

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

Location of spill: Big Walt CTB Gunbarrel Tank

Date of Spill: 5/11/2019

Site Soil Type: Caliche (silt)

Average Daily Production: BBL Oil BBL Water

Total Area Calculations						
Total Surface Area	width		length		wet soil depth	oil (%)
Rectangle Area #1	178 ft	X	165 ft	X	3 in	3%
Rectangle Area #2	119 ft	X	397 ft	X	2 in	2%
Rectangle Area #3	0 ft	X	0 ft	X	0 in	0%
Rectangle Area #4	0 ft	X	0 ft	X	0 in	0%
Rectangle Area #5	0 ft	X	0 ft	X	0 in	0%
Rectangle Area #6	0 ft	X	0 ft	X	0 in	0%
Rectangle Area #7	0 ft	X	0 ft	X	0 in	0%
Rectangle Area #8	0 ft	X	0 ft	X	0 in	0%

Porosity 0.16 gal per gal

Saturated Soil Volume Calculations:

		<u>H2O</u>	<u>OIL</u>	
Area #1	29370 sq. ft.	5,935 cu. ft.	184 cu. ft.	
Area #2	47243 sq. ft.	7,716 cu. ft.	157 cu. ft.	
Area #3	0 sq. ft.	cu. ft.	cu. ft.	
Area #4	0 sq. ft.	cu. ft.	cu. ft.	
Area #5	0 sq. ft.	cu. ft.	cu. ft.	
Area #6	0 sq. ft.	cu. ft.	cu. ft.	
Area #7	0 sq. ft.	cu. ft.	cu. ft.	
Area #8	0 sq. ft.	cu. ft.	cu. ft.	
Total Solid/Liquid Volume:	76,613 sq. ft.	13,652 cu. ft.	341 cu. ft.	

Estimated Volumes Spilled

	<u>H2O</u>	<u>OIL</u>	
Liquid in Soil:	389.0 BBL	9.7 BBL	
Liquid Recovered :	15.0 BBL	40.0 BBL	
Spill Liquid	404.0 BBL	49.7 BBL	
Total Spill Liquid:	453.7		

Recovered Volumes

Estimated oil recovered: **40.0 BBL**
 Estimated water recovered: **15.0 BBL**

<u>Soil Type</u>	<u>Porosity</u>
Clay	0.15
Peat	0.40
Glacial Sediments	0.13
Sandy Clay	0.12
Silt	0.16
Loess	0.25
Fine Sand	0.16
Medium Sand	0.25
Coarse Sand	0.26
Gravelly Sand	0.26
Fine Gravel	0.26
Medium Gravel	0.25
Coarse Gravel	0.18
Sandstone	0.25
Siltstone	0.18
Shale	0.05
Limestone	0.13
Basalt	0.19
Volcanic Tuff	0.20
Standing Liquids	