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Vast Oil Reserve May Now Be Within Reach, and Battle Heats Up

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Jim Wilson/The New York Times / At the Midway-Sunset oil field in California, the prize lies fairly close to the surface, so the wells do not have to be very deep. The oil in the Monterey Shale is much less acces-

FELLOWS, Calif. — Secure in this state's history and mythology, the venerable Midway-Sunset oil field near here keeps producing crude more than a century after Southern California's oil boom. Many of its bobbing pump jacks are relatively short, a telltale sign of the shallowness of the wells and the ease of extracting their prize.

But away from this forest of pump jacks on a flat, brown landscape, a road snakes up into nearby hills that are largely untouched — save for a handful of exploratory wells pumping oil from depths many times those of Midway-Sunset's. These wells are tapping crude directly from what is called the Monterey Shale, which could represent the future of California's oil industry — and a potential arena for conflict between drillers and the state's powerful environmental interests.

At one such exploratory site, tall pump jacks stood above two active wells on a small patch of federal land. For now, the operator, Venoco, has been storing the oil in two large tanks. But construction is scheduled to start soon on pipelines, and more wells are planned.

Comprising two-thirds of the United States's total estimated shale oil reserves and covering 1,750 square miles from Southern to Central California, the Monterey Shale could turn California into the nation's top oil-producing state and yield the kind of riches that far smaller shale oil deposits have showered on North Dakota and Texas.

For decades, oilmen have been unable to extricate the Monterey Shale's crude because of its complex geological formation, which makes extraction quite expensive. But as the oil industry's technological advances succeed in unlocking oil from increasingly difficult locations, there is heady talk that California could be in store for a new oil boom.

Established companies are expanding into the Monterey Shale, while newcomers are opening offices in Bakersfield, the capital of California's oil industry, about 40 miles east of here. With oil prices remaining high, landmen are buying up leases on federal land, sometimes bidding more than a thousand dollars an acre in auctions that used to fetch the minimum of \$2.

"We've seen a significant increase in the last three to five years in the price paid from our sales," said Gabriel Garcia, assistant field manager at the federal Bureau of Land Management's office in

Bakersfield. “Some of that has to do with speculation on new technologies, and some of that has to do with the high price of oil.”

The Monterey Shale has also galvanized California’s powerful environmental groups. They are pressing the state to strictly regulate hydraulic fracturing, or fracking, the drilling technique that has fueled the shale oil and gas boom elsewhere but has drawn opposition from many environmentalists. In December, the State Department of Conservation released a draft of fracking rules, the first step in a yearlong process to establish regulations.

Severin Borenstein, a co-director of the Energy Institute at the Haas School of Business at the University of California, Berkeley, said technological advances and the high price of oil were driving interest in the Monterey Shale, just as elsewhere.

“Everyone has known that there is shale oil not just in the Monterey Shale but also in North Dakota and Wyoming and all over the country,” he said. “Back in the ‘70s, there were discussions that there’s all this oil and all we’ve got to do is get it. Now 40 years later, the technologies have become available to actually get it in a cost-effective way.”

While oil is found less than 2,000 feet below the surface in fields like Midway-Sunset, companies must pump down to between 6,000 and 15,000 to tap shale oil in the Monterey.

Though production has been declining for years, California remains the country’s fourth-largest oil-producing state, after Texas, North Dakota and Alaska. So far, little of the crude is derived from the Monterey Shale, whose untapped deposits are estimated at 15.4 billion barrels, or more than four times the reserves of the Bakken Shale in North Dakota, according to the United States Energy Information Administration.

“There are billions of barrels of oil buried in the Monterey Shale, and as far as I know, nobody’s been able to find it yet,” said Neil Ormond, the president of Petroleum Land Management, a company based in Clovis, Calif. “But I think there’s going to be more people looking for it. You can’t let a few dry holes discourage the whole thing, because if you find oil, you make money.”

A landman, Mr. Ormond bought leases on more than 10,000 acres of federal land in an auction organized by the Bureau of Land Management. Landmen usually work for oil companies, acquiring leases that allow them to explore and drill for oil.

Landmen have also been increasingly approaching individual landowners and buying mineral rights, though these private transactions are hard to track, said Tim Kustic, California’s state oil and gas supervisor.

“That’s an early precursor to an increase in exploration and drilling activity,” Mr. Kustic said.

The two companies with the biggest stakes in the Monterey Shale, Occidental Petroleum and Venoco, are increasing their exploration efforts, including a joint three-dimensional seismic survey of one area.



California’s Hydraulic Fracturing Hotbed



Jim Wilson/The New York Times
Oil dripped from a stick held by Jeff Prude, a federal Bureau of Land Management employee, near the oil fields last month.



Jim Wilson/The New York Times
The Midway-Sunset oil field, which keeps producing crude more than a century after the Southern California oil boom.



Jim Wilson/The New York Times
A marker where a 1909 gusher made the field famous

Companies with experience exploiting the Bakken Shale, including the New York-based Hess, have recently set up operations in Bakersfield, too. Jon Pepper, a spokesman for Hess, said it was “too early to talk in any definitive way” about the company’s plans in the Monterey Shale.

But the oil companies’ plans for the Monterey Shale are already drawing increasing scrutiny from environmental groups. Though oil companies have engaged in fracking in California for decades, the process was only loosely monitored by state regulators.

The Monterey Shale’s geological formation will require companies to engage in more intensive fracking and deeper, horizontal drilling, a dangerous prospect in a seismically active region like California, environmental groups say.

Environmental groups, including the Sierra Club and the Center for Biological Diversity, are suing the Bureau of Land Management and the Department of Conservation to prevent the opening up of further land to oil exploration and to enforce stricter environmental practices.

“If and when the oil companies figure out how to exploit that shale oil, California could be transformed almost overnight,” said Kassie Siegel, a lawyer at the Center for Biological Diversity. “Fracking poisons the air we breathe and the water we drink. It is one of the most, if not the most, important environmental issue in California.”

Tupper Hull, a spokesman for the Western States Petroleum Association, an industry lobbying group, said oil companies had safely used fracking for decades in California, mostly combined with traditional vertical drilling.

“Nobody can point to any incident or impact that has taken place,” Mr. Hull said.

After the California Department of Conservation released its draft of fracking regulations, environmental groups criticized a clause that would allow companies not to disclose the chemicals used in fracking to protect trade secrets.

Jason Marshall, chief deputy director of the Department of Conservation, said companies seeking to withhold such information would have to adhere to the state’s trade secret protection laws.

“The baseline assumption of these regulations is the disclosure of what’s in the fluids,” he said. “It should be the exception when someone is trying to exercise a trade secret protection.”