**Dressed to call on the Amir of the Eastern Province in Hofuf in 1940, are, left to right, George Cunningham, Green and Ed Skinner. The photo was taken by a fourth member of the party, Max Steineke.** *(Courtesy, C. Green)*

# *Green Returns to Dhahran'*

**(Continued from Page 1)**

of either drill pipe or casing."

The drilling continued. Meanwhile, Green and Cunningham, joined by Steineke and Bapco's resident manager in Bahrain, Ed Skinner, toured the southern area — Hofuf, Jabrin and the edge of the Rub' al-Khali. They also went to Salwah on the Arabian Gulf.

On the way, Steineke stopped their touring car. "'Now I want you to get out,'" Green recalled Steineke as saying. "'You see that big rise that goes from one end of the horizon to the other? That could be our next big oil field.' And by God he was right. That was Abqaiq."

Since they had gone as far as eastern Saudi Arabia, Green and Cunningham proceeded to Bahawalpur in India's Punjab to check on seismic work being done in the Great Indian or Thar Desert. When they left Saudi Arabia, Abu Hadriya No. 1 was down to about 9,600 feet.

In late March 1940, while still in India, Cunningham received two radiograms. One was from San Francisco and the other from Dhahran. Green said Cunningham decided to open the one from San Francisco first, figuring it was from his boss, Clark Gester, vice president for exploration at Socal. He was right. As Green told it, the radiogram said: "Before going any further east on this trip, please go back to Saudi Arabia and conduct a post-mortem study as to why we ever got into that million-and-a-half-dollar mistake at Abu Hadriya."

As Cunningham was moaning about having to backtrack to Saudi Arabia, Green reminded him about the other radiogram. Cunningham opened the envelope. It was from Steineke. Green said it stated: "Abu Hadriya has just blown in for 15,000 barrels at 10,200 feet." The wildcat had struck oil on March 25, 1940, at more than twice the depth of Dammam Well No. 7 — 10,115 feet to be exact.

"This," said Green, "is a classic example of how one minute you're in the doghouse and the next minute you're on top of the world. It also explains an old saying of mine: 'If you ever meet an exploration geologist or an exploration geophysicist who is an egotist, you know you are listening to a beginner.'"

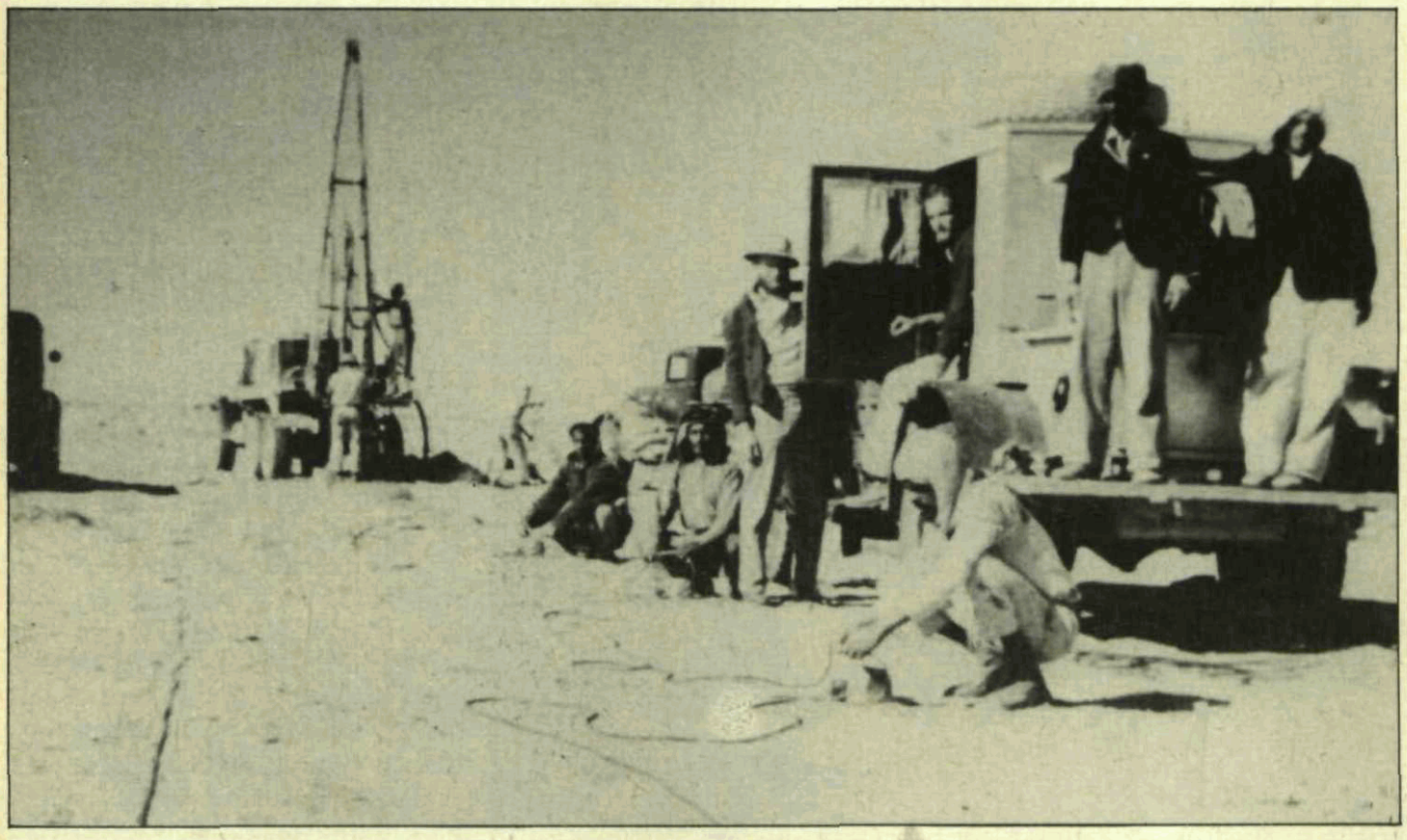
Green is also fond of a saying by his friend the late Everette DeGolyer, one of the world's great geologists who, incidentally, put up the money to launch GSI in early 1930. According to Green, DeGolyer used to say, "Use all the best geology you can and all the best geophysics. But be sure to carry a rabbit's foot in your pocket."

The success at Abu Hadriya was an important early vindication for exploration geophysics. Until then, and indeed for many years thereafter, Aramco relied much more on surface geological observations and structure drilling in exploration. In the 1960s, the application of statistical communications theory to the analysis and processing of seismic data revolutionized the seismic exploration business. Another technological leap occurred in the mid-1970s, when three-dimensional seismic data collection and processing was introduced.

Green sees further advances ahead. "We're not only working with geologists, but also with petroleum engineers now," he commented. "Under ideal circumstances, we can detect if a formation's got oil, water or gas in it...and detect the oil-water contact — the water injection front and where it joins with the oil."

Despite some early professional difference over Abu Hadriya No. 1, Green and Steineke remained lifelong friends. In 1951, Green helped Steineke, who had suffered a stroke, to the podium to receive the Sidney Powers Gold Medal, probably the greatest honor that can be bestowed upon a petroleum geologist.

"I'm very proud...of this long-time Aramco connection," Green told his audience at EXPEC. "It's been really wonderful." **— R. H.**



**An early seismic crew works near Abu Hadriya, circa 1939. The man in the foreground is planting an S-10 seismometer weighing 10 pounds. "That was considered quite an improvement over the way we started in 1930, with S-2 seismometers weighing 30 pounds each," said Green. Today's seismometers weigh "about a fraction of an ounce."** *(Courtesy, C. Green)*