

**Peripheral, Assessment Unit 60960102**  
**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	521	2,067	4,969	2,319	475	2,039	5,861	2,452	27	119	362	147	106	441	1,500	568
Gas Fields	6						264	1,325	3,824	1,585	11	58	176	71	118	476	1,816	651
Total		1.00	521	2,067	4,969	2,319	739	3,363	9,685	4,036	38	177	538	218				

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**Monte Carlo Results**

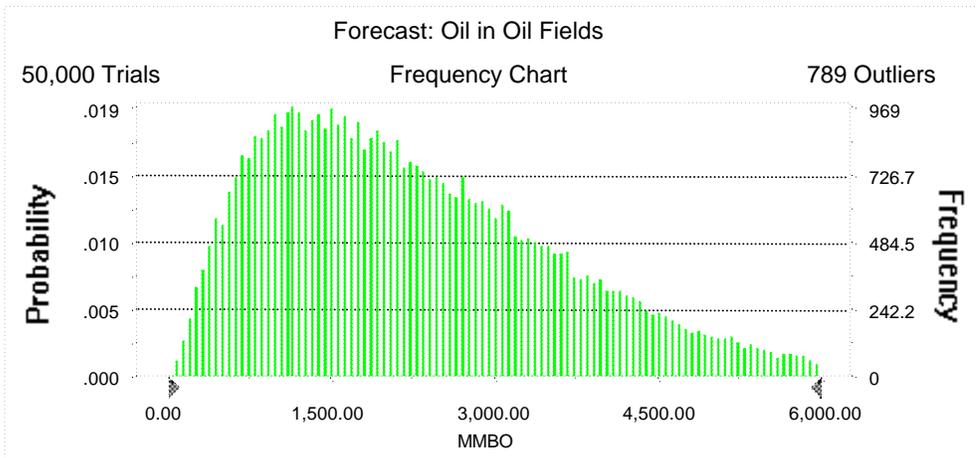
**Forecast: Oil in Oil Fields**

Summary:

Display range is from 0.00 to 6,000.00 MMBO  
Entire range is from 41.94 to 11,610.43 MMBO  
After 50,000 trials, the standard error of the mean is 6.26

Statistics:

	<u>Value</u>
Trials	50000
Mean	2,318.52
Median	2,067.02
Mode	---
Standard Deviation	1,399.35
Variance	1,958,185.88
Skewness	0.90
Kurtosis	3.77
Coefficient of Variability	0.60
Range Minimum	41.94
Range Maximum	11,610.43
Range Width	11,568.49
Mean Standard Error	6.26



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**Monte Carlo Results**

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

Percentiles:

<u>Percentile</u>	<u>MMBO</u>
100%	41.94
95%	520.57
90%	728.76
85%	907.07
80%	1,071.84
75%	1,227.48
70%	1,392.55
65%	1,552.72
60%	1,719.03
55%	1,890.47
50%	2,067.02
45%	2,252.79
40%	2,454.69
35%	2,674.01
30%	2,903.23
25%	3,153.86
20%	3,450.63
15%	3,796.63
10%	4,257.26
5%	4,969.29
0%	11,610.43

End of Forecast

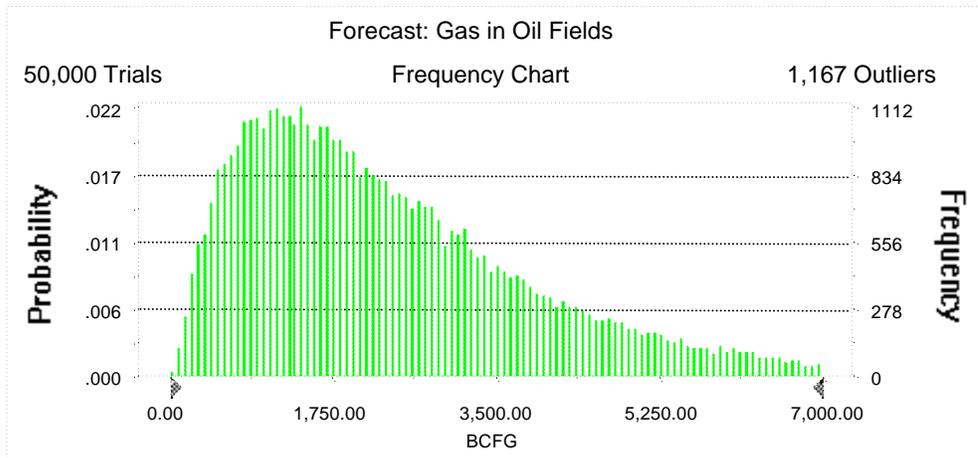
**60960102  
Peripheral  
Monte Carlo Results**

**Forecast: Gas in Oil Fields**

Summary:

Display range is from 0.00 to 7,000.00 BCFG  
 Entire range is from 32.91 to 14,804.40 BCFG  
 After 50,000 trials, the standard error of the mean is 7.75

Statistics:	<u>Value</u>
Trials	50000
Mean	2,451.58
Median	2,038.63
Mode	---
Standard Deviation	1,733.54
Variance	3,005,162.10
Skewness	1.45
Kurtosis	5.99
Coefficient of Variability	0.71
Range Minimum	32.91
Range Maximum	14,804.40
Range Width	14,771.49
Mean Standard Error	7.75



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**Peripheral**  
**Monte Carlo Results**

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

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	32.91
95%	474.80
90%	675.69
85%	851.33
80%	1,016.87
75%	1,178.57
70%	1,342.14
65%	1,503.94
60%	1,676.76
55%	1,851.84
50%	2,038.63
45%	2,247.44
40%	2,468.50
35%	2,707.61
30%	2,968.32
25%	3,271.48
20%	3,650.95
15%	4,119.19
10%	4,778.65
5%	5,861.06
0%	14,804.40

End of Forecast

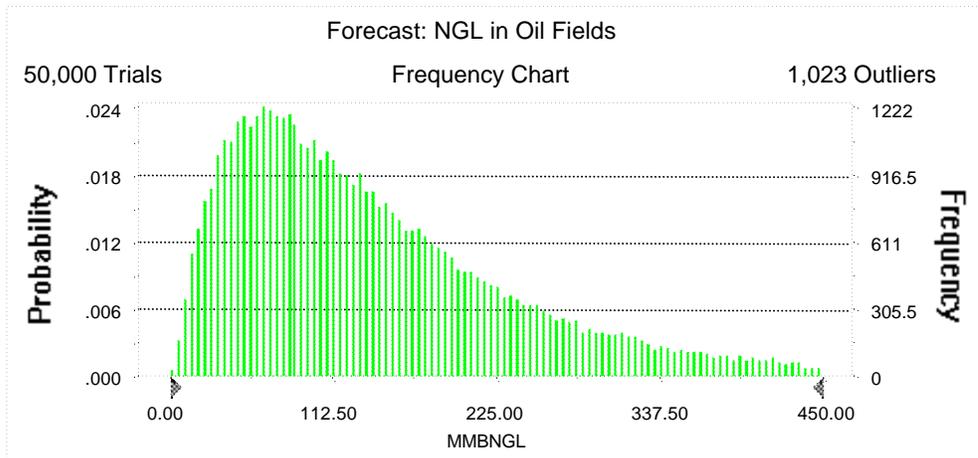
**60960102**  
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**Monte Carlo Results**

**Forecast: NGL in Oil Fields**

Summary:

Display range is from 0.00 to 450.00 MMBNGL  
Entire range is from 1.47 to 1,155.24 MMBNGL  
After 50,000 trials, the standard error of the mean is 0.49

Statistics:	Value
Trials	50000
Mean	146.94
Median	119.35
Mode	---
Standard Deviation	110.04
Variance	12,109.79
Skewness	1.66
Kurtosis	7.34
Coefficient of Variability	0.75
Range Minimum	1.47
Range Maximum	1,155.24
Range Width	1,153.78
Mean Standard Error	0.49



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

Percentiles:

<u>Percentile</u>	<u>MMBNGL</u>
100%	1.47
95%	26.61
90%	38.39
85%	48.61
80%	58.23
75%	67.61
70%	77.07
65%	86.56
60%	97.11
55%	107.97
50%	119.35
45%	131.88
40%	144.99
35%	159.86
30%	176.43
25%	195.69
20%	219.33
15%	249.79
10%	292.34
5%	362.35
0%	1,155.24

End of Forecast

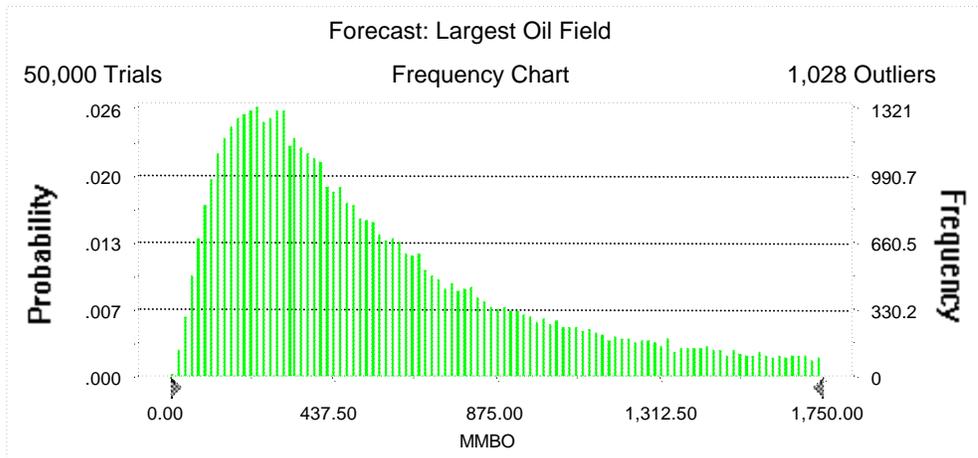
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Monte Carlo Results**

**Forecast: Largest Oil Field**

Summary:

Display range is from 0.00 to 1,750.00 MMBO  
 Entire range is from 8.53 to 1,999.92 MMBO  
 After 50,000 trials, the standard error of the mean is 1.91

Statistics:	<u>Value</u>
Trials	50000
Mean	568.12
Median	440.81
Mode	---
Standard Deviation	426.01
Variance	181,488.37
Skewness	1.23
Kurtosis	3.96
Coefficient of Variability	0.75
Range Minimum	8.53
Range Maximum	1,999.92
Range Width	1,991.39
Mean Standard Error	1.91



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

Percentiles:

<u>Percentile</u>	<u>MMBO</u>
100%	8.53
95%	105.80
90%	147.07
85%	182.56
80%	216.68
75%	250.44
70%	285.04
65%	319.27
60%	356.91
55%	396.77
50%	440.81
45%	489.45
40%	544.97
35%	607.49
30%	677.76
25%	767.28
20%	876.35
15%	1,020.01
10%	1,212.30
5%	1,499.64
0%	1,999.92

End of Forecast

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Peripheral  
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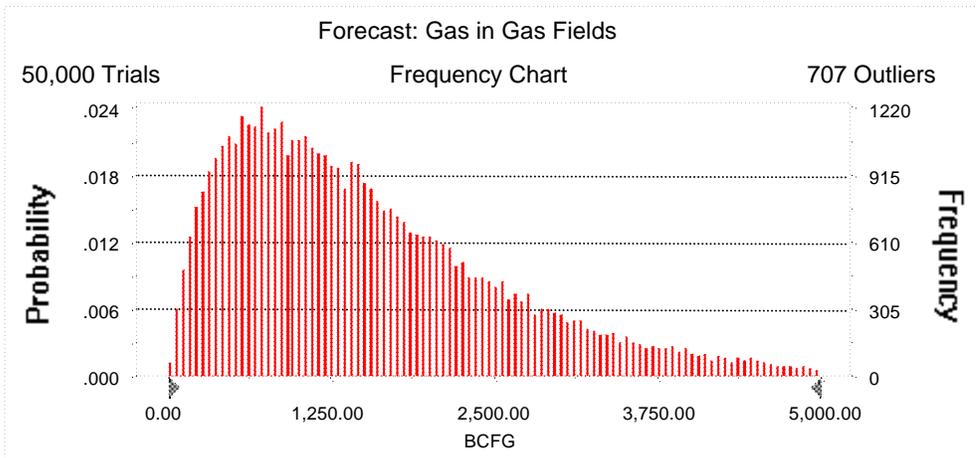
**Forecast: Gas in Gas Fields**

Summary:

Display range is from 0.00 to 5,000.00 BCFG  
 Entire range is from 9.10 to 10,960.13 BCFG  
 After 50,000 trials, the standard error of the mean is 5.10

Statistics:

	<u>Value</u>
Trials	50000
Mean	1,584.90
Median	1,324.66
Mode	---
Standard Deviation	1,140.83
Variance	1,301,489.46
Skewness	1.37
Kurtosis	5.68
Coefficient of Variability	0.72
Range Minimum	9.10
Range Maximum	10,960.13
Range Width	10,951.03
Mean Standard Error	5.10



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**Peripheral**  
**Monte Carlo Results**

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

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	9.10
95%	264.04
90%	398.66
85%	516.53
80%	626.20
75%	734.02
70%	844.49
65%	958.93
60%	1,075.30
55%	1,195.39
50%	1,324.66
45%	1,460.70
40%	1,600.95
35%	1,763.18
30%	1,948.05
25%	2,148.73
20%	2,397.06
15%	2,704.38
10%	3,124.76
5%	3,824.10
0%	10,960.13

End of Forecast

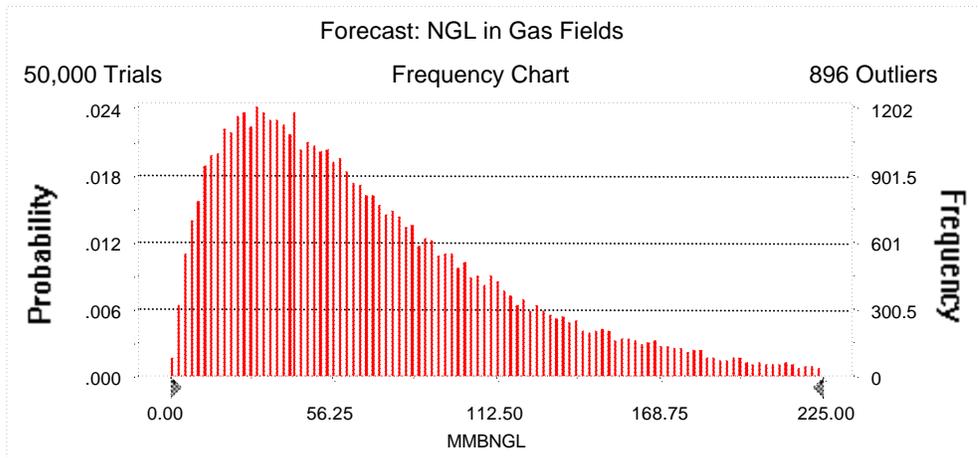
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**Monte Carlo Results**

**Forecast: NGL in Gas Fields**

Summary:

Display range is from 0.00 to 225.00 MMBNGL  
Entire range is from 0.35 to 634.47 MMBNGL  
After 50,000 trials, the standard error of the mean is 0.24

Statistics:	Value
Trials	50000
Mean	71.23
Median	58.14
Mode	---
Standard Deviation	53.58
Variance	2,870.30
Skewness	1.55
Kurtosis	6.73
Coefficient of Variability	0.75
Range Minimum	0.35
Range Maximum	634.47
Range Width	634.12
Mean Standard Error	0.24



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**Peripheral**  
**Monte Carlo Results**

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

Percentiles:

<u>Percentile</u>	<u>MMBNGL</u>
100%	0.35
95%	11.39
90%	17.17
85%	22.39
80%	27.19
75%	32.08
70%	36.89
65%	41.90
60%	47.04
55%	52.50
50%	58.14
45%	64.24
40%	70.90
35%	78.39
30%	86.61
25%	96.31
20%	107.82
15%	122.14
10%	142.35
5%	175.80
0%	634.47

End of Forecast

**60960102**  
**Peripheral**  
**Monte Carlo Results**

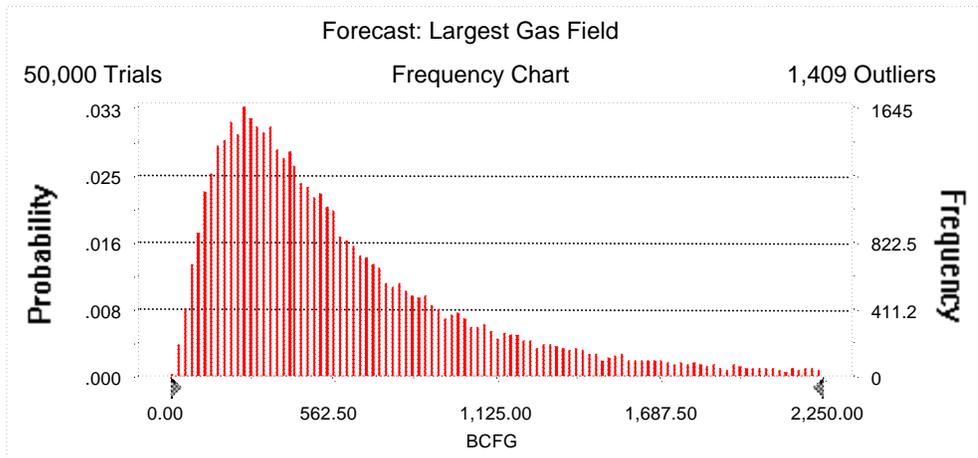
**Forecast: Largest Gas Field**

Summary:

Display range is from 0.00 to 2,250.00 BCFG  
Entire range is from 9.10 to 3,996.52 BCFG  
After 50,000 trials, the standard error of the mean is 2.58

Statistics:

	<u>Value</u>
Trials	50000
Mean	650.51
Median	475.66
Mode	---
Standard Deviation	576.64
Variance	332,517.13
Skewness	2.22
Kurtosis	9.34
Coefficient of Variability	0.89
Range Minimum	9.10
Range Maximum	3,996.52
Range Width	3,987.41
Mean Standard Error	2.58



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**Peripheral**  
**Monte Carlo Results**

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

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	9.10
95%	118.28
90%	164.10
85%	203.08
80%	239.81
75%	275.16
70%	311.41
65%	348.55
60%	388.13
55%	430.30
50%	475.66
45%	525.66
40%	578.79
35%	645.40
30%	724.09
25%	820.28
20%	938.49
15%	1,100.96
10%	1,345.40
5%	1,815.98
0%	3,996.52

End of Forecast

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Peripheral  
Monte Carlo Results

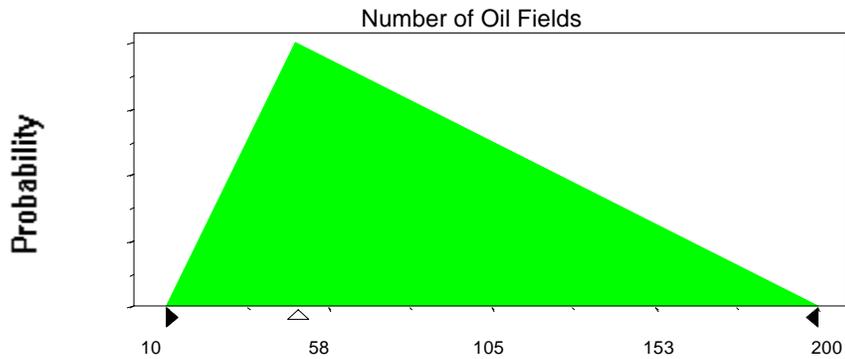
Assumptions

**Assumption: Number of Oil Fields**

Triangular distribution with parameters:

Minimum	10
Likeliest	48
Maximum	200

Selected range is from 10 to 200  
Mean value in simulation was 86



**Assumption: Sizes of Oil Fields**

Lognormal distribution with parameters:

Mean	30.22
Standard Deviation	226.27

Shifted parameters

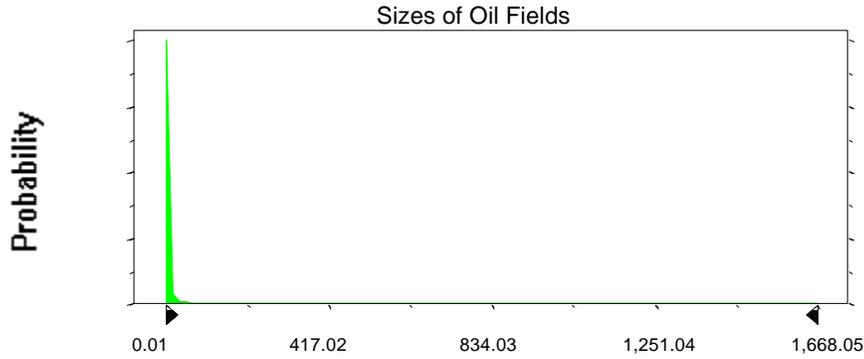
31.22
226.27

Selected range is from 0.00 to 1,999.00  
Mean value in simulation was 25.45

1.00 to 2,000.00  
26.45

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Assumption: Sizes of Oil Fields (cont'd)



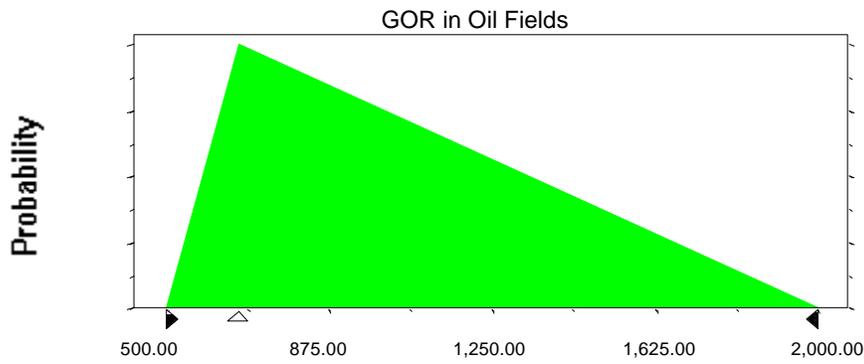
Assumption: GOR in Oil Fields

Triangular distribution with parameters:

Minimum	500.00
Likeliest	666.67
Maximum	2,000.00

Selected range is from 500.00 to 2,000.00

Mean value in simulation was 1,056.85



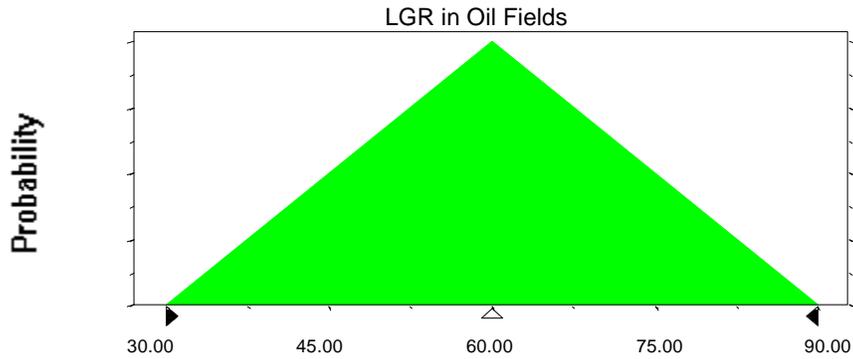
**60960102**  
**Peripheral**  
**Monte Carlo Results**

**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 59.97



**Assumption: Number of Gas Fields**

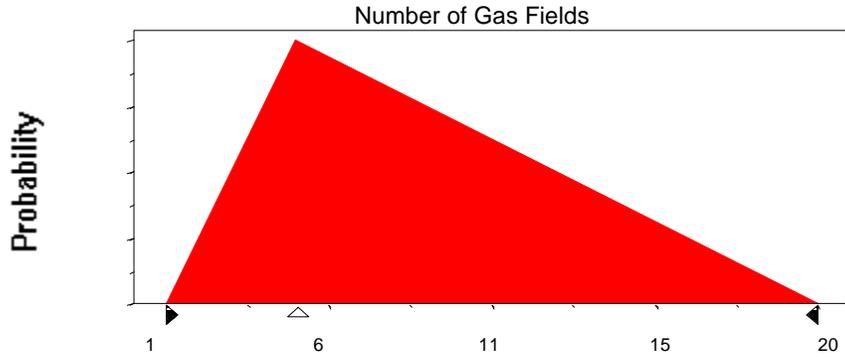
Triangular distribution with parameters:

Minimum	1
Likeliest	5
Maximum	20

Selected range is from 1 to 20  
Mean value in simulation was 9

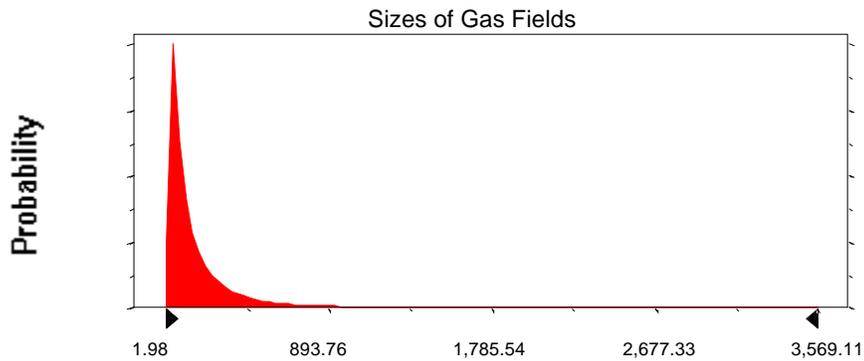
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Peripheral  
Monte Carlo Results

Assumption: Number of Gas Fields (cont'd)



Assumption: Sizes of Gas Fields

Lognormal distribution with parameters:		Shifted parameters
Mean	183.42	189.42
Standard Deviation	356.02	356.02
Selected range is from 0.00 to 3,994.00		6.00 to 4,000.00
Mean value in simulation was 175.96		181.96



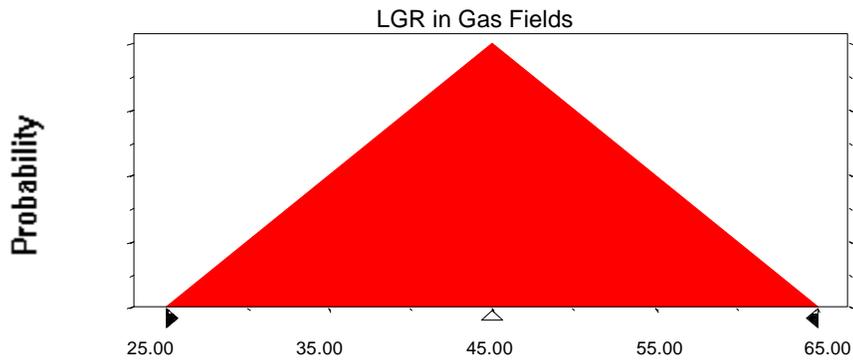
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Peripheral  
Monte Carlo Results**

**Assumption: LGR in Gas Fields**

Triangular distribution with parameters:

Minimum	25.00
Likeliest	45.00
Maximum	65.00

Selected range is from 25.00 to 65.00  
Mean value in simulation was 44.98



End of Assumptions

Simulation started on 7/15/99 at 13:39:05  
Simulation stopped on 7/15/99 at 14:30:36