

Late Cretaceous-Tertiary Nearshore Sandstones, Assessment Unit 60210103
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
Oil Fields	1	1.00	68	275	622	301	89	374	914	422	4	18	48	21	16	57	191	73
Gas Fields	6						46	321	1,127	417	2	11	41	15	24	123	588	188
Total		1.00	68	275	622	301	135	695	2,040	839	6	29	89	36				

60210103
Late Cretaceous-Tertiary Nearshore Sandstones
Monte Carlo Results

Forecast: Oil in Oil Fields

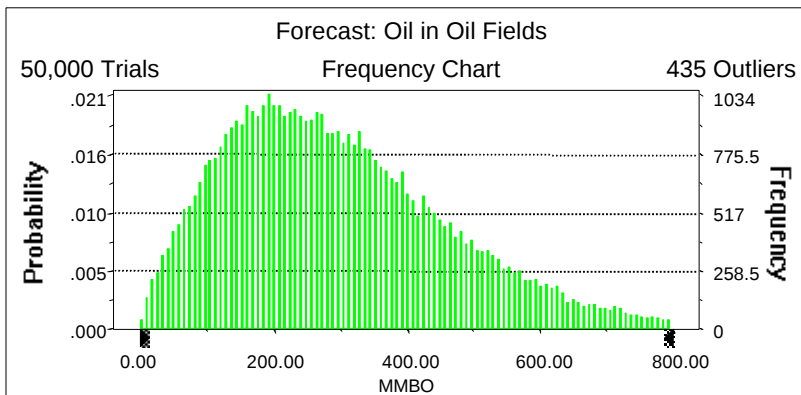
Summary:

Display range is from 0.00 to 800.00 MMBO

Entire range is from 1.28 to 1,373.15 MMBO

After 50,000 trials, the standard error of the mean is 0.77

Statistics:	Value
Trials	50000
Mean	301.09
Median	275.47
Mode	---
Standard Deviation	171.51
Variance	29,416.22
Skewness	0.80
Kurtosis	3.60
Coefficient of Variability	0.57
Range Minimum	1.28
Range Maximum	1,373.15
Range Width	1,371.87
Mean Standard Error	0.77



60210103
Late Cretaceous-Tertiary Nearshore Sandstones
Monte Carlo Results

Forecast: Oil in Oil Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBO</u>
100%	1.28
95%	68.07
90%	100.93
85%	127.32
80%	150.06
75%	170.86
70%	191.92
65%	211.69
60%	232.72
55%	253.97
50%	275.47
45%	297.97
40%	321.62
35%	345.97
30%	372.98
25%	403.67
20%	439.51
15%	482.29
10%	536.90
5%	621.56
0%	1,373.15

End of Forecast

60210103
Late Cretaceous-Tertiary Nearshore Sandstones
Monte Carlo Results

Forecast: Gas in Oil Fields

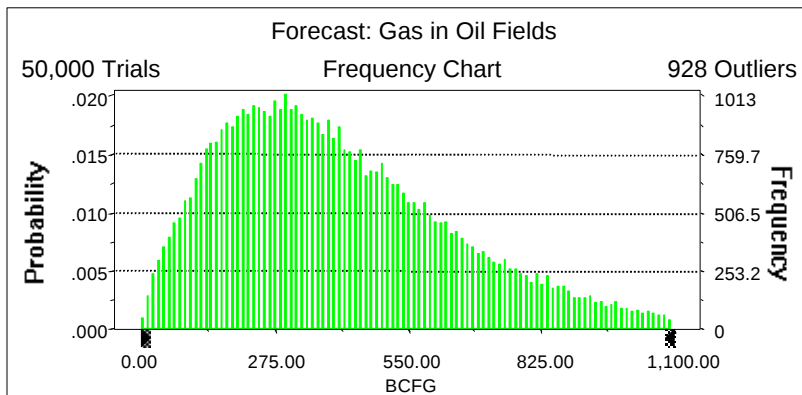
Summary:

Display range is from 0.00 to 1,100.00 BCFG

Entire range is from 1.51 to 1,994.71 BCFG

After 50,000 trials, the standard error of the mean is 1.16

Statistics:	Value
Trials	50000
Mean	421.55
Median	373.62
Mode	---
Standard Deviation	259.30
Variance	67,237.63
Skewness	1.05
Kurtosis	4.41
Coefficient of Variability	0.62
Range Minimum	1.51
Range Maximum	1,994.71
Range Width	1,993.19
Mean Standard Error	1.16



60210103
Late Cretaceous-Tertiary Nearshore Sandstones
Monte Carlo Results

Forecast: Gas in Oil Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	1.51
95%	89.04
90%	133.05
85%	167.70
80%	198.86
75%	228.34
70%	256.92
65%	285.86
60%	314.10
55%	343.15
50%	373.62
45%	405.65
40%	439.81
35%	478.41
30%	518.63
25%	565.48
20%	619.45
15%	684.36
10%	774.05
5%	913.67
0%	1,994.71

End of Forecast

60210103
Late Cretaceous-Tertiary Nearshore Sandstones
Monte Carlo Results

Forecast: NGL in Oil Fields

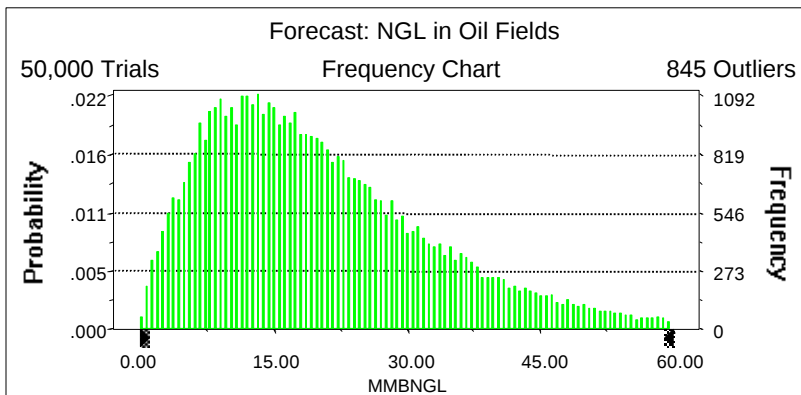
Summary:

Display range is from 0.00 to 60.00 MMBNGL

Entire range is from 0.08 to 128.13 MMBNGL

After 50,000 trials, the standard error of the mean is 0.06

Statistics:	Value
Trials	50000
Mean	21.06
Median	18.19
Mode	---
Standard Deviation	13.89
Variance	193.02
Skewness	1.30
Kurtosis	5.60
Coefficient of Variability	0.66
Range Minimum	0.08
Range Maximum	128.13
Range Width	128.05
Mean Standard Error	0.06



60210103
Late Cretaceous-Tertiary Nearshore Sandstones
Monte Carlo Results

Forecast: NGL in Oil Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBNGL</u>
100%	0.08
95%	4.14
90%	6.28
85%	7.94
80%	9.36
75%	10.85
70%	12.28
65%	13.69
60%	15.13
55%	16.65
50%	18.19
45%	19.86
40%	21.59
35%	23.50
30%	25.66
25%	28.16
20%	31.09
15%	34.75
10%	39.53
5%	47.56
0%	128.13

End of Forecast

60210103
Late Cretaceous-Tertiary Nearshore Sandstones
Monte Carlo Results

Forecast: Largest Oil Field

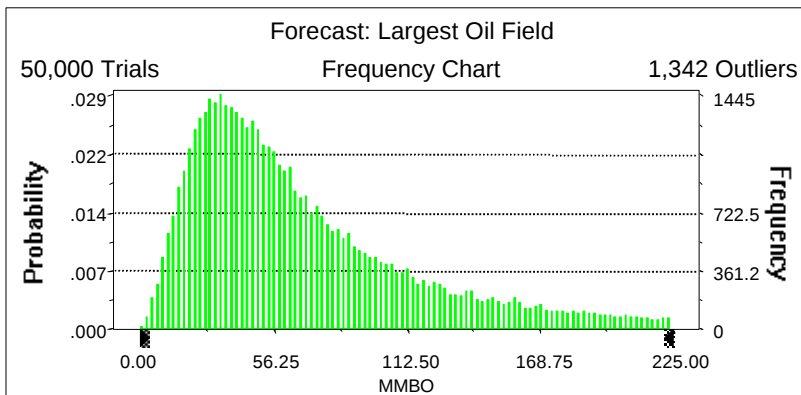
Summary:

Display range is from 0.00 to 225.00 MMBO

Entire range is from 1.28 to 299.91 MMBO

After 50,000 trials, the standard error of the mean is 0.24

Statistics:	Value
Trials	50000
Mean	73.04
Median	56.60
Mode	---
Standard Deviation	54.77
Variance	2,999.29
Skewness	1.56
Kurtosis	5.45
Coefficient of Variability	0.75
Range Minimum	1.28
Range Maximum	299.91
Range Width	298.63
Mean Standard Error	0.24



60210103
Late Cretaceous-Tertiary Nearshore Sandstones
Monte Carlo Results

Forecast: Largest Oil Field (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBO</u>
100%	1.28
95%	16.34
90%	21.99
85%	26.47
80%	30.57
75%	34.65
70%	38.65
65%	42.80
60%	47.20
55%	51.67
50%	56.60
45%	62.12
40%	68.30
35%	75.57
30%	84.09
25%	94.25
20%	107.11
15%	124.26
10%	149.47
5%	191.36
0%	299.91

End of Forecast

60210103
Late Cretaceous-Tertiary Nearshore Sandstones
Monte Carlo Results

Forecast: Gas in Gas Fields

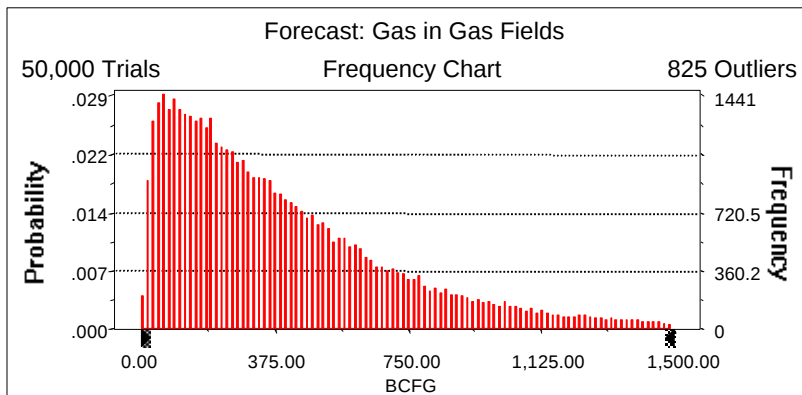
Summary:

Display range is from 0.00 to 1,500.00 BCFG

Entire range is from 6.38 to 3,591.14 BCFG

After 50,000 trials, the standard error of the mean is 1.59

Statistics:	Value
Trials	50000
Mean	417.09
Median	321.48
Mode	---
Standard Deviation	356.44
Variance	127,046.65
Skewness	1.69
Kurtosis	6.99
Coefficient of Variability	0.85
Range Minimum	6.38
Range Maximum	3,591.14
Range Width	3,584.76
Mean Standard Error	1.59



60210103
Late Cretaceous-Tertiary Nearshore Sandstones
Monte Carlo Results

Forecast: Gas in Gas Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	6.38
95%	46.17
90%	72.48
85%	99.76
80%	127.13
75%	156.29
70%	185.13
65%	214.93
60%	249.13
55%	283.95
50%	321.48
45%	361.86
40%	406.06
35%	454.59
30%	509.09
25%	572.77
20%	646.55
15%	746.46
10%	887.69
5%	1,126.63
0%	3,591.14

End of Forecast

60210103
Late Cretaceous-Tertiary Nearshore Sandstones
Monte Carlo Results

Forecast: NGL in Gas Fields

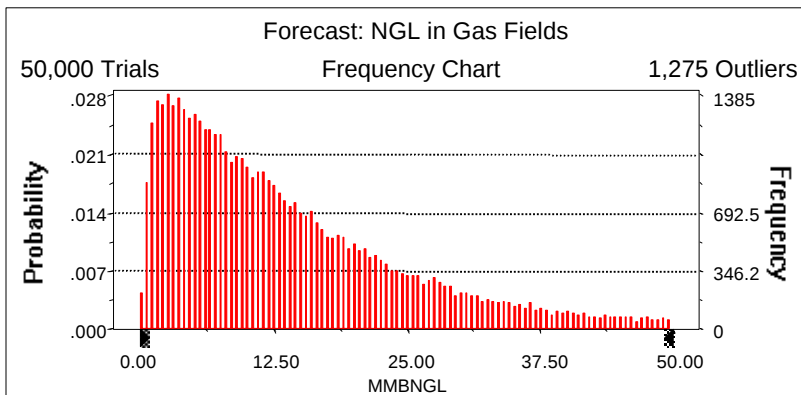
Summary:

Display range is from 0.00 to 50.00 MMBNGL

Entire range is from 0.13 to 134.87 MMBNGL

After 50,000 trials, the standard error of the mean is 0.06

Statistics:	Value
Trials	50000
Mean	14.87
Median	11.19
Mode	---
Standard Deviation	13.26
Variance	175.89
Skewness	1.88
Kurtosis	8.22
Coefficient of Variability	0.89
Range Minimum	0.13
Range Maximum	134.87
Range Width	134.74
Mean Standard Error	0.06



60210103
Late Cretaceous-Tertiary Nearshore Sandstones
Monte Carlo Results

Forecast: NGL in Gas Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBNGL</u>
100%	0.13
95%	1.57
90%	2.51
85%	3.42
80%	4.36
75%	5.35
70%	6.38
65%	7.45
60%	8.59
55%	9.85
50%	11.19
45%	12.56
40%	14.13
35%	15.90
30%	17.90
25%	20.25
20%	23.04
15%	26.82
10%	31.95
5%	41.40
0%	134.87

End of Forecast

60210103
Late Cretaceous-Tertiary Nearshore Sandstones
Monte Carlo Results

Forecast: Largest Gas Field

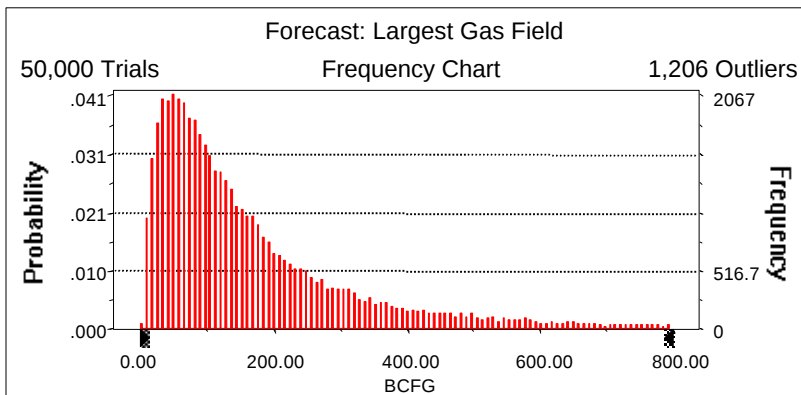
Summary:

Display range is from 0.00 to 800.00 BCFG

Entire range is from 6.38 to 1,499.12 BCFG

After 50,000 trials, the standard error of the mean is 0.90

Statistics:	Value
Trials	50000
Mean	187.84
Median	123.00
Mode	---
Standard Deviation	201.41
Variance	40,567.16
Skewness	2.66
Kurtosis	12.09
Coefficient of Variability	1.07
Range Minimum	6.38
Range Maximum	1,499.12
Range Width	1,492.74
Mean Standard Error	0.90



60210103
Late Cretaceous-Tertiary Nearshore Sandstones
Monte Carlo Results

Forecast: Largest Gas Field (cont'd)

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	6.38
95%	23.76
90%	34.58
85%	44.44
80%	54.14
75%	63.96
70%	74.17
65%	85.02
60%	96.44
55%	108.94
50%	123.00
45%	138.01
40%	155.89
35%	175.57
30%	199.36
25%	230.75
20%	270.56
15%	325.06
10%	416.19
5%	587.51
0%	1,499.12

End of Forecast

60210103
Late Cretaceous-Tertiary Nearshore Sandstones
Monte Carlo Results

Assumptions

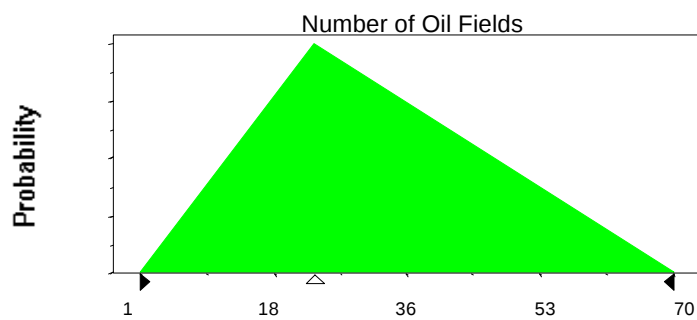
Assumption: Number of Oil Fields

Triangular distribution with parameters:

Minimum	1
Likeliest	24
Maximum	70

Selected range is from 1 to 70

Mean value in simulation was 31



Assumption: Sizes of Oil Fields

Lognormal distribution with parameters:

Mean	9.09	Shifted parameters	10.09
Standard Deviation	26.02		26.02

Selected range is from 0.00 to 299.00

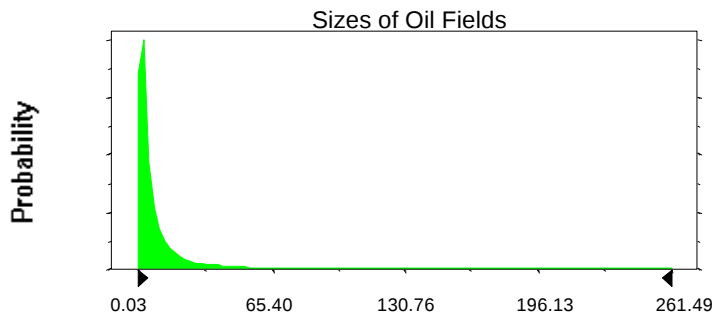
1.00 to 300.00

Mean value in simulation was 8.53

9.53

60210103
Late Cretaceous-Tertiary Nearshore Sandstones
Monte Carlo Results

Assumption: Sizes of Oil Fields (cont'd)



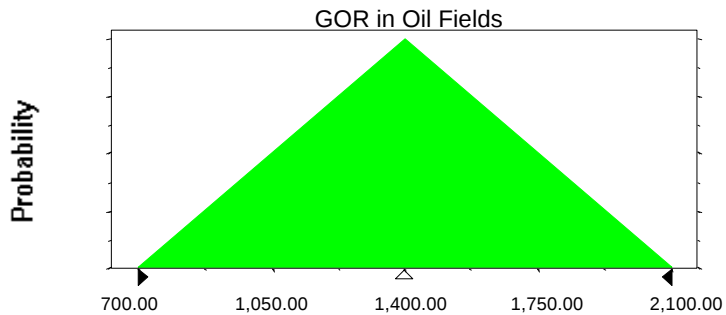
Assumption: GOR in Oil Fields

Triangular distribution with parameters:

Minimum	700.00
Likeliest	1,400.00
Maximum	2,100.00

Selected range is from 700.00 to 2,100.00

Mean value in simulation was 1,400.24



60210103
Late Cretaceous-Tertiary Nearshore Sandstones
Monte Carlo Results

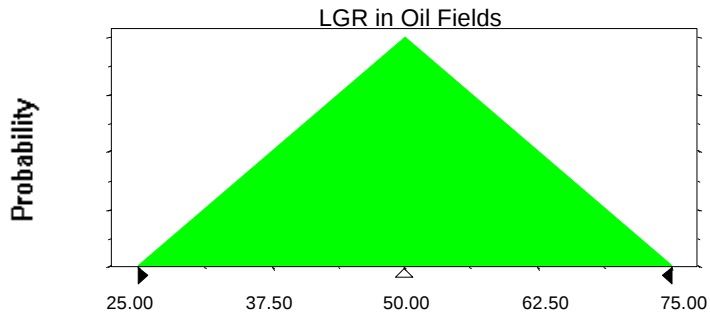
Assumption: LGR in Oil Fields

Triangular distribution with parameters:

Minimum	25.00
Likeliest	50.00
Maximum	75.00

Selected range is from 25.00 to 75.00

Mean value in simulation was 49.97



Assumption: Number of Gas Fields

Triangular distribution with parameters:

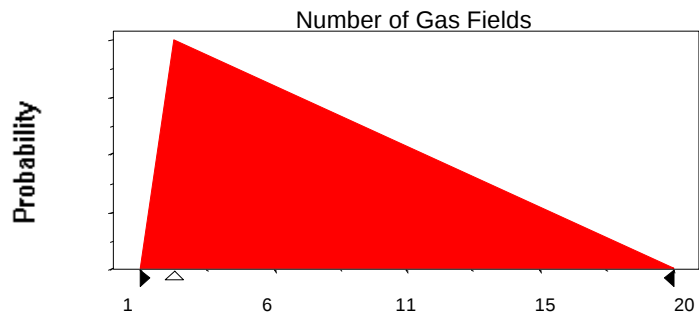
Minimum	1
Likeliest	2
Maximum	20

Selected range is from 1 to 20

Mean value in simulation was 8

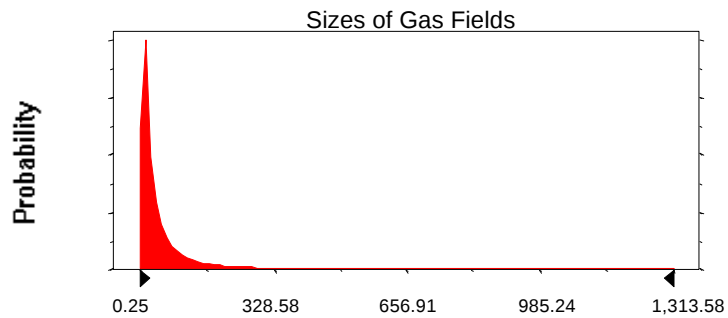
60210103
Late Cretaceous-Tertiary Nearshore Sandstones
Monte Carlo Results

Assumption: Number of Gas Fields (cont'd)



Assumption: Sizes of Gas Fields

Lognormal distribution with parameters:	Shifted parameters	
Mean	50.04	56.04
Standard Deviation	129.82	129.82
Selected range is from 0.00 to 1,494.00		
Mean value in simulation was 47.64		
	6.00 to 1,500.00	53.64



60210103
Late Cretaceous-Tertiary Nearshore Sandstones
Monte Carlo Results

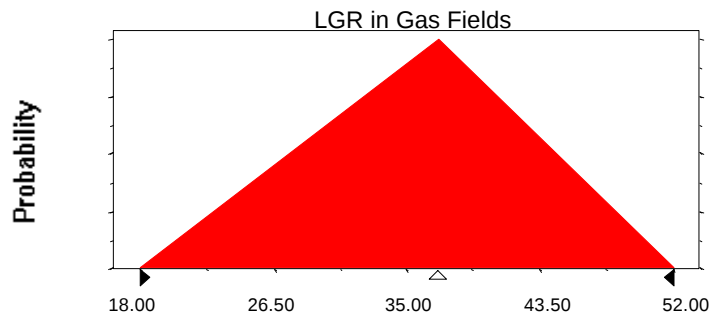
Assumption: LGR in Gas Fields

Triangular distribution with parameters:

Minimum	18.00
Likeliest	37.06
Maximum	52.00

Selected range is from 18.00 to 52.00

Mean value in simulation was 35.65



End of Assumptions

Simulation started on 11/1/99 at 15:37:23

Simulation stopped on 11/1/99 at 16:02:56