## Sunda/Asri, Assessment Unit 38240101
## 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 | 1.00 | 170 | 435 | 839 | 462 | 94 | 255 | 536 | 277 | 2 | 6 | 14 | 7 | 28 | 75 | 214 | 91 |
| Gas Fields | 6 | | | | | | 139 | 528 | 1,299 | 597 | 3 | 10 | 27 | 12 | 44 | 142 | 479 | 184 |
| Total | | 1.00 | 170 | 435 | 839 | 462 | 233 | 783 | 1,835 | 874 | 5 | 16 | 41 | 19 | | | | |

**Forecast: Oil in Oil Fields**

Summary:

    Display range is from 0.00 to 1,000.00 MMBO

    Entire range is from 42.65 to 1,793.27 MMBO

    After 50,000 trials, the standard error of the mean is 0.92

| Statistics: | Value |
|---|---|
| Trials | 50000 |
| Mean | 462.12 |
| Median | 435.29 |
| Mode | --- |
| Standard Deviation | 206.11 |
| Variance | 42,481.34 |
| Skewness | 0.68 |
| Kurtosis | 3.44 |
| Coefficient of Variability | 0.45 |
| Range Minimum | 42.65 |
| Range Maximum | 1,793.27 |
| Range Width | 1,750.63 |
| Mean Standard Error | 0.92 |
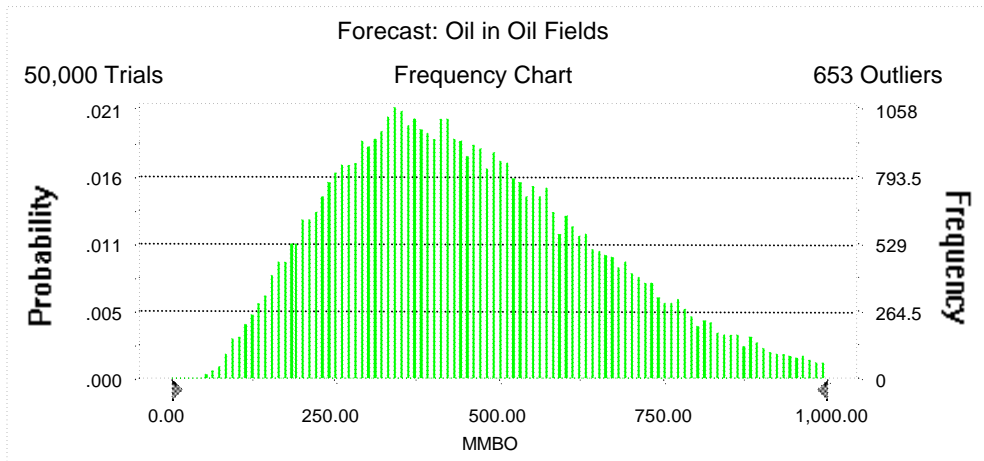


Forecast: Oil in Oil Fields

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

Percentiles:

| Percentile | MMBO |
|---|---|
| 100% | 42.65 |
| 95% | 170.12 |
| 90% | 216.29 |
| 85% | 251.44 |
| 80% | 281.56 |
| 75% | 309.48 |
| 70% | 335.24 |
| 65% | 359.14 |
| 60% | 383.88 |
| 55% | 410.28 |
| 50% | 435.29 |
| 45% | 462.76 |
| 40% | 491.31 |
| 35% | 520.51 |
| 30% | 553.58 |
| 25% | 588.82 |
| 20% | 631.17 |
| 15% | 680.84 |
| 10% | 742.51 |
| 5% | 839.43 |
| 0% | 1,793.27 |

End of Forecast

**Forecast:  Gas in Oil Fields**

Summary:

Display range is from 0.00 to 700.00 BCFG
Entire range is from 18.71 to 1,147.58 BCFG
After 50,000 trials, the standard error of the mean is 0.62

| Statistics: | Value |
| --- | --- |
| Trials | 50000 |
| Mean | 277.45 |
| Median | 254.92 |
| Mode | --- |
| Standard Deviation | 137.77 |
| Variance | 18,979.87 |
| Skewness | 0.93 |
| Kurtosis | 4.11 |
| Coefficient of Variability | 0.50 |
| Range Minimum | 18.71 |
| Range Maximum | 1,147.58 |
| Range Width | 1,128.86 |
| Mean Standard Error | 0.62 |
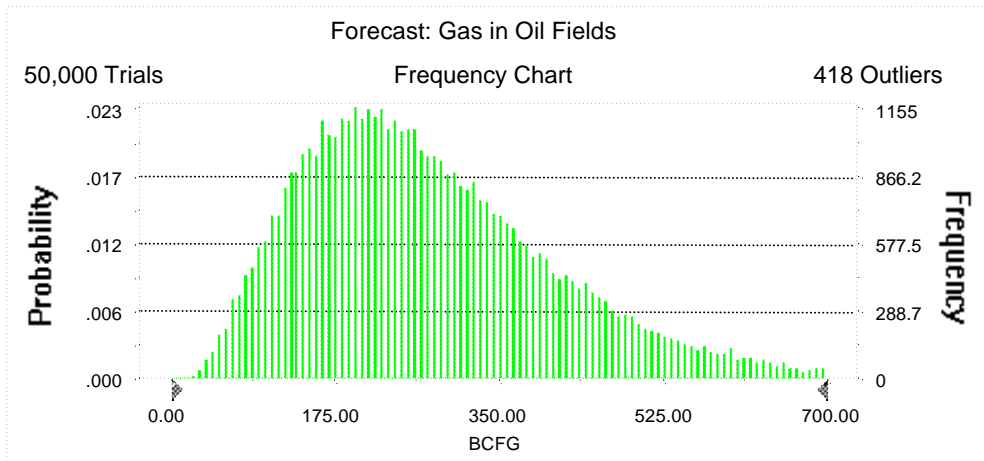


Forecast: Gas in Oil Fields

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

Percentiles:

| Percentile | BCFG |
|---|---|
| 100% | 18.71 |
| 95% | 94.22 |
| 90% | 120.67 |
| 85% | 140.96 |
| 80% | 159.12 |
| 75% | 175.59 |
| 70% | 191.79 |
| 65% | 207.24 |
| 60% | 222.94 |
| 55% | 238.50 |
| 50% | 254.92 |
| 45% | 271.78 |
| 40% | 290.13 |
| 35% | 309.91 |
| 30% | 331.45 |
| 25% | 355.62 |
| 20% | 383.64 |
| 15% | 419.47 |
| 10% | 464.07 |
| 5% | 536.45 |
| 0% | 1,147.58 |

End of Forecast

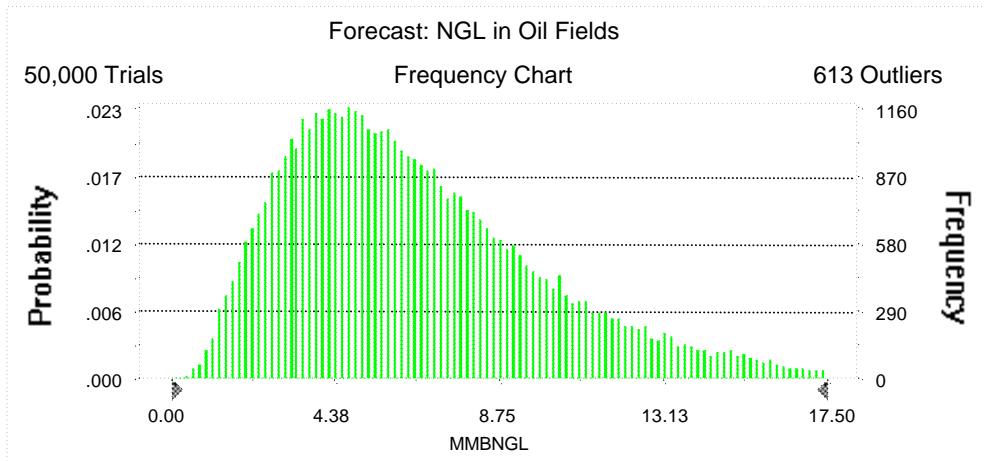**Forecast:  NGL in Oil Fields**

Summary:
Display range is from 0.00 to 17.50 MMBNGL
Entire range is from 0.37 to 35.66 MMBNGL
After 50,000 trials, the standard error of the mean is 0.02

| Statistics: | Value |
|---|---|
| Trials | 50000 |
| Mean | 6.65 |
| Median | 5.95 |
| Mode | --- |
| Standard Deviation | 3.64 |
| Variance | 13.27 |
| Skewness | 1.17 |
| Kurtosis | 5.11 |
| Coefficient of Variability | 0.55 |
| Range Minimum | 0.37 |
| Range Maximum | 35.66 |
| Range Width | 35.29 |
| Mean Standard Error | 0.02 |

Forecast: NGL in Oil Fields

50,000 Trials      Frequency Chart      613 Outliers

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

Percentiles:

| Percentile | MMBNGL |
|---|---|
| 100% | 0.37 |
| 95% | 2.07 |
| 90% | 2.69 |
| 85% | 3.16 |
| 80% | 3.59 |
| 75% | 3.99 |
| 70% | 4.37 |
| 65% | 4.76 |
| 60% | 5.13 |
| 55% | 5.54 |
| 50% | 5.95 |
| 45% | 6.40 |
| 40% | 6.87 |
| 35% | 7.37 |
| 30% | 7.93 |
| 25% | 8.56 |
| 20% | 9.31 |
| 15% | 10.28 |
| 10% | 11.56 |
| 5% | 13.62 |
| 0% | 35.66 |

End of Forecast

**Forecast: Largest Oil Field**

Summary:
    Display range is from 0.00 to 250.00 MMBO
    Entire range is from 5.86 to 299.99 MMBO
    After 50,000 trials, the standard error of the mean is 0.25

| Statistics: | Value |
|---|---|
| Trials | 50000 |
| Mean | 91.08 |
| Median | 75.26 |
| Mode | --- |
| Standard Deviation | 56.96 |
| Variance | 3,244.60 |
| Skewness | 1.30 |
| Kurtosis | 4.41 |
| Coefficient of Variability | 0.63 |
| Range Minimum | 5.86 |
| Range Maximum | 299.99 |
| Range Width | 294.12 |
| Mean Standard Error | 0.25 |

Forecast: Largest Oil Field

50,000 Trials      Frequency Chart      1,134 Outliers
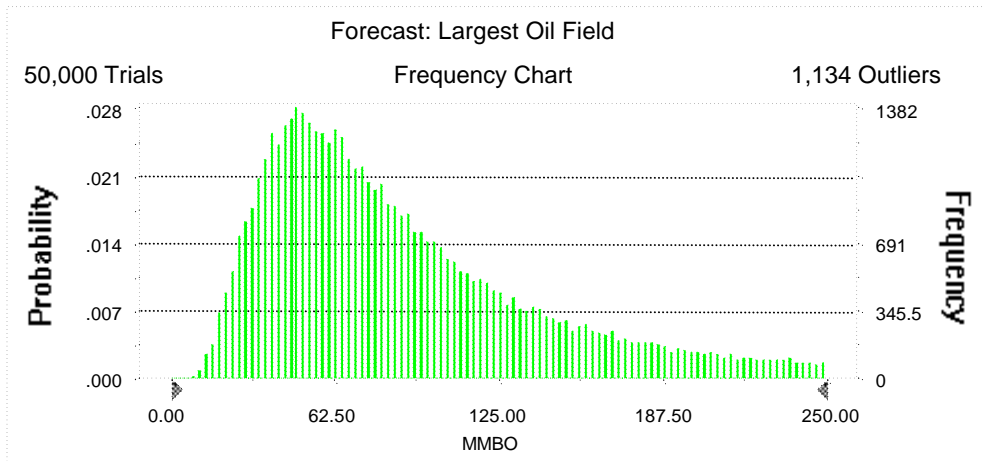
**Forecast:  Largest Oil Field  (cont'd)**

Percentiles:

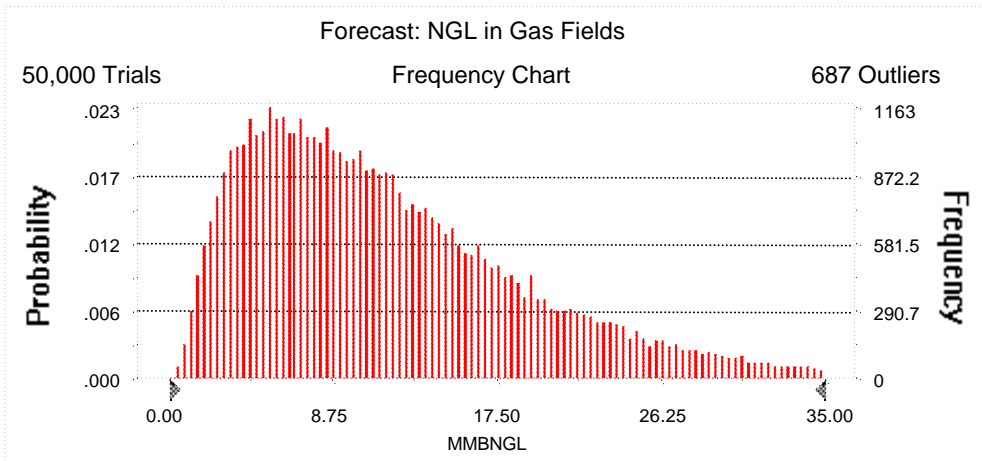| Percentile | MMBO |
|---|---|
| 100% | 5.86 |
| 95% | 27.78 |
| 90% | 34.75 |
| 85% | 40.00 |
| 80% | 45.02 |
| 75% | 49.63 |
| 70% | 54.38 |
| 65% | 59.19 |
| 60% | 64.26 |
| 55% | 69.50 |
| 50% | 75.26 |
| 45% | 81.59 |
| 40% | 88.56 |
| 35% | 96.48 |
| 30% | 105.47 |
| 25% | 116.59 |
| 20% | 130.37 |
| 15% | 148.21 |
| 10% | 173.15 |
| 5% | 213.64 |
| 0% | 299.99 |

End of Forecast

**Forecast: Gas in Gas Fields**

Summary:
Display range is from 0.00 to 1,750.00 BCFG
Entire range is from 16.38 to 3,065.54 BCFG
After 50,000 trials, the standard error of the mean is 1.64

| Statistics: | Value |
| --- | --- |
| Trials | 50000 |
| Mean | 596.79 |
| Median | 527.78 |
| Mode | --- |
| Standard Deviation | 367.15 |
| Variance | 134,797.42 |
| Skewness | 1.02 |
| Kurtosis | 4.17 |
| Coefficient of Variability | 0.62 |
| Range Minimum | 16.38 |
| Range Maximum | 3,065.54 |
| Range Width | 3,049.17 |
| Mean Standard Error | 1.64 |
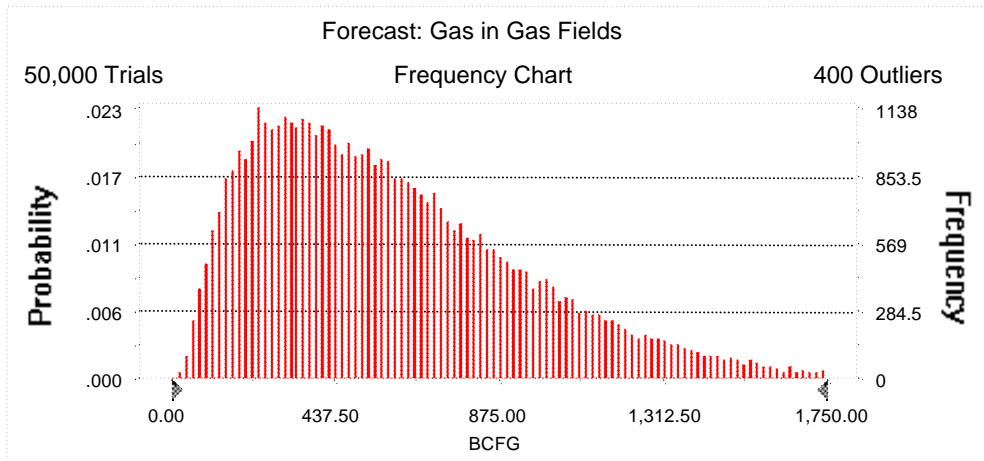


Forecast: Gas in Gas Fields

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

Percentiles:

| Percentile | BCFG |
|---|---|
| 100% | 16.38 |
| 95% | 138.73 |
| 90% | 187.98 |
| 85% | 232.56 |
| 80% | 273.11 |
| 75% | 313.05 |
| 70% | 353.98 |
| 65% | 395.09 |
| 60% | 436.87 |
| 55% | 481.64 |
| 50% | 527.78 |
| 45% | 575.09 |
| 40% | 624.87 |
| 35% | 678.69 |
| 30% | 737.59 |
| 25% | 806.66 |
| 20% | 883.69 |
| 15% | 980.95 |
| 10% | 1,103.00 |
| 5% | 1,298.92 |
| 0% | 3,065.54 |

End of Forecast

**Forecast: NGL in Gas Fields**

Summary:
Display range is from 0.00 to 35.00 MMBNGL
Entire range is from 0.25 to 86.54 MMBNGL
After 50,000 trials, the standard error of the mean is 0.04

| Statistics: | Value |
|---|---|
| Trials | 50000 |
| Mean | 11.93 |
| Median | 10.24 |
| Mode | --- |
| Standard Deviation | 7.89 |
| Variance | 62.19 |
| Skewness | 1.27 |
| Kurtosis | 5.32 |
| Coefficient of Variability | 0.66 |
| Range Minimum | 0.25 |
| Range Maximum | 86.54 |
| Range Width | 86.29 |
| Mean Standard Error | 0.04 |



Forecast: NGL in Gas Fields

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

Percentiles:

| Percentile | MMBNGL |
|---|---|
| 100% | 0.25 |
| 95% | 2.60 |
| 90% | 3.55 |
| 85% | 4.40 |
| 80% | 5.22 |
| 75% | 6.00 |
| 70% | 6.79 |
| 65% | 7.62 |
| 60% | 8.46 |
| 55% | 9.33 |
| 50% | 10.24 |
| 45% | 11.20 |
| 40% | 12.19 |
| 35% | 13.33 |
| 30% | 14.57 |
| 25% | 15.99 |
| 20% | 17.68 |
| 15% | 19.77 |
| 10% | 22.69 |
| 5% | 27.21 |
| 0% | 86.54 |

End of Forecast

**Forecast:  Largest Gas Field**

Summary:
    Display range is from 0.00 to 600.00 BCFG
    Entire range is from 8.71 to 899.28 BCFG
    After 50,000 trials, the standard error of the mean is 0.63

| Statistics: | Value |
|---|---|
| Trials | 50000 |
| Mean | 184.10 |
| Median | 141.96 |
| Mode | --- |
| Standard Deviation | 141.89 |
| Variance | 20,132.40 |
| Skewness | 1.89 |
| Kurtosis | 7.29 |
| Coefficient of Variability | 0.77 |
| Range Minimum | 8.71 |
| Range Maximum | 899.28 |
| Range Width | 890.56 |
| Mean Standard Error | 0.63 |



Forecast: Largest Gas Field

50,000 Trials          Frequency Chart          1,204 Outliers
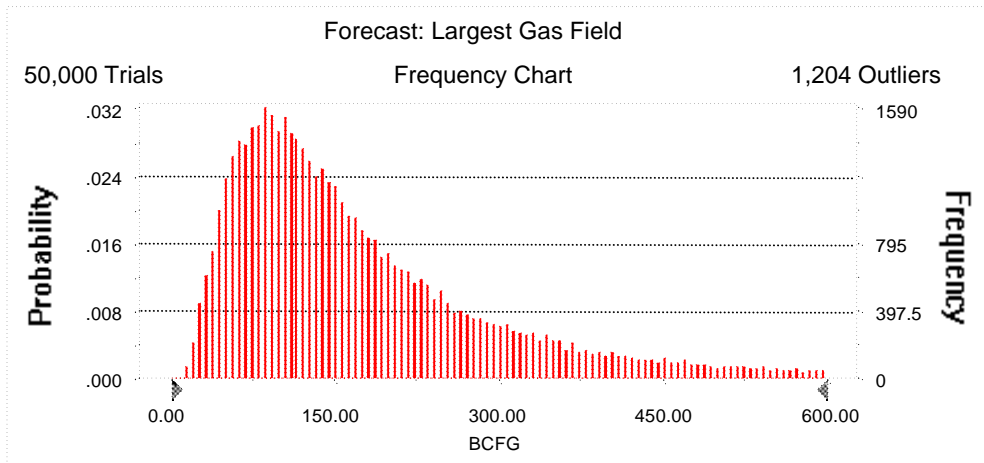
**Forecast:  Largest Gas Field  (cont'd)**

Percentiles:

| Percentile | BCFG |
|---|---|
| 100% | 8.71 |
| 95% | 44.34 |
| 90% | 57.29 |
| 85% | 68.28 |
| 80% | 78.56 |
| 75% | 88.32 |
| 70% | 98.00 |
| 65% | 108.10 |
| 60% | 118.56 |
| 55% | 129.81 |
| 50% | 141.96 |
| 45% | 155.05 |
| 40% | 170.20 |
| 35% | 187.25 |
| 30% | 207.80 |
| 25% | 232.26 |
| 20% | 263.18 |
| 15% | 305.92 |
| 10% | 365.12 |
| 5% | 479.17 |
| 0% | 899.28 |

End of Forecast

## Assumptions

**Assumption:  Number of Oil Fields**

Triangular distribution with parameters:
| | |
|---|---|
| Minimum | 10 |
| Likeliest | 34 |
| Maximum | 80 |

Selected range is from 10 to 80
Mean value in simulation was 41



Number of Oil Fields
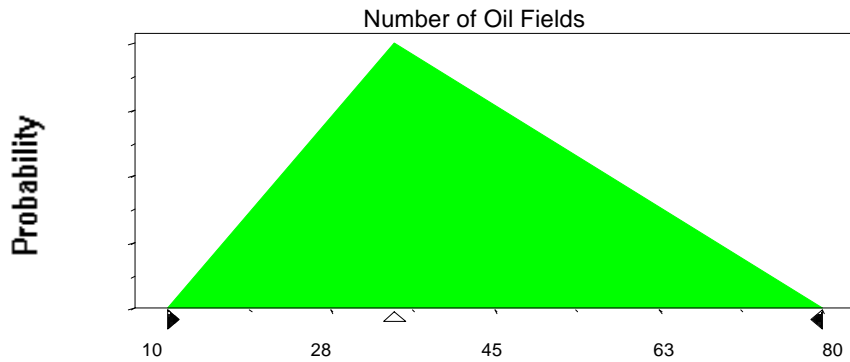
**Assumption:  Sizes of Oil Fields**

| Lognormal distribution with parameters: | | Shifted parameters | |
|---|---|---|---|
| Mean | 10.60 | | 11.6 |
| 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 10.11 | | | 11.11 |

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

Sizes of Oil Fields



| 0.06 | 65.97 | 131.88 | 197.79 | 263.69 |
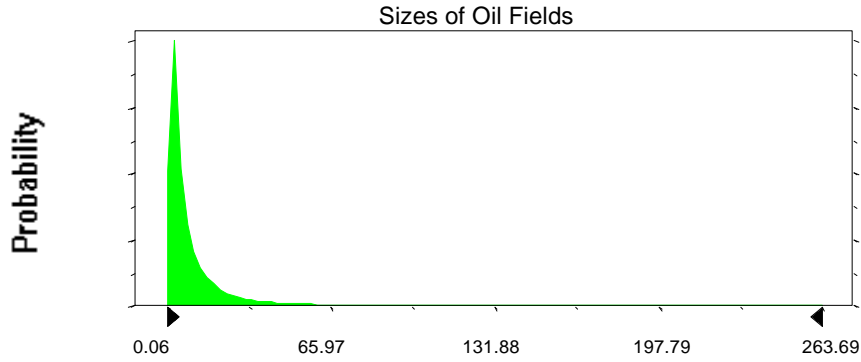
**Assumption: GOR in Oil Fields**

Triangular distribution with parameters:

| | |
|---|---|
| Minimum | 300.00 |
| Likeliest | 600.00 |
| Maximum | 900.00 |

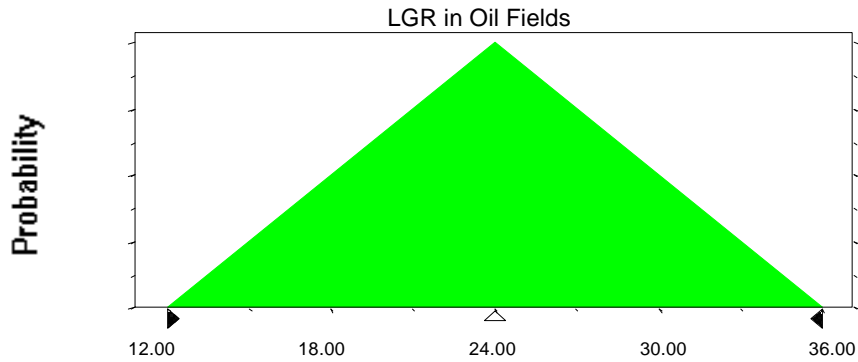Selected range is from 300.00 to 900.00
Mean value in simulation was 600.68

GOR in Oil Fields



| 300.00 | 450.00 | 600.00 | 750.00 | 900.00 |
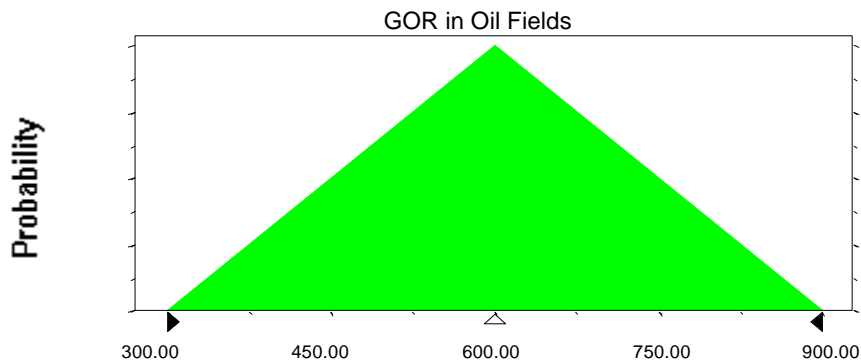
**Assumption:  LGR in Oil Fields**

Triangular distribution with parameters:
| | |
|---|---|
| Minimum | 12.00 |
| Likeliest | 24.00 |
| Maximum | 36.00 |

Selected range is from 12.00 to 36.00
Mean value in simulation was 23.96

LGR in Oil Fields



**Assumption:  Number of Gas Fields**

Triangular distribution with parameters:
| | |
|---|---|
| Minimum | 2 |
| Likeliest | 7 |
| Maximum | 30 |

Selected range is from 2 to 30
Mean value in simulation was 13

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

Number of Gas Fields
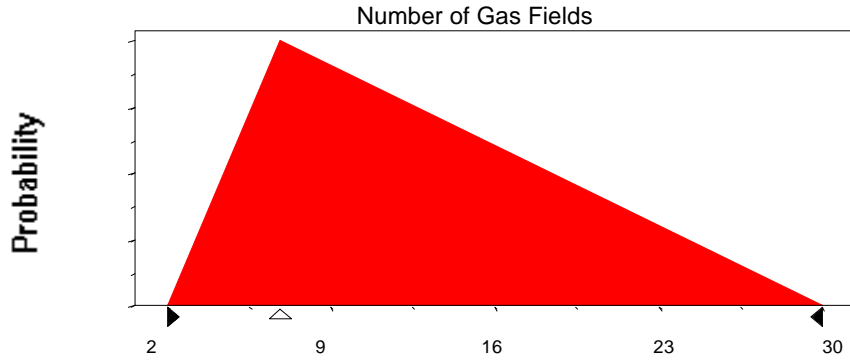


**Assumption:  Sizes of Gas Fields**

| Lognormal distribution with parameters: | | Shifted parameters | |
|---|---|---|---|
| Mean | 41.31 | | 47.31 |
| Standard Deviation | 79.76 | | 79.76 |

Selected range is from 0.00 to 894.00          6.00 to 900.00
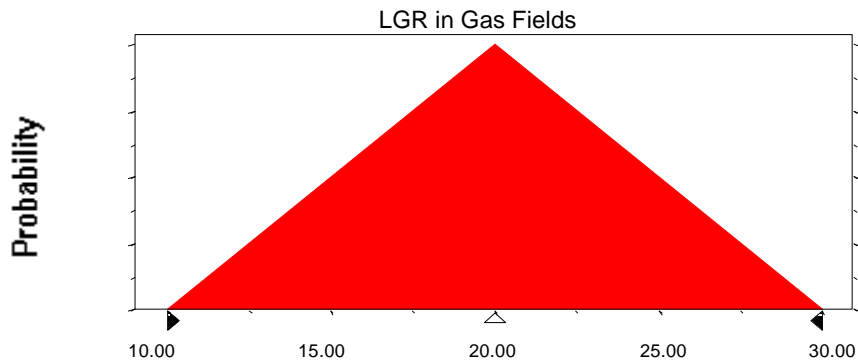Mean value in simulation was 40.04                       46.04
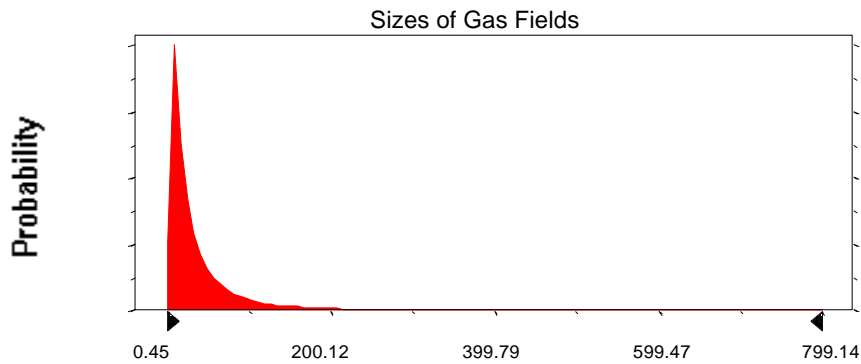
Sizes of Gas Fields

**Assumption:  LGR in Gas Fields**

Triangular distribution with parameters:
| | |
|---|---|
| Minimum | 10.00 |
| Likeliest | 20.00 |
| Maximum | 30.00 |

Selected range is from 10.00 to 30.00
Mean value in simulation was 20.00

LGR in Gas Fields



End of Assumptions

Simulation started on 5/28/99 at 15:51:56
Simulation stopped on 5/28/99 at 16:21:32