



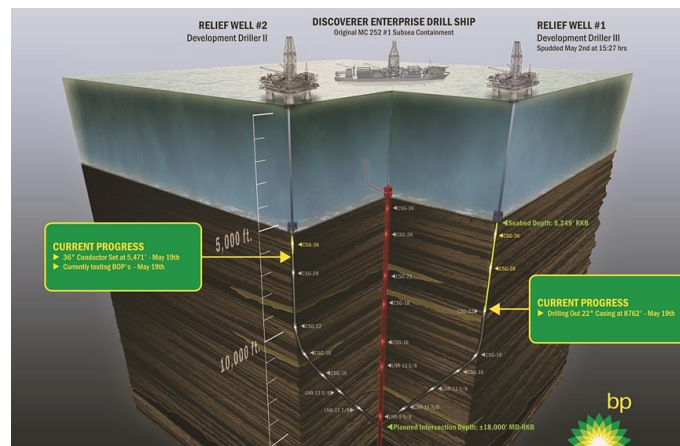
The Gulf Deepwater Oil Spill, sheen, other oil layers, and RIT flows

Posted by [Heading Out](#) on May 20, 2010 - 9:36am

Topic: [Environment/Sustainability](#)

Tags: [deepwater horizon](#), [oil spill](#) [[list all tags](#)]

There have been a number of steps forward in dealing with the massive oil spill and continued oil leak from the BP well in the Gulf. BP has now posted a [status illustration](#) of the two relief wells that are being drilled to intersect and finally kill the initial well.



Click for larger image.

The picture shows both of the relief wells and the original well, as of today. It gives some idea of the overall layout of the three wells, and the points where the original well will be intersected.

UPDATE: CNN has [been carrying live feed](#) of the flow out of the riser, as the RIT is now removing around [5,000 bpd](#) from the riser.

While there has been steady progress on a number of fronts; the riser insertion tube (RIT) is now pumping 3,000 bpd; a check on the fluid being collected shows that the gas content is higher with a gas:oil ratio of 5,000 rather than the 3,000 initially estimated; and the top kill injection is now scheduled for Sunday. There were four successful surface burns yesterday. There is not a lot otherwise that is new in terms of killing the well, though the oil is now arriving on shore and starting to have an impact. There was also the possibility of a Kevin Costner idea being adopted; a problem for a CBS crew; and a clarification of the role of Schlumberger.

There was a [Press Conference today](#), and a BP official on [PBS News Hour](#), and it is from these sources and a quick reference that I am writing the post tonight.

One of the issues that has been continuously referred to has been the progress of the oil spill both on the surface, and underwater. Unfortunately the underwater, and heavier oil, is now [beginning](#)

[to appear](#) in the marshes of Louisiana and the surface traces of the plume are beginning to get drawn into the Loop Current. The surface indication is the presence of a sheen on the surface. The thickness of that layer can be assessed by looking at the refraction, but it is [not that easy](#).

An estimate of the quantity of oil observed at sea is crucial. Observers are generally able to distinguish between sheen and thicker patches of oil. However gauging the oil thickness and coverage is rarely easy and is made more difficult if the sea is rough. All such estimates should be viewed with considerable caution. The table below gives some guidance. Most difficult to assess are water-in-oil emulsions and viscous oils like heavy crude and fuel oil, which can vary in thickness from millimeters to several centimeters

Oil Type	Appearance	Approx. Thickness	Approx volume (m ³ /km ²)
Oil Sheen	Silver	>0.0001 mm	0.1
Oil Sheen	Iridescent	>0.0003 mm	0.3
Crude and Fuel Oil	Brown to Black	>0.1 mm	100
Water-in-oil emulsion	Brown/Orange	>1 mm	1,000

Source ([MMS](#))

The transcript of the News Hour interview with [Bob Dudley of BP](#) this confirmed the 3,000 bd recovery figure through the RIT, and that they are continuing to open the choke that controls the flow up to the surface ship that is collecting the oil, and [flaring the gas](#). He noted the high gas content, at the greater oil flow. The pipe is now collecting more than 13 million cubic feet of gas a day. With that high a gas content, at least half the plume that has been coming from the pipes is made up of gas. Because of that gas content, it is hard to measure the exact volumes of fluid that are leaving the pipe. But he also noted that the larger numbers that have been quoted in the press, of 70,000 to 100,000 bd are purely sensational and not based on science. Unfortunately they also serve to increase alarm and suggest threats to the tourist industries of Alabama, Mississippi and Florida that do not realistically exist.

He further commented that the failure of the blowout preventer (BOP) in this circumstance is unprecedented, and that the dispersant being used is the one that the Coast Guard has been using for over 20 years, after extensive EPA testing. And, in regard to liability:

We have said we're not going to hide behind a \$75 million cap on the liabilities. To date, we have spent more than half-a-billion dollars on the spill response. We're not going to ask for reimbursements for the American people for that effort.

And we're going to keep at this. And shutting the well off, containing it at sea, and keeping it off the beaches as long as it takes, Jeff.

The transcript of the press conference was not posted as I write this, but there are comments available from it, which largely bore out what the BP official said (unfortunately I have lost the site that I was getting the info from). There was, however, a comment that the ["hot tap"](#) had made it back into consideration, and that [an idea by Kevin Costner](#) was also possibly going to be

Costner came forward last week with an oil spill cleanup technology he started devising after the 1989 Exxon Valdez spill in Alaska. Surrounded by local and state politicians, he demonstrated a \$24 million centrifuge device that he said could be placed on barges and used to suck in oily water, separate the oil and spit out mostly pure water.

Incidentally there has been a response to the story of [a CBS crew being stopped](#). The Unified Command issued a statement that said, in part:

Tonight CBS Evening News reported they were denied access to oiled shoreline by a civilian vessel that had clean-up workers contracted by BP, as well as Coast Guard personnel on board. CBS News video taped the exchange during which time one of the contractors told them (on tape) that " ... this is BP's rules not ours."

Neither BP nor the U.S. Coast Guard, who are responding to the spill, have any rules in place that would prohibit media access to impacted areas and we were disappointed to hear of this incident. In fact, media has been actively embedded and allowed to cover response efforts since this response began, with more than 400 embeds aboard boats and aircraft to date. Just today 16 members of the press observed clean-up operations on a vessel out of Venice, La.

The only time anyone would be asked to move from an area would be if there were safety concerns, or they were interfering with response operations. This did occur off South Pass Monday which may have caused the confusion reported by CBS today.

The entities involved in the Deepwater Horizon/BP Response have already reiterated these media access guidelines to personnel involved in the response and hope it prevents any future confusion.

And in regard to the Schlumberger crew that apparently were on the rig to run a Cement Bond Log (CBL), [Schlumberger has made a statement](#).

The company, which had not previously revealed its work on the Horizon, said in an emailed statement that it performed wireline services for BP Plc on the rig in March and April, completing the last services on April 15 and leaving a crew on standby in case any more were needed. the morning of April 20, 2010, B that it could return to its home base in Louisiana," Schlumberger said in a statement, which a spokesman for the company confirmed ~~The phone~~ departed the rig 11:00 a.m. on April 20 on one of BP's regularly scheduled helicopter flights, Schlumberger said.

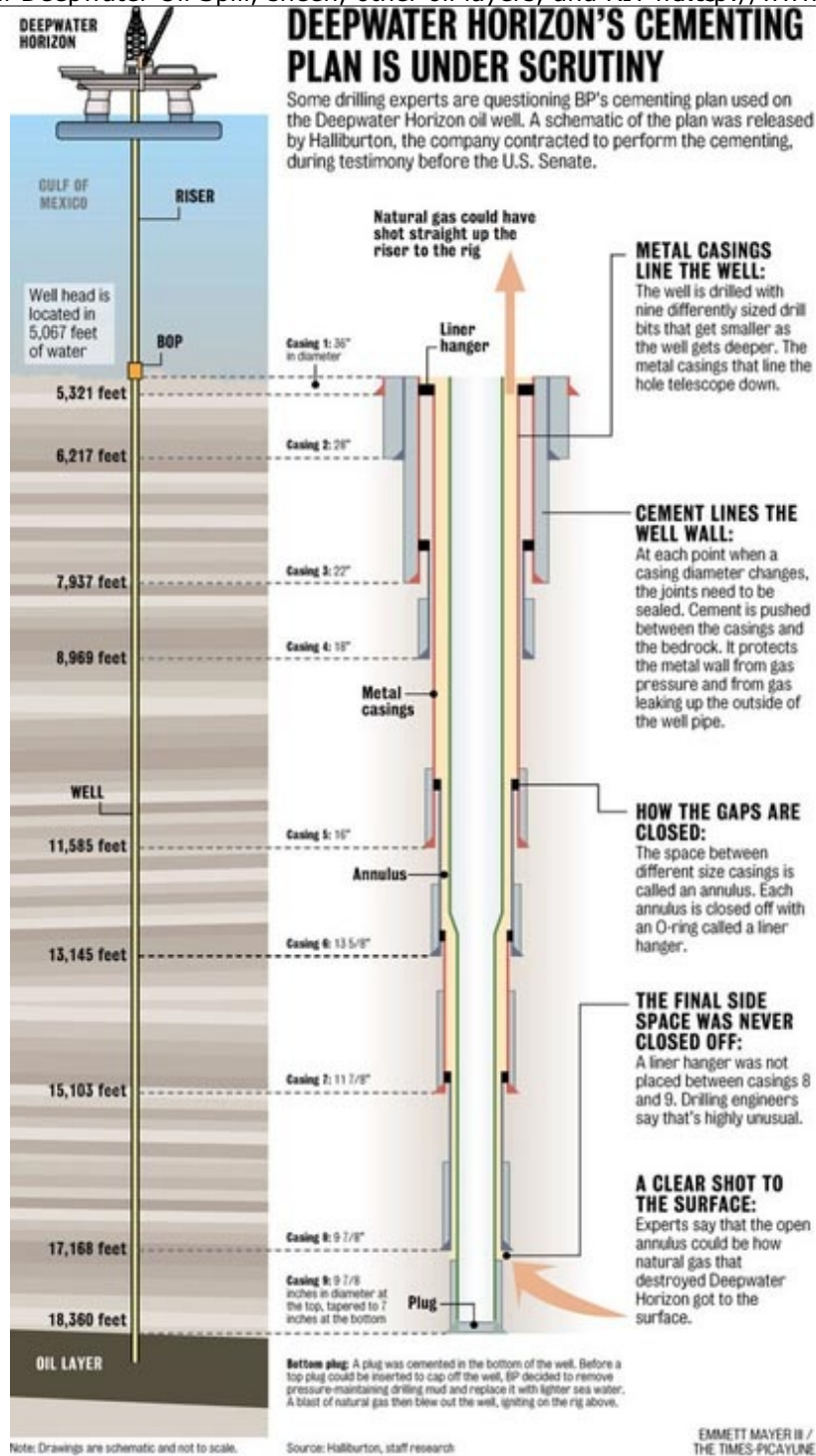
It [has been suggested](#) that they could have performed a CBL (cement bond log) to assess the quality of the cement lining at the bottom of the casing, but were not asked to do so before they

Probert (of Halliburton) told a Senate committee last week that the cement bond log is "the only test that can really determine the actual effectiveness of the bond between the cement sheets, the formation and the casing itself."

Gregory McCormack, director of the Petroleum Extension Service at the University of Texas, called the cement bond log the "gold standard" of cement tests. It records detailed, 360-degree representations of the well and can show where the cement isn't adhering fully to the casing and where there may be paths for gas or oil to get into the hole.

Schlumberger's Harris said the contractor was ready to do any such wireline tests, but was never directed to do so. The team had finished doing tests on the subsea layers of earth being drilled five days earlier and hadn't done any work since, Harris said.

The Times Picayune [has a graphic](#) showing that the last cement injection did not seal to the one above it, leaving a gap through which gas could enter the well. It is not clear whether the gas entered the well there, or from some other point in the well, nor whether the initial gas flow then progressed up the outside of the casing (the annulus), or up inside the production casing itself.



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