

From: Franklin.Shaffer@NETL.DOE.GOV
Sent: Monday, June 07, 2010 10:56:48 PM
To: ira.leifer@bubbleology.com; pdy@clarkson.edu; pmbommer@mail.utexas.edu;
savas@newton.berkeley.edu; antonio.possolo@nist.gov; pedro.espina@nist.gov;
Bill.Lehr@noaa.gov; Chris.Barker@noaa.gov; Wereley@purdue.edu; aaliseda@u.washington.edu;
rileyj@u.washington.edu; lasheras@ucsd.edu; mark_sogge@usgs.gov; mcnut@usgs.gov
Subject: RE: sample conclusion template

Marcia,

So you are telling me that the Plume Team selected the video samples we have ?
That BP did not select the samples, but the Plume Team did?

If that is true, why are so many people on the Plume Team complaining the we do
not have enough video?

We have about five hours of video samples in total. We are being asked to do
an independent, scientific estimate of the average oil leak rate over a period
longer than one month. The PIV analysis is done on a fraction of the video we
have. I would guess that all of the PIV analysis combined has been done on
less than 30 minutes of video in total. So, we are estimating total average
flow rate over a period of more than one month based on sample time of < 0.05 %
of the total period.

There is no way that we could do a scientific estimate of average oil leak rate
from such a small sample of the total period.

I have come to the conclusion that this team cannot say anything SCIENTIFIC
about the total average oil leak rate UNLESS WE HAVE LONG SAMPLES OF ORIGINAL,
UNALTERED VIDEO.

I simply do not believe it is "too hard" for BP to give us the video samples we
need.

Best regards,
Frank

>>> "Marcia K McNutt" <mcnut@usgs.gov> 6/7/2010 7:51 PM >>>
Frank -

I have to fact check one statement below, as this may come up. My
understanding was that the Plume Team put certain constraints on what
video they wanted in terms of it being before dispersants were being
applied, before the RITT was inserted, and after the trench was
excavated so that the end of the riser was exposed. That dictated the
period of time of data that was suitable for analysis, and all data in
that period of time was sent to Bill. So basically there was no
selection on the part of BP of a few hours of video from out of 50 days
- the criteria was set by the team and if the criteria had been relaxed,
more video could have been provided.

Did I get this wrong?

Marcia

From: Franklin Shaffer <Franklin.Shaffer@NETL.DOE.GOV> [mailto:Franklin
Shaffer <Franklin.Shaffer@NETL.DOE.GOV>]
Sent: Monday, June 07, 2010 6:53 PM
To: "ira leifer" <ira.leifer@bubbleology.com>; "Poojitha Yapa"
<pdy@clarkson.edu>; "Paul Bommer" <pmbommer@mail.utexas.edu>;
"savas@newton.berkeley.edu" <savas@newton.berkeley.edu>;
antonio.possolo@nist.gov; "Pedro I. Espina" <pedro.espina@nist.gov>;
Bill.Lehr@noaa.gov; "Chris Barker" <Chris.Barker@noaa.gov>;
"Wereley@purdue.edu" <Wereley@purdue.edu>; "Alberto Aliseda"
<aaliseda@u.washington.edu>; "James J Riley" <rileyj@u.washington.edu>;

"Juan Lasheras" <lasheras@ucsd.edu>; "Mark K Sogge"
<mark_sogge@usgs.gov>; "Marcia K McNutt" <mcnutt@usgs.gov>
Cc: "Anthony Cugini" <Anthony.Cugini@NETL.DOE.GOV>; "Franklin Shaffer"
<Franklin.Shaffer@NETL.DOE.GOV>; "George Guthrie"
<George.Guthrie@NETL.DOE.GOV>
Subject: Re: sample conclusion template

Dear Plume Analysis Team,
I would like to make a statement regarding our conference call today.

Our Plume Team has been working on an independent estimate of the maximum rate at which oil could be leaking from the BP Horizon oil spill. Our conference call today was to discuss our analysis of the maximum oil leak rate.

During the latter part of the conference call, Marcia McNutt, the USGS Director and Leader of the government's Flow Rate Technical Group (FRTG), informed us that Secretary of Energy Steven Chu was waiting for oil leak rate numbers from our Plume Team (in fact that he was postponing an Executive Order to BP until we could produce numbers), and that Sec. Chu would use our Plume Team's numbers to order BP to have a certain minimum level of compliance for the oil spill. The conference call today was the first time I heard anything about this matter.

The Plume Team was then asked to achieve a consensus that our best estimate of the oil leak rate was 20000 to 34000 bpd, or numbers in that range. Marcia McNutt also asked the team if it would be appropriate to report to the Secretary of Energy that the Plume Team had achieved "surprising consensus" on the numbers of 20000 to 34000 bpd.

I feel that I should state that I did not agree that these numbers be attributed to the Plume Analysis Team. Again, I did not agree to a consensus on these, or any other numbers, for the Plume Team's estimate of the maximum oil rate leaking from the BP site.

No one warned me that I would be asked for a final number for maximum oil leak rate today. I have sent more than one email to the team leader, Bill Lehr of NOAA, informing him that the analysis of maximum oil leak rate that I and several colleagues at NETL are performing would not be ready until tomorrow, June 8, and that my NETL final report would not be ready until COB June 9.

I understand that this is a crisis and the government must act immediately. I do not want to cause any delay. So I will present the numbers we have for maximum oil leak rate as of today. Our analysis is producing a number of 35,000 bpd for the maximum oil leak rate. This number does not include analysis uncertainty. The Plume Team member from NIST has advised us that the uncertainty associated with our "PIV" analysis of BP videos is +/- 40%. So to account for uncertainty in our analysis, the maximum oil leak rate based on NETL's analysis is 50,000 bpd (36000 + 40% of 36000). To account for the full range of uncertainty, this number could also be presented as an estimate of 34000 to 50000 bpd for the maximum oil leak rate.

Anyone who is given these numbers should be informed that our analysis was entirely based on a few hours of video of oil leaks provided by BP. Furthermore, that BP alone chose the video samples from more than 50 days of video of oil leak jets. It should also be noted that the quality of video provided to us was degraded (compressed), and that although we have continually asked BP for copies of the original unaltered video, BP has not provided it to date.

Finally, since the issue of funding of Plume Team members came up during the call today: I would like to state that I am a civil servant, a federal employee of the USDOE, and I have been a research engineer with DOE for 25 years. I am paid solely by U.S. taxpayers and my

paycheck comes directly from the U.S. Treasury. I accept finding from no one else.

Sincerely,
Franklin D. Shaffer

Franklin D. Shaffer
Senior Research Engineer
USDOE National Energy Technology Laboratory
Computational Science Division, Model Validation Team
Mail Stop 84-202
626 Cochran's Mill Road
Pittsburgh, PA 15236

Franklin.Shaffer@netl.doe.gov
Office phone: 412-386-5964
Cell phone: [REDACTED]

>>> "Bill Lehr" 6/7/2010 1:34 PM >>>

CONCLUSION TEMPLATE

As with earlier estimates, the conclusions in this report are only to aid the Response, not to determine the final Federal estimate of spillage. Because of time constraints, assumptions were made that may through later information or analysis be shown to be invalid. For example, the Team assumes that the average flow between the start of the incident and the insertion of the RITT was relatively constant and the time frames that were included in the examined videos were representative of that average. If this were not true, then the actual spillage may differ significantly from the values stated below.

Most of the experts have concluded that, based upon the limited data available and the small amount of time to process the data, the best estimate for the average flow rate for the leakage prior to the insertion of the RITT is ??? (could be a range). However, it is possible that the spillage could have been as little as ??? and as large ???. Further analysis of the existing data and of other videos not yet viewed may allow a refinement of these numbers.

>