

**Leduc Oil and Gas, Assessment Unit 52430202**  
**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	209	492	818	501	191	479	889	501	11	28	57	30	12	21	32	21
Gas Fields	3						130	265	480	281	4	10	20	11	18	40	103	47
Total		1.00	209	492	818	501	321	744	1,369	782	15	38	77	41				

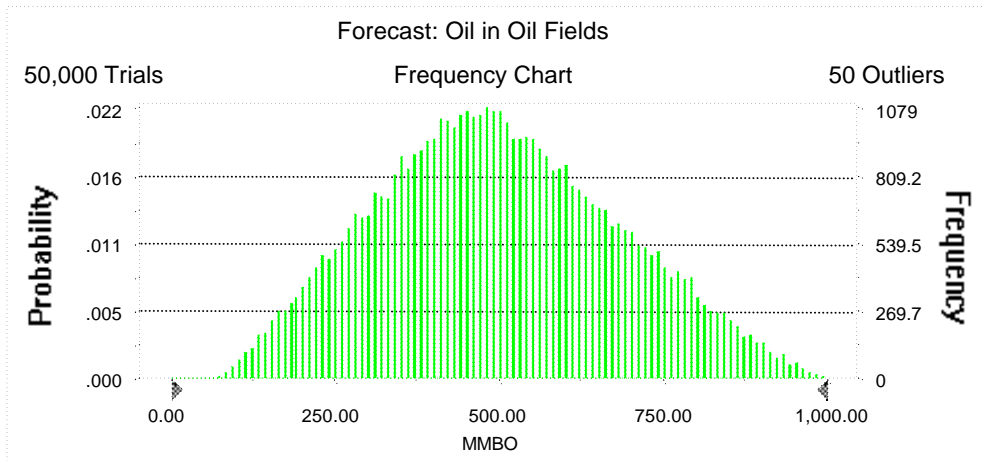
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**Monte Carlo Results**

**Forecast: Oil in Oil Fields**

Summary:

Display range is from 0.00 to 1,000.00 MMBO  
Entire range is from 63.53 to 1,092.66 MMBO  
After 50,000 trials, the standard error of the mean is 0.82

Statistics:	Value
Trials	50000
Mean	501.01
Median	492.03
Mode	---
Standard Deviation	183.20
Variance	33,563.83
Skewness	0.18
Kurtosis	2.49
Coefficient of Variability	0.37
Range Minimum	63.53
Range Maximum	1,092.66
Range Width	1,029.13
Mean Standard Error	0.82



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

Percentiles:

<u>Percentile</u>	<u>MMBO</u>
100%	63.53
95%	209.17
90%	262.08
85%	302.91
80%	337.89
75%	367.63
70%	395.05
65%	420.56
60%	445.06
55%	468.55
50%	492.03
45%	515.76
40%	541.79
35%	567.87
30%	597.24
25%	628.52
20%	663.94
15%	705.14
10%	753.44
5%	818.17
0%	1,092.66

End of Forecast

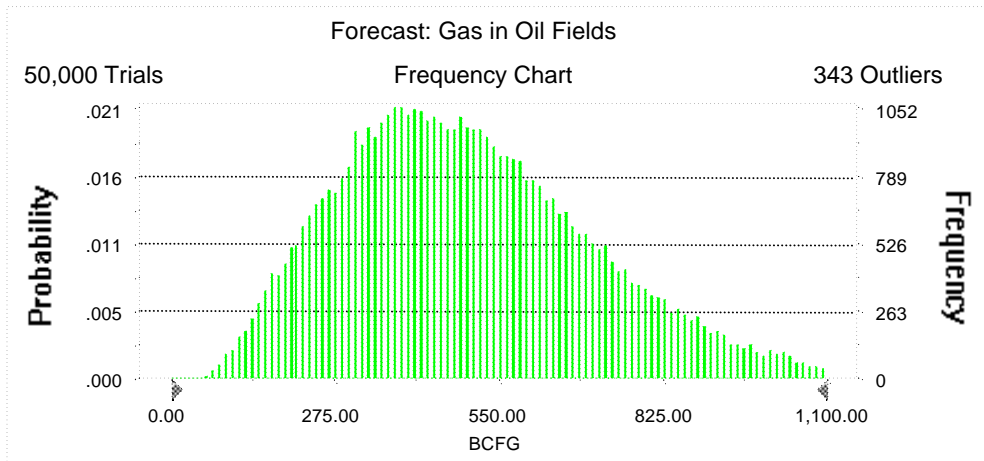
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**Forecast: Gas in Oil Fields**

Summary:

Display range is from 0.00 to 1,100.00 BCFG  
Entire range is from 51.16 to 1,411.52 BCFG  
After 50,000 trials, the standard error of the mean is 0.95

Statistics:	Value
Trials	50000
Mean	500.88
Median	478.73
Mode	---
Standard Deviation	212.63
Variance	45,211.69
Skewness	0.55
Kurtosis	3.06
Coefficient of Variability	0.42
Range Minimum	51.16
Range Maximum	1,411.52
Range Width	1,360.35
Mean Standard Error	0.95



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

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	51.16
95%	190.67
90%	241.52
85%	280.06
80%	314.04
75%	343.01
70%	371.18
65%	396.99
60%	423.44
55%	450.76
50%	478.73
45%	506.43
40%	534.67
35%	565.86
30%	597.95
25%	634.95
20%	676.59
15%	727.50
10%	792.29
5%	889.15
0%	1,411.52

End of Forecast

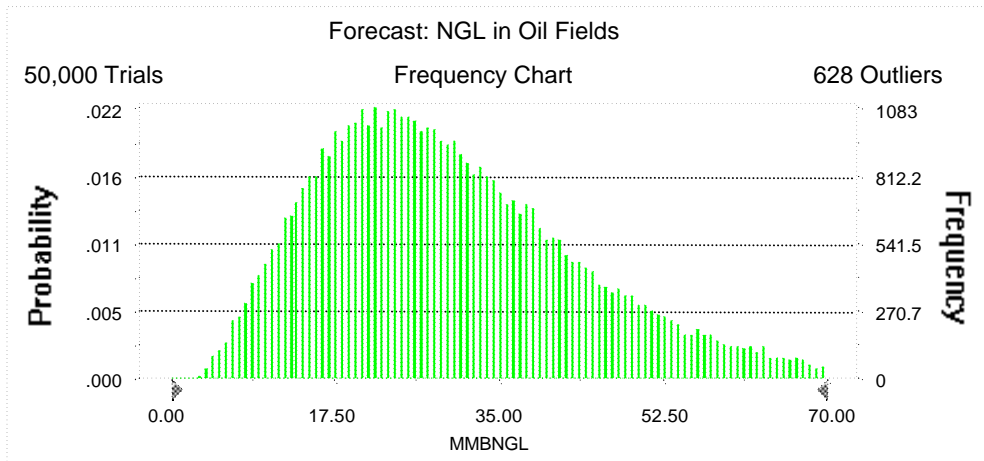
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**Forecast: NGL in Oil Fields**

Summary:

Display range is from 0.00 to 70.00 MMBNGL  
Entire range is from 2.53 to 114.99 MMBNGL  
After 50,000 trials, the standard error of the mean is 0.06

Statistics:	<u>Value</u>
Trials	50000
Mean	30.11
Median	27.89
Mode	---
Standard Deviation	14.41
Variance	207.56
Skewness	0.84
Kurtosis	3.77
Coefficient of Variability	0.48
Range Minimum	2.53
Range Maximum	114.99
Range Width	112.46
Mean Standard Error	0.06



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

Percentiles:

<u>Percentile</u>	<u>MMBNGL</u>
100%	2.53
95%	10.55
90%	13.47
85%	15.73
80%	17.69
75%	19.47
70%	21.15
65%	22.85
60%	24.48
55%	26.15
50%	27.89
45%	29.70
40%	31.60
35%	33.65
30%	35.90
25%	38.45
20%	41.35
15%	44.96
10%	49.79
5%	57.38
0%	114.99

End of Forecast

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**Forecast: Largest Oil Field**

Summary:

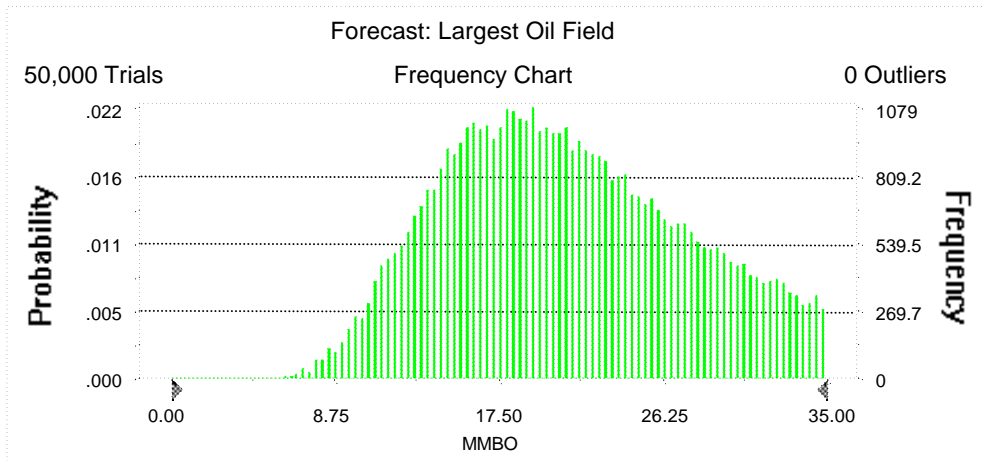
Display range is from 0.00 to 35.00 MMBO

Entire range is from 4.17 to 35.00 MMBO

After 50,000 trials, the standard error of the mean is 0.03

Statistics:

	<u>Value</u>
Trials	50000
Mean	21.10
Median	20.55
Mode	---
Standard Deviation	6.29
Variance	39.54
Skewness	0.23
Kurtosis	2.28
Coefficient of Variability	0.30
Range Minimum	4.17
Range Maximum	35.00
Range Width	30.83
Mean Standard Error	0.03





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

Percentiles:

<u>Percentile</u>	<u>MMBO</u>
100%	4.17
95%	11.55
90%	13.18
85%	14.38
80%	15.37
75%	16.25
70%	17.13
65%	18.01
60%	18.82
55%	19.67
50%	20.55
45%	21.45
40%	22.39
35%	23.38
30%	24.45
25%	25.66
20%	27.00
15%	28.51
10%	30.23
5%	32.33
0%	35.00

End of Forecast

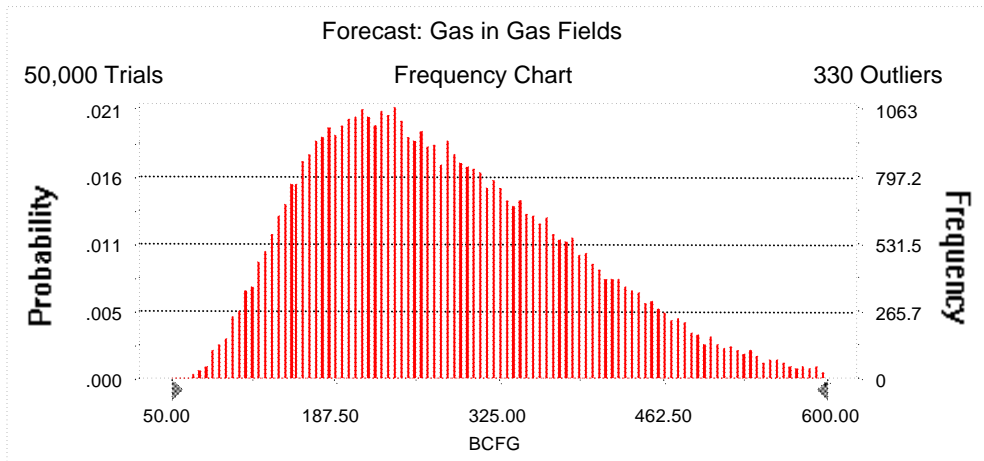
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**Forecast: Gas in Gas Fields**

Summary:

Display range is from 50.00 to 600.00 BCFG  
Entire range is from 56.65 to 893.33 BCFG  
After 50,000 trials, the standard error of the mean is 0.49

Statistics:	Value
Trials	50000
Mean	280.94
Median	265.33
Mode	---
Standard Deviation	109.25
Variance	11,934.55
Skewness	0.66
Kurtosis	3.21
Coefficient of Variability	0.39
Range Minimum	56.65
Range Maximum	893.33
Range Width	836.68
Mean Standard Error	0.49



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

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	56.65
95%	130.28
90%	151.83
85%	168.69
80%	183.23
75%	197.23
70%	210.76
65%	224.05
60%	237.46
55%	250.91
50%	265.33
45%	280.71
40%	296.22
35%	312.79
30%	330.81
25%	351.09
20%	373.23
15%	399.16
10%	432.31
5%	480.25
0%	893.33

End of Forecast

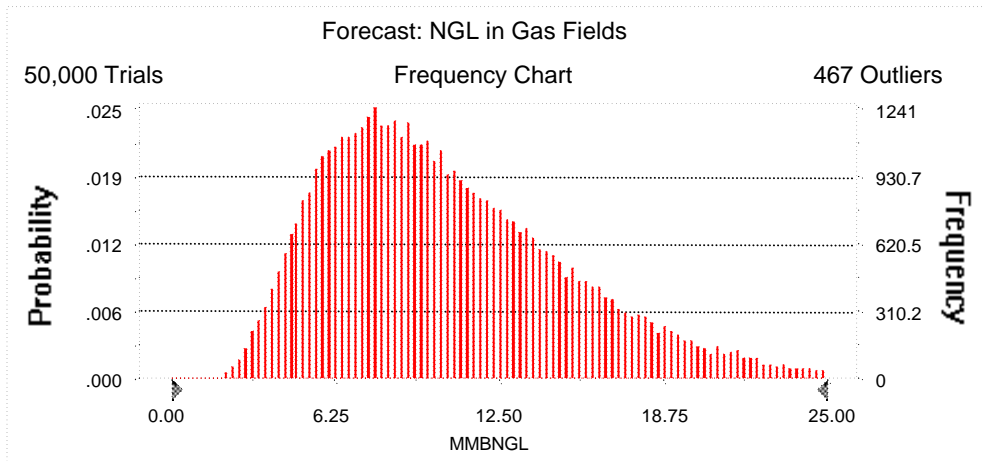
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**Forecast: NGL in Gas Fields**

Summary:

Display range is from 0.00 to 25.00 MMBNGL  
Entire range is from 1.38 to 42.54 MMBNGL  
After 50,000 trials, the standard error of the mean is 0.02

Statistics:	<u>Value</u>
Trials	50000
Mean	10.67
Median	9.83
Mode	---
Standard Deviation	4.76
Variance	22.66
Skewness	0.93
Kurtosis	4.01
Coefficient of Variability	0.45
Range Minimum	1.38
Range Maximum	42.54
Range Width	41.16
Mean Standard Error	0.02



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

Percentiles:

<u>Percentile</u>	<u>MMBNGL</u>
100%	1.38
95%	4.44
90%	5.30
85%	5.96
80%	6.55
75%	7.11
70%	7.64
65%	8.17
60%	8.70
55%	9.24
50%	9.83
45%	10.43
40%	11.08
35%	11.79
30%	12.57
25%	13.43
20%	14.41
15%	15.62
10%	17.17
5%	19.59
0%	42.54

End of Forecast

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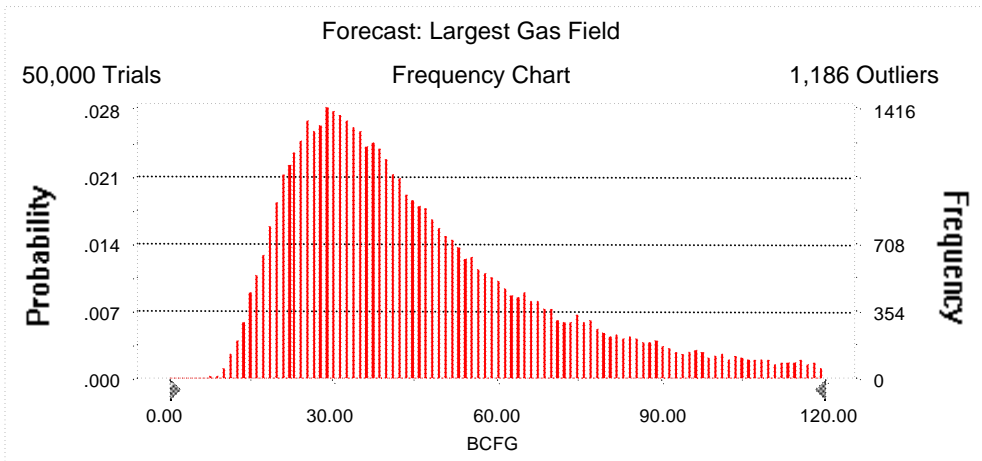
**Forecast: Largest Gas Field**

Summary:

Display range is from 0.00 to 120.00 BCFG  
Entire range is from 6.75 to 149.99 BCFG  
After 50,000 trials, the standard error of the mean is 0.12

Statistics:

	<u>Value</u>
Trials	50000
Mean	47.22
Median	40.12
Mode	---
Standard Deviation	26.08
Variance	679.96
Skewness	1.36
Kurtosis	4.77
Coefficient of Variability	0.55
Range Minimum	6.75
Range Maximum	149.99
Range Width	143.24
Mean Standard Error	0.12



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

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	6.75
95%	18.24
90%	21.43
85%	24.06
80%	26.35
75%	28.67
70%	30.79
65%	32.99
60%	35.22
55%	37.66
50%	40.12
45%	42.89
40%	46.03
35%	49.47
30%	53.54
25%	58.50
20%	64.78
15%	72.81
10%	83.96
5%	102.83
0%	149.99

End of Forecast

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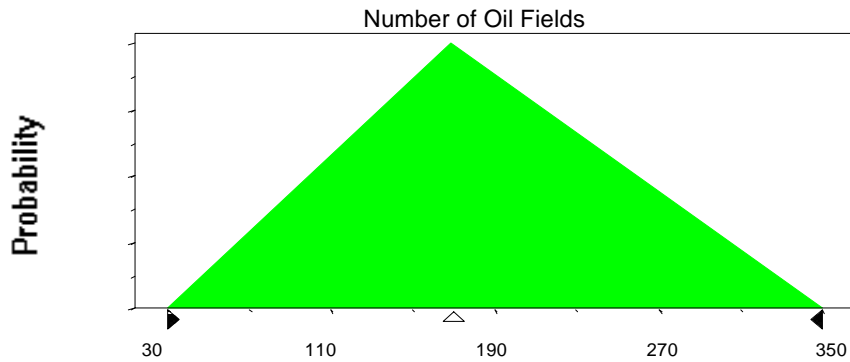
Assumptions

**Assumption: Number of Oil Fields**

Triangular distribution with parameters:

Minimum	30
Likeliest	169
Maximum	350

Selected range is from 30 to 350  
Mean value in simulation was 183



**Assumption: Sizes of Oil Fields**

Lognormal distribution with parameters:

Mean	2.28
Standard Deviation	3.29

Shifted parameters

2.78
3.29

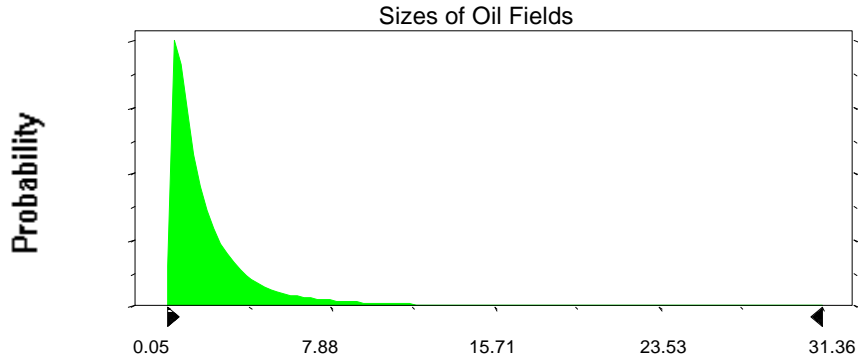
Selected range is from 0.00 to 34.50  
Mean value in simulation was 2.22

0.50 to 35.00  
2.72



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Assumption: Sizes of Oil Fields (cont'd)



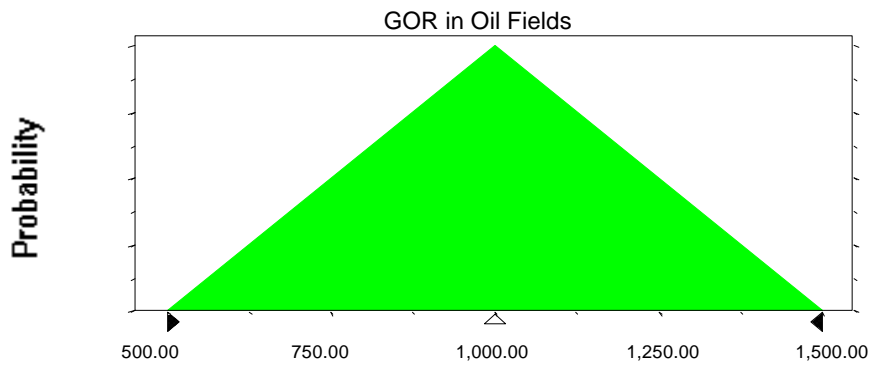
Assumption: GOR in Oil Fields

Triangular distribution with parameters:

Minimum	500.00
Likeliest	1,000.00
Maximum	1,500.00

Selected range is from 500.00 to 1,500.00

Mean value in simulation was 999.96



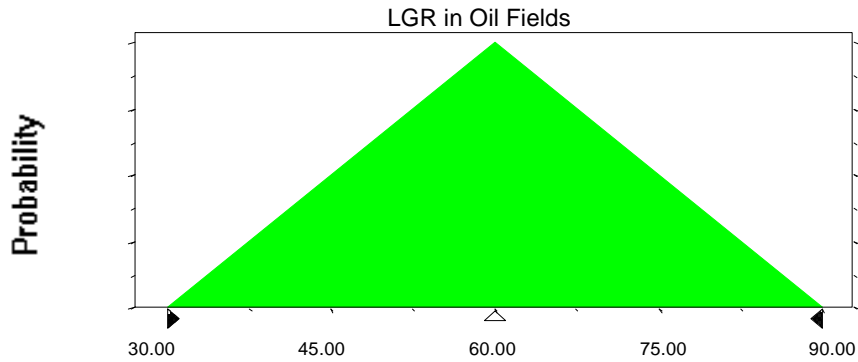
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**Assumption: LGR in Oil Fields**

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 60.11



**Assumption: Number of Gas Fields**

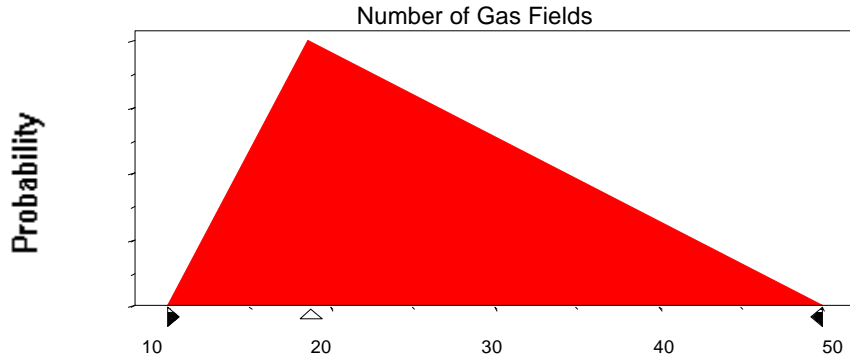
Triangular distribution with parameters:

Minimum	10
Likeliest	19
Maximum	50

Selected range is from 10 to 50  
Mean value in simulation was 26

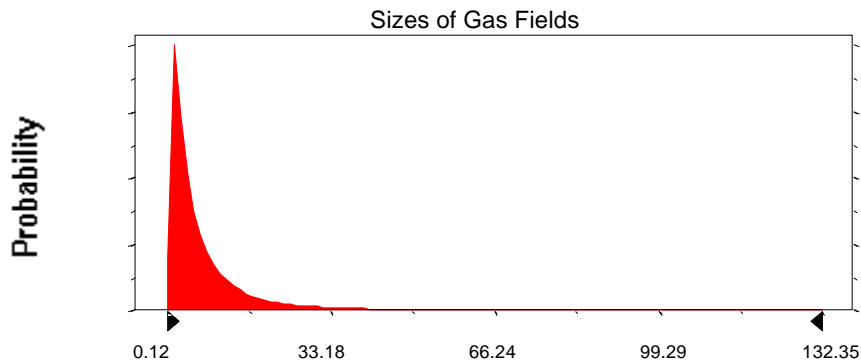
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Assumption: Number of Gas Fields (cont'd)



Assumption: Sizes of Gas Fields

Lognormal distribution with parameters:	Shifted parameters	
Mean	7.90	10.9
Standard Deviation	13.44	13.44
Selected range is from 0.00 to 147.00	3.00 to 150.00	
Mean value in simulation was 7.80	10.8	



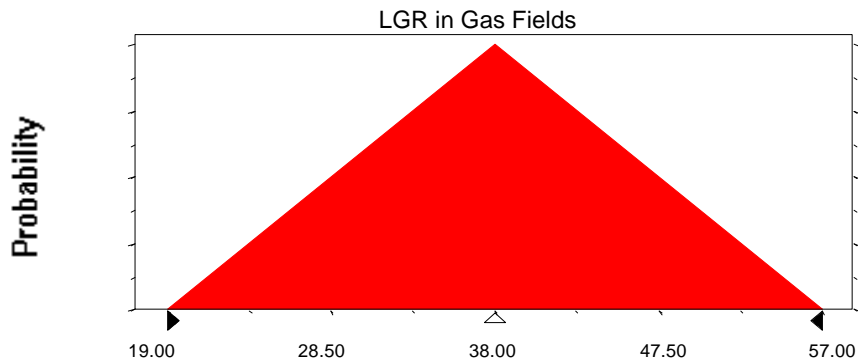
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**Assumption: LGR in Gas Fields**

Triangular distribution with parameters:

Minimum	19.00
Likeliest	38.00
Maximum	57.00

Selected range is from 19.00 to 57.00  
Mean value in simulation was 37.98



End of Assumptions

Simulation started on 10/21/99 at 10:15:54  
Simulation stopped on 10/21/99 at 11:42:36