

2142979143-3345-20350-189-216

From: Marcia K McNutt <mcnutt@usgs.gov>  
Sent: Wed, 4 Aug 2010 16:18:54  
To: GS FOIA 0105 <foia0105@usgs.gov>  
Subject: Fw: pictures of the plume

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----- Forwarded by Janet N Arneson/DO/USGS/DOI on 08/04/2010 04:18 PM -----

From: Marcia K McNutt/DO/USGS/DOI

To: wereley@purdue.edu, Franklin.Shaffer@NETL.DOE.GOV,  
rileyj@u.washington.edu

Cc: ira.leifer@bubbleology.com, pdy@clarkson.edu,  
savas@newton.berkeley.edu, antonio.possolo@nist.gov, pedro.espina@nist.gov,

Bill.Lehr@noaa.gov, aaliseda@u.washington.edu, lasher@ucsd.edu

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Date: 06/19/2010 03:22 PM

Subject: RE: pictures of the plume

Thanks! A picture tells a thousand words.

From: Wereley, Steven T. <wereley@purdue.edu> [mailto:wereley, Steven T. <wereley@purdue.edu>]

Sent: Saturday, June 19, 2010 3:13 PM

To: Marcia K McNutt <mcnutt@usgs.gov>; "Franklin.Shaffer@NETL.DOE.GOV" <Franklin.Shaffer@NETL.DOE.GOV>; "rileyj@u.washington.edu" <rileyj@u.washington.edu>

Cc: "ira.leifer@bubbleology.com" <ira.leifer@bubbleology.com>; "pdy@clarkson.edu" <pdy@clarkson.edu>; "savas@newton.berkeley.edu" <savas@newton.berkeley.edu>; "antonio.possolo@nist.gov" <antonio.possolo@nist.gov>; "pedro.espina@nist.gov" <pedro.espina@nist.gov>; "Bill.Lehr@noaa.gov" <Bill.Lehr@noaa.gov>; "aaliseda@u.washington.edu" <aaliseda@u.washington.edu>; "lasheras@ucsd.edu" <lasheras@ucsd.edu>

Subject: RE: pictures of the plume

Hi Marcia, what you're written so far sounds great. Regarding the issue of how far away to be, that question is convolved with the zoom settings on the camera. I've attached the image you recently sent us from June 17

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which I think would best give us a view of the whole phenomenon. The camera should be set up to show a view like that. One way to describe it in words might be to say that the triangular clamps on the tophat should occupy half the horizontal extent of the image. They should use as much light as possible.

Best,

(Embedded image moved to file: pic60130.jpg)

Steve Wereley, Professor of Mechanical Engineering  
Birck Nanotechnology Center, Room 2019, 1205 West State Street  
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From: Marcia K McNutt [mailto:[mcnutt@usgs.gov](mailto:mcnutt@usgs.gov)]  
Sent: Saturday, June 19, 2010 2:55 PM  
To: Wereley, Steven T.; [Franklin.Shaffer@NETL.DOE.GOV](mailto:Franklin.Shaffer@NETL.DOE.GOV);  
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Subject: RE: pictures of the plume

Thanks, Gang, for weighing in. I will ask BP for a 360 degree video survey using their highest resolution camera of the flow escaping from the cap "like they did during the LMRP cap removal" (assuming that that will give them the appropriate distance away and the duration of the survey?) Does that sound about right? I will also say that we want this done during a

period of known and steady production to the surface, and if for any reason there is an interruption in service that changes the flow, they should begin again when the containment is again steady. OK? For example, I know that there was another lightening strike last night at 2030 that shut down the Enterprise.

Marcia

From: wereley, Steven T. <wereley@purdue.edu> [mailto:wereley, Steven T. <wereley@purdue.edu>]

Sent: Friday, June 18, 2010 11:31 PM

To: Franklin Shaffer <Franklin.Shaffer@NETL.DOE.GOV>; James Riley <rileyj@u.washington.edu>; Marcia K McNutt <mcnutt@usgs.gov>

Cc: "ira.leifer@bubbleology.com" <ira.leifer@bubbleology.com>;

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Subject: RE: pictures of the plume

I would expand on what others said--long sequences of high-quality video are essential. A still photo just shows the volume of the plume, not its speed. It would be nice to have a 360 deg survey of the cap area like they did during the LMRP cap operation.

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-----Original Message-----

From: Franklin Shaffer [mailto:Franklin.Shaffer@NETL.DOE.GOV]

Sent: Friday, June 18, 2010 9:38 PM

To: James Riley; Marcia K McNutt

Cc: ira.leifer@bubbleology.com; pdy@clarkson.edu;

savas@newton.berkeley.edu; antonio.possolo@nist.gov; pedro.espina@nist.gov;

Bill.Lehr@noaa.gov; wereley, Steven T.; aaliseda@u.washington.edu;

lasheras@ucsd.edu

Subject: Re: pictures of the plume

All,

To make these photos easier to compare, I scaled the images so the top hat is the same size in each image, and I put all images side-by-side on the same slide. The powerpoint file with these adjustments is attached.

An important point to notice is that different sides of the ROV are shown in most of the photos. Only the June 3 photo and one of the June 14 photos show the same side of the Top Hat. Since the ROV is significantly tilted, it is likely that the flow rate will be greater on the higher side of the Top Hat, and less on the lower side.

Only the June 17, 25,000 bpd photo, shows the lower side of the Top Hat.

So the only conclusion I could draw from these photos is that the flow appears to be slightly lower in one of the June 13 (15,000 bpd) photos compared to the June 4 (6,000 bpd) photo. But the difference could also just be natural fluctuation in large eddies.

We need long segments of video of the same side of the Top Hat to draw any

conclusions.

Regards,

Frank

>>> "James Riley" <rileyj@u.washington.edu> 6/18/2010 8:01 PM >>>

Marcia,

Although it might also depend on at least the unsteadiness of the flow and the positioning of the ROV (as well as on the flow rate), the legs of the skirt appear to be much more visible in the second image compared to the first. This could indicate a noticeably different flow rate from the skirt.

I think that a view encompassing as much of the flow around the top hat as possible, from the skirt to above the top hat, can be very useful in understanding the overall flow, although there might be problems with lighting in doing this. On the other hand, closer views of the skirt and the vents could be useful to make speed estimates. -- Jim

Marcia K McNutt wrote:

> Hi all.

>

> I got from BP some frame grabs of different shots of the plume taken  
> at three different levels of collection up from the Top Hat. In the  
> first image, collection up the riser was just ramping up, and only  
> 6000 barrels was being collected. In image #2 (actually 2 frame  
> grabs), the Enterprise was at full production of 15,000 barrels per  
> day. So the difference between the first slide and the second slide is

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> about 9000 barrels per day. The third slide is when the Q-4000 was  
> being brought on line but before it reached full production, so it was  
> at about 7000 barrels. So to my eye, anyway, I think I am seeing a  
> much skinnier plume and a lot more of the cap exposed. The last 7000  
> barrels, in particular, seemed to have made a noticeable difference.

>  
> Bill and I decided that we should task BP to give us videos of the  
> plume before and after the Q-4000 was brought on line. Anything  
> special I should ask for from the videos in this request? Close ups?  
Further away?

> I want to make sure I get you what you want.

>

> Marcia

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