

Malvinas Extensional Structures, Assessment Unit 60630101
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	F95	F50	F5	Mean
Oil Fields	5	1.00	161	900	2,327	1,031	603	3,473	9,783	4,123	25	149	448	181	44	165	534	208
Gas Fields	30						1,072	6,292	16,407	7,205	26	154	422	180	299	1,208	3,953	1,524
Total		1.00	161	900	2,327	1,031	1,675	9,765	26,190	11,327	51	303	870	362				

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Monte Carlo Results

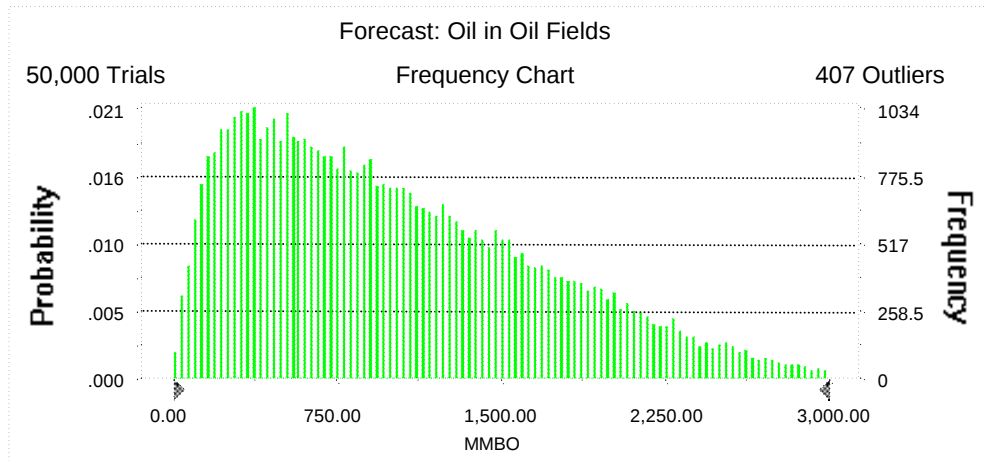
Forecast: Oil in Oil Fields

Summary:

Display range is from 0.00 to 3,000.00 MMBO
Entire range is from 5.14 to 5,490.01 MMBO
After 50,000 trials, the standard error of the mean is 3.08

Statistics:

	<u>Value</u>
Trials	50000
Mean	1,030.91
Median	900.12
Mode	---
Standard Deviation	688.73
Variance	474,346.91
Skewness	0.80
Kurtosis	3.20
Coefficient of Variability	0.67
Range Minimum	5.14
Range Maximum	5,490.01
Range Width	5,484.87
Mean Standard Error	3.08



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Forecast: Oil in Oil Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBO</u>
100%	5.14
95%	160.92
90%	244.47
85%	320.00
80%	393.69
75%	471.94
70%	550.70
65%	631.88
60%	718.58
55%	806.52
50%	900.12
45%	996.98
40%	1,100.90
35%	1,217.18
30%	1,337.01
25%	1,475.42
20%	1,620.48
15%	1,801.61
10%	2,016.17
5%	2,327.11
0%	5,490.01

End of Forecast

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Monte Carlo Results

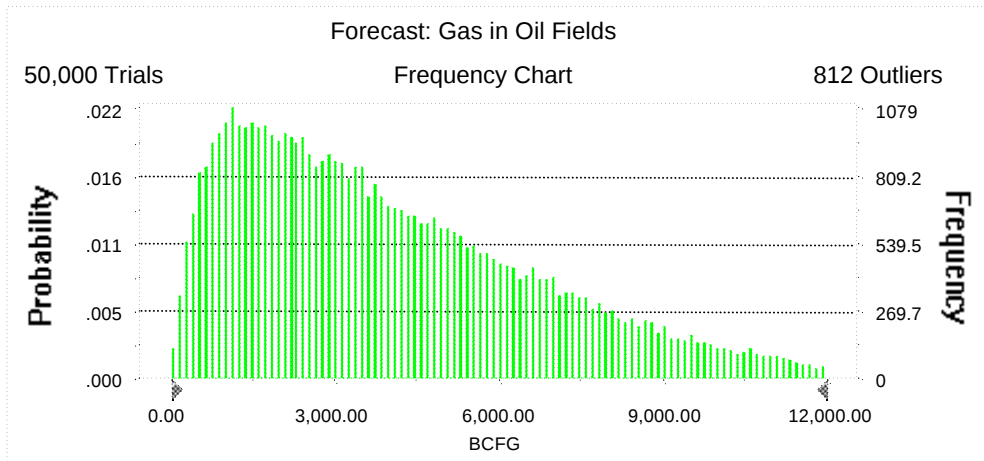
Forecast: Gas in Oil Fields

Summary:

Display range is from 0.00 to 12,000.00 BCFG
Entire range is from 14.29 to 29,065.60 BCFG
After 50,000 trials, the standard error of the mean is 13.12

Statistics:

	<u>Value</u>
Trials	50000
Mean	4,122.53
Median	3,472.96
Mode	---
Standard Deviation	2,934.80
Variance	8,613,026.57
Skewness	1.06
Kurtosis	4.14
Coefficient of Variability	0.71
Range Minimum	14.29
Range Maximum	29,065.60
Range Width	29,051.31
Mean Standard Error	13.12



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Forecast: Gas in Oil Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	14.29
95%	602.77
90%	929.06
85%	1,218.68
80%	1,517.60
75%	1,811.07
70%	2,125.82
65%	2,436.78
60%	2,772.86
55%	3,113.00
50%	3,472.96
45%	3,855.45
40%	4,289.67
35%	4,760.53
30%	5,251.65
25%	5,813.49
20%	6,476.63
15%	7,227.65
10%	8,229.67
5%	9,783.15
0%	29,065.60

End of Forecast

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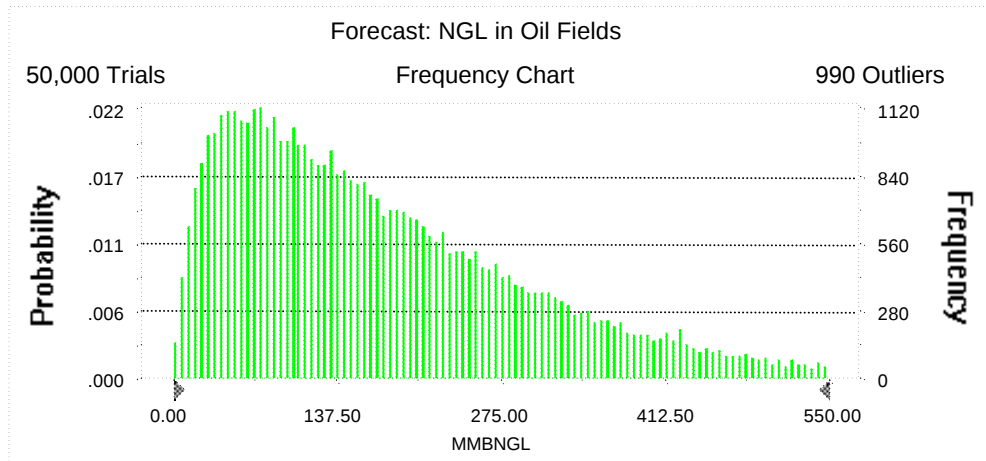
Forecast: NGL in Oil Fields

Summary:

Display range is from 0.00 to 550.00 MMBNGL
Entire range is from 0.66 to 1,608.09 MMBNGL
After 50,000 trials, the standard error of the mean is 0.61

Statistics:

	<u>Value</u>
Trials	50000
Mean	181.45
Median	148.51
Mode	---
Standard Deviation	137.21
Variance	18,826.99
Skewness	1.32
Kurtosis	5.42
Coefficient of Variability	0.76
Range Minimum	0.66
Range Maximum	1,608.09
Range Width	1,607.43
Mean Standard Error	0.61



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Forecast: NGL in Oil Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBNGL</u>
100%	0.66
95%	24.91
90%	38.96
85%	51.39
80%	64.26
75%	76.62
70%	89.61
65%	103.33
60%	117.48
55%	132.96
50%	148.51
45%	165.46
40%	184.51
35%	204.51
30%	227.16
25%	252.89
20%	282.50
15%	319.56
10%	369.83
5%	448.06
0%	1,608.09

End of Forecast

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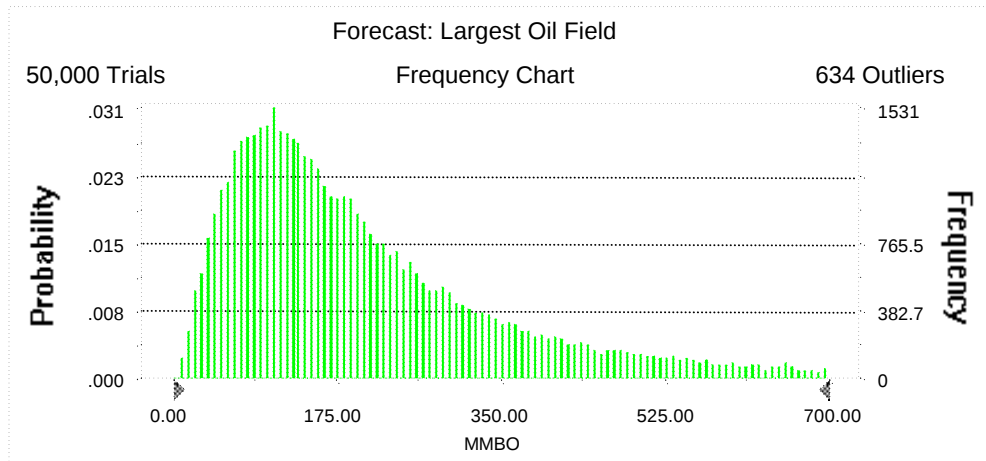
Forecast: Largest Oil Field

Summary:

Display range is from 0.00 to 700.00 MMBO
Entire range is from 5.14 to 799.89 MMBO
After 50,000 trials, the standard error of the mean is 0.68

Statistics:

	<u>Value</u>
Trials	50000
Mean	207.99
Median	165.13
Mode	---
Standard Deviation	151.58
Variance	22,975.26
Skewness	1.41
Kurtosis	4.87
Coefficient of Variability	0.73
Range Minimum	5.14
Range Maximum	799.89
Range Width	794.75
Mean Standard Error	0.68



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Forecast: Largest Oil Field (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBO</u>
100%	5.14
95%	43.86
90%	60.67
85%	74.42
80%	87.08
75%	99.43
70%	111.13
65%	123.70
60%	136.38
55%	150.30
50%	165.13
45%	182.00
40%	199.31
35%	219.89
30%	243.52
25%	271.98
20%	307.80
15%	354.59
10%	421.33
5%	534.09
0%	799.89

End of Forecast

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Monte Carlo Results

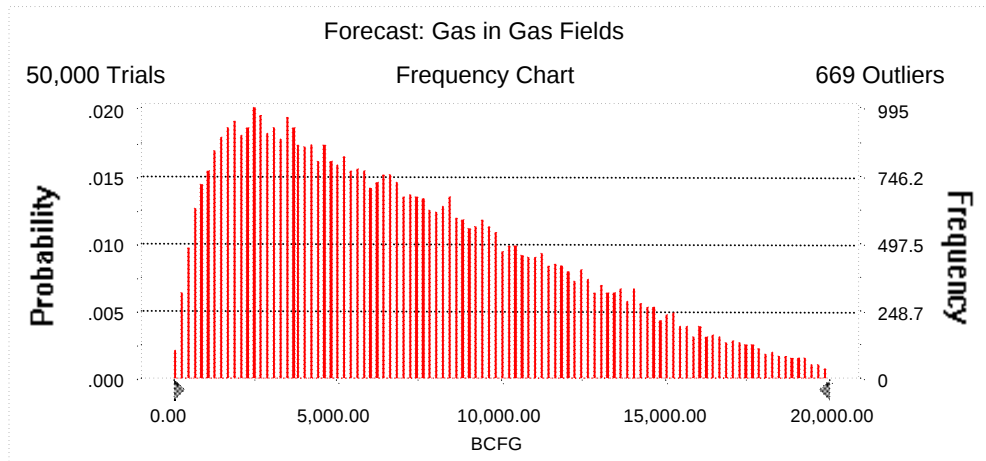
Forecast: Gas in Gas Fields

Summary:

Display range is from 0.00 to 20,000.00 BCFG
Entire range is from 32.11 to 31,864.04 BCFG
After 50,000 trials, the standard error of the mean is 21.78

Statistics:

	<u>Value</u>
Trials	50000
Mean	7,204.68
Median	6,292.14
Mode	---
Standard Deviation	4,869.43
Variance	23,711,367.33
Skewness	0.82
Kurtosis	3.27
Coefficient of Variability	0.68
Range Minimum	32.11
Range Maximum	31,864.04
Range Width	31,831.93
Mean Standard Error	21.78



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Forecast: Gas in Gas Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	32.11
95%	1,071.94
90%	1,656.22
85%	2,196.74
80%	2,714.99
75%	3,256.43
70%	3,797.74
65%	4,377.81
60%	4,988.28
55%	5,622.65
50%	6,292.14
45%	6,968.70
40%	7,705.94
35%	8,497.76
30%	9,350.40
25%	10,282.26
20%	11,370.83
15%	12,602.89
10%	14,134.77
5%	16,406.91
0%	31,864.04

End of Forecast

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Monte Carlo Results

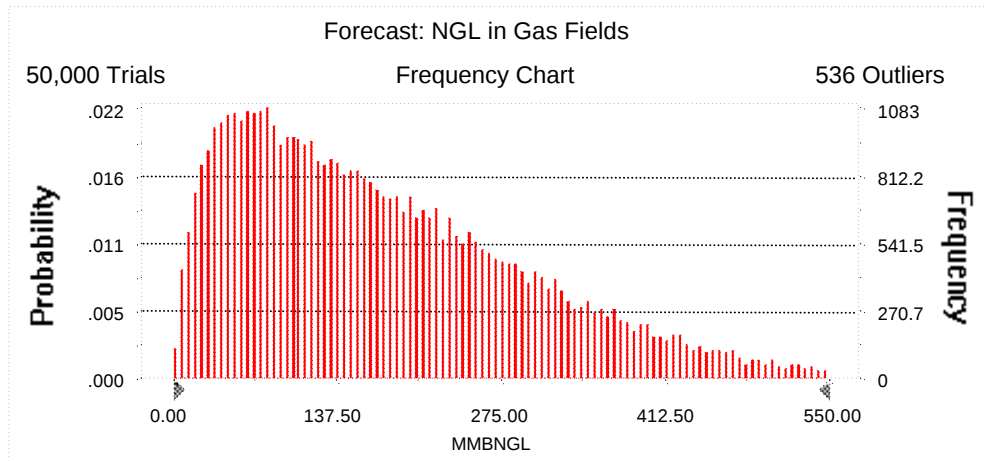
Forecast: NGL in Gas Fields

Summary:

Display range is from 0.00 to 550.00 MMBNGL
Entire range is from 0.83 to 956.27 MMBNGL
After 50,000 trials, the standard error of the mean is 0.57

Statistics:

	<u>Value</u>
Trials	50000
Mean	180.16
Median	154.02
Mode	---
Standard Deviation	126.79
Variance	16,076.42
Skewness	1.00
Kurtosis	3.95
Coefficient of Variability	0.70
Range Minimum	0.83
Range Maximum	956.27
Range Width	955.44
Mean Standard Error	0.57



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Forecast: NGL in Gas Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBNGL</u>
100%	0.83
95%	25.85
90%	40.30
85%	53.35
80%	66.37
75%	79.28
70%	92.98
65%	107.23
60%	121.79
55%	137.60
50%	154.02
45%	171.01
40%	189.65
35%	209.73
30%	231.33
25%	254.85
20%	282.86
15%	315.11
10%	358.46
5%	422.03
0%	956.27

End of Forecast

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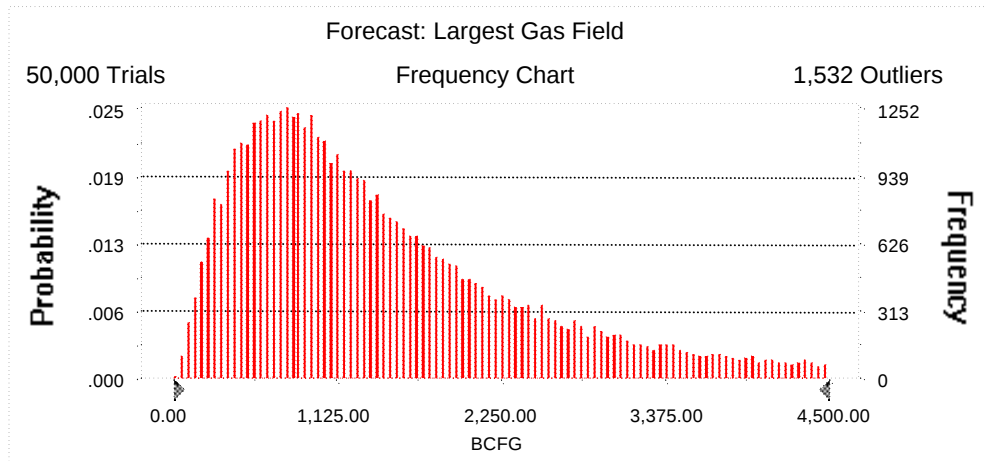
Forecast: Largest Gas Field

Summary:

Display range is from 0.00 to 4,500.00 BCFG
Entire range is from 32.11 to 5,999.06 BCFG
After 50,000 trials, the standard error of the mean is 5.05

Statistics:

	<u>Value</u>
Trials	50000
Mean	1,524.42
Median	1,207.97
Mode	---
Standard Deviation	1,129.56
Variance	1,275,917.01
Skewness	1.43
Kurtosis	4.97
Coefficient of Variability	0.74
Range Minimum	32.11
Range Maximum	5,999.06
Range Width	5,966.95
Mean Standard Error	5.05



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Forecast: Largest Gas Field (cont'd)

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	32.11
95%	299.29
90%	424.18
85%	527.14
80%	622.80
75%	715.33
70%	806.92
65%	898.65
60%	993.20
55%	1,096.14
50%	1,207.97
45%	1,327.62
40%	1,460.34
35%	1,614.82
30%	1,791.18
25%	2,002.44
20%	2,269.02
15%	2,607.12
10%	3,093.24
5%	3,952.59
0%	5,999.06

End of Forecast

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Assumptions

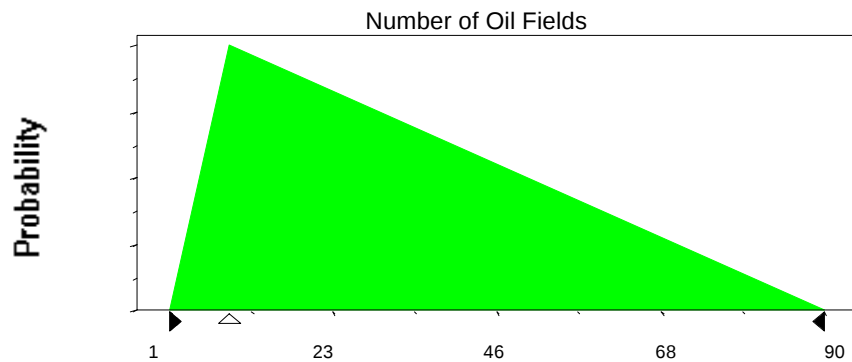
Assumption: Number of Oil Fields

Triangular distribution with parameters:

Minimum	1
Likeliest	9
Maximum	90

Selected range is from 1 to 90

Mean value in simulation was 33



Assumption: Sizes of Oil Fields

Lognormal distribution with parameters:

Mean	27.26
Standard Deviation	69.11

Shifted parameters

32.26
69.11

Selected range is from 0.00 to 795.00

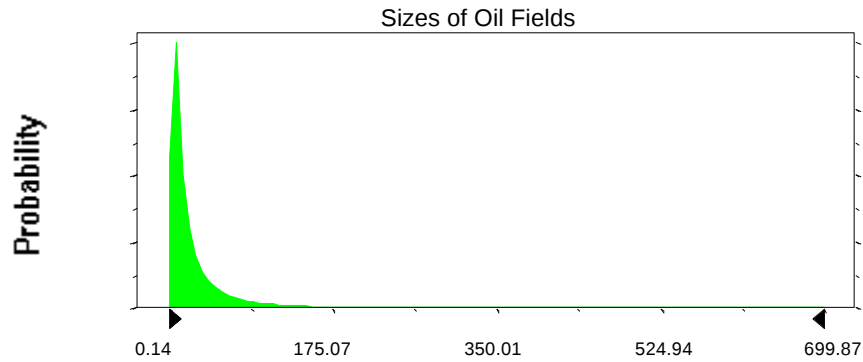
5.00 to 800.00

Mean value in simulation was 25.75

30.75

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Assumption: Sizes of Oil Fields (cont'd)



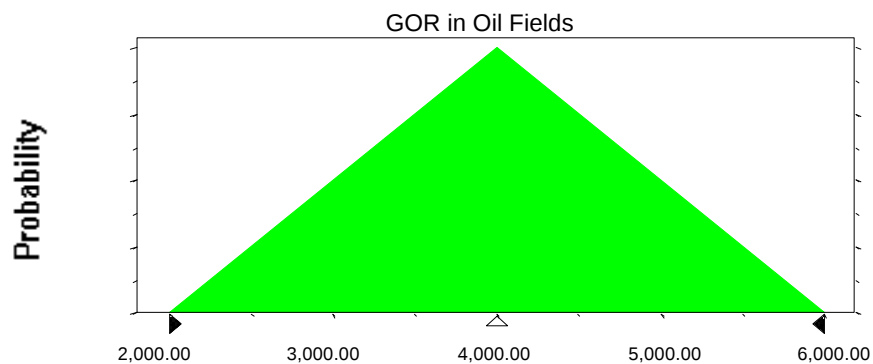
Assumption: GOR in Oil Fields

Triangular distribution with parameters:

Minimum	2,000.00
Likeliest	4,000.00
Maximum	6,000.00

Selected range is from 2,000.00 to 6,000.00

Mean value in simulation was 3,999.19



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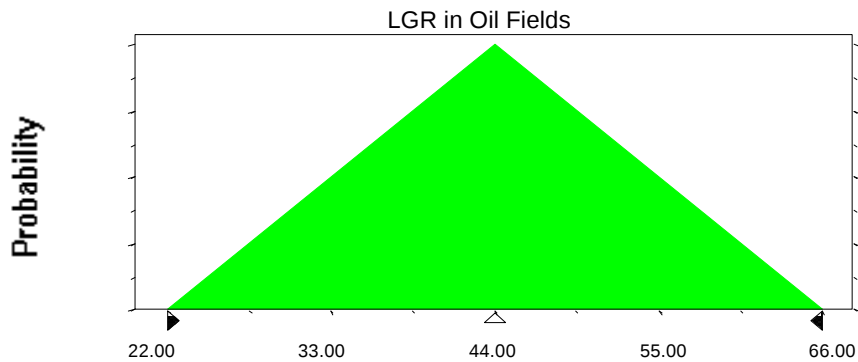
Assumption: LGR in Oil Fields

Triangular distribution with parameters:

Minimum	22.00
Likeliest	44.00
Maximum	66.00

Selected range is from 22.00 to 66.00

Mean value in simulation was 44.01



Assumption: Number of Gas Fields

Triangular distribution with parameters:

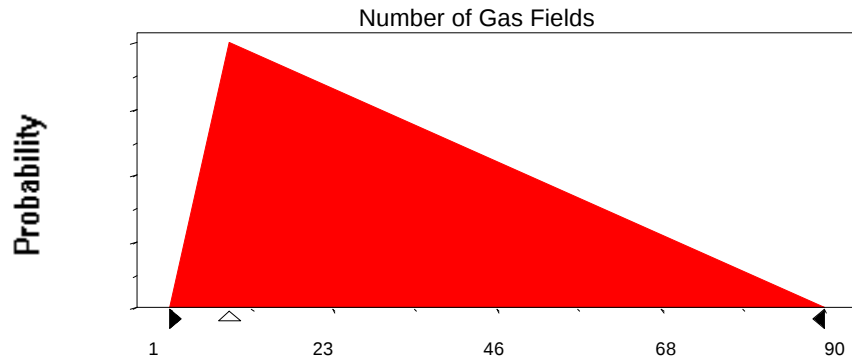
Minimum	1
Likeliest	9
Maximum	90

Selected range is from 1 to 90

Mean value in simulation was 33

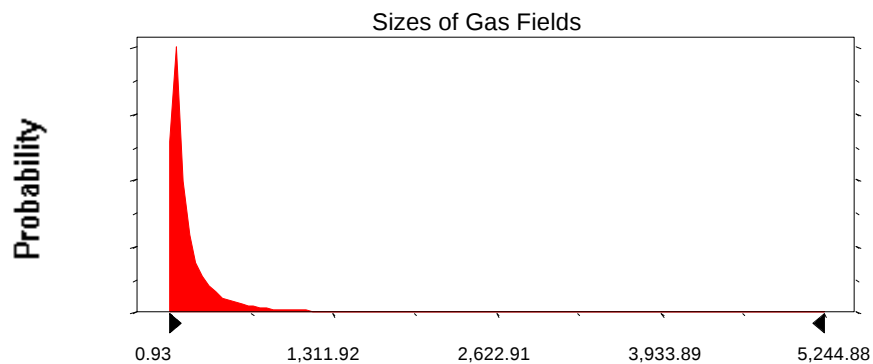
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Assumption: Number of Gas Fields (cont'd)



Assumption: Sizes of Gas Fields

Lognormal distribution with parameters:		Shifted parameters	
Mean	197.08		227.08
Standard Deviation	518.70		518.7
Selected range is from 0.00 to 5,970.00		30.00 to 6,000.00	
Mean value in simulation was 185.74		215.74	



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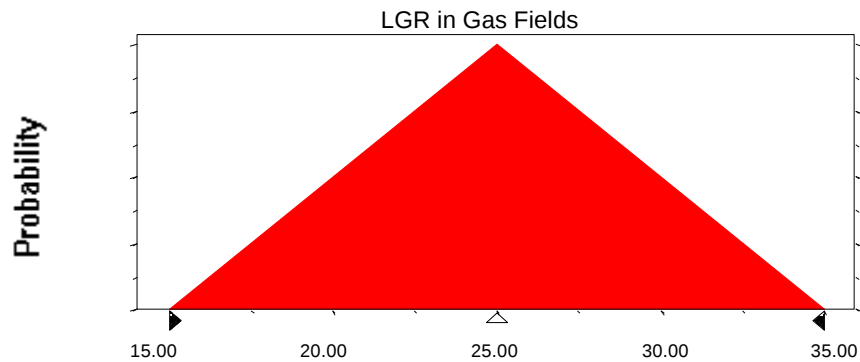
Assumption: LGR in Gas Fields

Triangular distribution with parameters:

Minimum	15.00
Likeliest	25.00
Maximum	35.00

Selected range is from 15.00 to 35.00

Mean value in simulation was 25.01



End of Assumptions

Simulation started on 10/18/99 at 10:23:39

Simulation stopped on 10/18/99 at 11:08:44