

Crystal Ball Report - Custom

Simulation started on 7/8/2010 at 21:51:57
Simulation stopped on 7/8/2010 at 21:52:22

Run preferences:

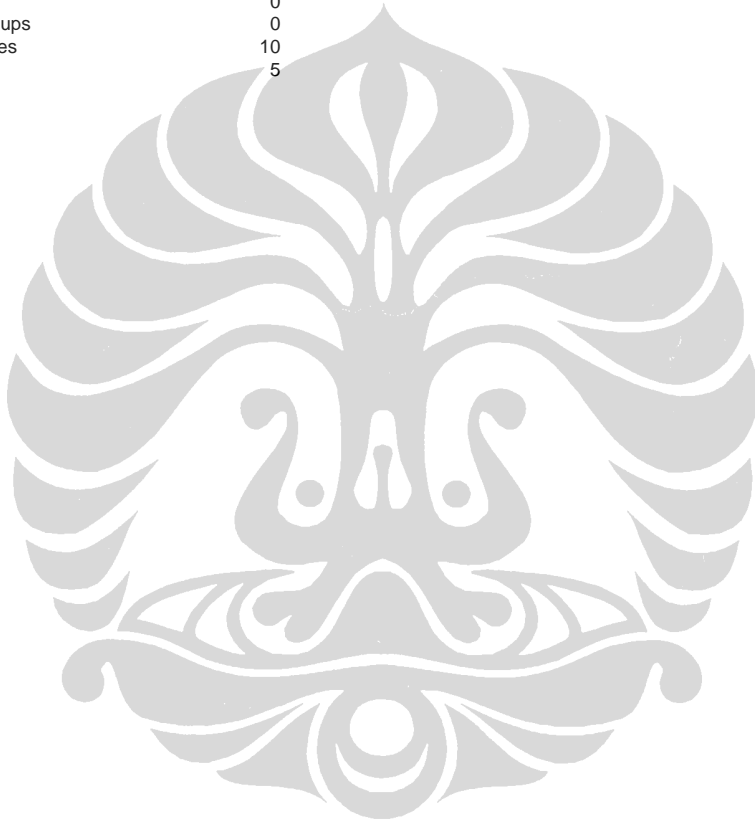
Number of trials run	100.000
Extreme speed	
Monte Carlo	
Random seed	

Run statistics:

Total running time (sec)	23,11
Trials/second (average)	4.327
Random numbers per sec	86.539

Crystal Ball data:

Assumptions	20
Correlations	0
Correlated groups	0
Decision variables	10
Forecasts	5



Forecasts

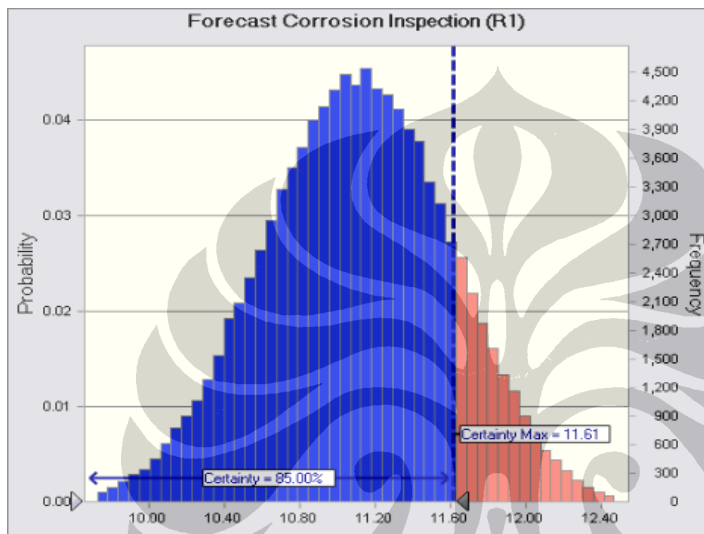
Worksheet: [cb3.xlsx]Sheet1

Forecast: Forecast Corrosion Inspection (R1)

Cell: D47

Summary:

Certainty level is 85.000%
 Certainty range is from 0.00 to 11.61
 Entire range is from 9.26 to 12.78
 Base case is 11.67
 After 100,000 trials, the std. error of the mean is 0.00



Forecast: Forecast Corrosion Inspection (R1) (cont'd)

Cell: D47

Statistics:		Forecast values
Trials		100.000
Mean		11,10
Median		11,10
Mode		---
Standard Deviation		0,49
Variance		0,24
Skewness		-0,0803
Kurtosis		2,81
Coeff. of Variability		0,0442
Minimum		9,26
Maximum		12,78
Range Width		3,52
Mean Std. Error		0,00

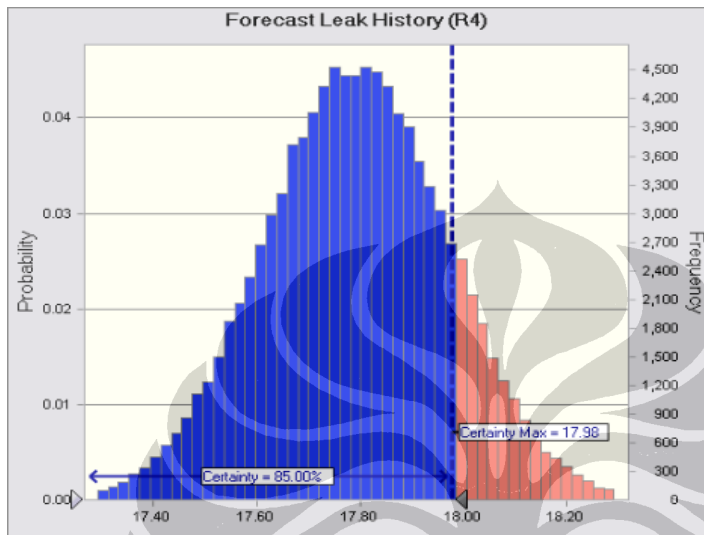
Percentiles:		Forecast values
0%		9,26
10%		10,46
20%		10,68
30%		10,84
40%		10,98
50%		11,10
60%		11,23
70%		11,37
80%		11,52
90%		11,73
100%		12,78

Forecast: Forecast Leak History (R4)

Cell: D73

Summary:

Certainty level is 85.000%
 Certainty range is from 0.00 to 17.98
 Entire range is from 16.93 to 18.63
 Base case is 17.79
 After 100,000 trials, the std. error of the mean is 0.00



Forecast: Forecast Leak History (R4) (cont'd)

Cell: D73

Statistics:	Forecast values
Trials	100.000
Mean	17,79
Median	17,79
Mode	---
Standard Deviation	0,18
Variance	0,03
Skewness	-0,0104
Kurtosis	2,98
Coeff. of Variability	0,0100
Minimum	16,93
Maximum	18,63
Range Width	1,69
Mean Std. Error	0,00

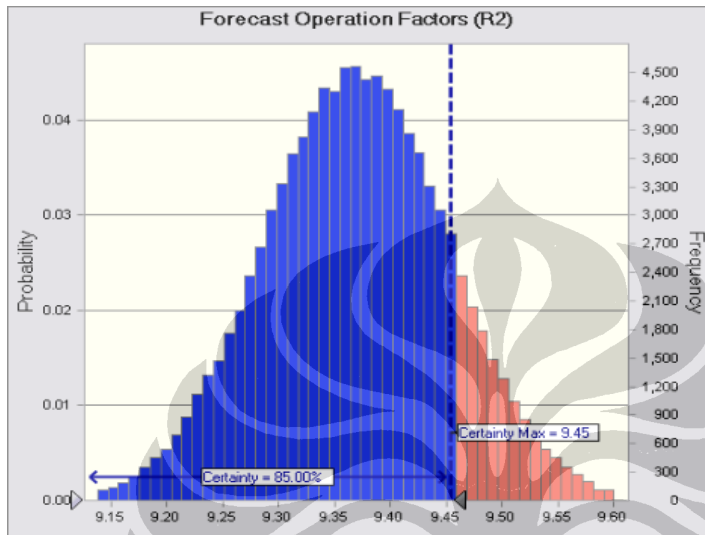
Percentiles:	Forecast values
0%	16,93
10%	17,56
20%	17,64
30%	17,70
40%	17,75
50%	17,79
60%	17,84
70%	17,89
80%	17,94
90%	18,02
100%	18,63

Forecast: Forecast Operation Factors (R2)

Cell: D55

Summary:

Certainty level is 85.000%
 Certainty range is from 0.00 to 9.45
 Entire range is from 9.00 to 9.72
 Base case is 11.71
 After 100,000 trials, the std. error of the mean is 0.00



Forecast: Forecast Operation Factors (R2) (cont'd)

Cell: D55

Statistics:	Forecast values
Trials	100.000
Mean	9,37
Median	9,37
Mode	---
Standard Deviation	0,08
Variance	0,01
Skewness	-0,0039
Kurtosis	2,99
Coeff. of Variability	0,0088
Minimum	9,00
Maximum	9,72
Range Width	0,71
Mean Std. Error	0,00

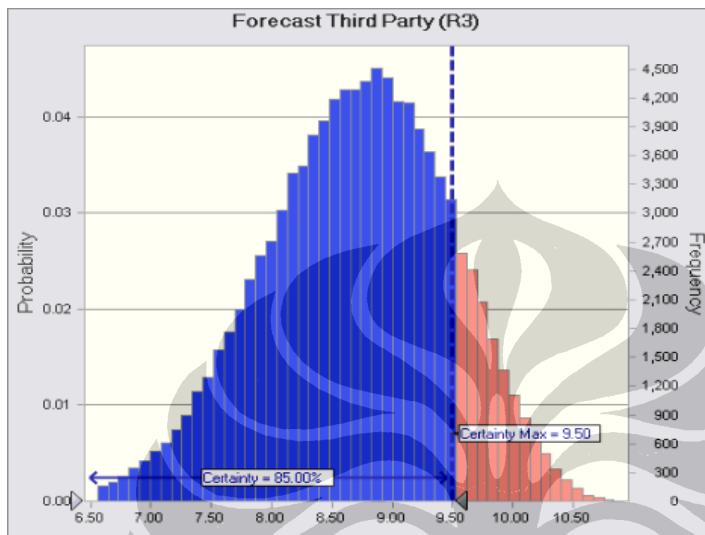
Percentiles:	Forecast values
0%	9,00
10%	9,26
20%	9,30
30%	9,33
40%	9,35
50%	9,37
60%	9,39
70%	9,41
80%	9,44
90%	9,47
100%	9,72

Forecast: Forecast Third Party (R3)

Cell: D64

Summary:

Certainty level is 85.000%
 Certainty range is from 0.00 to 9.50
 Entire range is from 5.66 to 11.01
 Base case is 10.14
 After 100,000 trials, the std. error of the mean is 0.00



Forecast: Forecast Third Party (R3) (cont'd)

Cell: D64

Statistics:	Forecast values
Trials	100.000
Mean	8,70
Median	8,73
Mode	---
Standard Deviation	0,76
Variance	0,59
Skewness	-0,2421
Kurtosis	2,80
Coeff. of Variability	0,0879
Minimum	5,66
Maximum	11,01
Range Width	5,35
Mean Std. Error	0,00

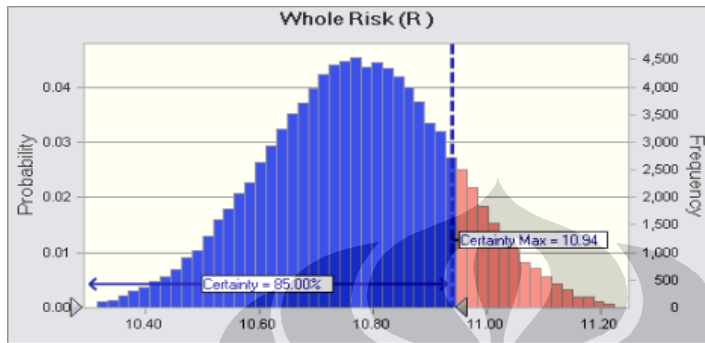
Percentiles:	Forecast values
0%	5,66
10%	7,68
20%	8,05
30%	8,31
40%	8,53
50%	8,73
60%	8,93
70%	9,14
80%	9,37
90%	9,67
100%	11,01

Forecast: Whole Risk (R)

Cell: D77

Summary:

Certainty level is 85.000%
 Certainty range is from 0.00 to 10.94
 Entire range is from 10.01 to 11.38
 Base case is 12.27
 After 100,000 trials, the std. error of the mean is 0.00



Statistics:	Forecast values
Trials	100,000
Mean	10,77
Median	10,77
Mode	---
Standard Deviation	0,16
Variance	0,03
Skewness	-0,0945
Kurtosis	2,93
Coeff. of Variability	0,0151
Minimum	10,01
Maximum	11,38
Range Width	1,36
Mean Std. Error	0,00

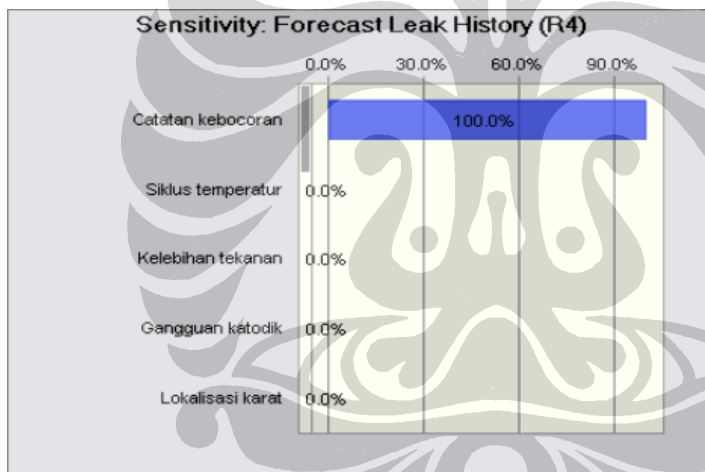
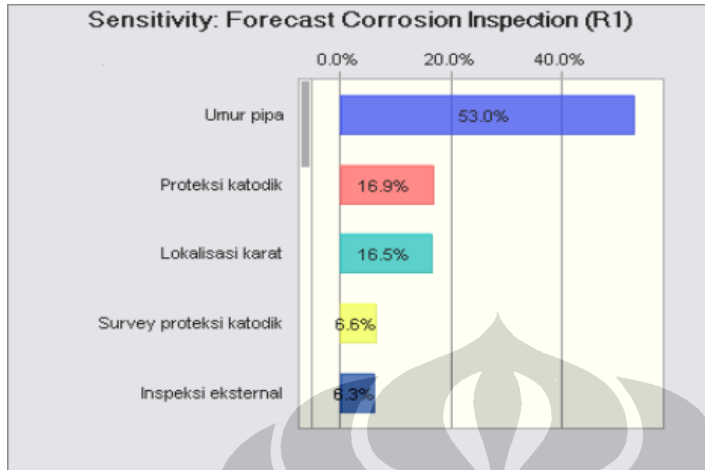
Forecast: Whole Risk (R) (cont'd)

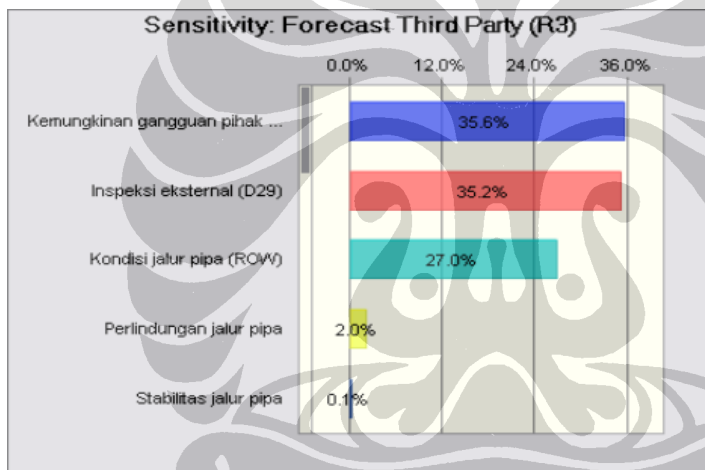
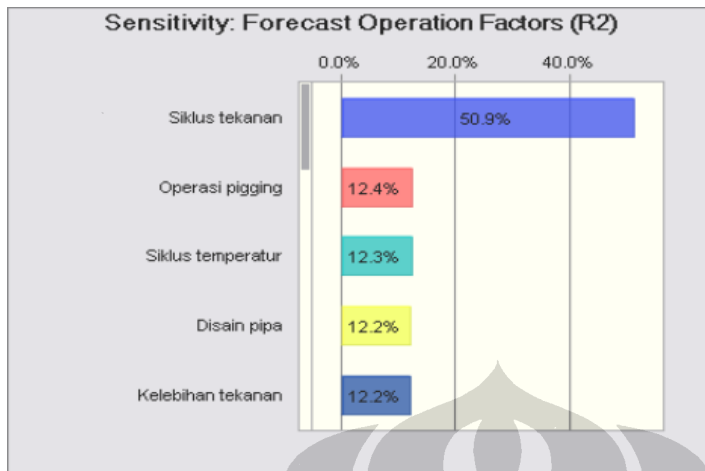
Cell: D77

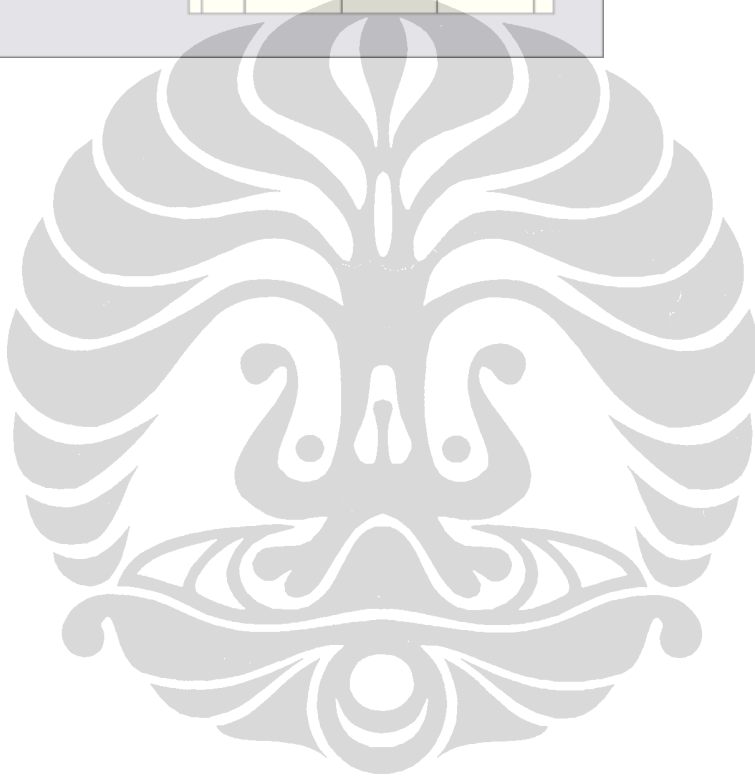
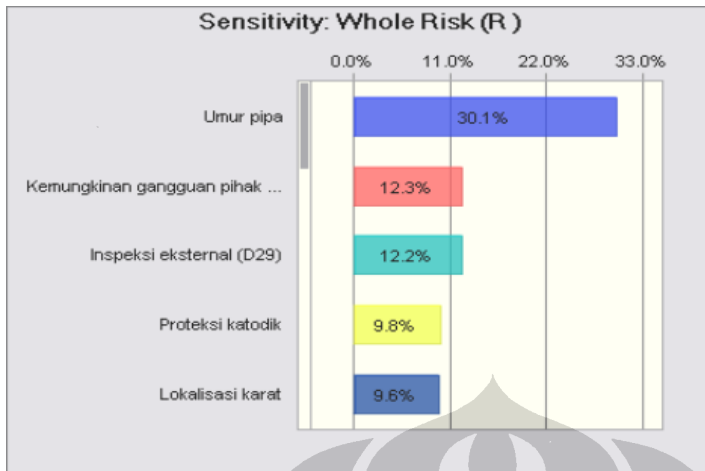
Percentiles:	Forecast values
0%	10,01
10%	10,56
20%	10,63
30%	10,69
40%	10,73
50%	10,77
60%	10,81
70%	10,86
80%	10,91
90%	10,98
100%	11,38

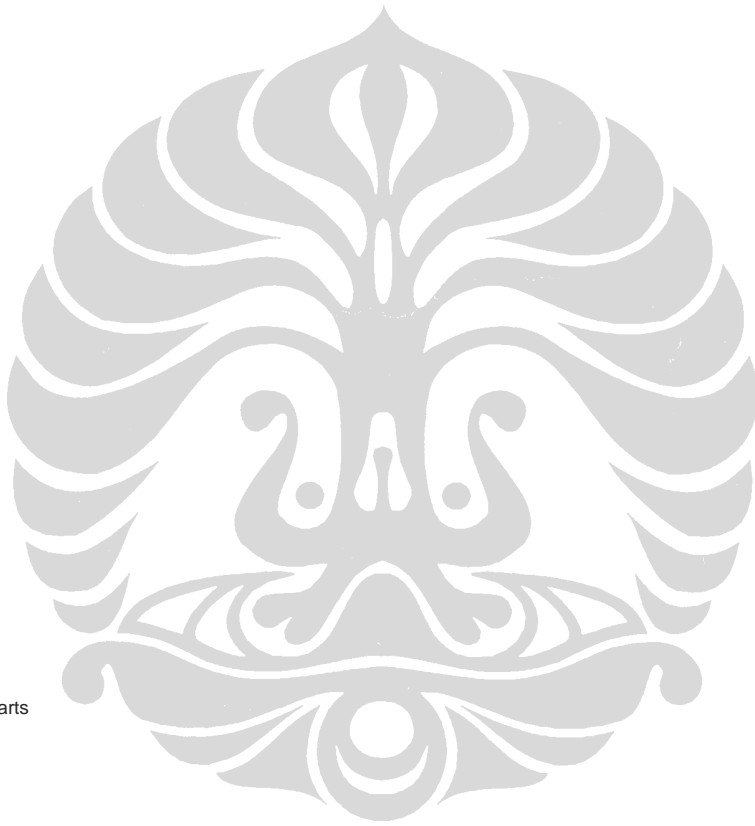
End of Forecasts

Sensitivity Charts









End of Sensitivity Charts

Crystal Ball Report - Custom

Simulation started on 7/6/2010 at 6:28:01
Simulation stopped on 7/6/2010 at 6:29:21

Run preferences:

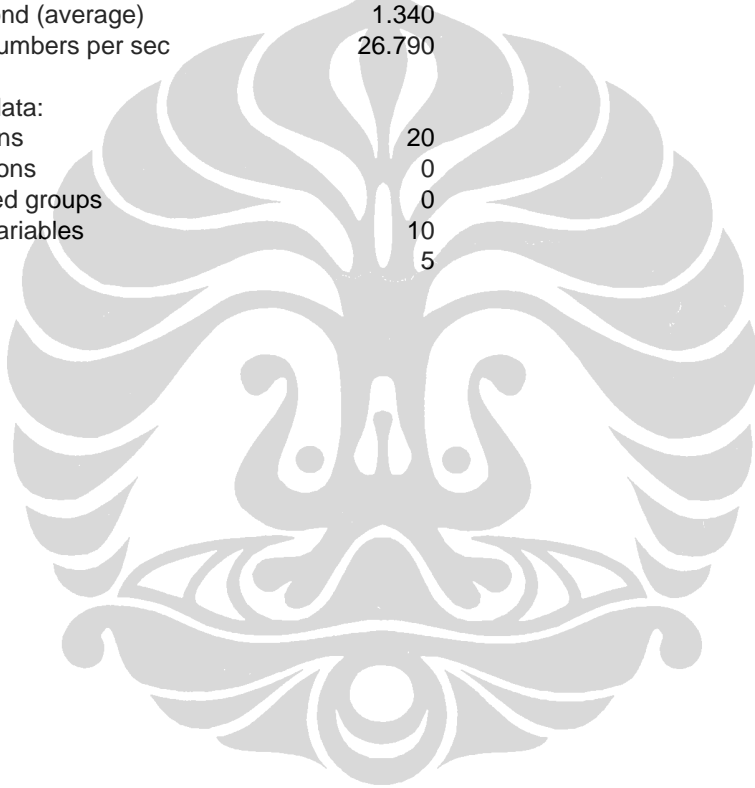
Number of trials run	100.000
Extreme speed	
Monte Carlo	
Random seed	
Precision control on	
Confidence level	95,00%

Run statistics:

Total running time (sec)	74,65
Trials/second (average)	1.340
Random numbers per sec	26.790

Crystal Ball data:

Assumptions	20
Correlations	0
Correlated groups	0
Decision variables	10
Forecasts	5



Forecasts

Worksheet: [cb2.xlsx]Sheet1

Forecast: Forecast Corrosion Inspection (R1)

Cell: D47

Summary:

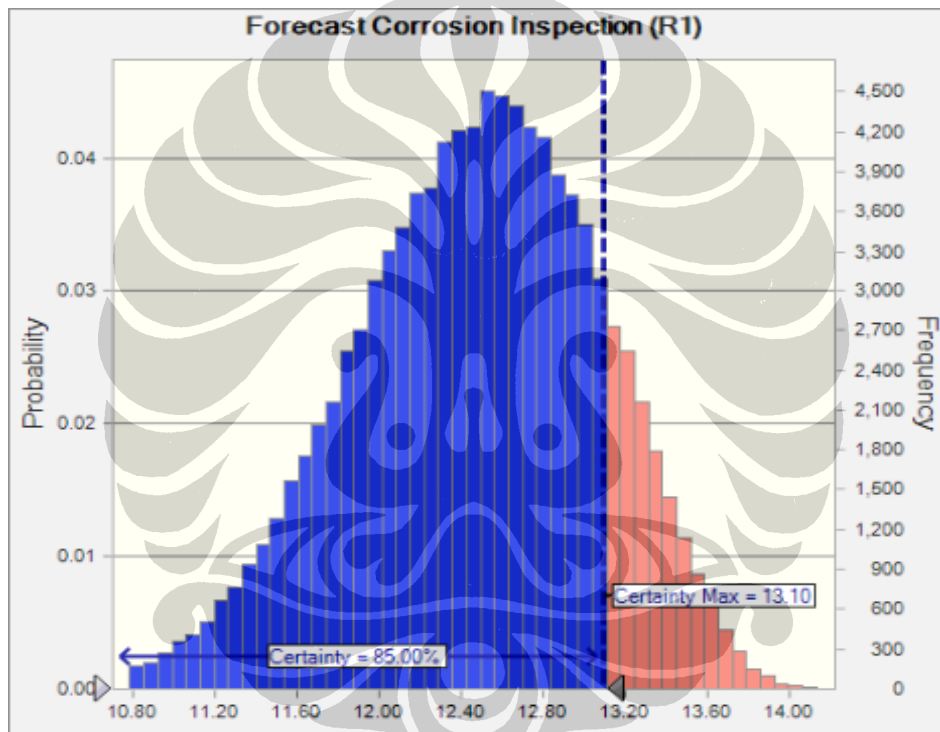
Certainty level is 85.000%

Certainty range is from 0.00 to 13.10

Entire range is from 9.88 to 14.13

Base case is 14.27

After 100,000 trials, the std. error of the mean is 0.00

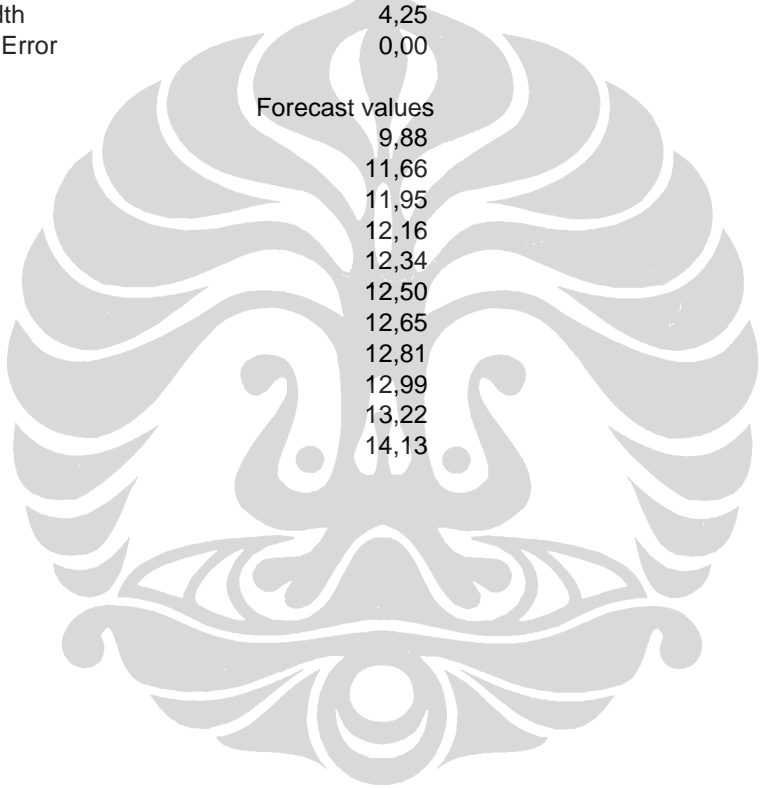


Forecast: Forecast Corrosion Inspection (R1) (cont'd)

Cell: D47

Statistics:	Forecast values
Trials	100,000
Mean	12,46
Median	12,50
Mode	---
Standard Deviation	0,60
Variance	0,36
Skewness	-0,2929
Kurtosis	2,81
Coeff. of Variability	0,0480
Minimum	9,88
Maximum	14,13
Range Width	4,25
Mean Std. Error	0,00

Percentiles:	Forecast values
0%	9,88
10%	11,66
20%	11,95
30%	12,16
40%	12,34
50%	12,50
60%	12,65
70%	12,81
80%	12,99
90%	13,22
100%	14,13

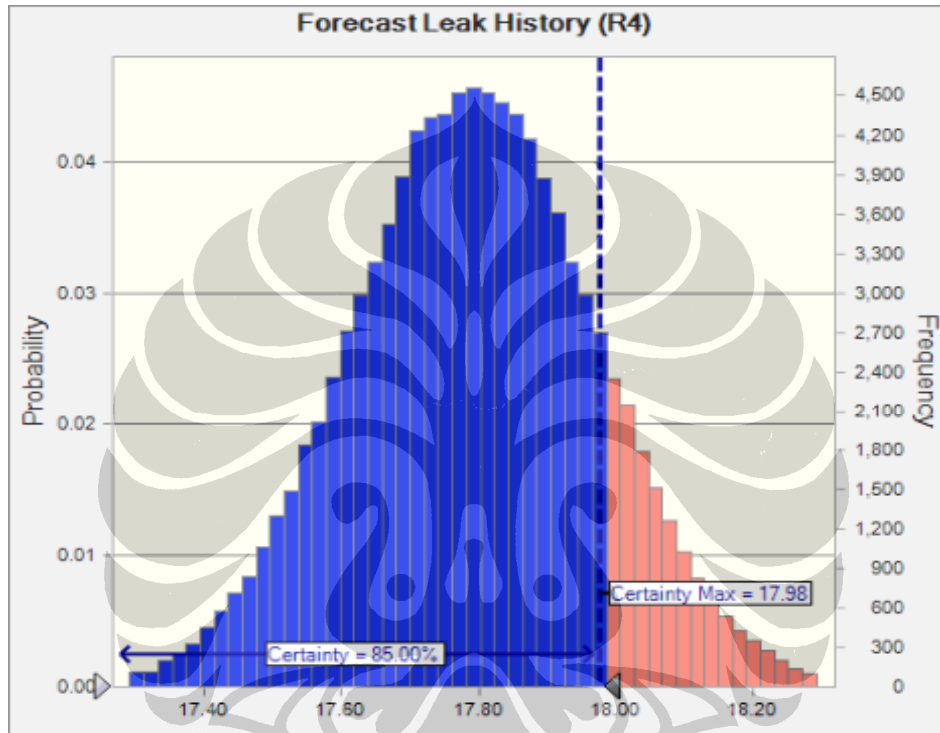


Forecast: Forecast Leak History (R4)

Cell: D73

Summary:

Certainty level is 85.000%
Certainty range is from 0.00 to 17.98
Entire range is from 17.03 to 18.56
Base case is 17.79
After 100,000 trials, the std. error of the mean is 0.00

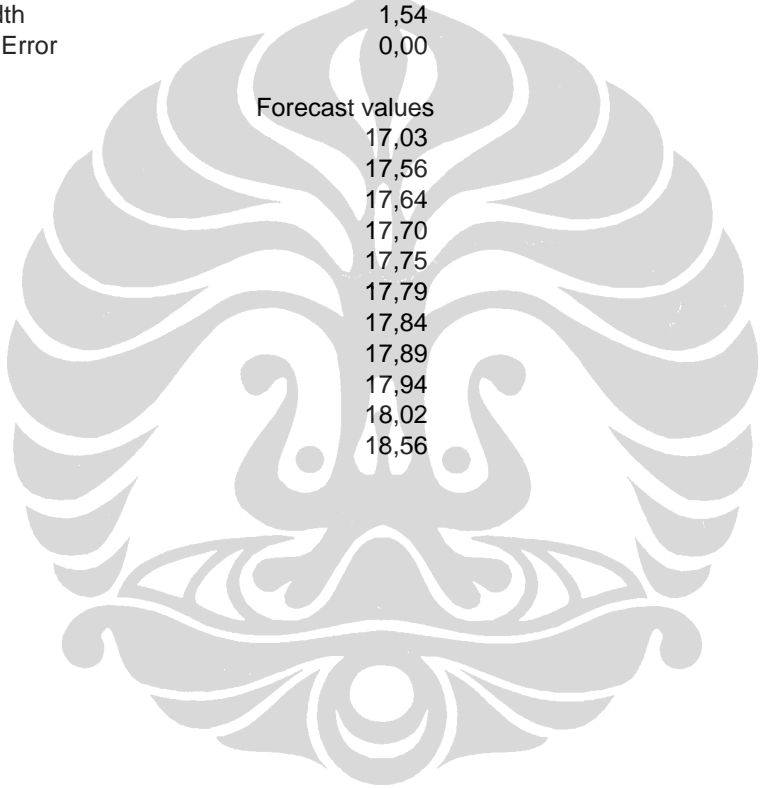


Forecast: Forecast Leak History (R4) (cont'd)

Cell: D73

Statistics:	Forecast values
Trials	100,000
Mean	17,79
Median	17,79
Mode	---
Standard Deviation	0,18
Variance	0,03
Skewness	-0,0055
Kurtosis	2,99
Coeff. of Variability	0,0100
Minimum	17,03
Maximum	18,56
Range Width	1,54
Mean Std. Error	0,00

Percentiles:	Forecast values
0%	17,03
10%	17,56
20%	17,64
30%	17,70
40%	17,75
50%	17,79
60%	17,84
70%	17,89
80%	17,94
90%	18,02
100%	18,56

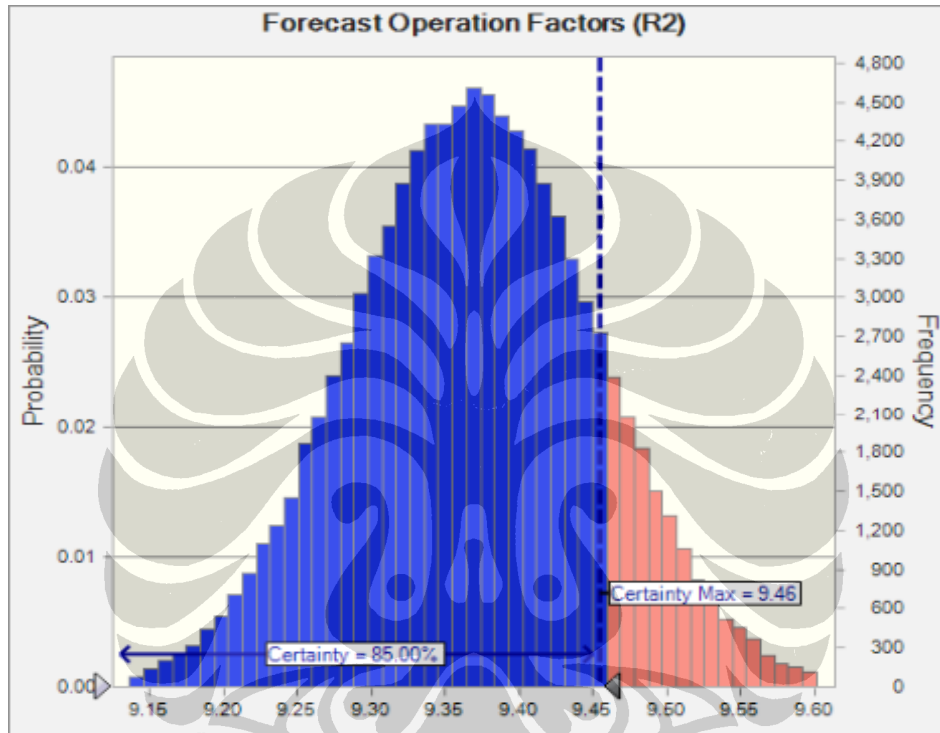


Forecast: Forecast Operation Factors (R2)

Cell: D55

Summary:

Certainty level is 85.000%
 Certainty range is from 0.00 to 9.46
 Entire range is from 8.99 to 9.71
 Base case is 11.71
 After 100,000 trials, the std. error of the mean is 0.00

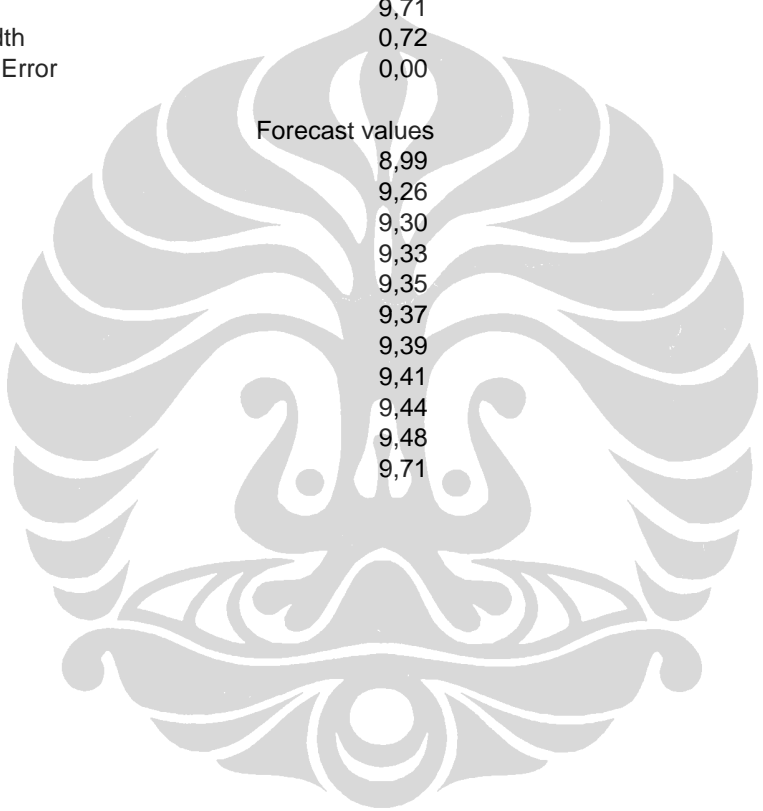


Forecast: Forecast Operation Factors (R2) (cont'd)

Cell: D55

Statistics:	Forecast values
Trials	100.000
Mean	9,37
Median	9,37
Mode	---
Standard Deviation	0,08
Variance	0,01
Skewness	-0,0013
Kurtosis	3,00
Coeff. of Variability	0,0088
Minimum	8,99
Maximum	9,71
Range Width	0,72
Mean Std. Error	0,00

Percentiles:	Forecast values
0%	8,99
10%	9,26
20%	9,30
30%	9,33
40%	9,35
50%	9,37
60%	9,39
70%	9,41
80%	9,44
90%	9,48
100%	9,71

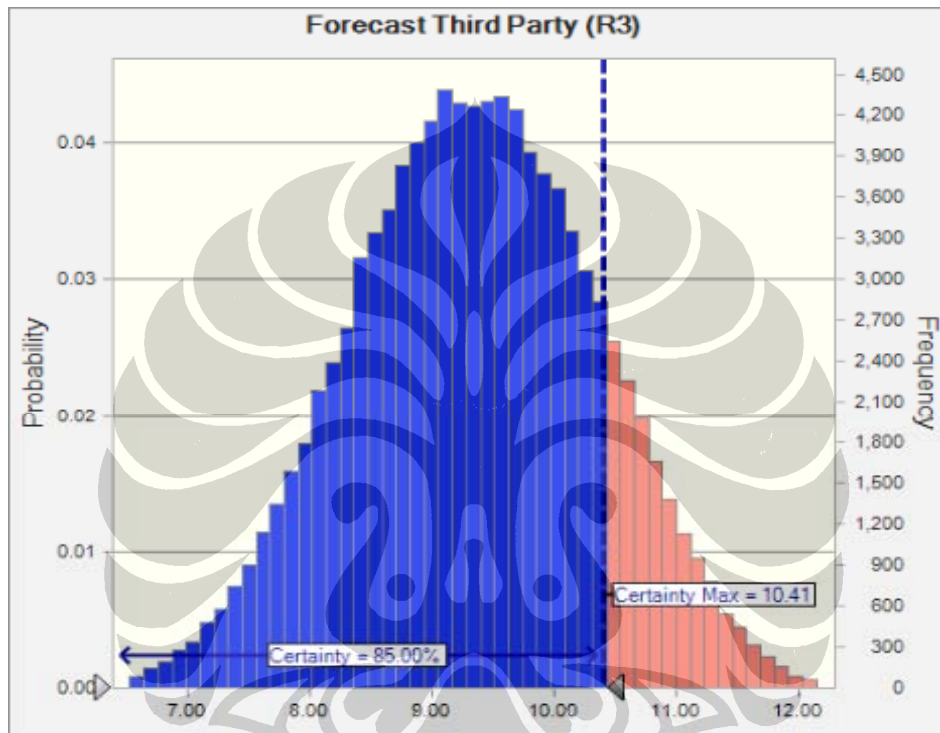


Forecast: Forecast Third Party (R3)

Cell: D64

Summary:

Certainty level is 85.000%
 Certainty range is from 0.00 to 10.41
 Entire range is from 5.78 to 12.62
 Base case is 10.14
 After 100,000 trials, the std. error of the mean is 0.00

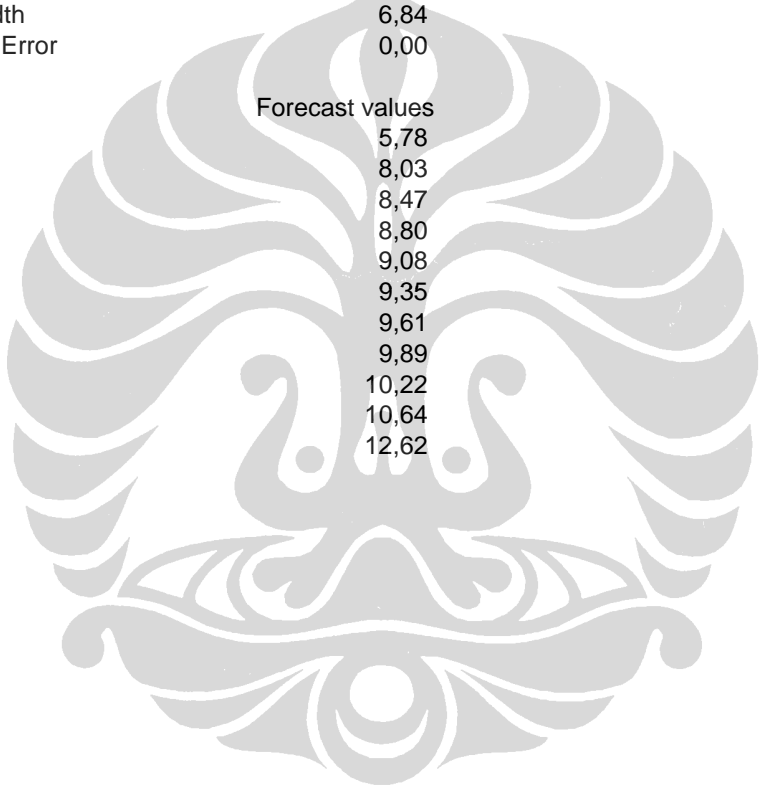


Forecast: Forecast Third Party (R3) (cont'd)

Cell: D64

Statistics:	Forecast values
Trials	100.000
Mean	9,34
Median	9,35
Mode	---
Standard Deviation	1,00
Variance	1,01
Skewness	-0,0508
Kurtosis	2,72
Coeff. of Variability	0,1074
Minimum	5,78
Maximum	12,62
Range Width	6,84
Mean Std. Error	0,00

Percentiles:	Forecast values
0%	5,78
10%	8,03
20%	8,47
30%	8,80
40%	9,08
50%	9,35
60%	9,61
70%	9,89
80%	10,22
90%	10,64
100%	12,62

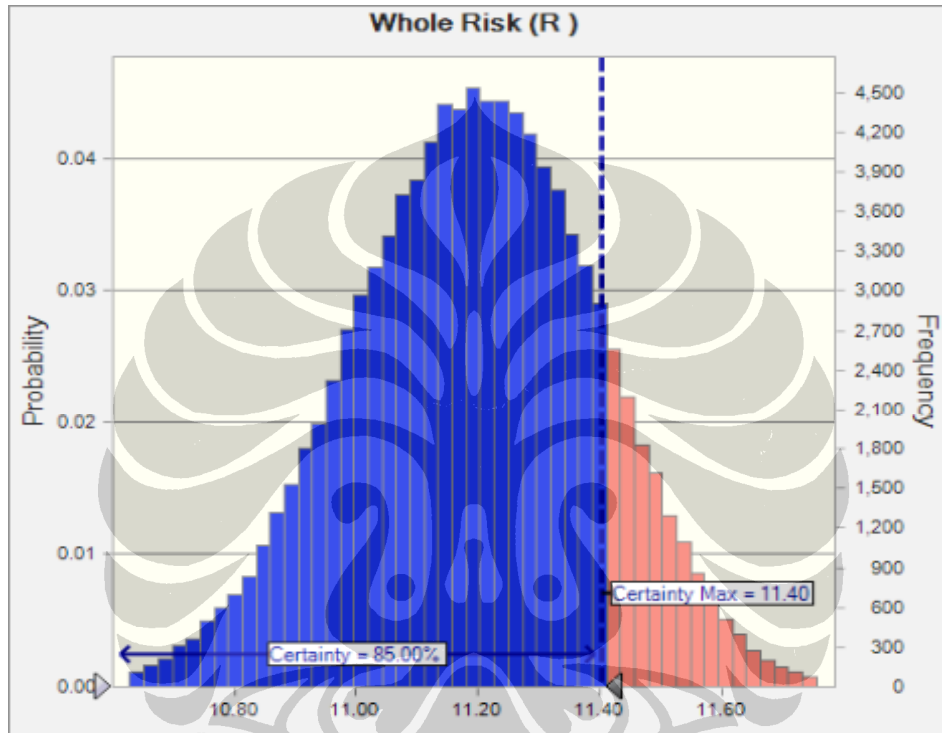


Forecast: Whole Risk (R)

Cell: D77

Summary:

Certainty level is 85.000%
 Certainty range is from 0.00 to 11.40
 Entire range is from 10.35 to 11.91
 Base case is 12.91
 After 100,000 trials, the std. error of the mean is 0.00



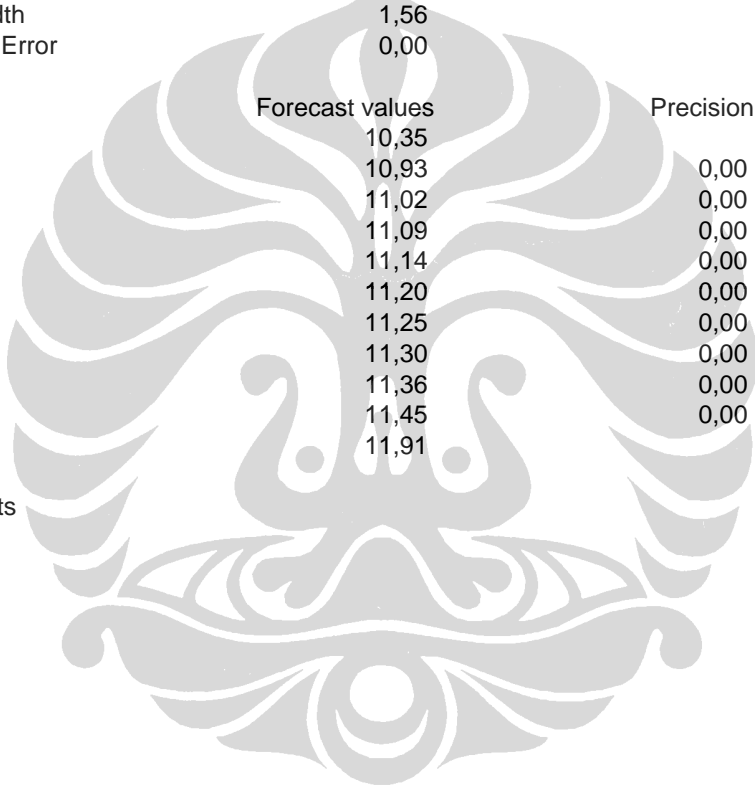
Forecast: Whole Risk (R) (cont'd)

Cell: D77

Statistics:	Forecast values	Precision
Trials	100.000	
Mean	11,19	0,00
Median	11,20	0,00
Mode	---	
Standard Deviation	0,20	0,00
Variance	0,04	
Skewness	-0,1225	
Kurtosis	2,90	
Coeff. of Variability	0,0180	
Minimum	10,35	
Maximum	11,91	
Range Width	1,56	
Mean Std. Error	0,00	

Percentiles:	Forecast values	Precision
0%	10,35	
10%	10,93	0,00
20%	11,02	0,00
30%	11,09	0,00
40%	11,14	0,00
50%	11,20	0,00
60%	11,25	0,00
70%	11,30	0,00
80%	11,36	0,00
90%	11,45	0,00
100%	11,91	

End of Forecasts



Assumptions

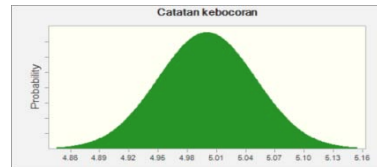
Worksheet: [cb2.xlsx]Sheet1

Assumption: Catatan kebocoran

Cell: D33

Normal distribution with parameters:

Mean 5,00
Std. Dev. 0,05

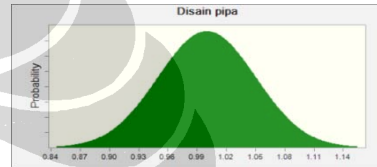


Assumption: Disain pipa

Cell: D21

Normal distribution with parameters:

Mean 1,00
Std. Dev. 0,05

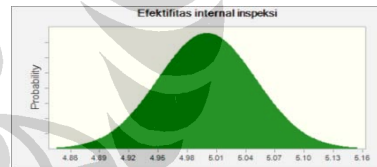


Assumption: Efektifitas internal inspeksi

Cell: D13

Normal distribution with parameters:

Mean 5,00
Std. Dev. 0,05

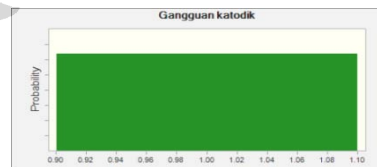


Assumption: Gangguan katodik

Cell: D10

Uniform distribution with parameters:

Minimum 0,90
Maximum 1,10

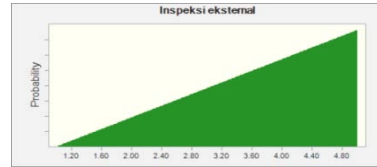


Assumption: Inspeksi eksternal

Cell: D6

Triangular distribution with parameters:

Minimum	1,00
Likeliest	5,00
Maximum	5,00

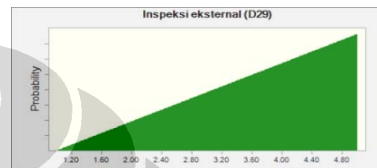


Assumption: Inspeksi eksternal (D29)

Cell: D29

Triangular distribution with parameters:

Minimum	1,00
Likeliest	5,00
Maximum	5,00

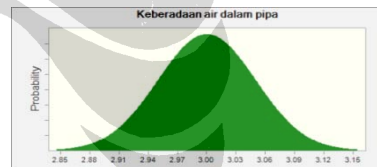


Assumption: Keberadaan air dalam pipa

Cell: D11

Normal distribution with parameters:

Mean	3,00
Std. Dev.	0,05

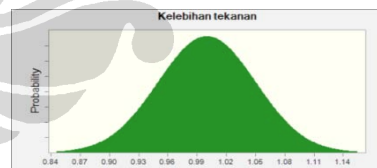


Assumption: Kelebihan tekanan

Cell: D17

Normal distribution with parameters:

Mean	1,00
Std. Dev.	0,05



Assumption: Kemungkinan gangguan pihak ketiga

Cell: D26

Triangular distribution with parameters:

Minimum	1,00
Likeliest	3,00
Maximum	5,00

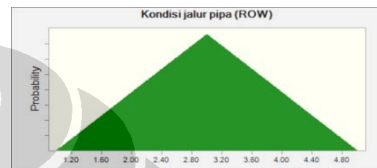


Assumption: Kondisi jalur pipa (ROW)

Cell: D27

Triangular distribution with parameters:

Minimum	1,00
Likeliest	3,00
Maximum	5,00

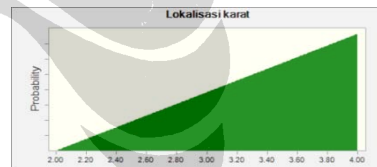


Assumption: Lokalisasi karat

Cell: D12

Triangular distribution with parameters:

Minimum	2,00
Likeliest	4,00
Maximum	4,00

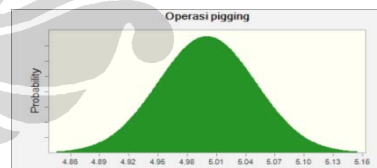


Assumption: Operasi pigging

Cell: D20

Normal distribution with parameters:

Mean	5,00
Std. Dev.	0,05

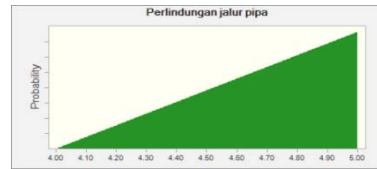


Assumption: Perlindungan jalur pipa

Cell: D25

Triangular distribution with parameters:

Minimum	4,00
Likeliest	5,00
Maximum	5,00

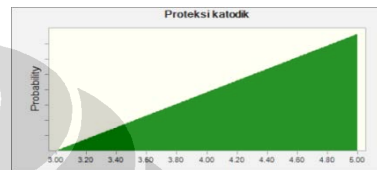


Assumption: Proteksi katodik

Cell: D8

Triangular distribution with parameters:

Minimum	3,00
Likeliest	5,00
Maximum	5,00

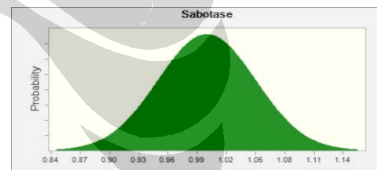


Assumption: Sabotase

Cell: D30

Normal distribution with parameters:

Mean	1,00
Std. Dev.	0,05

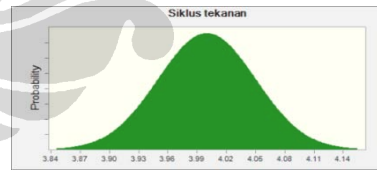


Assumption: Siklus tekanan

Cell: D18

Normal distribution with parameters:

Mean	4,00
Std. Dev.	0,05

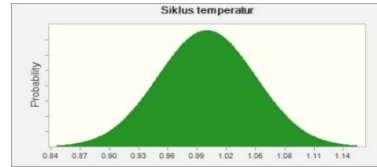


Assumption: Siklus temperatur

Cell: D19

Normal distribution with parameters:

Mean 1,00
Std. Dev. 0,05

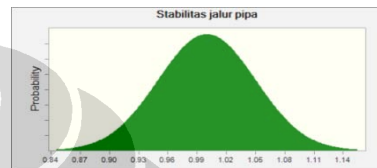


Assumption: Stabilitas jalur pipa

Cell: D28

Normal distribution with parameters:

Mean 1,00
Std. Dev. 0,05

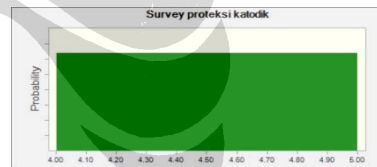


Assumption: Survey proteksi katodik

Cell: D9

Uniform distribution with parameters:

Minimum 4,00
Maximum 5,00

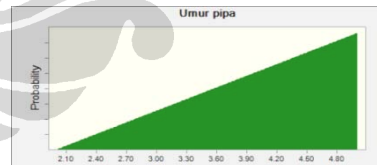


Assumption: Umur pipa

Cell: D7

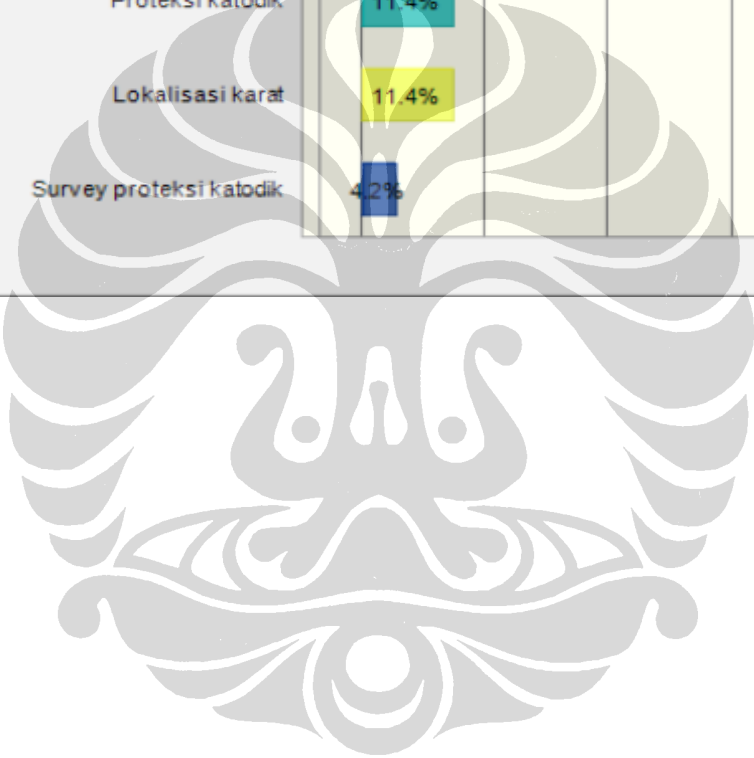
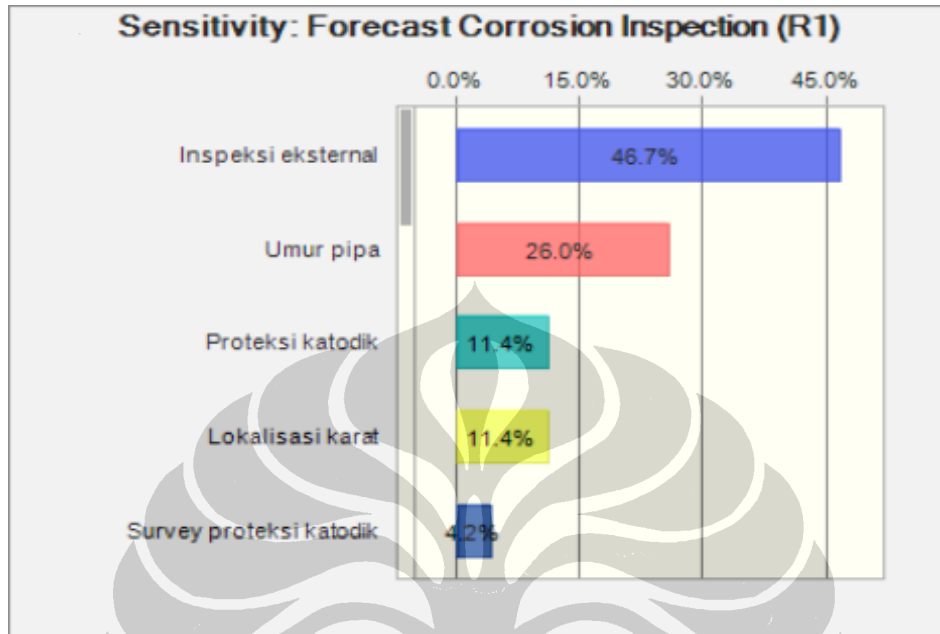
Triangular distribution with parameters:

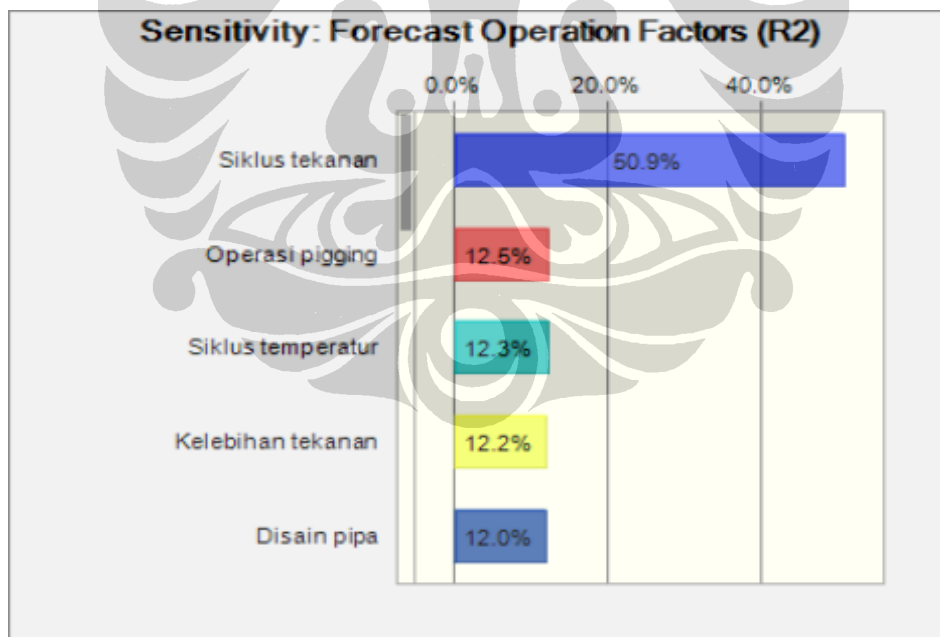
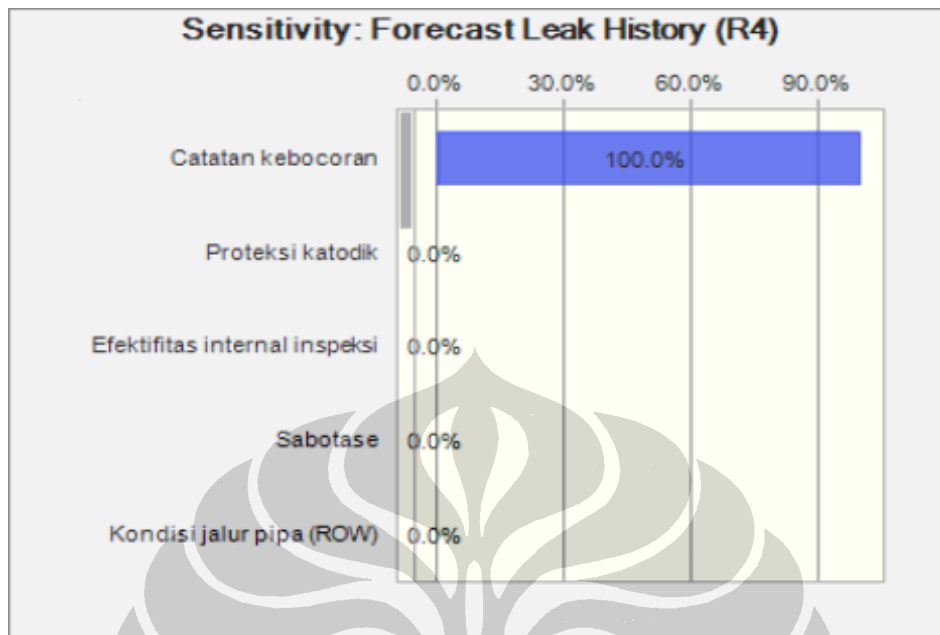
Minimum 2,00
Likeliest 5,00
Maximum 5,00

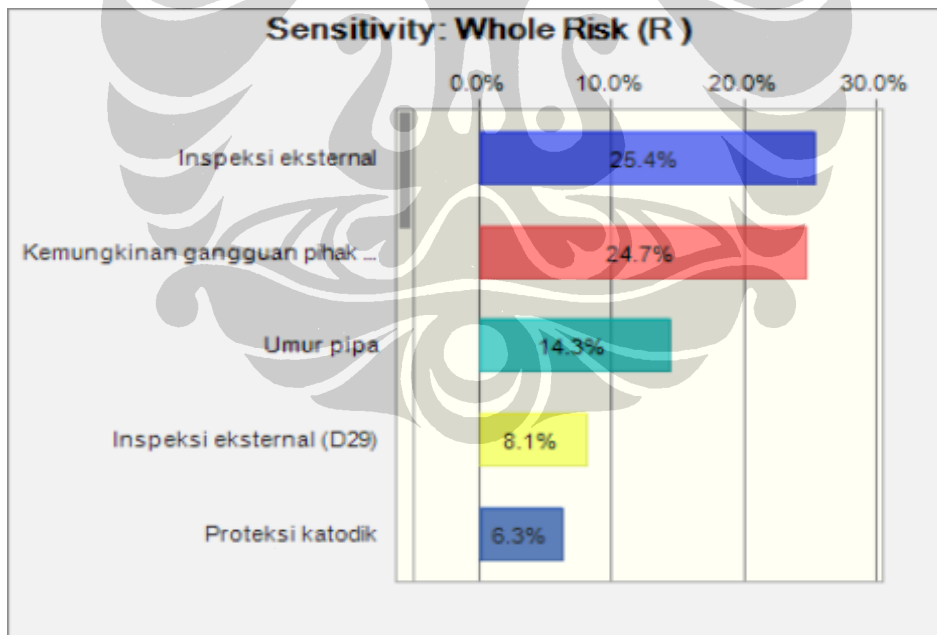
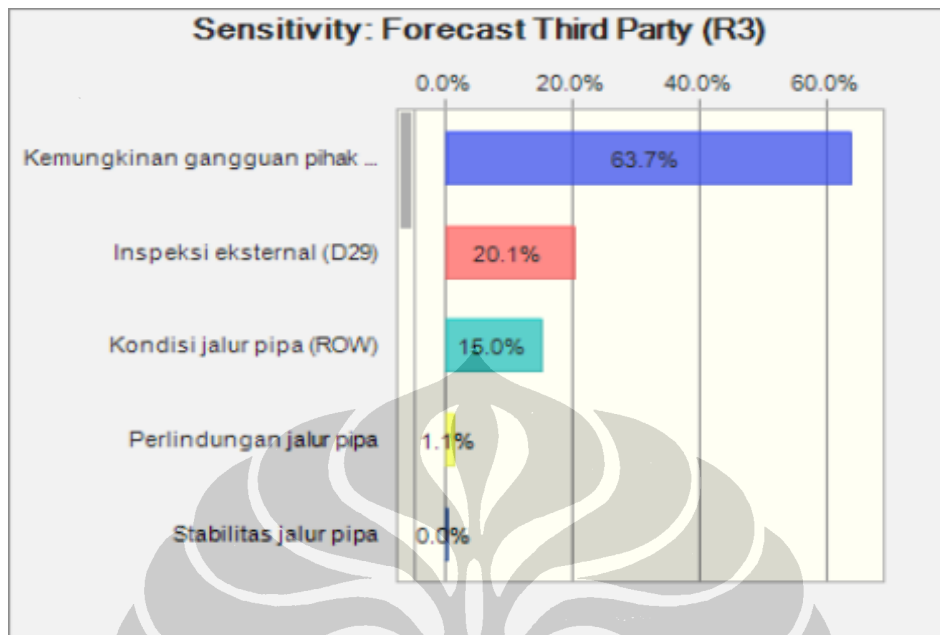


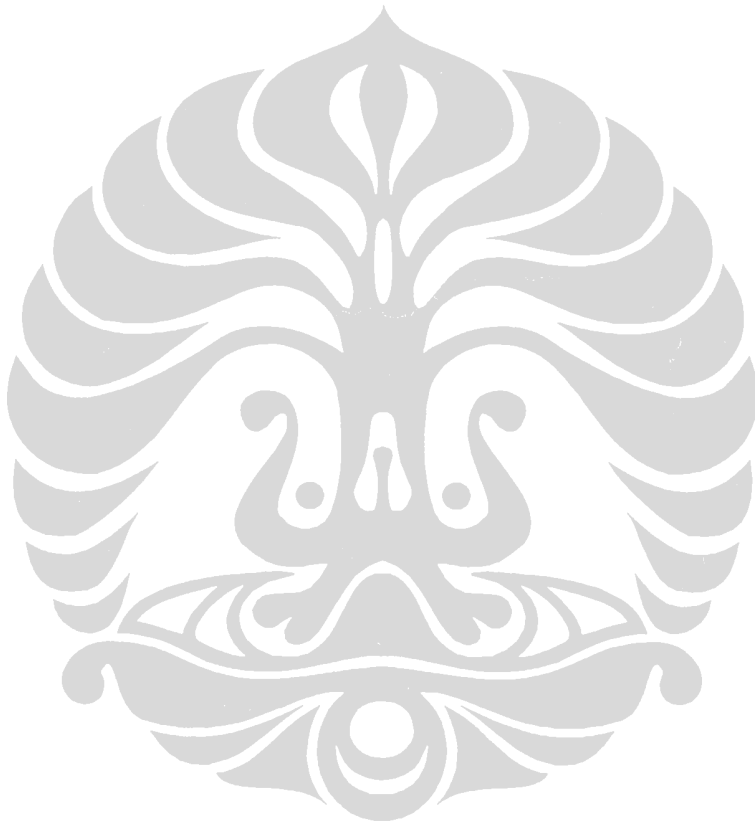
End of Assumptions

Sensitivity Charts









End of Sensitivity Charts

Crystal Ball Report - Custom

Simulation started on 7/8/2010 at 21:51:57
Simulation stopped on 7/8/2010 at 21:52:22

Run preferences:

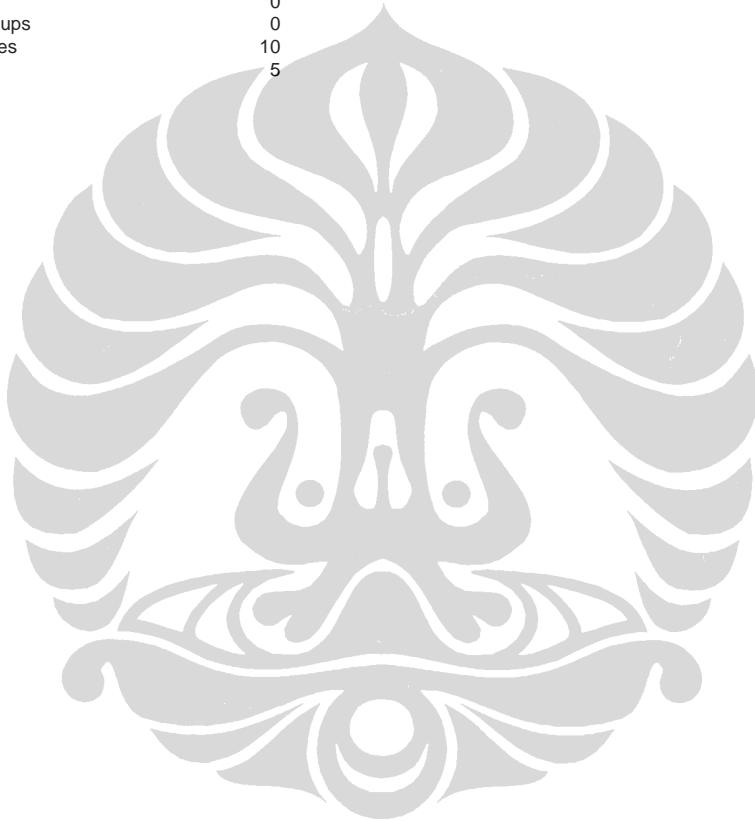
Number of trials run	100.000
Extreme speed	
Monte Carlo	
Random seed	

Run statistics:

Total running time (sec)	23,11
Trials/second (average)	4.327
Random numbers per sec	86.539

Crystal Ball data:

Assumptions	20
Correlations	0
Correlated groups	0
Decision variables	10
Forecasts	5



Forecasts

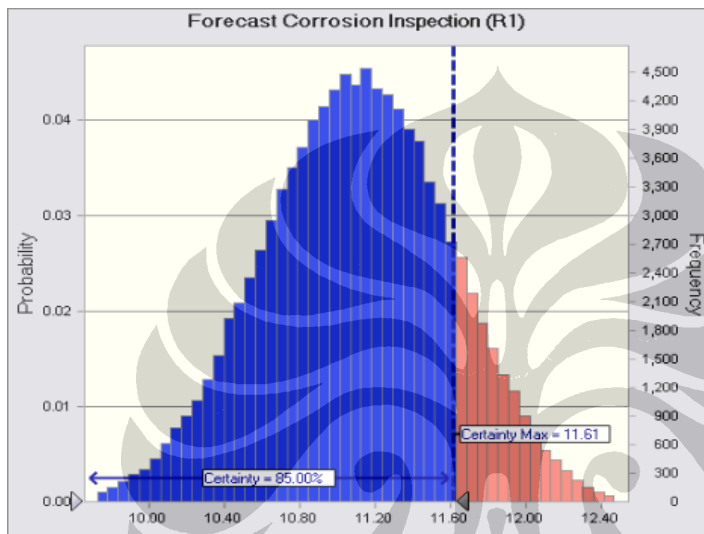
Worksheet: [cb3.xlsx]Sheet1

Forecast: Forecast Corrosion Inspection (R1)

Cell: D47

Summary:

Certainty level is 85.000%
 Certainty range is from 0.00 to 11.61
 Entire range is from 9.26 to 12.78
 Base case is 11.67
 After 100,000 trials, the std. error of the mean is 0.00



Forecast: Forecast Corrosion Inspection (R1) (cont'd)

Cell: D47

Statistics:		Forecast values
Trials		100.000
Mean		11,10
Median		11,10
Mode		---
Standard Deviation		0,49
Variance		0,24
Skewness		-0,0803
Kurtosis		2,81
Coeff. of Variability		0,0442
Minimum		9,26
Maximum		12,78
Range Width		3,52
Mean Std. Error		0,00

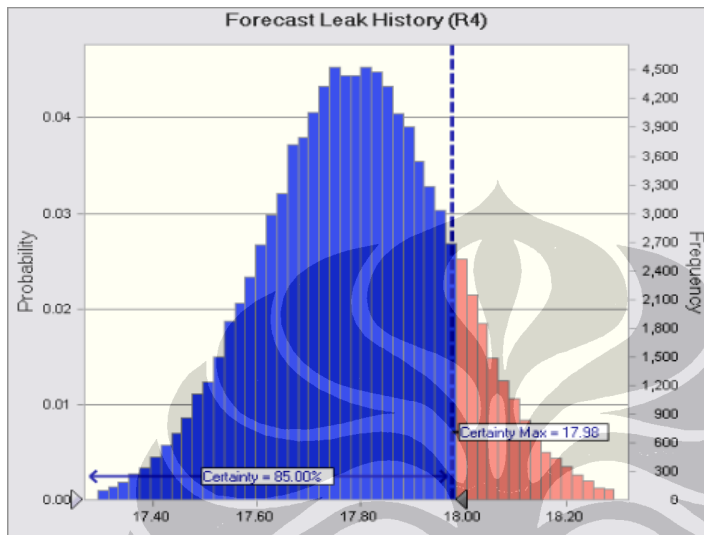
Percentiles:		Forecast values
0%		9,26
10%		10,46
20%		10,68
30%		10,84
40%		10,98
50%		11,10
60%		11,23
70%		11,37
80%		11,52
90%		11,73
100%		12,78

Forecast: Forecast Leak History (R4)

Cell: D73

Summary:

Certainty level is 85.000%
 Certainty range is from 0.00 to 17.98
 Entire range is from 16.93 to 18.63
 Base case is 17.79
 After 100,000 trials, the std. error of the mean is 0.00



Forecast: Forecast Leak History (R4) (cont'd)

Cell: D73

Statistics:	Forecast values
Trials	100.000
Mean	17,79
Median	17,79
Mode	---
Standard Deviation	0,18
Variance	0,03
Skewness	-0,0104
Kurtosis	2,98
Coeff. of Variability	0,0100
Minimum	16,93
Maximum	18,63
Range Width	1,69
Mean Std. Error	0,00

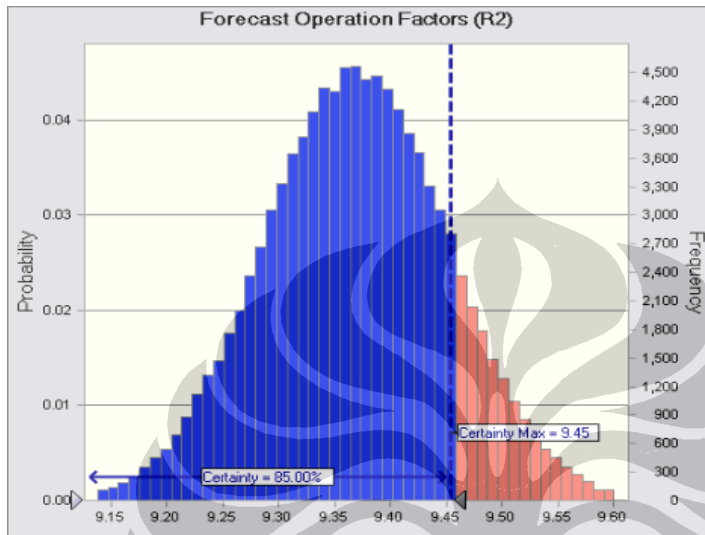
Percentiles:	Forecast values
0%	16,93
10%	17,56
20%	17,64
30%	17,70
40%	17,75
50%	17,79
60%	17,84
70%	17,89
80%	17,94
90%	18,02
100%	18,63

Forecast: Forecast Operation Factors (R2)

Cell: D55

Summary:

Certainty level is 85.000%
 Certainty range is from 0.00 to 9.45
 Entire range is from 9.00 to 9.72
 Base case is 11.71
 After 100,000 trials, the std. error of the mean is 0.00



Forecast: Forecast Operation Factors (R2) (cont'd)

Cell: D55

Statistics:	Forecast values
Trials	100.000
Mean	9,37
Median	9,37
Mode	---
Standard Deviation	0,08
Variance	0,01
Skewness	-0,0039
Kurtosis	2,99
Coeff. of Variability	0,0088
Minimum	9,00
Maximum	9,72
Range Width	0,71
Mean Std. Error	0,00

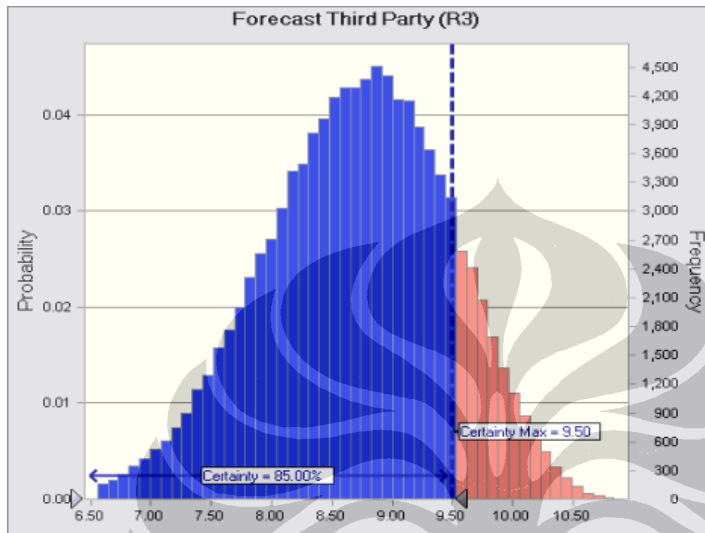
Percentiles:	Forecast values
0%	9,00
10%	9,26
20%	9,30
30%	9,33
40%	9,35
50%	9,37
60%	9,39
70%	9,41
80%	9,44
90%	9,47
100%	9,72

Forecast: Forecast Third Party (R3)

Cell: D64

Summary:

Certainty level is 85.000%
 Certainty range is from 0.00 to 9.50
 Entire range is from 5.66 to 11.01
 Base case is 10.14
 After 100,000 trials, the std. error of the mean is 0.00



Forecast: Forecast Third Party (R3) (cont'd)

Cell: D64

Statistics:	Forecast values
Trials	100.000
Mean	8,70
Median	8,73
Mode	---
Standard Deviation	0,76
Variance	0,59
Skewness	-0,2421
Kurtosis	2,80
Coeff. of Variability	0,0879
Minimum	5,66
Maximum	11,01
Range Width	5,35
Mean Std. Error	0,00

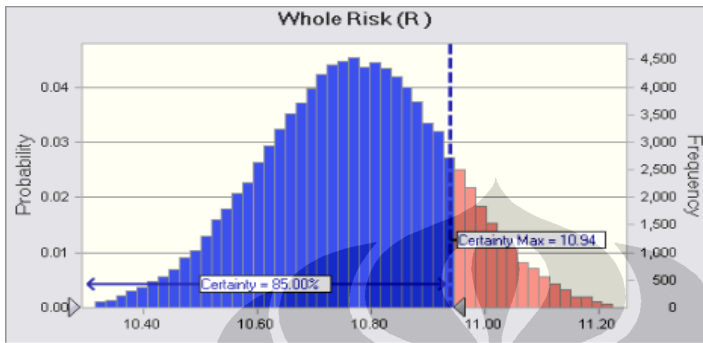
Percentiles:	Forecast values
0%	5,66
10%	7,68
20%	8,05
30%	8,31
40%	8,53
50%	8,73
60%	8,93
70%	9,14
80%	9,37
90%	9,67
100%	11,01

Forecast: Whole Risk (R)

Cell: D77

Summary:

Certainty level is 85.000%
 Certainty range is from 0.00 to 10.94
 Entire range is from 10.01 to 11.38
 Base case is 12.27
 After 100,000 trials, the std. error of the mean is 0.00



Statistics:	Forecast values
Trials	100,000
Mean	10,77
Median	10,77
Mode	---
Standard Deviation	0,16
Variance	0,03
Skewness	-0,0945
Kurtosis	2,93
Coeff. of Variability	0,0151
Minimum	10,01
Maximum	11,38
Range Width	1,36
Mean Std. Error	0,00

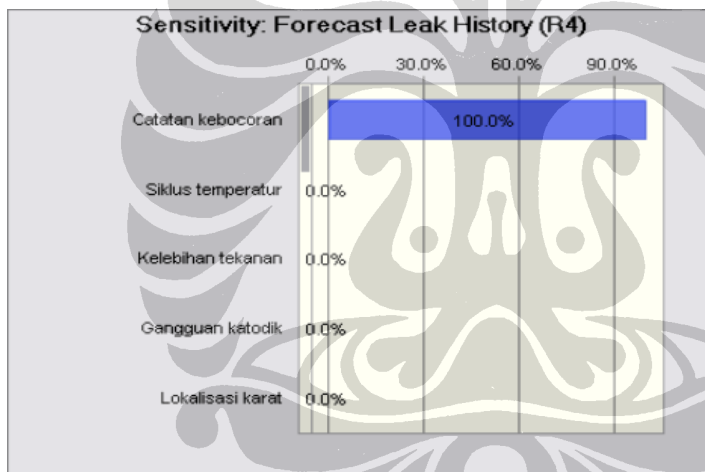
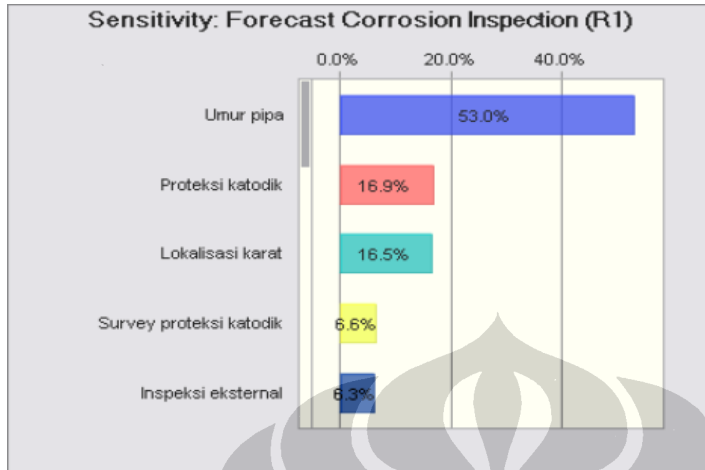
Forecast: Whole Risk (R) (cont'd)

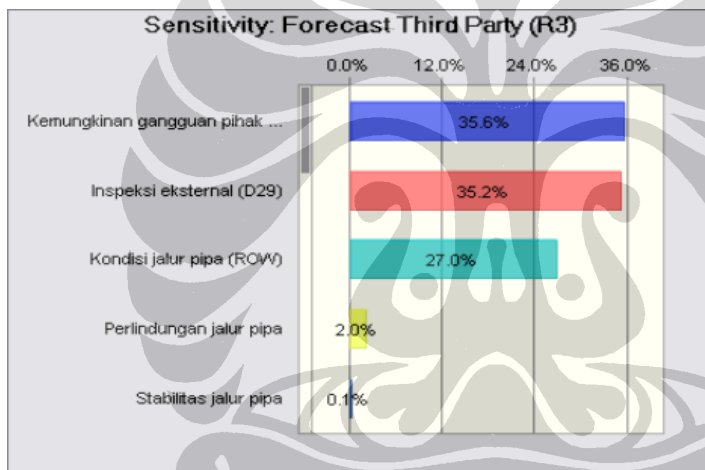
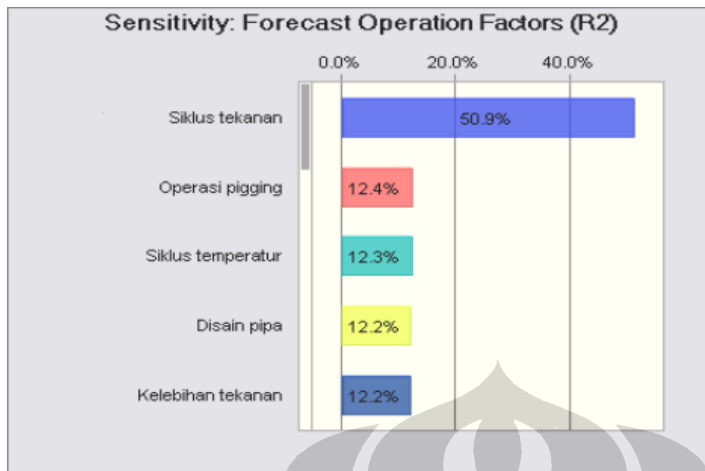
Cell: D77

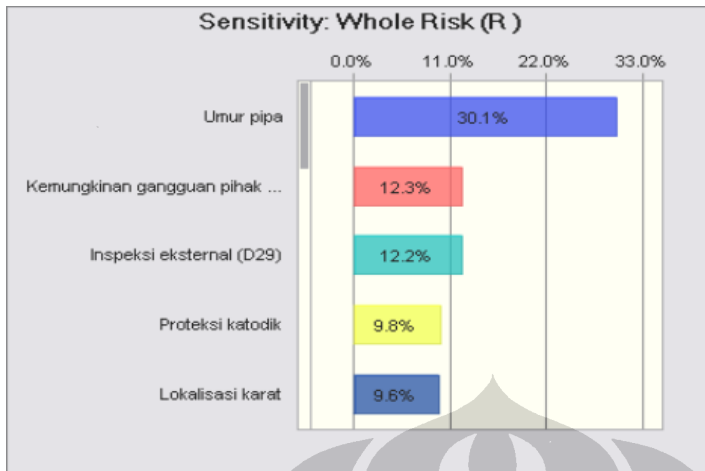
Percentiles:	Forecast values
0%	10,01
10%	10,56
20%	10,63
30%	10,69
40%	10,73
50%	10,77
60%	10,81
70%	10,86
80%	10,91
90%	10,98
100%	11,38

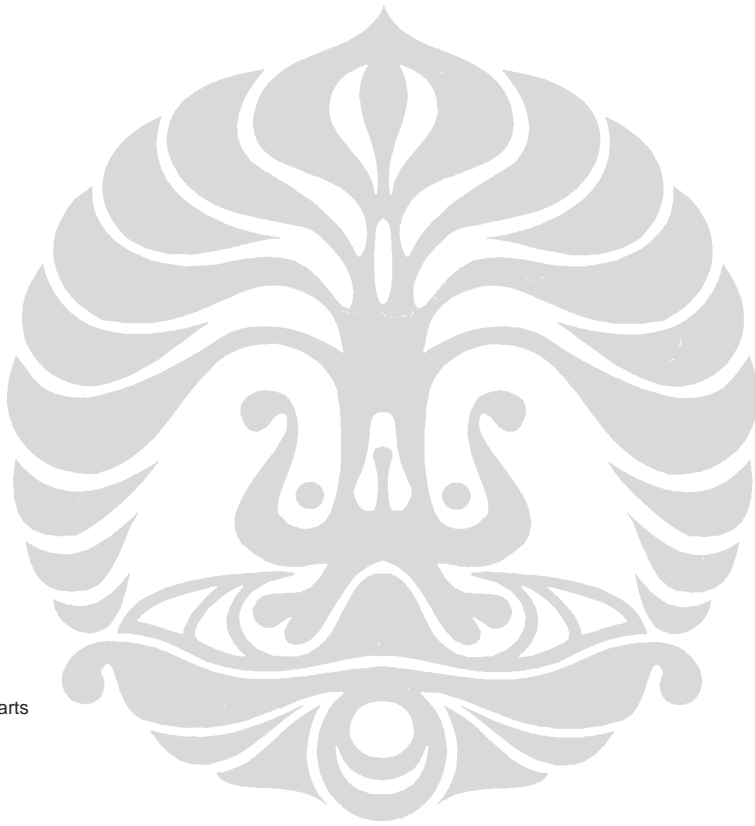
End of Forecasts

Sensitivity Charts









End of Sensitivity Charts