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

Location of Spill: MCA Battery 2   **Date of Spill:** 1/15/2024

If the leak/spill is associated with production equipment, i.e. - wellhead, stuffing box,
flowline, tank battery, production vessel, transfer pump, or storage tank place an "X" here: **x**

Input Data:

	OIL:	WATER:
If spill volumes from measurement, i.e. metering, tank volumes, etc. are known enter the volumes here:	_____ BBL	_____ BBL

If "known" spill volumes are given, input data for the following "Area Calculations" is optional. The above will override the calculated volumes.

Total Area Calculations

Total Surface Area	width		length		wet soil depth	oil (%)
Rectangle Area #1	20.00 ft	X	30.00 ft	X	6.00 in	100.00%
Rectangle Area #2	15.00 ft	X	15.00 ft	X	6.00 in	100.00%
Rectangle Area #3	6.00 ft	X	160.00 ft	X	6.00 in	100.00%
Rectangle Area #4	0.00 ft	X	0.00 ft	X	0.00 in	0.00%
Rectangle Area #5	0.00 ft	X	0.00 ft	X	0.00 in	0.00%
Rectangle Area #6	0.00 ft	X	0.00 ft	X	0.00 in	0.00%
Rectangle Area #7	0.00 ft	X	0.00 ft	X	0.00 in	0.00%
Rectangle Area #8	0.00 ft	X	0.00 ft	X	0.00 in	0.00%

Standing Liquid Calculations

Standing Liquid Area	width		length		liquid depth	oil (%)
Rectangle Area #1	20.00 ft	X	25.00 ft	X	0.50 in	100.00%
Rectangle Area #2	15.00 ft	X	15.00 ft	X	0.50 in	100.00%
Rectangle Area #3	6.00 ft	X	160.00 ft	X	0.50 in	100.00%
Rectangle Area #4	0.00 ft	X	0.00 ft	X	0.00 in	0.00%
Rectangle Area #5	0.00 ft	X	0.00 ft	X	0.00 in	0.00%
Rectangle Area #6	0.00 ft	X	0.00 ft	X	0.00 in	0.00%
Rectangle Area #7	0.00 ft	X	0.00 ft	X	0.00 in	0.00%
Rectangle Area #8	0.00 ft	X	0.00 ft	X	0.00 in	0.00%

production system leak - DAILY PRODUCTION DATA REQUIRED

Average Daily Production: Oil   Water
                                   _____ BBL   _____ BBL

Did leak occur before the separator?:   ☐ YES   ☒ N/A   *(place an "X")*

Amount of Free Liquid Recovered: 24 BBL   *okay*

Percentage of Oil in Free Liquid Recovered: 100.00%   (percentage)

Liquid holding factor *:   0.14 gal per gal

Use the following when the spill wets the grains of the soil.
* sand = .08 gallon liquid per gallon volume of soil.
* gravelly (caliche) loam = .14 gallon liquid per gallon volume of soil.
* sandy clay loam soil = .14 gallon liquid per gallon volume of soil.
* clay loam = .16 gallon liquid per gallon volume of soil.

Use the following when the liquid completely fills the pore space of the soil:
Occures when the spill soaked soil is contained by barriers, natural (or not).
* gravelly (caliche) loam = .25 gallon liquid per gallon volume of soil.
* sandy loam = .5 gallon liquid per gallon volume of soil.

Saturated Soil Volume Calculations:

		H2O	OIL
Total Solid/Liquid Volume:	1,785 sq. ft.	cu. ft.	893 cu. ft.

Estimated Volumes Spilled

	H2O	OIL
Liquid in Soil:	0.0 BBL	22.3 BBL
Free Liquid:	0.0 BBL	12.5 BBL
Totals:	0.0 BBL	34.8 BBL
Total Spill Liquid:	0.0 BBL	34.8 BBL

Recovered Volumes

Estimated oil recovered:	24.0 BBL	check - okay
Estimated water recovered:	0.0 BBL	check - okay

Free Liquid Volume Calculations:

		H2O	OIL
Total Free Liquid Volume:	1,685 sq. ft.	cu. ft.	70 cu. ft.

Estimated Production Volumes Lost

	H2O	OIL
Estimated Production Spilled:	0.0 BBL	0.0 BBL

Estimated Surface Damage

Surface Area:	1,785 sq. ft.
Surface Area:	.0410 acre

Estimated Weights, and Volumes

Saturated Soil =	99,960 lbs	893 cu.ft.	33 cu.yds.
Total Liquid =	35 BBL	1,460 gallon	12,145 lbs