

**From:** [Yu, Olivia, EMNRD](#)  
**To:** [Oster, Matt; Griswold, Jim, EMNRD](#)  
**Cc:** [Stucker@blm.gov](#); [Hernandez, Christina, EMNRD](#)  
**Subject:** RE: Zia Hills Spill  
**Date:** Tuesday, October 16, 2018 10:15:00 AM  
**Attachments:** image001.png  
1RP5235\_ZiaHillsFederalCom401H\_C-141.pdf

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Good morning Mr. Oster:

Thank you for providing the calculations to determine release volume. Please have Conoco Phillips's Environmental Department provide the rationale for setting the proportion of soil absorption at 0.25 and soil porosity at 0.25.

In an idealized soil, 50% is pore space and 50% is solid material. Of the 50% pore space, approximately 25% is filled with air and 25% with water. In other words, 0.25 could be interpreted as free available pore space (porosity) for spill fluids to fill and 0.25 as not available since these pores are filled with water for vegetation. As the soil porosity is set at 0.25 and the spill saturated a depth of 0.5 ft., the assumption is 100% of the 0.25 porosity has been filled with the water-based mud. However, with the soil absorption proportion set at 0.25, the interpretation of the equation is that only 1/4 of the 0.5 ft. depth entered the 0.25 pore space. Is there an misunderstanding or misuse of the term 'soil absorption'?

Please be advised that

1. The GPS coordinates as written is not in the vicinity of the API well provided.
2. The release volume for spill calculation should include both the impact on location and the portion that impacted pasture. According to NMOCD database, the entire release area is on Federal surface and minerals.
3. Dated, geo-referenced photo documentation for verification that the initial response activities have been employed to contain the release is requested.
4. Per 19.15.29.10 NMAC, a major release necessitates immediate notification to NMOCD Environmental Bureau chief (cc'd), in addition to the appropriate District office.
5. Per 19.15.29.13 NMAC, regulations of corresponding agencies supersede NMOCD's.

The 1RP for this incident is

<b>5235</b>	10/16/2018	A	Conoco Phillips	Red Hills Federal Com 401H	30-025-42560	26S-32E-25B	10/3/2018
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Please remember to include this 1RP identifier to all communications. Delineate and remediate per regulation. Mind the timelines for submittal of requisite information.

Please be advised that NMOCD recommends a completed site characterization/delineation report be reviewed or approved by NMOCD BEFORE any significant remediation work towards closure.

Thanks,

Olivia Yu  
Environmental Specialist  
NMOCD, District I  
[Olivia.yu@state.nm.us](mailto:Olivia.yu@state.nm.us)  
575-393-6161 x113

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

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**From:** Oster, Matt <Matthew.Oster@conocophillips.com>  
**Sent:** Thursday, October 4, 2018 10:48 AM  
**To:** Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>  
**Cc:** Stucker@blm.gov  
**Subject:** [EXT] Zia Hills Spill

Good morning Olivia,

Please see the attached documentation. I only filled out pages 1-2 on the form. I'm planning on using Tetra Tech to handle the cleanup and remediation. Please advise when we can contact Tetra Tech to begin the process.

Also, below is a snip-it of the spill volume calculator that was used to determine the volume of fluid that left the pad.

**Spill Volume Calculator**

**Instructions:**

1. Values in the light yellow cells are default. Users are advised not to change the default values.
2. Enter values for the green cells. Fractions of feet or inches need to be in decimals (example 1/2 is 0.5)
3. Use the Calculate Spill button to calculate or recalculate Spill Volume

**Formula**

Soil Porosity %	Soil Absorption %	ft <sup>3</sup> /BBL
25	25	5.61

**Volume = ( (Length of spill \* Width of spill \* Depth of spill \* 0.25 \* 0.25) / 5.61 ) + Free Fluid**

**Example:** Spill Length = 20 feet  
Spill Width = 10 feet  
Spill Depth = 6 inches = 0.5 feet  
Spill Volume = (20 \* 10 \* 0.5 \* 0.25 \* 0.25) / 5.61

Length	Width	Depth	Volume Recovered
192 Feet	4 Feet	6 Inches	0 BBL

Length  
Width

Spill Area

Spill Depth

Calculate Spill

Spill Volume 4.28 BBL

Reset All Close

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*"Success isn't always about greatness; it's about consistency.  
Consistent hard work gains success. Greatness will come."*