***** LIQUID SPILLS - VOLUME CALCULATIONS *****

Location of Spill: Sweetgrass 10 State #2 Date of Spill: 10/26/2018

Site Soil Type: Sandy Loam & Caliche

Average Daily Production: 13 BBL Oil 128 BBL Water

Total Area Calculations							
Total Surface Area		Width	Length	Wet Soil Depth	Oil (%)	Soil Class	Porosity%
Polygon #1	3,755			6"	5	GM	0.15
Polygon #2	3,664			10"	5	GM/ML	0.18
Polygon #3	644			4"	99	ML/CL	0.25
Polygon #4	173			1/16"	99	ML	0.21

Saturated Soil Volume calculations:		H2O	OIL
Polygon #1	1,877.50	47.60	2.50
Polygon #2	3,053	92.98	4.89
Polygon #3	215	0.09	9.45
Polygon #4	11	0.00	0.40

Total Solid/ Liquid Volume:

Estimated Volumes Spilled	H20	OIL
	140.67	17.24
Liquid Recovered:	0	2
Total Spill Liquid:	155.91	

Please view Attachment 12 for the references in obtaining the Porosity values.

The soil classification was gathered from Soil Survey Eddy Area, New Mexico March 1971.

Polygon #1 is from the caliche pad with Soil Class GM.

Polygon #2 is located on the caliche pad with 6" of caliche (GM) and 4" of top soil (ML). Porosity % is the average of both.

Polygon #3 is located on the pasture where fluids ran down cattle path. Includes ML and CL soil. Porosity % is average of both.

Polygon #4 is located on the northern end of the spill. This was mostly a misty that was carried by the wind. Soil samples did not show any contamination in this area.