

Tanezzuft-Bechar/Abadla Structural/Stratigraphic, Assessment Unit 20580601
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	0.40	0	0	66	16	0	0	256	59	0	0	16	4	5	14	44	18
Gas Fields	6		0	0	66	16	0	0	1,571	382	0	0	77	18	71	230	812	303
Total		0.40	0	0	66	16	0	0	1,827	441	0	0	93	22				

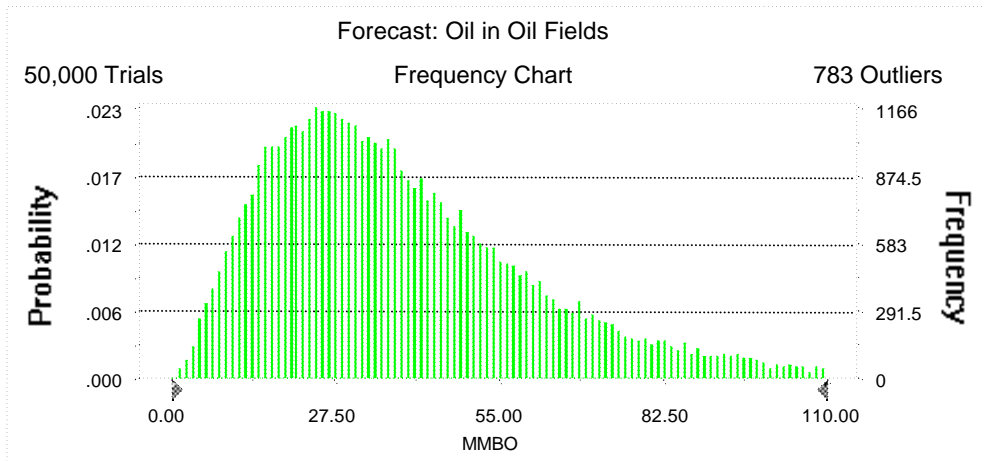
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Monte Carlo Results

Forecast: Oil in Oil Fields

Summary:

Display range is from 0.00 to 110.00 MMBO
Entire range is from 1.16 to 254.66 MMBO
After 50,000 trials, the standard error of the mean is 0.11

Statistics:	Value
Trials	50000
Mean	39.62
Median	34.67
Mode	---
Standard Deviation	24.17
Variance	584.32
Skewness	1.35
Kurtosis	5.87
Coefficient of Variability	0.61
Range Minimum	1.16
Range Maximum	254.66
Range Width	253.49
Mean Standard Error	0.11



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Forecast: Oil in Oil Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBO</u>
100%	1.16
95%	10.35
90%	14.13
85%	16.99
80%	19.68
75%	22.23
70%	24.70
65%	27.07
60%	29.49
55%	31.99
50%	34.67
45%	37.39
40%	40.36
35%	43.71
30%	47.35
25%	51.50
20%	56.46
15%	62.57
10%	71.37
5%	86.54
0%	254.66

End of Forecast

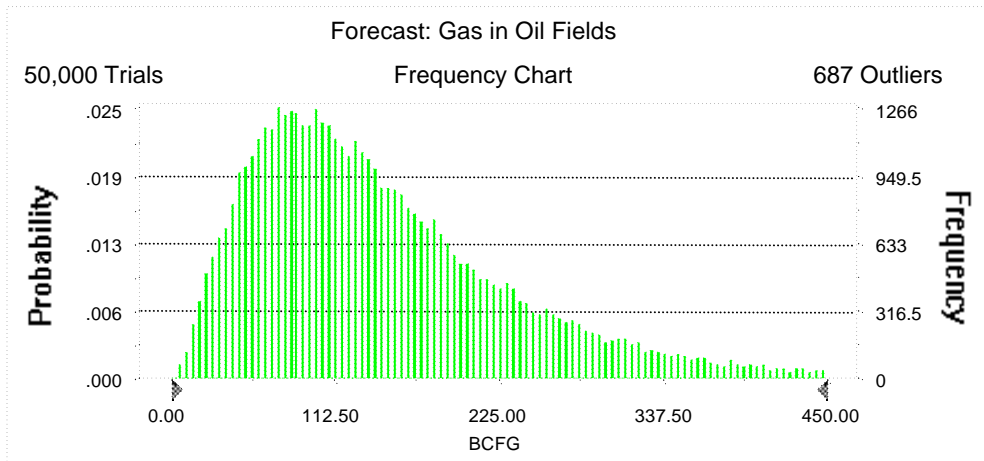
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Forecast: Gas in Oil Fields

Summary:

Display range is from 0.00 to 450.00 BCFG
Entire range is from 2.85 to 1,232.33 BCFG
After 50,000 trials, the standard error of the mean is 0.44

Statistics:	Value
Trials	50000
Mean	148.45
Median	126.83
Mode	---
Standard Deviation	97.38
Variance	9,483.03
Skewness	1.58
Kurtosis	7.26
Coefficient of Variability	0.66
Range Minimum	2.85
Range Maximum	1,232.33
Range Width	1,229.49
Mean Standard Error	0.44



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Forecast: Gas in Oil Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	2.85
95%	35.81
90%	49.41
85%	60.30
80%	69.84
75%	79.06
70%	88.09
65%	97.49
60%	106.56
55%	116.32
50%	126.83
45%	137.26
40%	149.11
35%	161.84
30%	176.46
25%	192.70
20%	213.69
15%	239.26
10%	275.58
5%	334.82
0%	1,232.33

End of Forecast

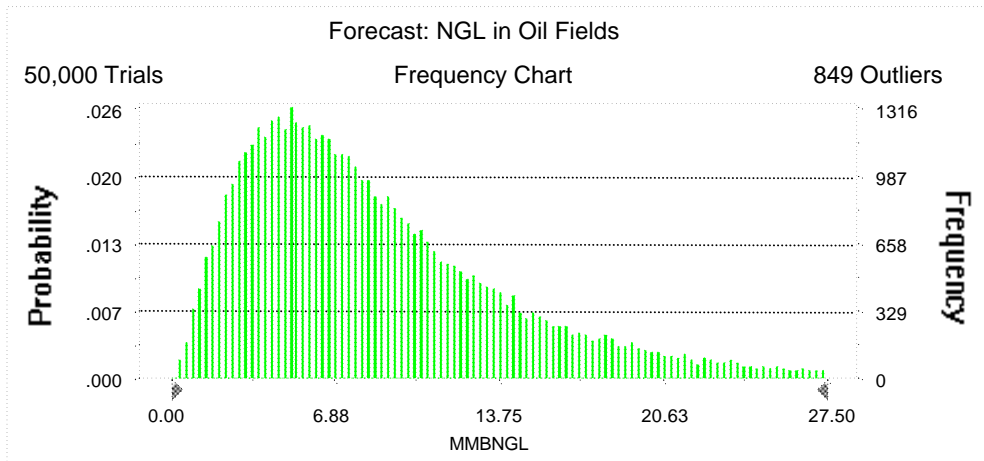
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Forecast: NGL in Oil Fields

Summary:

Display range is from 0.00 to 27.50 MMBNGL
Entire range is from 0.15 to 79.56 MMBNGL
After 50,000 trials, the standard error of the mean is 0.03

Statistics:	Value
Trials	50000
Mean	8.91
Median	7.41
Mode	---
Standard Deviation	6.24
Variance	38.89
Skewness	1.74
Kurtosis	7.96
Coefficient of Variability	0.70
Range Minimum	0.15
Range Maximum	79.56
Range Width	79.41
Mean Standard Error	0.03



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Forecast: NGL in Oil Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBNGL</u>
100%	0.15
95%	2.01
90%	2.77
85%	3.41
80%	3.98
75%	4.54
70%	5.08
65%	5.63
60%	6.19
55%	6.78
50%	7.41
45%	8.05
40%	8.79
35%	9.60
30%	10.51
25%	11.59
20%	12.90
15%	14.54
10%	16.97
5%	21.03
0%	79.56

End of Forecast

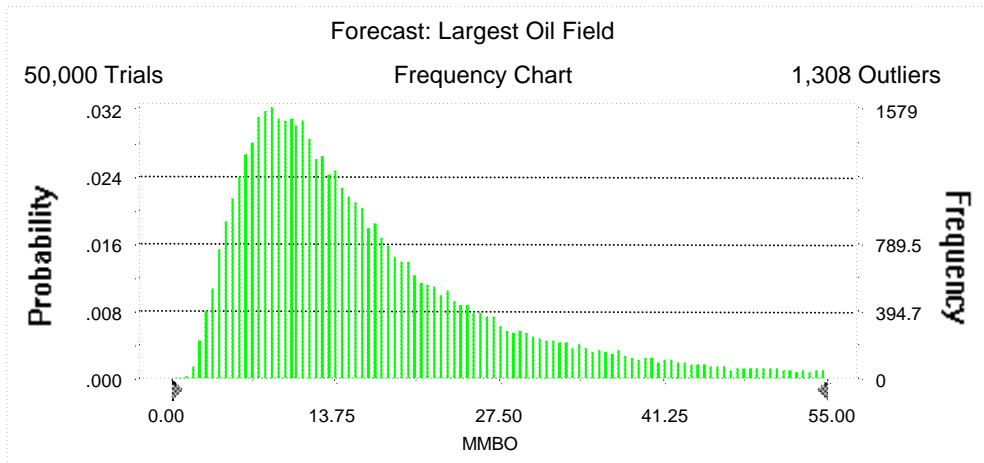
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Forecast: Largest Oil Field

Summary:

Display range is from 0.00 to 55.00 MMBO
 Entire range is from 1.16 to 100.00 MMBO
 After 50,000 trials, the standard error of the mean is 0.06

Statistics:	<u>Value</u>
Trials	50000
Mean	17.56
Median	13.66
Mode	---
Standard Deviation	13.43
Variance	180.42
Skewness	2.20
Kurtosis	9.50
Coefficient of Variability	0.76
Range Minimum	1.16
Range Maximum	100.00
Range Width	98.83
Mean Standard Error	0.06



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Forecast: Largest Oil Field (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBO</u>
100%	1.16
95%	4.72
90%	5.99
85%	7.02
80%	7.93
75%	8.80
70%	9.73
65%	10.62
60%	11.54
55%	12.57
50%	13.66
45%	14.85
40%	16.17
35%	17.66
30%	19.48
25%	21.70
20%	24.47
15%	28.13
10%	33.80
5%	44.25
0%	100.00

End of Forecast

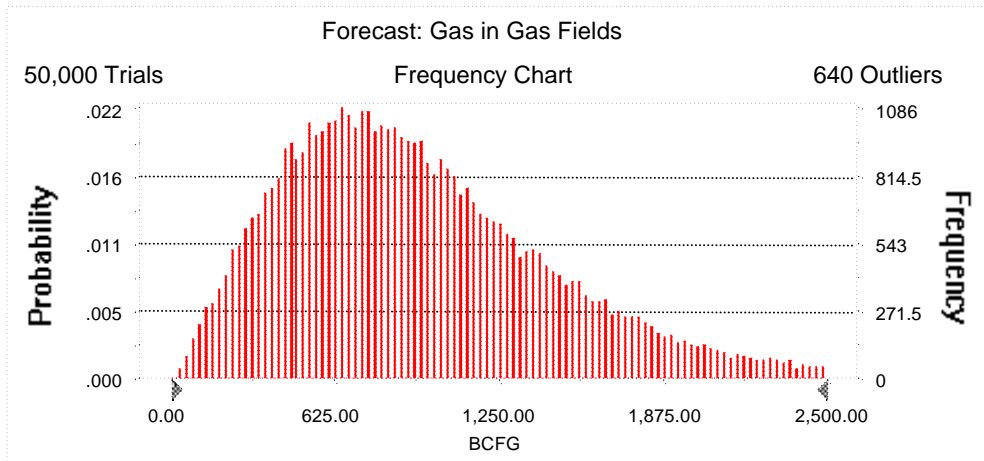
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Forecast: Gas in Gas Fields

Summary:

Display range is from 0.00 to 2,500.00 BCFG
 Entire range is from 26.05 to 4,864.45 BCFG
 After 50,000 trials, the standard error of the mean is 2.40

Statistics:	<u>Value</u>
Trials	50000
Mean	959.09
Median	869.30
Mode	---
Standard Deviation	536.26
Variance	287,574.00
Skewness	1.02
Kurtosis	4.46
Coefficient of Variability	0.56
Range Minimum	26.05
Range Maximum	4,864.45
Range Width	4,838.40
Mean Standard Error	2.40



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Forecast: Gas in Gas Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	26.05
95%	255.37
90%	354.68
85%	434.42
80%	502.08
75%	565.76
70%	628.07
65%	686.91
60%	747.02
55%	807.25
50%	869.30
45%	933.76
40%	1,002.59
35%	1,076.02
30%	1,157.60
25%	1,252.92
20%	1,364.95
15%	1,498.69
10%	1,677.91
5%	1,971.22
0%	4,864.45

End of Forecast

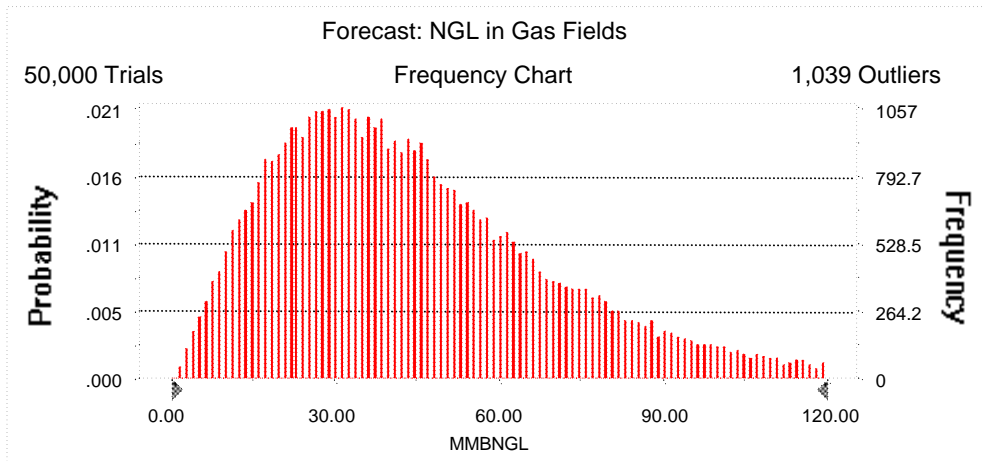
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Forecast: NGL in Gas Fields

Summary:

Display range is from 0.00 to 120.00 MMBNGL
 Entire range is from 1.16 to 252.58 MMBNGL
 After 50,000 trials, the standard error of the mean is 0.12

Statistics:	<u>Value</u>
Trials	50000
Mean	46.04
Median	40.62
Mode	---
Standard Deviation	27.92
Variance	779.67
Skewness	1.26
Kurtosis	5.35
Coefficient of Variability	0.61
Range Minimum	1.16
Range Maximum	252.58
Range Width	251.42
Mean Standard Error	0.12



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Forecast: NGL in Gas Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBNGL</u>
100%	1.16
95%	11.43
90%	16.02
85%	19.55
80%	22.77
75%	25.85
70%	28.73
65%	31.62
60%	34.49
55%	37.51
50%	40.62
45%	43.91
40%	47.24
35%	51.03
30%	55.29
25%	60.20
20%	65.87
15%	73.33
10%	82.81
5%	99.39
0%	252.58

End of Forecast

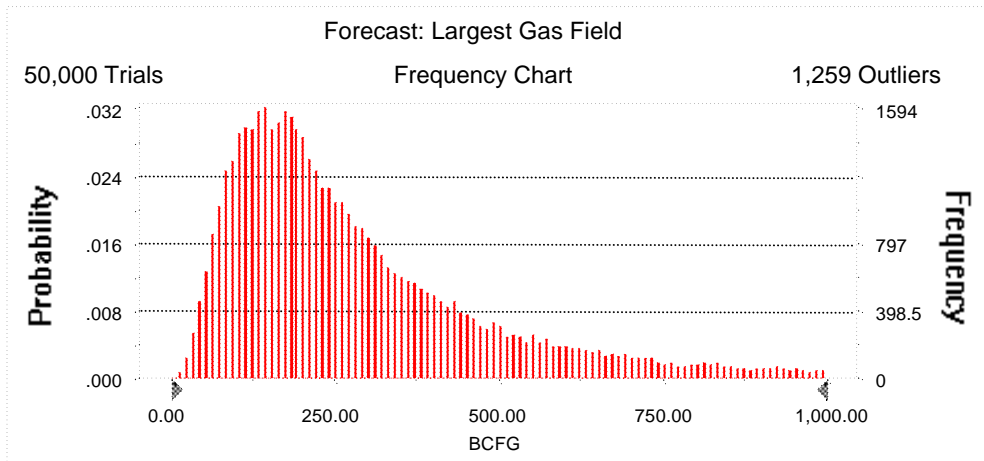
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Forecast: Largest Gas Field

Summary:

Display range is from 0.00 to 1,000.00 BCFG
 Entire range is from 10.41 to 1,499.21 BCFG
 After 50,000 trials, the standard error of the mean is 1.07

Statistics:	<u>Value</u>
Trials	50000
Mean	303.34
Median	229.97
Mode	---
Standard Deviation	238.98
Variance	57,109.74
Skewness	1.91
Kurtosis	7.29
Coefficient of Variability	0.79
Range Minimum	10.41
Range Maximum	1,499.21
Range Width	1,488.80
Mean Standard Error	1.07



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Forecast: Largest Gas Field (cont'd)

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	10.41
95%	71.26
90%	92.85
85%	110.92
80%	127.99
75%	143.90
70%	160.32
65%	176.48
60%	192.77
55%	210.18
50%	229.97
45%	252.51
40%	276.92
35%	304.76
30%	338.74
25%	380.92
20%	433.25
15%	503.64
10%	612.33
5%	811.98
0%	1,499.21

End of Forecast

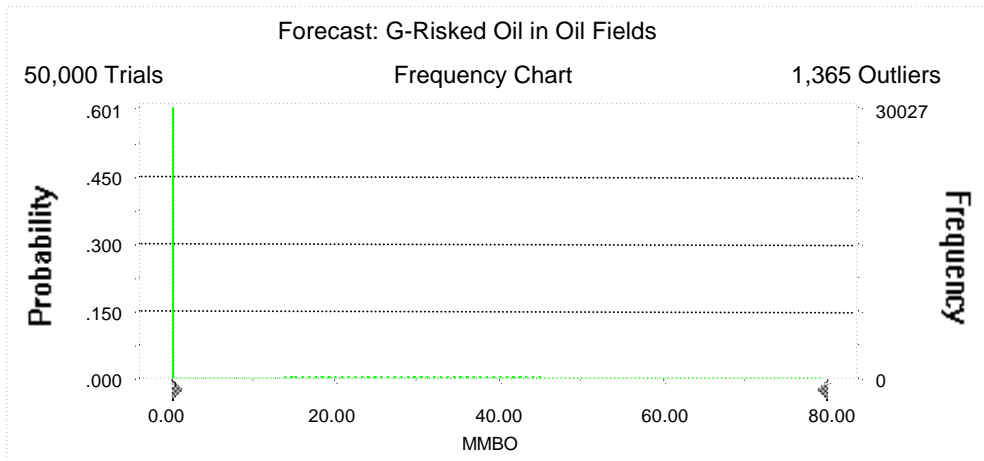
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Forecast: G-Risked Oil in Oil Fields

Summary:

Display range is from 0.00 to 80.00 MMBO
 Entire range is from 0.00 to 204.81 MMBO
 After 50,000 trials, the standard error of the mean is 0.11

Statistics:	<u>Value</u>
Trials	50000
Mean	15.80
Median	0.00
Mode	0.00
Standard Deviation	24.67
Variance	608.81
Skewness	1.81
Kurtosis	6.65
Coefficient of Variability	1.56
Range Minimum	0.00
Range Maximum	204.81
Range Width	204.81
Mean Standard Error	0.11



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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%	0.00
35%	15.59
30%	22.07
25%	28.12
20%	34.47
15%	41.90
10%	51.44
5%	66.39
0%	204.81

End of Forecast

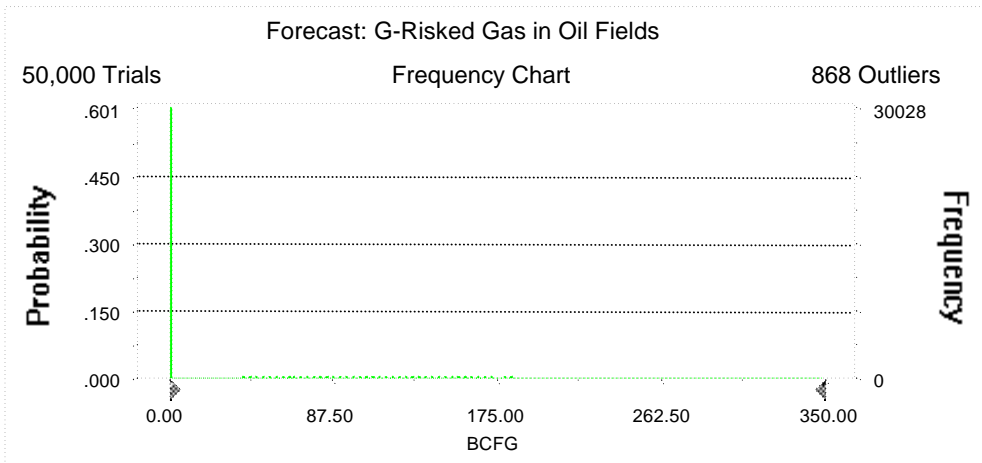
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Forecast: G-Risked Gas in Oil Fields

Summary:

Display range is from 0.00 to 350.00 BCFG
 Entire range is from 0.00 to 1,039.73 BCFG
 After 50,000 trials, the standard error of the mean is 0.43

Statistics:	<u>Value</u>
Trials	50000
Mean	59.17
Median	0.00
Mode	0.00
Standard Deviation	95.27
Variance	9,076.29
Skewness	2.05
Kurtosis	8.41
Coefficient of Variability	1.61
Range Minimum	0.00
Range Maximum	1,039.73
Range Width	1,039.73
Mean Standard Error	0.43



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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%	0.00
35%	54.67
30%	78.90
25%	101.25
20%	125.86
15%	154.32
10%	191.90
5%	256.11
0%	1,039.73

End of Forecast

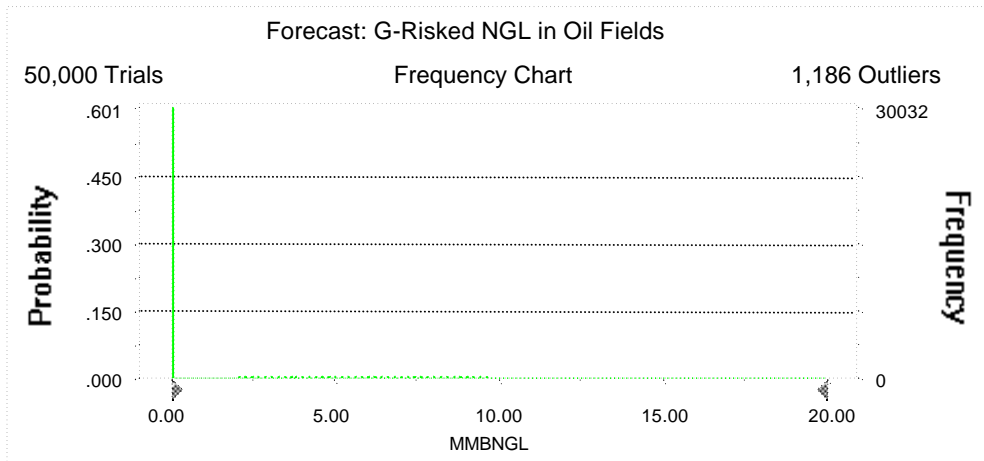
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Forecast: G-Risked NGL in Oil Fields

Summary:

Display range is from 0.00 to 20.00 MMBNGL
 Entire range is from 0.00 to 66.05 MMBNGL
 After 50,000 trials, the standard error of the mean is 0.03

Statistics:	<u>Value</u>
Trials	50000
Mean	3.56
Median	0.00
Mode	0.00
Standard Deviation	5.88
Variance	34.58
Skewness	2.21
Kurtosis	9.36
Coefficient of Variability	1.65
Range Minimum	0.00
Range Maximum	66.05
Range Width	66.05
Mean Standard Error	0.03



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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%	0.00
35%	3.07
30%	4.53
25%	5.90
20%	7.33
15%	9.13
10%	11.63
5%	15.63
0%	66.05

End of Forecast

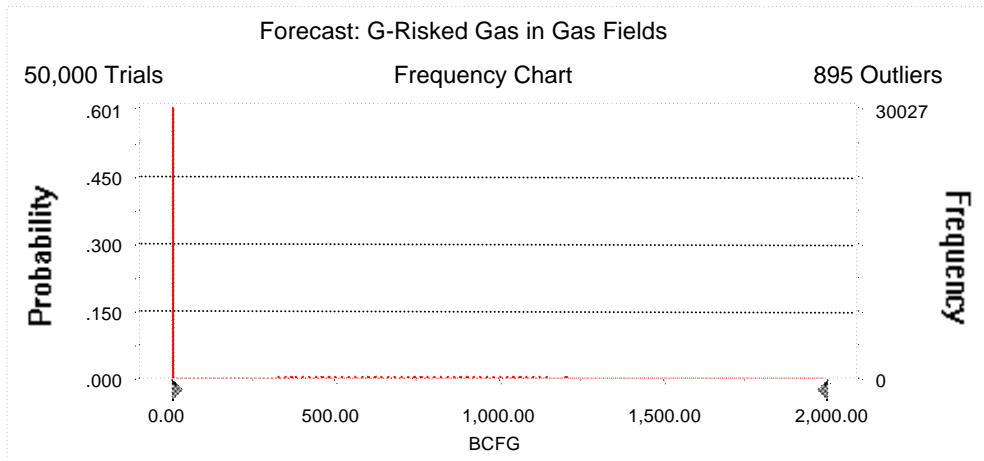
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Forecast: G-Risked Gas in Gas Fields

Summary:

Display range is from 0.00 to 2,000.00 BCFG
 Entire range is from 0.00 to 4,198.26 BCFG
 After 50,000 trials, the standard error of the mean is 2.57

Statistics:	<u>Value</u>
Trials	50000
Mean	381.54
Median	0.00
Mode	0.00
Standard Deviation	575.76
Variance	331,495.78
Skewness	1.55
Kurtosis	5.06
Coefficient of Variability	1.51
Range Minimum	0.00
Range Maximum	4,198.26
Range Width	4,198.26
Mean Standard Error	2.57



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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%	0.00
35%	394.89
30%	562.76
25%	710.78
20%	867.17
15%	1,037.19
10%	1,248.38
5%	1,571.25
0%	4,198.26

End of Forecast

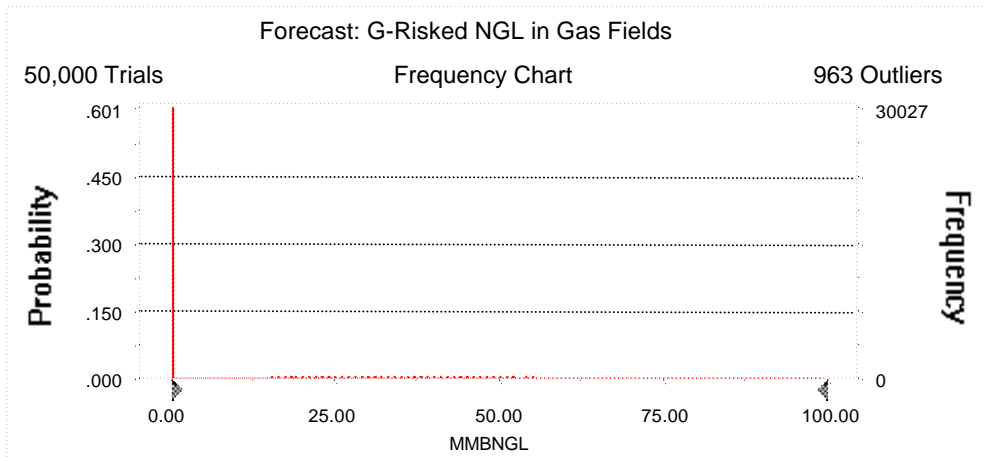
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Forecast: G-Risked NGL in Gas Fields

Summary:

Display range is from 0.00 to 100.00 MMBNGL
 Entire range is from 0.00 to 252.58 MMBNGL
 After 50,000 trials, the standard error of the mean is 0.13

Statistics:	<u>Value</u>
Trials	50000
Mean	18.33
Median	0.00
Mode	0.00
Standard Deviation	28.54
Variance	814.36
Skewness	1.77
Kurtosis	6.36
Coefficient of Variability	1.56
Range Minimum	0.00
Range Maximum	252.58
Range Width	252.58
Mean Standard Error	0.13



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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%	0.00
35%	17.78
30%	25.69
25%	32.82
20%	40.38
15%	48.90
10%	59.90
5%	77.44
0%	252.58

End of Forecast

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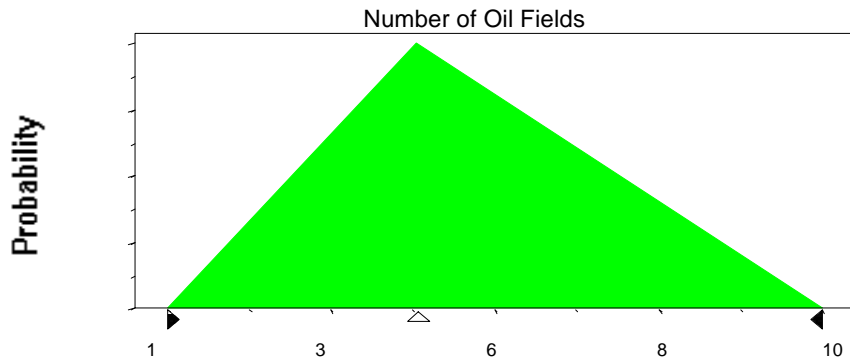
Assumptions

Assumption: Number of Oil Fields

Triangular distribution with parameters:

Minimum	1
Likeliest	4
Maximum	10

Selected range is from 1 to 10
Mean value in simulation was 5



Assumption: Sizes of Oil Fields

Lognormal distribution with parameters:

Mean	6.86
Standard Deviation	9.55

Shifted parameters

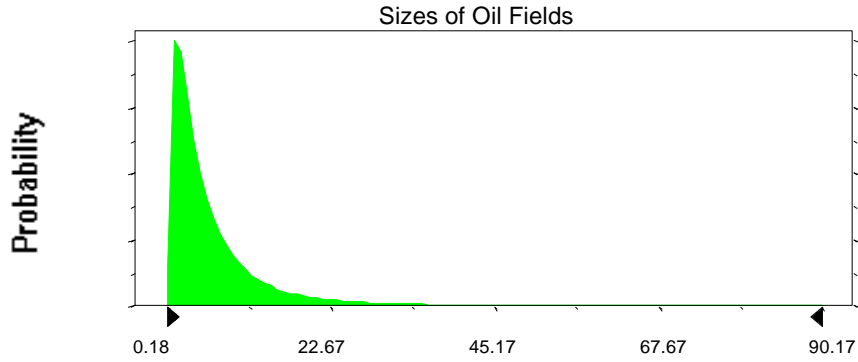
7.86
9.55

Selected range is from 0.00 to 99.00
Mean value in simulation was 6.79

1.00 to 100.00
7.79

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Assumption: Sizes of Oil Fields (cont'd)



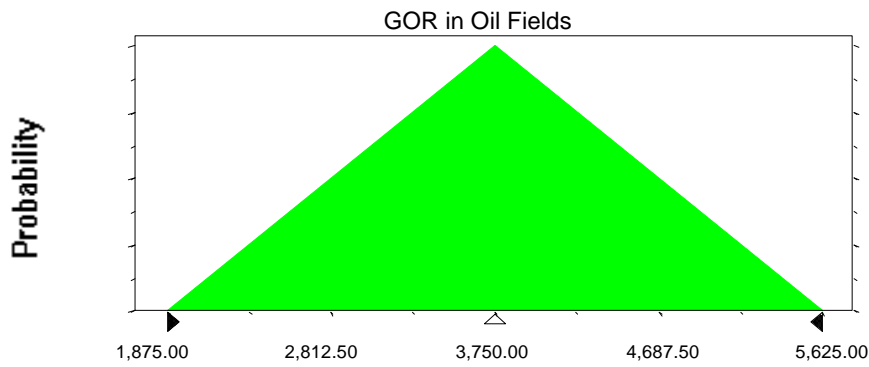
Assumption: GOR in Oil Fields

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 3,745.37



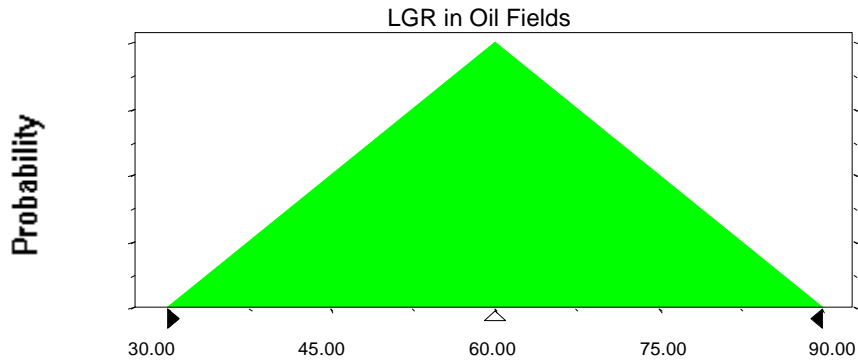
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Assumption: LGR in Oil Fields

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 60.02



Assumption: Number of Gas Fields

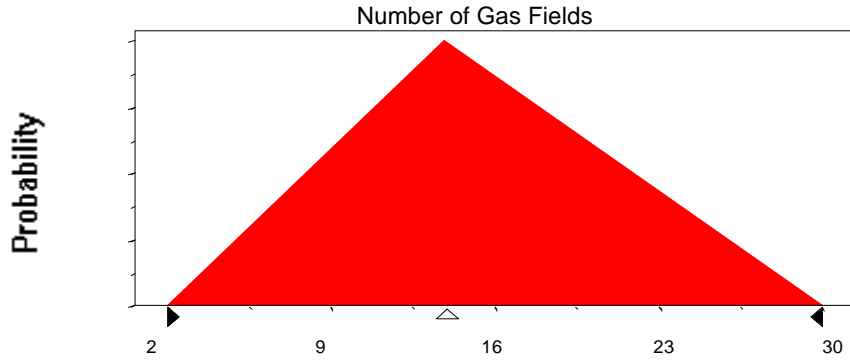
Triangular distribution with parameters:

Minimum	2
Likeliest	14
Maximum	30

Selected range is from 2 to 30
Mean value in simulation was 15

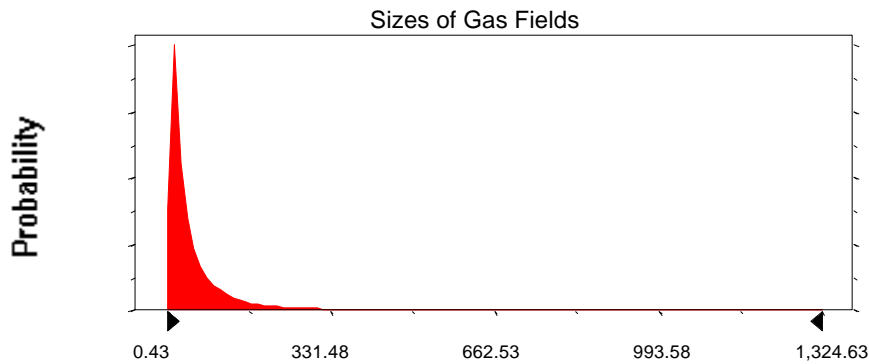
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Assumption: Number of Gas Fields (cont'd)



Assumption: Sizes of Gas Fields

Lognormal distribution with parameters:		Shifted parameters	
Mean	58.66		64.66
Standard Deviation	130.83		130.83
Selected range is from 0.00 to 1,494.00		6.00 to 1,500.00	
Mean value in simulation was 56.58		62.58	



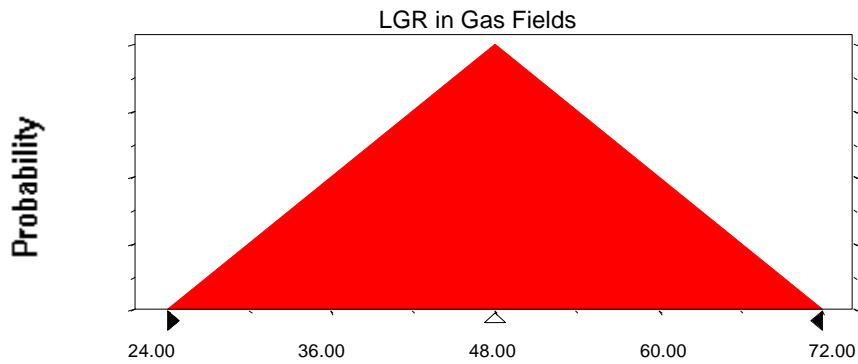
20580601
Tanezzuft-Bechar/Abadla Structural/Stratigraphic
Monte Carlo Results

Assumption: LGR in Gas Fields

Triangular distribution with parameters:

Minimum	24.00
Likeliest	48.00
Maximum	72.00

Selected range is from 24.00 to 72.00
Mean value in simulation was 48.01



End of Assumptions

Simulation started on 12/30/99 at 10:06:22
Simulation stopped on 12/30/99 at 10:22:03