



BP's Deepwater Oil Spill - Capping the Riser - Part 1 (Cap on, but leaks) - and Open Thread 3

Posted by [Heading Out](#) on June 4, 2010 - 10:24pm

Topic: [Environment/Sustainability](#)

Tags: [bp](#), [deepwater horizon](#), [lmp](#), [oil spill](#), [top hat](#) [list all tags]

Please note: This discussion is being moved to <http://www.theoil Drum.com/node/6564>.

Update: It is still too soon to know how successful the new cap will be. Spillage of oil was apparently expected by design, initially. As the system is adjusted so that more oil can come from the top, less spillage is expected. Updates on the amount of oil being collected will be provided only every 24 hours. The first estimate is expected tomorrow morning. The ship doing the processing is set up to handle 15,000 barrels of oil a day, so that is the upper limit on the amount the system is set up to handle. - Notes by Gail, based on this afternoon's press conference.

This post describes what leads up to Heading Out's statement at 10:06 PM that they have the cap on but it has not gone down far enough to generate the seal, and so there is a lot of oil still coming out from under the cap.

The vertical section of the riser was cut, [using a Shear](#), at 9 am Thursday morning.



Lower Riser Assembly (LRA) atop the Blowout Preventer (BOP) at the Deepwater Horizon well, with the bent riser removed, waiting for the arrival of the Lower Marine Riser package (LMRP)

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The oil and gas are rising vertically, from the top of the riser, the drill pipe (DP) and the saw cut in the side of the riser (just down from the top of the shear)

At 8:30 pm, the ROVs maneuvered the latest version of the “top hat”, variation 7, of the LMRP over the top of the LRA. As the new cap was lowered into place, it was surrounded by clouds of oil and gas, making the actual progress of the event somewhat difficult to follow. The new variation had been finished yesterday, to accommodate the changing upper surface of the remnants of the well.



Building LMRP 7 on June 2nd at Port Fourchon ([BP](#))

The Lower Marine Riser Package (LMRP) was first connected to the riser, and to a methanol feed that would help, between them, to inhibit the formation of methane hydrides when the gas came into contact with the surrounding cold seawater. It was then slowly lowered to the site, and across into the fountain of oil and gas, and down over the top of the riser.



Lowering the LMRP into the cloud of oil from the riser.

The initial attempt halted after a while, and by 9 pm the situation was, for while static. The cap was sitting apparently on the rubber seal that had been designed to fit between the LMRP and

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the flange, but the amount of oil that was leaking out of the bottom of the LMRP was still a considerable amount, even though some of the flow was also being bypassed through ports on the LMRP that could later be closed.



Flow through a relief port on side off the LMRP to relieve the pressure within it.



Leakage around the seal between LMRP 7 (yellow), the seal (greenish black) and the LRA. (white)

The question now arises as to whether the LMRP could be lowered sufficiently that it could seal to the flange surface, since it was no longer possible to get the seal needed on the upper surface of the riser, given that it had been distorted by the Shear which had cut the bent riser away.

There was a pause, while the engineers had a bit think for over an hour. Looking at the cloud of oil coming out, it does contain small white specs that could be either methane hydrates or drops of the dispersant. And now, at 10:30 pm, there is a little more action.

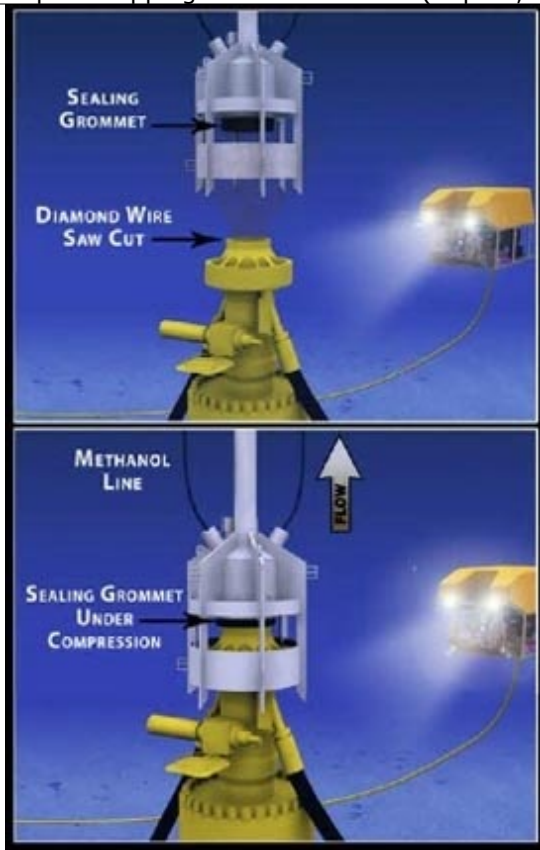


Oil and gas coming out from under the LMRP



Leaks under the LMRP at 10:30 pm

For those who may not remember, this was the initial plan as it was proposed.



The [*Lower Marine Riser Package \(LMRP\)*](#) option

So far it is not quite as simple as the sketch would suggest. But I will put this up, and then update, as changes appear.

At 11:12 PM Central Time, we received an e-mailed press release with a statement from National Incident Commander Admiral Thad Allen that the cap was in place.



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