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Sent: Wed, 4 Aug 2010 15:14:42
To: GS FOIA 0105 <foia0105@usgs.gov>
Subject: Fw: regarding length scales in main riser images

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----- Forwarded by Janet N Arneson/DO/USGS/DOI on 08/04/2010 03:14 PM -----

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Date: 06/05/2010 09:58 PM

Subject: regarding length scales in main riser images

Hi all. Probably we've discussed this issue before but does anyone know the sizes of the other pipes in view of the main riser pipe images? See attached image for the view I'm working with. Also, what is the OD of the drill pipe that is sticking out of the riser?

Thanks

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From: Espina, Pedro I. [mailto:pedro.espina@nist.gov]

Sent: Thursday, June 03, 2010 3:13 PM

To: Ira Leifer; Juan Lasheras; Alberto Aliseda; Franklin Shaffer; Ömer

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Subject: UNCERTAINTY: second report

Importance: High

Dear Plume Team Members,

Many of you are working on the PIV analysis of the leak at the end of the drilling riser. In order for NIST to provide NOAA with an uncertainty analysis on this estimate, we need your help. Could you please answer these questions for your current work.

1. Do you think that the enclosed analysis (used during the first report) describes, in principle, what you are doing using the video footage of the leak at the end of the drilling riser? If not, could you tell me why?
2. Do you think that you can determine length scales in the video to about $\pm 5\%$? If not, to what level?
3. Do you think that you can determine time between video frames to about $\pm 3.8\%$? If not, to what level?
4. Do you think that you can determine the diameter of the plume (where you are making the PIV determinations) to about $\pm 5\%$? If not, to what

level?

5. What value of average volume fraction of oil in the jet (i.e., oil/total flow) are you using?

6. What uncertainty are you willing to assign to that value of average volume fraction of oil in the jet?

I know you are loosing sleep at the moment, so I thank you in advance for supporting the NIST work with your answers.

Pedro

Pedro I. Espina, Ph.D.

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