

From: "Chris Barker" <chris.barker@noaa.gov>
To: bill.lehr@noaa.gov
Cc: "Glen (Bushy) Watabayashi" <glen.watabayashi@noaa.gov>, "Debbie Payton" <debbie.payton@noaa.gov>, "Debra Simecek-Beatty" <debra.simecek-beatty@noaa.gov>
Bcc:
Date: Sun, 25 Apr 2010 05:56:07 PM
Subject: Re: Leak rate guestimate
Attachments:

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...

>>>>> $\pi * r * r * 1 \text{ ft per second} = 3.14 * 1 \text{ foot} * 1 \text{ foot} * 1 \text{ ft/sec} =$

>>> 3.14

>>>> cubic feet / sec

>> ...

>>> = 64,426 bbls per day

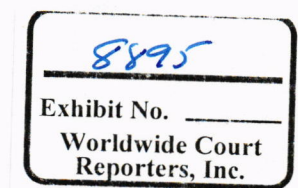
>>

>> NUCOS (my Unit converter for Oil Spills) has a discharge unit. It

>> gives me:

>>

>> $3.14 \text{ ft}^3/\text{s} = 48,320 \text{ bbls/day}$



>>
>> I haven't checked each step of your math, but I have tested NUCOS
>> pretty
>> completely.
>>
>> -CHB
>>
>>
>>
>> --
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>>
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