

**Upper Jurassic-Cretaceous Sandstones, Assessment Unit 11740101**  
**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	5	1.00	13,761	39,987	81,363	42,947	28,026	85,490	190,829	94,430	1,552	4,979	12,082	5,662	829	1,630	2,143	1,577
Gas Fields	30						698	2,234	5,229	2,504	23	77	190	88	147	474	1,712	632
Total		1.00	13,761	39,987	81,363	42,947	28,724	87,724	196,057	96,934	1,575	5,055	12,272	5,749				

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**Monte Carlo Results**

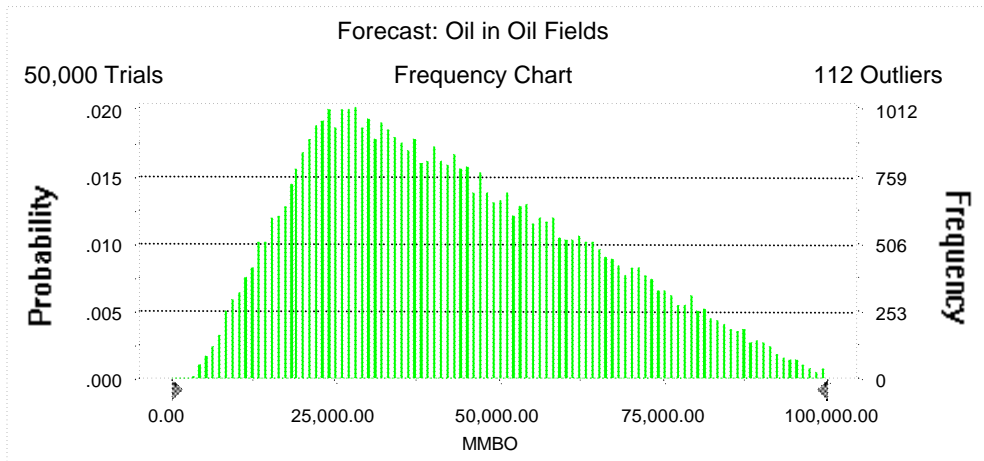
**Forecast: Oil in Oil Fields**

Summary:

Display range is from 0.00 to 100,000.00 MMBO  
Entire range is from 2,834.08 to 110,802.28 MMBO  
After 50,000 trials, the standard error of the mean is 93.16

Statistics:

	<u>Value</u>
Trials	50000
Mean	42,947.41
Median	39,987.31
Mode	---
Standard Deviation	20,831.05
Variance	433,932,759.96
Skewness	0.49
Kurtosis	2.49
Coefficient of Variability	0.49
Range Minimum	2,834.08
Range Maximum	110,802.28
Range Width	107,968.20
Mean Standard Error	93.16



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**Forecast: Oil in Oil Fields (cont'd)**

Percentiles:

<u>Percentile</u>	<u>MMBO</u>
100%	2,834.08
95%	13,761.08
90%	18,003.42
85%	21,191.66
80%	23,832.25
75%	26,393.65
70%	28,846.32
65%	31,485.77
60%	34,161.98
55%	37,015.76
50%	39,987.31
45%	43,009.16
40%	46,117.44
35%	49,622.87
30%	53,457.48
25%	57,533.99
20%	62,076.10
15%	67,109.85
10%	73,147.37
5%	81,362.57
0%	110,802.28

End of Forecast

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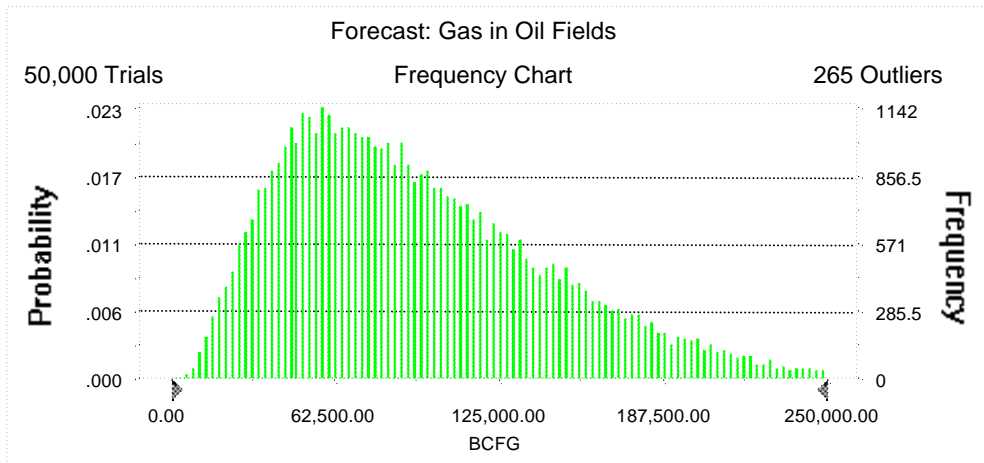
**Forecast: Gas in Oil Fields**

Summary:

Display range is from 0.00 to 250,000.00 BCFG  
 Entire range is from 4,827.52 to 335,813.60 BCFG  
 After 50,000 trials, the standard error of the mean is 225.88

Statistics:

	<u>Value</u>
Trials	50000
Mean	94,429.85
Median	85,489.74
Mode	---
Standard Deviation	50,509.13
Variance	2,551,172,079.86
Skewness	0.80
Kurtosis	3.33
Coefficient of Variability	0.53
Range Minimum	4,827.52
Range Maximum	335,813.60
Range Width	330,986.08
Mean Standard Error	225.88



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**Forecast: Gas in Oil Fields (cont'd)**

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	4,827.52
95%	28,026.26
90%	36,580.98
85%	43,594.61
80%	49,752.74
75%	55,391.16
70%	61,084.53
65%	66,946.91
60%	72,900.99
55%	79,015.12
50%	85,489.74
45%	92,130.02
40%	99,465.63
35%	107,197.44
30%	115,668.57
25%	125,331.70
20%	136,016.76
15%	149,379.87
10%	165,716.85
5%	190,828.61
0%	335,813.60

End of Forecast

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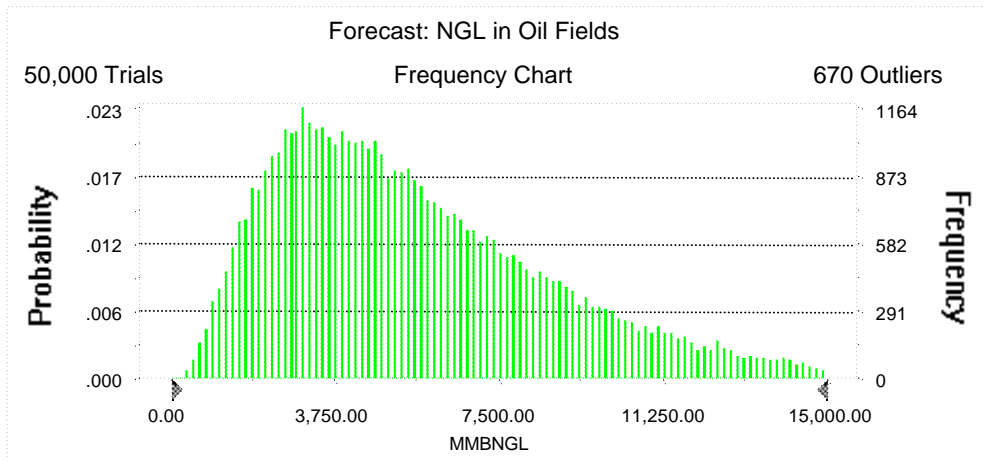
**Forecast: NGL in Oil Fields**

Summary:

Display range is from 0.00 to 15,000.00 MMBNGL  
 Entire range is from 174.13 to 25,292.00 MMBNGL  
 After 50,000 trials, the standard error of the mean is 14.77

Statistics:

	<u>Value</u>
Trials	50000
Mean	5,661.79
Median	4,978.64
Mode	---
Standard Deviation	3,302.71
Variance	10,907,885.32
Skewness	1.05
Kurtosis	4.17
Coefficient of Variability	0.58
Range Minimum	174.13
Range Maximum	25,292.00
Range Width	25,117.87
Mean Standard Error	14.77



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**Forecast: NGL in Oil Fields (cont'd)**

Percentiles:

<u>Percentile</u>	<u>MMBNGL</u>
100%	174.13
95%	1,552.16
90%	2,059.29
85%	2,456.73
80%	2,820.47
75%	3,157.75
70%	3,499.75
65%	3,860.00
60%	4,223.20
55%	4,593.61
50%	4,978.64
45%	5,400.60
40%	5,832.86
35%	6,333.41
30%	6,882.80
25%	7,492.26
20%	8,217.34
15%	9,080.25
10%	10,242.58
5%	12,082.47
0%	25,292.00

End of Forecast

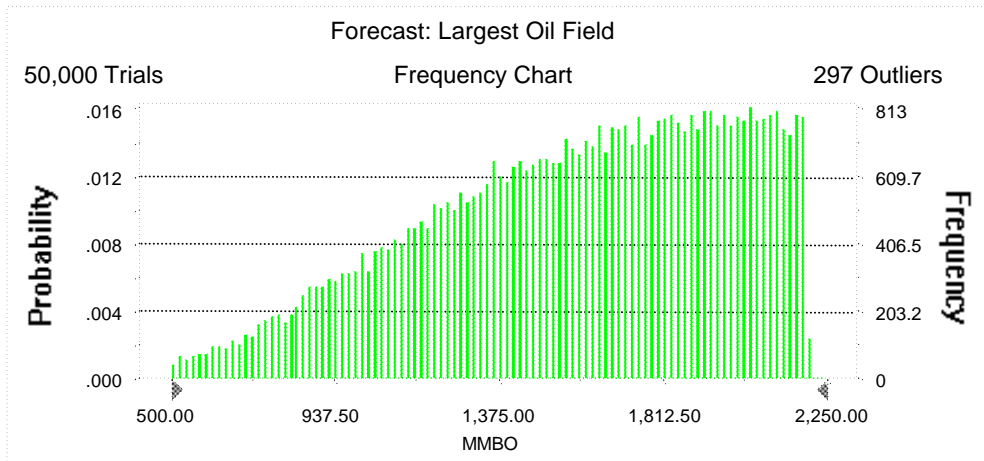
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**Forecast: Largest Oil Field**

Summary:

Display range is from 500.00 to 2,250.00 MMBO  
Entire range is from 203.87 to 2,199.99 MMBO  
After 50,000 trials, the standard error of the mean is 1.84

Statistics:	<u>Value</u>
Trials	50000
Mean	1,576.75
Median	1,630.10
Mode	---
Standard Deviation	412.27
Variance	169,965.28
Skewness	-0.50
Kurtosis	2.48
Coefficient of Variability	0.26
Range Minimum	203.87
Range Maximum	2,199.99
Range Width	1,996.12
Mean Standard Error	1.84





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**Monte Carlo Results**

**Forecast: Largest Oil Field (cont'd)**

Percentiles:

<u>Percentile</u>	<u>MMBO</u>
100%	203.87
95%	828.80
90%	986.42
85%	1,104.80
80%	1,203.03
75%	1,285.61
70%	1,363.84
65%	1,434.20
60%	1,500.99
55%	1,566.49
50%	1,630.10
45%	1,689.36
40%	1,748.52
35%	1,806.89
30%	1,863.05
25%	1,920.11
20%	1,975.17
15%	2,032.76
10%	2,087.65
5%	2,143.31
0%	2,199.99

End of Forecast

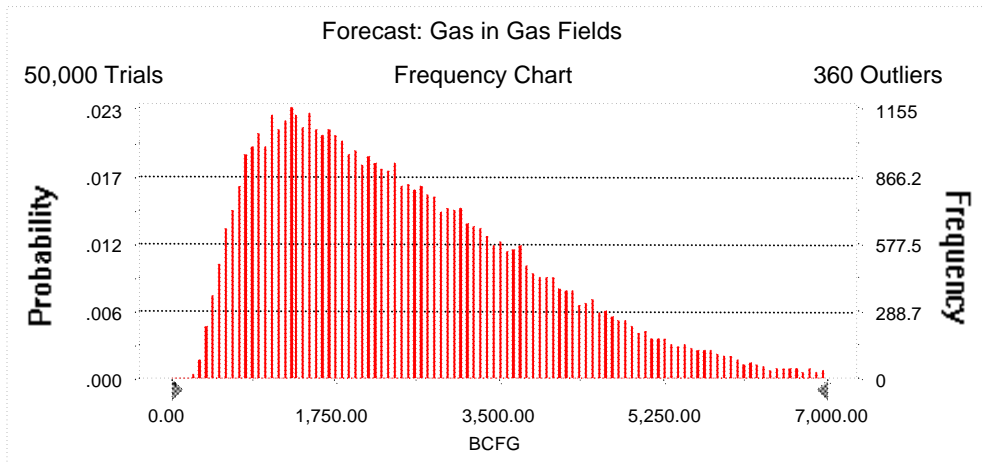
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**Forecast: Gas in Gas Fields**

**Summary:**

Display range is from 0.00 to 7,000.00 BCFG  
 Entire range is from 196.06 to 11,227.25 BCFG  
 After 50,000 trials, the standard error of the mean is 6.43

Statistics:	<u>Value</u>
Trials	50000
Mean	2,504.18
Median	2,234.40
Mode	---
Standard Deviation	1,438.02
Variance	2,067,906.88
Skewness	0.95
Kurtosis	3.89
Coefficient of Variability	0.57
Range Minimum	196.06
Range Maximum	11,227.25
Range Width	11,031.19
Mean Standard Error	6.43



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**Forecast: Gas in Gas Fields (cont'd)**

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	196.06
95%	697.75
90%	888.81
85%	1,059.95
80%	1,218.16
75%	1,374.91
70%	1,531.30
65%	1,698.23
60%	1,867.81
55%	2,045.80
50%	2,234.40
45%	2,427.47
40%	2,640.39
35%	2,857.77
30%	3,102.41
25%	3,362.94
20%	3,666.96
15%	4,026.44
10%	4,497.82
5%	5,228.74
0%	11,227.25

End of Forecast

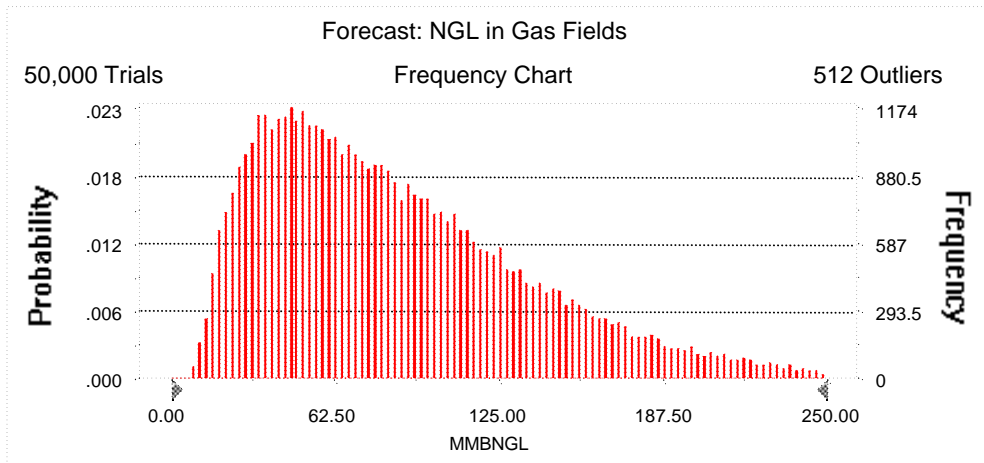
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**Forecast: NGL in Gas Fields**

Summary:

Display range is from 0.00 to 250.00 MMBNGL  
 Entire range is from 6.22 to 412.91 MMBNGL  
 After 50,000 trials, the standard error of the mean is 0.24

Statistics:	<u>Value</u>
Trials	50000
Mean	87.55
Median	76.53
Mode	---
Standard Deviation	53.17
Variance	2,827.45
Skewness	1.12
Kurtosis	4.54
Coefficient of Variability	0.61
Range Minimum	6.22
Range Maximum	412.91
Range Width	406.69
Mean Standard Error	0.24



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**Forecast: NGL in Gas Fields (cont'd)**

Percentiles:

<u>Percentile</u>	<u>MMBNGL</u>
100%	6.22
95%	23.07
90%	29.91
85%	35.59
80%	41.27
75%	46.74
70%	52.17
65%	57.83
60%	63.73
55%	69.96
50%	76.53
45%	83.27
40%	90.74
35%	98.61
30%	107.28
25%	116.87
20%	128.08
15%	142.33
10%	160.40
5%	189.53
0%	412.91

End of Forecast

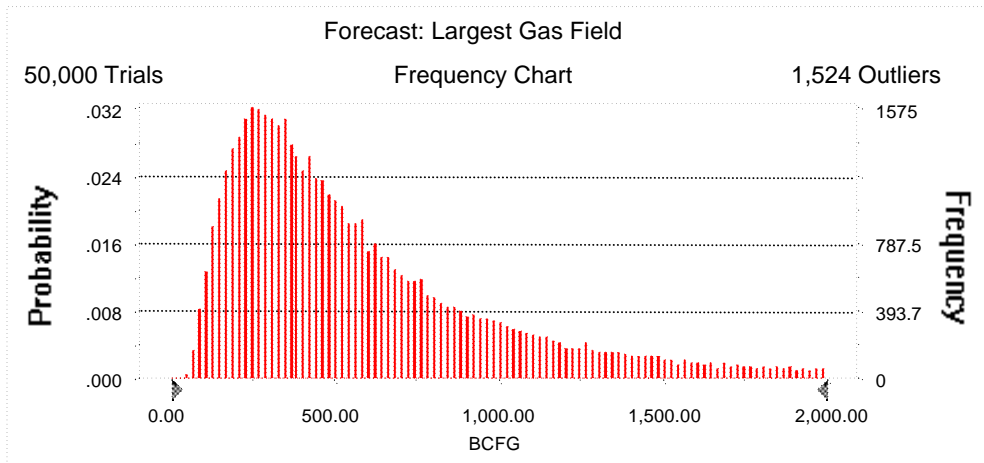
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**Forecast: Largest Gas Field**

Summary:

Display range is from 0.00 to 2,000.00 BCFG  
Entire range is from 45.97 to 2,999.59 BCFG  
After 50,000 trials, the standard error of the mean is 2.25

Statistics:	<u>Value</u>
Trials	50000
Mean	631.72
Median	474.44
Mode	---
Standard Deviation	503.13
Variance	253,140.50
Skewness	1.85
Kurtosis	6.81
Coefficient of Variability	0.80
Range Minimum	45.97
Range Maximum	2,999.59
Range Width	2,953.61
Mean Standard Error	2.25



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**Forecast: Largest Gas Field (cont'd)**

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	45.97
95%	147.49
90%	189.75
85%	224.94
80%	257.30
75%	289.21
70%	322.48
65%	355.77
60%	392.30
55%	431.73
50%	474.44
45%	521.04
40%	574.58
35%	634.38
30%	707.96
25%	798.39
20%	916.49
15%	1,067.12
10%	1,291.35
5%	1,712.16
0%	2,999.59

End of Forecast

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**Assumptions**

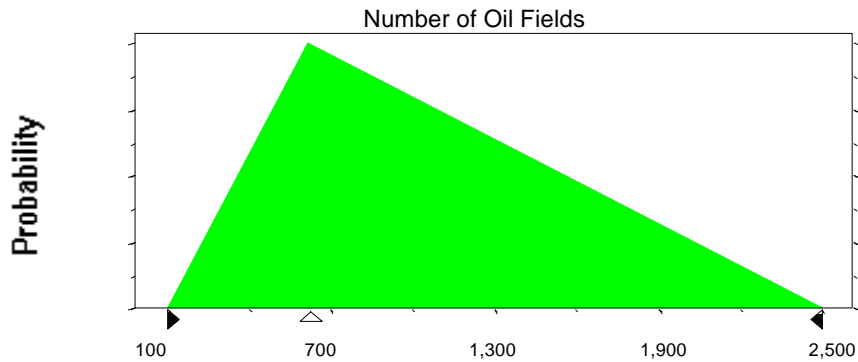
**Assumption: Number of Oil Fields**

Triangular distribution with parameters:

Minimum	100
Likeliest	625
Maximum	2,500

Selected range is from 100 to 2,500

Mean value in simulation was 1,068



**Assumption: Sizes of Oil Fields**

Lognormal distribution with parameters:

Mean	39.49
Standard Deviation	219.27

Shifted parameters

44.49
219.27

Selected range is from 0.00 to 2,195.00

Mean value in simulation was 35.44

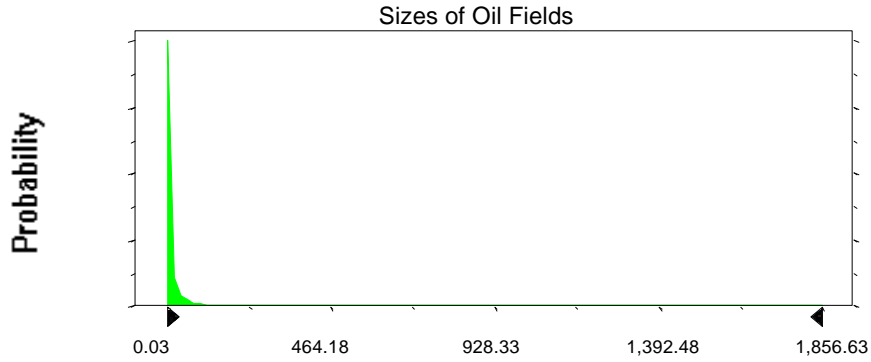
5.00 to 2,200.00

40.44



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Assumption: Sizes of Oil Fields (cont'd)



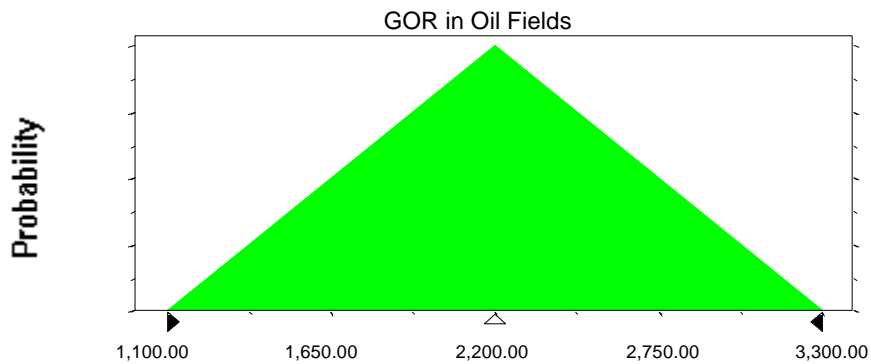
Assumption: GOR in Oil Fields

Triangular distribution with parameters:

Minimum	1,100.00
Likeliest	2,200.00
Maximum	3,300.00

Selected range is from 1,100.00 to 3,300.00

Mean value in simulation was 2,199.24



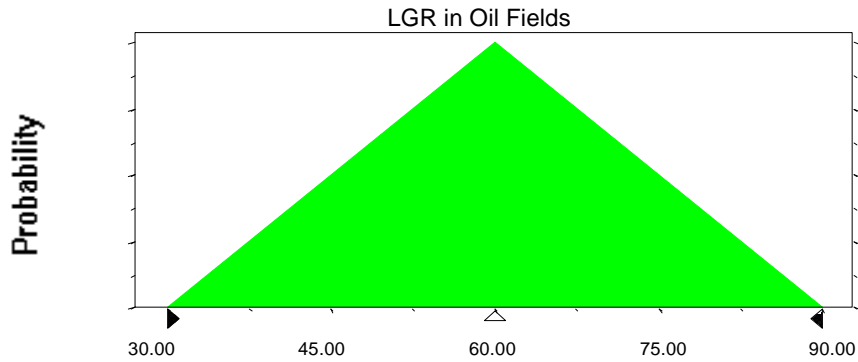
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**Assumption: LGR in Oil Fields**

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 59.93



**Assumption: Number of Gas Fields**

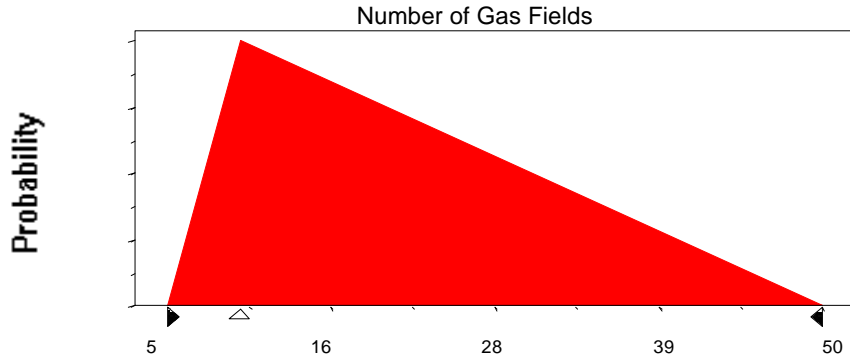
Triangular distribution with parameters:

Minimum	5
Likeliest	10
Maximum	50

Selected range is from 5 to 50  
Mean value in simulation was 22

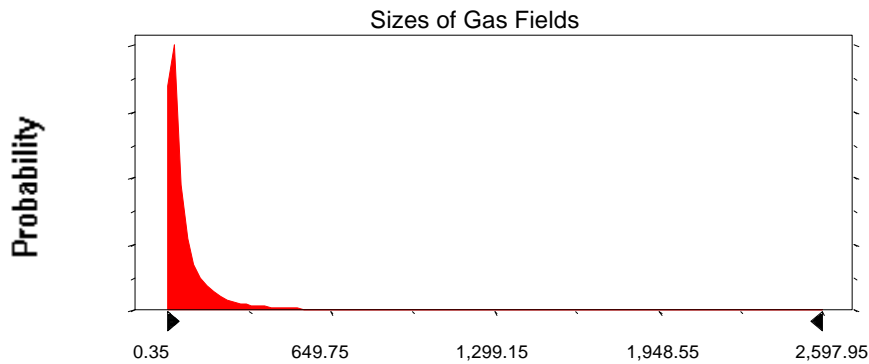
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**Assumption: Number of Gas Fields (cont'd)**



**Assumption: Sizes of Gas Fields**

Lognormal distribution with parameters:		Shifted parameters
Mean	90.64	120.64
Standard Deviation	258.43	258.43
Selected range is from 0.00 to 2,970.00		30.00 to 3,000.00
Mean value in simulation was 84.78		114.78



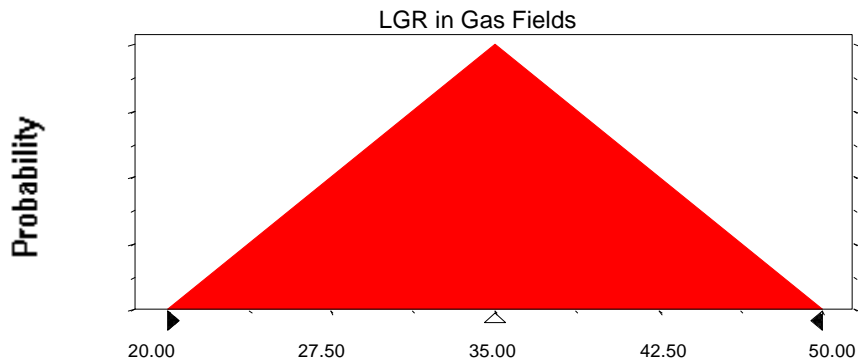
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**Assumption: LGR in Gas Fields**

Triangular distribution with parameters:

Minimum	20.00
Likeliest	35.00
Maximum	50.00

Selected range is from 20.00 to 50.00  
Mean value in simulation was 34.99



End of Assumptions

Simulation started on 12/13/99 at 16:39:44  
Simulation stopped on 12/14/99 at 4:03:53