska) set a Prudhoe Bay record in 2005, drilling five horizontal lateral legs from a single well bore, to access as much reservoir sand as possible in the shallow Schrader Bluff reservoir.

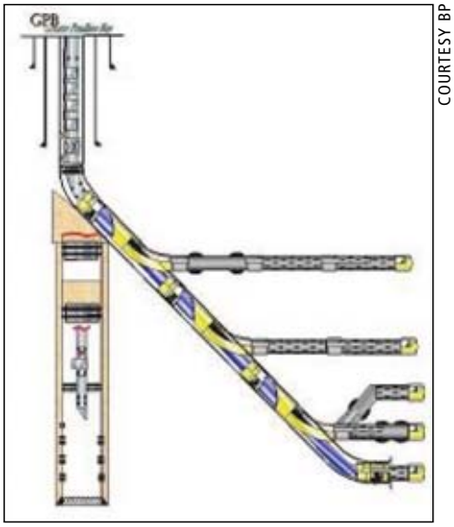
In 2003 BP drilled the first trilateral well on the North Slope, and in 2004 it drilled the first quadrilateral. All targeted the Schrader, either at Orion or Polaris, two satellite fields under development on the western side of the Prudhoe Bay field.

The new technology has made Schrader Bluff economic. North Slope viscous oil is in shallow reservoirs, close to the permafrost: it is cold and doesn't flow as readily as oil in deeper, warmer reservoirs.

In the 1990s the formation was tapped with vertical wells, crossing vertically through multiple narrow reservoir sands, but production rates were not economic. Now horizontal drilling opens reservoirs to production for a mile or more.

The five horizontal laterals in the S-213A well at Polaris access 27,000 feet of reservoir, compared to 200-250 feet of reservoir opened up when a well is drilled vertically through four or five Schrader Bluff sands each up to 50 feet thick, according to Gil Beuhler, Prudhoe Bay satellite development manager.

COURTESY BP



BP drilled Alaska's first pentalateral well in 2003 at Schrader Bluff for the production of viscous oil.

Long-term flow rates are expected up to 1,500 bpd; the original vertical well, the S-213, had a long-term rate of 200-300 bpd, he said.

The pentalateral costs $10 million, four times what a vertical well to the Schrader might cost.

The wells BP is drilling in the Schrader Bluff formation — and wells that ConocoPhillips Alaska is drilling in the analogous West Sak formation at the Kuparuk River field — address the viscous oil productivity issue with technology. The companies have a regional viscous team that shares technology and best practices.

"We can't afford to make the same mistakes across multiple assets. We can't afford to have a success and not apply it across all the assets," Beuhler said.

Marathon steadily increasing Cook Inlet gas production

Marathon Oil continues to develop new gas production from its existing Cook Inlet Basin onshore fields while also looking for new natural gas fields, Marathon's top Alaska executive, John Barnes, said May 18, 2006.

Marathon produces gas from the Kenai, Cannery Loop, Ninilchik, Beaver Creek and West Fork fields on the Kenai Peninsula, and from the Unocal-operated McArthur River field on the west side of Cook Inlet.

First production from Kasilof, the company's newest gas field, is expected by the

JUDY PATRICK

JOHN BARNES

- Total enters Alaska, picks up 20 tracts in NPR-A
- Armstrong brings independent Pioneer Natural Resources enters to Alaska North Slope as 70% partner in Oooguruk prospect
- Marathon and Unocal discover Ninilchik field, largest gas find in Cook Inlet Basin in 20 years
- BP opens $7.1 million energy center in Anchorage for educational and non-profit use
- Aurora buys last of Anadarko's Cook Inlet assets
- Forest begins production at Redoubt Shoal
- EnCana spuds Beaufort McCovey well, plugs and abandons
- Central Arctic caribou herd in Prudhoe area reaches record 31,857, up from 5,000 in mid-1970s
- North Slope producers release results of $125 million analysis of highway gas pipeline project

2003

- Average WTI crude oil price in 2003 is $31.12
- Alaska Stranded Gas Development Act reauthorized
- Pioneer makes Oooguruk oil discovery in shallow waters of Beaufort Sea
- Unocal finds gas at Happy Valley on Kenai Peninsula
- Alpine field reaches 100 million barrel milestone
- Governor moves functions of Division of

end of 2006.

Marathon has enjoyed particular success in the development of existing fields at its Cannery Loop field, south of the town of Kenai, where gas production has been increasing for several years. Barnes attributed this to two main factors: better identification of pay zones in the Beluga formation and the use of the company's Excape completion technology, which allows multiple zones to be efficiently fracture-stimulated in a well.

Marathon is also drilling a couple of Excape wells in its Kenai gas field in 2006 to help maintain production.

Production continues at about 50 million cubic feet of gas per day from the 2002 Ninilchik discovery, the largest gas find in the Cook Inlet Basin in 20 years. Production facilities are going in at a fifth Ninilchik pad where two wells will be drilled in 2006.

To flatten out gas production peaks and troughs between high winter and low summer demand Marathon obtained a state gas storage lease for the Sterling formation pool 6 C1 and C2 sands of the Kenai gas field. It began gas injection May 8, the day it signed the lease with the state, Barnes said.

In 2007 Marathon plans to do a 3D seismic survey at the Sunrise (East Swanson) gas prospect.

The neglected Cook Inlet basin: has its time come again?

After many years of unsuccessful oil exploration in southern Alaska the discovery of the state's first significant oil field at Swanson River on the Kenai Peninsula in 1957 shot Alaska into the league of oil producing regions. The find also propelled Alaska into statehood in 1959.

The discovery at Swanson River shifted the focus of Alaska exploration activity into the Cook Inlet region and away from areas such as the Alaska Peninsula. As a consequence, between 1958 and 1970 about 160 exploration wells were spudded in the Cook Inlet basin, resulting in the discovery of 13 oil or gas fields in addition to Swanson River.

But the discovery of the giant Prudhoe Bay oil field on the North Slope in 1968 slowed Cook Inlet exploration to a trickle of new wells as explorers headed north in the hopes of another major find in the Arctic.

Forest Oil did bring the Redoubt Shoal field into production in 2002, south of Trading Bay in the Cook Inlet — Redoubt Shoal was discovered back in the 1960s. However, problems with the field reservoir have resulted in disappointing oil production since field startup.

Exploration of the Cook Inlet basin languished until the turn of the century, when impending natural gas shortages in Southcentral Alaska started to spur interest in finding new gas fields. Southcentral had enjoyed the benefits of an excess of stranded natural gas found in association with oil exploration, but the oil and gas fields discovered back in the 1950s and 1960s were running down.

Is this renewed interest in Cook Inlet exploration the dying throes of a basin that achieved its golden age several decades earlier? Or are we about to see a resurgence of the basin as an oil and gas province?

DOE study

A 2004 study by the U.S. Department of Energy postulated an undiscovered Cook Inlet natural gas resource of 25 trillion to 30 trillion cubic feet, more than double the amount already discovered. And most of the gas discoveries to date have resulted from oil exploration — even the new gas field developments often relate to gas finds bypassed when drilling for oil.

COURTESY MARATHON

Marathon's Glacier 1 rig. Marathon, Unocal (now owned by Chevron) and Aurora Gas have been particularly active in Cook Inlet gas development. These companies, between them, have brought 10 new gas fields online since 2000.

Also, most Cook Inlet gas is biogenic in origin, a result of bacterial decomposition of organic material; the gas did not form in association with the Cook Inlet oil.

"Therefore, it is not realistic to conclude that exploration based on oil prospects will necessarily lead to a true evaluation of the basin's gas potential," DOE said.

DOE suggested that the greatest potential for finding new gas is in stratigraphic traps on the flanks of large structures, the crests of which have already been extensively explored.

In addition, gas shortages in Southcentral Alaska have pushed gas prices to levels comparable to the Lower 48, thus encouraging companies to invest in Cook Inlet gas exploration.

Marathon, Unocal (now owned by Chevron) and Aurora Gas have been particularly active in Cook Inlet gas development. These companies, between them, have brought 10 new gas fields on line since 2000.

Totem Ocean Trailer Express

Once considered the last frontier, Alaska has always presented unique challenges for those who live and do business here. For many years, a fast, competitive and reliable way to bring vital goods to Alaska simply did not exist.

In September 1975, during the height of construction of the trans-Alaska oil pipeline, Totem Ocean Trailer Express, or TOTE as they are commonly known, was founded on the idea that moving goods to Alaska could be done more efficiently and with greater speed. Three decades later, TOTE not only continues to expedite cargo to Alaska, they continue to renew their commitment to delivering vital goods for Alaska's future.

Headquartered in Federal Way, Wash., TOTE has offices and cargo terminals in Tacoma, Anchorage and Fairbanks. In addition, there are offices in Chicago, Houston, Los Angeles, Kenai and Portland. It is from these strategic locations that TOTE efficiently routes cargo from anywhere in North America and delivers it to job sites in Alaska

The unwavering commitment to serve Alaska is at the heart of TOTE's decision to invest in new ships, terminals, equipment and technology. In 2003, TOTE built two new 840-foot vessels to meet the growing needs of its customers. The ships, the first two members of the Orca class, are 50 feet longer and 26 feet wider than TOTE's original vessels, furthering the company's commitment to serve Alaska's needs for decades to come.

TOTE's new vessels meet the needs of project cargo shippers and alleviate most cargo size constraints. The new ships were built with 85 percent of the deck space covered, including an overhead clearance of 19 feet on the main deck to accommodate over-height and over-dimensional freight. TOTE's ships are specially-designed for the rigors of the tough Alaskan voyage. An unusually high freeboard and a unique protective cover on the bow combine to keep cargo dry while trailers, machinery, vehicle and other cargo is stowed on the lower decks.

The MV Midnight Sun and the MV North Star sail from Tacoma each week – early Thursday and Saturday mornings – arriving in Anchorage to begin early morning unloading operations on Sundays and Tuesdays. TOTE uses its own line-haul trucking and trailer-on-a-flatcar service for next-day delivery to Fairbanks and the Kenai Peninsula.

A key to TOTE's speed and efficiency is the Roll On/Roll Off (RO/RO) method of loading. Instead of loading containers one at a time with a crane, almost anything can simply be driven, or rolled, onto the ships. Consequently, in less than 12 hours the vessel is completely unloaded and loaded and ready for the return voyage. That is significantly less time than it takes a barge or container ship to do the same job.

To keep things organized and moving quickly, TOTE utilizes the most modern, computerized cargo management system to track the movement of cargo every step of the way. In addition, TOTE is ISO 9001-2000 certified, a testimony to its commitment to quality, service, safety and reliability.

TOTE's investment in state-of-the-art, environmentally-friendly vessels like the MV Midnight Sun and the MV North Star also reaffirms the company's commitment to a healthy and prosperous Alaska. The ships feature clean, fuel efficient engines and fresh water ballast to help keep the pristine waters of Alaska pure.

Totem Ocean Trailer Express is a company that is very proud to play a part in helping the 49th state grow and prosper, and proud to offer its customers a unique advantage when shipping to Alaska. It is a company that is committed to being a reliable, competitive and responsive transportation partner to its customers and the people of Alaska – now and for years to come.

For more information, visit TOTE at www.totemocean.com.

Udelhoven Oilfield System Services

Solid reputation carries company for three decades

At Udelhoven Oilfield System Services Inc., the phrase R & R doesn't mean kick back and take it easy. Quite the contrary — at this long-time Alaska firm, it means reputation and reliability.

A privately owned Alaska business for 36 years, Udelhoven Oilfield System Services has provided construction and maintenance support for development in all of Alaska's oil fields, as well as the gas and power industries.

Udelhoven provides quality assurance, electrical and instrumentation support, startup, pre-commissioning and commissioning activities for new construction and shutdowns, turnarounds and revamps.

On the North Slope and in Cook Inlet, the versatile company currently specializes in three areas: third party inspections, functional checkout and project management. But it also offers a variety of services in engineering, construction and maintenance.

Inspection and functional checkout

"As a result of many successful projects both large and small," says Udelhoven's President Jim Gilbert, "many clients have come to rely on our inspection and commission services to maintain quality in either existing facilities, new facilities or maintenance projects."

Drawing from a pool of carefully selected personnel, Udelhoven provides functional verification of new or existing equipment and systems and inspection and commissioning for electrical, instrumentation, controls, piping, mechanical and welding through all phases of a project from pre-construction through training and start up. Functional checkout includes module construction and control system field-testing to verify compliance with codes and regulations and to ensure system operability.

Expanding and changing focus

During the last decade, Udelhoven's involvement on the North Slope has moved away from construction and toward quality assurance, maintenance and project management services. The company's work was originally 100 percent oil-related, but since the oil price reductions of the 1980s, work has expanded outside of the industry.

Most of the non-oil work involves electrical and mechanical subcontracting, including military projects, hospitals and both rural and urban schools.

Safety sense

"It is our belief that safety and operational efficiency are inseparable," says Gilbert. "Our existing comprehensive safety program has resulted in a record we are proud of and continually demonstrates to our employees our commitment to their health and well being." We just surpassed two million man-hours without a lost time accident.

Support services

Frequently Udelhoven crews are asked to stay on for short or long term instrumentation and maintenance support.

"On the industrial and mechanical side of the company, inspections are ongoing and often our commission and startup inspections roll over to technicians," says Gilbert. "Clients frequently keep us around to manage maintenance."

Expanding globally

In addition to Alaska projects, Udelhoven companies work in a variety of locations, serving a wide range of industries from petrochemical to power generation. Alaska offices are located in Nikiski, Prudhoe Bay and Anchorage. The Houston, Texas, office is currently focusing on new projects in the Gulf of Mexico, and the most recent additions to the portfolio are Beijing, China and Tbilisi, Georgia.

The reputation factor

"Our reputation for honesty and integrity brings us business," says Gilbert. "Company revenues have grown 15-20 percent every year for the last six years. We don't even have to bid a lot of our work. They come to us, especially on the oil side. But, construction contractors also seek us out as subcontractors, too. They want a proven track record."

Company founder and CEO Jim Udelhoven has his own version of the real estate mantra — location, location, location. To him, it's reputation, reputation, reputation. "Work can be taken from us in many ways, but our reputation is ours to lose," he says. "Our reputation is the key that will open doors to new business in the future."

Governmental Coordination and Fish & Game Habitat Division to DNR
• Governor signs legislation to streamline Alaska Coastal Management Program
• State adds state and Native Alaska Peninsula lands near Bristol Bay to five-year leasing program

2004

• Average WTI crude oil price in 2004 is $37.66
• Armstrong brings Kerr-McGee enters to Alaska as 70% partner in North Slope Nikaitchuq prospect
• TAPS owners authorize strategic reconfiguration of the pipeline — the most significant upgrade of the system since construction
• BLM holds NPR-A Northwest lease sale, leasing 1,403,561 acres and generating $54 million
• Alaska daily oil output drops under 1 million barrels
• Petroleum revenue to state $2.3 billion; 87% of state's unrestricted funds
• BP fleet of "Alaska Class" double-hulled tankers begin service in Alaska trade
• Gas pipeline sponsor group submits application under Alaska Stranded Gas Development Act; state begins negotiations
• Marathon discovers Kasilof gas field
• BP drills first quadrilateral well on North Slope
• BP sets coiled tubing drilling record at Niakuk field;

Oil prospects

What about the prospects for further oil finds in the Cook Inlet basin?

U.S. Geological Survey scientists have theorized that Cook Inlet oil discoveries to date have only identified about 4 percent of the oil generated by the oil source rocks. That would suggest that much oil remains to be found in the Inlet.

Escopeta Oil and Gas is in the process of bringing a jack-up rig to the Cook Inlet for 2007 drilling: the company hopes to find some of that missing oil, as well as gas, in its Kitchen and East Kitchen prospects, offshore, north of Nikiski.

Aurora Gas has also taken an interest in oil exploration in the Cook Inlet basin. The company's first wildcat oil well, drilled at the Endeavour prospect in the southwestern Kenai Peninsula in April 2006, proved to be a dry hole. But the company, with its partner Swift Energy, still plans to drill deep for oil at its Aspen prospect on the west side of the Cook Inlet.

And in early 2006 Texas-based Rutter and Wilbanks Corp. purchased the 36,000-acre offshore Northern Lights prospect in the northern part of the Cook Inlet. Northern Lights is known to contain oil, with estimated recoverable oil in the range of 111 million to 358 million barrels.

Creating jobs for Alaskans

COURTESY ALASKA RAILROAD

Unlike most state-owned entities, the Alaska Railroad is incorporated and run like a business, guided by a board of directors. The Alaska Railroad receives no operating funds from the state. Rather, it generates revenues through freight, passenger, and real estate services to cover personnel, operations and maintenance expenses.

Alyeska reconfiguration moves ahead

Alyeska Pipeline Service Co.'s strategic reconfiguration for the trans-Alaska pipeline is moving ahead on an adjusted schedule, with completion expected in the second quarter of 2007.

Alyeska spokesman Mike Heatwole told Petroleum News July 20 that the company is focused on concluding construction, functional checkout and start-up at pump stations 9 and 3 this year, with pump stations 4 and 1 scheduled for 2007. As work — and functional checkout — at each pump station is completed, that pump station will be started up, Heatwole said, and workers will move on to the next pump station.

ALYESKA PIPELINE SERVICE CO.

Pump Station 3, north of the Brooks Range (photo taken in June 2006). The dark green buildings are the new facilities. These include three variable frequency drive modules, three pump motor modules, and two turbine generator modules.

The goal of the project is to minimize the cost of transporting oil by making the system more efficient.

The company began studying modernization of the line in 2001 and completed conceptual engineering in 2002. Pipeline owners approved the project in March 2004 and detailed engineering began, followed in 2005 by module fabrication, installation and onsite construction.

Modernization was one goal. Right sizing was another as the line was designed to handle 2 million barrels a day; present throughput is about 830,000 bpd.

Strategic reconfiguration will size pipeline operations to present levels — with a modular scalable system that allows the line to readily adjust to increased flows if needed.

Heatwole noted that this is the largest investment made in the system since startup in 1977 and represents a significant upgrade in both equipment and technology. The original cost estimate was $250 million, which had grown to $434 million by January 2006, although Alyeska officials told Petroleum News it still remained a "robust" project for Alyeska and its owners.

Automated system

Electric motors are part of the update, along with pumps designed for the flow rate Alyeska is running.

The new equipment will come with new control systems and other controls, such as those at the centralized control center, are being upgraded, including telecommunications.

Pump stations will be automated and the entire system to be run from one control center, eliminating control checking at individual stations. The control center will be relocated from Valdez to Anchorage next year when reconfiguration work is completed.

Maintenance crews will respond from different centers because not every pump station will have a camp after reconfiguration is complete.

Alyeska said the company will not be reducing the number

drilled to 17,500 feet
• ASRC under mentoring agreement with BP to become independent oil and gas company
• Governor signs bills facilitating Bristol Bay exploration
• Viscous oil production across North Slope reaches 30,000 barrels per day
• Five companies offer $53,904,491 in high bonus bids at BLM Northwest NPR-A sale
• Kerr-McGee, Armstrong announces Nikaitchuq oil discovery
• State replaces coalbed methane leasing program with shallow gas leasing program
• Congress passes Alaska Natural Gas Pipeline Act

2005

• Average WTI crude oil price in 2005 is $50.04
• 15 billionth barrel of oil through TAPS leaves North Slope
• Alaska Permanent Fund reaches $32 billion
• 1st Alaska Peninsula areawide lease sale held, receiving 37 bids totaling $1.3 million
• ConocoPhillips-operated Kuparuk field produces 2 billionth barrel of oil
• Marathon finds gas in West Fork Tyonek, Cook Inlet
• MMS conducts Beaufort Sea OCS lease sale, largest

of people dedicated to spill response.

Looking for new oil in old places

While no longer an exploration player on Alaska's North Slope, BP remains a dominant developer as it targets known light oil accumulations around its existing infrastructure, and puts what it calls "risk dollars" into technology development aimed at producing at least a portion of the slope's 15 billion barrel heavy oil resource.

BP Exploration (Alaska) President Steve Marshall said in January 2002 that BP's recent success on the North Slope hasn't been from exploration. From 1991 to 2001 BP found and commercialized 160 million barrels from frontier exploration, which translates to 16 million barrels a year at a cost of $40 million a year.

"In the same period," he said, "we've added almost 900 million barrels of extensions in our existing fields — five times that reserve. That's where we've had the greatest success. And the exploration successes we have had are from satellites — in and around Prudhoe, Milne, Kuparuk. That's what we're going to continue doing."

The only new development BP is considering outside existing North Slope units is its Beaufort Sea Liberty project.

Five billion barrels

BP has "5 billion barrels of known oil and gas" in its Alaska reserves, a resource that will continue to attract capital investment "for many years to come," Marshall said in 2004.

"Our focus on drilling generates new production and new state revenues today — not five, 10 or 15 years from today," he said.

The company's ongoing investments have resulted in a 13 percent increase in BP's production over the last two years, Marshall said in 2004, a production level the company expects to sustain for several years.

Tony Meggs, BP's group vice president for technology, said in 2004 that in the 1970s original Prudhoe Bay field development called for 500 wells. "We've already drilled 1,300 penetrations and plan another 200. Ten years from now I predict we'll have another 200 to drill, regardless of all the drilling we'll do in the meantime."

Of the 5 billion barrels, about 2 billion is proven, and about half of it is light oil. But that only scratches the surface of viscous oil, Marshall said. "We've started to produce viscous, but there's some really heavy stuff out there, called the Ugnu formation — sits just below the permafrost."

Right now BP believes it can get maybe 8 percent of that resource, he said, but in Canada they're producing close to 50 percent recovery "from that same kind of oil, but they don't have permafrost, they don't have the extremes of weather that we do."

But if the technology issues around Ugnu oil can be solved — with steam, bacteria or CO2 — "that could be a huge business for many, many years to come, well beyond 2050."

Flint Hills supplies Alaska's jet fuel

2004

In 2004 Flint Hills Resources purchased the North Pole refinery from Williams Alaska. Flint Hills employs 183 Alaskans at the refinery and products terminal in Anchorage. It is the primary jet fuel supplier for Alaska's airports, providing more than 50 percent of the jet fuel for the Ted Stevens International Airport in Anchorage. Flint Hills is the only refinery currently purchasing royalty oil from the State of Alaska. In 2005 the company paid the State of Alaska $1.2 billion for North Slope crude oil. In 2005, Flint Hills spent in the neighborhood of $45 million with the Alaska Railroad, using approximately 33,000 rail cars to ship petroleum products from North Pole to Anchorage.

British gas major partners with Anadarko, Petro-Canada

London-based BG Group plc, a spin-off 20 years ago from the privatization of the British government-owned gas monopoly British Gas, entered Alaska on Jan. 26 when its Brooks Range Foothills "participation agreement" with Anadarko Petroleum and Petro-Canada went into effect.


GLENN MCNAMARA

Formally announced Feb. 7, the deal gives BG Group's new Alaska subsidiary, BG Alaska E&P Inc., a "33.33 percent equity share in 2.1 million acres" in the Brooks Range Foothills.

Each partner now owns a one-third working interest in the acreage. Anadarko will continue to serve as operator.

BG's Alaska subsidiary will be managed by Glenn McNamara, president of BG's Calgary subsidiary.

Mark Hanley, Anadarko's spokesman in Alaska, said "frontier exploration tends to be riskier and we've always said we preferred having a third partner for the Foothills acreage," referring to two partners that have walked away from the consortium in

Unitech of Alaska

Pallets, pails and pumps, shovels, sand and sorbent, containers, cans and kits — Unitech supplies it all, with a steady stream of good cheer

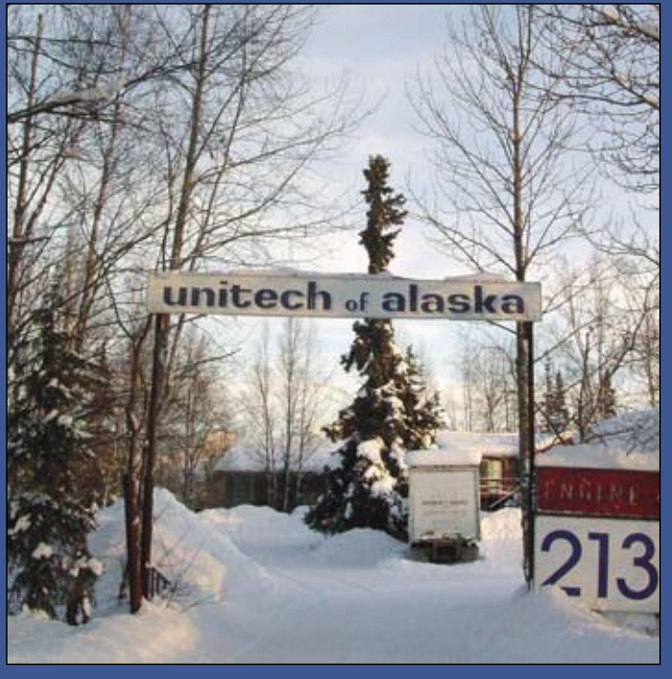
Garrett Miller displays a small, under vehicle containment berm. Miller is a warehouseman, designer and fabricator.

Tucked away in the trees at the end of East Dimond Boulevard in Anchorage is Unitech of Alaska, a warehouse bursting at the seams with environmental equipment and industrial supplies.

"We've worked hard during the last few years of turmoil to keep things going smoothly and continue building the business, which has brought us close," says General Manager Debbie Hawley. "We're like a family, a little family who takes care of each other, backs each other up — everything a family does."

An Alaska owned and operated company since 1985, Unitech took a turn for the worse after the death of a major shareholder, until Don Rogahn of North Star Wiper and Absorbent purchased it in April 2001.

"Now we're doing great! Don's been in the industry for 35 years and has holdings all across the country. With his help we have stabilized and added lines, especially in sampling and filtration supplies."



Once a 14-employee company, it now operates efficiently with four knowledgeable staff members: Hawley; Curly Arndt, sales manager; Dave Herrell, outside sales representative; and Garrett Miller, warehouse manager/custom designer.

Dave and Curly are an ideal sales duo: Dave is a former environmental business owner and Curly, a company veteran, has been called a "walking catalog." From her office in the depths of the warehouse, Debbie runs a tight ship and dispenses good cheer. Garrett, an employee for seven and a half years, designs and fabricates custom containment berms and spill kits and liners from geotextiles that protect the ground under tanks and vehicles. Unitech also fabricates custom filtration systems.

Trained in oil spill response and hazardous material handling and response, the staff is often called upon to consult and problem solve with clients to determine the best approach to cleanup or remediation challenges.

Solid service

"We put the customer first, by providing attentive customer service, which obviously keeps people coming back. We're a one-stop shop available 24 hours a day," says Hawley. "We always have somebody on call after hours. Once, to help a customer make a deadline, we got the order ready, staged it, and would have even had it delivered for them if we needed to — we really do go the extra mile."

Unitech is the only stocking distributor in the state with a full line of oil spill; remediation; environmental and safety supplies. "With United Sorbents, LLC coming online this past year in Kent, Washington, we are able to provide faster turns on orders," Hawley said. Unitech currently has a network of over 200 manufacturers.

"And, we're always on the lookout for new products that help our customers," says Herrell.

The company wants to outgrow its current location according to Hawley, "that would mean we are growing and doing really well. We want to keep our customers by providing the best price, the best product and the best service."

since 1988, garners 121 bids, $46.7 million for some 618,751 acres
• Armstrong sells North Slope assets to Eni
• Forest announces Alaska strategy will be production growth from onshore gas
• Shell returns, bids $44 million in Beaufort sale
• BP drills first pentalateral well on North Slope
• If sanctioned, BP says Liberty facilities to be onshore
• Interior, USDA, EPA, Corps of Engineers sign MOU to expedite federal oil and gas permitting
• Three Mile Creek gas discovery made by Aurora Gas, onshore west side of Cook Inlet
• Rutter and Wilbanks drills Ahtna No. 1-19 exploration well near Glennallen in Copper River Basin
• New state North Slope coastal tundra protection standards allow earliest start of exploration since 1995
• Tesoro's Nikiski refinery announces $45 million project to produce ultra low sulfur diesel
• University of Alaska Fairbanks sets out to double petroleum engineering program enrollment

2006

• Alaska Permanent Fund reaches $34 billion
• Pioneer approves Oooguruk development — will be first independent-operated North Slope oil field

past years for reasons unrelated to it.

BG's involvement, he said, could mean Anadarko will "consider some exploration drilling in the foothills in the near feature."

Specially built for the Arctic

Pioneer Natural Resources is "very, very pleased" with the performance of the new Arctic Fox Rig No. 1, designed and built at its request by joint venture partners Doyon Drilling and Akita Drilling. Doyon is based in Anchorage and Akita in Calgary.

The lightweight, truckable rig was used to drill three North Slope exploration wells close to infrastructure between late January and early April 2006.

Built by Akita in Alberta, the rig is similar to those used in northern Canada, but the Arctic Fox was designed specifically for North Slope wells, Pioneer has said.

Akita and Doyon are sending a second Arctic rig to the North Slope for the 2006-07 drilling season. The $13.2 million Arctic Wolf Rig No. 1 has also been custom designed for use in "northern applications." It will be drilling exploration wells for Talisman Energy's Alaska subsidiary FEX in the National Petroleum Reserve-Alaska.

Armstrong pulls in Eni

2005

In 2005 Armstrong Alaska — the small independent instrumental in bringing three new oil companies to Alaska — sold all of its oil and gas leases in Alaska to one of those new companies, Eni Petroleum Exploration Co., an affiliate of Italy's Eni SpA. "We were not capitalized enough to do the things our North Slope partners Pioneer Natural Resources and Kerr-McGee wanted to do. They've both been incredibly great partners for us. It was important to me not to slow them down and be a drag on development at Oooguruk and Nikaitchuq, so we sold our assets to Eni," Armstrong Oil & Gas President Bill Armstrong said after the sale.

May Pioneer said it struck oil at its Cronus No. 1 well.

In March AVCG/Brooks Range Petroleum formed a joint venture with Calgary-based TG World Energy Co., which acquired an interest in most of AVCG's oil and gas leases and agreed to participate in the exploration and development of those leases.

Thompson said that the joint venture with Ramshorn is similar to that with TG World. Ramshorn has paid cash to AVCG to compensate for a portion of the cost of the land and the cost of exploration work such as seismic acquisition and geological studies. Once drilling starts, Ramshorn will pay an undisclosed percentage greater than 25 percent of drilling costs, to earn the 25 percent interest in the prospects.

Brooks Range exploration plans for the 2006-07 winter drilling season will likely include seismic and two exploration wells north of Prudhoe Bay.

Chevron to begin North Slope exploration in '07

John Zager, Chevron's general manager in Alaska, said June 5, 2006, that his company expects to begin exploration drilling of its North Slope White Hills acreage in the winter of 2007-08.

According to Zager it will be the first Chevron-operated drilling on the North Slope since the Amethyst State No. 1 well was drilled in February 1994 by Unocal, which has since been purchased by Chevron.


JOHN ZAGER

The White Hills are west of the Sagavanirktok River, south of the Kuparuk River field and southwest of the Prudhoe Bay field in Alaska's central North Slope. Unocal acquired the initial White Hills tracts in 2001 and an additional 48 tracts in the March 1, 2006, State of Alaska North Slope areawide lease sale. Zager said the company has a total of 68 tracts in the White Hills area.

"Currently we plan to drill as soon as the 2007-08 season, assuming all commercial and logistical aspects come together; seismic could occur as early as the 2006-07 season," Zager said in e-mails with Petroleum News.

AVCG, Ramshorn form joint venture

In June 2006 Alaska Venture Capital Group and its operating company Brooks Range Petroleum formed a joint venture with Ramshorn Exploration, a Houston-based private equity company associated with drilling contractor Nabors Industries Inc.

"Ramshorn Exploration has acquired a 25 percent working interest in all of AVCG's North Slope acreage and exploration prospects," Ken Thompson, managing director of AVCG, told Petroleum News on July 19. "They'll also own that 25 percent in all future prospects."

Since 1999 AVCG, a small Kansas-based independent, has established a substantial lease position close to infrastructure on the central North Slope, with oil prospects at Gwydyr Bay, Whiskey Gulch, Ocean Point and Titania.

The company also owns a 10 percent interest in the Pioneer Natural Resources-operated Cronus unit, southwest of Kuparuk. In

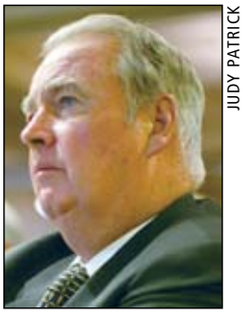
• Rutter and Wilbanks buys Cook Inlet Northern Lights (Sunfish/Tyonek Deep) prospect
• Governor reaches agreement with Gas Pipeline sponsor group on gas pipeline fiscal contract and 20% petroleum profits tax (PPT)
• Legislature fails to reach agreement on PPT and gas contract during regular and first special session; Governor convenes second special session
• Escopeta permits Kitchen prospect in Cook Inlet, will use utilizing jack-up rig
• Shell, ConocoPhillips, GX Technology plan seismic shoot in Chukchi Sea, ahead of 2007 lease sale
• Alyeska wins API distinguished operator award – — highest honor pipeline company can receive
• BP responds to 200,000 gallon oil spill from transit line to trans-Alaska pipeline
• Pioneer discovers oil in Cronus No. 1 well on North Slope, southwest of Kuparuk unit, independents AVCG and Brooks Range Petroleum participate
• BP develops hot waterflood program for viscous oil on North Slope
• BG and Anadarko partner at Jacob's Ladder, an eastern North Slope oil prospect
• Aurora Gas drills Endeavour No. 1, its first oil exploration well in Cook Inlet Basin
• 19,000 oil tankers have 'called on' Valdez to date

Alaska Legislature continues to work proposed production tax

PPT, the production profits tax, was introduced by Gov. Frank Murkowski in February 2006.

The PPT would replace the state's production severance tax — based on the wellhead value of oil (transportation costs are deducted) — with a tax on profits, basically a tax on the net as opposed to a tax on the gross.

The administration's goal was to encourage more investment on the North Slope by providing credits as part of the tax system. Currently there is no tax benefit to producers from reinvesting Alaska profits in Alaska and the administration has estimated that twice the current $1 billion per year capital investment on the North Slope is needed to hold oil production decline flat.


JUDY PATRICK
GOV. FRANK MURKOWSKI

The PPT was to be tied to a fiscal contract for the Alaska gas pipeline project, for the duration of the contract, to ensure that fiscal certainty on natural gas wasn't undermined by increases in oil taxes, problematic to gas pipeline economics since both oil and gas come from the same reservoirs and use many of the same facilities.

There have been calls in recent years to revise the state's severance tax because, while ELF was designed to encourage development from smaller fields with lower rates, it has resulted in reduced tax levels at large fields, such as Kuparuk.

The 20/20 bill

Legislators, and their consultants, worked the governor's PPT proposal in both the House and Senate. The House passed an amended version of a Senate bill in the fading hours of the regular session but the Senate rejected changes made on the House floor.

The governor negotiated a 20 percent tax rate and a 20 percent credit as part of the fiscal contract, the so-called 20/20; he has said the producers wanted a 12 percent rate. Legislators wanted more than 20 percent; and they wanted "progressivity" — an increasing tax rate tied to increasing oil prices.

There were also calls for a tax floor: the administration has said that the proposed PPT is already progressive, providing more production tax revenues to the state at higher oil prices; at very low oil prices there would be no production tax revenues. The state would thus share the risks of low oil prices and the rewards of high oil prices with the producers.

The PPT would be in addition to other taxes collected by the state: a minimum 12.5 percent royalty from state leases; property tax; and state corporate income tax.

Special sessions

The governor reintroduced a 20/20 PPT in the summer's first special session and legislators revised it; this time around it was the House which rejected a compromise PPT bill negotiated between the bodies.

An amendment from the special session which showed promise, and which the governor adopted in the PPT introduced in the summer's second special session July 12, was a graduated application of oil tax surety: none until a gas pipeline project is sanctioned; then surety during production until construction costs are recovered.

The second special session is scheduled to adjourn August 10, 2006. As the Legislature continues the debate on PPT, other proposals are coming forward, ranging from basing the tax on gross, a sliding scale tax and basing the tax rate on investment.

At the time of publication of this magazine, no decisions have been reached. Any change the Legislature makes to the structure of Alaska's oil taxes will have an immediate and lasting impact on the future of the industry and the state.

Adding to this timeline

This timeline will be posted on both the Alaska Oil and Gas Association's Web page (www.aoga.org) and Petroleum News' Web page (www.PetroleumNews.com).

Our apologies to those people, companies and agencies whose significant events are not included in this Alaska oil and gas history timeline. We will be adding new events to the timeline on a monthly basis, but we will also be adding things from the past.

The last few weeks have been busy for our staffs, so we're sure there are a number of happenings that have been accidentally overlooked. Others might have been left out because of space considerations.

If you have an event you think belongs in this timeline, please e-mail it to either Kara Moriarty at AOGA (moriarty@aoga.org) or Amy Spittler at Petroleum News (aspittler@petroleumnews.com).

Or you can send submissions by U.S. mail to Kara Moriarty, external affairs manager, AOGA, 121 W. Fireweed Lane, Suite 207, Anchorage, AK 99503.

We can't guarantee we will include an event, as all entrees have to pass a significance and accuracy standard, but we will give all submissions consideration.

XTO Energy

XTO purchased Shell's Cook Inlet interests in 1998 and has been the only driller in the Inlet for the past two years.

XTO Energy Inc. is a premier domestic natural gas producer engaged in the acquisition, exploitation and development of high-quality, long-lived producing natural gas and oil properties. Established in 1986 as Cross Timbers Oil Company, XTO now owns interests in 18,863 wells in Alaska, Texas, New Mexico, Oklahoma, Arkansas, Kansas, Louisiana, Colorado, Wyoming, Utah and Mississippi. Headquarters are located in Fort Worth, Texas.

The Company's reserves have grown from 296 billion cubic feet equivalent (Bcfe) in 1993 to 7.622 trillion cubic feet equivalent (Tcfe) today, of which 69% is proved developed, making it the fourth largest owner of domestic natural gas reserves among the independents.

Over its 19-year history, XTO Energy has amassed a portfolio of legacy assets that has fueled remarkably consistent growth in production and reserves, on a per share basis. Reserves on acquired properties have grown an average of 95% from the date of acquisition. The Company is a leader in low-cost development and high-margin economic return. As a result, tremendous value has been created for the shareholders and the stock has performed well - - - up about 41 times since IPO in 1993.

In 1998, XTO purchased the Middle Ground Shoal Field in Alaska's Cook Inlet. This highly complex field has contributed about 2,900 barrels of oil per day in production through the 1st quarter of 2006. The Company operates two platforms in about 70 feet of water with 40 active wells, both production and injection.

Perhaps most importantly, XTO Energy is poised to continue its extraordinary performance. The Company holds an unprecedented inventory of low-risk projects that will fuel double-digit growth in production for years to come. In 2005, XTO achieved production and reserve growth of about 30%, marking our twelfth year of increases. With 70 drilling rigs currently active the Company is on pace to deliver 11 – 12% production growth for 2006. XTO Energy will continue to be a leader, delivering drill-bit growth and acquiring strategic assets.

Members of the Alaska House of Representatives Special Committee on Oil & Gas get a first-hand look at crude oil production in the Cook Inlet.

Alaska Oil and Gas Association

www.aoga.org