

Tanezzuft-Mouydir Structural/Stratigraphic, Assessment Unit 20580401
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	0.40	0	0	54	12	0	0	203	47	0	0	12	3	7	14	56	21
Gas Fields	30		0	0	54	12	0	0	1,056	245	0	0	51	12	61	170	620	230
Total		0.40	0	0	54	12	0	0	1,259	292	0	0	63	14				

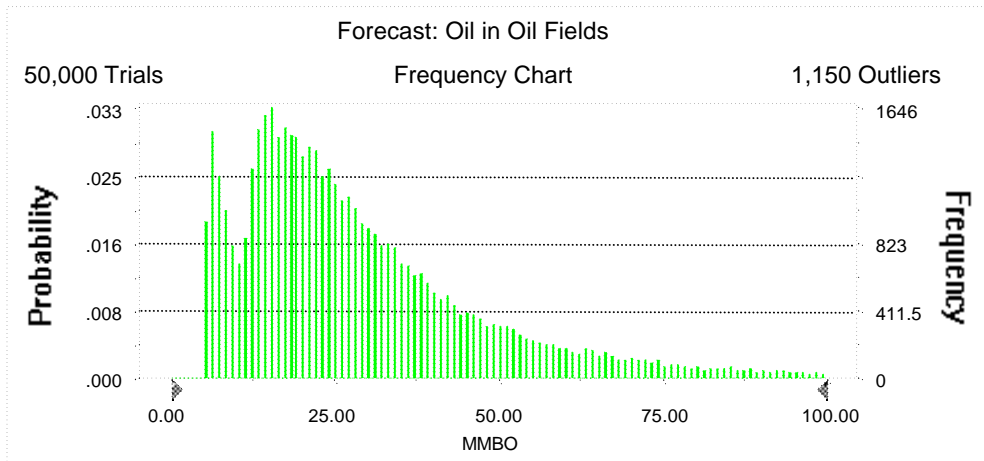
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Monte Carlo Results

Forecast: Oil in Oil Fields

Summary:

Display range is from 0.00 to 100.00 MMBO
Entire range is from 5.06 to 359.00 MMBO
After 50,000 trials, the standard error of the mean is 0.11

Statistics:	Value
Trials	50000
Mean	30.95
Median	24.40
Mode	---
Standard Deviation	24.40
Variance	595.42
Skewness	2.64
Kurtosis	14.30
Coefficient of Variability	0.79
Range Minimum	5.06
Range Maximum	359.00
Range Width	353.93
Mean Standard Error	0.11



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Forecast: Oil in Oil Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBO</u>
100%	5.06
95%	7.02
90%	9.31
85%	12.34
80%	14.08
75%	15.63
70%	17.26
65%	18.91
60%	20.67
55%	22.47
50%	24.40
45%	26.50
40%	28.83
35%	31.53
30%	34.54
25%	38.22
20%	42.77
15%	49.18
10%	58.50
5%	76.42
0%	359.00

End of Forecast

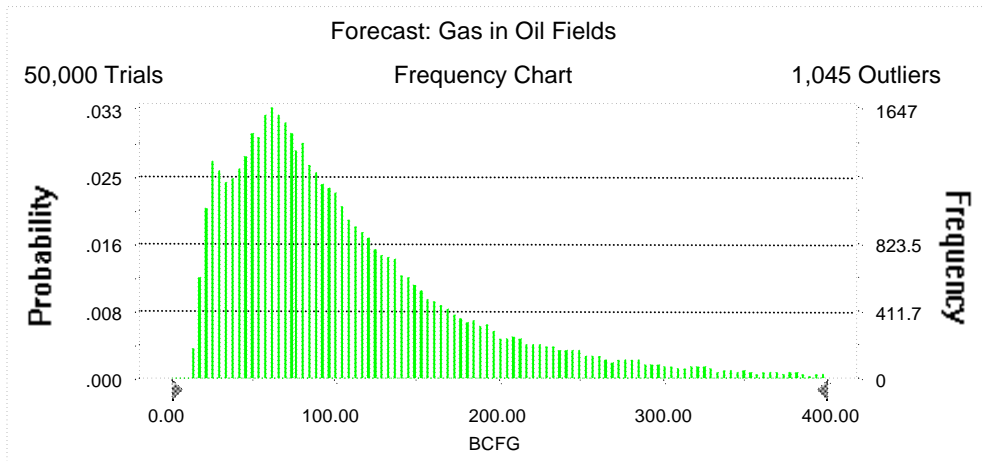
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Forecast: Gas in Oil Fields

Summary:

Display range is from 0.00 to 400.00 BCFG
 Entire range is from 11.14 to 1,742.84 BCFG
 After 50,000 trials, the standard error of the mean is 0.43

Statistics:	<u>Value</u>
Trials	50000
Mean	116.00
Median	89.59
Mode	---
Standard Deviation	96.80
Variance	9,371.09
Skewness	2.91
Kurtosis	17.78
Coefficient of Variability	0.83
Range Minimum	11.14
Range Maximum	1,742.84
Range Width	1,731.70
Mean Standard Error	0.43



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Forecast: Gas in Oil Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	11.14
95%	25.96
90%	33.73
85%	42.07
80%	49.44
75%	56.07
70%	62.24
65%	68.41
60%	75.01
55%	82.03
50%	89.59
45%	97.73
40%	106.85
35%	117.22
30%	129.22
25%	143.46
20%	161.81
15%	186.84
10%	224.37
5%	293.35
0%	1,742.84

End of Forecast

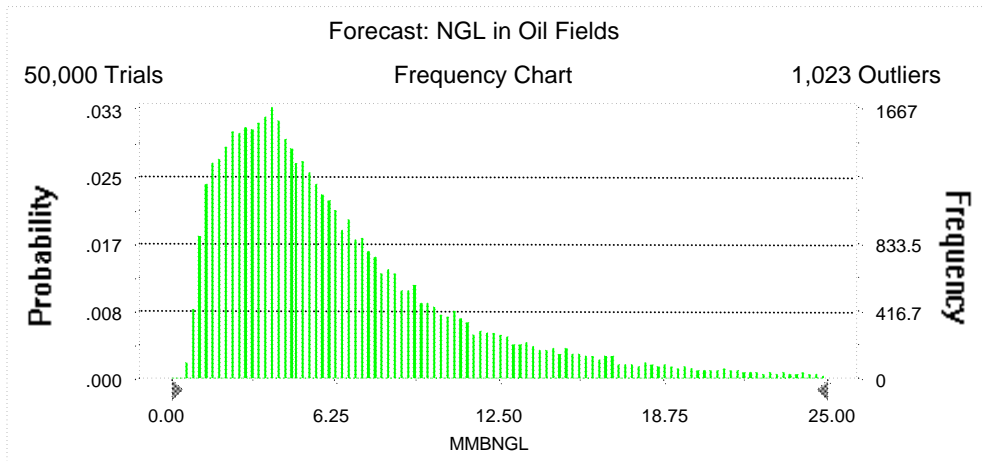
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Forecast: NGL in Oil Fields

Summary:

Display range is from 0.00 to 25.00 MMBNGL
 Entire range is from 0.45 to 97.97 MMBNGL
 After 50,000 trials, the standard error of the mean is 0.03

Statistics:	<u>Value</u>
Trials	50000
Mean	6.97
Median	5.27
Mode	---
Standard Deviation	6.12
Variance	37.50
Skewness	3.10
Kurtosis	20.12
Coefficient of Variability	0.88
Range Minimum	0.45
Range Maximum	97.97
Range Width	97.52
Mean Standard Error	0.03



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Forecast: NGL in Oil Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBNGL</u>
100%	0.45
95%	1.47
90%	1.94
85%	2.38
80%	2.79
75%	3.18
70%	3.59
65%	3.97
60%	4.37
55%	4.80
50%	5.27
45%	5.78
40%	6.35
35%	6.99
30%	7.74
25%	8.65
20%	9.80
15%	11.35
10%	13.68
5%	18.14
0%	97.97

End of Forecast

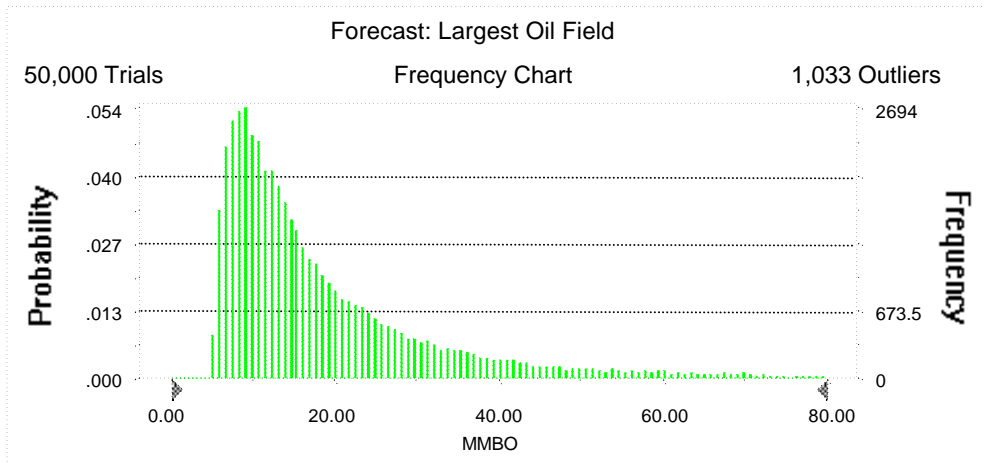
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Forecast: Largest Oil Field

Summary:

Display range is from 0.00 to 80.00 MMBO
 Entire range is from 5.06 to 199.29 MMBO
 After 50,000 trials, the standard error of the mean is 0.09

Statistics:	<u>Value</u>
Trials	50000
Mean	20.66
Median	14.40
Mode	---
Standard Deviation	19.23
Variance	369.62
Skewness	3.45
Kurtosis	20.07
Coefficient of Variability	0.93
Range Minimum	5.06
Range Maximum	199.29
Range Width	194.23
Mean Standard Error	0.09



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Forecast: Largest Oil Field (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBO</u>
100%	5.06
95%	6.54
90%	7.37
85%	8.14
80%	8.90
75%	9.64
70%	10.47
65%	11.33
60%	12.31
55%	13.30
50%	14.40
45%	15.71
40%	17.23
35%	19.00
30%	21.23
25%	23.93
20%	27.36
15%	32.26
10%	40.09
5%	56.20
0%	199.29

End of Forecast

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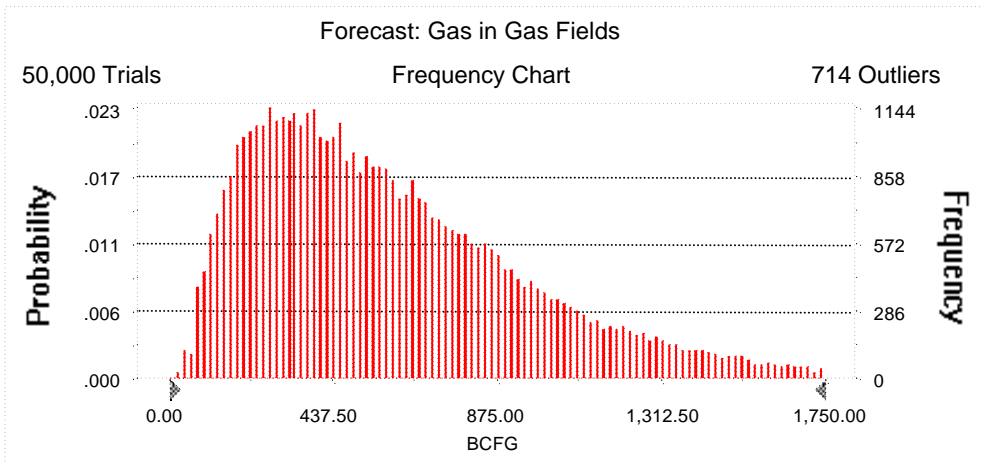
Forecast: Gas in Gas Fields

Summary:

Display range is from 0.00 to 1,750.00 BCFG
 Entire range is from 30.74 to 3,773.57 BCFG
 After 50,000 trials, the standard error of the mean is 1.75

Statistics:

	<u>Value</u>
Trials	50000
Mean	607.70
Median	524.28
Mode	---
Standard Deviation	392.38
Variance	153,963.24
Skewness	1.28
Kurtosis	5.33
Coefficient of Variability	0.65
Range Minimum	30.74
Range Maximum	3,773.57
Range Width	3,742.83
Mean Standard Error	1.75



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Forecast: Gas in Gas Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	30.74
95%	142.06
90%	191.72
85%	233.53
80%	273.17
75%	313.41
70%	352.96
65%	392.57
60%	434.40
55%	476.31
50%	524.28
45%	571.87
40%	624.48
35%	678.64
30%	741.38
25%	812.63
20%	891.79
15%	994.67
10%	1,135.31
5%	1,361.74
0%	3,773.57

End of Forecast

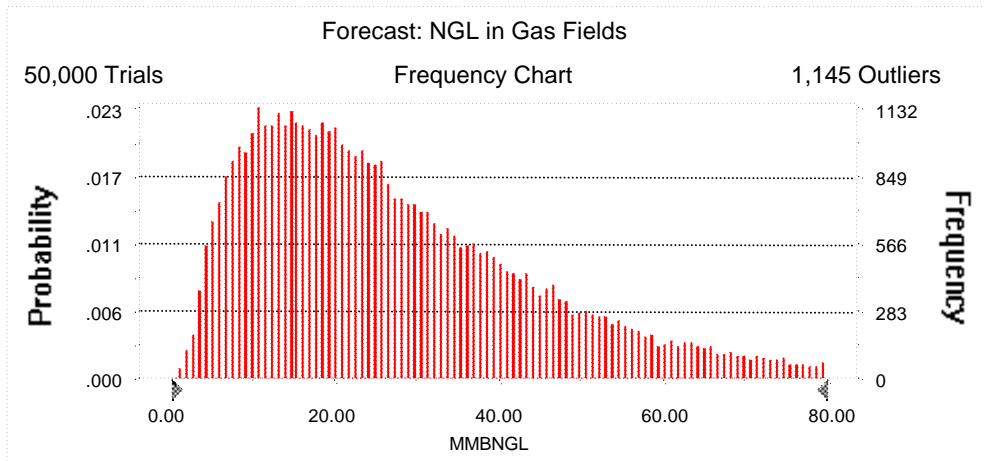
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Forecast: NGL in Gas Fields

Summary:

Display range is from 0.00 to 80.00 MMBNGL
 Entire range is from 0.89 to 221.56 MMBNGL
 After 50,000 trials, the standard error of the mean is 0.09

Statistics:	<u>Value</u>
Trials	50000
Mean	28.60
Median	23.92
Mode	---
Standard Deviation	19.75
Variance	389.87
Skewness	1.53
Kurtosis	6.65
Coefficient of Variability	0.69
Range Minimum	0.89
Range Maximum	221.56
Range Width	220.67
Mean Standard Error	0.09



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Forecast: NGL in Gas Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBNGL</u>
100%	0.89
95%	6.21
90%	8.48
85%	10.49
80%	12.34
75%	14.16
70%	16.01
65%	17.93
60%	19.83
55%	21.79
50%	23.92
45%	26.14
40%	28.66
35%	31.46
30%	34.57
25%	38.14
20%	42.27
15%	47.33
10%	54.57
5%	66.63
0%	221.56

End of Forecast

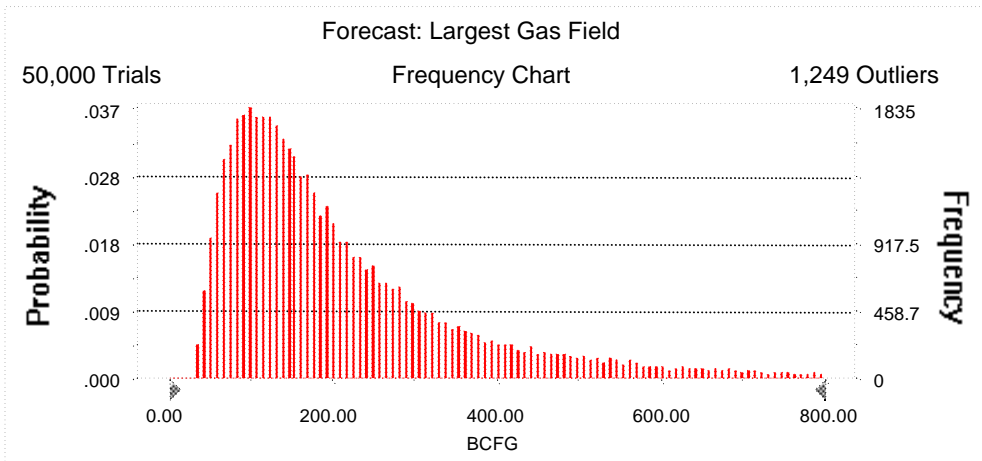
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Forecast: Largest Gas Field

Summary:

Display range is from 0.00 to 800.00 BCFG
 Entire range is from 30.74 to 1,497.25 BCFG
 After 50,000 trials, the standard error of the mean is 0.87

Statistics:	<u>Value</u>
Trials	50000
Mean	230.44
Median	169.93
Mode	---
Standard Deviation	194.36
Variance	37,777.27
Skewness	2.49
Kurtosis	11.19
Coefficient of Variability	0.84
Range Minimum	30.74
Range Maximum	1,497.25
Range Width	1,466.51
Mean Standard Error	0.87



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Forecast: Largest Gas Field (cont'd)

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	30.74
95%	60.62
90%	74.16
85%	86.21
80%	97.27
75%	108.35
70%	119.68
65%	131.02
60%	143.04
55%	155.82
50%	169.93
45%	185.51
40%	203.15
35%	224.09
30%	249.18
25%	279.49
20%	317.87
15%	371.55
10%	458.69
5%	620.00
0%	1,497.25

End of Forecast

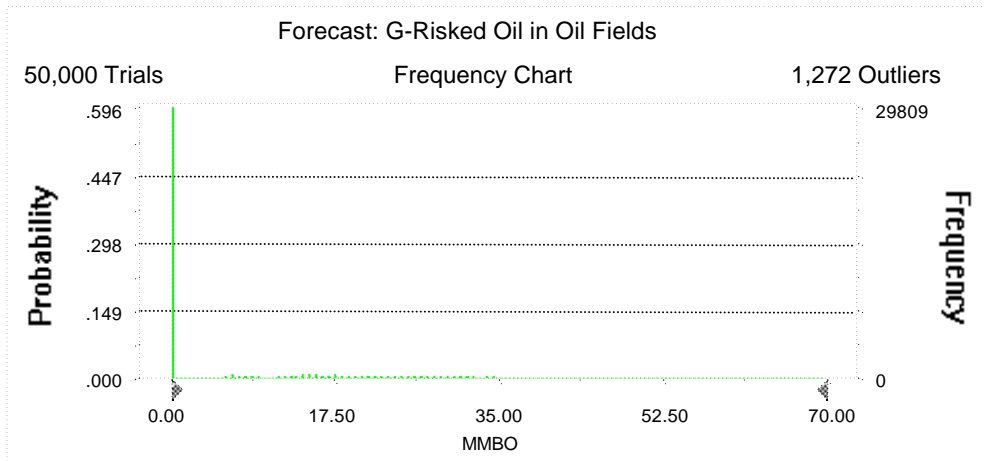
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Forecast: G-Risked Oil in Oil Fields

Summary:

Display range is from 0.00 to 70.00 MMBO
 Entire range is from 0.00 to 359.00 MMBO
 After 50,000 trials, the standard error of the mean is 0.10

Statistics:	<u>Value</u>
Trials	50000
Mean	12.48
Median	0.00
Mode	0.00
Standard Deviation	21.66
Variance	469.25
Skewness	2.97
Kurtosis	17.51
Coefficient of Variability	1.74
Range Minimum	0.00
Range Maximum	359.00
Range Width	359.00
Mean Standard Error	0.10



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Forecast: G-Risk Oil in Oil Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBO</u>
100%	0.00
95%	0.00
90%	0.00
85%	0.00
80%	0.00
75%	0.00
70%	0.00
65%	0.00
60%	0.00
55%	0.00
50%	0.00
45%	0.00
40%	5.66
35%	11.54
30%	15.84
25%	19.87
20%	24.46
15%	30.25
10%	38.43
5%	53.73
0%	359.00

End of Forecast

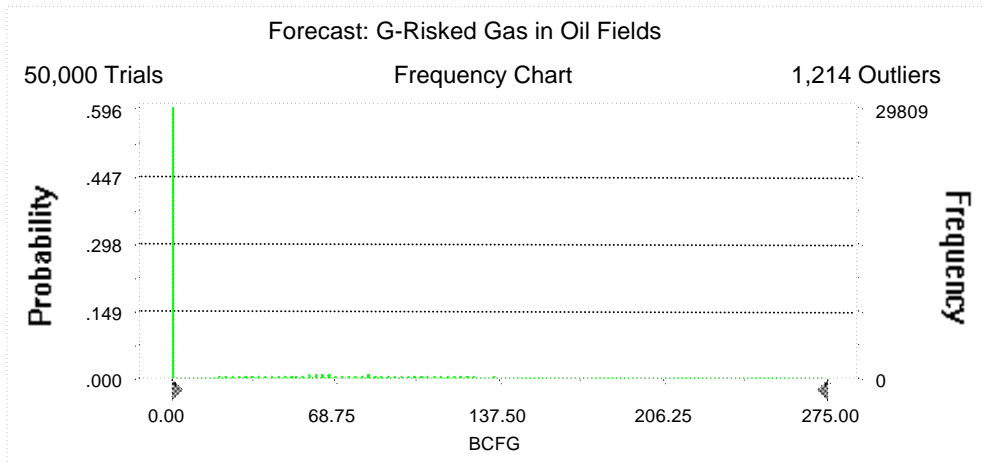
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Forecast: G-Risked Gas in Oil Fields

Summary:

Display range is from 0.00 to 275.00 BCFG
 Entire range is from 0.00 to 1,742.84 BCFG
 After 50,000 trials, the standard error of the mean is 0.37

Statistics:	<u>Value</u>
Trials	50000
Mean	46.75
Median	0.00
Mode	0.00
Standard Deviation	83.41
Variance	6,957.79
Skewness	3.27
Kurtosis	22.20
Coefficient of Variability	1.78
Range Minimum	0.00
Range Maximum	1,742.84
Range Width	1,742.84
Mean Standard Error	0.37



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Forecast: G-Risked Gas in Oil Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	0.00
95%	0.00
90%	0.00
85%	0.00
80%	0.00
75%	0.00
70%	0.00
65%	0.00
60%	0.00
55%	0.00
50%	0.00
45%	0.00
40%	18.01
35%	39.80
30%	57.03
25%	72.36
20%	90.09
15%	112.50
10%	144.38
5%	202.85
0%	1,742.84

End of Forecast

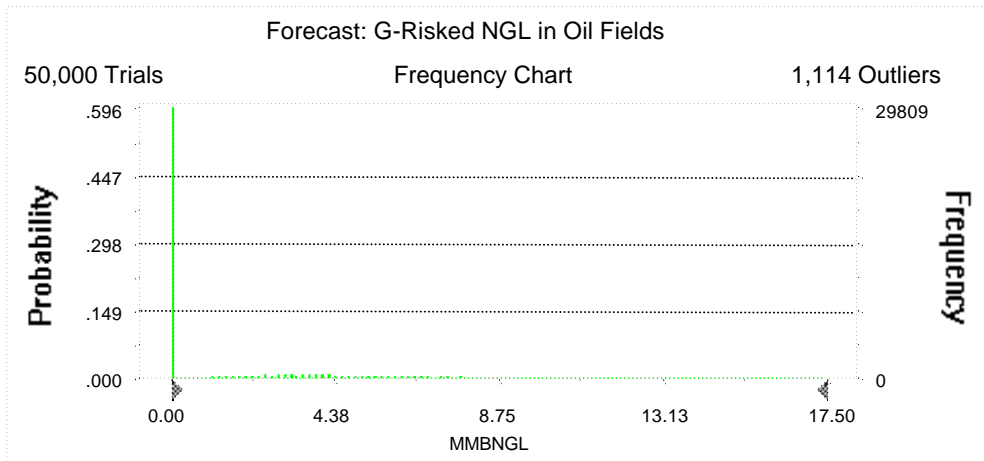
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Forecast: G-Risked NGL in Oil Fields

Summary:

Display range is from 0.00 to 17.50 MMBNGL
 Entire range is from 0.00 to 83.93 MMBNGL
 After 50,000 trials, the standard error of the mean is 0.02

Statistics:	<u>Value</u>
Trials	50000
Mean	2.82
Median	0.00
Mode	0.00
Standard Deviation	5.16
Variance	26.64
Skewness	3.42
Kurtosis	22.50
Coefficient of Variability	1.83
Range Minimum	0.00
Range Maximum	83.93
Range Width	83.93
Mean Standard Error	0.02



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Forecast: G-Risked NGL in Oil Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBNGL</u>
100%	0.00
95%	0.00
90%	0.00
85%	0.00
80%	0.00
75%	0.00
70%	0.00
65%	0.00
60%	0.00
55%	0.00
50%	0.00
45%	0.00
40%	0.98
35%	2.25
30%	3.26
25%	4.21
20%	5.31
15%	6.72
10%	8.72
5%	12.49
0%	83.93

End of Forecast

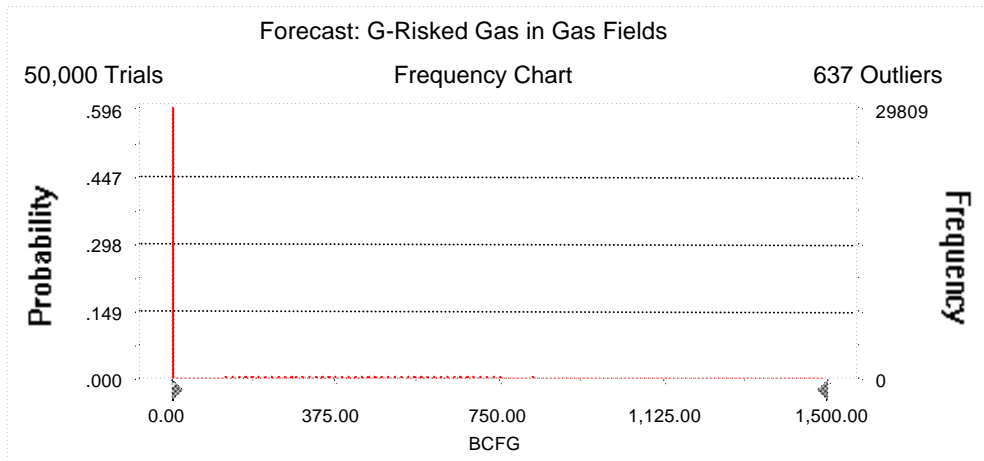
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Forecast: G-Riskd Gas in Gas Fields

Summary:

Display range is from 0.00 to 1,500.00 BCFG
Entire range is from 0.00 to 3,190.30 BCFG
After 50,000 trials, the standard error of the mean is 1.73

Statistics:	<u>Value</u>
Trials	50000
Mean	244.87
Median	0.00
Mode	0.00
Standard Deviation	387.94
Variance	150,496.24
Skewness	1.87
Kurtosis	6.84
Coefficient of Variability	1.58
Range Minimum	0.00
Range Maximum	3,190.30
Range Width	3,190.30
Mean Standard Error	1.73



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Forecast: G-Risked Gas in Gas Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	0.00
95%	0.00
90%	0.00
85%	0.00
80%	0.00
75%	0.00
70%	0.00
65%	0.00
60%	0.00
55%	0.00
50%	0.00
45%	0.00
40%	80.31
35%	219.25
30%	318.05
25%	416.15
20%	530.00
15%	654.48
10%	814.09
5%	1,056.06
0%	3,190.30

End of Forecast

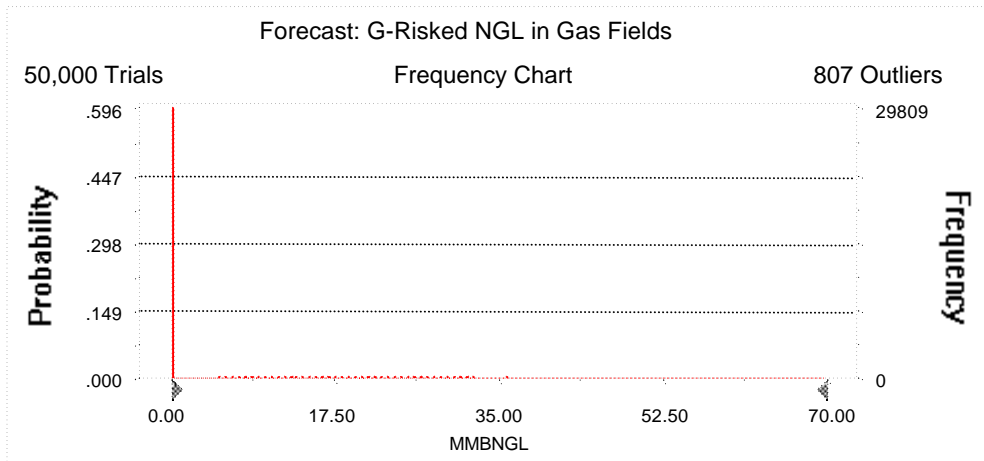
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Forecast: G-Risked NGL in Gas Fields

Summary:

Display range is from 0.00 to 70.00 MMBNGL
 Entire range is from 0.00 to 184.09 MMBNGL
 After 50,000 trials, the standard error of the mean is 0.08

Statistics:	<u>Value</u>
Trials	50000
Mean	11.51
Median	0.00
Mode	0.00
Standard Deviation	18.72
Variance	350.36
Skewness	2.06
Kurtosis	8.24
Coefficient of Variability	1.63
Range Minimum	0.00
Range Maximum	184.09
Range Width	184.09
Mean Standard Error	0.08



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Forecast: G-Risked NGL in Gas Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBNGL</u>
100%	0.00
95%	0.00
90%	0.00
85%	0.00
80%	0.00
75%	0.00
70%	0.00
65%	0.00
60%	0.00
55%	0.00
50%	0.00
45%	0.00
40%	3.54
35%	9.78
30%	14.45
25%	19.05
20%	24.10
15%	30.10
10%	38.16
5%	50.76
0%	184.09

End of Forecast

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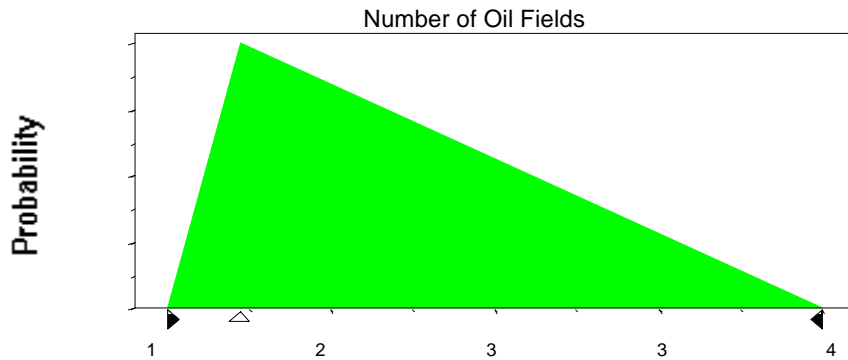
Assumptions

Assumption: Number of Oil Fields

Triangular distribution with parameters:

Minimum	1
Likeliest	1
Maximum	4

Selected range is from 1 to 4
Mean value in simulation was 2



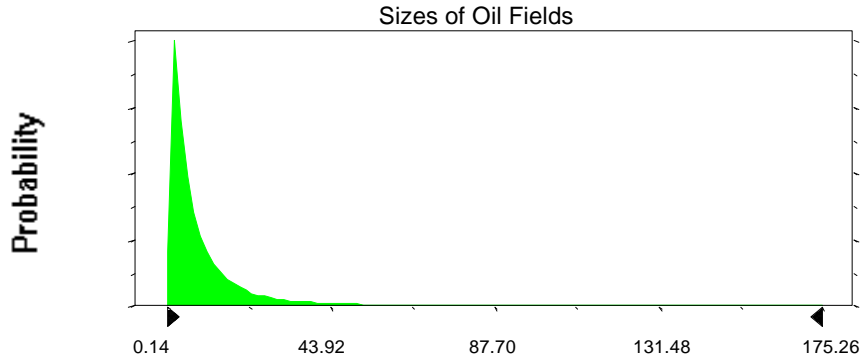
Assumption: Sizes of Oil Fields

Lognormal distribution with parameters:		Shifted parameters
Mean	10.10	15.1
Standard Deviation	17.72	17.72

Selected range is from 0.00 to 195.00 5.00 to 200.00
Mean value in simulation was 9.73 14.73

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Assumption: Sizes of Oil Fields (cont'd)



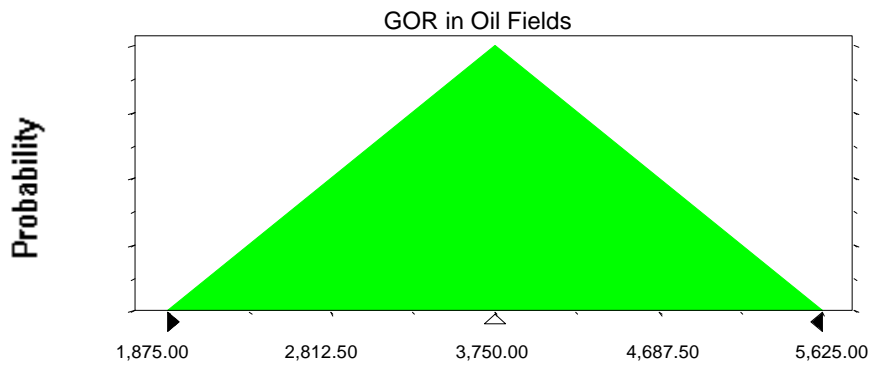
Assumption: GOR in Oil Fields

Triangular distribution with parameters:

Minimum	1,875.00
Likeliest	3,750.00
Maximum	5,625.00

Selected range is from 1,875.00 to 5,625.00

Mean value in simulation was 3,748.70



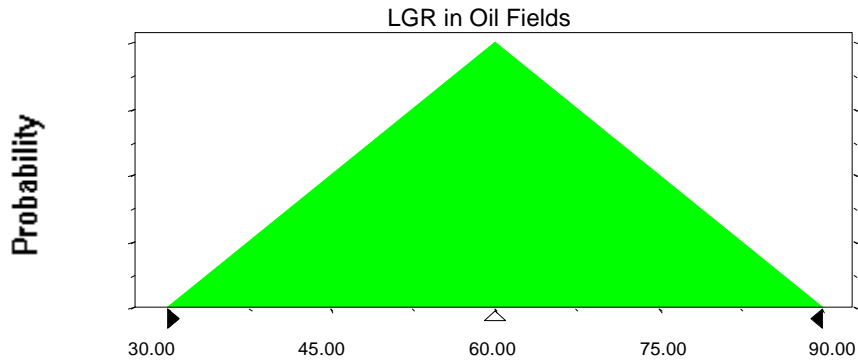
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Assumption: LGR in Oil Fields

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 60.08



Assumption: Number of Gas Fields

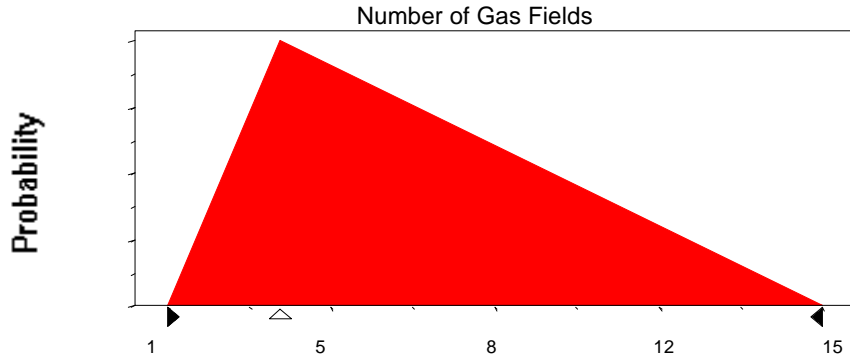
Triangular distribution with parameters:

Minimum	1
Likeliest	3
Maximum	15

Selected range is from 1 to 15
Mean value in simulation was 6

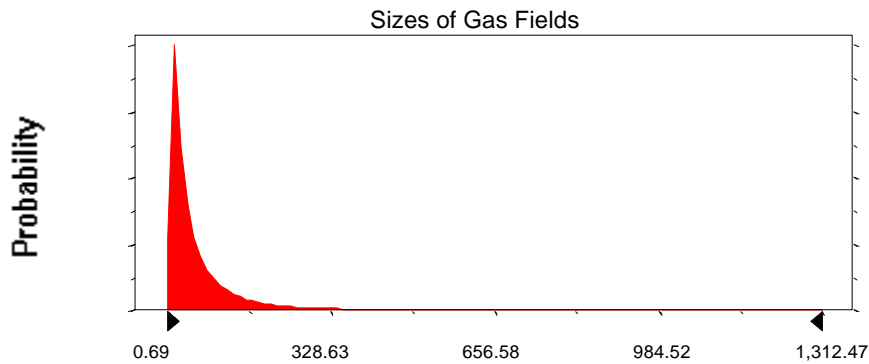
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Assumption: Number of Gas Fields (cont'd)



Assumption: Sizes of Gas Fields

Lognormal distribution with parameters:		Shifted parameters
Mean	66.31	96.31
Standard Deviation	130.71	130.71
Selected range is from 0.00 to 1,470.00		30.00 to 1,500.00
Mean value in simulation was 64.11		94.11



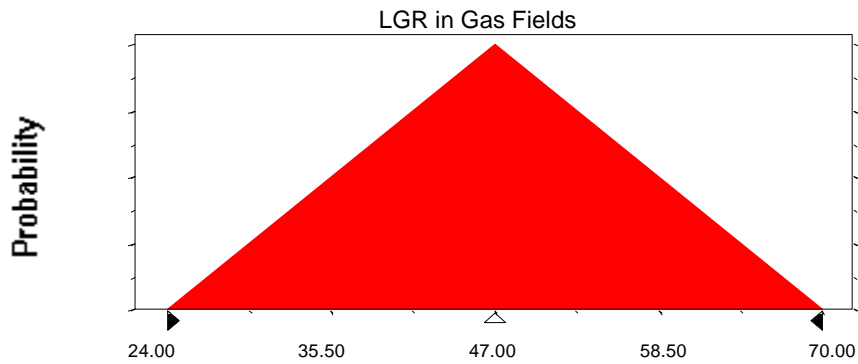
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Monte Carlo Results

Assumption: LGR in Gas Fields

Triangular distribution with parameters:

Minimum	24.00
Likeliest	47.00
Maximum	70.00

Selected range is from 24.00 to 70.00
Mean value in simulation was 47.02



End of Assumptions

Simulation started on 12/4/98 at 11:00:27
Simulation stopped on 12/4/98 at 11:14:58