

# Seventy SIX

May  
June 1984



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## 1983: difficult challenges, encouraging trends.

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Unocal Chairman and President Fred L. Hartley addressed the annual meeting of shareholders on April 30 at Union Oil Center in Los Angeles.

Good morning, ladies and gentlemen, and welcome to this first annual meeting of Unocal Corporation.

As you recall, Unocal came into being following last year's annual meeting, when a large majority of our shareholders approved a reorganization which resulted in Union Oil Company of California becoming a wholly owned subsidiary of Unocal, a Delaware company. In my comments today, I will use the term "Unocal" when referring to the corporation and its financial results. When discussing operations, I will use the more familiar term, "Union."

Focusing first on the petroleum industry in general, it hardly needs saying that the industry went through a difficult period in 1983. Natural gas sales and average natural gas prices were depressed. Oil prices and refining margins slipped. And overall demand, reflecting continued conservation and the lingering effects of the recession, was slack. In 1978, for example, the U.S. consumed 18.9 million barrels of oil per day. In 1983, that figure was down 20 percent to 15.1 million barrels.

The combination of these adverse factors reduced earnings throughout the oil industry. They also affected Unocal's earnings, causing us to experience a 22 percent decline from 1982's record level. We think 1983's setback was temporary, and that we're now back on a favorable upward growth trend.

Some of the recent improvements in the nation's economy are already having a positive effect on many of our business segments.

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Inflation was only 3.2 percent last year, the lowest rate since 1967 and down dramatically from the 1980 high of 13.5 percent.

There has also been a strong and steady rise in worker productivity after years of near stagnation. I strongly hope that we may have at last broken the unholy alliance of inflation, automatic wage escalation, and low productivity. If true, this suggests to me that both management and labor are now facing up to their national responsibilities. Meanwhile, the unemployment rate is falling, total employment is at record levels, and autos, houses and other big ticket items are selling well.

*Fred L. Hartley and Corporate Secretary  
Robert O. Hedley*

However, I'm not saying that all is well. While interest rates are down sharply from the 20 percent prime rate in 1981, they remain several points higher than they should be and are threatening to go even higher. For this reason, as well as others, our leaders in Washington must work together to find a bipartisan solution to problems of the budget deficit. Assuming they do so, the long-term outlook for the national economy is a good one.

And so is Unocal's. Despite the short-term problems of 1983, our strategy for the future has not changed. We are an independent high technology company seeking innovative and profitable ways to find and produce a variety of the earth's resources. We continue to focus heavily on expanding our resource base,

especially domestic oil and natural gas, on increasing our productivity, and on expanding the markets for our products.

Let's turn to a description of how our activities fit into that strategy.

Although the range of our operations is wide, the core of the company's growth and earnings still rests on a petroleum exploration and production base. In 1983, we increased domestic crude oil reserves and production. Worldwide, we achieved higher crude oil production for the second straight year—though reserves did show a slight decrease. And while domestic natural gas production and reserves were down slightly, foreign production and reserves were notably higher.

At last year's meeting, I reported that we had begun production in the first two oil fields to be developed in the Dutch sector of the North Sea, Helm and Helder. In 1983, we brought a third field, Hoorn, on line and succeeded in raising overall Dutch sector production to more than 30,000 barrels per day, some 20 percent above previous peak production estimates.

Natural gas production in the Gulf of Thailand is also expanding. Last year, we installed two additional platforms in the original Erawan field. Following seven months of accelerated development, we launched production from the Baanpot field which is in the second contract area.

Gross production from Erawan averaged 146 million cubic feet per day during 1983. When both contract areas are on line in 1985, we will have the capacity to produce more than 400 million cubic feet per day.



Condensate production from our fields has been running ahead of Thailand's refining demand, and the government has allowed us to export surplus quantities. The first 510,000-barrel shipment of Thai-produced condensate arrived at our Los Angeles Refinery in March.

Union made or participated in several oil discoveries in European waters in 1983. One, offshore southeast Ireland, was in an area of the Celtic Sea where Union holds interests in 15 blocks. A delineation well was a dry hole, and the information from that well and the earlier discovery well are

*Union Oil Company of Thailand is expanding gas and condensate production from its offshore fields.*

under study. Meanwhile, we are participating in another exploration well 50 miles to the southwest, which is on another structure in a similar geologic environment. During the year, Union also announced a discovery in the British sector of the North Sea.

Union's Canadian subsidiary made good progress in 1983, recording higher crude oil, condensate and natural gas production and prices. Also in Canada, construction of our Obed Marsh Thermal Coal Project in Alberta continued on schedule. We expect to make our first coal shipment in the third quarter of this year.

An earlier oil discovery in the Slave field was confirmed by additional drilling, and acreage interests were expanded in north central Alberta.

Promising new developments also took place here at home.

Platform Habitat in the Santa Barbara Channel's Pitas Point field began natural gas production in December and is currently producing about 60 million cubic feet per day. Crude oil production from Platform Edith in the new Beta field offshore Huntington Beach began this year.

We confirmed our discovery in the Pt. Pedernales field in California's highly promising Santa Maria Basin and expect to start production by early 1986. We also made a natural gas discovery, yet to be confirmed, near Houston.

We are continuing to expand our exploration program into new domestic prospects. As evidence of our aggressive strategy, we spent \$114 million to obtain important acreage in two area-wide federal offshore lease sales held this month.

In OCS sale #83 in the Navarin Basin of the Bering Sea, we acquired varying interests in nine tracts totaling 49,000 acres. We consider this to be the most attractive Bering Sea basin. Survey work will be conducted on these leases this summer, with drilling to follow in mid-1985. In earlier sales, we acquired lease interests in 14 blocks in the other two major Bering Sea basins—the Norton Sound and St. George.

Last week, in OCS sale #81, we acquired interests in 45 tracts covering 238,000 acres in the Gulf of Mexico. These included five tracts in Mobile Bay, an attractive new gas producing area where we participated in a discovery announced in March. The new leases give us interests in 15 tracts in Mobile Bay.

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As to alternative energy, 1983 was a year of gains and challenges.

Union is the world's largest producer of geothermal energy. Our Geothermal Division posted its fifth straight year of rising production—a 17 percent increase in kilowatt-hours produced worldwide. Growth of the Geysers project in Northern California raised total Union-operated field capacity there to almost one million kilowatts. Expansion at our two fields in the Philippines raised capacity to 550,000 kilowatts in 1983, with a further boost to 660,000 kilowatts scheduled for 1984.

We are also encouraged about another geothermal project in Southeast Asia. Under a joint venture agreement with Pertamina, the Indonesian state oil company, Union has drilled five successful geothermal exploration wells south of Jakarta on the island of Java. We believe that the area has potential for a commercial project, and drilling will resume this year to determine if this is true.

Returning to California, I can report that our efforts to develop the rich energy resources of the Imperial Valley are slowly advancing from the demonstration stage to commercial scale operations.

Our 10,000 kilowatt pilot plants at the Salton Sea and at Brawley were designed to develop and prove-out techniques for handling the valley's super-saline geothermal fluids. Both of these plants had excellent on-line availability this past year. The Salton Sea project achieved a load factor



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greater than 90 percent during a nine-month run between scheduled turn-arounds. We are encouraged by these results, and discussions and studies are under way with our utility customer to expand operations at the Salton Sea resource.

At Heber, also in the Imperial Valley, we will soon be supplying geothermal steam to power two new plants capable of generating a combined 117,000 kilowatts of capacity. These two plants should be producing power in 1985.

On our other alternative energy front, we also made great progress in 1983 with our pioneering shale oil project. This is America's first such effort on a commercial scale.

Last September, we completed construction and successfully commissioned two of the project's three elements—the underground mine and the upgrading facility.

Although significant progress has been made in starting up the third element, the upflow retort, start-up has proved to be more difficult than anticipated.

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*The Geysers geothermal project in Northern California is the world's largest.*

Some background on the retort's design may be helpful in understanding the cause of the delay. Following the production of shale ore by the room and pillar mining method, the ore is crushed, sized, and conveyed to the bottom of the 108-foot-high structure standing on a bench cut into the mountainside. A 10-foot diameter rock pump slowly injects the oil shale rock upward into a large inverted cone that stands 34 feet high.

As the ore is pushed up, hot gas is drawn down, heating the top of the shale bed to nearly 1,000 degrees Fahrenheit and releasing the oil. While this is taking place, a rotating scraper, suspended from the top of the retort, guides the spent shale over the side of the cone and into disposal chutes—or at least was supposed to.

Preliminary testing in start-up runs demonstrated that the retort's most critical design feature, the rock pump, worked smoothly. A number of minor mechanical problems cropped up but were quickly resolved. Problems in the scraper mechanism proved more serious, however, and we were forced to return to basic research to understand what was happening and find out how to correct it. We now have that knowledge. We have tested the new scraper design and it works.

The retort was fired up to operating temperatures this past weekend, but we were unable to achieve sustained production. We shut down when we encountered problems in cooling the retorted shale. Briefly, the retorted



shale is finer than originally anticipated and tends to plug the cooling system. Over the next few weeks, we will make additional modifications in the system. I am optimistic that we will shortly overcome this mechanical problem, and that we will be up and running soon.

In response to a solicitation from the Synthetic Fuels Corporation, we are negotiating a new price support agreement that would enable us to expand our shale oil operations over the next decade up to a total of 50,000 barrels per day. Our final decision to proceed will not be made until the design, mechanics, and economics of the first 10,000 barrel per day project have been confirmed.

Turning now to our domestic refining and marketing operations, I'm pleased to report that, despite oversupply and declining demand, Union increased its sales of petroleum products six percent last year.

Much of this increase was due to our efforts to provide quality products and service. We extended our 76 PROTECH guaranteed auto repair program to the entire West Coast, and increased our nationwide credit card accounts by 10 percent. We also maintained our position as the West's only major supplier of leaded premium gasoline.

*Progress continues on the start-up of Union's pioneering shale oil project in Colorado.*



Meanwhile, we extended our self service outlets, added nearly 500 Union-branded service stations through our eastern jobber network and surpassed previous motor fuel sales records in our Auto/Truckstop system by almost one-third.

The company's refineries operated at slightly higher capacity in 1983 while moving ahead with projects to produce more high value products from lower priced crude oils, to improve energy efficiency and to reduce emissions.

*Union increased its nationwide credit card accounts by 10 percent in 1983.*

The recession had a depressive effect on our chemicals and metals earnings last year, but both began to rebound as the economy picked up. Our chemicals business segment maintained sound profit levels and actually improved market share in several areas. The metals segment felt the effect of depressed markets to a much greater degree. But, here again, we took steps to strengthen our competitive position.

Last September, Molycorp dedicated a new underground molybdenum mine and modernized mill at Questa, New Mexico. The mine is a thoroughly automated facility which utilizes the cost-effective gravity block caving method for mining the ore.

When operating at capacity, the mine can produce 18,000 tons of ore per day. This is milled and concentrated to yield about 55,000 pounds of contained molybdenum in concentrate.

Construction, mine development and mill remodeling for this \$250 million project were largely accomplished by Molycorp's own workers. They were retrained for these tasks, and for underground operations, while on the job and with no layoffs.

Molycorp's molybdenum upgrading facilities in Washington, Pennsylvania, have been modernized. The company is now in an excellent position to produce highly competitive products. Molybdenum is a vital ingredient in steel alloys and refining catalysts.

At Mountain Pass, California, Molycorp is the world's largest producer of lanthanides, or rare earths. Sales of these exotic metals, used in a growing number of high tech products—from television picture tubes to super magnets—increased approximately 20 percent in 1983.

Overall fertilizer sales were down slightly in 1983 despite the fact that sales volumes to the export market were substantially higher. Currently, domestic demand is increasing, and export requirements are continuing at a high rate.

Our petrochemicals segment added several promising polymer emulsion products last year. We carved out a larger market share for our solvent products following the opening of new chemicals distribution centers in Cleveland, Cincinnati and Pensacola.



The carbon group's \$43 million cogeneration facility at the Contra Costa coke calcining plant began operation in December. The plant uses waste heat from the coke calcining process to generate 27,000 kilowatts of electricity which is then sold to Pacific Gas and Electric Company.

As this brief overview suggests, Union has entered 1984 with a variety of programs offering prospects for higher earnings in the years ahead. To boost the profitability of current operations, we are continuing our efforts

*The addition of two coker drums to the Chicago Refinery's existing coker will increase the unit's capacity by 45 percent.*

to cut costs and to increase productivity. Looking to the future, we are also continuing our significant research program aimed primarily at providing innovative ways to find and produce needed new energy resources.

Our major corporate goal has always been to achieve solid long-term growth in profits. Our past record is a good one, and we are confident that our future record will likewise be a good one. Let me stress that we have the corporate strength to achieve this growth. Our balance sheet is strong, and our investment opportunities are excellent.

Our planned capital and exploration expenditures for 1984 are nearly \$2.1 billion, up 19 percent from the \$1.75 billion we spent last year. A major part of this increase will come from higher spending for petroleum exploration and production in the United States, Canada and overseas. In total, about \$1.7 billion, or 80 percent of the budget, is earmarked for energy-related projects in oil and gas, geothermal, shale oil and coal.

Now I would like to shift to the first quarter's earnings and to the company's prospects for the rest of 1984.

At last year's shareowners' meeting, I expressed concerns that several factors would likely have a negative impact on 1983's earnings. These included a downward trend in natural gas sales and prices, a squeeze on refined product margins and a persistent industrywide weakness in chemical and fertilizer sales. Unfortunately, my concerns were borne out by the year's actual results.

However, I am pleased to be able to report today that we have seen a reversal in some of these factors, and that the positive results are now starting to show up in improved earnings.

For the first three months of 1984, net earnings were \$180.1 million, or \$1.04 per share. This is a 40 percent increase from \$128.3 million, or 74 cents per share, reported in last year's first quarter.

The major positive factor responsible for this earnings improvement was increased production of crude oil and natural gas in our overseas operations, especially in the Netherlands, Indonesia, and Thailand.



Lower dry hole expenses, both foreign and domestic, also added to earnings, as did higher sales and margins in our refining and marketing segment. In addition, earnings from our chemicals operations improved due to higher sales volumes and prices for fertilizer products. Partially offsetting these gains were lower domestic crude oil production and prices, and lower investment tax credits.

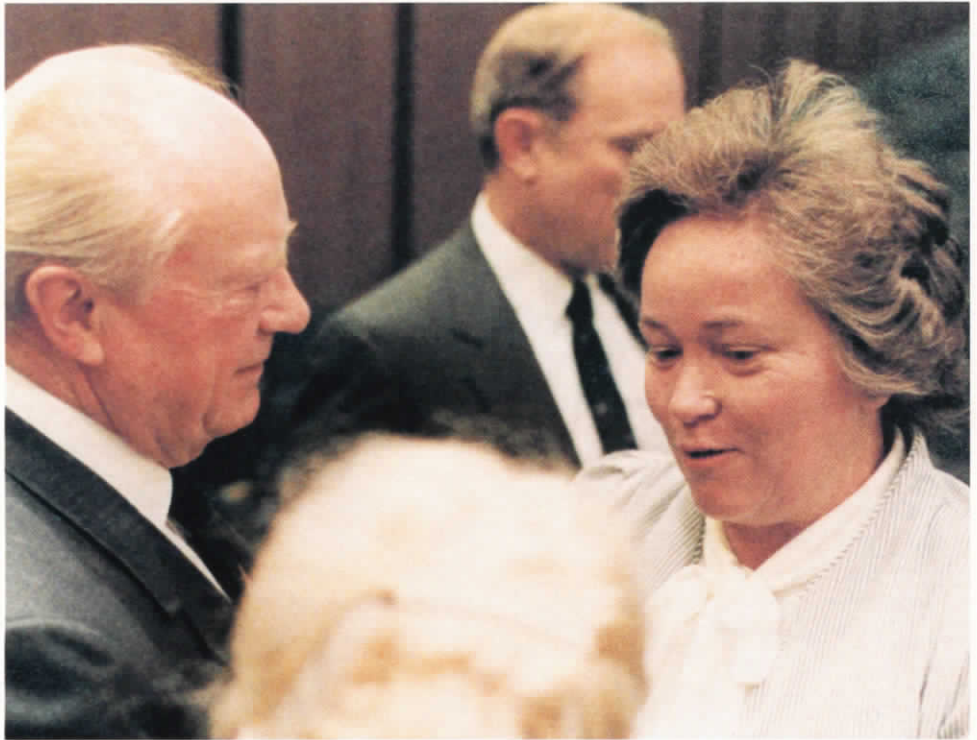
Since I expect these same factors to continue to help us, I am also optimistic about the company's earnings prospects for the balance of the year. However, I wish to stress that it's not likely that the first quarter's rate of improvement can be maintained.

I would like to close with a brief observation about Union Oil's long-term prospects, especially from the shareholders' perspective. While forecasting is always hazardous, I think this is a situation where the past can provide some guidance.

Consider the following.

If, at the beginning of 1960, a shareholder had invested, say, \$10,000 in Union Oil stock, that stock would today be worth approximately \$120,000. This stock appreciation, plus the dividends, would have yielded an annual rate of return of 15.4 percent on the initial investment. This is one of the highest returns that could have been realized by investing in any major oil company over this 24-year period.

By contrast, a \$10,000 investment in a stock that represents a composite of the five international oil companies would be worth about \$40,000 today.



*Mr. Hartley talks with shareholders after the meeting.*

This stock appreciation, plus dividends, would have yielded an annual rate of return of 11 percent. And an investment in the Dow Jones Industrial Average, something most investment analysts have trouble beating, would have produced a return of only 6.8 percent.

We're proud of our long-term record. We believe, as this record shows, that our policy of concentrating on high technology investments in basic earth resources serves you, our shareholders, in the best possible way. And, as discussed earlier, we believe we have the long-term investment opportunities that will enable us to continue to serve you in this way. 76

# RIDING HIGH IN CANADA

Imagine a dusty, bruised broncbuster climbing back into the saddle, grinning with the sure knowledge that he is about to have the best ride of his life.

That's how they feel at Union Oil headquarters in Calgary, home of the famous "Stampede" and, more to the point, center of Canada's Oil Patch.

"Today, we are much better organized and equipped to succeed than ever before in our history," said Clem Dumett in his 1983 President's Christmas message to the employees of Union Oil Company of Canada Limited.

The company is pursuing an aggressive exploration and development program. Technology to recover heavy oil from Canada's vast tar sands resource is advancing. And, the first load of thermal coal from the new \$250 million Obed-Marsh Project, Union of Canada's largest project to date, will be shipped in August. (Canadian dollars currently translate to about 80 percent of U.S. dollars.)

But just a few years ago, the outlook was not so rosy when Canada's new National Energy Program (NEP) combined with the world recession to throw icewater on western Canada's oil boom. Union Oil of California's 1981 Annual Report stated:

"Union of Canada recorded net earnings for 1981 of \$12.1 million (Can.), a 33 percent drop from \$18.0 million in 1980. The lower earnings, as well as a 21 percent decline in cash flow, resulted from the effects of Canada's new higher taxes on petroleum which are part of the National Energy Program initiated in 1980."

In the 1970s, Calgary was shedding its cowtown image. Breathtaking crystalline skyscrapers, built on foundations of oil, tried to rival the Rocky Mountains edging Alberta's plains about a hundred miles west of the city. In the ten years from 1970 to 1980, Calgary's population rose from 385,000 to almost 600,000. Unemployment was virtually unknown. There was plenty of work in oil and related industries.

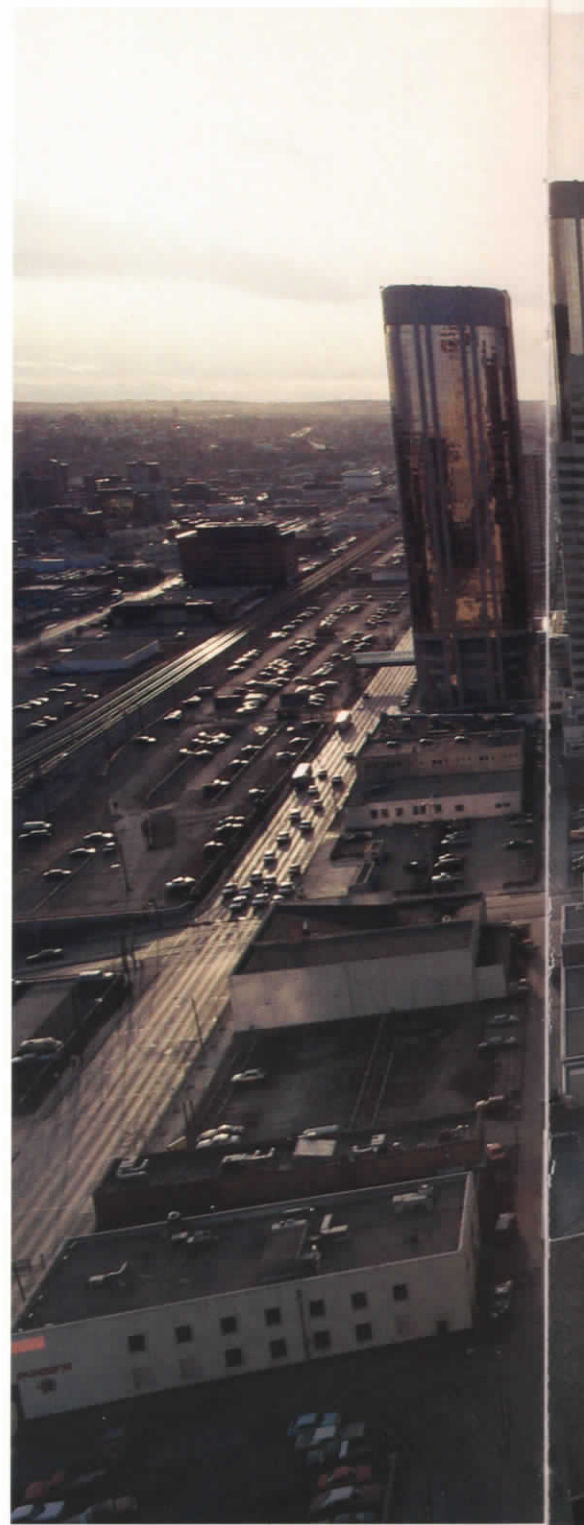
"I'd be the first one to admit that the boom really got out of control," says Dumett, who succeeded to the presidency of the company in 1975. "The economy was overheating, and we began to see inefficiencies creeping into our operations. A little cooling off would have been welcome, but we got the deep freeze."

One of the NEP's objectives was to "Canadianize" an industry that had been largely developed by U.S. firms since the discovery of the first commercial oil deposit in Leduc, Alberta in 1947. Higher government incentives were offered to Canadian-owned firms. These made up only 28 percent of the industry in 1980, and the intention was to increase that to 50 percent by 1990. The result so far is about 34 percent.

Foreign-owned firms received only very small incentives for exploration work done on federal lands, and also had to deal with higher taxes and oil price controls. Many decided to sell, including Union Oil of California. However, to prepare for sale, the company decided to buy back its publicly held stock, which it did by July 1981.

So, Union of Canada's conventional oil and gas operations were for sale during most of 1981 and part of 1982. (The longer term coal and heavy oil properties, along with acreage in the Beaufort Sea, were not offered.) During those years, the focus was on holding things together and preparing for a new owner. Activity slowed in many areas. People left for more secure jobs.

Meanwhile, recession had driven interest rates up and many of the Canadian firms that had purchased U.S. interests were left with no capital to finance exploration and development. The industry came to a standstill, and no suitable buyers appeared.





*Calgary — capital of the Canadian Oil Patch*

In 1982, Union Oil took down the "for sale" sign and began to rebuild.

"Of course, now the job market was a little different," says Ken Shaw, manager of special projects in the exploration department. "Instead of going to the universities, we found we were able to hire people with five to ten years of experience. We were back to where we had been in 1980 in terms of expertise, but with only half the staff."

"Union Oil of Canada went from just over 400 people before the NEP down to 316 at the end of 1981. Now we are back up to about 340," according to Don Jarrett, vice president of finance and administration. The figure includes 51 employees of the Obed-Marsh coal project, which began development in 1983.

"The company is in a good position to rebuild. Drilling costs have gone down, and the regulatory climate is improving," says Fritz Perschon, manager of economics and corporate planning. "It's a good time to be investing. I see some moderation in the tax and royalty burdens imposed on our industry in the last few years." The general consensus holds that further improvements from the industry standpoint will be forthcoming after the national elections expected this fall.

"Although we still have a significant handicap as compared to companies with a high percentage of Canadian ownership," says Dumett, "we are finding that we can compete if we just try a little harder."

Their efforts are paying off.

### **A difficult environment**

From the perspective of a helicopter, northern Alberta stretches endlessly flat in all directions. The acres and acres of scrub brush and skinny trees are home to a surprising amount of wildlife — moose, bear, beaver, caribou and waterfowl. But this is a landscape of surprises, hiding vast oil and gas reserves and laying traps for the unwary.

Union of Canada is one of the more active performers in the Peace River country, an area which has been quite successful for the industry as a whole.

Union's most recent success, the Slave Field, lies about 45 miles east of the town of Peace River. The original discovery was made in 1979, with a second oil pool identified in 1982. A total of 19 wells are now producing.

For most of the year, much of northern Alberta is mush — making exploration and development operations very difficult. The land is dappled with deep pools of muskeg, a mixture of moss, leaves, earth and water — mostly water. Building roads through muskeg can cost from \$50,000 to \$200,000 (Can.) a mile. It isn't done without strong economic justification.

So the drilling season is short, spanning the dark winter months of December through March when the muskeg freezes solid. During this time, trucks, tractors and other heavy equipment can be moved without getting hopelessly mired.

The smartest operators maximize the time they can use the equipment in the roadless back country, getting out just before the spring break-up. "We have to rely on a certain intuition about the weather," says Peter Pecharsky, production manager who, after 26 years with the company, has a better than average feel for shifts in the wind.

"Building pipelines under muskeg is interesting, too," he adds. "Oil lines have to be buried three to four feet under the water line, and freshwater lines even deeper, so that everything keeps moving during the winter freeze."

And once the discovery has been confirmed and the muskeg accommodated, there seems always to be another economic complexity. Production rates are regulated by a provincial agency — in this case, the Alberta Energy Resources Conservation Board.

### **Allowable production rates**

In Canada, the provincial governments own the natural resources within their boundaries. In the interest of making Canada self-sufficient in energy resources for the long term, Alberta bases its allowable production rates on market demand and reservoir capacities. Allowables are issued once or twice a month.

"The original Slave well is capable of producing 400 to 600 barrels a day, but the allowable is only 110," says Bob Goldie, district production supervisor. "Sometimes, better wells must be shut down so as not to exceed their allowables. Poorer producers operate all the time."

The two Slave Field pools contain approximately 25 million barrels of oil in place. Both pools have a very strong natural water drive, and both will probably yield about 30 percent of the oil in place, according to Ed Hughes, manager of engineering.

"There may be nothing we can do to improve that," Hughes says. But, if the production method could be changed to improve the recovery rate, or if more thorough analysis could substantiate a higher natural recovery rate, then the allowables would be higher earlier in the life of the field and the company's return would be greater.

Hughes' engineering group is charged with getting the most out of every field. "As early as we can, we want to recognize problems and determine the best means of production to get the highest return from the entire field, not just the individual wells."

"Every oil and gas field is different from all the others, every well is different — just like people," adds Hughes. "So, reservoir engineering has to be as much skill as science, but we use a heck of a lot of science."

The work is strictly analytical — the study and comparison of data, and recommendation of the best production methods. Using the best information available, the engineers look at the nature of a reservoir — its porosity, permeability streaks, barriers and so forth, to determine how much oil can be produced.

As in almost every phase of almost every industry, computers play a growing role. In analytical work, they are invaluable. Extensive comparisons of data and examination of variables that used to take months or years, can now be accomplished in a few hours.



*Clockwise from left: A Slave Field rig surrounded by muskeg; workers install piping at Leige Gas Field; a section of the nearly completed coal processing plant at Obed Mountain.*



- Oil
- Heavy Oil
- Gas
- Gas & Liquids
- Coal

"With the introduction of desk top models, this invaluable tool has leapt into the hands of every working engineer," Hughes says.

Union of Canada's average gross production now exceeds 21,000 barrels a day of crude oil and natural gas liquids and 68 million cubic feet of natural gas.

And, Union of Canada will get more and more out of its known resources — partly because higher oil prices help to justify greater efforts economically, and partly because technological developments make it possible.

### Oil, oil everywhere

The Canadian resource is vast and promising. In the beginning of 1981, estimated proven reserves of conventional light and heavy oil were approximately 6.4 billion barrels, according to a report of the U.S. Department of Energy. This excludes offshore areas in the Beaufort Sea and the eastern coastal waters, where initial efforts suggest that the potential resource is very large.

The province of Alberta contains 85 percent of Canada's known conventional oil reserves, while Saskatchewan accounts for most of the remaining 15 percent. Indeed, Alberta is where the majority of Union's continuing operations are located.

Union of Canada's explorationists have developed a geological data base to help them reanalyze old data and look for geologic anomalies that may have been ignored as uneconomic in the days of cheap oil.

"For example, we are looking at an old area in central Alberta," Shaw says. "Using our data base system, one of our senior geologists has conducted a search of several thousand wells looking for a specific type of information. He did that in a matter of two days, and that's probably a month's work the old way."

"I think it's fair to say that we have developed one of the finest systems in town," Shaw adds.

Part of the reason for that is a senior systems geologist who joined the company in early 1983. The company had developed the beginnings of a very sophisticated system in the late 1970s. Doug Glass implemented enhancements of this interactive system. "That in itself has permitted us to increase the workload," Shaw says.

The exploration department is also looking into new areas, acquiring interests in just over 23,000 acres last year at a total cost of \$4.3 million (Can.).

In Canada, exploration well data is generally easier to get than in the United States. Data must be filed with a provincial board and released after a certain period of time: one year in provincial areas, and only 30 to 90 days for development wells.

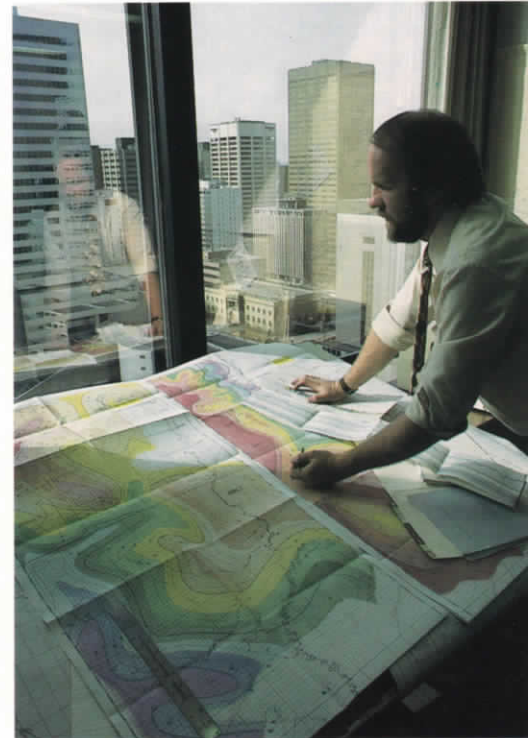
The Alberta government had an incentive program, as well, to encourage the gathering of seismic data. The program partially underwrote seismic expenditures. In return, data had to be made available below the market value for resale after a three-year period of confidentiality. In the plains area of southern Alberta, for example, state-of-the-art seismic data can be purchased for \$300 (Can.) a mile.

The seismic grants were recently trimmed to finance expanded oil royalty holidays announced earlier this year, another indication of the improving regulatory climate.

"The pace of our exploration activity is picking up very well, compared to the past few years," Shaw notes. "I think the potential for discoveries in the next decade is quite good."

Union's exploration effort in the Beaufort Sea, now in a holding pattern, is the exception. So far, the Beaufort has not responded well to industry efforts. And, as a foreign-owned company, Union does not enjoy the significant government grants that might justify the level of expense required to operate in deep waters above the Arctic Circle.

"For the next two or three years certainly," Dumett says, "we are going to be concentrating on looking for new oil because of the market problems associated with natural gas."



*Tom Donaghy, senior geologist, is part of Union of Canada's highly successful exploration team.*

The U.S. surplus of natural gas has restricted one of Canada's major export markets for the natural resource that is more abundant than oil in the Western Canadian Sedimentary Basin. That important market may not open up again until the end of the decade. But some gas finds can be pursued if the economics are right.

The Liege gas project in Alberta has been operating since April 1, 1984. The gas is shallow, 700 feet deep. It takes only three days to drill each well, and three are enough to meet contract requirements.

These factors combined to make the project economically attractive — and it doesn't hurt that the support facilities of Union's Buffalo Creek heavy oil project are just 12 miles away. The gas, in fact, overlies the bitumen deposit that holds such promise for Union of Canada's future.

### A Promising Future

"Canada's unconventional oil reserves (heavy oil and tar sands) are in excess of 1 trillion barrels in place, about one-fourth of which may be recoverable," according to a U.S. Department of Energy report published in 1981.

These reserves are concentrated in the Athabasca and Grosmont formations located 200 miles north of Edmonton. The Athabasca deposit, the world's largest oil pool, is like beach sand saturated with heavy oil, or "bitumen." Bitumen has a very high viscosity. Try to pour it out of a jar and your arm will get tired long before it hits the floor.

One hundred fifty billion barrels of oil in the Athabasca can be recovered by surface mining. Union has significant Athabasca acreage, but currently is concentrating on deeper stuff, the Grosmont, lying about 820 feet below the surface. Reserves in the Grosmont are estimated at over 125 billion barrels.

"We have 153,000 acres of the best material in the Grosmont," says Tim Presber, manager of heavy oil. Below the oil sands, the geology changes to carbonate rock — limestone and dolomite. "Carlsbad Caverns are an extreme example of this type of formation. We've seen core samples with flow channels you can stick three fingers into," Presber explains.

The Grosmont formation was identified in 1961. Union of Canada assembled its land position between 1969 and 1972 with little money and effort, since no one else was interested. The first steam injection pilot in 1977 resulted in production rates far beyond expectations.

At the Buffalo Creek site, which has been operating since 1980, a "huff and puff" method alternates steam injection and oil production. Surrounding observation wells provide data on pressure and temperature variations.

In order to duplicate the success at Buffalo Creek, a new five-well pattern was developed for the McLean site two miles south. The production/injection wells are drilled on three-acre spacing, with observation wells only 100 feet away.

Operations began in early 1983 and results are being evaluated. "This is still a research project," Presber notes. "We are not ready yet to go into commercial production. We have pulled in \$3.4 million (Can.) since 1981 on the sale of the technology, and we get a little revenue from the sale of the oil."

Union, the operator, pooled a very small portion of its acreage with Canadian Superior for the pilot project, and the two companies share ownership. AOSTRA, the Alberta Oil Sands Technology Resource Authority, is currently funding 50 percent of the expenditures.

The oil is sold during the winter months when it can be trucked out over the frozen muskeg. It must be mixed with condensates to thin it down to "pipelineable" consistency, and the nearest facility that can do that is on the Alberta-Saskatchewan border 400 miles away. After the spring thaw swallows the roads, the oil must be stored or pumped back into the ground.

"Sooner or later, we will have to find better ways of living with the muskeg, because we will be expanding," Presber says. "For now, since the oil is everywhere, we just have to look for good ground on which to build."

### In Canada since 1912

The Athabasca River, from which the oil sands deposit takes its name, flows north to Lake Athabasca, then on to the Beaufort Sea via the Mackenzie River. From its source in the Rockies near Jasper, it rushes out of the mountains into a wide, lush valley. This is coal mining country, and the site of Union's Obed-Marsh thermal coal project.

The coal project (described in an accompanying story) and the heavy oil properties figure prominently in the long term for Union of Canada. "But for the foreseeable future, the bulk of our revenues are going to come from conventional oil and gas," says Clem Dumett, whose own history with Union of Canada dates to 1955.

Union of California's history in Canada goes back much further. As early as 1912, the company was shipping fuel oil to British Columbia. For many years Union was a major supplier to the Canadian Pacific Railway, a contract that expired only with the sale of marketing operations in 1945.

In 1930, two Union explorationists spent five months in Alberta's plains and Peace River areas. They left convinced that the prospects were very promising.

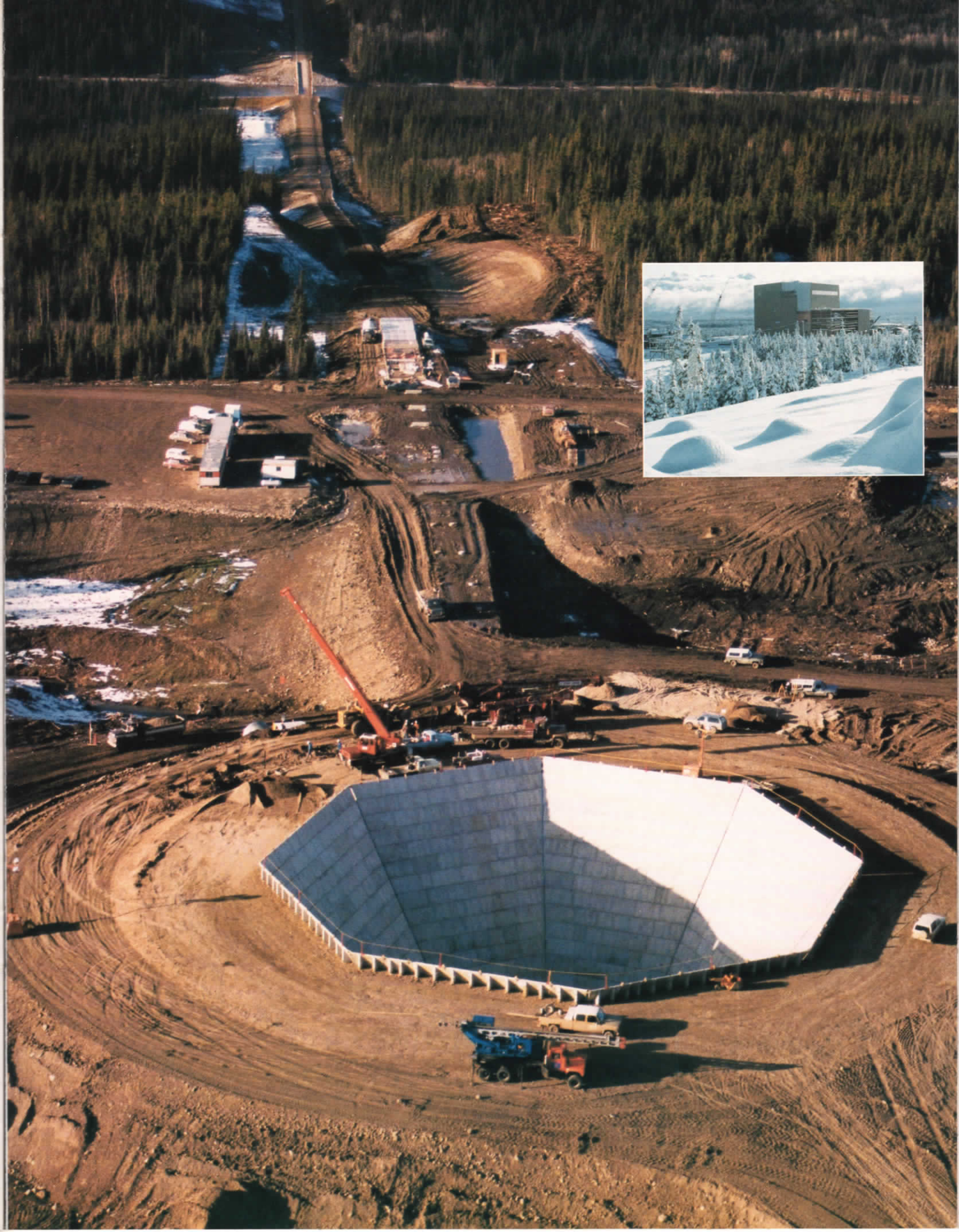
In the 1940s, the company participated in the discovery of three gas fields. And, in January 1949, the Calgary office was opened.

By 1961, Union crews had drilled 175 exploratory wells in Canada, resulting in the discovery of 22 oil fields and 21 gas fields. In that year, the Canadian Division became Union Oil Company of Canada Ltd. Union of California traded its properties for 83 percent of the stock and the rest was offered for public sale.

As was discussed earlier, Union of Canada is now wholly owned by its U.S. parent. Its employees, almost all of whom are Canadian, share excitement about the prospects, both short and long term. As all good cowboys know, after an upset the best thing to do is get right back on your horse. 76

*Mild winters helped speed construction of Obed's glory hole and processing plant.*





*Below: Steam billows off a tanker truck at the McLean heavy oil pilot project. Right: The wheel rim of a coal hauling truck dwarfs workers at Obed.*



*Above: The coal conveyor heads from the crusher toward Obed's processing plant. Right: Bitumen solidifies at less than 70 degrees F., so all piping and storage tanks at the heavy oil project must be heavily insulated. Far right: Workers drill a new test well at McLean.*



# WARM OASIS IN A MUSKEG SEA

Buffalo Creek, site of the McLean heavy oil pilot project in northeast Alberta, is what you might call “off the beaten track.” Just how remote is it?

“Put it this way,” says Tim Presber, Union of Canada’s manager of heavy oil. “Civilization ends around 100 miles north of Edmonton. Buffalo Creek is 200 miles north. You won’t find any corner drug stores up there.”

Along with the isolation, workers at Buffalo Creek must cope with frigid winters (temperatures can plummet to –50 degrees), a bleak landscape, and spring months that bring rain, mud, and swarms of horseflies and mosquitoes. But life isn’t all so arduous for those toiling up in the tundra. When they finish their daily 12-hour work shifts, crew members pull off their boots and head inside a welcoming oasis: the Buffalo Creek Camp.

“The camp facilities here are first class all the way,” says Noel Brown, field foreman. “People work long and hard up here. They deserve a little comfort.”

At Buffalo Creek, comfort means warmth, plenty of good food, and living quarters that are clean, spacious, and well-equipped. Most of the workers have their own bedrooms in the camp buildings, which can house up to 75 people. (There are currently 40 workers on site; the total will drop to 25 once construction at McLean is completed later this year. Most live in Edmonton, 50 minutes away by plane, working eight days on site, six days off.)

*Hardworking chefs: Cook Vi Christensen (above, right) and helper Cora Knutson man their posts at Buffalo Creek Camp.*



The camp also provides a lounge with a pool table and color TV, a game room, sauna, exercise room, and a large dining room. Gleaming stainless steel counters ring the large kitchen, which is manned by a full-time cook and helper. There is also a camp attendant on hand to take care of cleaning, laundry and maintenance work.

The kitchen hums with activity virtually around the clock. “We’ve got three meals to prepare every day—and I mean *meals*,” says cook Vi Christensen, smiling as she pulls two steaming apple pies from an oven rack. “You wouldn’t believe the appetites around here.” One look around the kitchen would convince any doubters. Fried chicken, sandwiches, beef stroganoff, four kinds of vegetables, rolls, fruit and various desserts are spread out over a steam table—and that’s just for lunch.

During their off hours, some workers use the time to study. (Several who want to qualify as operators at McLean are enrolled in a year-long correspondence course in steam engineering.) Last winter, some of the crew also built a skating rink for playing hockey. But, as everywhere, television is the most popular form of off-hours recreation.

“We’ve got a satellite dish, so we can pick up HBO movies, sports, and all the regular TV shows,” says Brown. “That helps us feel a little less isolated. And we’re always busy with work, so the time here goes pretty fast.”

Although visitors may be few, unexpected vagabonds do occasionally turn up at remote work camps like Buffalo Creek. Heavy Oil Operations Supervisor Stan Crothers remembers a time, at another camp, when he and a co-worker ambled into the kitchen for a late-night snack. They found they weren’t the only ones struck with the midnight munchies. Seated on the counter by an open window, casually devouring the night crew’s dinner, was a large black bear.

When the intruder wouldn’t respond to shouts or claps, Crothers and his cohort handled the situation with the aplomb of seasoned frontiersmen. “We threw a bunch of cups and saucers at him,” Crothers explains. “He flew out that window pretty fast then.” 76

# FAST TIMES AT OBED MOUNTAIN

Excitement is brewing these days at Union of Canada's Obed-Marsh Thermal Coal Project. With the calendar fast approaching August 5th, when the first trainload of Obed coal is scheduled for shipment, the atmosphere at the west-central Alberta facility is charged with anticipation. You can feel it in the quickening pace of activity at Obed, as construction of the mine, processing and load-out facilities nears completion. And you can see it in the faces of the busy Obed staff, now working out of a brand new administration building on site.

"There's no doubt about it—this has been one sweet construction project," says Larry Dykers, general mine manager at Obed. "We didn't get seriously underway until January of last year. But the winters have been mild, and the work has gone very smoothly. So we were able to advance our first rail shipment from September to August."

Located some 15 miles northeast of the town of Hinton, within sight of the spectacular mountains of Jasper National Park, Obed is a joint venture operated by Union, which owns over 90 percent of the project. (NORCEN, a Canadian oil company, is the partner.) The lease area, covering roughly 15,000 acres of gently rolling land in the Alberta foothills, contains a unique flat coal deposit. Discovered in the early 1970s, the recoverable coal is contained in two major seams underlying Obed Mountain, a narrow, flat-topped ridge eight miles in length.

The 12-to-14 foot thick seams contain more than 96 million tons of clean, saleable coal. They are stacked one on top of the other like layers in a cake and are separated by about 40 feet of sandstone. Although they lie underneath hundreds of feet of overburden in places, both seams are exposed where glacial erosion has cut the mountain into two blocks—north and south.

Three additional seams in the Obed South block will also be mined if found to be of sufficient thickness and quality. The nearby Marsh block, which contains 17 million tons of coal, is not being considered for mining at this time.

According to Mining Manager Warren Bossé, Obed's two main seams alone will have a mining lifespan of more than 30 years.

"That's based on a peak production level of three million tons per year," Bossé says. The company's objective is to produce two million tons in 1985.

The deposits at Obed are a low sulfur, thermal coal that's highly suitable for power generation. At this time, all of Obed's production is slated for export, with the major market area being the Pacific Rim nations of Japan, South Korea and Taiwan, among others. Europe will also provide some customers. Currently, one million tons of coal has been contracted by power companies in Japan and Denmark.

"The basic marketing plan is to go for long-term contracts," says David Bruneau, Obed marketing and transportation manager. "For now, we want to get on stream and demonstrate our efficiency and reliability."

Along with the size and accessibility of its coal deposits (both of the main seams can be reached entirely through surface mining), efficiency may turn out to be Obed's greatest asset. In its design and technology, Obed promises to be state-of-the-art. Tracing a ton of coal through the mining, processing and shipping phases will illustrate how.

Starting at Obed North (the first block to be mined), a large, 7,000-horsepower walking dragline will remove the overburden above the first seam. Maneuvered by a 300-foot boom, the dragline's 75-cubic-yard bucket will clear a series of 55-yard-wide "slots" above the coal, dumping the overburden from each new slot into the preceding (already mined) one. Another machine called an Easi-Miner will then remove the coal, loading it into trucks at a rate of 1,500 tons per hour.

The first of its type to be used in Canada, the Easi-Miner is a precision machine whose design allows the coal to be mined clean, leaving the clay partings behind and thus reducing the percentage of non-coal (called "ash") taken. "In conventional surface mining, where a backhoe takes the entire seam, an average of 35 percent ash is taken with the coal," Bossé explains. "The Easi-Miner cuts mine-run ash content to 25 percent or less."



*Clockwise from top left: Workers inside Obed's processing plant; conveyor carries coal to the top of the plant for the journey down through the jigs; a work crew clears a new road; looking out from inside the massive dragline; a section of the seven-mile long overland conveyor under construction.*



*Hard work and good planning have characterized the Obed project from the start. "This has been one sweet construction project," says Larry Dykers, general mine manager.*

From the mining pit, the coal will be hauled in 120-ton trucks to the ROM ("run of the mine") crusher, where the different-sized chunks of coal will be crushed into pieces four inches in width or less. The coal will then move by conveyor into the processing plant, which sits between the Obed North and South blocks.

Dropping through a pair of washers (called "jigs"), the coal will be cleaned by a gravity separation process that will also be unique to Canadian mining operations. As it passes down through the jigs, the coal will be lifted by pulses of water, separating it from most of the ash, which sinks. Emerging in two-inch pieces (or smaller), the coal will then enter one of two rotary kiln driers that are fired by "middlings" (poor grade coal) separated out by the washers. After 15 minutes in the 265-degree Fahrenheit driers, the clean coal will contain eight percent moisture, 13 percent ash and .5 percent sulfur content. (To make sure these standards are being met, a chemist will analyze various coal samples daily.)

Now the coal is ready for its journey to the load-out facility, located along the main line of the Canadian National Railway. This 46-minute trip is made via a seven-mile-long overland conveyor that spans the Athabasca River near the tracks. A continuous belt mechanism that will run at 700 feet per minute, the conveyor will deliver 700 tons of coal an hour to the trackside "glory hole"—a huge, conical storage bin that is built mostly underground and is covered by a concrete dome. This glory hole, which will hold 45,000 tons of coal, is one of the largest covered coal-storage structures in the world.

You might imagine that operating this vast, complex system will involve dozens of technicians—all of them huddled over banks of dials, meters and switches. Not so.

"The entire show—from crusher to glory hole—can be run by just a handful of people," says Garry Pangracs, Obed processing manager. "Our control room will have just four TV monitors and four keyboards. It's going to be a super-efficient operation."

The key, of course, is the extent of automation. Two computers, an Allen Bradley PLC-3 and a Hewlett-Packard 1000, will operate process controls, monitor plant systems, and provide both operating and status reports. The plant is designed to operate 24 hours a day, seven days a week, producing from 15 to 16,000 tons of clean coal per day. Because it's not cost-effective to scale back operations, the plant will be shut down whenever production outpaces demand. Depending on production levels, total staff at Obed will number between 85 and 135.

From the glory hole, coal will be loaded onto Canadian National Railway trains for the 600-mile trip to the Roberts Bank shipping terminal south of Vancouver. The 100-car trains (called "unit trains") will carry only Obed coal, completing a roundtrip every 90 hours. Each unit train will carry 10,000 tons of coal per trip and can make approximately 100 trips a year. When peak production of three million tons per year is reached, three unit trains—almost one a day—will make the run.

At the Roberts Bank terminal, where vessels of up to 250,000 tons can be accommodated, the Obed coal will commence the last leg of its journey to overseas customers.

In his office at the Obed administration building, Larry Dykers pauses from his hectic-as-usual day to gaze out the window. Trucks and bulldozers seem to be scurrying everywhere. Construction workers trudge through the mud nearby, bright spring sunshine glinting off their silver hard hats.

"The scope of our operation here can seem a little mind-boggling at times," Dykers says. "But it's all starting to come together. I've seen a lot of coal mining operations, and this is going to be one of the best. That's because we've spent the money, hired innovative people and put forth the effort to *make it the best.*"

David Bruneau echoes that sentiment. "There's no doubt that coal is going to play a major role in the energy mix of the future," he says. "And Obed is going to be ready to meet the demand. We'll be a strong, reliable source of supply for a long time to come." 76



# PROTECTING THE ENVIRONMENT: A Top Priority at Obed

In any large-scale mining operation, working to minimize environmental disruption is a major concern. As part of an on-going effort to safeguard the land, air, water and wildlife of the region, Obed has a full-time environmental scientist on staff.

“Permitting and licensing with various Alberta regulatory agencies went very smoothly,” says Eric Beresford, manager of planning and regulatory affairs. “Collection and monitoring of environmental data on the site—from wildlife to water quality—began in 1979, and is an on-going operating responsibility.”

Following is a brief rundown of some of the steps planned—or already taken—at the site.

## LAND

Land reclamation will be a continuing operation at Obed. As each new slot is mined, the previous slot will be filled with overburden, then topped off with topsoil and seeded with grass. Starting in the fifth year, blue spruce and lodgepole pine seedlings will be planted. When mining is completed, the contour of the land will be similar to its original state, and land use will be returned to commercial forestry.

## AIR

Obed’s processing plant will employ two electrostatic precipitators to remove coal dust from hot air released by the drying kilns. As the air passes through the precipitators, the suspended coal dust particles cling to electrically charged metal strips. The air then passes out the stacks with 99.8 percent of the dust removed. The dust (10 to 40 tons per hour) is collected and placed on the overland conveyor.

## WATER

Great care has been taken to insure that tailings and waste water from the processing plant will be in a closed circuit, which will eliminate any threat of contamination to groundwater or the Athabasca River. The tailings—small particles of waste rock and fine clay suspended in waste water slurries from the jigs—will go to a tailings pond where the solids can gradually settle out. A specially constructed dam will keep the tailings water in the pond so that it can be pumped back to the plant for reuse. The dam will be raised in stages as the pond grows over the life of the mine. At the end of mining the dam will be 75 feet high, and a portion of the pond will remain as a man-made lake.

## WILDLIFE

To minimize any impact on deer and elk movement in the region, the overland conveyor has been raised in eight places to create crossing points. Exact locations for the crossings were determined after four years of careful study of seasonal migration patterns.



## A GEOLOGIST AND HIS DINOSAUR

In the last five years, Union Oil of Canada has made contributions to the Energy Industry Fund for the Calgary Zoo. The money has helped build the new Prehistoric Park, a representation of Western Canada in the Mesozoic Era some 160 million years ago. It has also helped fund a new display case for the almost complete skeleton of a duck-billed denizen of the swamplands, *Corythosaurus*.

Bill Haskett, a Union geologist and zoo volunteer, has made the zoo his special project. This summer, he will help tell the story of the dinosaurs—and the discovery of the *Corythosaurus* bones in 1915 near Jenner, Alberta—to some of the 600,000 zoo visitors expected in 1984.

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The three professional photographers who judged the fourth annual *Seventy Six* Magazine Photo Contest had a difficult assignment: select seven winners from the 150 entries submitted by 79 people.

After spending an active morning looking over the entries—a session that was punctuated by much discussion and debate—the judges managed to narrow the field down to eight. In the end, they were unable to make the final cut and awarded one extra Honorable Mention.

Criteria included content, composition and technical skill — as well as expression of the theme: people at work for love, money or both.

The judges are frequent contributors to *Seventy Six*. For example, Bart Bartholomew covered the polymer plant in Charlotte, North Carolina, for the November/December 1983 issue. Larry Lee photographed Billy Dalton for this issue. Christopher Springmann covered the Union Chemicals Distribution Center in Dallas for the last issue.

Said Springmann of the contest entries: “We were all very impressed by the depth, creativity, and variety of the entries. The overall quality of the work was excellent.”

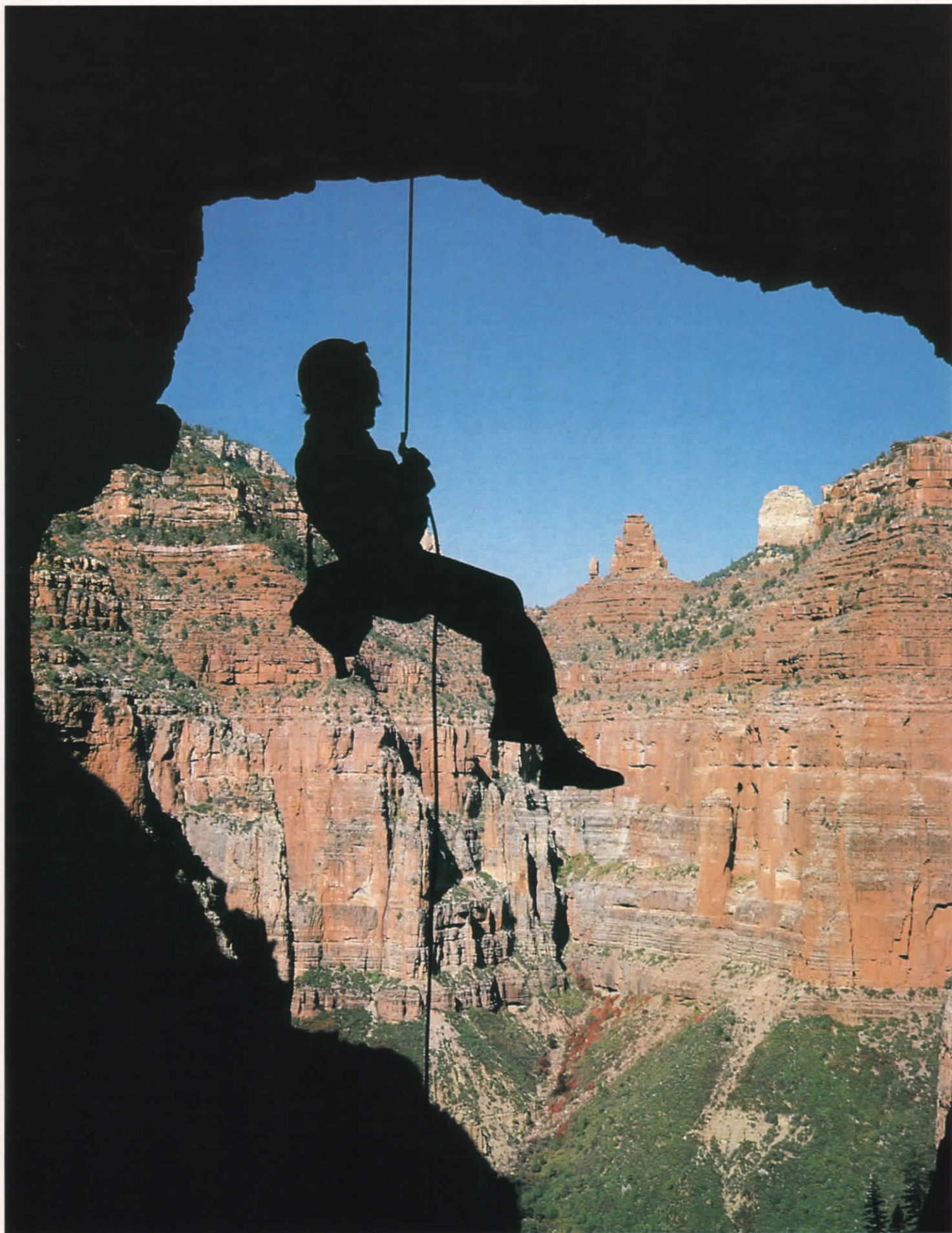
### **Grand Prize Bob Richards Caving in the Canyon**

Anyone who thinks this isn't hard work need only listen to the photographer's description. The cavers had to rappel 100 feet down the face of a 500-foot cliff in order to swing into the entrance of the Silent River Cave on the Grand Canyon's North Rim. “I asked the woman who followed me down to just hang on for a few seconds when she got to the cave,” Bob said.

The judges, who have all dangled precariously in search of just the right shot, appreciated the planning and physical effort that went into this professional quality photograph — “perfectly composed, clean and with great immediacy.”

Richards, a geological draftsman for Union's Science and Technology Division in Brea, California, has been an avid caver for 12 years. “It's a lot like mountain climbing,” he says, “except that it's usually so dark you can't see how far you have to fall.”







**First Prize**  
**George Tyll**  
**Reserve Energy**

George hid behind a tree to get this shot. He had planned to photograph his grandson breaking in his new tricycle. But when George looked the other way for a few minutes, Jimmy decided to do grandpa's work. He climbed up on his tricycle to get on the car.

"A nice, tight shot that was obviously well cropped in the camera — shows good work and a fast reaction," said the judges.

George Tyll retired as a foreman from the Chicago Refinery and now makes his home in Toledo, Ohio. He's been taking pictures for 30 or 40 years.



**Second Prize  
Tricia Melosh  
The Village Fishnet**

Fishing is the major occupation on the small island of Baler in the Philippines where Tricia Melosh took her early morning photograph. The judges noted the strong composition and excellent color contrasts of the shot.

The Meloshes were in the Philippines for Glenn's job as a geologist with the Geothermal Division. He has since been reassigned to the office in Santa Rosa, California. Tricia, a nurse, took up photography in 1979.



**Third Prize**  
**Tom Doneth**  
**Self-portrait**

It was a dark winter afternoon when Tom Doneth decided to photograph his cabin in the woods for his Christmas card. The cabin is located in the Upper Susitna Valley about 125 miles north of Anchorage. Tom set up the tripod and got to work, using the lantern as his single light source. Said the judges, "An excellent execution of a great idea."

Tom, chief draftsman for the Oil and Gas Division in Anchorage, has been in Alaska for four years. He spends at least one weekend a month at the cabin, happy to make the three-hour walk in from the nearest road for the opportunities it affords to see black bears, moose and other wildlife abundant in the area.



**Honorable Mention**  
**Viboon Boonbandit**  
**Classic Welding**

“A difficult subject done well,” said the judges. “The photo transcends the usual cliché, shows smart use of a slow shutter speed.” The welder is aboard a construction barge, working on one of the jacket piles that will support a processing platform in the Platong gas field in the Gulf of Thailand. The photographer is assistant manager of public relations for Union Oil Company of Thailand. Viboon has been taking pictures for the last 15 years.



**Honorable Mention**  
**Karen Mertz**  
**San Juan Serenade**

Karen Mertz was determined to get a few shots for the photo contest as she strolled through Old San Juan in Puerto Rico with her husband, Ron, Union 76 division sales manager in Atlanta. She followed the music and captured the concentration of the cello player. The judges commended her use of a shallow depth of field to separate the musician from the crowd. Karen's interest in photography was born about two years ago—along with her baby, who provided the inspiration for her first pictures.



**Honorable Mention  
Glenn Marsh  
The Clamdiggers**

It was a dreary gray morning along the central Oregon coast when Glenn and Dorothy Marsh stopped their car to take pictures. Just as they reached the best vantage point, the rain started falling and the sky took on an eerie yellow color. It is this “warm amber cast and the texture of the sand that create a simple, yet strong composition,” according to the judges.

Glenn, supervisor of corrosion research for Union’s Science and Technology Division in Brea, California, has been taking pictures for about eight years. Dorothy won third prize in the 1981 Seventy Six magazine contest for her photo of railroad tracks twisting away into a forest.



**Honorable Mention  
W. T. Bondurant III  
Too Early To Fly**

The sky was still too dark for the helicopters to fly on that December dawn over B Platform in the Highland area offshore South Texas. But it was not too early for Tom Bondurant to get the picture. “Mixed light sources—reflections of light off the water and the natural colors of the sunrise—turn what might have been a ho-hum shot into something extraordinary,” according to the judges. Tom, better known as “Bondo” to his crew, is a field operator who has been carrying his camera with him everywhere for about six years.

# A Man, a Dog and a Dream: Union's Billy Dalton (and Friend) Strive for Olympic Gold



The man and his dog are a familiar sight by now to people in Lafayette. Almost every day for the past two years, anyone driving by the University of Louisiana's running track during evening rush hour has probably noticed them. Rain or shine, sweltering or freezing, in summer's light or winter's darkness, they're out there—and usually alone. While the mottled brown Great Dane frolics alongside, the man goes through a workout that would make Jane Fonda wince: running, jumping and vaulting; throwing the javelin, the discus and the shot; then running some more.

No, he's not a college track star—though he once was. This man is 32 years old. He puts in a full day's work *before* heading out to the track each afternoon. Meet Billy Dalton, a landman for Union Oil in Lafayette. His grueling after-hours regimen is pointed toward a serious goal. Dalton wants to

make the U.S. Olympic Team, and compete against the world's best in the ultimate athletic endeavor: the decathlon.

"Sure, a lot of people think I'm crazy," says Dalton, grinning, seated behind his desk at Union's Southwest District Office in Lafayette. "I guess you have to be a little crazy to do this, especially at my age. But I'm chasing a lifelong dream. And I love every minute of it."

Although love of the sport—and a measure of craziness—may be requisite qualities for aspiring decathletes, success takes a lot more. There is no more rugged, challenging, or exhausting test of athletic ability than the decathlon—a two-day, all-around track and field spectacle where athletes lock horns in no less than 10 events. (The 100 meters, long jump, shot put, high jump and 400 meters comprise the first day; the 110 meter hurdles, discus, pole vault,





javelin and 1500 meters fill day two.)

Unlike track and field's specialists, who concentrate on one or two related events, a decathlete must be able to do it all. He's got to train and compete in 10 separate events that tax every muscle and body part. He must be strong yet agile; have speed as well as endurance.

"The magnitude of the decathlon can overwhelm you if you let it," Dalton says. "That's why it's important to keep your mind well-disciplined. The challenge of the sport is as much mental as physical."

It's fitting that Billy Dalton's athletic background lies in a sport that requires discipline to the extreme: the pole vault. One of the 10 decathlon events, the pole vault is perhaps the most difficult and complex—not to mention dangerous—event in track and field. Dalton was initially attracted to the sport at age 12, when he saw former world record holder John Pennel become the first man to clear 17 feet in a meet.

"It totally amazed me, seeing a guy going over a bar that high," recalls Dalton, who grew up in New Orleans. "I got myself a cane pole and started vaulting over clothes lines in the back yard. I was hooked."

By the time he finished his junior year at the University of Louisiana, in the spring of 1973, Dalton was a world class pole vaulter himself. He was consistently

topping 17 feet in meets, and had won the conference championship. But then a serious hamstring pull brought a sudden end to his college career.

The injury gave Dalton a whole new perspective on the word frustration—but it didn't squelch his desire. After graduation, with his injury healed, Dalton picked up the pole again. He took a night job to support himself, keeping his days free for vaulting.



*The decathlon's ten events tax every muscle and body part. But the challenge of the sport is as much mental as physical.*

Before long he was back in form and approaching the 18-foot mark. By 1976 Dalton was vaulting well enough to win an invitation to the U.S. Olympic Team trials in Eugene, Oregon. He didn't qualify for the team, but did go to Montreal as an alternate.

"Just participating in the trials was an incredible experience," Dalton recalls. "Training is very solitary work most of the time. But in Eugene, the stands were packed, and ABC had three TV cameras covering the pole vault. I was competing against the best vaulters in the nation. I was so scared I was spitting cotton."

The experience left Dalton hungry for more. Over the next four years he continued competing while pursuing a Petroleum Land Management degree at the University of Texas at Austin. Shortly after the 1980 Olympic trials, where he again failed to qualify, Dalton

was hired by Union as a landman and found himself back in Lafayette. He was 28, and figured the time had finally come to retire from competitive vaulting.

"Right from the start I enjoyed the job with Union tremendously," says Dalton, whose work involves everything from researching offshore lease tracts to chasing down records of land ownership. He also spends a good deal of time out in the field negotiating with landowners for permission to drill on their land. ("Horse trading might be a better way to describe it," Dalton says, "especially when you're dealing with some of the old line Cajuns who live around here.")

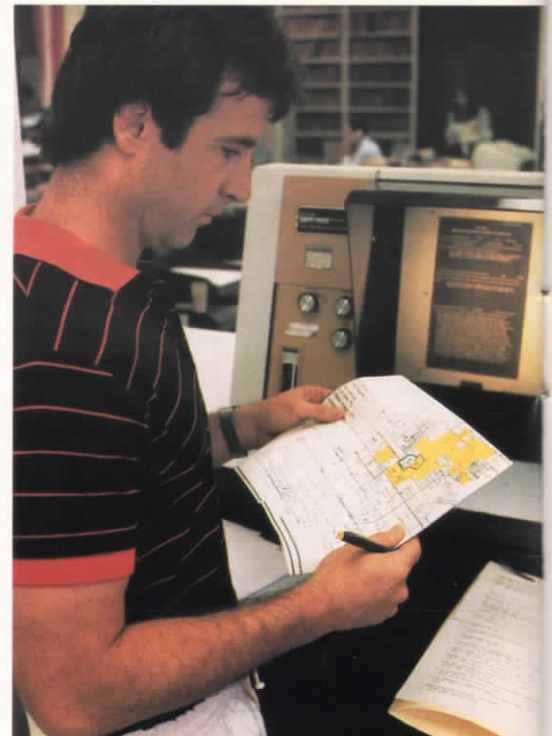
For two years, Dalton was content to play golf and tennis for recreation during his off hours. Then he attended a West German-American dual track meet one weekend in Baton Rouge—

and the old competitive juices began to flow once again.

"The American team looked pretty weak," he recalls, "especially in the decathlon. So I started thinking, hell, why not give it a try? I had two years to train until 1984. Sure, I was 30 years old. But Bill Toomey was 29 when he won the decathlon gold medal in the '68 Olympics."

Although Dalton had dabbled in other track and field events back in school, he found himself "groping around in the dark" at first. He started by reading books and viewing film of various decathletes. Don Salyers, a coach whom Dalton had met at the '76 trials, helped him work out a training routine, and University of Louisiana track coach Bob Cole chipped in advice as well. Cole also gave Dalton the keys to the U of L track facilities so he could work out in his off hours. And work he did, gradually building up to four hours of training a day.

Dalton's performance in each event steadily improved, and before long he was entering—and often winning—regional track meets. He honed his 100 meter dash time down to 10.9—faster than Bruce Jenner's in 1976—got his 1500 down to 5:05, his long jump up to more than 22 feet and his high jump to over 6'2".



With virtually no background in the throwing events, Dalton (who is 6'1" and 185 lbs.) gradually built them up to respectable distances. And his decathlon score—determined through a point system that rates performance on a scale of one to 1,000 in each event—steadily climbed from 6,100 points to just under 7,400 in a meet last November. (A 7,600 score at any sanctioned meet wins an automatic

invitation to the U.S. Olympic Team trials in June.)

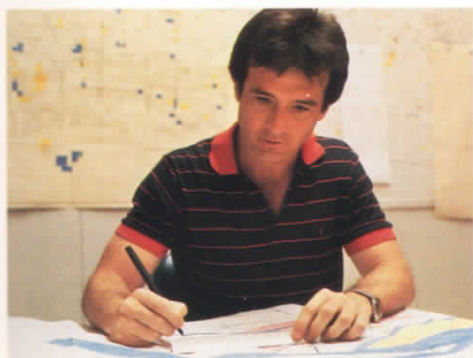
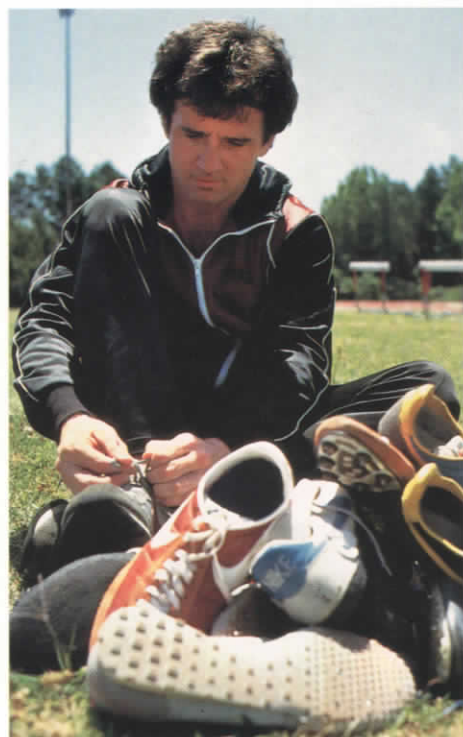
While the shot put has been the most difficult event for Dalton to learn ("It takes years to perfect," he says), the one he dreads most is the 1500 meters. "It's the final event, and everything is on the line," he explains. "Try running a mile—as fast as you can—when you're already totally drained from two days of intense competition. You'll understand

why every decathlete hates the 1500."

As the Olympic trials drew closer this year, Dalton redoubled his training efforts while competing in an average of one meet per month. Aside from the hardships of training while holding down a job, traveling to weekend meets is itself quite a chore.

"Every meet I go to, I've got to take along four vaulting poles, two javelins, a couple of discuses, a 16-pound shot, 10 pairs of shoes, an ice chest full of food and Gatorade, and a Great Dane," Dalton laments. "Sometimes I feel like a traveling gypsy circus."

Nagging minor injuries and bad weather at meets have kept Dalton from improving his top decathlon score of 7,371 points. But by mid-spring, with two more chances to crack 7,600 at meets before the Olympic trials, he was healed and in top form. As the rush hour traffic snaked by on a hot, humid

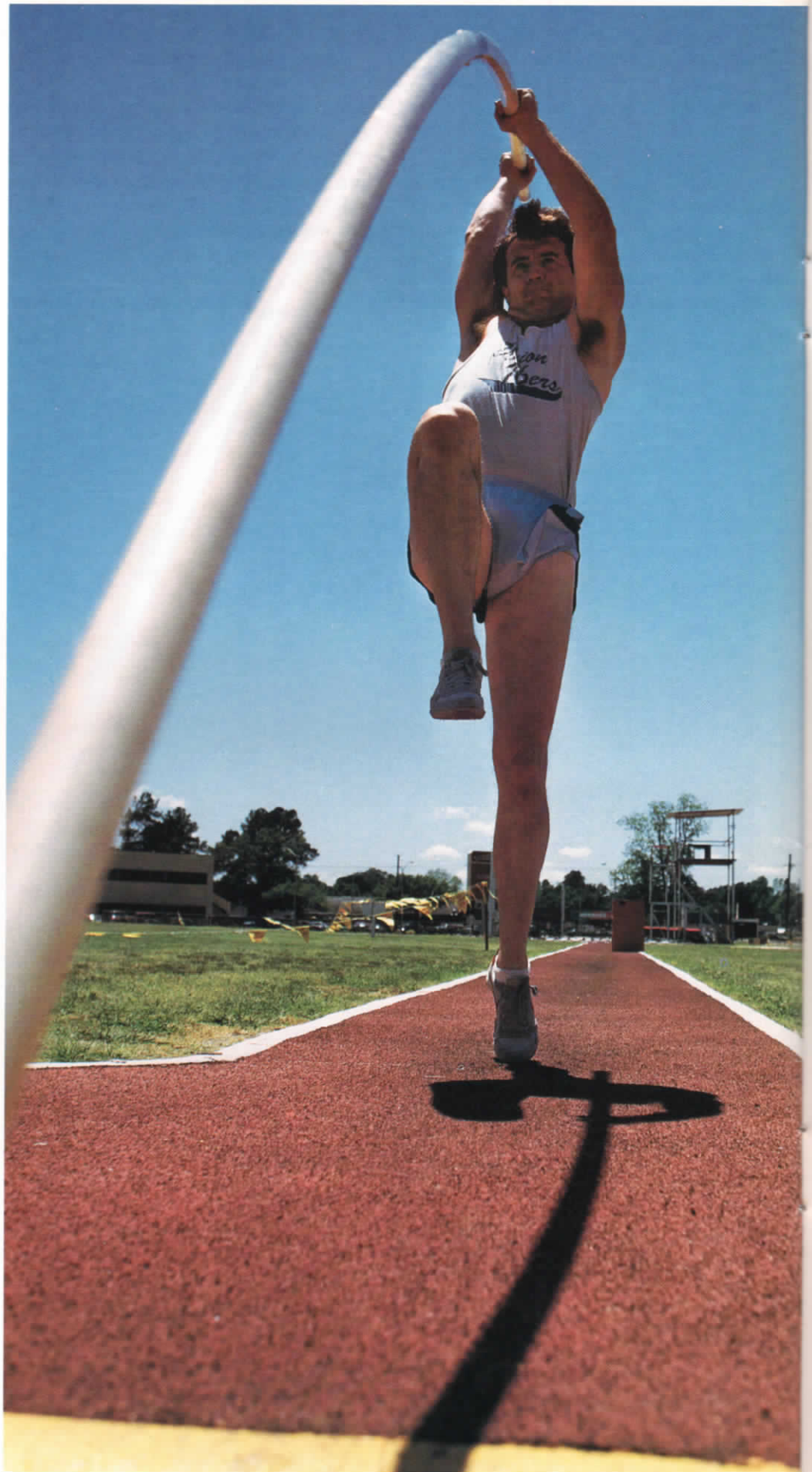


*The two lives of an aspiring Olympian: After a full day's work as a Union Oil landman, Billy Dalton heads to the track for a grueling four-hour workout.*

May afternoon, Dalton and his dog Asta (“the world’s greatest training partner,” Dalton says) could be found out on the U of L track going through their paces.

Soaked with perspiration, Dalton pushed himself through a long workout: running laps, throwing the shot, hurdling, high jumping, and sprinting. Then it was on to the weight room for a half hour of lifting. Each day’s routine emphasizes different events, but the intensity level never diminishes.

“Some days I have to really kick myself to go out there,” Dalton says, collapsing on a couch back at his townhouse. “When it’s hot, or cold, or rainy; or if I’m feeling lousy, I’ve still got to go work out. If someone’s having a big party, I’ve got to pass it up. There’s a lot of pain and sacrifice involved in what I’m doing. But there are rewards, too. I’ve learned a lot, and



accomplished things I never dreamed I could do.”

“Besides, I’m just too stubborn to quit,” he continues, smiling as Asta ambles over to nuzzle him. “Three guys will make the Olympic Team in the decathlon, and I want to be one of them. My family and everyone at work have been really supportive, and I want to give it my best shot.”

Later that night, sitting at home and munching on the last of five daily bananas (potassium for muscle fiber, Dalton explains), Billy Dalton gazes intently at a video tape of Jürgen Hingson, a West German who currently holds the world record in the decathlon at 8,777 points. (When not watching old movies on his VCR—Dalton is a self-confessed classic movie freak—he spends a lot of time analyzing tape of decathletes.)

“Look at this guy!” he exclaims, mar-

veling as the 6’7”, 230-pound Hingson performs a spectacular long jump.

“How can he possibly jump that far?”

The natural question is asked: What if, after all the work and dreams and sacrifice, Billy Dalton doesn’t make the 1984 Olympic team?

“If I make the team, it’ll be the highlight of my life,” Dalton responds. “But if it doesn’t work out, that’s okay, too. I’ll always know that I tried. Not many people do.”

No matter how things turn out this summer, Dalton says he will retire from competitive track after the Olympics. But then a whimsical smile lights up his face.

“Well, I have been thinking a little bit about the bobsled,” he confesses.

The *bobsled*?

“Yeah. Did you know that a lot of those bobsled guys are former decathletes?”

*“There’s a lot of pain and sacrifice involved in what I’m doing. But I’ve accomplished things I never dreamed I could do.”*





**CORPORATE**

**May 1984**

- 45 YEARS Fred L. Hartley, Union Oil Center
- 30 YEARS David F. Cox Jr., Los Angeles, Ca.
- 15 YEARS Donald C. Harris, Union Oil Center
- 10 YEARS Paul G. Chromek, Schaumburg, Il.
- 5 YEARS Tracy Hines Anderson, Union Oil Center  
Emily R. Boyle, Union Oil Center  
Francis J. Giblin, Union Oil Center  
Linda A. Nitkin, Union Oil Center  
Judith H. Young, Schaumburg, Il.

**June 1984**

- 35 YEARS John E. Koines, Union Oil Center
- 30 YEARS James R. Joy, Union Oil Center
- 25 YEARS Richard W. Gillespie, Sacramento, Ca.
- 20 YEARS Bettysue C. Hulette, Union Oil Center  
Sue M. Yee, Union Oil Center
- 15 YEARS Gloria M. Alley, New York, N.Y.  
Donald A. Dinkelman,  
Schaumburg, Il.  
Kathleen H. Triggs, Schaumburg, Il.  
Esther P. Yee, Union Oil Center
- 5 YEARS Philip J. Boutte, Union Oil Center  
Victor E. Fitzmaurice, Pasadena, Ca.  
Rita A. Klepitch, Schaumburg, Il.  
Ann Medina, Union Oil Center  
Griselda A. Morales, Union Oil Center  
Richard L. Standage, Burbank, Ca.  
Anthony D. Weber, Union Oil Center

**UNION SCIENCE AND TECHNOLOGY DIVISION**

**May 1984**

- 5 YEARS Oscar J. Buttner, Brea, Ca.

**June 1984**

- 35 YEARS Bruce E. Buell, Brea, Ca.  
J. Douglas McCawley, Brea, Ca.
- 30 YEARS John H. Duir, Brea, Ca.
- 15 YEARS Thomas H. Herren, Brea, Ca.  
Gloria M. Okasako-Oshiro, Brea, Ca.  
Thomas W. Tippett, Brea, Ca.

- 10 YEARS Daniel R. Farrell, Brea, Ca.  
Craig P. Harvey, Brea, Ca.  
Robert G. Hickman, Brea, Ca.  
Sandra L. Person, Brea, Ca.  
Gary W. Phillips, Brea, Ca.  
Michael K. Thomas, Brea, Ca.  
Michael E. Utt, Brea, Ca.

- 5 YEARS Peter J. Jessup, Brea, Ca.  
Frederick E. Mazzella, Brea, Ca.  
James W. Warren, Brea, Ca.

**UNION REAL ESTATE DIVISION**

**June 1984**

- 15 YEARS Arne T. Adams, Union Oil Center

**UNION 76 DIVISION**

**April 1984**

- 30 YEARS Delbert T. Area, Phoenix, Az.

**May 1984**

- 40 YEARS Leopauld H. Decuir, Beaumont Refinery  
Charles B. Johnson, Beaumont Refinery
- 35 YEARS William F. Orr, Los Angeles, Ca.  
Donald G. King, St. Paul, Mn.  
Howard J. Miller, Columbus, Oh.  
Noble T. Solomon, Beaumont Refinery
- 30 YEARS Burton R. Bley, Atlanta, Ga.  
Thomas O. Crozier, Los Angeles, Ca.  
Harry L. Gordon, Anchorage, Ak.  
Richard Green, San Francisco, Ca.  
Wilson N. Hatton, Beaumont Refinery  
Robert R. Jarrett, San Diego, Ca.  
E. F. Lesmeister, Los Angeles, Ca.  
William W. Lough, Los Angeles, Ca.  
John W. Zdanowski, Schaumburg, Il.

- 25 YEARS R. R. Anderson, Schaumburg, Il.  
Larry D. Dolan, Los Angeles Refinery  
Regina M. Kochesky,  
Los Angeles Refinery  
Walter B. Krueger, Schaumburg, Il.  
Richard E. McCants, Los Angeles, Ca.  
Robert C. Sherman, Los Angeles, Ca.  
Gerald K. Widger, Los Angeles, Ca.

- 20 YEARS Donald L. Culver, Los Angeles, Ca.  
C. Jean Potter, Schaumburg, Il.  
Marilyn J. Seitler, Schaumburg, Il.  
Joseph N. Sicuro, Schaumburg, Il.  
Dennis F. Siebold, Columbus, Oh.  
Loren G. Woods, San Luis Obispo, Ca.  
Robert D. Yates, San Francisco, Ca.

- 15 YEARS Angela R. Arias, Schaumburg, Il.  
Edith D. Debbs, Schaumburg, Il.  
Albert Hines Jr., Las Vegas, Nv.  
Bobbie L. Hardy, Beaumont Refinery  
Jimmie G. Holmes, Taft, Ca.  
Lee T. Horton, Los Angeles, Ca.  
Robert G. Houchins,  
San Francisco Refinery  
Geraldine C. Jurewicz, Schaumburg, Il.  
Richard M. Johnson, South Holland, Il.  
Jimmie R. Laprade,

- Pure Transportation Co., Van, Tx.  
Larry P. Lewis, Los Angeles Refinery  
Harold D. Miller, Detroit, Mi.  
James B. Ormbrek, Edmonds, Wa.  
John R. Pasma, Ketchikan, Ak.  
James C. Rasmusan, Portland, Or.  
Robert P. Ritner, Spokane, Wa.  
Maria H. Robinson, South Holland, Il.  
Roy E. Viar, Chicago Refinery  
Roger A. Werner, Colton, Ca.  
Rhoda A. Wilson, Schaumburg, Il.

- 10 YEARS Paula R. Brooks, Seattle, Wa.  
Dan H. Brown, Anchorage, Ak.  
Elaine R. Brown, Los Angeles, Ca.  
Robert D. Dawson, San Francisco, Ca.  
Randal M. Fukuda, San Francisco, Ca.  
Jean E. Harback, Schaumburg, Il.  
Jo Ann Hill, Schaumburg, Il.  
Dennis C. Hunt, San Francisco, Ca.  
Les W. Miller, San Francisco, Ca.  
Don A. Miller, Beaumont Refinery  
Robert L. Miller, San Francisco, Ca.  
James P. O'Neill, Los Angeles, Ca.  
Norman D. Paul, Los Angeles Refinery  
Theodore R. Rachlitz,  
Beaumont Refinery  
Kenneth L. Tracy, Los Angeles, Ca.  
Ned J. Voight, Jr. Santa Fe Springs, Ca.  
Linda C. Wickham, Detroit, Mi.  
Danna F. Wilson, San Francisco Refinery

- 5 YEARS Jerry R. Barba, Los Angeles, Ca.  
Michael J. Becker, Los Angeles, Ca.  
Patricia A. Bohacik, South Holland, Il.  
Donna M. Bush, Portland, Or.  
William A. Carleton, Los Angeles, Ca.  
George F. Casey, Los Angeles, Ca.  
William H. Cowgill,  
San Francisco Refinery  
Jo Ann Cross, Wildwood, Fl.  
Melvin B. Day, Beaumont Refinery

Samuel R. Dean, Beaumont Refinery  
 Ricky DeLege, San Francisco Refinery  
 Donnie J. Ellison, Atlanta, Ga.  
 Christine M. Harris, Toledo, Oh.  
 Paul O. Hughes, Los Angeles Refinery  
 Garriel D. Johnson, Beaumont Refinery  
 Robert O. Leger, Beaumont Refinery  
 Michael F. Marie, Schaumburg, Il.  
 Timothy C. Neville,  
 San Francisco Refinery  
 Kathleen J. O'Neill, Portland, Or.  
 Frank E. Perry, Santa Margarita, Ca.  
 Paul B. Reppert, Richmond, Ca.  
 Drew M. Robbins, Beaumont  
 Refinery  
 Leonard K. Sanchez,  
 Los Angeles Refinery  
 Calvin J. Sellers, Beaumont Refinery  
 Eddie L. Sewell, Los Angeles Refinery  
 Needham E. Shotwell,  
 Beaumont Refinery  
 Leonard Smith, South Holland, Il.  
 Mark R. Valladoa, Beaumont, Tx.  
 Jon E. Vanslytters, Los Angeles, Ca.  
 Irene M. Wegener, San Francisco, Ca.  
 Wade G. Wilkinson, Los Angeles  
 Refinery

**June 1984**

45 YEARS Henry D. Haas, Chicago Refinery

40 YEARS William A. Hood, Los Angeles, Ca.

35 YEARS Doris L. Brolio, Los Angeles, Ca.  
 Eric J. Broussard Jr., Beaumont Refinery  
 Raymond R. Carre, Beaumont Refinery  
 Paul D. Dougharty, Beaumont Refinery  
 Elden Fisher Jr.,  
 Pure Transportation Co., Patoka, Il.  
 James L. Halliwell, Detroit, Mi.  
 Robert D. King, Memphis, Tn.  
 George T. Kleespies, Beaumont Refinery  
 Ornie R. Perdue Jr., Beaumont Refinery  
 William L. Reed, Seattle, Wa.  
 William N. Stark, San Francisco, Ca.  
 Homer W. Widener, San Diego, Ca.  
 James R. Wigley, Beaumont Refinery

30 YEARS Harlon J. Adrian,  
 Pure Transportation Co., Van, Tx.  
 Gordon D. Bergreen, Los Angeles, Ca.  
 Charles P. Blackwell,  
 Pure Transportation Co., Van, Tx.  
 Earl H. Davis, San Francisco, Ca.  
 Donald W. DeBuse,  
 San Francisco Refinery  
 John Alan Drysel, Seattle, Wa.  
 Loren E. Grimes,  
 Pure Transportation Co., Olney, Il.  
 Gene G. Pederson, Portland, Or.  
 Donald H. Smith, Los Angeles Refinery

25 YEARS Harold R. Banks, Phoenix, Az.  
 Lawrence M. Barr, Los Angeles, Ca.  
 Frances D. Bass, Charlotte, N.C.  
 Raymond L. Funk, Schaumburg, Il.  
 Henry H. Fukai, San Francisco, Ca.  
 Daniel C. Gabrielson, St. Paul, Mn.  
 Donald W. Kaminga, Houston, Tx.  
 R. P. Martinelli, Richmond, Ca.  
 Donald R. Skaggs, Santa Maria Refinery  
 Alan L. Taylor, Los Angeles, Ca.  
 Richard J. Wheeler, Houston, Tx.

20 YEARS Dennis W. Anderson, Avila, Ca.  
 Shelia L. Berlin, Schaumburg, Il.  
 William T. Elder Jr., Tallmadge, Oh.  
 Raymond J. Jerge, Pittsburgh, Pa.  
 Michael I. Miller, Schaumburg, Il.  
 R. F. Miller, Los Angeles Refinery  
 Susan L. Murphy, Schaumburg, Il.  
 Robert L. Price, Kansas City, Mo.  
 Hilton Reeves, Wildwood, Fl.  
 David D. Way, Atlanta, Ga.  
 Robert L. Williams, Griffin, Ga.

15 YEARS William D. Ackerman, St. Paul, Mn.  
 Payton Anderson, San Francisco Refinery  
 Raymond S. Bahou, San Jose, Ca.  
 Donal R. Barr,  
 Pure Transportation Co., Van, Tx.  
 Lloyd M. Berger,  
 Pure Transportation Co., Olney, Il.  
 Gary K. Cook, San Francisco Refinery  
 William R. Cullison, Los Angeles Refinery  
 Jay T. Dean, Los Angeles Refinery  
 Maurice Denton,  
 Pure Transportation Co., Olney, Il.  
 Elsa N. Durbin, Schaumburg, Il.  
 John L. Dyer, Santa Maria Refinery  
 Gerald L. Dorband, Schaumburg, Il.  
 Bessie L. Fort,  
 Pure Transportation Co., Van, Tx.  
 Grant D. Freeding, Schaumburg, Il.  
 Armin E. Fette, Schaumburg, Il.  
 Phillip Garcia, Beaumont Refinery  
 Alton R. Gill, Chicago Refinery  
 Andrew C. Goetz, Los Angeles, Ca.  
 John P. Holden, Beaumont, Tx.  
 Ronald L. James,  
 Pure Transportation Co., Houma, La.  
 John H. Kaufman Jr.,  
 Beaumont Refinery  
 Stephen G. Keller, Beaumont Refinery  
 Ronald M. Kielma, Chicago Refinery  
 Peter G. Krejci Jr., Schaumburg, Il.  
 Mathias A. Krubski, Los Angeles, Ca.  
 Brian P. Loftus, San Francisco Refinery  
 Hales C. Mareath, Seattle, Wa.  
 Nicholas T. Martinez, Los Angeles, Ca.  
 Walter J. McChaney, Los Angeles Refinery  
 Ralph C. Mercer, Schaumburg, Il.  
 Floyd E. Pearson, Fresno, Ca.  
 Diane M. Peterson, Schaumburg, Il.  
 Larry L. Rober, Los Angeles, Ca.  
 Carl Tapps, Los Angeles Refinery  
 Jack K. Wine, Los Angeles Refinery  
 William H. Whittaker, Los Angeles, Ca.  
 Leonard Young, Beaumont Refinery  
 Robert J. Young, Beaumont Refinery

10 YEARS Gary A. Bleamel,  
 San Francisco Refinery  
 James I. Dibartolo, Miami, Fl.  
 Roger A. Donley,  
 Pure Transportation Co., Patoka, Il.  
 John G. Lewis, Los Angeles Refinery  
 Judith A. Lindley, Phoenix, Az.  
 Veronica Luna, Los Angeles, Ca.  
 Rachel L. Maynard, Orlando, Fl.  
 Charles A. McLuen, Orange, Ca.  
 Lee S. Owens, San Francisco, Ca.  
 Joan M. Pagliai, Schaumburg, Il.  
 Francisco A. Perez, Avila, Ca.  
 Johnnie H. Powell, Wildwood, Fl.  
 Angela O. Santos, San Francisco, Ca.  
 Israel Sopher, Los Angeles Refinery  
 Daniel R. Stanley, Chicago Refinery  
 Ronald L. Tyrre, Colton, Ca.  
 Jeffrey C. Wilkes, Chicago Refinery



5 YEARS Thomas E. Addleman, Portland, Or.  
 Albert L. Baugh, Wildwood, Fl.  
 George F. Bland, Chicago Refinery  
 Bruce P. Buckley, Chicago Refinery  
 James G. Campbell, Chicago Refinery  
 William T. Cary Jr., Chicago Refinery  
 Nancy E. Chell, Brea, Ca.  
 Elizabeth I. Cortez, San Francisco, Ca.  
 George H. Fletcher, San Francisco Refinery  
 Kathy A. Dalton, Schaumburg, Il.  
 Mennen L. Delapena, San Francisco, Ca.  
 Cathleen P. Drollinger, Schaumburg, Il.  
 Peggy A. Frakes, Richmond, Ca.  
 Sharon A. Gary, Los Angeles, Ca.  
 Richard J. Gaugler, Los Angeles Refinery  
 Beverly J. Gibson, Chicago Refinery  
 Adelheid J. Goebel, Los Angeles Refinery  
 William E. Gomora Jr., Chicago Refinery  
 Russell S. Hancock Jr., Chicago Refinery  
 Yanira G. Hernandez,  
 Los Angeles Refinery  
 Glenn E. Hofer, Chicago Refinery  
 Timothy S. Jordan, Edmonds, Wa.  
 J. L. Kellems, Tucson, Az.  
 Bonnie F. Kirk, San Francisco, Ca.  
 Anthony M. Kisl, Schaumburg, Il.  
 Derek F. Kruk, Chicago Refinery  
 Arlene R. Leuze, Schaumburg, Il.  
 William M. Mampre,  
 Pure Transportation Co., Van, Tx.  
 Terence J. Martinek, Chicago Refinery  
 Rodney G. Motley, Santa Maria Refinery  
 Perry J. Morris, Beaumont Refinery  
 Catherine A. Murphy,  
 San Francisco Refinery  
 Jean M. Nিকেle, Schaumburg, Il.  
 Michael T. Norder, Los Angeles, Ca.  
 James S. Oliver,  
 Pure Transportation Co., Van, Tx.  
 Donald D. Opie, Beaumont Refinery  
 Gregg M. Parker, Chicago Refinery  
 Andrew Z. Pollak, Chicago Refinery  
 John M. Press, Chicago Refinery  
 Malcolm E. Prince, Los Angeles, Ca.  
 Priscilla B. Sabido, San Francisco, Ca.  
 Daniel R. Salazar, Los Angeles, Ca.  
 Frederick J. Shimek, Schaumburg, Il.  
 Tina L. Simms, San Francisco, Ca.  
 James A. Tancredi, Chicago Refinery  
 Arlene E. Tomsovic, South Holland, Il.  
 Nerissa Torres, Anchorage, Ak.  
 Mark M. Yanez, Santa Paula, Ca.  
 James R. Widrig, San Francisco Refinery

## UNION OIL AND GAS DIVISION

### May 1984

45 YEARS	James E. Tippit, Moab, Ut.
35 YEARS	James E. Goode Jr., Lafayette, La. Charles M. Schwartz, Pasadena, Ca.
30 YEARS	Ralph L. Black, Orcutt, Ca. V. L. Cummings, Bakersfield, Ca. John R. Murphey Jr., Houston, Tx. Berwick J. Olivier Jr., Houma, La. Billie N. Pinkston, Snyder, Tx. J. G. Schaeffer Jr., Orcutt, Ca. Eugene D. Smith, Santa Fe Springs, Ca.
25 YEARS	Emmet R. Embody, Cutbank, Mt. Harry C. Lee, Houston, Tx.
20 YEARS	Jon D. B. Avitia, Orcutt, Ca. Donald J. Glynn, Houma, La. Lenoard R. Lockhard, Coalinga, Ca.
15 YEARS	Fred N. Austin, Brea, Ca. Rosa Maria Dennis, Union Oil Center Roger A. Dombrowski, Santa Paula, Ca. Imogene M. Heltzel, Olney, Il. Robert J. Loewecke, Cutbank, Mt. Van N. Schultz, Santa Fe Springs, Ca.
10 YEARS	James M. Freeman, Houston, Tx. Steven H. Gault, Midland, Tx. Gary M. Grabil, Orcutt, Ca. Janet M. Harshman, Casper, Wv. Jerry L. Kincaid, Kenai, Ak. Randolph May, Kenai, Ak. Naomi J. Moore, Midland, Tx. Roselily C. Ramirez, Union Oil Center James A. Shew, Orcutt, Ca. Edward E. Thomas, Houma, La. Carl R. Weniger, Cutbank, Mt.
5 YEARS	Philip M. Ayer, Orcutt, Ca. Mary K. Bell, Lafayette, La. Bruce A. Berwager, Santa Fe Springs, Ca. Robert D. Bokenkamp, Houma, La. Patricia A. Dewitt, Midland, Tx. Constance G. Flournoy, Lafayette, La. Gordon V. Laseter, Lafayette, La. Judy A. Lipari, Houma, La. John C. Liput, Santa Paula, Ca. Cynthia W. Metcalfe, Houston, Tx. Dewayne M. Reamy, Hominy, Ok. William E. Snysman, Anchorage, Ak. Wilford G. Sowell Jr., Lafayette, La. Pam L. Thibodaux, Lafayette, La. Dave C. Thompson, Van, Tx. Robert G. Vicars, Lafayette, La.

### June 1984

45 YEARS	Basil C. Loftis, Orcutt, Ca.
40 YEARS	Edward E. Zinser, Houston, Tx.
35 YEARS	Joseph C. Broussard, Lafayette, La. Charles H. Clark, Union Oil Center Edward C. Clay, Oklahoma City, Ok. Robert C. Maguire, Houston, Tx.
30 YEARS	Zel L. Johnson Jr., Coalinga, Ca. Joseph C. Troups, Lafayette, La.
25 YEARS	Charles W. Browning, Houston, Tx. Jimmie R. Hughes, Midland, Tx. Batson R. Trahan, Lafayette, La.

20 YEARS	William D. Adams, Houston, Tx. Donald W. Appelgate, Jackson, Ms. Emma L. Bland, Midland, Tx. James V. Broda, Santa Paula, Ca. Bill O. Murch, West Liberty, Il. Elton R. Wilkerson, Houston, Tx.
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15 YEARS	Rickey H. Baugh, Van, Tx. Suzanne Bechyne, Midland, Tx. David C. Bennett, Houston, Tx. Jerrold R. Lohr, Houston, Tx. Robert G. Lopez, Coalinga, Ca. Michael A. Marinovich, CutBank, Mt. Jon M. McLennan, Clay City, Il. William B. Mueller, Jackson, Ms. Donnie D. Pere, Lafayette, La. Alan D. Sharpnack, Casper, Wv. Francis M. Steckel, Olney, Il. Margot M. Ziller, Union Oil Center
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10 YEARS	Gerald W. Daigle, Lafayette, La. Ronald J. Grabyan, Ventura, Ca. Wilbert B. Mitchell Jr., Lafayette, La. Stanley E. Obrecht, Clay City, Il. David L. Salzman, Santa Paula, Ca. William C. Schramm, Pasadena, Ca. Seigler K. Smith, Anchorage, Ak.
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5 YEARS	William R. Abercrombie, Houston, Tx. Catalina S. Armas, Union Oil Center Mary E. Burkhardt, Houston, Tx. Craig C. Cobb, Houston, Tx. Justin V. Devery, Jackson, Ms. Thomas H. Doneth, Anchorage, Ak. Norman Frosboese, Houston, Tx. Davis R. Green, Houston, Tx. Robert F. Hopkins Sr., Clay City, Il. Douglas D. Hunt, Taft, Ca. Marvin L. Ivey Jr., Houston, Tx. Philip F. Johnston, Ventura, Ca. Jeffrey C. Leblanc, Lafayette, La. Barry W. McKay, Jackson, Ms. H. Rene Moulinet, Midland, Tx. Michelle Eason Mooney, Pasadena, Ca. Irene C. Myers, Ventura, Ca. Larry S. Nichols, Houston, Tx. Louis J. Rothenberg, Lafayette, La. William W. Rucks IV, Lafayette, La. Thomas L. Todd, Houston, Tx. Andrew C. Warford, Anchorage, Ak. James E. Vanderveen, Moab, Ut. Gary A. Young, Jackson, Ms. Gregory P. Yvarra, Ventura, Ca.
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## UNION GEOTHERMAL DIVISION

### May 1984

30 YEARS	Vane E. Suter, Union Oil Center
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### June 1984

30 YEARS	Neil J. Stefanides, Union Oil Center
15 YEARS	Wendell T. Howard, Manila
5 YEARS	Dolores G. Spence, Santa Rosa, Ca. Bradley E. Wendt, Manila

Service Awards



## UNION CHEMICALS DIVISION

### April 1984

25 YEARS	James A. Laurie, St. Clair Shores, Mi. Donald M. Shillingburg, Denver, Co.
20 YEARS	Wilbur W. Fields, Kansas City, Mo.
15 YEARS	Michael W. Gates, Houston, Tx. Jennings H. Thornton, Tucker, Ga.
10 YEARS	Carmella Mace, Providence, R.I. Walter J. Shipinski, Bridgeview, Il.
5 YEARS	Darlene D. Cook, Charlotte, N.C. Beverly Edwards, Bridgeview, Il. Willie G. Franklin, Miami, Fl. Doree A. Hazen, Schaumburg, Il. James K. Keenum, Tucker, Ga. Ronald A. Lawrence, Rolling Meadows, Il.

### May 1984

35 YEARS	RaeFord L. Johnston, Charlotte, N.C.
30 YEARS	Charles E. Doolin, Rodeo, Ca. Melvin R. Gregory, Brea, Ca. Edwin J. Haughton, Fresno, Ca. Roland C. Raymond, Kenai, Ak.
20 YEARS	Edward J. Underhill, Clark, N.J.
15 YEARS	Kenneth E. Healy, East Providence, R.I. Lamar G. Hunt, La Mirada, Ca. Lazzell Nelson, Charlotte, N.C. Maurits Vlaanderen, Union Oil Center
10 YEARS	Christin E. Korkosz, Schaumburg, Il. Betsy L. Legere, Schaumburg, Il. Paul W. Lemonta, Chicago, Il. Ronnie T. Mathews, Tampa, Fl. Edwin L. Mitchell, Kennewick, Wa. Jessie Nash, Bridgeview, Il. Russell H. Vlieland, Brea, Ca.
5 YEARS	Dallas A. Kirkendol, Clark, N.J. Carolyn E. Klepitsch, Lemont, Il. Susan E. Lindley, Schaumburg, Il. Anthony J. Ponzi, Lemont, Il. Margaret E. Roberts, Union Oil Center Henry L. Torres, Union Oil Center

### June 1984

30 YEARS	Jack L. Tallman, Oakland, Ca. Andrew Vargo, Schaumburg, Il.
25 YEARS	Willard Dorsett Jr., Brea, Ca. John H. Hager, Charlotte, N.C. Donald F. Washburn, Brea, Ca.
20 YEARS	Don H. Beck, Brea, Ca. Fred R. Daugherty, Clark, N.J.



15 YEARS Kenneth W. Carlton, La Mirada, Ca.  
David F. Diehl, Charlotte, N.C.  
Robert L. Hall, Union Oil Center  
Robert S. Kalapos, Brea, Ca.  
Richard A. Roerig, Brea, Ca.  
Helen H. Strange, Charlotte, N.C.  
Edward J. Urey, La Mirada, Ca.

5 YEARS Robert N. Baldwin, La Mirada, Ca.  
Jerome J. Focose, Kenai, Ak.  
Douglas K. Hallmark, Kenai, Ak.  
Scott A. Hanus, Clark, N.J.  
Allen A. Hughes, Kennewick, Wa.  
Robert A. Kudlicki Jr., La Mirada, Ca.  
William L. Kuntzman, Lemont, Il.  
Roger L. Liljequist, Schaumburg, Il.  
Daniel S. Murad, Schaumburg, Il.  
Phillip D. Page, Kenai, Ak.  
Erwin J. Petterson, Kenai, Ak.  
James H. Saling, Kenai, Ak.  
Stephen A. Spangler, Chicago, Il.  
Cheryl L. Srage, Union Oil Center  
Danny R. Stevens, Kenai, Ak.  
James F. Tumsuden, Kenai, Ak.  
Paul F. Weaver III, Kennewick, Wa.

### UNION INTERNATIONAL OIL DIVISION

#### May 1984

20 YEARS James E. Groom, Los Angeles, Ca.  
15 YEARS Martin F. Miller, Thailand  
10 YEARS George Barnes, Los Angeles, Ca.  
William D. Gray, Thailand  
William B. Willsmer,  
Balikpapan, Indonesia  
William F. Leonard, Thailand  
Allan H. Armitage, Jakarta, Indonesia

#### June 1984

30 YEARS Robert E. Harke, Thailand  
25 YEARS Gene R. Ward, Los Angeles, Ca.  
15 YEARS John A. Briffett, Thailand  
10 YEARS Steven R. Belgard, Thailand  
Julie A. Galvan, Los Angeles, Ca.  
5 YEARS Gary V. Awad, London  
Margaret I. Kimbell, Los Angeles, Ca.  
James W. Lemm, Union Oil Center  
Linda A. Perry, London  
Dan R. Williamson, Netherlands  
Gregory W. Plate, Los Angeles, Ca.

### UNION OIL CO. OF CANADA LTD.

#### May 1984

15 YEARS Dave R. Noel, Calgary, Alta.  
10 YEARS Darlene S. Basky, Calgary, Alta.  
M. Doreen Walker, Calgary, Alta.  
5 YEARS Herbert Kam, Calgary, Alta.

#### June 1984

10 YEARS Gordon H. Harcastle, Calgary, Alta.  
5 YEARS Alex W. Knox, Calgary, Alta.  
Jack A. MacArthur, Calgary, Alta.  
Nazir A. Meghani, Calgary, Alta.  
Neil L. Taylor, Calgary, Alta.  
Stewart T. Ward, Calgary, Alta.  
Thea M. Young, Calgary, Alta.

### UNION OIL OF GREAT BRITAIN

#### March 1984

5 YEARS J. R. Bryce, The Hague

#### May 1984

5 YEARS J. D. Summersgill, Scotland  
L. M. Milne, Scotland

### UNION OIL CO. OF INDONESIA

#### May 1984

15 YEARS Bambang Indrajaya Zainuddin

10 YEARS Julius Arungbua  
A. Aziz  
Sujitno B.  
Sijang Batang  
Tori Bunjamin  
Petrus Djomulyo  
Mardi Hardjo  
Husain  
Muhammad Jambari  
Johannes  
Sugeng Maryono Maridin  
Maskur  
Mesak  
Valentinus Ndohe  
Jusup Pare  
Lopu Rantepadang  
Abdul Sani  
Tardjono

5 YEARS Suparnadi Franciscus  
Hoedoro Koento  
Hendra Sukotjo  
Hathaya Tantrakul

#### June 1984

15 YEARS Bintan Tamba  
Laine Thubyuluw  
10 YEARS Didi Achmad Djunaedi  
Kasri Eryanto  
Rusli Hartono  
Raphael Indradi  
Johana Kortman  
Makrup  
Robert Nawawi  
Mohamad Noor  
Nuryadi  
Andarias Paramban  
Peter Patadungan  
Rachmad  
Wahib Said  
Paulus Soemarso  
Slamet Subagyo  
Sudirin  
Sukliwon  
Suwari  
Weynand Van Slooten  
Pitut Yunanto

5 YEARS Bambang Budi Ytomo  
Angeline Chan Ming Yu  
Slamet Djunaedi  
Orawan Luknavongsa  
Mary B. Oliveiro  
Teresita S. Piyarom  
Dennis Sumartono  
Dendy Sunaryo  
Ridwan R. Winterstein  
Zainir

Service Awards



### PHILIPPINE GEOTHERMAL, INC.

#### May 1984

10 YEARS Gregoria Coronel-deLuna, Manila

5 YEARS Celestino O. Blanca, Manila  
Almario M. Castro, Manila  
Vicente C. Claveillas, Manila  
Victoria M. Clemente, Manila  
Santos H. Cortez, Manila  
Remedios A. Fabillon, Manila  
Ricardo U. Fernando, Manila  
Ramiro O. Imperial, Manila  
Jovencio C. Tuto, Manila

#### June 1984

5 YEARS Salome C. Arazas, Manila  
Ma. Bernadette M. Cabarles, Manila  
Jocelyn S. Canezo, Manila  
Florino G. Faustino, Manila  
Roberto Y. Gonzalez, Manila  
Mario K. Magahiz, Manila  
Severo L. Serrano Jr., Manila

### UNION ENERGY MINING DIVISION

#### May 1984

10 YEARS Daniel J. Keuscher, Parachute, Co.

5 YEARS Gary R. Denault, Parachute, Co.  
David Karlinsey, Parachute, Co.

#### June 1984

15 YEARS Timothy L. Heckel, Parachute, Co.  
10 YEARS Jacob J. Graeber, Parachute, Co.  
5 YEARS Kerry D. Crum, Parachute, Co.  
Gary F. Gerstner, Parachute, Co.  
Shelley A. Schutterle, Rawlins, Wyo.  
Paul B. Ternovacz, Parachute, Co.

### MOLYCORP, INC.

#### May 1984

15 YEARS Phil Jiron, Questa, N.M.  
Alonzo H. Martinez, Questa, N.M.  
Emilio J. Martinez, Questa, N.M.  
Albert J. Medina, Questa, N.M.  
Joe E. Miera, Questa, N.M.  
Roger E. Ortega, Questa, N.M.  
Gilbert Pacheco, Questa, N.M.  
Adonias J. Romero, Questa, N.M.  
Luther Tafoya, Questa, N.M.  
Johnny A. Torres, Questa, N.M.

10 YEARS	Kenneth W. Axe, Nipton, Ca. Tony A. Martinez, Questa, N.M. Bernabe O. Valencia, Questa, N.M.
5 YEARS	Mercedinio G. Cisneros, Questa, N.M. Julie M. Devis, Questa, N.M. Pamela J. Kirk, Nipton, Ca. Philip A. Molling, Questa, N.M. Paul H. Silzell, Questa, N.M. Dennis F. Yajko, Washington, Pa.

#### June 1984

30 YEARS Thomas B. Sleeman, Union Oil Center

25 YEARS Damacio Martinez, Questa, N.M.

15 YEARS Epifanio Aguilar, Questa, N.M.  
Paul Arellano, Questa, N.M.  
Orlando B. Cordova, Questa, N.M.  
Gilbert A. Cruz, Questa, N.M.  
Elias Espinoza, Questa, N.M.  
Juan T. Espinoza, Questa, N.M.  
Teodoro Gonzales, Questa, N.M.  
Andy J. Manzanarez, Questa, N.M.  
Gilbert C. Martinez, Questa, N.M.  
Jose M. Mondragon, Questa, N.M.  
Armando L. Ortega, Questa, N.M.  
Delfino L. Oritz, Questa, N.M.  
Joe A. Romero, Questa, N.M.  
Laudes Romero Jr., Questa, N.M.  
Edumenio B. Vigil, Questa, N.M.  
Jose L. Vigil, Questa, N.M.

10 YEARS Edmund C. Barnum, Union Oil Center

5 YEARS Henry E. Aldorf, Paris, France  
Feliberto A. Martinez, Questa, N.M.  
Jeffrey W. Meyer, Questa, N.M.  
Donald R. Pretasky, Nipton, Ca.  
Curtis Raymond Serviss Jr.,  
Questa, N.M.  
John A. Vialpando, Questa, N.M.  
Clarence B. Young, Union Oil Center

#### POCO GRAPHITE INC.

##### June 1984

25 YEARS Robert K. Carlson, Decatur, Tx.

5 YEARS Nona P. McCarthy, Decatur, Tx.  
Bradly W. Neuschwanger, Decatur, Tx.  
Martin B. Woodruff, Decatur, Tx.

#### JOBBERS AND DISTRIBUTORS

##### May 1984

25 YEARS Berg Oil Company, Inc., Anoka, Mn.

10 YEARS Sanbar Oil Company, Inc.,  
Brookhaven, Ms.

##### June 1984

50 YEARS Shamla Oil Company, Inc.,  
Silver Lake, Mn.

40 YEARS Bauer Built, Inc., Durand, Wi.

25 YEARS Ward Oil Company, Inc., Griffin, Ga.

20 YEARS Russ & Mike's Oil Company, Inc.,  
Cook, Mn.

10 YEARS Storey Oil Company, Inc.,  
Seymour, In.

#### RETIREMENTS

##### February 1984

James E. Hooven, Union 76 Division,  
Torrance, Ca., November 2, 1955

##### March 1984

Jane E. Franks, Union 76 Division,  
Kent, Wa., January 20, 1970

##### April 1984

Lowell T. Bernard, Oil & Gas Division,  
Breaux Bridge, La., March 20, 1967  
Vernell H. Bizot Jr., Union 76 Division,  
Port Neches, Tx., August 2, 1948  
Beneslado A. Chacon, Molycorp,  
Arroyo Seco, N.M., November 14, 1968

Roy F. Chambers, Union 76 Division,  
La Puente, Ca., September 30, 1968

David H. De Windt, Union 76 Division,  
Los Angeles, Ca., July 19, 1965

Ruth K. Dore, Union 76 Division,  
Port Neches, Tx., January 3, 1967

Bernice Fio Rito, Union 76 Division,  
No. Riverside, Il., March 18, 1963

Paul M. Foreman, Corporate, San Marino, Ca.,  
April 1, 1940

Willie E. French Jr., Union Chemicals,  
Eros, La., July 18, 1955

Doris A. Hawkins, Union 76 Division,  
Yorba Linda, Ca., August 16, 1955

Arthur J. Henderson Jr., Union 76 Division,  
Beaumont, Tx., August 28, 1950

Edward O. Perry, Union 76 Division,  
Climax, Ga., November 1, 1946

James E. Ramsey, Union 76 Division,  
Walnut, Ca., October 2, 1952

Sam S. Russo, Oil & Gas Division, Berwick, La.,  
July 26, 1951

John L. Schoeff, Union 76 Division,  
Vallejo, Ca., February 16, 1953

Percy G. Taylor, Union 76 Division,  
Nederland, Tx., February 18, 1953

##### May 1984

Ray S. Birmingham, Oil & Gas Division,  
Midland, Tx., October 9, 1949

Raymond J. Bodini, Science & Technology,  
Placentia, Ca., April 1, 1953

James M. Bragg, Union 76 Division,  
Nederland, Tx., June 4, 1941

Bruce E. Buell, Science & Technology,  
Brea, Ca., June 7, 1949

John E. Clark, Oil & Gas Division,  
Arcadia, Ca., July 1, 1955

Donald E. Crow, Oil & Gas Division,  
Houston, Tx., April 14, 1955

Howard D. Edwards, Union 76 Division,  
Nederland, Tx., October 27, 1952

Arthur M. Ellis, Union 76 Division,  
Pell City, Al., November 1, 1960

Douglas N. Harris, Union Chemicals,  
Yorba Linda, Ca., March 15, 1954

Delbert J. Johnson, Union Chemicals,  
Brea, Ca., September 30, 1954

Edgar E. Keller, Oil & Gas Division,  
Whittier, Ca., July 11, 1963

Albert L. Kubalewski, Union 76 Division,  
Joliet, Il., August 1, 1954

Kenneth W. Lewis, Union 76 Division,  
Groves, Tx., December 19, 1967

Mansfield P. Lowery, Union 76 Division,  
Pleasant Hill, Ca., March 21, 1946

Eleanor M. J. Matzl, Union 76 Division,  
Schaumburg, Il., September 20, 1967

David W. McCann, Union 76 Division,  
Temple Terr., Fl., November 1, 1950

Leona O. McGraw, Union 76 Division,  
Nederland, Tx., April 10, 1944

Betty L. Nieman, Union 76 Division,  
Arlington Heights, Il., March 11, 1943

William L. Palmer, Union 76 Division,  
Batavia, Oh., July 13, 1949

Norris W. Pannill, Oil & Gas Division,  
Westminster, Ca., October 10, 1955

John C. Pearson, International Division,  
Alexandria, Va., April 26, 1951

Wilbur G. Rishel, Oil & Gas Division,  
Worland, Wv., February 15, 1952

Jack A. Schuster, Union 76 Division,  
Monticello, Ga., February 1, 1954

Selma Schwartz, Union 76 Division,  
Arlington Heights, Il., January 16, 1969

Johnny T. Smith, Union 76 Division,  
Pensacola, Fl., November 5, 1945

Lawrence H. Smith, Oil & Gas Division,  
Midland, Tx., April 6, 1946

John R. Trubich, Union 76 Division,  
Joliet, Il., August 1, 1954

Joseph R. White, Union 76 Division,  
Denver, Co., April 1, 1954

Leonard F. Zolecki, Union 76 Division,  
Lemont, Il., April 7, 1949

##### June 1984

William J. Anderson, Union 76 Division,  
Farmington Hills, Mi., May 22, 1947

Leonard J. Burke, Union Chemicals Division,  
Schwenksville, Pa., March 12, 1956

Erin P. Carter, Union 76 Division,  
Concord, Ca., April 18, 1946

Ernie C. Caudill, Union 76 Division,  
Barboursville, W.V., February 12, 1941

Colin H. Chadband, Oil & Gas Division,  
Santa Maria, Ca., July 28, 1941

Dale C. Cooper, Union Real Estate Division,  
La Mirada, Ca., July 2, 1956

Ellen V. Cordry, Science & Technology,  
Chino, Ca., March 21, 1960

James C. Crisafi, Union Chemicals Division,  
Cypress, Ca., March 8, 1973

**William A. Deane**, Union 76 Division, Arroyo Grande, Ca., December 8, 1950  
**Eugene E. Finnell**, Union 76 Division, Torrance, Ca., August 15, 1952  
**Richard L. Fitzpatrick**, Union 76 Division, Hartwell, Ga., August 2, 1954  
**George P. Fox**, Science & Technology, Tustin, Ca., February 1, 1942  
**Clifford C. Gracey, Jr.**, Union 76 Division, Miami, Fl., January 24, 1947  
**Charles R. Howe**, Science & Technology, Anaheim, Ca., December 6, 1965  
**Helen G. Kemmerer**, Union Real Estate Division, Los Angeles, Ca., May 9, 1947  
**Leopold Koncki**, Union 76 Division, Beaumont, Tx., February 6, 1951  
**Edward Mauel**, Union 76 Division, Palatine, Il., October 1, 1950  
**Harlan H. Richardson**, Union 76 Division, Charlotte, N.C., August 30, 1948  
**Frederick E. Saeger**, Union Chemicals Division, Fair Lawn, N.J., February 1, 1972  
**Eugene B. Tasharski**, Union 76 Division, Lemont, Il., September 4, 1951  
**Russell H. Vlieland**, Union Chemicals Division, Yorba Linda, Ca., May 6, 1974  
**David Wink**, Union 76 Division, San Rafael, Ca., March 14, 1966  
**Lloyd G. Woodson**, Union Chemicals Division, Brea, Ca., March 15, 1954

**William S. Eggleston**, Corporate, Laguna Hills, Ca., March 20, 1984  
**Charles R. Evans**, Oil & Gas Division, Ft. Worth, Tx., March 22, 1984  
**Zenn O. Feltz**, Union 76 Division, Perryville, Mo., April 20, 1984  
**Ernest A. Firth**, Union 76 Division, Orlando, Fl., April 7, 1984  
**Charles J. Flanagan**, Union 76 Division, Seattle, Wa., April 1, 1984  
**Michael J. Flanagan**, Union 76 Division, Sun City, Ca., March 3, 1984  
**Jennings A. Garrett**, Union 76 Division, Cedar Park, Tx., March 20, 1984  
**James N. Gilbert**, Union 76 Division, Atlanta, Ga., March 14, 1984  
**Robert L. Green**, Union 76 Division, San Pablo, Ca., March 6, 1984  
**Ensel A. Hall**, Union 76 Division, McAllen, Tx., January 29, 1984  
**Mahlon Lee Hall**, Union 76 Division, Nederland, Tx., March 23, 1984  
**Aubrey J. Hebert**, Oil & Gas Division, Morgan City, La., March 14, 1984  
**Eugene F. Hill**, Union 76 Division, Pinole, Ca., April 8, 1984  
**Harry A. Hudalla**, Union 76 Division, Lecanto, Fl., March 28, 1984  
**Leroy S. Kedorski**, Union 76 Division, Lockport, Il., March 2, 1984  
**Robert M. Kimball**, Union 76 Division, Anderson, In., March 10, 1984  
**Anthony W. Korelec**, Union 76 Division, Joliet, Il., March 25, 1984  
**Charles A. LeMaster**, Union 76 Division, Neward, Oh., March 2, 1984  
**Adolph C. Lenz**, Oil & Gas Division, Santa Maria, Ca., March 20, 1984  
**John Mackey**, Union 76 Division, Pioneer Town, Ca., March 17, 1984  
**Thomas B. Mann**, Union 76 Division, Shreveport, La., February 1, 1984  
**Dean A. Martin**, Molycorp, Twin Falls, Id., March 12, 1984  
**Virginia O. McGee**, Union 76 Division, Glendale, Ca., February 18, 1984  
**Arthur Oliver Olsen**, Union 76 Division, Reno, Nv., March 10, 1984  
**Clifford S. Porter**, Union 76 Division, Holiday, Fl., April 21, 1984  
**Claude L. Seabury**, Union 76 Division, Saraland, Al., March 28, 1984  
**Ted Sluder**, Union 76 Division, San Pedro, Ca., April 20, 1984  
**John J. Stockmaster**, Union 76 Division, Toledo, Oh., December 27, 1983  
**Clare H. Tempel**, Union 76 Division, Joliet, Il., March 25, 1984  
**Arthur N. Tilston**, Union 76 Division, Bishop, Ca., April 1, 1984  
**Bud Trimble**, Oil & Gas Division, Seminole, Ok., February 29, 1984  
**Walter R. Van Kleek**, Union 76 Division, Tigard, Or., March 22, 1984  
**Jess D. Williams**, Oil & Gas Division, Siloam Springs, Ar., April 19, 1984  
**William R. Whitfield**, Molycorp, Temple, Tx., March 23, 1984  
**Walter C. Wooten**, Union 76 Division, Sarasota, Fl., April 15, 1984  
**Lee A. Yahn**, Oil & Gas Division, Perry, Ok., March 7, 1984



## IN MEMORIAM

### Employees

**Marvin L. Hasletine**, Union 76 Division, Alhambra, Ca., March 1, 1984  
**Carl O. Lundblade**, Union 76 Division, Pleasant Hill, Ca., April 22, 1984  
**R. W. (Dick) Yarbrough**, Oil & Gas Division, Arcadia, Ca., February 27, 1984

### Retirees

**James E. Atkins**, Oil & Gas Division, Arkansas, Ks., March 12, 1984  
**Lawton D. Atkins**, Oil & Gas Division, Rubidoux, Ca., March 14, 1984  
**Homer A. Austin**, Oil & Gas Division, Roscommon, Mi., February 25, 1984  
**Eunice P. Banks**, Union 76 Division, Savannah, Ga., April 10, 1984  
**Elden C. Bassi**, Oil & Gas Division, Santa Maria, Ca., April 14, 1984  
**James F. Brownlee**, Union 76 Division, San Pedro, Ca., April 2, 1984  
**Irwin G. Clay**, Union 76 Division, Beaumont, Tx., March 23, 1984



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UNION OIL COMPANY OF CALIFORNIA

# Seventy Six

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 MAY/JUNE 1984  
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