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Deepwater Oil Spill - Top Kill Update, Restarting the Mud, and Comment Thread

Posted by Heading Out on May 28, 2010 - 7:28am
Topic: Environment/Sustainability
Tags: deepwater horizon, oil spill, top kill [list all tags]

New thread, please redirect to http://www.theoildrum.com/node/6536.

New thread, please redirect to http://www.theoildrum.com/node/6538. As I write this, I see see that the monitoring ROV is back in position to watch the leaks as BP, perhaps, is about to restart pumping mud – if they really are.

9:52 pm the camera is focusing on the cracks in the riser, and it seems that they may be injecting rubber pieces one of which is now stuck in one of the cracks in the riser. (Not very securely it seems)

Piece of "junk" (?) in the riser crack, as BP apparently work to reduce the size of the path through the BOP.

Note that this piece has had to pass through the BOP, and it is sealing the BOP path which is more critical to success. It could also be a piece of the rubber from the annulus seal that broke loose and got caught in the riser. Without knowledge of what BP is trying it is hard to decide, but the flow looks to be still gas and oil without mud, and I would expect that BP would have to use mud as the

carrier if they were injecting material into the flow, so this could just be a piece of seal that got caught. If you can't tell where it is, it is in the crack to the immediate right of the center line (without the paint) on the riser. (The view has changed)

UPDATE 1: Mud is clearly visible in the change in the look of the flows out of the riser. But at the moment it does not appear to be under the pressure of the flows on Wednesday. (This could be because it is being pumped in at a lower pressure, or it could be that they have sealed some of the leaks in the BOP and that is cutting back the driving pressure at the riser).

Leak shot at 10:25 pm Central

The problem we saw on Wednesday night with mud being heavier than oil and thus settling more readily and obscuring the view, is also evident.

UPDATE 2: 12:18 AM So it appears that BP have injected "rubber strips" into the flow, and that some of these have lodged in the BOP, reducing the flow channel, while one made it through and is trapped in one of the leaks in the bent portion of the riser.

Now what may happen is that they will slowly increase the mud flow/pressure to a) find out how much the leak rate has been reduced and b) to make sure that the restrictions in the flow channel are stable, and won't blow out. (If they do then they will have to repeat the process). Once they have a sure reduction in leakage then they will re-generate the higher pressures that overcome the pressure in the reservoir and start forcing the oil and gas back down the well, as the mud begins to fill the pipe.

The mud seems to have a slightly different texture from last time, so they could have increased the mud weight so that when the column of mud is re-established that this time it weighs a little more and overcomes the slight pressure imbalance that they were left with the first time they tried this.

Now is a good time for caution and, though the fill time may be reduced because of the smaller leak rate into the Gulf, they may still pump at relatively only slightly higher pressure that that in the reservoir, to slowly sweep down the well, getting into the necessary channels, and giving time

for the oil and gas to be pressed back into the rock that it came from.

UPDATE 3: 9:30 AM The latest report from the Gulf

> Hayward told CNN BP engineers had injected a "junk shot" of heavier blocking materials into the failed blowout preventer of the ruptured wellhead, and would also pump in more drilling "mud"- all part of the top kill procedure being attempted.
>
> "We have some indications of partial bridging which is good news," he said.
>
> "I think it's probably 48 hours before we have a conclusive view," he added.

Admiral Allen also noted at that time that the leak had been stopped, but that they were not sure that they could sustain the halt in flow. However at 8:10 am, Sterling925 who was watching and commenting on The Oil Drum saw some sort of event occur around the BOP.

> Chaotic images - looks like an explosion!
>
> 09:14 et 5/28/2010

and from SteinarN

> It looks like A LOT of gas is coming up from the seabed around the BOP. Considering the large water pressure and the possibly large area this gas is emanating from it ought to be a large flow. This indicate the integrity of the well is not good?

Unfortunately I did not see any of this and haven't been able to see the BOP apart from one short shot since, though in that shot it did not appear to have any problem. The PBS viewed ROV at the moment is working with a chain, while the ROV that was monitoring the plume is now staring out into the ocean.

The CNN shot however shows that we are back with oil and gas apparently coming out of the leaks at the top of the riser, which is no different than the conditions before they started pumping mud into the well last evening. So the second filling of the well has apparently all been washed out, and they will try again later. The comment from BP was that this might take another couple of days.

UPDATE 4: 10:24 AM Well, I am not sure that the CNN feed was actually live and there are other stories catching their attention at the moment, but there is a Youtube recording of what took place (h/t Jessica in Pensacola).

UPDATE 5: 11:09 AM The feed has gone back to the riser, and we are back to the oil and gas flows that we were saw at the beginning. Not quite the same shapes as earlier, so perhaps the block in the BOP was partially effective, but BP have now apparently filled the well twice and failed to get enough weight into the mud to hold the driving pressure from the rock. They could try again with a higher density mud, I am presuming that the second shot had a higher weight than the first, and that while the first left a small pressure imbalance, that the second was closer, but as yet no banana. (Though the Admiral did say that they had stabilized the flow). My presumption is that they will mix up another batch and try again - though whether they will try

another junk shot is not clear.

Flow at 11:09 am

The way in which you try to stop leaks is that you put the big stuff in first. If you can get enough of that to stick, it still leaves large flow channels, and so the second shot uses smaller pieces that fit into the gaps. Then you try smaller shots etc until you get as good a seal as you can. Doing this to plug water flows into tunnels can take several shots to get a total seal, working with sequentially smaller sizes of particles.