

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

Location of spill: Red Tank 28 Federal 3 SWD

Date of Spill: 8/2/2019

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 | 45 ft | X | 40 ft | X | 1 in | 0% |
| Rectangle Area #2 | 42 ft | X | 64 ft | X | 4 in | 0% |
| 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:

| | | H2O | OIL |
|----------------------------|----------------------|----------------------|----------------|
| Area #1 | 1800 sq. ft. | 150 cu. ft. | cu. ft. |
| Area #2 | 2688 sq. ft. | 896 cu. ft. | 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: | 4,488 sq. ft. | 1,046 cu. ft. | cu. ft. |

Estimated Volumes Spilled

| | H2O | OIL |
|---------------------|-------------|------------|
| Liquid in Soil: | 29.8 BBL | 0.0 BBL |
| Liquid Recovered : | 0.0 BBL | 0.0 BBL |
| Spill Liquid | 29.8 BBL | 0.0 BBL |
| Total Spill Liquid: | 29.8 | |

Recovered Volumes

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

| Soil Type | Porosity |
|-------------------|----------|
| 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 | |