From: "Debbie Payton" <debbie.payton@noaa.gov>
To: chris.barker@noaa.gov, bill.lehr@noaa.gov
Cc: glen.watabayashi@noaa.gov, debbie.payton@noaa.gov, debra.simecek-beatty@noaa.gov
Bcc:
Date: Sun, 25 Apr 2010 06:43:29 PM
Subject: Re: Leak rate guestimate
Attachments:

Two feet is the reported diameter in the release video as well. I think all of you got the video but tell me if you didn,t.

----- Original Message -----
From: Chris Barker
To: Bill.Lehr@noaa.gov
Cc: Glen (Bushy) Watabayashi ; Debbie Payton ; Debra Simecek-Beatty
Sent: Sun Apr 25 17:56:07 2010
Subject: Re: Leak rate guestimate

Bill.Lehr@noaa.gov wrote:
> I don't think it is quite that bad Chris. First, I think that the 20
> in pipe actually has a pipe in a pipe, so the effective diameter
> through the hole is smaller and the 0.6 standard adjustment factor may
> be too big. Plus, there is a lot of gas mixed in. I think the BP
> estimate of 6,000 bbl day may be reasonable, if slightly low.

Bushy mostly did this, but we went off the description of a "2 foot hole" -- I don't know how you get a 2 foot hole in a 20" pipe, but there you go.

If we make it half the size, the that's 1/4 the area, and our vertical scale (which we used for velocity) is 1/2 different, so 1/8 the volume rate:

48,000 / 8 = 6,000 bbls a day

and I didn't even plan that!

-Chris

> ----- Original Message -----
> From: Chris Barker
> Date: Sunday, April 25, 2010 1:20 pm
> Subject: Re: Leak rate guestimate
> To: "Glen (Bushy) Watabayashi"
> Cc: Debbie Payton , Debra Simecek-Beatty , Bill Lehr
>
>> Glen (Bushy) Watabayashi wrote:
>>> OK I looked at the video clip with Chris.
>>> >>> We figure that it's coming out of the 2 foot diameter hole at about
>> 1

>>> foot per second so...
>>> >>> pi * r * r * 1 ft per second = 3.14 * 1 foot * 1 foot * 1 ft/sec =
>> 3.14
>>> cubic feet / sec
>> ...
>> > = 64,426 bbls per day
>>
>> NUCOS (my Unit converter for Oil Spills) has a discharge unit. It
>> gives me:
>>
>> 3.14 ft^3/s = 48,320 bbls/day
>>
>> I haven't checked each step of your math, but I have tested NUCOS
>> pretty
>> completely.
>>
>> -CHB
>>
>>
>>
>> --
>> Christopher Barker, Ph.D.
>> Oceanographer
>>
>> Emergency Response Division
>> NOAA/NOS/OR&R (206) 526-6959 voice
>> 7600 Sand Point Way NE (206) 526-6329 fax
>> Seattle, WA 98115 (206) 526-6317 main reception
>>
>> Chris.Barker@noaa.gov

--
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