Análisis de la Corriente, 706B (Experimento de Screening)
02/12/2005 12:26 p.m.

Analysis Summary

File name: C:\Documents and Settings\Edward A. Moscoso\Mis documentos\Statgraphics\CB_706B.sfx

Estimated effects for Ol y Ona 706B

average	= 306,517	+/- 0,717269
A:Carga	= 22,5431	+/- 1,43454
B:Vapor E530	= 15,6744	+/- 1,43454
C:P_C525	= 4,09062	+/- 1,43454
D:Nivel_V540	= -20,3181	+/- 1,43454
E:Vapor_E532	= -2,74562	+/- 1,43454
AB	= 6,45812	+/- 1,43454
AC	= -8,34813	+/- 1,43454
AD	= 0,693125	+/- 1,43454
AE	= 2,94813	+/- 1,43454
BC	= 12,9206	+/- 1,43454
BD	= -0,308125	+/- 1,43454
BE	= -3,72313	+/- 1,43454
CD	= 0,965625	+/- 1,43454
CE	= 4,23063	+/- 1,43454
DE	= 0,534375	+/- 1,43454

Standard errors are based on total error with 16 d.f.

The StatAdvisor

   This table shows each of the estimated effects and interactions. Also shown is the standard error of each of the effects, which measures their sampling error. To plot the estimates in decreasing order of importance, select Pareto Charts from the list of Graphical Options. To test the statistical significance of the effects, select ANOVA Table from the list of Tabular Options. You can then remove insignificant effects by pressing the alternate mouse button, selecting Analysis Options, and pressing the Exclude button.

Análisis de la Corriente, 706B (Experimento de Screening)
02/12/2005 12:26 p.m.

Analysis of Variance for Ol y Ona 706B

Source	Sum of Squares	Df	Mean Square	F-Ratio	P-Value
A:Carga	4065,54	1	4065,54	246,95	0,0000
B:Vapor E530	1965,49	1	1965,49	119,39	0,0000
C:P C525	133,866	1	133,866	8,13	0,0115
D:Nivel V540	3302,61	1	3302,61	200,61	0,0000
E:Vapor E532	60,3077	1	60,3077	3,66	0,0737
AB	333,659	1	333,659	20,27	0,0004
AC	557,53	1	557,53	33,87	0,0000
AD	3,84338	1	3,84338	0,23	0,6355
AE	69,5315	1	69,5315	4,22	0,0566
BC	1335,54	1	1335,54	81,12	0,0000
BD	0,759528	1	0,759528	0,05	0,8326
BE	110,893	1	110,893	6,74	0,0195
CD	7,45945	1	7,45945	0,45	0,5105
CE	143,186	1	143,186	8,70	0,0094
DE	2,28445	1	2,28445	0,14	0,7144
Total error	263,411	16	16,4632		
Total (corr.)	12355,9	31			

R-squared = 97,8681 percent
R-squared (adjusted for d.f.) = 95,8695 percent
Standard Error of Est. = 4,05748
Mean absolute error = 2,42145
Durbin-Watson statistic = 2,92551 (P=0,0004)
Lag 1 residual autocorrelation = -0,464143

The StatAdvisor

The ANOVA table partitions the variability in Ol_y_Ona_706B into separate pieces for each of the effects. It then tests the statistical significance of each effect by comparing the mean square against an estimate of the experimental error. In this case, 9 effects have P-values less than 0,05, indicating that they are significantly different from zero at the 95,0% confidence level.

The R-Squared statistic indicates that the model as fitted explains 97,8681% of the variability in Ol y Ona 706B. The adjusted R-squared statistic, which is more suitable for comparing models with different numbers of independent variables, is 95,8695%. The standard error of the estimate shows the standard deviation of the residuals to be 4,05748. The mean absolute error (MAE) of 2,42145 is the average value of the residuals. The Durbin-Watson (DW) statistic tests the residuals to determine if there is any significant correlation based on the order in which they occur in your data file. Since the P-value is less than 0.05, there is an indication of possible serial correlation. Plot the residuals versus row order to see if there is any pattern which can be seen.

Análisis de la Corriente, 706B (Experimento de Screening)
02/12/2005 12:26 p.m.

Regression coeffs. for Ol y Ona 706B

constant	= 4304,18
A:Carga	= -0,0326659
B:Vapor E530	= -0,425072
C:P C525	= -350,349
D:Nivel V540	= -5,10264
E:Vapor E532	= 0,165641
AB	= 0,00000369036
AC	= -0,00238518
AD	= 0,0000282908
AE	= 0,00000280774
BC	= 0,0516825
BD	= -0,000176071
BE	= -0,0000496417
CD	= 0,275893
CE	= 0,0282042
DE	= 0,000508929

The StatAdvisor

This pane displays the regression equation which has been fitted to the data. The equation of the fitted model is

Ol y Ona 706B = 4304,18 - 0,0326659*Carga - 0,425072*Vapor E530 - 350,349*P C525 - 5,10264*Nivel V540 + 0,165641*Vapor E532 + 0,00000369036*Carga*Vapor E530 - 0,00238518*Carga*P C525 + 0,0000282908*Carga*Nivel V540 + 0,00000280774*Carga*Vapor E532 + 0,0516825*Vapor E530*P C525 - 0,000176071*Vapor E530*Nivel V540 - 0,0000496417*Vapor E530*Vapor E532 + 0,275893*P C525*Nivel V540 + 0,0282042*P_C525*Vapor_E532 + 0,000508929*Nivel_V540*Vapor_E532

where the values of the variables are specified in their original units. To have STATGRAPHICS evaluate this function, select Predictions from the list of Tabular Options. To plot the function, select Response Plots from the list of Graphical Options.

Análisis de la Corriente, 706B (Experimento de Screening)
02/12/2005 12:26 p.m.

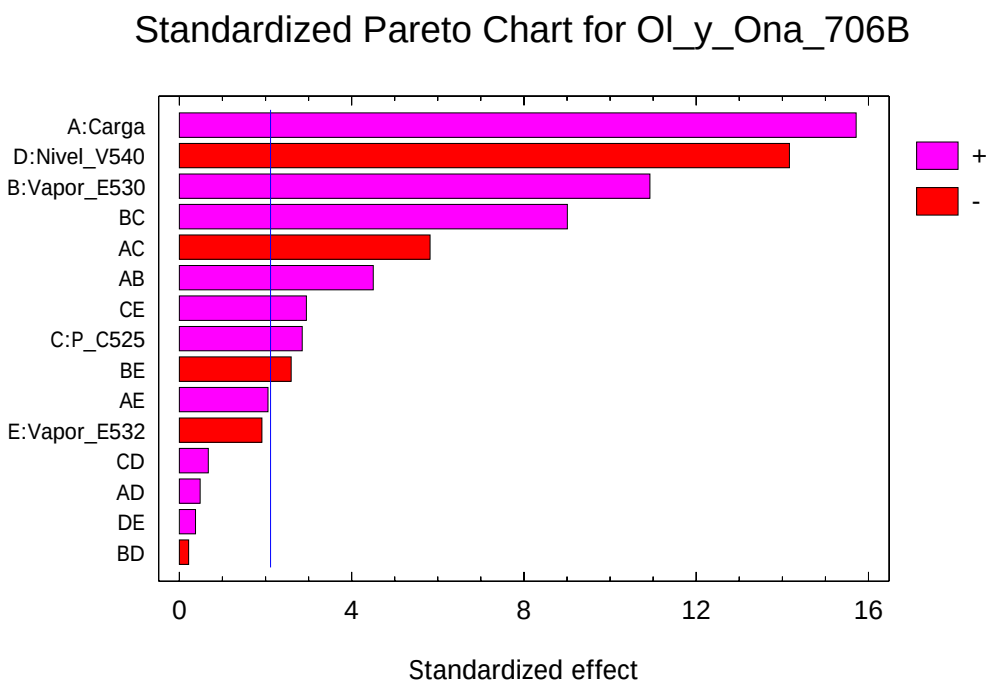
Estimation Results for Ol y Ona 706B

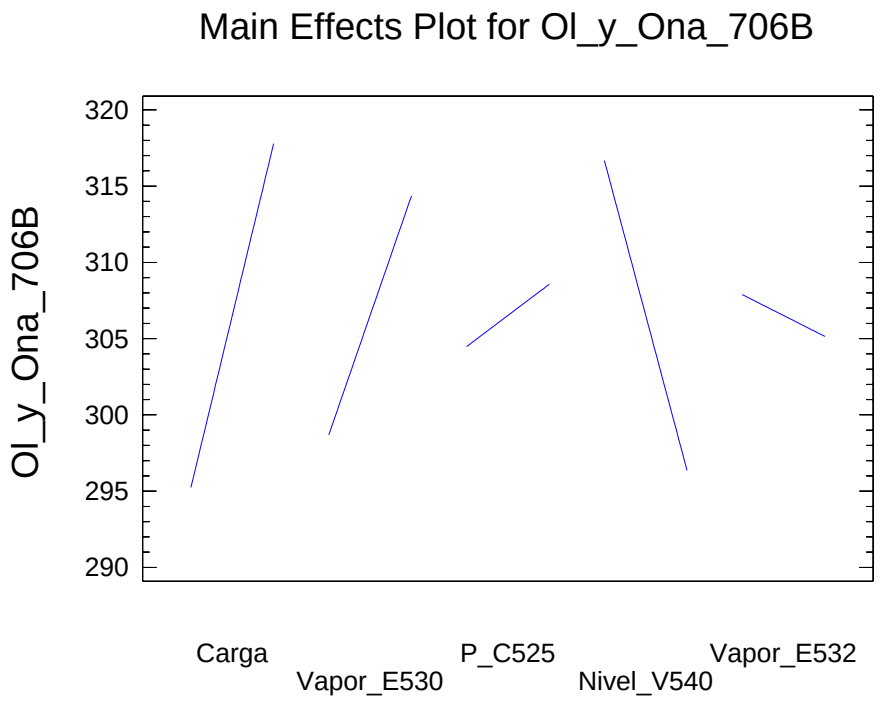
Row	Observed Value	Fitted Value	Lower 95,0% CL for Mean	Upper 95,0% CL for Mean
1	304,95	305,081	298,998	311,163
2	329,44	325,873	319,79	331,955
3	304,6	305,408	299,325	311,49
4	337,24	339,116	333,033	345,198
5	303,62	299,403	293,32	305,485
6	297,02	303,498	297,416	309,58
7	325,01	325,571	319,488	331,653
8	344,65	342,582	336,5	348,665
9	281,15	282,877	276,795	288,96
10	306,87	305,056	298,973	311,138
11	283,79	282,588	276,506	288,67
12	315,64	317,682	311,6	323,765
13	278,42	279,131	273,048	285,213
14	284,06	284,613	278,53	290,695
15	303,2	304,682	298,6	310,765
16	326,58	323,081	316,998	329,163
17	293,98	298,345	292,263	304,427
18	326,97	325,033	318,951	331,115
19	295,02	291,226	285,143	297,308
20	328,71	330,83	324,748	336,912
21	302,37	301,128	295,046	307,21
22	311,13	311,12	305,038	317,202
23	316,46	319,85	313,768	325,932
24	345,65	342,758	336,676	348,84
25	274,13	277,211	271,128	283,293
26	307,27	305,285	299,203	311,367
27	274,59	269,475	263,393	275,557
28	307,2	310,466	304,383	316,548
29	286,48	281,925	275,843	288,007
30	291,02	293,303	287,221	299,385
31	296,16	300,031	293,948	306,113
32	325,17	324,325	318,243	330,407

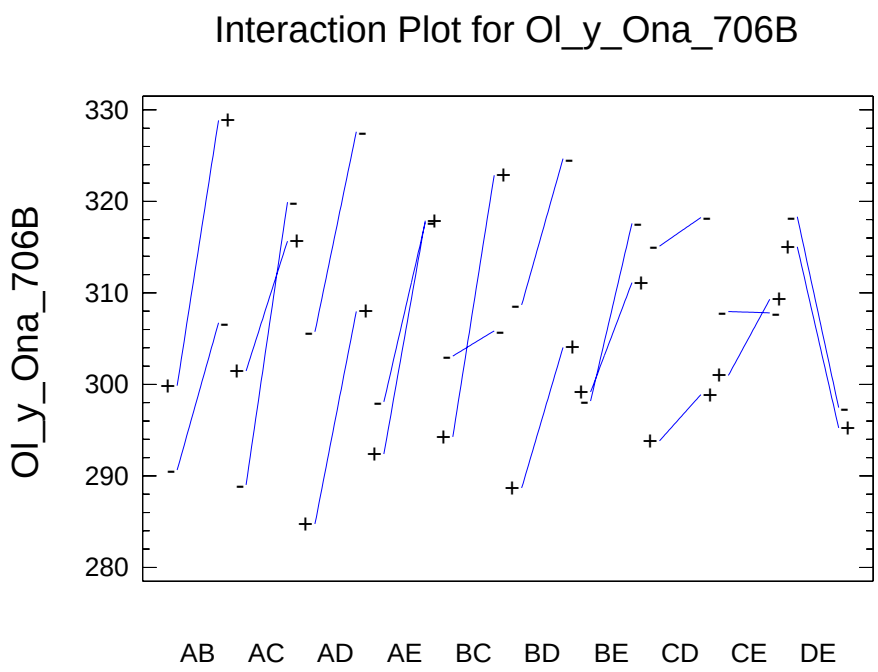
The StatAdvisor

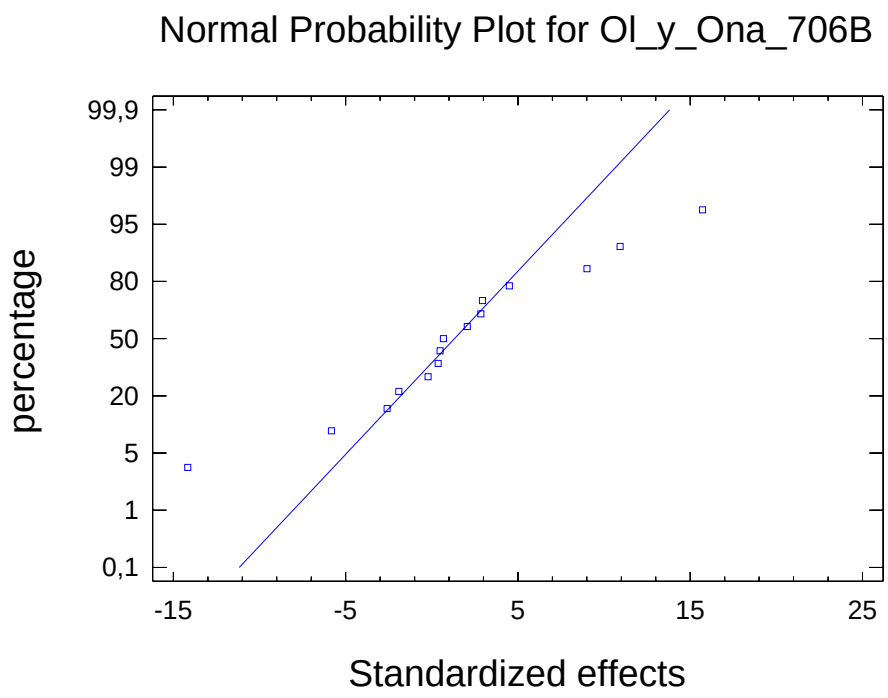
This table contains information about values of Ol y_Ona_706B generated using the fitted model. The table includes:
(1) the observed value of Ol y Ona 706B (if any)
(2) the predicted value of Ol y Ona 706B using the fitted model
(3) 95,0% confidence limits for the mean response
Each item corresponds to the values of the experimental factors in a specific row of your data file. To generate forecasts for additional combinations of the factors, add additional rows to the bottom of your data file. In each new row, enter values for the experimental factors but leave the cell for the response empty. When you return to this pane, forecasts will be added to the table for the new rows, but the model will be unaffected.

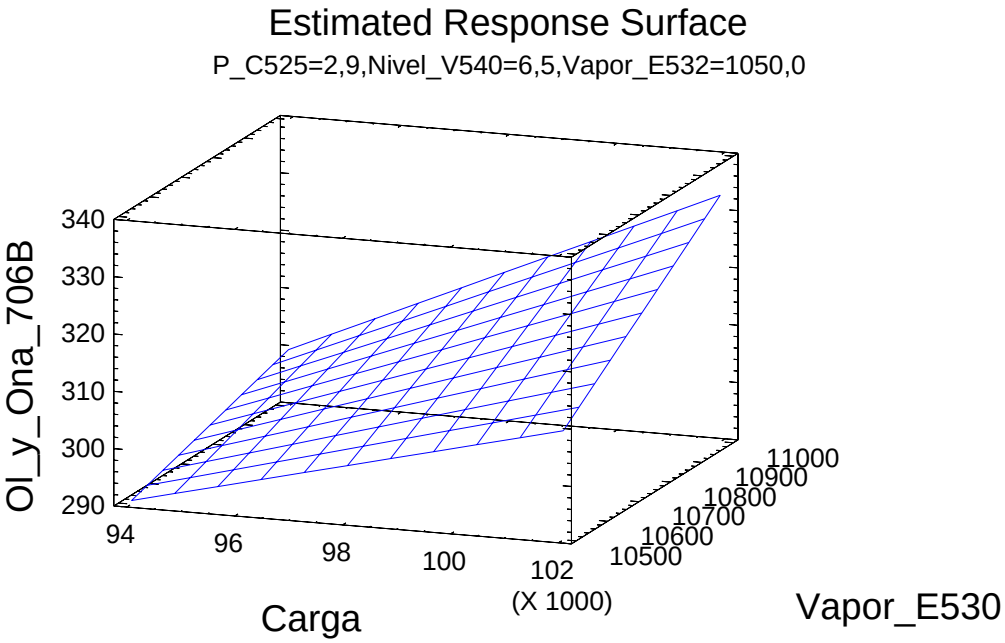
Análisis de la Corriente, 706B (Experimento de Screening)
02/12/2005 12:26 p.m.

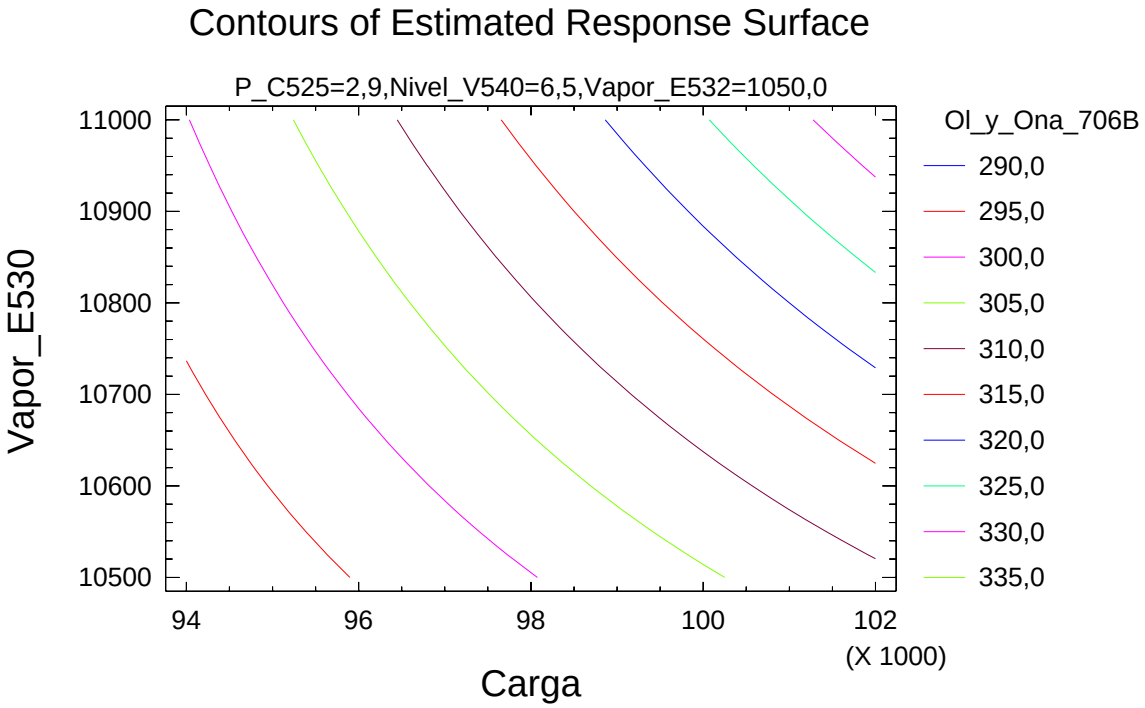


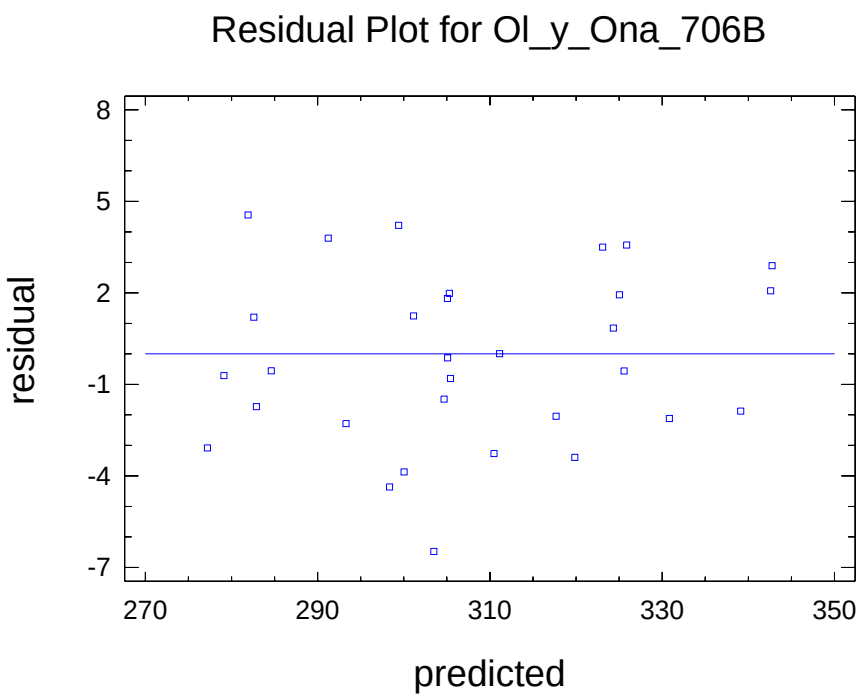

Main Effects Plot for Ol_y_Ona_706B
Ol_y_Ona_706B
320
315
310
305
300
295
290
Carga
P_C525
Vapor_E532
Vapor_E530
Nivel_V540


Interaction Plot for Ol_y_Ona_706B
Ol_y_Ona_706B
330
320
310
300
290
280
AB
AC
AD
AE
BC
BD
BE
CD
CE
DE


Normal Probability Plot for Ol_y_Ona_706B
percentage
99,9
99
95
80
50
20
5
1
0,1
-15
-5
5
15
25
Standardized effects


Estimated Response Surface
P_C525=2,9,Nivel_V540=6,5,Vapor_E532=1050,0
Ol_y_Ona_706B
340
330
320
310
300
290
94
96
98
100
102
(X 1000)
Carga
11000
10900
10800
10700
10600
10500
Vapor_E530


Contours of Estimated Response Surface
P_C525=2,9,Nivel_V540=6,5,Vapor_E532=1050,0
Vapor_E530
11000
10900
10800
10700
10600
10500
94
96
98
100
102
(X 1000)
Carga
Ol_y_Ona_706B
290,0
295,0
300,0
305,0
310,0
315,0
320,0
325,0
330,0
335,0


Residual Plot for Ol_y_Ona_706B
residual
predicted
8
5
2
-1
-4
-7
270
290
310
330
350