

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

Location of spill: NBR State 1 SWD

Date of Spill: 8/6/2019

Site Soil Type: Silt (caliche)

Average Daily Production: BBL Oil BBL Water

Total Area Calculations						
Total Surface Area	width		length		wet soil depth	oil (%)
Rectangle Area #1	100 ft	X	250 ft	X	6 in	1%
Rectangle Area #2	69 ft	X	50 ft	X	2 in	1%
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	25000 sq. ft.	12,438 cu. ft.	63 cu. ft.
Area #2	3450 sq. ft.	429 cu. ft.	2 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:	28,450 sq. ft.	12,867 cu. ft.	65 cu. ft.

Estimated Volumes Spilled

	<u>H2O</u>	<u>OIL</u>
Liquid in Soil:	366.6 BBL	1.8 BBL
Liquid Recovered :	331.0 BBL	0.0 BBL
Spill Liquid	697.6 BBL	1.8 BBL
Total Spill Liquid:	699.5	

Recovered Volumes

Estimated oil recovered: **0.0 BBL**
 Estimated water recovered: **331.0 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	