Ma'Rib-Al Jawf/Shabwah/Masila, Assessment Unit 20040101
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			
			Oil (MMBO)				Gas (BCFG)				NGL (MMBNGL)				(MMBO or BCFG)			
			F95	F50	F5	Mean	F95	F50	F5	Mean	F95	F50	F5	Mean	F95	F50	F5	Mean
Oil Fields	5	1.00	1,028	2,674	4,652	2,740	3,816	10,369	20,156	10,970	212	605	1,295	659	116	244	499	267
Gas Fields	30						2,656	5,861	9,850	6,012	106	251	470	264	371	849	2,145	991
Total		1.00	1,028	2,674	4,652	2,740	6,472	16,229	30,006	16,982	319	855	1,765	924				

Forecast: Oil in Oil Fields

Summary:
    Display range is from 0.00 to 6,000.00 MMBO
    Entire range is from 163.94 to 7,344.14 MMBO
    After 50,000 trials, the standard error of the mean is 4.91

Statistics:	Value
Trials	50000
Mean	2,740.38
Median	2,673.73
Mode	---
Standard Deviation	1,098.09
Variance	1,205,803.62
Skewness	0.29
Kurtosis	2.67
Coefficient of Variability	0.40
Range Minimum	163.94
Range Maximum	7,344.14
Range Width	7,180.20
Mean Standard Error	4.91
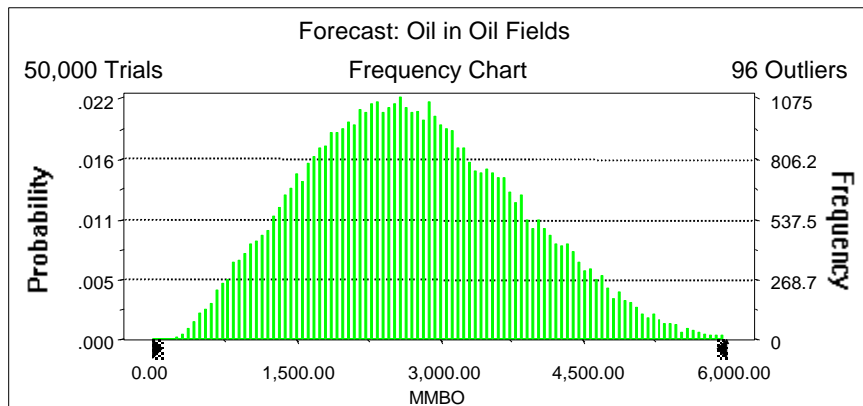
Forecast: Oil in Oil Fields

Forecast: Oil in Oil Fields (cont'd)

Percentiles:

Percentile	MMBO
100%	163.94
95%	1,028.19
90%	1,339.05
85%	1,565.58
80%	1,758.06
75%	1,929.34
70%	2,086.43
65%	2,239.67
60%	2,384.79
55%	2,530.68
50%	2,673.73
45%	2,820.55
40%	2,969.97
35%	3,125.89
30%	3,297.97
25%	3,494.81
20%	3,699.85
15%	3,939.09
10%	4,241.99
5%	4,652.25
0%	7,344.14

End of Forecast

Forecast: Gas in Oil Fields

Summary:
    Display range is from 0.00 to 25,000.00 BCFG
    Entire range is from 486.94 to 37,369.63 BCFG
    After 50,000 trials, the standard error of the mean is 22.41

Statistics:	Value
Trials	50000
Mean	10,970.09
Median	10,368.96
Mode	---
Standard Deviation	5,011.99
Variance	25,120,060.88
Skewness	0.64
Kurtosis	3.31
Coefficient of Variability	0.46
Range Minimum	486.94
Range Maximum	37,369.63
Range Width	36,882.69
Mean Standard Error	22.41
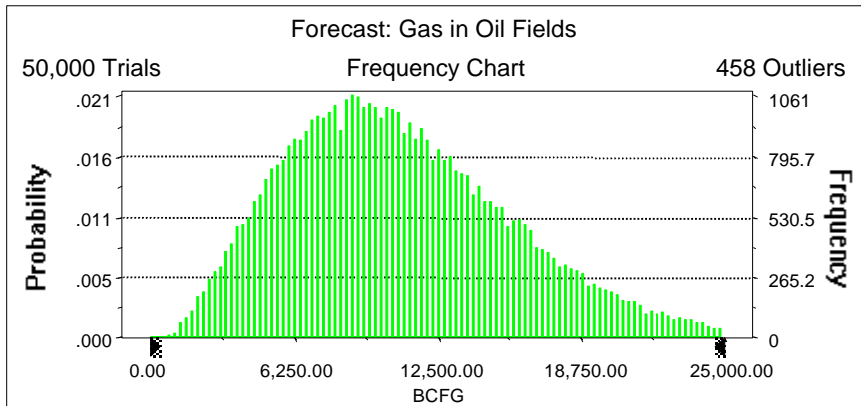
Forecast: Gas in Oil Fields

Forecast: Gas in Oil Fields (cont'd)

Percentiles:

Percentile	BCFG
100%	486.94
95%	3,815.73
90%	4,957.58
85%	5,812.78
80%	6,563.47
75%	7,248.91
70%	7,891.88
65%	8,540.05
60%	9,133.82
55%	9,738.58
50%	10,368.96
45%	10,997.49
40%	11,687.81
35%	12,412.13
30%	13,202.26
25%	14,070.51
20%	15,094.76
15%	16,259.32
10%	17,784.83
5%	20,156.12
0%	37,369.63

End of Forecast

Forecast: NGL in Oil Fields

Summary:
    Display range is from 0.00 to 1,750.00 MMBNGL
    Entire range is from 32.02 to 2,617.39 MMBNGL
    After 50,000 trials, the standard error of the mean is 1.51

Statistics:	Value
Trials	50000
Mean	659.13
Median	604.65
Mode	---
Standard Deviation	336.68
Variance	113,355.39
Skewness	0.93
Kurtosis	4.09
Coefficient of Variability	0.51
Range Minimum	32.02
Range Maximum	2,617.39
Range Width	2,585.37
Mean Standard Error	1.51
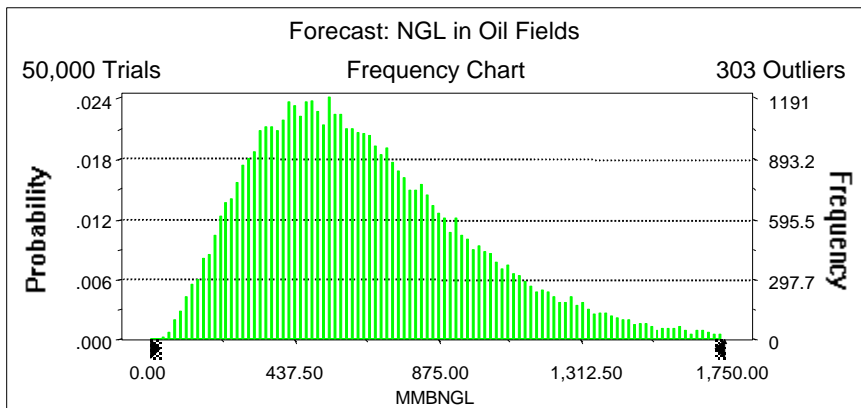
Forecast: NGL in Oil Fields

50,000 Trials   Frequency Chart   303 Outliers

Forecast: NGL in Oil Fields (cont'd)

Percentiles:

Percentile	MMBNGL
100%	32.02
95%	212.45
90%	276.29
85%	326.07
80%	368.90
75%	410.70
70%	449.13
65%	487.15
60%	525.43
55%	564.54
50%	604.65
45%	646.85
40%	690.36
35%	737.54
30%	790.44
25%	850.07
20%	919.76
15%	1,003.67
10%	1,114.82
5%	1,294.88
0%	2,617.39

End of Forecast

Forecast: Largest Oil Field

Summary:
Display range is from 0.00 to 600.00 MMBO
Entire range is from 30.15 to 599.97 MMBO
After 50,000 trials, the standard error of the mean is 0.52

Statistics:	Value
Trials	50000
Mean	266.97
Median	243.93
Mode	---
Standard Deviation	115.44
Variance	13,326.86
Skewness	0.75
Kurtosis	2.97
Coefficient of Variability	0.43
Range Minimum	30.15
Range Maximum	599.97
Range Width	569.81
Mean Standard Error	0.52
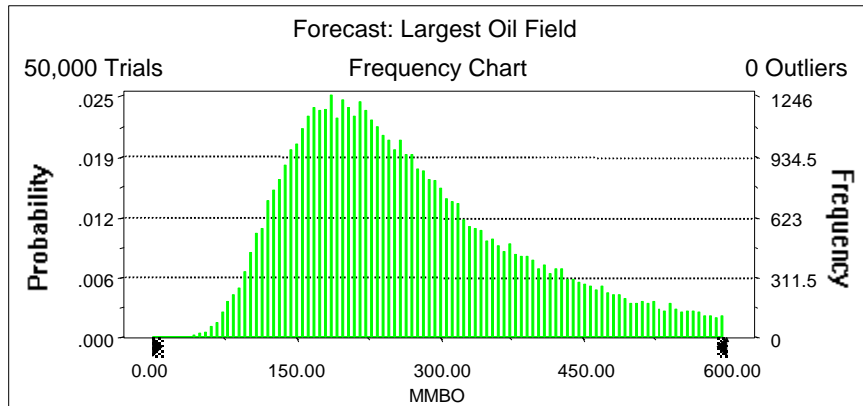
Forecast: Largest Oil Field
50,000 Trials — Frequency Chart — 0 Outliers

Forecast: Largest Oil Field (cont'd)

Percentiles:

Percentile	MMBO
100%	30.15
95%	115.89
90%	136.73
85%	152.99
80%	166.75
75%	179.54
70%	191.95
65%	204.62
60%	217.53
55%	230.13
50%	243.93
45%	259.13
40%	274.55
35%	292.28
30%	311.58
25%	334.85
20%	362.95
15%	396.53
10%	439.11
5%	499.11
0%	599.97

End of Forecast

Forecast: Gas in Gas Fields

Summary:
Display range is from 0.00 to 12,000.00 BCFG
Entire range is from 789.78 to 17,493.52 BCFG
After 50,000 trials, the standard error of the mean is 9.81

Statistics:	Value
Trials	50000
Mean	6,012.14
Median	5,860.53
Mode	---
Standard Deviation	2,193.56
Variance	4,811,699.57
Skewness	0.41
Kurtosis	3.02
Coefficient of Variability	0.36
Range Minimum	789.78
Range Maximum	17,493.52
Range Width	16,703.74
Mean Standard Error	9.81
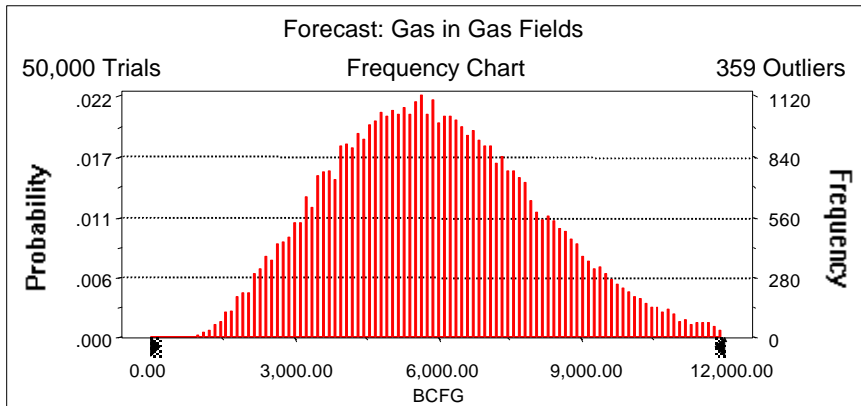
Forecast: Gas in Gas Fields

Forecast: Gas in Gas Fields (cont'd)

Percentiles:

Percentile	BCFG
100%	789.78
95%	2,655.85
90%	3,266.97
85%	3,699.59
80%	4,077.08
75%	4,408.72
70%	4,724.10
65%	5,016.71
60%	5,303.10
55%	5,584.58
50%	5,860.53
45%	6,150.04
40%	6,443.85
35%	6,758.71
30%	7,086.69
25%	7,441.40
20%	7,836.51
15%	8,331.76
10%	8,922.64
5%	9,849.53
0%	17,493.52

End of Forecast

Forecast: NGL in Gas Fields

Summary:
    Display range is from 0.00 to 600.00 MMBNGL
    Entire range is from 30.64 to 966.51 MMBNGL
    After 50,000 trials, the standard error of the mean is 0.50

Statistics:	Value
Trials	50000
Mean	264.44
Median	250.59
Mode	---
Standard Deviation	112.23
Variance	12,595.66
Skewness	0.72
Kurtosis	3.61
Coefficient of Variability	0.42
Range Minimum	30.64
Range Maximum	966.51
Range Width	935.88
Mean Standard Error	0.50
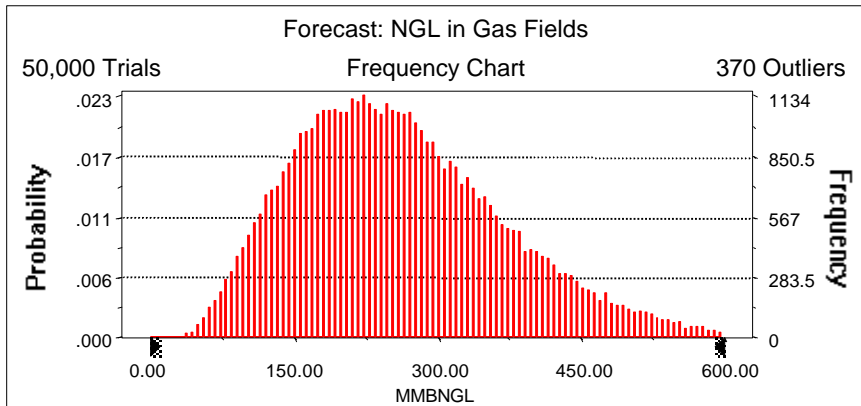
Forecast: NGL in Gas Fields

50,000 Trials   Frequency Chart   370 Outliers

Forecast: NGL in Gas Fields (cont'd)

Percentiles:

Percentile	MMBNGL
100%	30.64
95%	106.28
90%	131.13
85%	150.56
80%	166.64
75%	181.49
70%	195.75
65%	209.67
60%	223.17
55%	236.87
50%	250.59
45%	264.77
40%	279.33
35%	295.02
30%	312.91
25%	332.15
20%	354.13
15%	381.22
10%	416.02
5%	470.49
0%	966.51

End of Forecast

Forecast: Largest Gas Field

Summary:
    Display range is from 0.00 to 2,500.00 BCFG
    Entire range is from 121.55 to 2,999.62 BCFG
    After 50,000 trials, the standard error of the mean is 2.43

Statistics:	Value
Trials	50000
Mean	991.10
Median	848.73
Mode	---
Standard Deviation	543.56
Variance	295,456.10
Skewness	1.24
Kurtosis	4.30
Coefficient of Variability	0.55
Range Minimum	121.55
Range Maximum	2,999.62
Range Width	2,878.07
Mean Standard Error	2.43
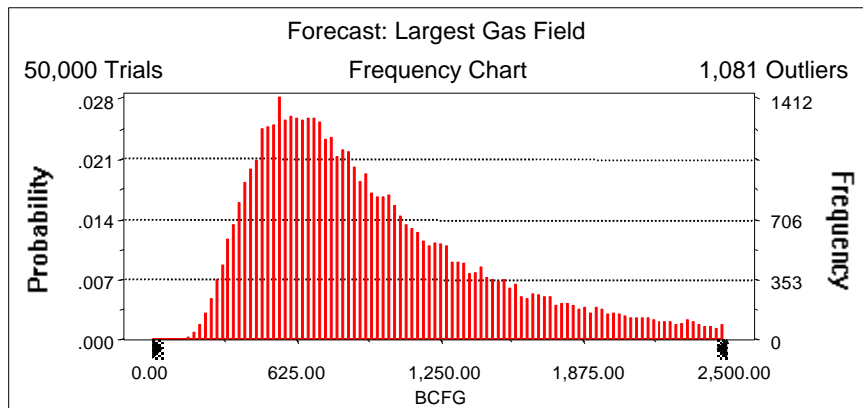
Forecast: Largest Gas Field

Forecast: Largest Gas Field (cont'd)

Percentiles:

Percentile	BCFG
100%	121.55
95%	370.76
90%	441.86
85%	497.51
80%	547.90
75%	594.00
70%	642.80
65%	690.51
60%	738.69
55%	791.62
50%	848.73
45%	909.18
40%	977.70
35%	1,052.81
30%	1,140.62
25%	1,247.06
20%	1,372.68
15%	1,539.14
10%	1,769.89
5%	2,144.50
0%	2,999.62

End of Forecast

Assumptions

Assumption: Number of Oil Fields
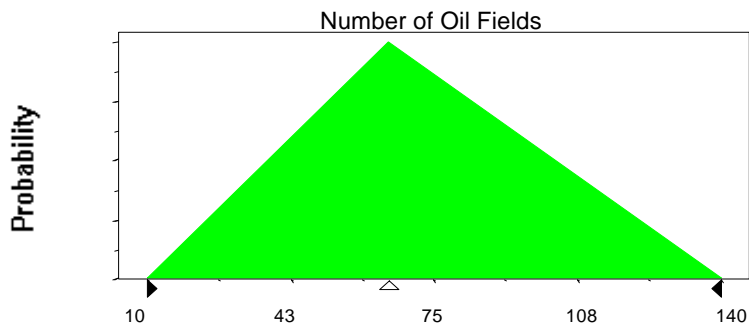
Triangular distribution with parameters:
Minimum   10
Likeliest   65
Maximum   140

Selected range is from 10 to 140
Mean value in simulation was 71

Number of Oil Fields

Assumption: Sizes of Oil Fields

Lognormal distribution with parameters:		Shifted parameters	
Mean	34.16		39.16
Standard Deviation	55.12		55.12
Selected range is from 0.00 to 595.00		5.00 to 600.00	
Mean value in simulation was 33.29		38.29	

Assumption: Sizes of Oil Fields (cont'd)

Sizes of Oil Fields

Probability

0.60   134.79   268.98   403.17   537.36
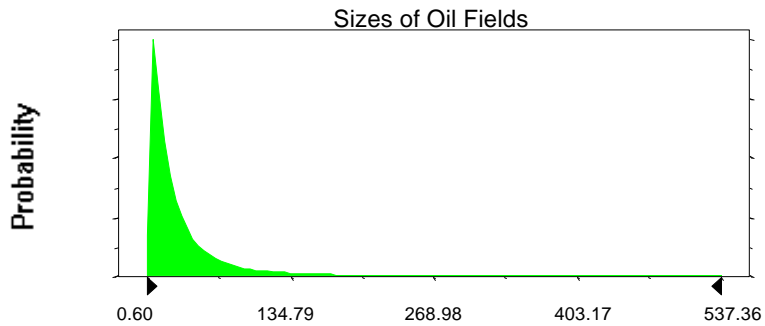
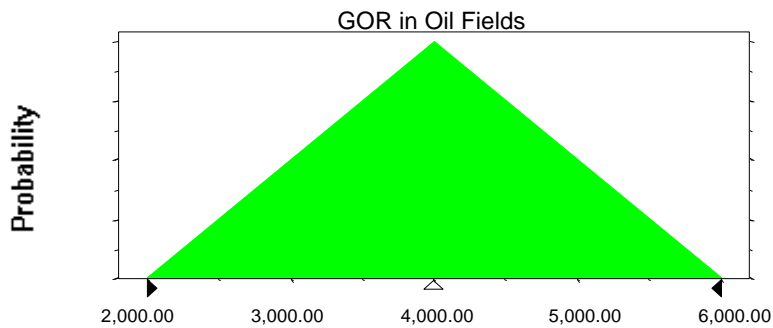**Assumption: GOR in Oil Fields**

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
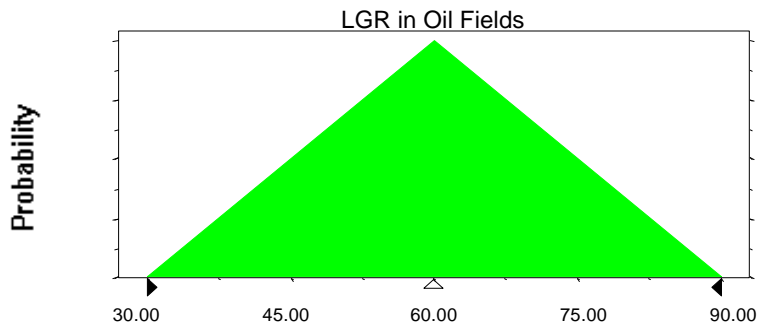Mean value in simulation was 4,002.90

GOR in Oil Fields

Probability

2,000.00   3,000.00   4,000.00   5,000.00   6,000.00

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
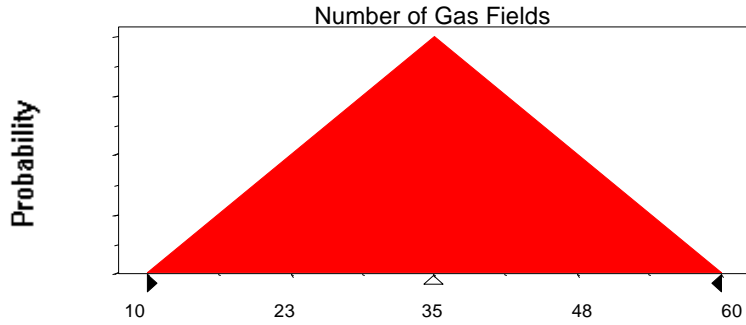Mean value in simulation was 60.06

LGR in Oil Fields

Assumption: Number of Gas Fields

Triangular distribution with parameters:
Minimum	10
Likeliest	35
Maximum	60

Selected range is from 10 to 60
Mean value in simulation was 35

Assumption: Number of Gas Fields (cont'd)

Number of Gas Fields

10	23	35	48	60

Assumption: Sizes of Gas Fields

Lognormal distribution with parameters: Shifted parameters
    Mean   146.06   176.06
    Standard Deviation   267.50   267.5

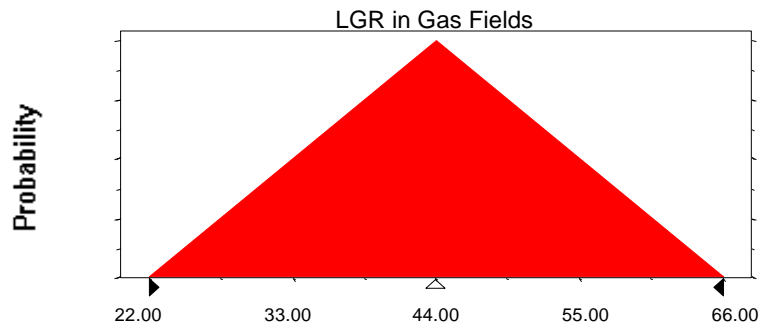Selected range is from 0.00 to 2,970.00   30.00 to 3,000.00
Mean value in simulation was 140.58   170.58

Sizes of Gas Fields

1.84	667.10	1,332.35	1,997.61	2,662.86
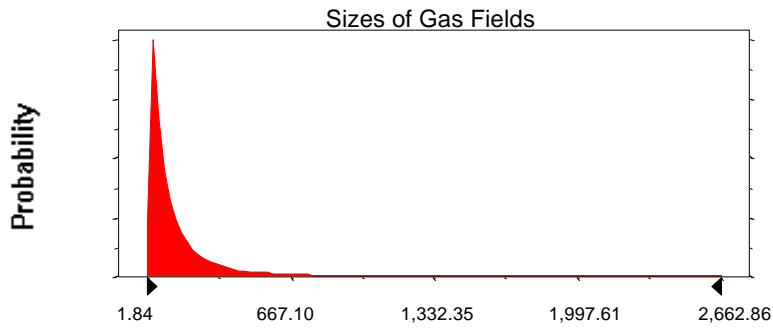
Assumption: LGR in Gas Fields

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 43.99

LGR in Gas Fields

End of Assumptions

Simulation started on 5/27/99 at 13:56:56
Simulation stopped on 5/27/99 at 14:46:40