

**Bakken Sandstone, Assessment Unit 52440301
Assessment Results Summary**

[MMBO, million barrels of oil. BCFG, billion cubic feet of gas. MMBNGL, million barrels of natural gas liquids. MFS, minimum field size assessed (MMBO or BCFG). Prob., probability (including both geologic and accessibility probabilities) of at least one field equal to or greater than the MFS. Results shown are fully risked estimates. For gas fields, all liquids are included under the NGL (natural gas liquids) category. F95 represents a 95 percent chance of at least the amount tabulated. Other fractiles are defined similarly. Fractiles are additive under the assumption of perfect positive correlation. Shading indicates not applicable]

Field Type	MFS	Prob. (0-1)	Undiscovered Resources												Largest Undiscovered Field (MMBO or BCFG)			
			Oil (MMBO)				Gas (BCFG)				NGL (MMBNGL)				F95	F50	F5	Mean
			F95	F50	F5	Mean	F95	F50	F5	Mean	F95	F50	F5	Mean				
Oil Fields	1	1.00	2	10	24	11	1	3	7	3	0	0	0	0	1	2	4	2
Gas Fields	3						0	0	0	0	0	0	0	0	NA	NA	NA	NA
Total		1.00	2	10	24	11	1	3	7	3	0	0	0	0				

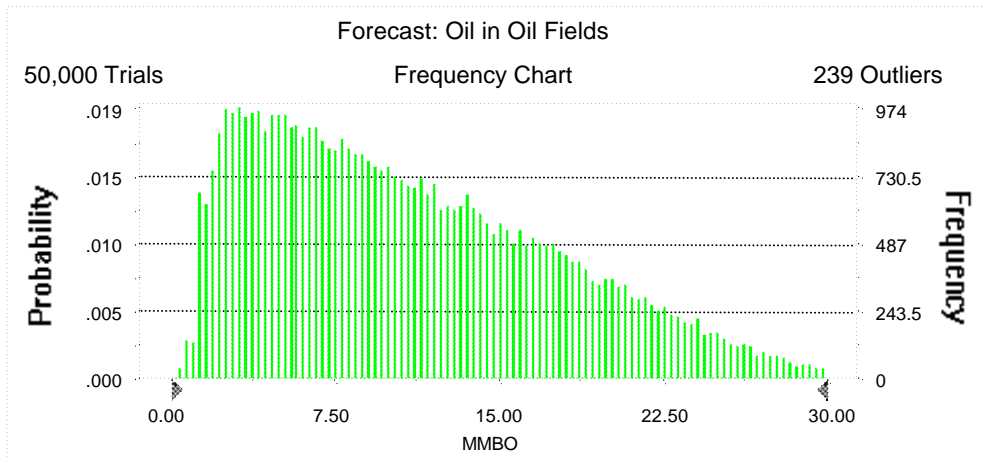
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Monte Carlo Results

Forecast: Oil in Oil Fields

Summary:

Display range is from 0.00 to 30.00 MMBO
Entire range is from 0.52 to 39.38 MMBO
After 50,000 trials, the standard error of the mean is 0.03

Statistics:	<u>Value</u>
Trials	50000
Mean	10.95
Median	9.75
Mode	---
Standard Deviation	6.80
Variance	46.23
Skewness	0.65
Kurtosis	2.72
Coefficient of Variability	0.62
Range Minimum	0.52
Range Maximum	39.38
Range Width	38.86
Mean Standard Error	0.03



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Forecast: Oil in Oil Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBO</u>
100%	0.52
95%	2.15
90%	2.94
85%	3.73
80%	4.53
75%	5.32
70%	6.15
65%	6.98
60%	7.88
55%	8.79
50%	9.75
45%	10.77
40%	11.85
35%	13.03
30%	14.22
25%	15.58
20%	17.08
15%	18.72
10%	20.82
5%	23.65
0%	39.38

End of Forecast

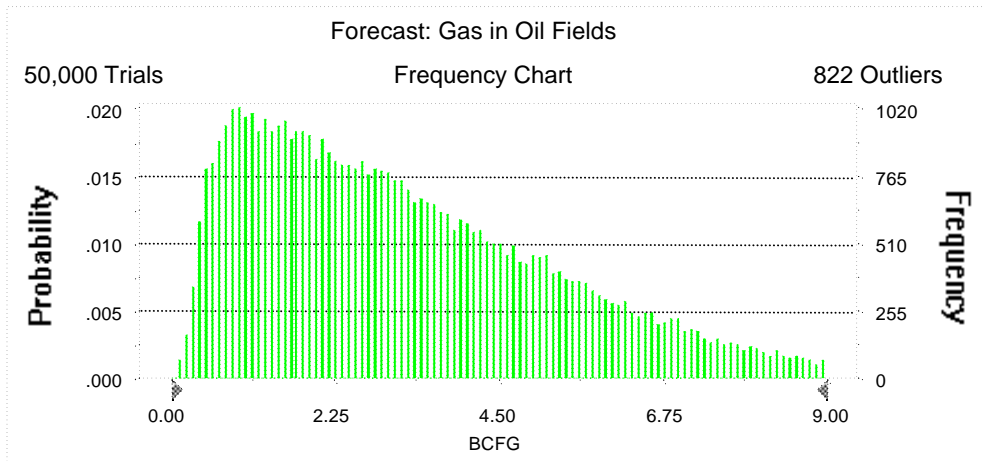
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Forecast: Gas in Oil Fields

Summary:

Display range is from 0.00 to 9.00 BCFG
Entire range is from 0.09 to 16.04 BCFG
After 50,000 trials, the standard error of the mean is 0.01

Statistics:	<u>Value</u>
Trials	50000
Mean	3.28
Median	2.84
Mode	---
Standard Deviation	2.19
Variance	4.80
Skewness	0.94
Kurtosis	3.64
Coefficient of Variability	0.67
Range Minimum	0.09
Range Maximum	16.04
Range Width	15.95
Mean Standard Error	0.01



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Forecast: Gas in Oil Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	0.09
95%	0.60
90%	0.84
85%	1.07
80%	1.30
75%	1.53
70%	1.77
65%	2.02
60%	2.28
55%	2.56
50%	2.84
45%	3.13
40%	3.45
35%	3.79
30%	4.18
25%	4.60
20%	5.09
15%	5.65
10%	6.39
5%	7.49
0%	16.04

End of Forecast

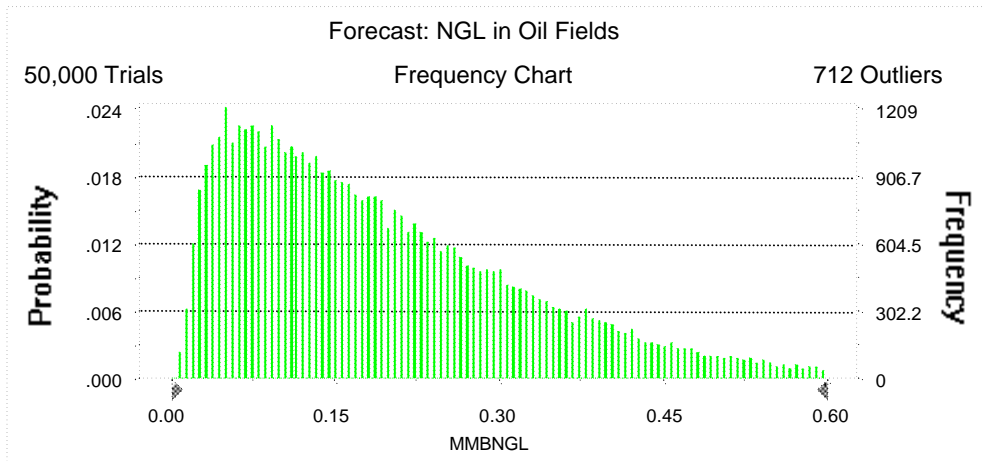
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Forecast: NGL in Oil Fields

Summary:

Display range is from 0.00 to 0.60 MMBNGL
Entire range is from 0.00 to 1.15 MMBNGL
After 50,000 trials, the standard error of the mean is 0.00

Statistics:	<u>Value</u>
Trials	50000
Mean	0.20
Median	0.16
Mode	---
Standard Deviation	0.14
Variance	0.02
Skewness	1.19
Kurtosis	4.67
Coefficient of Variability	0.71
Range Minimum	0.00
Range Maximum	1.15
Range Width	1.15
Mean Standard Error	0.00



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Forecast: NGL in Oil Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBNGL</u>
100%	0.00
95%	0.03
90%	0.05
85%	0.06
80%	0.07
75%	0.09
70%	0.10
65%	0.12
60%	0.13
55%	0.15
50%	0.16
45%	0.18
40%	0.20
35%	0.22
30%	0.25
25%	0.27
20%	0.30
15%	0.34
10%	0.39
5%	0.47
0%	1.15

End of Forecast

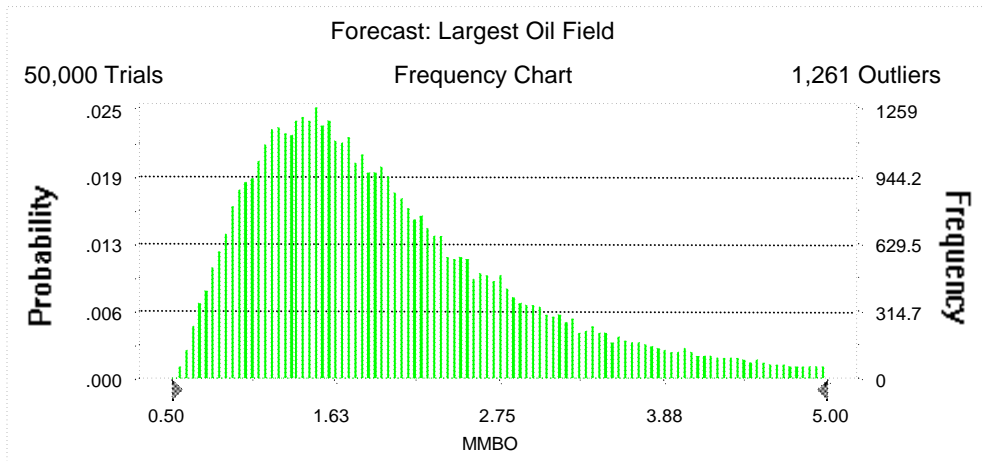
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Forecast: Largest Oil Field

Summary:

Display range is from 0.50 to 5.00 MMBO
Entire range is from 0.52 to 7.00 MMBO
After 50,000 trials, the standard error of the mean is 0.00

Statistics:	<u>Value</u>
Trials	50000
Mean	2.07
Median	1.81
Mode	---
Standard Deviation	1.07
Variance	1.14
Skewness	1.50
Kurtosis	5.72
Coefficient of Variability	0.51
Range Minimum	0.52
Range Maximum	7.00
Range Width	6.48
Mean Standard Error	0.00



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Forecast: Largest Oil Field (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBO</u>
100%	0.52
95%	0.87
90%	1.01
85%	1.13
80%	1.23
75%	1.33
70%	1.42
65%	1.51
60%	1.61
55%	1.71
50%	1.81
45%	1.92
40%	2.04
35%	2.18
30%	2.33
25%	2.53
20%	2.75
15%	3.05
10%	3.48
5%	4.25
0%	7.00

End of Forecast

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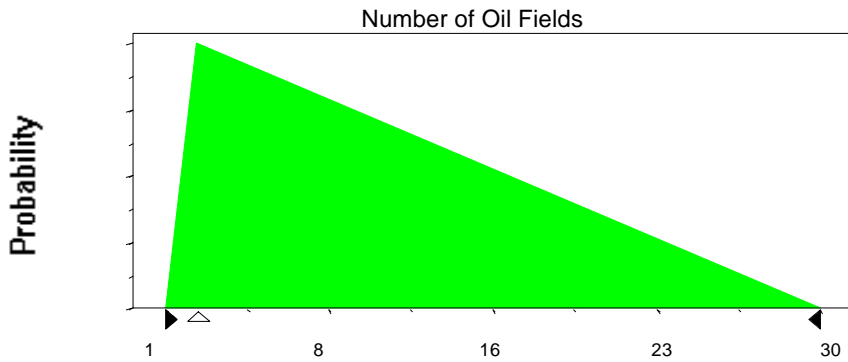
Assumptions

Assumption: Number of Oil Fields

Triangular distribution with parameters:

Minimum	1
Likeliest	2
Maximum	30

Selected range is from 1 to 30
Mean value in simulation was 11



Assumption: Sizes of Oil Fields

Lognormal distribution with parameters:

Mean	0.49
Standard Deviation	0.64

Shifted parameters

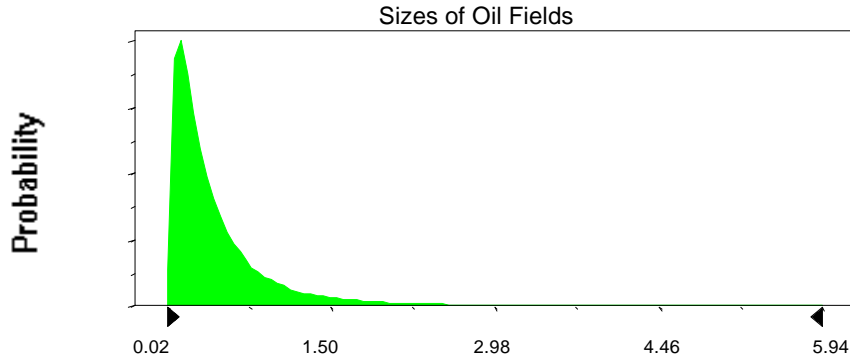
0.99
0.64

Selected range is from 0.00 to 6.50
Mean value in simulation was 0.48

0.50 to 7.00
0.98

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Assumption: Sizes of Oil Fields (cont'd)



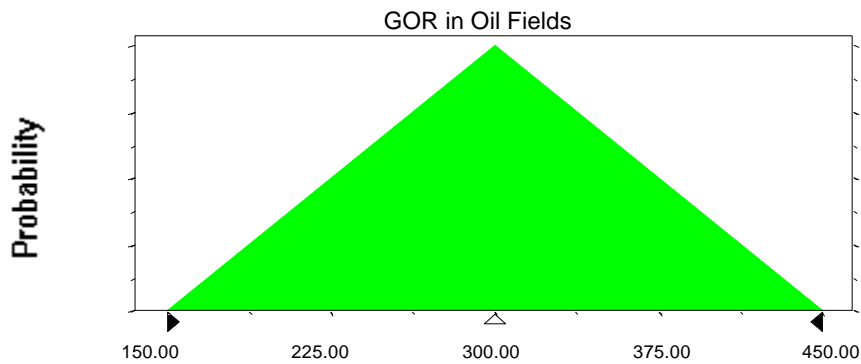
Assumption: GOR in Oil Fields

Triangular distribution with parameters:

Minimum	150.00
Likeliest	300.00
Maximum	450.00

Selected range is from 150.00 to 450.00

Mean value in simulation was 299.70



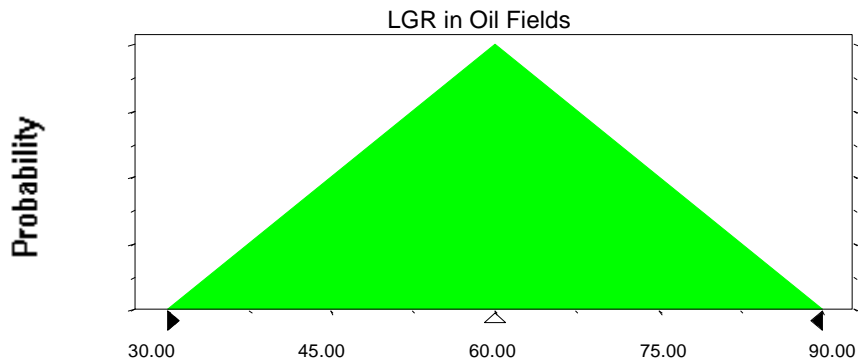
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Assumption: LGR in Oil Fields

Triangular distribution with parameters:

Minimum	30.00
Likeliest	60.00
Maximum	90.00

Selected range is from 30.00 to 90.00
Mean value in simulation was 60.01



End of Assumptions

Simulation started on 10/20/99 at 15:44:20
Simulation stopped on 10/20/99 at 15:58:57