

**South Malay Coaly, Assessment Unit 37030201  
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	34	98	177	101	153	456	920	486	2	6	14	7	10	18	44	21
Gas Fields	30						892	3,018	6,515	3,282	17	59	139	66	210	524	1,341	611
Total		1.00	34	98	177	101	1,045	3,473	7,435	3,768	19	65	152	72				

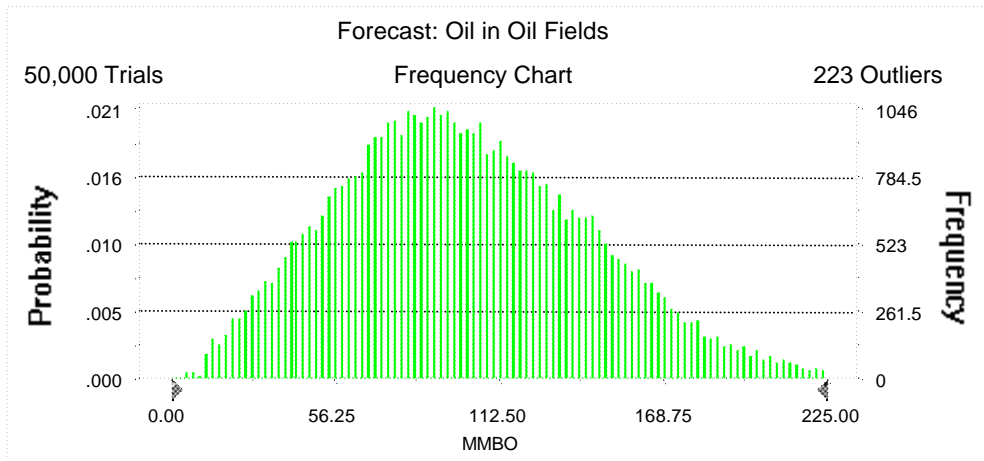
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**Forecast: Oil in Oil Fields**

Summary:

Display range is from 0.00 to 225.00 MMBO  
Entire range is from 5.24 to 294.63 MMBO  
After 50,000 trials, the standard error of the mean is 0.19

Statistics:	Value
Trials	50000
Mean	101.23
Median	97.90
Mode	---
Standard Deviation	43.46
Variance	1,888.34
Skewness	0.38
Kurtosis	2.87
Coefficient of Variability	0.43
Range Minimum	5.24
Range Maximum	294.63
Range Width	289.39
Mean Standard Error	0.19



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

Percentiles:

<u>Percentile</u>	<u>MMBO</u>
100%	5.24
95%	34.42
90%	46.08
85%	55.22
80%	62.85
75%	69.67
70%	75.64
65%	81.35
60%	86.85
55%	92.38
50%	97.90
45%	103.76
40%	109.70
35%	116.04
30%	122.88
25%	130.19
20%	138.65
15%	147.67
10%	159.69
5%	176.95
0%	294.63

End of Forecast

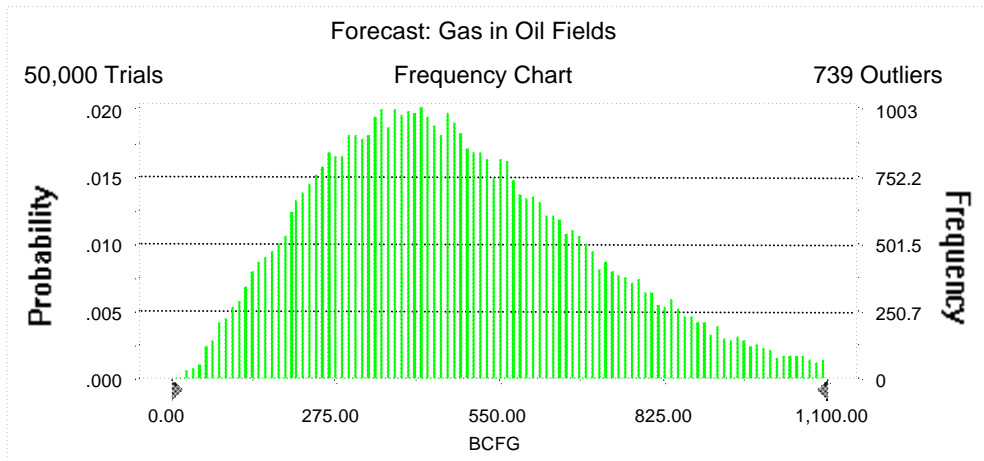
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**Forecast: Gas in Oil Fields**

Summary:

Display range is from 0.00 to 1,100.00 BCFG  
 Entire range is from 21.99 to 1,821.36 BCFG  
 After 50,000 trials, the standard error of the mean is 1.05

Statistics:	<u>Value</u>
Trials	50000
Mean	485.98
Median	455.73
Mode	---
Standard Deviation	235.81
Variance	55,604.13
Skewness	0.73
Kurtosis	3.59
Coefficient of Variability	0.49
Range Minimum	21.99
Range Maximum	1,821.36
Range Width	1,799.37
Mean Standard Error	1.05



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

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	21.99
95%	153.10
90%	206.94
85%	246.31
80%	280.06
75%	312.56
70%	342.79
65%	371.11
60%	399.32
55%	426.77
50%	455.73
45%	484.75
40%	516.37
35%	550.82
30%	585.94
25%	627.18
20%	674.67
15%	731.77
10%	806.01
5%	919.73
0%	1,821.36

End of Forecast

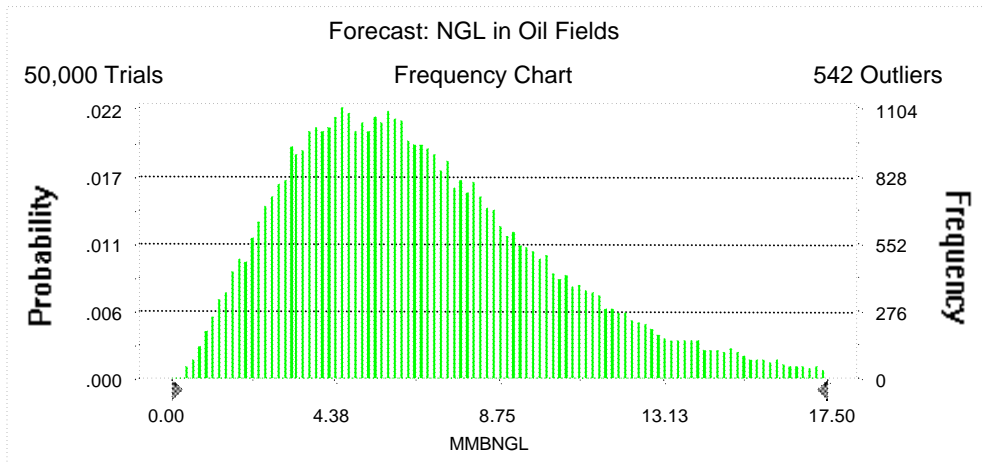
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**Forecast: NGL in Oil Fields**

Summary:

Display range is from 0.00 to 17.50 MMBNGL  
Entire range is from 0.22 to 34.05 MMBNGL  
After 50,000 trials, the standard error of the mean is 0.02

Statistics:	<u>Value</u>
Trials	50000
Mean	6.80
Median	6.20
Mode	---
Standard Deviation	3.63
Variance	13.19
Skewness	0.99
Kurtosis	4.45
Coefficient of Variability	0.53
Range Minimum	0.22
Range Maximum	34.05
Range Width	33.83
Mean Standard Error	0.02



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

Percentiles:

<u>Percentile</u>	<u>MMBNGL</u>
100%	0.22
95%	1.99
90%	2.69
85%	3.23
80%	3.70
75%	4.13
70%	4.55
65%	4.96
60%	5.38
55%	5.79
50%	6.20
45%	6.65
40%	7.11
35%	7.62
30%	8.18
25%	8.79
20%	9.56
15%	10.47
10%	11.67
5%	13.67
0%	34.05

End of Forecast

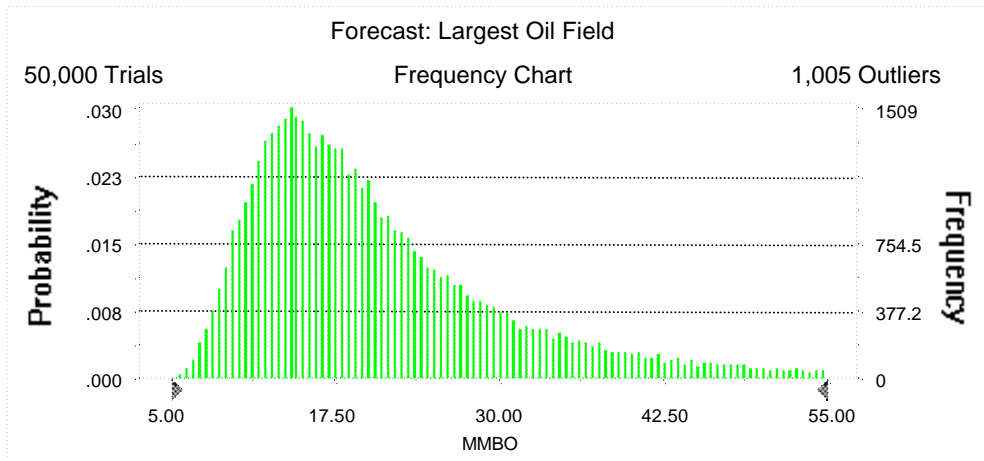
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**Forecast: Largest Oil Field**

Summary:

Display range is from 5.00 to 55.00 MMBO  
Entire range is from 5.24 to 74.86 MMBO  
After 50,000 trials, the standard error of the mean is 0.05

Statistics:	<u>Value</u>
Trials	50000
Mean	21.43
Median	18.49
Mode	---
Standard Deviation	11.00
Variance	120.93
Skewness	1.69
Kurtosis	6.50
Coefficient of Variability	0.51
Range Minimum	5.24
Range Maximum	74.86
Range Width	69.62
Mean Standard Error	0.05





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

Percentiles:

<u>Percentile</u>	<u>MMBO</u>
100%	5.24
95%	9.69
90%	11.05
85%	12.12
80%	13.04
75%	13.92
70%	14.75
65%	15.64
60%	16.57
55%	17.51
50%	18.49
45%	19.57
40%	20.75
35%	22.12
30%	23.67
25%	25.62
20%	27.97
15%	31.07
10%	35.70
5%	44.04
0%	74.86

End of Forecast

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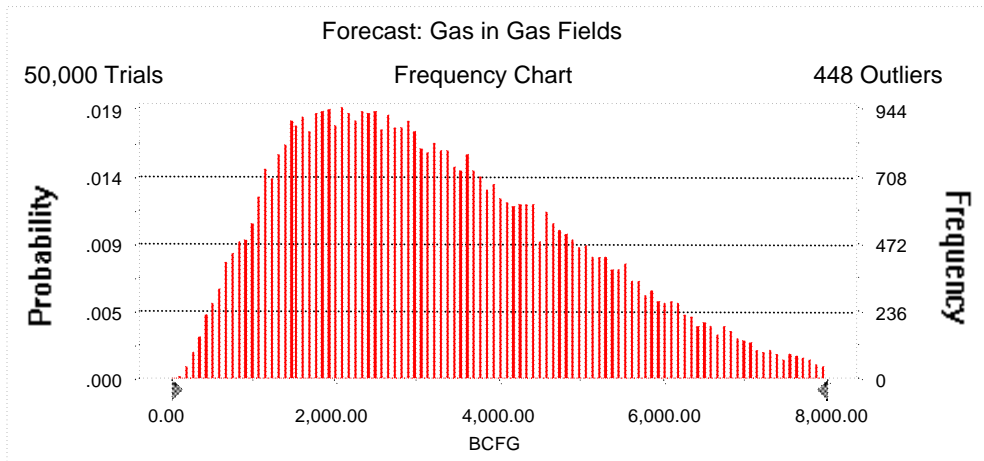
**Forecast: Gas in Gas Fields**

Summary:

Display range is from 0.00 to 8,000.00 BCFG  
 Entire range is from 96.33 to 10,920.01 BCFG  
 After 50,000 trials, the standard error of the mean is 7.80

Statistics:

	<u>Value</u>
Trials	50000
Mean	3,282.24
Median	3,017.54
Mode	---
Standard Deviation	1,745.06
Variance	3,045,242.15
Skewness	0.65
Kurtosis	3.00
Coefficient of Variability	0.53
Range Minimum	96.33
Range Maximum	10,920.01
Range Width	10,823.68
Mean Standard Error	7.80



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

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	96.33
95%	892.18
90%	1,220.49
85%	1,472.97
80%	1,696.51
75%	1,916.87
70%	2,133.14
65%	2,349.92
60%	2,564.11
55%	2,788.89
50%	3,017.54
45%	3,263.28
40%	3,518.14
35%	3,788.10
30%	4,088.80
25%	4,417.14
20%	4,785.48
15%	5,212.75
10%	5,732.22
5%	6,515.22
0%	10,920.01

End of Forecast

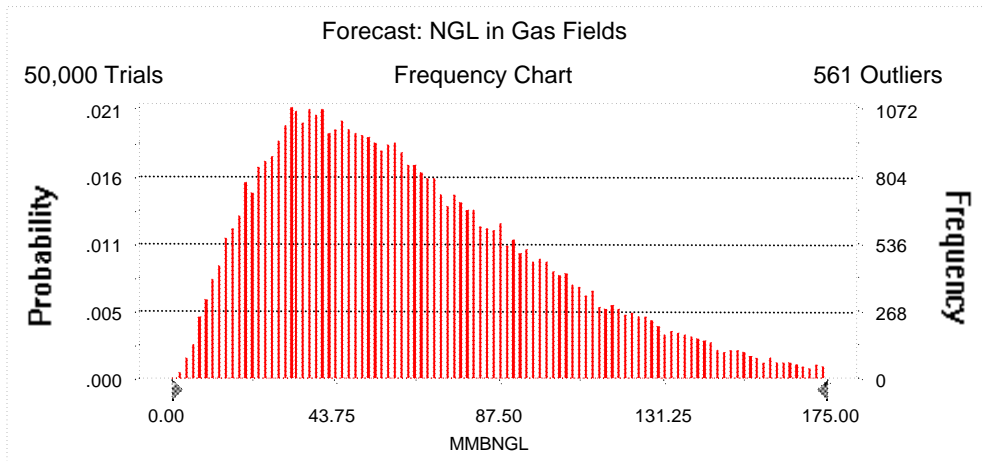
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**Forecast: NGL in Gas Fields**

Summary:

Display range is from 0.00 to 175.00 MMBNGL  
 Entire range is from 1.54 to 277.92 MMBNGL  
 After 50,000 trials, the standard error of the mean is 0.17

Statistics:	<u>Value</u>
Trials	50000
Mean	65.63
Median	58.58
Mode	---
Standard Deviation	38.16
Variance	1,456.06
Skewness	0.94
Kurtosis	3.85
Coefficient of Variability	0.58
Range Minimum	1.54
Range Maximum	277.92
Range Width	276.37
Mean Standard Error	0.17



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

Percentiles:

<u>Percentile</u>	<u>MMBNGL</u>
100%	1.54
95%	16.58
90%	22.83
85%	27.89
80%	32.32
75%	36.50
70%	40.68
65%	44.95
60%	49.31
55%	53.83
50%	58.58
45%	63.41
40%	68.66
35%	74.46
30%	80.73
25%	87.82
20%	95.91
15%	105.71
10%	118.86
5%	138.56
0%	277.92

End of Forecast

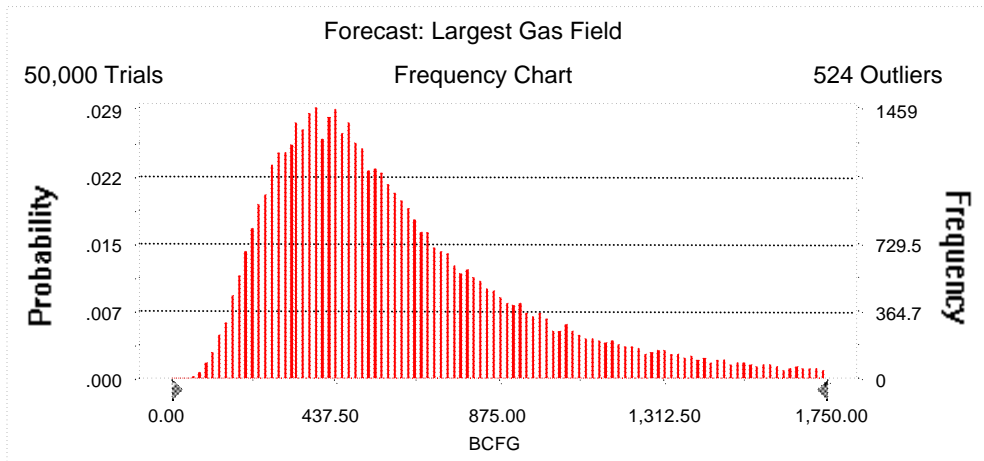
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**Forecast: Largest Gas Field**

Summary:

Display range is from 0.00 to 1,750.00 BCFG  
Entire range is from 43.58 to 1,999.83 BCFG  
After 50,000 trials, the standard error of the mean is 1.56

Statistics:	Value
Trials	50000
Mean	611.11
Median	523.59
Mode	---
Standard Deviation	348.13
Variance	121,193.03
Skewness	1.30
Kurtosis	4.66
Coefficient of Variability	0.57
Range Minimum	43.58
Range Maximum	1,999.83
Range Width	1,956.25
Mean Standard Error	1.56



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

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	43.58
95%	209.56
90%	257.75
85%	295.20
80%	330.71
75%	362.64
70%	393.49
65%	426.14
60%	456.34
55%	488.51
50%	523.59
45%	561.87
40%	603.06
35%	648.91
30%	703.50
25%	768.42
20%	847.12
15%	949.85
10%	1,096.06
5%	1,341.14
0%	1,999.83

End of Forecast

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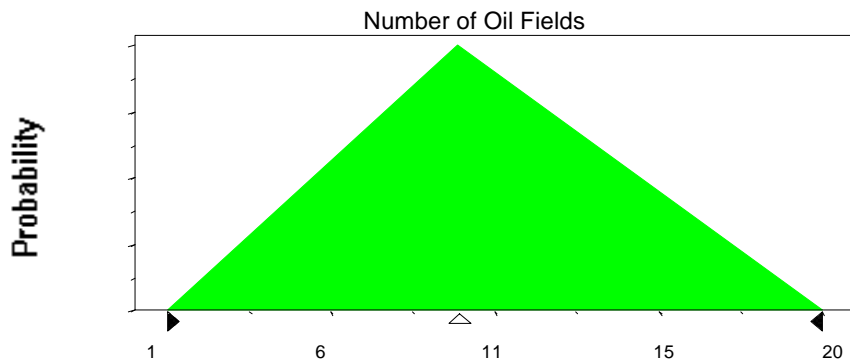
**Assumptions**

**Assumption: Number of Oil Fields**

Triangular distribution with parameters:

Minimum	1
Likeliest	9
Maximum	20

Selected range is from 1 to 20  
Mean value in simulation was 10



**Assumption: Sizes of Oil Fields**

Lognormal distribution with parameters:

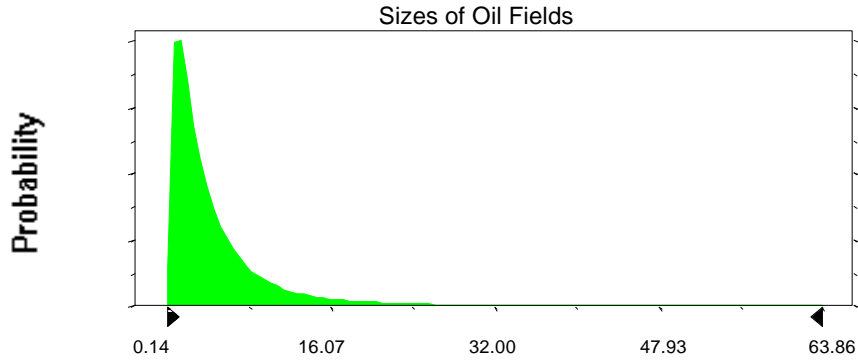
Mean	5.04	Shifted parameters	10.04
Standard Deviation	6.82		6.82

Selected range is from 0.00 to 70.00                      5.00 to 75.00  
Mean value in simulation was 4.91                                      9.91



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Assumption: Sizes of Oil Fields (cont'd)



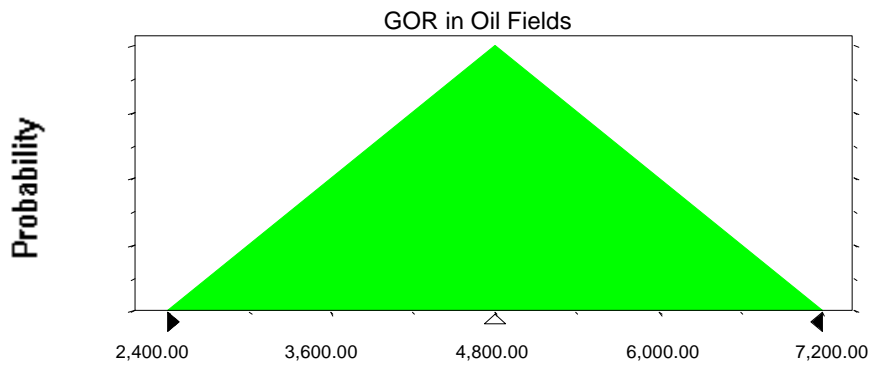
Assumption: GOR in Oil Fields

Triangular distribution with parameters:

Minimum	2,400.00
Likeliest	4,800.00
Maximum	7,200.00

Selected range is from 2,400.00 to 7,200.00

Mean value in simulation was 4,799.39



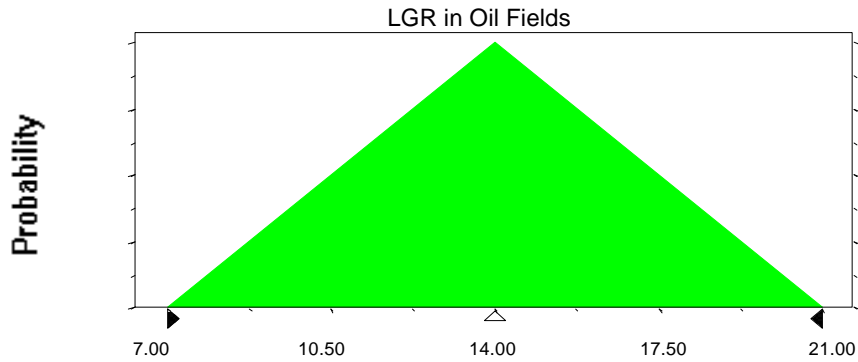
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**Assumption: LGR in Oil Fields**

Triangular distribution with parameters:

Minimum	7.00
Likeliest	14.00
Maximum	21.00

Selected range is from 7.00 to 21.00  
Mean value in simulation was 13.99



**Assumption: Number of Gas Fields**

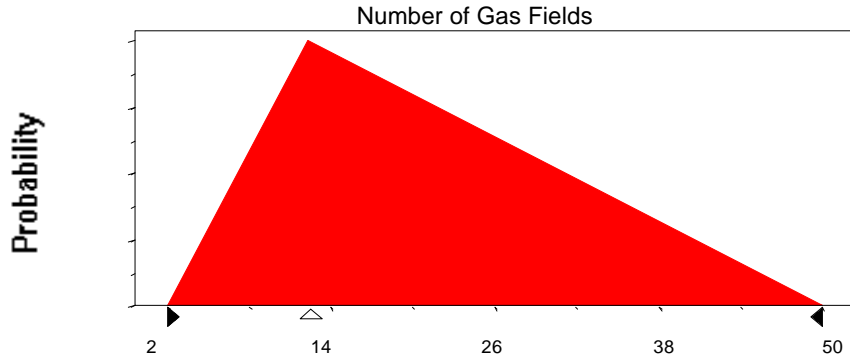
Triangular distribution with parameters:

Minimum	2
Likeliest	13
Maximum	50

Selected range is from 2 to 50  
Mean value in simulation was 21

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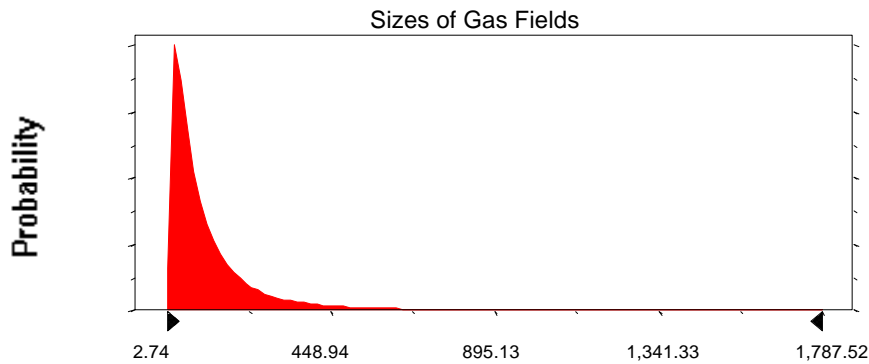
**Assumption: Number of Gas Fields (cont'd)**



**Assumption: Sizes of Gas Fields**

Lognormal distribution with parameters:		Shifted parameters
Mean	125.43	155.43
Standard Deviation	186.49	186.49

Selected range is from 0.00 to 1,970.00	30.00 to 2,000.00
Mean value in simulation was 123.54	153.54



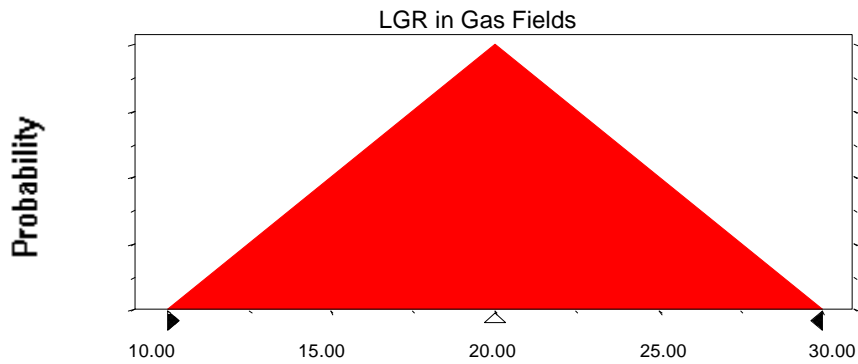
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**Assumption: LGR in Gas Fields**

Triangular distribution with parameters:

Minimum	10.00
Likeliest	20.00
Maximum	30.00

Selected range is from 10.00 to 30.00  
Mean value in simulation was 19.99



End of Assumptions

Simulation started on 10/7/99 at 13:13:48  
Simulation stopped on 10/7/99 at 13:36:19