

**Orinoco Delta and Offshore, Assessment Unit 60980202**  
**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	6	0.80	0	3,560	11,255	4,228	0	6,876	23,328	8,458	0	395	1,464	507	195	839	2,650	1,048
Gas Fields	36						0	16,842	51,087	19,591	0	710	2,330	862	906	3,317	9,377	3,965
Total		0.80	0	3,560	11,255	4,228	0	23,718	74,415	28,049	0	1,106	3,794	1,369				

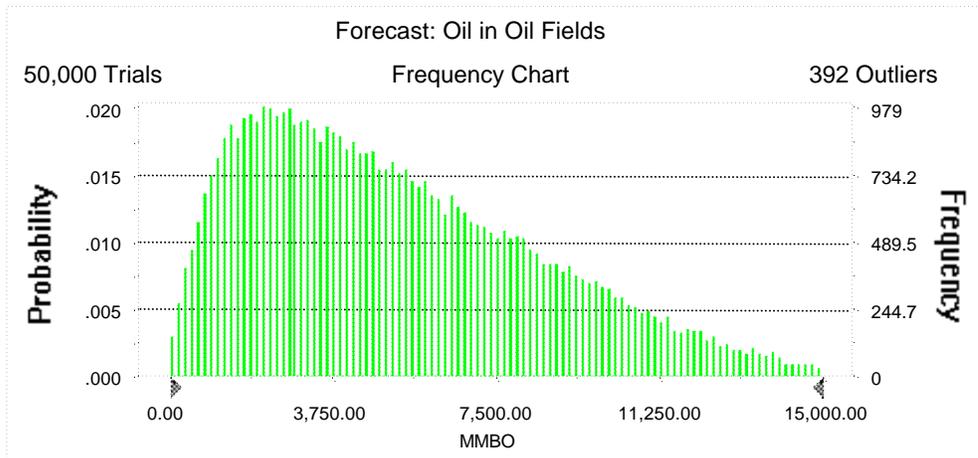
**60980202**  
**Orinoco Delta and Offshore**  
**Monte Carlo Results**

**Forecast: Oil in Oil Fields**

Summary:

Display range is from 0.00 to 15,000.00 MMBO  
Entire range is from 10.59 to 22,817.10 MMBO  
After 50,000 trials, the standard error of the mean is 15.26

Statistics:	Value
Trials	50000
Mean	5,298.56
Median	4,678.43
Mode	---
Standard Deviation	3,412.74
Variance	11,646,817.92
Skewness	0.77
Kurtosis	3.16
Coefficient of Variability	0.64
Range Minimum	10.59
Range Maximum	22,817.10
Range Width	22,806.51
Mean Standard Error	15.26



**60980202**  
**Orinoco Delta and Offshore**  
**Monte Carlo Results**

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

Percentiles:

<u>Percentile</u>	<u>MMBO</u>
100%	10.59
95%	900.63
90%	1,364.42
85%	1,780.54
80%	2,172.19
75%	2,566.30
70%	2,958.21
65%	3,363.64
60%	3,784.68
55%	4,221.33
50%	4,678.43
45%	5,158.94
40%	5,663.99
35%	6,208.50
30%	6,812.59
25%	7,488.33
20%	8,217.57
15%	9,098.40
10%	10,153.50
5%	11,741.11
0%	22,817.10

End of Forecast

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**Orinoco Delta and Offshore**  
**Monte Carlo Results**

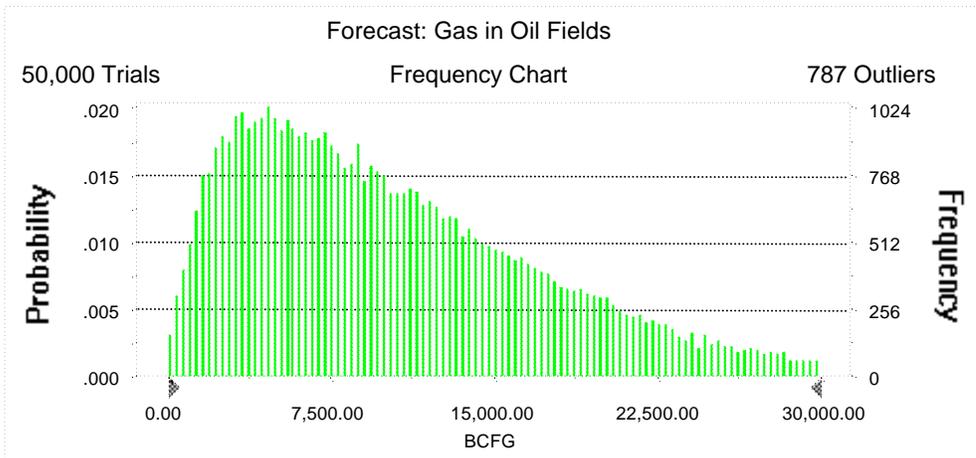
**Forecast: Gas in Oil Fields**

Summary:

Display range is from 0.00 to 30,000.00 BCFG  
Entire range is from 27.18 to 55,849.12 BCFG  
After 50,000 trials, the standard error of the mean is 32.54

Statistics:

	<u>Value</u>
Trials	50000
Mean	10,596.62
Median	9,069.78
Mode	---
Standard Deviation	7,275.30
Variance	52,929,968.44
Skewness	1.02
Kurtosis	4.04
Coefficient of Variability	0.69
Range Minimum	27.18
Range Maximum	55,849.12
Range Width	55,821.93
Mean Standard Error	32.54



**60980202**  
**Orinoco Delta and Offshore**  
**Monte Carlo Results**

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

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	27.18
95%	1,689.27
90%	2,595.07
85%	3,390.23
80%	4,147.44
75%	4,895.32
70%	5,678.91
65%	6,488.79
60%	7,311.28
55%	8,168.76
50%	9,069.78
45%	10,040.74
40%	11,101.25
35%	12,198.39
30%	13,374.42
25%	14,809.27
20%	16,412.74
15%	18,325.66
10%	20,743.27
5%	24,629.24
0%	55,849.12

End of Forecast

**60980202**  
**Orinoco Delta and Offshore**  
**Monte Carlo Results**

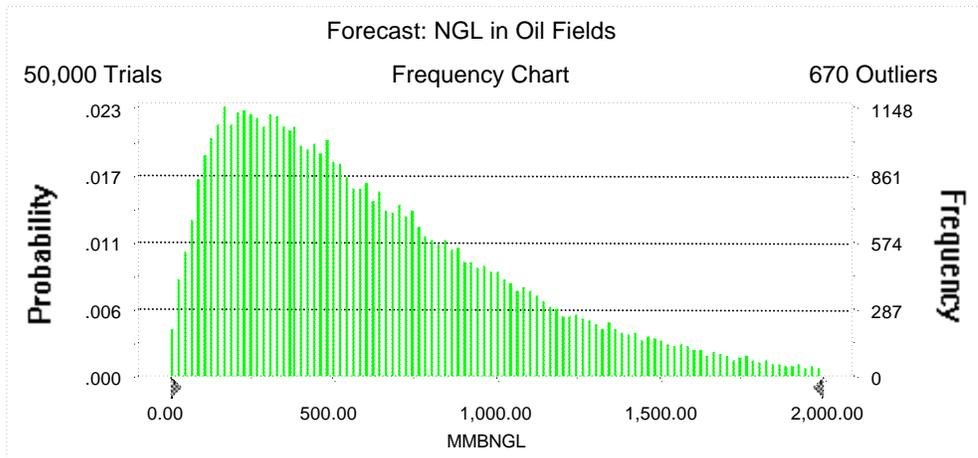
**Forecast: NGL in Oil Fields**

Summary:

Display range is from 0.00 to 2,000.00 MMBNGL  
Entire range is from 1.49 to 3,914.72 MMBNGL  
After 50,000 trials, the standard error of the mean is 2.07

Statistics:

	<u>Value</u>
Trials	50000
Mean	634.78
Median	526.07
Mode	---
Standard Deviation	462.21
Variance	213,635.07
Skewness	1.22
Kurtosis	4.80
Coefficient of Variability	0.73
Range Minimum	1.49
Range Maximum	3,914.72
Range Width	3,913.22
Mean Standard Error	2.07



**60980202**  
**Orinoco Delta and Offshore**  
**Monte Carlo Results**

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

Percentiles:

<u>Percentile</u>	<u>MMBNGL</u>
100%	1.49
95%	96.73
90%	147.40
85%	192.37
80%	236.32
75%	281.61
70%	327.15
65%	373.65
60%	422.58
55%	473.85
50%	526.07
45%	585.50
40%	649.08
35%	717.31
30%	793.14
25%	880.32
20%	981.63
15%	1,104.78
10%	1,275.11
5%	1,539.35
0%	3,914.72

End of Forecast

**60980202**  
**Orinoco Delta and Offshore**  
**Monte Carlo Results**

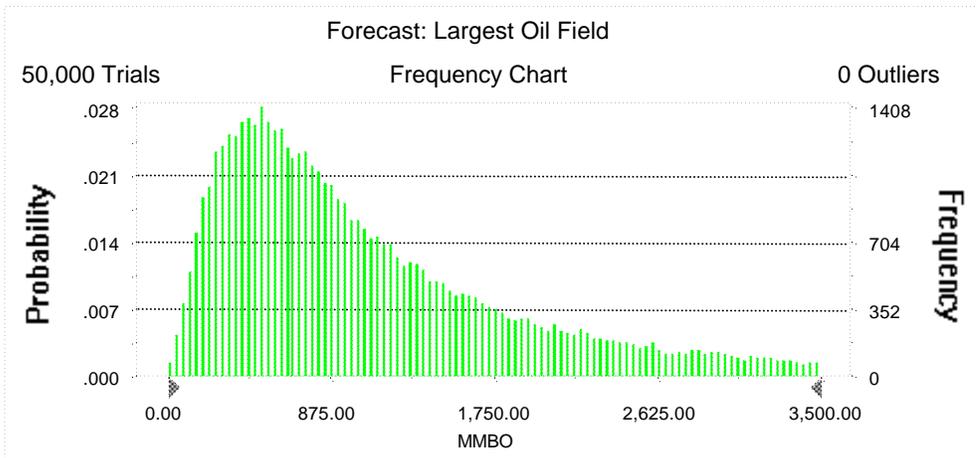
**Forecast: Largest Oil Field**

Summary:

Display range is from 0.00 to 3,500.00 MMBO  
 Entire range is from 8.49 to 3,499.36 MMBO  
 After 50,000 trials, the standard error of the mean is 3.36

Statistics:

	<u>Value</u>
Trials	50000
Mean	1,048.16
Median	838.88
Mode	---
Standard Deviation	751.70
Variance	565,056.05
Skewness	1.11
Kurtosis	3.68
Coefficient of Variability	0.72
Range Minimum	8.49
Range Maximum	3,499.36
Range Width	3,490.86
Mean Standard Error	3.36



**60980202**  
**Orinoco Delta and Offshore**  
**Monte Carlo Results**

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

Percentiles:

<u>Percentile</u>	<u>MMBO</u>
100%	8.49
95%	195.42
90%	277.65
85%	348.55
80%	416.12
75%	481.39
70%	544.56
65%	611.57
60%	684.60
55%	759.73
50%	838.88
45%	925.85
40%	1,028.39
35%	1,142.65
30%	1,274.69
25%	1,428.74
20%	1,617.64
15%	1,858.44
10%	2,189.89
5%	2,649.76
0%	3,499.36

End of Forecast

**60980202**  
**Orinoco Delta and Offshore**  
**Monte Carlo Results**

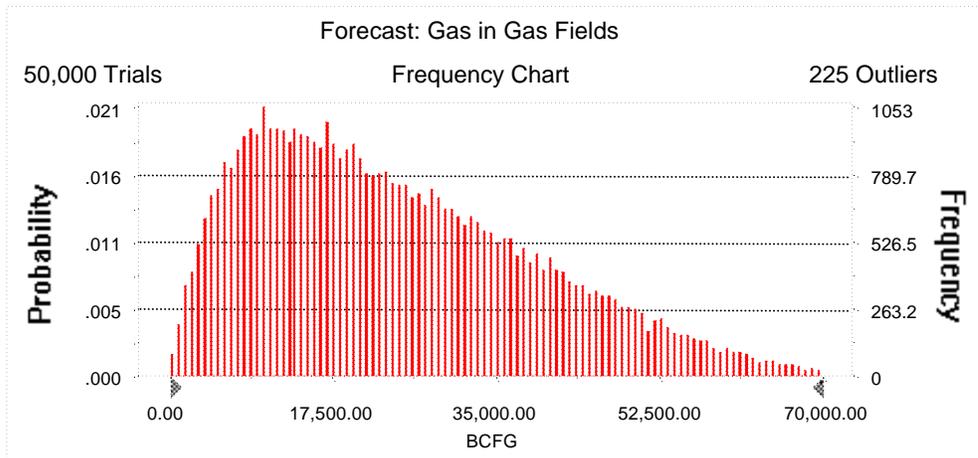
**Forecast: Gas in Gas Fields**

Summary:

Display range is from 0.00 to 70,000.00 BCFG  
 Entire range is from 110.24 to 94,948.80 BCFG  
 After 50,000 trials, the standard error of the mean is 68.33

Statistics:

	<u>Value</u>
Trials	50000
Mean	24,533.19
Median	21,846.86
Mode	---
Standard Deviation	15,278.38
Variance	233,429,010.17
Skewness	0.70
Kurtosis	2.96
Coefficient of Variability	0.62
Range Minimum	110.24
Range Maximum	94,948.80
Range Width	94,838.56
Mean Standard Error	68.33



**60980202**  
**Orinoco Delta and Offshore**  
**Monte Carlo Results**

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

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	110.24
95%	4,479.97
90%	6,738.97
85%	8,677.99
80%	10,419.64
75%	12,202.58
70%	14,062.70
65%	15,931.16
60%	17,797.20
55%	19,778.46
50%	21,846.86
45%	24,038.31
40%	26,392.21
35%	28,897.54
30%	31,583.15
25%	34,483.35
20%	37,839.37
15%	41,647.06
10%	46,460.11
5%	53,195.79
0%	94,948.80

End of Forecast

**60980202**  
**Orinoco Delta and Offshore**  
**Monte Carlo Results**

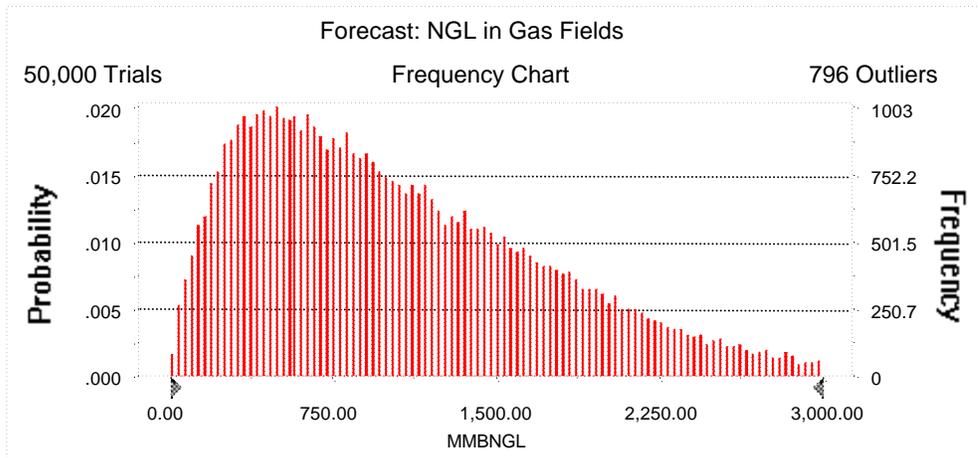
**Forecast: NGL in Gas Fields**

Summary:

Display range is from 0.00 to 3,000.00 MMBNGL  
 Entire range is from 5.25 to 5,163.37 MMBNGL  
 After 50,000 trials, the standard error of the mean is 3.22

Statistics:

	<u>Value</u>
Trials	50000
Mean	1,079.53
Median	932.26
Mode	---
Standard Deviation	719.02
Variance	516,992.47
Skewness	0.96
Kurtosis	3.79
Coefficient of Variability	0.67
Range Minimum	5.25
Range Maximum	5,163.37
Range Width	5,158.12
Mean Standard Error	3.22



**60980202**  
**Orinoco Delta and Offshore**  
**Monte Carlo Results**

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

Percentiles:

<u>Percentile</u>	<u>MMBNGL</u>
100%	5.25
95%	187.20
90%	281.11
85%	360.43
80%	437.99
75%	515.03
70%	592.89
65%	671.88
60%	755.64
55%	841.18
50%	932.26
45%	1,030.70
40%	1,135.80
35%	1,245.40
30%	1,372.96
25%	1,509.04
20%	1,664.33
15%	1,847.14
10%	2,082.34
5%	2,452.62
0%	5,163.37

End of Forecast

**60980202**  
**Orinoco Delta and Offshore**  
**Monte Carlo Results**

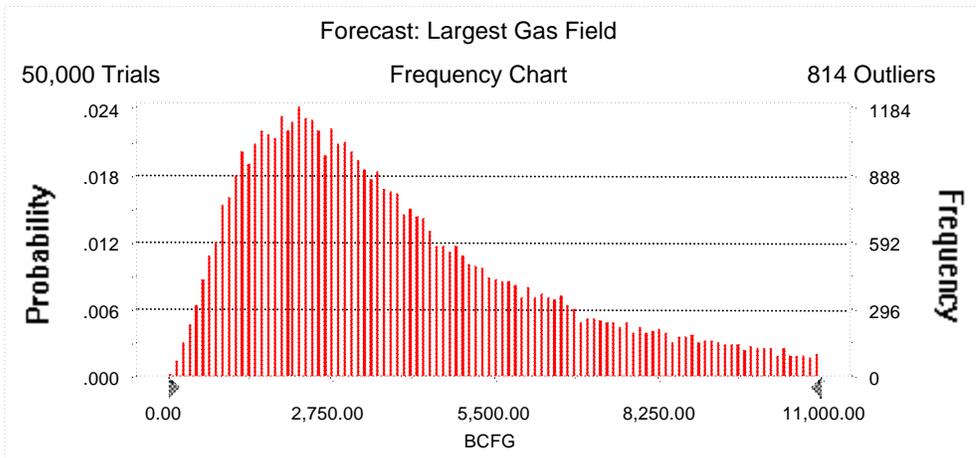
**Forecast: Largest Gas Field**

Summary:

Display range is from 0.00 to 11,000.00 BCFG  
 Entire range is from 68.30 to 11,999.28 BCFG  
 After 50,000 trials, the standard error of the mean is 11.50

Statistics:

	<u>Value</u>
Trials	50000
Mean	3,964.92
Median	3,317.26
Mode	---
Standard Deviation	2,571.46
Variance	6,612,416.47
Skewness	1.01
Kurtosis	3.44
Coefficient of Variability	0.65
Range Minimum	68.30
Range Maximum	11,999.28
Range Width	11,930.97
Mean Standard Error	11.50



**60980202**  
**Orinoco Delta and Offshore**  
**Monte Carlo Results**

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

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	68.30
95%	906.04
90%	1,233.94
85%	1,517.66
80%	1,771.57
75%	2,023.96
70%	2,266.46
65%	2,508.33
60%	2,772.17
55%	3,034.60
50%	3,317.26
45%	3,624.24
40%	3,959.21
35%	4,349.10
30%	4,799.39
25%	5,325.79
20%	5,978.17
15%	6,744.63
10%	7,849.75
5%	9,377.29
0%	11,999.28

End of Forecast

**60980202**  
**Orinoco Delta and Offshore**  
**Monte Carlo Results**

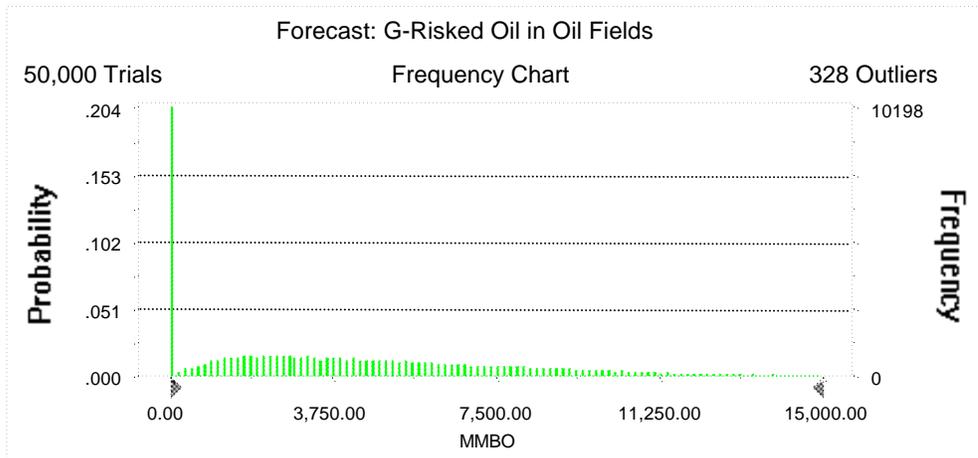
**Forecast: G-Risk Oil in Oil Fields**

Summary:

Display range is from 0.00 to 15,000.00 MMBO  
 Entire range is from 0.00 to 22,817.10 MMBO  
 After 50,000 trials, the standard error of the mean is 16.64

Statistics:

	<u>Value</u>
Trials	50000
Mean	4,227.87
Median	3,559.65
Mode	0.00
Standard Deviation	3,721.48
Variance	13,849,390.22
Skewness	0.79
Kurtosis	3.05
Coefficient of Variability	0.88
Range Minimum	0.00
Range Maximum	22,817.10
Range Width	22,817.10
Mean Standard Error	16.64



**60980202**  
**Orinoco Delta and Offshore**  
**Monte Carlo Results**

**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%	1,011.94
70%	1,562.55
65%	2,068.65
60%	2,557.71
55%	3,044.04
50%	3,559.65
45%	4,078.95
40%	4,646.04
35%	5,255.95
30%	5,906.88
25%	6,648.57
20%	7,476.18
15%	8,420.36
10%	9,596.72
5%	11,255.03
0%	22,817.10

End of Forecast

**60980202**  
**Orinoco Delta and Offshore**  
**Monte Carlo Results**

**Forecast: G-Risk Gas in Oil Fields**

Summary:

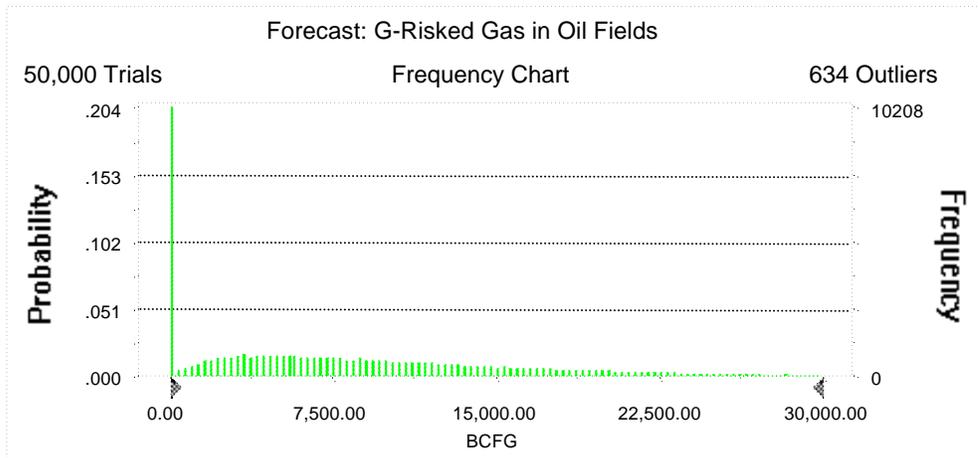
Display range is from 0.00 to 30,000.00 BCFG

Entire range is from 0.00 to 54,528.43 BCFG

After 50,000 trials, the standard error of the mean is 34.77

Statistics:

	<u>Value</u>
Trials	50000
Mean	8,458.05
Median	6,875.98
Mode	0.00
Standard Deviation	7,775.71
Variance	60,461,692.89
Skewness	1.01
Kurtosis	3.87
Coefficient of Variability	0.92
Range Minimum	0.00
Range Maximum	54,528.43
Range Width	54,528.43
Mean Standard Error	34.77



**60980202**  
**Orinoco Delta and Offshore**  
**Monte Carlo Results**

**Forecast: G-Risk 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%	1,907.62
70%	2,981.43
65%	3,928.21
60%	4,887.56
55%	5,852.73
50%	6,875.98
45%	7,925.68
40%	9,021.13
35%	10,229.10
30%	11,595.14
25%	13,047.55
20%	14,772.57
15%	16,832.16
10%	19,486.87
5%	23,328.35
0%	54,528.43

End of Forecast

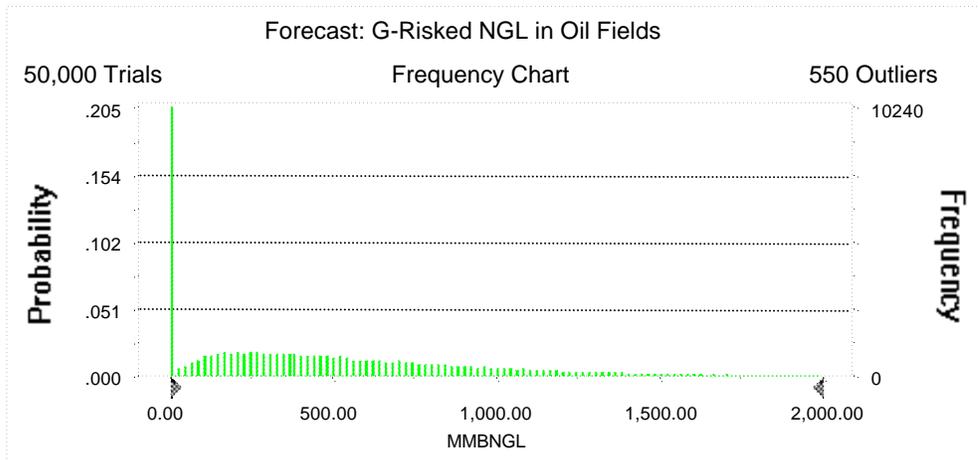
**60980202**  
**Orinoco Delta and Offshore**  
**Monte Carlo Results**

**Forecast: G-Riskd NGL in Oil Fields**

Summary:

Display range is from 0.00 to 2,000.00 MMBNGL  
 Entire range is from 0.00 to 3,914.72 MMBNGL  
 After 50,000 trials, the standard error of the mean is 2.17

Statistics:	<u>Value</u>
Trials	50000
Mean	506.66
Median	395.25
Mode	0.00
Standard Deviation	485.95
Variance	236,149.12
Skewness	1.21
Kurtosis	4.64
Coefficient of Variability	0.96
Range Minimum	0.00
Range Maximum	3,914.72
Range Width	3,914.72
Mean Standard Error	2.17



**60980202**  
**Orinoco Delta and Offshore**  
**Monte Carlo Results**

**Forecast: G-Riskd 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%	108.12
70%	167.47
65%	224.10
60%	279.84
55%	336.74
50%	395.25
45%	459.19
40%	524.14
35%	598.60
30%	680.23
25%	769.54
20%	877.61
15%	1,007.04
10%	1,180.27
5%	1,463.78
0%	3,914.72

End of Forecast

**60980202**  
**Orinoco Delta and Offshore**  
**Monte Carlo Results**

**Forecast: G-Risk Gas in Gas Fields**

Summary:

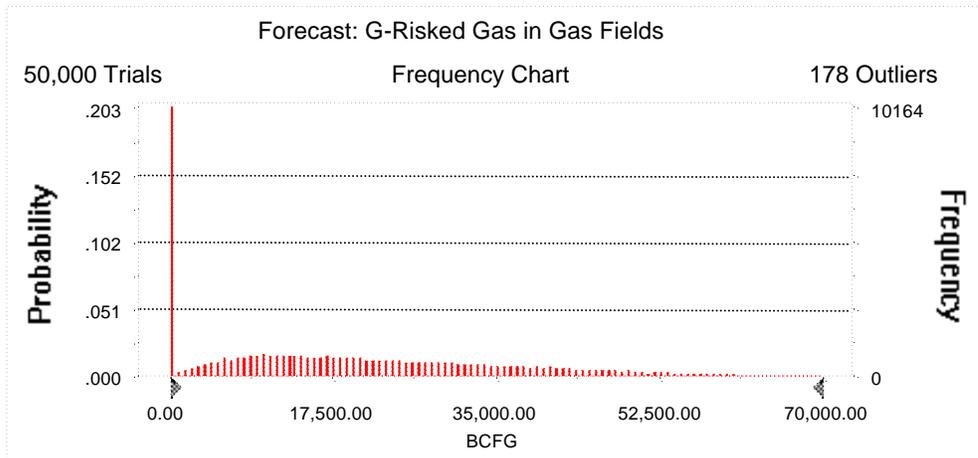
Display range is from 0.00 to 70,000.00 BCFG

Entire range is from 0.00 to 94,948.80 BCFG

After 50,000 trials, the standard error of the mean is 75.31

Statistics:

	<u>Value</u>
Trials	50000
Mean	19,591.18
Median	16,841.55
Mode	0.00
Standard Deviation	16,840.64
Variance	283,607,073.76
Skewness	0.70
Kurtosis	2.80
Coefficient of Variability	0.86
Range Minimum	0.00
Range Maximum	94,948.80
Range Width	94,948.80
Mean Standard Error	75.31



**60980202**  
**Orinoco Delta and Offshore**  
**Monte Carlo Results**

**Forecast: G-Risk 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%	4,995.75
70%	7,632.01
65%	9,948.94
60%	12,118.14
55%	14,428.64
50%	16,841.55
45%	19,236.38
40%	21,806.91
35%	24,612.23
30%	27,669.91
25%	30,877.36
20%	34,501.79
15%	38,767.86
10%	43,905.62
5%	51,086.75
0%	94,948.80

End of Forecast

**60980202**  
**Orinoco Delta and Offshore**  
**Monte Carlo Results**

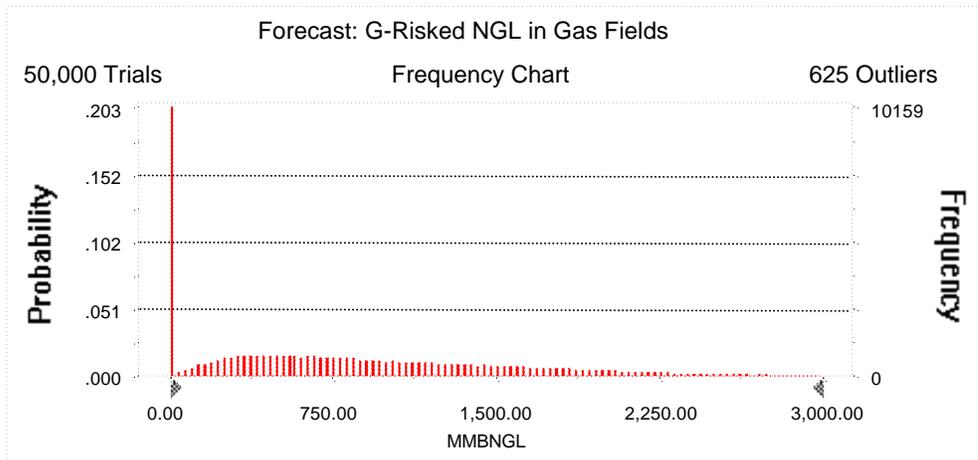
**Forecast: G-Riskd NGL in Gas Fields**

Summary:

Display range is from 0.00 to 3,000.00 MMBNGL  
Entire range is from 0.00 to 5,163.37 MMBNGL  
After 50,000 trials, the standard error of the mean is 3.46

Statistics:

	<u>Value</u>
Trials	50000
Mean	861.93
Median	710.29
Mode	0.00
Standard Deviation	774.64
Variance	600,069.68
Skewness	0.92
Kurtosis	3.54
Coefficient of Variability	0.90
Range Minimum	0.00
Range Maximum	5,163.37
Range Width	5,163.37
Mean Standard Error	3.46



**60980202**  
**Orinoco Delta and Offshore**  
**Monte Carlo Results**

**Forecast: G-Riskied 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%	208.72
70%	317.68
65%	416.48
60%	511.11
55%	610.03
50%	710.29
45%	819.41
40%	930.99
35%	1,054.98
30%	1,188.47
25%	1,343.34
20%	1,510.13
15%	1,707.09
10%	1,958.09
5%	2,330.28
0%	5,163.37

End of Forecast

**60980202**  
**Orinoco Delta and Offshore**  
**Monte Carlo Results**

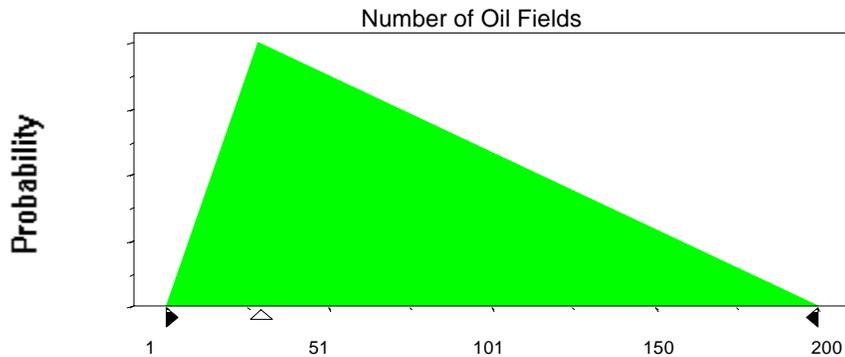
**Assumptions**

**Assumption: Number of Oil Fields**

Triangular distribution with parameters:

Minimum	1
Likeliest	30
Maximum	200

Selected range is from 1 to 200  
Mean value in simulation was 77



**Assumption: Sizes of Oil Fields**

Lognormal distribution with parameters:

Mean	69.03
Standard Deviation	333.29

Shifted parameters

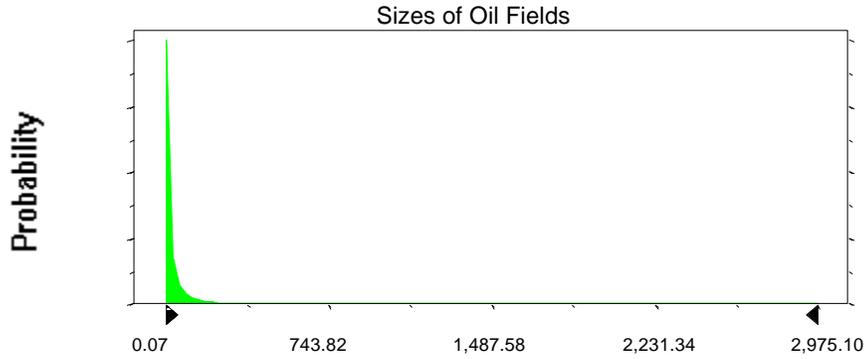
75.03
333.29

Selected range is from 0.00 to 3,494.00  
Mean value in simulation was 62.23

6.00 to 3,500.00  
68.23

**60980202**  
**Orinoco Delta and Offshore**  
**Monte Carlo Results**

**Assumption: Sizes of Oil Fields (cont'd)**



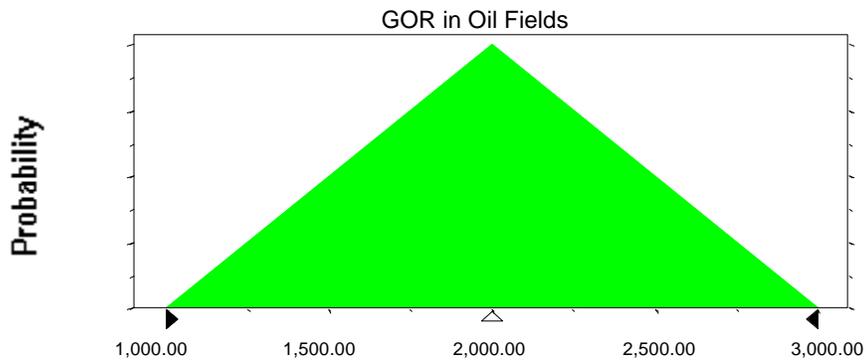
**Assumption: GOR in Oil Fields**

Triangular distribution with parameters:

Minimum	1,000.00
Likeliest	2,000.00
Maximum	3,000.00

Selected range is from 1,000.00 to 3,000.00

Mean value in simulation was 2,001.06



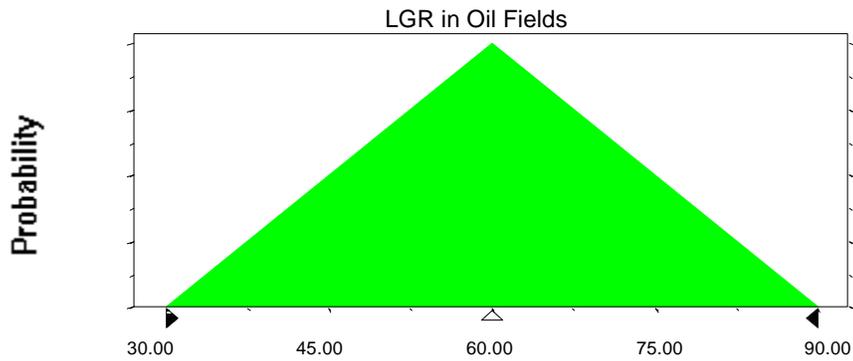
**60980202**  
**Orinoco Delta and Offshore**  
**Monte Carlo Results**

**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 59.91



**Assumption: Number of Gas Fields**

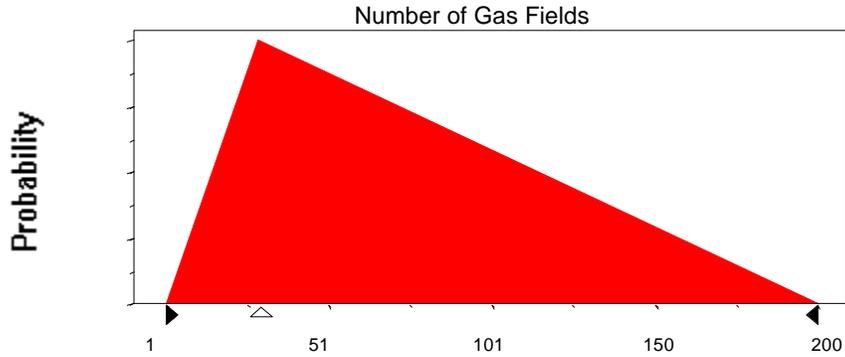
Triangular distribution with parameters:

Minimum	1
Likeliest	30
Maximum	200

Selected range is from 1 to 200  
Mean value in simulation was 77

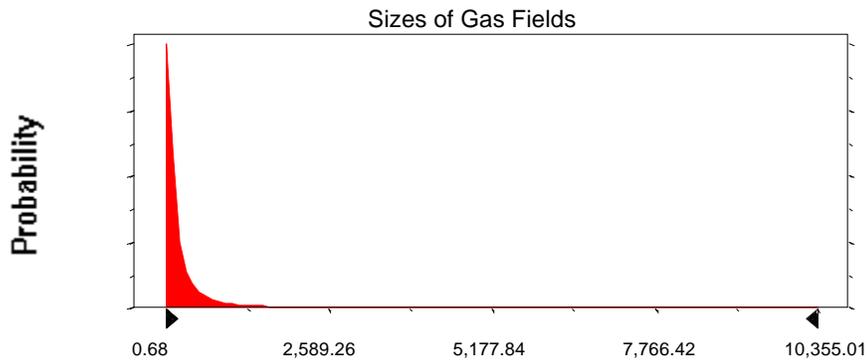
**60980202**  
**Orinoco Delta and Offshore**  
**Monte Carlo Results**

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



**Assumption: Sizes of Gas Fields**

Lognormal distribution with parameters:		Shifted parameters
Mean	304.45	340.45
Standard Deviation	1,060.63	1,060.63
Selected range is from 0.00 to 11,964.00		36.00 to 12,000.00
Mean value in simulation was 282.71		318.71



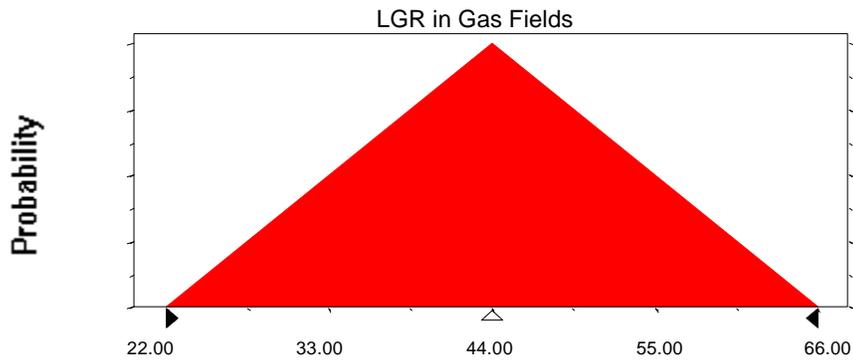
**60980202**  
**Orinoco Delta and Offshore**  
**Monte Carlo Results**

**Assumption: LGR in Gas 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



End of Assumptions

Simulation started on 7/16/99 at 15:14:58  
Simulation stopped on 7/16/99 at 16:40:39