

3,200 Gulf wells unplugged, unprotected

Jeff Donn, Associated Press, 4-20-11

More than 3,200 oil and gas wells classified as active lie abandoned beneath the Gulf of Mexico, with no cement plugging to help prevent leaks that could threaten the same waters fouled by last year's BP spill, The Associated Press has learned.

These wells likely pose an even greater environmental threat than the 27,000 wells in the Gulf that have been plugged and classified officially as "permanently abandoned" or "temporarily abandoned." Those sealed wells were first tallied and reported as a major leaking threat in an investigative report by the AP in July.

The unplugged wells haven't been used for at least five years, and there are no plans to restore production on them, according to the federal government. Operators have not been required to plug the wells because their leases have not expired.

As a result, there is little to prevent powerful leaks from pushing to the surface. Even depleted wells can repressurize from work on nearby wells or shifts in oil or gas layers beneath the surface, petroleum engineers say. But no one is watching to make sure that doesn't happen.

The addition of the unused but officially active wells, as documented in a list provided to the AP by federal officials under the U.S. Freedom of Information Act, means at least three-fifths of the 50,000 wells ever drilled in the Gulf have been left behind with no routine monitoring for leaks.

The 27,000 decommissioned wells were drilled mostly on federal leases that have now expired. Government rules for expired leases on the sea floor require operators to plug the wells or make plans to reuse them within a year. In its original report, the AP documented how oil and gas companies regularly flouted the rules regarding temporary abandonment, with some wells "temporarily abandoned" since the 1950s.

Rules for unexpired leases are different, and have allowed operators to simply walk away from idle wells. Some of the roughly 3,200 unsealed wells contained in the latest list were drilled 60 years ago, and most are more than 10 years old.

Federal regulators described idle wells on active leases as a "potential threat" to the environment in a September letter to operators announcing a new program, dubbed "Idle Iron," to plug them within three years. The letter said the program would cover more than 3,000 idle wells but didn't say what kind of wells would be included or whether the wells already contained at least some cement plugging.

The list of specific wells covered by the Idle Iron initiative was provided to the AP by the U.S. Bureau of Ocean Energy Management, Regulation and Enforcement, which regulates oil and gas leases on federal lands on the sea floor.

BOEMRE refused to provide the list when the AP first requested it in September. The agency said at the time that it first wanted to verify with gas and oil companies that the wells were correctly classified. The AP argued that the FOIA provides access to records as they exist at the time of the request, but the agency still refused to release the material.

In finally providing the list last month, BOEMRE said the wells had been "verified." But several weeks later, a

representative of the agency, Eileen Angelico, contacted the AP and said it had mistakenly released the original unverified list.

It is that version - a listing of wells as they were classified in September without any challenges from the industry - that the AP has analyzed and used as a basis for this story. Angelico said the verified list wasn't yet ready, despite the earlier assurance that the released list had been checked by operators.

The list cites the American Petroleum Institute number of 3,253 oil or gas wells targeted by the initiative in September. Ninety-nine percent of them, or 3,212, were classified as completed wells. Most were drilled for regular production, but a few were exploratory.

Just 41 of the Idle Iron wells - 1 percent - were already classified in September as "temporarily abandoned."

When wells are drilled, they are lined with metal casing, which is then encased in cement to further shore up the borehole.

Whole segments of wells that are permanently abandoned are plugged with additional lengths of cement - known as plugs - to prevent any oil or gas from pushing its way to the top. Then, the top of the casing is sheared off, and a cap is placed over it.

When wells are temporarily abandoned, fewer cement plugs are placed, so it is easier to drill through the plugs and resume production, if desired.

The typical well in the Iron Idle program is finished only with a wellhead, which is the top of the metal lining, and perhaps a device called a tree, a faucet-like rig equipped with valves to open and shut the flow of hydrocarbons during production.

Federal regulators have acknowledged that even some plugged wells have leaked in the past. And, as the AP disclosed last summer, there is no routine monitoring of abandoned wells - plugged or unplugged.

The oil and gas industry generally views plugging on unexpired leases as an inconvenience and prefers the freedom to resume operations at any time on such wells.

When BP's Deepwater Horizon well blew in the Gulf last April 20, it was being temporarily abandoned to await later production. A poor cement plugging job has been identified as a chief cause of the deadly explosion and spill.

Engineers say the metal and cement lining inside abandoned wells, as well as the plugs, can break down over time and allow leaking. Petroleum or corrosive brine, which is even saltier than sea water, can leak from under the sea floor, harming aquatic life.

The most dramatic threat from the Idle Iron wells is a gusher akin to the BP spill, though probably on a smaller scale, specialists say.

Roger N. Anderson, an energy geophysicist at Columbia University, said he worries about a catastrophic failure of the cement lining in the unplugged wells. "The one thing we don't know very much about is how the cement will age. Highways only last so long, and the cement starts to degrade," he said.

Another danger is that many of the unused Idle Iron wells may be slowly leaking, hurting sea creatures that have adapted to the natural petroleum seepage from the sea floor, but not to higher amounts. "Elevated chronic

leaks from thousands of sources spread widely across the Gulf can have much more impact than single spills," said Doug Rader, an ecologist for the Environmental Defense Fund.

A third danger is that hurricanes or other storms will wreck underwater structures and make them leak.

David Pettit, senior attorney for the Natural Resources Defense Council, said the lack of oversight of unused wells makes him nervous.

"I have no idea how badly they may be leaking," he said, adding that federal regulators should start with checking some of the oldest wells.

Under the Idle Iron program, operators can choose to seal the wells with a complete series of plugs and sheared-off well lining for permanent abandonment, or with fewer plugs for temporary abandonment.

As a third choice, they may apply limited plugs strategically around the oil or gas zones within the well - but must then seal the well more thoroughly within two more years.

It's not clear if companies would be required to fully seal the Idle Iron wells that are already listed as temporarily abandoned.

Under the new rules, future wells that drop out of production on active leases also must be sealed within three years.

Gene Beck, a petroleum engineer at Texas A&M University who used to work in the petroleum industry, said many companies won't like the Idle Iron program "because it's going to cost a lot of money." It is not clear how much, but companies will have to spend at least \$3 billion to permanently plug wells on both active and expired federal leases, according to earlier BOEMRE estimates.

Apache Corp., which operates the most Idle Iron wells with 587 in its portfolio, foresees spending \$317 million to plug and decommission its own assets in the Gulf just this year.

Drew Hunger, who manages Gulf decommissioning work for Apache, said he views the timetable of the Idle Iron program as reasonably ambitious, but he added that it also appears to allow for "the limitations on available contractor equipment and manpower."

He said industry complaints about the program revolve around the paperwork and the limited size of BOEMRE's staffing to process it.

Chevron U.S.A., the company with the second-highest number of wells in the program at 528, did not respond to a request for comment. BP has 24 such wells and also did not respond.

Federal officials have said little about how the new program will be enforced. Neither the BOEMRE nor the U.S. Environmental Protection Agency, which monitors sea pollution, responded to repeated requests for interviews about the program.