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ADDITIONAL REMEDIAL INVESTIGATION
MIDDLE FORK LITTLE BEAVER CREEK
NEASE SITE, SALEM, OHIO

VOLUME 2 OF 2
APPENDIX A

Prepared for:

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August 1994

Project No.: 933-6154

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1.0 PREFACE

In March 1994, ERM-Midwest, Inc. (ERM) prepared and submitted a report to RNC summarizing the results of the statistical analyses ERM performed on the MFLBC Phase II data. The ERM report has been reproduced here with format modifications, so as to incorporate it into a comprehensive Remedial Investigation document presenting all relevant data collected at the MFLBC.

2.0 PHASE II RESULTS

2.1 Introduction

In accordance with the ERM-Midwest, Inc. document entitled "Middle Fork Little Beaver Creek Sampling Plan" dated February 4, 1993, sediment and overbank deposit sampling was performed in three areas along the Middle Fork Little Beaver Creek (MFLBC) in Salem, Ohio.

The objectives of the sampling/analyses and statistical analyses were:

- To determine if there are relationships between site physical parameters and Mirex concentration;
- To evaluate Mirex extent in the sampled areas (and through the entire MFLBC study area); and,
- To evaluate if the MFLBC data base is sufficient to address remedial design questions.

Upon completion of this sampling in the MFLBC, the sampled data set was analyzed by various statistical methods.

2.2 Sampling Results

2.2.1 Sampled Locations/Data Summary

MFLBC sediments and overbank deposits were sampled in three areas using an unaligned systematic grid procedure (procedure is described by Gilbert (1987)). The three areas sampled [with associated river miles (R-M)] were:

- Area 2: R-M 36.2-36.5;
- Alternate Area 3: R-M 30.3-30.9; and,
- Area 5: R-M 21.6-22.1.

A map showing the locations of these areas along the MFLBC is provided in Figure 1. The sampled areas are shown in detail in Figures 2,3, and 4.

All sampling protocols which were previously established (e.g., ERM, 1993) were followed. All samples were analyzed for:

- Mirex;
- Total Organic Carbon (TOC); and,
- Grain Size (Sieve Analysis).

In addition, the locations of all samples were surveyed in.

The analytical results of the sediment and overbank deposit samples are summarized in Table 1a, with only positive detections shown. Table 1b presents descriptions of the samples collected.

Table 1a was then used to construct the data set for the statistical analyses. The final data set used in the statistical calculations is provided in Table 2. In addition to the Mirex, TOC, and grain size data, the following values were added:

- Uniformity Coefficient (Cu) - explained in the next section;
- Coefficient of Gradation (Cc) - explained in the next section;
- Elevation Difference - Difference between a sampled location's elevation and the elevation of the bottom of the MFLBC perpendicular to that sampled location;
- Perpendicular Distance - Projected shortest perpendicular distance from a sampled location to the MFLBC; and,
- Downstream Distance - Downstream river distance of a sediment sample to a reference point next to the Ruetgers-Nease property (confluence of earthen ditch from th e Ruetgers-Nease property into the MFLBC).

All proper Quality Assurance/Quality Control (QA/QC) protocols were followed, including internal 100% checks of the tables with the original laboratory reports.

2.2.2 Grain Size Distribution

With reference to Table 2, the grain size distributions from the sieve analyses were used to interpolate values of D10, D30 and D60, where (Das, 1983):

- D10: Diameter through which 10% of the total soil mass is passing. Measure of the fine portion of grain sizes.
- D30: Diameter through which 30% of the total soil mass is passing. Measure of the median portion of grain sizes.
- D60: Diameter through which 60% of the total soil mass is passing. Measure of the coarse portion of grain sizes.

These values of D10, D30, and D60 were then used to calculate (Das, 1983):

- Uniformity coefficient = Cu = D60/D10, and
- Coefficient of gradation = Cc = [(D30)^2/(D60*D10)].

Cu and Cc are semi-quantitative measures of soil gradation. The soil gradation is in turn related to the soil type (e.g., sand, clay, etc.).

A large value of Cu is indicative of a well-graded soil (i.e, the distribution of grain sizes extends over a rather large range), while a low value of Cu is indicative of a poorly-graded soil. Very poorly graded soils, such as beach sands have Cu's of 2 or 3, whereas very well-graded soils may have a Cu of 15 or greater (occasionally ranging up to 1000 or so).

A value of Cc of between 1 and 3 is considered to be well graded if the Cu is also greater than approximately 4 for gravels and 6 for sands.

A plot of Cc versus Cu for the overbank deposits and sediments is provided in Figure 5. From Figure 5, it is seen that Cu values are generally high, indicating very well-graded soils. The lowest Cu values were for several of the sediment samples, which is an indication of depositional trends in surface water bodies resulting in poorly-graded soils (i.e., almost singular soil grain size).

2.2.3 Non-Detects/Below-Detection-Limits

Statisticians (e.g., Gilbert, 1987) recommend incorporation of non-detects (ND)/below-detection-limit (BDL) values into the statistical calculations. In this analysis, the ND/BDL values are replaced by a value one-half the detection limit (DL). This method of incorporating the ND/BDL values is prescribed by Gilbert (1987).

The Mirex DLs are obtained by multiplication of the reporting limit with a reporting limit multiplier. When a sample is diluted, a higher reporting limit multiplier may result. However, in cases where a sample was diluted (resulting in a higher reporting limit multiplier) and still tested as ND/BDL, the original undiluted (and lower) reporting limit multiplier was used in order to not upward-bias the statistics.

For example, for SS-09-05, a dilution was performed which resulted in a ND/BDL value for Mirex. Then, the undiluted reporting limit multiplier of 1.94 was multiplied to the Mirex reporting limit (solids) of 18.5 ug/Kg to give 35.89 ug/Kg. Finally, one half of 35.89 ug/Kg resulted in 17.94 ug/Kg, which was incorporated into the statistical data set (Table 3).

2.2.4 Area-Specific Data Sets

The final data set (Table 4.6.6-3) was used to create the following area-specific data sets for further analysis:

- All sediments;

- Area 2 overbank deposit samples;
- Alt. Area 3 overbank deposit samples;
- Area 5 overbank deposit samples; and,
- Areas 2, 3 and 5 overbank deposit samples combined.

In the data sets incorporating Area 2 (Colonial Villa), previous Mirex data was added to these data sets. In addition, the 6"-12" data for Area 2 was left out of the final statistical data sets as they were from a different soil horizon.

2.3 Data Distribution

The generated data sets were used to plot histograms and probability plots for the various parameters. These histogram and probability plots are provided in Appendix 1.

For data distributions which appeared lognormal, the data was log-transformed and the histogram and probability plots for the log-transformed data were plotted. Hence, for normally distributed data, the untransformed histograms and probability plots are provided, while for lognormally distributed data, both the untransformed and transformed histograms and probability plots are provided in Appendix 1.

Determination of the data distribution was through visual inspection of the probability plots. A straight line plot on the probability plot for untransformed data is an indication of a normal distribution, while for log-transformed data is an indication of a lognormal distribution.

In addition, there were distributions which were not normally or log-normally distributed. These distributions fell into three categories:

- Positively skewed - The peak of the distributions was on the extreme right-hand side of the distribution;

- Negatively skewed - The peak of the distributions was on the extreme left-hand side of the distribution; and,
- Other - Mainly bi-modal, i.e., there were two peaks in the distribution.

The results of the visual inspection of the data distributions are summarized in Table 3.

As summarized in Table 3, the Mirex distributions were consistently lognormal in both sediment and overbank deposits. This observation is consistent with reports in the literature that man-made compounds are generally distributed lognormally in environmental media.

From Table 3, the TOC distributions in the overbank deposits are consistently normal. The observation that TOC is not normal or lognormal in the sediment samples is indicative of the relatively turbulent nature in the MFLBC (i.e., depositional and resuspension action) as opposed to the quiescent nature in the overbank deposits.

Distributions of Mirex bi-products, spatial parameters, and grain sizes were not examined.

2.4 Regression Analysis

2.4.1 Background

Most introductory statistical textbooks (e.g. McClave & Dietrich, 1985) address the topic of regression analysis. McClave & Dietrich (1985) define the term "modeling" as "trying to describe how variables are related".

There are two classes of models: (i) deterministic models which hypothesize the exact relationship(s) between variables (used more for discrete variables), and (ii) probabilistic models which "includes both a deterministic component and a

random error component" (Dietrich & McClave, 1985) (used more for variables sampled randomly, or random variables).

The general form of probabilistic models is:

$$y = \text{Deterministic Component} + \text{Random Error}$$

where y is the variable to be predicted. We will always assume that the mean value of the random error equals zero. This is equivalent to assuming that the mean value of y, E(y), equals the deterministic component of the model (i.e., E(y) = Deterministic Component, McClave & Dietrich, 1985).

In this document, the data from the MFLBC sampling are random variables, and the terms "random variable" and "variable" will be used interchangeably.

"Regression analysis" is a class of probabilistic models consisting of two major types: (i) simple linear (straight-line/first-order) regression, and (ii) multiple regression. The difference between simple linear and multiple regression is in the deterministic component, where E(y) for simple linear regression has the form of a straight line equation, while E(y) for multiple regression has the form of a higher-order equation.

Example:

Simple Linear Regression: $E(y) = mx + c$

where
- m = slope of the straight line
- x = independent (or predictor) variable
- c = y-intercept of the straight line
- y = dependent (or response) variable

Multiple Regression: $E(y) = a0 + a1x1 + a2\ x2 + \ldots + ak\ xk$

where
- a0, a1 ,... = regression coefficients
- x1, x2 ,... = independent variables (e.g. x, x2, z3, ln(t), etc.)
- y = dependent (or response) variable

2.4.2 Methodology of the Regression Analysis

- A data set of random variables was first graphed to visually determine the existence of relationships, and if so, what type of relationship(s) (e.g. linear (first-order) or higher-order).

- The regression analysis has an underlying assumption for normality. Hence, using the results from the histogram and probability plots, the data was transformed prior to graphing according to the following conventions:

  - Normally distributed data = Data used without any transformations;

  - Lognormally distributed data = Data log-transformed;

  - Positively skewed data = Data approximated as normally distributed, and used without any transformations;

  - Negatively skewed data = Data approximated as lognormally distributed, and log-transformed;

  - Other = Data approximated as normally distributed, and used without any transformations;

- If scatter in the data is observed in a plot, then a relationship does not exist or the system is too variable, and a different random variable(s) was chosen and this step is repeated;

- Where a trend or relationship was evident in the data plots, a regression model was constructed using a least-squares approach, as provided in many statistical textbooks (e.g. McClave & Dietrich, 1985), for both simple linear and multiple regression to obtain "fits" of the deterministic component, E(y);

- The "goodness-of-fit" of a regression model was dealt with using the concept of correlation. Positive (or high) correlation means that the regression model relates one random variable to one or more random variables very well, while negative (or low) correlation means that the regression model does not relate one random variable to one or more random variables;

- Several numerical descriptive measures of the correlation are generally termed "coefficient of correlation (R)", and these coefficients of correlation (e.g. Pearson product moment coefficient of correlation) are defined in statistical textbooks (e.g. McClave &

Dietrich, 1985). The values of R (or R^2) range from 0 (low correlation) to 1.0 (high correlation), and are the measures of the strength of the regression models to relate two or more random variables.

- An R^2 of greater than 90% (or 0.9) was considered a successful relationship. An intermediate range for R^2 from 75% to 90% was also considered acceptable. An R^2 value less than 75% indicated that the particular form of the regression model was not acceptable (NOTE: This is a criteria of failure for this method); and

- Finally, plots of the regression models (with the specified upper and lower confidence limits) were overlaid on the graphs generated earlier to visually validate that the resulting regression models do correlate with the measured data.

2.4.3 Regression Results

In general, there was a large degree of scatter in the data plots. This general observation indicated that there was a large degree of variability in the physical system of the MFLBC.

In spite of the scatter in the data, several possible scenarios were plotted, and linear regression fits were performed for these scenarios. The values of R^2 for the linear regression of these scenarios are tabulated in Table 4. The scatter plots with the linear regression lines are provided in Appendix 2.

Where applicable, the data was transformed according to the convention established in Section 4.6.6.3.2 prior to the regression analysis in order to comply with the underlying assumption of normality in the regression analysis.

Various spatial relationships, carbon affinity, and grain size interactions were investigated through the linear regression fits. Particular emphasis was placed on the following relationships:

- Mirex versus Elevation (overbank deposit);

- Mirex versus TOC (overbank deposits and sediment);

- Mirex versus Grain Sizes (overbank deposit and sediment);
- Mirex versus Downstream Distance from Site (sediment);
- Mirex versus Elevation Difference from creek bank to sampling location (overbank deposit); and,
- Mirex versus Perpendicular Distance from creek bank to sampling location (overbank deposit).

With reference to Table 4, it is observed that the values of R^2 are all below 0.75 (75%), which was the lower limit of established criteria of successful correlation (ERM-Midwest, Inc., 1993). These results indicate that, in general, there is poor correlation in the data set. Therefore, while the linear regression analysis provides mathematical equations which relate various site parameters to Mirex concentrations, the level of confidence in these mathematical equations is relatively low because of the low correlation observed.

To a large degree, the observation of poor correlation is indicative of the relatively large degree of variability in the MFLBC system (overbank deposit and sediment). However, several consistent trends were noted in all the areas:

OVERBANK DEPOSIT:

- An approximate logarithmic decrease in Mirex concentration with increasing perpendicular distance;
- An approximate logarithmic decrease in Mirex concentration with increasing elevation difference; and
- An increase in TOC concentration with increasing perpendicular distance.

SEDIMENT:

- An increase in TOC with increasing distance downstream from the site; and
- A decrease in Mirex concentration with increasing distance downstream from the site.

The trend between Mirex and elevation difference was consistently observed in all sampled areas, albeit with some outliers/local areas of high Mirex concentration. This observation reflects a general decrease in Mirex concentration, with increasing elevation from the MFLBC, as Mirex decreases with distance away from the MFLBC.

In addition, it was noted that there was an increase in Mirex with decreasing grain size in Area 5, but not in Areas 2 and 3. This observation indicates that Mirex may tend to the finer fraction of the soils, but that this observation is sensitive to physical variabilities, such as human development/activities. For example, the trend with grain size is noted only in Area 5, which is swampy and less developed than Areas 2 and 3, which have been exposed more to human development/activities.

The consistent trends noted above were used to develop a multiple regression equation (with several non-linear transformations). In generating the multiple regression equation, the appropriate data transformations were performed to fulfill the underlying assumption for normality of the data.

In addition, the data sets were inspected for outliers from observed trends (e.g., high Mirex concentration with high elevation difference), and the SS-28-02 and SS-28-13 samples were removed from the data set as outliers. Also, the observed versus predicted plots were examined and the SS-09-09 sample was removed from the data set as an outlier.

No outliers were observed in the sediment samples.

The resulting best-fit multiple regression equations are provided below (detailed statistical calculations are in Appendix 3):

OVERBANK DEPOSIT:

Mirex = exp[299.912 - 41.3410xln(Elevation) - 0.0000x(TOC) + 0.4489xln(D10) - 0.8601xln(D30) + 0.0543xln(D60) - 2.5163xln(Elevation Difference) - 0.4066xln(Perpendicular Distance)]

R^2 = 0.7176 (i.e., 71.76%)

SEDIMENT:

Mirex = exp[0.336 - 0.000052x(Downstream Distance) + 0.855170xln(TOC) - 0.007042x(D10)]

R^2 = 0.484 (i.e., 48.4%)

Removing the outliers improved the value of R^2; for example, the R^2 value in the overbank deposit data set increased from 0.6432 to 0.7176 with the removal of the three outliers.

From the above equations, it is seen that the overbank deposit multiple regression equation is well correlated (though less than the established R^2>75% criteria for success), while the sediment equation is poorly correlated (from the low R^2 value).

2.4.4 Evaluation of the Effects of Tillage

In the course of the sampling effort, it was observed that some sample locations in Area 3 may be in areas which have historically been disturbed by farming activity. Hence, the potential impact of such disturbance was evaluated through a linear regression analysis.

- Two sample sets were created: potentially disturbed and undisturbed soil samples.
- Histograms and probability plots of these sample sets were generated for determination of data distributions.
- Regression analyses were performed on these two sets (the methodology in Section 2.4.2).

The results of the determinations of data distributions are shown in Table 5. The results of the linear regression analyses are found in Table 6. The detailed calculations are provided in Appendix 4.

From Table 5, it is clear that the data distributions in the tilled and untilled samples are generally different. For example, Mirex is normally distributed in the tilled samples and is negatively skewed in the untilled samples. This result is an indication of differences between the tilled and untilled areas.

From Table 6, it is observed that the R^2 values were different between the tilled and untilled samples. The R^2 values were generally higher in the untilled samples, by at least an order of magnitude in many cases. For example, the highest R^2 value was 84.82% for the relationship between ln(Mirex) and ln(D60) in the untilled samples.

In summary, the results from Table 6 indicate that:

- The Mirex distribution in the tilled areas was more variable than in the untilled areas; and,
- Depositional trends were better defined in the untilled areas versus the tilled areas.

Study results indicate that human activities, such as tilling, increase the variability of the MFLBC system. Therefore, the mode of analysis utilized in this study may not be able to account for large variabilities in portions of the MFLBC which have been farmed.

2.4.5 Study of the Effects of Incorporating Past Data with New Data

As described in Section 4.6.6.1.4, previous Mirex data from the Area 2 (Colonial Villa) overbank deposits was added to the data set in the analysis. Multiple regression was used to study the effects of incorporating or leaving this previously collected data out of the overbank deposit analysis.

- First, a multiple regression equation was generated using all the overbank deposit data (from the three areas) with the same independent variables used in the multiple regression equation derived in Section 2.4.3.

- Then, a second multiple regression equation was generated using new overbank deposit data.

- Next, a multiple regression was generated using all overbank deposit data from Areas 3 and 5 minus the effects of Area 2.

- Finally a third multiple regression equation was generated using all overbank deposit data from Areas 2 and 5 minus the effects of Area 2.

The resulting R^2 values from these three regression runs are shown in Table 7 (detailed calculations are provided in Appendix 5).

From Table 7, it is seen that there is a little improvement in the R^2 values using just new overbank deposit data; however, the greatest change in R^2 is when the data in Area 2 is removed from the regression run. This indicates that the overbank deposits in Area 2 are significantly different (from a statistical viewpoint) than those in Areas 3 and 5.

Hence, these observations indicate that temporal variabilities are not very significant, while localized system variabilities may be significant depending on land use.

2.5 Geostatistical Analysis

2.5.1 Background

Geostatistics was originally developed in the mining and oil exploration industries to predict the likelihood of finding natural resources in unsampled areas close to sampled locations. Geostatistics consists of variogram analysis, kriging, and simulation.

Geostatistics, in general, operates on the observation that "if measurements are made at two different locations, the closer the measurement points are to each other, the closer the measured values (deMarsily)". Measured values are then defined as "regionalized variables" that are "typical of a phenomenon developing in space (and/or time) and possessing a certain structure [or spatial correlation] (deMarsily)".

The structure of geostatistics, which is spatial by nature, places this analysis at the end of this statistical evaluation, after exhausting the regression analysis methods. Geostatistics may be used in a limited sense to confirm some of the regression models if good regression models exist. In general, the estimates from the regression analysis and geostatistics will not be averaged together, but handled separately.

Preliminary site knowledge indicated that there would be high probability of modeling Mirex distribution in the MFLBC system using one or more regression models which compare Mirex and one or more site physical parameters. However, as the regression results were less than satisfactory, geostatistics was evaluated as an alternate method for modeling the spatial distribution of Mirex in the MFLBC system.

Kriging, a "weighted moving-average estimation technique based on geostatistics" (Gilbert, 1987) is described in various geostatistical textbooks (e.g. Journel & Huijbregts, 1978), and has been accepted by U.S. EPA (e.g. U.S. EPA, 1990, 1991) for analyzing environmental data. Kriging has been used to model the distribution of hydraulic conductivities in soils, and groundwater quality (Gilbert, 1987). It is suitable for the current scope of work to find relationships in the various parameters of the MFLBC system in the event that the spatial distributions of contaminants have to be estimated.

2.5.2 Methodology of the Geostatistical Analysis

Gilbert (1987) summarizes the method of kriging as follows: "Kriging, a weighted moving-average estimation technique based on geostatistics, determines the weights by using the spatial correlation structure of the pollutant, which is estimated from the grid data. In this way a mean is estimated at each node of a grid laid over the region of interest. Kriging permits one to estimate the variance of each estimated mean and hence to assess whether additional data are needed in any portion of the region."

The specific steps to the geostatistical analysis were as follows:

- The analyses focused on Mirex's and TOC's spatial distribution.
- Use the results of the determination of data distributions to transform the data prior to analyses (to satisfy the underlying assumption of normality in this analysis).
- Create plots of Mirex (or appropriate transformed data) versus several MFLBC spatial parameters (e.g., northing, easting, elevation, etc.).
- Study the plots for trends in the data. If consistent trends exist (due to factors other than spatial correlational trends), then de-trend the data. The proper data transformation is a form of this de-trending.
- Variogram analysis: According to U.S. EPA (1991), "[t]he computation, interpretation, and modeling of variograms is the 'heart' of a geostatistical study. The variogram model is your interpretation of the spatial correlation structure of the sample data set. It controls the way that kriging weights are assigned to samples during interpolation, and consequently controls the quality of the results... Variogram analysis attempts to quantify this relationship: How well can a measurement be expected to represent another location a specific distance (and direction) away?"
- Generate an omnidirectional variogram versus lag distance (distance class interval) plot.
- Visually fit a variogram model (e.g. spherical, exponential, linear with nugget) to the variogram plotted.

- Plot directional variograms for several different directions and visually fit variogram models to the variogram plots.

- If the directional variogram models vary with direction and with the omnidirectional variogram, then this is an indication of anisotropy.

- Based on the variogram analysis above, set up the variogram model for kriging, including specifying the kriging search window to approximate the degree of anisotropy observed during the variogram analysis (described in U.S. EPA, 1991).

- Ordinary block kriging will be performed and the kriging estimates of Mirex will be plotted up with the kriging standard deviations (KSD).

- Areas which have high KSD values (relative to an action value for Mirex) are indicative of areas which may require further sampling.

- Repeat the kriging with several different variogram models (e.g. use exponential instead of spherical).

- If the krige estimates and KSD do not change significantly, this is a sign that the physical system which was kriged is relatively "robust" to the type of spatial correlation structure used.

- For each case, the coefficient of variation is calculated by dividing an approximate mean (from the cross-validated kriging estimate map) with an approximate standard deviation of Mirex (from the cross-validated KSD map).

- A coefficient of variation of 1.5 or less defines a successful geostatistical result.

- The kriging model is then used for cross-validation. U.S. EPA (1991) defines cross-validation as "estimating values at each sampled location in an area by kriging with the neighboring sample values" (excluding the value of the point being estimated). The estimates are then compared to the original observations in order to test if the hypothetical variogram model and neighborhood search parameters will accurately reproduce the spatial variability of the sampled observations."

- Graphs of the kriged estimates versus measured data are plotted to determine their correlation.

- High correlation is a measure of success with the geostatistical analysis.
- The current protocol is to start the two-dimensional geostatistical analysis using the U.S. EPA software GEO-EAS (U.S. EPA, 1991).
- If needed, use a three-dimensional geostatistical analysis using a customized computer program written from the geostatistical mathematical formulations.

2.5.3 Geostatistical Results

The ideal variogram cloud is one in which the variograms are scattered evenly throughout the plot, indicating a lack of trends or outliers. A variogram cloud of all the overbank deposit data is shown in Figure 6. The variogram cloud plot indicates three distinct concentrations of data pairs corresponding roughly to the distances between each of the three sampled areas. This is indicative of strong bias/trend exerted by the distances between sampled areas.

In the current data set, it was not productive to combine the data from the three sampled areas in light of such strong trending by the physical separation between the sampled areas. Hence, the geostatistical analyses proceeded with separate analyses of the data in each of the three sampled areas.

In addition, only the overbank deposit samples were considered, with the sediment data handled in the earlier regression analysis as a one-dimensional problem with respect to the downstream distance from the site.

2.5.4 Two-Dimensional Geostatistical Results

Variogram Analysis

Relevant hard-copy output of the variogram analysis is provided in Appendix 6.

In considering the overbank deposit data in each sampled area, it became apparent during the variogram analyses that the number of data pairs generated from the

entire geostatistical analyses were, in general, small (i.e., < 50 data pairs). Hence, only moderate to low confidence could be placed on the resulting variograms generated from paired-data points.

This observation is an indication that an insufficient number of samples were collected to characterize the physical system under the current sampling constraints.

Also, it was observed that there was much scatter in the variogram plots. Some of the scatter was a result of large differentials in Mirex concentrations between samples in close proximity to each other; for example, in Area 2 (Colonial Villa).

The directional variogram analyses consistently indicated vastly different variograms in directions approximately parallel and perpendicular to the MFLBC. This observation is indicative of strong anisotropy in the MFLBC overbank deposit system. The directional plots were achieved by varying the search window for the variogram plots. Only those data which fell into the defined search window were incorporated into the computation of the variogram at a certain lag distance.

Various variogram models were visually fitted to the variogram plots using GeoEAS. These models are provided in Table 8 (Appendix 6 contains the hard-copy output).

With reference to Table 8, the variogram models fall into several categories and are defined by several parameters:

- OMNI: Omnidirectional or unbiased in all directions. Equivalent to a circular search field.
- DIRECTIONAL: Focused in specific direction(s). Equivalent to an elliptical search field. In general, the directions considered were approximately parallel and perpendicular to the MFLBC flow direction.

- MODEL TYPE: The theoretical relationship to model the variogram plot.
- NUGGET: Y-intercept of the variogram model. It is indicative of the amount of the random error in the samples.
- SILL: The vertical distance from the Y-intercept to the "plateau" in the variogram plot.
- RANGE: The region around an estimated location in which samples falling in this region will be weighted and used to provide an estimate at that location. May be circular in definition (Major range = minor range) or elliptical (major range ≠ minor range).
- ANGLE: Counterclockwise angle of the major range from the positive X-axis.

With reference to the variogram plots in Appendix 6, rather large "nuggets" were observed in the variogram models, which indicate the presence of large random variability in the physical system. This random variability may be due to one or more of the following:

- Underlying random error in the physical system.
- Laboratory measurement error.
- Field and lab sampling errors.

It is likely that the underlying random error in the physical system contributes most to the observed "nugget" as the laboratory/field sampling and measurement error is minimized through the strict adherence to EPA-approved sampling, analysis and data validation protocols.

Cross-Validation

The cross-validation results are provided in Table using the variogram models shown in Table 8. The cross-validation output is provided in Appendix 7.

The means of the sample data and the estimates at the sampled locations (through kriging) in each of the three areas are calculated, with the associated differences in mean values. The kriging standard deviations (KSD) from the cross-validation are also listed in Table 9. The coefficients of variation (COV) are calculated by dividing these KSD by the estimate means.

With reference to Table 9, it is seen that the COV values are less than 1.5. The largest COV is 0.61, which is an indication that the kriging has relatively low associated KSD values. One reason for this is that data which are not deemed as outliers are sufficient in characterizing the overall spatial distribution by accounting for the few outliers.

The above observations show that the criteria of success established earlier (ERM, 1993) of COV < 1.5 has been met. Therefore, the results of the kriging are adequate in representing the spatial distribution of Mirex in the three areas.

The COV values for directional kriging are generally less than the COV values for omnidirectional kriging. For example, in Area 1, COV = 0.36 for the omnidirectional case and COV = 0.31 for the directional case. This observation concurs with the earlier observation that the system is anisotropic, and indicates that directional kriging is a better predictor of Mirex and TOC distributions.

However, the cross-validation plots in Appendix 7 indicate that the kriging routine tends to underestimate the Mirex concentrations at high Mirex levels, and overestimates the Mirex concentrations at low Mirex levels. This observation is consistent with the tendency of kriging to "level-out" spatial distributions by weighting the outliers (extremely high or low data) less than the rest of the data.

Kriging

The kriging models summarized in Table 8 were used to perform the kriging. In kriging the overbank deposit Mirex concentrations, an ellipsoidal search field was

used to simulate the anisotropic nature of the overbank deposits first observed in the variogram analysis.

The resulting contour plots of kriged estimates of ln(Mirex) and TOC in the three sampled areas are shown in Appendix 8. In addition, for each krige contour map, the associated KSD map is also plotted. Several observations about these contour plots are:

- Mirex distribution is approximately parallel to the MFLBC;
- Mirex concentrations tend to decrease away from the MFLBC;
- There are localized elevated zones of both Mirex and TOC in the three sampled areas;
- The Mirex and TOC distributions were approximately symmetrical on each side of the MFLBC in areas 3 and 5;
- The Mirex concentrations tended to be higher on the northern banks than on the southern banks in Area 2;
- The TOC concentrations tended to be lower on the northern banks than on the southern banks in Area 2; and
- Generally, all the KSD contour plots appeared as "clumps" of low KSD values. The clumping in the KSDs is due to the fact that the variability calculated by the kriging routine is minimized near the areas sampled (kriging reproduces exactly the measured concentrations at the sampled locations), and increases further away from the samples and between samples. Therefore, the kriging routine is not introducing error into the estimates. This observation is indicative of successful use of kriging to model the spatial distribution of Mirex and TOC in the overbank deposits in the three sampled areas.

Sensitivity Analysis

Two scenarios were considered:

- Omnidirectional in Area 5 for ln(Mirex); and
- Omnidirectional in Area 3 for ln(Mirex).

Areas 3 and 5 were selected because the kriging model in Area 3 had a nugget smaller than the model sill, while Area 5 had a nugget larger than the model sill. The results from these scenarios should be similar in Area 2 and in the directional scenarios.

The results of the sensitivity analysis are summarized in Table 10. The sensitivity analysis calculations are provided in Appendix 9.

With reference to Table 10, the following are some observations from the sensitivity analysis:

- The criteria of success (COV < 1.5) was met in all the cases considered;
- The differences in measured means versus estimated means were rather small (maximum difference = 1.17%);
- The largest changes in COV are for kriging runs with varying nuggets (though the magnitude of the changes remain rather small);
- The largest changes in the differences in measured means versus estimated means are for kriging runs with varying ranges (though the magnitude of the changes remain rather small);
- The trends observed by varying the kriging parameters are summarized in Table 11;
- With reference to Table 11, there was no consistent general trend using the different variogram models;
- With reference to Table 11, there was a general increase in the variability of the kriging estimates with increasing sill. This observation is consistent with the direct relationship that the sill has with estimated variability; and
- With reference to Table 11, there was a general decrease in the variability of the kriging estimates with increasing range. This observation is due to the fact that more measured data are incorporated in the estimation of a particular location as a result of an increased search field.

The above observations indicate that the overall MFLBC overbank deposit system is not very sensitive to kriging model, sill, or range. However, this system is moderately sensitive to the nugget. These results indicate that the kriging routine is relatively "robust" for the MFLBC overbank deposit system. One reason for this observed "robustness" is that the MFLBC overbank deposit system may be highly variable, so the analysis of the underlying distribution of Mirex reflects this significant effect of natural system variability.

2.5.5 Three-Dimensional Geostatistical Results

The data collected was not adequate for the three-dimensional geostatistical analysis. In general, the three-dimensional analysis requires more data than the two-dimensional analysis to adequately characterize the third dimension. For example, the variogram plots consisted of up to four to six variogram data points, which did not permit adequate variogram model fits, or directional variogram analysis to determine the degree of anisotropy.

However, the same degree of scatter (as in the two-dimensional case) was observed in the variogram plots (in spite of the small number of data points), indicating yet again the system variability observed earlier.

Hence, the three-dimensional analysis was inconclusive under the current sampling scenario.

2.6 Phase II Summary

2.6.1 Summary of Results

Both regression and geostatistical analyses were performed on overbank deposit and sediment data collected from three areas in the MFLBC. From these analyses, the following results may be summarized:

- The data distributions of the various measured parameters were determined and fell into five categories:

  - Normal distribution
  - Lognormal distribution
  - Positively skewed distribution
  - Negatively skewed distribution
  - Other, mainly bi-modal, distribution

- The results of the regression analysis indicate that, overall, there is no strong relationship between Mirex and any of the MFLBC site parameters (e.g., TOC, Perpendicular Distance, D10 , etc.).

- However, inspection of the data plots indicates there were some trends in the MFLBC, especially of decreasing Mirex concentration with increasing distance away from the MFLBC.

- Combining the site parameters in a multiple regression equation, and removing the "outliers" from the data set, provided better correlation of Mirex to site parameters.

- The established criteria of success (i.e. R2 > 75%) for the regression analysis was not met in this study for both overbank deposits and sediments data.

- In the overbank deposits, the following multiple regression equation was obtained for all three sampled areas combined:

  - Mirex = exp[299.912 - 41.3410xln(Elevation) - 0.0000x(TOC) + 0.4489xln(D10) - 0.8601xln(D30) + 0.0543xln(D60) - 2.5163xln(Elevation Difference) - 0.4066xln(Perpendicular Distance)]

  - R^2 = 0.7176 (i.e., 71.76%)

  - Moderate correlation

- In the sediment, the following multiple regression equation was obtained:

  - Mirex = exp[0.336 - 0.000052x(Downstream Distance) + 0.855170xln(TOC) - 0.007042x(D10)]
  - R^2 = 0.484 (i.e., 48.4%)
  - Low correlation.

- The regression analysis was used to study the effects of tillage in the MFLBC from Area 3 overbank deposit data. The results indicate that tillage in the MFLBC does affect the natural depositional trends in the MFLBC.

- Hence, while standard depositional action governs the Mirex distribution in the overbank deposits, there is variability exerted from human presence along the MFLBC (e.g., agriculture, creek dredging, land cover, etc.) which will affect the natural depositional trends.

- The temporal variability in the MFLBC was studied by comparing the regression results with Area 2 (Colonial Villa) overbank deposit data (collected in an earlier sampling event) left in and out of the entire overbank deposit data set. The results indicated that there was some temporal variability in the MFLBC, though their effects are less than other system variabilities (e.g., spatial).

- The geostatistical analysis indicated that it was not possible to combine the data from the three sampled areas. This was because the sampled areas were sufficiently far from each other that the inter-area distances dominated the variograms rather that the intra-area sample distances. Hence, each sampled area was analyzed separately in the geostatistical study.

- In addition, only two-dimensional geostatistical analysis was performed using U.S. EPA's GeoEAS. Three-dimensional geostatistical analysis, which requires a larger data set than two-dimensional analysis, was not possible as there were too few data points in each sampled area.

- Also, only overbank deposit data was analyzed using geostatistics. Sediment data was handled as a one-dimensional problem, and analyzed using the regression analysis.

- In the variogram analysis, it was observed that the data pairs for some of the variogram plots were relatively low. This was an indication that the number of samples collected in some of the sampled areas were insufficient.

- Relatively strong anisotropy was observed in the overbank deposits in directions approximately parallel and perpendicular to the MFLBC.

- The results of the cross-validation kriging were used for calculating the Coefficient of Variation (COV) values.

- The established criteria of success (i.e. COV < 1.5) for the geostatistical analysis was met in all cases considered this study for the overbank deposits data.

- Because of the observed anisotropy in the overbank deposit data, the directional, rather than omnidirectional, kriging was performed for Mirex and TOC, and kriging contour plots were generated.

- From the kriging contour plots, it was observed that:

  - Mirex was distributed approximately parallel to the MFLBC.
  - Mirex concentrations tend to decrease away from the MFLBC.
  - There were localized elevated zones of both Mirex and TOC in the three sampled areas.
  - The Mirex and TOC distributions were approximately symmetrical on each side of the MFLBC in areas 3 and 5.
  - The Mirex concentrations tended to be higher on the northern banks than on the southern banks in Area 2.
  - The TOC concentrations tended to be lower on the northern banks than on the southern banks in Area 2.

- The kriging standard deviation (KSD) contour plots indicated that the kriging routine is not introducing error into the estimates, and are indicative of successful use of kriging to model the spatial distribution of Mirex and TOC in the overbank deposits in the three sampled areas.

- The sensitivity analyses indicated that:

  - The criteria of success (COV < 1.5) was met in all the cases considered. In addition, the differences in measured means versus estimated means were rather small.
  - The largest changes in COV are for kriging runs with varying nuggets (though the magnitude of the changes remains rather small).
  - The kriging routine is relatively "robust" for the MFLBC overbank deposit system. One reason for this observed "robustness" is that the MFLBC overbank deposit system may be highly variable, so the analysis of the underlying distribution of Mirex reflects this significant effect of natural system variability.

2.6.2 Conclusions

The results of the statistical analyses of overbank deposit and sediment data indicate that both regression and geostatistical analyses have the potential to adequately describe Mirex distribution in the MFLBC overbank deposit system. The modeling of sediment distributions with a regression and/or geostatistical approach is inadequate due to the inherent system variabilities (e.g., influence from human activity, spatial and temporal variabilities).

Regression, in particular, has enough potential to warrant further study. Geostatistics, while meeting the established criteria for success, is rather limited to localized overbank deposit areas along the MFLBC.

The results of this study indicate that temporal variabilities in the MFLBC overbank deposits are not as significant as the spatial variabilities. For example, there are indications that past human activity will introduce large variations into the results of either regression or geostatistics.

2.7 References

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Z:933-6154:MFLBC.RPT:APPXA:REPORT.WP5

Table 1a

Ruetgers-Nease Corporation

MFLBC Sediment Sampling

Sampling Dates: May 10 thru May 15, 1993

Mirex\Photomirex\Kepone, Total Organic Carbon, & Grainsize Samples (1)

Northing	Easting	Elevation	Area	Sample Number	Sur. Num	Other Desig.	Mirex ug/kg	Photo M ug/kg	Kepone ug/kg	TOC mg/kg	D10 um	D30 um	D60 um	Sample Depth	QA/QC Sample
468879.440	2446636.259	1103.11	2	RNS-SS-09-01	SL-1		54.2			24000	0.61	9.0	70	(0-6")	
468976.563	2447090.267	1102.79	2	RNS-SS-09-02	SL-5		17.3			26000	0.68	8.8	36	(0-6")	
469125.436	2446642.301	1101.80	2	RNS-SS-09-03	SL-7		10.2			13000	0.18	10.0	51	(0-6")	
469228.998	2446985.305	1101.26	2	RNS-SS-09-04	SL-8		48.7	4.64		14000	0.75	23.0	128	(0-6")	
469335.432	2446682.343	1101.87	2	RNS-SS-09-05	SL-17					20000	0.10	4.8	30	(0-6")	
469336.993	2446986.346	1101.35	2	RNS-SS-09-06	SL-18		29.2			17000	2.00	41.0	150	(0-6")	
469377.555	2447194.350	1100.66	2	RNS-SS-09-07	SL-19		18.5			25000	2.00	30.0	110	(0-6")	
469396.677	2447580.357	1099.44	2	RNS-SS-09-08	SL-24		2870			13000	1.50	35.0	120	(0-6")	
469685.112	2447316.395	1111.65	2	RNS-SS-09-09	SL-26		28.9			21000	0.73	17.5	75	(0-6")	
469544.673	2447601.399	1099.76	2	RNS-SS-09-10	SL-25		74	3.29		17000	2.30	21.0	63	(0-6")	
469024.217	2446874.804	1101.70	2	RNS-SS-09-11	SL-6	CV-1	*	*	*	27000	3.00	36.0	175	(0-6")	
469236.322	2447398.319	1099.16	2	RNS-SS-09-12	SL-15	CV-11	*	*	*	24000	1.50	9.3	32	(0-6")	
469241.107	2447470.445	1100.05	2	RNS-SS-09-13	SL-16	CV-13	*	*	*	26000	1.90	11.0	43	(0-6")	
469264.572	2447386.316	1098.90	2	RNS-SS-09-14	SL-20	CV-10	*	*	*	18000	2.50	16.8	57	(0-6")	
469280.009	2447449.070	1099.59	2	RNS-SS-09-15	SL-21	CV-12	*	*	*	18000	1.40	14.0	57	(0-6")	
469024.217	2446874.804	1101.70	2	RNS-SS-09-16	SL-6	CV-1	41.3	2.41		15000	3.60	73.0	305	(6-12")	
469236.322	2447398.319	1099.16	2	RNS-SS-09-17	SL-15	CV-11	342	21.2		15000	0.17	7.1	45	(6-12")	
469241.107	2447470.445	1100.05	2	RNS-SS-09-18	SL-16	CV-13	24.1	2.33		26000	0.61	9.8	44	(6-12")	

Notes:

(1) Table provided by MFLBC Statistical Analysis Report, ERM-Midwest, March 1994.

(2) "*" Sample analyzed in a previous sampling event.

Table 1a

Ruetgers-Nease Corporation

MFLBC Sediment Sampling

Sampling Dates: May 10 thru May 15, 1993

Mirex\Photomirex\Kepone, Total Organic Carbon, & Grainsize Samples (1)

Northing	Easting	Elevation	Area	Sample Number	Sur. Num	Other Desig.	Mirex ug/kg	Photo M ug/kg	Kepone ug/kg	TOC mg/kg	D10 um	D30 um	D60 um	Sample Depth	QA/QC Sample
469264.572	2447386.316	1098.90	2	RNS-SS-09-19	SL-20	CV-10	3740	129	30.7	17000	0.14	11.0	55	(6-12")	
469280.009	2447449.070	1099.59	2	RNS-SS-09-20	SL-21	CV-12	223			15000	0.41	8.2	40	(6-12")	
468846.691	2446918.817	1104.89	2	RNS-SS-09-21	SL-2	CV-3	*	*	*	32000	1.60	25.0	70	(0-6")	
468981.996	2446885.016	1102.43	2	RNS-SS-09-22	SL-4	CV-2	*	*	*	30000	4.80	38.0	165	(0-6")	
468897.401	2447182.891	1102.37	2	RNS-SS-09-23	SL-3	CV-6	*	*	*	51000	0.50	7.4	37	(0-6")	
469044.439	2447122.031	1101.67	2	RNS-SS-09-24	SL-11	CV-5	*	*	*	30000	1.00	8.0	26	(0-6")	
469106.496	2447096.025	1100.50	2	RNS-SS-09-25	SL-10	CV-4	*	*	*	28000	1.50	11.0	50	(0-6")	
469148.022	2447250.173	1101.52	2	RNS-SS-09-26	SL-13	CV-8	*	*	*	20000	3.60	19.8	66	(0-6")	
469196.270	2447230.483	1101.15	2	RNS-SS-09-27	SL-12	CV-7	*	*	*	20000	3.40	26.0	74	(0-6")	
469041.815	2447294.290	1106.06	2	RNS-SS-09-28	SL-14	CV-9	*	*	*	24000	4.00	19.5	69	(0-6")	
469264.572	2447592.584	1102.50	2	RNS-SS-09-29	SL-22	CV-15	*	*	*	26000	0.40	9.0	59	(0-6")	
469331.569	2447555.626	1100.70	2	RNS-SS-09-30	SL-23	CV-14	*	*	*	24000	1.00	13.0	69	(0-6")	
468879.440	2446636.259	1103.11	2	RNS-SS-09-31	SL-1		76			32000	1.00	20.0	70	(0-6")	DUP SS-09-01
475433.616	2459610.772	1042.48	Alt.3	RNS-SS-15-01	SL-3		24.2	1.46		36000	0.10	4.0	19	(0-6")	SS-15-01-113 FB
475180.616	2460002.772	1042.49	Alt.3	RNS-SS-15-02	SL-2		27.6	3.16		41000	0.66	7.0	25	(0-6")	
475144.616	2460382.722	1038.17	Alt.3	RNS-SS-15-03	SL-1		57.2			30000	0.10	5.0	39	(0-6")	MS/MSD
475744.616	2459486.772	1044.24	Alt.3	RNS-SS-15-04	SL-6		4.19			14000	0.51	8.9	33	(0-6")	
475450.616	2459583.772	1042.70	Alt.3	RNS-SS-15-05	SL-4		8.9	1.1		33000	0.10	2.9	19	(0-6")	

Notes:

(1) Table provided by MFLBC Statistical Analysis Report, ERM-Midwest, March 1994.

(2) "*" Sample analyzed in a previous sampling event.

Table 1a

Ruetgers-Nease Corporation

MFLBC Sediment Sampling

Sampling Dates: May 10 thru May 15, 1993

Mirex\Photomirex\Kepone, Total Organic Carbon, & Grainsize Samples (1)

Northing	Easting	Elevation	Area	Sample Number	Sur. Num	Other Desig.	Mirex ug/kg	Photo M ug/kg	Kepone ug/kg	TOC mg/kg	D10 um	D30 um	D60 um	Sample Depth	QA/QC Sample
475894.616	2460252.772	1043.57	Alt.3	RNS-SS-15-06	SL-5		23.2			23000	0.01	6.8	30	(0-6")	
476205.616	2459338.772	1044.21	Alt.3	RNS-SS-15-07	SL-9		320	8.1		18000	0.25	13.1	50	(0-6")	
476124.616	2459597.772	1043.81	Alt.3	RNS-SS-15-08	SL-8		23.3			18000	0.45	9.5	40	(0-6")	
476060.616	2459952.772	1042.73	Alt.3	RNS-SS-15-09	SL-7		25.8			10000	0.35	10.5	44	(0-6")	
476629.616	2459346.772	1043.93	Alt.3	RNS-SS-15-10	SL-15		407	11.7		24000	0.72	6.3	45	(0-6")	
476451.616	2459940.772	1043.72	Alt.3	RNS-SS-15-11	SL-11		26.7			18000	0.12	4.0	17	(0-6")	
476346.616	2459965.772	1043.15	Alt.3	RNS-SS-15-12	SL-10		41.1			18000	0.55	5.2	21	(0-6")	
476783.616	2459349.772	1045.72	Alt.3	RNS-SS-15-13	SL-14		15.9			53000	0.52	7.0	27	(0-6")	
476738.616	2459944.772	1043.26	Alt.3	RNS-SS-15-14	SL-13		11.6			22000	0.38	3.7	17	(0-6")	
476921.616	2460035.772	1046.14	Alt.3	RNS-SS-15-15	SL-12					16000	0.68	5.8	27	(0-6")	
475160.616	2460002.772	1042.49	Alt.3	RNS-SS-15-16	SL-2		33.2			32000	0.40	7.0	21	(0-6")	DUP SS-15-02
476346.616	2459965.772	1043.15	Alt.3	RNS-SS-15-17	SL-10		37.9			20000	0.60	5.5	20	(0-6")	DUP SS-15-12
440783.173	2472722.075	1007.23	5	RNS-SS-28-01	SL-1		105			9200	50.00	150.0	250	(0-6")	SS-28-01-114 FB
441013.873	2472679.075	999.49	5	RNS-SS-28-02	SL-2		2600	13.5		42000	0.05	2.1	15	(0-6")	
441044.873	2472864.775	999.42	5	RNS-SS-28-03	SL-3		270			18000	2.00	32.0	165	(0-6")	
441480.273	2472583.375	1010.44	5	RNS-SS-28-04	SL-4					49000	5.50	30.0	250	(0-6")	
441393.273	2472839.075	1000.92	5	RNS-SS-28-05	SL-5		336	24.9		48000	0.32	4.1	21	(0-6")	
441424.273	2472925.775	1000.30	5	RNS-SS-28-06	SL-6		1360	2.48		37000	0.40	1.9	11	(0-6")	MS/MSD

Notes:

(1) Table provided by MFLBC Statistical Analysis Report, ERM-Midwest, March 1994.

(2) "*" Sample analyzed in a previous sampling event.

Table 1a

Ruetgers-Nease Corporation

MFLBC Sediment Sampling

Sampling Dates: May 10 thru May 15, 1993

Mirex\Photomirex\Kepone, Total Organic Carbon, & Grainsize Samples (1)

Northing	Easting	Elevation	Area	Sample Number	Sur. Num	Other Desig.	Mirex ug/kg	Photo M ug/kg	Kepone ug/kg	TOC mg/kg	D10 um	D30 um	D60 um	Sample Depth	QA/QC Sample
441678.973	2472682.075	1007.37	5	RNS-SS-28-07	SL-7		6.5			33000	2.60	36.0	242	(0-6")	
441575.973	2472925.775	1001.19	5	RNS-SS-28-08	SL-8		717	81.1		22000	0.59	7.1	33	(0-6")	
441858.673	2472763.075	1000.64	5	RNS-SS-28-09	SL-9		283	7.6		19000	1.00	23.0	120	(0-6")	
442039.373	2472781.075	1001.05	5	RNS-SS-28-10	SL-10		1220	34.7		40000	0.57	2.5	9	(0-6")	
441941.373	2472911.775	1001.92	5	RNS-SS-28-11	SL-11		758	115		32000	0.50	6.9	28	(0-6")	
442170.073	2472754.075	999.59	5	RNS-SS-28-12	SL-12		206			76000	1.30	4.0	9	(0-6")	
442308.073	2473036.775	1001.09	5	RNS-SS-28-13	SL-13		1240	73		29000	0.09	4.9	19	(0-6")	
442374.773	2472756.075	1001.31	5	RNS-SS-28-14	SL-14		259			77000	2.30	7.5	45	(0-6")	
442492.773	2473005.775	1003.69	5	RNS-SS-28-15	SL-15		18.6			46000	2.90	35.0	155	(0-6")	
442350.773	2473170.475	999.69	5	RNS-SS-28-16	SL-16		381	9.9		31000	0.40	7.0	40	(0-6")	SS-28-16-115 FB
442582.473	2472643.375	1013.34	5	RNS-SS-28-17	SL-17					50000	0.09	1.9	28	(0-6")	
442625.473	2472789.075	1002.56	5	RNS-SS-28-18	SL-18		803	34.2		25000	0.05	1.7	16	(0-6")	
442533.473	2473180.475	1000.70	5	RNS-SS-28-19	SL-19		1290	44.9		25000	0.60	3.0	15	(0-6")	
442724.173	2473106.475	1001.15	5	RNS-SS-28-20	SL-20		1120	46.6		29000	0.20	3.0	30	(0-6")	
441393.273	2472839.075	1000.92	5	RNS-SS-28-21	SL-5		271	23.1		66000	0.50	4.5	30	(0-6")	DUP SS-28-05
442374.773	2472756.075	1001.31	5	RNS-SS-28-22	SL-14		261	5.9		110000	1.50	5.5	20	(0-6")	DUP SS-28-14
469116.394	2446879.759	1196.90	2	RNS-SD-09-02		S-169	191			1400	115.00	255.0	405	(0-6")	
469268.271	2447274.973	1098.00	2	RNS-SD-09-03		S-171	1190			4500	64.00	218.0	322	(0-6")	

Notes:

(1) Table provided by MFLBC Statistical Analysis Report, ERM-Midwest, March 1994.

(2) "*" Sample analyzed in a previous sampling event.

Table 1a

Rustgers-Neese Corporation

MFLBC Sediment Sampling

Sampling Dates: May 10 thru May 15, 1993

Mirex\Photomirex\Kepone, Total Organic Carbon, & Grainsize Samples (1)

Northing	Easting	Elevation	Area	Sample Number	Sur. Num	Other Desig.	Mirex ug/kg	Photo M ug/kg	Kepone ug/kg	TOC mg/kg	D10 um	D30 um	D60 um	Sample Depth	QA/QC Sample
469457.853	2447800.432	1195.70	2	RNS-SD-09-04		S-179	179			1600	270.00	550.0	2950	(0-6")	
469457.853	2447800.432	1195.70	2	RNS-SD-09-05		S-179	71.3			1300	300.00	750.0	5000	(0-6")	DUP SD-09-04
476711.410	2458969.415	1042.40	Alt. 3	RNS-SD-15-02		S-436	11.9			1000	170.00	220.0	400	(0-6")	MS/MSD
476158.371	2459350.339	1038.20	Alt. 3	RNS-SD-15-03		S-450	37.9	1		1500	60.00	180.0	280	(0-6")	
475744.813	2460207.155	1036.20	Alt. 3	RNS-SD-15-04		S-471	20.5			1500	68.00	315.0	540	(0-6")	
475372.722	2460406.895	1035.10	Alt. 3	RNS-SD-15-05		S-479	29.2			1600	95.00	270.0	405	(0-6")	
475218.172	2460744.027	1034.50	Alt. 3	RNS-SD-15-06		S-484	24			13000	125.00	220.0	315	(0-6")	
442425.873	2473064.977	996.40	5	RNS-SD-28-02		S-681	138.5	1.6		9000	7.00	67.0	308	(0-6")	SD-28-02-116 FB
441442.150	2473014.512	995.70	5	RNS-SD-28-03		S-688	223			40000	3.00	55.0	251	(0-6")	MS/MSD
441136.622	2472954.543	994.60	5	RNS-SD-28-04		S-689	28.6			19000	0.09	51.0	165	(0-6")	
441136.622	2472954.543	994.60	5	RNS-SD-28-05		S-689	32.2			13000	1.00	51.5	170	(0-6")	DUP SD-28-04

Notes:

(1) Table provided by MFLBC Statistical Analysis Report, ERM-Midwest, March 1994.

(2) "*" Sample analyzed in a previous sampling event.

Table 1b

Ruetgers-Nease Corporation

MFLBC Sediment Sampling

Sampling Dates: May 10 thru May 15, 1993

Mirex\Photomirex\Kepone, Total Organic Carbon & Grainsize Samples - Location Descriptions (1)

Northing	Easting	Elevation	Area	Sample Number	Other Desig	Sample Depth	Sampling Location Description
468879.44	2446636.259	1103.11	2	RNS-SS-09-01		(0-6")	Moist, brown silt loam, heavy grass cover
468978.563	2447090.267	1102.79	2	RNS-SS-09-02		(0-6")	Moist, brown silt loam, trace oxidation, mottles - light vegetation
469125.436	2446642.301	1101.8	2	RNS-SS-09-03		(0-6")	Moist, red-brown silt/sand loam, light root zone, grass cover, standing water evidence
469228.996	2446985.305	1101.26	2	RNS-SS-09-04		(0-6")	Same as above - brush and tree saplings nearby
469335.432	2446662.343	1101.87	2	RNS-SS-09-05		(0-6")	Black muck soil and red-brown clay in standing water, cattails
469336.993	2446966.348	1101.35	2	RNS-SS-09-06		(0-6")	Very moist-wet clayey sand, adjacent to standing water, cattails, grasses, abundant trees
469377.555	2447194.35	1100.66	2	RNS-SS-09-07		(0-6")	Very moist red-brown silty, fine sandy clay, heavy grass cover, light root zone, trees
469398.677	2447580.357	1099.44	2	RNS-SS-09-08		(0-6")	Wet brown silty sand with black clay at creek edge (emergent) no vegetation
469665.112	2447316.395	1111.65	2	RNS-SS-09-09		(0-6")	Moist brown silty clay with abundant root hairs in drainage ditch, some gravel, grass vegetation
469644.673	2447661.399	1099.76	2	RNS-SS-09-10		(0-6")	Moist red-brown silt loam, heavy grass cover, heavy root zone, scattered brush
469024.217	2446874.804	1101.7	2	RNS-SS-09-11	CV-1	(0-6")	Moist brown sandy loam with gravel, heavy mowed grass cover
469236.322	2447398.319	1099.16	2	RNS-SS-09-12	CV-11	(0-6")	Moist brown silt clay loam, heavy mowed grass cover
469241.107	2447470.445	1100.05	2	RNS-SS-09-13	CV-13	(0-6")	Moist brown clay loam, heavy mowed grass cover
469264.572	2447386.316	1098.9	2	RNS-SS-09-14	CV-10	(0-6")	Moist brown silt loam, heavy mowed grass cover, located on side of small swale
469280.009	2447449.07	1099.59	2	RNS-SS-09-15	CV-12	(0-6")	Moist brown silt loam, heavy mowed grass cover
469024.217	2446874.804	1101.7	2	RNS-SS-09-16	CV-1	(6-12")	Moist brown sandy loam with gravel, below RNS-SS-09-11
469236.322	2447398.319	1099.16	2	RNS-SS-09-17	CV-11	(6-12")	Moist brown silt loam, below RNS-SS-09-12
469241.107	2447470.445	1100.05	2	RNS-SS-09-18	CV-13	(6-12")	Moist brown clay loam with red mottles, below RNS-SS-09-13
469264.572	2447386.316	1098.9	2	RNS-SS-09-19	CV-10	(6-12")	Moist brown silt loam, below RNS-SS-09-14
469280.009	2447449.07	1099.59	2	RNS-SS-09-20	CV-12	(6-12")	Moist brown silt loam, below RNS-SS-09-15
468846.691	2446918.817	1104.89	2	RNS-SS-09-21	CV-3	(0-6")	Moist dark brown silty sandy clay, trace cobbles, roots, part of mowed area near pool

Table 1b

Ruetgers-Nease Corporation

MFLBC Sediment Sampling

Sampling Dates: May 10 thru May 15, 1993

Mirex\Photomirex\Kepone, Total Organic Carbon & Grainsize Samples - Location Descriptions (1)

Northing	Easting	Elevation	Area	Sample Number	Other Desig	Sample Depth	Sampling Location Description
468981.996	2446885.018	1102.43	2	RNS-SS-09-22	CV-2	(0-6")	Moist brown sandy loam, trace gravel, heavy grass in mowed area
468697.401	2447182.891	1102.57	2	RNS-SS-09-23	CV-6	(0-6")	Wet brown clay loam, wet area surrounded by cattails
469044.439	2447122.031	1101.67	2	RNS-SS-09-24	CV-5	(0-6")	Moist red-brown clay loam, heavy mowed grass cover
469108.496	2447096.025	1100.5	2	RNS-SS-09-25	CV-4	(0-6")	Moist brown clay loam, heavy mowed grass cover
469148.022	2447250.173	1101.52	2	RNS-SS-09-26	CV-8	(0-6")	Moist brown silt loam with some gravel, heavy mowed grass cover
469196.27	2447230.493	1101.15	2	RNS-SS-09-27	CV-7	(0-6")	Moist red-brown silt loam with gravel, heavy mowed grass cover
469041.815	2447294.29	1106.06	2	RNS-SS-09-28	CV-9	(0-6")	Moist brown clay loam with abundant root hairs above flat of overbank, heavy mowed grass cover
469264.572	2447592.584	1102.5	2	RNS-SS-09-29	CV-15	(0-6")	Moist sandy loam and gravel in heavy mowed grass cover
469331.569	2447555.626	1100.7	2	RNS-SS-09-30	CV-14	(0-6")	Moist brown sandy clay loam, heavy mowed grass cover
469679.44	2448636.259	1103.11	2	RNS-SS-09-31		(0-6")	Moist, brown silt loam, heavy grass cover
475433.616	2459610.772	1042.48	Alt.3	RNS-SS-15-01		(0-6")	Moist brown silt loam in fallow soybean field with sparse weed growth
475180.616	2460002.772	1042.49	Alt.3	RNS-SS-15-02		(0-6")	Moist brown silt loam in heavily wooded area beneath tree, near very old abandoned channel
475144.616	2460382.722	1038.17	Alt.3	RNS-SS-15-03		(0-6")	Moist brown silt clay loam, located in heavily wooded area adjacent to small feeder creek
475744.616	2459486.772	1044.24	Alt.3	RNS-SS-15-04		(0-6")	Moist brown silt loam in fallow soybean field with sparse weed growth
475450.616	2459583.772	1042.7	Alt.3	RNS-SS-15-05		(0-6")	Moist brown silt loam in fallow soybean field with sparse weed growth
475694.616	2460252.772	1043.57	Alt.3	RNS-SS-15-06		(0-6")	Moist brown silt loam at edge of cut bank approximately 6 feet above creek, heavy trees and brush
476205.616	2459338.772	1044.21	Alt.3	RNS-SS-15-07		(0-6")	Moist red-brown sand loam located near fence row in wooded and brushy area
476124.616	2459597.772	1043.81	Alt.3	RNS-SS-15-08		(0-6")	Moist brown silt loam in plowed corn field
476060.616	2459952.772	1042.73	Alt.3	RNS-SS-15-09		(0-6")	Moist brown clay loam in plowed corn field
476629.616	2459346.772	1043.93	Alt.3	RNS-SS-15-10		(0-6")	Slightly moist red-brown silt loam on fence row within heavily wooded area
476451.616	2459940.772	1043.72	Alt.3	RNS-SS-15-11		(0-6")	Moist brown clay loam in plowed corn field

Table 1b

Rustgers-Nease Corporation

MFLBC Sediment Sampling

Sampling Dates: May 10 thru May 15, 1993

Mirex\Photomirex\Kepone, Total Organic Carbon & Grainsize Samples - Location Descriptions (1)

Northing	Easting	Elevation	Area	Sample Number	Other Desig	Sample Depth	Sampling Location Description
476346.616	2459965.772	1043.15	Alt.3	RNS-SS-15-12		(0-6")	Moist brown clay loam in plowed cornfield
476783.616	2459349.772	1045.72	Alt.3	RNS-SS-15-13		(0-6")	Slightly moist red-brown silt loam on fence row within heavily wooded area
476738.616	2459944.772	1043.26	Alt.3	RNS-SS-15-14		(0-6")	Moist red-brown clay loam in plowed cornfield
476921.616	2460035.772	1046.14	Alt.3	RNS-SS-15-15		(0-6")	Moist red-brown clay loam in plowed cornfield
475180.616	2460002.772	1042.49	Alt.3	RNS-SS-15-16		(0-6")	Moist brown silt loam in heavily wooded area beneath tree, near very old abandoned channel
476346.616	2459965.772	1043.15	Alt.3	RNS-SS-15-17		(0-6")	Moist brown clay loam in plowed cornfield
440783.173	2472722.075	1007.23	5	RNS-SS-28-01		(0-6")	Moist fine sand, trace pebbles, heavy grass and trees, adjacent to high cut bank
441013.673	2472879.075	999.49	5	RNS-SS-28-02		(0-6")	Moist brown silty clay in heavy weeds and brush, adjacent to high cut bank
441044.873	2472864.775	999.42	5	RNS-SS-28-03		(0-6")	Moist brown fine sand and silt adjacent to high cut bank, heavy weeds
441480.773	2472563.375	1010.44	5	RNS-SS-28-04		(0-6")	Moist red-brown sandy loam with pebbles, on edge on old road grade
441393.273	2472839.075	1000.92	5	RNS-SS-28-05		(0-6")	Moist red-brown silty clay loam located in brushy area near very old log jam
441424.273	2472925.775	1000.3	5	RNS-SS-28-06		(0-6")	Moist red-brown silty clay loam, oxidized mottles, heavy grass cover with nearby brush
441678.973	2472682.075	1007.37	5	RNS-SS-28-07		(0-6")	Moist red-brown silt loam with gravel, located above break in flat area
441575.973	2472925.775	1001.19	5	RNS-SS-28-08		(0-6")	Moist red-brown silty clay loam in heavy grass cover
441858.673	2472763.075	1000.64	5	RNS-SS-28-09		(0-6")	Moist fine sand with silt and some clay on side of cut bank approximately 1.5 feet below top
442039.373	2472781.075	1001.05	5	RNS-SS-28-10		(0-6")	Very moist brown silty clay, swampy area nearby, heavy brush
441941.373	2472911.775	1001.92	5	RNS-SS-28-11		(0-6")	Moist brown silt loam, adjacent to tree in wooded area with heavy weeds
442170.073	2472754.075	999.59	5	RNS-SS-28-12		(0-6")	Saturated black muck soil in thick brushy swamp
442308.073	2473036.775	1001.09	5	RNS-SS-28-13		(0-6")	Moist red-brown silty clay loam in heavy grass adjacent to wooded area
442374.773	2472756.075	1001.31	5	RNS-SS-28-14		(0-6")	Wet, brown muck & silty clay, grass covered near swamp
442492.773	2473005.775	1003.69	5	RNS-SS-28-15		(0-6")	Moist red-brown sandy loam adjacent to a suspect levee deposit

Table 1b

Ruetgers-Nease Corporation

MFLBC Sediment Sampling

Sampling Dates: May 10 thru May 18, 1993

Mirex\Photomirex\Kepone, Total Organic Carbon & Grainsize Samples - Location Descriptions (1)

Northing	Easting	Elevation	Area	Sample Number	Other Desig	Sample Depth	Sampling Location Description
442350.773	2473170.475	999.69	5	RNS-SS-28-16		(0-6")	Moist red-brown silty clay loam, heavy grass and weeds, adjacent to ox bow
442562.473	2472643.375	1013.34	5	RNS-SS-28-17		(0-6")	Dark gray silty clay on side of coal spoil pile, heavily wooded
442625.473	2472789.075	1002.56	5	RNS-SS-28-18		(0-6")	Moist brown silty clay, bare ground surrounded by heavy brush
442533.473	2473186.475	1000.7	5	RNS-SS-28-19		(0-6")	Red-brown silty clay loam, light grass, wooded, adjacent to oxbow
442724.173	2473106.475	1001.15	5	RNS-SS-28-20		(0-6")	Moist brown, soft, silty clay, in area of dead grass (from previous standing water) and brush
441393.273	2472639.075	1000.92	5	RNS-SS-28-21		(0-6")	Moist red-brown silty clay loam located in brushy area near very old log jam
442374.773	2472756.075	1001.31	5	RNS-SS-28-22		(0-6")	Wet, brown muck & silty clay, grass covered near swamp
469116.5934	2446879.7585	1196.9	2	RNS-SD-09-02	S-180	(0-6")	Submergent in relatively calm straight section
469268.2712	2447274.9732	1098	2	RNS-SD-09-03	S-171	(0-6")	Emergent heavily grassed in calm straight section
469457.8526	2447800.4316	1195.7	2	RNS-SD-09-04	S-179	(0-6")	Submergent in deep pool on calm bend
469457.8526	2447800.4316	1195.7	2	RNS-SD-09-05	S-179	(0-6")	Submergent in deep pool on calm bend
476711.4095	2458909.4148	1042.4	Alt. 3	RNS-SD-15-02	S-438	(0-6")	Submergent in shallow very long straight section
476158.3714	2459350.3392	1038.2	Alt. 3	RNS-SD-15-03	S-450	(0-6")	Submergent in relatively deep pool on bend
475744.8127	2460207.1548	1036.2	Alt. 3	RNS-SD-15-04	S-471	(0-6")	Submergent adjacent to tributary, calm
475372.7219	2460406.8949	1035.1	Alt. 3	RNS-SD-15-05	S-479	(0-6")	Emergent in calm narrow straight section
475218.1724	2460744.0265	1034.5	Alt. 3	RNS-SD-15-06	S-484	(0-6")	Submergent in calm pool under bridge
442425.8731	2473064.9773	996.4	5	RNS-SD-28-02	S-681	(0-6")	Submergent in calm long gentle bend
441442.1495	2473014.5118	995.7	5	RNS-SD-28-03	S-688	(0-6")	Submergent in relatively deep calm pool
441136.6223	2472954.5426	994.6	5	RNS-SD-28-04	S-689	(0-6")	Submergent in relatively deep calm pool
441136.6223	2472954.5426	994.6	5	RNS-SD-28-05	S-689	(0-6")	Submergent in relatively deep calm pool

Table 2

Ruetgers Nease Corporation

MFLBC Sampling

Sampling Dates: May 10 through May 15, 1993

Final Statistical Data Set

Sample Number	Easting ft.	Northing ft.	Elev. ft.	Mirex ug/kg		TOC mg/kg	D10 um	D30 um	D60 um	Cu*	Cc**	Elev. Diff. ft.	Perp. Dist. ft.	Down. Dist. ft.	TILLED? (Y/N)
SS-15-01	2459610.772	475433.616	1042.48	24.2		36000	0.10	4.0	19	190.0	8.42	4.48	450		Y
SS-15-02	2460002.772	475180.616	1042.49	27.6		41000	0.66	7.0	25	37.9	2.97	6.49	450		N
SS-15-03	2460382.722	475144.616	1038.17	57.2		30000	0.10	5.0	39	390.0	6.41	2.17	190		N
SS-15-04	2459486.772	475744.616	1044.24	4.19		14000	0.51	8.9	33	64.7	4.71	6.24	140		Y
SS-15-05	2459583.772	475450.616	1042.70	8.9		33000	0.10	2.9	19	190.0	4.43	4.7	470		Y
SS-15-06	2460252.772	475694.616	1043.57	23.2		23000	0.01	6.8	30	3000.0	154.13	7.57	20		N
SS-15-07	2459338.772	476205.616	1044.21	320		18000	0.25	13.1	50	200.0	13.73	4.21	65		N
SS-15-08	2459597.772	476124.616	1043.81	23.3		18000	0.45	9.5	40	88.9	5.01	5.81	100		Y
SS-15-09	2459952.772	476060.616	1042.73	25.8		10000	0.35	10.5	44	125.7	7.16	6.73	130		Y
SS-15-10	2459346.772	476629.616	1043.93	407		24000	0.72	6.3	45	62.5	1.23	3.93	65		N
SS-15-11	2459940.772	476451.616	1043.72	26.7		18000	0.12	4.0	17	141.7	7.84	7.72	470		Y
SS-15-12	2459965.772	476346.616	1043.15	41.1		18000	0.55	5.2	21	38.2	2.34	7.15	395		Y
SS-15-13	2459349.772	476783.616	1045.72	15.9		53000	0.52	7.0	27	51.9	3.49	5.72	210		N
SS-15-14	2459944.772	476738.616	1043.26	11.6		22000	0.38	3.7	17	43.7	2.17	7.26	660		Y
SS-15-15	2460035.772	476921.616	1046.14	11.7	ND	16000	0.68	5.8	27	39.7	1.83	10.14	800		Y
SS-09-01	2446636.259	468879.440	1103.11	54.2		24000	0.61	9.0	70	114.8	1.90	3.1	20		N
SS-09-02	2447090.267	468976.563	1102.79	17.3		26000	0.68	8.8	36	52.9	3.16	4.79	210		N
SS-09-03	2446642.301	469125.436	1101.80	10.2		13000	0.18	10.0	51	283.3	10.89	1.8	140		N
SS-09-04	2446985.305	469228.998	1101.26	48.7		14000	0.75	23.0	128	170.7	5.51	3.26	60		N
SS-09-05	2446662.343	469335.432	1101.87	17.94	ND	20000	0.10	4.8	30	300.0	7.68	1.87	290		N
SS-09-06	2446986.346	469336.993	1101.35	29.2		17000	2.00	41.0	150	75.0	5.60	3.35	160		N
SS-09-07	2447194.350	469377.555	1100.66	18.5		25000	2.00	30.0	110	55.0	4.09	2.66	150		N
SS-09-08	2447580.357	469398.677	1099.44	2870		13000	1.50	35.0	120	80.0	6.81	1.4	15		N
SS-09-09	2447316.395	469685.112	1111.65	28.9		21000	0.73	17.5	75	102.7	5.59	13.65	380		N

Notes:

* - Coefficient of Uniformity (Cu): "1" indicates all one size, >15 well graded

** - Coefficient of Curvature (Gradation) (Cc): 1 to 3 is well graded if Cu >4 (gravel) or >6 (sand).

Perp Dist - Perpendicular distance from sampled location to the creek

Down. Dist - Downstream distance of the sediment sample from the Ruetgers property.

Elev Diff - (Sample elevation - Creek bottom elevation perpendicular to sample location)

ND - Non-Detect

Table 2

Ruetgers Nease Corporation

MFLBC Sampling

Sampling Dates: May 10 through May 16, 1993

Final Statistical Data Set

Sample Number	Easting ft.	Northing ft.	Elev. ft.	Mirex ug/kg	TOC mg/kg	D10 um	D30 um	D60 um	Cu*	Cc**	Elev. Diff. ft.	Perp. Dist. ft.	Down. Dist. ft.	TILLED? (Y/N)
SS-09-10	2447601.399	469544.673	1099.76	74	17000	2.30	21.0	63	27.4	3.04	1.76	150		N
SS-09-11	2446874.804	469024.217	1101.70	958	27000	3.00	36.0	175	58.3	2.47	1.7	85		N
SS-09-12	2447398.319	469236.322	1099.16	655	24000	1.50	9.3	32	21.3	1.80	1.16	75		N
SS-09-13	2447470.445	469241.107	1100.05	42.1	26000	1.90	11.0	43	22.6	1.48	2.05	70		N
SS-09-14	2447386.316	469264.572	1098.90	6650	18000	2.50	16.8	57	22.8	1.98	0.9	45		N
SS-09-15	2447449.070	469280.009	1099.59	301	18000	1.40	14.0	57	40.7	2.46	1.59	25		N
SS-09-21	2446918.817	468846.691	1104.89	1.74	32000	1.60	25.0	70	43.8	5.58	4.89	260		N
SS-09-22	2446885.018	468961.996	1102.43	17.7	30000	4.80	38.0	165	34.4	1.82	2.43	120		N
SS-09-23	2447182.891	468897.401	1102.37	10.8	51000	0.50	7.4	37	74.0	2.96	4.37	310		N
SS-09-24	2447122.031	469044.439	1101.67	13.3	30000	1.00	8.0	26	26.0	2.46	3.67	150		N
SS-09-25	2447098.025	469106.496	1100.50	29.4	28000	1.50	11.0	50	33.3	1.61	2.5	90		N
SS-09-26	2447250.173	469148.022	1101.52	15.2	20000	3.60	19.8	66	18.3	1.65	3.52	80		N
SS-09-27	2447230.483	469198.270	1101.15	19	20000	3.40	26.0	74	21.8	2.69	3.15	25		N
SS-09-28	2447294.290	469041.815	1106.06	0.719	24000	4.00	19.5	69	17.3	1.38	8.06	200		N
SS-09-29	2447592.584	469264.572	1102.50	1.99	26000	0.40	9.0	59	147.5	3.43	4.5	110		N
SS-09-30	2447555.626	469331.569	1100.70	4.42	24000	1.00	13.0	69	69.0	2.45	2.7	35		N
SS-28-01	2472722.075	440783.173	1007.23	105	9200	50.00	150.0	250	5.0	1.80	11.23	40		N
SS-28-02	2472679.075	441013.873	999.49	2600	42000	0.05	2.1	15	290.0	6.08	3.49	80		N
SS-28-03	2472864.775	441044.873	999.42	270	18000	2.00	32.0	165	82.5	3.10	3.42	10		N
SS-28-04	2472583.375	441480.273	1010.44	11.2 ND	49000	5.50	30.0	250	45.5	0.65	14.44	440		N
SS-28-05	2472839.075	441393.273	1000.92	336	48000	0.32	4.1	21	65.6	2.50	4.92	160		N
SS-28-06	2472925.775	441424.273	1000.30	1360	37000	0.40	1.9	11	27.5	0.82	4.3	90		N
SS-28-07	2472682.075	441678.973	1007.37	6.5	33000	2.60	36.0	242	93.1	2.06	11.37	150		N

Notes:

* - Coefficient of Uniformity (Cu): "1" indicates all one size, >15 well graded

** - Coefficient of Curvature (Gradation) (Cc): 1 to 3 is well graded if Cu >4 (gravel) or >6 (sand),

Perp. Dist - Perpendicular distance from sampled location to the creek.

Down Dist - Downstream distance of the sediment sample from the Ruetgers property.

Elev Diff. - (Sample elevation - Creek bottom elevation perpendicular to sample location)

ND - Non-Detect

Table 2

Ruetgers Nease Corporation

MFLBC Sampling

Sampling Dates: May 10 through May 18, 1993

Final Statistical Data Set

Sample Number	Easting ft.	Northing ft.	Elev. ft.	Mirex ug/kg	TOC mg/kg	D10 um	D30 um	D60 um	Cu*	Cc**	Elev. Diff. ft.	Perp. Dist. ft.	Down Dist. ft.	TILLED? (Y/N)
SS-28-08	2472925.775	441575.973	1001.19	717	22000	0.59	7.1	33	55.9	2.59	5.19	70		N
SS-28-09	2472763.075	441858.673	1000.64	283	19000	1.00	23.0	120	120.0	4.41	4.64	20		N
SS-28-10	2472781.075	442039.373	1001.05	1220	40000	0.57	2.5	9	15.8	1.22	5.05	90		N
SS-28-11	2472911.775	441941.373	1001.92	758	32000	0.50	6.9	28	56.0	3.40	5.92	60		N
SS-28-12	2472754.075	442170.073	999.59	206	76000	1.30	4.0	9	6.9	1.37	3.59	230		N
SS-28-13	2473036.775	442308.073	1001.09	1240	29000	0.09	4.9	19	205.6	14.42	5.09	50		N
SS-28-14	2472756.075	442374.773	1001.31	259	77000	2.30	7.5	45	19.6	0.54	5.31	330		N
SS-28-15	2473005.775	442492.773	1003.69	18.6	46000	2.90	35.0	155	53.4	2.73	7.69	40		N
SS-28-16	2473170.475	442350.773	999.69	381	31000	0.40	7.0	40	100.0	3.06	3.69	80		N
SS-28-17	2472643.375	442582.473	1013.34	11.6 ND	50000	0.09	1.9	28	311.1	1.43	17.34	310		N
SS-28-18	2472769.075	442625.473	1002.56	803	25000	0.05	1.7	16	316.0	3.66	6.56	160		N
SS-28-19	2473180.475	442533.473	1000.70	1290	25000	0.60	3.0	15	24.2	1.03	4.7	130		N
SS-28-20	2473106.475	442724.173	1001.15	1120	29000	0.20	3.0	30	150.0	1.50	5.15	180		N
SD-09-02	2446879.759	469116.394	1196.9	191	1400	115.00	255.0	405	3.5	1.40			13615	
SD-09-03	2447274.973	469268.271	1098	1190	4500	64.00	218.0	322	5.0	2.31			14027	
SD-09-04	2447800.432	469457.853	1195.7	179	1600	270.00	550.0	2950	10.9	0.38			14568	
SD-15-02	2458969.415	476711.410	1042.4	11.9	1000	170.00	220.0	400	2.4	0.71			42072	
SD-15-03	2459350.339	476158.371	1038.2	37.9	1500	60.00	180.0	280	4.7	1.93			43615	
SD-15-04	2460207.155	475744.813	1036.2	20.5	1500	68.00	315.0	540	7.9	2.70			45047	
SD-15-05	2460406.895	475372.722	1035.1	29.2	1600	95.00	270.0	405	4.3	1.89			45592	
SD-15-06	2460744.027	475218.172	1034.5	24	13000	125.00	220.0	315	2.5	1.23			45911	
SD-28-02	2473064.977	442425.873	996.4	138.5	9000	7.00	67.0	306	43.7	2.10			88995	
SD-28-03	2473014.512	441442.150	995.7	223	40000	3.00	55.0	251	83.7	4.02			91095	
SD-28-04	2472954.543	441136.622	994.6	28.6	19000	0.09	51.0	165	1833.3	175.15			91436	

Notes:

* - Coefficient of Uniformity (Cu): "1" indicates all one size, >15 well graded

** - Coefficient of Curvature (Gradation) (Cc) 1 to 3 is well graded if Cu >4 (gravel) or >6 (sand).

Perp Dist. - Perpendicular distance from sampled location to the creek

Down Dist - Downstream distance of the sediment sample from the Ruetgers property

Elev. Diff - (Sample elevation - Creek bottom elevation perpendicular to sample location)

ND - Non-Detect

Table 3

DATA DISTRIBUTION SUMMARY

AREA/PARAMETER	NORMAL	LOGNORMAL	+ SKEWED	- SKEWED	OTHER (see note)
AREA 2-SS					
Mirex		X			
TOC	X				
D10		X			
D30		X			
D60		X			
Elevation				X	
Elevation Difference		X			
Perpendicular Distance		X			
ALT. AREA 3-SS					
Mirex		X			
TOC	X				
D10					X
D30		X			
D60		X			
Elevation			X		
Elevation Difference	X				
Perpendicular Distance		X			
AREA 5-SS					
Mirex		X			
TOC	X				
D10		X			
D30				X	
D60				X	
Elevation				X	
Elevation Difference		X			
Perpendicular Distance		X			
ALL SD					
Mirex		X			
TOC				X	
D10	X				
D30		X			
D60				X	
Elevation				X	

Notes: SS - Overbank Deposit Samples SD - Sediment Samples

+ Skewed - The peak is on the extreme right-hand side of the distribution - Skewed - The peak is on the extreme left-hand side of the distribution

OTHER - Distributions other than normal, lognormal, positive skewed, or negative skewed (e.g. bi-modal)

Table 4

Linear Regression Analysis

Summary Table of Analyses and R^2 Values

NO.	R	R^2	R^2 (%)	PERMUTATIONS			
1	-0.902	0.843204	84.32%	SS	AREA 5	ln(MIREX)	ln(ELEV.)
2	-0.487	0.237169	23.72%	SS	AREA 2	ln(MIREX)	ln(ELEV.)
3	-0.155	0.024025	2.40%	SS	ALT. AREA 3	ln(MIREX)	ELEV.
4	-0.222	0.049284	4.93%	SS	AREA 5	ln(MIREX)	TOC
5	-0.344	0.118336	11.83%	SS	AREA 2	ln(MIREX)	TOC
6	-0.056	0.003136	0.31%	SS	ALT. AREA 3	ln(MIREX)	TOC
7	-0.5	0.25	25.00%	SS	AREA 5	ln(MIREX)	ln(D10)
8	0.195	0.038025	3.80%	SS	AREA 2	ln(MIREX)	ln(D10)
9	0.074	0.005476	0.55%	SS	ALT. AREA 3	ln(MIREX)	D10
10	-0.567	0.321489	32.15%	SS	AREA 5	ln(MIREX)	ln(D30)
11	0.202	0.040804	4.08%	SS	AREA 2	ln(MIREX)	ln(D30)
12	0.309	0.095481	9.55%	SS	ALT. AREA 3	ln(MIREX)	ln(D30)
13	-0.698	0.487204	48.72%	SS	AREA 5	ln(MIREX)	ln(D60)
14	0.158	0.024964	2.50%	SS	AREA 2	ln(MIREX)	ln(D60)
15	0.538	0.289444	28.94%	SS	ALT. AREA 3	ln(MIREX)	ln(D60)
16	-0.785	0.616225	61.62%	SS	AREA 5	ln(MIREX)	ln(Elev. Diff.)
17	-0.715	0.511225	51.12%	SS	AREA 2	ln(MIREX)	ln(Elev. Diff.)
18	-0.483	0.233289	23.33%	SS	ALT. AREA 3	ln(MIREX)	Elev. Diff.
19	-0.24	0.0576	5.76%	SS	AREA 5	ln(MIREX)	ln(PERP. DIST.)
20	-0.515	0.265225	26.52%	SS	AREA 2	ln(MIREX)	ln(PERP. DIST.)
21	-0.435	0.189225	18.92%	SS	ALT. AREA 3	ln(MIREX)	ln(PERP. DIST.)
22	0.056	0.003136	0.31%	SS	AREA 5	TOC	ln(ELEV.)
23	0.184	0.033856	3.39%	SS	AREA 2	TOC	ln(ELEV.)
24	-0.085	0.007225	0.72%	SS	ALT. AREA 3	TOC	ELEV.
25	-0.04	0.0016	0.16%	SS	AREA 5	TOC	ln(D10)
26	0.003	9E-06	0.00%	SS	AREA 2	TOC	ln(D10)
27	-0.014	0.000196	0.02%	SS	ALT. AREA 3	TOC	D10
28	-0.294	0.086436	8.64%	SS	AREA 5	TOC	ln(D30)
29	-0.281	0.078961	7.90%	SS	AREA 2	TOC	ln(D30)
30	-0.299	0.089401	8.94%	SS	ALT. AREA 3	TOC	ln(D30)
31	-0.285	0.081225	8.12%	SS	AREA 5	TOC	ln(D60)
32	-0.273	0.074529	7.45%	SS	AREA 2	TOC	ln(D60)
33	-0.281	0.078961	7.90%	SS	ALT. AREA 3	TOC	ln(D60)
34	0.007	4.9E-05	0.00%	SS	AREA 5	TOC	ln(Elev. Diff.)
35	0.313	0.097969	9.80%	SS	AREA 2	TOC	ln(Elev. Diff.)
36	-0.343	0.117649	11.76%	SS	ALT. AREA 3	TOC	Elev. Diff.
37	0.651	0.423801	42.38%	SS	AREA 5	TOC	ln(PERP. DIST.)
38	0.41	0.1681	16.81%	SS	AREA 2	TOC	ln(PERP. DIST.)
39	0.188	0.035344	3.53%	SS	ALT. AREA 3	TOC	ln(PERP. DIST.)
40	-0.245	0.060025	6.00%	SD		ln(MIREX)	DOWN DIST
41	0.726	0.527076	52.71%	SD		ln(TOC)	DOWN DIST
42	0.423	0.178929	17.89%	SD		ln(MIREX)	ln(ELEV.)
43	0.227	0.051529	5.15%	SD		ln(MIREX)	ln(TOC)
44	-0.084	0.007056	0.71%	SD		ln(MIREX)	D10
45	-0.054	0.002916	0.29%	SD		ln(MIREX)	ln(D30)
46	0.141	0.019881	1.99%	SD		ln(MIREX)	ln(D60)
47	-0.604	0.364816	36.48%	SD		ln(TOC)	D10
48	-0.795	0.632025	63.20%	SD		ln(TOC)	ln(D30)
49	-0.508	0.258064	25.81%	SD		ln(TOC)	ln(D60)
50	-0.548	0.300304	30.03%	SD		ln(TOC)	ln(ELEV.)

By TWL (9/93)

Checked TWL (2/94)

Table 5

COMPARATIVE STUDY OF TILLED/UNTILLED SAMPLES IN AREA 3

DATA DISTRIBUTION SUMMARY

AREA/PARAMETER	NORMAL	LOGNORMAL	+ SKEWED	- SKEWED	OTHER (see note)
TILLED					
Mirex	X				
TOC		X			
D10	X				
D30	X				
D60				X	
Elevation		X			
Elevation Difference	X				
Perpendicular Distance	X				
UNTILLED					
Mirex				X	
TOC		X			
D10	X				
D30				X	
D60		X			
Elevation			X		
Elevation Difference	X				
Perpendicular Distance		X			
COMBINED					
Mirex		X			
TOC	X				
D10					X
D30		X			
D60		X			
Elevation			X		
Elevation Difference	X				
Perpendicular Distance		X			

Notes:

+ Skewed - The peak is on the extreme right-hand side of the distribution

- Skewed - The peak is on the extreme left-hand side of the distribution

OTHER - Distributions other than normal, lognormal, positive skewed, or negative skewed (e.g. bi-modal)

By: TWL, 6/93 202-01\202-01-7\WFLBC\273\TILLDATA.WQ1

Checked: TWL, 3/94

Table 6

COMPARATIVE STUDY OF TILLED/UNTILLED SAMPLES IN AREA 3

Summary Table of Analyses and R ^ 2 Values

NO.	R	R^2	R^2 (%)	PERMUTATIONS			
1	-0.349	0.121801	12.18%	SS	TILLED	MIREX	ln(ELEV.)
2	0.015	0.000225	0.02%	SS	UNTILLED	ln(MIREX)	ELEV.
3	-0.103	0.010609	1.06%	SS	TILLED	MIREX	ln(TOC)
4	-0.724	0.524176	52.42%	SS	UNTILLED	ln(MIREX)	ln(TOC)
5	-0.039	0.001521	0.15%	SS	TILLED	MIREX	D10
6	0.191	0.036481	3.65%	SS	UNTILLED	ln(MIREX)	D10
7	0.033	0.001089	0.11%	SS	TILLED	MIREX	D30
8	0.393	0.154449	15.44%	SS	UNTILLED	ln(MIREX)	ln(D30)
9	-0.04	0.0016	0.16%	SS	TILLED	MIREX	ln(D60)
10	0.921	0.848241	84.82%	SS	UNTILLED	ln(MIREX)	ln(D60)
11	0.003	9E-06	0.00%	SS	TILLED	MIREX	Elev. Diff.
12	-0.573	0.328329	32.83%	SS	UNTILLED	ln(MIREX)	Elev. Diff.
13	-0.185	0.034225	3.42%	SS	TILLED	MIREX	PERP. DIST.
14	-0.289	0.083521	8.35%	SS	UNTILLED	ln(MIREX)	ln(PERP. DIST.)
15	-0.371	0.137641	13.76%	SS	TILLED	ln(TOC)	ln(ELEV.)
16	0.08	0.0064	0.64%	SS	UNTILLED	ln(TOC)	ELEV.
17	-0.593	0.351649	35.16%	SS	TILLED	ln(TOC)	D10
18	0.428	0.183184	18.32%	SS	UNTILLED	ln(TOC)	D10
19	-0.783	0.613089	61.31%	SS	TILLED	ln(TOC)	D30
20	-0.446	0.198916	19.89%	SS	UNTILLED	ln(TOC)	ln(D30)
21	-0.707	0.499849	49.98%	SS	TILLED	ln(TOC)	ln(D60)
22	-0.791	0.625681	62.57%	SS	UNTILLED	ln(TOC)	ln(D60)
23	-0.539	0.290521	29.05%	SS	TILLED	ln(TOC)	Elev. Diff.
24	0.214	0.045796	4.58%	SS	UNTILLED	ln(TOC)	Elev. Diff.
25	0.394	0.155236	15.52%	SS	TILLED	ln(TOC)	PERP. DIST.
26	0.741	0.549081	54.91%	SS	UNTILLED	ln(TOC)	ln(PERP. DIST.)

By: TWL (8/93)

802-01-7\WFLBC\273\LREGTILL.WQ1

Checked: TWL (2/94)

TABLE 7
VALUES FROM COMBINATIONS OF NEW AND OLD DATA (1)

REGRESSION RUN	R2 VALUE
Areas 2, 3, and 5 (all data)	0.6432
Areas 2, 3, and 5 (only new data)	0.6498
Areas 3 and 5 (minus Area 2 effects)	0.8031
Areas 2 and 5 (minus Area 3 effects)	0.6812

(1) Table provided by MFLBC Statistical Analysis Report, ERM Midwest, March 1994.

Table 8

Geostatistical Analyses of Overbank Deposit Data

Summary of Variogram Models from Variogram Analyses

Area	Direction	Parameter	Model Type	Nugget	Sill	Range		Angle
						Major	Minor	(deg)
2	OMNI	ln(Mrex)	Spherical	4	1	400	400	-
2	OMNI	TOC	Spherical	2.50E+07	5.00E+07	600	600	-
3	OMNI	ln(Mrex)	Spherical	0.4	1.2	700	700	-
3	OMNI	TOC	Spherical	4.00E+07	1.00E+08	700	700	-
5	OMNI	ln(Mrex)	Spherical	2.5	1	400	400	-
5	OMNI	TOC	Spherical	2.50E+06	9.00E+07	600	600	-
2	DIRECTIONAL	ln(Mrex)	Spherical	3.5	1.25	400	300	20
2	DIRECTIONAL	TOC	Spherical	2.50E+06	4.00E+07	700	400	20
3	DIRECTIONAL	ln(Mrex)	Spherical	0.5	1	1000	800	140
3	DIRECTIONAL	TOC	Gaussian	0	2.50E+08	1250	700	140
5	DIRECTIONAL	ln(Mrex)	Spherical	2	1	700	300	90
5	DIRECTIONAL	TOC	Spherical	2.25E+08	1.10E+08	600	300	90

Note

By TWL (9/93)

Checked TWL RSF (3/94)

OMNI: Omnidirectional Search Field

DIRECTIONAL: Directional/Elliptical Search Field

ANGLE: Estimated MFLBC flow direction (from available site maps)

Table 9

Geostatistical Analyses of Overbank Deposit Data

Summary of Cross-Validation Results

Area	Direction	Parameter	Variable Mean	Estimate Mean	Difference in Means(%)	Mean of Krige Std. Dev.	Coeff. of Variation (COV	Criteria of Success Met? (COV < 1.5)
2	OMNI	ln(Mirex)	3.549	3.766	6.11%	2.299	0.61	Y
2	OMNI	TOC	23520	23392.12	-0.54%	7032.388	0.30	Y
3	OMNI	ln(Mirex)	3.344	3.364	0.60%	1.156	0.34	Y
3	OMNI	TOC	24933.33	25119.90	0.75%	10983.44	0.44	Y
5	OMNI	ln(Mirex)	5.579	5.575	-0.07%	2	0.36	Y
5	OMNI	TOC	36860	38233.39	3.73%	18748.49	0.49	Y
2	DIRECTIONAL	ln(Mirex)	3.549	3.692	4.03%	2.242	0.61	Y
2	DIRECTIONAL	TOC	23520	23239.48	-1.19%	4451.744	0.19	Y
3	DIRECTIONAL	ln(Mirex)	3.344	3.351	0.21%	1.09	0.33	Y
3	DIRECTIONAL	TOC	24933.33	24264.44	-2.68%	4969.703	0.20	Y
5	DIRECTIONAL	ln(Mirex)	5.579	5.7	2.17%	1.776	0.31	Y
5	DIRECTIONAL	TOC	36860	38399.68	4.18%	18766.12	0.49	Y

Note:

- Compiled from data in Appendix 4.6.8-7

By: TWL (8/93) 202-01-7\MFLBC\273\XVALID.WQ1

Checked: RSF (3/94)

OMNI: Omnidirectional Search Field

DIRECTIONAL: Directional/Elliptical Search Field

Difference in Means (%) = |(Estimate Mean)-(Variable Mean)|/|Variable Mean|

Coefficient of Variation (COV) = (Mean of Krige Standard Deviation)/Estimate Mean

Table 10

Geostatistical Analyses of Overbank Deposit Data

Summary of Sensitivity Analyses

Sensitivity Run	[illegible]	Direction	Parameter	Model Type	Nugget	Sill	Range		Angle	Variable	Estimate	Diff. in	Mean of	Coeff. of	Criteria of Success
							Major	Minor	(deg)	Mean	Mean	Means(%)	Krige Std. Dev.	Var. (COV)	Met? (COV < 1.5)
Original	5	OMNI	ln(Mirex)	Spherical	2.5	1	400	400	-	5.579	5.575	-0.07%	2	0.359	Y
Vary Model	5	OMNI	ln(Mirex)	Exponent	2.5	1	400	400	-	5.579	5.561	-0.32%	2.019	0.363	Y
Vary Model	5	OMNI	ln(Mirex)	Gaussian	2.5	1	400	400	-	5.579	5.588	0.16%	1.95	0.349	Y
Original	5	OMNI	ln(Mirex)	Spherical	2.5	1	400	400	-	5.579	5.575	-0.07%	2	0.359	Y
0.5* Nugget	5	OMNI	ln(Mirex)	Spherical	1.25	1	400	400	-	5.579	5.599	0.36%	1.561	0.279	Y
2.0* Nugget	5	OMNI	ln(Mirex)	Spherical	5	1	400	400	-	5.579	5.557	-0.39%	2.666	0.480	Y
Original	5	OMNI	ln(Mirex)	Spherical	2.5	1	400	400	-	5.579	5.575	-0.07%	2	0.359	Y
0.5* Sill	5	OMNI	ln(Mirex)	Spherical	2.5	0.5	400	400	-	5.579	5.557	-0.39%	1.884	0.339	Y
2.0* Sill	5	OMNI	ln(Mirex)	Spherical	2.5	2	400	400	-	5.579	5.599	0.36%	2.207	0.394	Y
Original	5	OMNI	ln(Mirex)	Spherical	2.5	1	400	400	-	5.579	5.575	-0.07%	2	0.359	Y
0.5* Range	5	OMNI	ln(Mirex)	Spherical	2.5	1	200	200	-	5.579	5.56	-0.32%	2.071	0.373	Y
2.0* Range	5	OMNI	ln(Mirex)	Spherical	2.5	1	800	800	-	5.579	5.569	-0.19%	1.888	0.339	Y
Original	3	OMNI	ln(Mirex)	Spherical	0.4	1.2	700	700	-	3.344	3.364	0.60%	1.156	0.344	Y
Vary Model	3	OMNI	ln(Mirex)	Exponent	0.4	1.2	700	700	-	3.344	3.368	0.72%	1.217	0.361	Y
Vary Model	3	OMNI	ln(Mirex)	Gaussian	0.4	1.2	700	700	-	3.344	3.361	0.51%	1.031	0.307	Y
Original	3	OMNI	ln(Mirex)	Spherical	0.4	1.2	700	700		3.344	3.364	0.60%	1.156	0.344	Y
0.5* Nugget	3	OMNI	ln(Mirex)	Spherical	0.2	1.2	700	700		3.344	3.372	0.84%	1.024	0.304	Y
2.0* Nugget	3	OMNI	ln(Mirex)	Spherical	0.8	1.2	700	700		3.344	3.359	0.45%	1.37	0.408	Y
Original	3	OMNI	ln(Mirex)	Spherical	0.4	1.2	700	700	-	3.344	3.364	0.60%	1.156	0.344	Y
0.5* Sill	3	OMNI	ln(Mirex)	Spherical	0.4	0.6	700	700	-	3.344	3.359	0.45%	0.980	0.298	Y
2.0* Sill	3	OMNI	ln(Mirex)	Spherical	0.4	2.4	700	700	-	3.344	3.372	0.84%	1.449	0.430	Y
Original	3	OMNI	ln(Mirex)	Spherical	0.4	1.2	700	700	-	3.344	3.364	0.60%	1.156	0.344	Y
0.5* Range	3	OMNI	ln(Mirex)	Spherical	0.4	1.2	350	350	-	3.344	3.383	1.17%	1.298	0.384	Y
2.0* Range	3	OMNI	ln(Mirex)	Spherical	0.4	1.2	1400	1400	-	3.344	3.343	-0.03%	0.968	0.290	Y

Note

- Compiled from data in Appendix 4.6.6-6

OMNI: Omnidirectional Search Field

DIRECTIONAL: Directional/Elliptical Search Field

Difference in Means (%) = [(Estimate Mean)-(Variable Mean)]/(Variable Mean)

Coefficient of Variation (COV) = (Mean of Krige Standard Deviation)/Estimate Mean

By: TWL (9/93) 302-01-7\MFLBC\273\SENSITIV.WQ1

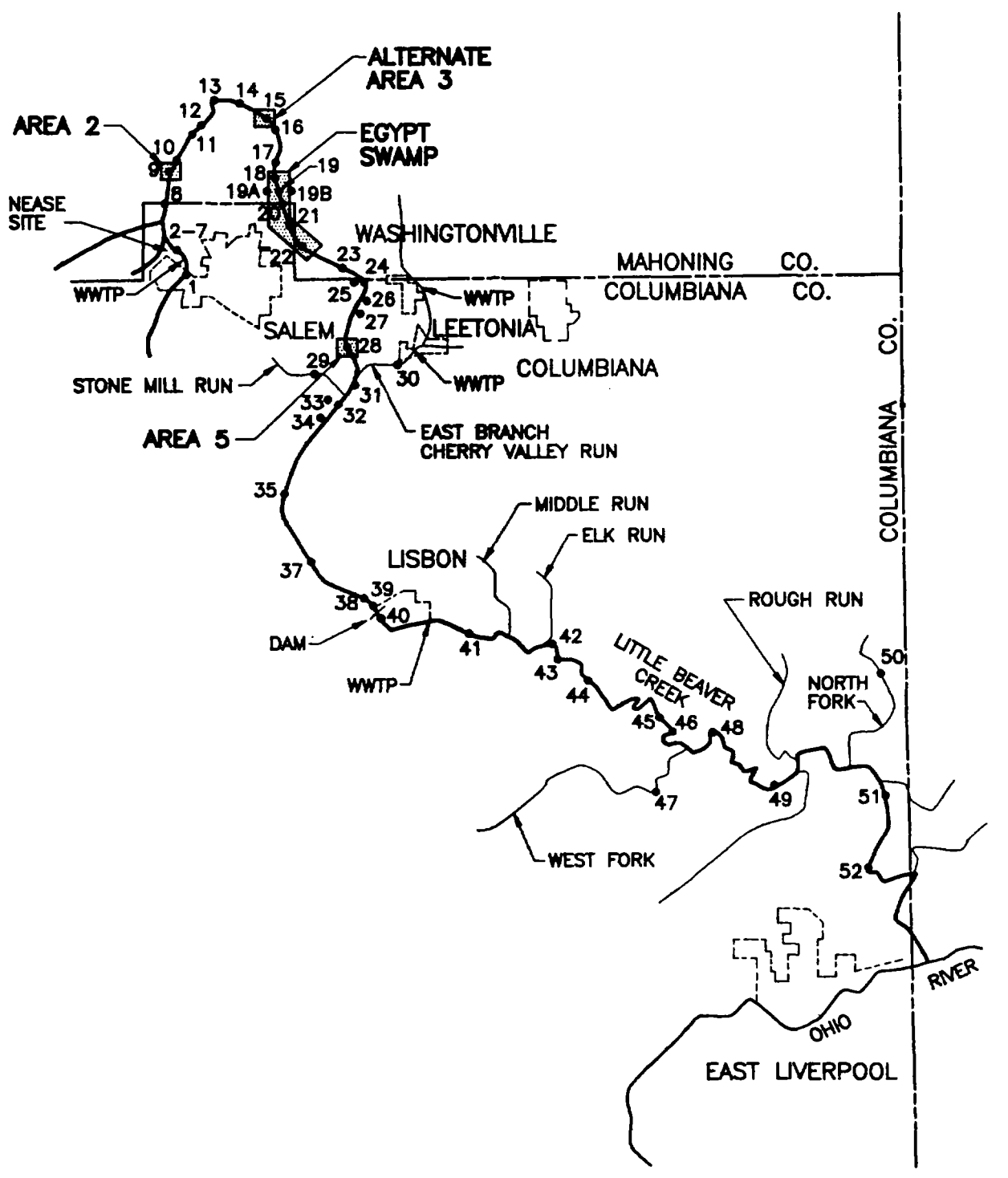
Checked: RBF (3/94)

TABLE 11
GEOSTATISTICAL ANALYSES OF OVERBANK DEPOSIT DATA
TRENDS FROM THE SENSITIVITY ANALYSES (1)

SENSITIVITY RUN	AREA 3 MEAN DIFF.	AREA 5 MEAN DIFF.	AREA 3 COV	AREA 5 COV
Exponential->Spherical ->Gaussian	Decrease	Increase	Decrease	Same
Increase Nugget	Decrease	Decrease	Increase	Increase
Increase Sill	Increase	Increase	Increase	Increase
Increase Range	Decrease	Inconclusive	Decrease	Decrease

Note: The results here were based on inspections of Table 10.

(1) Table provided by MFLBC Statistical Analysis Report, ERM Midwest, March 1994.



LEGEND

- 14 — MFLBC SEDIMENT SAMPLE STATION ID
- SAMPLE AREA

AUG 18 1994

4 0 4
scale miles

JOB No.:	933-6154	SCALE:	AS SHOWN
DR BY:	WME	DATE:	07/26/94
CHK BY:	THR	FILE No.:	OH01-284
REV BY:	PSK	DR SUBTITLE:	06

SCHEMATIC SAMPLING MAP FOR MIDDLE FORK LITTLE BEAVER CREEK

Golder Associates

RUETGERS-NEASE CORP.

FIGURE 1

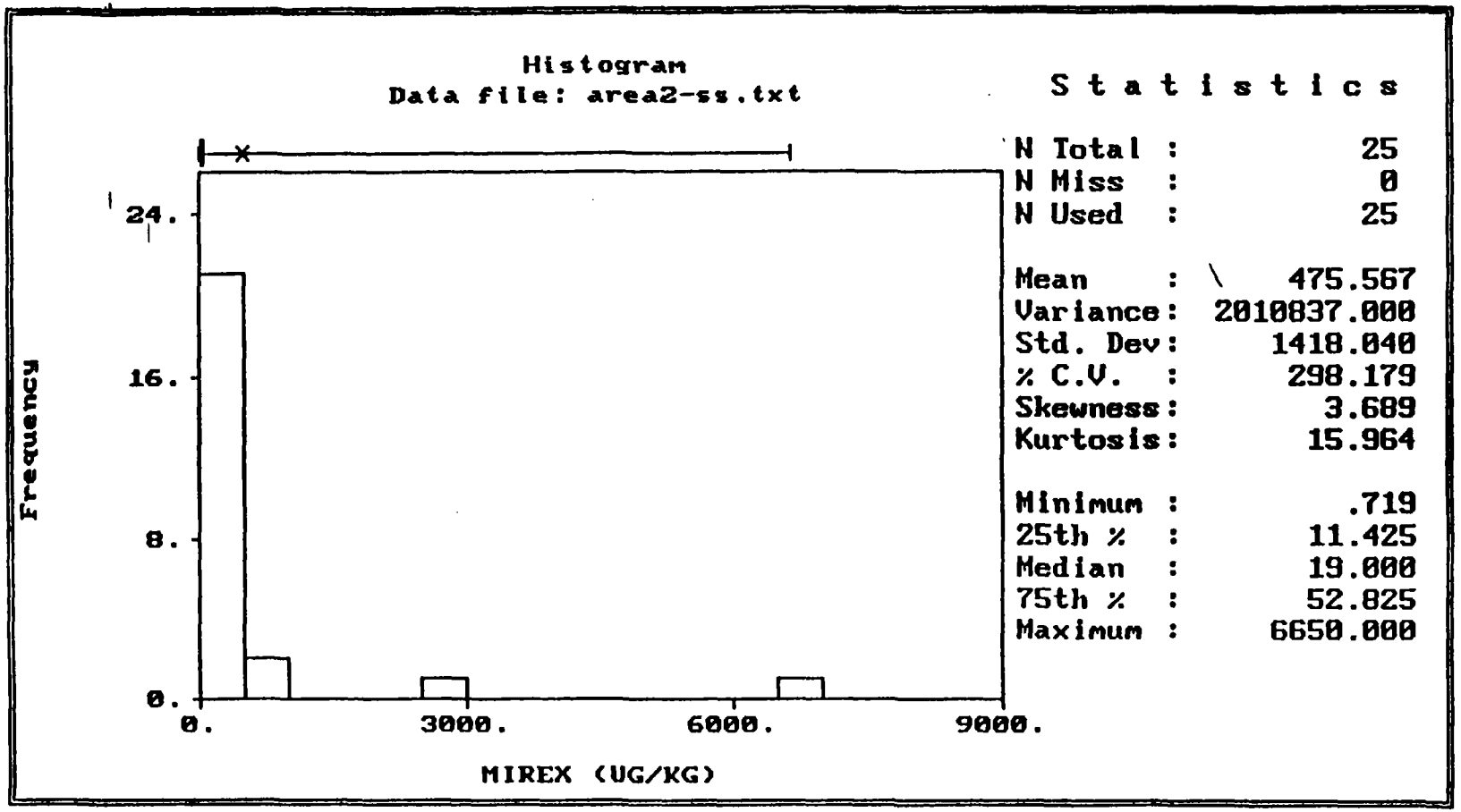
APPENDIX A

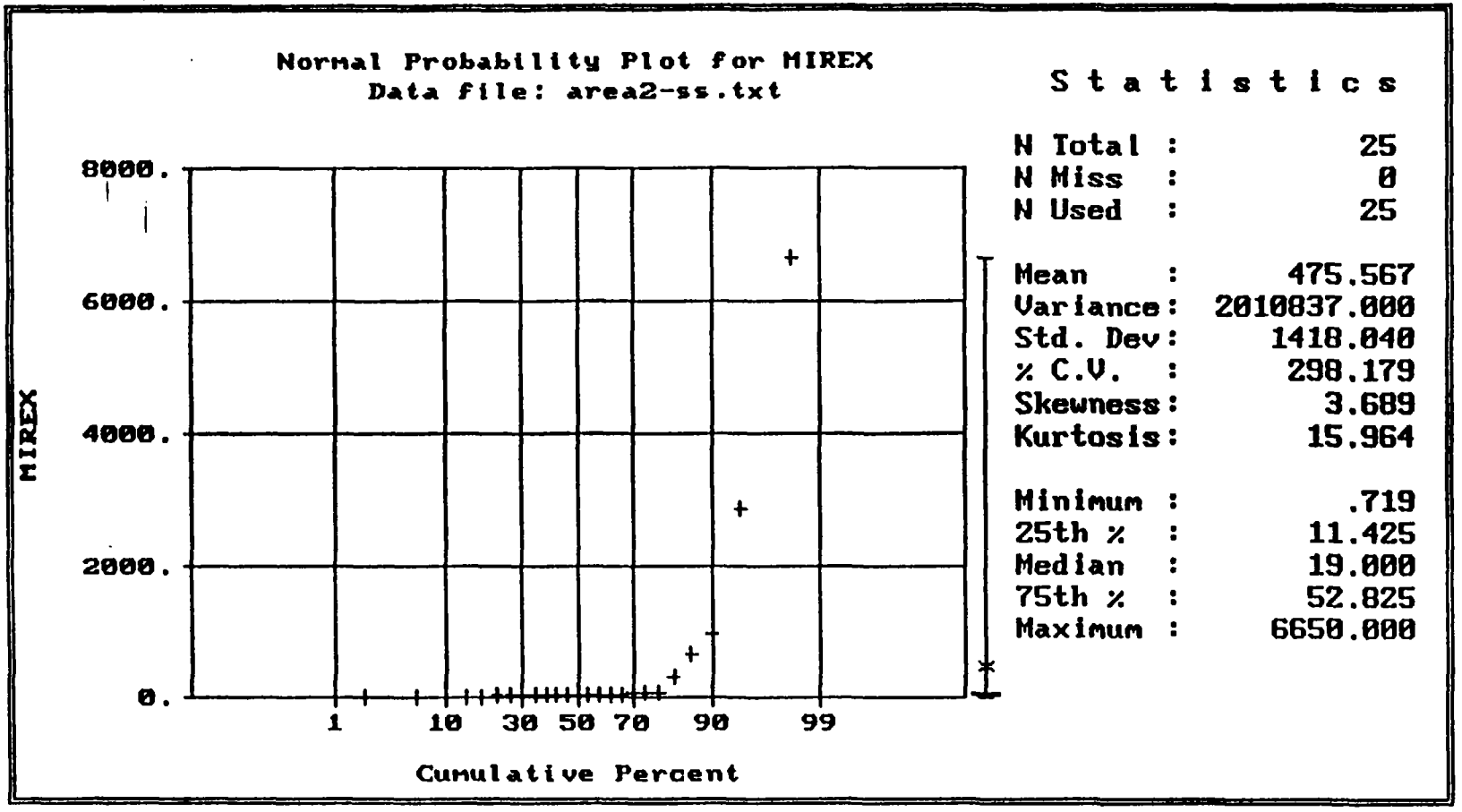
STATISTICAL ANALYSIS REPORT

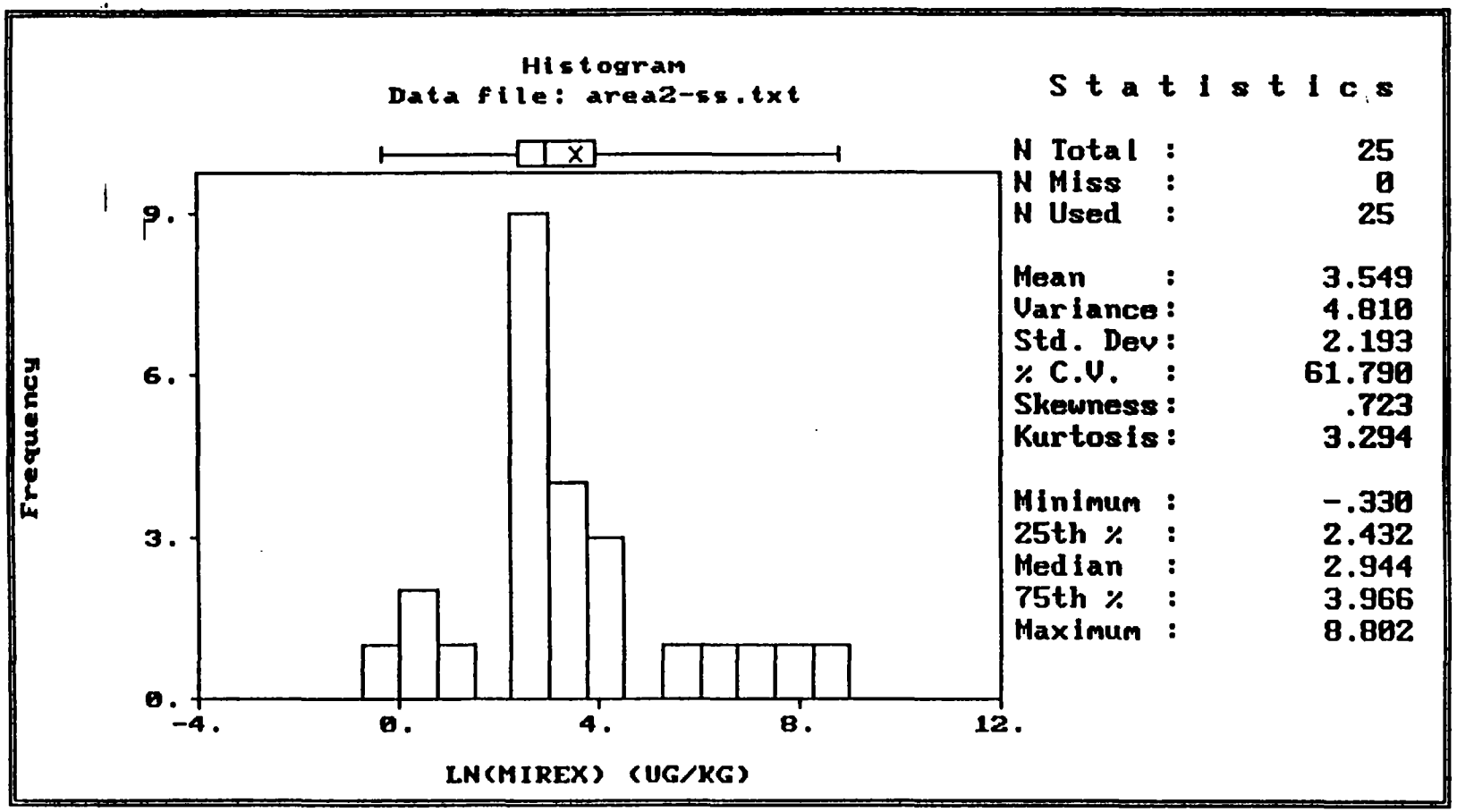
APPENDIX 1

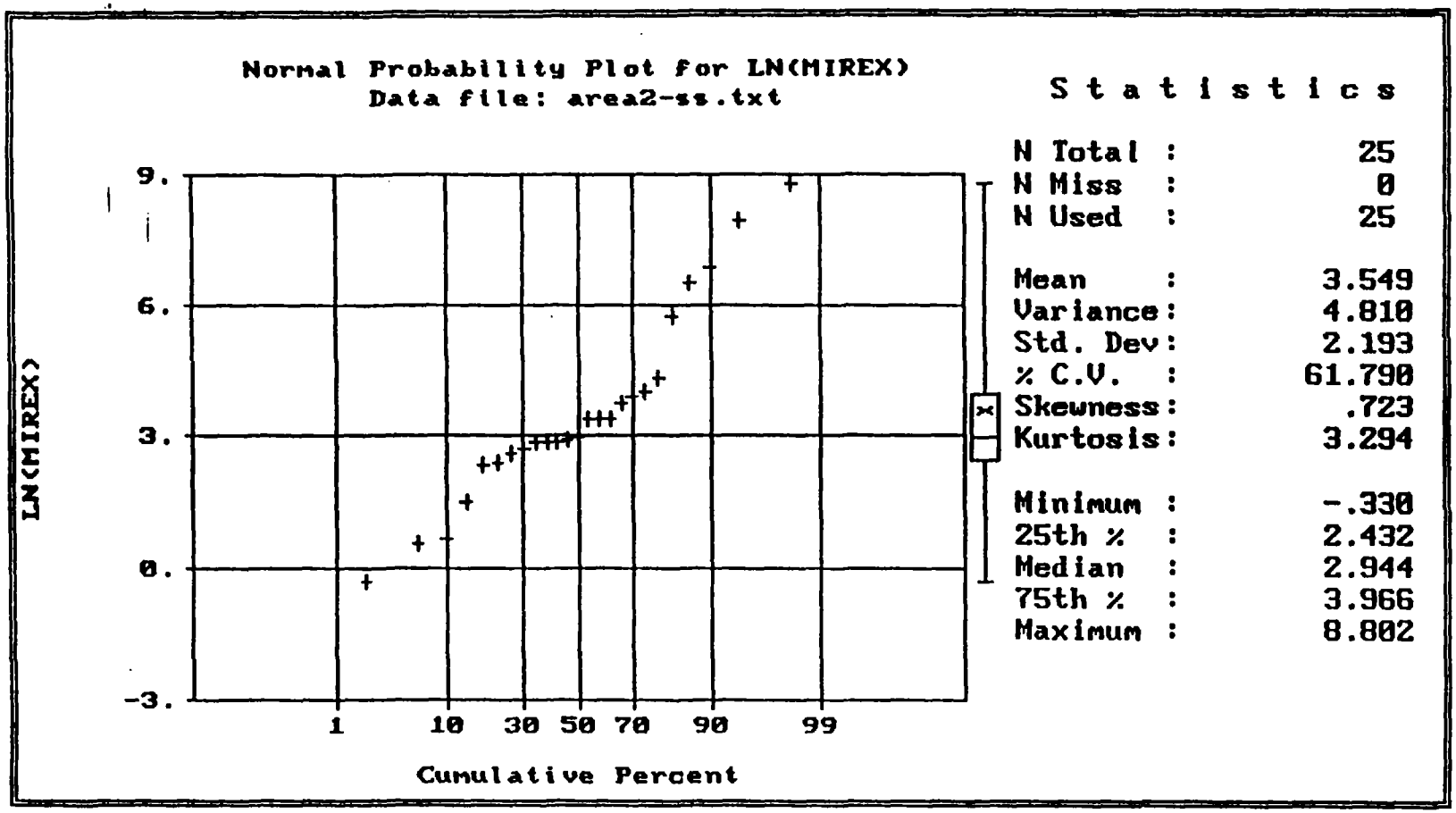
HISTOGRAM AND PROBABILITY PLOTS

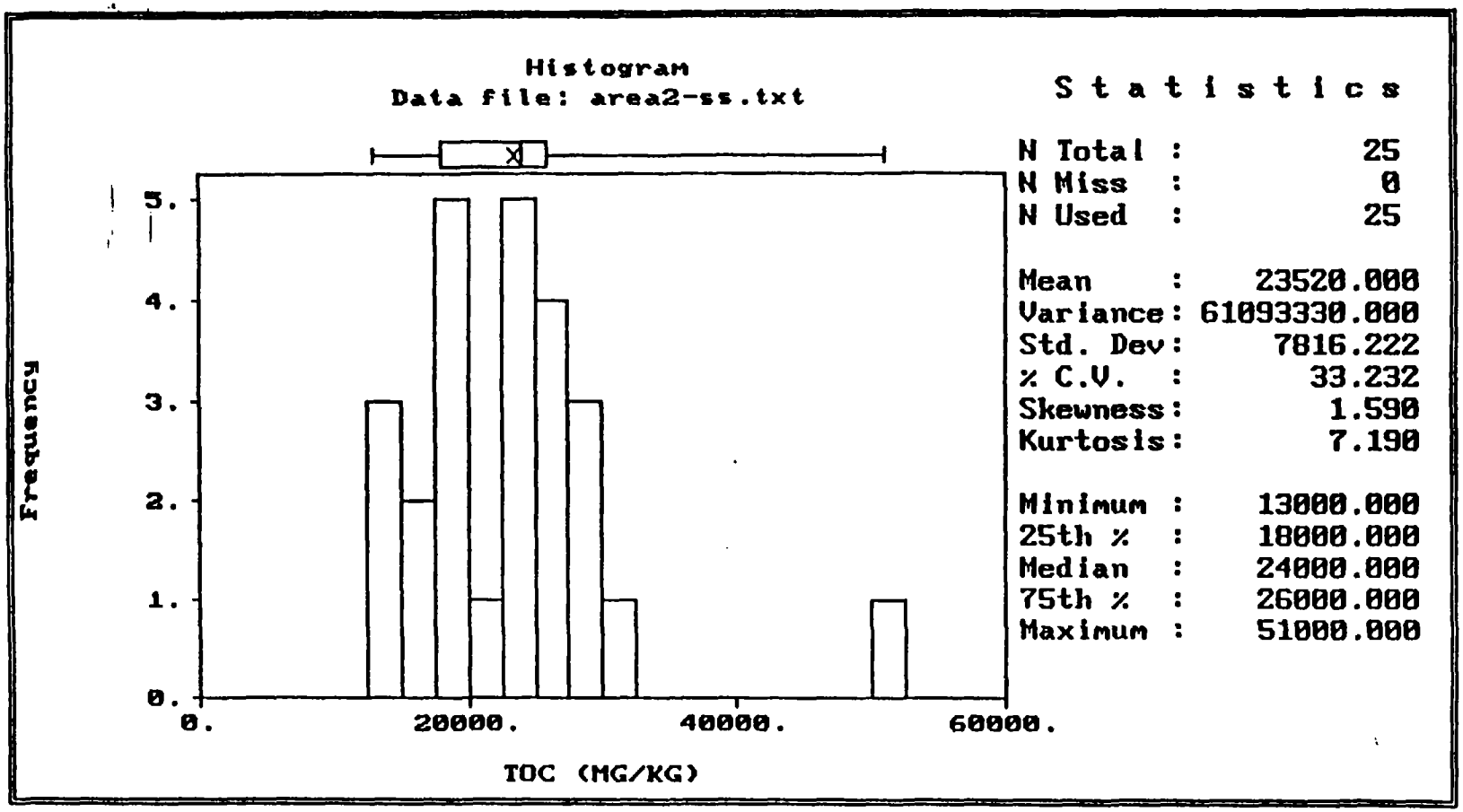
AREA 2

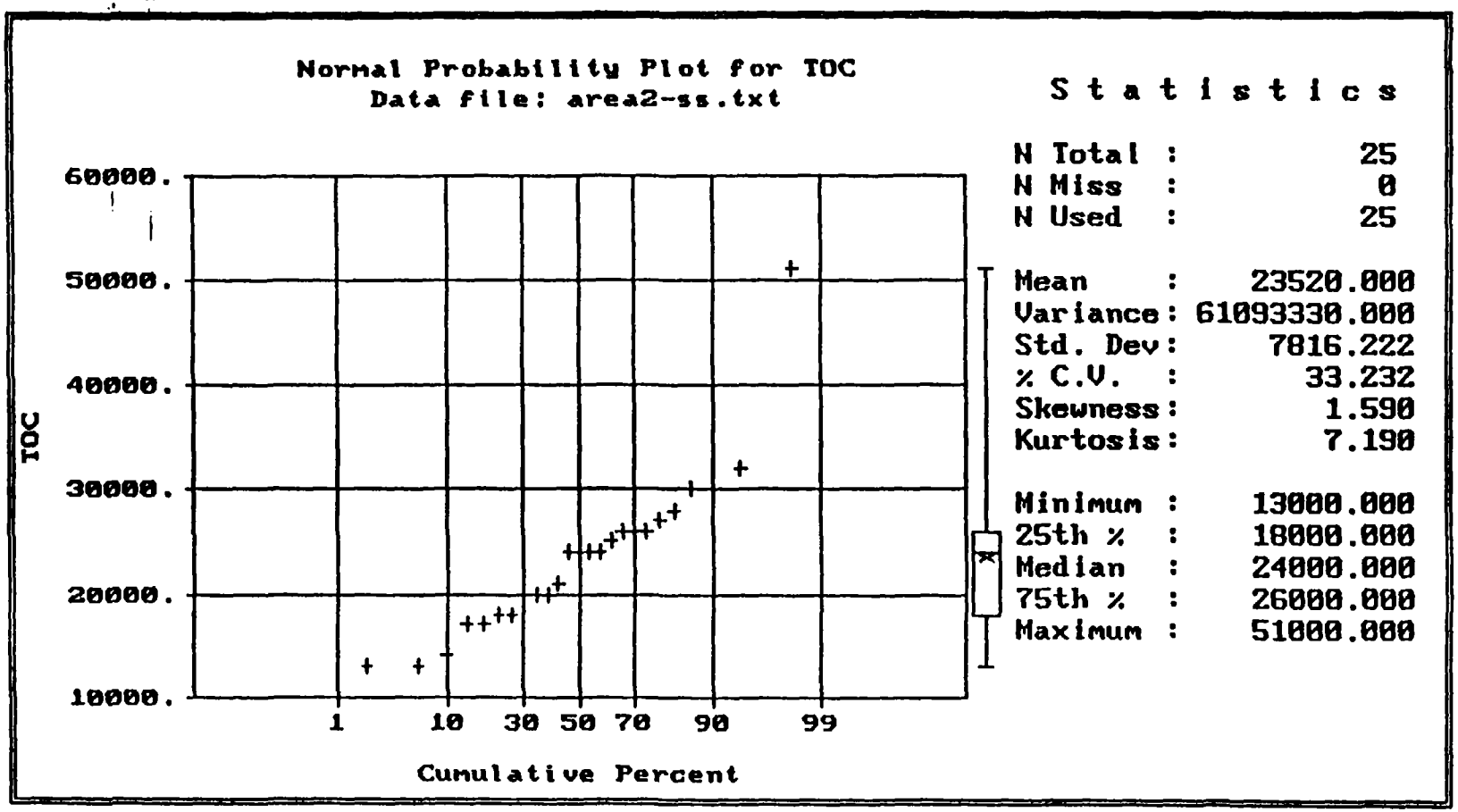

Histogram
Data file: area2-ss.txt
Frequency
24.
16.
8.
0.
0.
3000.
6000.
9000.
MIREX (UG/KG)
Statistics
N Total : 25
N Miss : 0
N Used : 25
Mean : 475.567
Variance: 2010837.000
Std. Dev: 1418.040
% C.V. : 298.179
Skewness: 3.689
Kurtosis: 15.964
Minimum : .719
25th % : 11.425
Median : 19.000
75th % : 52.825
Maximum : 6650.000

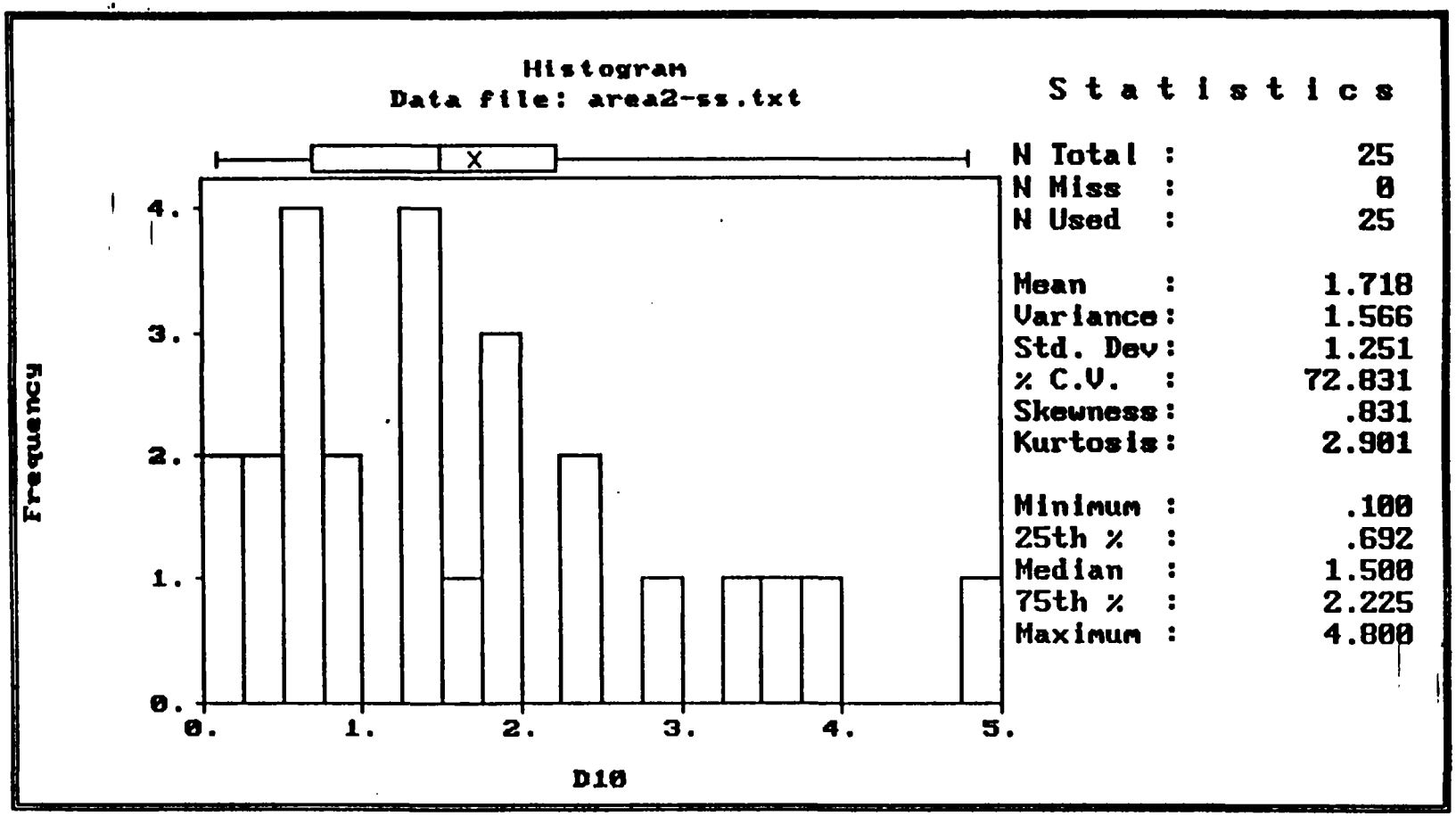

Normal Probability Plot for MIREX
Data file: area2-ss.txt
MIREX
8000.
6000.
4000.
2000.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 25
N Miss : 0
N Used : 25
Mean : 475.567
Variance: 2010837.000
Std. Dev: 1418.040
% C.V. : 298.179
Skewness: 3.689
Kurtosis: 15.964
Minimum : .719
25th % : 11.425
Median : 19.000
75th % : 52.825
Maximum : 6650.000

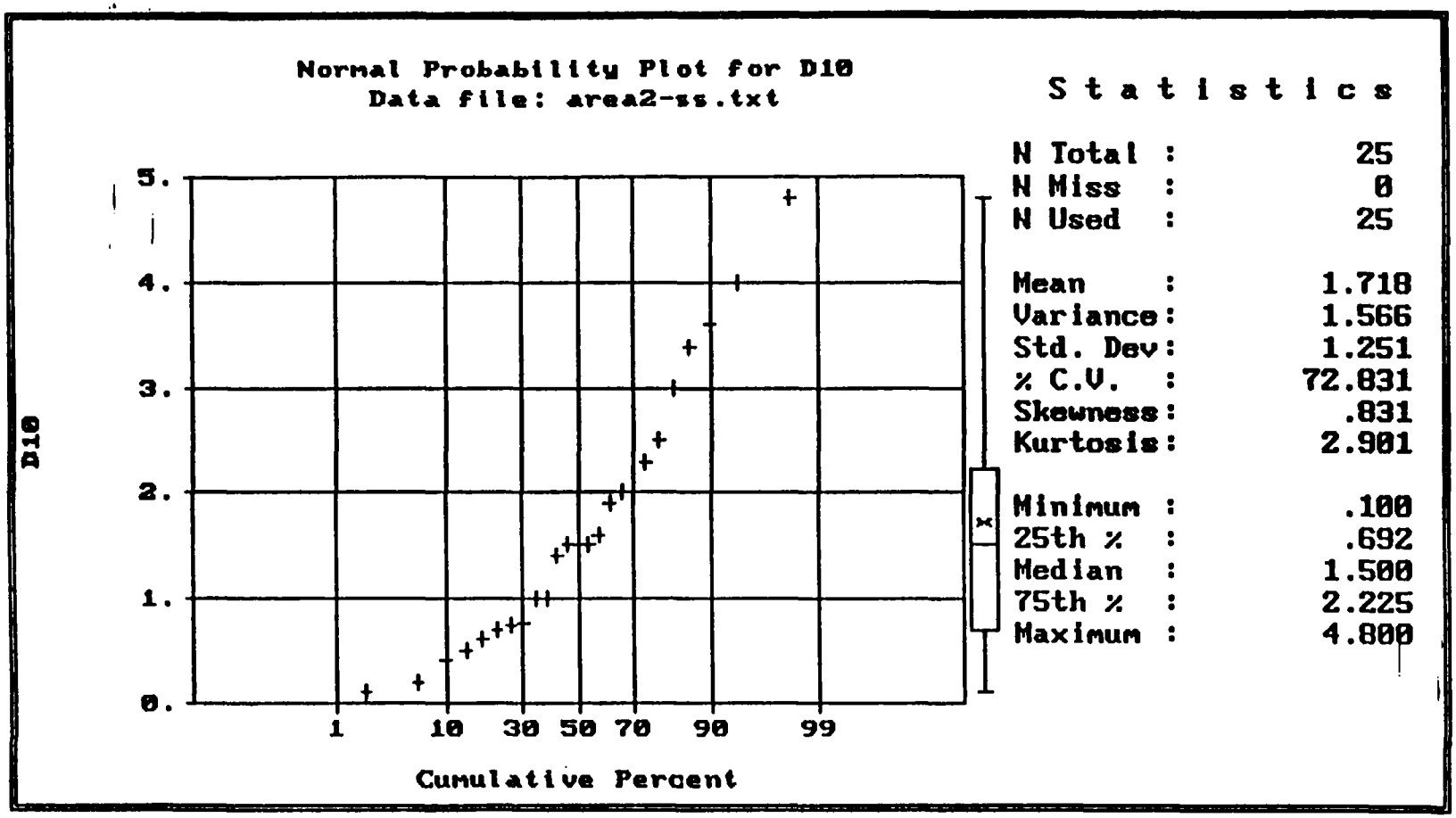

Histogram
Data file: area2-ss.txt
Statistics
N Total : 25
N Miss : 0
N Used : 25
Mean : 3.549
Variance: 4.810
Std. Dev: 2.193
% C.V. : 61.790
Skewness: .723
Kurtosis: 3.294
Minimum : -.330
25th % : 2.432
Median : 2.944
75th % : 3.966
Maximum : 8.802
Frequency
9.
6.
3.
0.
-4.
0.
4.
8.
12.
LN(MIREX) (UG/KG)

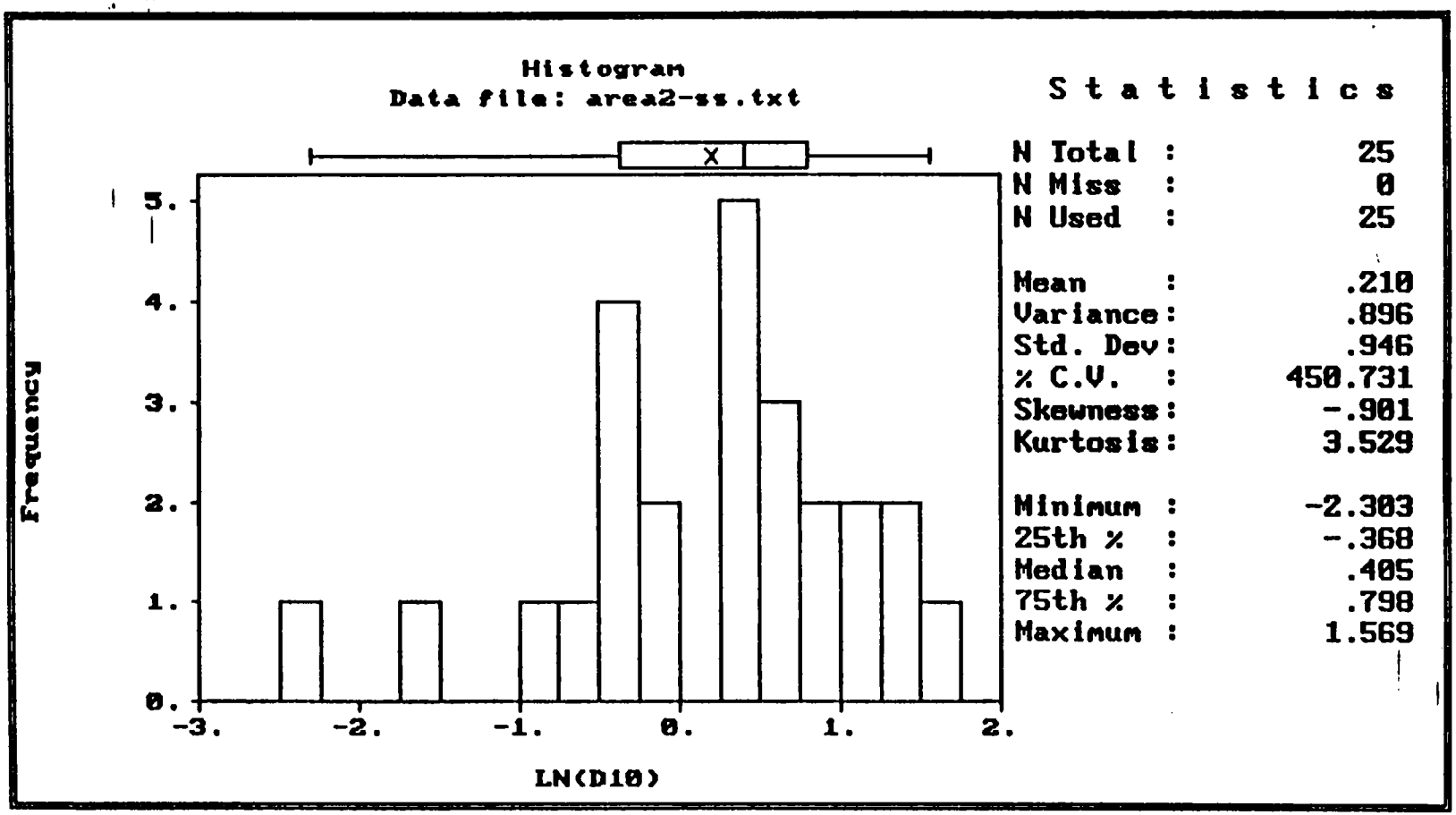

Normal Probability Plot for LN(MIREX)
Data file: area2-ss.txt
LN(MIREX)
9.
6.
3.
0.
-3.
1
10
30
50
70
90
99
Cumulative Percent
S t a t i s t i c s
N Total : 25
N Miss : 0
N Used : 25
Mean : 3.549
Variance : 4.810
Std. Dev : 2.193
% C.V. : 61.790
Skewness : .723
Kurtosis : 3.294
Minimum : -.330
25th % : 2.432
Median : 2.944
75th % : 3.966
Maximum : 8.802

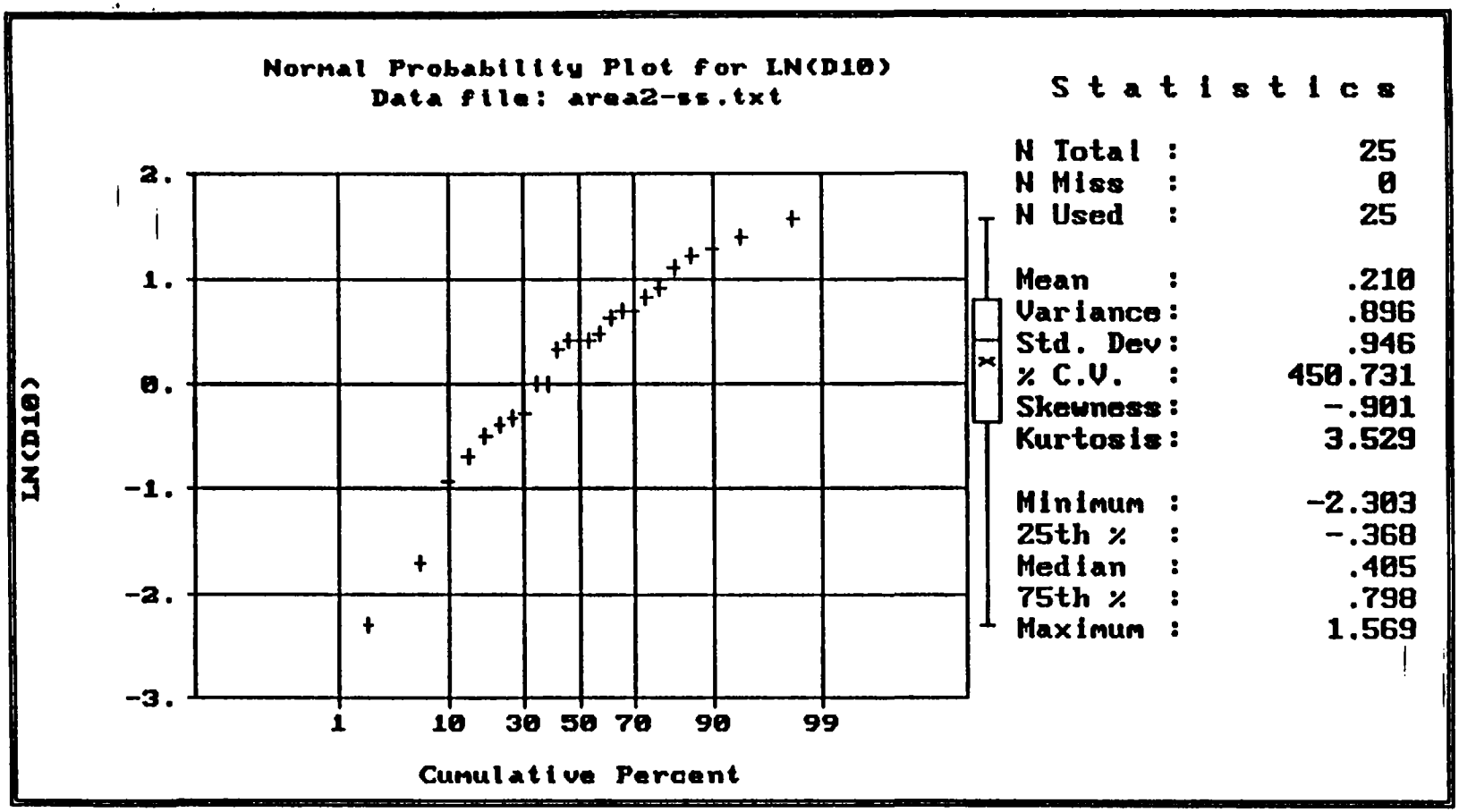

Histogram
Data file: area2-ss.txt
Frequency
5.
4.
3.
2.
1.
0.
0.
20000.
40000.
60000.
TOC (MG/KG)
Statistics
N Total : 25
N Miss : 0
N Used : 25
Mean : 23520.000
Variance: 61093330.000
Std. Dev: 7816.222
% C.V. : 33.232
Skewness: 1.590
Kurtosis: 7.190
Minimum : 13000.000
25th % : 18000.000
Median : 24000.000
75th % : 26000.000
Maximum : 51000.000

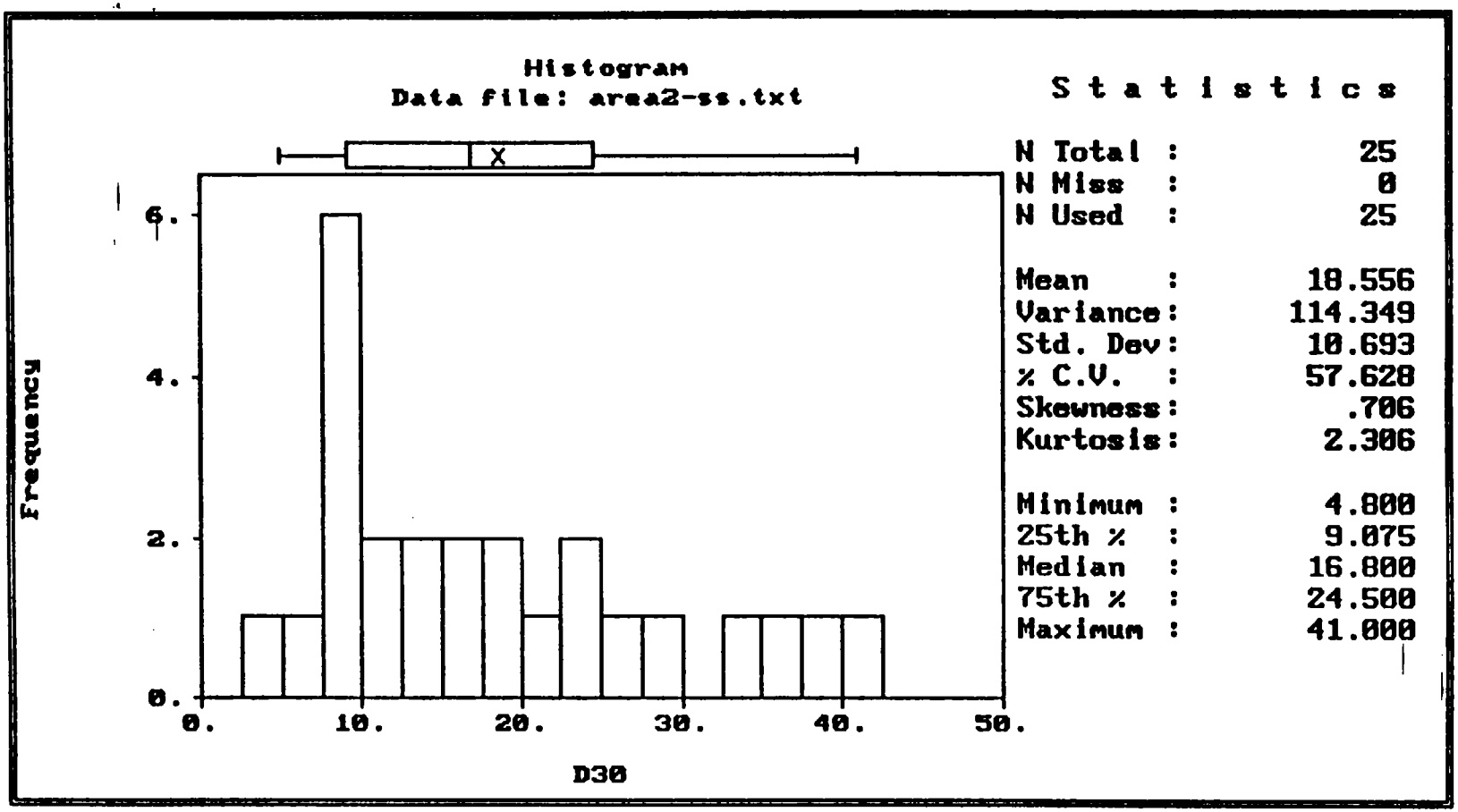

Normal Probability Plot for TOC
Data file: area2-ss.txt
60000.
50000.
40000.
30000.
20000.
10000.
TOC
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 25
N Miss : 0
N Used : 25
Mean : 23520.000
Variance : 61093330.000
Std. Dev : 7816.222
% C.V. : 33.232
Skewness : 1.590
Kurtosis : 7.190
Minimum : 13000.000
25th % : 18000.000
Median : 24000.000
75th % : 26000.000
Maximum : 51000.000

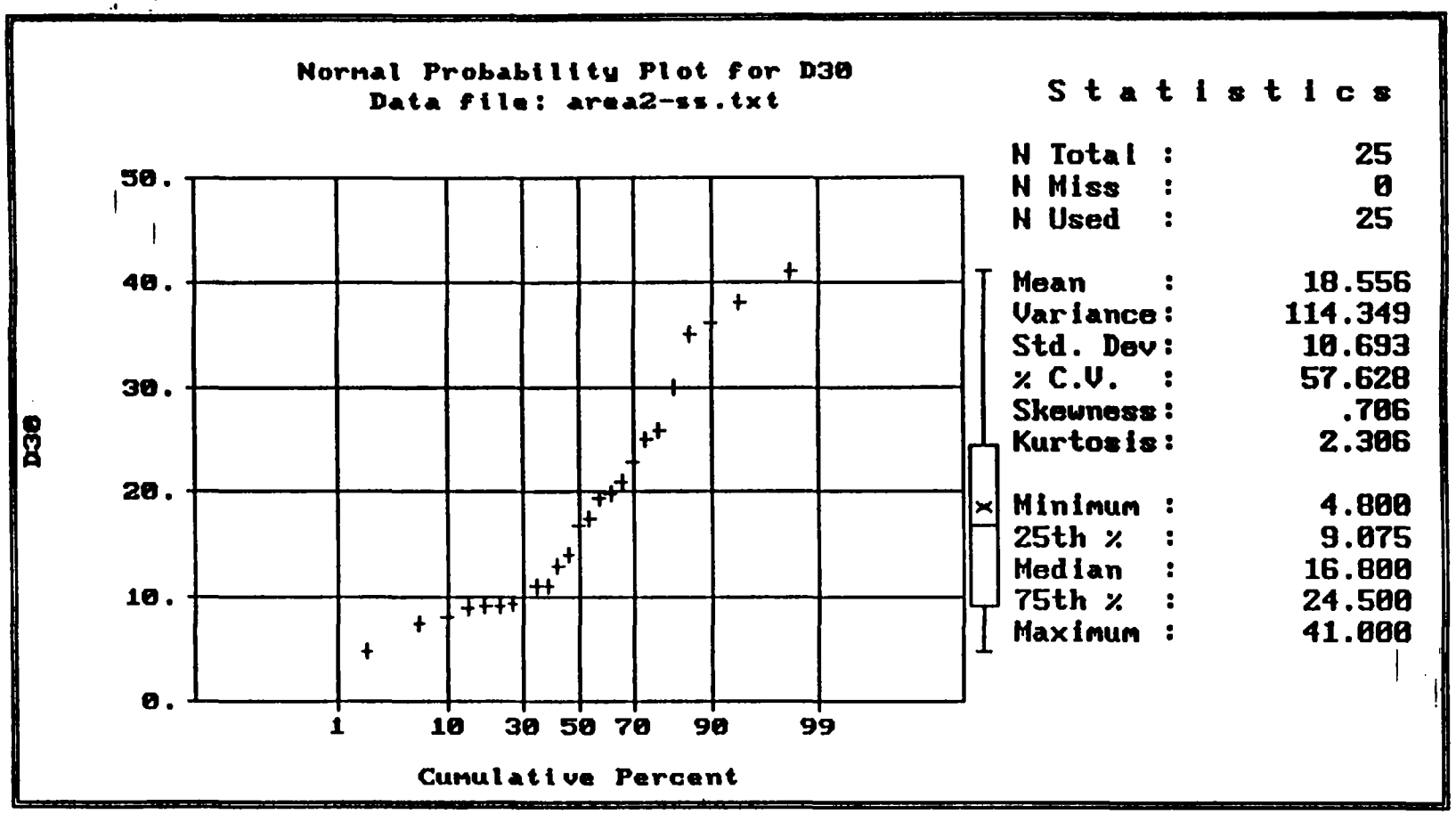

Histogram
Data file: area2-ss.txt
Statistics
N Total : 25
N Miss : 0
N Used : 25
Mean : 1.718
Variance : 1.566
Std. Dev : 1.251
% C.V. : 72.831
Skewness : .831
Kurtosis : 2.901
Minimum : .100
25th % : .692
Median : 1.500
75th % : 2.225
Maximum : 4.800
Frequency
0.
1.
2.
3.
4.
0.
1.
2.
3.
4.
5.
D10

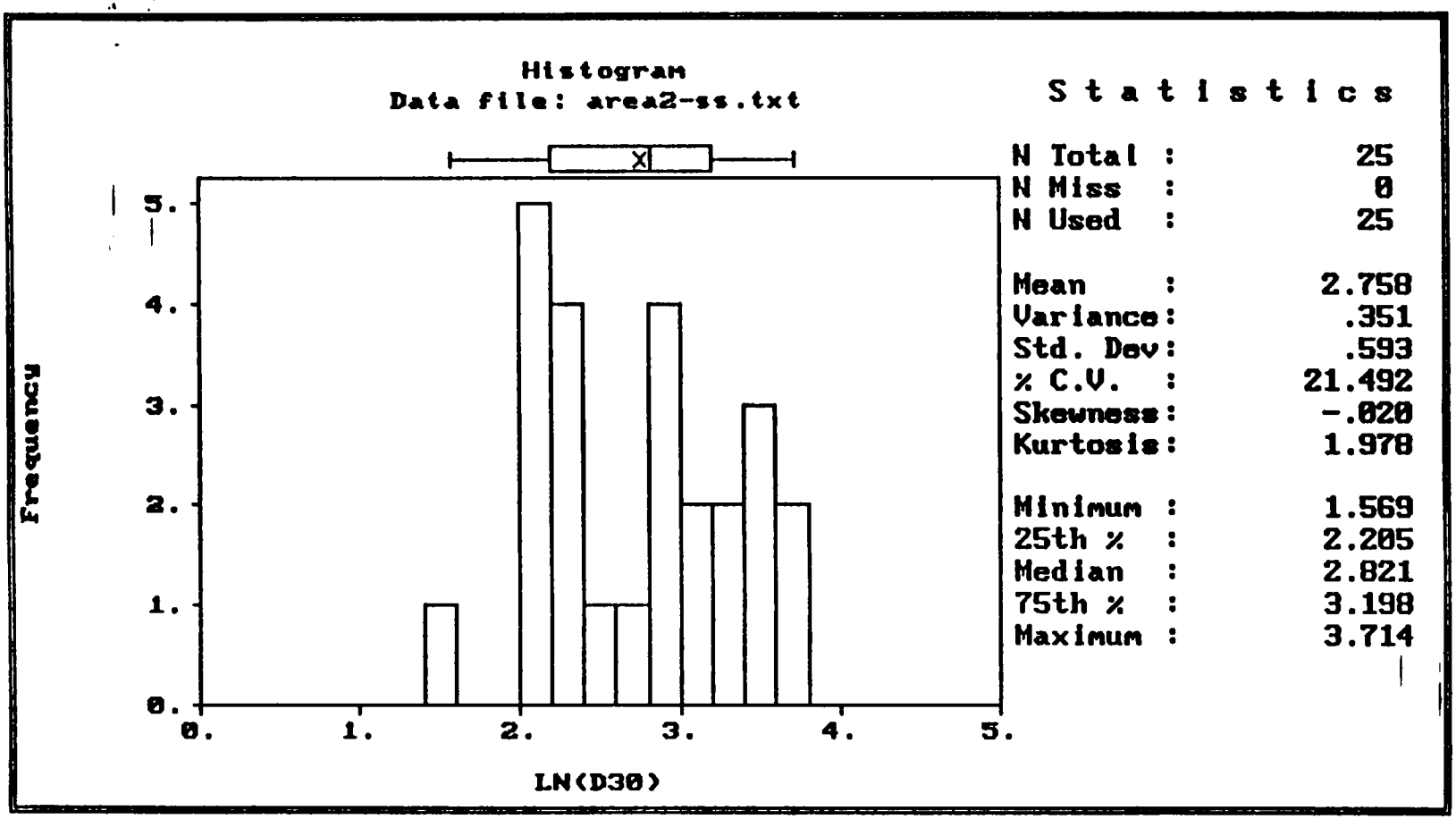

Normal Probability Plot for D10
Data file: area2-ss.txt
D10
5.
4.
3.
2.
1.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 25
N Miss : 0
N Used : 25
Mean : 1.718
Variance: 1.566
Std. Dev: 1.251
% C.V. : 72.831
Skewness: .831
Kurtosis: 2.901
Minimum : .100
25th % : .692
Median : 1.500
75th % : 2.225
Maximum : 4.800

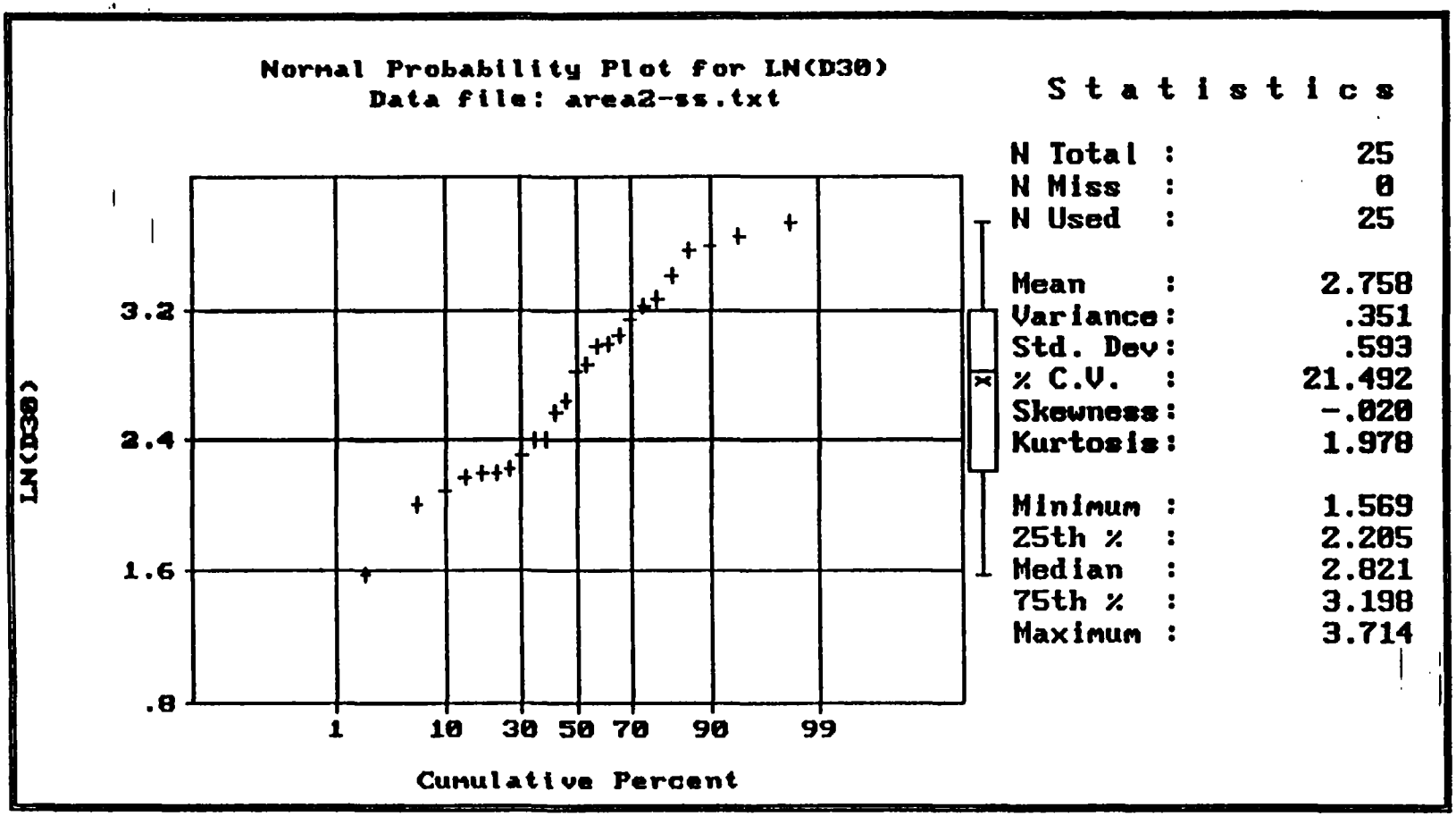

Histogram
Data file: area2-ss.txt
Frequency
5.
4.
3.
2.
1.
0.
-3.
-2.
-1.
0.
1.
2.
LN(D10)
Statistics
N Total : 25
N Miss : 0
N Used : 25
Mean : .210
Variance: .896
Std. Dev: .946
% C.V. : 450.731
Skewness: -.901
Kurtosis: 3.529
Minimum : -2.303
25th % : -.368
Median : .405
75th % : .798
Maximum : 1.569

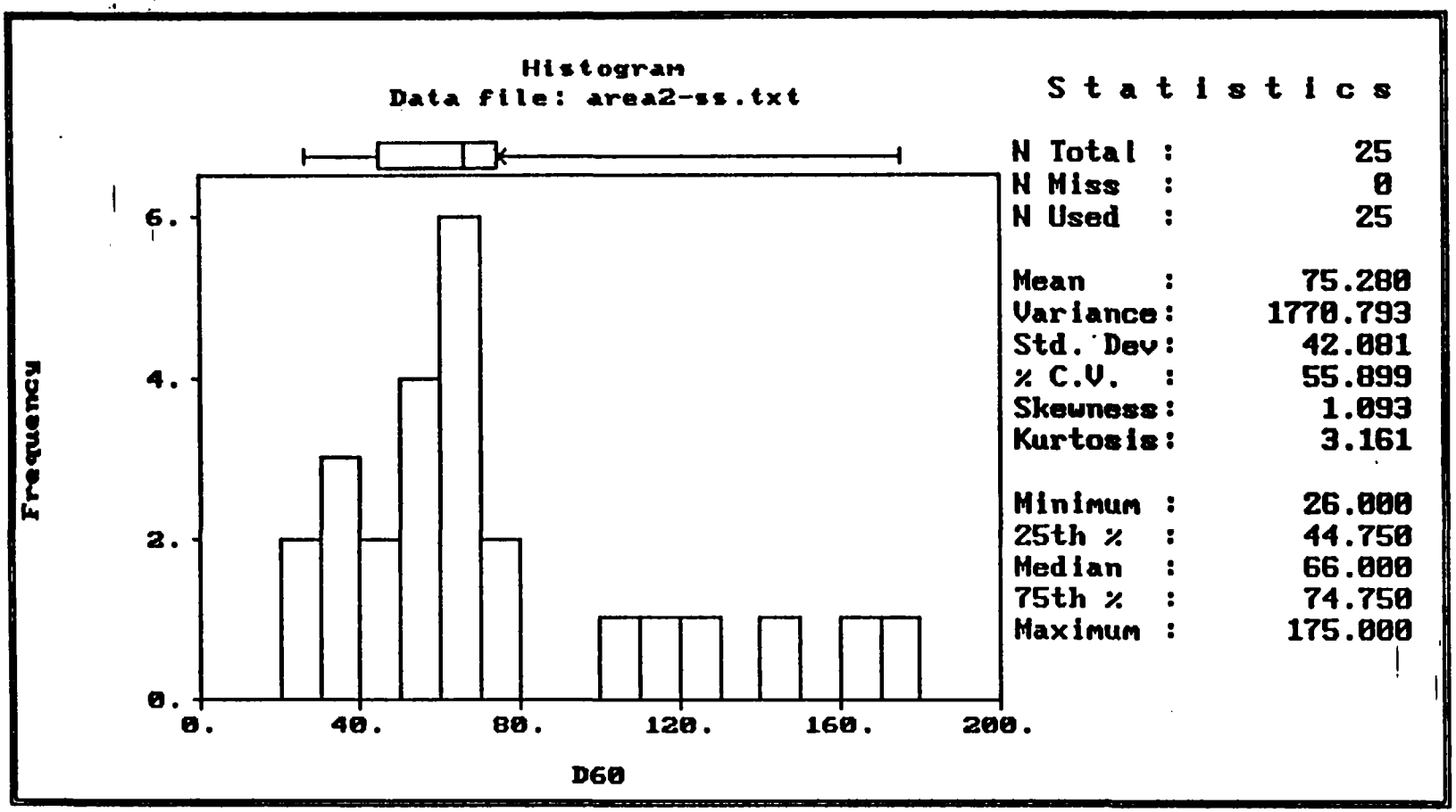

Normal Probability Plot for LN(D10)
Data file: area2-ss.txt
LN(D10)
2.
1.
0.
-1.
-2.
-3.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 25
N Miss : 0
N Used : 25
Mean : .210
Variance : .896
Std. Dev : .946
% C.V. : 450.731
Skewness : -.901
Kurtosis : 3.529
Minimum : -2.303
25th % : -.368
Median : .405
75th % : .798
Maximum : 1.569

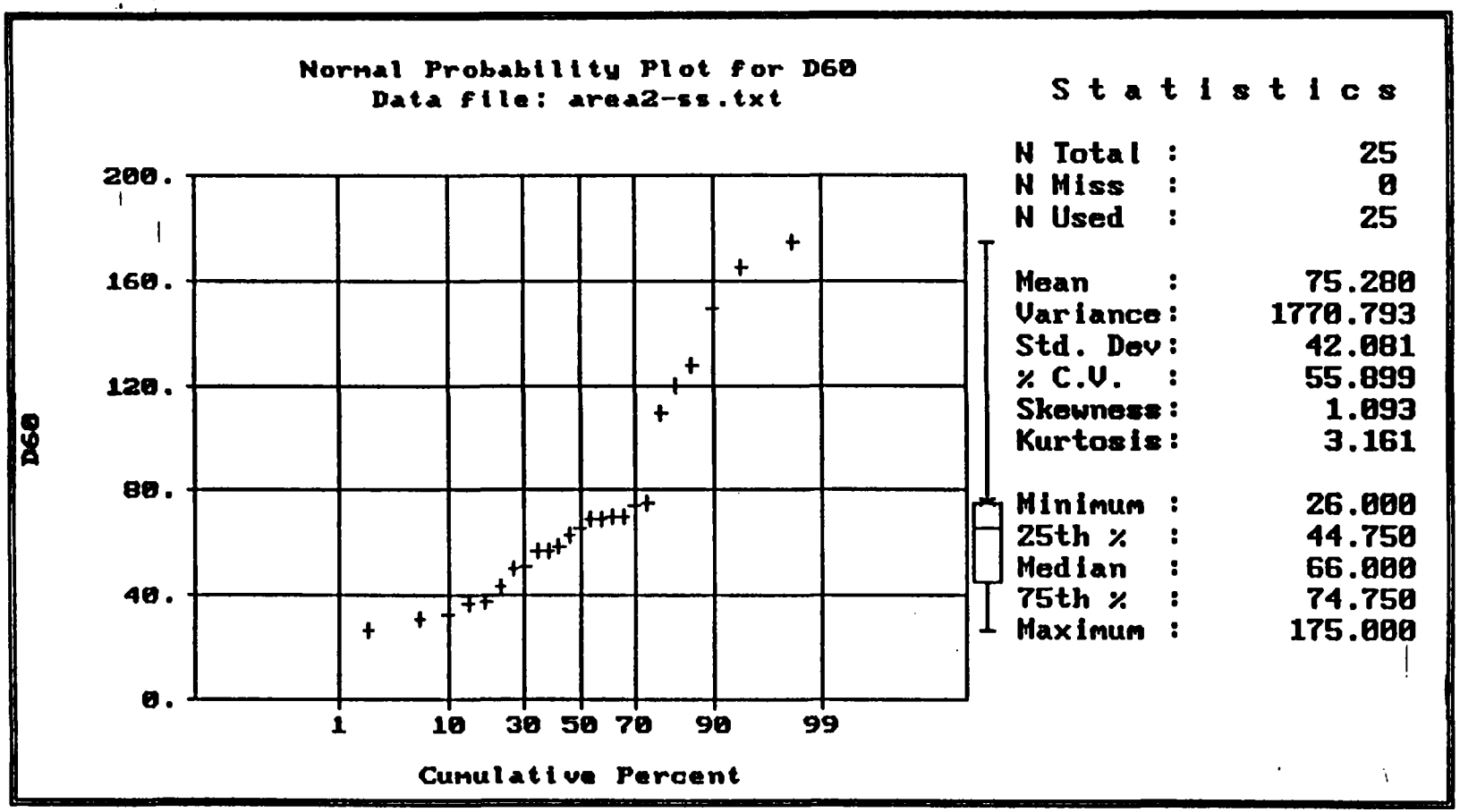

Histogram
Data file: area2-ss.txt
Frequency
6.
4.
2.
0.
0.
10.
20.
30.
40.
50.
D30
Statistics
N Total : 25
N Miss : 0
N Used : 25
Mean : 18.556
Variance: 114.349
Std. Dev: 10.693
% C.V. : 57.628
Skewness: .706
Kurtosis: 2.306
Minimum : 4.800
25th % : 9.075
Median : 16.800
75th % : 24.500
Maximum : 41.000

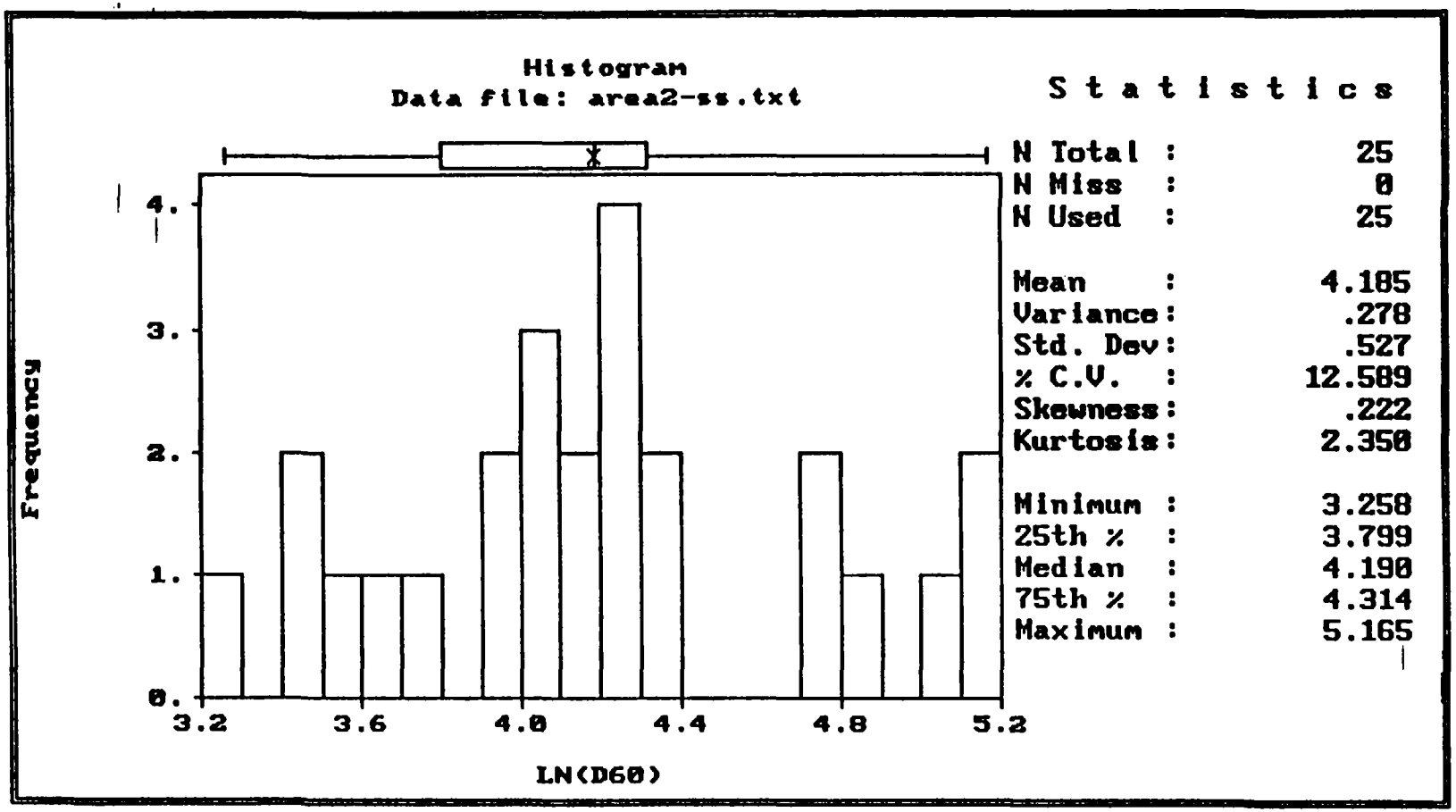

Normal Probability Plot for D30
Data file: area2-ss.txt
D30
50.
40.
30.
20.
10.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 25
N Miss : 0
N Used : 25
Mean : 18.556
Variance: 114.349
Std. Dev: 10.693
% C.V. : 57.628
Skewness: .706
Kurtosis: 2.306
Minimum : 4.800
25th % : 9.075
Median : 16.800
75th % : 24.500
Maximum : 41.000

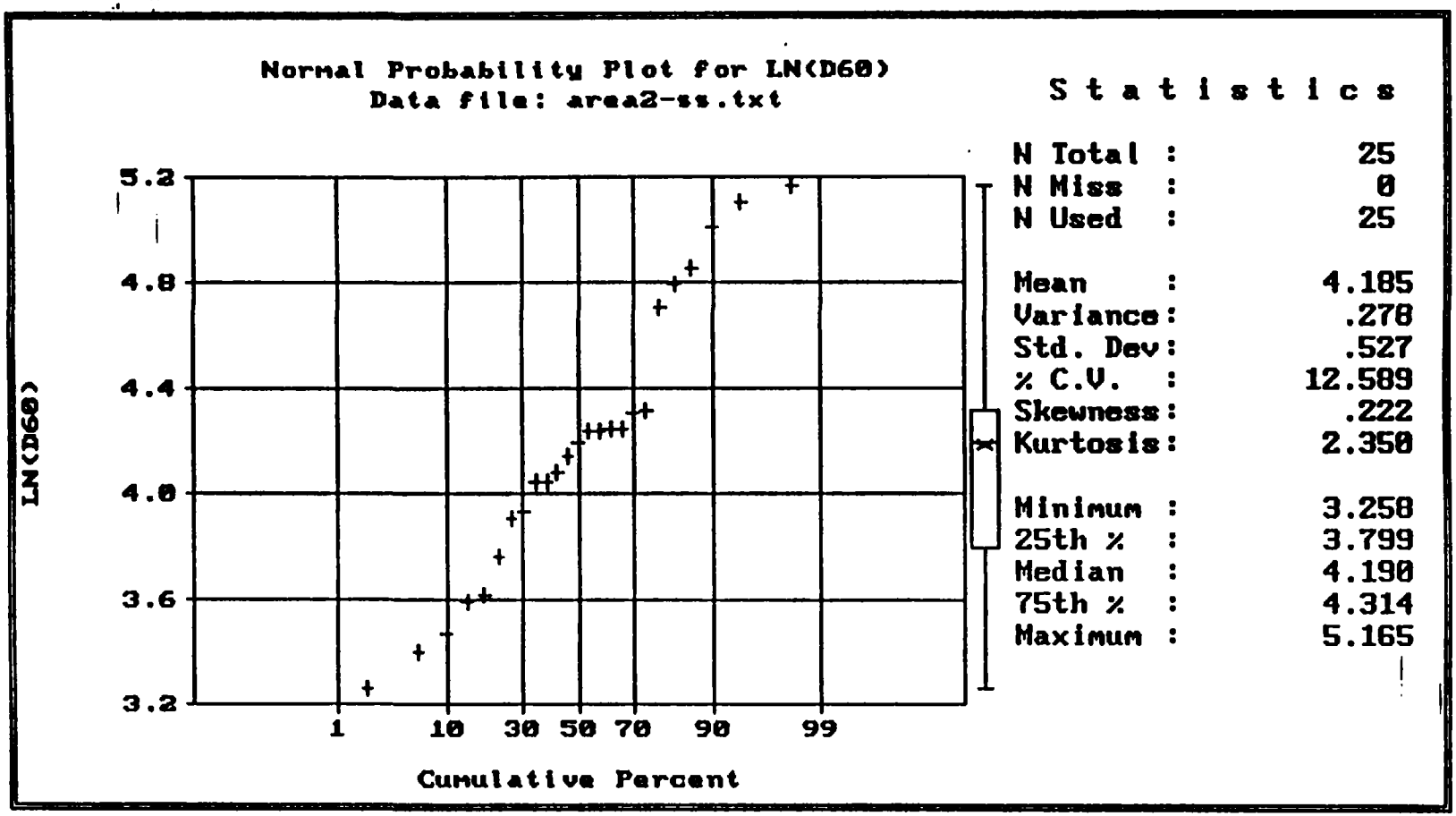

Histogram
Data file: area2-ss.txt
Frequency
0.
1.
2.
3.
4.
5.
0.
1.
2.
3.
4.
5.
LN(D30)
Statistics
N Total : 25
N Miss : 0
N Used : 25
Mean : 2.758
Variance: .351
Std. Dev: .593
% C.V. : 21.492
Skewness: -.020
Kurtosis: 1.978
Minimum : 1.569
25th % : 2.205
Median : 2.821
75th % : 3.198
Maximum : 3.714

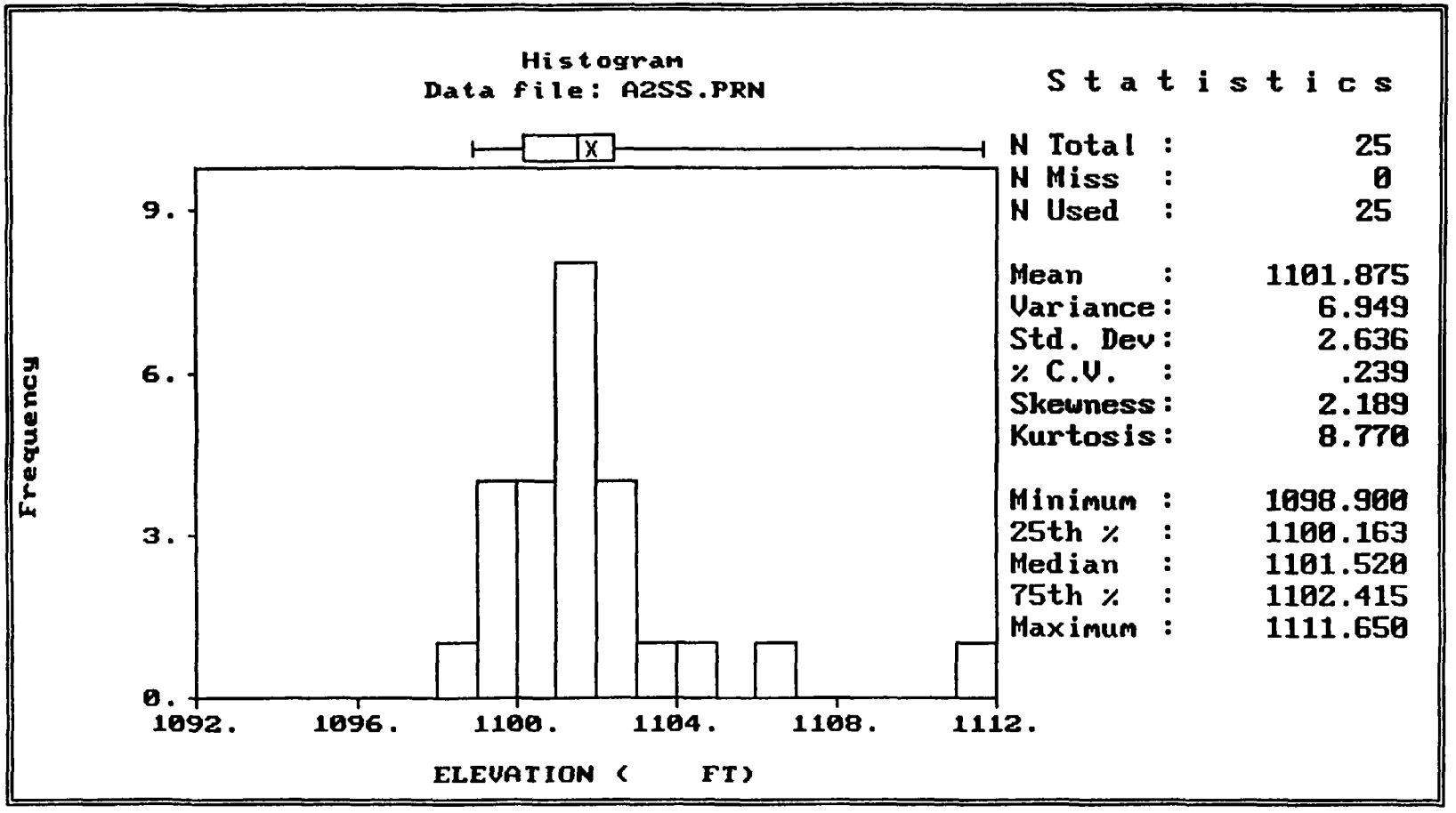

Normal Probability Plot for LN(D30)
Data file: area2-ss.txt
LN(D30)
3.2
2.4
1.6
.8
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 25
N Miss : 0
N Used : 25
Mean : 2.758
Variance: .351
Std. Dev: .593
% C.V. : 21.492
Skewness: -.020
Kurtosis: 1.978
Minimum : 1.569
25th % : 2.205
Median : 2.821
75th % : 3.198
Maximum : 3.714

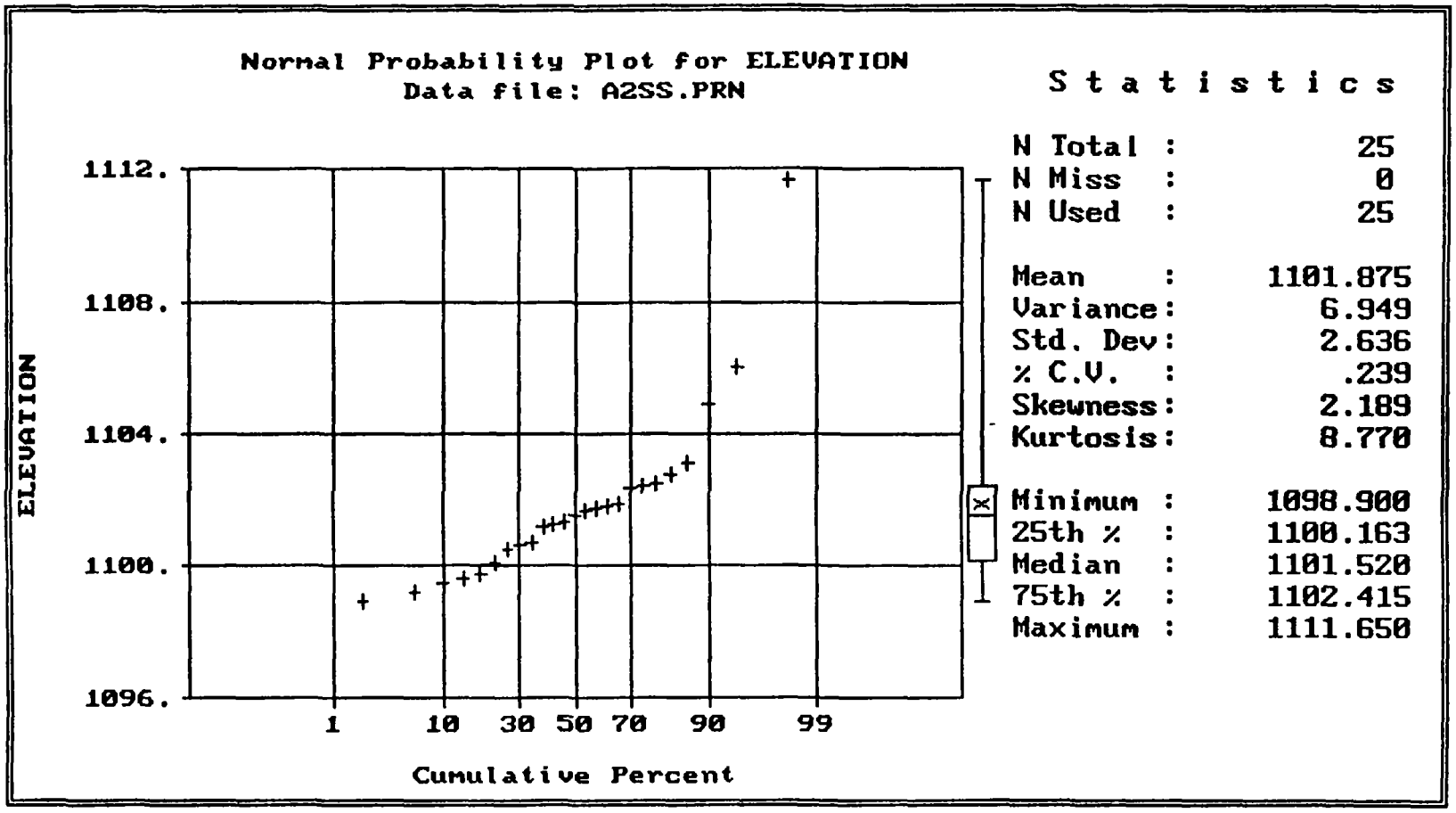

Histogram
Data file: area2-ss.txt
Frequency
6.
4.
2.
0.
0.
40.
80.
120.
160.
200.
D60
Statistics
N Total : 25
N Miss : 0
N Used : 25
Mean : 75.280
Variance: 1770.793
Std. Dev: 42.081
% C.V. : 55.899
Skewness: 1.093
Kurtosis: 3.161
Minimum : 26.000
25th % : 44.750
Median : 66.000
75th % : 74.750
Maximum : 175.000

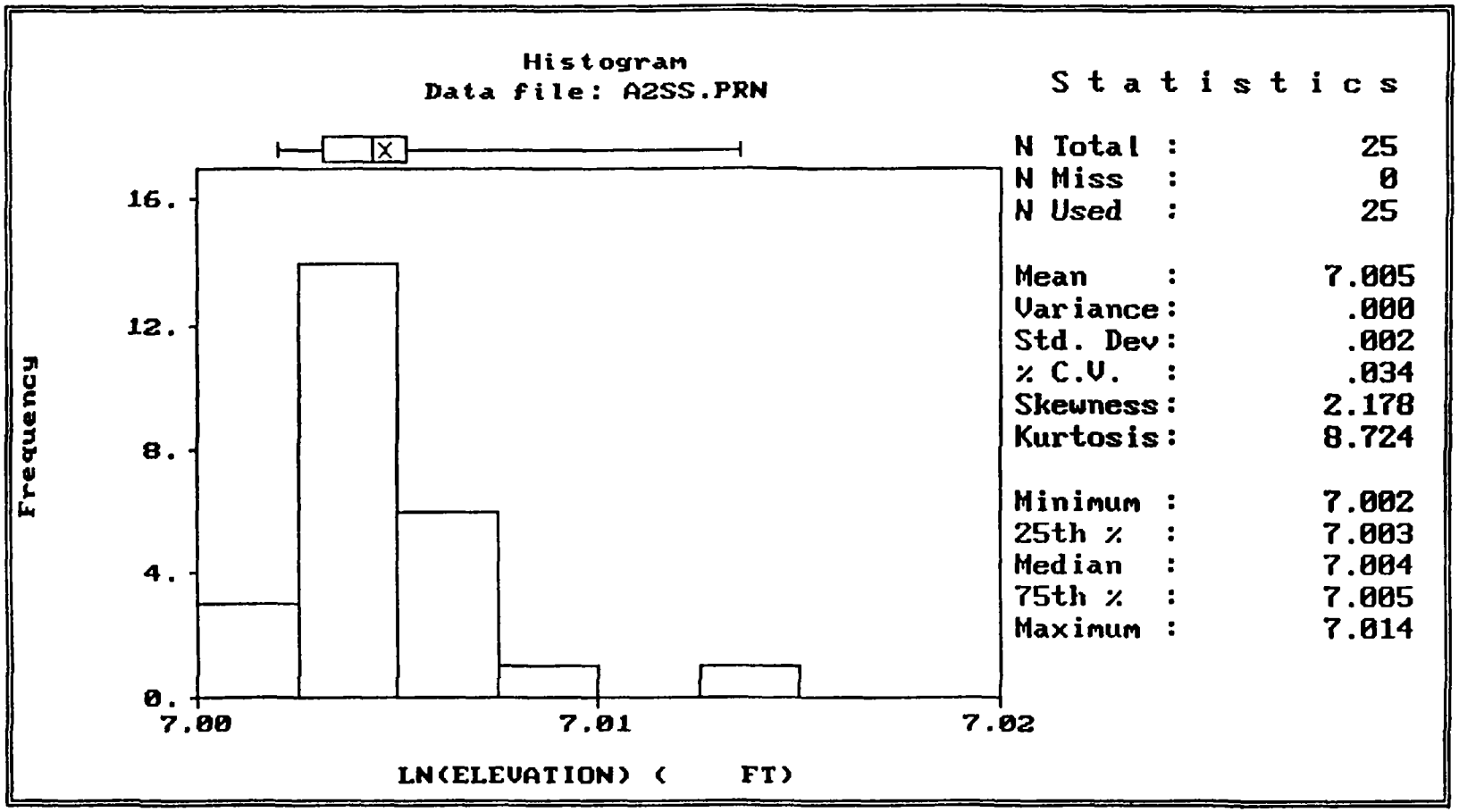

Normal Probability Plot for D60
Data file: area2-ss.txt
D60
200.
160.
120.
80.
40.
0.
1
10
30
50
70
90
99
Cumulative Percent
S t a t i s t i c s
N Total : 25
N Miss : 0
N Used : 25
Mean : 75.280
Variance: 1770.793
Std. Dev: 42.081
% C.V. : 55.899
Skewness: 1.093
Kurtosis: 3.161
Minimum : 26.000
25th % : 44.750
Median : 66.000
75th % : 74.750
Maximum : 175.000

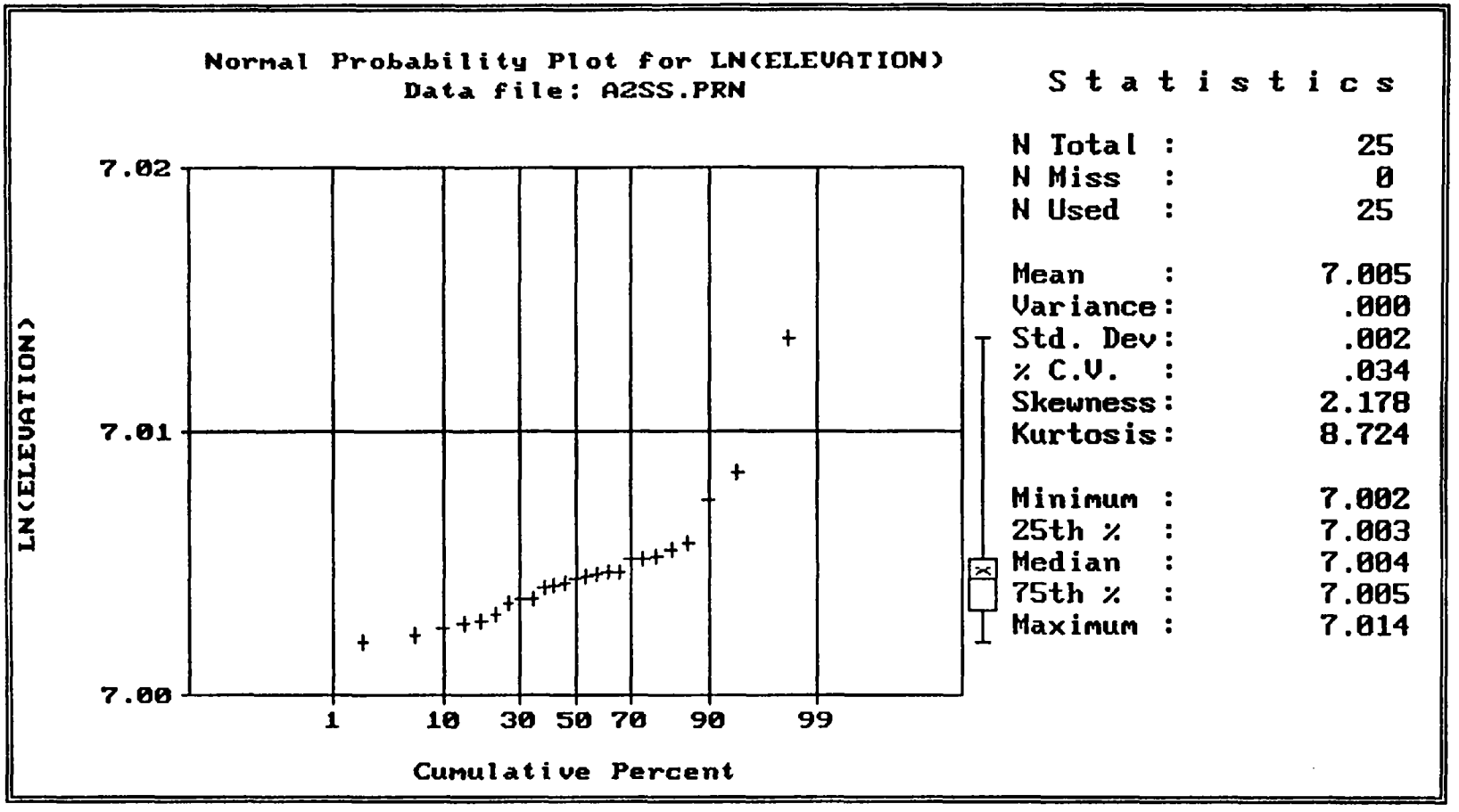

Histogram
Data file: area2-ss.txt
Frequency
4.
3.
2.
1.
0.
3.2
3.6
4.0
4.4
4.8
5.2
LN(D60)
Statistics
N Total : 25
N Miss : 0
N Used : 25
Mean : 4.185
Variance : .278
Std. Dev : .527
% C.V. : 12.589
Skewness : .222
Kurtosis : 2.350
Minimum : 3.258
25th % : 3.799
Median : 4.190
75th % : 4.314
Maximum : 5.165

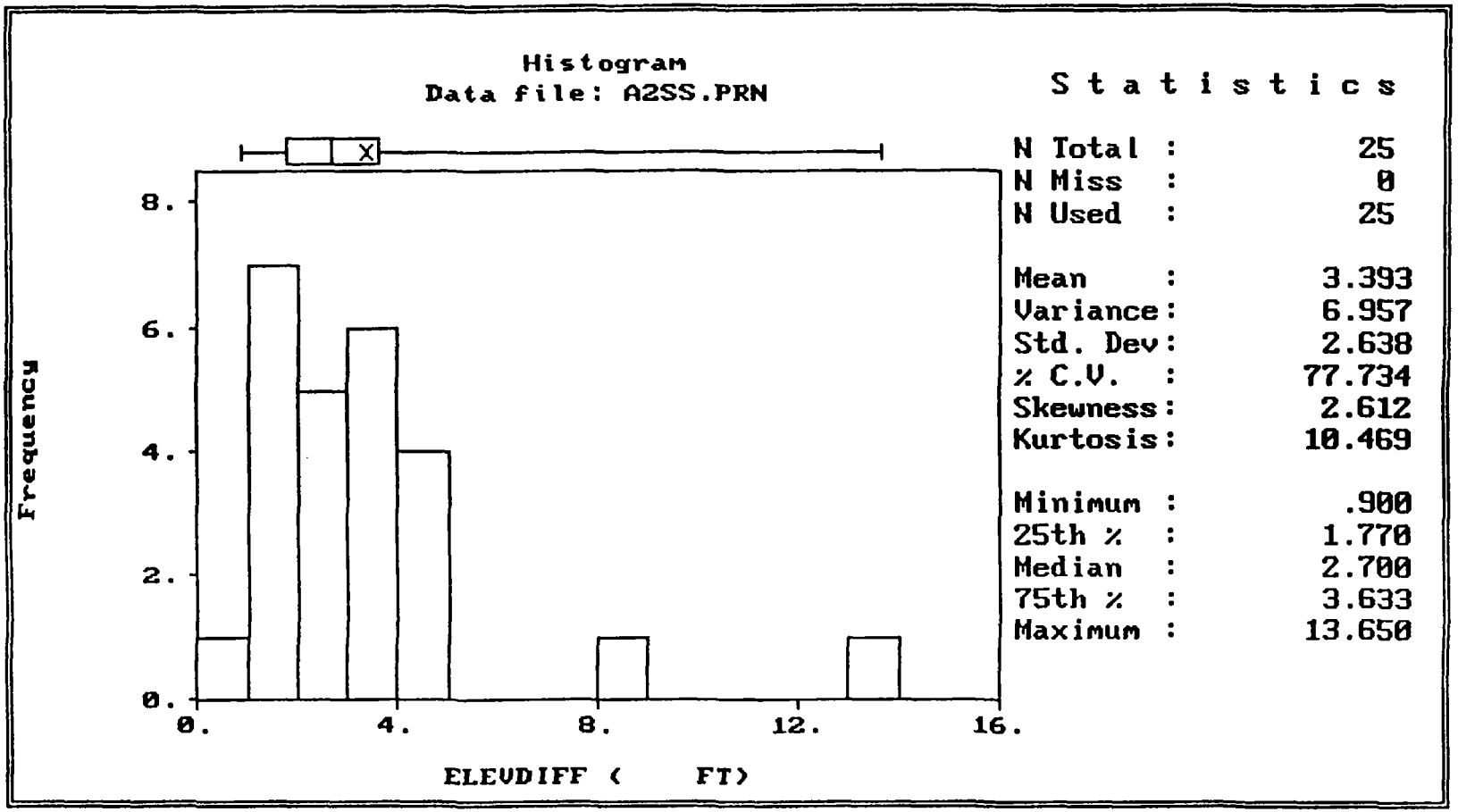

Normal Probability Plot for LN(D60)
Data file: area2-ss.txt
LN(D60)
5.2
4.8
4.4
4.0
3.6
3.2
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 25
N Miss : 0
N Used : 25
Mean : 4.185
Variance: .278
Std. Dev: .527
% C.V. : 12.589
Skewness: .222
Kurtosis: 2.350
Minimum : 3.258
25th % : 3.799
Median : 4.190
75th % : 4.314
Maximum : 5.165

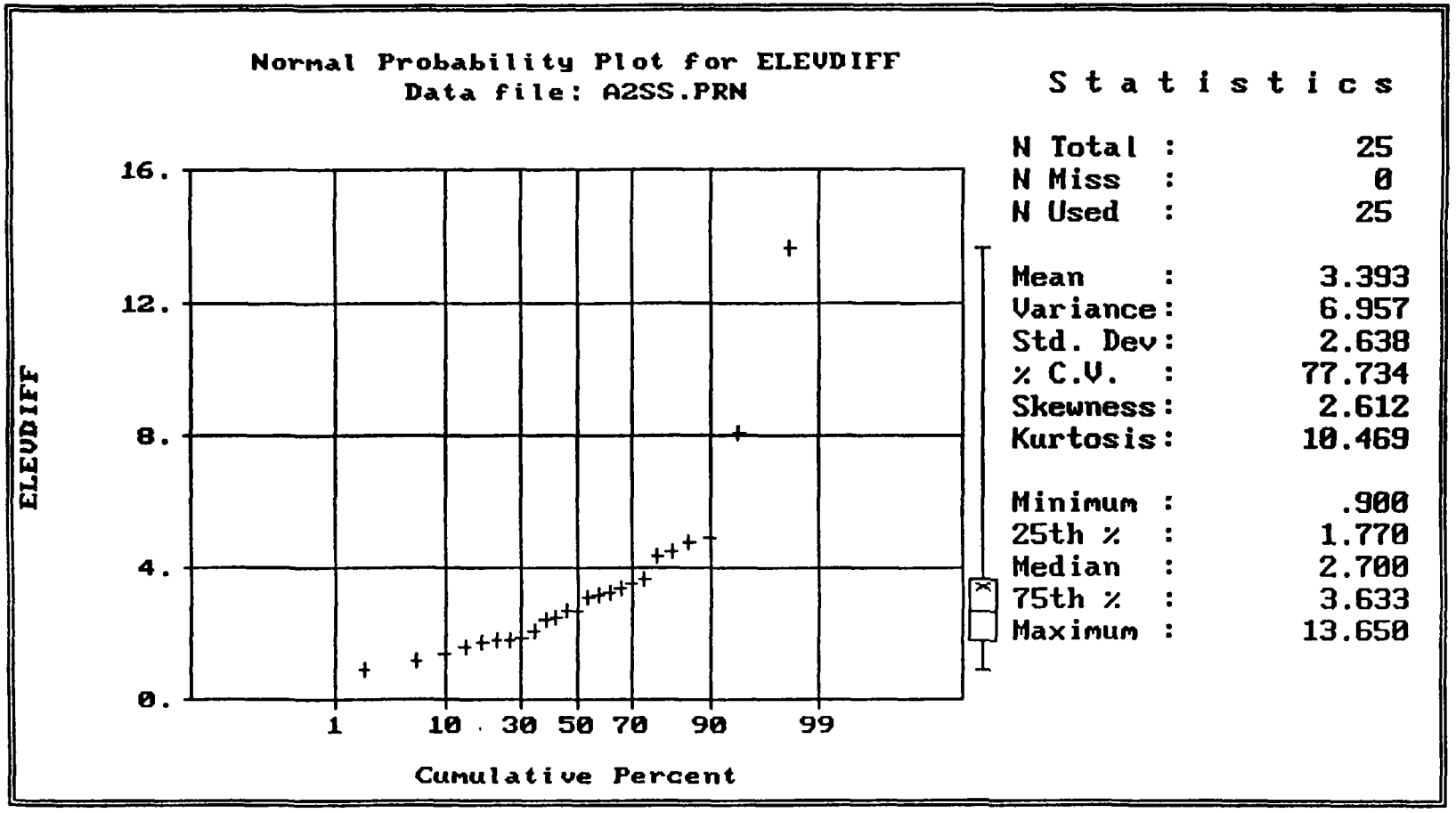

Histogram
Data file: A2SS.PRN
Frequency
9.
6.
3.
0.
1092.
1096.
1100.
1104.
1108.
1112.
ELEVATION (FT)
Statistics
N Total : 25
N Miss : 0
N Used : 25
Mean : 1101.875
Variance: 6.949
Std. Dev: 2.636
% C.V. : .239
Skewness: 2.189
Kurtosis: 8.770
Minimum : 1098.900
25th % : 1100.163
Median : 1101.520
75th % : 1102.415
Maximum : 1111.650

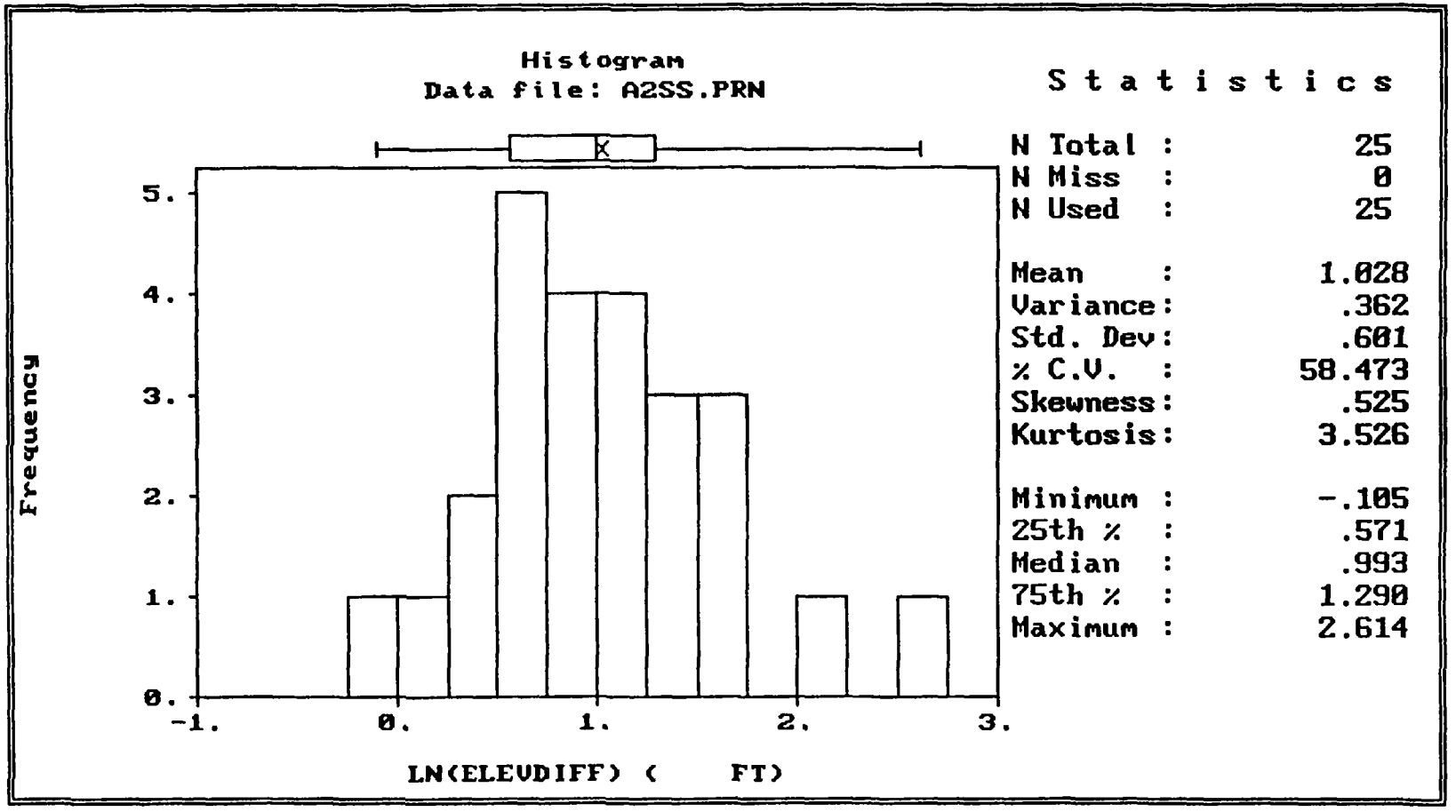

Normal Probability Plot for ELEVATION
Data file: A2SS.PRN
ELEVATION
1112.
1108.
1104.
1100.
1096.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 25
N Miss : 0
N Used : 25
Mean : 1101.875
Variance: 6.949
Std. Dev: 2.636
% C.V. : .239
Skewness: 2.189
Kurtosis: 8.770
Minimum : 1098.900
25th % : 1100.163
Median : 1101.520
75th % : 1102.415
Maximum : 1111.650

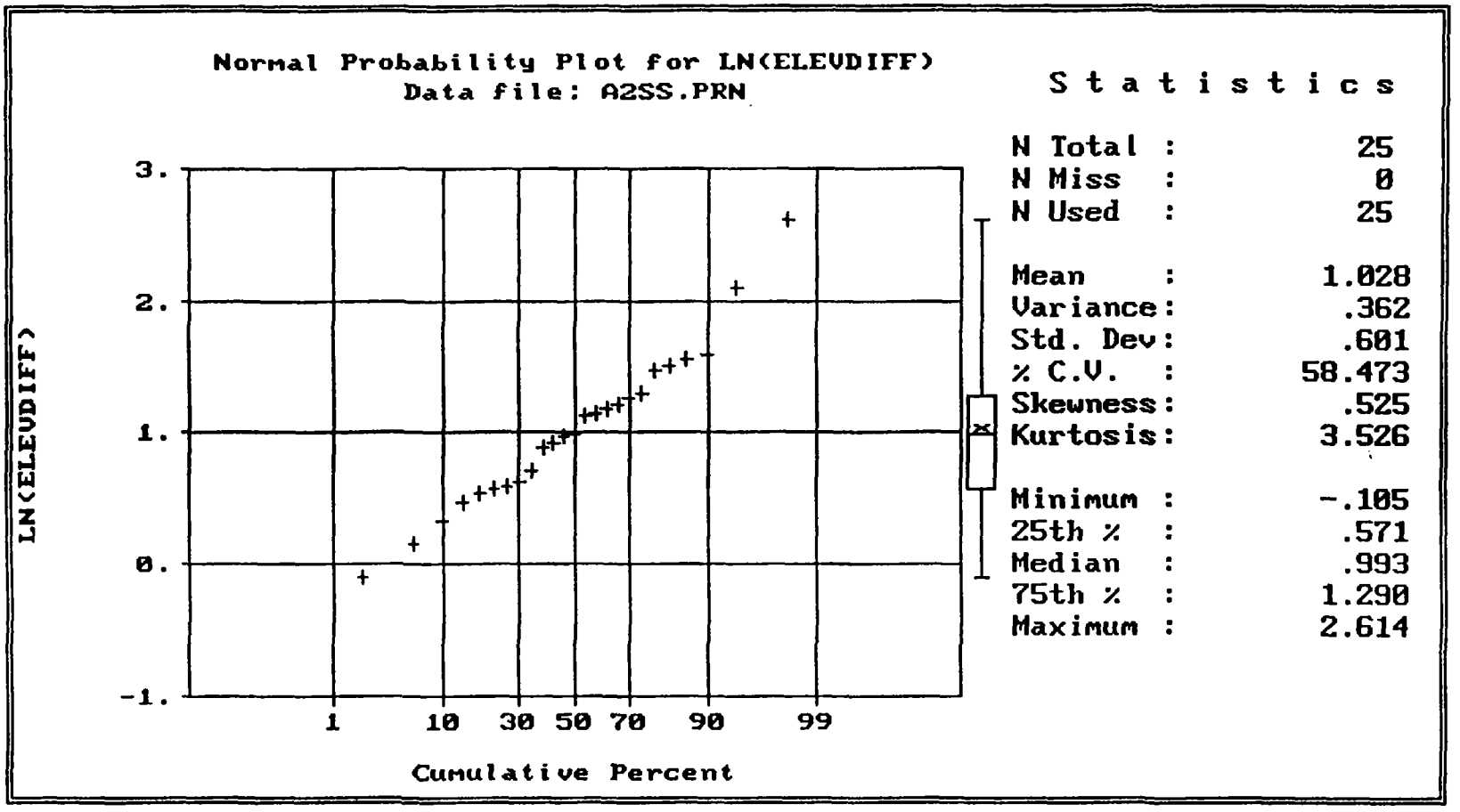

Histogram
Data file: A2SS.PRN
Statistics
N Total : 25
N Miss : 0
N Used : 25
Mean : 7.005
Variance : .000
Std. Dev : .002
% C.V. : .034
Skewness : 2.178
Kurtosis : 8.724
Minimum : 7.002
25th % : 7.003
Median : 7.004
75th % : 7.005
Maximum : 7.014
Frequency
16.
12.
8.
4.
0.
7.00
7.01
7.02
LN(ELEVATION) (FT)

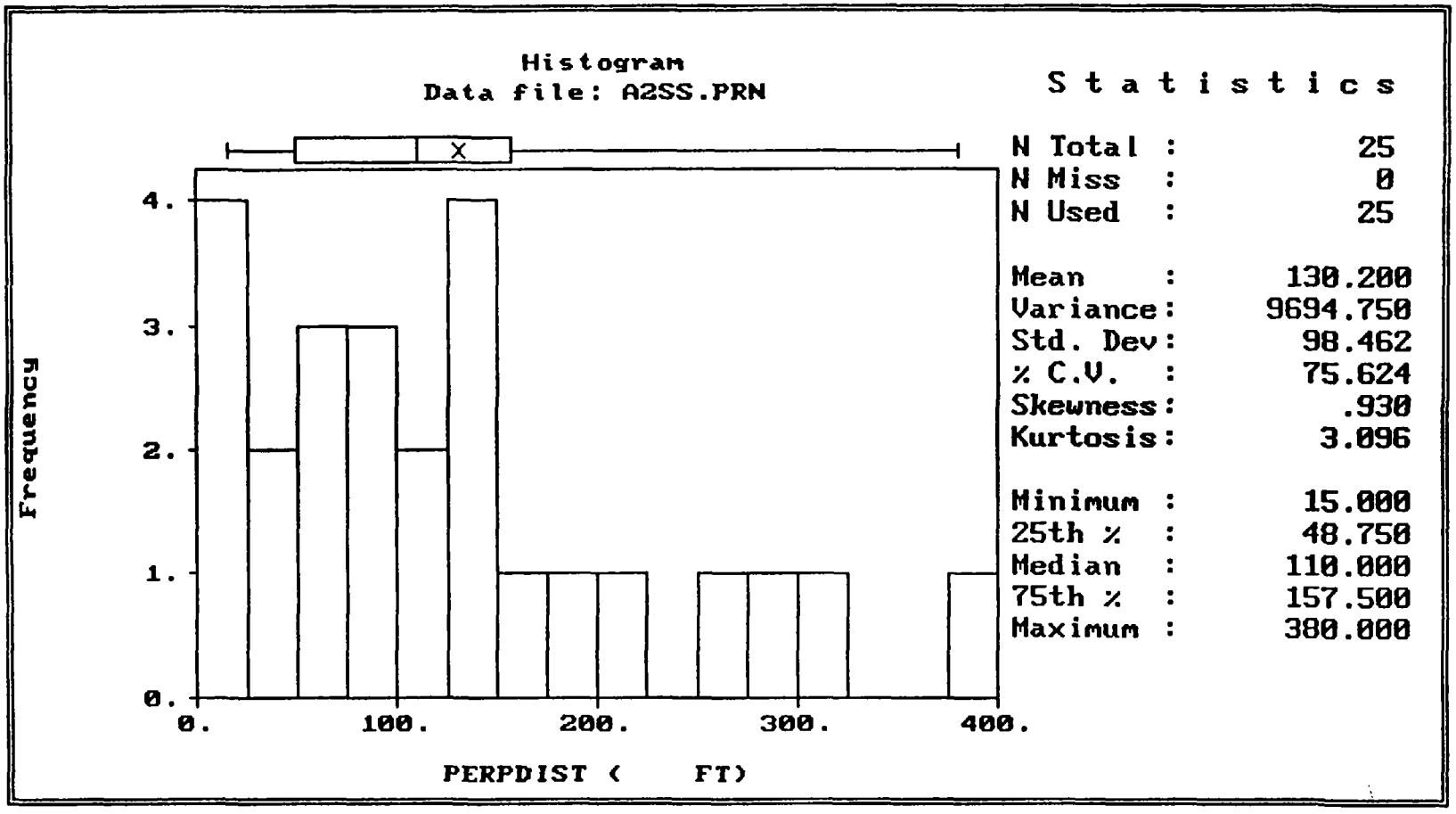

Normal Probability Plot for LN(ELEVATION)
Data file: A2SS.PRN
LN(ELEVATION)
7.02
7.01
7.00
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 25
N Miss : 0
N Used : 25
Mean : 7.005
Variance: .000
Std. Dev: .002
% C.V. : .034
Skewness: 2.178
Kurtosis: 8.724
Minimum : 7.002
25th % : 7.003
Median : 7.004
75th % : 7.005
Maximum : 7.014

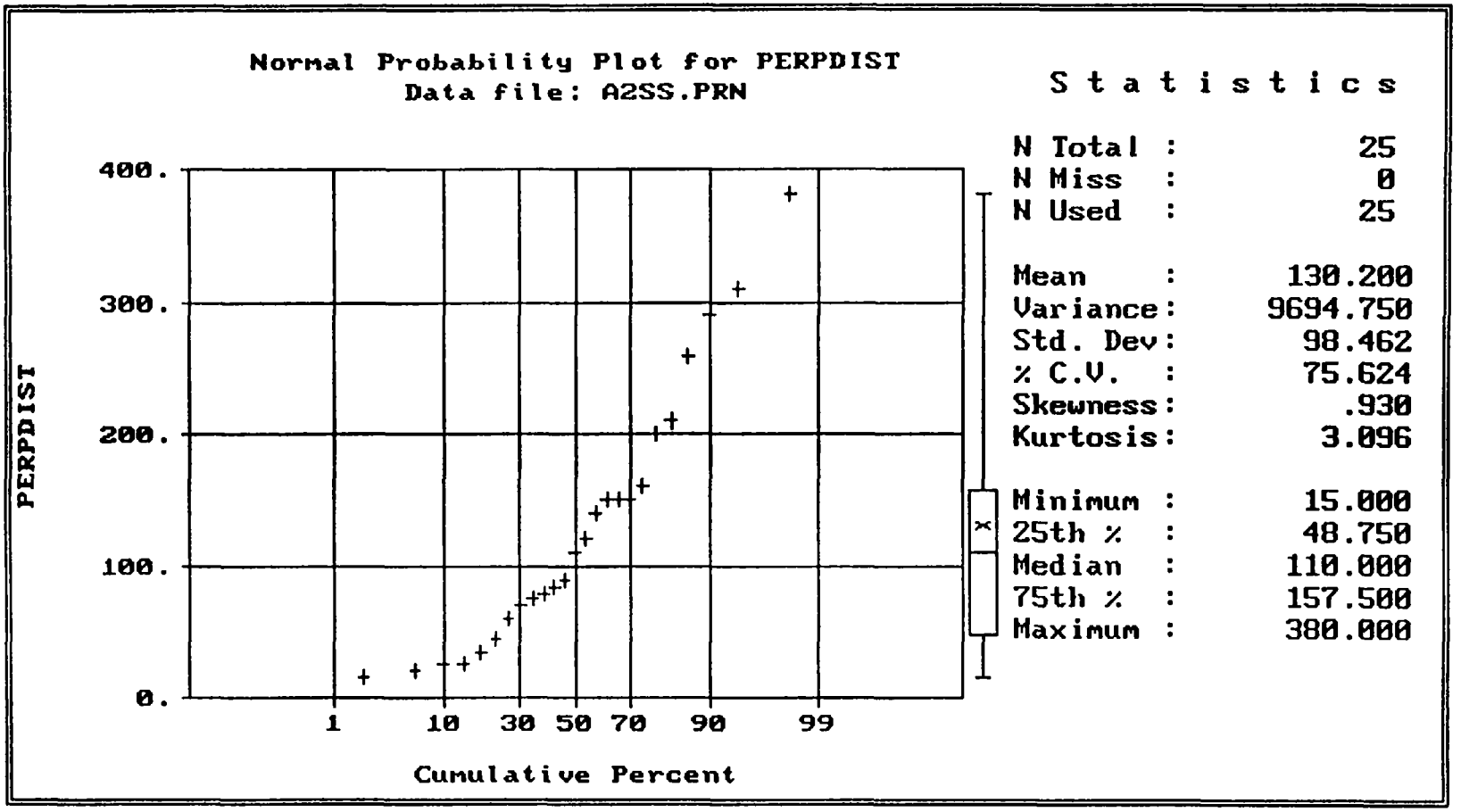

Histogram
Data file: A2SS.PRN
Frequency
8.
6.
4.
2.
0.
0.
4.
8.
12.
16.
ELEVDIFF (FT)
Statistics
N Total : 25
N Miss : 0
N Used : 25
Mean : 3.393
Variance: 6.957
Std. Dev: 2.638
% C.V. : 77.734
Skewness: 2.612
Kurtosis: 10.469
Minimum : .900
25th % : 1.770
Median : 2.700
75th % : 3.633
Maximum : 13.650

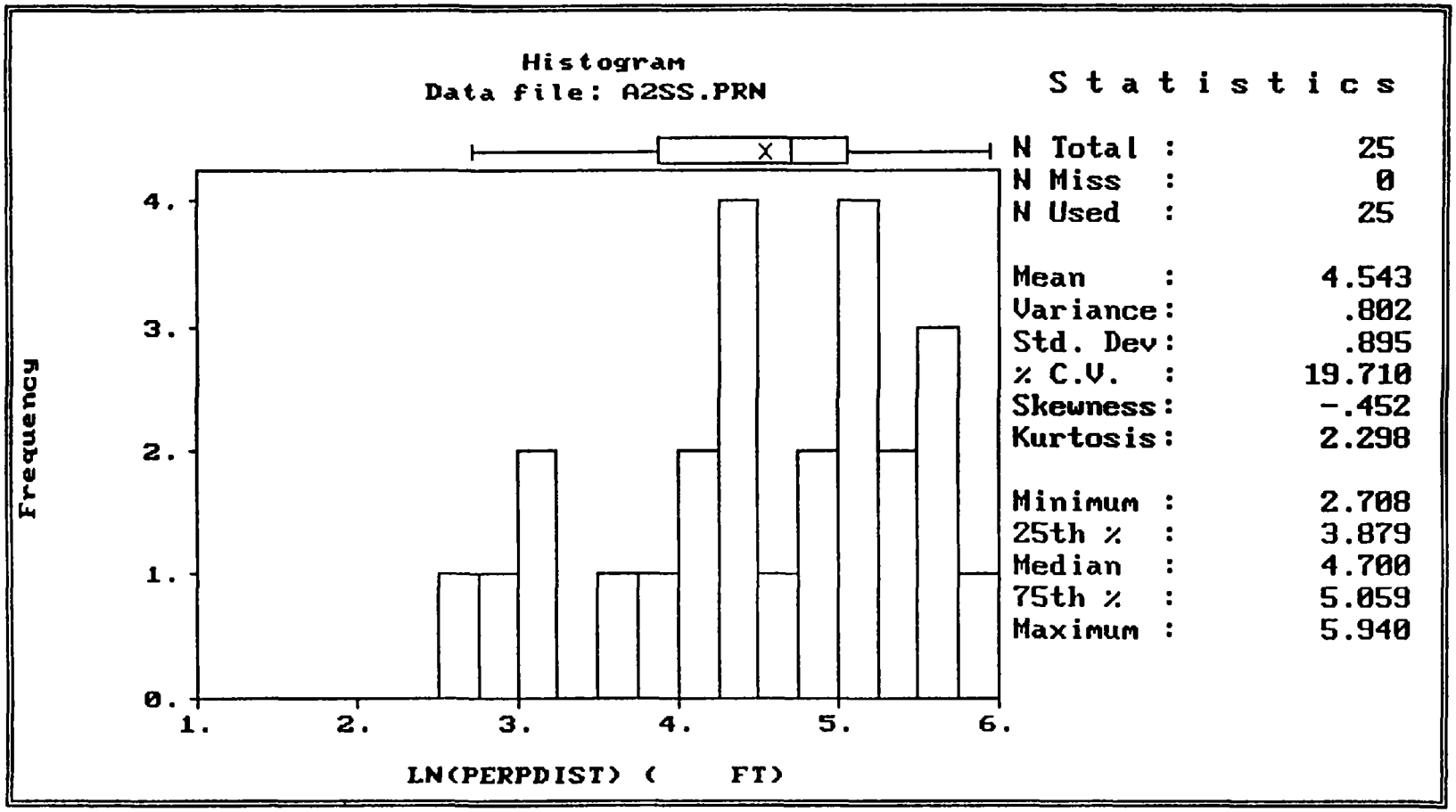

Normal Probability Plot for ELEVDIFF
Data file: A2SS.PRN
ELEVDIFF
16.
12.
8.
4.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 25
N Miss : 0
N Used : 25
Mean : 3.393
Variance: 6.957
Std. Dev: 2.638
% C.V. : 77.734
Skewness: 2.612
Kurtosis: 10.469
Minimum : .900
25th % : 1.770
Median : 2.700
75th % : 3.633
Maximum : 13.650

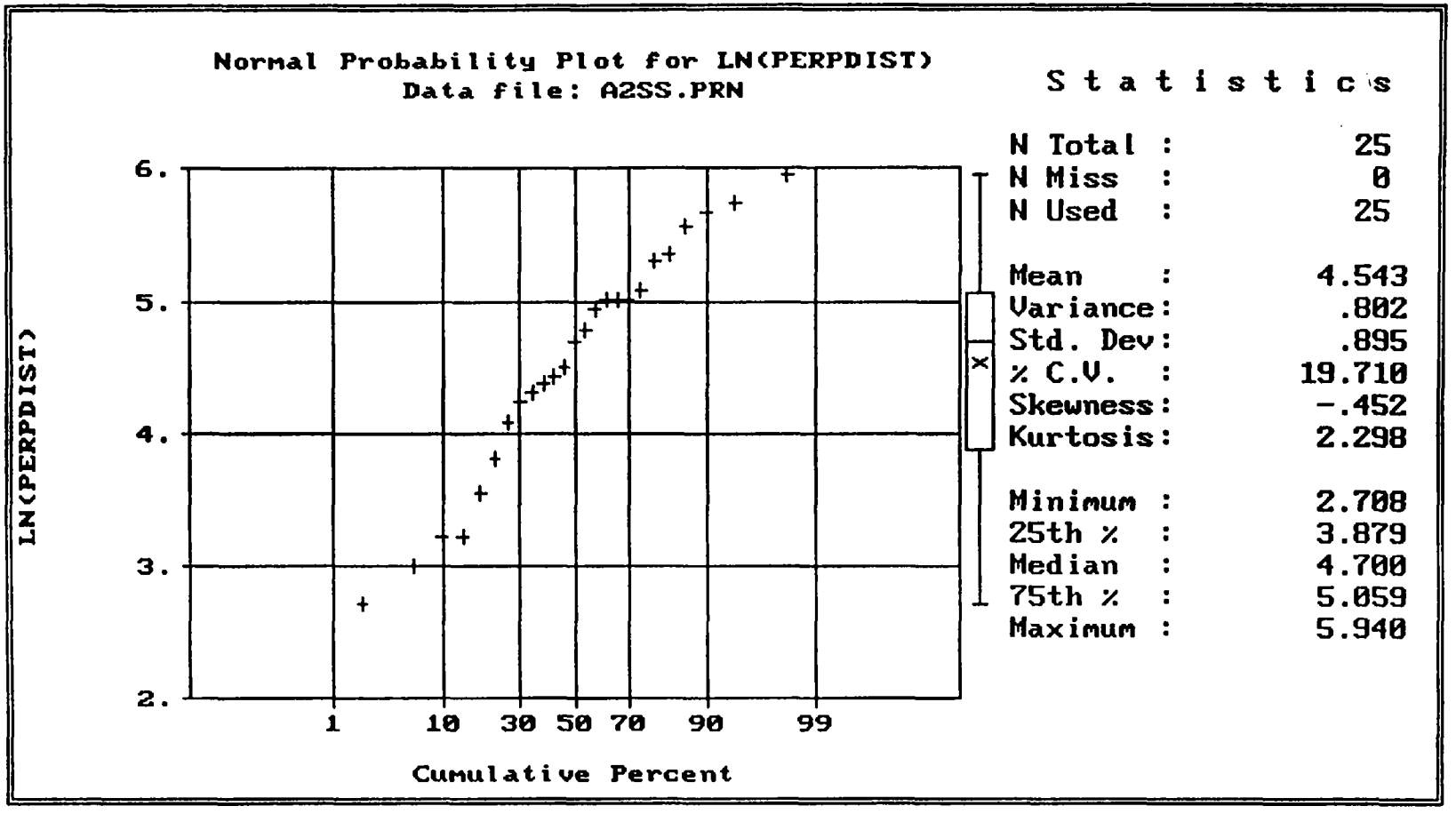

Histogram
Data file: A2SS.PRN
Frequency
5.
4.
3.
2.
1.
0.
-1.
0.
1.
2.
3.
LN(ELEVDIFF) (FT)
Statistics
N Total : 25
N Miss : 0
N Used : 25
Mean : 1.028
Variance: .362
Std. Dev: .601
% C.V. : 58.473
Skewness: .525
Kurtosis: 3.526
Minimum : -.105
25th % : .571
Median : .993
75th % : 1.290
Maximum : 2.614


Normal Probability Plot for LN(ELEVDIFF)
Data file: A2SS.PRN
LN(ELEVDIFF)
3.
2.
1.
0.
-1.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 25
N Miss : 0
N Used : 25
Mean : 1.028
Variance: .362
Std. Dev: .601
% C.V. : 58.473
Skewness: .525
Kurtosis: 3.526
Minimum : -.105
25th % : .571
Median : .993
75th % : 1.290
Maximum : 2.614

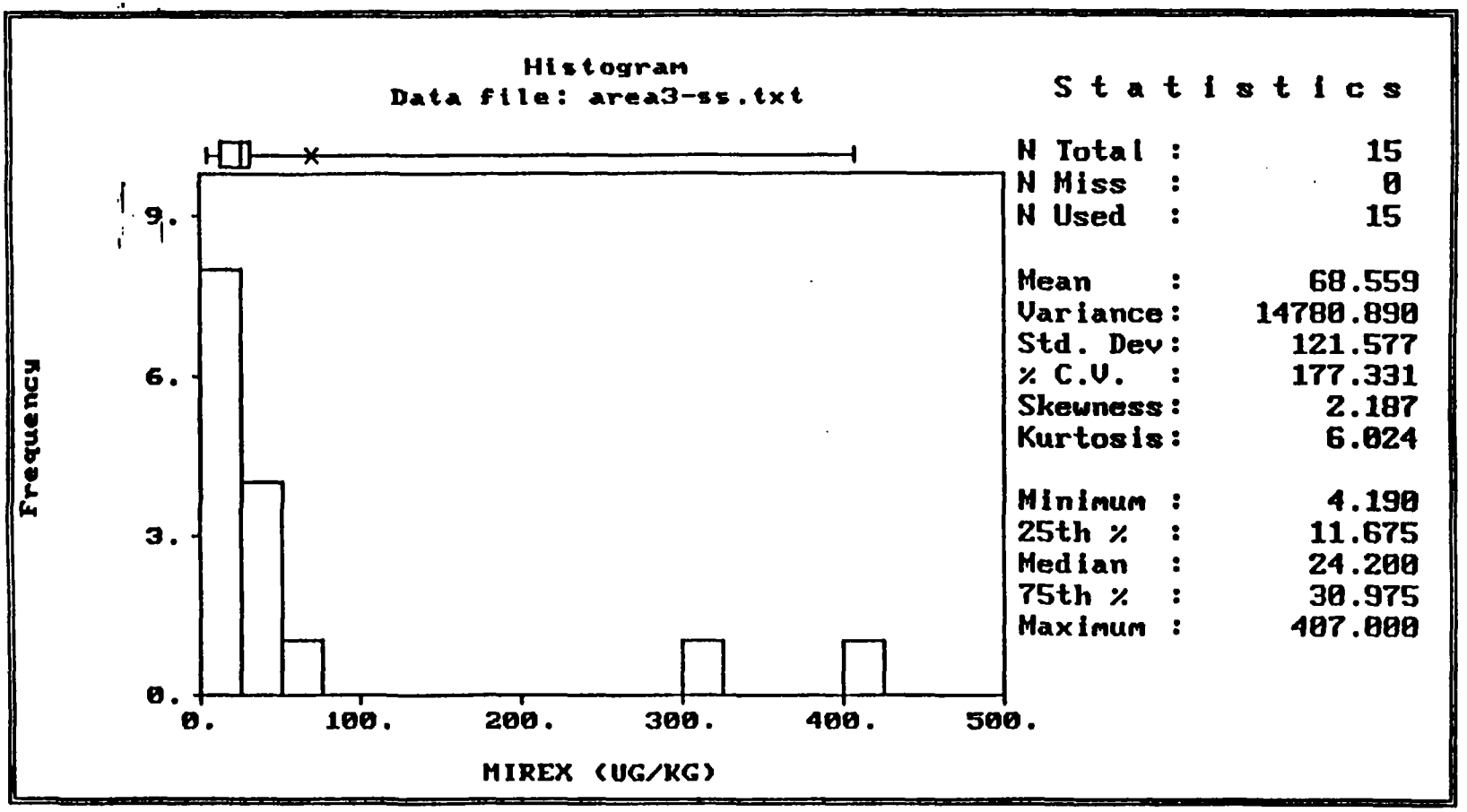

Histogram
Data file: A2SS.PRN
Frequency
4.
3.
2.
1.
0.
0.
100.
200.
300.
400.
PERPDIST (FT)
Statistics
N Total : 25
N Miss : 0
N Used : 25
Mean : 130.200
Variance : 9694.750
Std. Dev : 98.462
% C.V. : 75.624
Skewness : .930
Kurtosis : 3.096
Minimum : 15.000
25th % : 48.750
Median : 110.000
75th % : 157.500
Maximum : 380.000

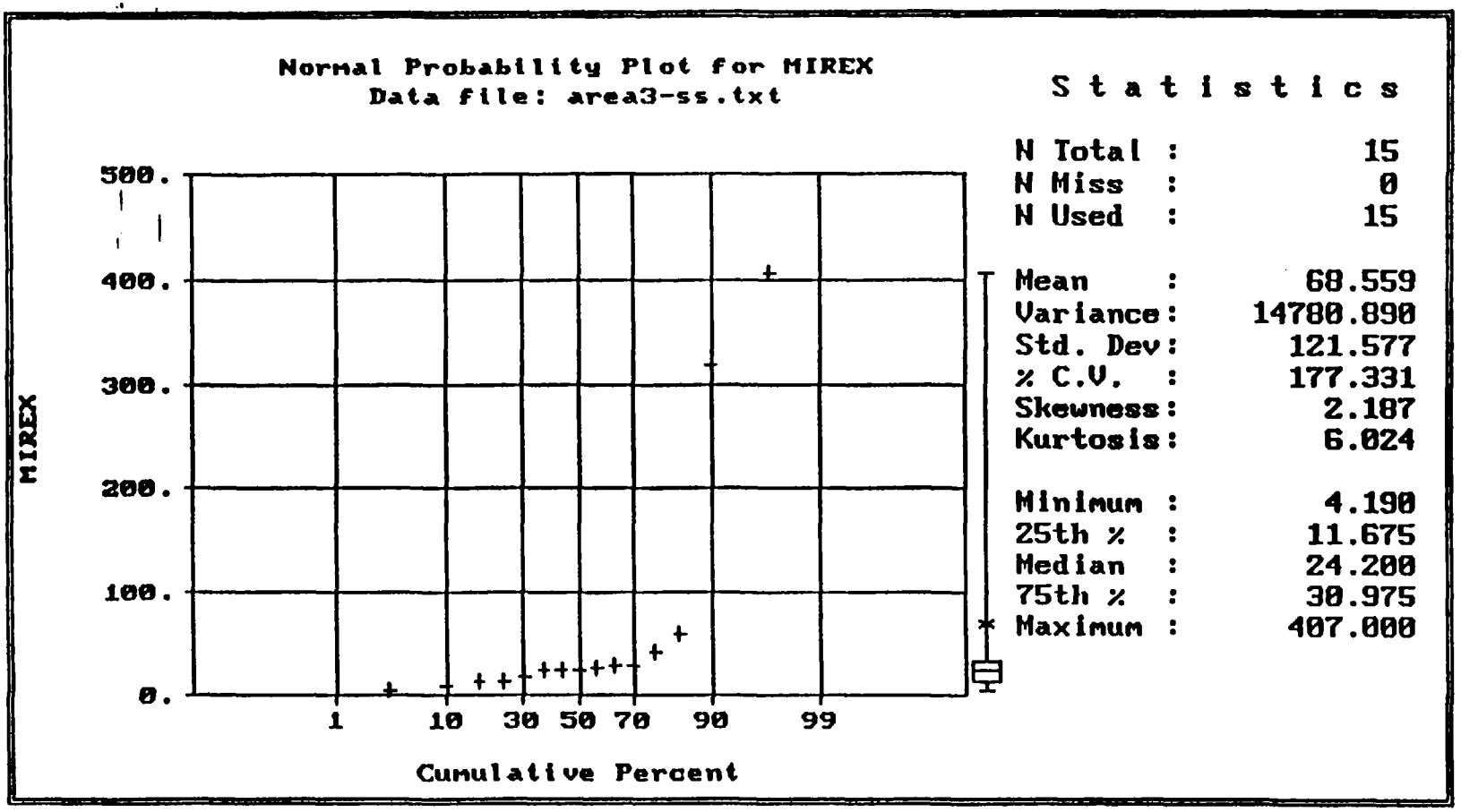

Normal Probability Plot for PERPDIST
Data file: A2SS.PRN
PERPDIST
400.
300.
200.
100.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 25
N Miss : 0
N Used : 25
Mean : 130.200
Variance : 9694.750
Std. Dev : 98.462
% C.V. : 75.624
Skewness : .930
Kurtosis : 3.096
Minimum : 15.000
25th % : 48.750
Median : 110.000
75th % : 157.500
Maximum : 380.000

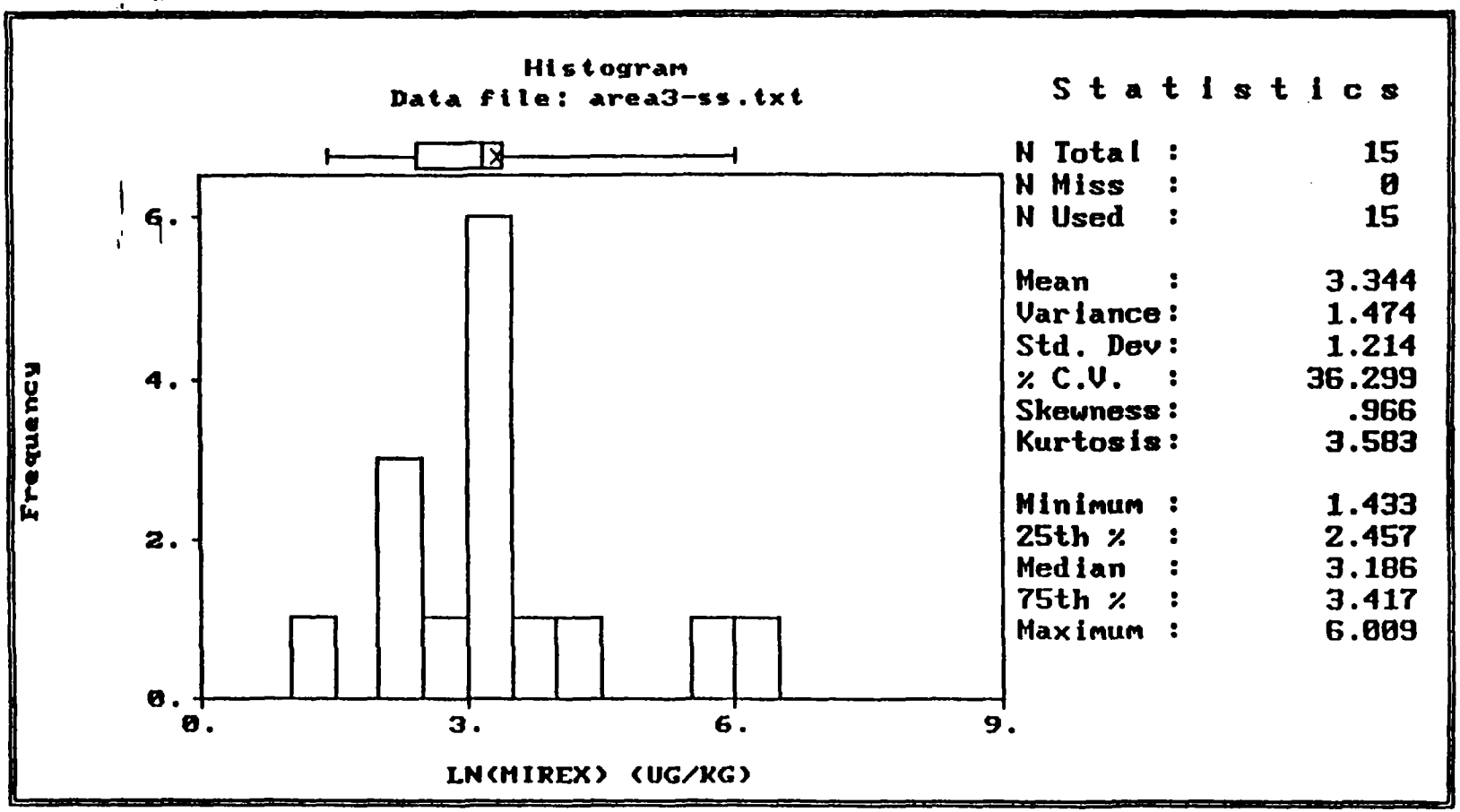

Histogram
Data file: A2SS.PRN
Frequency
4.
3.
2.
1.
0.
1.
2.
3.
4.
5.
6.
LN(PERPDIST) (FT)
Statistics
N Total : 25
N Miss : 0
N Used : 25
Mean : 4.543
Variance: .802
Std. Dev: .895
% C.V. : 19.710
Skewness: -.452
Kurtosis: 2.298
Minimum : 2.708
25th % : 3.879
Median : 4.700
75th % : 5.059
Maximum : 5.940

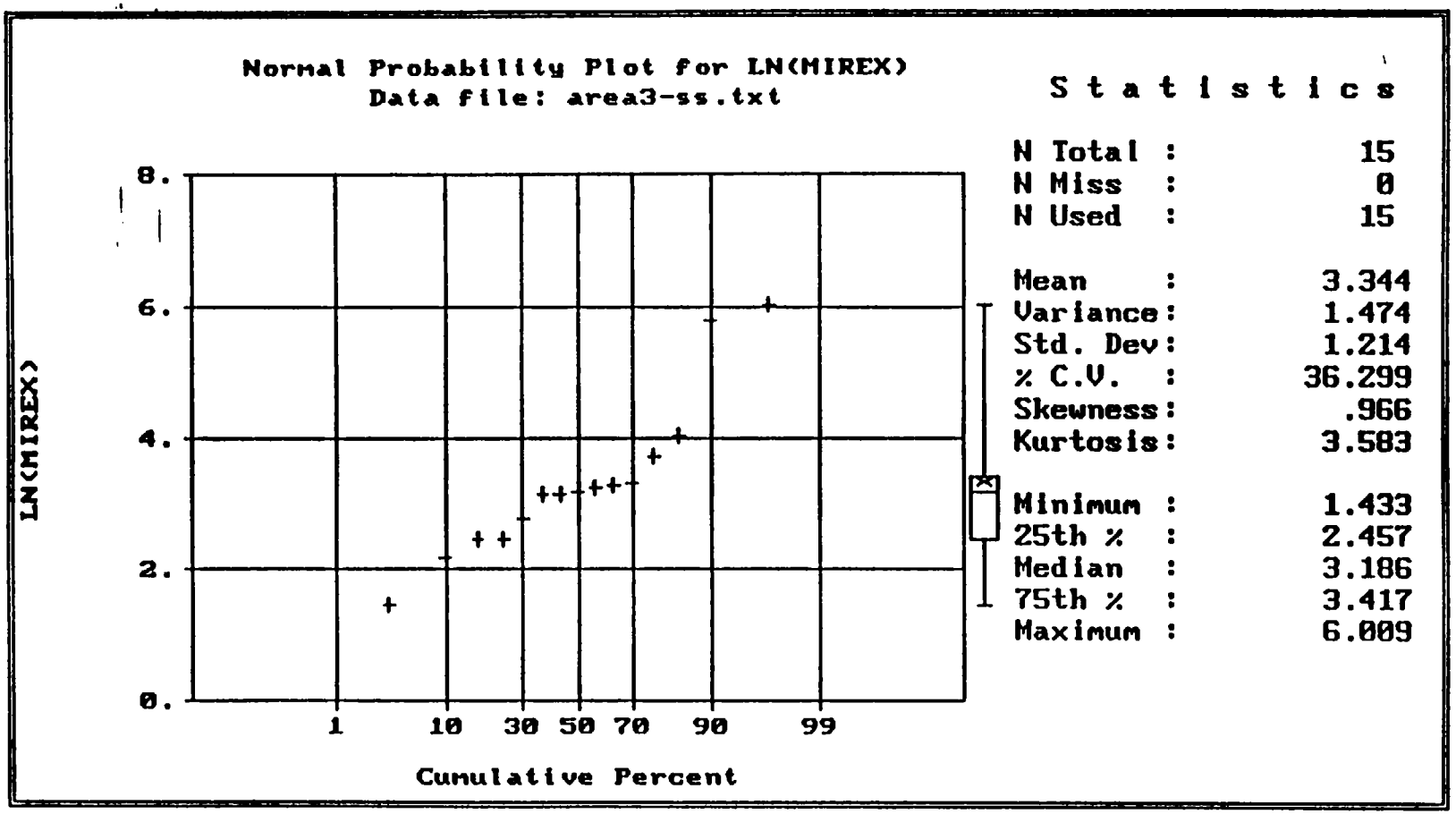

Normal Probability Plot for LN(PERPDIST)
Data file: A2SS.PRN
LN(PERPDIST)
6.
5.
4.
3.
2.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 25
N Miss : 0
N Used : 25
Mean : 4.543
Variance: .802
Std. Dev: .895
% C.V. : 19.710
Skewness: -.452
Kurtosis: 2.298
Minimum : 2.708
25th % : 3.879
Median : 4.700
75th % : 5.059
Maximum : 5.940

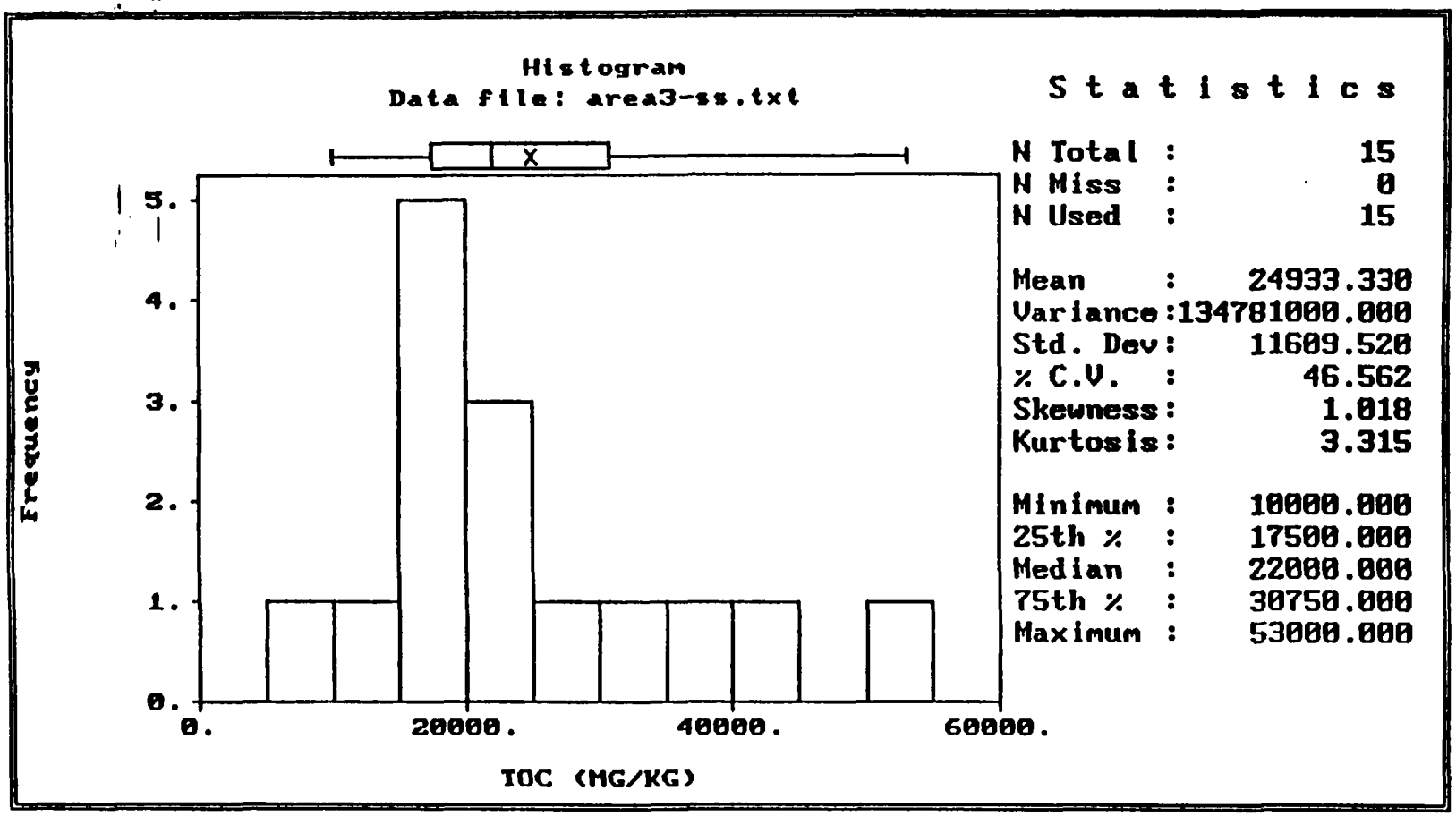
AREA 3

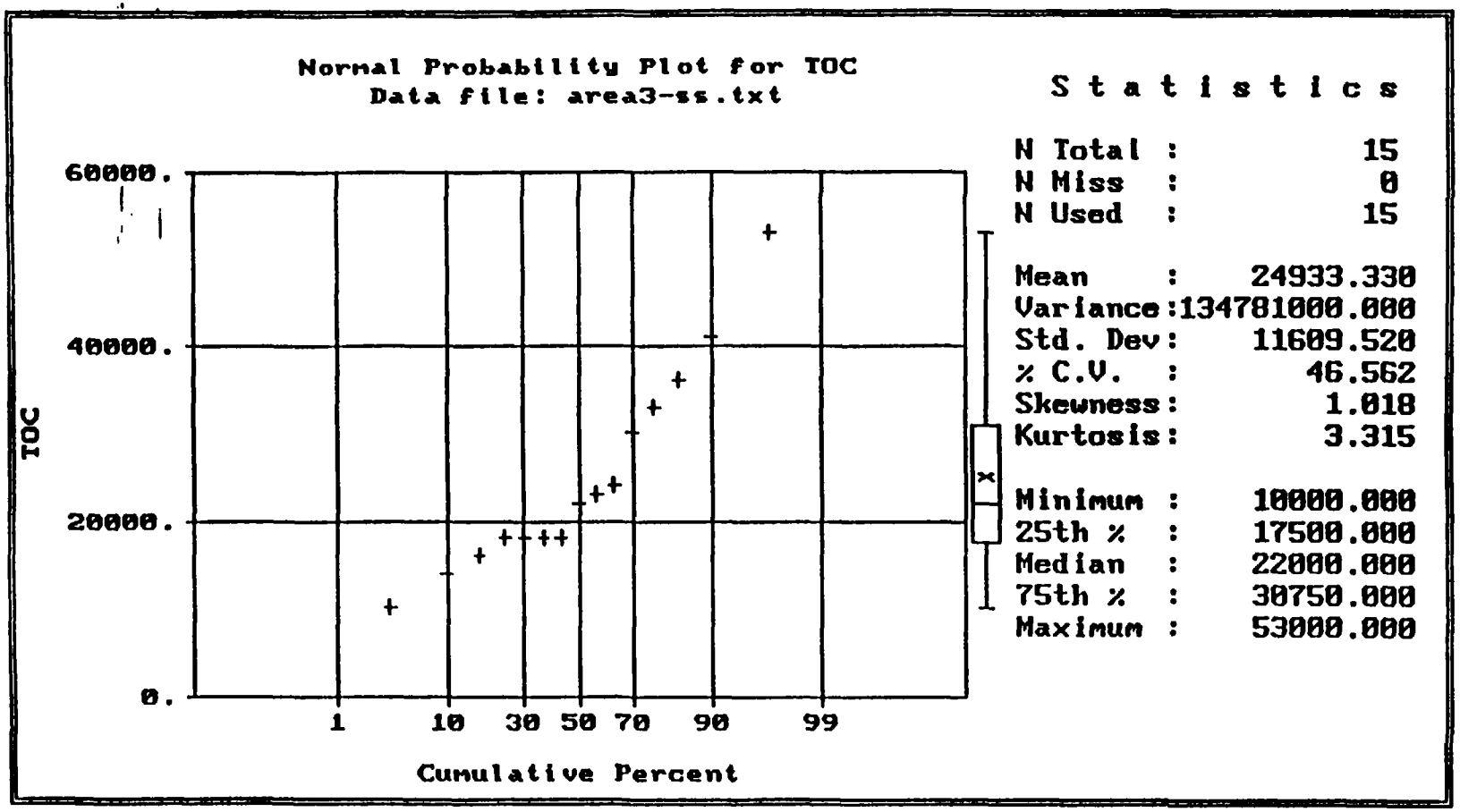

Histogram
Data file: area3-ss.txt
Frequency
9.
6.
3.
0.
0.
100.
200.
300.
400.
500.
MIREX (UG/KG)
Statistics
N Total : 15
N Miss : 0
N Used : 15
Mean : 68.559
Variance: 14780.890
Std. Dev: 121.577
% C.V. : 177.331
Skewness: 2.187
Kurtosis: 6.024
Minimum : 4.190
25th % : 11.675
Median : 24.200
75th % : 30.975
Maximum : 407.000

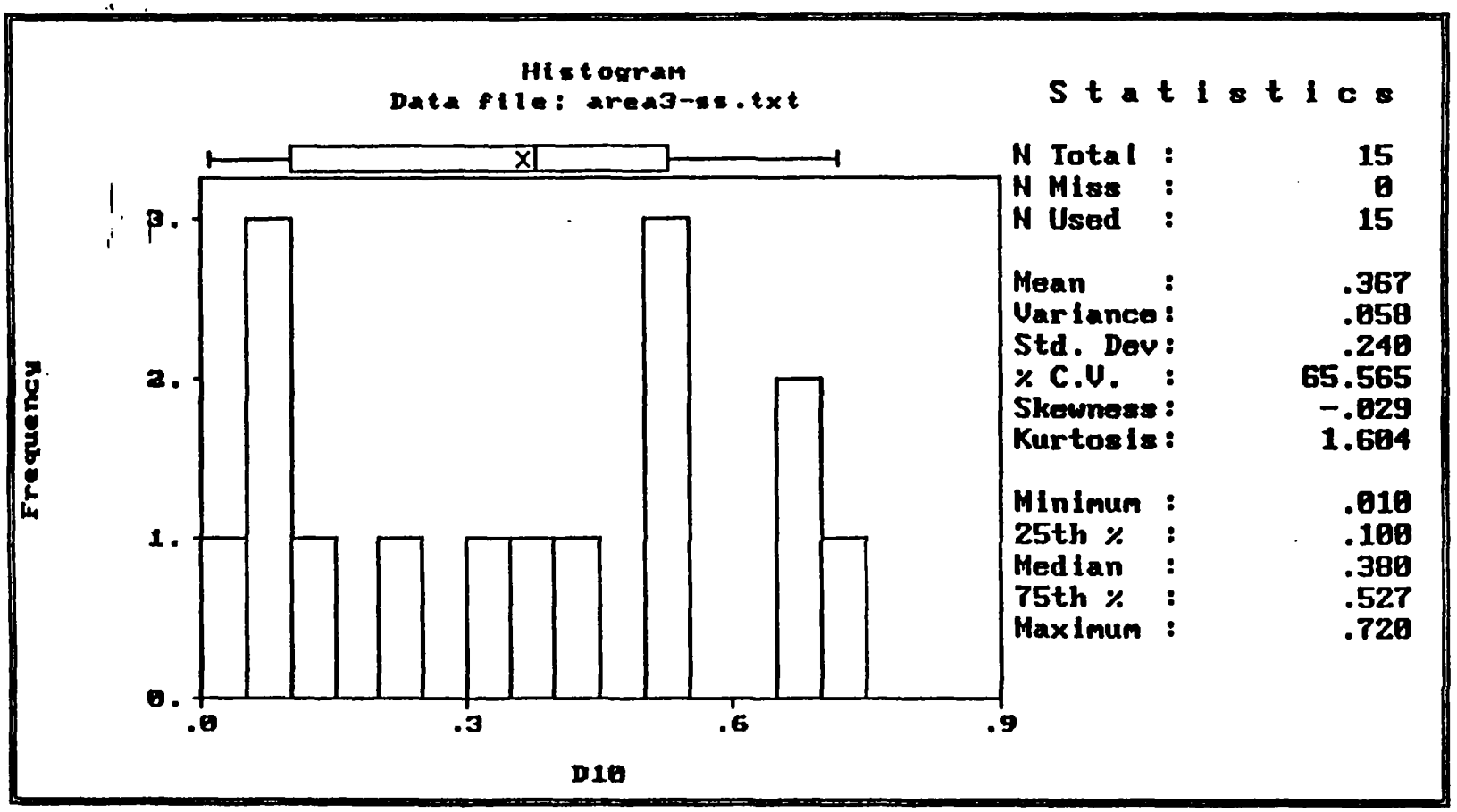

Normal Probability Plot for MIREX
Data file: area3-ss.txt
MIREX
500.
400.
300.
200.
100.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 15
N Miss : 0
N Used : 15
Mean : 68.559
Variance: 14780.890
Std. Dev: 121.577
% C.V. : 177.331
Skewness: 2.187
Kurtosis: 6.024
Minimum : 4.190
25th % : 11.675
Median : 24.200
75th % : 30.975
Maximum : 407.000

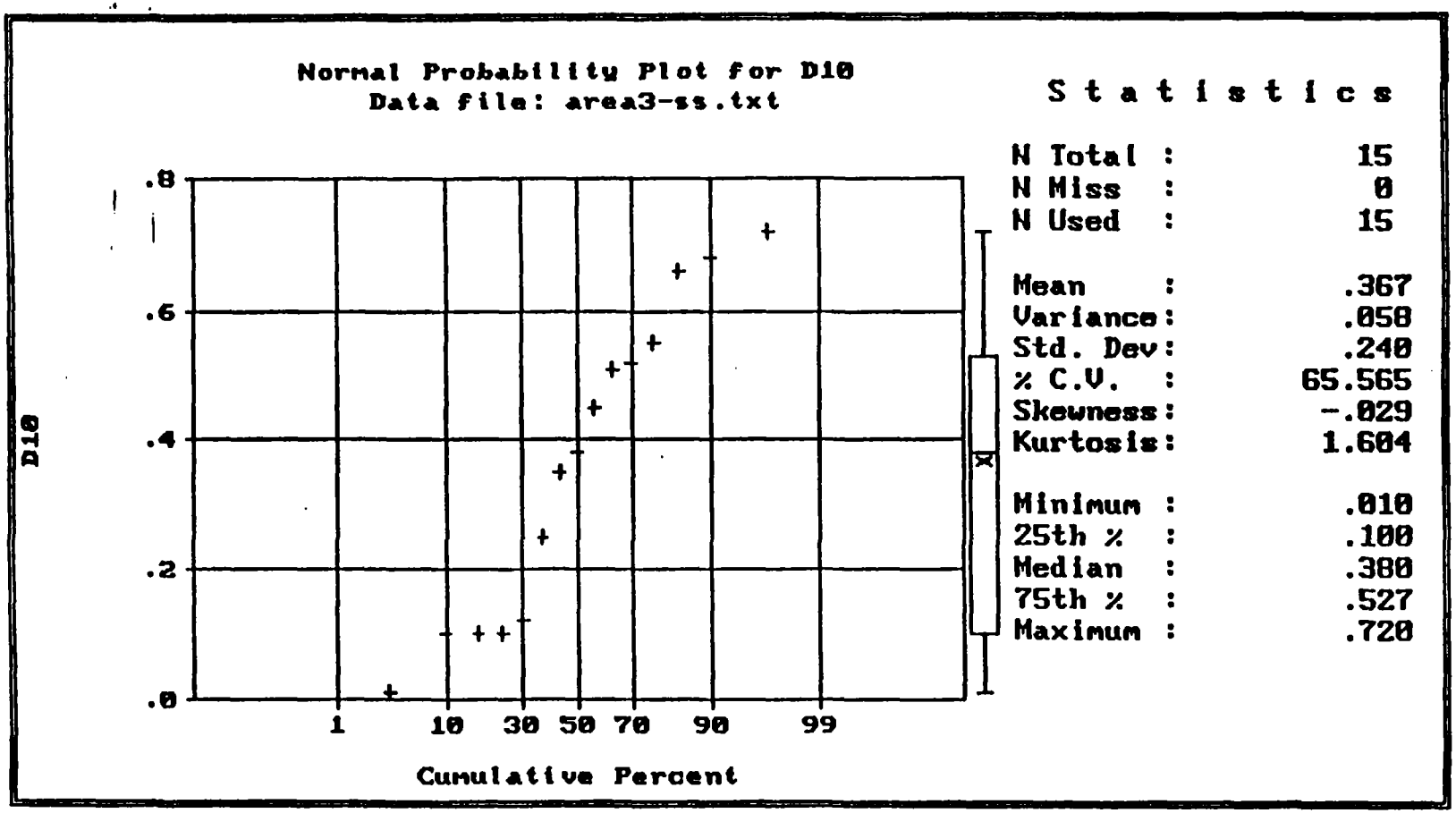

Histogram
Data file: area3-ss.txt
Frequency
6.
4.
2.
0.
0.
3.
6.
9.
LN(MIREX) (UG/KG)
Statistics
N Total : 15
N Miss : 0
N Used : 15
Mean : 3.344
Variance: 1.474
Std. Dev: 1.214
% C.V. : 36.299
Skewness: .966
Kurtosis: 3.583
Minimum : 1.433
25th % : 2.457
Median : 3.186
75th % : 3.417
Maximum : 6.009

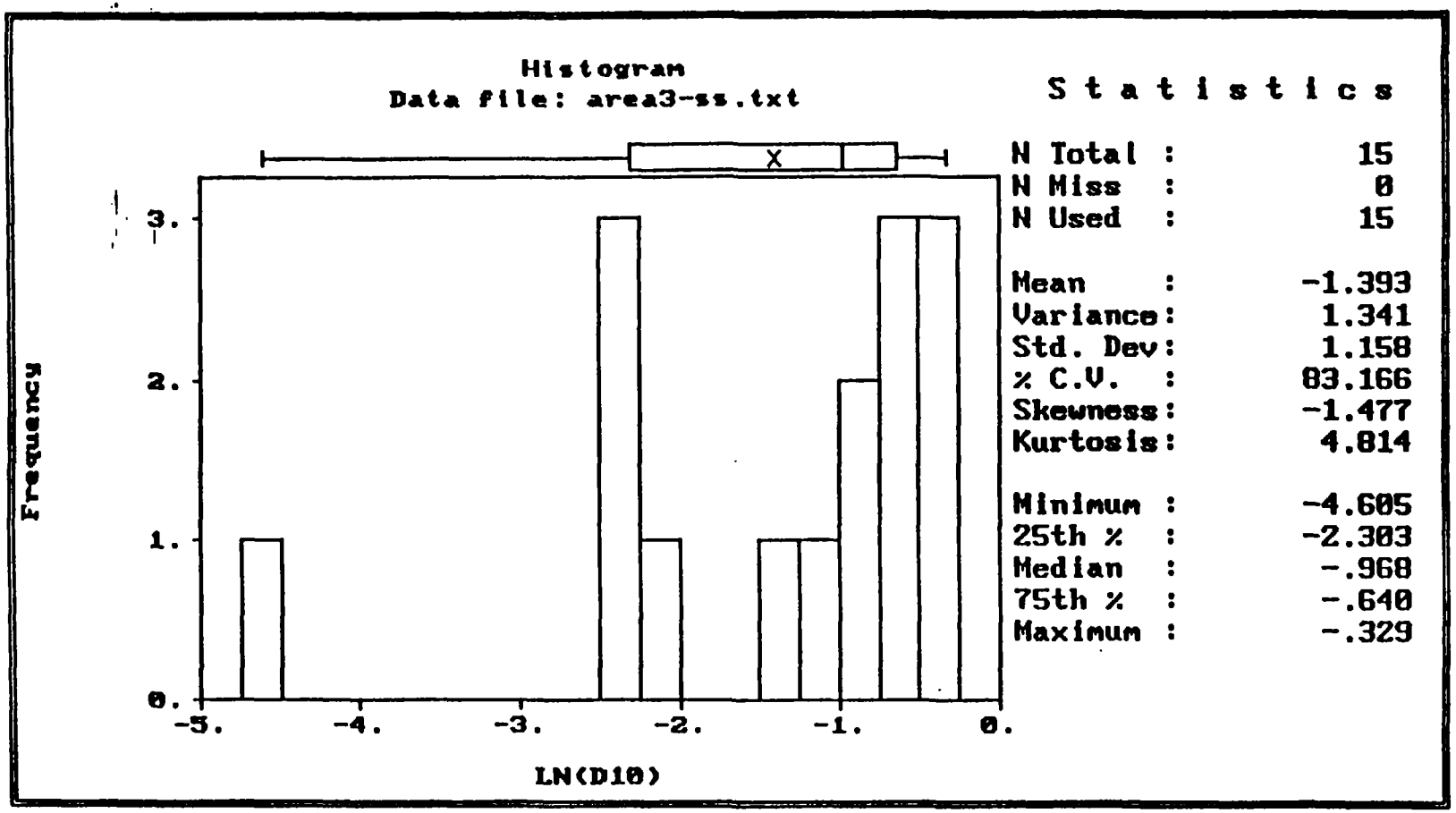

Normal Probability Plot for LN(MIREX)
Data file: area3-ss.txt
LN(MIREX)
8.
6.
4.
2.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 15
N Miss : 0
N Used : 15
Mean : 3.344
Variance: 1.474
Std. Dev: 1.214
% C.V. : 36.299
Skewness: .966
Kurtosis: 3.583
Minimum : 1.433
25th % : 2.457
Median : 3.186
75th % : 3.417
Maximum : 6.009

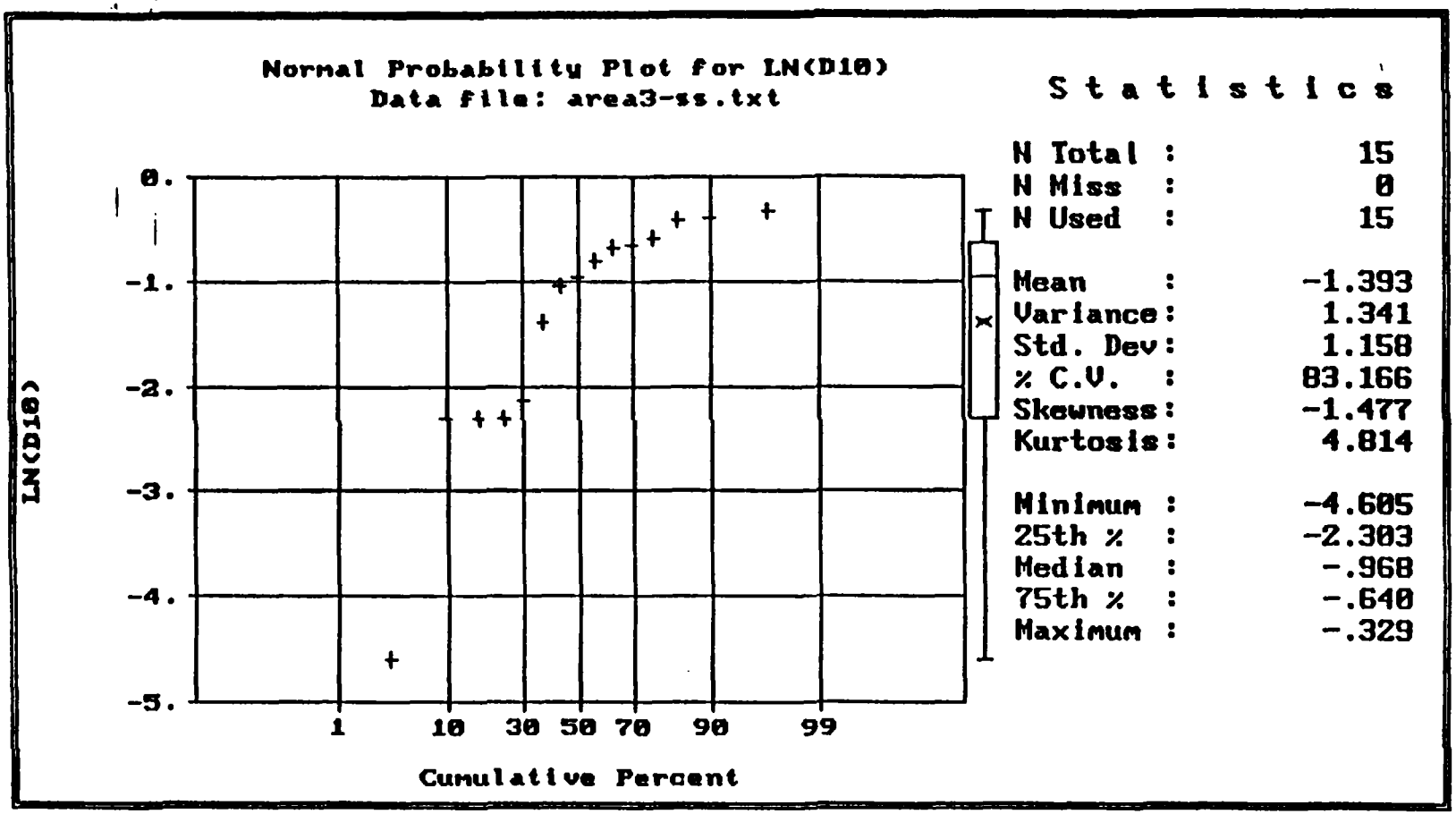

Histogram
Data file: area3-ss.txt
Statistics
N Total : 15
N Miss : 0
N Used : 15
Mean : 24933.330
Variance : 134781000.000
Std. Dev : 11609.520
% C.V. : 46.562
Skewness : 1.018
Kurtosis : 3.315
Minimum : 10000.000
25th % : 17500.000
Median : 22000.000
75th % : 30750.000
Maximum : 53000.000
Frequency
5.
4.
3.
2.
1.
0.
0.
20000.
40000.
60000.
TOC (MG/KG)

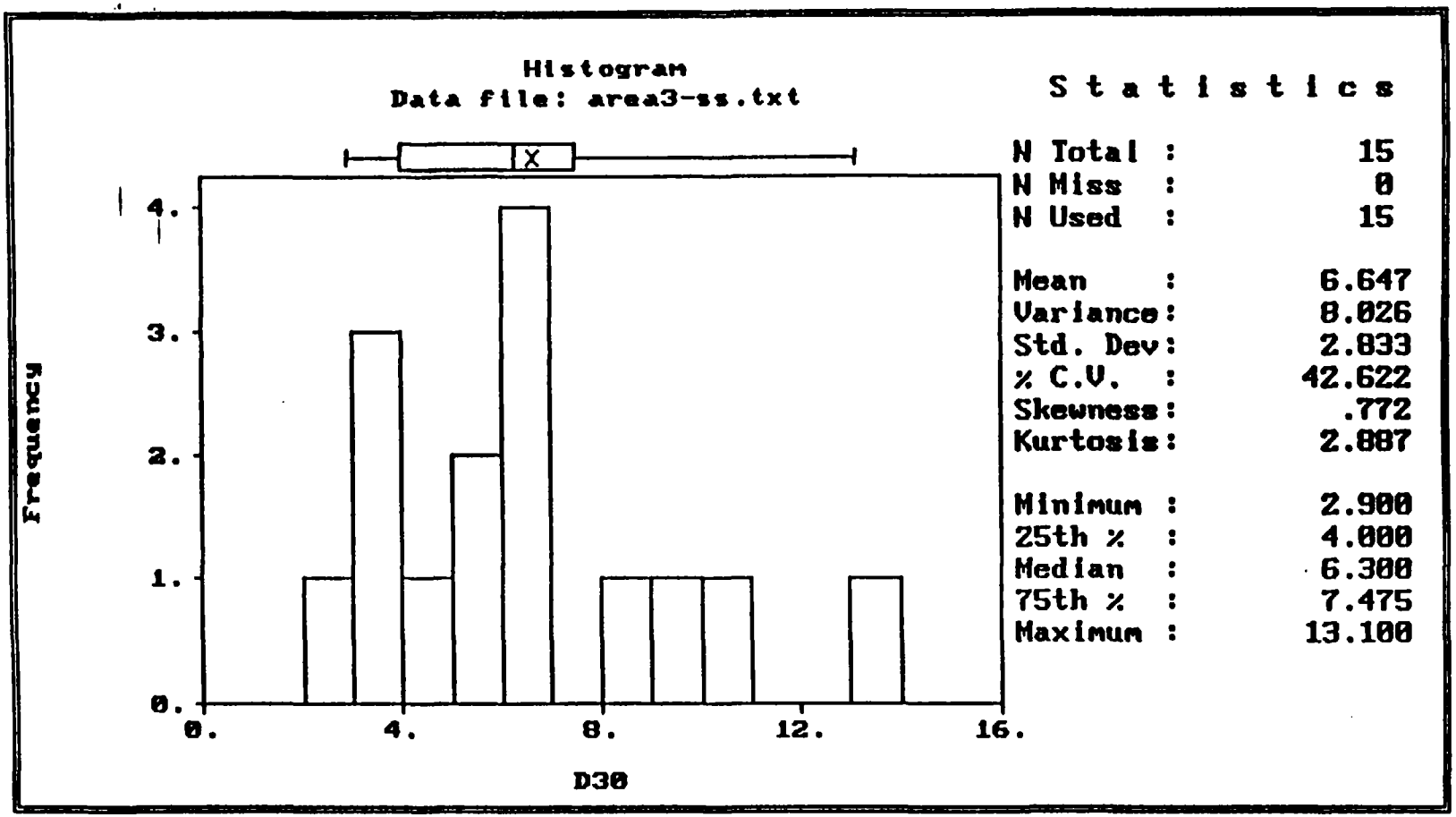

Normal Probability Plot for TOC
Data file: area3-ss.txt
60000.
40000.
20000.
0.
TOC
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 15
N Miss : 0
N Used : 15
Mean : 24933.330
Variance : 134781000.000
Std. Dev : 11609.520
% C.V. : 46.562
Skewness : 1.018
Kurtosis : 3.315
Minimum : 10000.000
25th % : 17500.000
Median : 22000.000
75th % : 30750.000
Maximum : 53000.000

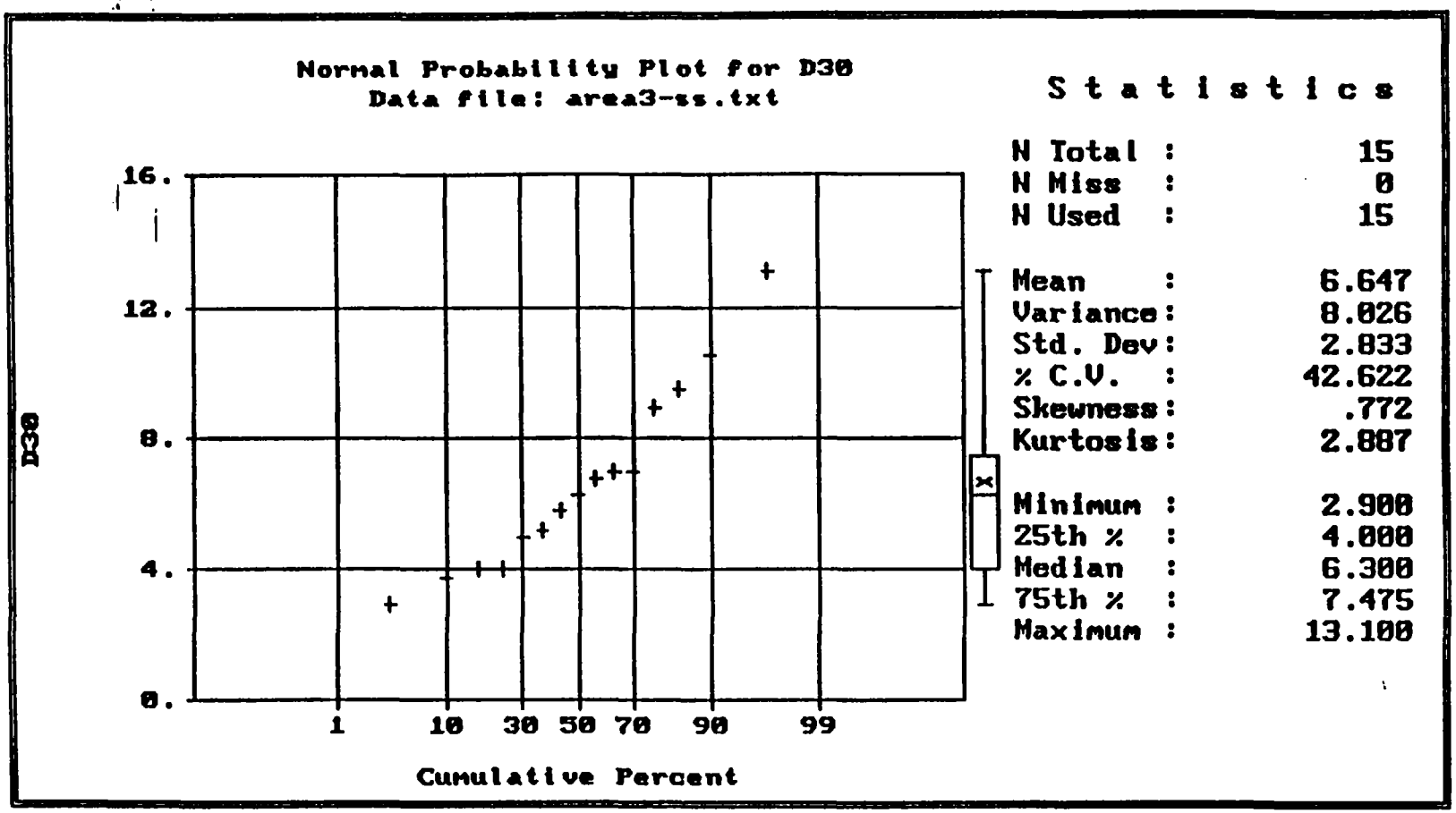

Histogram
Data file: area3-ss.txt
Frequency
3.
2.
1.
0.
.0
.3
.6
.9
D10
Statistics
N Total : 15
N Miss : 0
N Used : 15
Mean : .367
Variance: .058
Std. Dev: .240
% C.V. : 65.565
Skewness: -.029
Kurtosis: 1.604
Minimum : .010
25th % : .100
Median : .380
75th % : .527
Maximum : .720

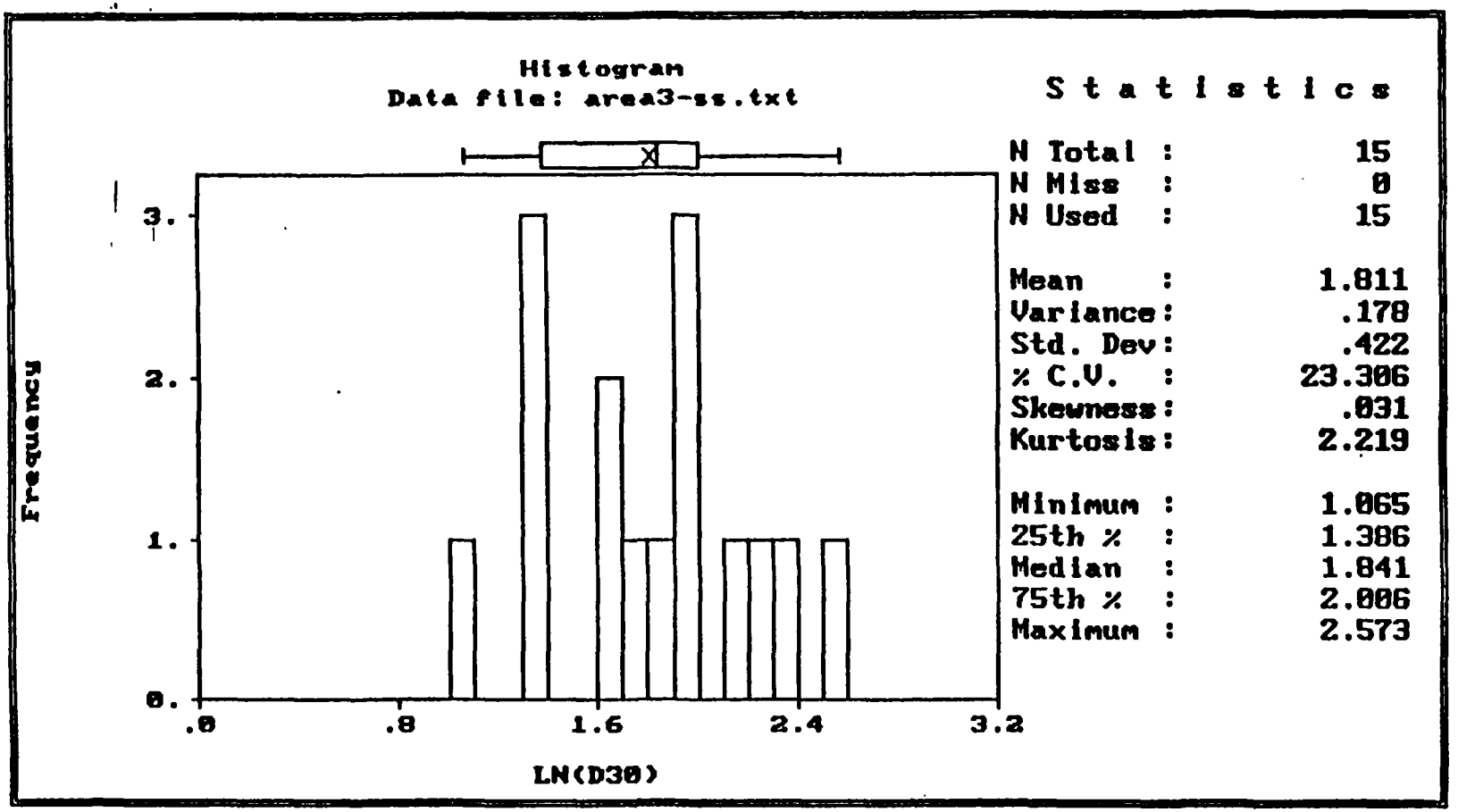

Normal Probability Plot for D10
Data file: area3-ss.txt
D10
.8
.6
.4
.2
.0
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 15
N Miss : 0
N Used : 15
Mean : .367
Variance: .058
Std. Dev: .240
% C.V. : 65.565
Skewness: -.029
Kurtosis: 1.604
Minimum : .010
25th % : .100
Median : .380
75th % : .527
Maximum : .720

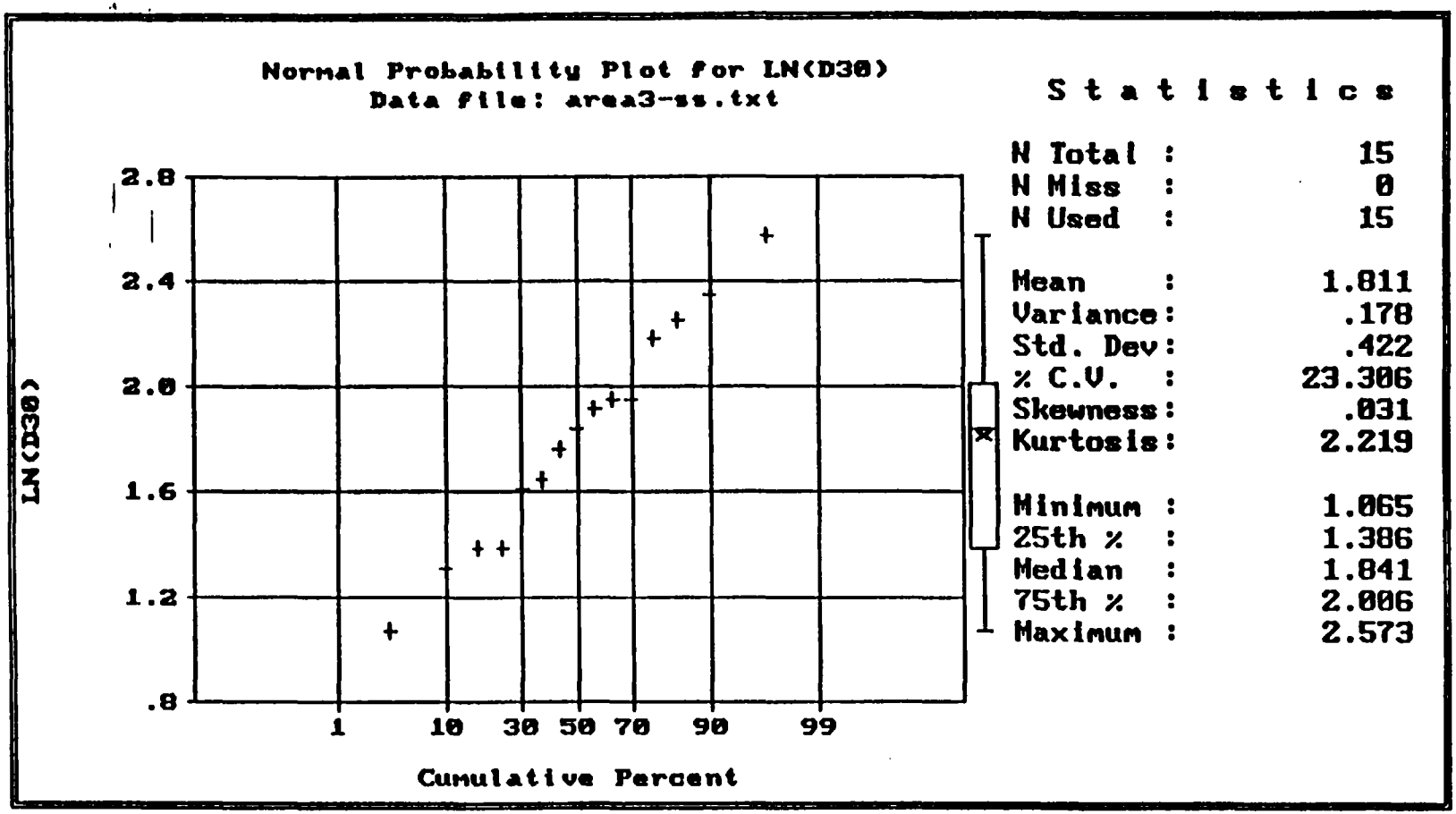

Histogram
Data file: area3-ss.txt
Frequency
3.
2.
1.
0.
-5.
-4.
-3.
-2.
-1.
0.
LN(D10)
Statistics
N Total : 15
N Miss : 0
N Used : 15
Mean : -1.393
Variance: 1.341
Std. Dev: 1.158
% C.V. : 83.166
Skewness: -1.477
Kurtosis: 4.814
Minimum : -4.605
25th % : -2.303
Median : -.968
75th % : -.640
Maximum : -.329

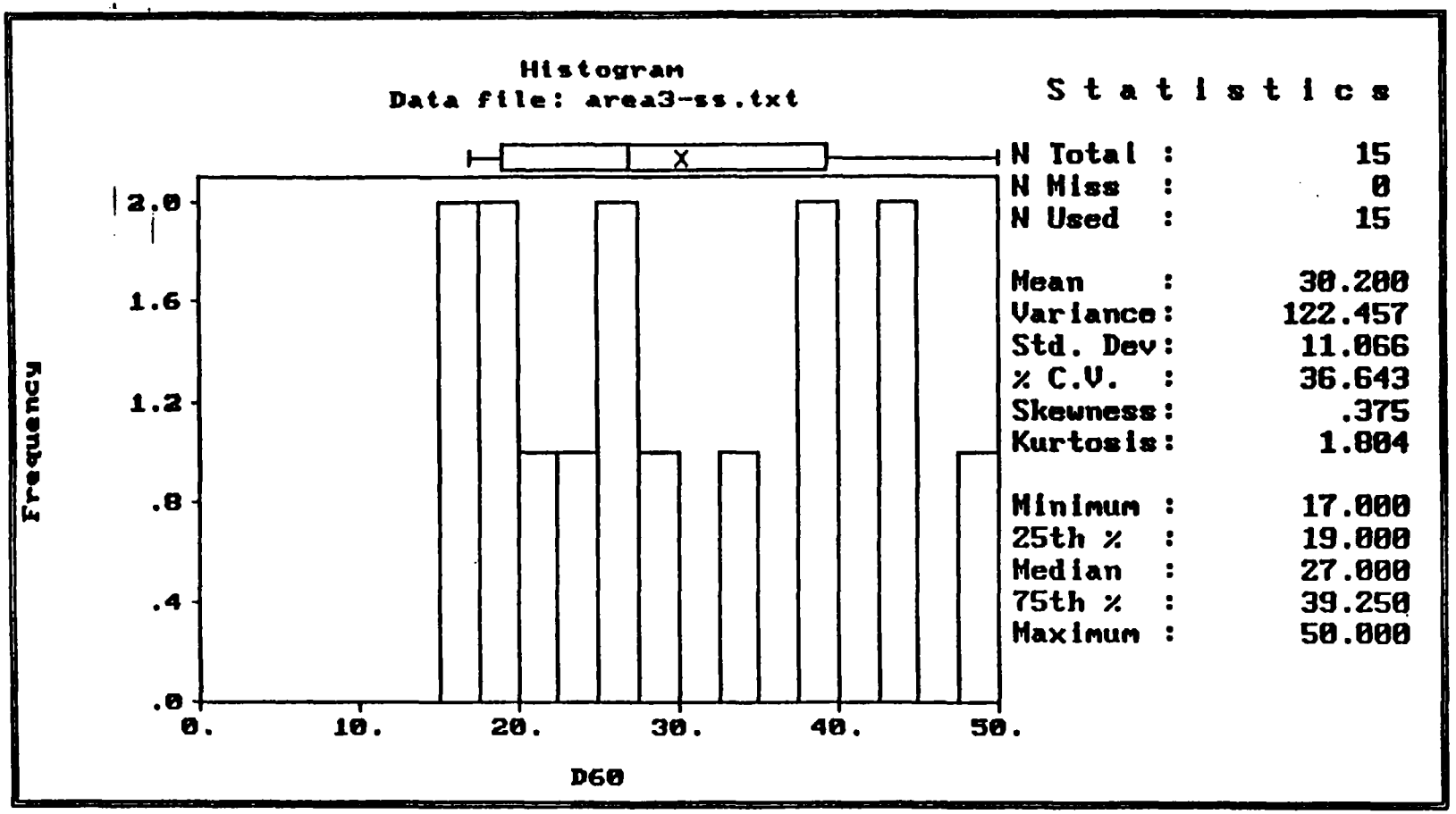

Normal Probability Plot for LN(D10)
Data file: area3-ss.txt
LN(D10)
0.
-1.
-2.
-3.
-4.
-5.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 15
N Miss : 0
N Used : 15
Mean : -1.393
Variance: 1.341
Std. Dev: 1.158
% C.V. : 83.166
Skewness: -1.477
Kurtosis: 4.814
Minimum : -4.605
25th % : -2.303
Median : -.968
75th % : -.640
Maximum : -.329

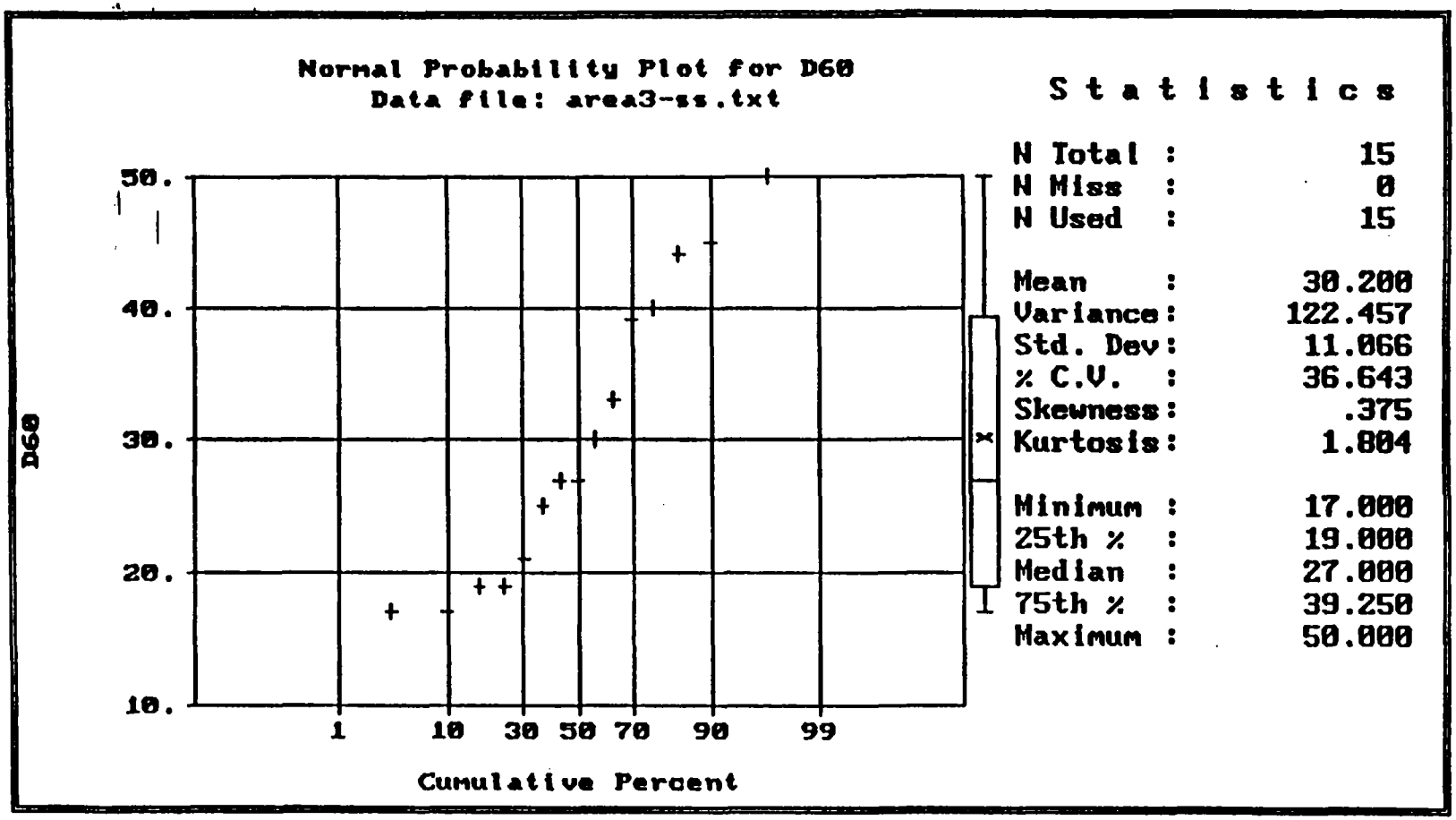

Histogram
Data file: area3-ss.txt
Frequency
4.
3.
2.
1.
0.
0.
4.
8.
12.
16.
D30
Statistics
N Total : 15
N Miss : 0
N Used : 15
Mean : 6.647
Variance: 8.026
Std. Dev: 2.833
% C.V. : 42.622
Skewness: .772
Kurtosis: 2.887
Minimum : 2.900
25th % : 4.000
Median : 6.300
75th % : 7.475
Maximum : 13.100

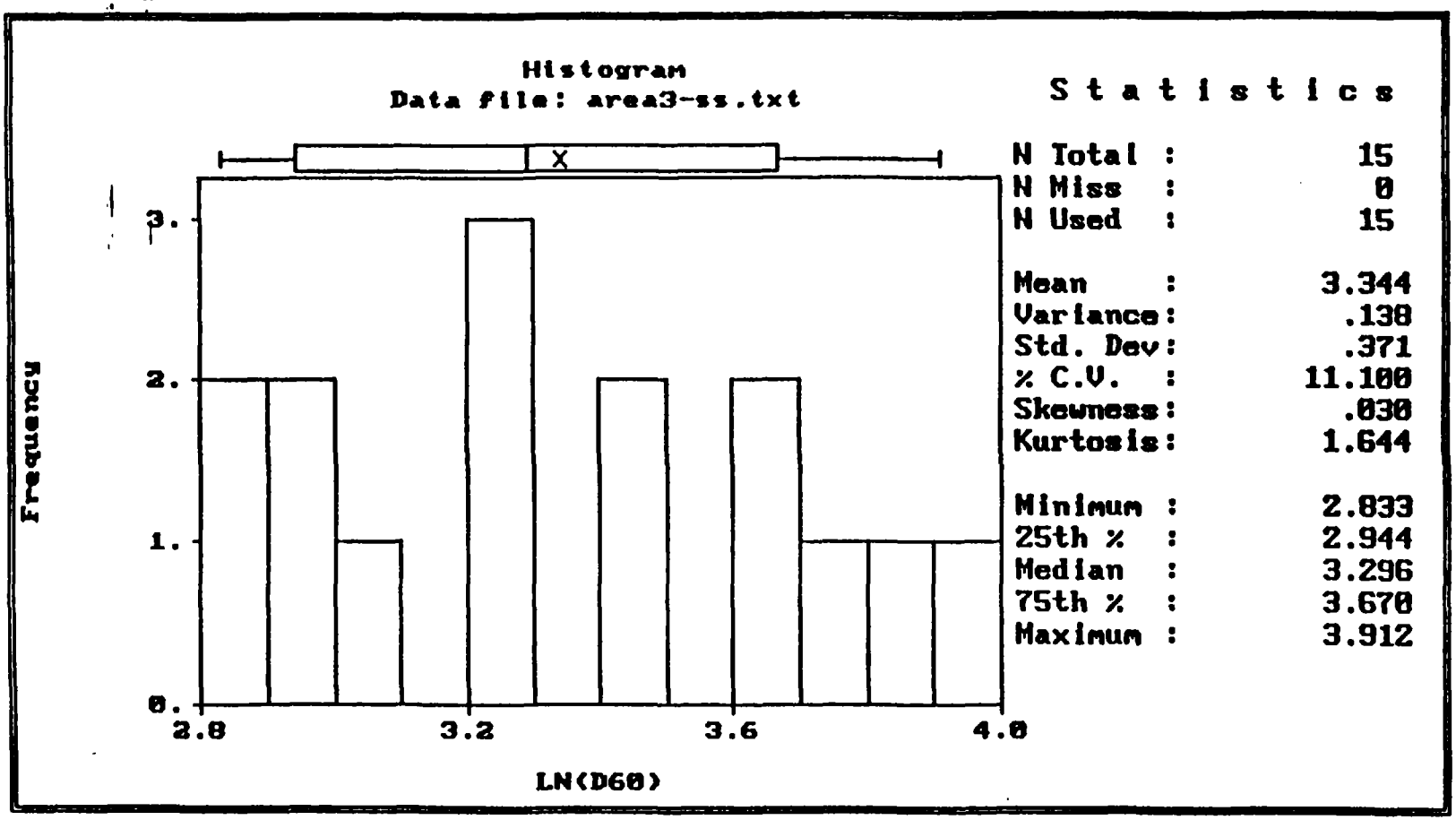

Normal Probability Plot for D30
Data file: area3-ss.txt
D30
16.
12.
8.
4.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 15
N Miss : 0
N Used : 15
Mean : 6.647
Variance: 8.026
Std. Dev: 2.833
% C.V. : 42.622
Skewness: .772
Kurtosis: 2.887
Minimum : 2.900
25th % : 4.000
Median : 6.300
75th % : 7.475
Maximum : 13.100

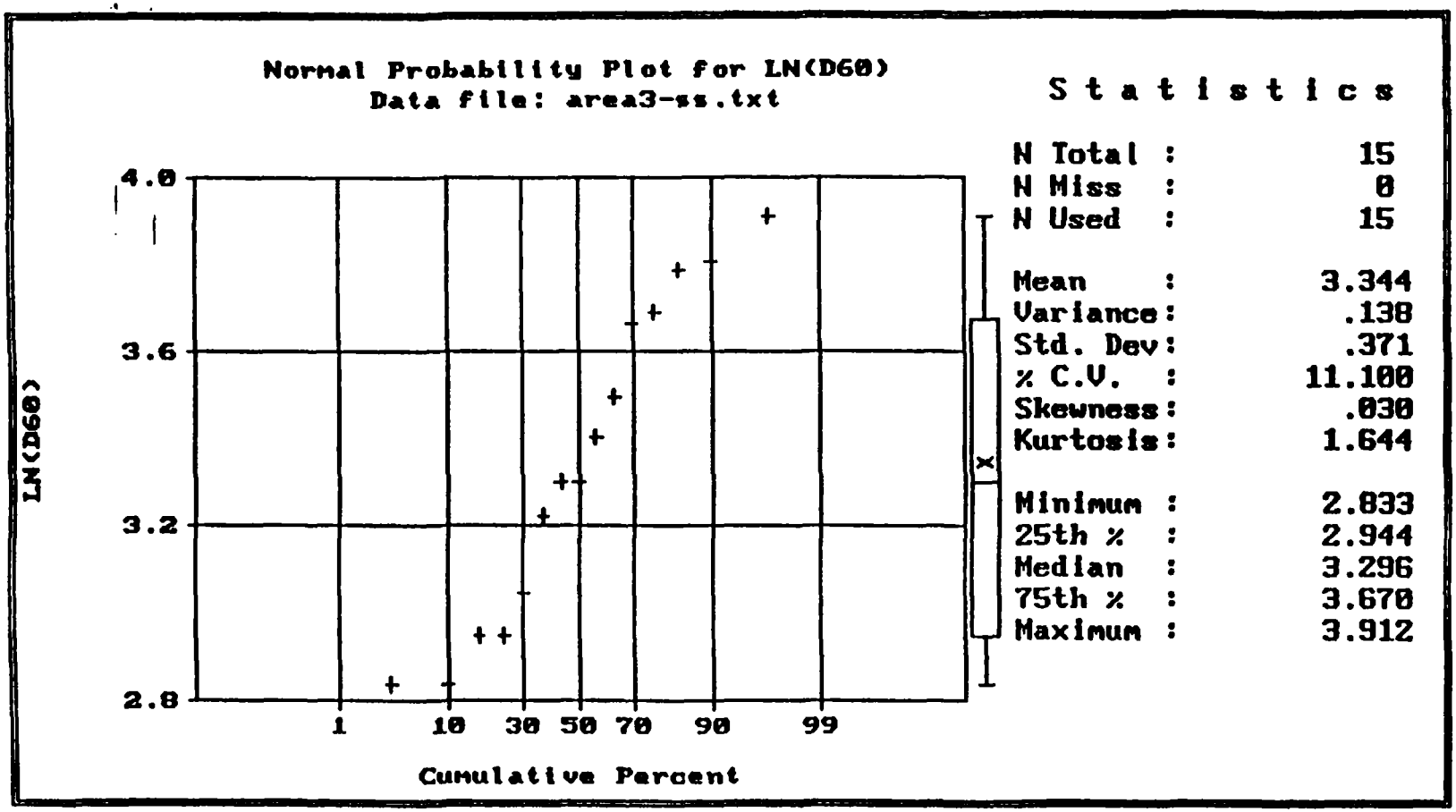

Histogram
Data file: area3-ss.txt
Frequency
3.
2.
1.
0.
.0
.8
1.6
2.4
3.2
LN(D30)
Statistics
N Total : 15
N Miss : 0
N Used : 15
Mean : 1.811
Variance: .178
Std. Dev: .422
% C.V. : 23.306
Skewness: .031
Kurtosis: 2.219
Minimum : 1.065
25th % : 1.386
Median : 1.841
75th % : 2.006
Maximum : 2.573

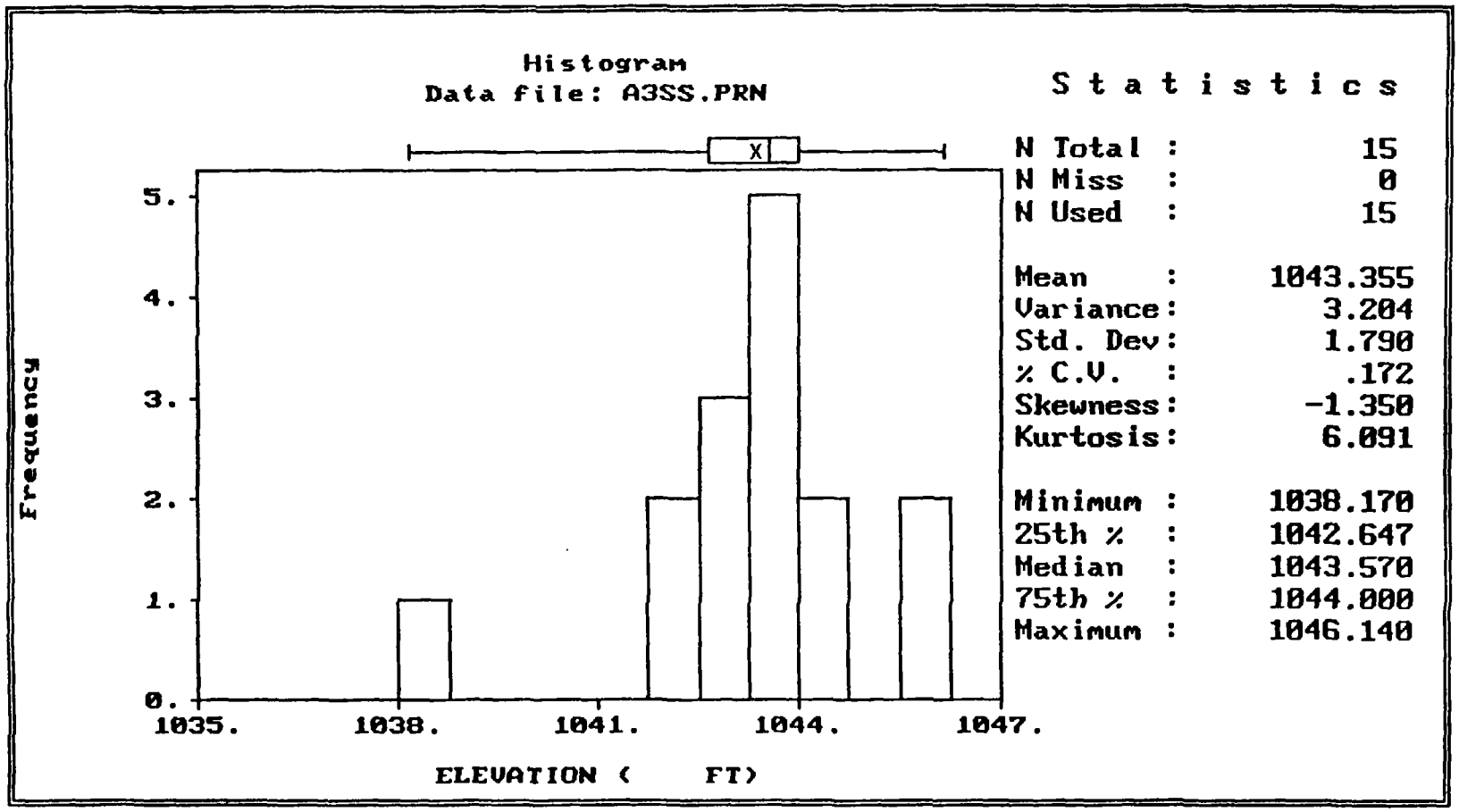

Normal Probability Plot for LN(D30)
Data file: area3-ss.txt
LN(D30)
2.8
2.4
2.0
1.6
1.2
.8
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 15
N Miss : 0
N Used : 15
Mean : 1.811
Variance: .178
Std. Dev: .422
% C.V. : 23.306
Skewness: .031
Kurtosis: 2.219
Minimum : 1.065
25th % : 1.386
Median : 1.841
75th % : 2.006
Maximum : 2.573

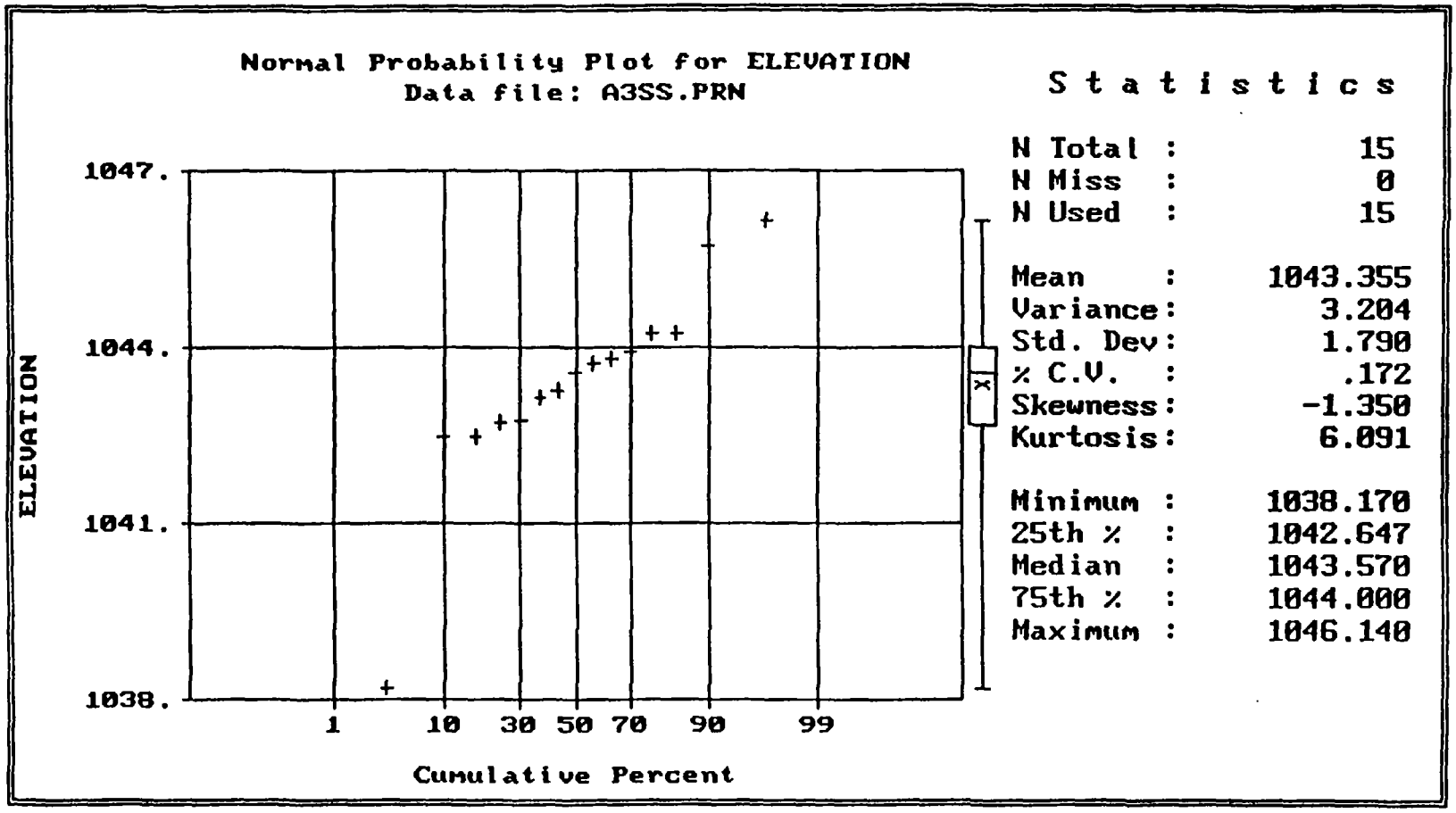

Histogram
Data file: area3-ss.txt
Frequency
2.0
1.6
1.2
.8
.4
.0
0.
10.
20.
30.
40.
50.
D60
Statistics
N Total : 15
N Miss : 0
N Used : 15
Mean : 30.200
Variance: 122.457
Std. Dev: 11.066
% C.V. : 36.643
Skewness: .375
Kurtosis: 1.804
Minimum : 17.000
25th % : 19.000
Median : 27.000
75th % : 39.250
Maximum : 50.000

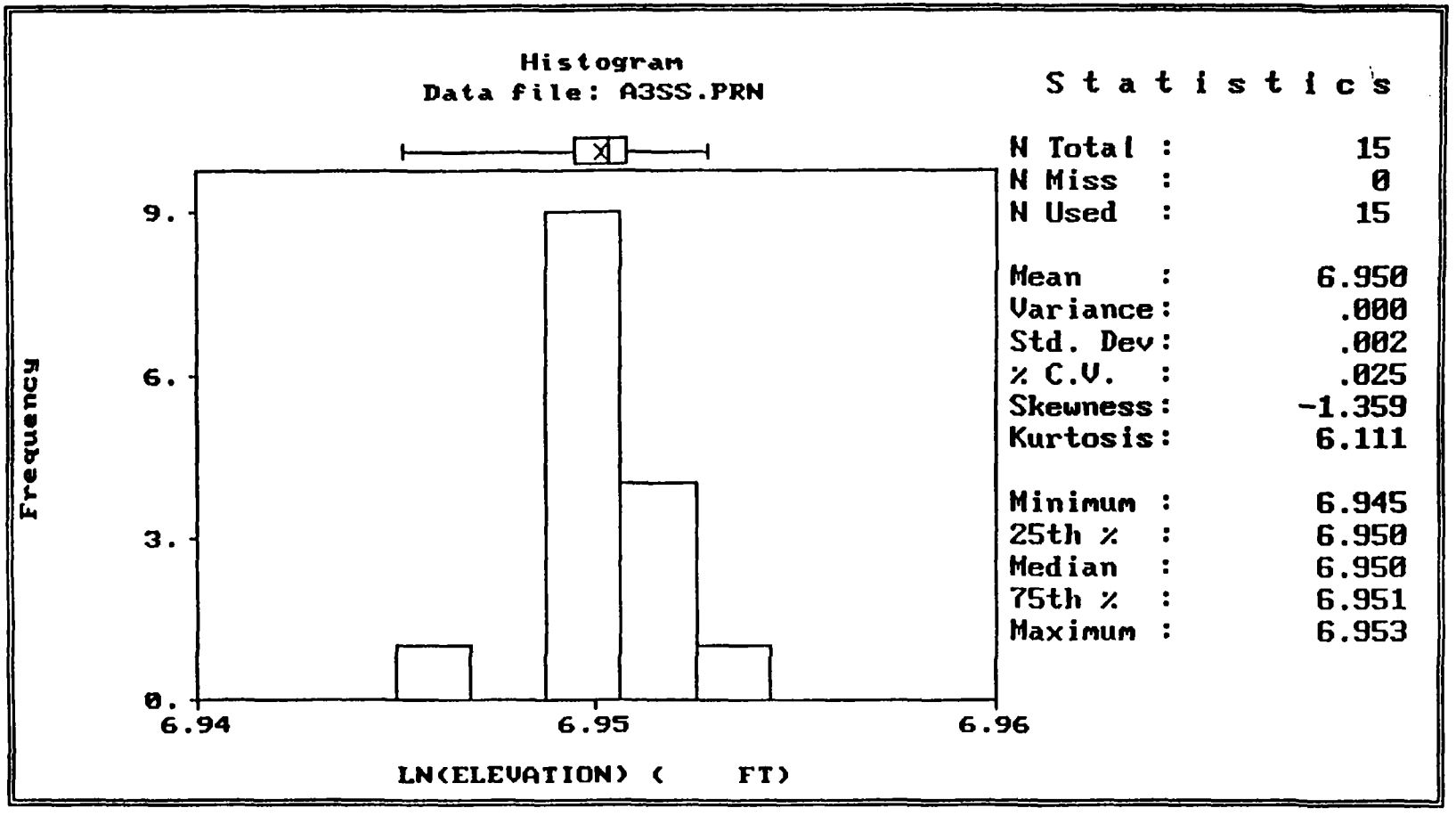

Normal Probability Plot for D60
Data file: area3-ss.txt
D60
50.
40.
30.
20.
10.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 15
N Miss : 0
N Used : 15
Mean : 30.200
Variance: 122.457
Std. Dev: 11.066
% C.V. : 36.643
Skewness: .375
Kurtosis: 1.804
Minimum : 17.000
25th % : 19.000
Median : 27.000
75th % : 39.250
Maximum : 50.000

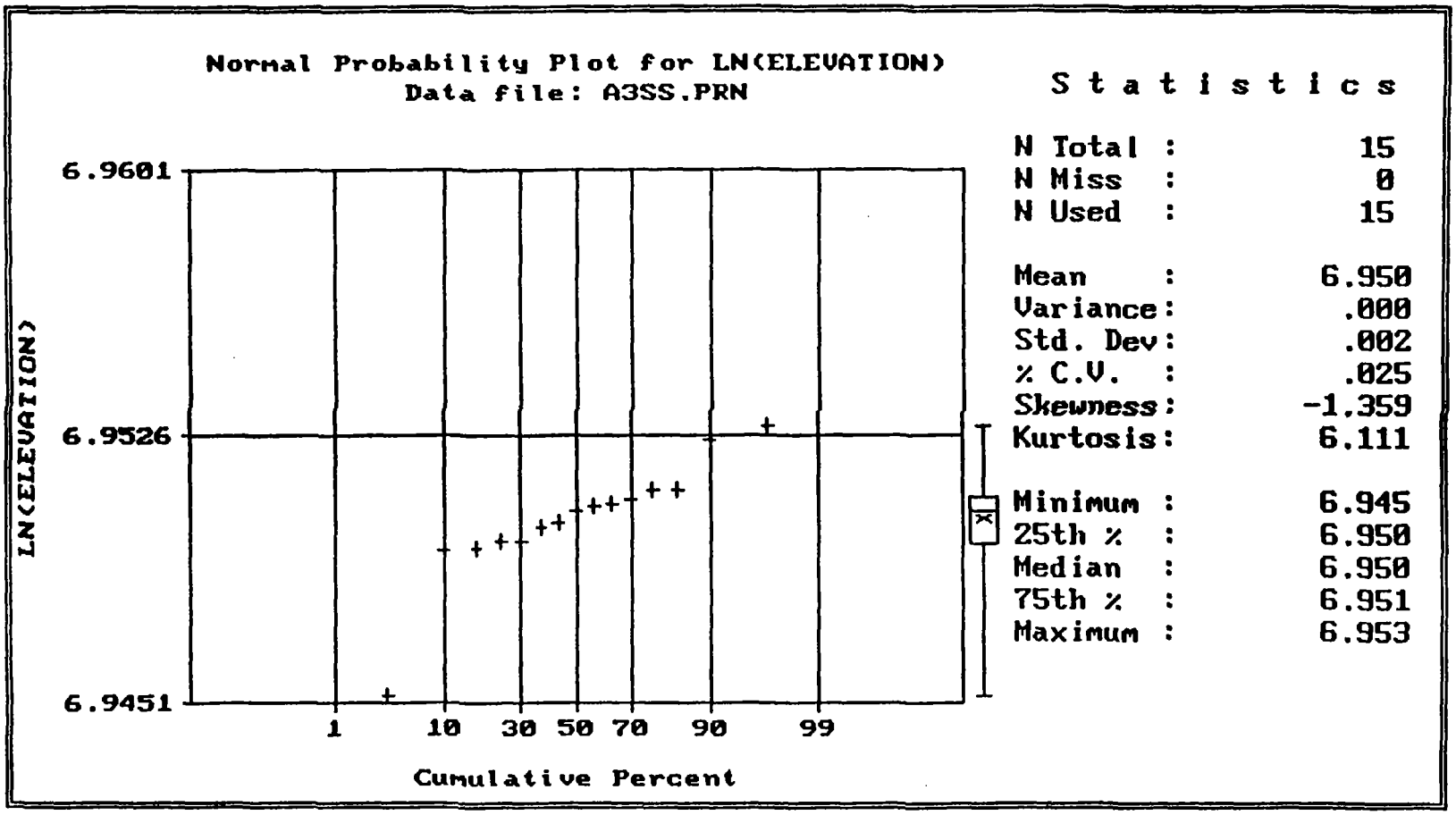

Histogram
Data file: area3-ss.txt
Frequency
3.
2.
1.
0.
2.8
3.2
3.6
4.0
LN(D60)
Statistics
N Total : 15
N Miss : 0
N Used : 15
Mean : 3.344
Variance: .138
Std. Dev: .371
% C.V. : 11.100
Skewness: .030
Kurtosis: 1.644
Minimum : 2.833
25th % : 2.944
Median : 3.296
75th % : 3.670
Maximum : 3.912

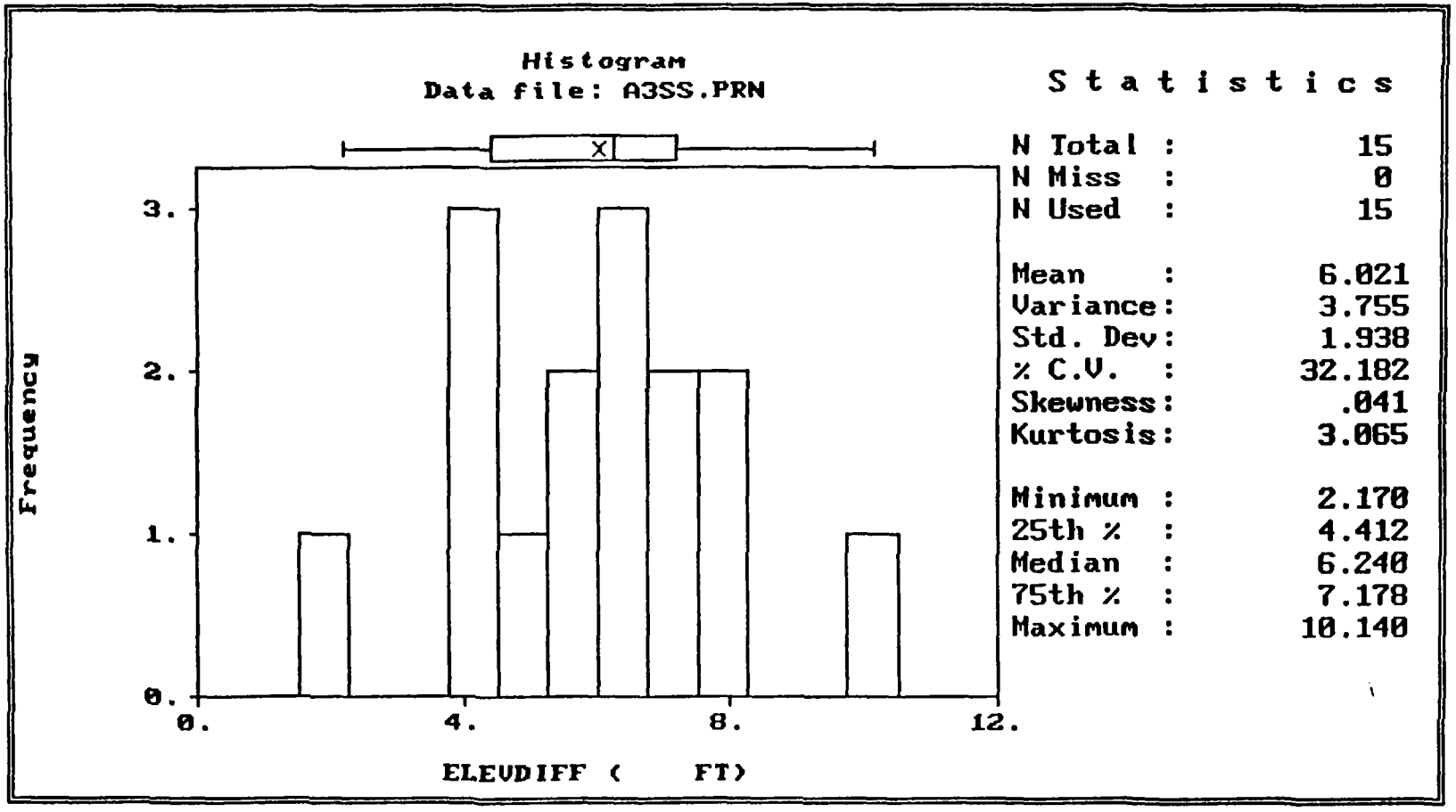

Normal Probability Plot for LN(D60)
Data file: area3-ss.txt
LN(D60)
4.0
3.6
3.2
2.8
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 15
N Miss : 0
N Used : 15
Mean : 3.344
Variance: .138
Std. Dev: .371
% C.V. : 11.100
Skewness: .030
Kurtosis: 1.644
Minimum : 2.833
25th % : 2.944
Median : 3.296
75th % : 3.670
Maximum : 3.912

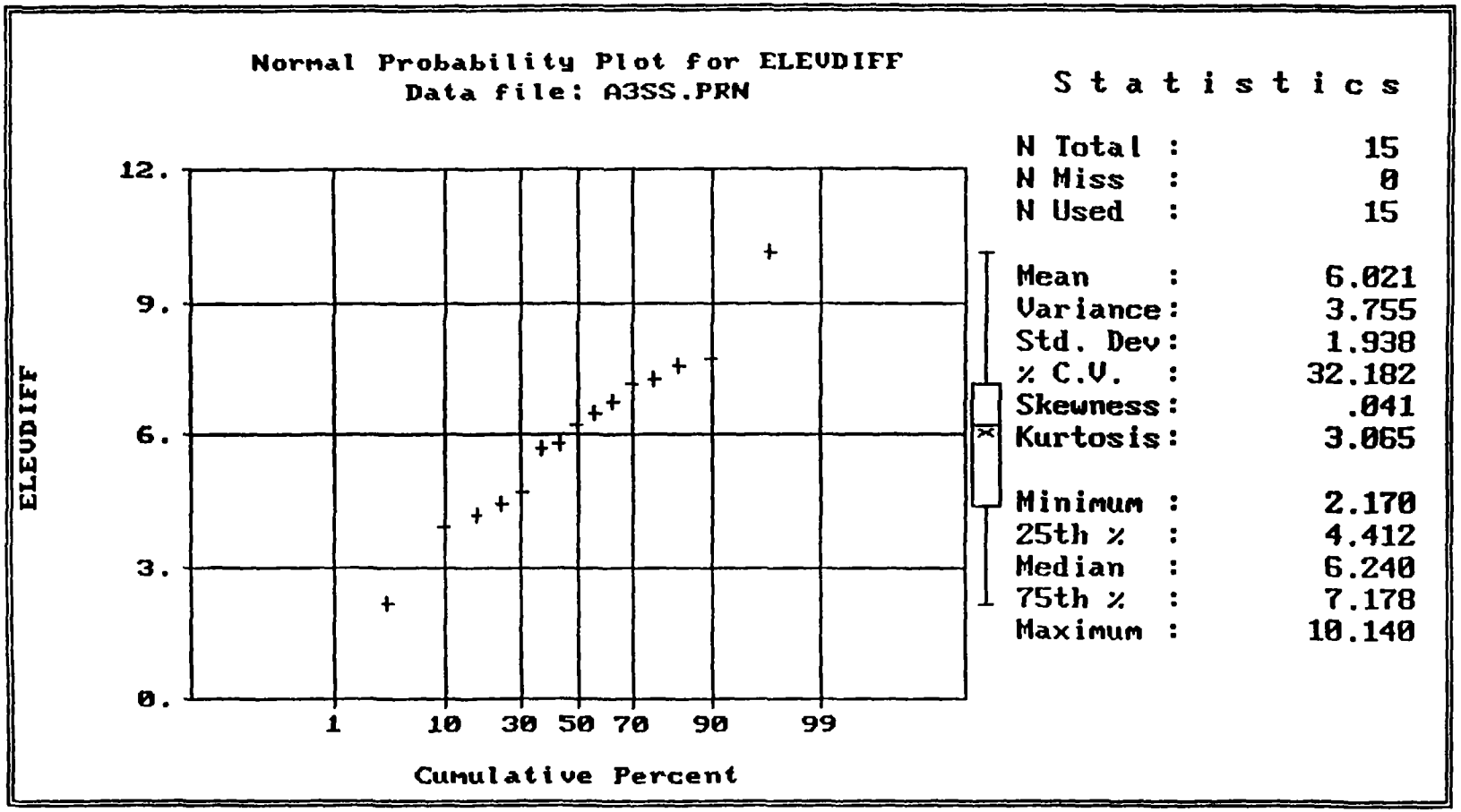

Histogram
Data file: A3SS.PRN
Frequency
5.
4.
3.
2.
1.
0.
1035.
1038.
1041.
1044.
1047.
ELEVATION (FT)
Statistics
N Total : 15
N Miss : 0
N Used : 15
Mean : 1043.355
Variance: 3.204
Std. Dev: 1.790
% C.V. : .172
Skewness: -1.350
Kurtosis: 6.091
Minimum : 1038.170
25th % : 1042.647
Median : 1043.570
75th % : 1044.000
Maximum : 1046.140

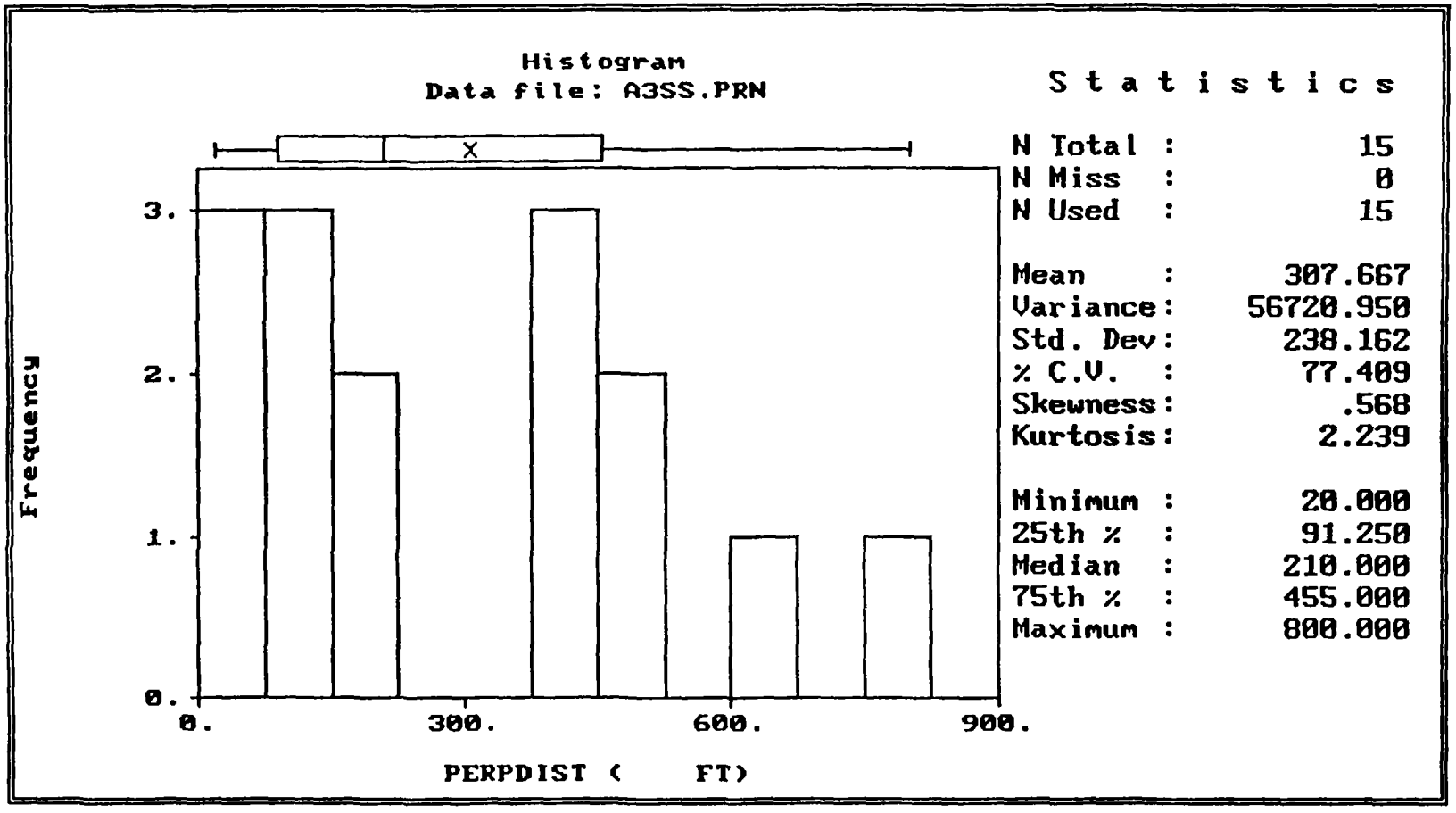

Normal Probability Plot for ELEVATION
Data file: A3SS.PRN
ELEVATION
1047.
1044.
1041.
1038.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 15
N Miss : 0
N Used : 15
Mean : 1043.355
Variance: 3.204
Std. Dev: 1.790
% C.V. : .172
Skewness: -1.350
Kurtosis: 6.091
Minimum : 1038.170
25th % : 1042.647
Median : 1043.570
75th % : 1044.000
Maximum : 1046.140

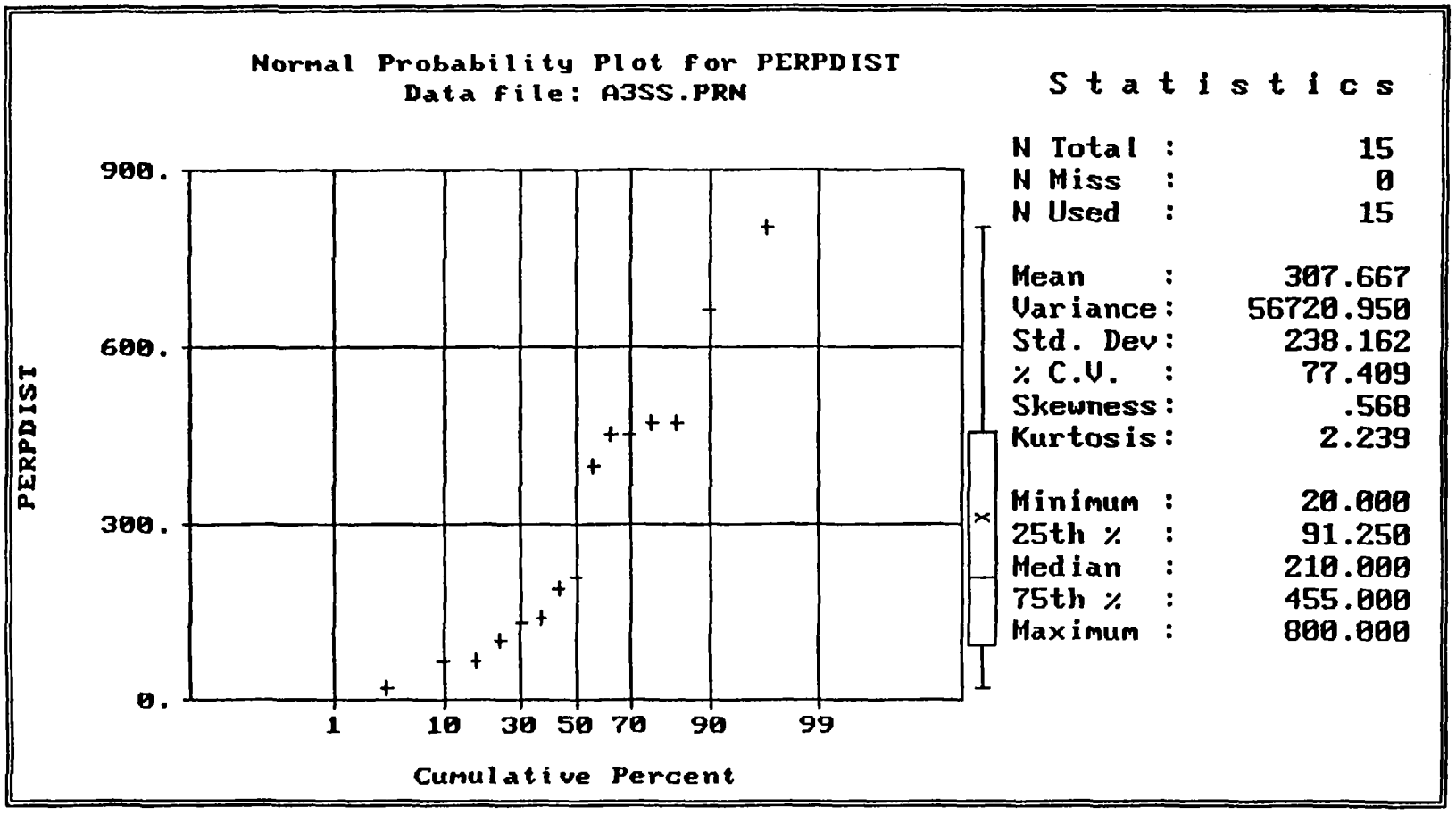

Histogram
Data file: A3SS.PRN
Frequency
9.
6.
3.
0.
6.94
6.95
6.96
LN(ELEVATION) (FT)
Statistics
N Total : 15
N Miss : 0
N Used : 15
Mean : 6.950
Variance: .000
Std. Dev: .002
% C.V. : .025
Skewness: -1.359
Kurtosis: 6.111
Minimum : 6.945
25th % : 6.950
Median : 6.950
75th % : 6.951
Maximum : 6.953

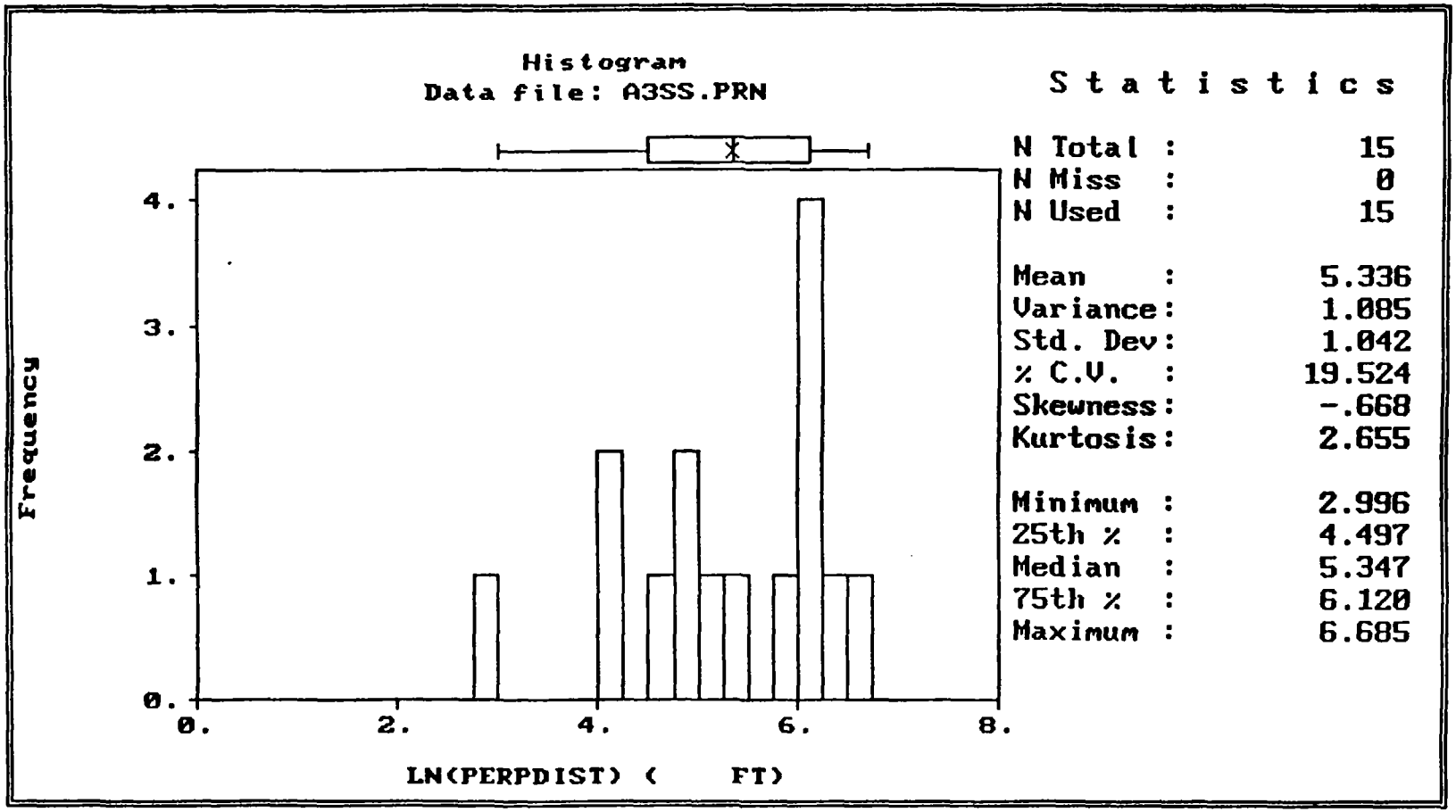

Normal Probability Plot for LN(ELEVATION)
Data file: A3SS.PRN
6.9601
6.9526
6.9451
LN(ELEVATION)
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 15
N Miss : 0
N Used : 15
Mean : 6.950
Variance: .000
Std. Dev: .002
% C.V. : .025
Skewness: -1.359
Kurtosis: 6.111
Minimum : 6.945
25th % : 6.950
Median : 6.950
75th % : 6.951
Maximum : 6.953

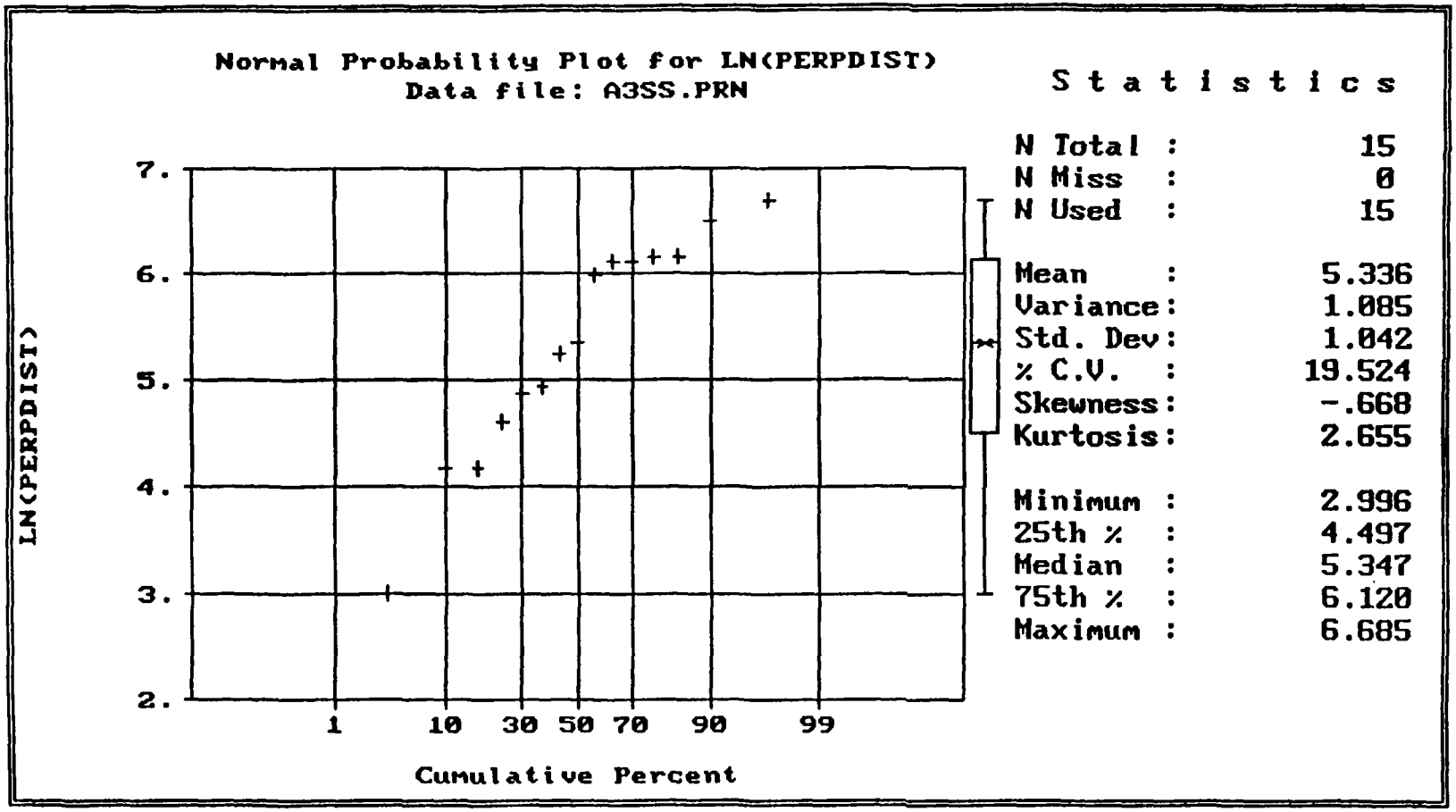

Histogram
Data file: A3SS.PRN
Frequency
3.
2.
1.
0.
0.
4.
8.
12.
ELEVDIFF (FT)
Statistics
N Total : 15
N Miss : 0
N Used : 15
Mean : 6.021
Variance: 3.755
Std. Dev: 1.938
% C.V. : 32.182
Skewness: .041
Kurtosis: 3.065
Minimum : 2.170
25th % : 4.412
Median : 6.240
75th % : 7.178
Maximum : 10.140


Normal Probability Plot for ELEVDIFF
Data file: A3SS.PRN
ELEVDIFF
12.
9.
6.
3.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 15
N Miss : 0
N Used : 15
Mean : 6.021
Variance : 3.755
Std. Dev : 1.938
% C.V. : 32.182
Skewness : .041
Kurtosis : 3.065
Minimum : 2.170
25th % : 4.412
Median : 6.240
75th % : 7.178
Maximum : 10.140

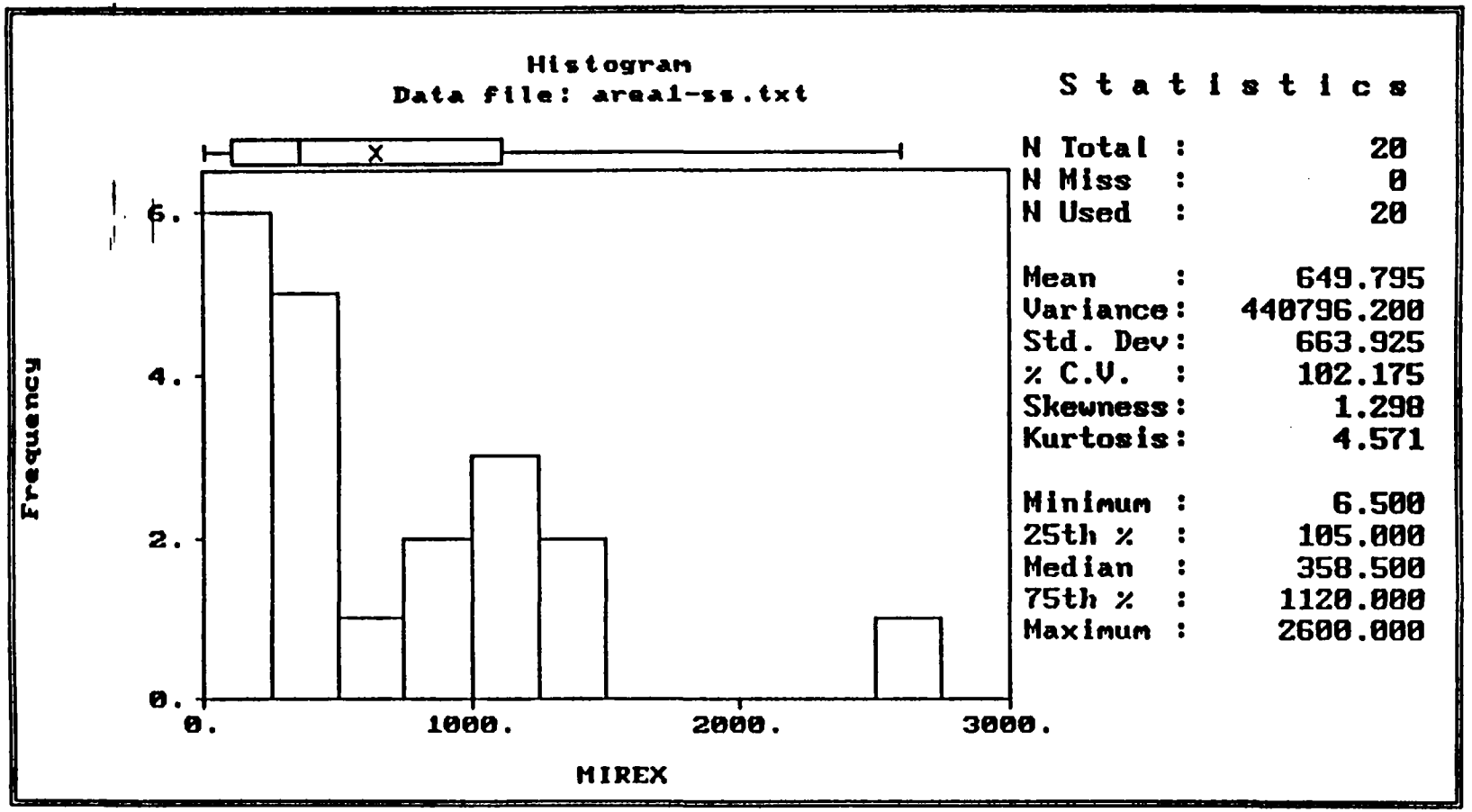

Histogram
Data file: A3SS.PRN
Statistics
N Total : 15
N Miss : 0
N Used : 15
Mean : 307.667
Variance: 56720.950
Std. Dev: 238.162
% C.V. : 77.409
Skewness: .568
Kurtosis: 2.239
Minimum : 20.000
25th % : 91.250
Median : 210.000
75th % : 455.000
Maximum : 800.000
Frequency
3.
2.
1.
0.
0.
300.
600.
900.
PERPDIST (FT)

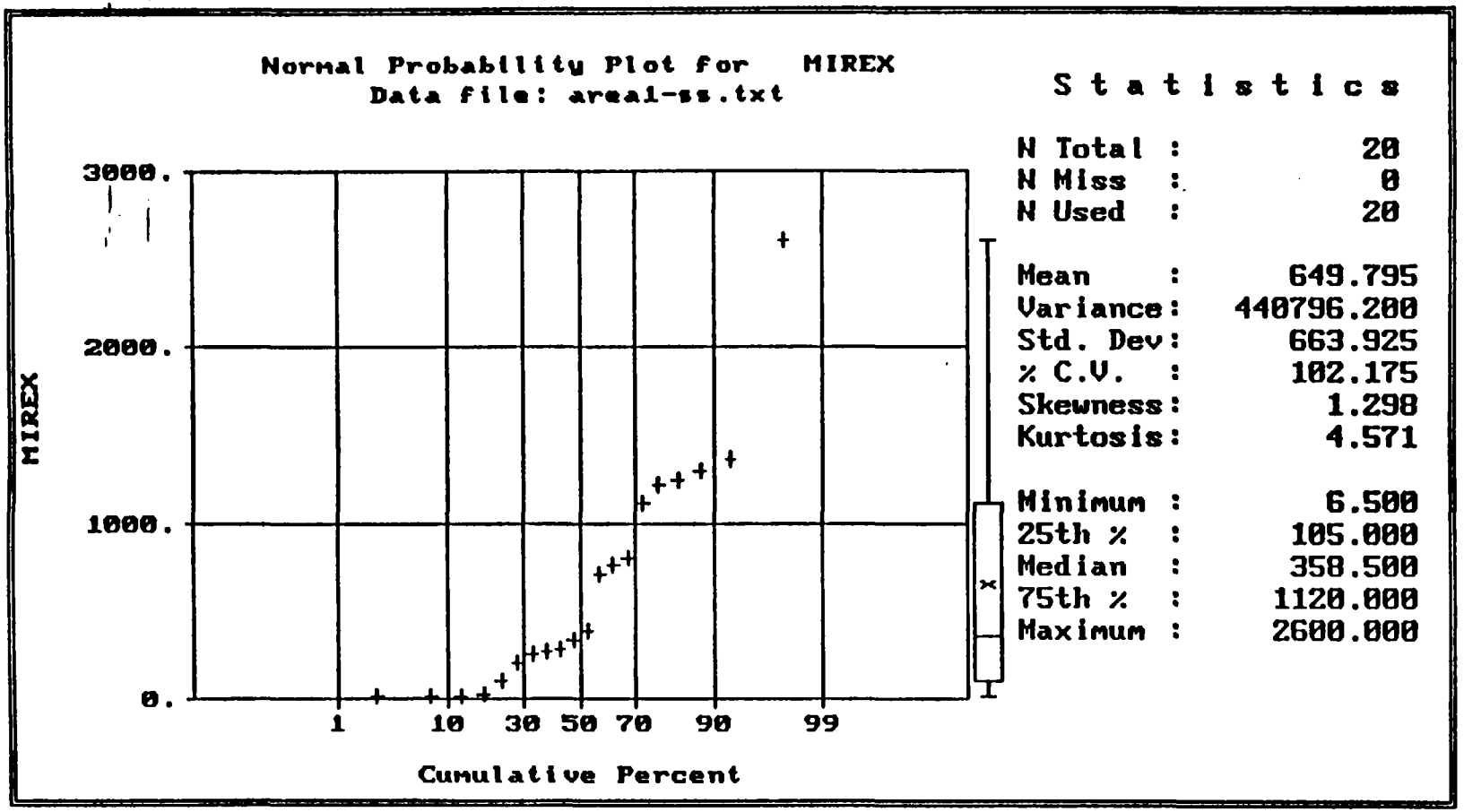

Normal Probability Plot for PERPDIST
Data file: A3SS.PRN
PERPDIST
900.
600.
300.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 15
N Miss : 0
N Used : 15
Mean : 307.667
Variance : 56720.950
Std. Dev : 238.162
% C.V. : 77.409
Skewness : .568
Kurtosis : 2.239
Minimum : 20.000
25th % : 91.250
Median : 210.000
75th % : 455.000
Maximum : 800.000

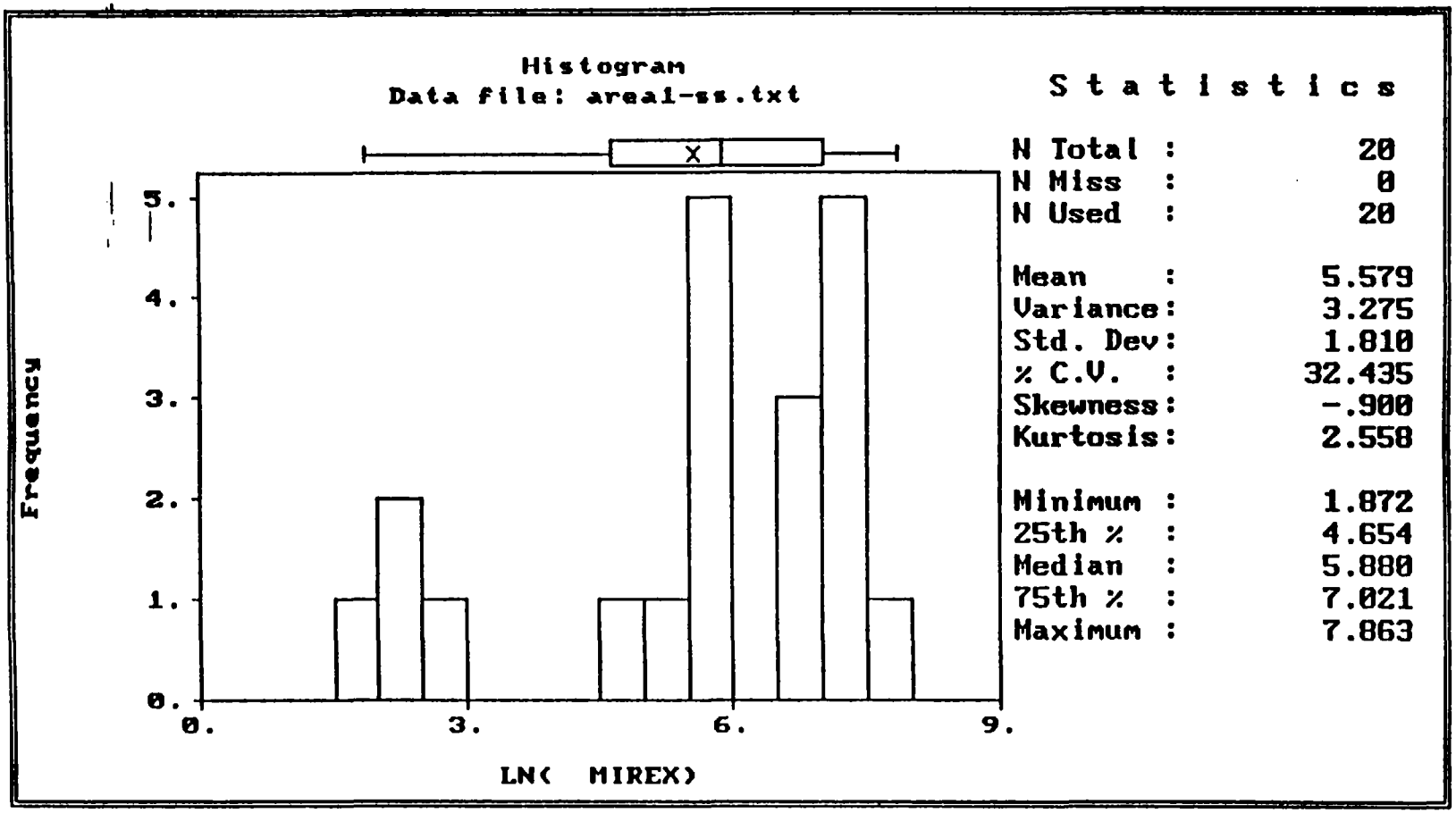

Histogram
Data file: A3SS.PRN
Frequency
4.
3.
2.
1.
0.
0.
2.
4.
6.
8.
LN(PERPDIST) (FT)
Statistics
N Total : 15
N Miss : 0
N Used : 15
Mean : 5.336
Variance: 1.085
Std. Dev: 1.042
% C.V. : 19.524
Skewness: -.668
Kurtosis: 2.655
Minimum : 2.996
25th % : 4.497
Median : 5.347
75th % : 6.120
Maximum : 6.685

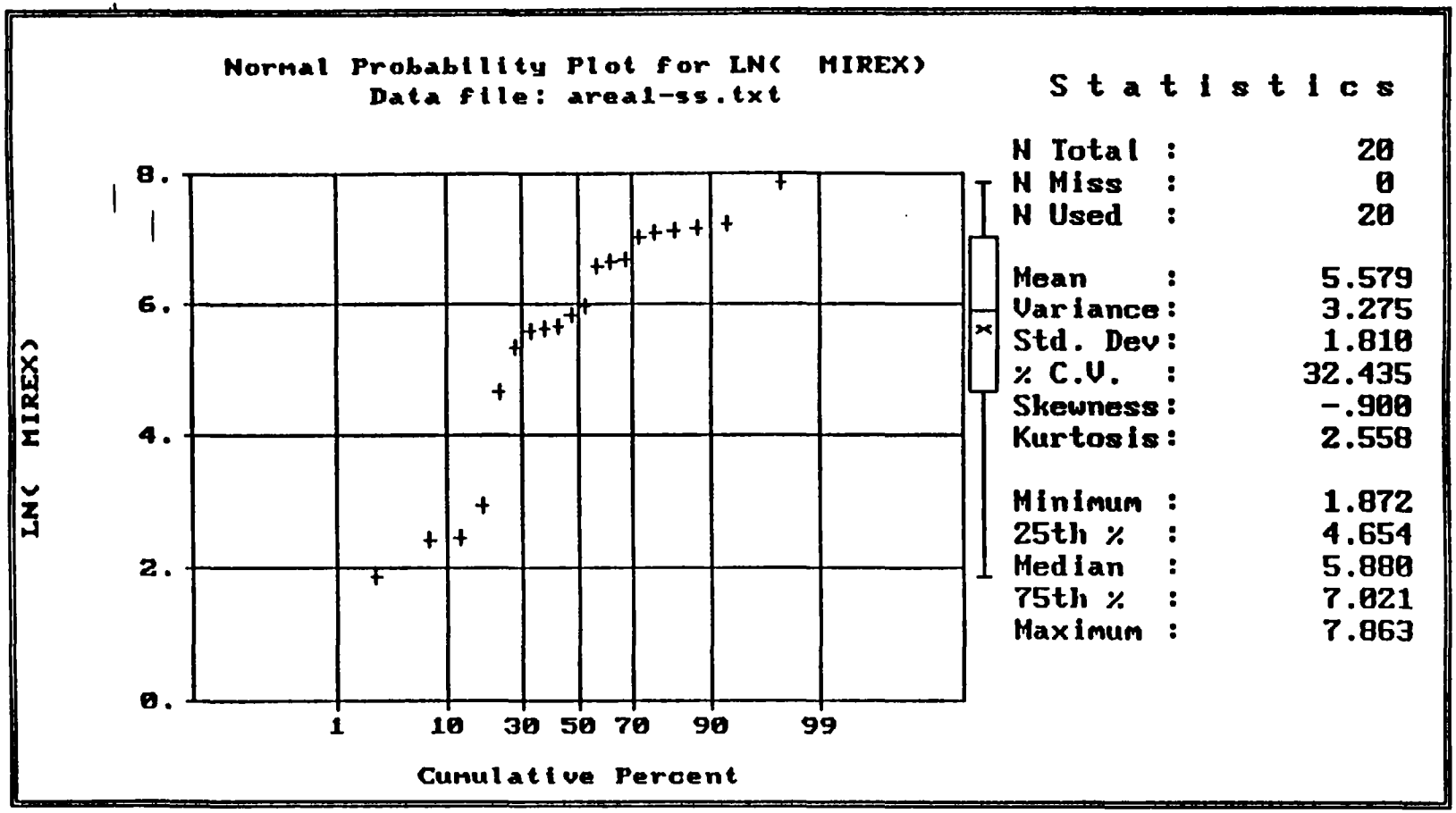

Normal Probability Plot for LN(PERPDIST)
Data file: A3SS.PRN
LN(PERPDIST)
7.
6.
5.
4.
3.
2.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 15
N Miss : 0
N Used : 15
Mean : 5.336
Variance: 1.085
Std. Dev: 1.042
% C.V. : 19.524
Skewness: -.668
Kurtosis: 2.655
Minimum : 2.996
25th % : 4.497
Median : 5.347
75th % : 6.120
Maximum : 6.685

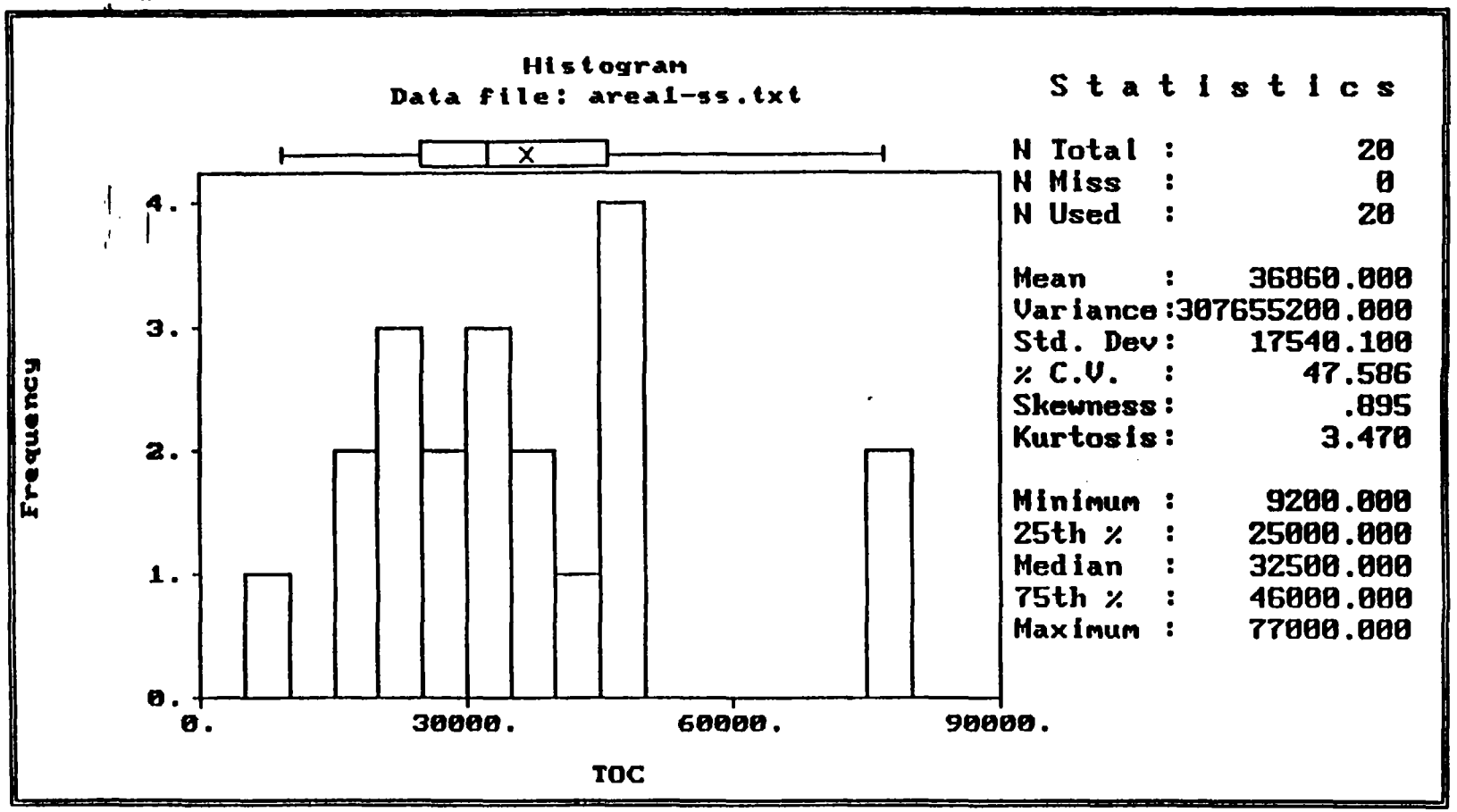
AREA 5

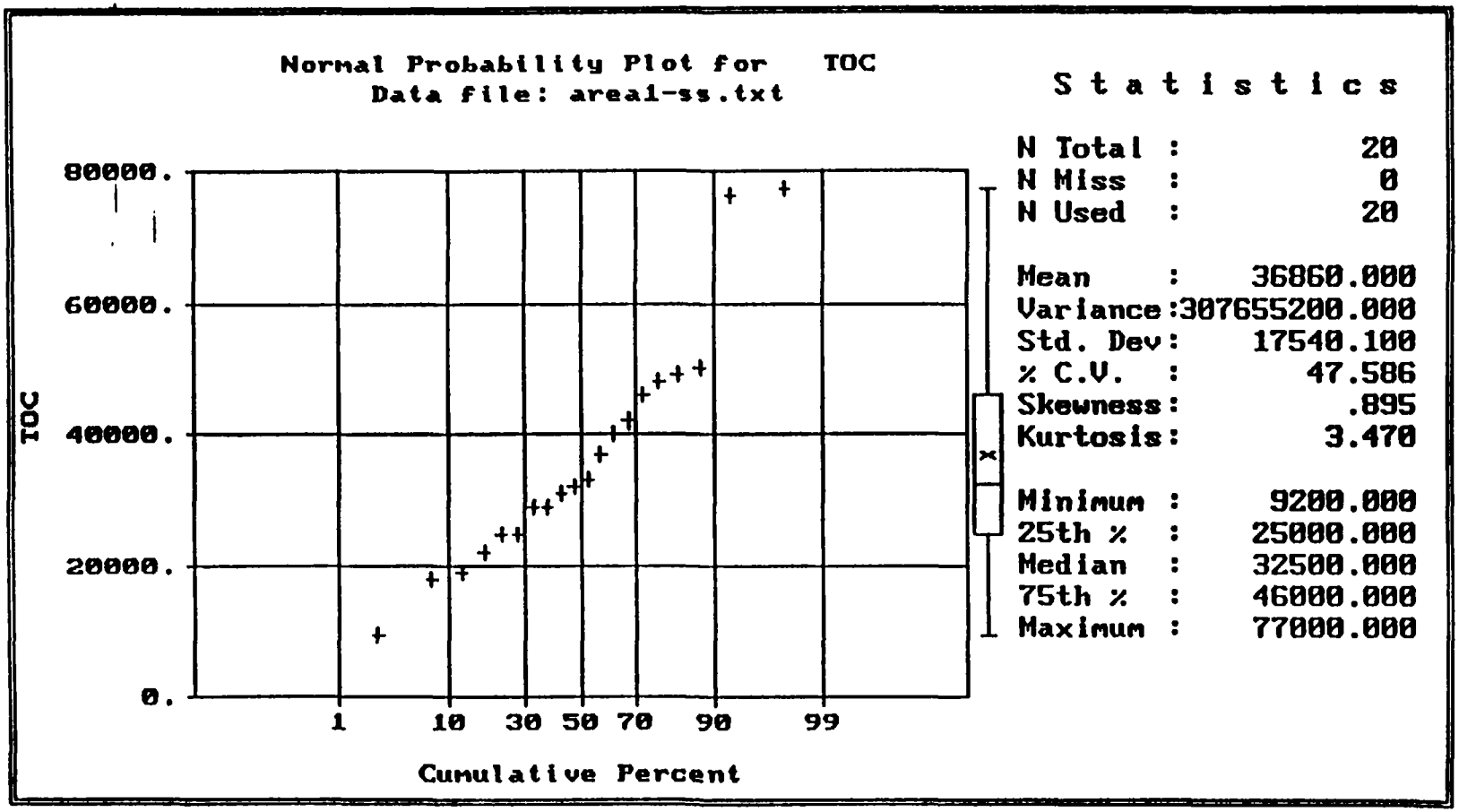

Histogram
Data file: area1-ss.txt
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 649.795
Variance: 440796.200
Std. Dev: 663.925
% C.V. : 102.175
Skewness: 1.298
Kurtosis: 4.571
Minimum : 6.500
25th % : 105.000
Median : 358.500
75th % : 1120.000
Maximum : 2600.000
Frequency
6.
4.
2.
0.
0.
1000.
2000.
3000.
MIREX

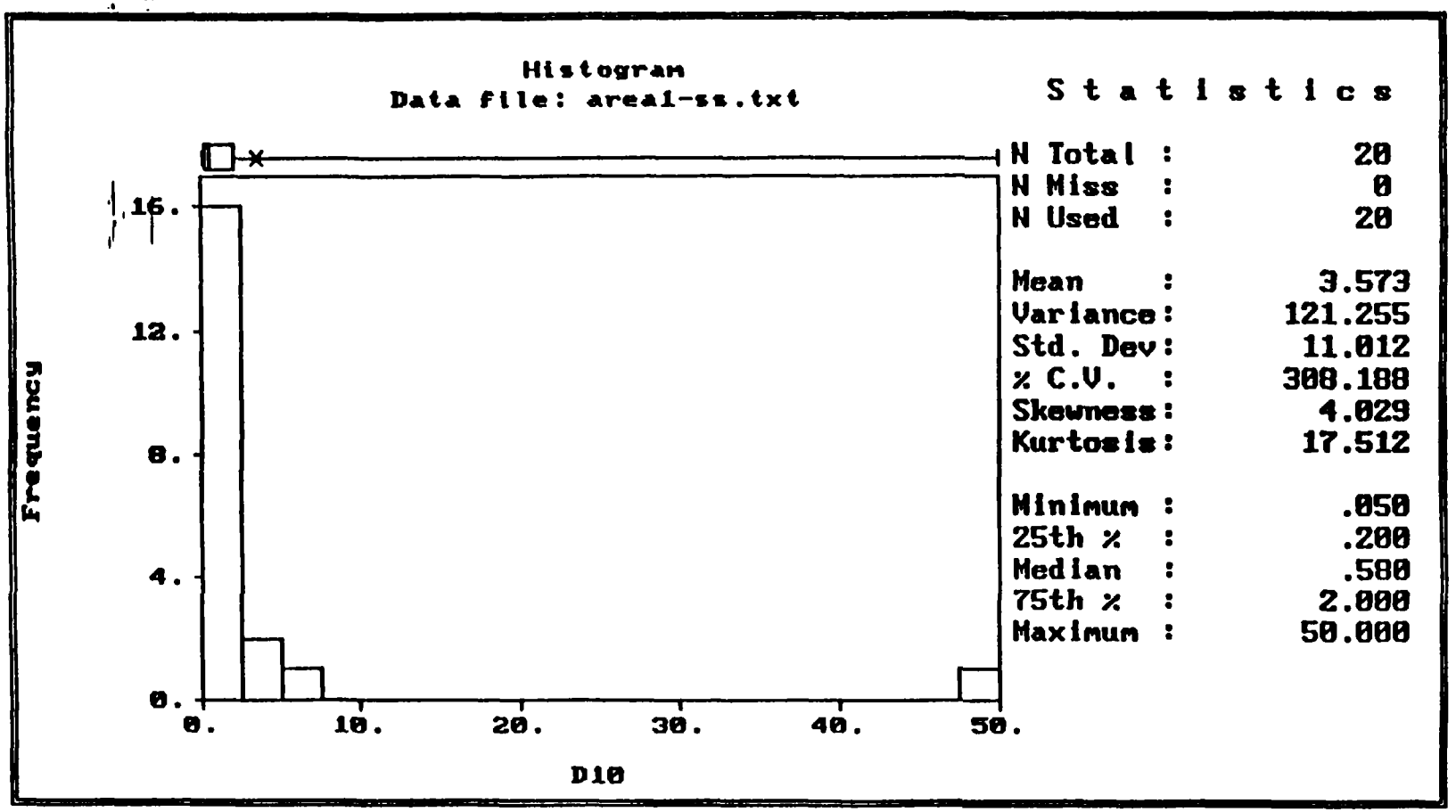

Normal Probability Plot for MIREX
Data file: areal-ss.txt
MIREX
3000.
2000.
1000.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 649.795
Variance: 440796.200
Std. Dev: 663.925
% C.V. : 102.175
Skewness: 1.298
Kurtosis: 4.571
Minimum : 6.500
25th % : 105.000
Median : 358.500
75th % : 1120.000
Maximum : 2600.000

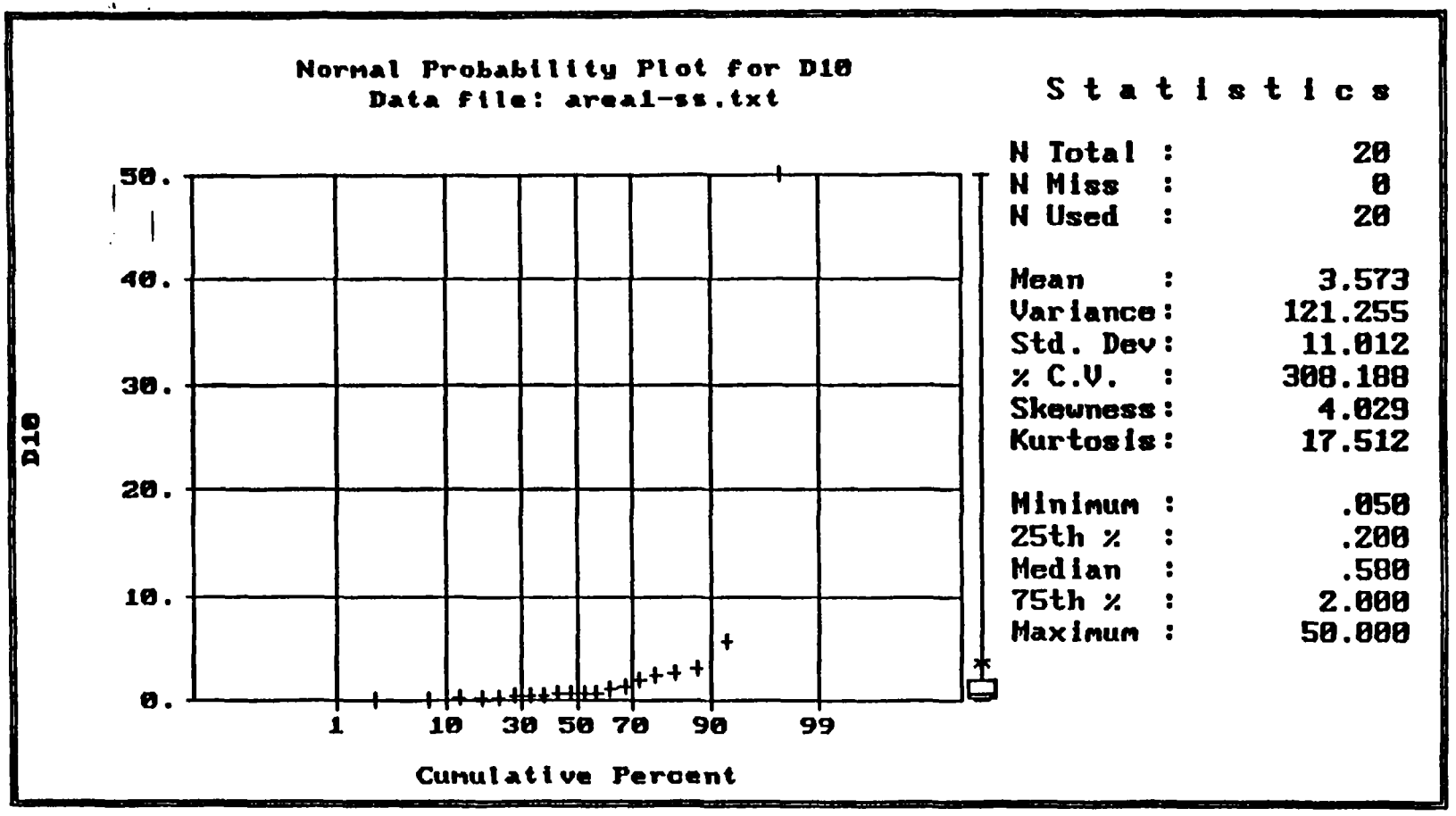

Histogram
Data file: areal-ss.txt
Frequency
5.
4.
3.
2.
1.
0.
0.
3.
6.
9.
LN(MIREX)
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 5.579
Variance: 3.275
Std. Dev: 1.810
% C.V. : 32.435
Skewness: -.900
Kurtosis: 2.558
Minimum : 1.872
25th % : 4.654
Median : 5.880
75th % : 7.021
Maximum : 7.863

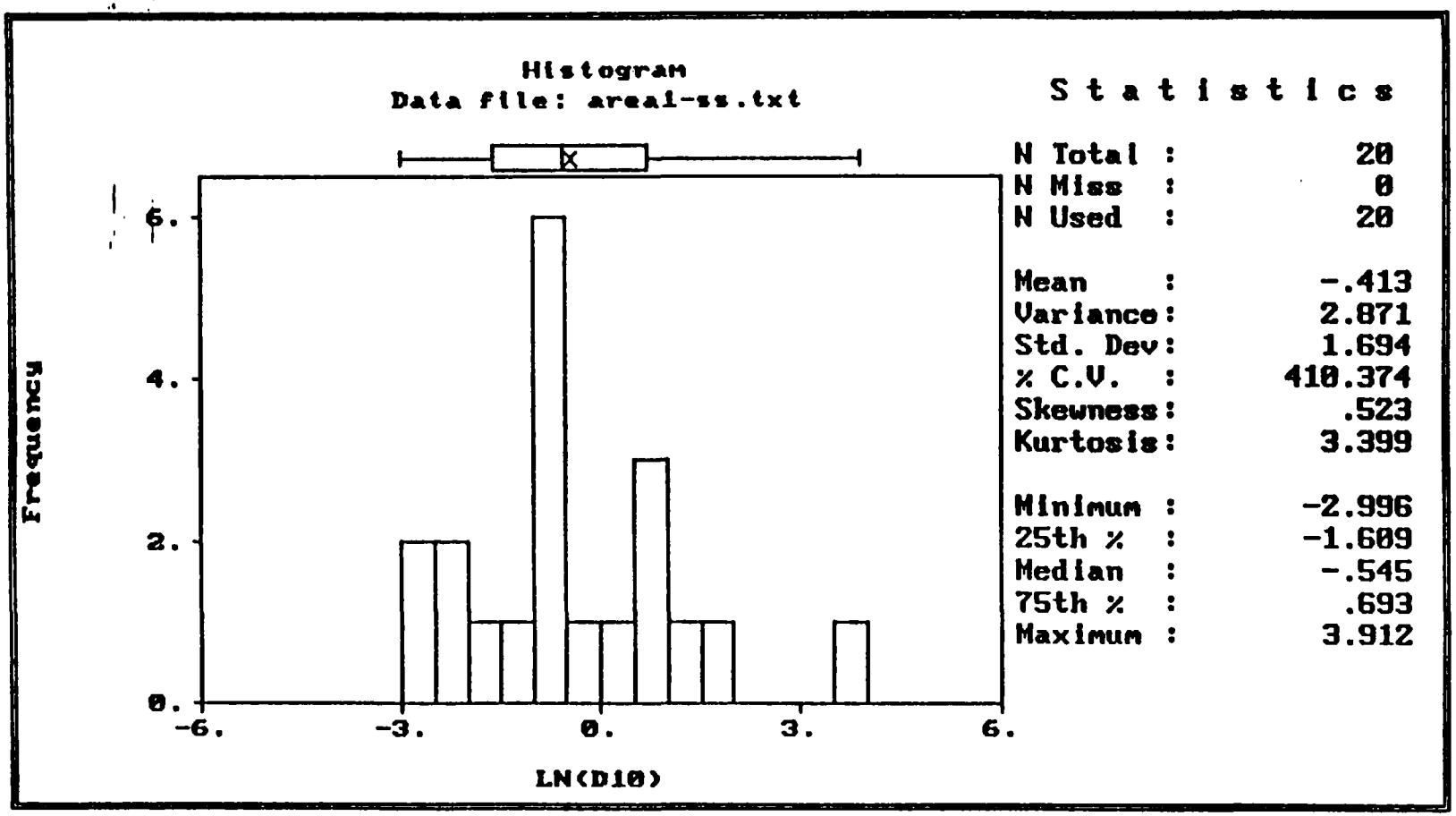

Normal Probability Plot for LN(MIREX)
Data file: area1-ss.txt
LN(MIREX)
8.
6.
4.
2.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 5.579
Variance: 3.275
Std. Dev: 1.810
% C.V. : 32.435
Skewness: -.900
Kurtosis: 2.558
Minimum : 1.872
25th % : 4.654
Median : 5.880
75th % : 7.021
Maximum : 7.863

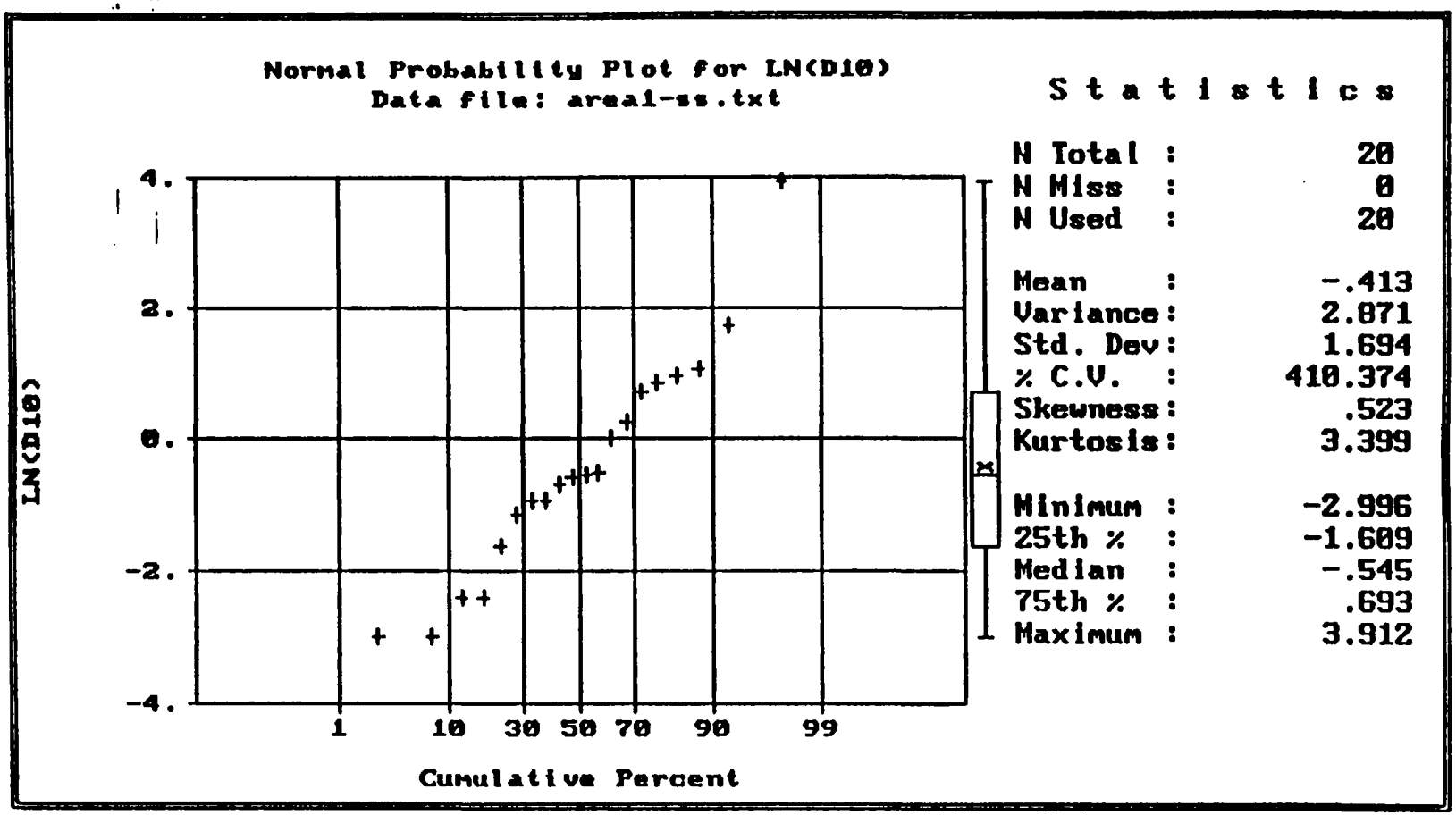

Histogram
Data file: areal-ss.txt
Frequency
4.
3.
2.
1.
0.
0.
30000.
60000.
90000.
TOC
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 36860.000
Variance : 307655200.000
Std. Dev : 17540.100
% C.V. : 47.586
Skewness : .895
Kurtosis : 3.470
Minimum : 9200.000
25th % : 25000.000
Median : 32500.000
75th % : 46000.000
Maximum : 77000.000

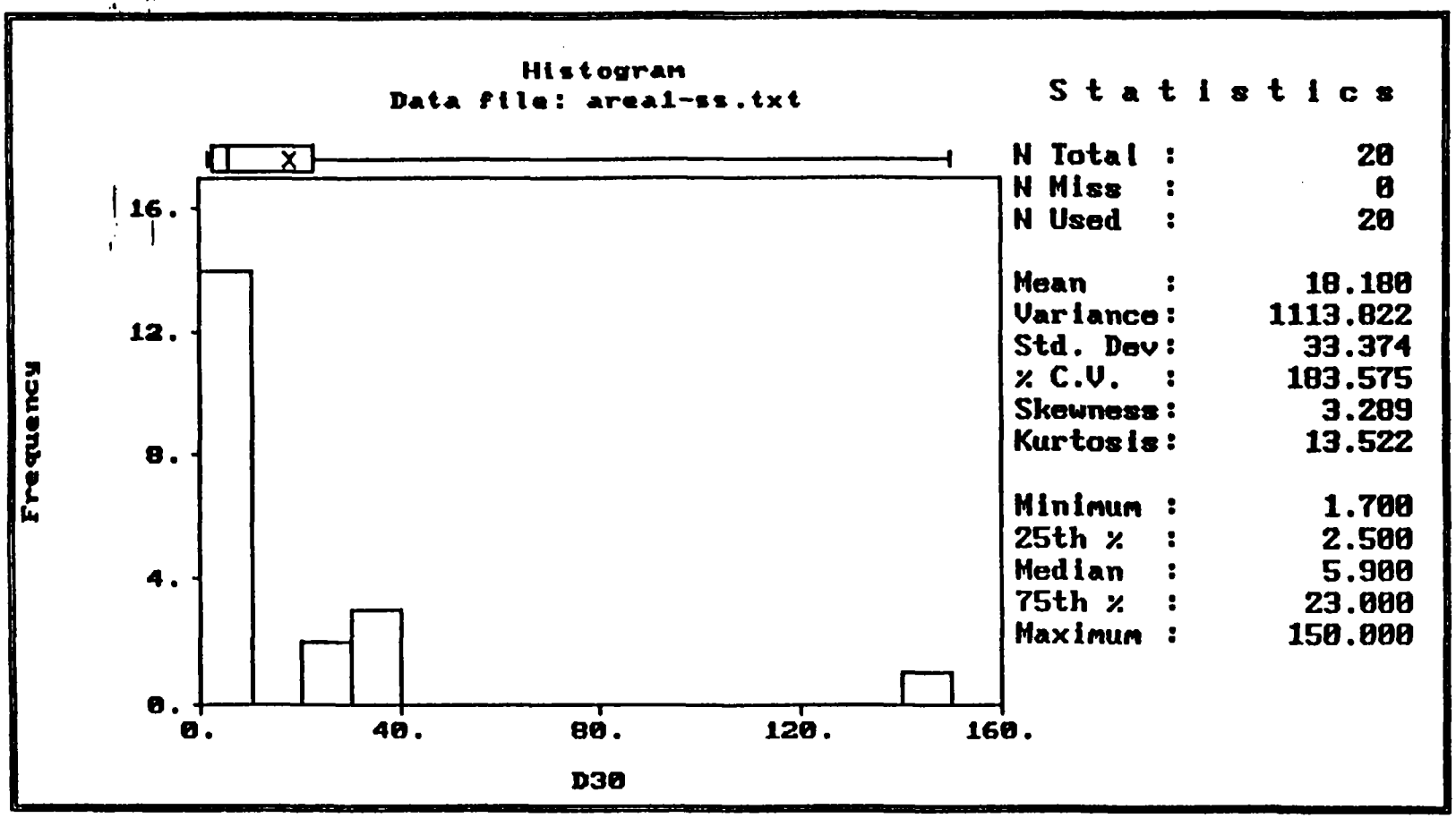

Normal Probability Plot for TOC
Data file: area1-ss.txt
80000.
60000.
40000.
20000.
0.
TOC
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 36860.000
Variance : 307655200.000
Std. Dev : 17540.100
% C.V. : 47.586
Skewness : .895
Kurtosis : 3.470
Minimum : 9200.000
25th % : 25000.000
Median : 32500.000
75th % : 46000.000
Maximum : 77000.000

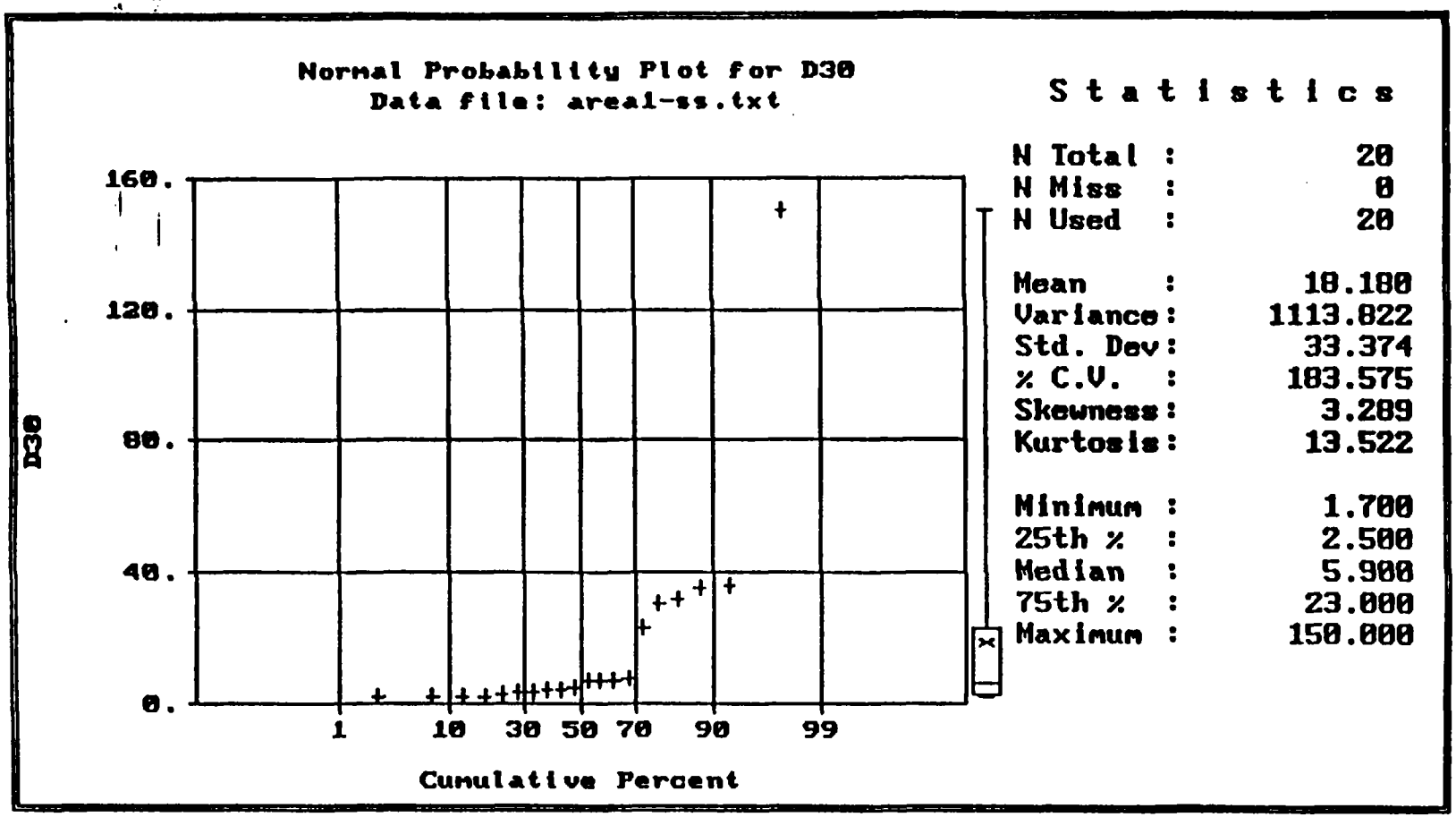

Histogram
Data file: areal-ss.txt
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 3.573
Variance: 121.255
Std. Dev: 11.012
% C.V. : 308.188
Skewness: 4.029
Kurtosis: 17.512
Minimum : .050
25th % : .200
Median : .500
75th % : 2.000
Maximum : 50.000
Frequency
16.
12.
8.
4.
0.
0.
10.
20.
30.
40.
50.
D10

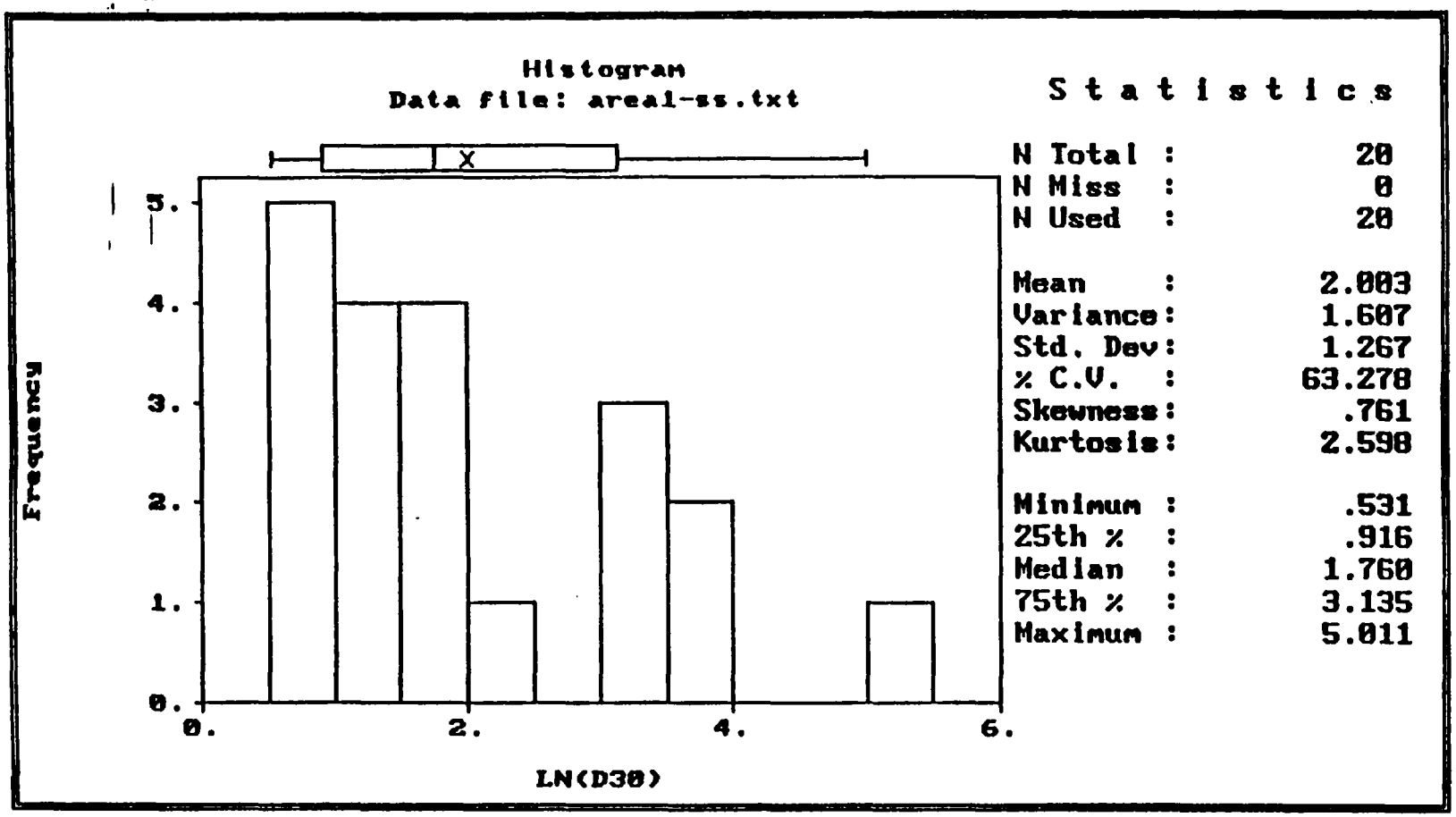

Normal Probability Plot for D10
Data file: areal-ss.txt
D10
50.
40.
30.
20.
10.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 3.573
Variance: 121.255
Std. Dev: 11.012
% C.V. : 308.188
Skewness: 4.029
Kurtosis: 17.512
Minimum : .050
25th % : .200
Median : .500
75th % : 2.000
Maximum : 50.000

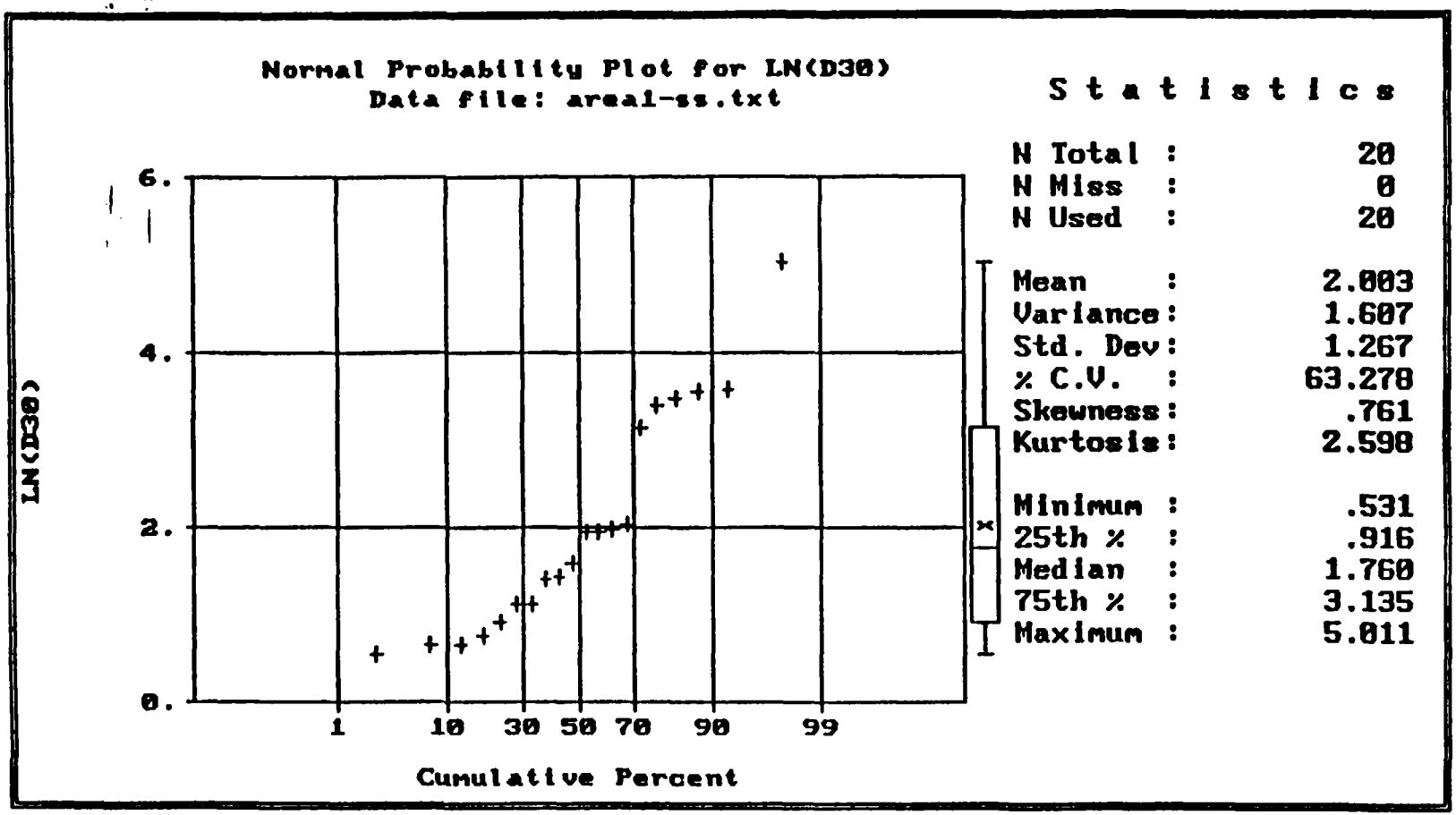

Histogram
Data file: areal-ss.txt
Frequency
6.
4.
2.
0.
-6.
-3.
0.
3.
6.
LN(D10)
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : -.413
Variance: 2.871
Std. Dev: 1.694
% C.V. : 410.374
Skewness: .523
Kurtosis: 3.399
Minimum : -2.996
25th % : -1.609
Median : -.545
75th % : .693
Maximum : 3.912

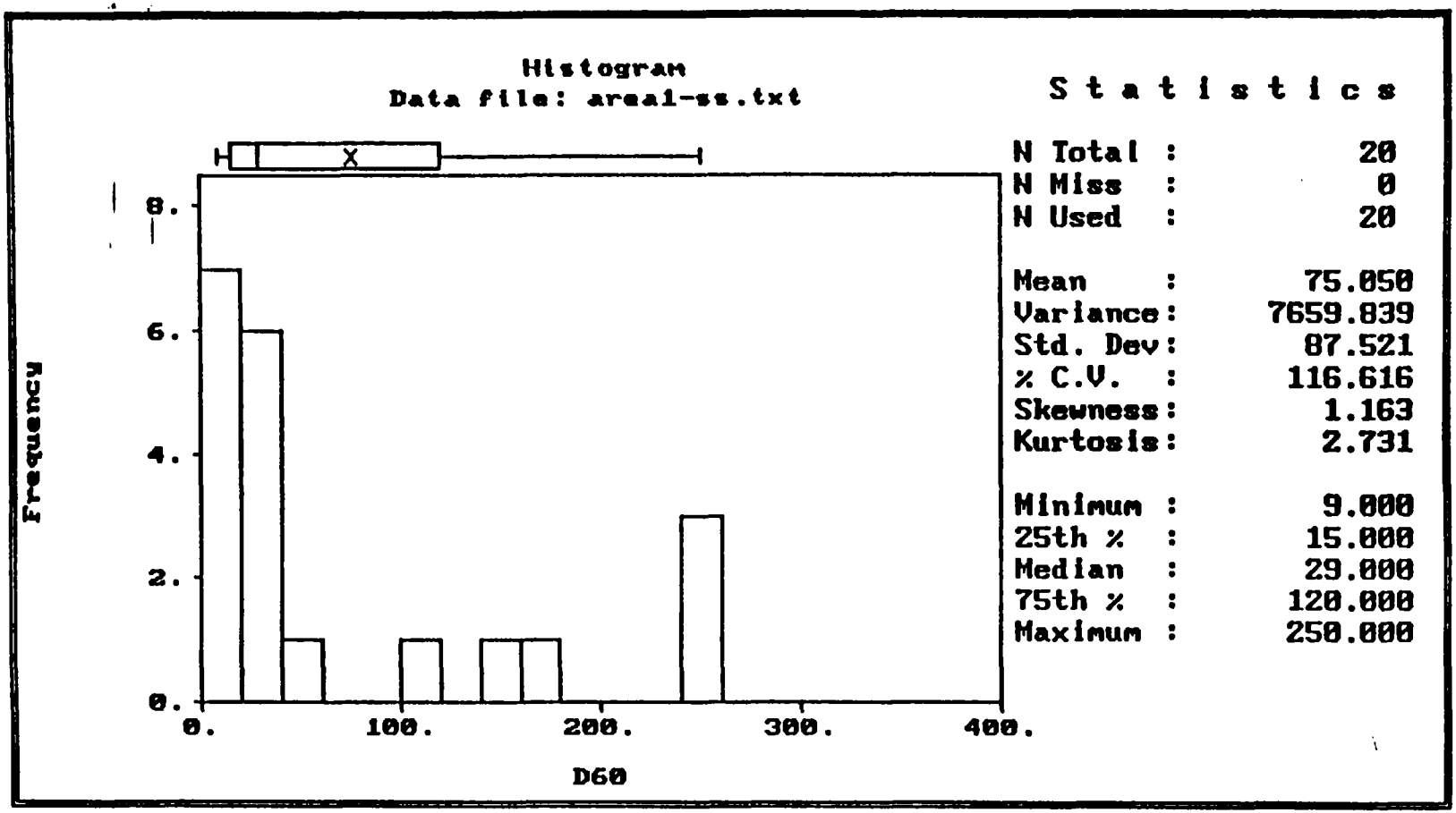

Normal Probability Plot for LN(D10)
Data file: area1-ss.txt
LN(D10)
4.
2.
0.
-2.
-4.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : -.413
Variance: 2.871
Std. Dev: 1.694
% C.V. : 410.374
Skewness: .523
Kurtosis: 3.399
Minimum : -2.996
25th % : -1.609
Median : -.545
75th % : .693
Maximum : 3.912

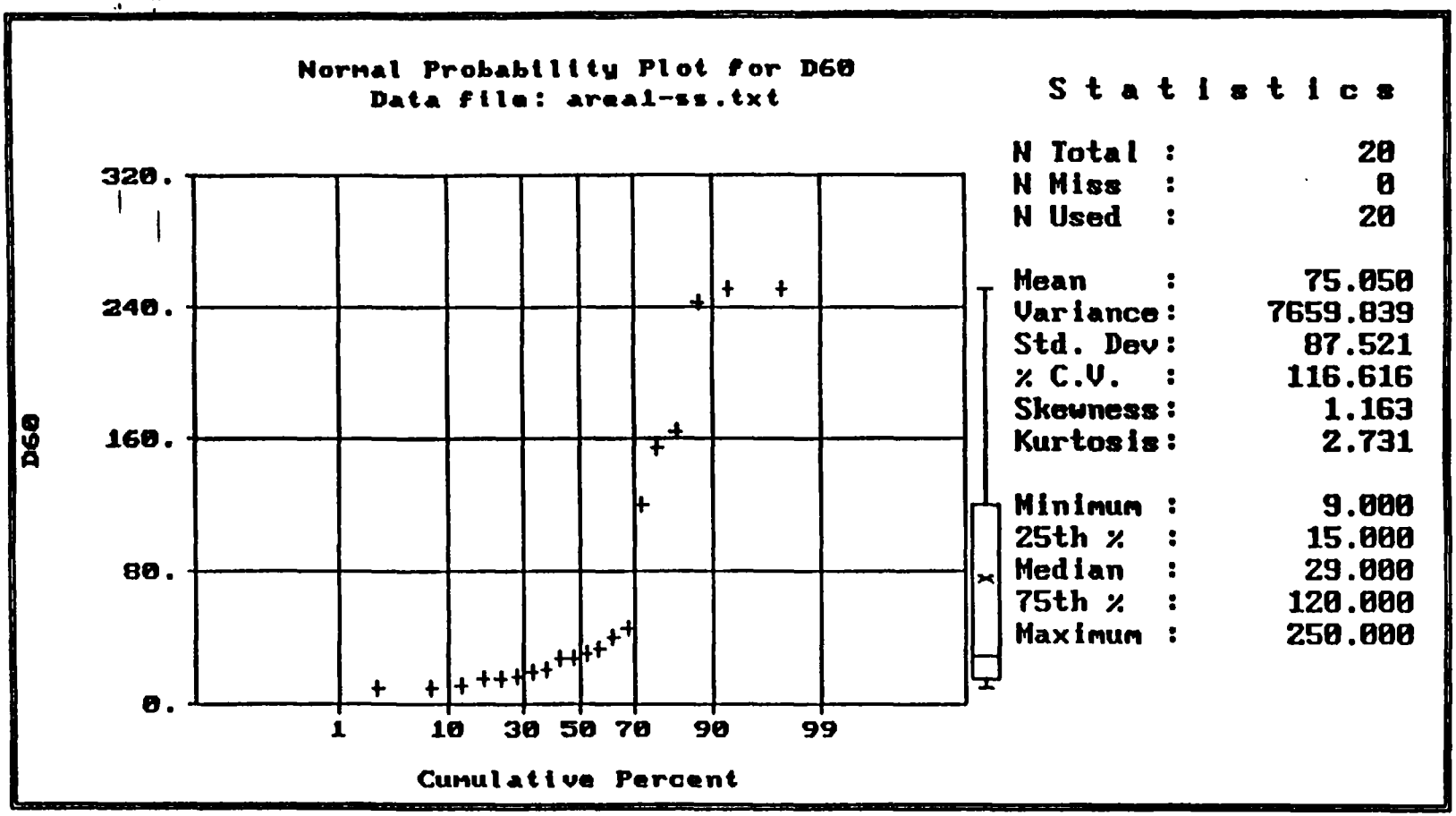

Histogram
Data file: areal-ss.txt
Frequency
16.
12.
8.
4.
0.
0.
40.
80.
120.
160.
D30
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 18.180
Variance: 1113.822
Std. Dev: 33.374
% C.V. : 183.575
Skewness: 3.289
Kurtosis: 13.522
Minimum : 1.700
25th % : 2.500
Median : 5.900
75th % : 23.000
Maximum : 150.000

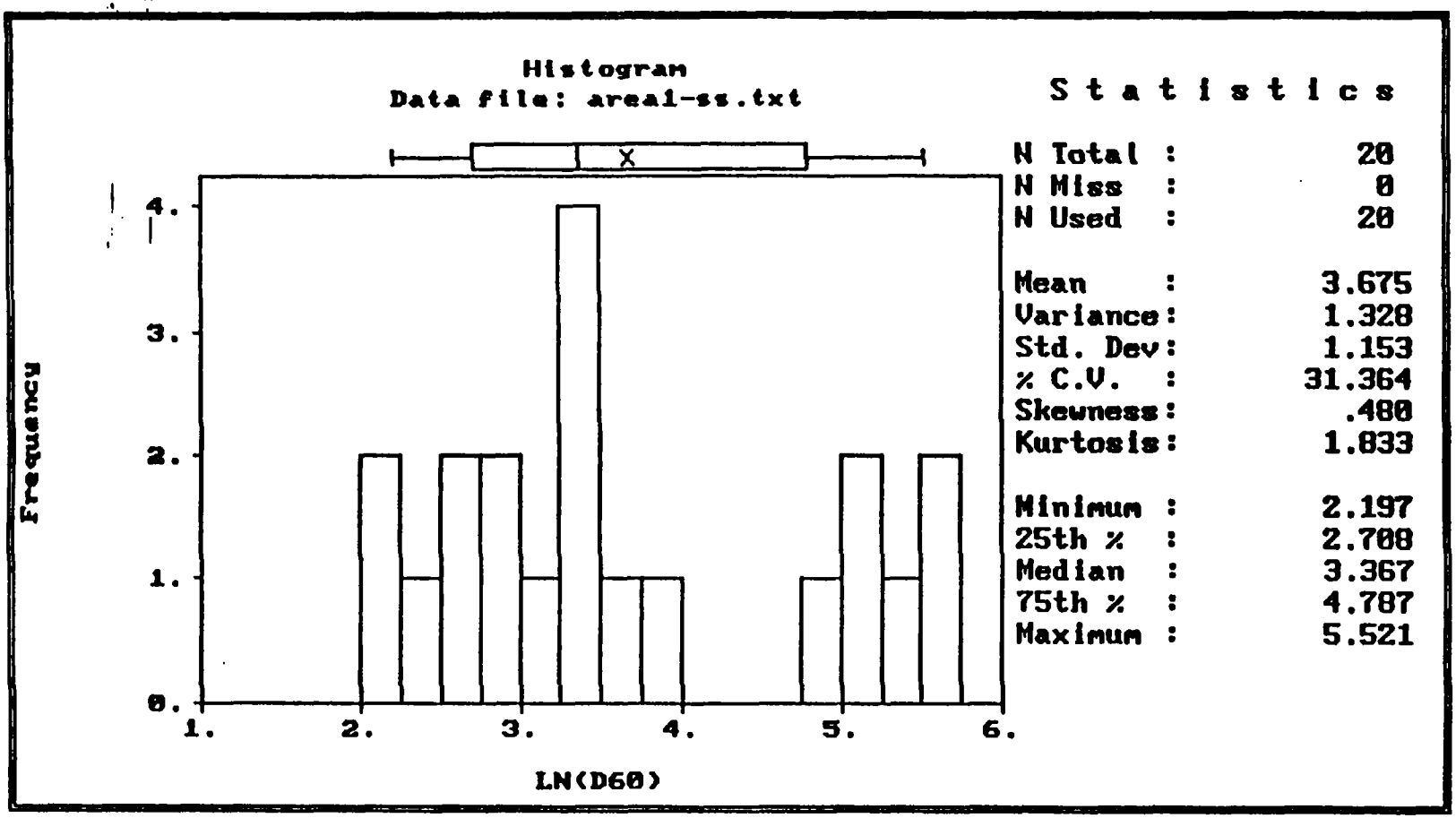

Normal Probability Plot for D30
Data file: area1-ss.txt
D30
160.
120.
80.
40.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 18.180
Variance : 1113.822
Std. Dev : 33.374
% C.V. : 183.575
Skewness : 3.289
Kurtosis : 13.522
Minimum : 1.700
25th % : 2.500
Median : 5.900
75th % : 23.000
Maximum : 150.000

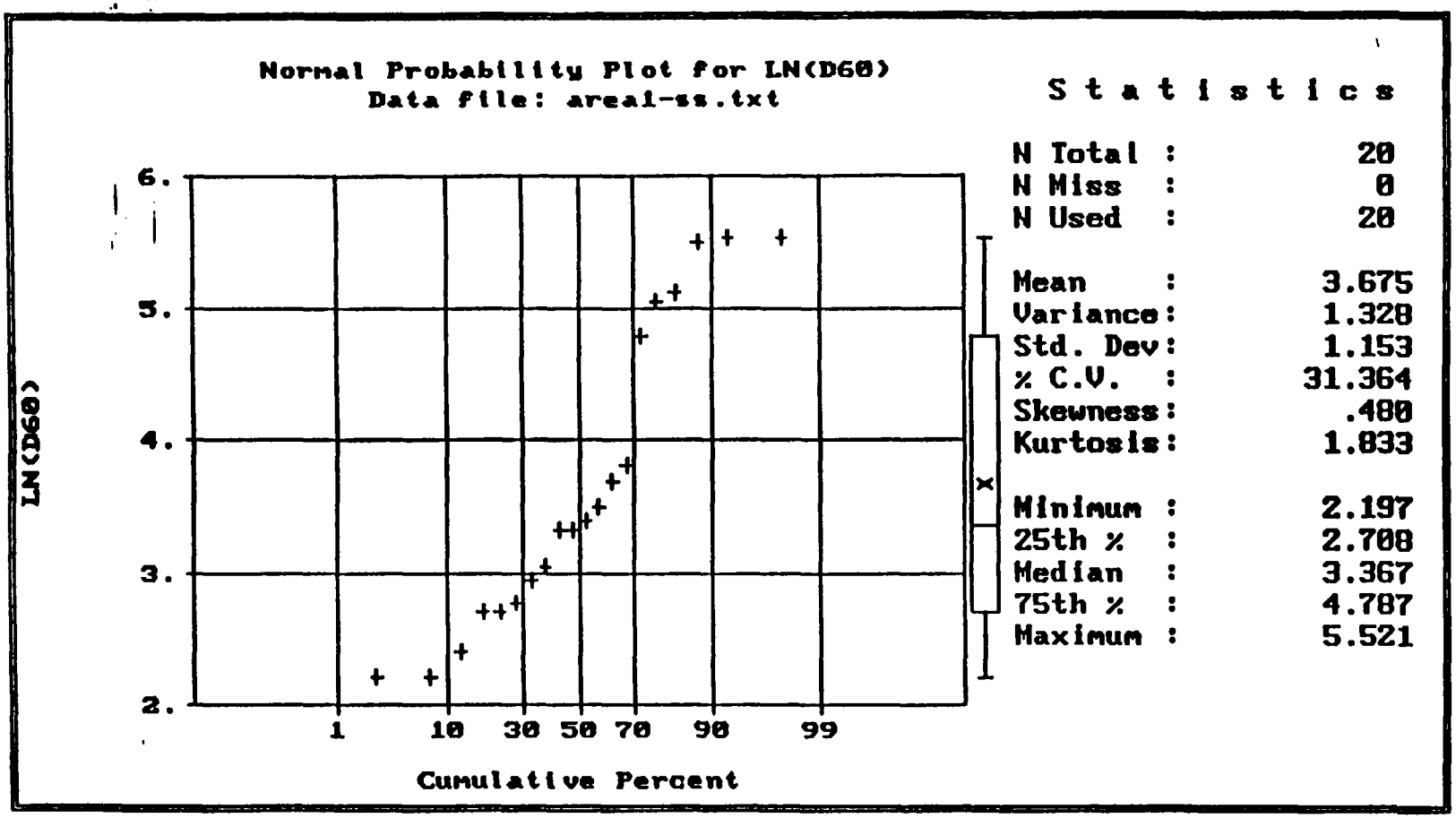

Histogram
Data file: areal-ss.txt
Frequency
5.
4.
3.
2.
1.
0.
0.
2.
4.
6.
LN(D30)
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 2.003
Variance: 1.607
Std. Dev: 1.267
% C.V. : 63.278
Skewness: .761
Kurtosis: 2.598
Minimum : .531
25th % : .916
Median : 1.760
75th % : 3.135
Maximum : 5.011

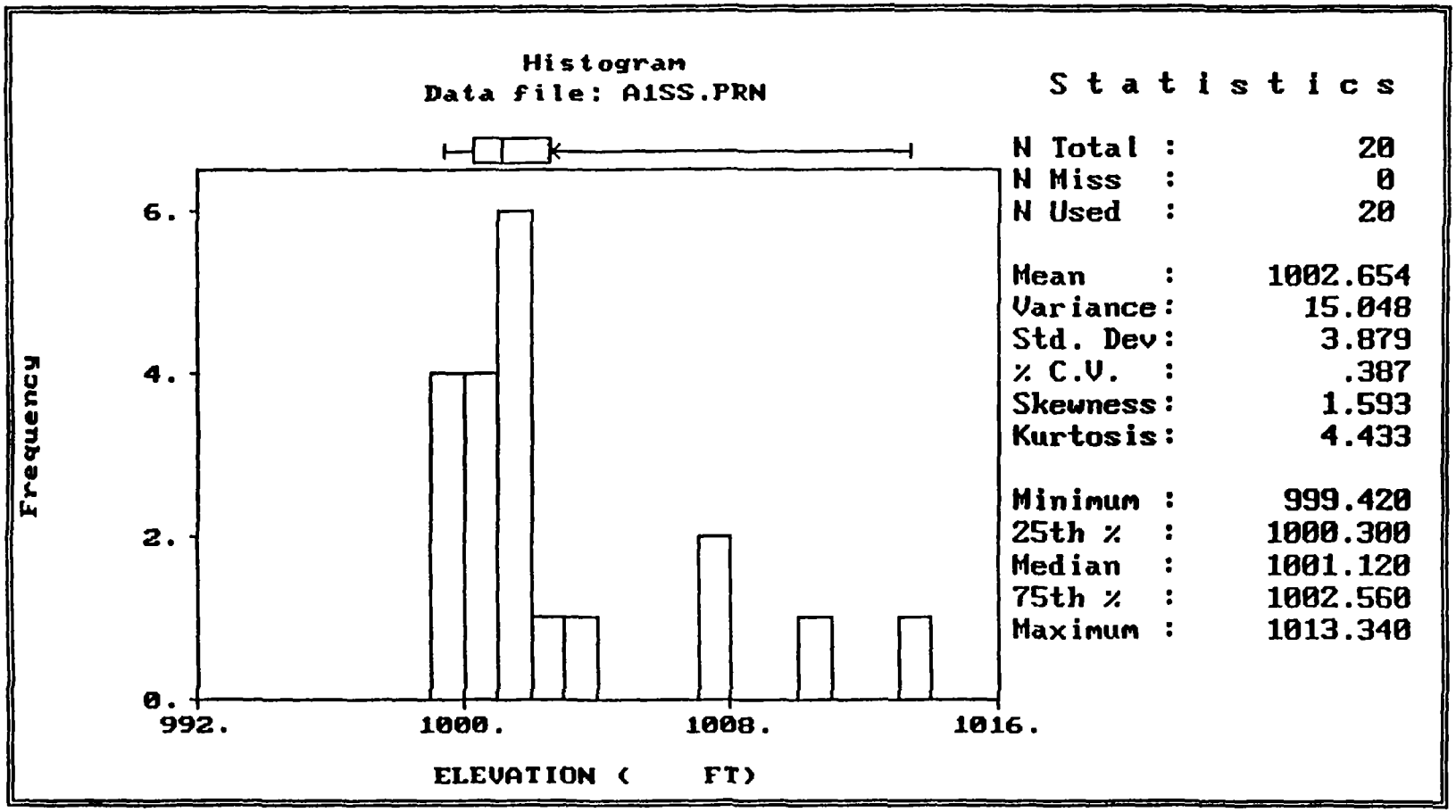

Normal Probability Plot for LN(D30)
Data file: areal-ss.txt
LN(D30)
6.
4.
2.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 2.003
Variance : 1.607
Std. Dev : 1.267
% C.V. : 63.278
Skewness : .761
Kurtosis : 2.598
Minimum : .531
25th % : .916
Median : 1.760
75th % : 3.135
Maximum : 5.011

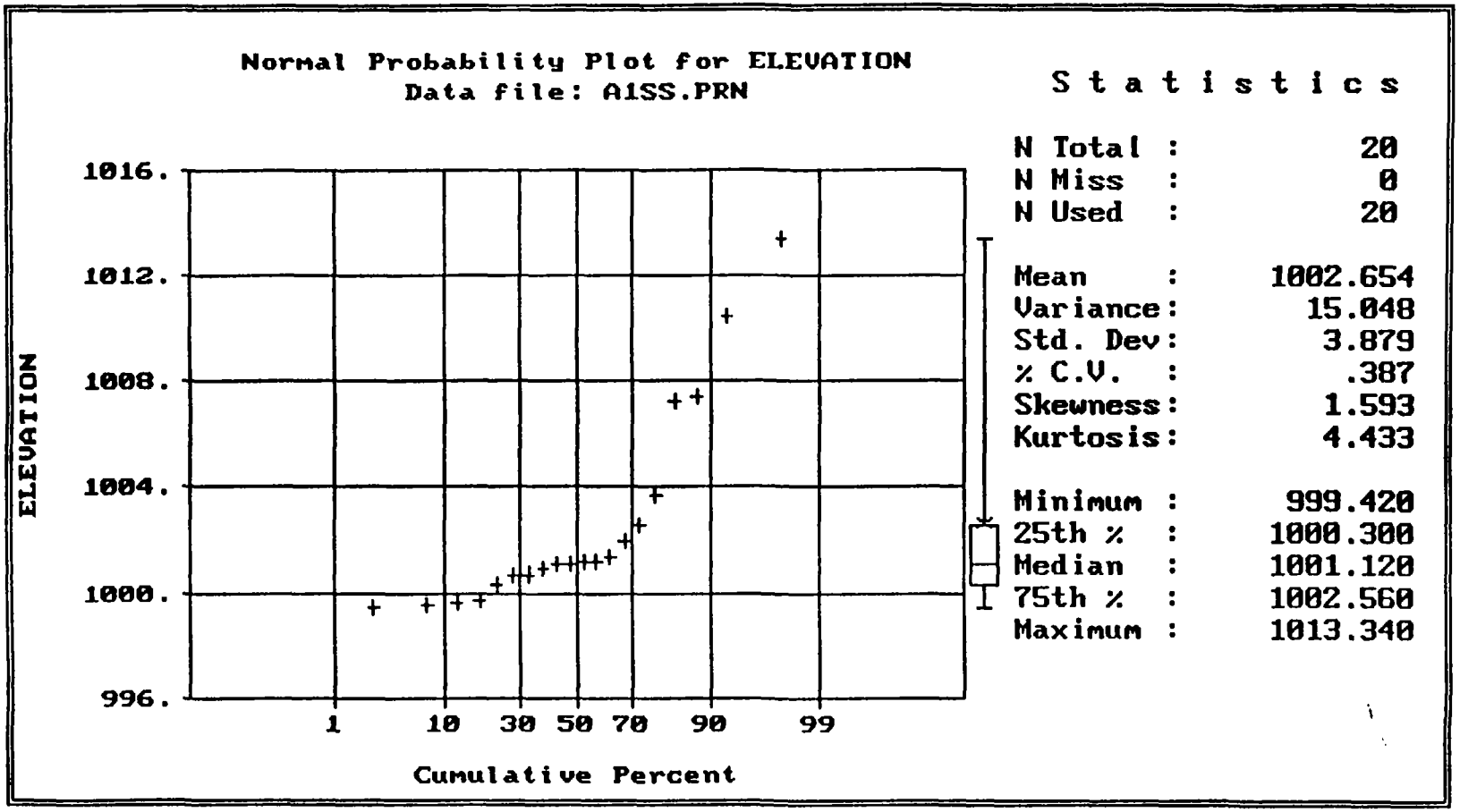

Histogram
Data file: area1-ss.txt
Frequency
8.
6.
4.
2.
0.
0.
100.
200.
300.
400.
D60
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 75.050
Variance: 7659.839
Std. Dev: 87.521
% C.V. : 116.616
Skewness: 1.163
Kurtosis: 2.731
Minimum : 9.000
25th % : 15.000
Median : 29.000
75th % : 120.000
Maximum : 250.000

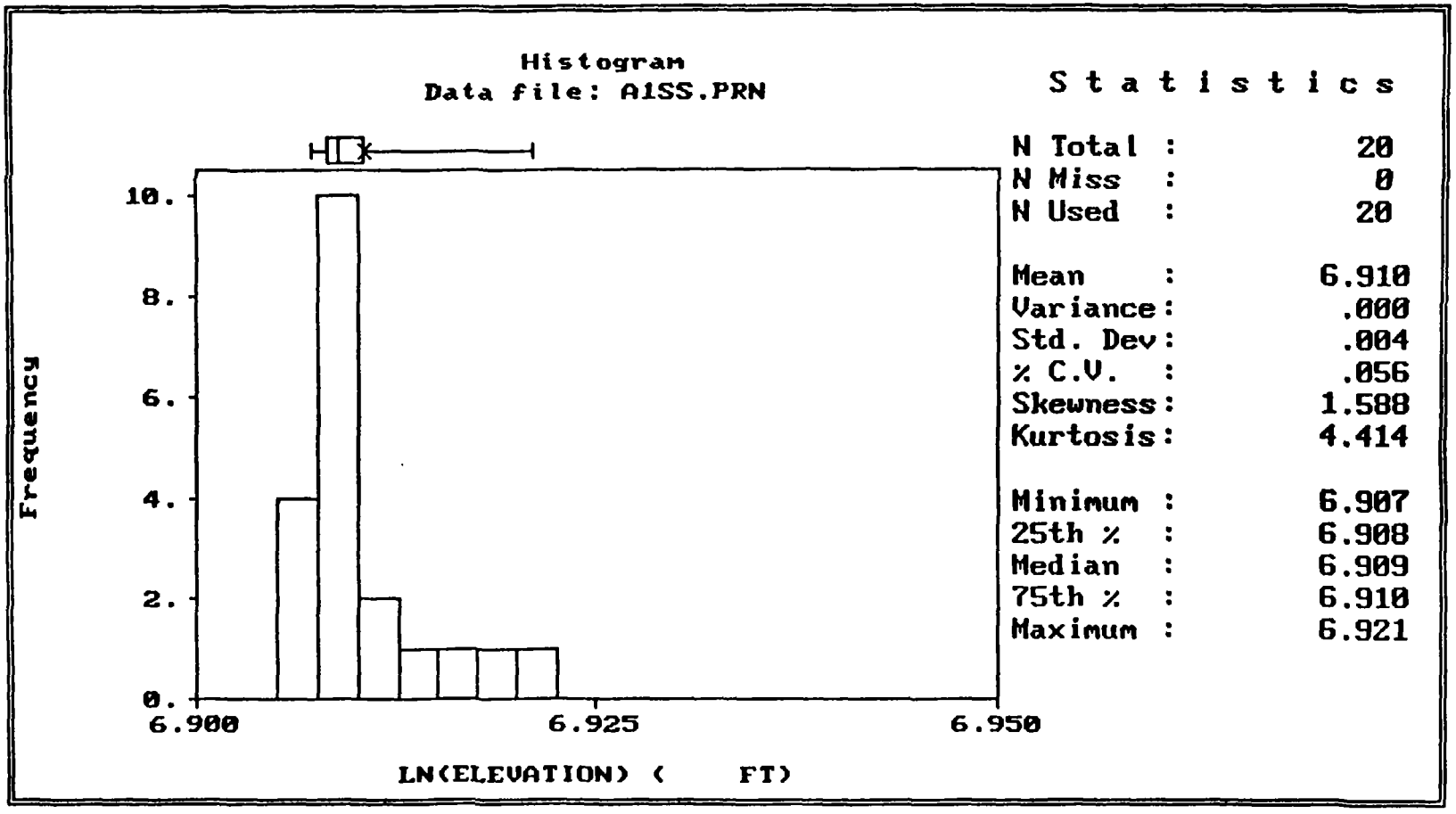

Normal Probability Plot for D60
Data file: area1-ss.txt
320.
240.
160.
80.
0.
D60
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 75.050
Variance : 7659.839
Std. Dev : 87.521
% C.V. : 116.616
Skewness : 1.163
Kurtosis : 2.731
Minimum : 9.000
25th % : 15.000
Median : 29.000
75th % : 120.000
Maximum : 250.000

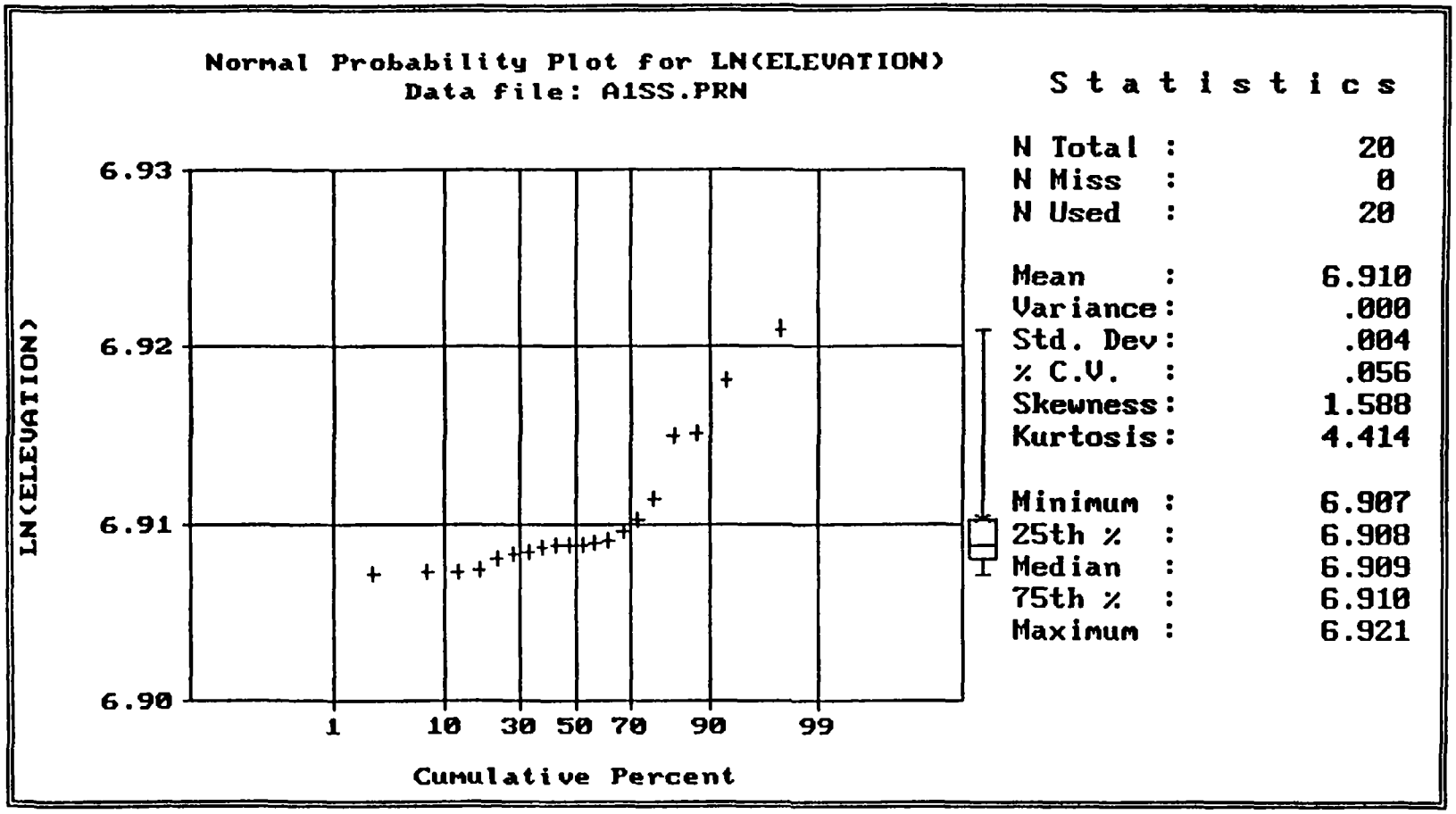

Histogram
Data file: areal-ss.txt
Frequency
4.
3.
2.
1.
0.
1.
2.
3.
4.
5.
6.
LN(D60)
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 3.675
Variance: 1.328
Std. Dev: 1.153
% C.V. : 31.364
Skewness: .480
Kurtosis: 1.833
Minimum : 2.197
25th % : 2.708
Median : 3.367
75th % : 4.787
Maximum : 5.521

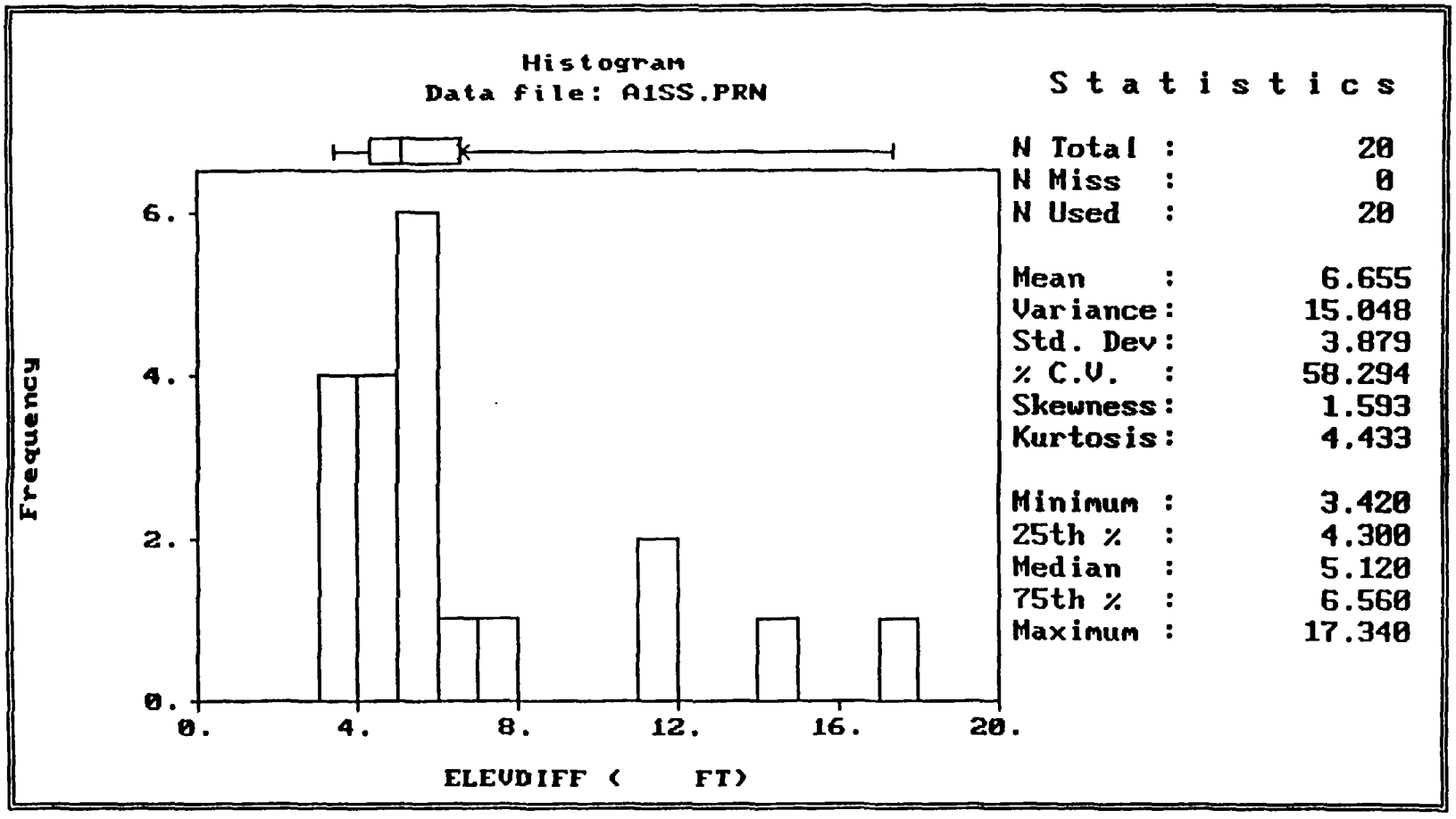

Normal Probability Plot for LN(D60)
Data file: areal-ss.txt
LN(D60)
6.
5.
4.
3.
2.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 3.675
Variance: 1.328
Std. Dev: 1.153
% C.V. : 31.364
Skewness: .480
Kurtosis: 1.833
Minimum : 2.197
25th % : 2.708
Median : 3.367
75th % : 4.787
Maximum : 5.521

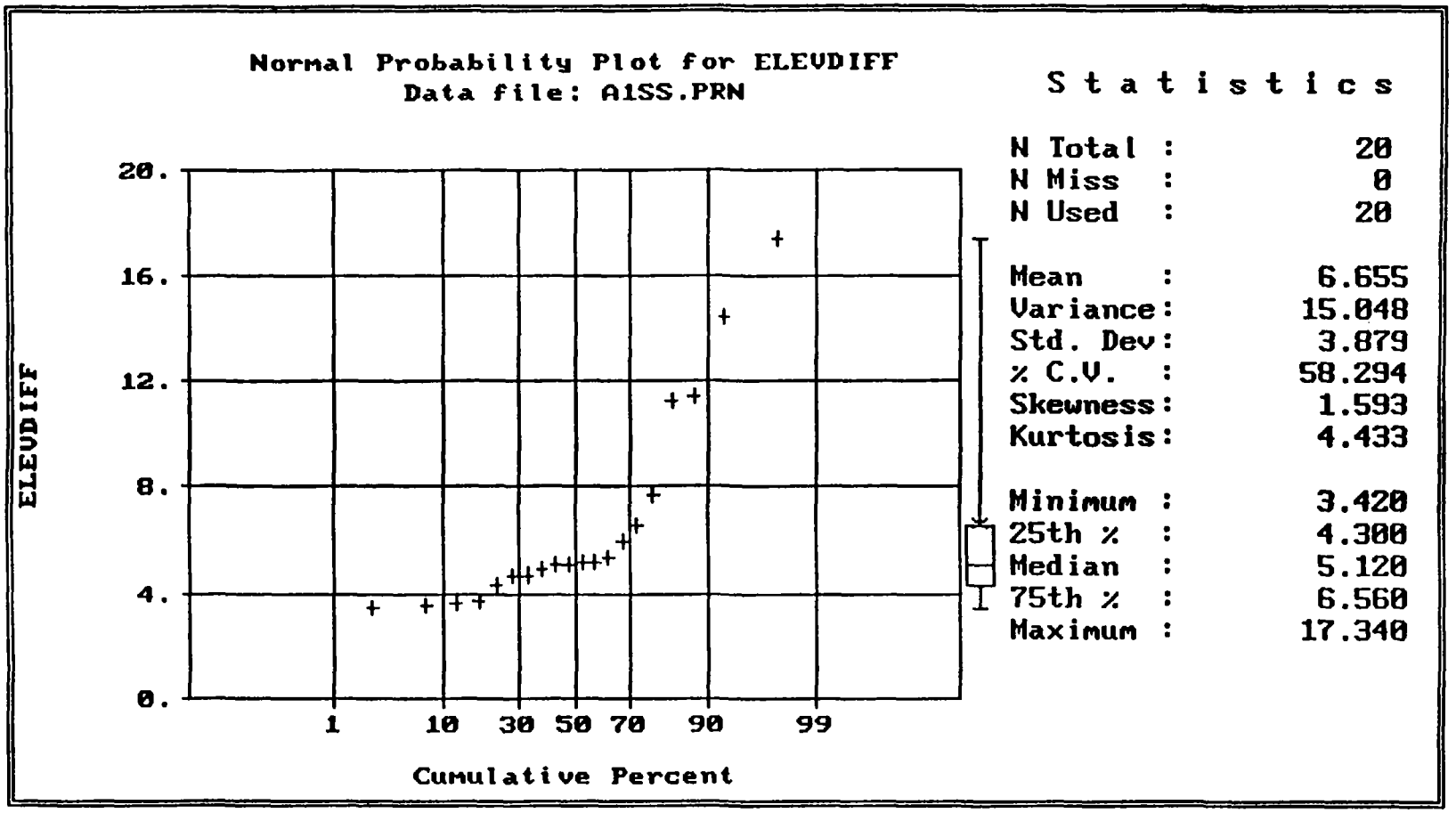

Histogram
Data file: A1SS.PRN
Frequency
6.
4.
2.
0.
992.
1000.
1008.
1016.
ELEVATION (FT)
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 1002.654
Variance: 15.048
Std. Dev: 3.879
% C.V. : .387
Skewness: 1.593
Kurtosis: 4.433
Minimum : 999.420
25th % : 1000.300
Median : 1001.120
75th % : 1002.560
Maximum : 1013.340

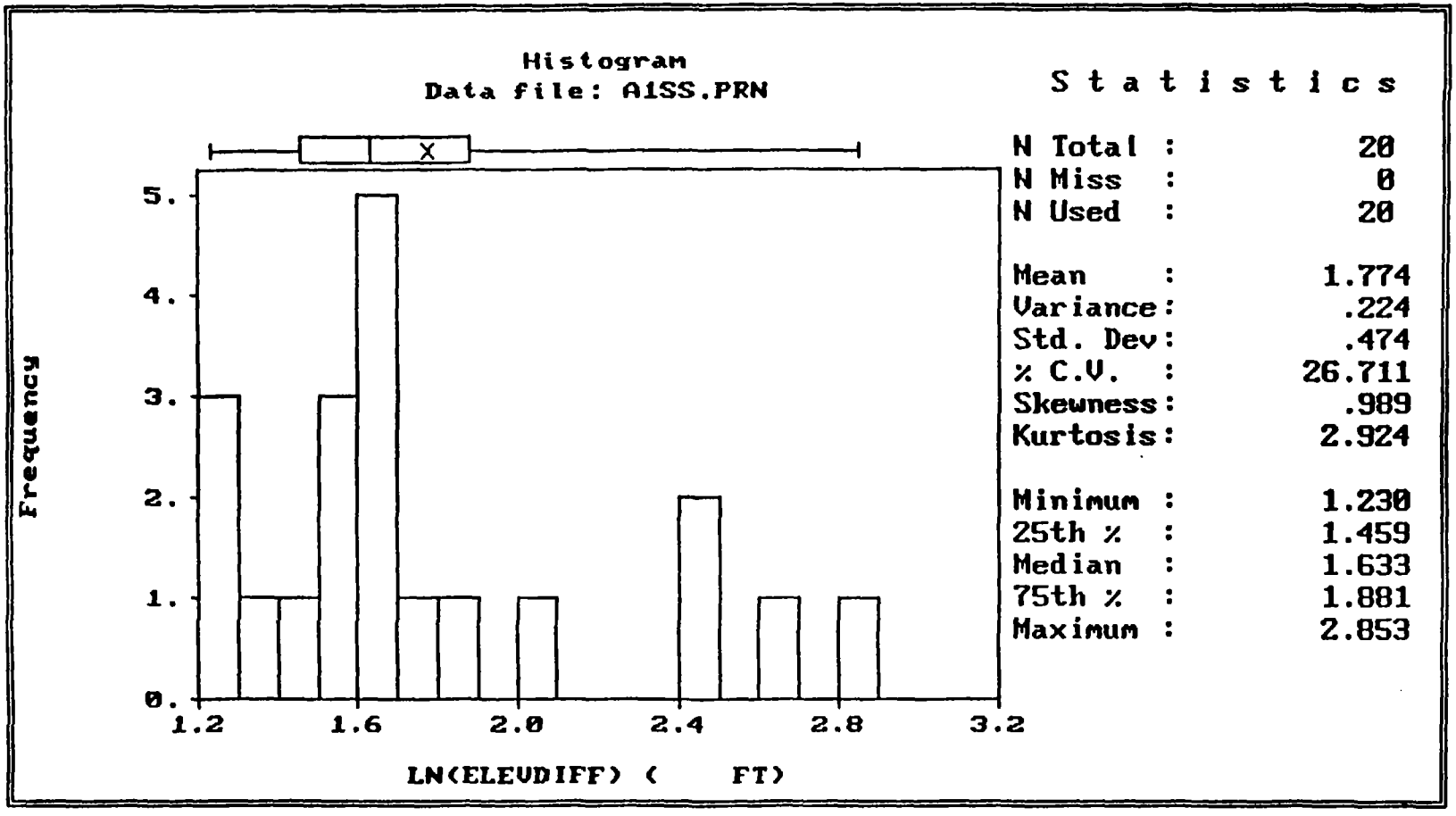

Normal Probability Plot for ELEVATION
Data file: A1SS.PRN
ELEVATION
1016.
1012.
1008.
1004.
1000.
996.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 1002.654
Variance: 15.048
Std. Dev: 3.879
% C.V. : .387
Skewness: 1.593
Kurtosis: 4.433
Minimum : 999.420
25th % : 1000.300
Median : 1001.120
75th % : 1002.560
Maximum : 1013.340

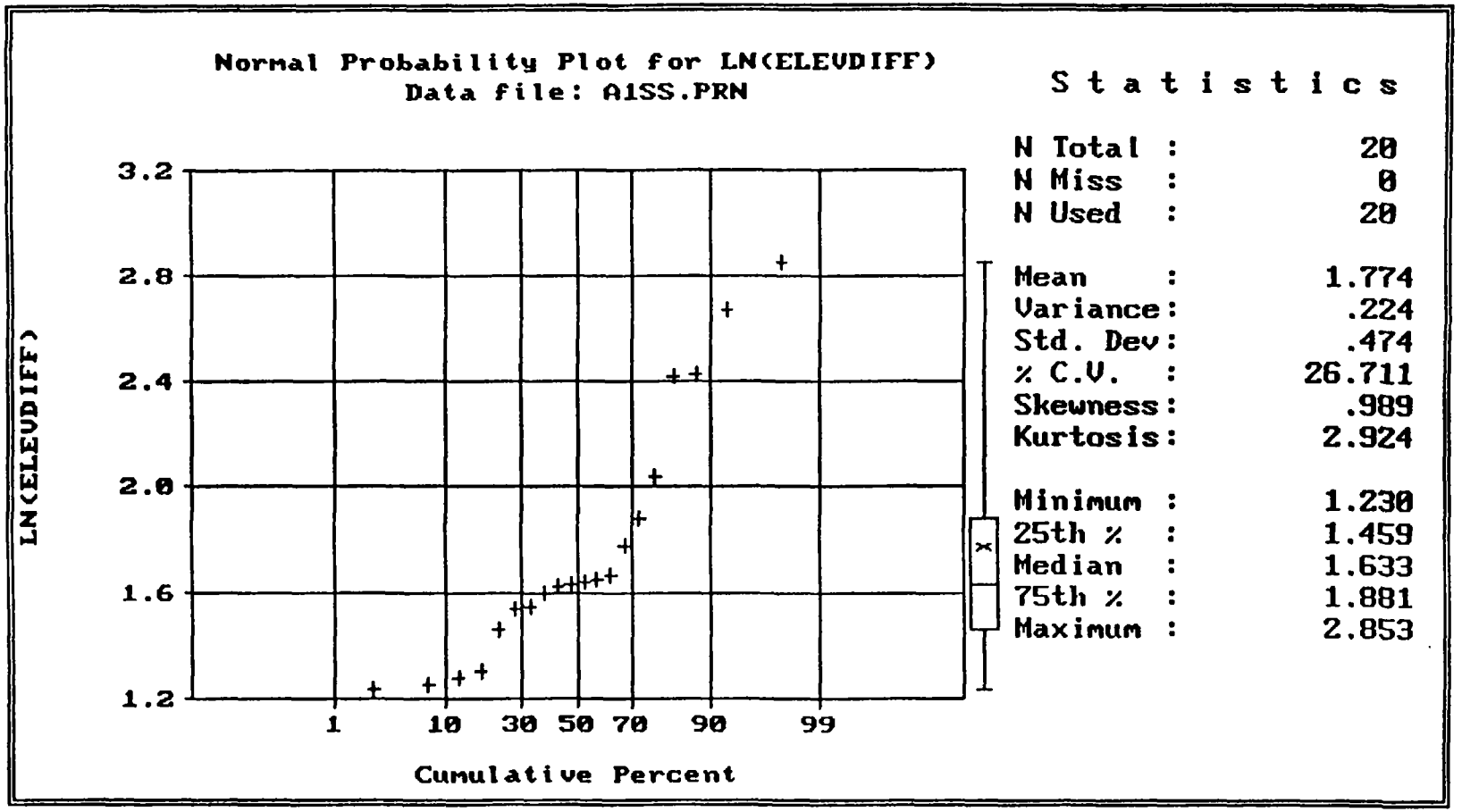

Histogram
Data file: AISS.PRN
Frequency
10.
8.
6.
4.
2.
0.
6.900
6.925
6.950
LN(ELEVATION) (FT)
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 6.910
Variance: .000
Std. Dev: .004
% C.V. : .056
Skewness: 1.588
Kurtosis: 4.414
Minimum : 6.907
25th % : 6.908
Median : 6.909
75th % : 6.910
Maximum : 6.921

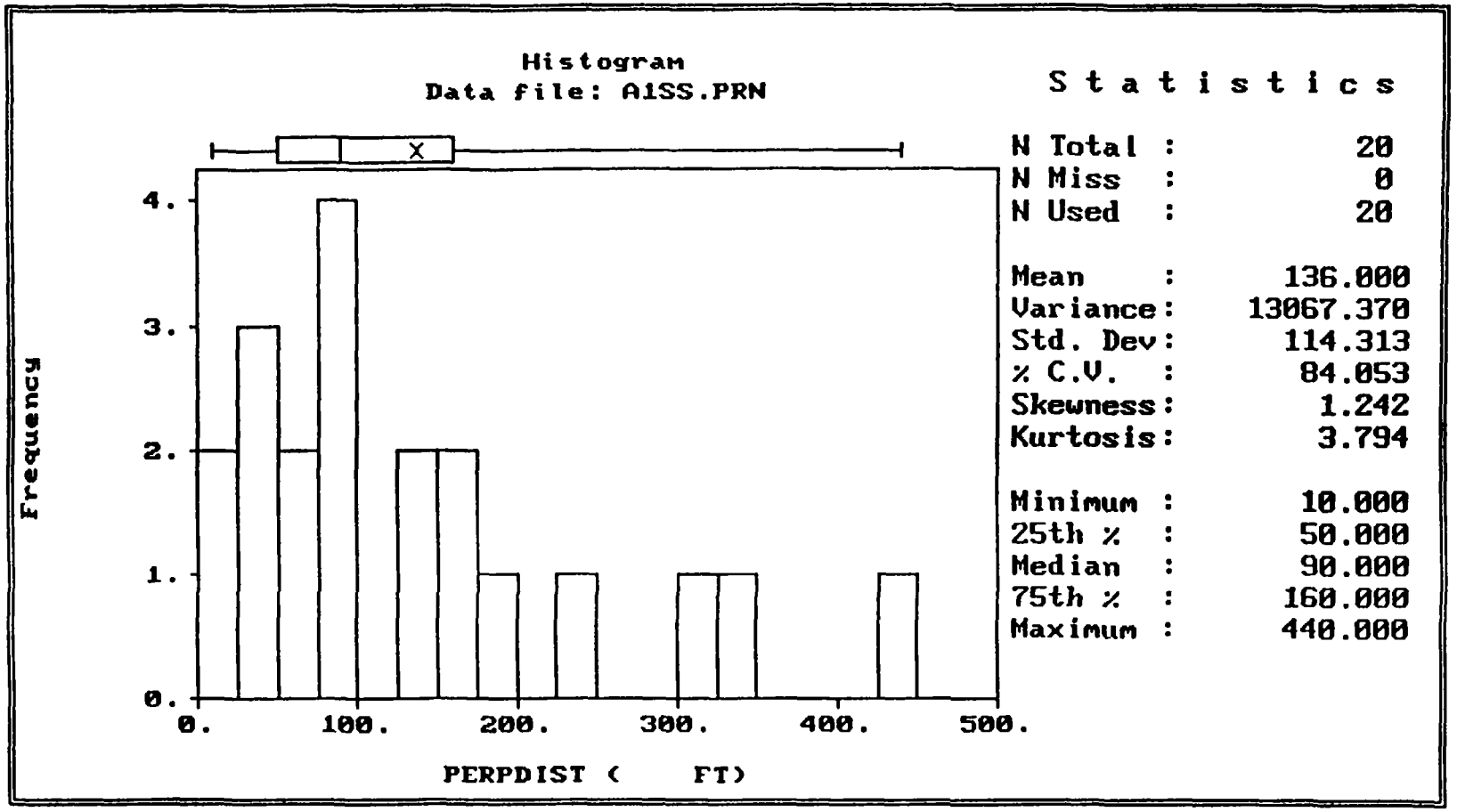

Normal Probability Plot for LN(ELEVATION)
Data file: A1SS.PRN
LN(ELEVATION)
6.93
6.92
6.91
6.90
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 6.910
Variance : .000
Std. Dev : .004
% C.V. : .056
Skewness : 1.588
Kurtosis : 4.414
Minimum : 6.907
25th % : 6.908
Median : 6.909
75th % : 6.910
Maximum : 6.921

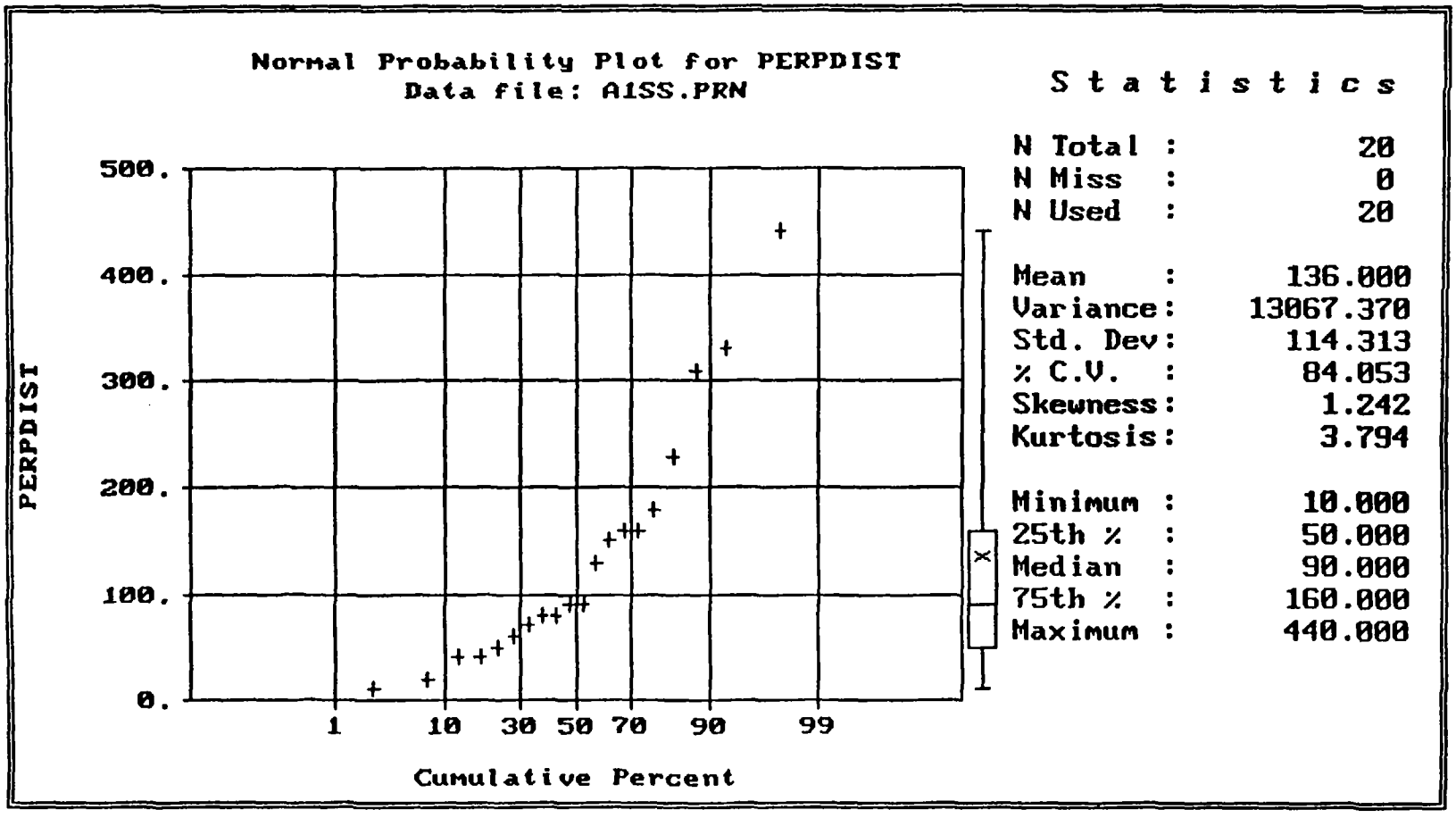

Histogram
Data file: A1SS.PRN
Frequency
6.
4.
2.
0.
0.
4.
8.
12.
16.
20.
ELEVDIFF (FT)
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 6.655
Variance: 15.048
Std. Dev: 3.879
% C.V. : 58.294
Skewness: 1.593
Kurtosis: 4.433
Minimum : 3.420
25th % : 4.300
Median : 5.120
75th % : 6.560
Maximum : 17.340

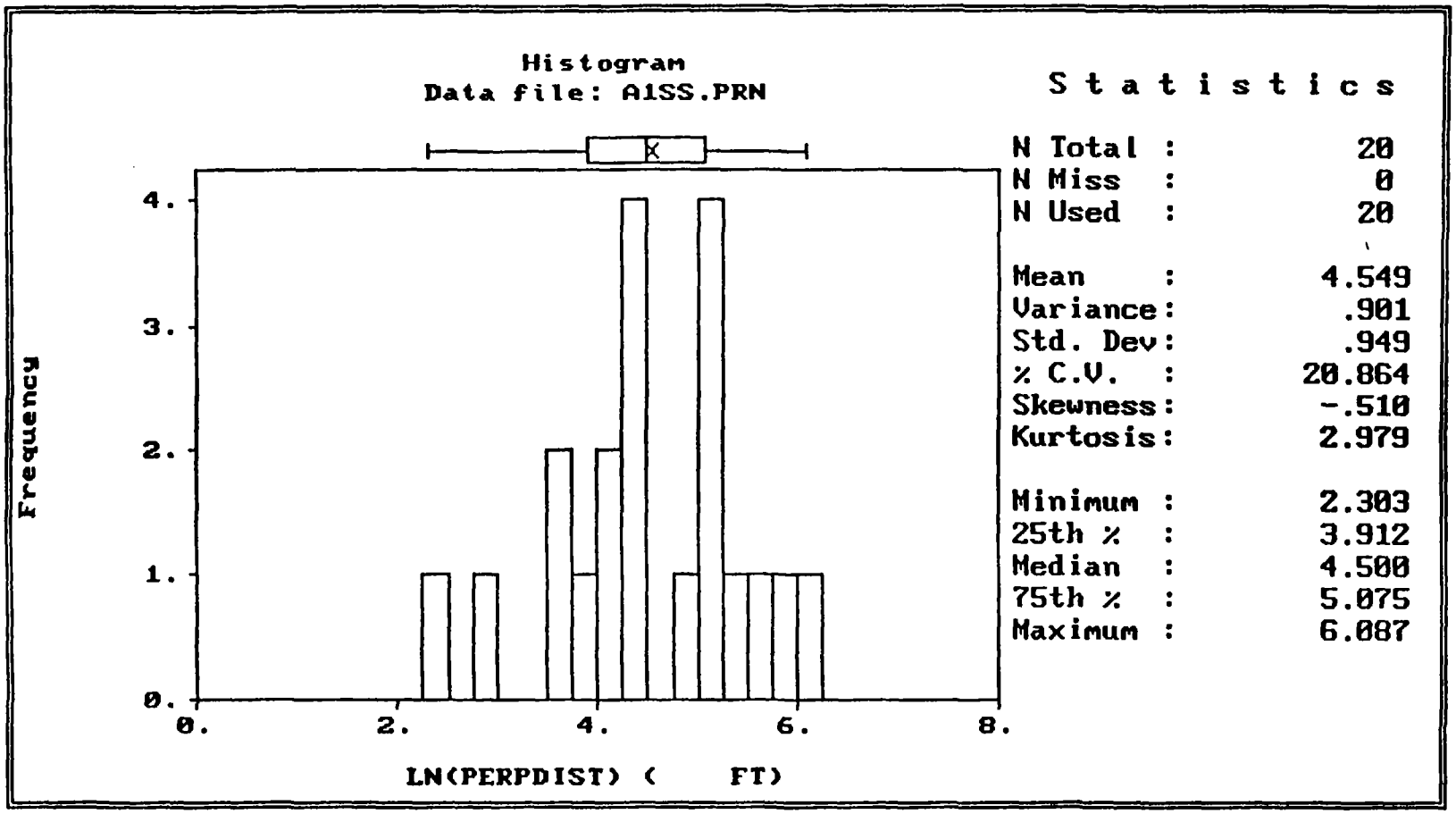

Normal Probability Plot for ELEVDIFF
Data file: A1SS.PRN
ELEVDIFF
20.
16.
12.
8.
4.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 6.655
Variance: 15.048
Std. Dev: 3.879
% C.V. : 58.294
Skewness: 1.593
Kurtosis: 4.433
Minimum : 3.420
25th % : 4.300
Median : 5.120
75th % : 6.560
Maximum : 17.340

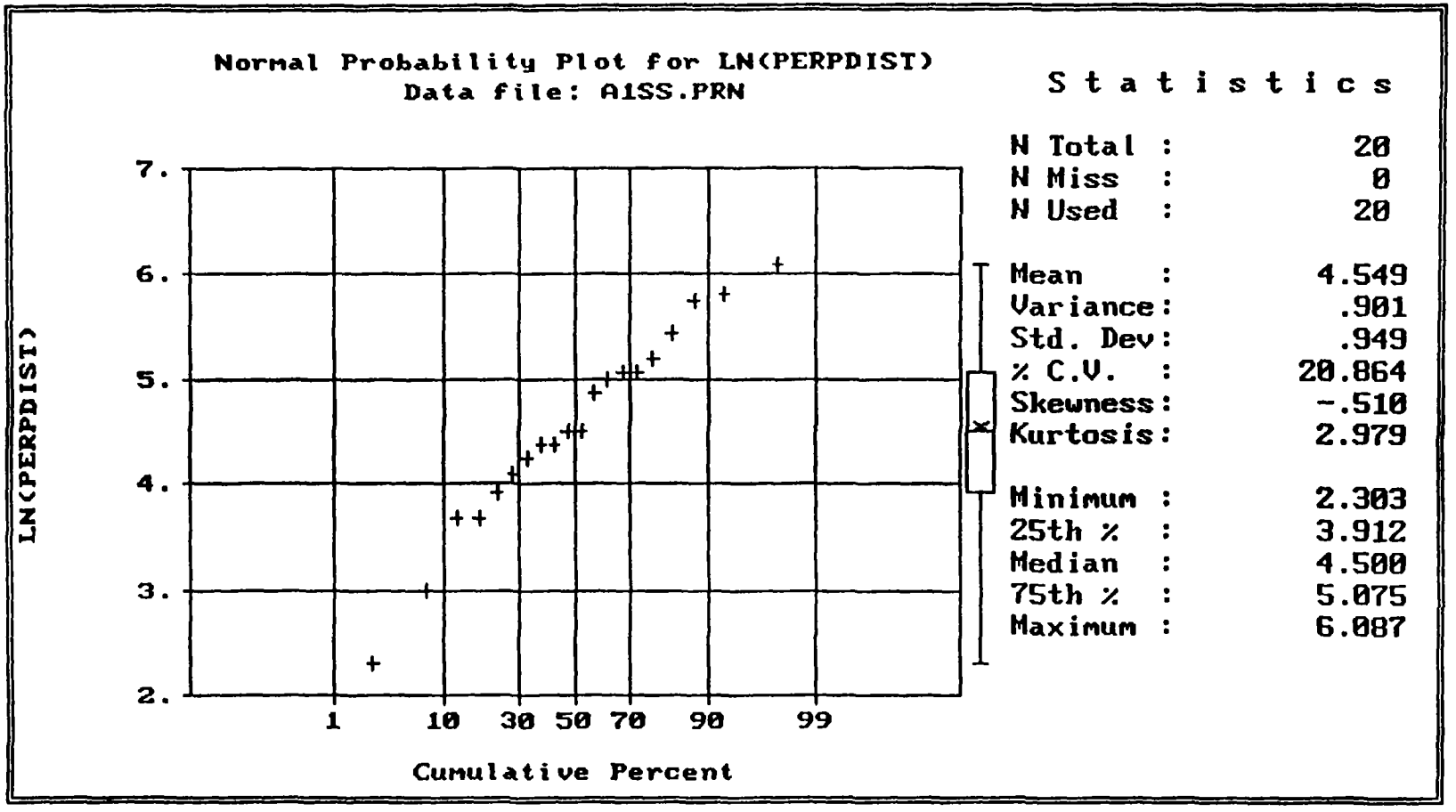

Histogram
Data file: A1SS.PRN
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 1.774
Variance: .224
Std. Dev: .474
% C.V. : 26.711
Skewness: .989
Kurtosis: 2.924
Minimum : 1.230
25th % : 1.459
Median : 1.633
75th % : 1.881
Maximum : 2.853
Frequency
0.
1.
2.
3.
4.
5.
1.2
1.6
2.0
2.4
2.8
3.2
LN(ELEVDIFF) (FT)


Normal Probability Plot for LN(ELEVDIFF)
Data file: A1SS.PRN
LN(ELEVDIFF)
3.2
2.8
2.4
2.0
1.6
1.2
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 1.774
Variance: .224
Std. Dev: .474
% C.V. : 26.711
Skewness: .989
Kurtosis: 2.924
Minimum : 1.230
25th % : 1.459
Median : 1.633
75th % : 1.881
Maximum : 2.853

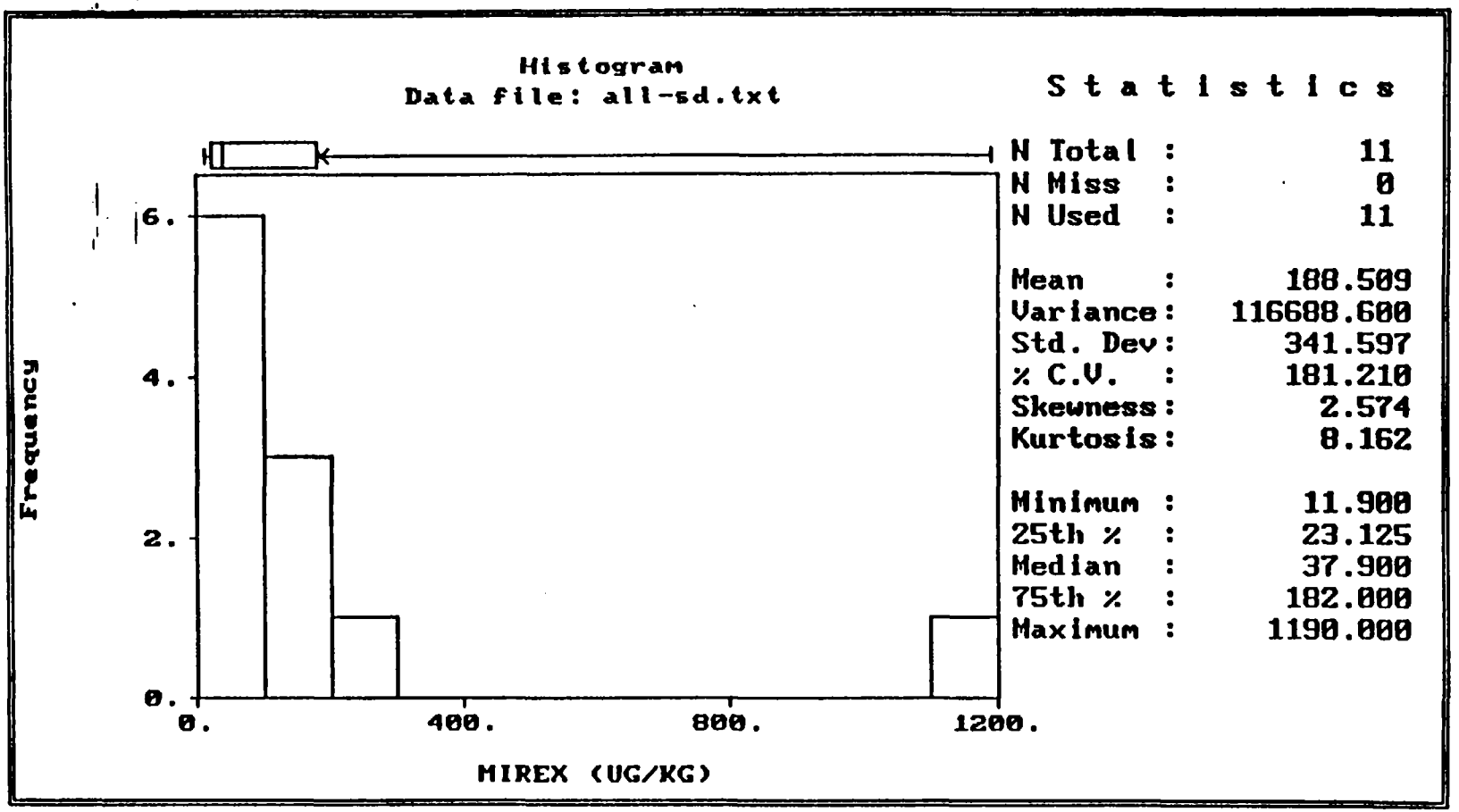

Histogram
Data file: A1SS.PRN
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 136.000
Variance: 13067.370
Std. Dev: 114.313
% C.V. : 84.053
Skewness: 1.242
Kurtosis: 3.794
Minimum : 10.000
25th % : 50.000
Median : 90.000
75th % : 160.000
Maximum : 440.000
Frequency
4.
3.
2.
1.
0.
0.
100.
200.
300.
400.
500.
PERPDIST (FT)

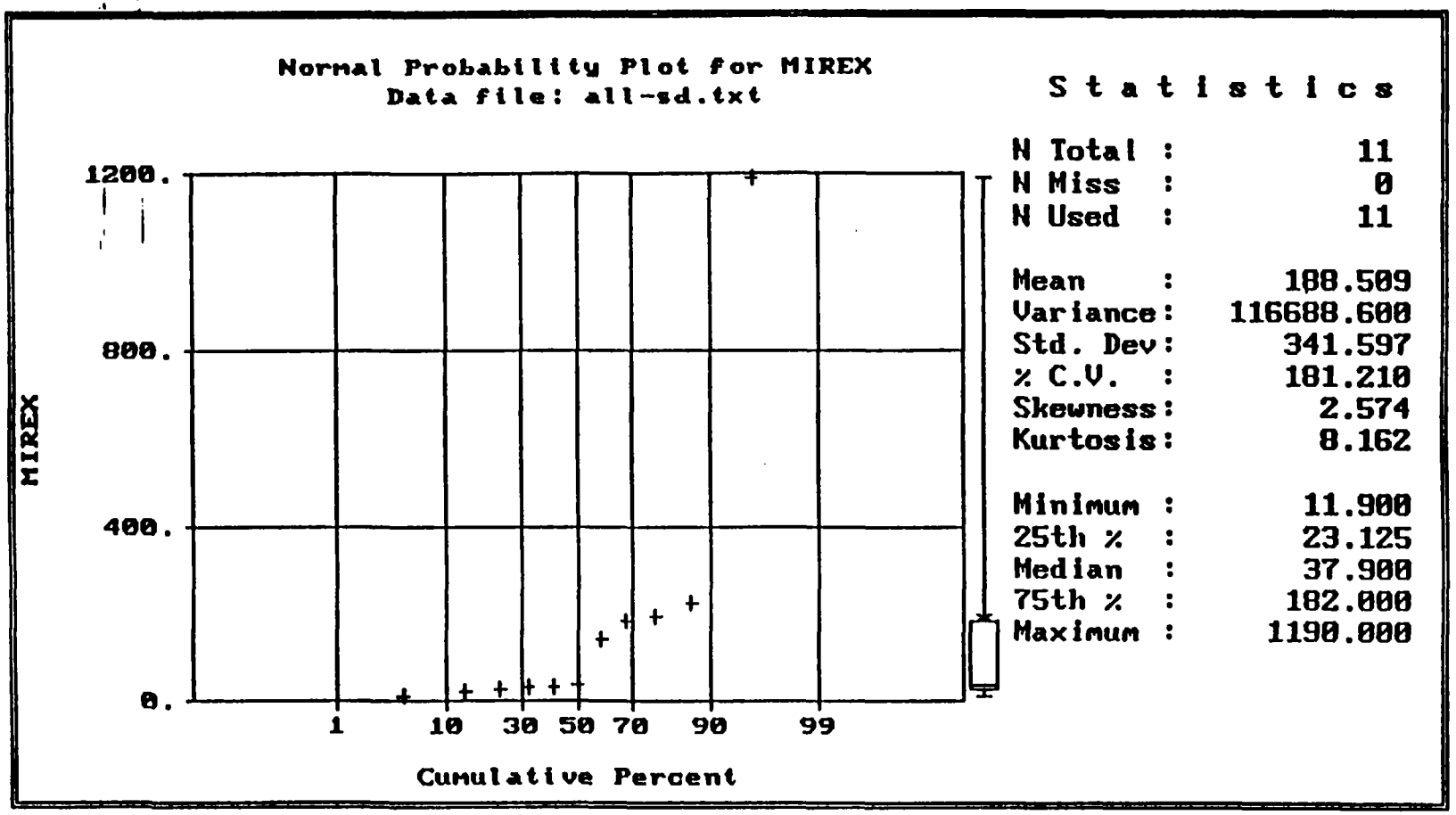

Normal Probability Plot for PERPDIST
Data file: A1SS.PRN
PERPDIST
500.
400.
300.
200.
100.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 136.000
Variance: 13067.370
Std. Dev: 114.313
% C.V. : 84.053
Skewness: 1.242
Kurtosis: 3.794
Minimum : 10.000
25th % : 50.000
Median : 90.000
75th % : 160.000
Maximum : 440.000

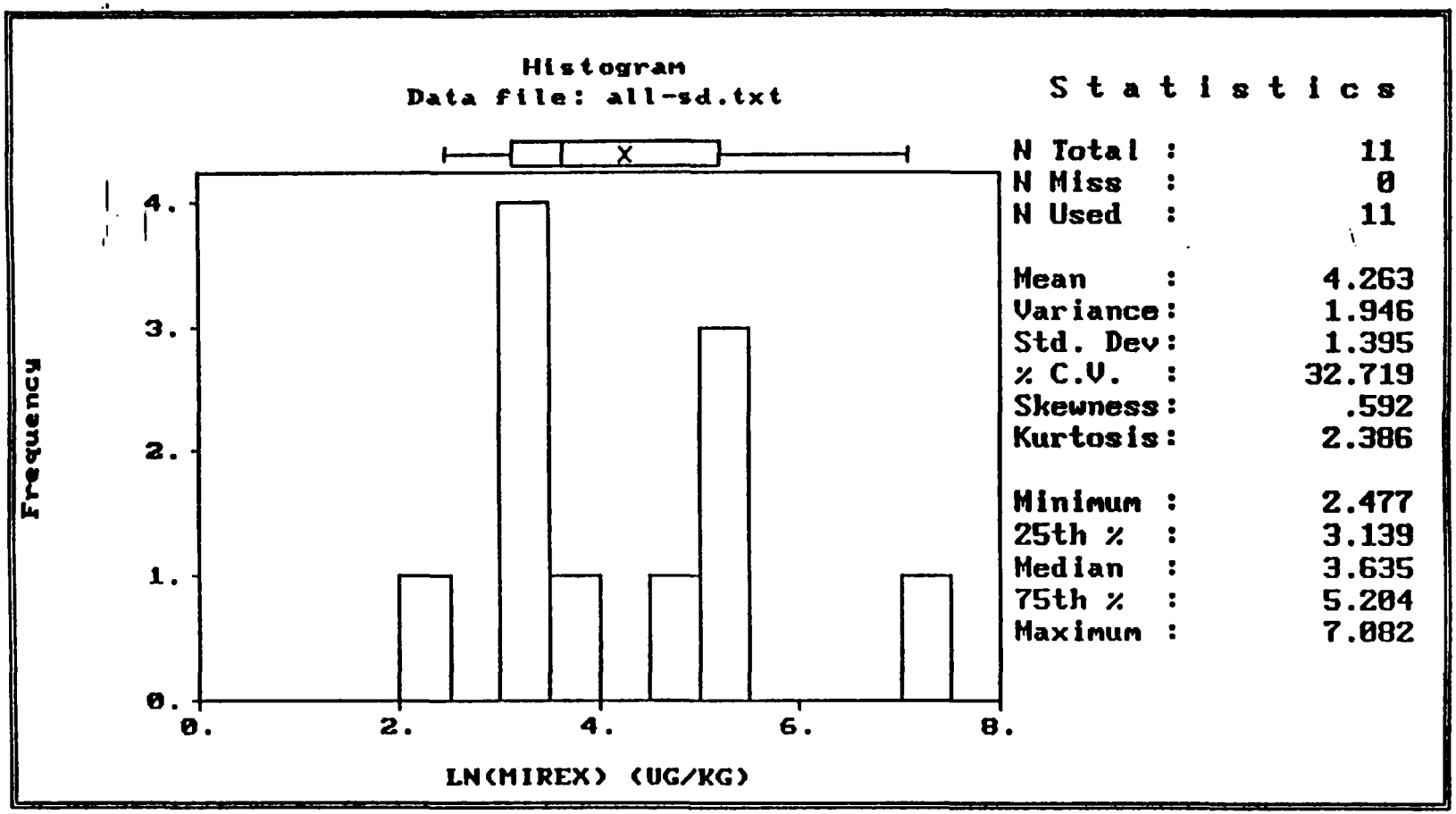

Histogram
Data file: A1SS.PRN
Frequency
4.
3.
2.
1.
0.
0.
2.
4.
6.
8.
LN(PERPDIST) (FT)
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 4.549
Variance: .901
Std. Dev: .949
% C.V. : 20.864
Skewness: -.510
Kurtosis: 2.979
Minimum : 2.303
25th % : 3.912
Median : 4.500
75th % : 5.075
Maximum : 6.087

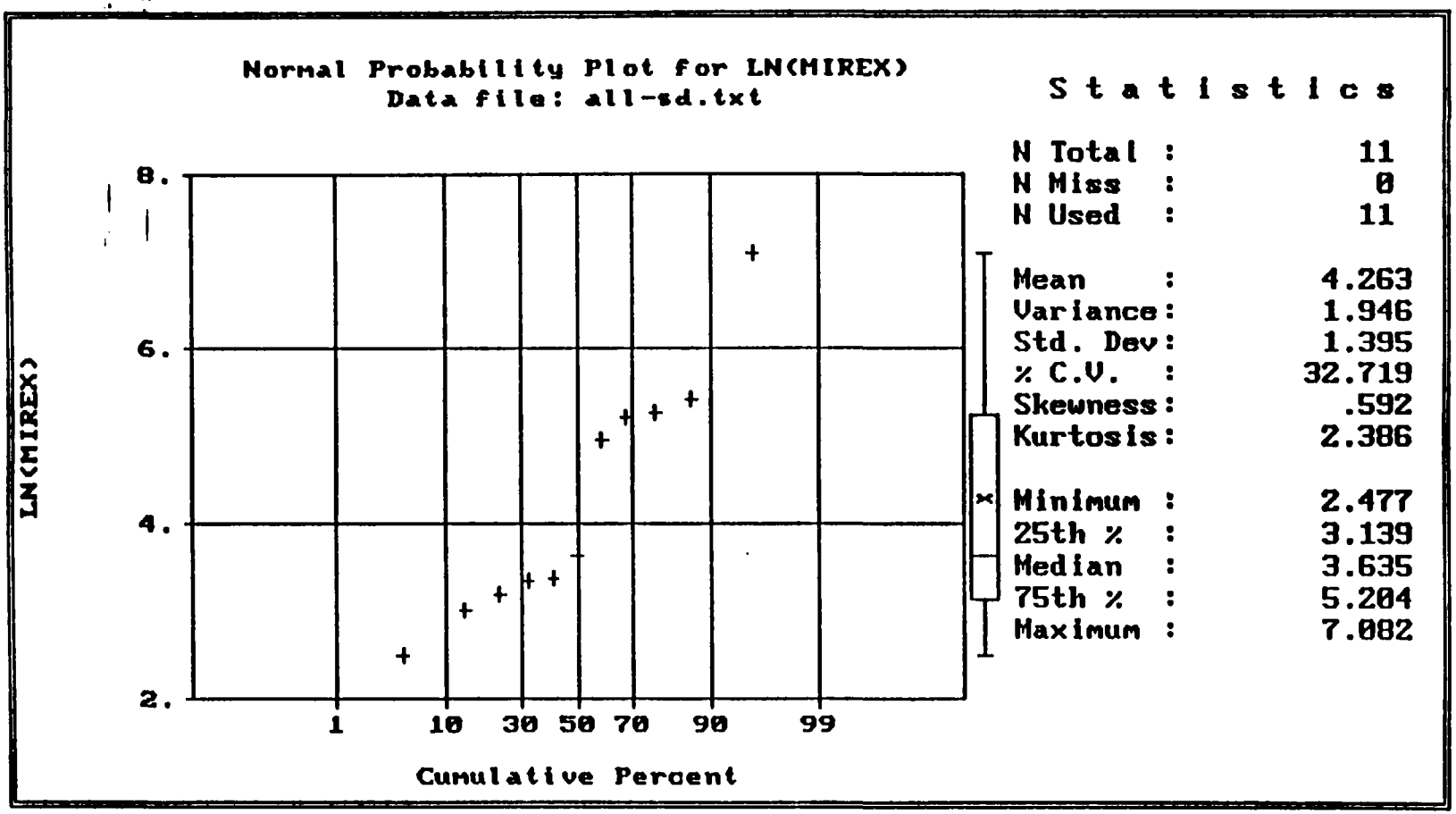

Normal Probability Plot for LN(PERPDIST)
Data file: A1SS.PRN
LN(PERPDIST)
7.
6.
5.
4.
3.
2.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 4.549
Variance: .901
Std. Dev: .949
% C.V. : 20.864
Skewness: -.510
Kurtosis: 2.979
Minimum : 2.303
25th % : 3.912
Median : 4.500
75th % : 5.075
Maximum : 6.087

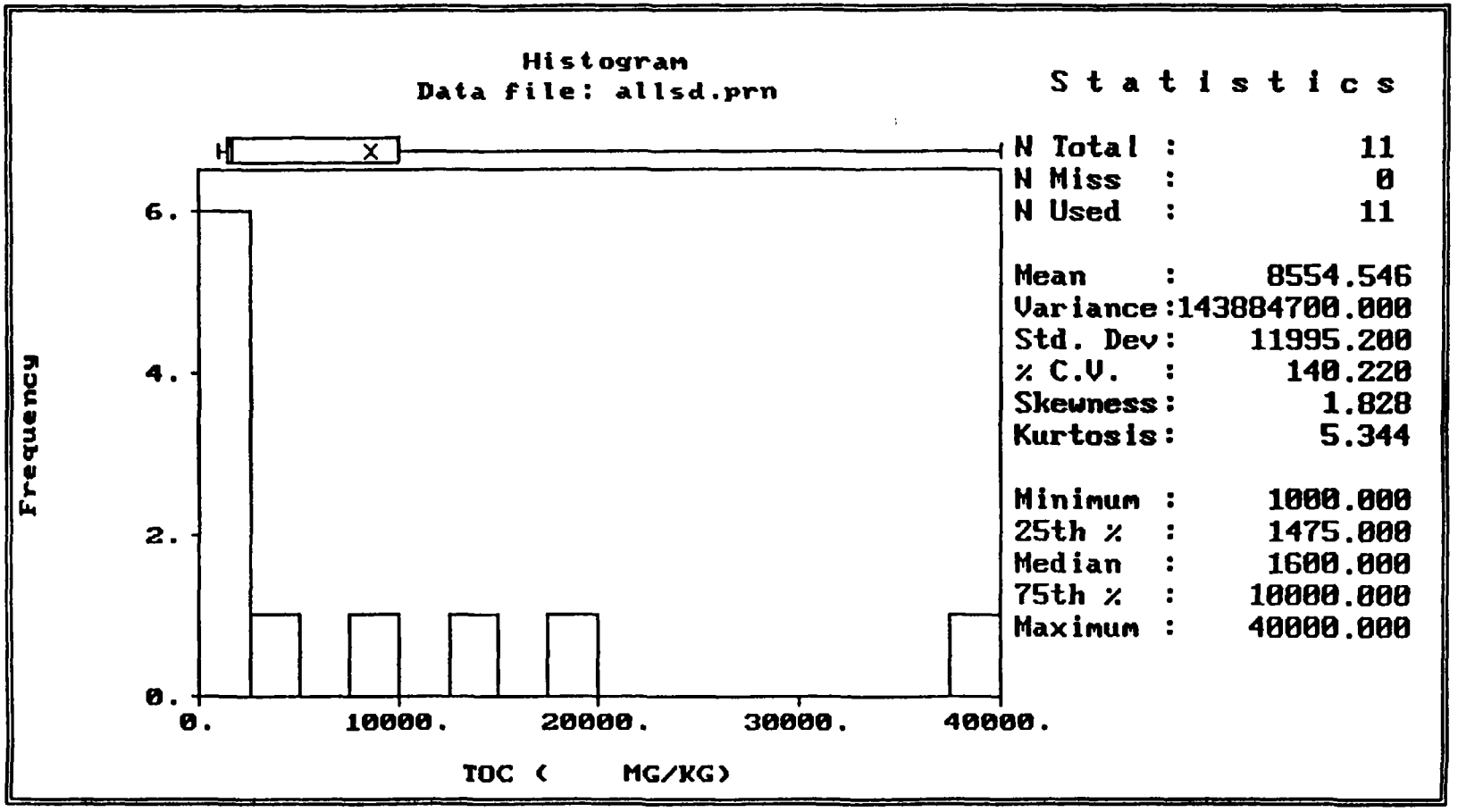
SEDIMENT

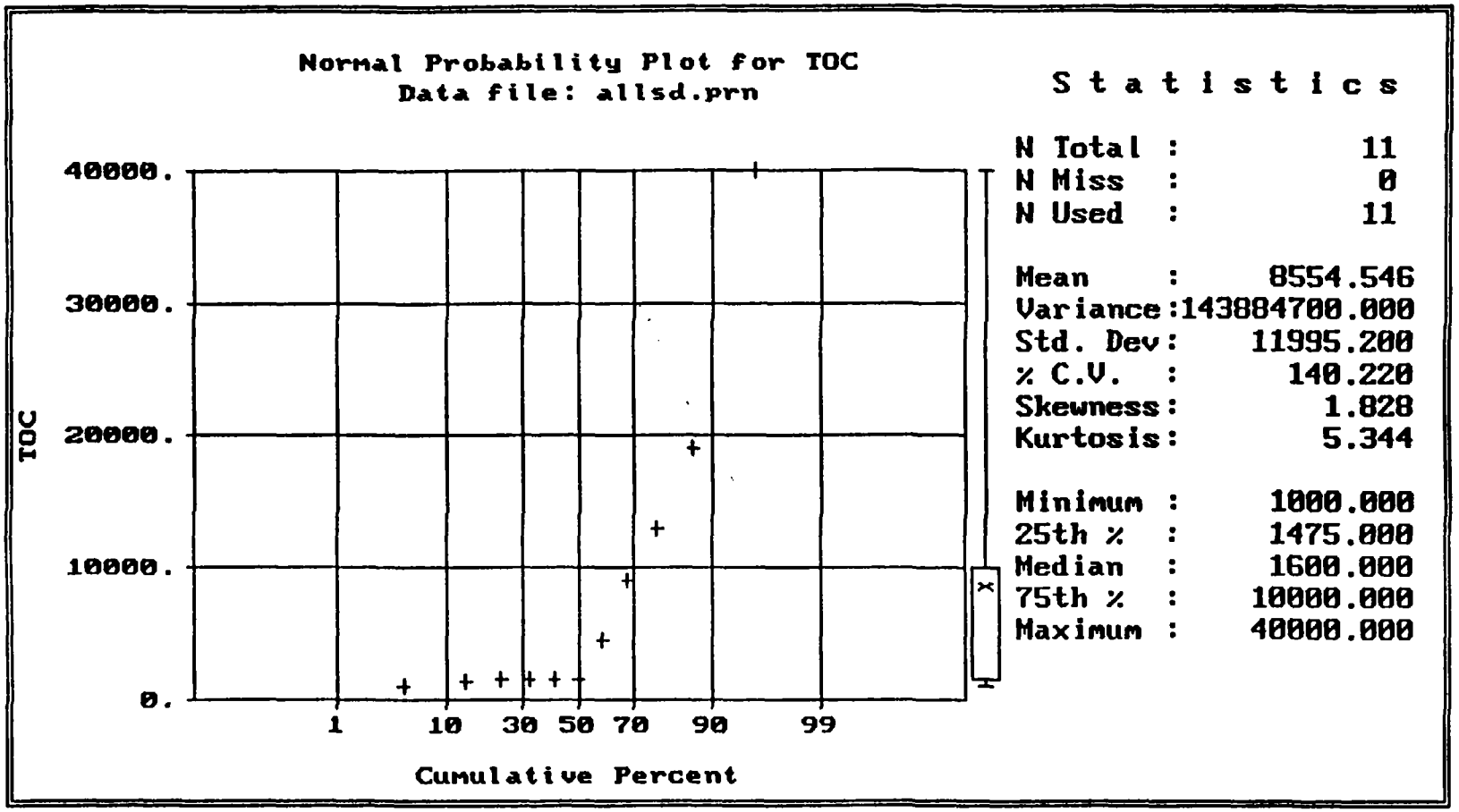

Histogram
Data file: all-sd.txt
Statistics
N Total : 11
N Miss : 0
N Used : 11
Mean : 188.509
Variance : 116688.600
Std. Dev : 341.597
% C.V. : 181.210
Skewness : 2.574
Kurtosis : 8.162
Minimum : 11.900
25th % : 23.125
Median : 37.900
75th % : 182.000
Maximum : 1190.000
Frequency
6.
4.
2.
0.
0.
400.
800.
1200.
MIREX (UG/KG)

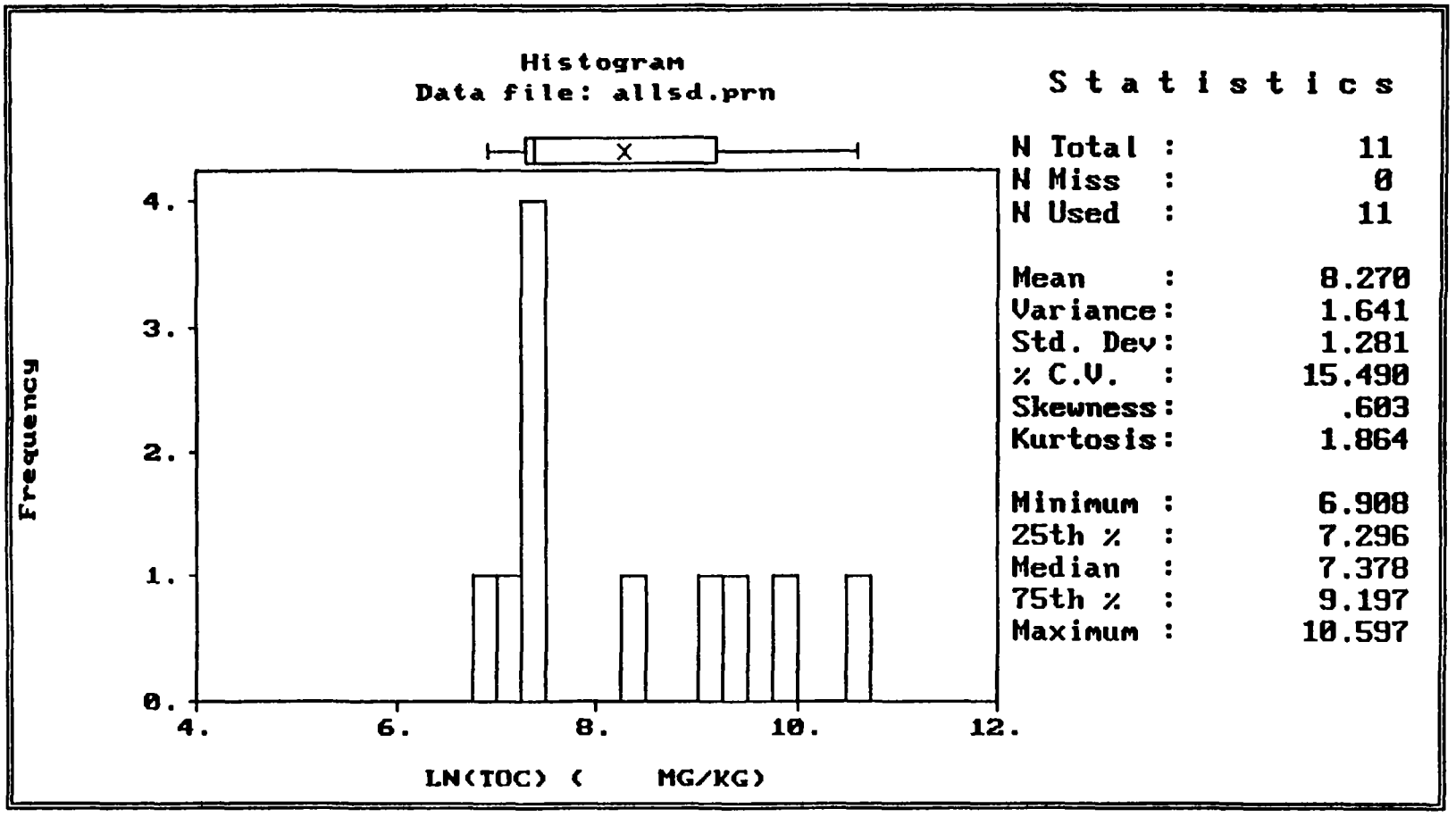

Normal Probability Plot for MIREX
Data file: all-sd.txt
MIREX
1200.
800.
400.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 11
N Miss : 0
N Used : 11
Mean : 188.509
Variance: 116688.600
Std. Dev: 341.597
% C.V. : 181.210
Skewness: 2.574
Kurtosis: 8.162
Minimum : 11.900
25th % : 23.125
Median : 37.900
75th % : 182.000
Maximum : 1190.000

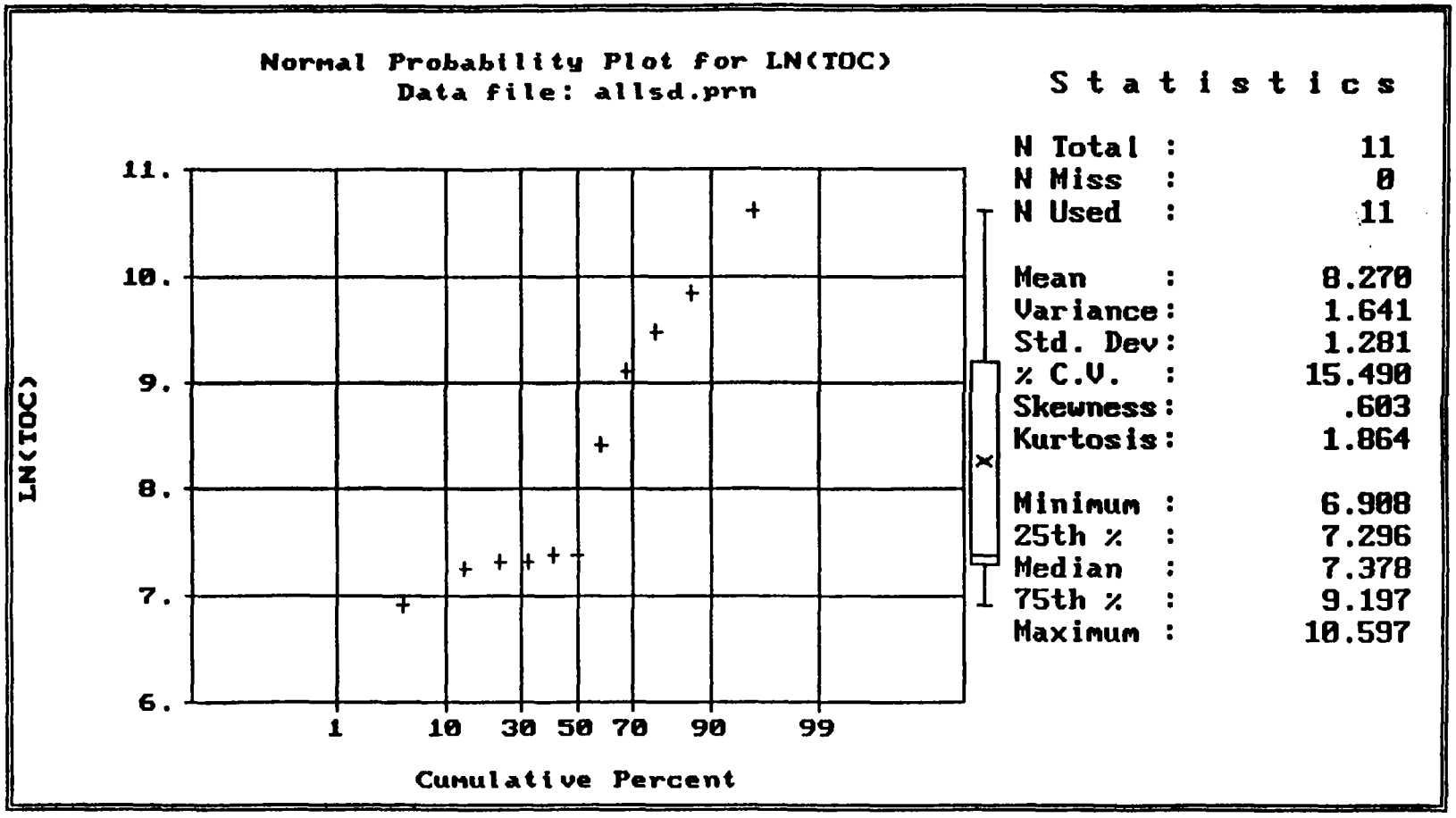

Histogram
Data file: all-sd.txt
Frequency
4.
3.
2.
1.
0.
0.
2.
4.
6.
8.
LN(MIREX) (UG/KG)
Statistics
N Total : 11
N Miss : 0
N Used : 11
Mean : 4.263
Variance: 1.946
Std. Dev: 1.395
% C.V. : 32.719
Skewness: .592
Kurtosis: 2.386
Minimum : 2.477
25th % : 3.139
Median : 3.635
75th % : 5.204
Maximum : 7.082

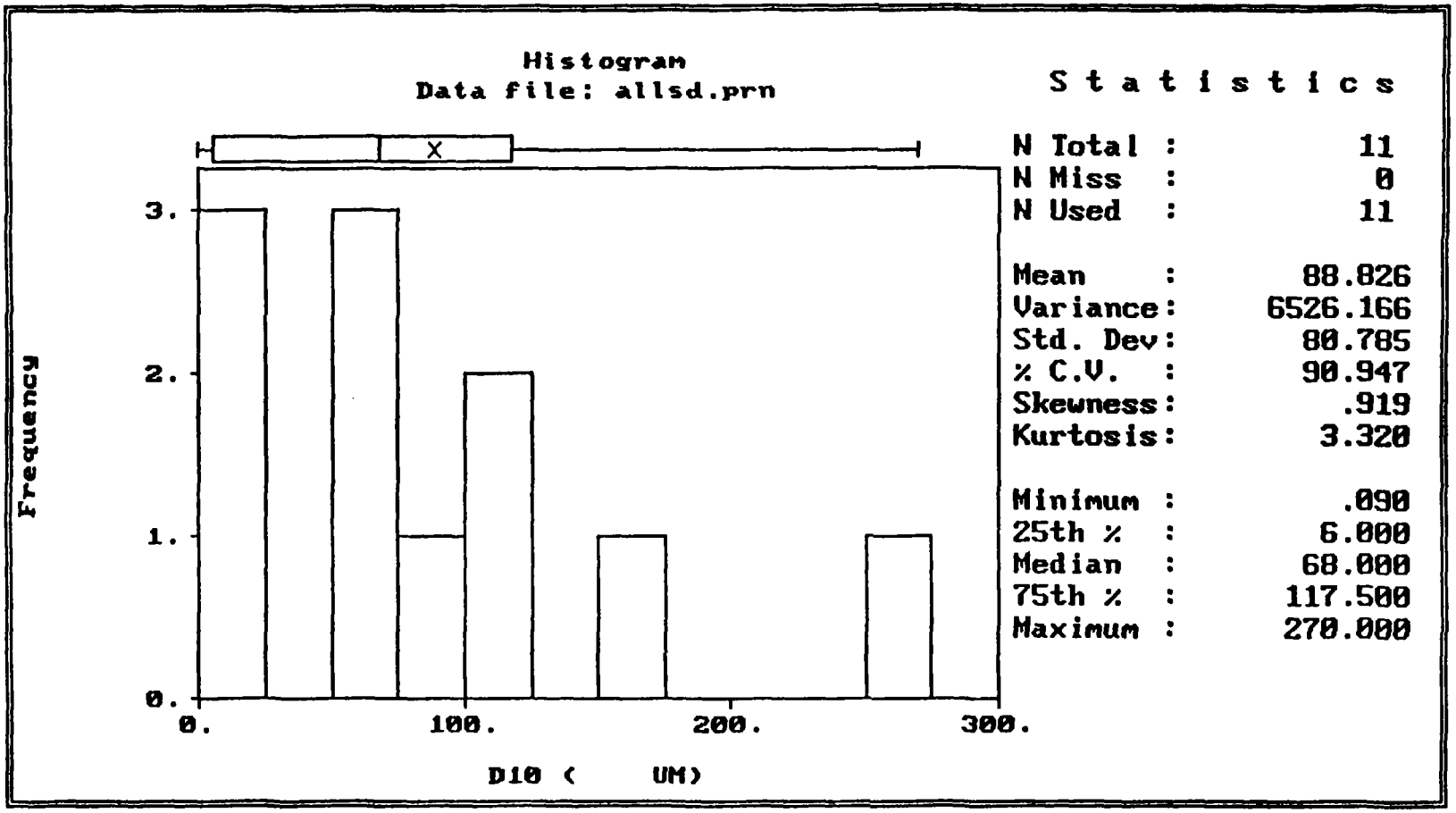

Normal Probability Plot for LN(MIREX)
Data file: all-sd.txt
LN(MIREX)
8.
6.
4.
2.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 11
N Miss : 0
N Used : 11
Mean : 4.263
Variance: 1.946
Std. Dev: 1.395
% C.V. : 32.719
Skewness: .592
Kurtosis: 2.386
Minimum : 2.477
25th % : 3.139
Median : 3.635
75th % : 5.204
Maximum : 7.082

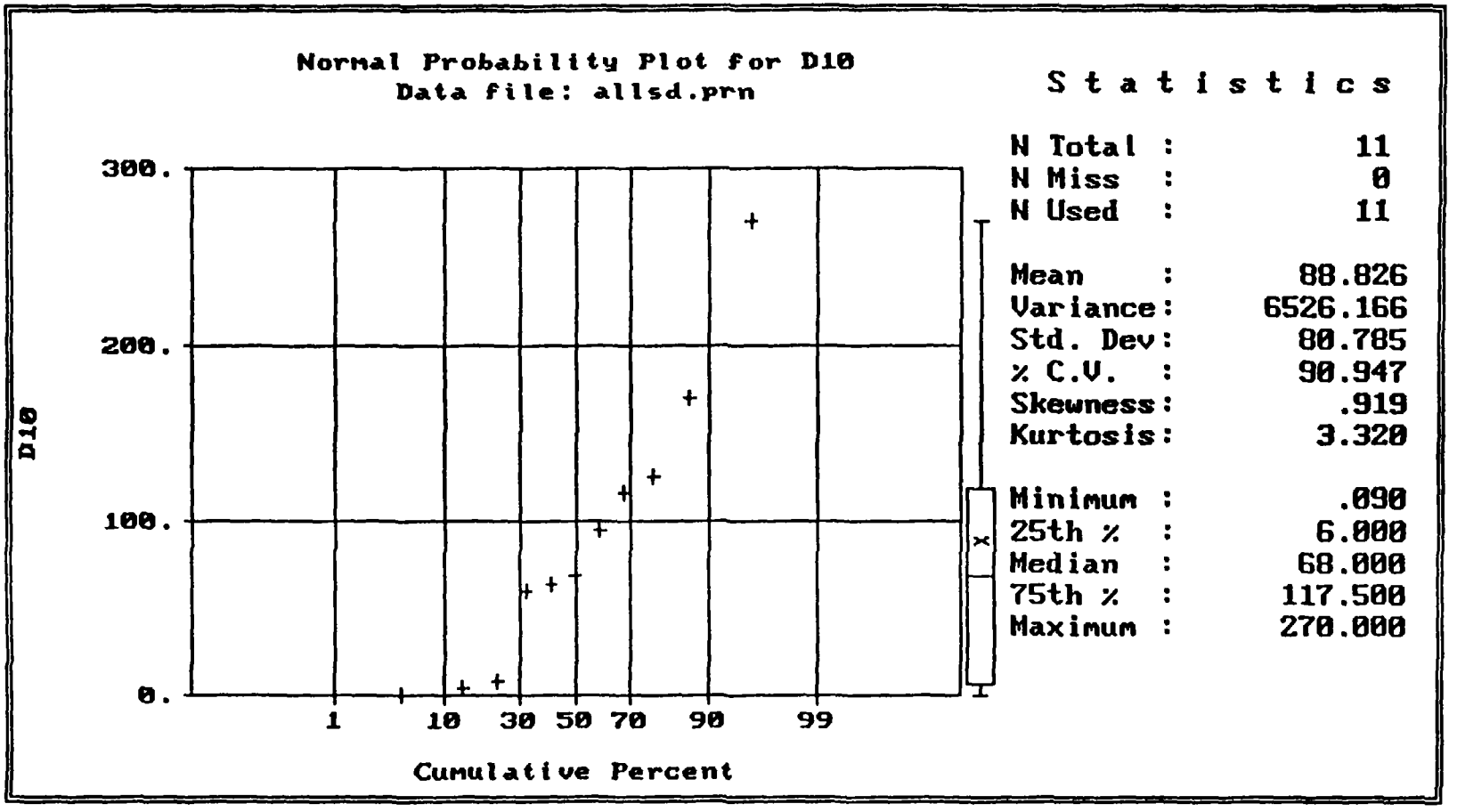

Histogram
Data file: allsd.prn
Frequency
6.
4.
2.
0.
0.
10000.
20000.
30000.
40000.
TOC (MG/KG)
Statistics
N Total : 11
N Miss : 0
N Used : 11
Mean : 8554.546
Variance : 143884700.000
Std. Dev : 11995.200
% C.V. : 140.220
Skewness : 1.828
Kurtosis : 5.344
Minimum : 1000.000
25th % : 1475.000
Median : 1600.000
75th % : 10000.000
Maximum : 40000.000

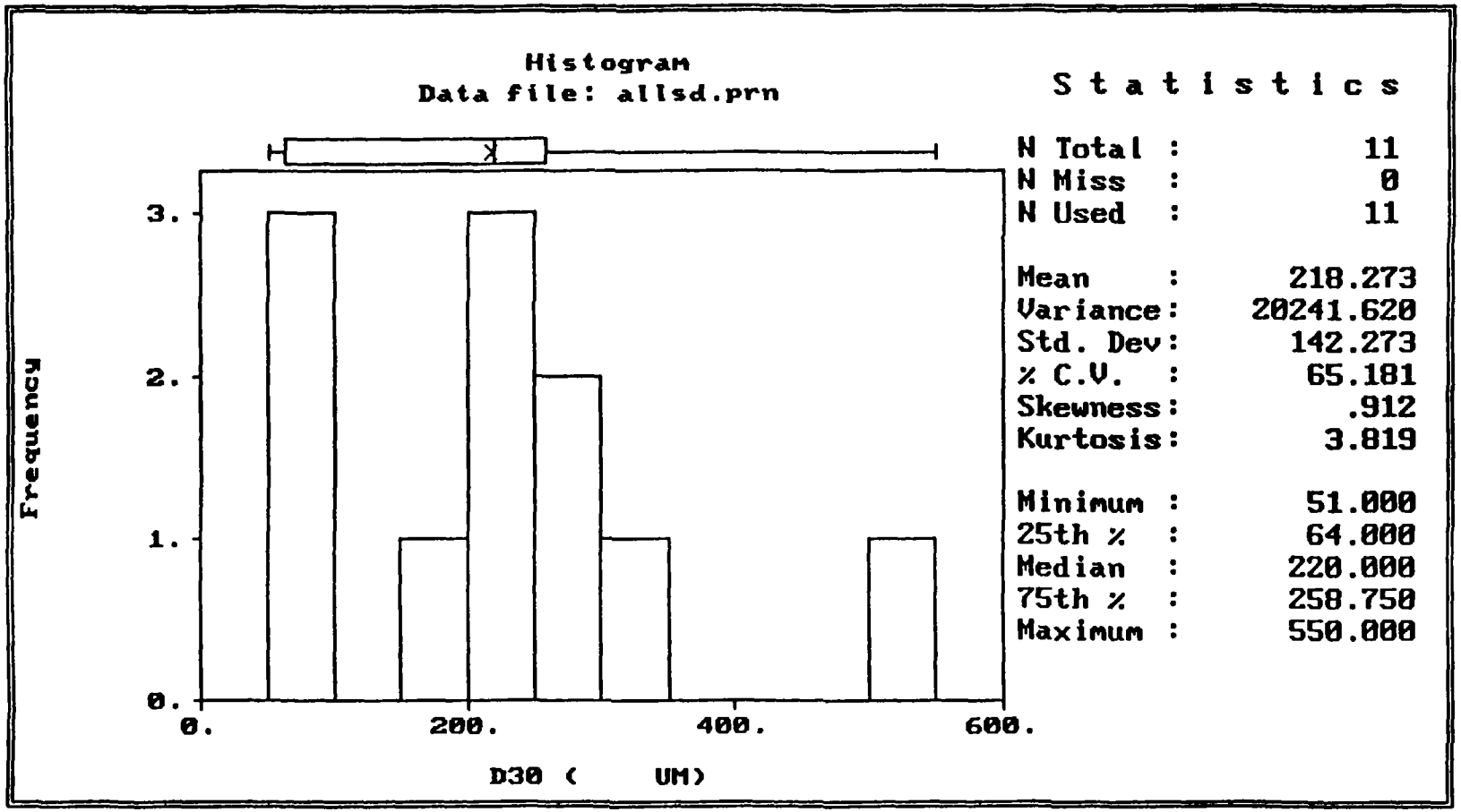

Normal Probability Plot for TOC
Data file: allsd.prn
TOC
40000.
30000.
20000.
10000.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 11
N Miss : 0
N Used : 11
Mean : 8554.546
Variance : 143884700.000
Std. Dev : 11995.200
% C.V. : 140.220
Skewness : 1.828
Kurtosis : 5.344
Minimum : 1000.000
25th % : 1475.000
Median : 1600.000
75th % : 10000.000
Maximum : 40000.000

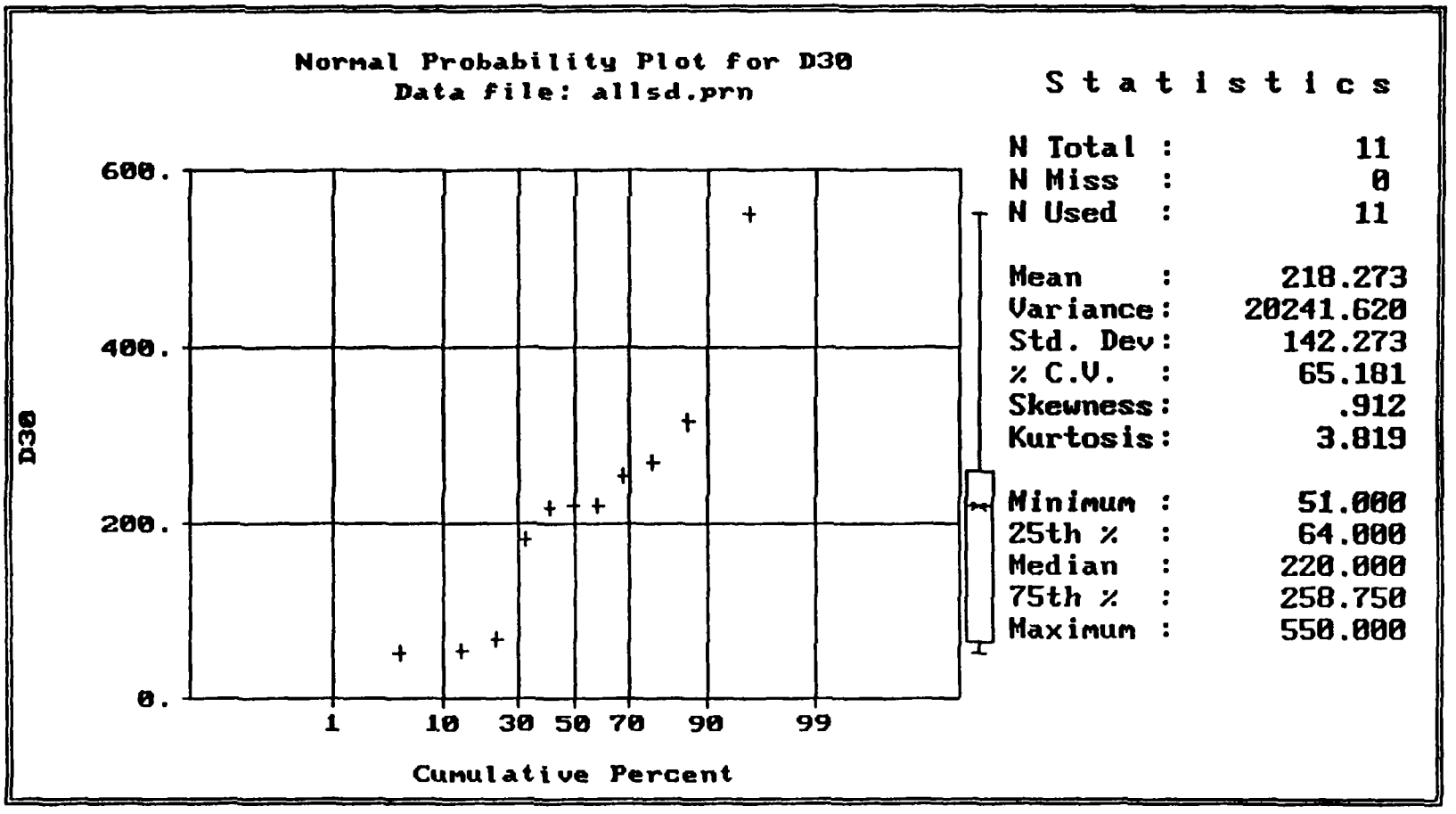

Histogram
Data file: allsd.prn
Frequency
4.
3.
2.
1.
0.
4.
6.
8.
10.
12.
LN(TOC) (MG/KG)
Statistics
N Total : 11
N Miss : 0
N Used : 11
Mean : 8.270
Variance: 1.641
Std. Dev: 1.281
% C.V. : 15.490
Skewness: .603
Kurtosis: 1.864
Minimum : 6.908
25th % : 7.296
Median : 7.378
75th % : 9.197
Maximum : 10.597

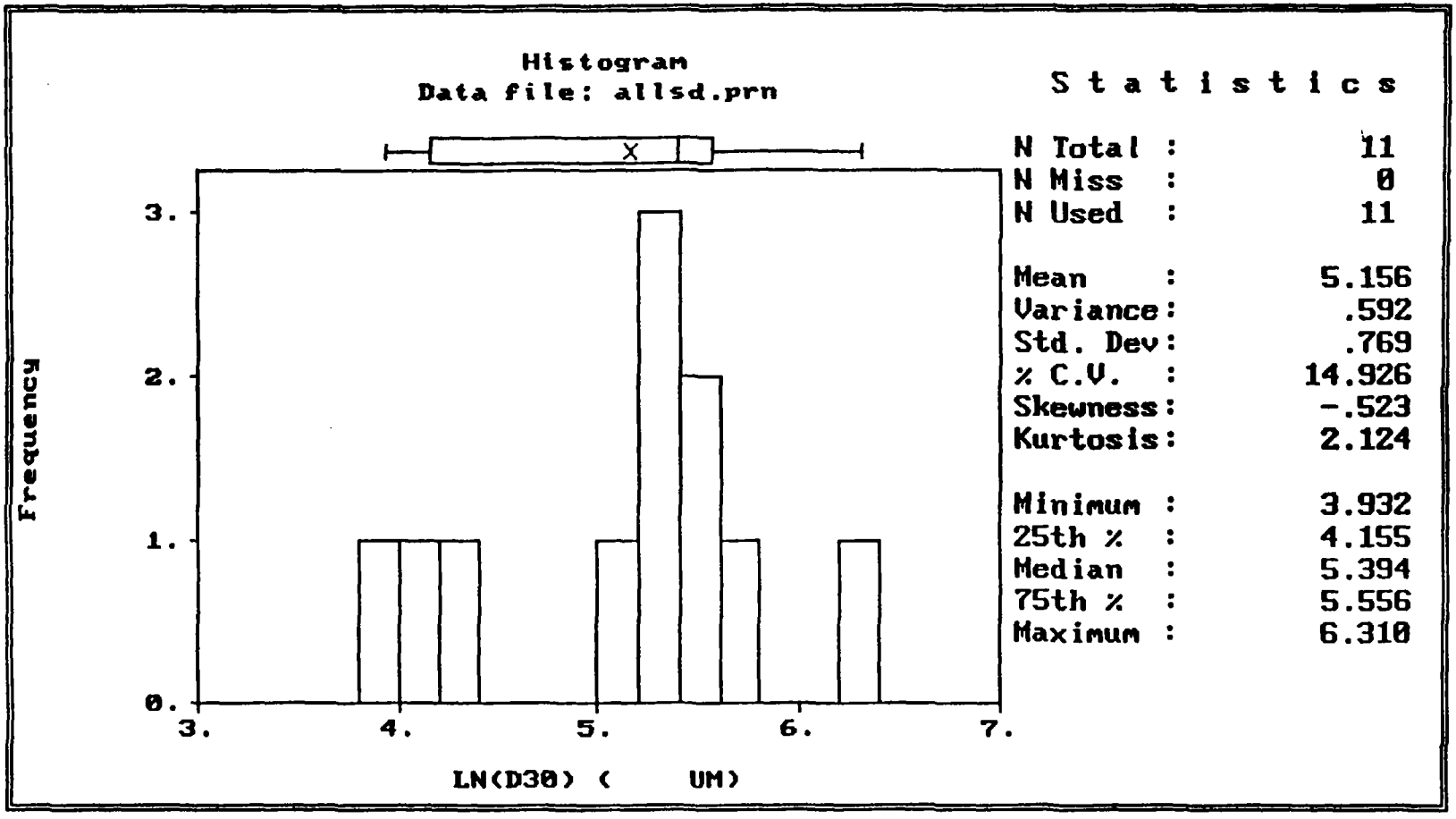

Normal Probability Plot for LN(TOC)
Data file: allsd.prn
LN(TOC)
11.
10.
9.
8.
7.
6.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 11
N Miss : 0
N Used : 11
Mean : 8.270
Variance: 1.641
Std. Dev: 1.281
% C.V. : 15.490
Skewness: .603
Kurtosis: 1.864
Minimum : 6.908
25th % : 7.296
Median : 7.378
75th % : 9.197
Maximum : 10.597

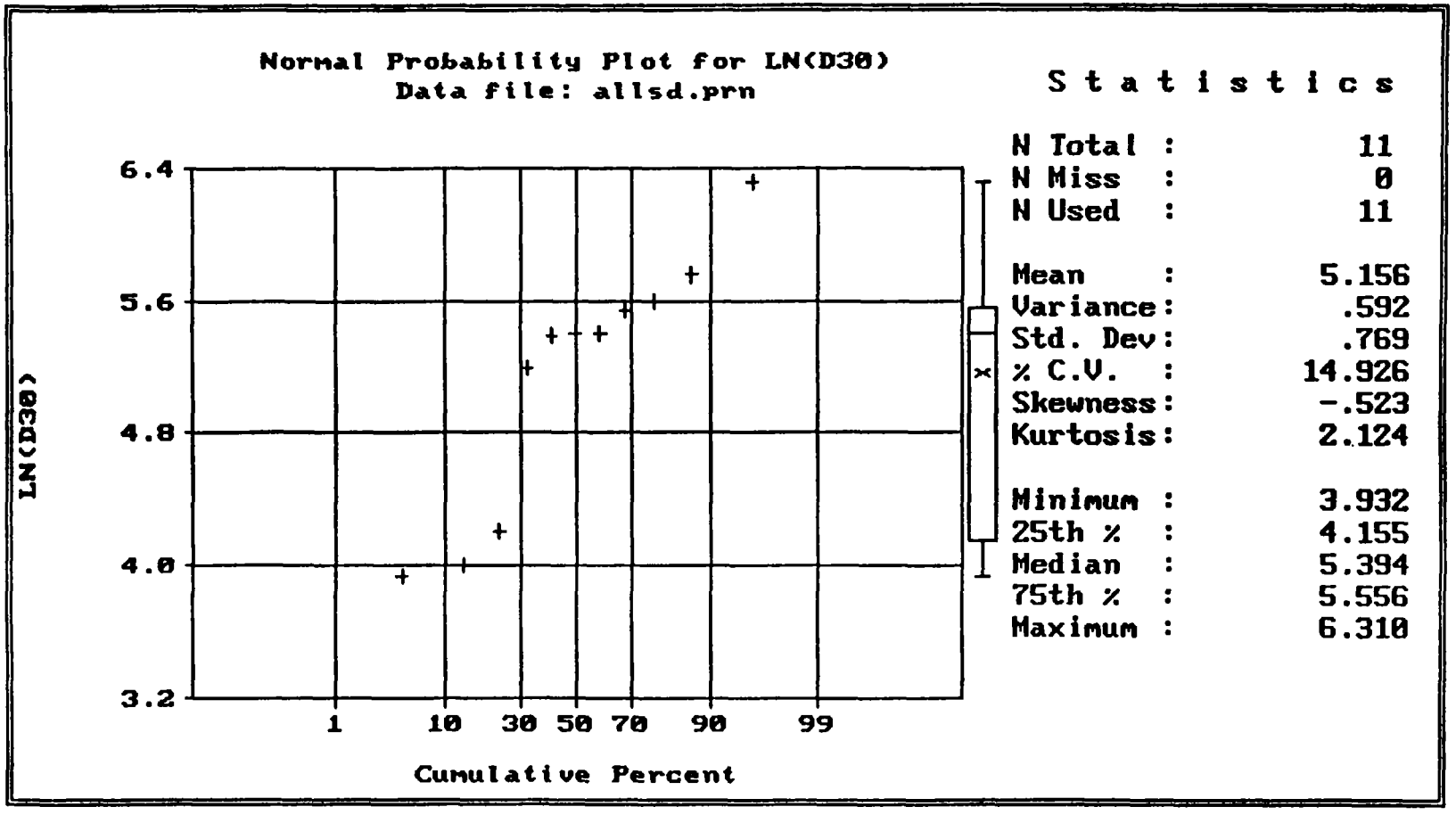

Histogram
Data file: allsd.prn
Frequency
3.
2.
1.
0.
0.
100.
200.
300.
D10 (UM)
Statistics
N Total : 11
N Miss : 0
N Used : 11
Mean : 88.826
Variance: 6526.166
Std. Dev: 80.785
% C.V. : 90.947
Skewness: .919
Kurtosis: 3.320
Minimum : .090
25th % : 6.000
Median : 68.000
75th % : 117.500
Maximum : 270.000

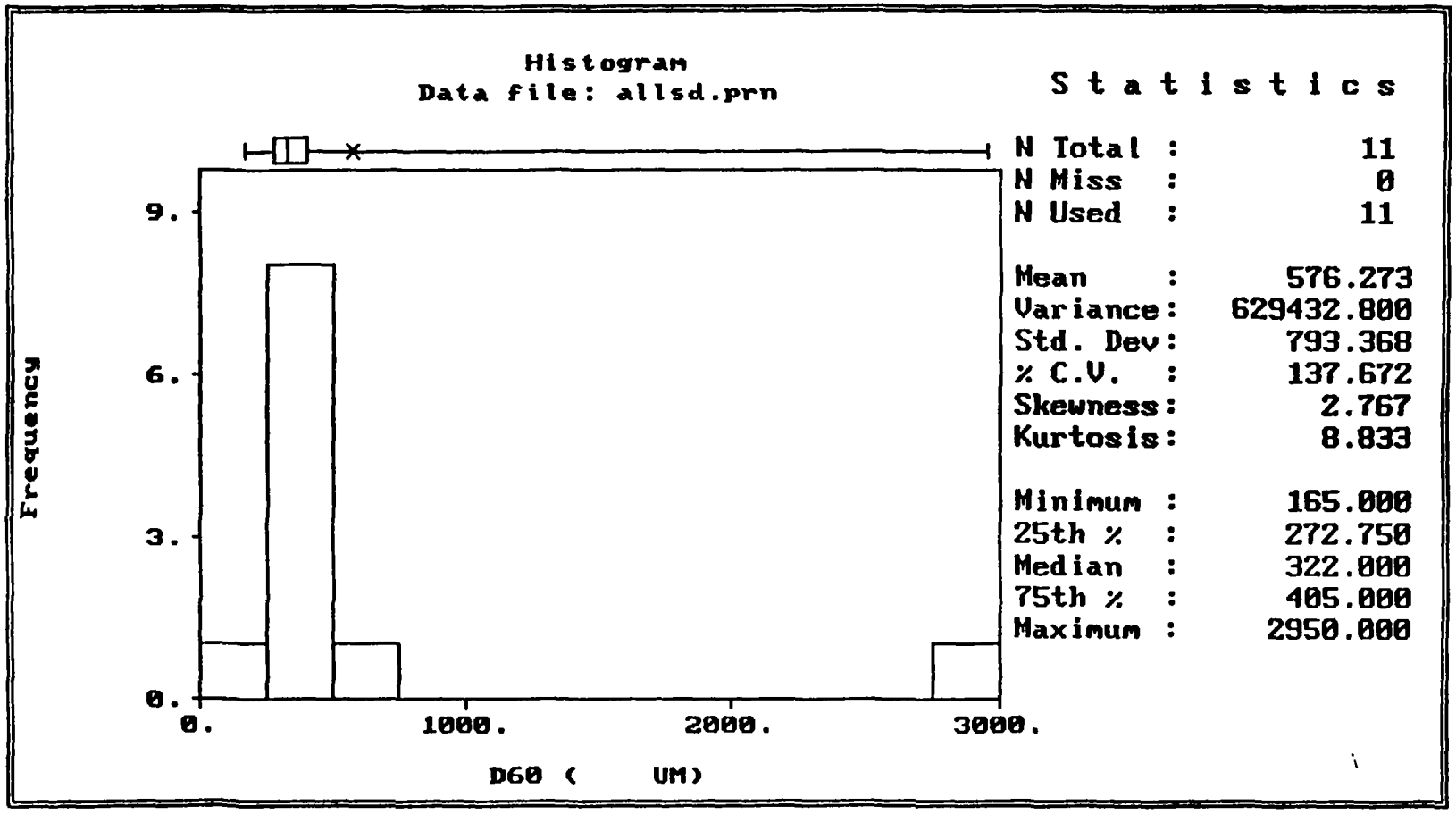

Normal Probability Plot for D10
Data file: allsd.prn
300.
200.
100.
0.
D10
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 11
N Miss : 0
N Used : 11
Mean : 88.826
Variance: 6526.166
Std. Dev: 80.785
% C.V. : 90.947
Skewness: .919
Kurtosis: 3.320
Minimum : .090
25th % : 6.000
Median : 68.000
75th % : 117.500
Maximum : 270.000

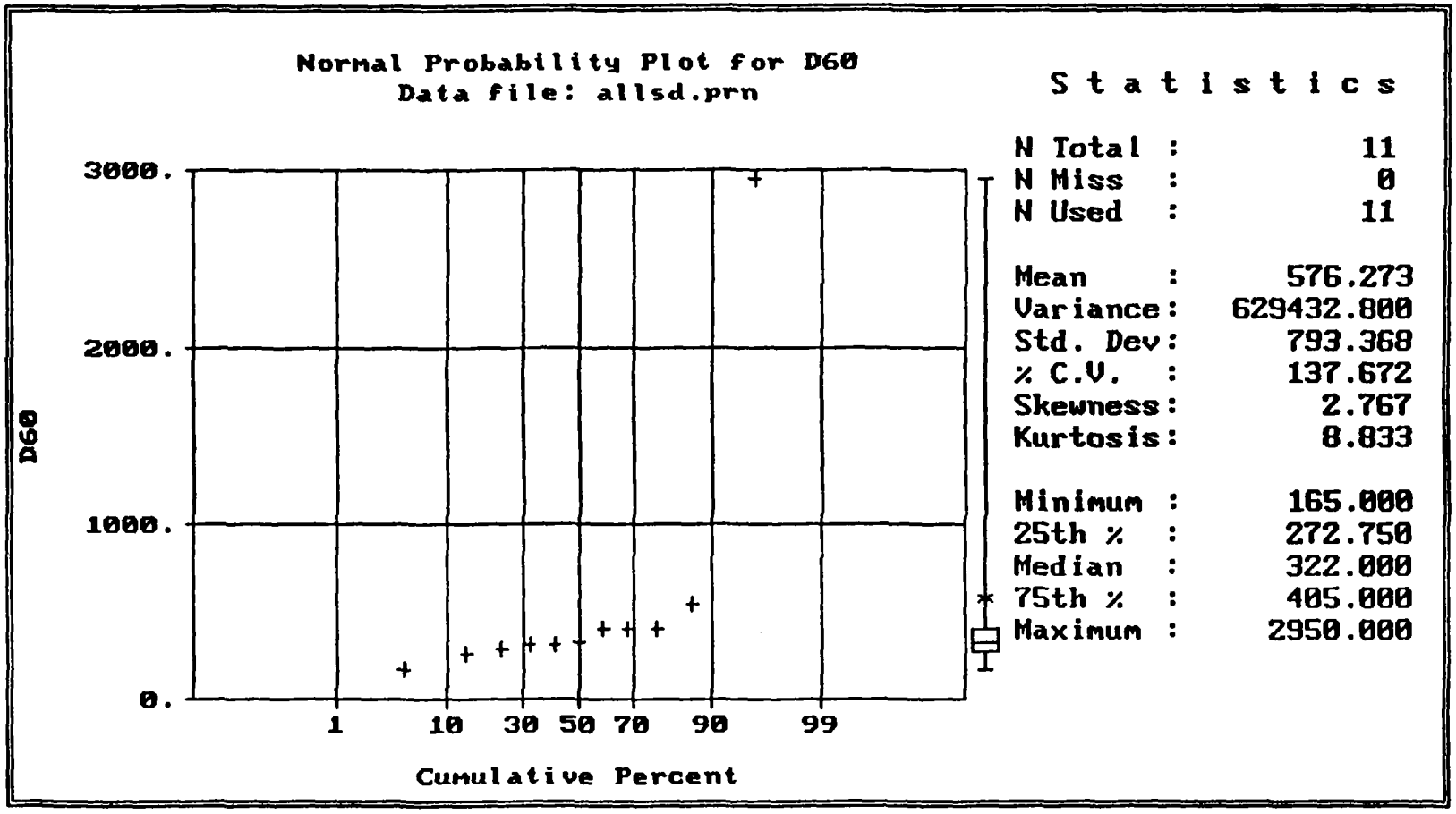

Histogram
Data file: allsd.prn
Frequency
3.
2.
1.
0.
0.
200.
400.
600.
D30 (UM)
Statistics
N Total : 11
N Miss : 0
N Used : 11
Mean : 218.273
Variance: 20241.620
Std. Dev: 142.273
% C.V. : 65.181
Skewness: .912
Kurtosis: 3.819
Minimum : 51.000
25th % : 64.000
Median : 220.000
75th % : 258.750
Maximum : 550.000

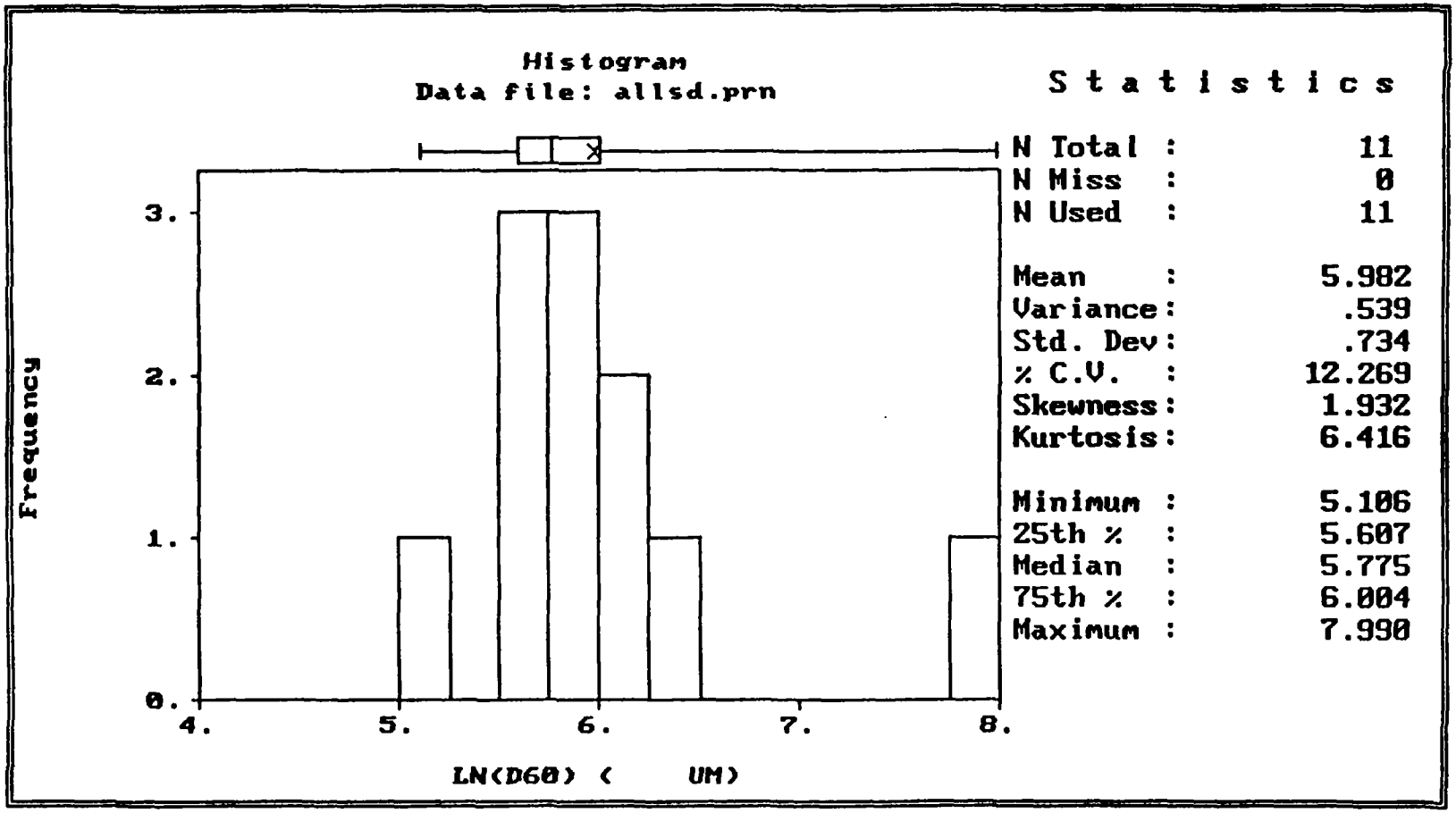

Normal Probability Plot for D30
Data file: allsd.prn
600.
400.
200.
0.
D30
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 11
N Miss : 0
N Used : 11
Mean : 218.273
Variance: 20241.620
Std. Dev: 142.273
% C.V. : 65.181
Skewness: .912
Kurtosis: 3.819
Minimum : 51.000
25th % : 64.000
Median : 220.000
75th % : 258.750
Maximum : 550.000

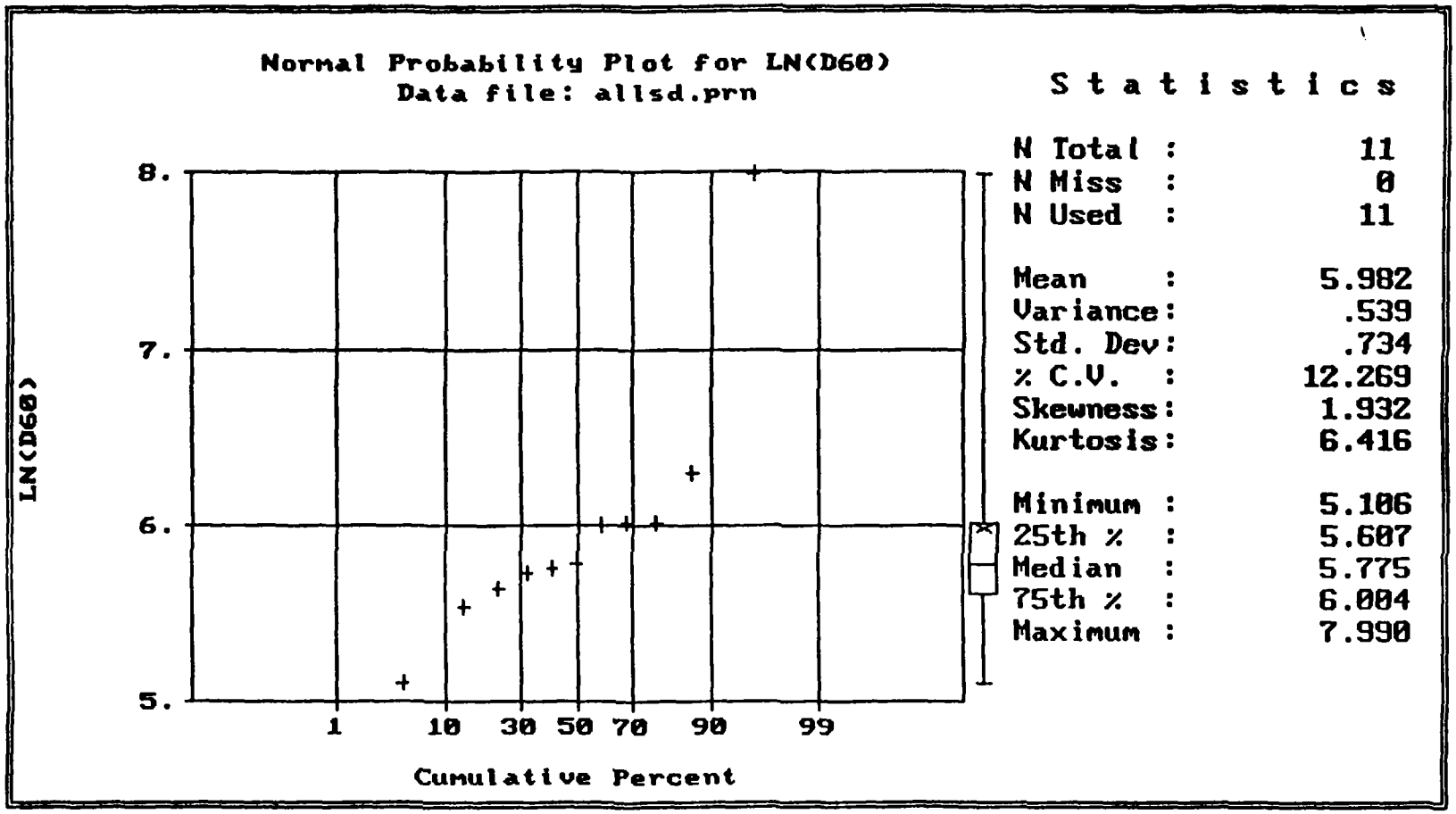

Histogram
Data file: allsd.prn
Frequency
3.
2.
1.
0.
3.
4.
5.
6.
7.
LN(D30) (UM)
Statistics
N Total : 11
N Miss : 0
N Used : 11
Mean : 5.156
Variance: .592
Std. Dev: .769
% C.V. : 14.926
Skewness: -.523
Kurtosis: 2.124
Minimum : 3.932
25th % : 4.155
Median : 5.394
75th % : 5.556
Maximum : 6.310

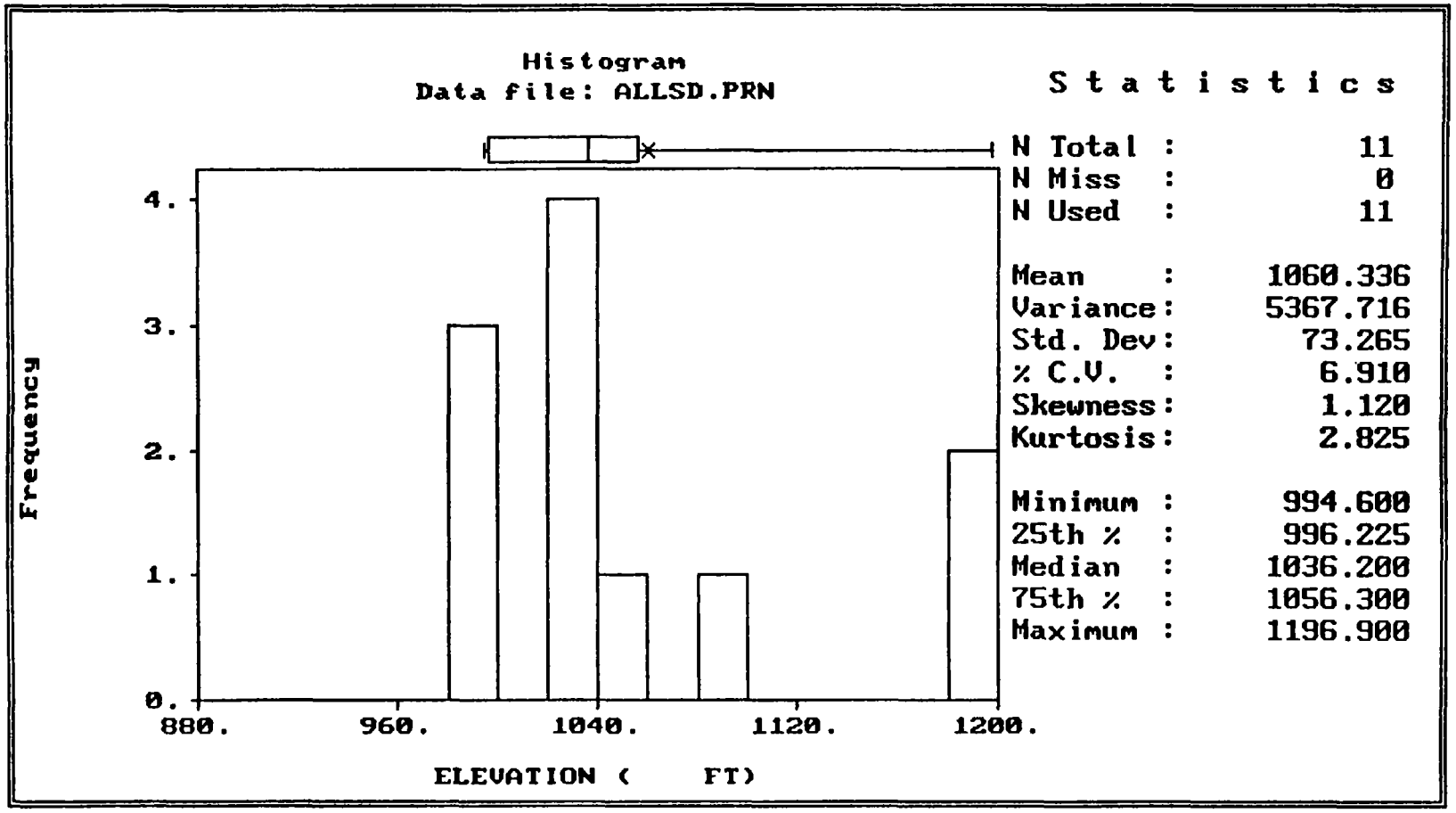

Normal Probability Plot for LN(D30)
Data file: allsd.prn
LN(D30)
6.4
5.6
4.8
4.0
3.2
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 11
N Miss : 0
N Used : 11
Mean : 5.156
Variance: .592
Std. Dev: .769
% C.V. : 14.926
Skewness: -.523
Kurtosis: 2.124
Minimum : 3.932
25th % : 4.155
Median : 5.394
75th % : 5.556
Maximum : 6.310

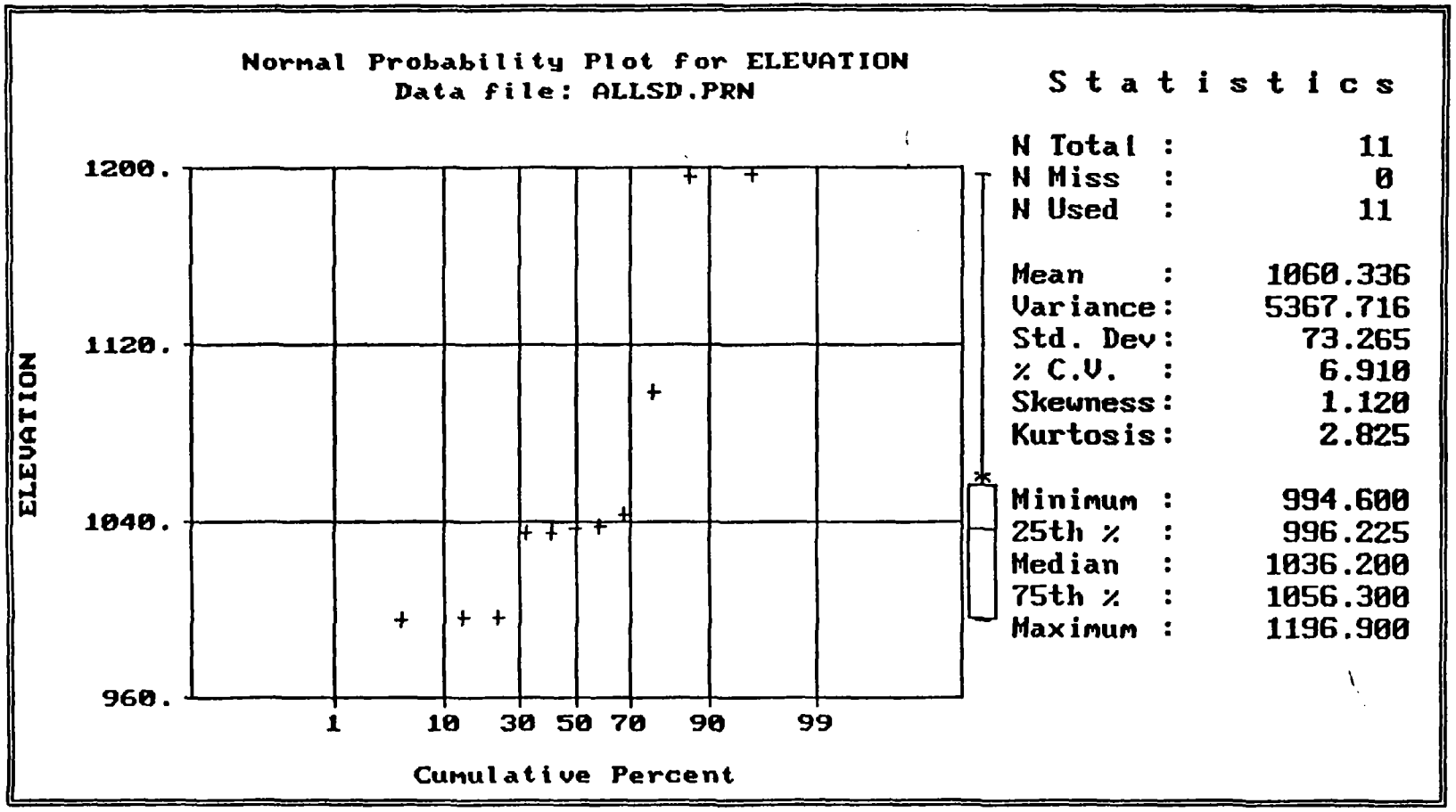

Histogram
Data file: allsd.prn
Frequency
9.
6.
3.
0.
0.
1000.
2000.
3000.
D60 (UM)
Statistics
N Total : 11
N Miss : 0
N Used : 11
Mean : 576.273
Variance: 629432.800
Std. Dev: 793.368
% C.V. : 137.672
Skewness: 2.767
Kurtosis: 8.833
Minimum : 165.000
25th % : 272.750
Median : 322.000
75th % : 405.000
Maximum : 2950.000

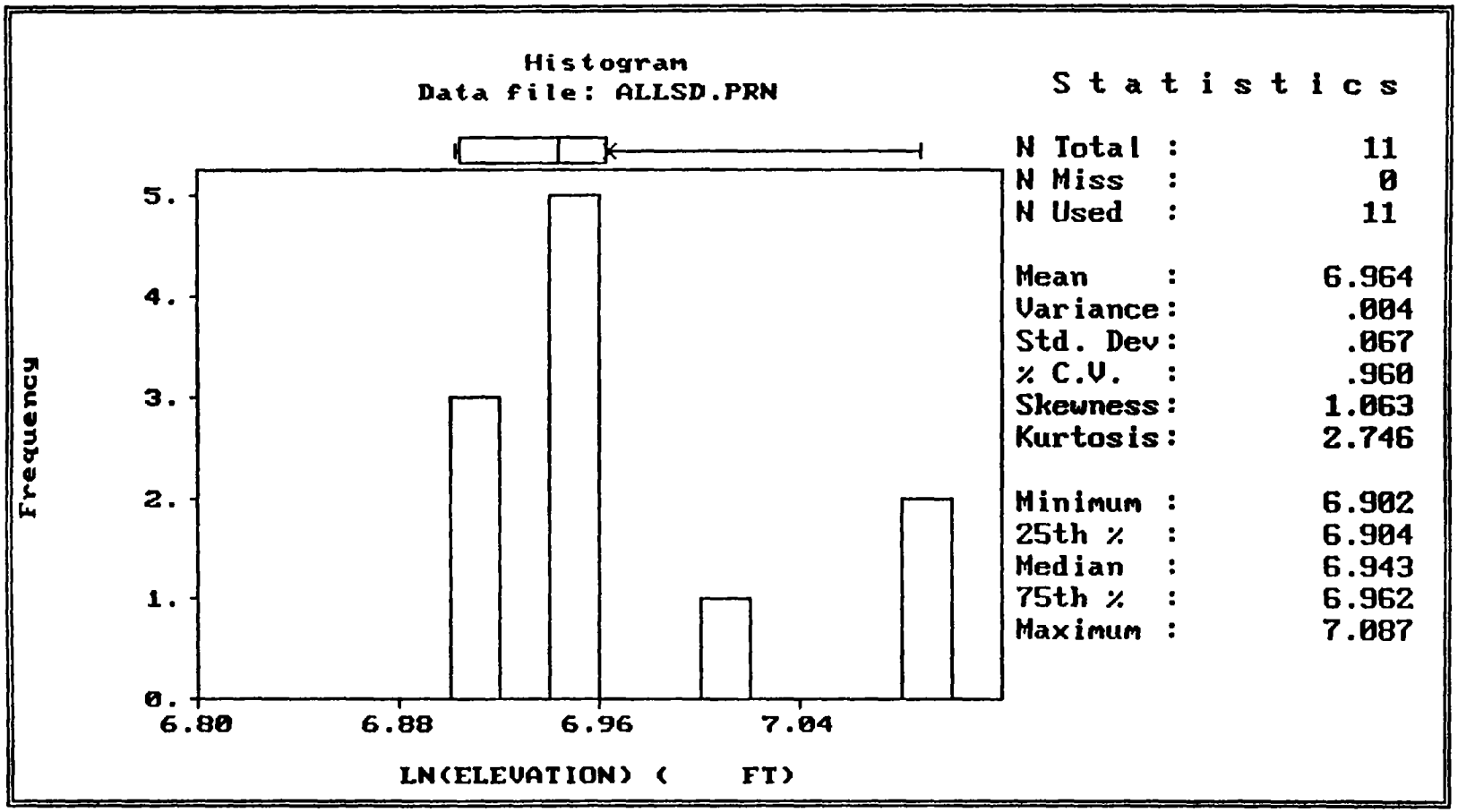

Normal Probability Plot for D60
Data file: allsd.prn
3000.
2000.
1000.
0.
D60
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 11
N Miss : 0
N Used : 11
Mean : 576.273
Variance: 629432.800
Std. Dev: 793.368
% C.V. : 137.672
Skewness: 2.767
Kurtosis: 8.833
Minimum : 165.000
25th % : 272.750
Median : 322.000
75th % : 405.000
Maximum : 2950.000

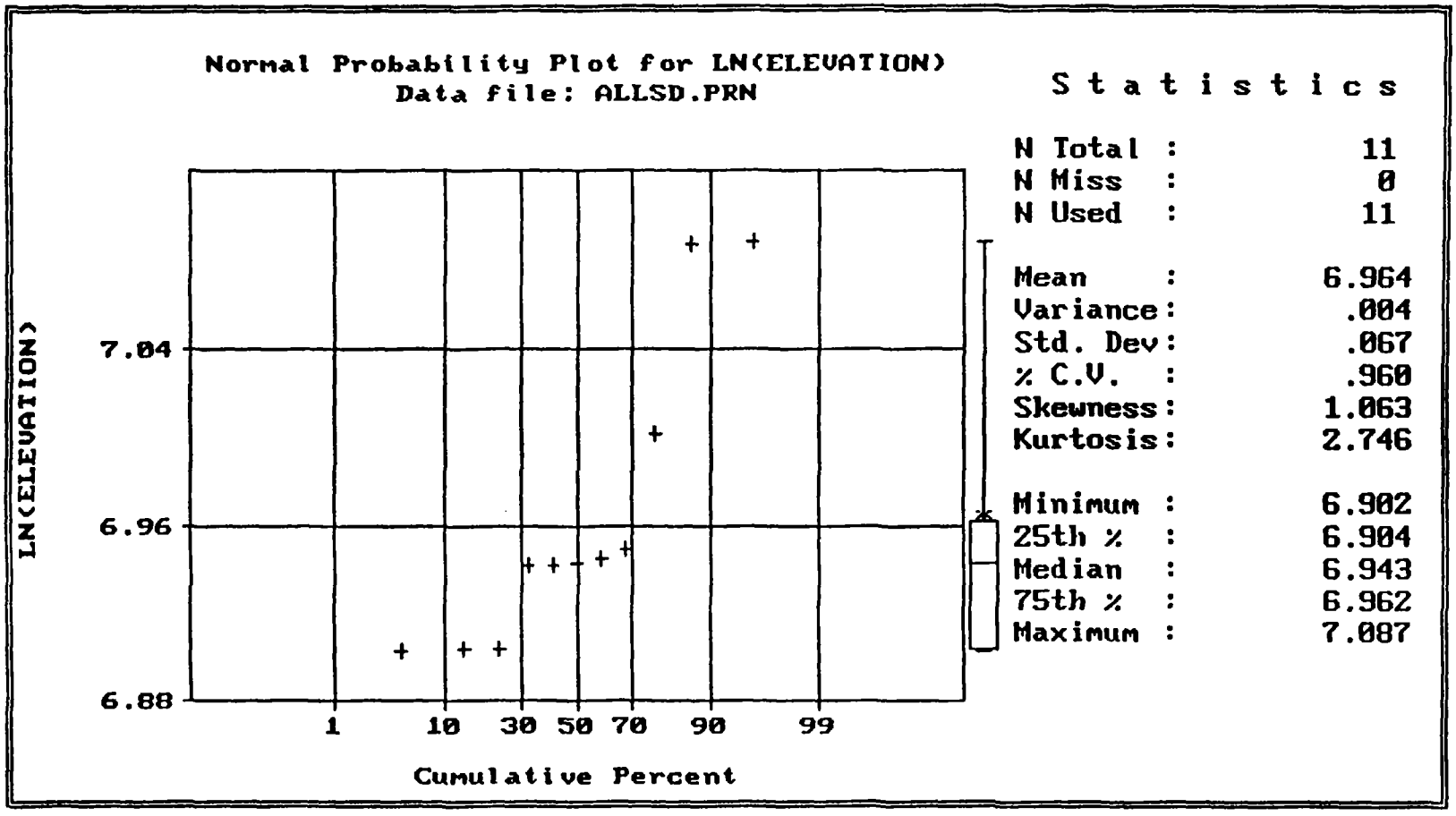

Histogram
Data file: allsd.prn
Frequency
3.
2.
1.
0.
4.
5.
6.
7.
8.
LN(D60) (UM)
Statistics
N Total : 11
N Miss : 0
N Used : 11
Mean : 5.982
Variance : .539
Std. Dev : .734
% C.V. : 12.269
Skewness : 1.932
Kurtosis : 6.416
Minimum : 5.106
25th % : 5.607
Median : 5.775
75th % : 6.004
Maximum : 7.990


Normal Probability Plot for LN(D60)
Data file: allsd.prn
LN(D60)
8.
7.
6.
5.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 11
N Miss : 0
N Used : 11
Mean : 5.982
Variance: .539
Std. Dev: .734
% C.V. : 12.269
Skewness: 1.932
Kurtosis: 6.416
Minimum : 5.106
25th % : 5.607
Median : 5.775
75th % : 6.004
Maximum : 7.990


Histogram
Data file: ALLSD.PRN
Frequency
4.
3.
2.
1.
0.
880.
960.
1040.
1120.
1200.
ELEVATION (FT)
Statistics
N Total : 11
N Miss : 0
N Used : 11
Mean : 1060.336
Variance: 5367.716
Std. Dev: 73.265
% C.V. : 6.910
Skewness: 1.120
Kurtosis: 2.825
Minimum : 994.600
25th % : 996.225
Median : 1036.200
75th % : 1056.300
Maximum : 1196.900


Normal Probability Plot for ELEVATION
Data file: ALLSD.PRN
ELEVATION
1200.
1120.
1040.
960.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 11
N Miss : 0
N Used : 11
Mean : 1060.336
Variance: 5367.716
Std. Dev: 73.265
% C.V. : 6.910
Skewness: 1.120
Kurtosis: 2.825
Minimum : 994.600
25th % : 996.225
Median : 1036.200
75th % : 1056.300
Maximum : 1196.900

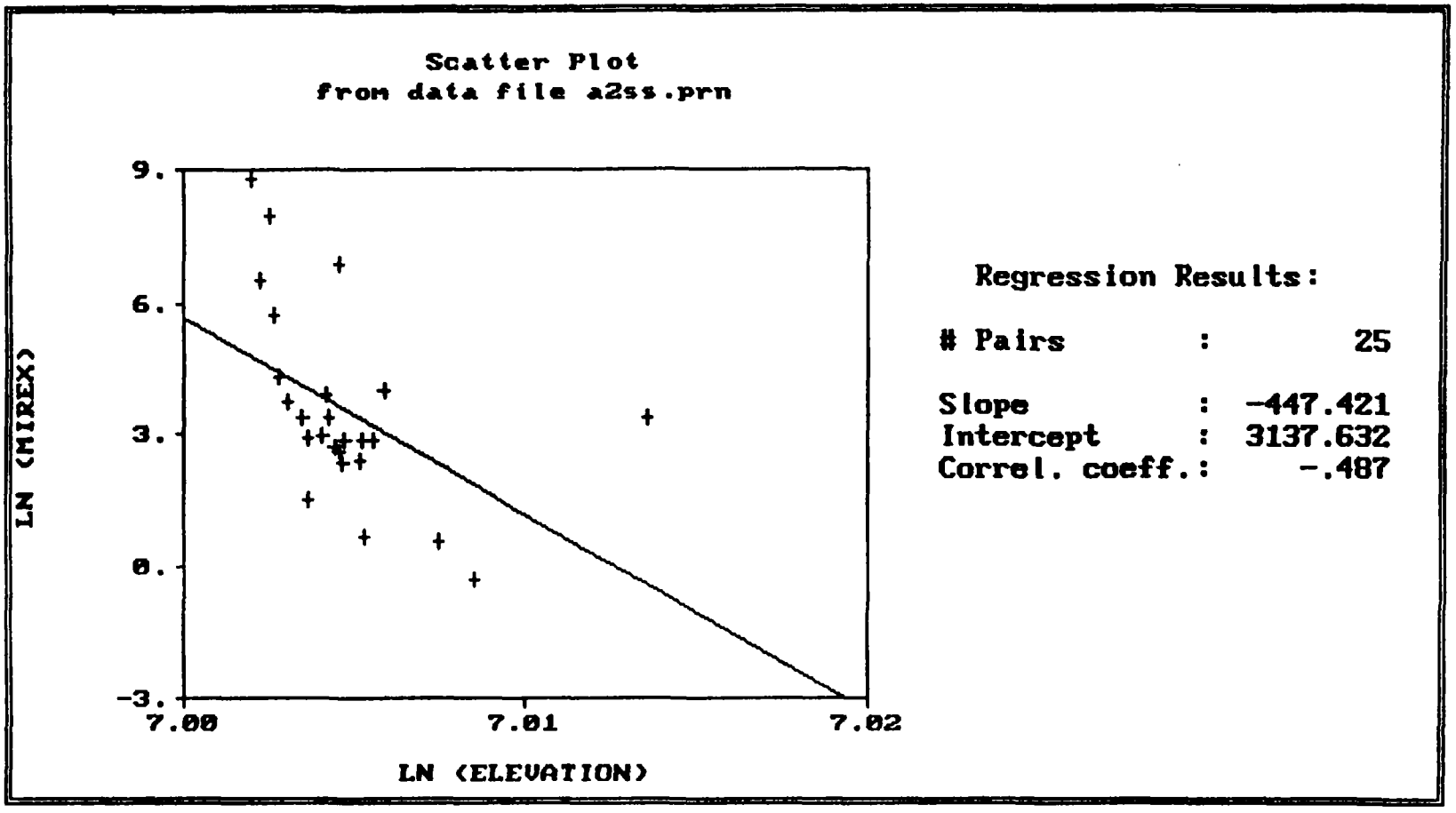

Histogram
Data file: ALLSD.PRN
Frequency
5.
4.
3.
2.
1.
0.
6.80
6.88
6.96
7.04
LN(ELEVATION) (FT)
Statistics
N Total : 11
N Miss : 0
N Used : 11
Mean : 6.964
Variance: .004
Std. Dev: .067
% C.V. : .960
Skewness: 1.063
Kurtosis: 2.746
Minimum : 6.902
25th % : 6.904
Median : 6.943
75th % : 6.962
Maximum : 7.087

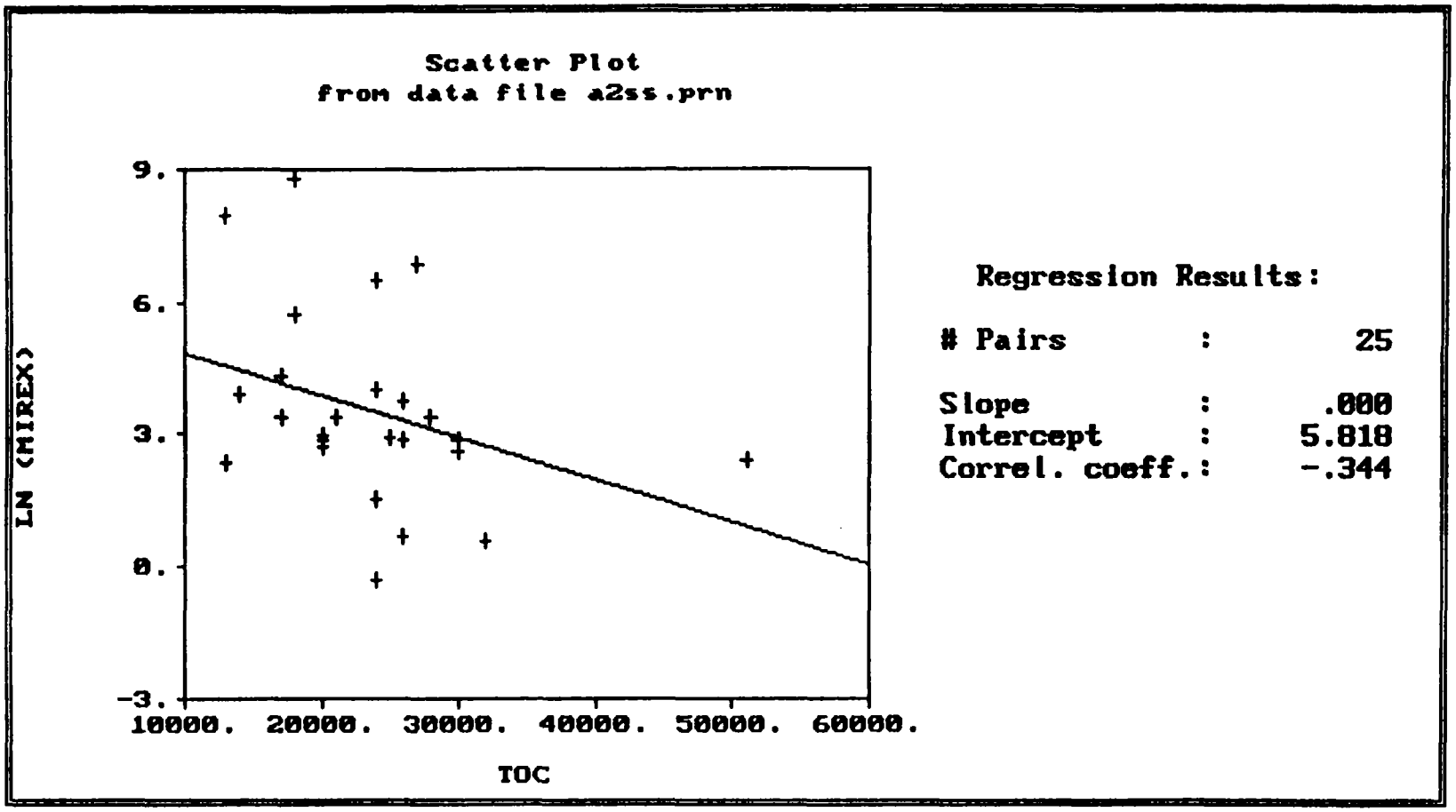

Normal Probability Plot for LN(ELEVATION)
Data file: ALLSD.PRN
LN(ELEVATION)
7.04
6.96
6.88
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 11
N Miss : 0
N Used : 11
Mean : 6.964
Variance: .004
Std. Dev: .067
% C.V. : .960
Skewness: 1.063
Kurtosis: 2.746
Minimum : 6.902
25th % : 6.904
Median : 6.943
75th % : 6.962
Maximum : 7.087

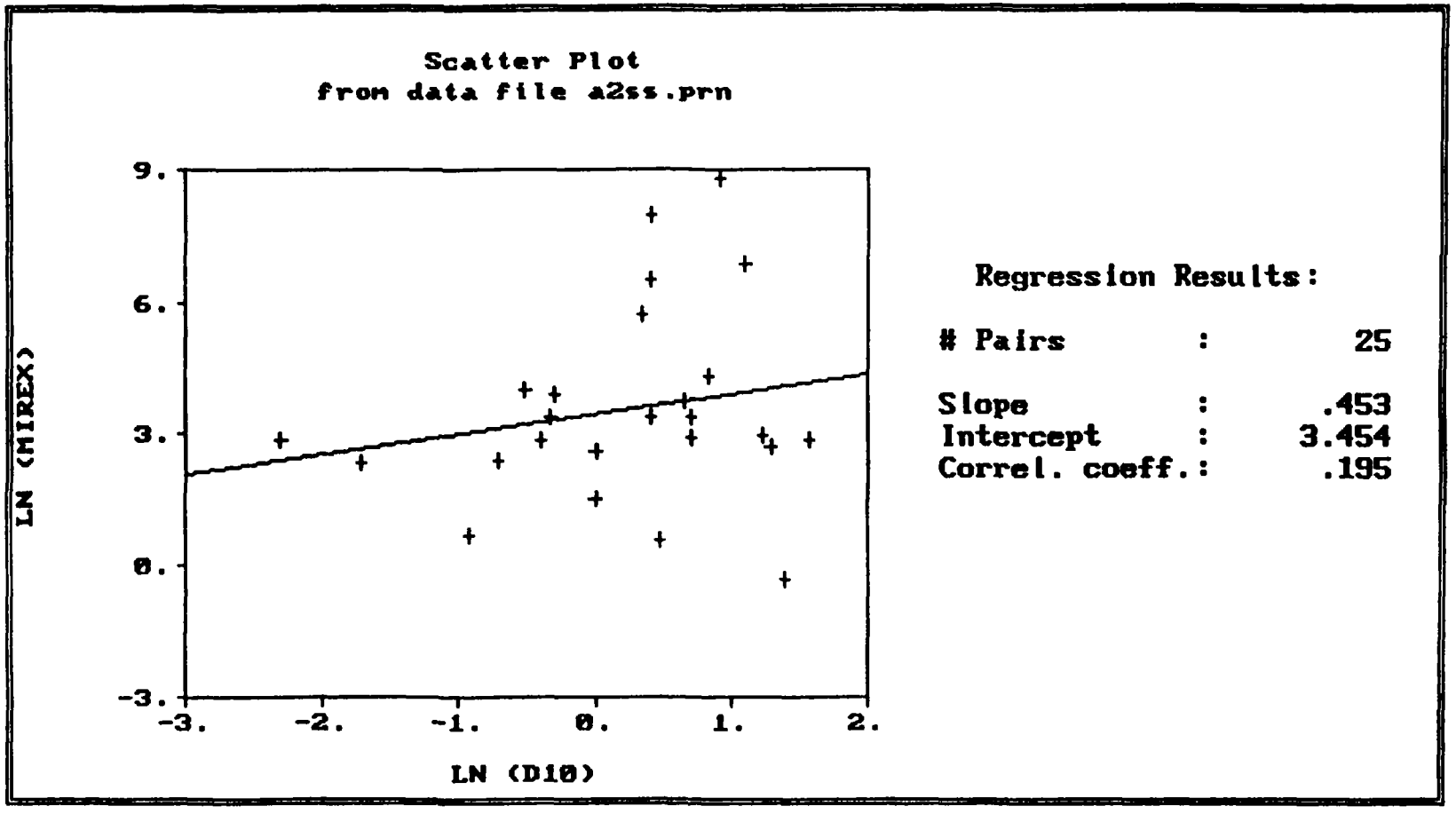
APPENDIX 2

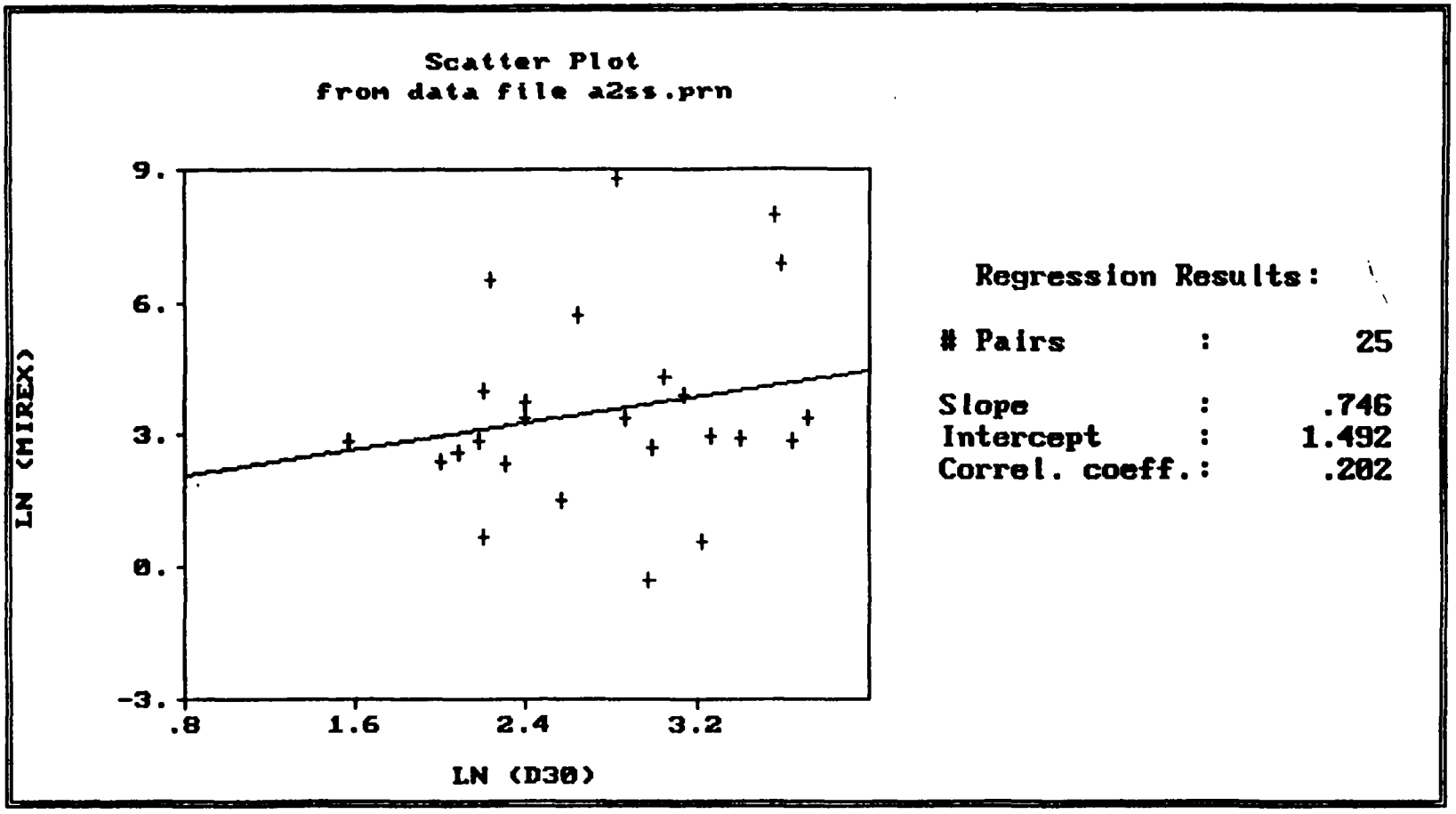
LINEAR REGRESSION ANALYSIS SUPPORTING DOCUMENTS

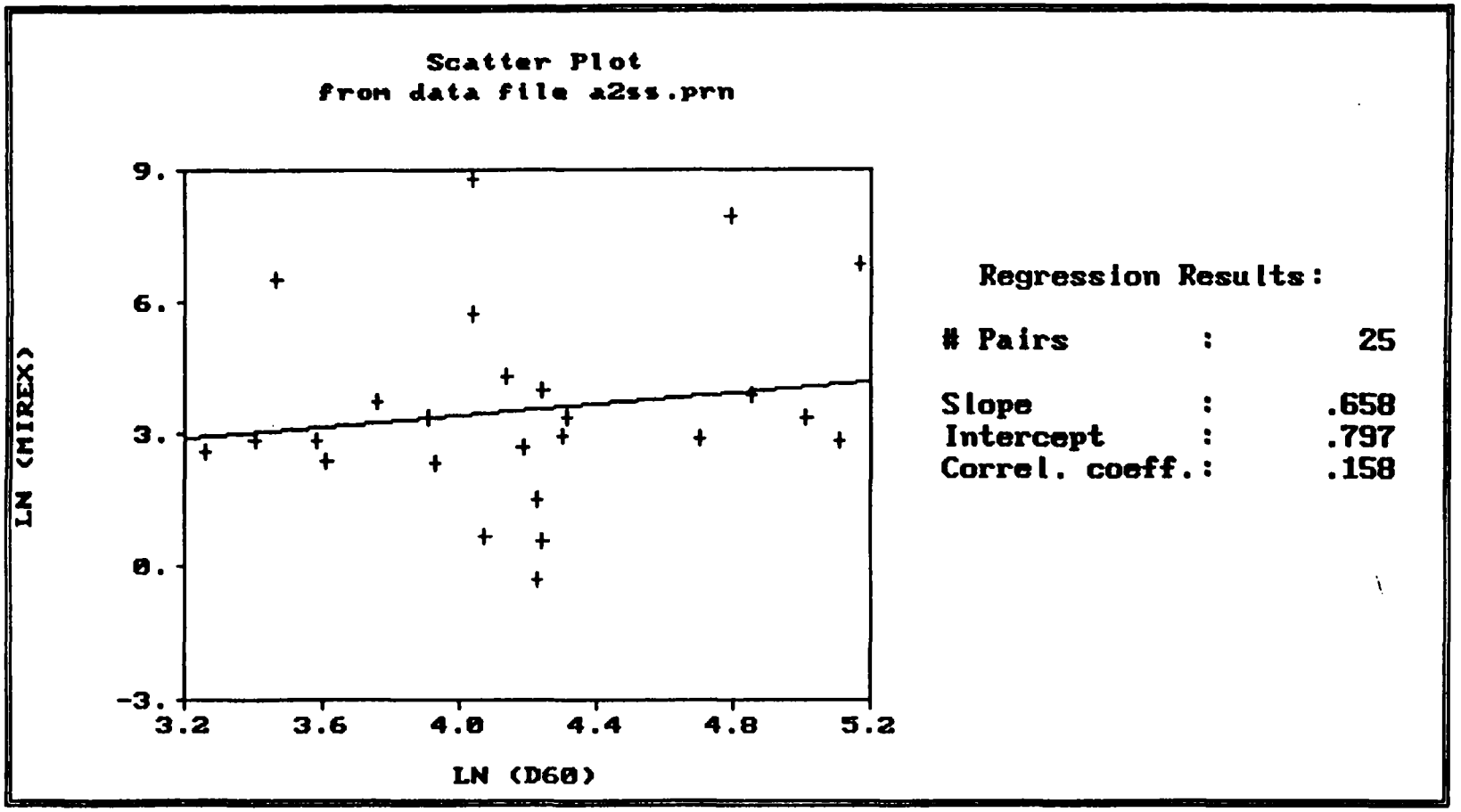
AREA 2

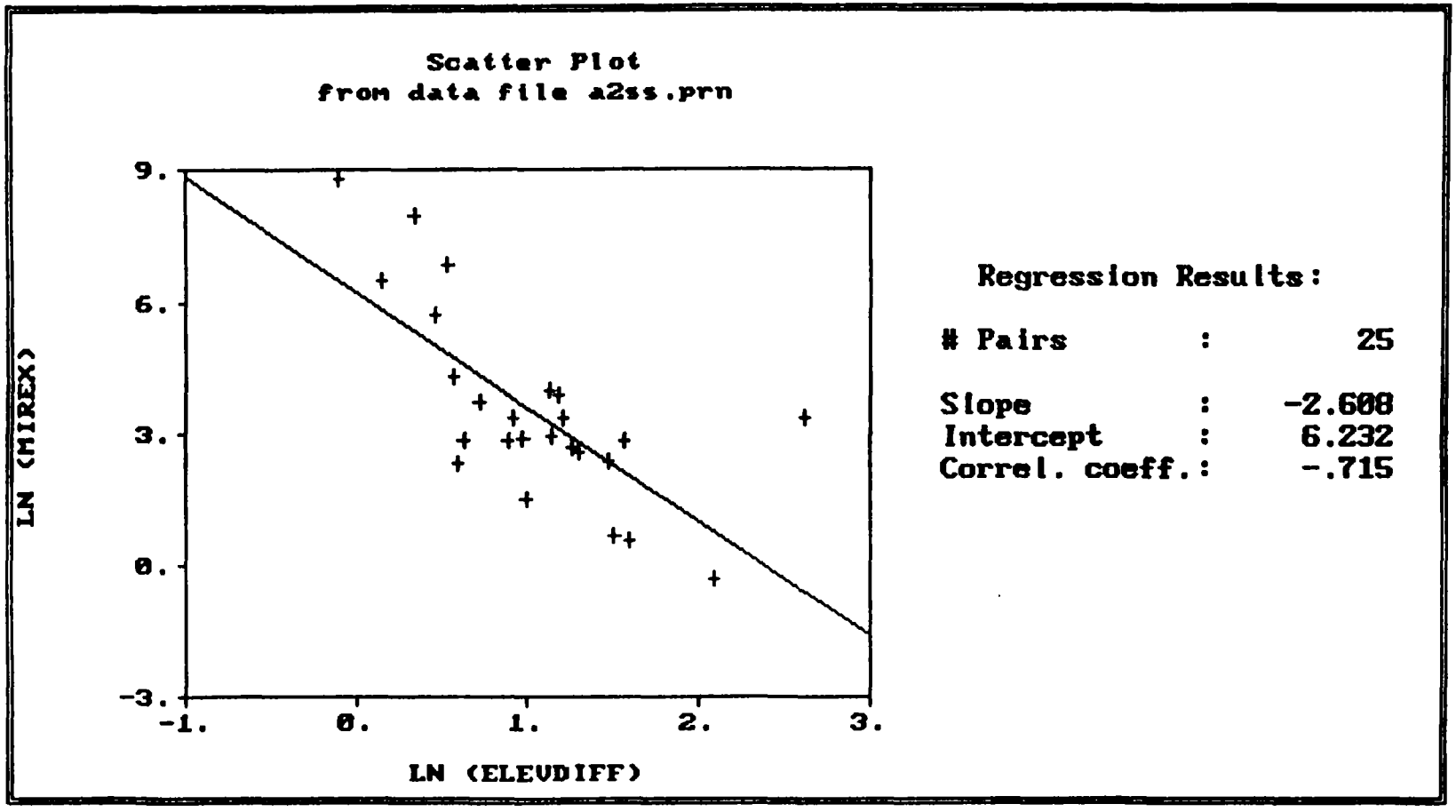

Scatter Plot
from data file a2ss.prn
9.
6.
3.
0.
-3.
7.00
7.01
7.02
LN (MIREX)
LN (ELEVATION)
Regression Results:
Pairs : 25
Slope : -447.421
Intercept : 3137.632
Correl. coeff.: -.487

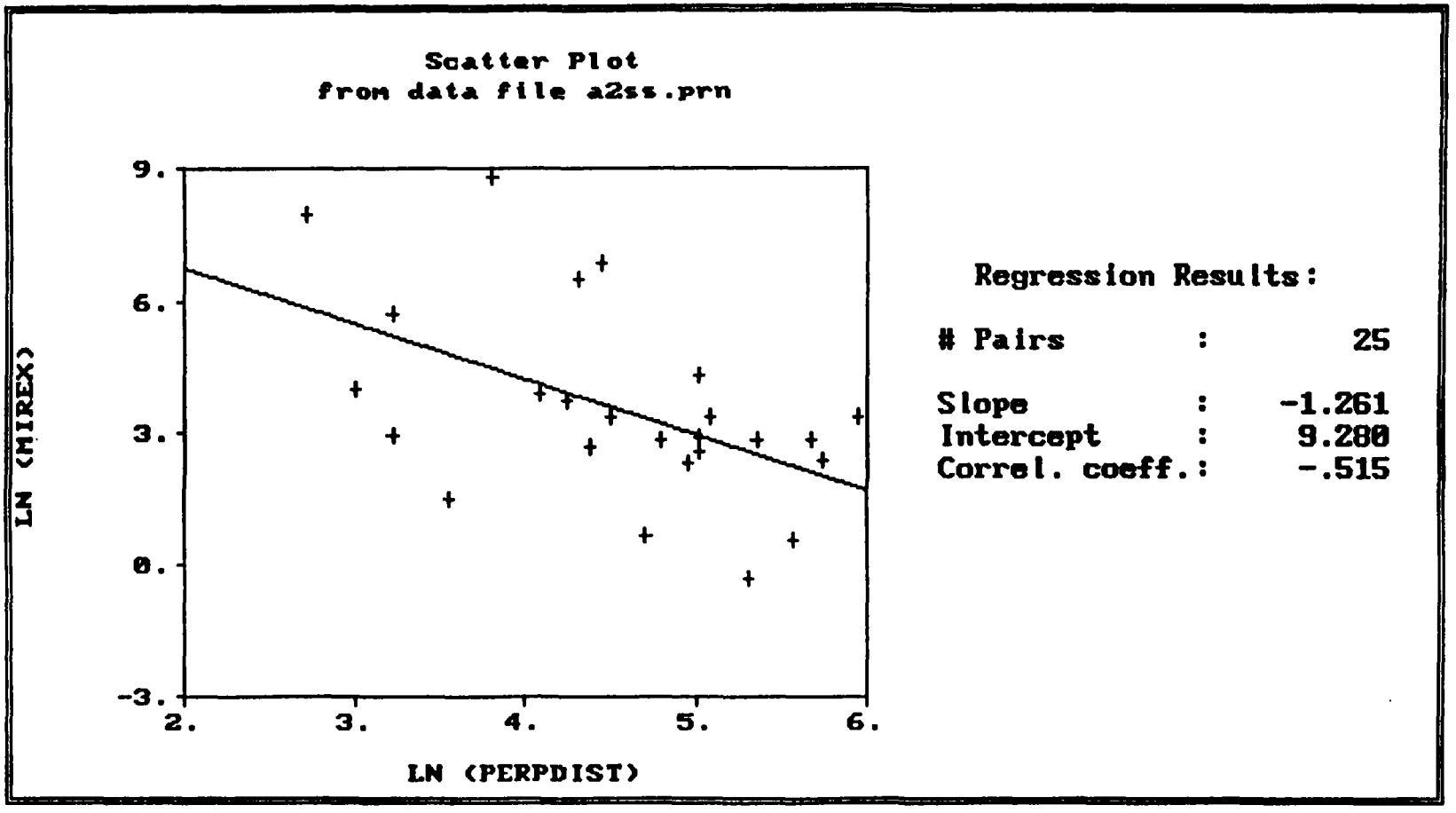

Scatter Plot
from data file a2ss.prn
9.
6.
3.
0.
-3.
LN (MIREX)
10000.
20000.
30000.
40000.
50000.
60000.
TOC
Regression Results:
Pairs : 25
Slope : .000
Intercept : 5.818
Correl. coeff.: -.344

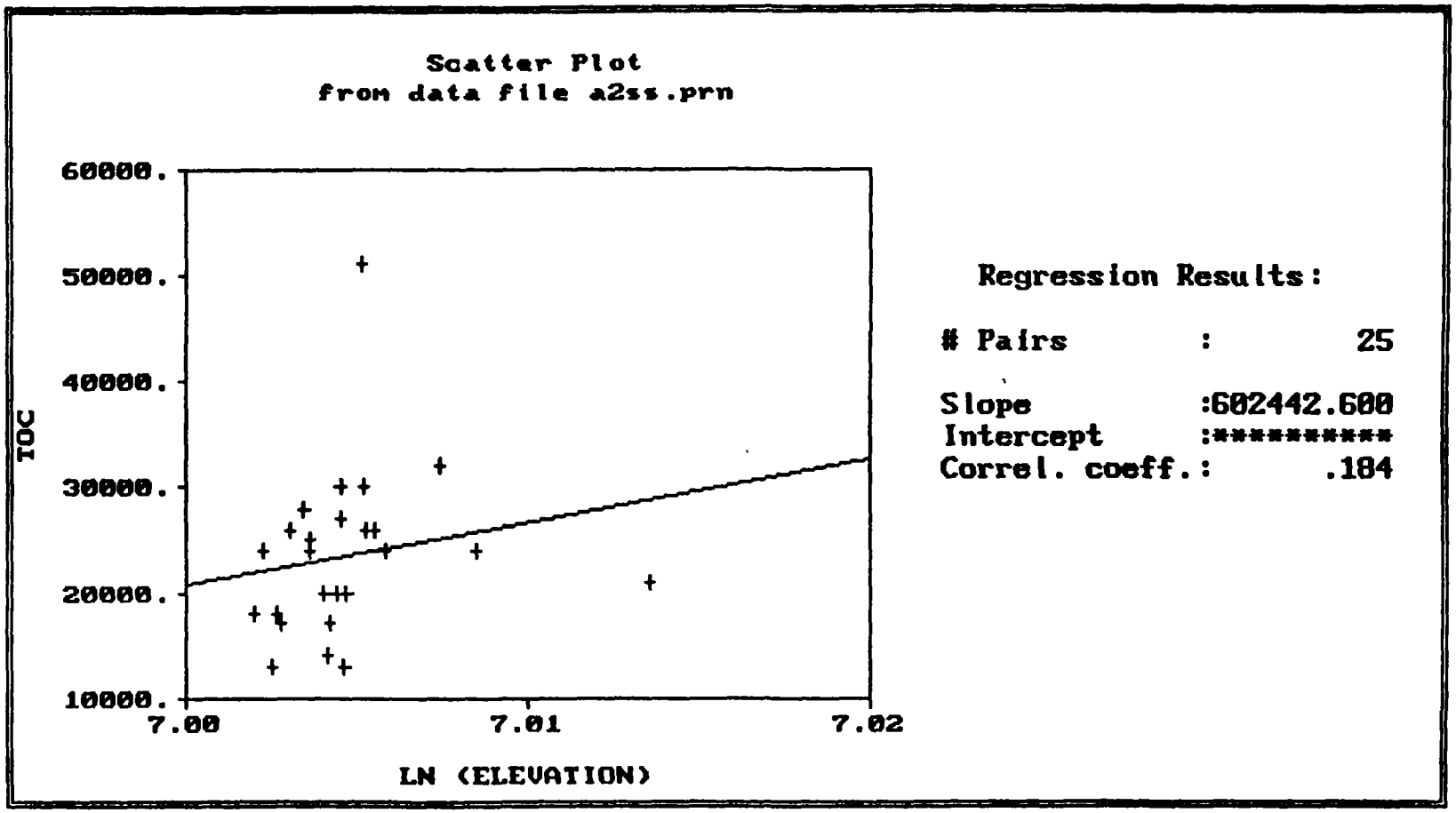

Scatter Plot
from data file a2ss.prn
LN (MIREX)
9.
6.
3.
0.
-3.
-3.
-2.
-1.
0.
1.
2.
LN (D10)
Regression Results:
Pairs : 25
Slope : .453
Intercept : 3.454
Correl. coeff.: .195

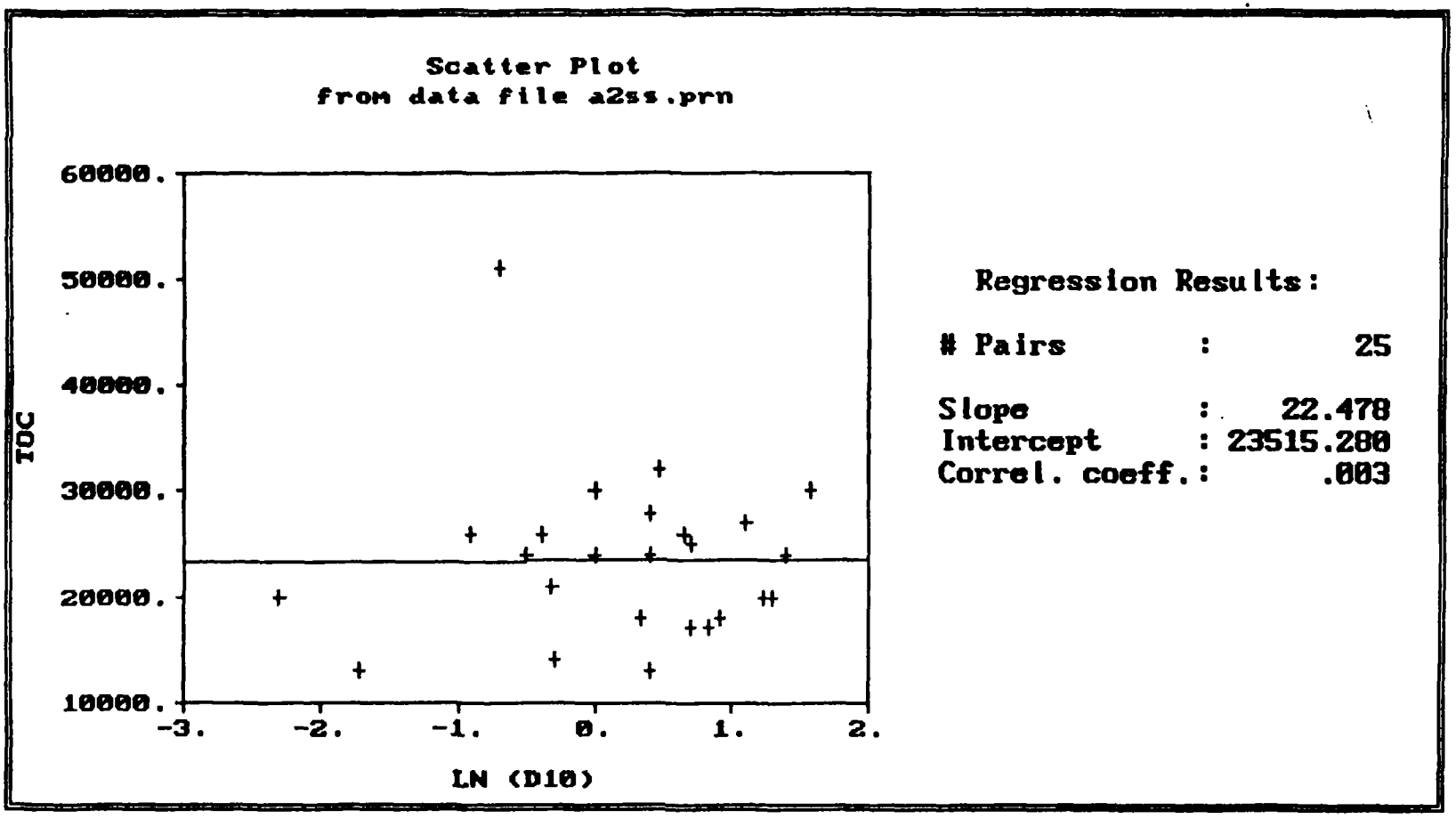

Scatter Plot
from data file a2ss.prn
9.
6.
3.
0.
-3.
.8
1.6
2.4
3.2
LN (MIREX)
LN (D30)
Regression Results:
Pairs : 25
Slope : .746
Intercept : 1.492
Correl. coeff.: .202

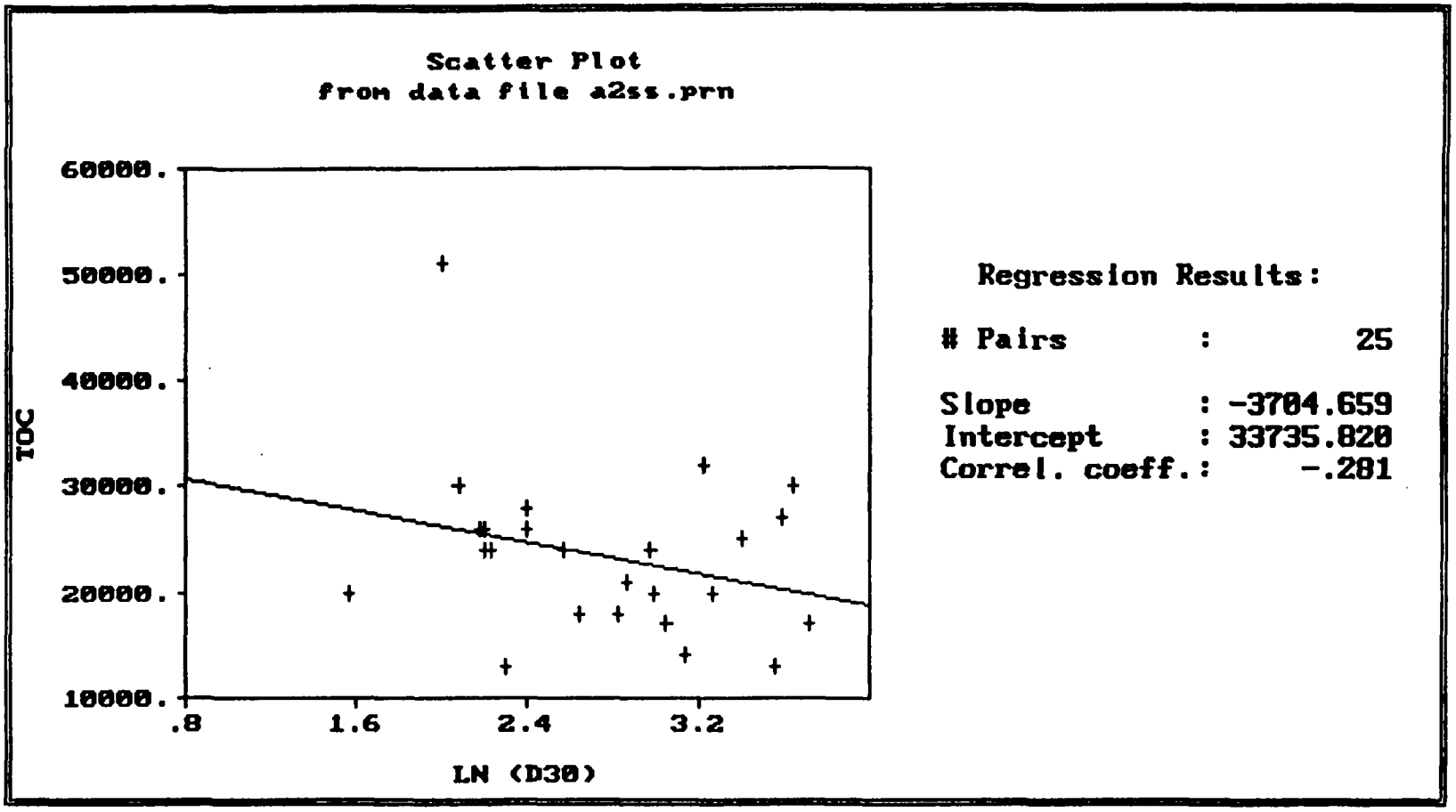

Scatter Plot
from data file a2ss.prn
LN (MIREX)
9.
6.
3.
0.
-3.
3.2
3.6
4.0
4.4
4.8
5.2
LN (D60)
Regression Results:
Pairs : 25
Slope : .658
Intercept : .797
Correl. coeff.: .158

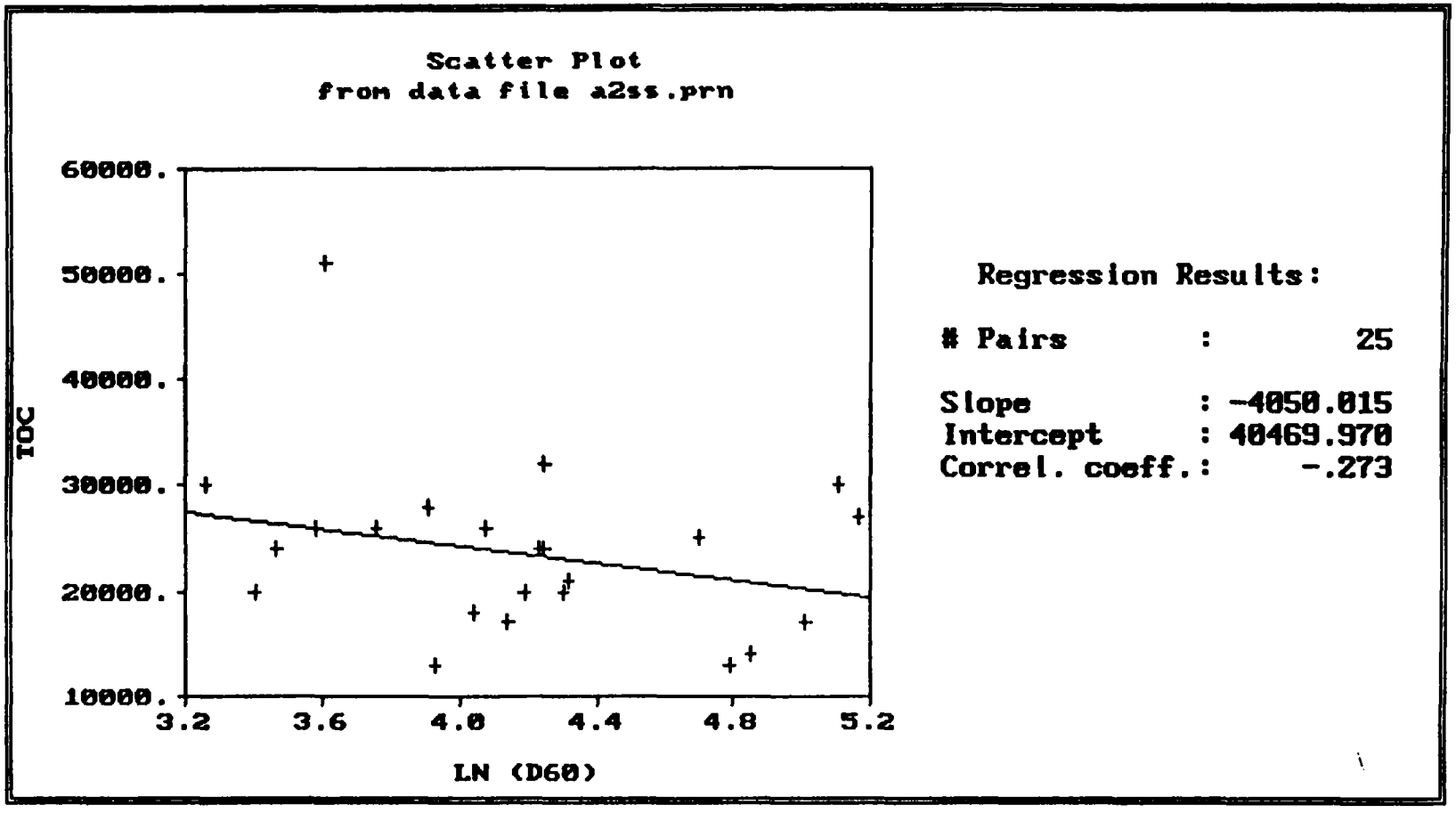

Scatter Plot
from data file a2ss.prn
LN (MIREX)
9.
6.
3.
0.
-3.
-1.
0.
1.
2.
3.
LN (ELEVDIFF)
Regression Results:
Pairs : 25
Slope : -2.608
Intercept : 6.232
Correl. coeff.: -.715

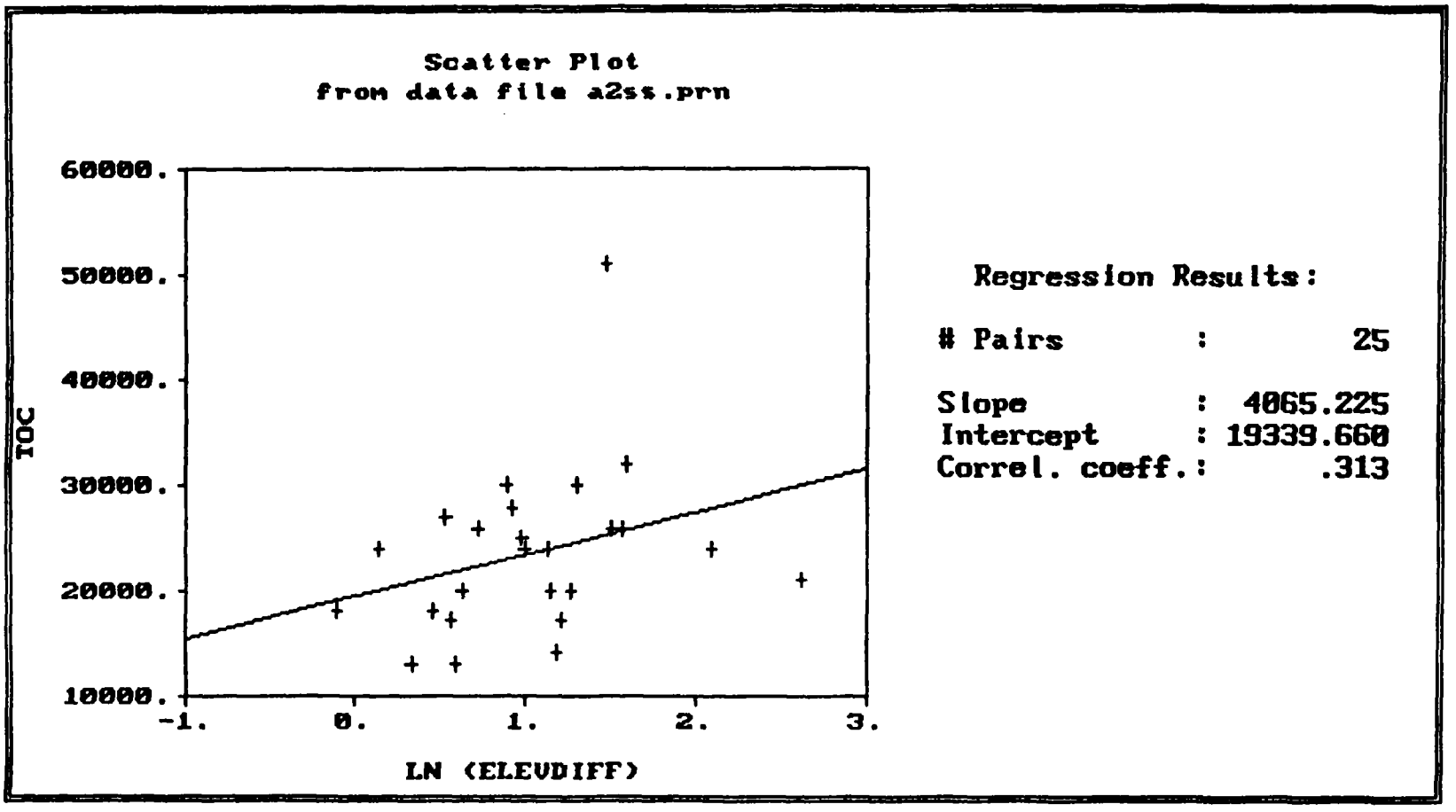

Scatter Plot
from data file a2ss.prn
9.
6.
3.
0.
-3.
2.
3.
4.
5.
6.
LN (HIREX)
LN (PERPDIST)
Regression Results:
Pairs : 25
Slope : -1.261
Intercept : 9.280
Correl. coeff.: -.515

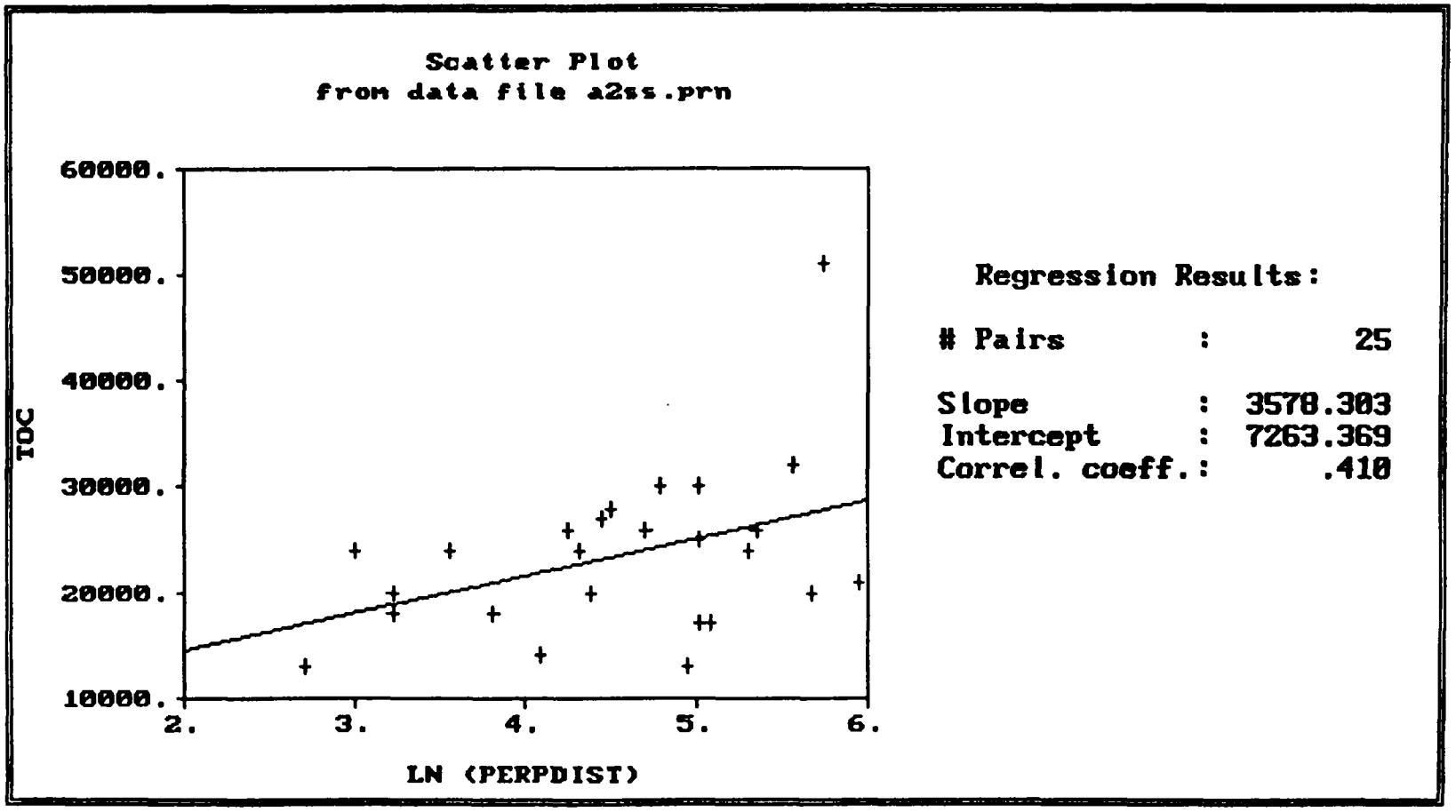

Scatter Plot
from data file a2ss.prn
60000.
50000.
40000.
30000.
20000.
10000.
TOC
7.00
7.01
7.02
LN (ELEVATION)
Regression Results:
Pairs : 25
Slope :602442.600
Intercept :**********
Correl. coeff.: .184


Scatter Plot
from data file a2ss.prn
60000.
50000.
40000.
30000.
20000.
10000.
TOC
-3.
-2.
-1.
0.
1.
2.
LN (D10)
Regression Results:
Pairs : 25
Slope : 22.478
Intercept : 23515.280
Correl. coeff.: .003

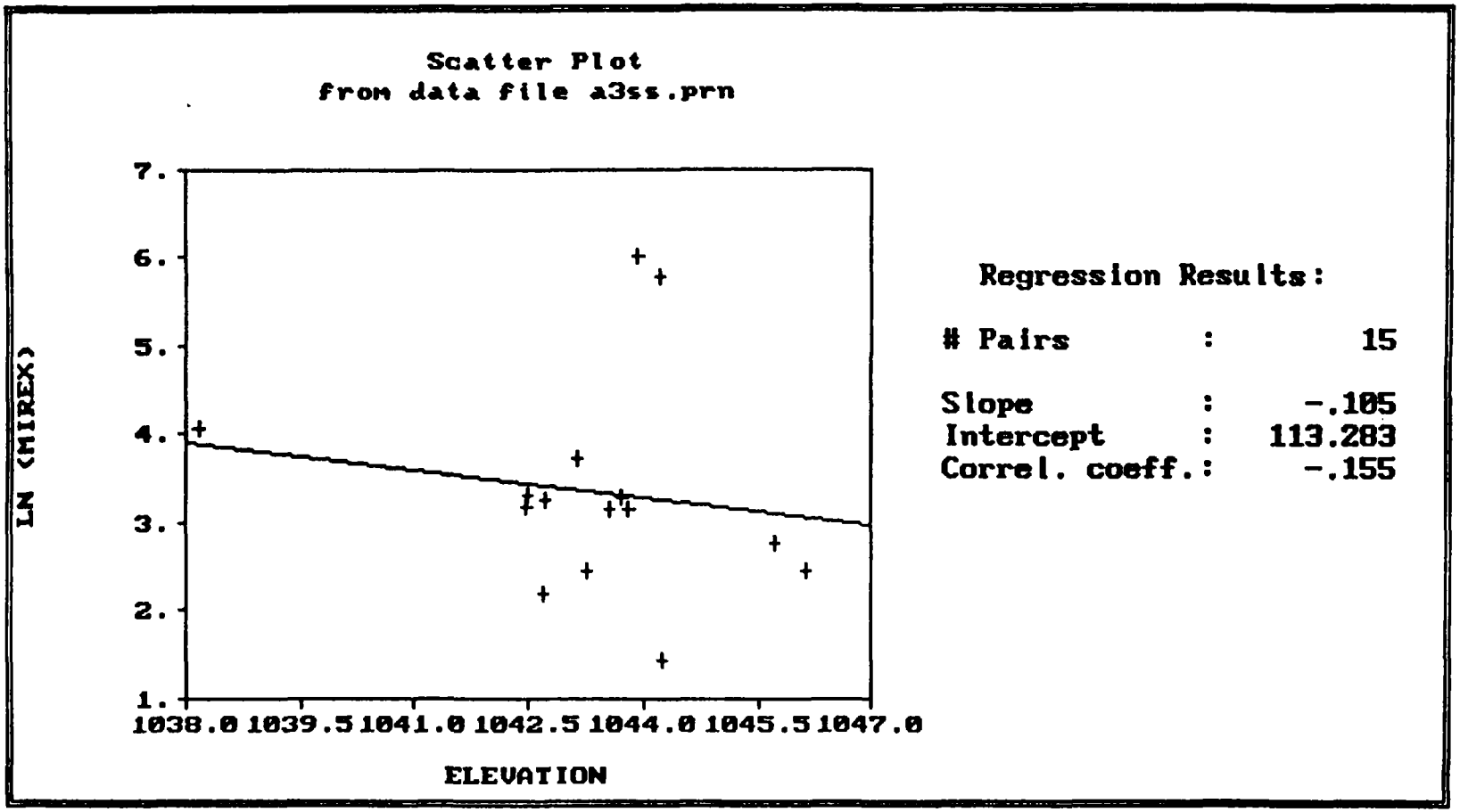

Scatter Plot
from data file a2ss.prn
60000.
50000.
40000.
30000.
20000.
10000.
TOC
.8
1.6
2.4
3.2
LN (D30)
Regression Results:
Pairs : 25
Slope : -3704.659
Intercept : 33735.820
Correl. coeff.: -.281

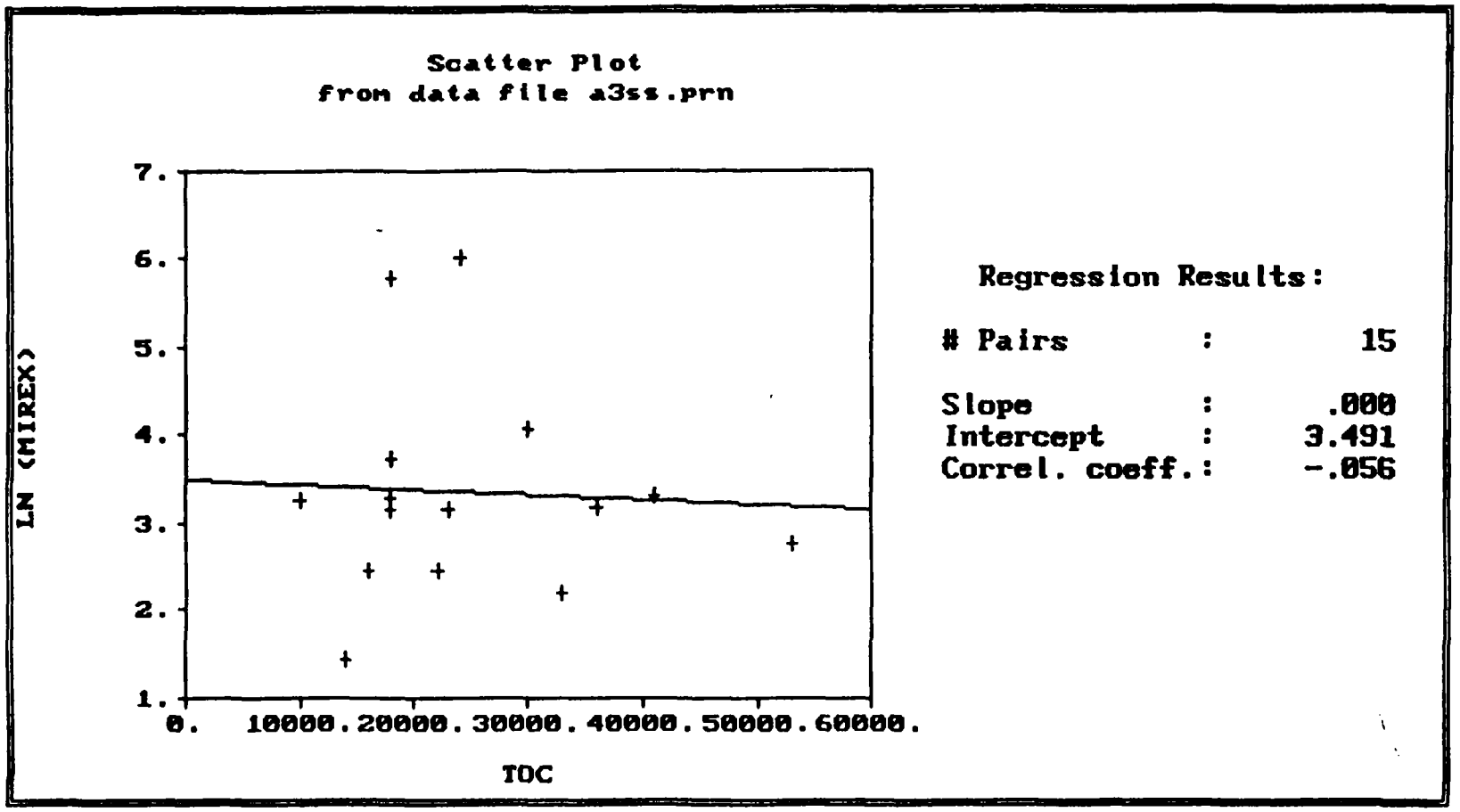

Scatter Plot
from data file a2ss.prn
60000.
50000.
40000.
30000.
20000.
10000.
TOC
3.2
3.6
4.0
4.4
4.8
5.2
LN (D60)
Regression Results:
Pairs : 25
Slope : -4050.015
Intercept : 40469.970
Correl. coeff.: -.273

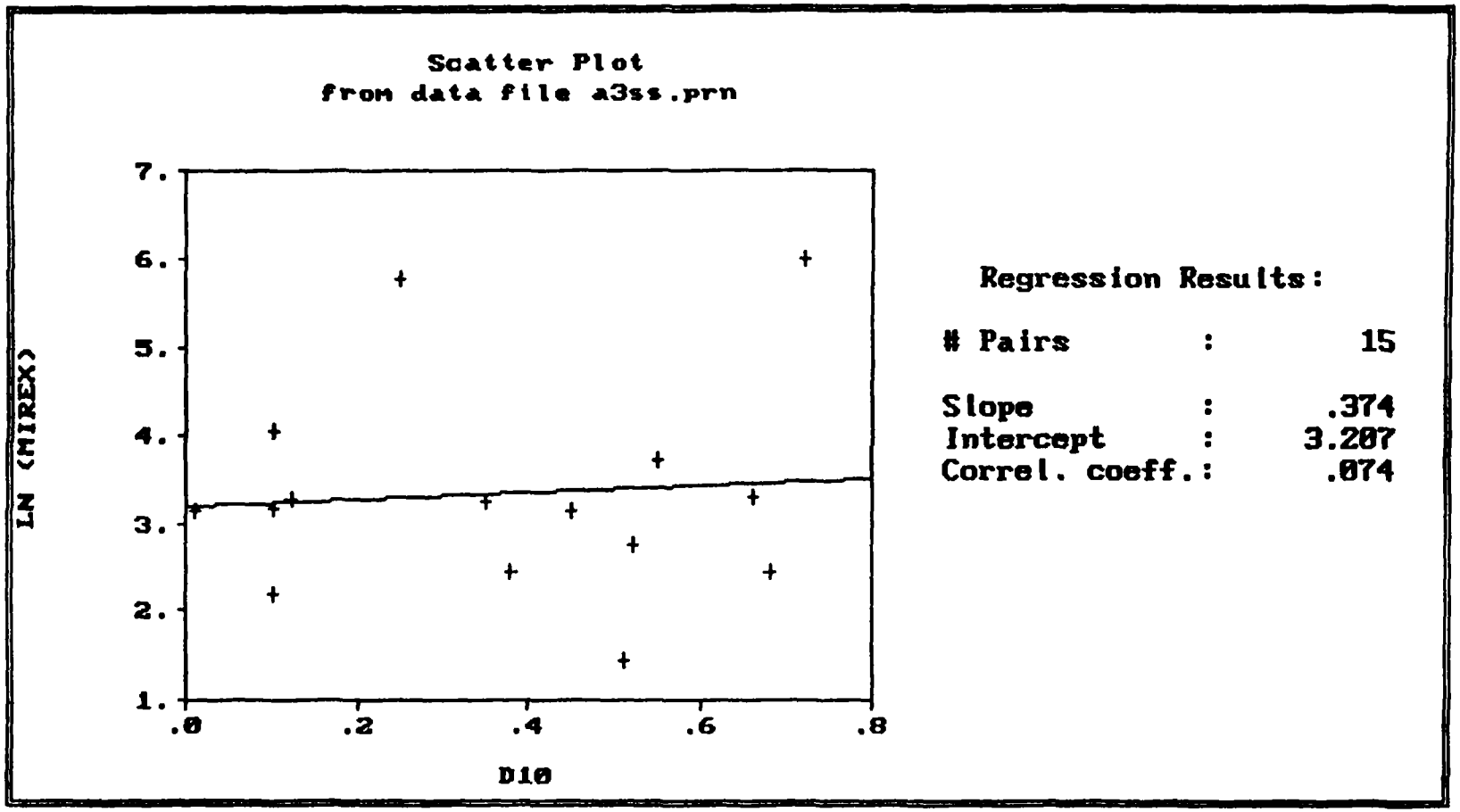

Scatter Plot
from data file a2ss.prn
60000.
50000.
40000.
30000.
20000.
10000.
TOC
-1.
0.
1.
2.
3.
LN (ELEVDIFF)
Regression Results:
Pairs : 25
Slope : 4065.225
Intercept : 19339.660
Correl. coeff.: .313

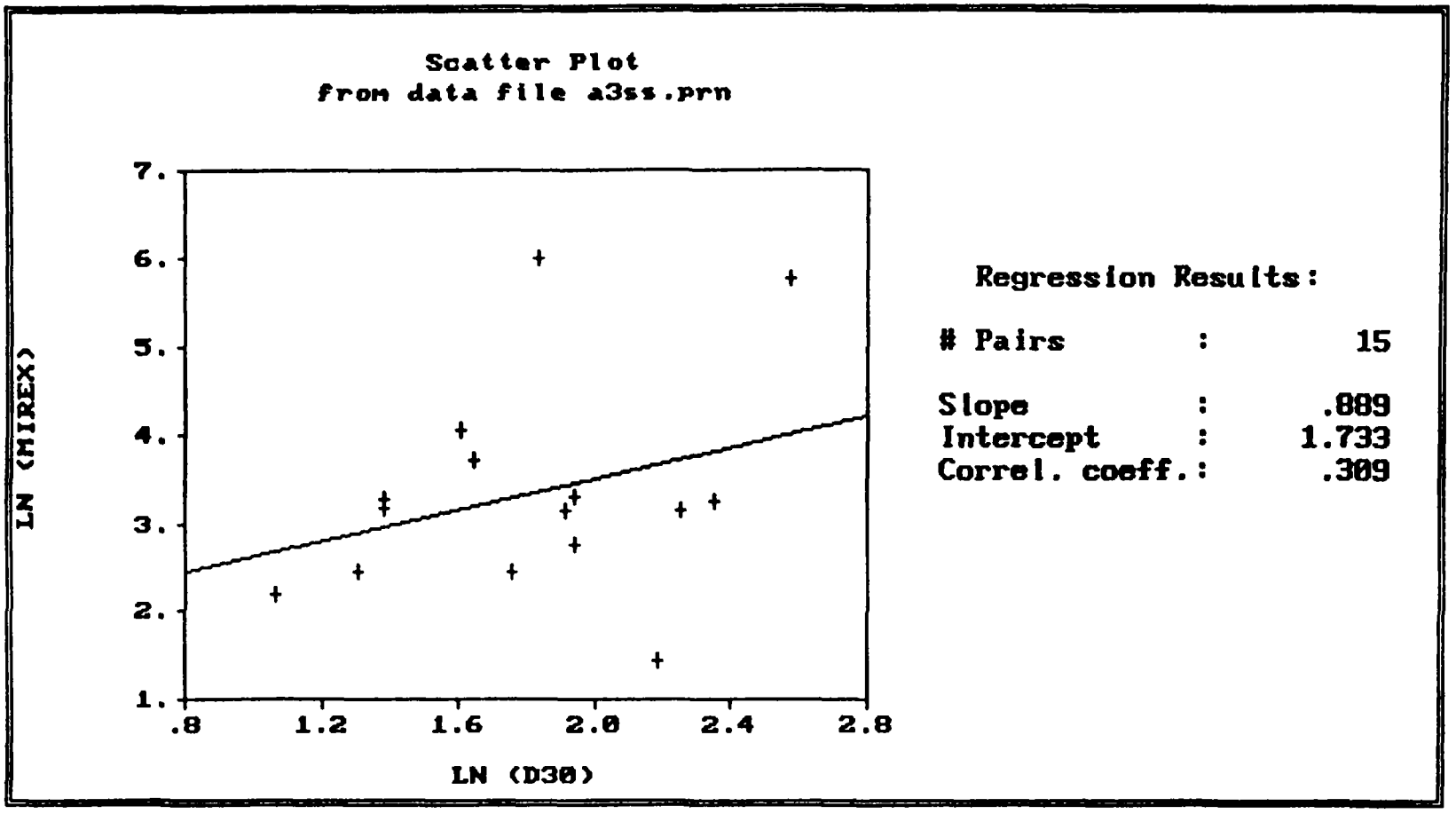

Scatter Plot
from data file a2ss.prn
60000.
50000.
40000.
30000.
20000.
10000.
TOC
2.
3.
4.
5.
6.
LN (PERPDIST)
Regression Results:
Pairs : 25
Slope : 3578.303
Intercept : 7263.369
Correl. coeff.: .410

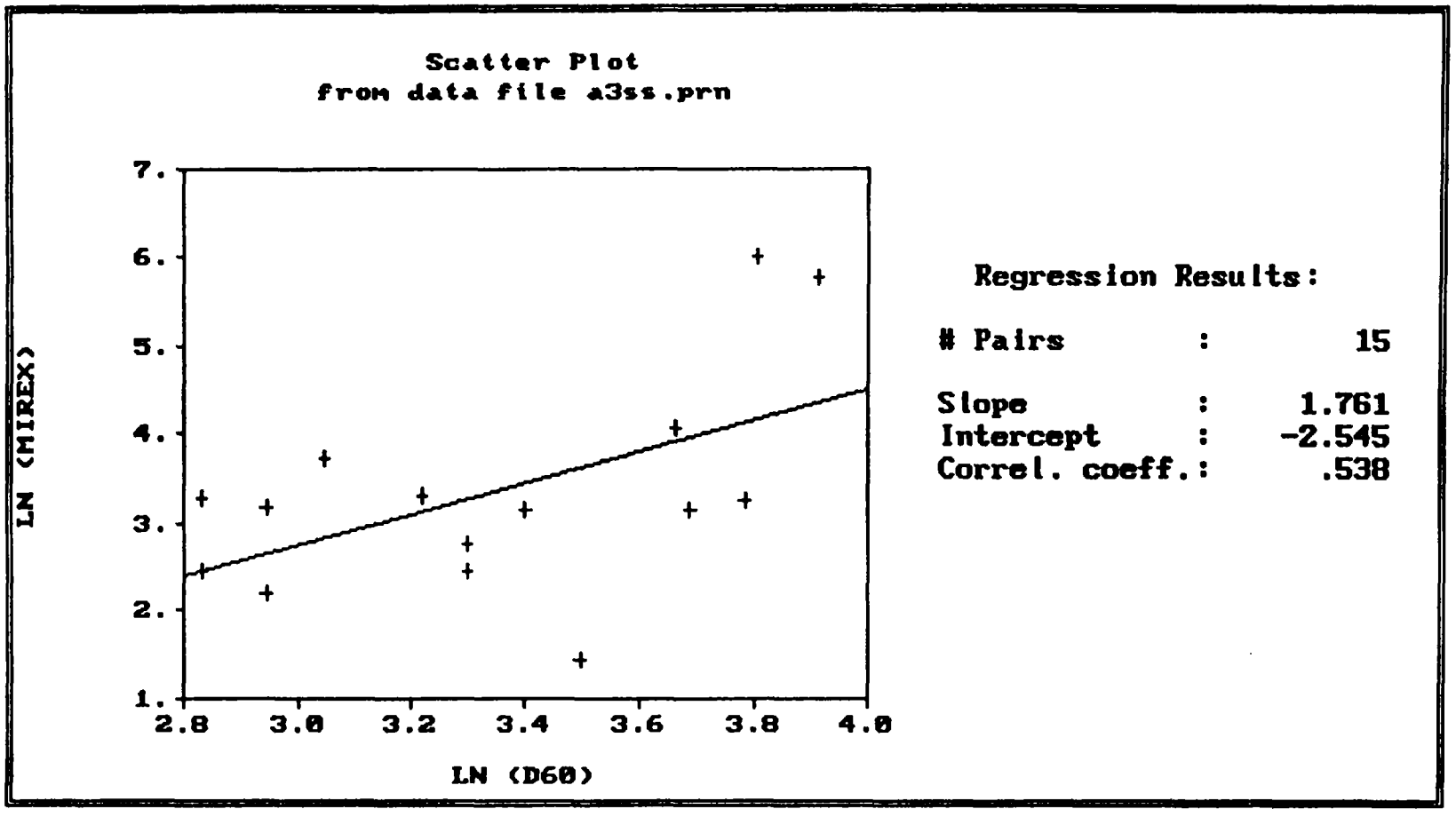
AREA 3

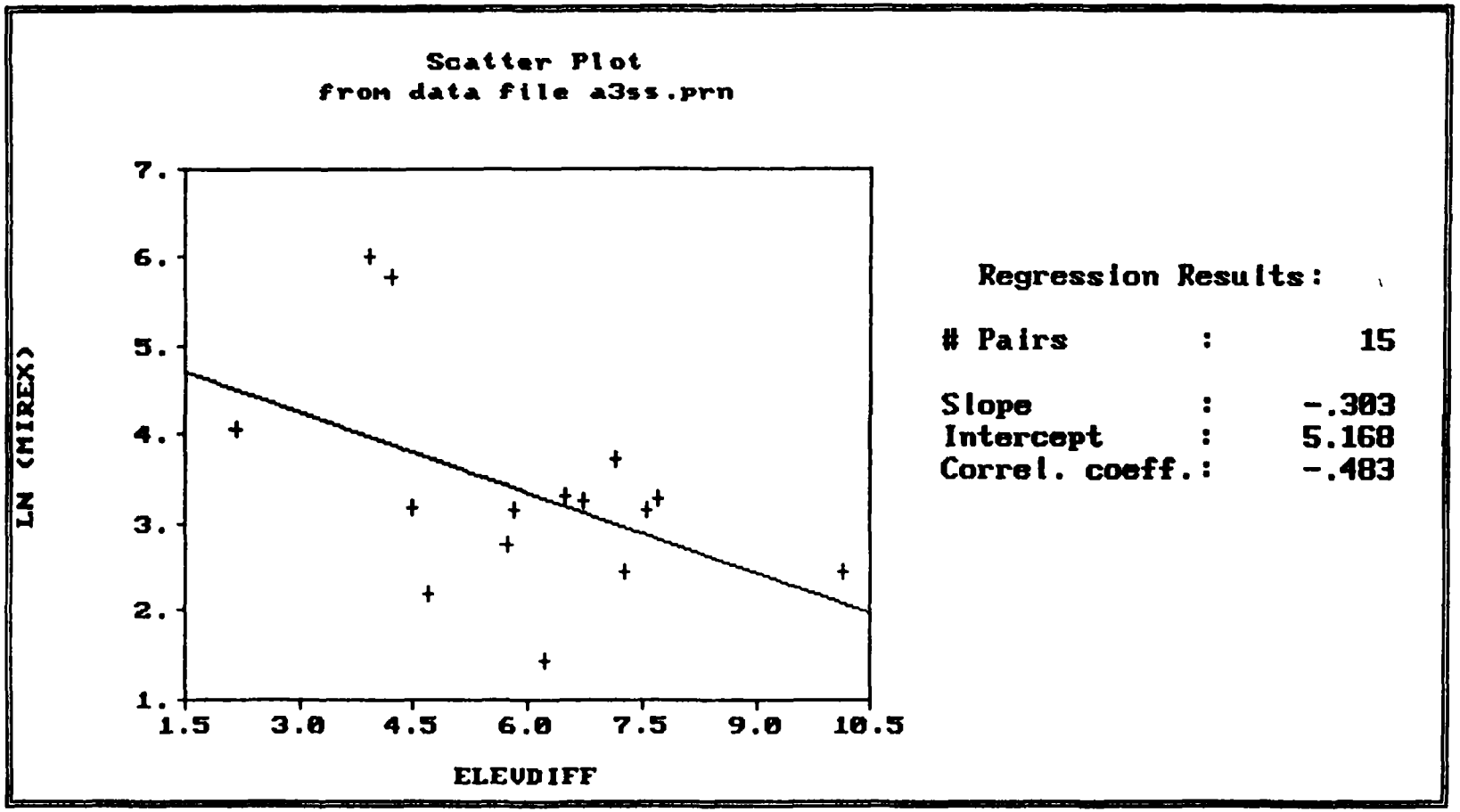

Scatter Plot
from data file a3ss.prn
LN (MIREX)
7.
6.
5.
4.
3.
2.
1.
1038.0 1039.5 1041.0 1042.5 1044.0 1045.5 1047.0
ELEVATION
Regression Results:
Pairs : 15
Slope : -.105
Intercept : 113.283
Correl. coeff.: -.155

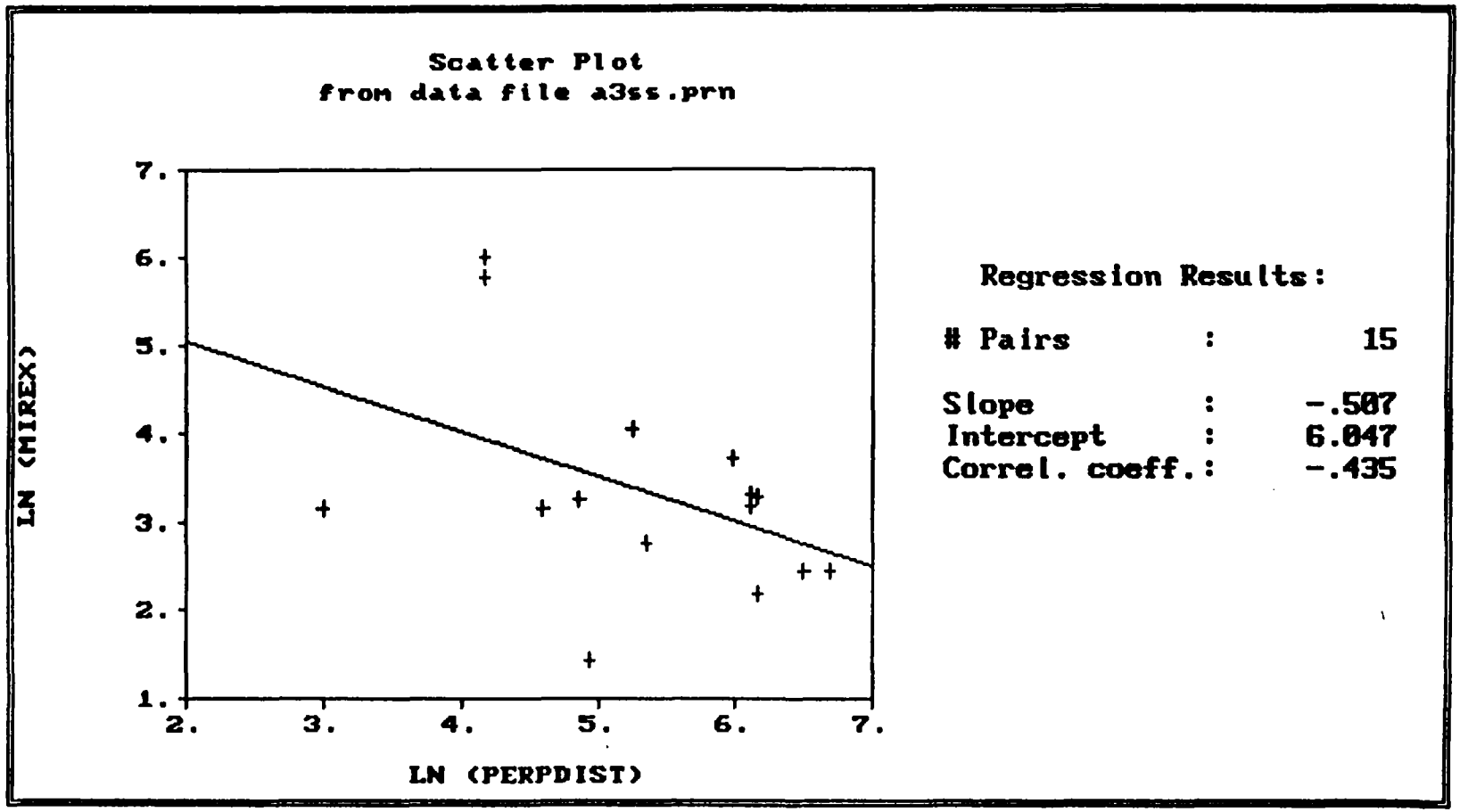

Scatter Plot
from data file a3ss.prn
LN (MIREX)
7.
6.
5.
4.
3.
2.
1.
0.
10000.
20000.
30000.
40000.
50000.
60000.
TOC
Regression Results:
Pairs : 15
Slope : .000
Intercept : 3.491
Correl. coeff.: -.056

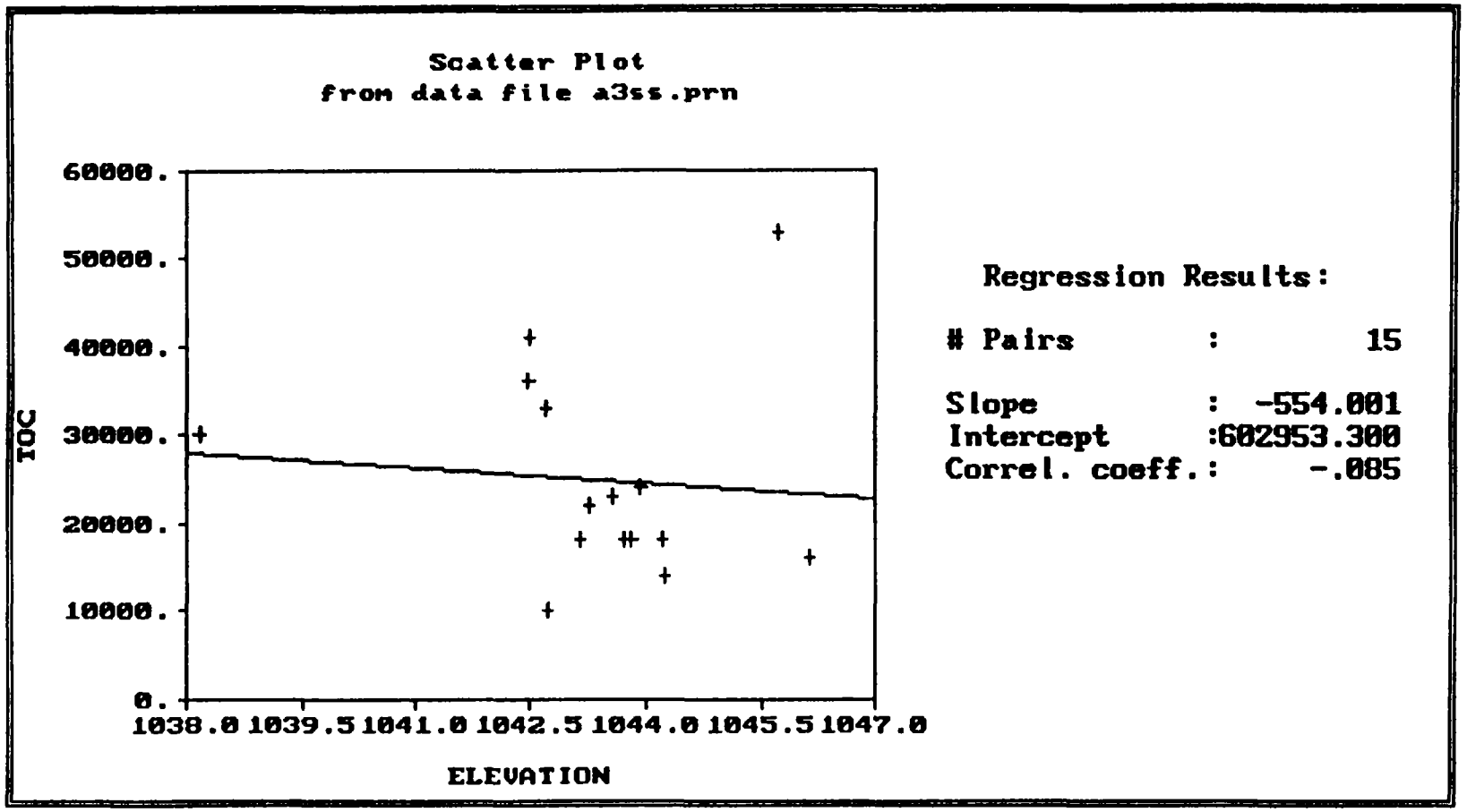

Scatter Plot
from data file a3ss.prn
LN (MIREX)
7.
6.
5.
4.
3.
2.
1.
.0
.2
.4
.6
.8
D10
Regression Results:
Pairs : 15
Slope : .374
Intercept : 3.207
Correl. coeff.: .074

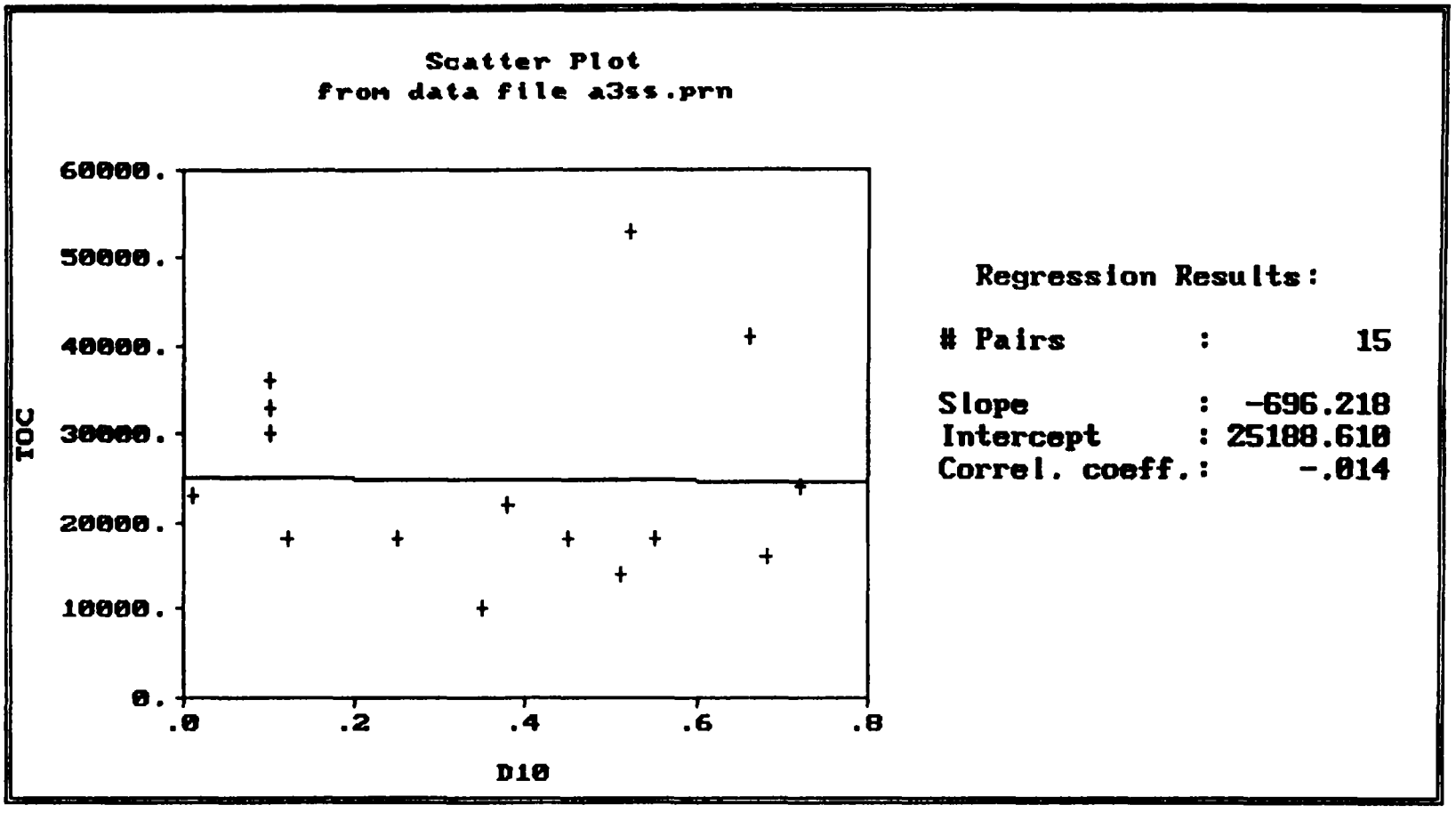

Scatter Plot
from data file a3ss.prn
LN (MIREX)
7.
6.
5.
4.
3.
2.
1.
.8
1.2
1.6
2.0
2.4
2.8
LN (D30)
Regression Results:
Pairs : 15
Slope : .889
Intercept : 1.733
Correl. coeff.: .309

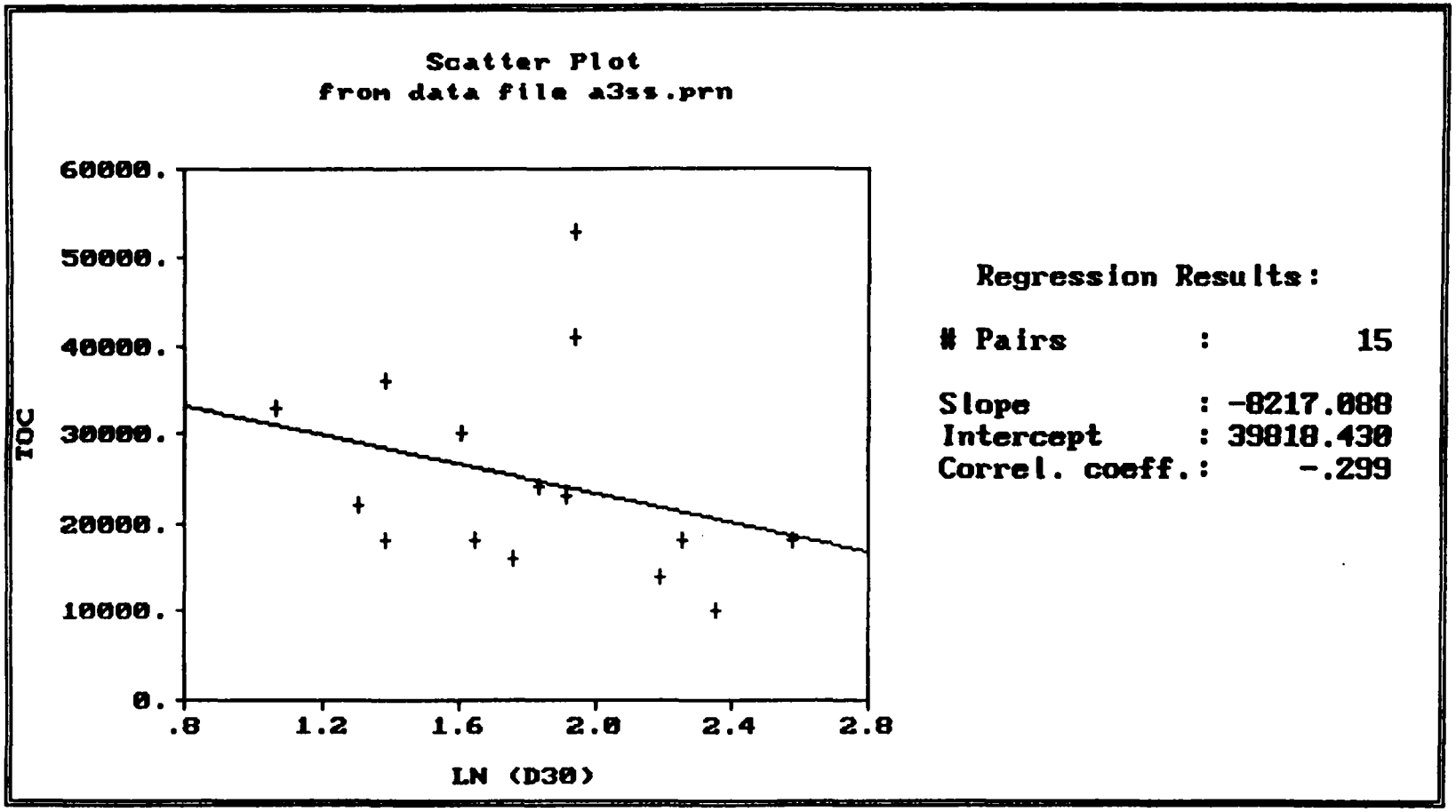

Scatter Plot
from data file a3ss.prn
LN (MIREX)
7.
6.
5.
4.
3.
2.
1.
2.8
3.0
3.2
3.4
3.6
3.8
4.0
LN (D60)
Regression Results:
Pairs : 15
Slope : 1.761
Intercept : -2.545
Correl. coeff.: .538

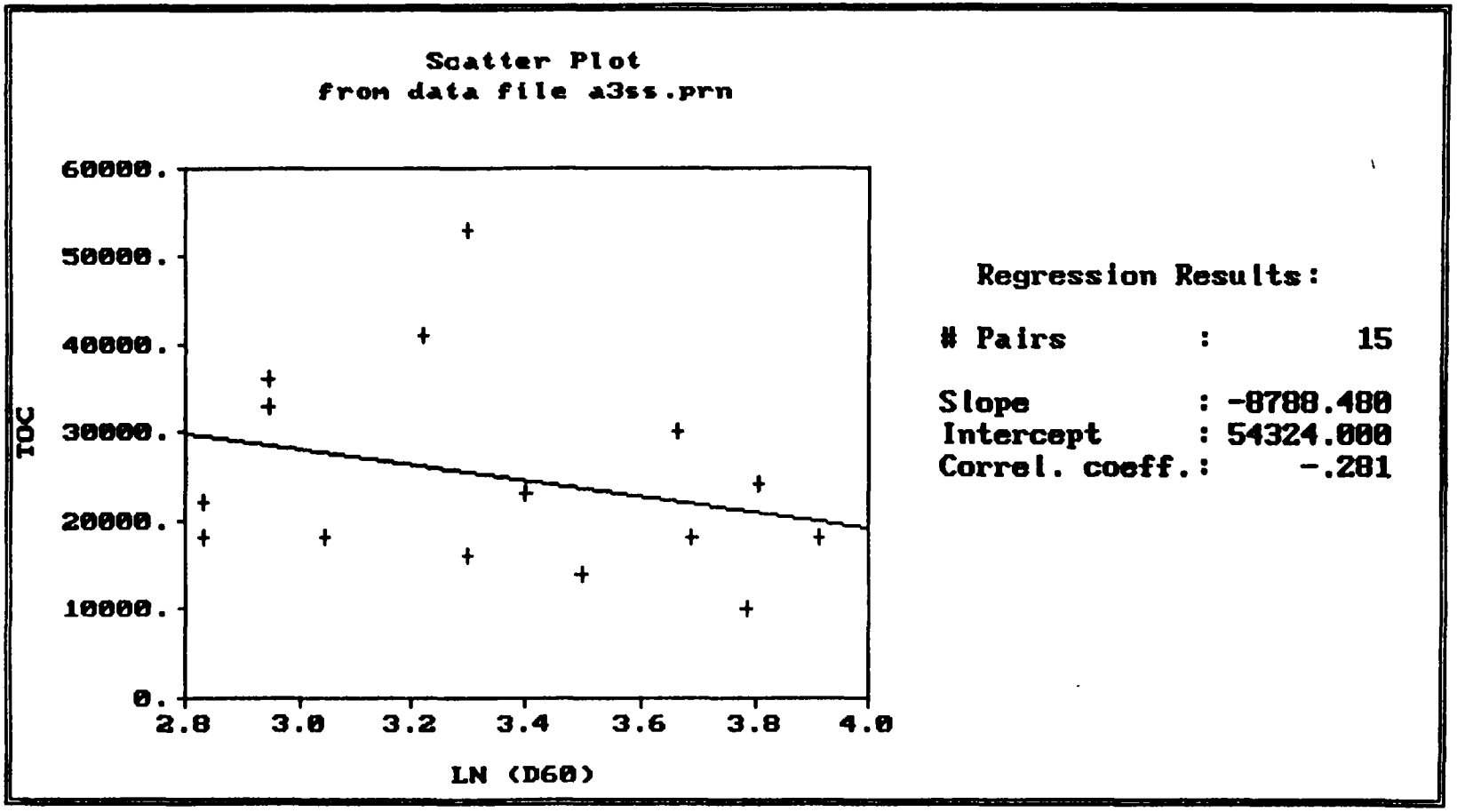

Scatter Plot
from data file a3ss.prn
LN (MIREX)
7.
6.
5.
4.
3.
2.
1.
1.5
3.0
4.5
6.0
7.5
9.0
10.5
ELEVDIFF
Regression Results:
Pairs : 15
Slope : -.303
Intercept : 5.168
Correl. coeff.: -.483

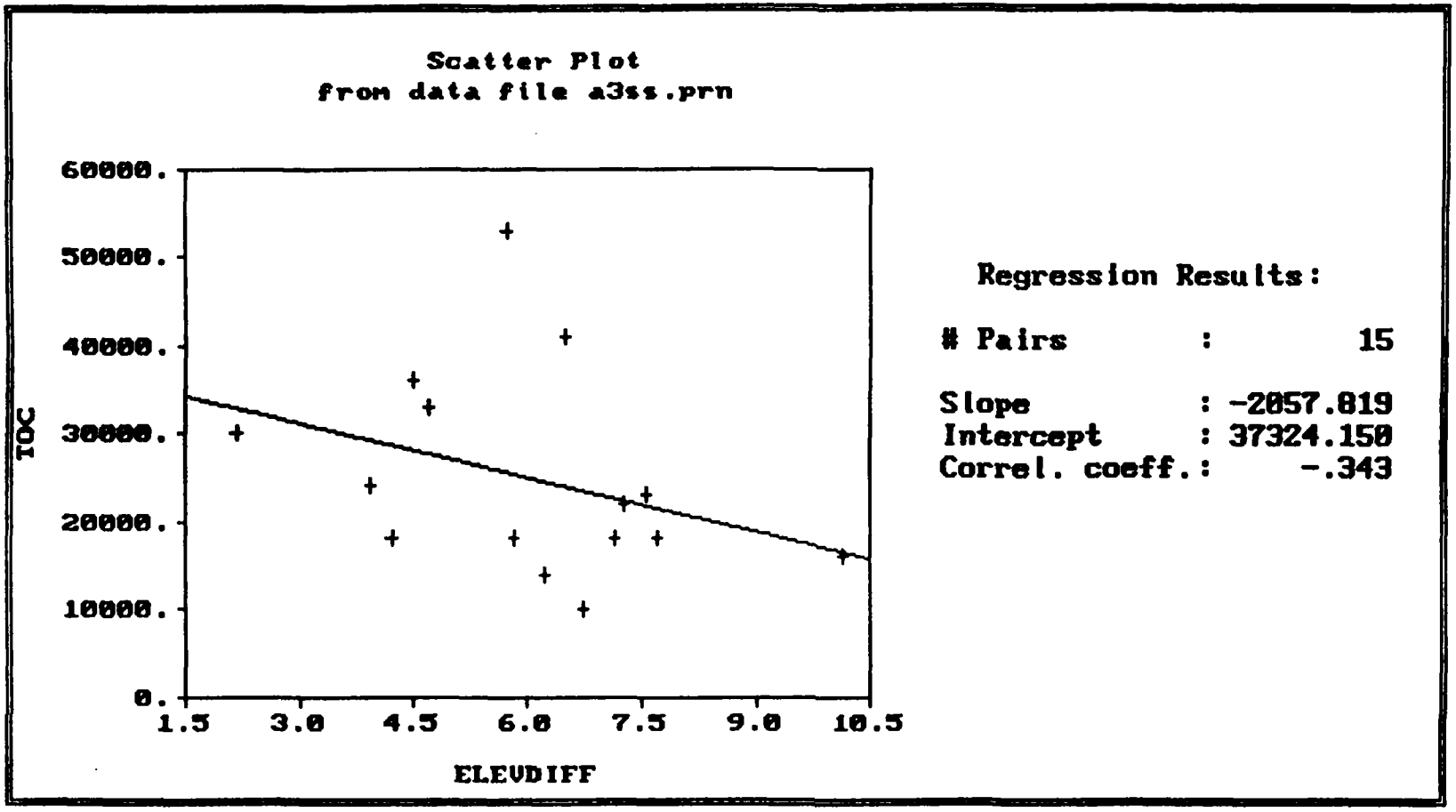

Scatter Plot
from data file a3ss.prn
LN (MIREX)
7.
6.
5.
4.
3.
2.
1.
2.
3.
4.
5.
6.
7.
LN (PERPDIST)
Regression Results:
Pairs : 15
Slope : -.507
Intercept : 6.047
Correl. coeff.: -.435

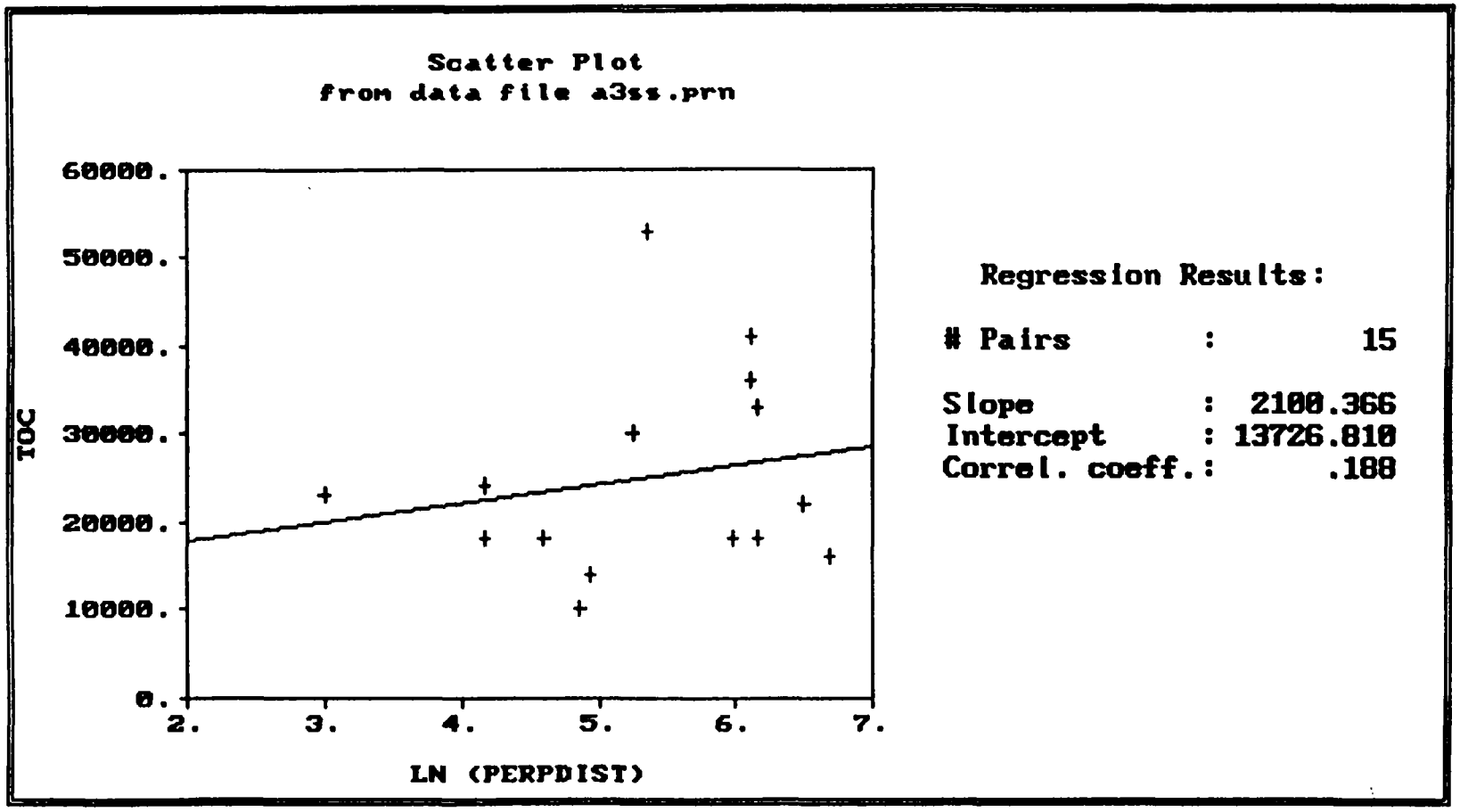

Scatter Plot
from data file a3ss.prn
60000.
50000.
40000.
30000.
20000.
10000.
0.
TOC
1038.0 1039.5 1041.0 1042.5 1044.0 1045.5 1047.0
ELEVATION
Regression Results:
Pairs : 15
Slope : -554.001
Intercept :602953.300
Correl. coeff.: -.085


Scatter Plot
from data file a3ss.prn
60000.
50000.
40000.
30000.
20000.
10000.
0.
TOC
.0
.2
.4
.6
.8
D10
Regression Results:
Pairs : 15
Slope : -696.218
Intercept : 25188.610
Correl. coeff.: -.014

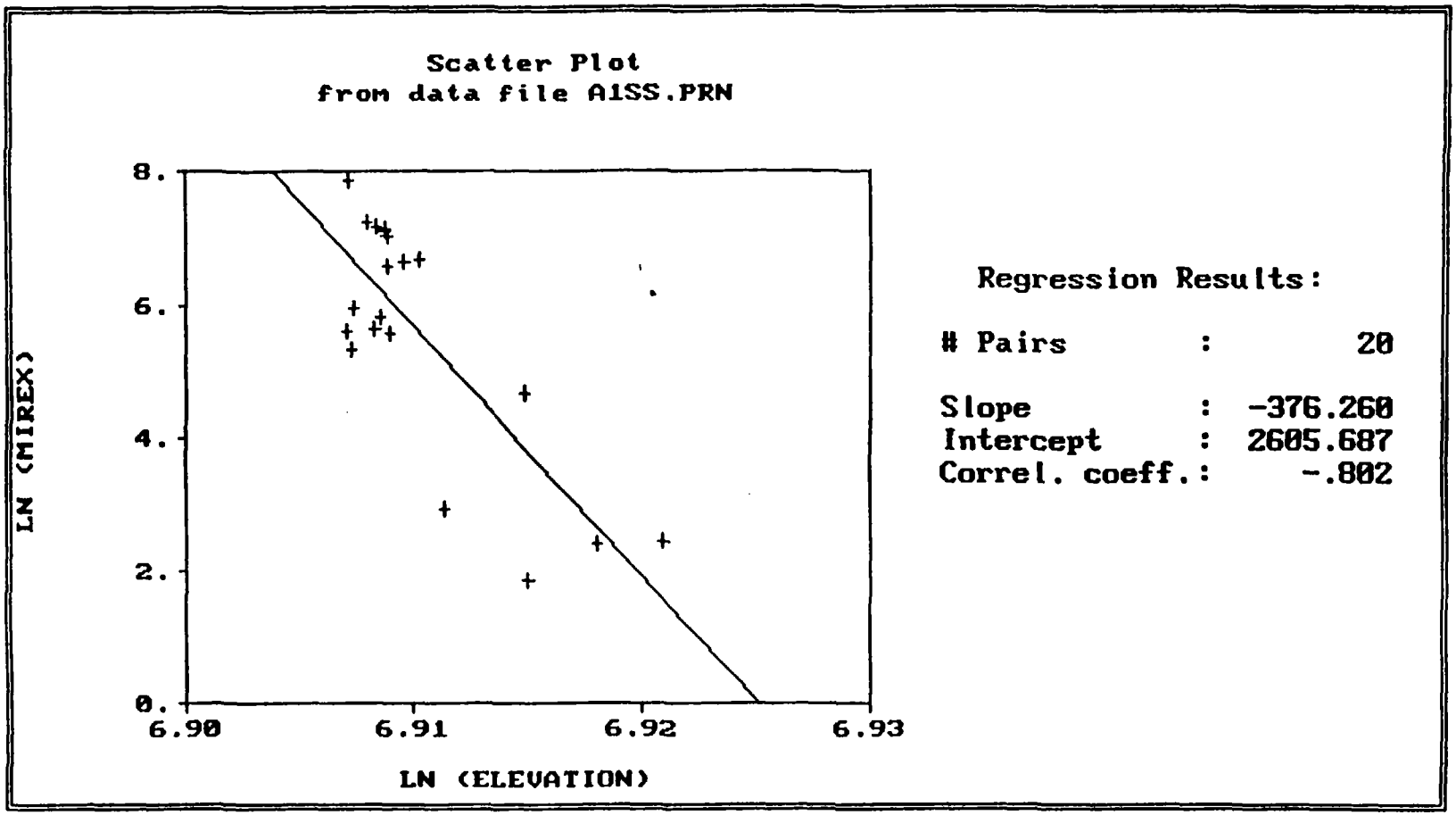

Scatter Plot
from data file a3ss.prn
60000.
50000.
40000.
30000.
20000.
10000.
0.
TOC
.8
1.2
1.6
2.0
2.4
2.8
LN (D30)
Regression Results:
Pairs : 15
Slope : -8217.088
Intercept : 39818.430
Correl. coeff.: -.299

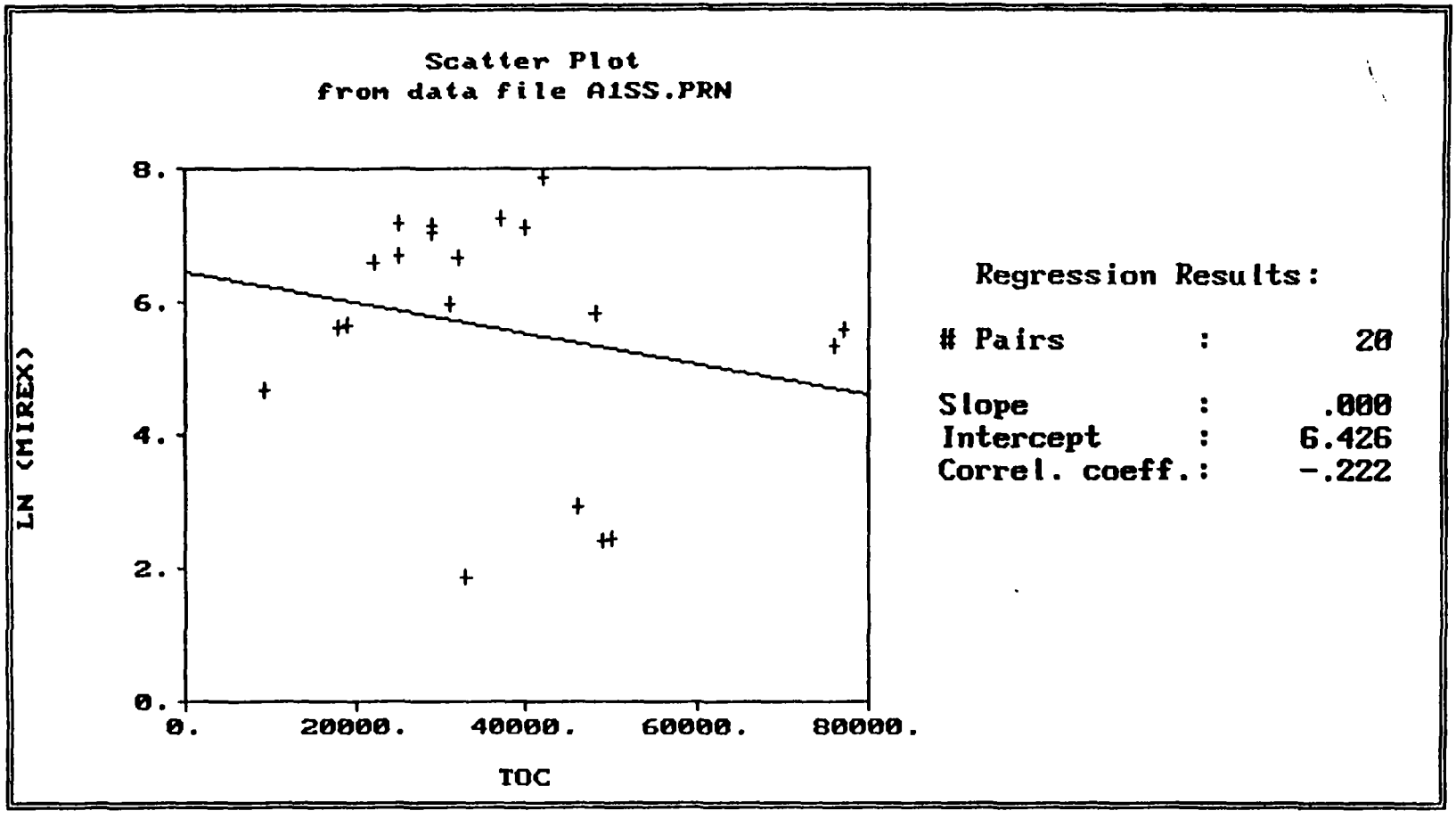

Scatter Plot
from data file a3ss.prn
60000.
50000.
40000.
30000.
20000.
10000.
0.
TOC
2.8
3.0
3.2
3.4
3.6
3.8
4.0
LN (D60)
Regression Results:
Pairs : 15
Slope : -8788.480
Intercept : 54324.000
Correl. coeff.: -.281

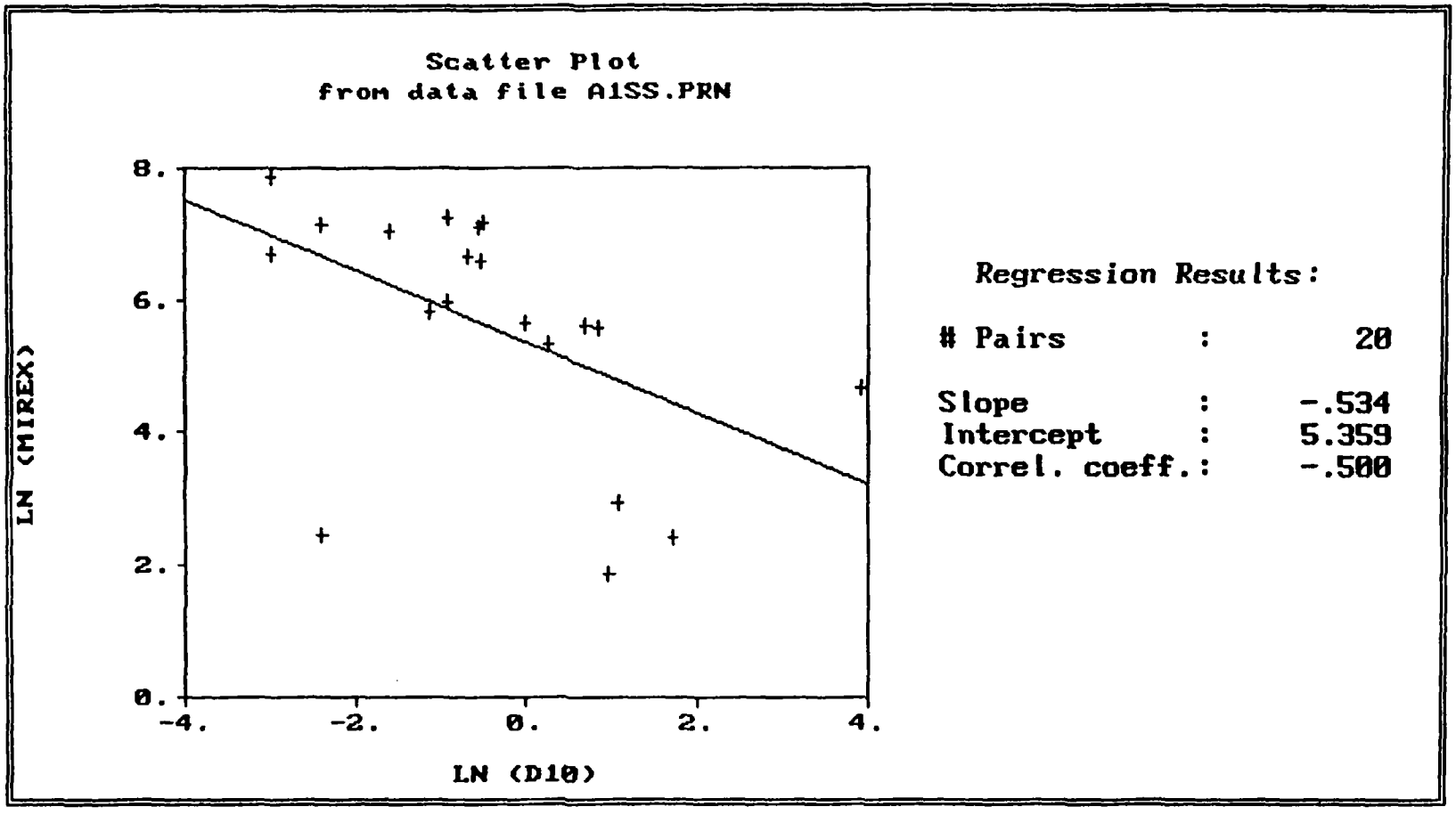

Scatter Plot
from data file a3ss.prn
60000.
50000.
40000.
30000.
20000.
10000.
0.
TOC
1.5
3.0
4.5
6.0
7.5
9.0
10.5
ELEVDIFF
Regression Results:
Pairs : 15
Slope : -2057.819
Intercept : 37324.150
Correl. coeff.: -.343

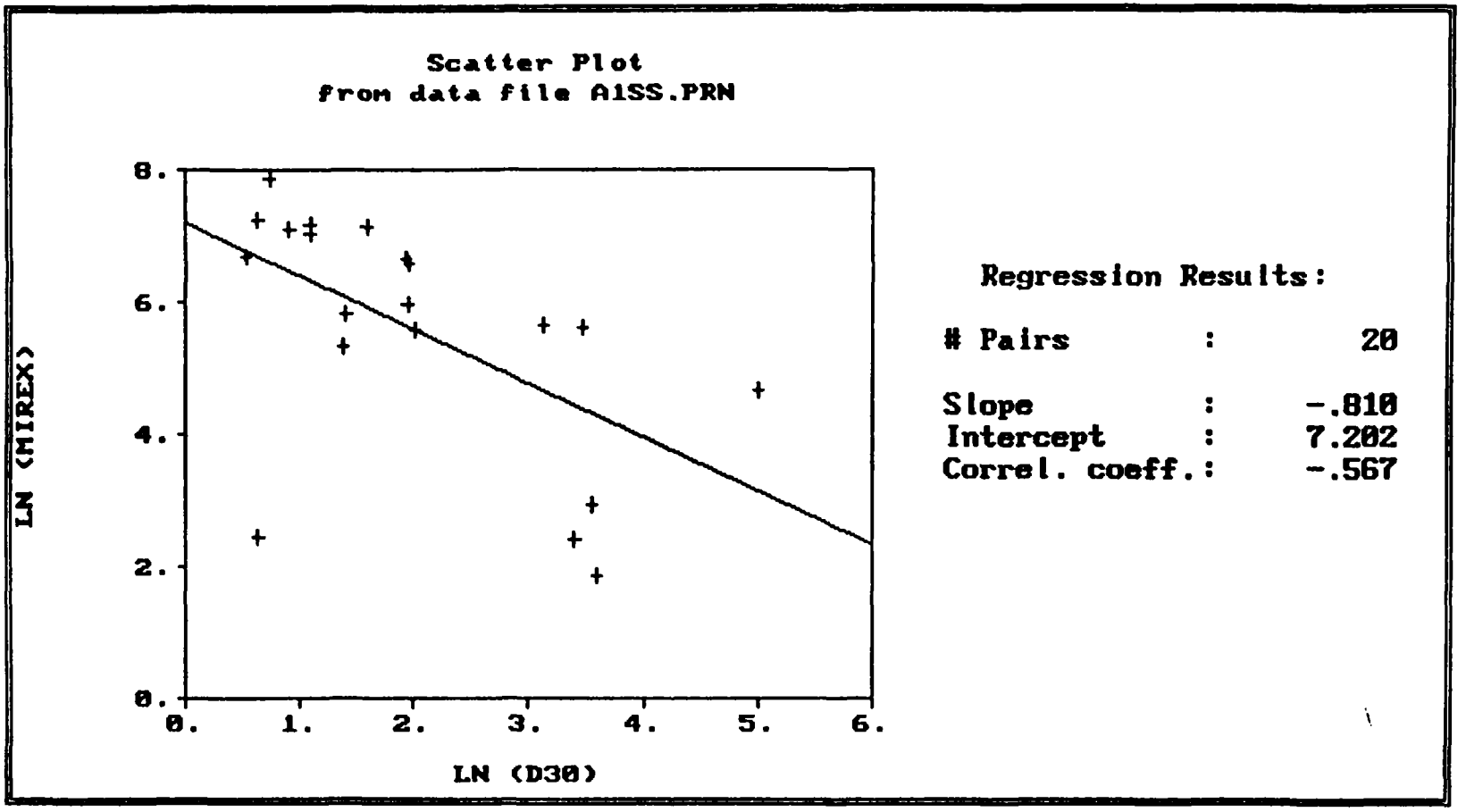

Scatter Plot
from data file a3ss.prn
60000.
50000.
40000.
30000.
20000.
10000.
0.
TOC
2.
3.
4.
5.
6.
7.
LN (PERPDIST)
Regression Results:
Pairs : 15
Slope : 2100.366
Intercept : 13726.810
Correl. coeff.: .188

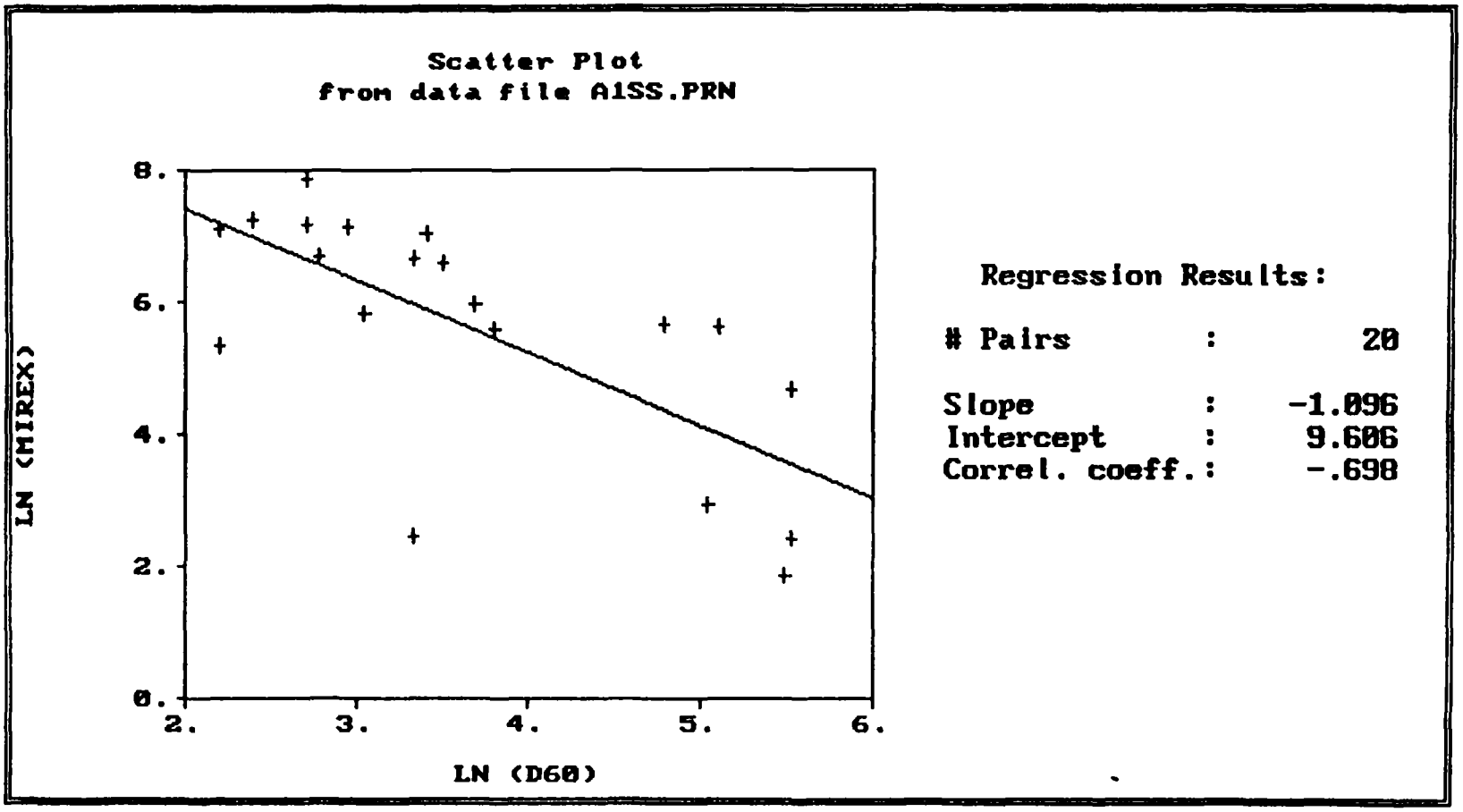
AREA 5

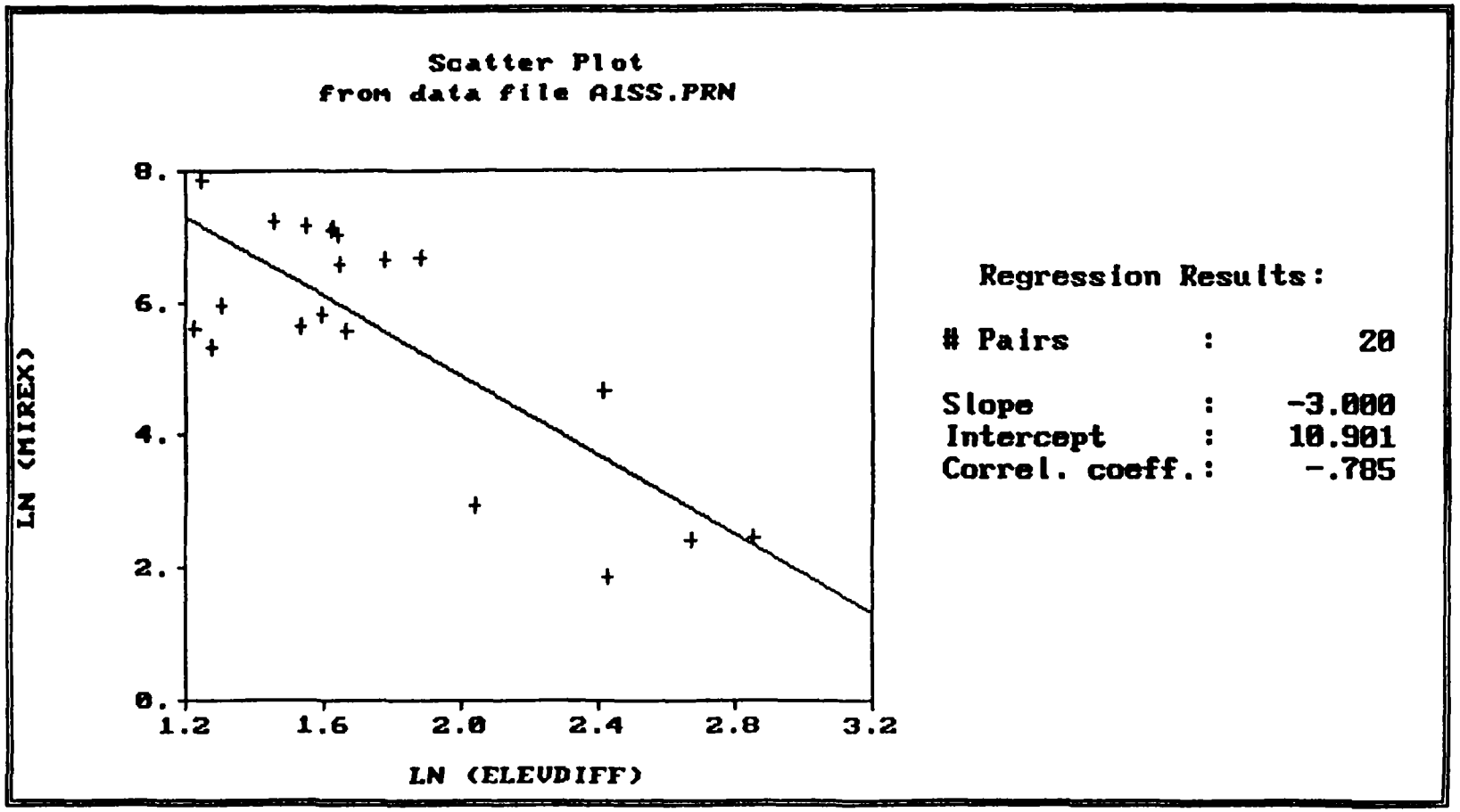

Scatter Plot
from data file A1SS.PRN
8.
6.
4.
2.
0.
6.90
6.91
6.92
6.93
LN (MIREX)
LN (ELEVATION)
Regression Results:
Pairs : 20
Slope : -376.260
Intercept : 2605.687
Correl. coeff.: -.802

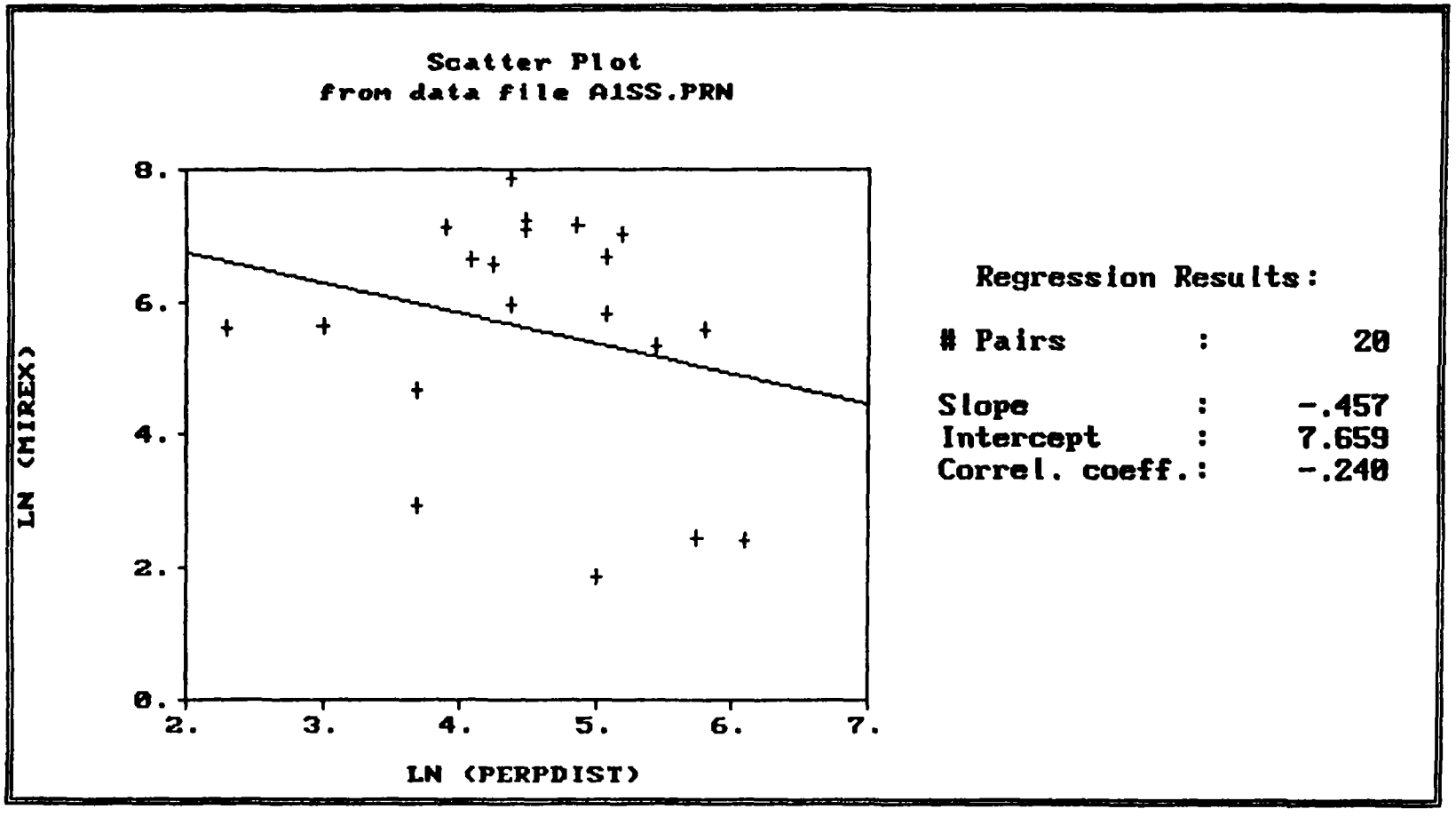

Scatter Plot
from data file A1SS.PRN
LN (MIREX)
8.
6.
4.
2.
0.
0.
20000.
40000.
60000.
80000.
TOC
Regression Results:
Pairs : 20
Slope : .000
Intercept : 6.426
Correl. coeff.: -.222

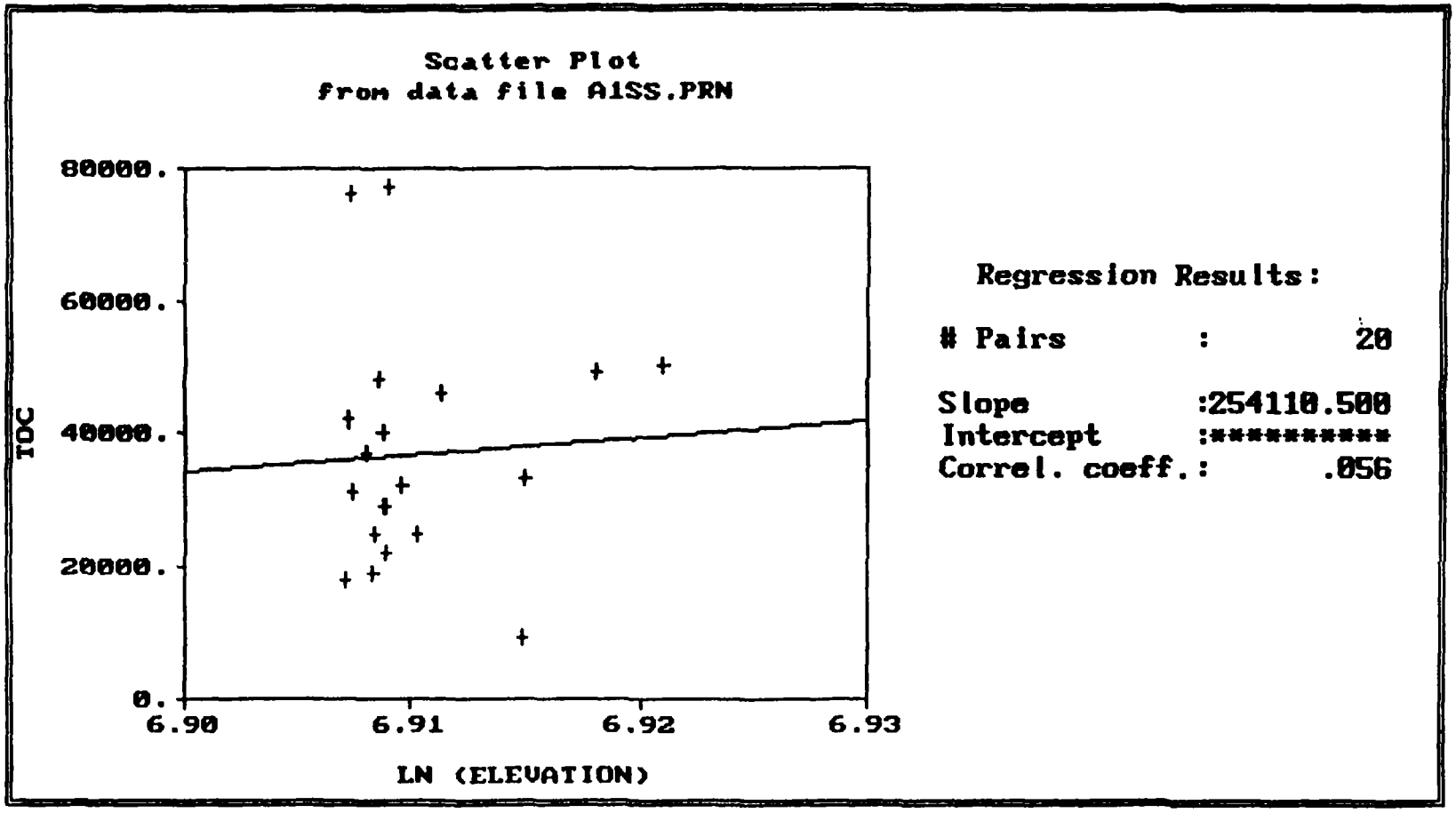

Scatter Plot
from data file A1SS.PRN
LN (MIREX)
8.
6.
4.
2.
0.
-4.
-2.
0.
2.
4.
LN (D10)
Regression Results:
Pairs : 20
Slope : -.534
Intercept : 5.359
Correl. coeff.: -.500

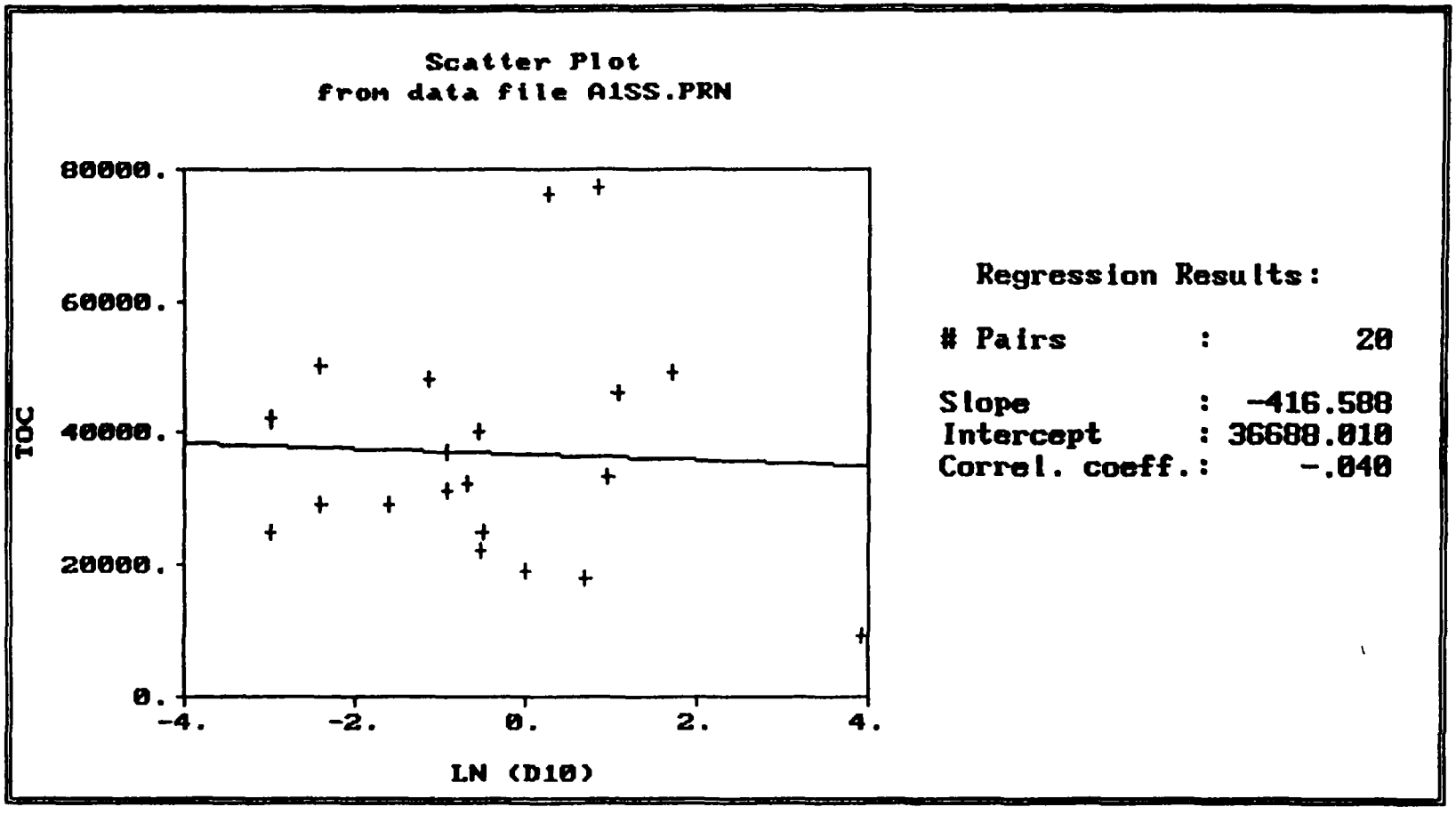

Scatter Plot
from data file A1SS.PRN
LN (MIREX)
8.
6.
4.
2.
0.
0.
1.
2.
3.
4.
5.
6.
LN (D30)
Regression Results:
Pairs : 20
Slope : -.810
Intercept : 7.202
Correl. coeff.: -.567

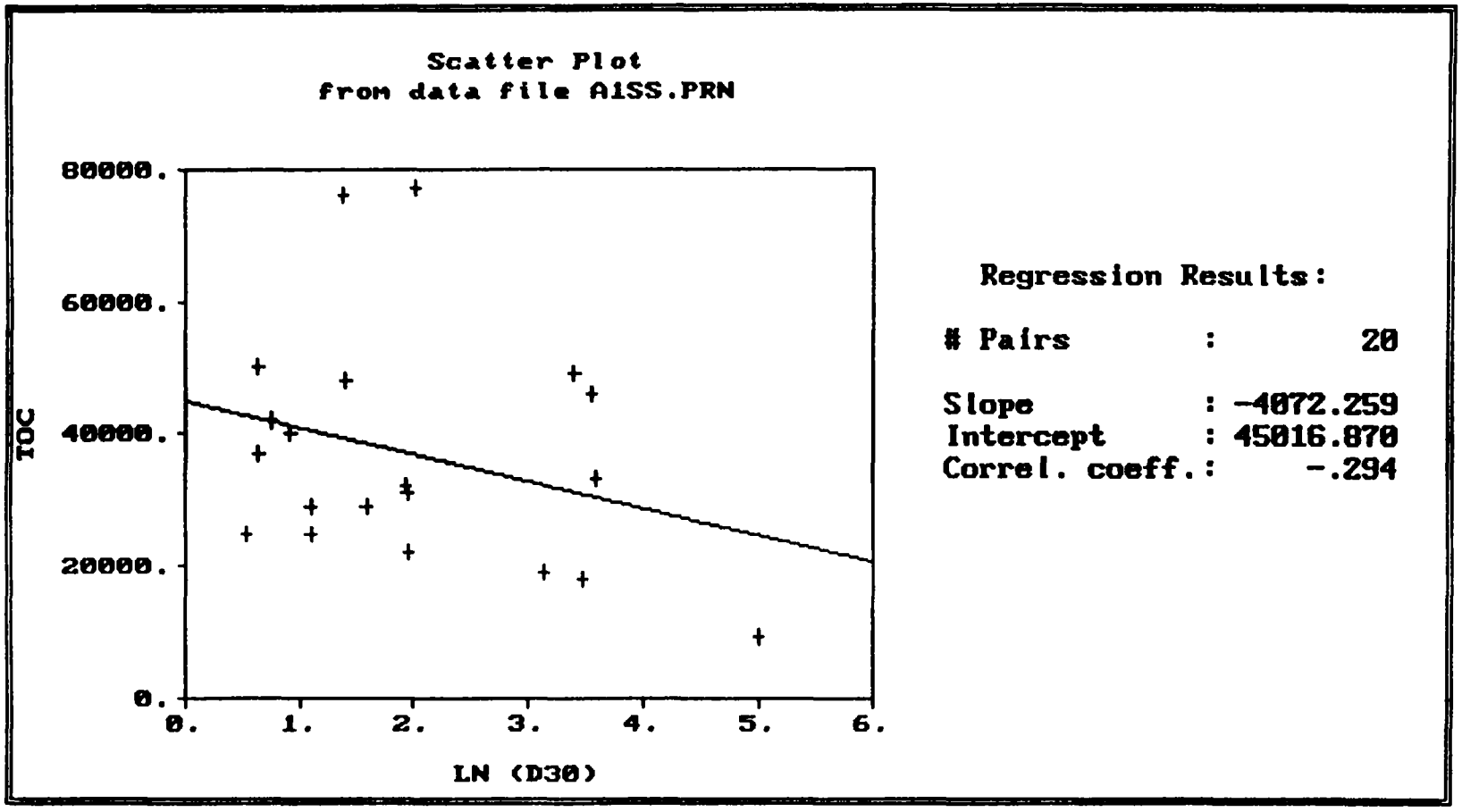

Scatter Plot
from data file A1SS.PRN
8.
6.
4.
2.
0.
2.
3.
4.
5.
6.
LN (MIREX)
LN (D60)
Regression Results:
Pairs : 20
Slope : -1.096
Intercept : 9.606
Correl. coeff.: -.698

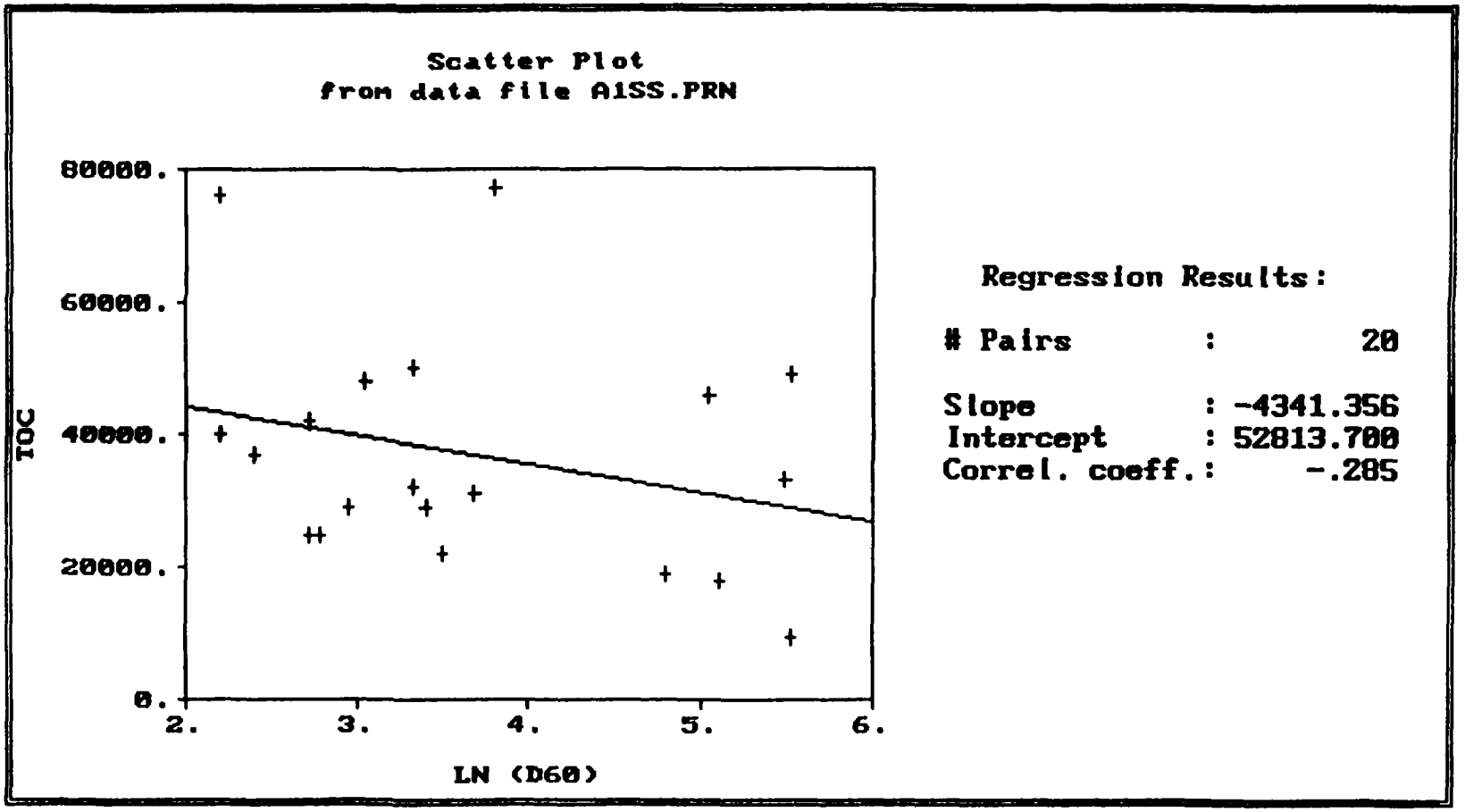

Scatter Plot
from data file AISS.PRN
8.
6.
4.
2.
0.
1.2
1.6
2.0
2.4
2.8
3.2
LN (MIREX)
LN (ELEVDIFF)
Regression Results:
Pairs : 20
Slope : -3.000
Intercept : 10.901
Correl. coeff.: -.785

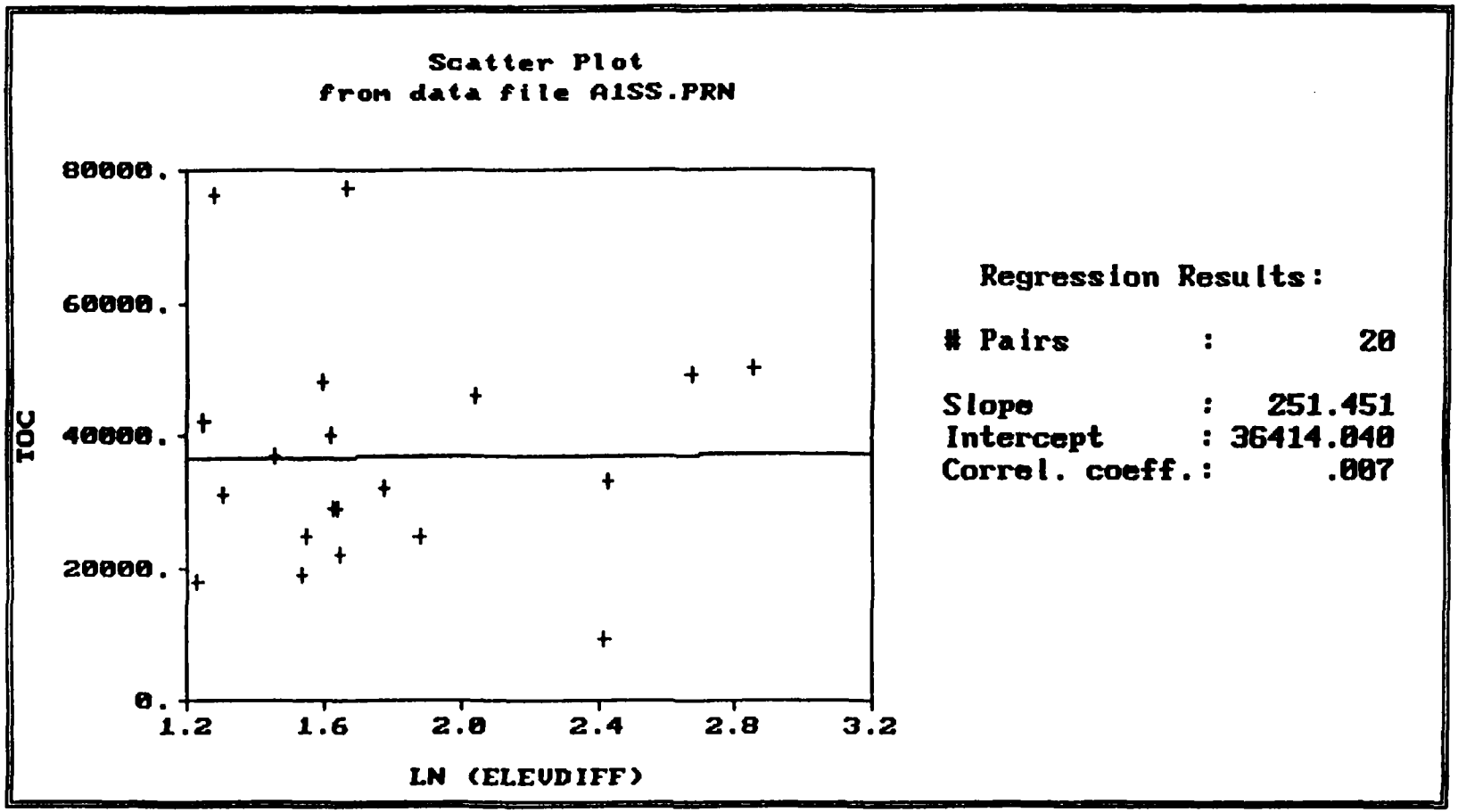

Scatter Plot
from data file A1SS.PRN
LN (MIREX)
8.
6.
4.
2.
0.
2.
3.
4.
5.
6.
7.
LN (PERPDIST)
Regression Results:
Pairs : 20
Slope : -.457
Intercept : 7.659
Correl. coeff.: -.240

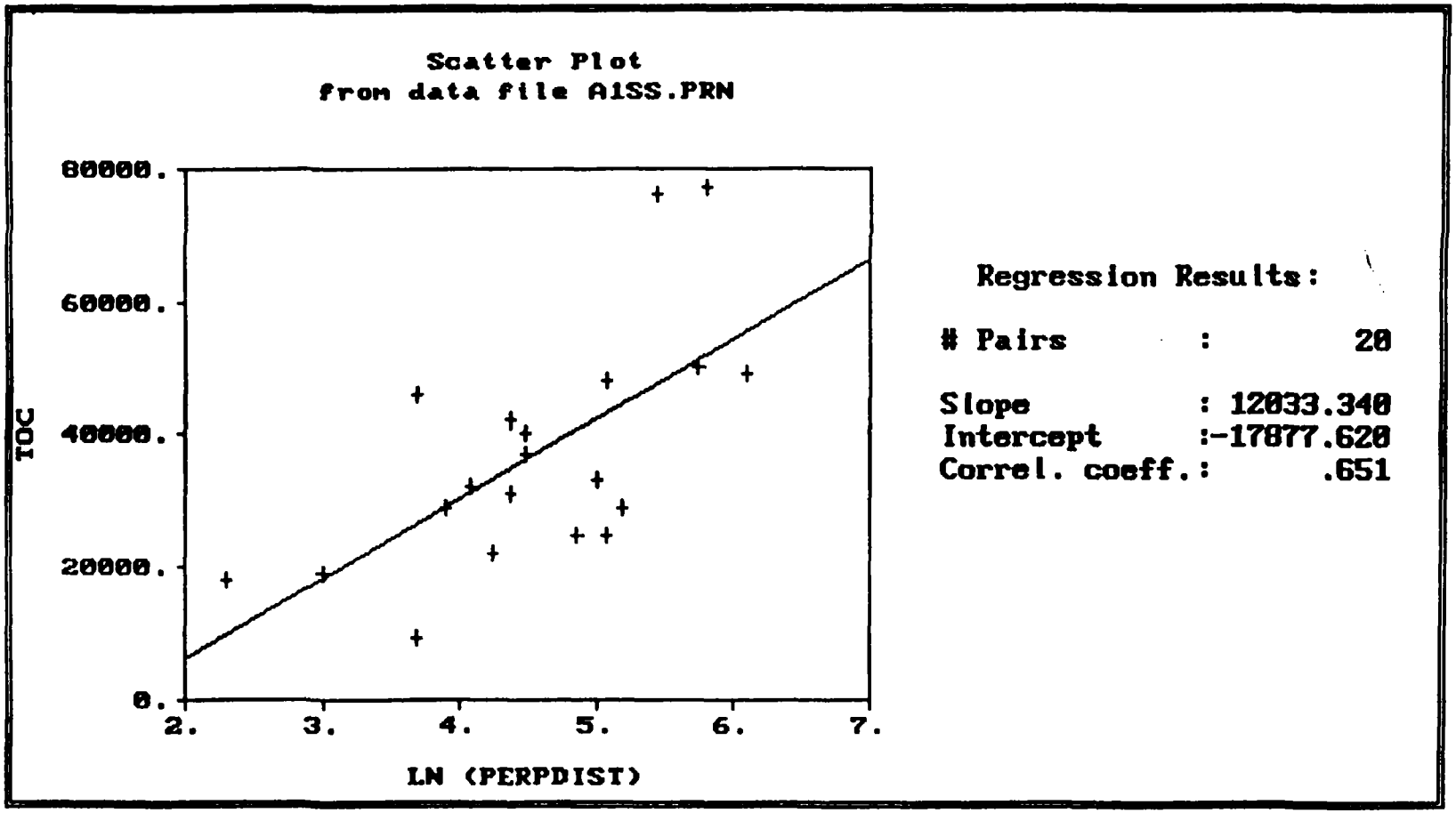

Scatter Plot
from data file A1SS.PRN
80000.
60000.
40000.
20000.
0.
TOC
6.90
6.91
6.92
6.93
LN (ELEVATION)
Regression Results:
Pairs : 20
Slope :254110.500
Intercept :**********
Correl. coeff.: .056


Scatter Plot
from data file A1SS.PRN
80000.
60000.
40000.
20000.
0.
TOC
-4.
-2.
0.
2.
4.
LN (D10)
Regression Results:
Pairs : 20
Slope : -416.588
Intercept : 36688.010
Correl. coeff.: -.040

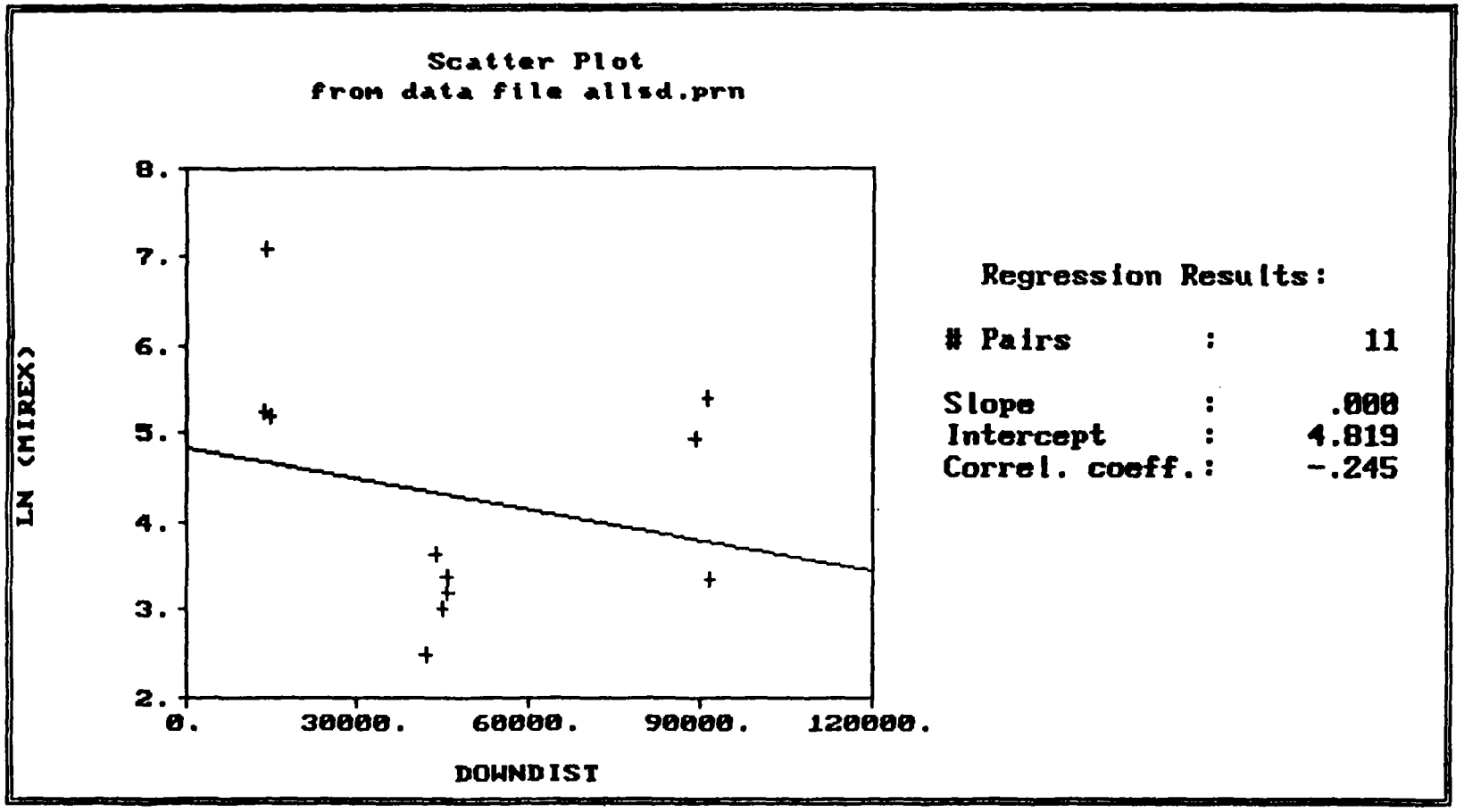

Scatter Plot
from data file A1SS.PRN
80000.
60000.
40000.
20000.
0.
TOC
0.
1.
2.
3.
4.
5.
6.
LN (D30)
Regression Results:
Pairs : 20
Slope : -4072.259
Intercept : 45016.870
Correl. coeff.: -.294

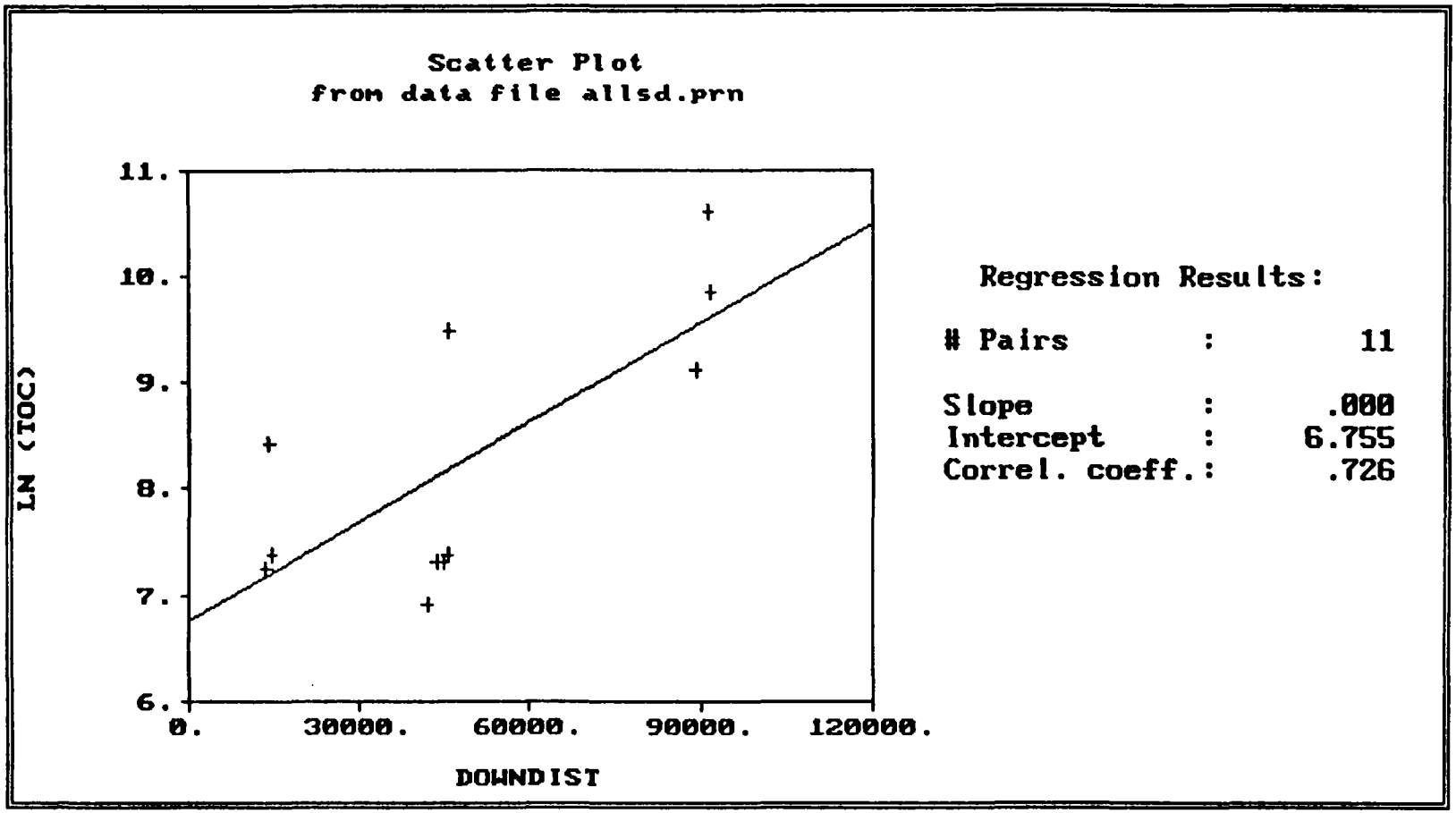

Scatter Plot
from data file A1SS.PRN
80000.
60000.
40000.
20000.
0.
TOC
2.
3.
4.
5.
6.
LN (D60)
Regression Results:
Pairs : 20
Slope : -4341.356
Intercept : 52813.700
Correl. coeff.: -.285

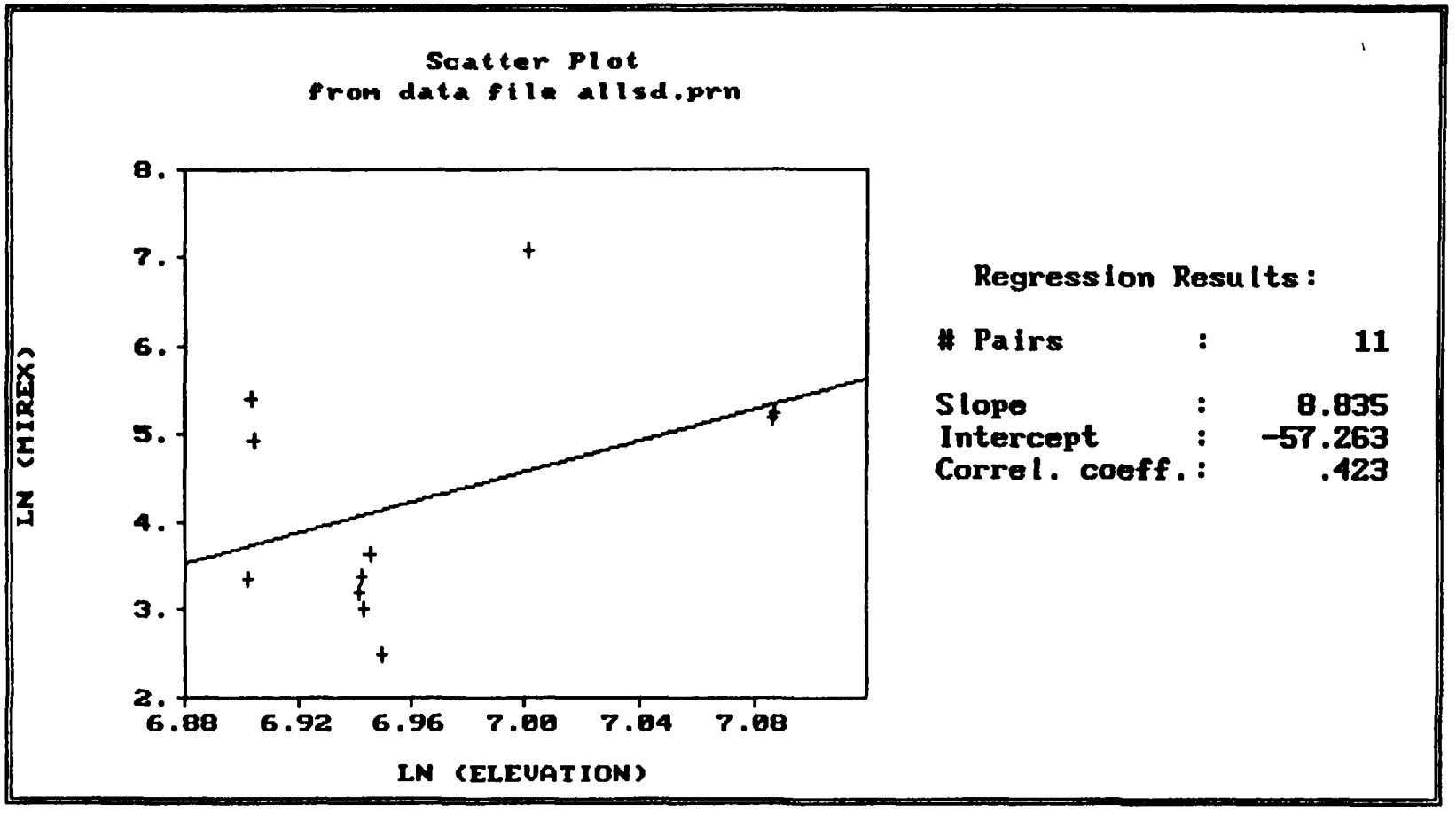

Scatter Plot
from data file A1SS.PRN
80000.
60000.
40000.
20000.
0.
TOC
1.2
1.6
2.0
2.4
2.8
3.2
LN (ELEVDIFF)
Regression Results:
Pairs : 20
Slope : 251.451
Intercept : 36414.040
Correl. coeff.: .007

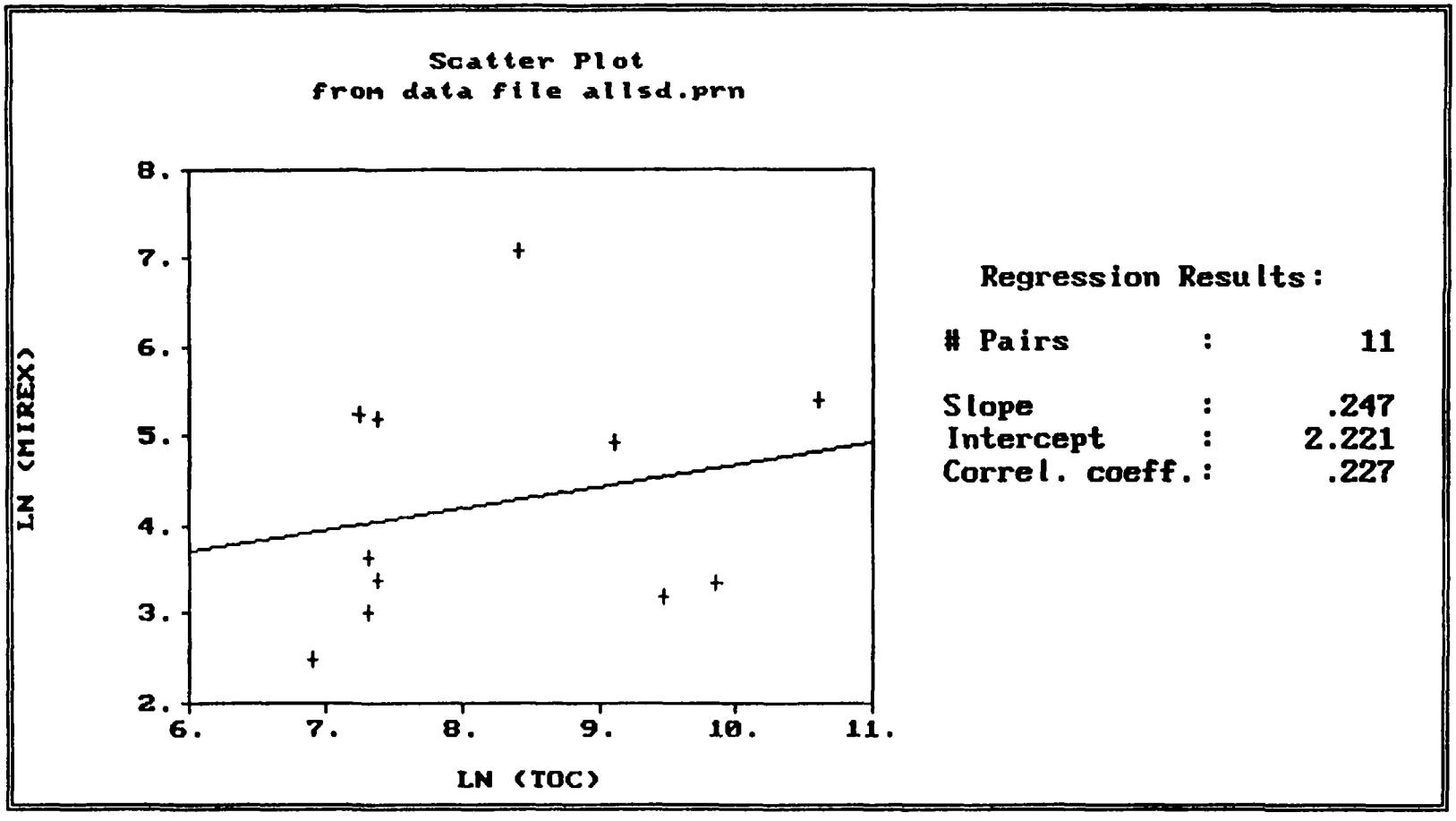

Scatter Plot
from data file A1SS.PRN
80000.
60000.
40000.
20000.
0.
TOC
2.
3.
4.
5.
6.
7.
LN (PERPDIST)
Regression Results:
Pairs : 20
Slope : 12033.340
Intercept :-17877.620
Correl. coeff.: .651

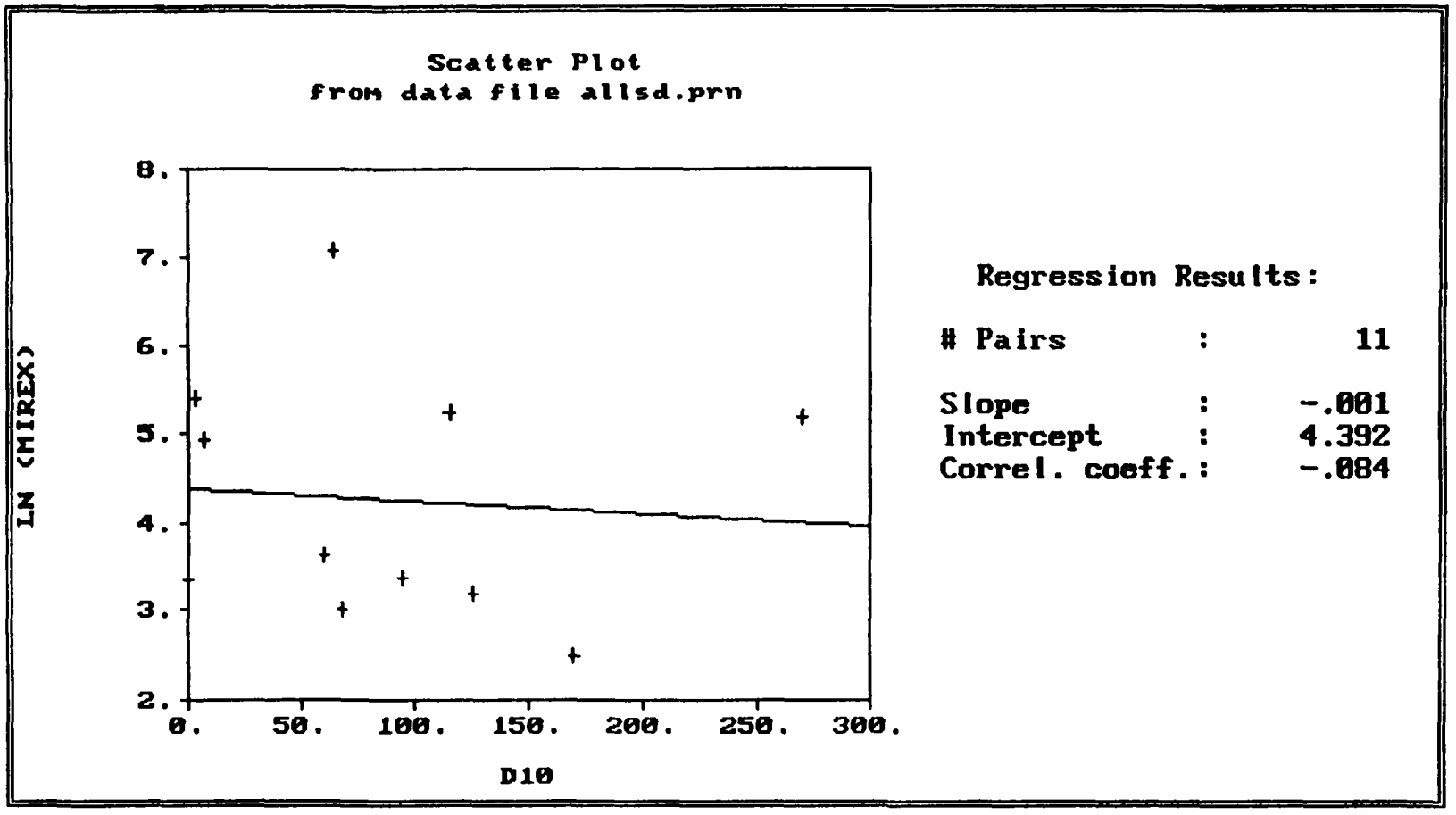
SEDIMENT

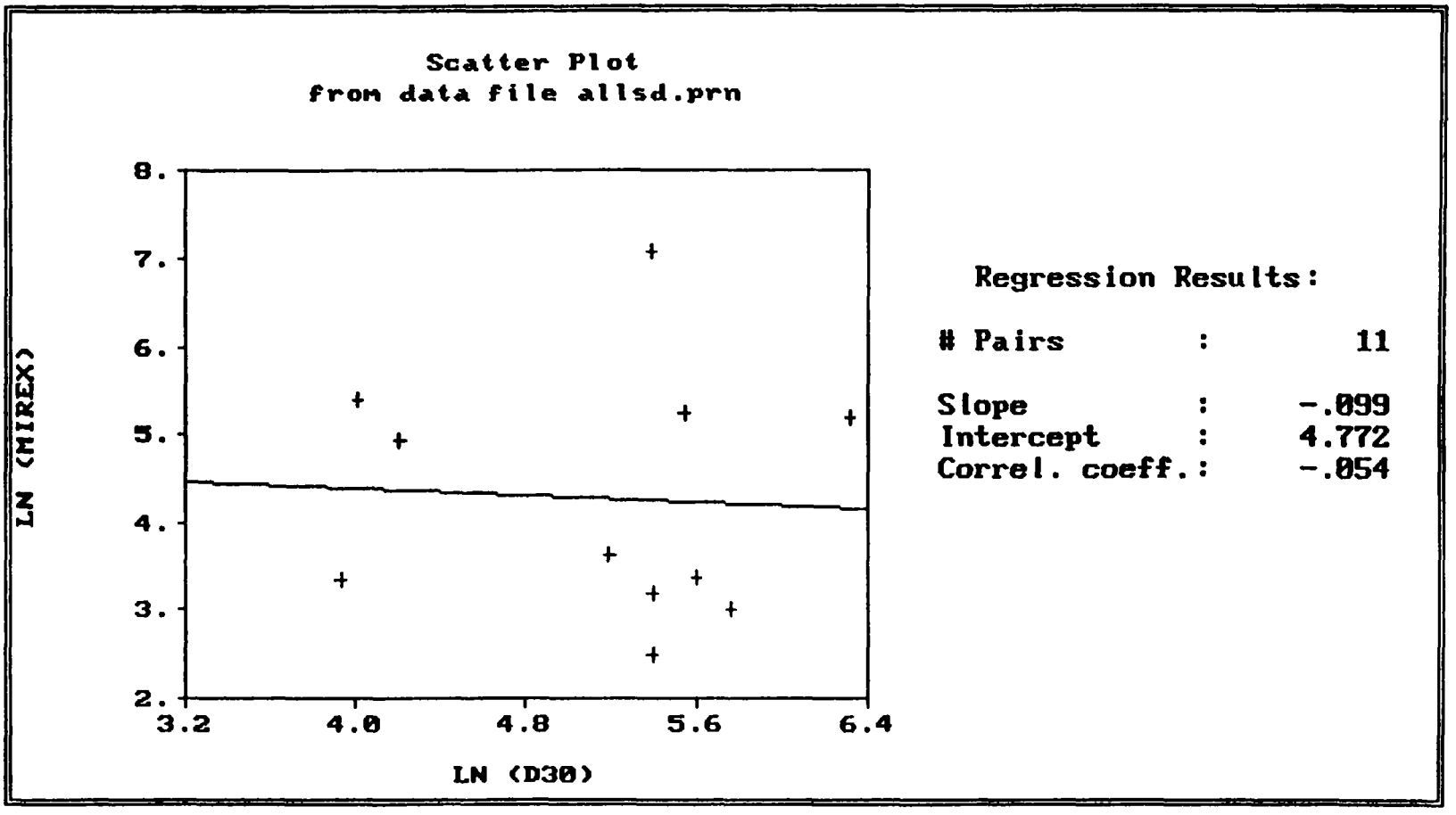

Scatter Plot
from data file allsd.prn
LN (MIREX)
8.
7.
6.
5.
4.
3.
2.
0.
30000.
60000.
90000.
120000.
DOWNDIST
Regression Results:
Pairs : 11
Slope : .000
Intercept : 4.819
Correl. coeff.: -.245

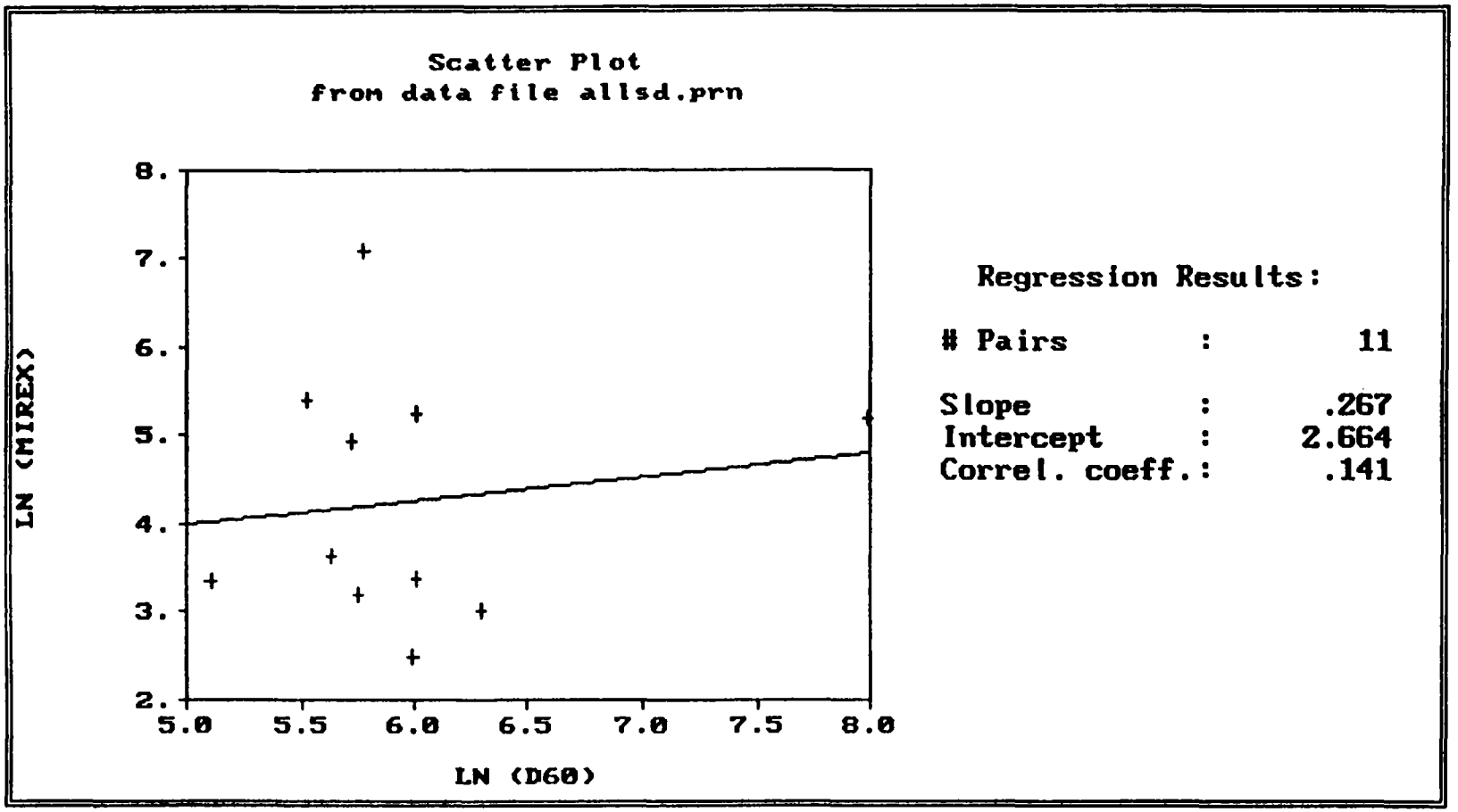

Scatter Plot
from data file allsd.prn
11.
10.
9.
8.
7.
6.
LN (TOC)
0.
30000.
60000.
90000.
120000.
DOWNDIST
Regression Results:
Pairs : 11
Slope : .000
Intercept : 6.755
Correl. coeff.: .726

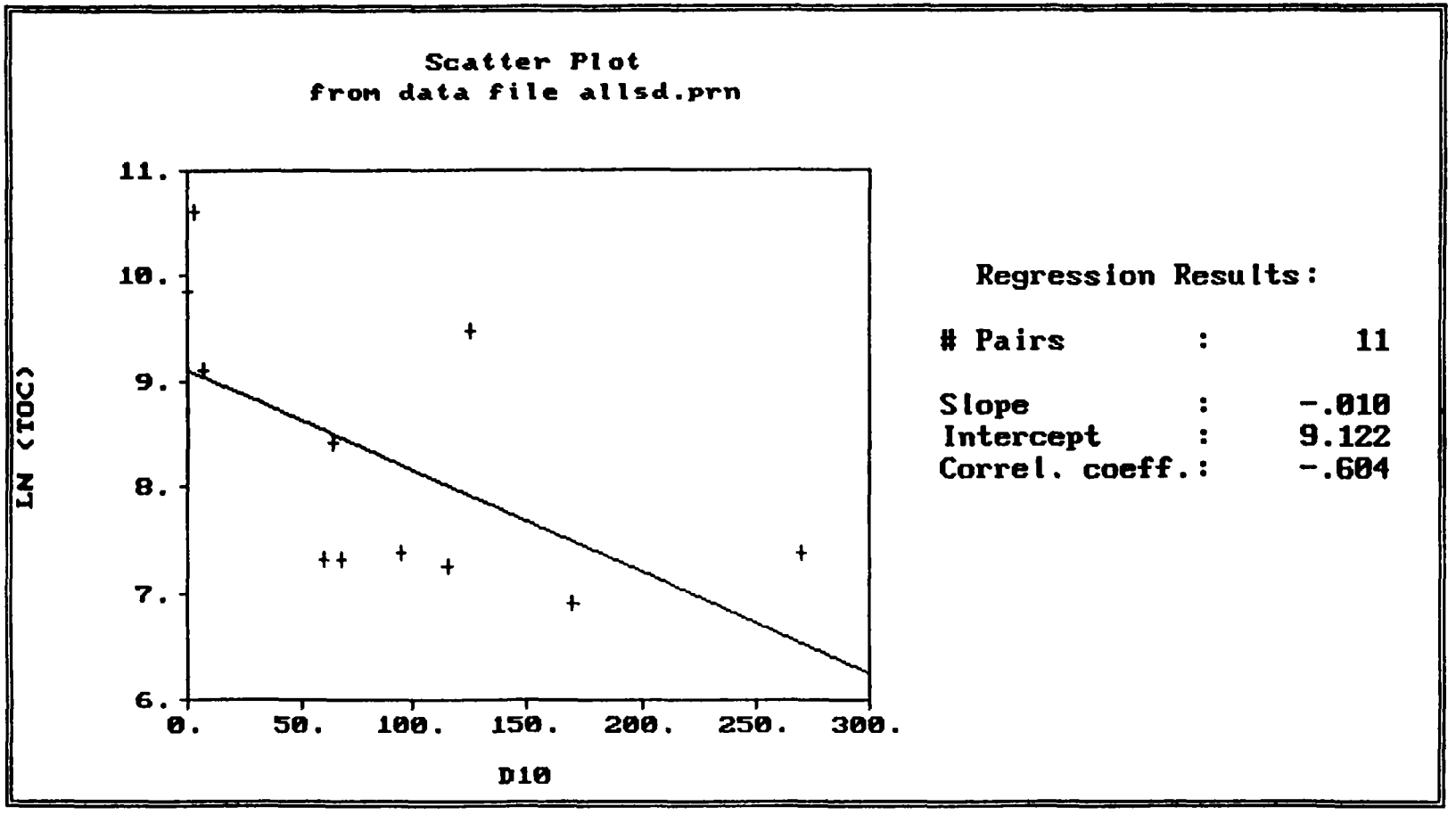

Scatter Plot
from data file allsd.prn
LN (MIREX)
8.
7.
6.
5.
4.
3.
2.
6.88
6.92
6.96
7.00
7.04
7.08
LN (ELEVATION)
Regression Results:
Pairs : 11
Slope : 8.835
Intercept : -57.263
Correl. coeff. : .423

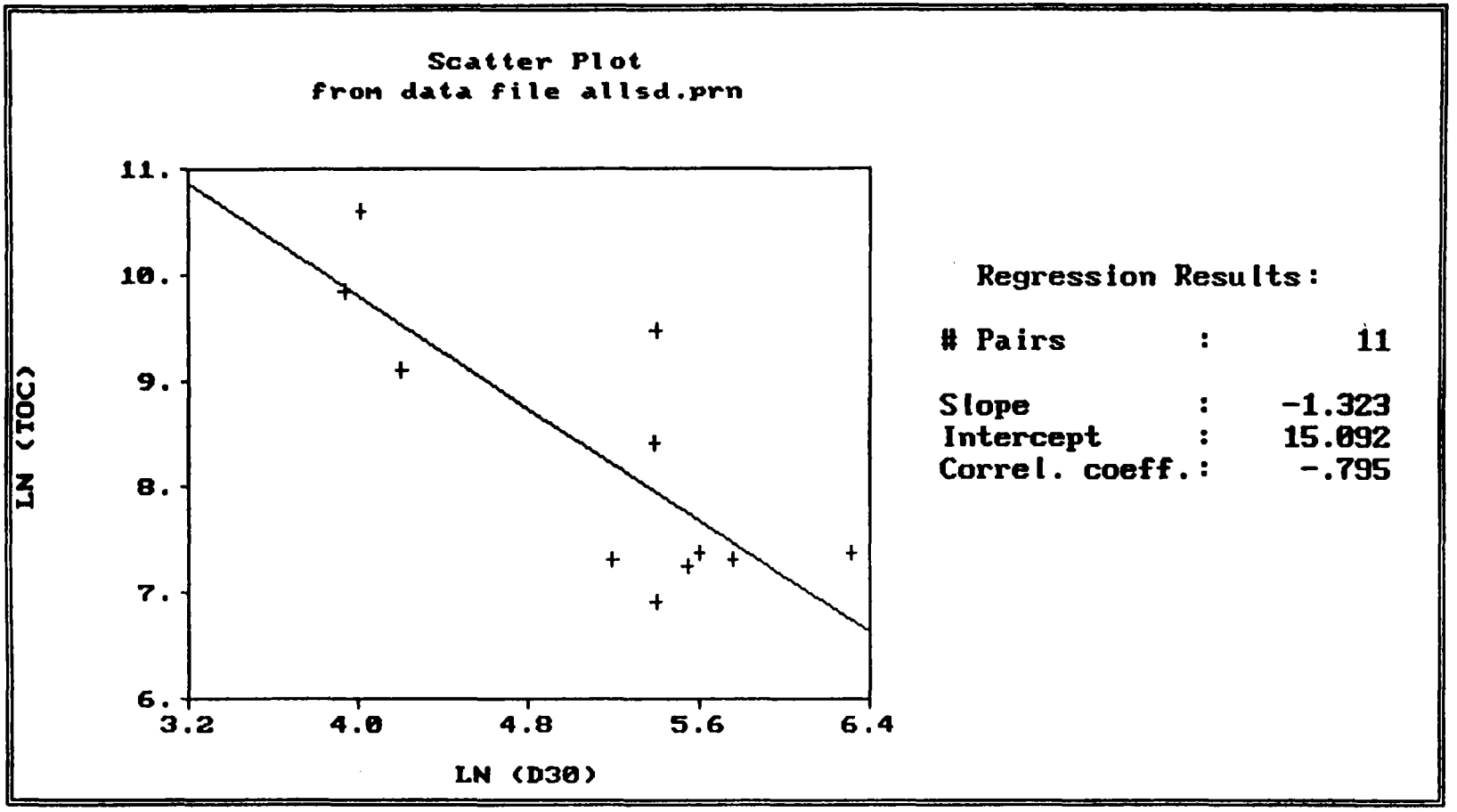

Scatter Plot
from data file allsd.prn
LN (MIREX)
8.
7.
6.
5.
4.
3.
2.
6.
7.
8.
9.
10.
11.
LN (TOC)
Regression Results:
Pairs : 11
Slope : .247
Intercept : 2.221
Correl. coeff.: .227

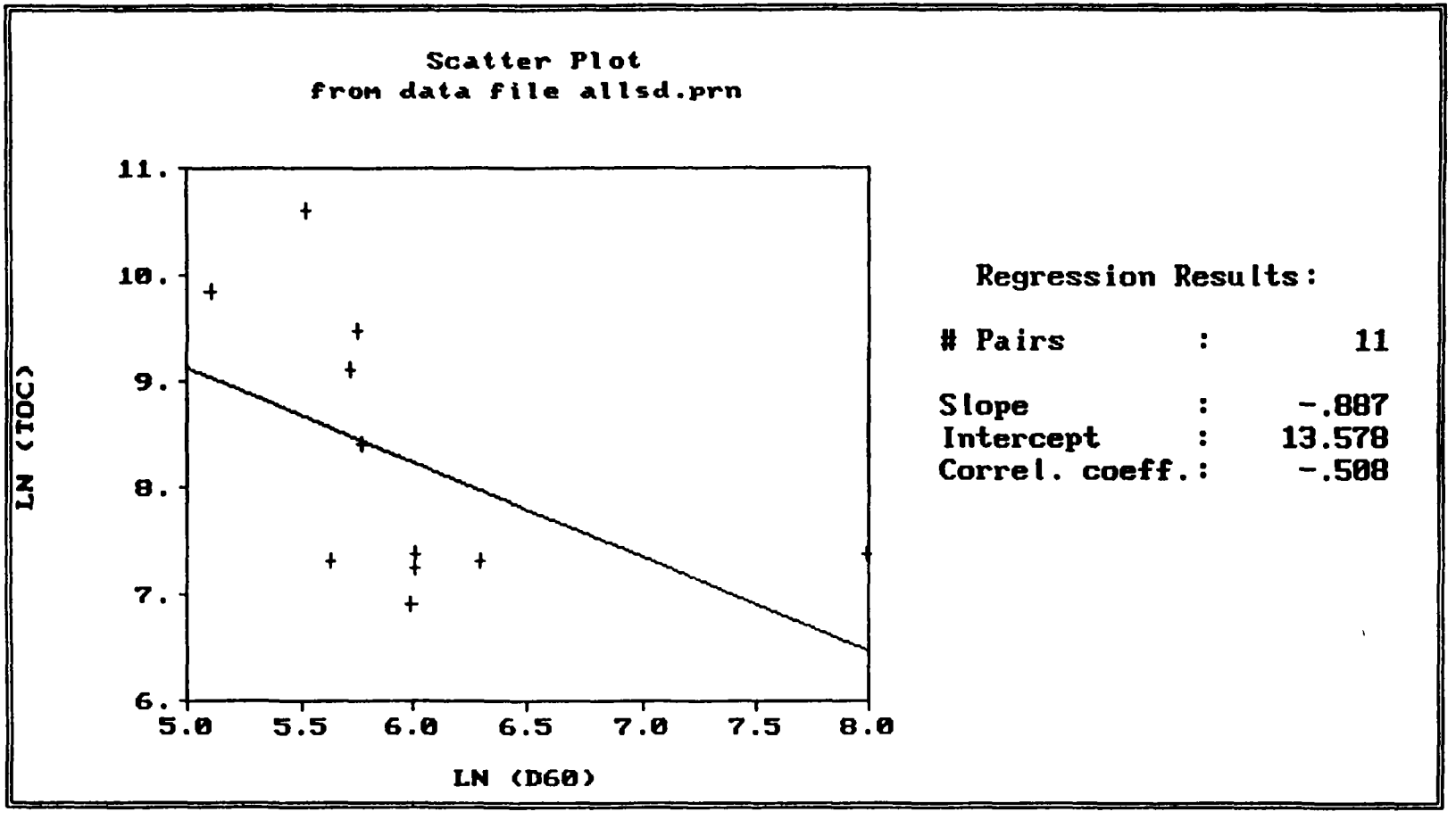

Scatter Plot
from data file allsd.prn
LN (HIREX)
8.
7.
6.
5.
4.
3.
2.
0.
50.
100.
150.
200.
250.
300.
D10
Regression Results:
Pairs : 11
Slope : -.001
Intercept : 4.392
Correl. coeff.: -.084

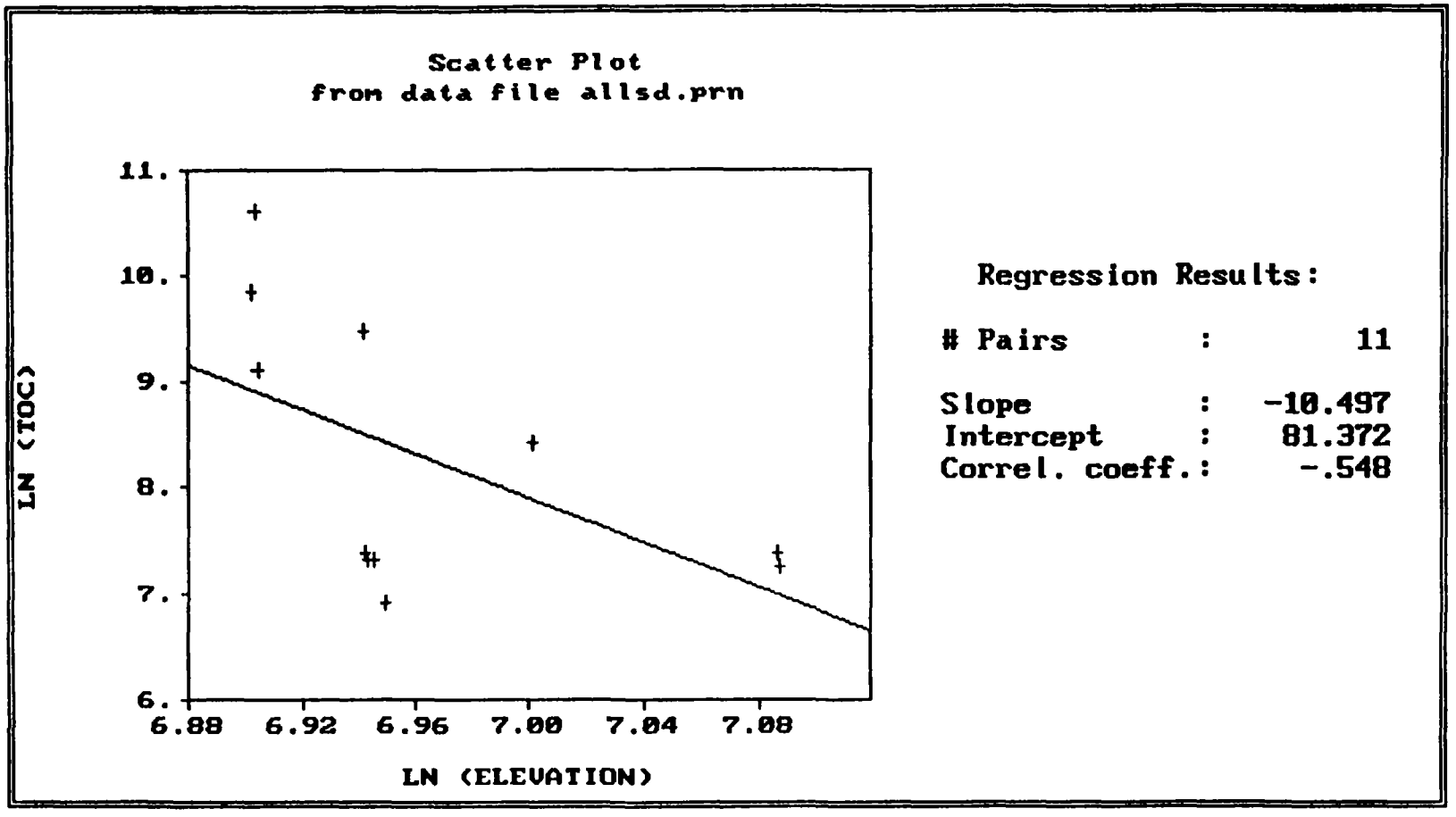

Scatter Plot
from data file allsd.prn
LN (MIREX)
8.
7.
6.
5.
4.
3.
2.
3.2
4.0
4.8
5.6
6.4
LN (D30)
Regression Results:
Pairs : 11
Slope : -.099
Intercept : 4.772
Correl. coeff.: -.054


Scatter Plot
from data file allsd.prn
LN (MIREX)
8.
7.
6.
5.
4.
3.
2.
5.0
5.5
6.0
6.5
7.0
7.5
8.0
LN (D60)
Regression Results:
Pairs : 11
Slope : .267
Intercept : 2.664
Correl. coeff. : .141


Scatter Plot
from data file allsd.prn
LN (TOC)
11.
10.
9.
8.
7.
6.
0.
50.
100.
150.
200.
250.
300.
D10
Regression Results:
Pairs : 11
Slope : -.010
Intercept : 9.122
Correl. coeff.: -.604


Scatter Plot
from data file allsd.prn
11.
10.
9.
8.
7.
6.
LN (TOC)
3.2
4.0
4.8
5.6
6.4
LN (D30)
Regression Results:
Pairs : 11
Slope : -1.323
Intercept : 15.092
Correl. coeff. : -.795

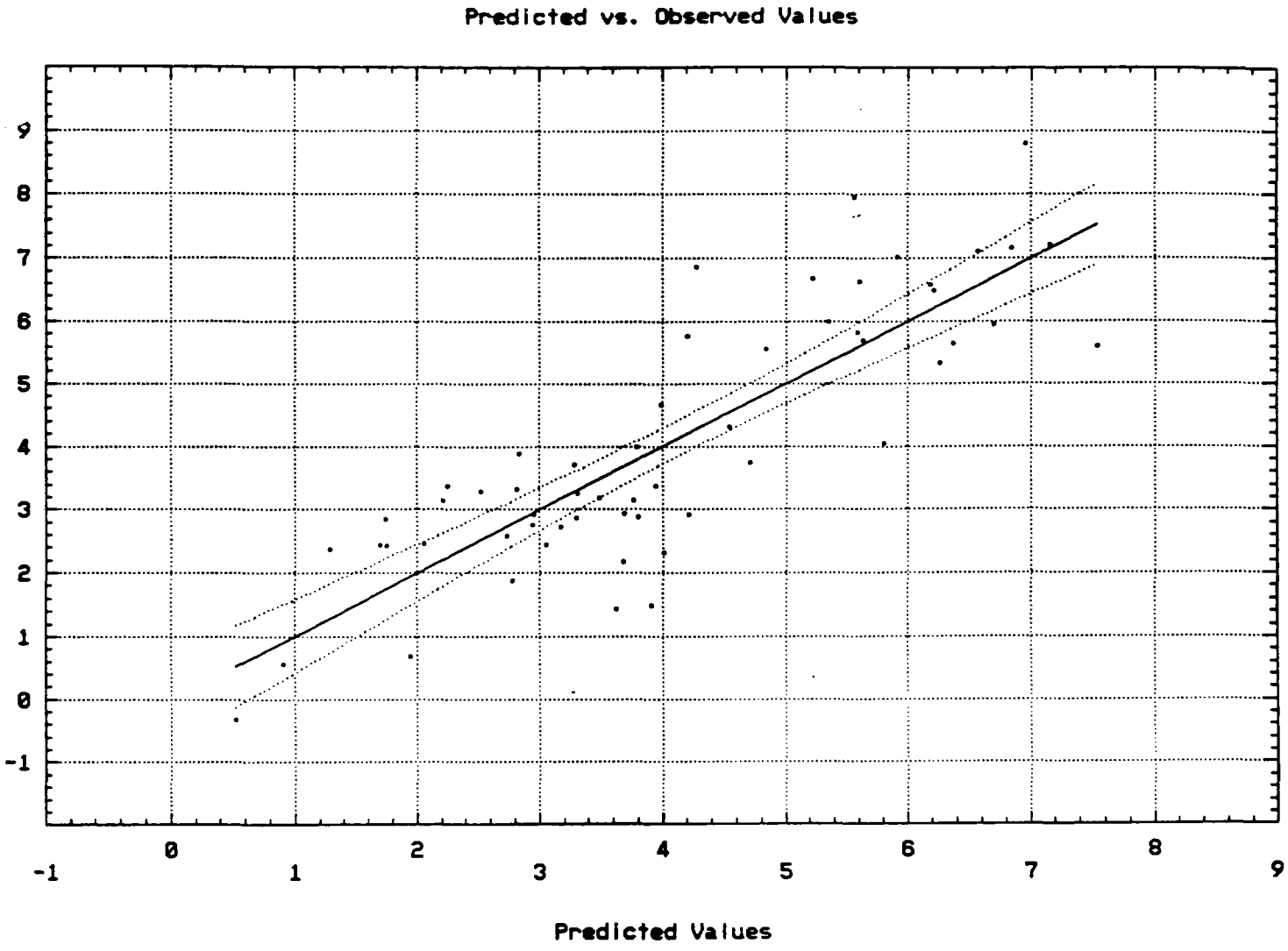

Scatter Plot
from data file allsd.prn
11.
10.
9.
8.
7.
6.
LN (TOC)
5.0
5.5
6.0
6.5
7.0
7.5
8.0
LN (D60)
Regression Results:
Pairs : 11
Slope : -.887
Intercept : 13.578
Correl. coeff.: -.508


Scatter Plot
from data file allsd.prn
11.
10.
9.
8.
7.
6.
LN (TOC)
6.88
6.92
6.96
7.00
7.04
7.08
LN (ELEVATION)
Regression Results:
Pairs : 11
Slope : -10.497
Intercept : 81.372
Correl. coeff.: -.548

APPENDIX 3

MULTIPLE REGRESSION ANALYSIS SUPPORTING DOCUMENTS

OVERBANK DEPOSIT


Predicted vs. Observed Values
9
8
7
6
5
4
3
2
1
0
-1
-1
0
1
2
3
4
5
6
7
8
9
Predicted Values

```
áááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááÇ
  Multiple Regression Results                                                        °
   ·ááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááÇ
   ·. Var. : LNMIREX    Multiple R :  .84711997     F = 17.78861                     °
                                R»:   .71761225    df =  7, 49                       °
 No. of cases: 57      adjusted R»:   .67727114      p =  .000000                    °
        Standard error of estimate:  1.162114133                                     °
 Intercept: 299.91185261  Std.Error: 39.84900  t(   49) = 7.5262  p <  .00000 °
áááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááÇ
    LNELEV Å=-.8232        TOC Å=-.1552     LN_D10 Å=.30441     LN_D30 Å=-.3924  °
    LN_D60 Å=.02212   LN_ELDIF Å=-.7571    LN_PERP Å=-.1993                      °
                                                                                 °
                                                                                 °
                                                                                 °
                                                                                 °
 (significant Å's are higlighted)                                                °
ıáááááááááááááááááááááááááááááááááááááááááááááááááááááááá F7-alpha: .050 áááááááÇ
 d - Descriptive stats      o - cOvar. of weights     r - pRedict dep. var.   °
 w - regression Weights     p - Partial corr.         u - redUndancy          °
 a - Analysis of variance                                                     °
 e - current swEEp matrix                                                     °
ıáááááááááááááááááááááááááááááááááááá <cr>-residual analysis   <esc>-previous ááì
ıeader of RAW DATA file: c:\css\data\mflbc\OVERBAN2.CSS
```

css/3: multiple regress.	Regression Weights					
variable	BETA	St. Err. of BETA	B	St. Err. of B	t(49)	p-level
LNELEV	-.823208	.114701	-41.3410	5.760239	-7.17697	.000000
TOC	-.155161	.093176	-.0000	.000013	-1.66525	.102245
LN_D10	.304405	.135829	.4489	.200310	2.24110	.029584
LN_D30	-.392422	.271568	-.8601	.595241	-1.44503	.154816
LN_D60	.022117	.206821	.0543	.507769	.10694	.915276
LN_ELDIF	-.757064	.111297	-2.5163	.369928	-6.80219	.000000
LN_PERP	-.199305	.104587	-.4066	.213351	-1.90564	.062573

css/3: multiple regress.	Variables not in the Equation					
Variable	Beta in	Partial Cor.	Semipart Cor.	Tolernce	Minimum Tolernce	t(49)
EASTING	1.155429	.166097	.088264	.005836	.005836	1.166961
··RTHING	-.104522	-.100874	-.053605	.263018	.067348	-.702458
ELEV	2.226721	.037563	.019961	.000080	.000080	.260430
MIREX	.330130	.521436	.277092	.704496	.077253	4.233750
D10	.081174	.109426	.058149	.513158	.071821	.762703
D30	.179615	.177072	.094096	.274446	.062036	1.246484
D60	.249051	.142799	.075883	.092836	.065093	.999581

CU	.133906	.150203	.079818	.355305	.059884	1.052578
CC	.160259	.183306	.097409	.369446	.052259	1.291868
ELEVDIFF	.333536	.227455	.120870	.131326	.072665	1.618270
PDIST	.018276	.016636	.008840	.233971	.078101	.115274

css/3: multiple regress.	Variables not in the Equation

Variable	p-level
EASTING	.248874
NORTHING	.485717
ELEV	.795624
MIREX	.000101
D10	.449297
D30	.218513
D60	.322424
CU	.297698
CC	.202463
ELEVDIFF	.112024
PERPDIST	.908699

css/3: multiple regress.	Variables currently in the Equation						
Variable	Beta in	Partial Cor.	Semipart Cor.	Tolernce	R-square	t(50)	
LNELEV	-.823208	-.715878	-.544836	.438039	.561961	-7.17697	
TOC	-.155161	-.231434	-.126417	.663806	.336194	-1.66525	
LN_D10	.304405	.304911	.170132	.312369	.687631	2.24110	
LN_D30	-.392423	-.202170	-.109699	.078144	.921856	-1.44503	
LN_D60	.022117	.015275	.008118	.134729	.865271	.10694	
LN_ELDIF	-.757064	-.696901	-.516385	.465245	.534755	-6.80219	
LN_PERP	-.199305	-.262674	-.144666	.526860	.473141	-1.90564	

css/3: multiple regress.	Variables currently in the Equation

Variable	p-level
LNELEV	.000000
TOC	.102118
LN_D10	.029491
LN_D30	.154689
LN_D60	.915267
LN_ELDIF	.000000
LN_PERP	.062455

css/3: multiple regress.	Predicted and Residual Values				
Case No.	Observed Value	Predictd Value	Residual	Standard Pred. v.	Standard Residual
SS-15-01	3.186353	3.485482	-.29913	-.33887	-.25740
SS-15-02	3.317816	2.820724	.49709	-.72248	.42775
SS-15-03	4.046554	5.813180	-1.76663	1.00437	-1.52018
SS-15-04	1.432701	3.624699	-2.19200	-.25853	-1.88622
SS-15-05	2.186051	3.682496	-1.49644	-.22518	-1.28769
SS-15-06	3.144152	2.214925	.92923	-1.07207	.79960
SS-15-07	5.768321	4.207936	1.56039	.07803	1.34271
SS-15-08	3.148453	3.766211	-.61776	-.17687	-.53158
SS-15-09	3.250375	3.318570	-.06820	-.43519	-.05868
SS-15-10	6.008813	5.356329	.65248	.74073	.56146
SS-15-11	3.284664	2.529561	.75510	-.89050	.64977
SS-15-12	3.716008	3.285077	.43093	-.45452	.37082
SS-15-13	2.766319	2.947872	-.18155	-.64911	-.15623
SS-15-14	2.451005	3.057639	-.60663	-.58576	-.52201
SS-15-15	2.459589	2.060613	.39898	-1.16111	.34332
SS-09-01	3.992681	3.795488	.19719	-.15998	.16968
09-02	2.850707	1.743592	1.10712	-1.34406	.95267
09-03	2.322388	4.012944	-1.69056	-.03449	-1.45473
SS-09-04	3.885679	2.834873	1.05081	-.71431	.90422
SS-09-05	2.879199	3.799507	-.92031	-.15766	-.79193
SS-09-06	3.374169	2.248445	1.12572	-1.05272	.96869
SS-09-07	2.917771	2.952940	-.03517	-.64618	-.03026
SS-09-08	7.962067	5.562817	2.39925	.85989	2.06456
SS-09-10	4.304065	4.545145	-.24108	.27262	-.20745
SS-09-11	6.864848	4.276818	2.58803	.11778	2.22700
SS-09-12	6.484635	6.213110	.27152	1.23515	.23365
SS-09-13	3.740048	4.707657	-.96761	.36641	-.83263
SS-09-14	8.802372	6.956064	1.84631	1.66388	1.58875
SS-09-15	5.707110	5.633599	.07351	.90073	.06326
SS-09-21	.553885	.913372	-.35949	-1.82315	-.30934
SS-09-22	2.873565	3.304095	-.43053	-.44354	-.37047
SS-09-23	2.379546	1.282383	1.09716	-1.61020	.94411
SS-09-24	2.587764	2.740110	-.15235	-.76900	-.13109
SS-09-25	3.380995	3.946316	-.56532	-.07294	-.48646
SS-09-26	2.721295	3.177248	-.45595	-.51674	-.39235
SS-09-27	2.944439	3.689735	-.74530	-.22100	-.64133
SS-09-28	-.329894	.522941	-.85284	-2.04845	-.73387
SS-09-29	.688135	1.943803	-1.25567	-1.22852	-1.08050
SS-09-30	1.486140	3.910836	-2.42470	-.09341	-2.08645
SS-28-01	4.653960	3.993799	.66016	-.04554	.56807

css/3: multiple regress.	Predicted and Residual Values				
Case No.	Observed Value	Predictd Value	Residual	Standard Pred. v.	Standard Residual
SS-28-03	5.598422	7.534434	-1.93601	1.99764	-1.66594
SS-28-04	2.415914	1.753435	.66248	-1.33838	.57006
SS-28-05	5.817111	5.588419	.22869	.87466	.19679
SS-28-06	7.215240	7.160802	.05444	1.78203	.04684
SS-28-07	1.871802	2.782979	-.91118	-.74426	-.78407
SS-28-08	6.575076	6.190317	.38476	1.22200	.33109
SS-28-09	5.645447	6.367642	-.72220	1.32433	-.62145
SS-28-10	7.106606	6.569864	.53674	1.44102	.46187
SS-28-11	6.630683	5.608248	1.02244	.88611	.87981
SS-28-12	5.327876	6.263935	-.93606	1.26448	-.80548
SS-28-14	5.556828	4.841441	.71539	.44361	.61559
SS-28-15	2.923162	4.212498	-1.28934	.08067	-1.10948
SS-28-16	5.942800	6.702192	-.75939	1.51738	-.65346
SS-28-17	2.451005	1.702626	.74838	-1.36770	.64398
SS-28-18	6.688354	5.222355	1.46600	.66342	1.26149
SS-28-19	7.162397	6.844862	.31753	1.59971	.27324
28-20	7.021084	5.920263	1.10082	1.06616	.94726
Minimum	-.329894	.522941	-2.42470	-2.04845	-2.08645
Maximum	8.802372	7.534434	2.58803	1.99764	2.22700
Mean	4.072711	4.072724	-.00001	.00001	-.00001
Median	3.374169	3.799507	.05444	-.15766	.04684

css/3: multiple regress.	Predicted and Residual Values			
Case No.	Std.Err. Pred.Val	Mahalns. Distance	Deleted Residual	Cook's Distance
SS-15-01	.385361	5.17534	-.33609	.001150
SS-15-02	.322042	3.31801	.53844	.002061
SS-15-03	.488684	8.92008	-2.14613	.075385
SS-15-04	.299015	2.72500	-2.34741	.033766
SS-15-05	.336462	3.71174	-1.63336	.020699
SS-15-06	.866700	30.16537	2.09385	.225706
SS-15-07	.342208	3.87345	1.70854	.023428
SS-15-08	.239432	1.39468	-.64514	.001635
SS-15-09	.329777	3.52707	-.07417	.000041
SS-15-10	.341091	3.84182	.71399	.004065
SS-15-11	.405314	5.82951	.85968	.008321
SS-15-12	.368829	4.65834	.47920	.002141
SS-15-13	.379444	4.98769	-.20322	.000408
SS-15-14	.396475	5.53565	-.68654	.005078
SS-15-15	.476073	8.41561	.47944	.003570
SS-09-01	.557746	11.91675	.25621	.001400
-09-02	.309811	2.99756	1.19182	.009344
-09-03	.409178	5.96001	-1.92980	.042733
SS-09-04	.322451	3.32893	1.13845	.009236
SS-09-05	.443625	7.17816	-1.07730	.015654
SS-09-06	.371507	4.74056	1.25386	.014871
SS-09-07	.320599	3.27957	-.03807	.000010
SS-09-08	.408958	5.95257	2.73837	.085952
SS-09-10	.374599	4.83620	-.26903	.000696
SS-09-11	.404629	5.80653	2.94507	.097324
SS-09-12	.398927	5.61652	.30780	.001033
SS-09-13	.312957	3.07879	-1.04327	.007306
SS-09-14	.451143	7.45707	2.17393	.065923
SS-09-15	.358665	4.35173	.08125	.000058
SS-09-21	.407105	5.88987	-.40977	.001907
SS-09-22	.364714	4.53317	-.47757	.002079
SS-09-23	.441193	7.08894	1.28193	.021923
SS-09-24	.341093	3.84187	-.16671	.000222
SS-09-25	.281933	2.31352	-.60068	.001966
SS-09-26	.321139	3.29392	-.49365	.001722
SS-09-27	.407234	5.89423	-.84963	.008205
SS-09-28	.476768	8.44306	-1.02543	.016381
SS-09-29	.353350	4.19482	-1.38358	.016381
SS-09-30	.349072	4.07021	-2.66516	.059319
SS-28-01	.738909	21.65732	1.10818	.045953

css/3: multiple regress.	Predicted and Residual Values			
Case No.	Std.Err. Pred.Val	Mahalns. Distance	Deleted Residual	Cook's Distance
SS-28-03	.514745	10.00445	-2.40856	.105345
SS-28-04	.633732	15.67092	.94287	.024470
SS-28-05	.323227	3.34972	.24787	.000440
SS-28-06	.453042	7.52830	.06419	.000058
SS-28-07	.494178	9.14401	-1.11232	.020708
SS-28-08	.310048	3.00365	.41425	.001131
SS-28-09	.424746	6.49837	-.83355	.008591
SS-28-10	.465802	8.01444	.63948	.006081
SS-28-11	.308946	2.97537	1.10019	.007918
SS-28-12	.729497	21.08428	-1.54478	.087035
SS-28-14	.598177	13.85467	.97325	.023228
SS-28-15	.469663	8.16420	-1.54104	.035902
SS-28-16	.333655	3.63375	-.82761	.005226
SS-28-17	.638664	15.93111	1.07222	.032139
SS-28-18	.421952	6.40027	1.68862	.034794
SS-28-19	.419784	6.32460	.36519	.001611
SS-28-20	.428092	6.61669	1.27365	.020375
Minimum	.239432	1.39468	-2.66516	.000010
Maximum	.866700	30.16537	2.94507	.225706
Mean	.418810	6.87719	.02390	.023686
Median	.398927	5.61652	.06419	.008321

SEDIMENT

a... file: c:\css\data\mflbc\SEDIMENT.CSS
[8104 cases with 13 variables]

C

ULTIPLE REGRESSION RESULTS:

ariables were entered in one block

ependent Variable: LNMIREX
ultiple R: .695404112
ultiple R-Square: .483586878
djusted R-Square: .262266969
umber of cases: 11
(3, 7) = 2.185013 p < .177739
tandard Error of Estimate: 1.198110036
ntercept: .335874696 Std.Error: 3.473060 t(7) = .09671 p < .925668

css/3: multiple ress.	Regression Weights					
variable	BETA	St. Err. of BETA	B	St. Err. of B	t(7)	p-level
DOWNDIST	-1.10873	.460472	-.000052	.000021	-2.40781	.046925
LNTOC	.78538	.400921	.855170	.436550	1.95893	.090964
D10	-.40782	.397396	-.007042	.006862	-1.02623	.338933

css/3: multiple regress.	Variables not in the Equation						
Variable	Beta in	Partial Cor.	Semipart Cor.	Tolernce	Minimum Tolernce	t(7)	
EASTING	-4.68082	-.731341	-.525556	.012606	.010701	-2.62666	
NORTHING	-1.13240	-.814532	-.585338	.267185	.267185	-3.43928	
ELEV	.83082	.581136	.417616	.252660	.186771	1.74917	
MIREX	.76135	.655254	.470878	.382512	.134547	2.12473	
TOC	.23457	.137713	.098963	.177992	.165032	.34057	
D30	.28960	.165969	.119269	.169609	.169609	.41226	
D60	.80558	.650741	.467635	.336972	.195187	2.09928	
CU	-.19921	-.237277	-.170512	.732663	.325936	-.59829	
CC	-.21117	-.255382	-.183522	.755308	.328955	-.64701	

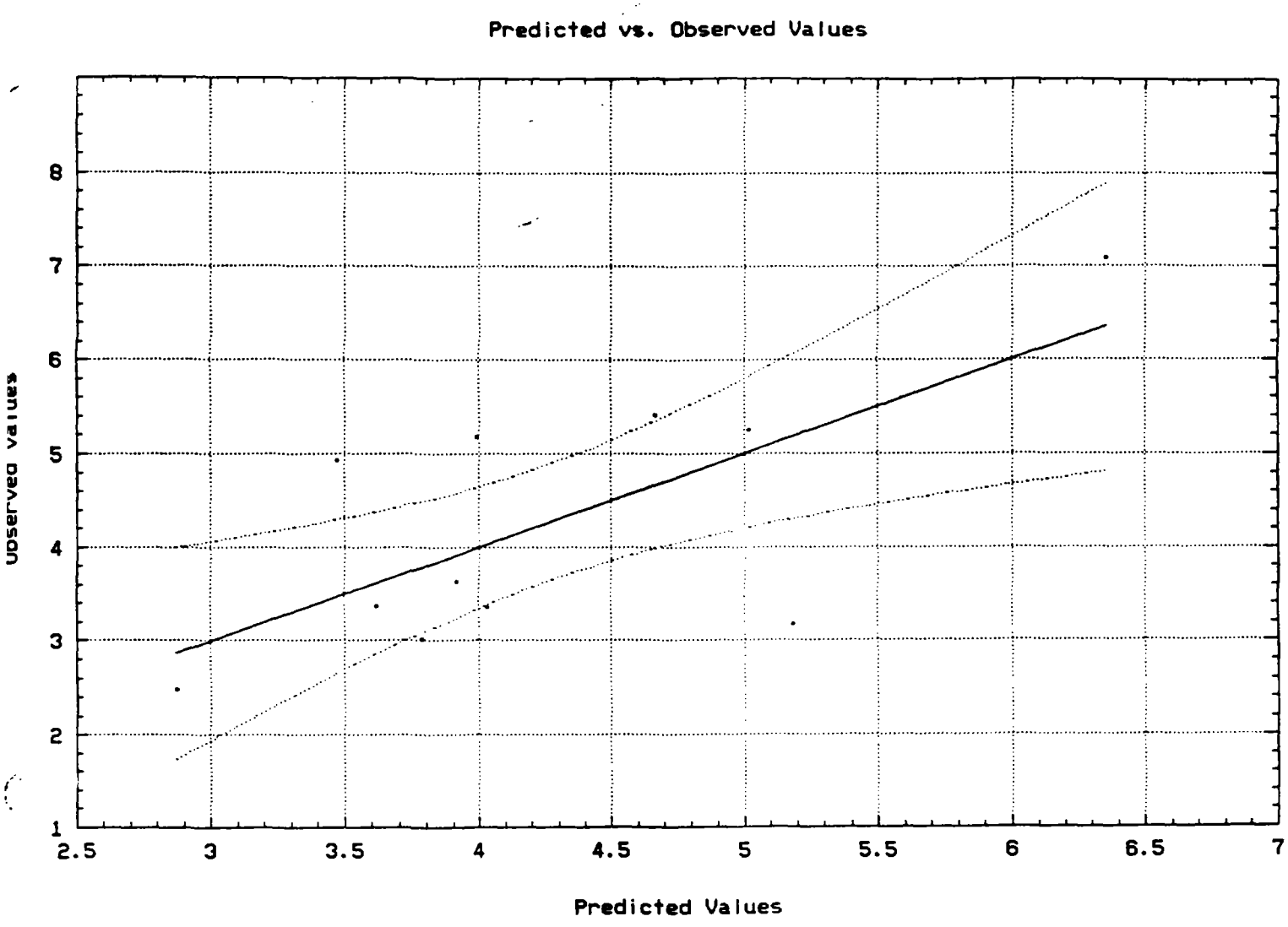
css/3: multiple regress.	Variables not in the Equation
Variable	p-level
EASTING	.034078
NORTHING	.010848
ELEV	.123742
MIREX	.071222
TOC	.743419
D30	.692483
D60	.073950
CU	.568489
CC	.538256

css/3: multiple regress.	Variables currently in the Equation						
Variable	Beta in	Partial Cor.	Semipart Cor.	Tolernce	R-square	t(8)	
DOWNDIST	-1.10873	-.673067	-.653990	.347931	.652069	-2.40781	
LNTOC	.78538	.595053	.532068	.458966	.541034	1.95893	
D10	-.40782	-.361627	-.278736	.467145	.532855	-1.02623	

css/3: multiple regress.	Variables currently in the Equation	
Variable	p-level	
DOWNDIST	.042654	
LNTOC	.085801	
D10	.334810	

css/3: multiple regress.	Predicted and Residual Values				
Case No.	Observed Value	Predictd Value	Residual	Standard Pred. v.	Standard Residual
SD-09-02	5.252274	5.017108	.23517	.77704	.19628
SD-09-03	7.081708	6.353438	.72827	2.15466	.60785
09-04	5.187386	3.990538	1.19685	-.28125	.99895
15-02	2.476538	2.870622	-.39408	-1.43577	-.32892
SD-15-03	3.634951	3.912180	-.27723	-.36203	-.23139
SD-15-04	3.020425	3.781800	-.76138	-.49644	-.63548
SD-15-05	3.374169	3.618681	-.24451	-.66460	-.20408
SD-15-06	3.178054	5.182466	-2.00441	.94750	-1.67298
SD-28-02	4.930871	3.471162	1.45971	-.81667	1.21834
SD-28-03	5.407172	4.666362	.74081	.41545	.61832
SD-28-04	3.353407	4.032598	-.67919	-.23789	-.56689
Minimum	2.476538	2.870622	-2.00441	-1.43577	-1.67298
Maximum	7.081708	6.353438	1.45971	2.15466	1.21834
Mean	4.263360	4.263360	-.00000	.00000	-.00000
Median	3.634951	3.990538	-.24451	-.28125	-.20408

css/3: multiple regress.	Predicted and Residual Values			
Case No.	Std.Err. Pred.Val	Mahalns. Distance	Deleted Residual	Cook's Distance
SD-09-02	.640208	1.946187	.32915	.005387
SD-09-03	.945460	5.318115	1.93032	.404109
SD-09-04	.981223	5.798120	3.63475	1.543258
SD-15-02	.728487	2.787917	-.62523	.025170
SD-15-03	.598709	1.588019	-.36950	.005937
SD-15-04	.573529	1.382396	-.98771	.038933
SD-15-05	.502456	.849652	-.29669	.002696
SD-15-06	.730588	2.809273	-3.19091	.659366
SD-28-02	.652694	2.058652	2.07573	.222698
SD-28-03	.780701	3.336869	1.28746	.122572
SD-28-04	.659928	2.124800	-.97499	.050229
Minimum	.502456	.849652	-3.19091	.002696
Maximum	.981223	5.798120	3.63475	1.543258
Mean	.708544	2.727273	.25567	.280032
Median	.659928	2.124800	-.29669	.050229

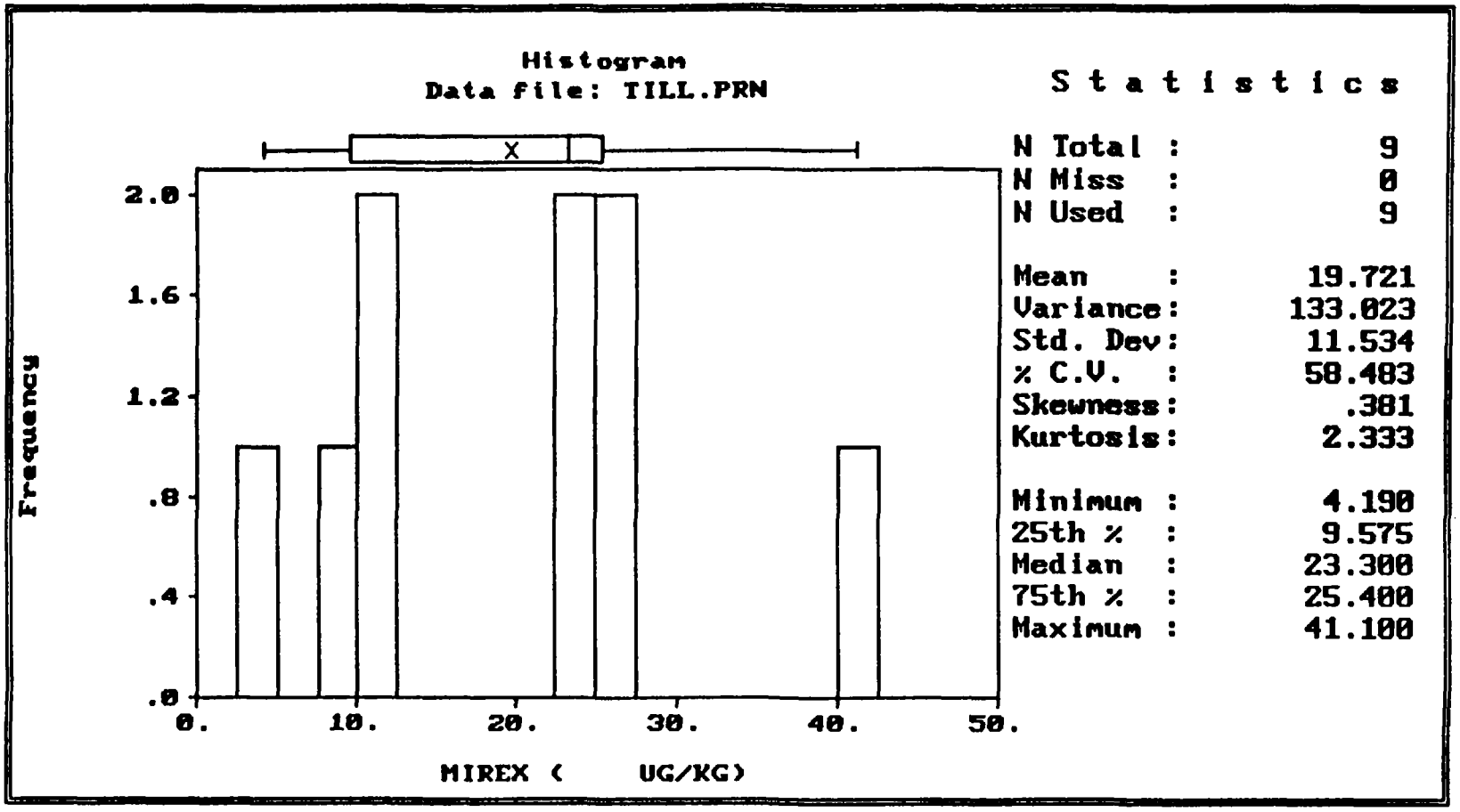

Predicted vs. Observed Values
Observed Values
8
7
6
5
4
3
2
1
2.5
3
3.5
4
4.5
5
5.5
6
6.5
7
Predicted Values

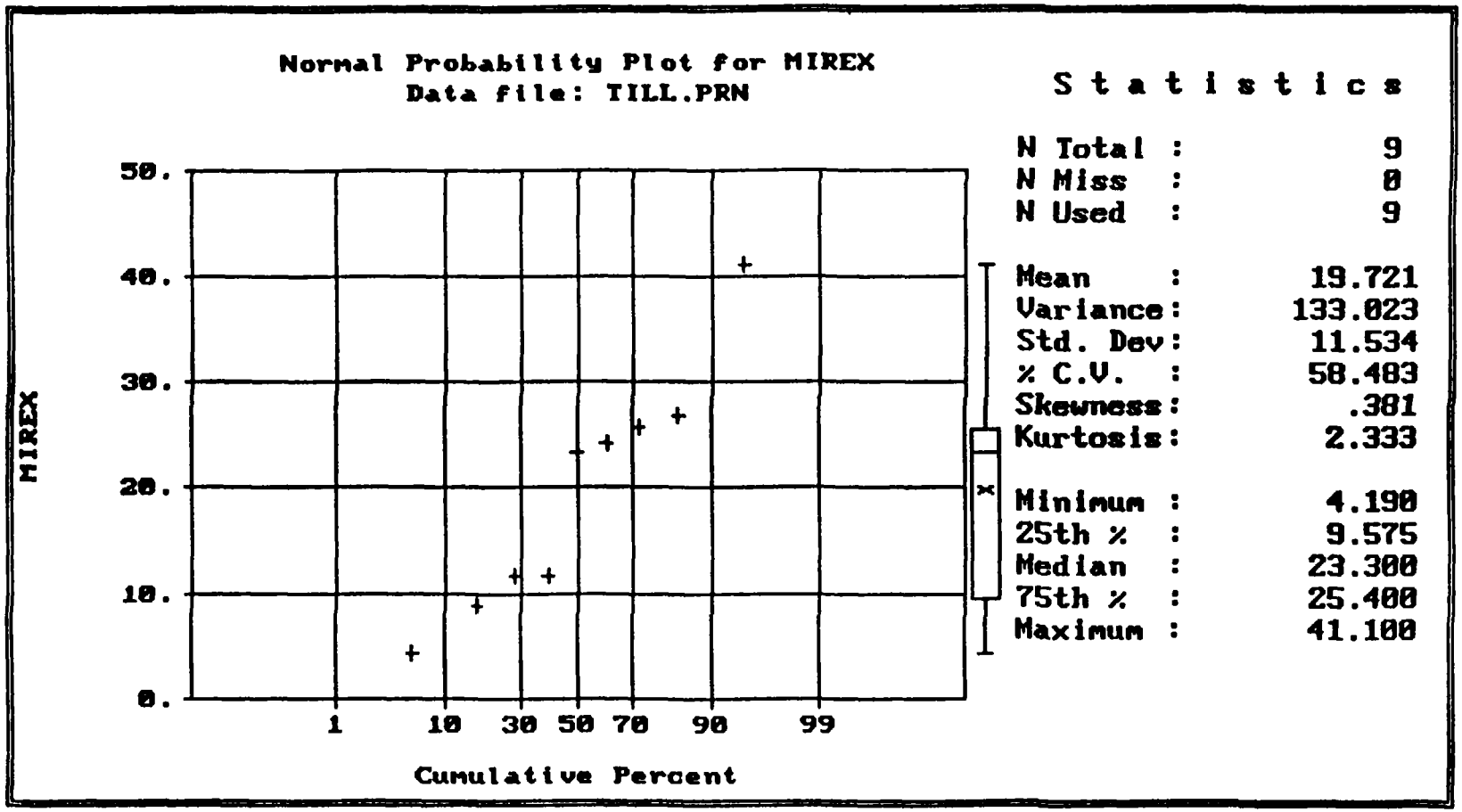
APPENDIX 4

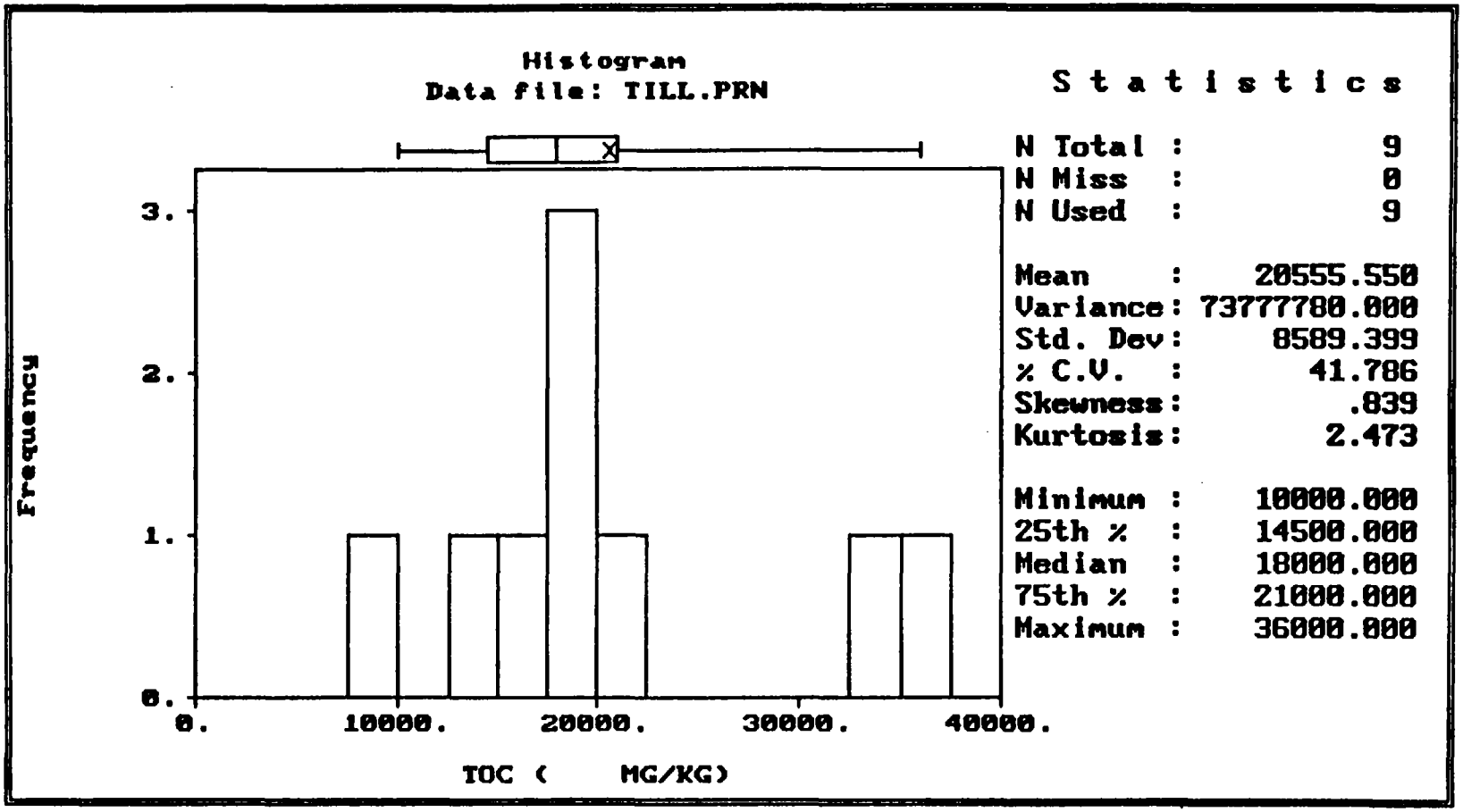
SUPPORTING DOCUMENT FOR THE STUDY OF THE EFFECTS OF TILLAGE

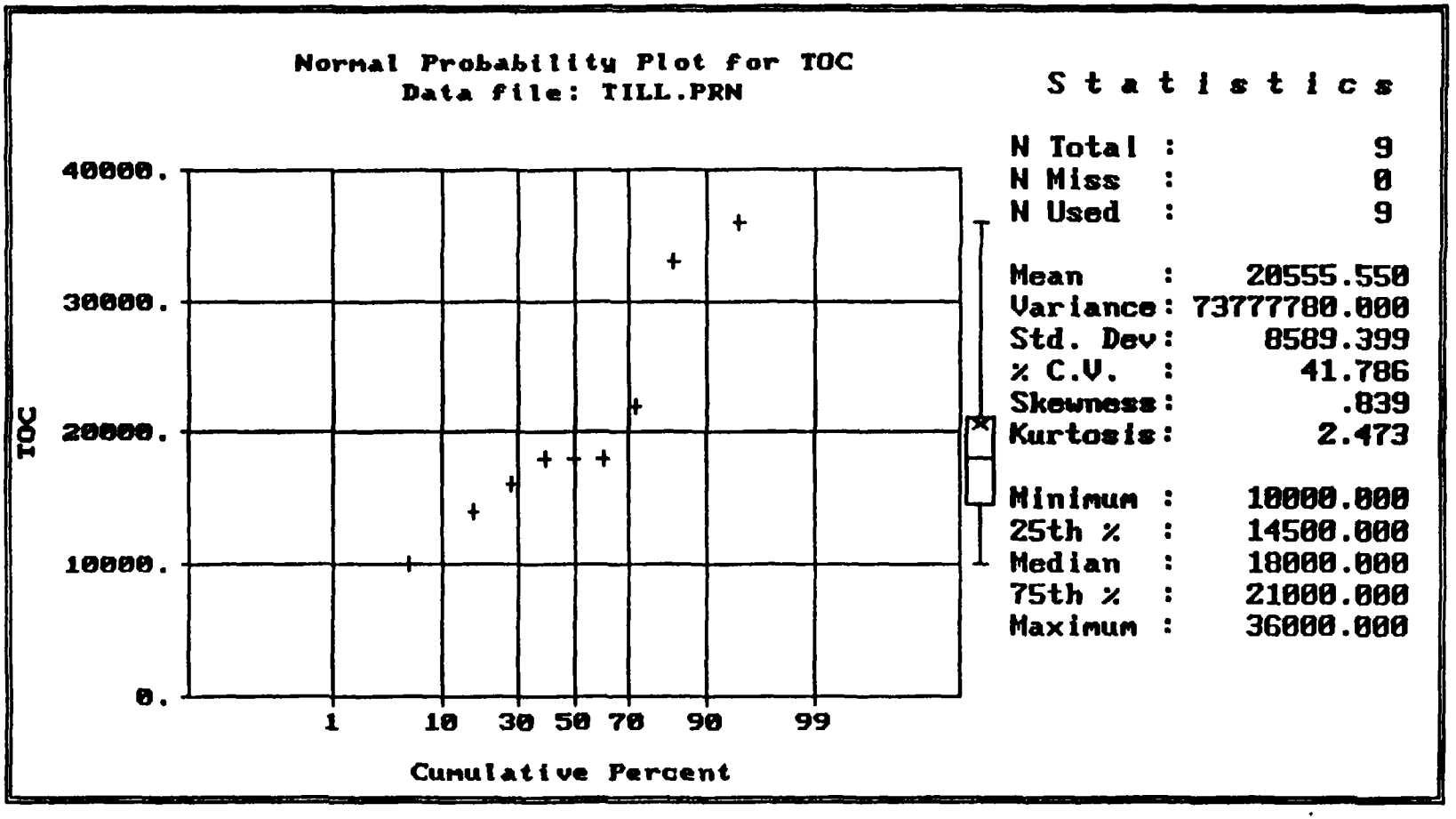
TILLED

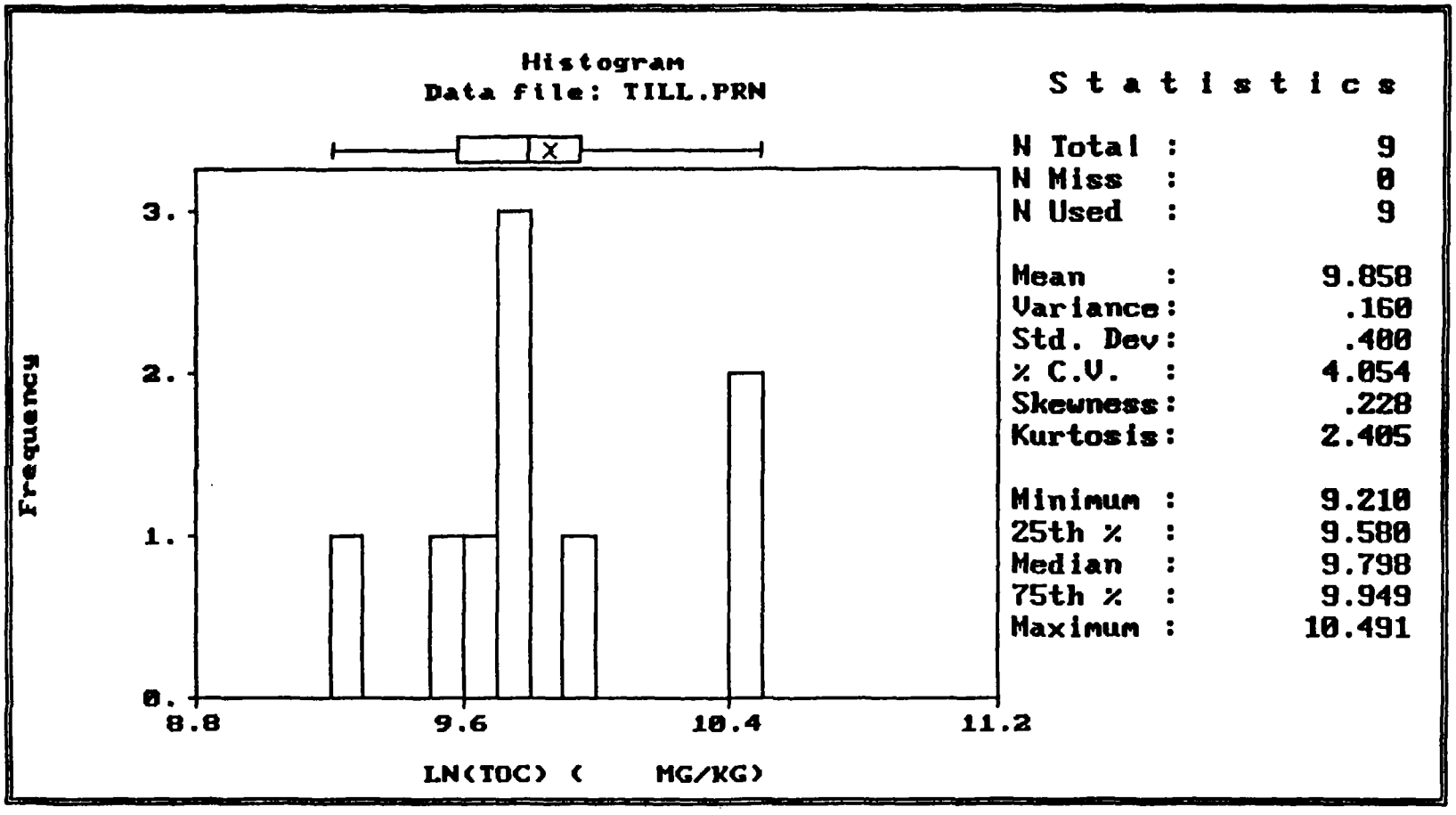
(AREA 3)

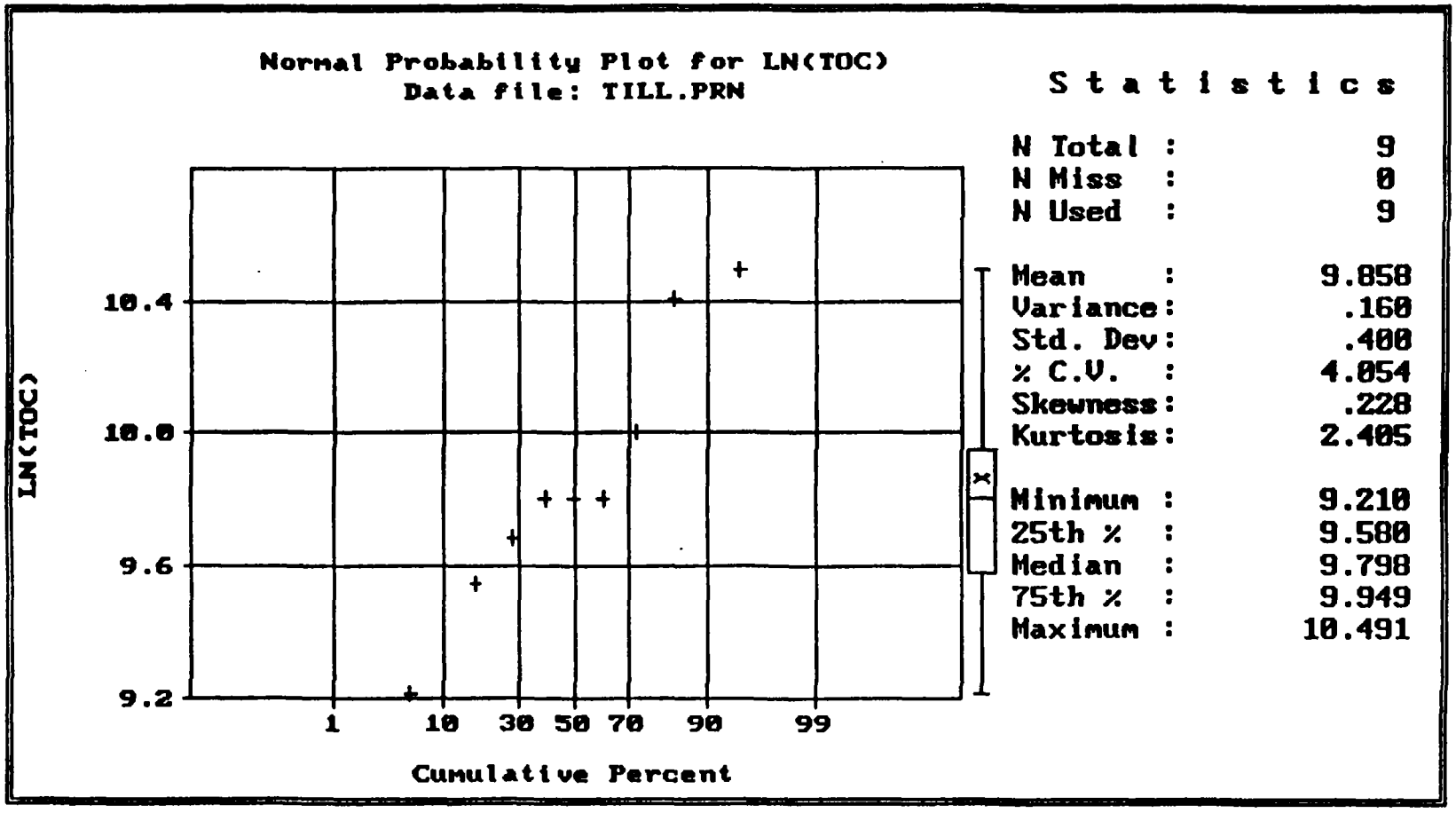

Histogram
Data file: TILL.PRN
Frequency
2.0
1.6
1.2
.8
.4
.0
0.
10.
20.
30.
40.
50.
MIREX (UG/KG)
Statistics
N Total : 9
N Miss : 0
N Used : 9
Mean : 19.721
Variance: 133.023
Std. Dev: 11.534
% C.V. : 58.483
Skewness: .381
Kurtosis: 2.333
Minimum : 4.190
25th % : 9.575
Median : 23.300
75th % : 25.400
Maximum : 41.100

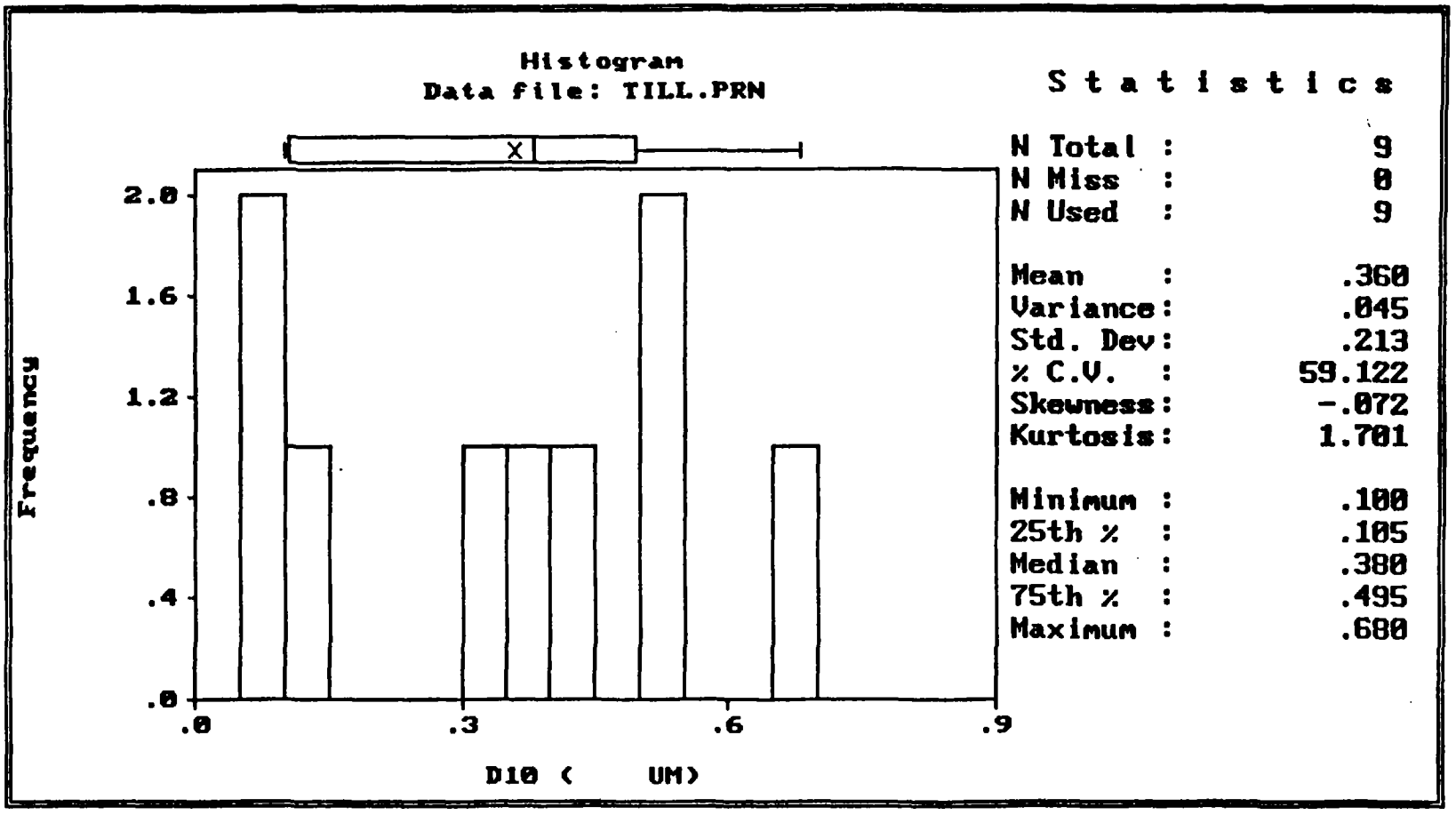

Normal Probability Plot for MIREX
Data file: TILL.PRN
MIREX
50.
40.
30.
20.
10.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 9
N Miss : 0
N Used : 9
Mean : 19.721
Variance: 133.023
Std. Dev: 11.534
% C.V. : 58.483
Skewness: .381
Kurtosis: 2.333
Minimum : 4.190
25th % : 9.575
Median : 23.300
75th % : 25.400
Maximum : 41.100

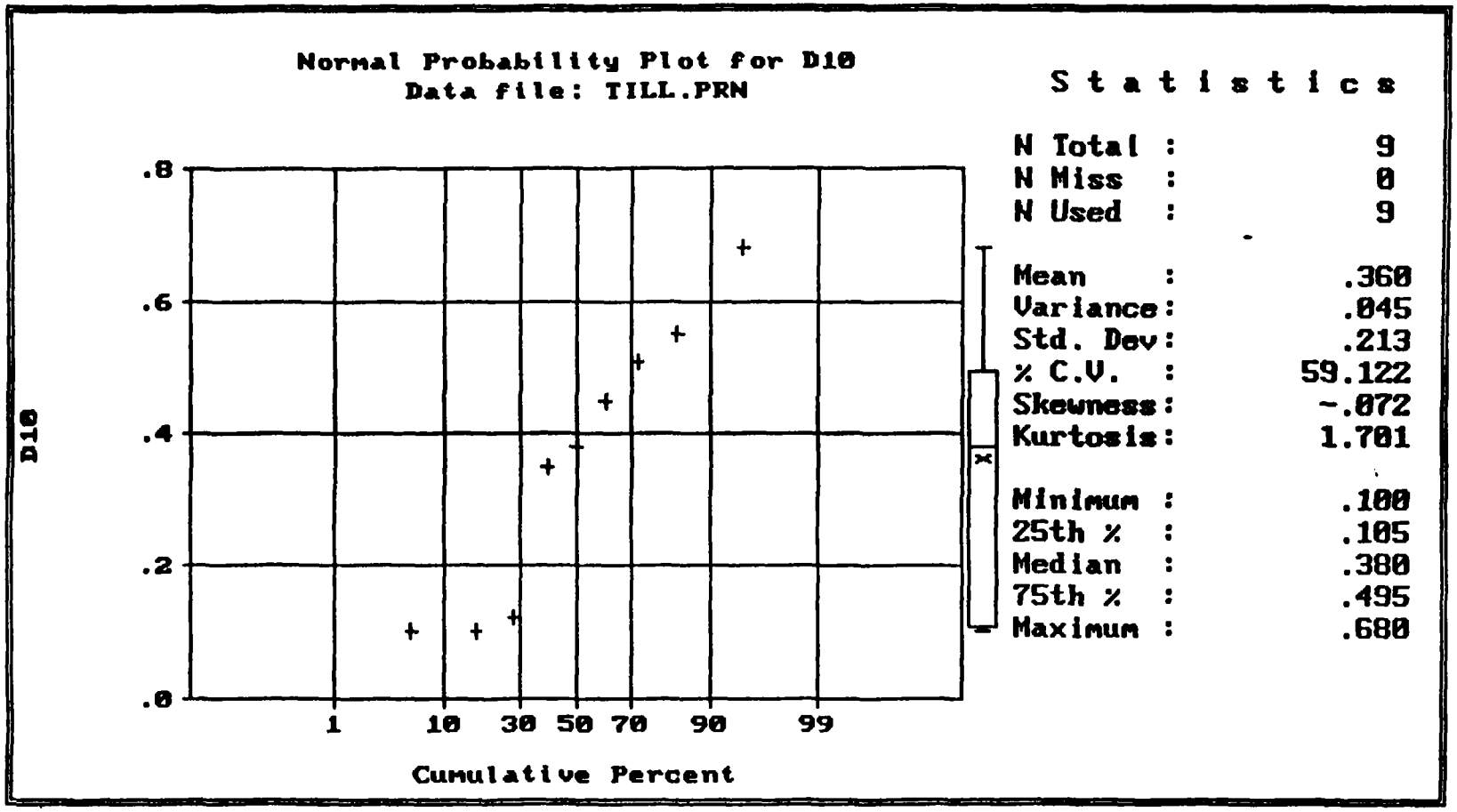

Histogram
Data file: TILL.PRN
Frequency
3.
2.
1.
0.
0.
10000.
20000.
30000.
40000.
TOC (MG/KG)
Statistics
N Total : 9
N Miss : 0
N Used : 9
Mean : 20555.550
Variance: 73777780.000
Std. Dev: 8589.399
% C.V. : 41.786
Skewness: .839
Kurtosis: 2.473
Minimum : 10000.000
25th % : 14500.000
Median : 18000.000
75th % : 21000.000
Maximum : 36000.000

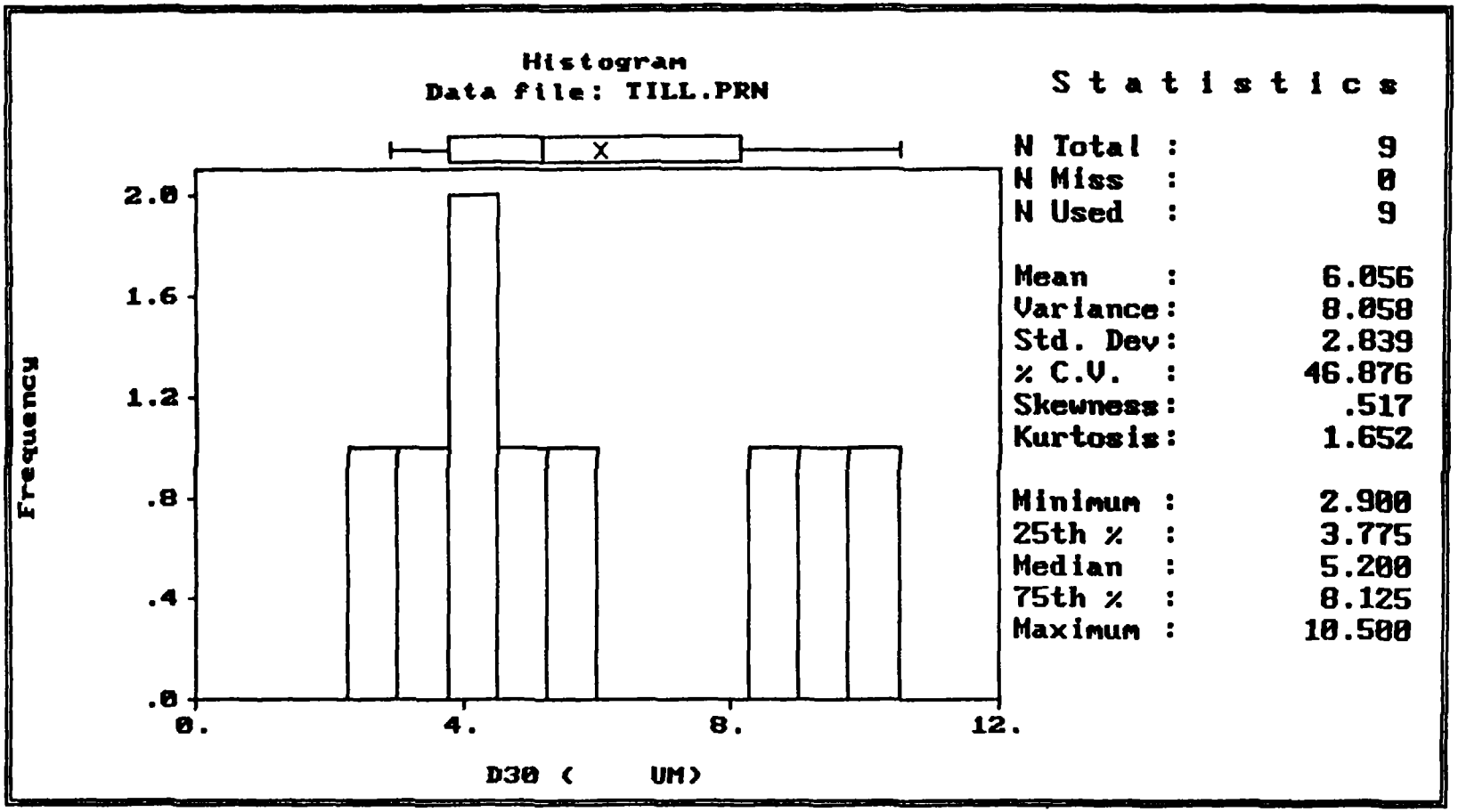

Normal Probability Plot for TOC
Data file: TILL.PRN
TOC
40000.
30000.
20000.
10000.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 9
N Miss : 0
N Used : 9
Mean : 20555.550
Variance: 73777780.000
Std. Dev: 8589.399
% C.V. : 41.786
Skewness: .839
Kurtosis: 2.473
Minimum : 10000.000
25th % : 14500.000
Median : 18000.000
75th % : 21000.000
Maximum : 36000.000

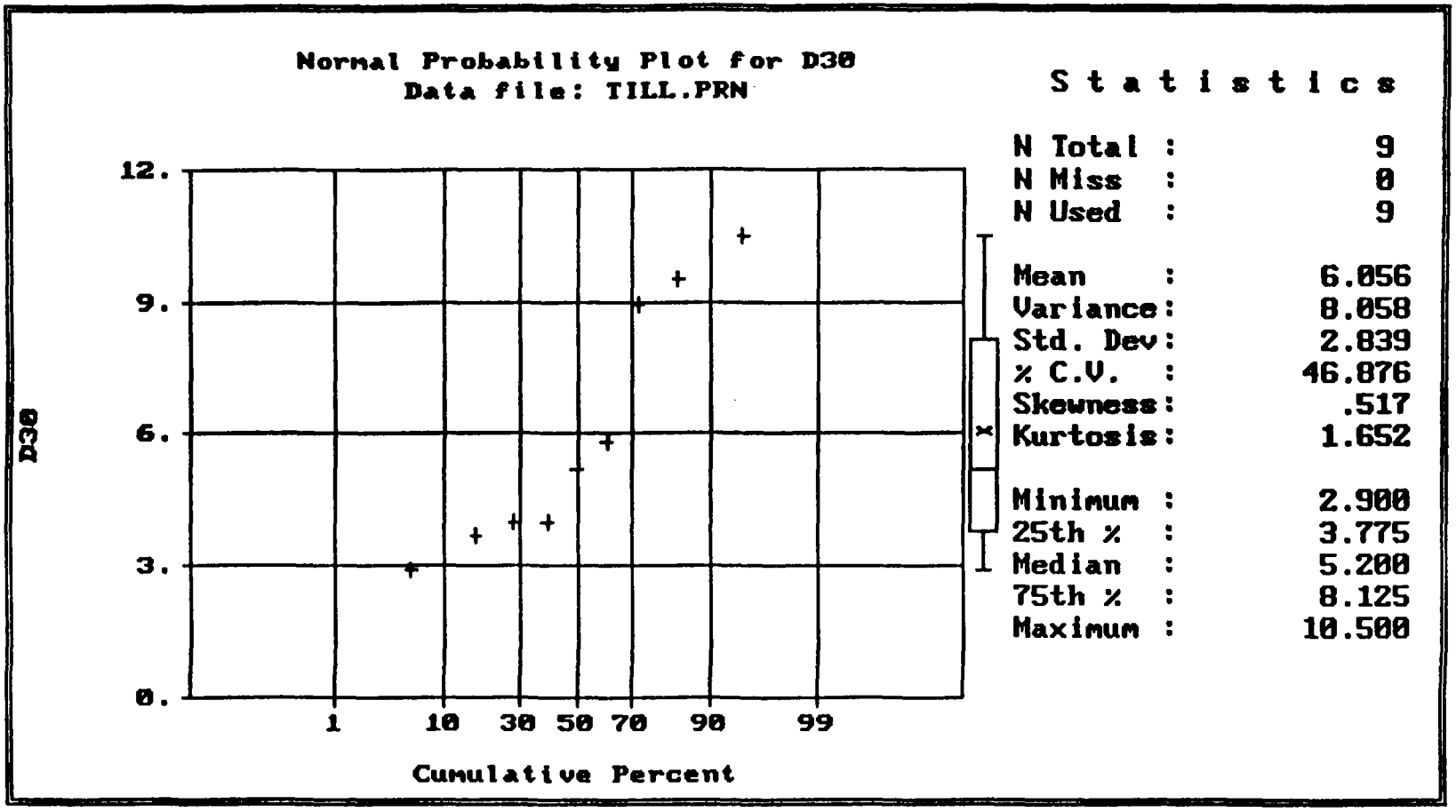

Histogram
Data file: TILL.PRN
Frequency
3.
2.
1.
0.
8.8
9.6
10.4
11.2
LN(TOC) (MG/KG)
Statistics
N Total : 9
N Miss : 0
N Used : 9
Mean : 9.858
Variance: .160
Std. Dev: .400
% C.V. : 4.054
Skewness: .228
Kurtosis: 2.405
Minimum : 9.210
25th % : 9.580
Median : 9.798
75th % : 9.949
Maximum : 10.491

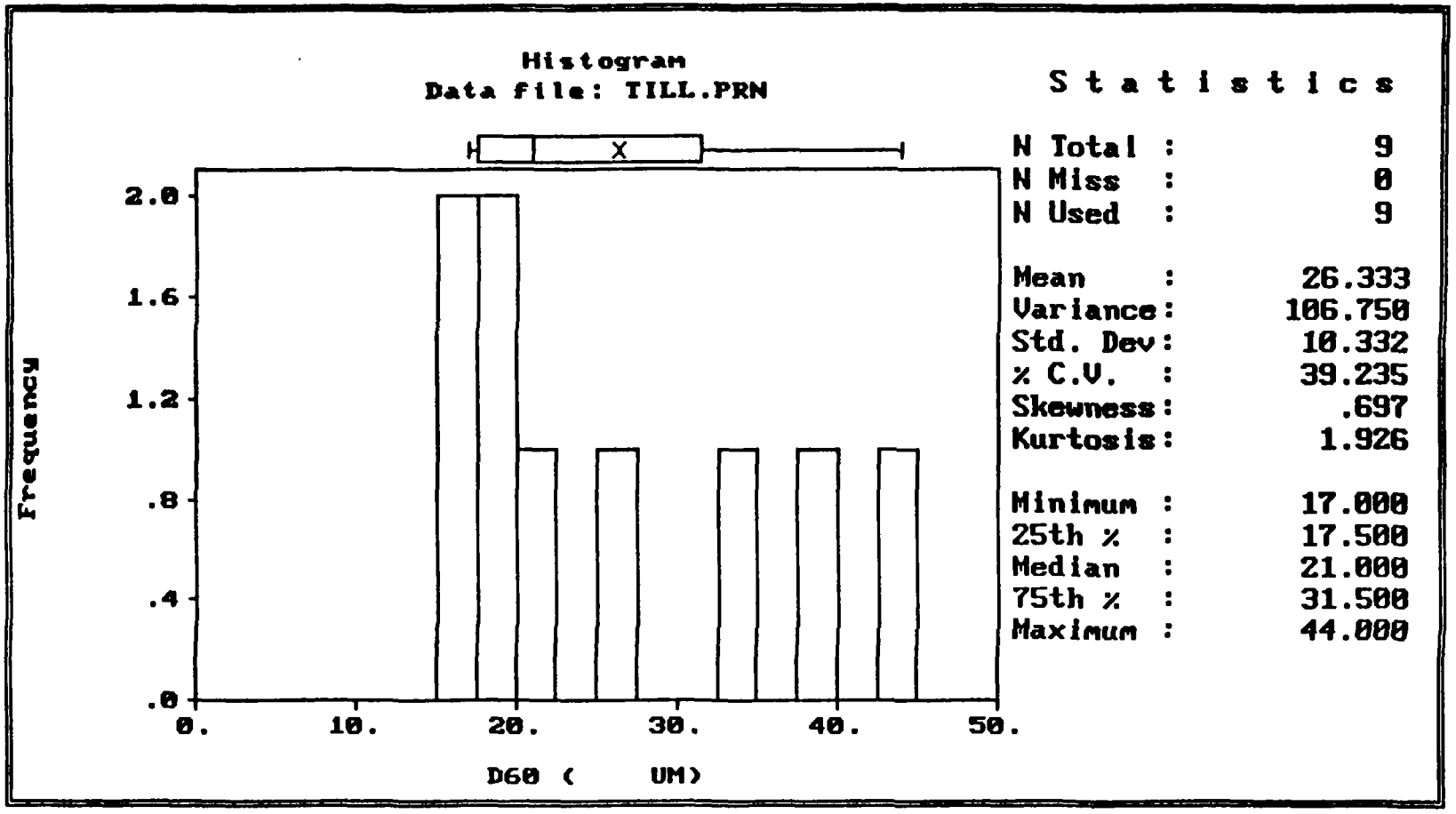

Normal Probability Plot for LN(TOC)
Data file: TILL.PRN
LN(TOC)
10.4
10.0
9.6
9.2
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 9
N Miss : 0
N Used : 9
Mean : 9.858
Variance: .160
Std. Dev: .400
% C.V. : 4.054
Skewness: .228
Kurtosis: 2.405
Minimum : 9.210
25th % : 9.580
Median : 9.798
75th % : 9.949
Maximum : 10.491

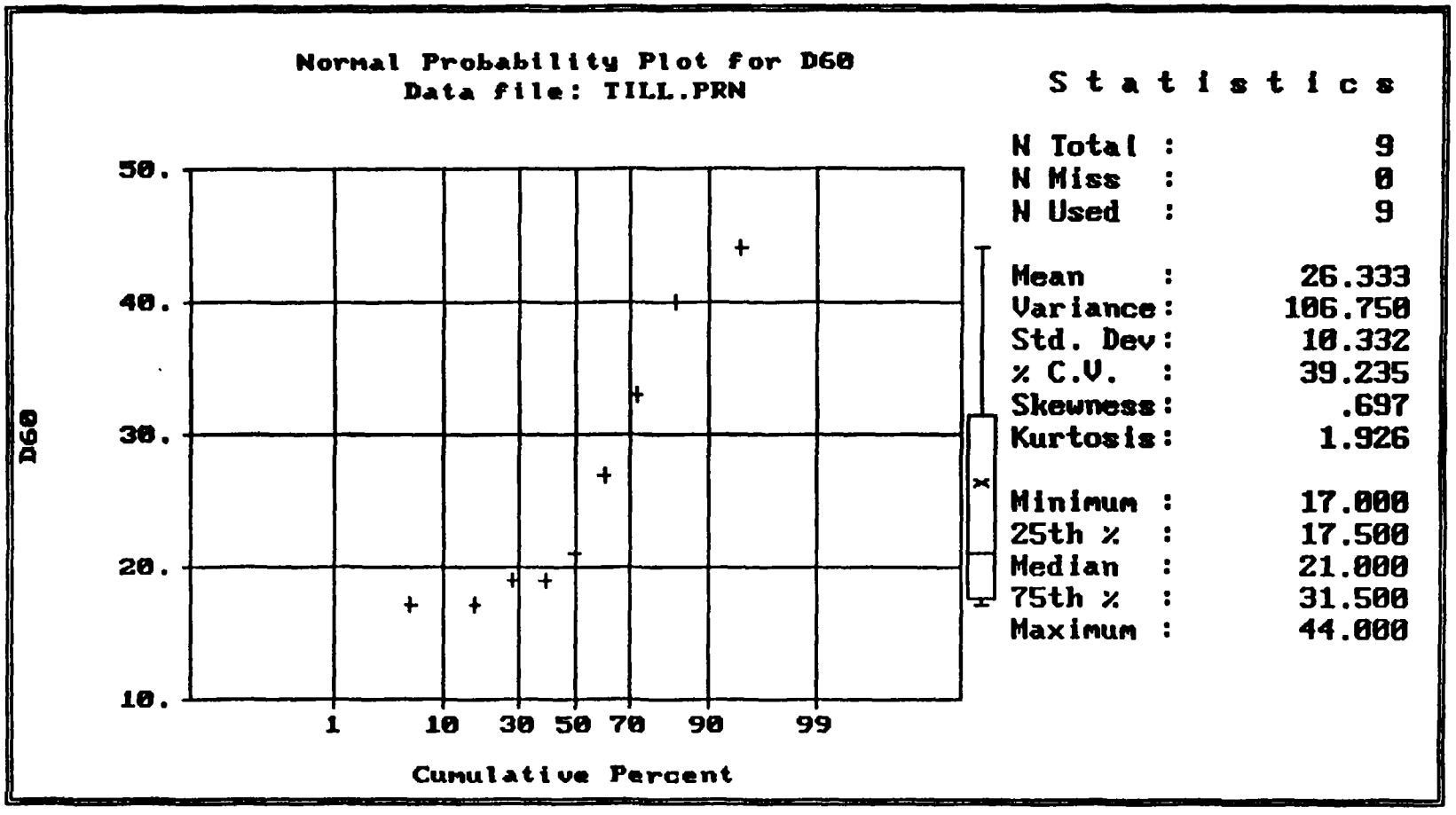

Histogram
Data file: TILL.PRN
Frequency
2.0
1.6
1.2
.8
.4
.0
.0
.3
.6
.9
D10 (UM)
Statistics
N Total : 9
N Miss : 0
N Used : 9
Mean : .360
Variance: .045
Std. Dev: .213
% C.V. : 59.122
Skewness: -.072
Kurtosis: 1.701
Minimum : .100
25th % : .105
Median : .380
75th % : .495
Maximum : .680

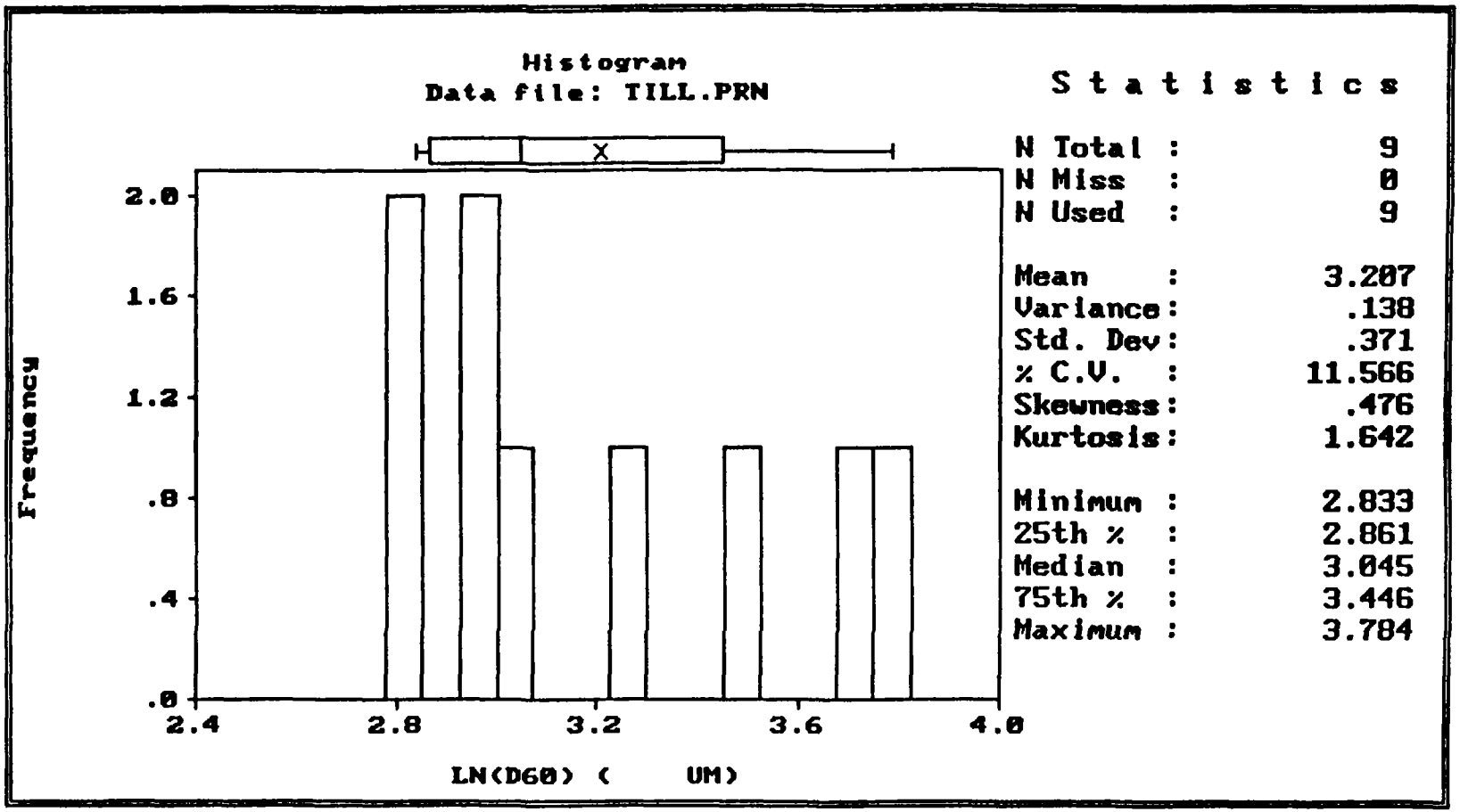

Normal Probability Plot for D10
Data file: TILL.PRN
D10
.8
.6
.4
.2
.0
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 9
N Miss : 0
N Used : 9
Mean : .360
Variance: .045
Std. Dev: .213
% C.V. : 59.122
Skewness: -.072
Kurtosis: 1.701
Minimum : .100
25th % : .105
Median : .380
75th % : .495
Maximum : .680

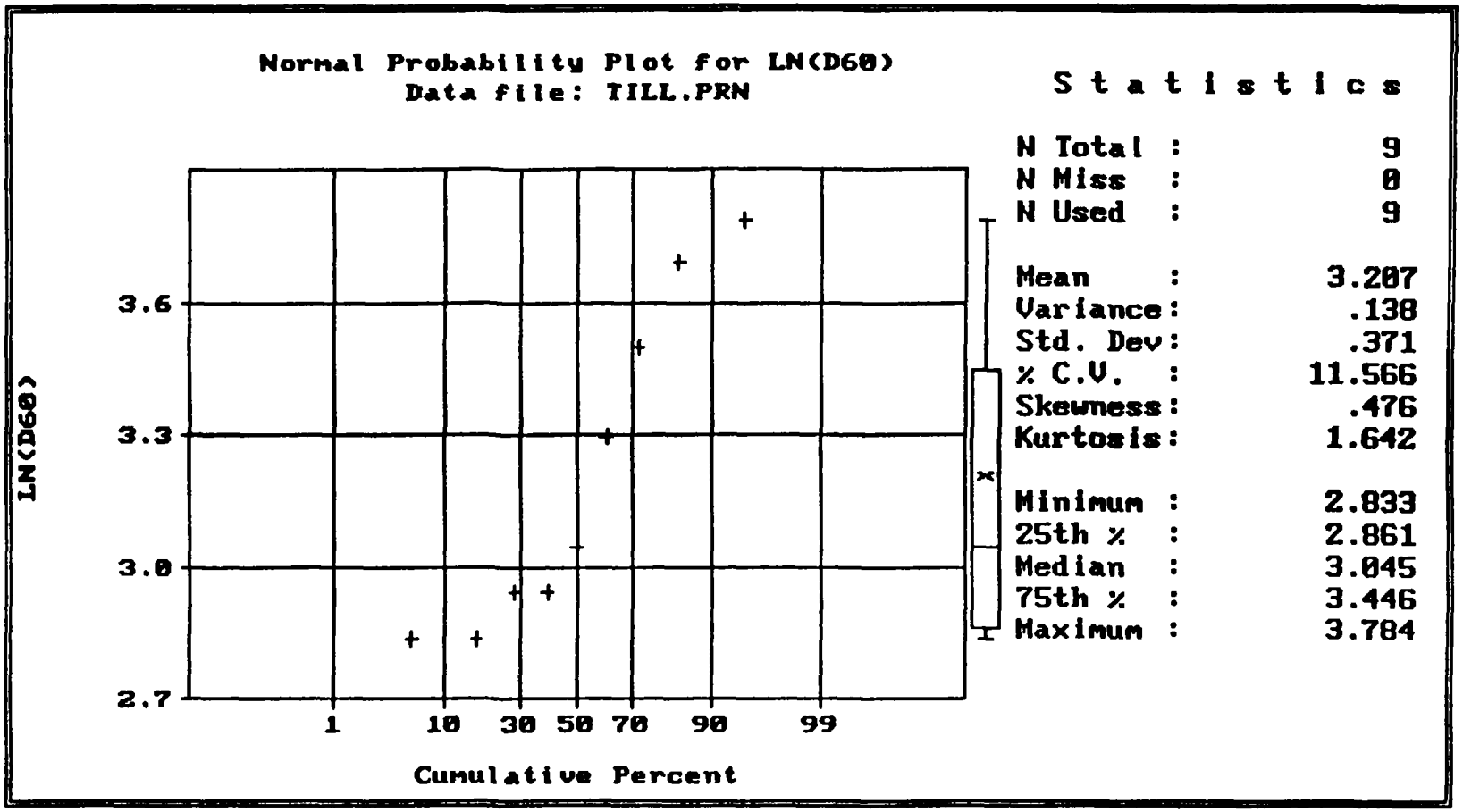

Histogram
Data file: TILL.PRN
Frequency
2.0
1.6
1.2
.8
.4
.0
0.
4.
8.
12.
D30 (UM)
Statistics
N Total : 9
N Miss : 0
N Used : 9
Mean : 6.056
Variance: 8.058
Std. Dev: 2.839
% C.V. : 46.876
Skewness: .517
Kurtosis: 1.652
Minimum : 2.900
25th % : 3.775
Median : 5.200
75th % : 8.125
Maximum : 10.500

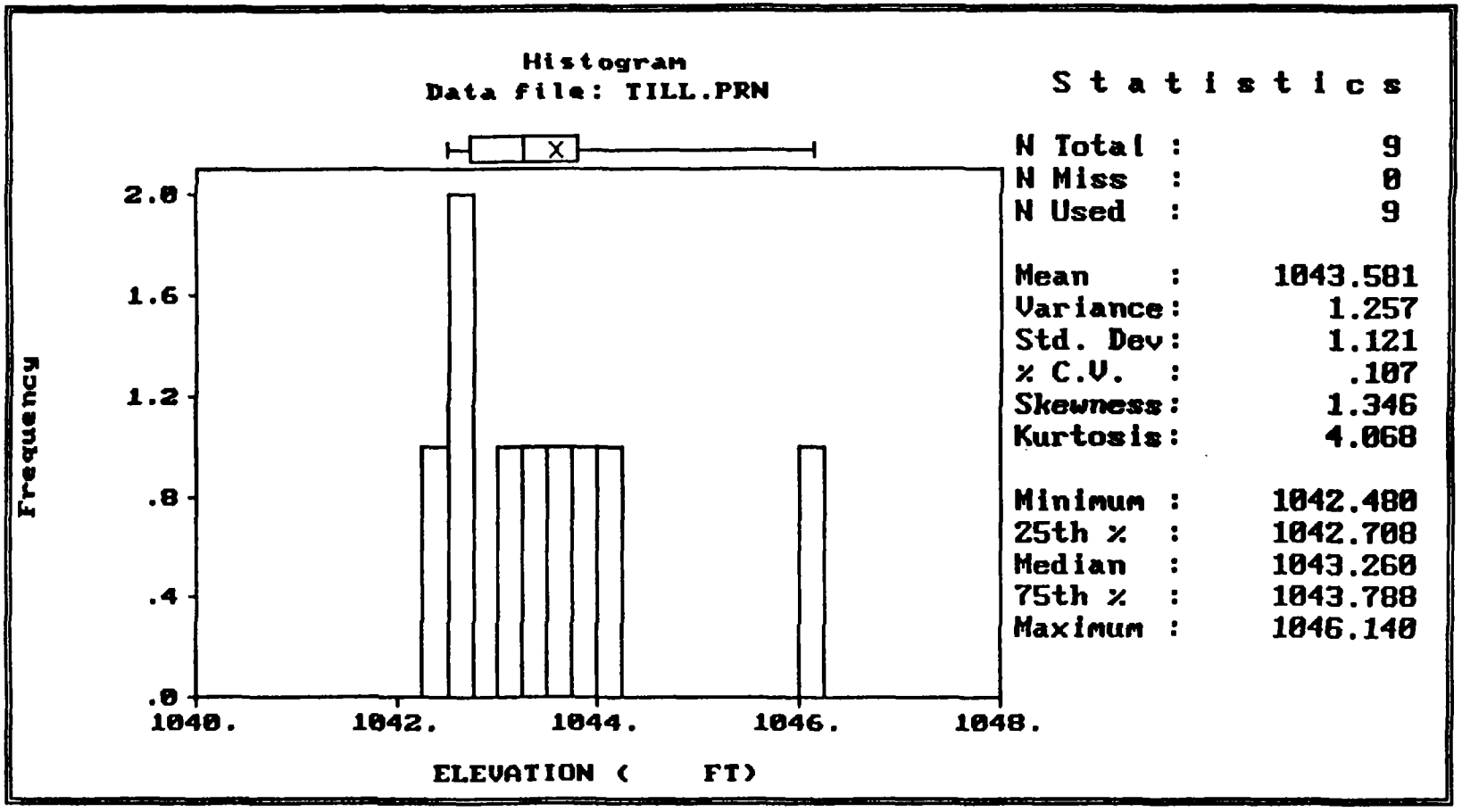

Normal Probability Plot for D30
Data file: TILL.PRN
D30
12.
9.
6.
3.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 9
N Miss : 0
N Used : 9
Mean : 6.056
Variance: 8.058
Std. Dev: 2.839
% C.V. : 46.876
Skewness: .517
Kurtosis: 1.652
Minimum : 2.900
25th % : 3.775
Median : 5.200
75th % : 8.125
Maximum : 10.500

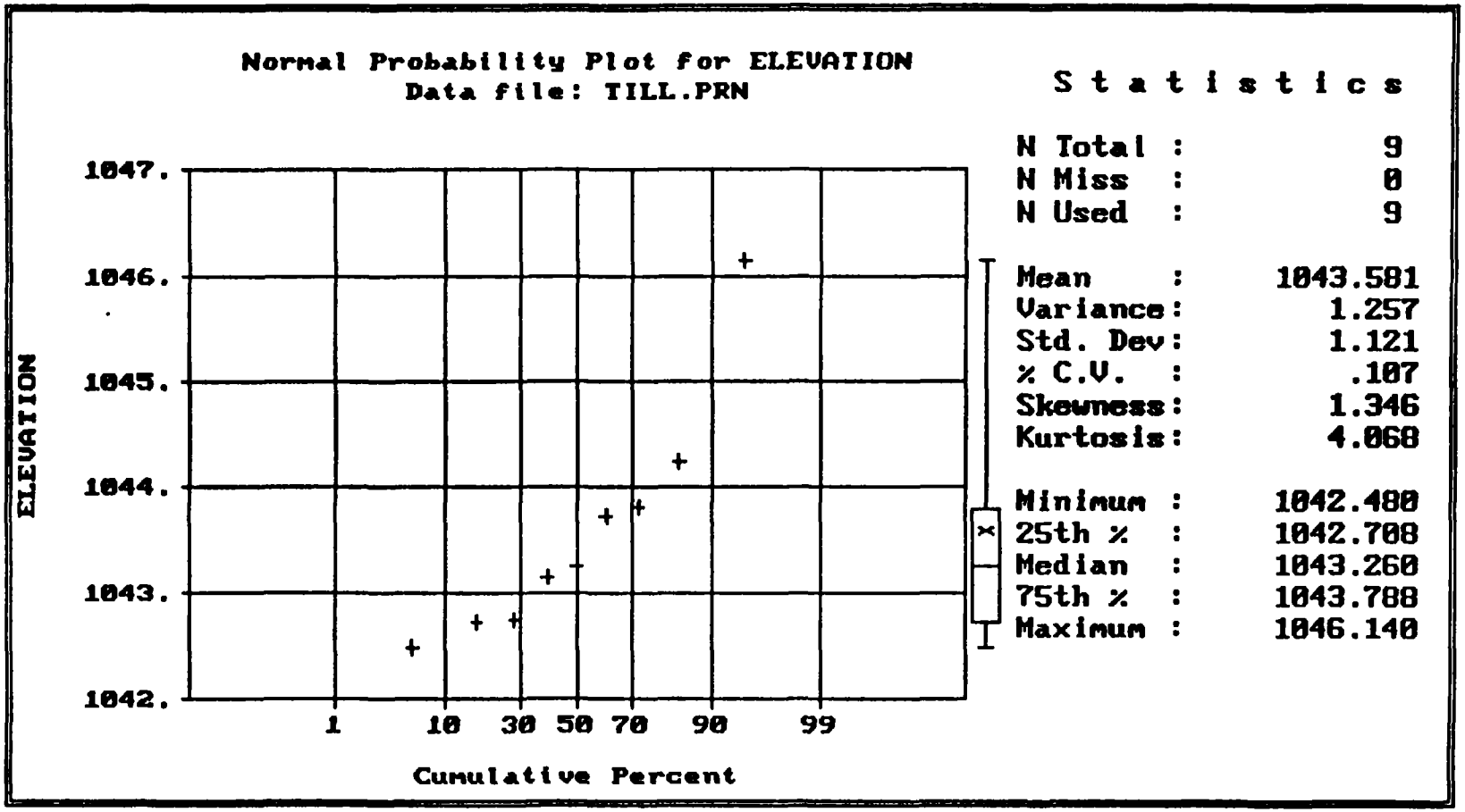

Histogram
Data file: TILL.PRN
Frequency
2.0
1.6
1.2
.8
.4
.0
0.
10.
20.
30.
40.
50.
D60 (UM)
Statistics
N Total : 9
N Miss : 0
N Used : 9
Mean : 26.333
Variance: 106.750
Std. Dev: 10.332
% C.V. : 39.235
Skewness: .697
Kurtosis: 1.926
Minimum : 17.000
25th % : 17.500
Median : 21.000
75th % : 31.500
Maximum : 44.000

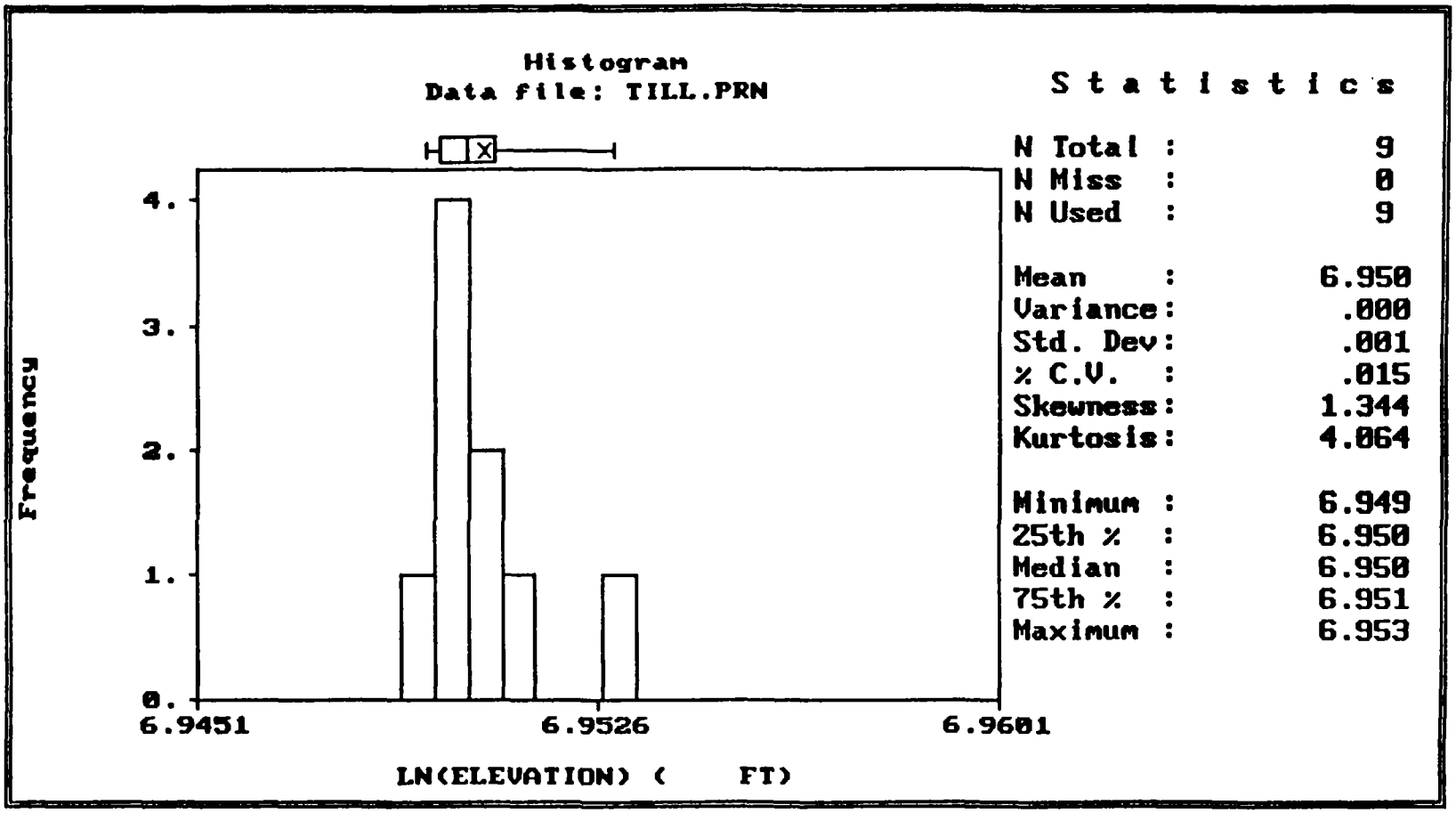

Normal Probability Plot for D60
Data file: TILL.PRN
D60
50.
40.
30.
20.
10.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 9
N Miss : 0
N Used : 9
Mean : 26.333
Variance : 106.750
Std. Dev : 10.332
% C.V. : 39.235
Skewness : .697
Kurtosis : 1.926
Minimum : 17.000
25th % : 17.500
Median : 21.000
75th % : 31.500
Maximum : 44.000

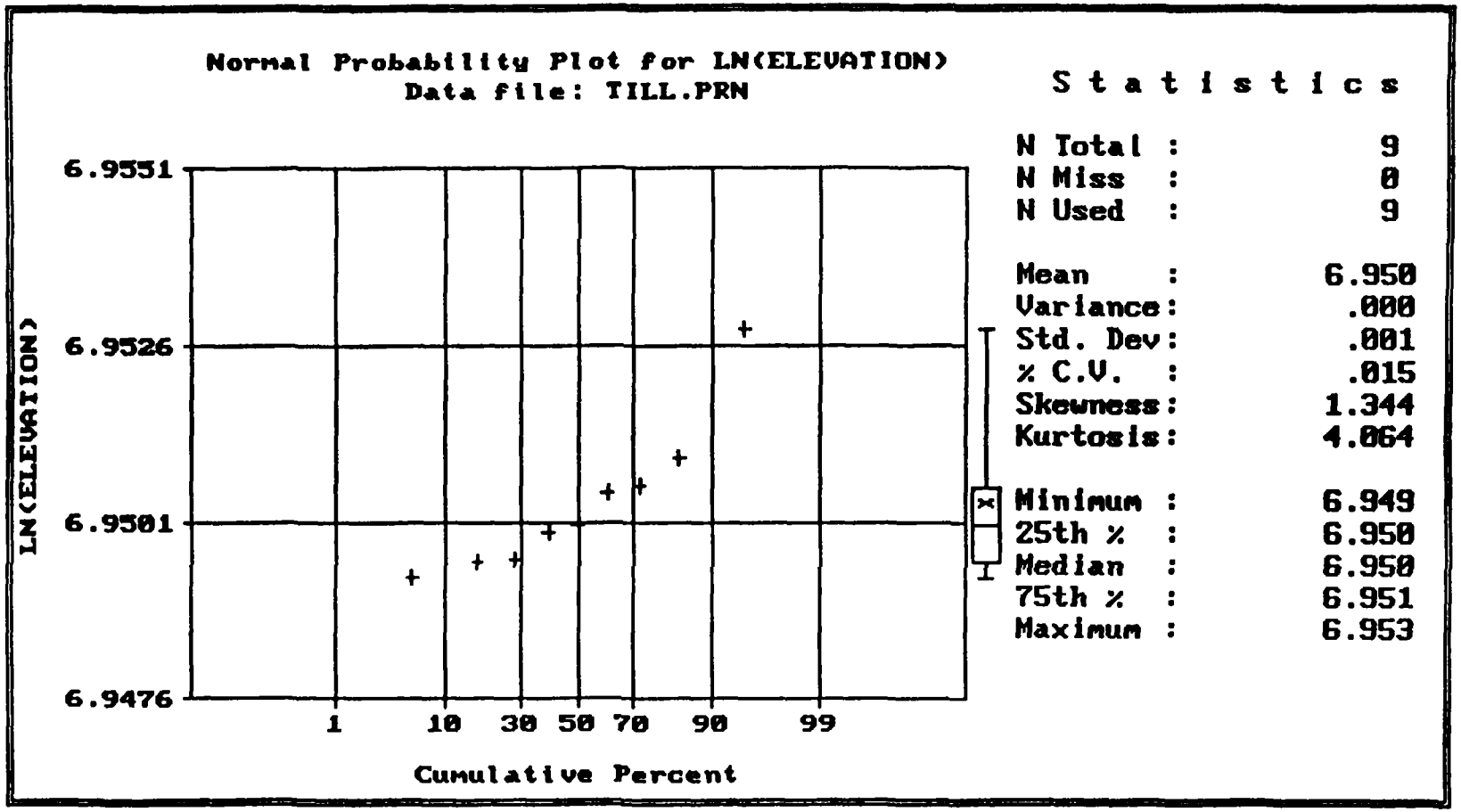

Histogram
Data file: TILL.PRN
Frequency
2.0
1.6
1.2
.8
.4
.0
2.4
2.8
3.2
3.6
4.0
LN(D60) (UM)
Statistics
N Total : 9
N Miss : 0
N Used : 9
Mean : 3.207
Variance: .138
Std. Dev: .371
% C.V. : 11.566
Skewness: .476
Kurtosis: 1.642
Minimum : 2.833
25th % : 2.861
Median : 3.045
75th % : 3.446
Maximum : 3.784

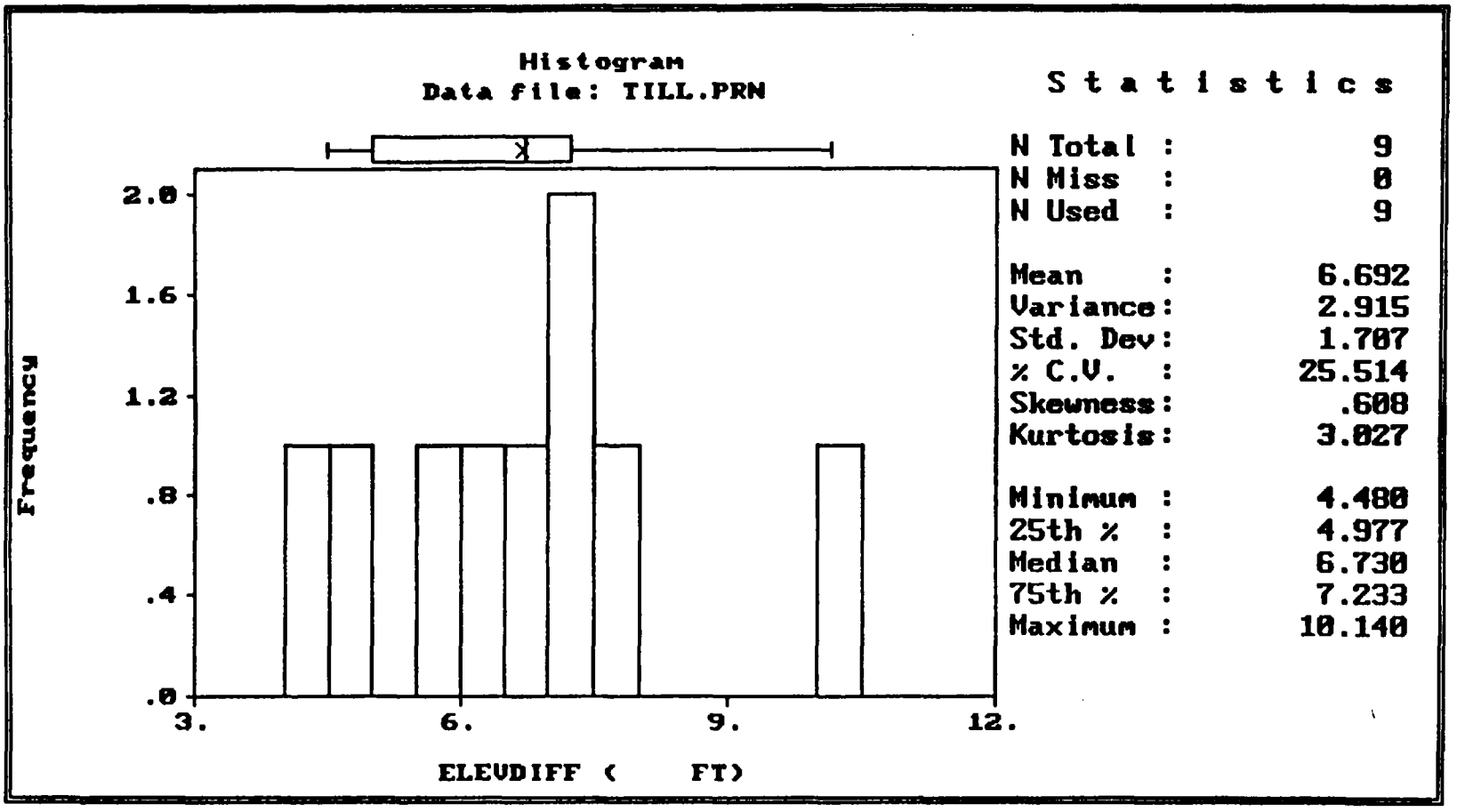

Normal Probability Plot for LN(D60)
Data file: TILL.PRN
LN(D60)
3.6
3.3
3.0
2.7
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 9
N Miss : 0
N Used : 9
Mean : 3.207
Variance: .138
Std. Dev: .371
% C.V. : 11.566
Skewness: .476
Kurtosis: 1.642
Minimum : 2.833
25th % : 2.861
Median : 3.045
75th % : 3.446
Maximum : 3.784

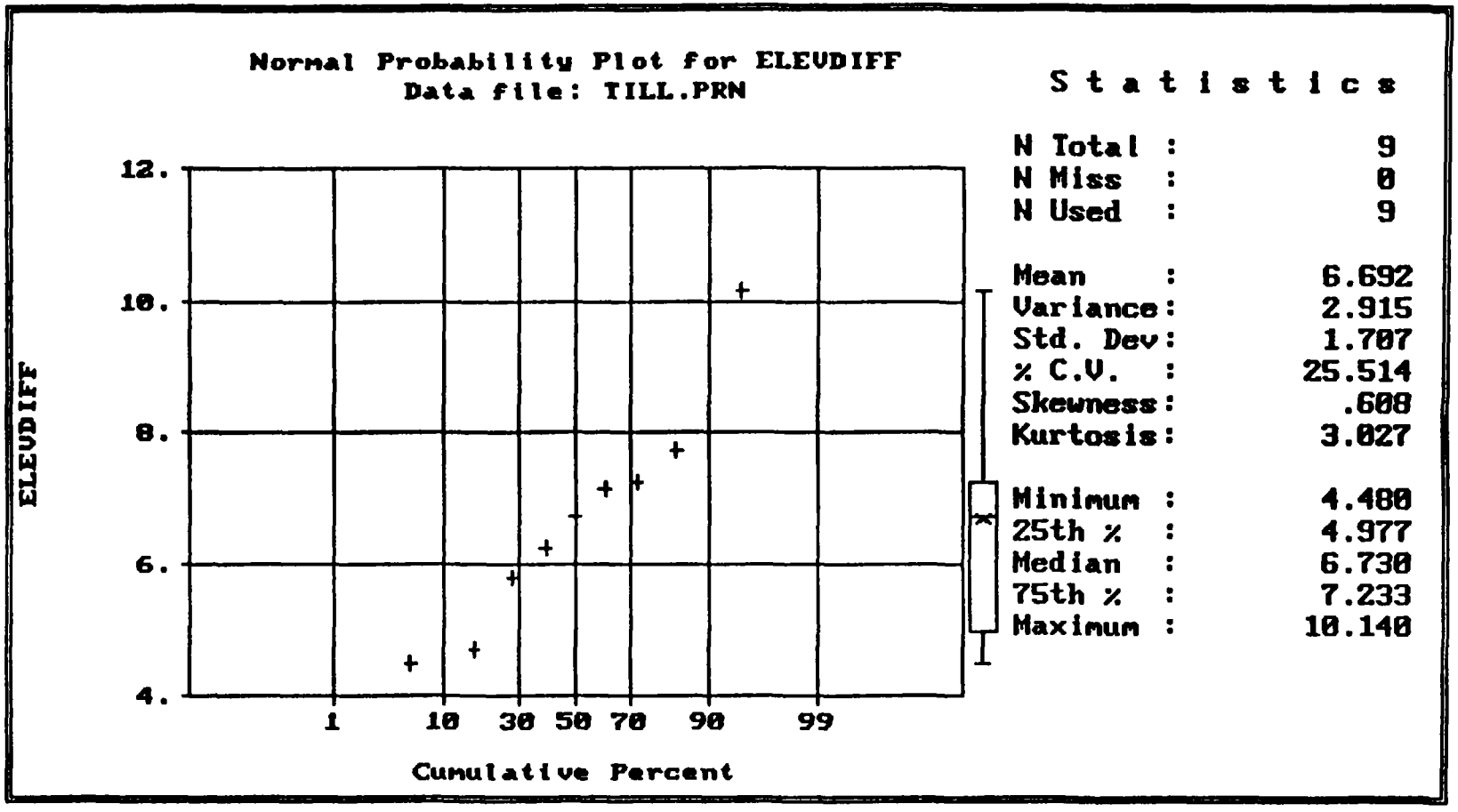

Histogram
Data file: TILL.PRN
Frequency
2.0
1.6
1.2
.8
.4
.0
1040.
1042.
1044.
1046.
1048.
ELEVATION (FT)
Statistics
N Total : 9
N Miss : 0
N Used : 9
Mean : 1043.581
Variance: 1.257
Std. Dev: 1.121
% C.V. : .107
Skewness: 1.346
Kurtosis: 4.068
Minimum : 1042.480
25th % : 1042.708
Median : 1043.260
75th % : 1043.788
Maximum : 1046.140

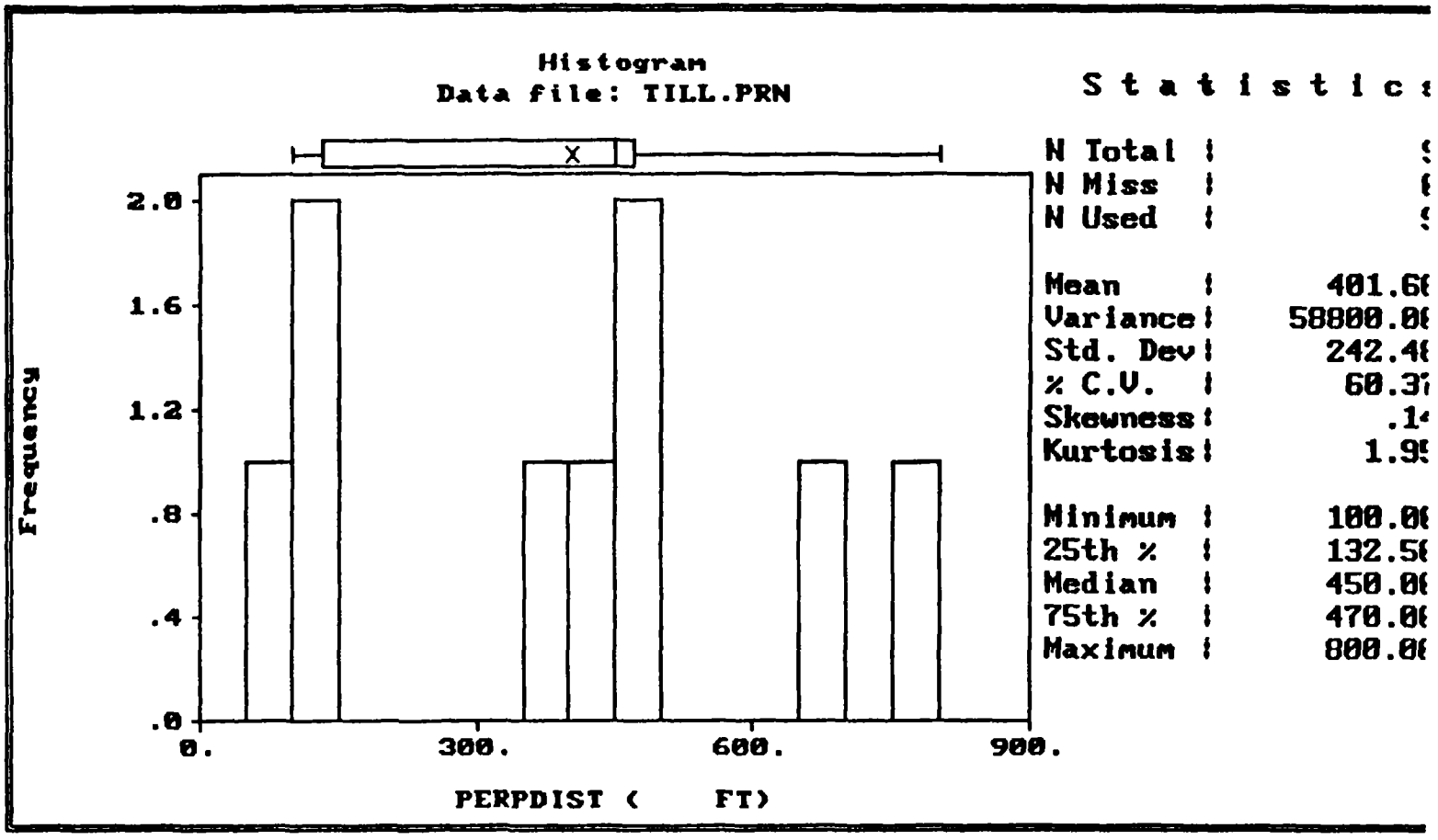

Normal Probability Plot for ELEVATION
Data file: TILL.PRN
ELEVATION
1047.
1046.
1045.
1044.
1043.
1042.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 9
N Miss : 0
N Used : 9
Mean : 1043.581
Variance: 1.257
Std. Dev: 1.121
% C.V. : .107
Skewness: 1.346
Kurtosis: 4.068
Minimum : 1042.480
25th % : 1042.708
Median : 1043.260
75th % : 1043.788
Maximum : 1046.140

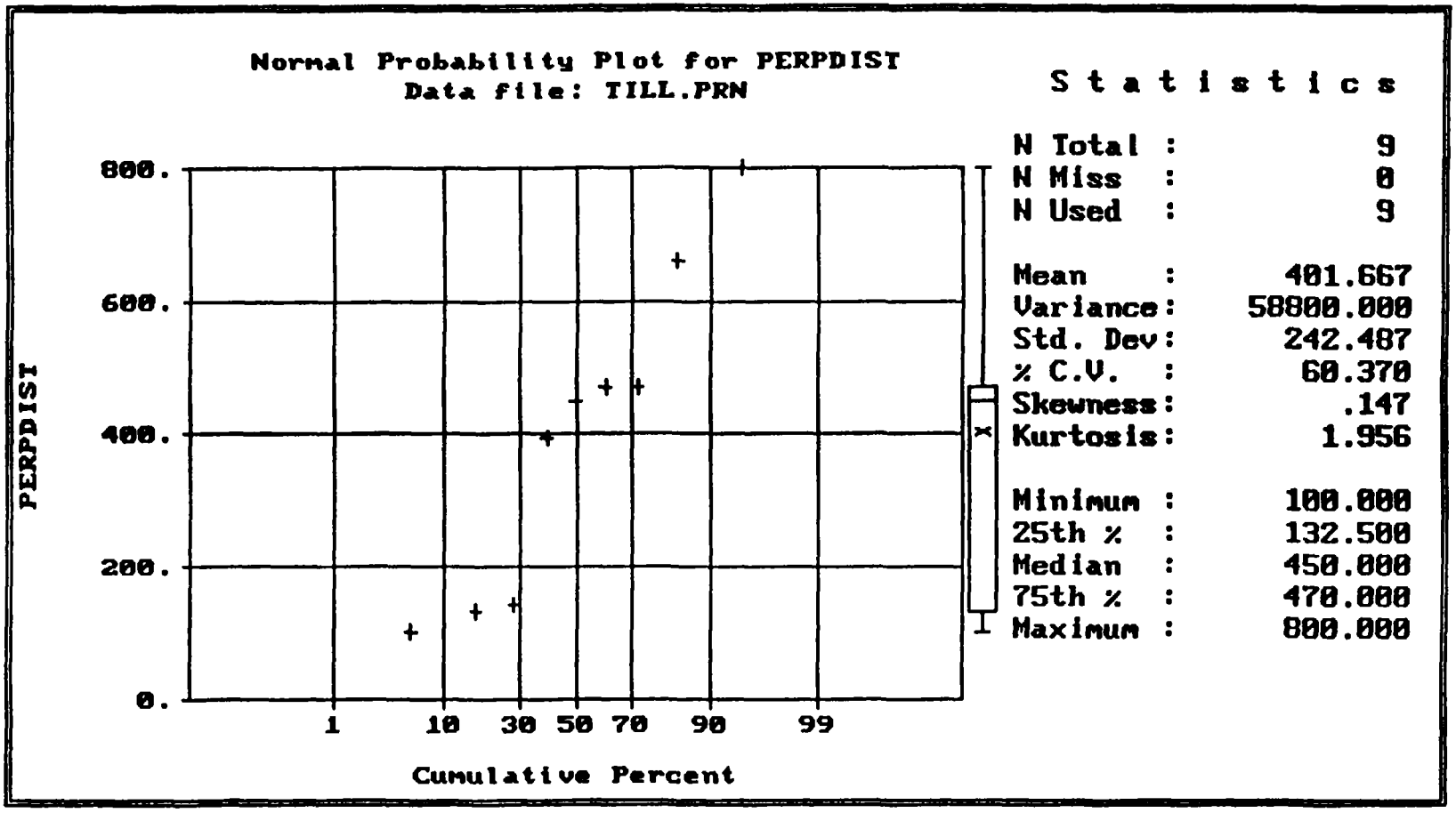

Histogram
Data file: TILL.PRN
Frequency
4.
3.
2.
1.
0.
6.9451
6.9526
6.9601
LN(ELEVATION) (FT)
Statistics
N Total : 9
N Miss : 0
N Used : 9
Mean : 6.950
Variance: .000
Std. Dev: .001
% C.V. : .015
Skewness: 1.344
Kurtosis: 4.064
Minimum : 6.949
25th % : 6.950
Median : 6.950
75th % : 6.951
Maximum : 6.953

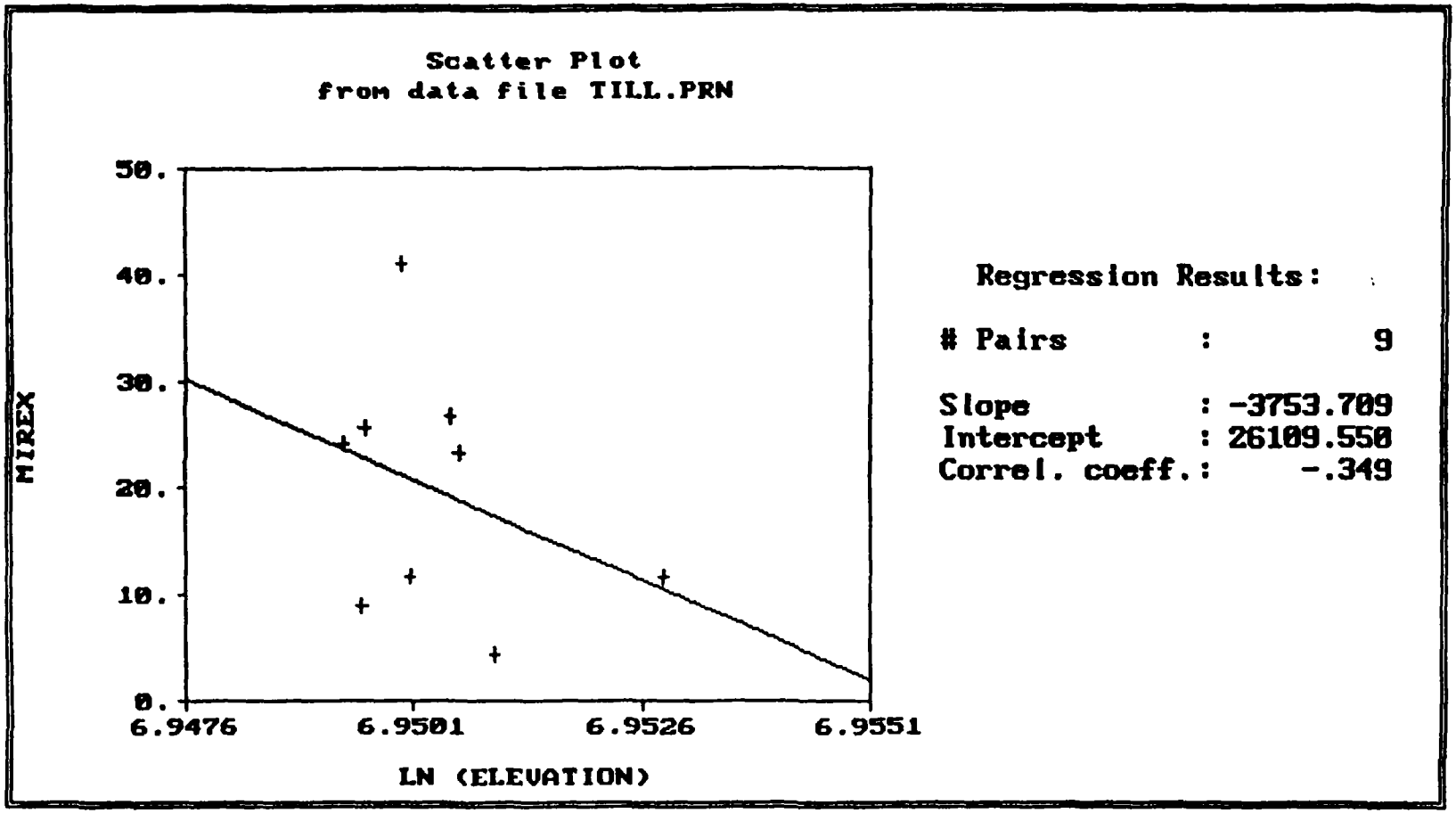

Normal Probability Plot for LN(ELEVATION)
Data file: TILL.PRN
6.9551
6.9526
6.9501
6.9476
LN(ELEVATION)
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 9
N Miss : 0
N Used : 9
Mean : 6.950
Variance: .000
Std. Dev: .001
% C.V. : .015
Skewness: 1.344
Kurtosis: 4.064
Minimum : 6.949
25th % : 6.950
Median : 6.950
75th % : 6.951
Maximum : 6.953

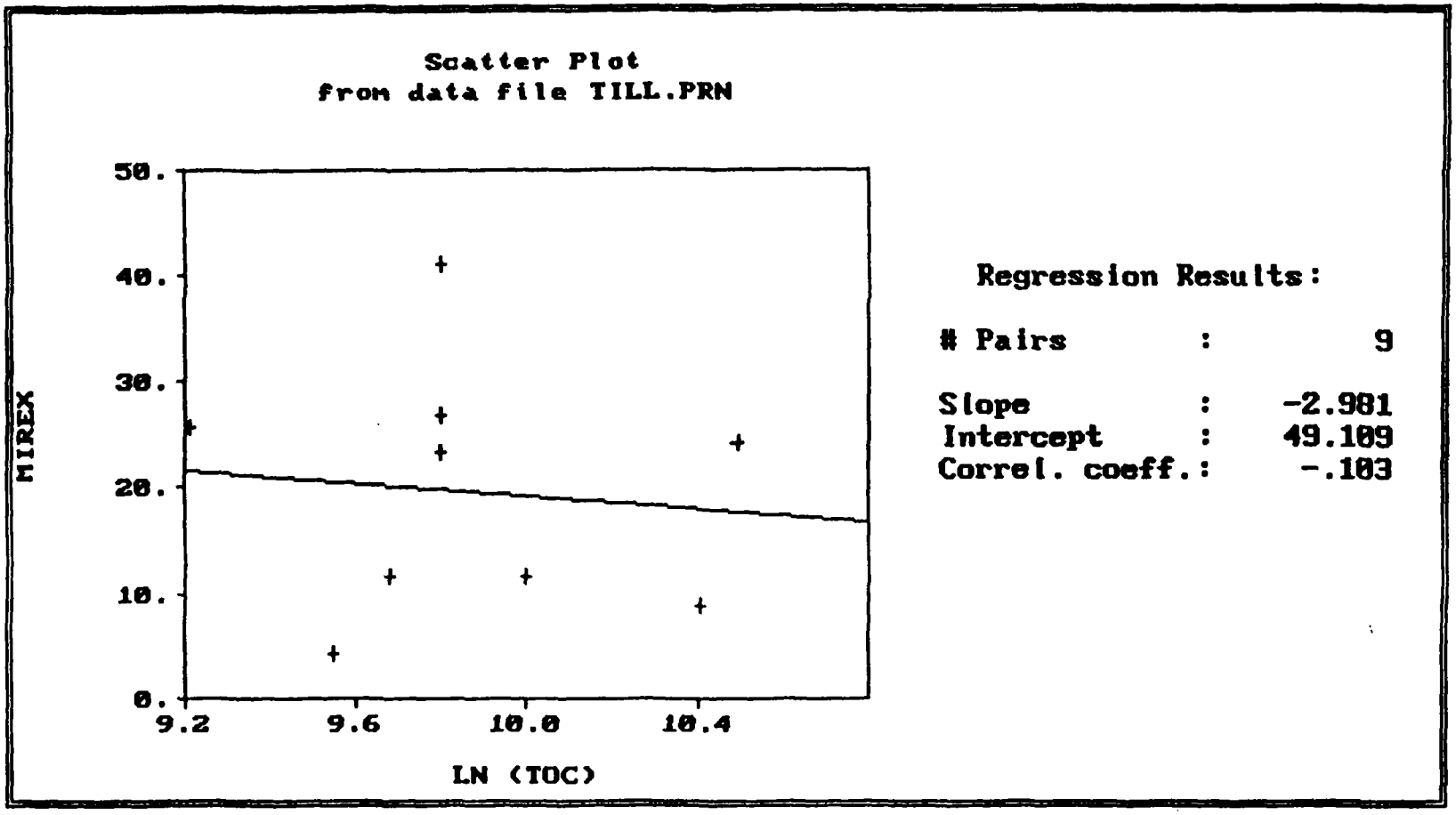

Histogram
Data file: TILL.PRN
Frequency
2.0
1.6
1.2
.8
.4
.0
3.
6.
9.
12.
ELEVDIFF (FT)
Statistics
N Total : 9
N Miss : 0
N Used : 9
Mean : 6.692
Variance: 2.915
Std. Dev: 1.707
% C.V. : 25.514
Skewness: .608
Kurtosis: 3.027
Minimum : 4.480
25th % : 4.977
Median : 6.730
75th % : 7.233
Maximum : 10.140

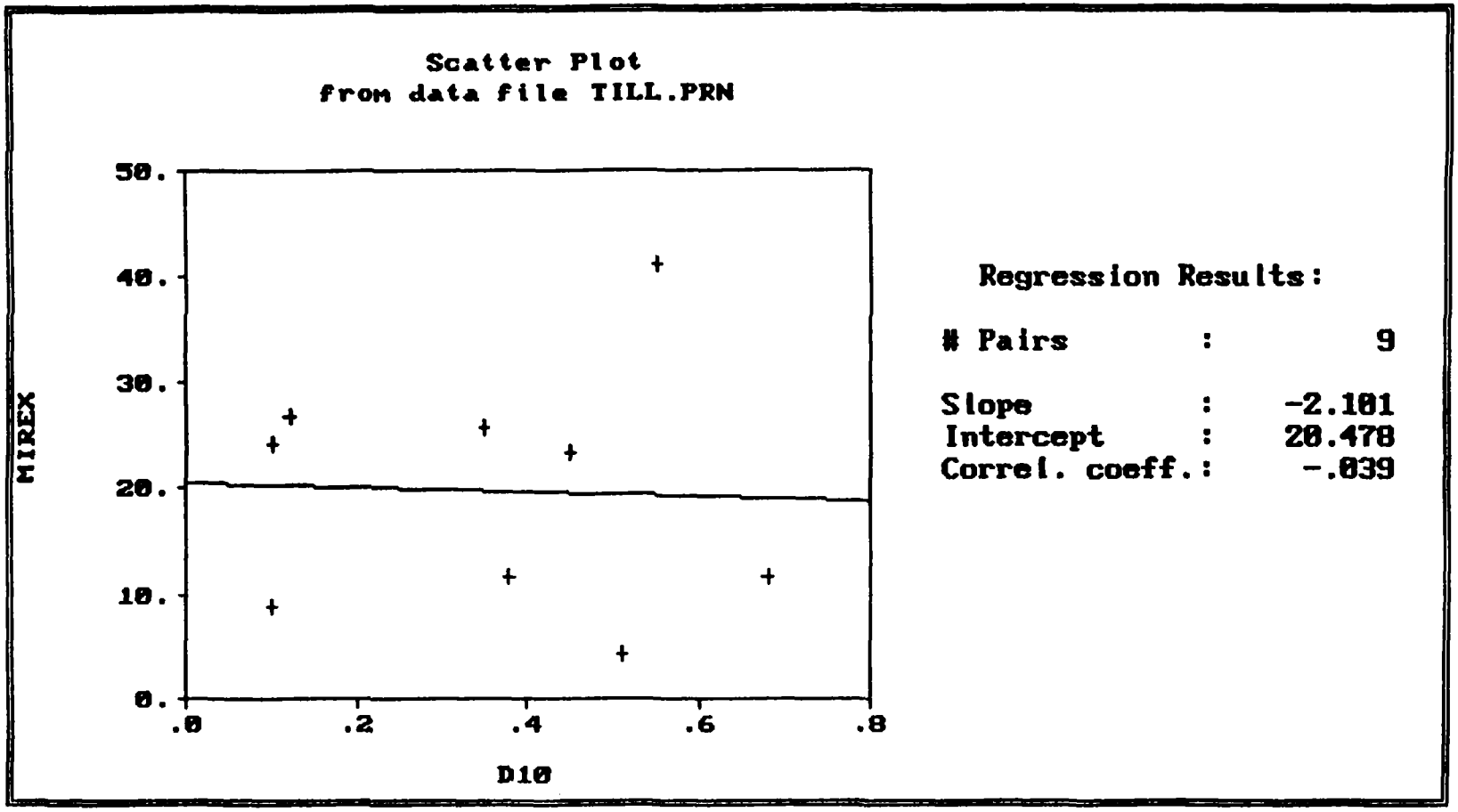

Normal Probability Plot for ELEVDIFF
Data file: TILL.PRN
ELEVDIFF
12.
10.
8.
6.
4.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 9
N Miss : 0
N Used : 9
Mean : 6.692
Variance : 2.915
Std. Dev : 1.707
% C.V. : 25.514
Skewness : .608
Kurtosis : 3.027
Minimum : 4.480
25th % : 4.977
Median : 6.730
75th % : 7.233
Maximum : 10.140

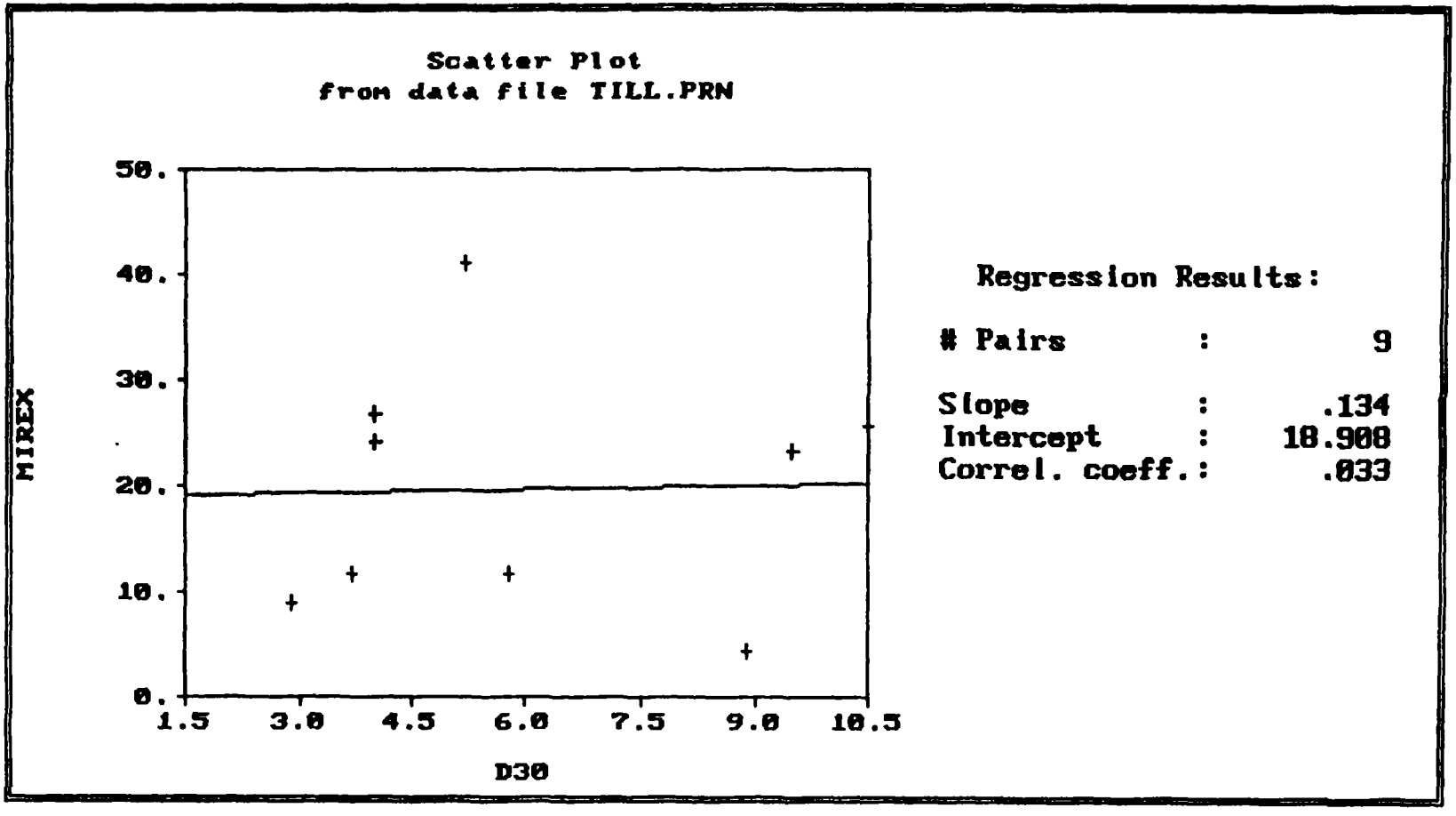

Histogram
Data file: TILL.PRN
Frequency
2.0
1.6
1.2
.8
.4
.0
0.
300.
600.
900.
PERPDIST (FT)
Statistic
N Total
N Miss
N Used
Mean 401.6
Variance 58800.0
Std. Dev 242.4
% C.V. 60.3
Skewness .1
Kurtosis 1.9
Minimum 100.0
25th % 132.5
Median 450.0
75th % 470.0
Maximum 800.0

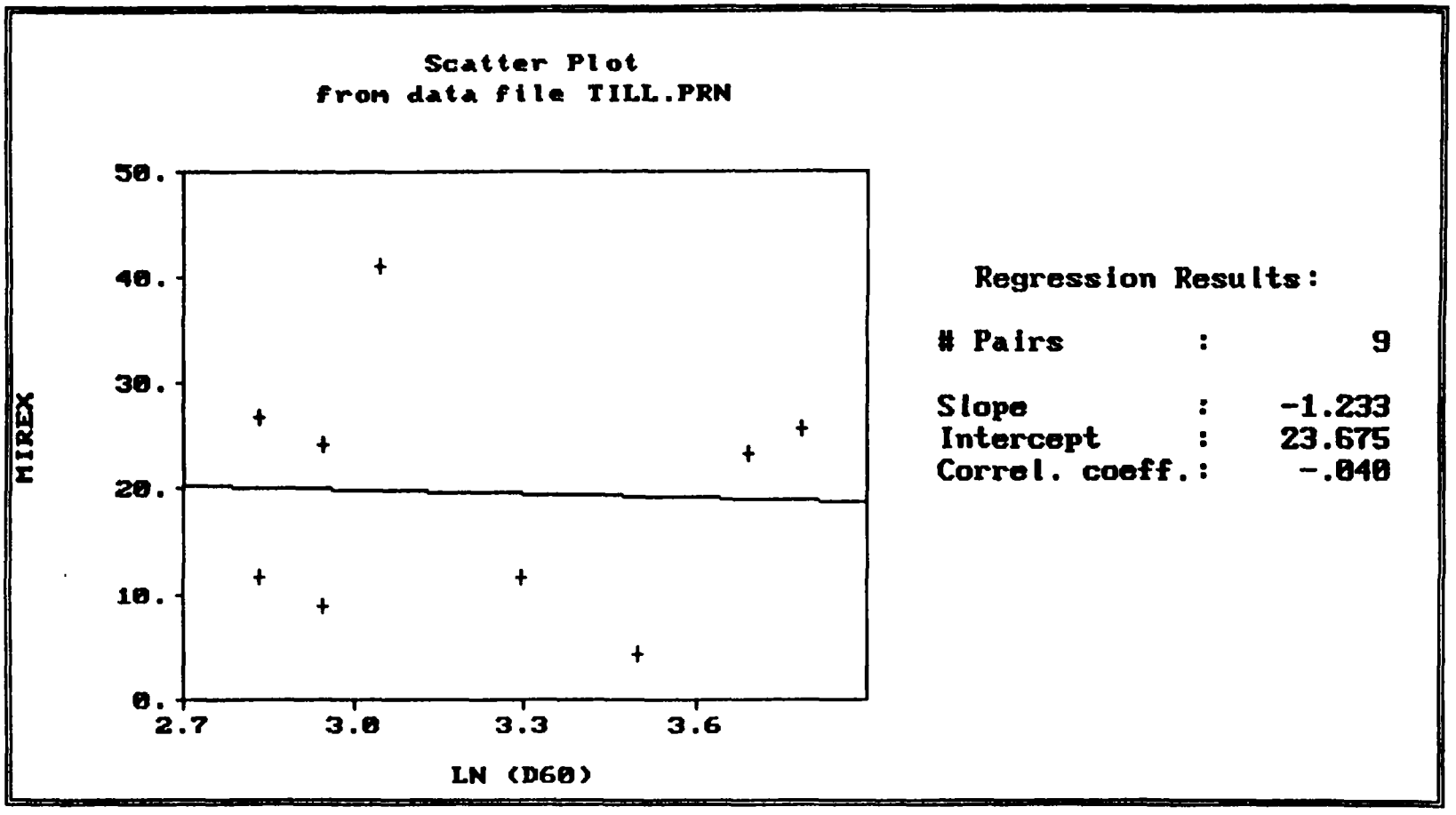

Normal Probability Plot for PERPDIST
Data file: TILL.PRN
PERPDIST
800.
600.
400.
200.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 9
N Miss : 0
N Used : 9
Mean : 401.667
Variance : 58800.000
Std. Dev : 242.487
% C.V. : 60.370
Skewness : .147
Kurtosis : 1.956
Minimum : 100.000
25th % : 132.500
Median : 450.000
75th % : 470.000
Maximum : 800.000

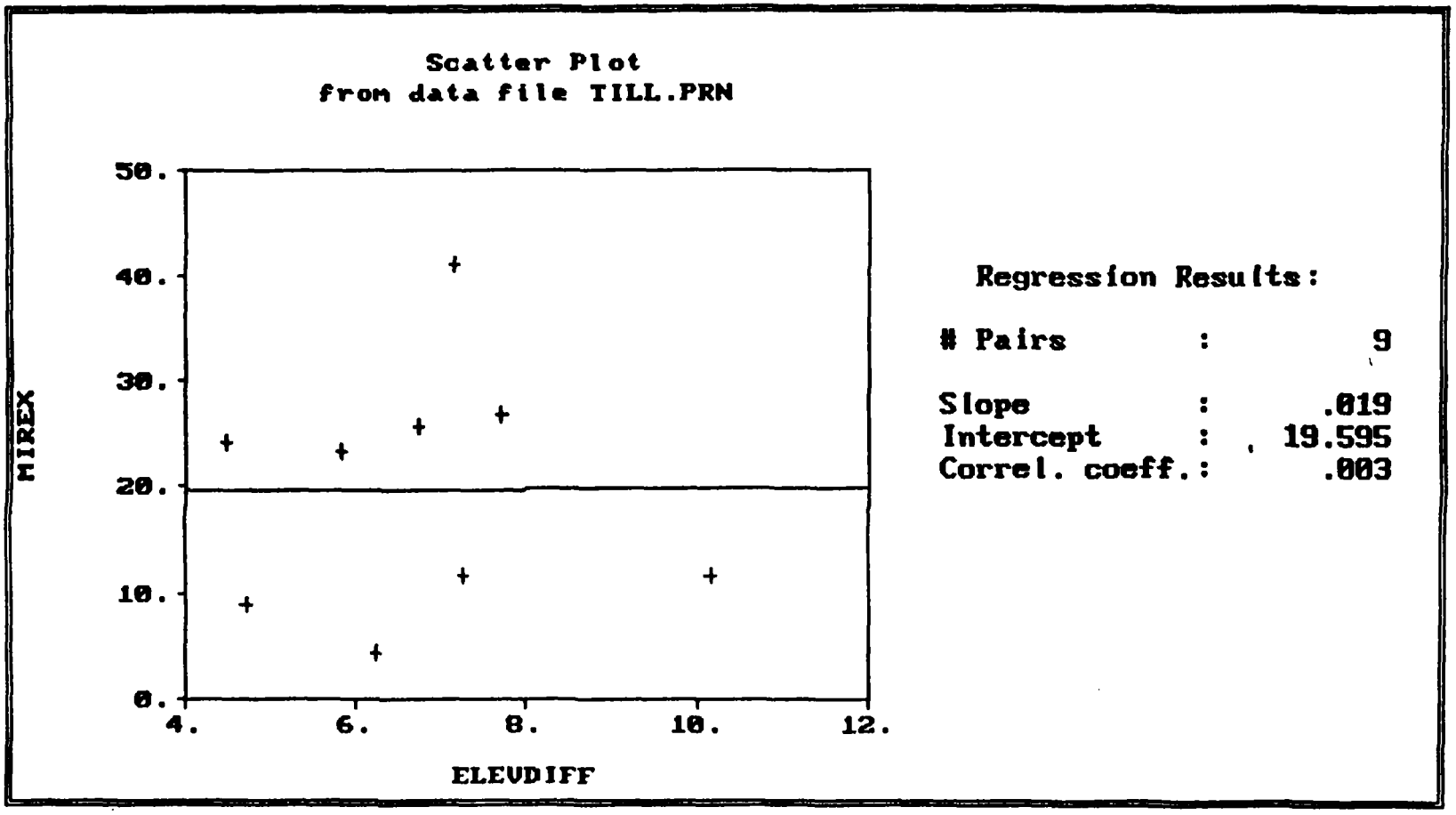

Scatter Plot
from data file TILL.PRN
MIREX
50.
40.
30.
20.
10.
0.
6.9476
6.9501
6.9526
6.9551
LN (ELEVATION)
Regression Results:
Pairs : 9
Slope : -3753.709
Intercept : 26109.550
Correl. coeff.: -.349

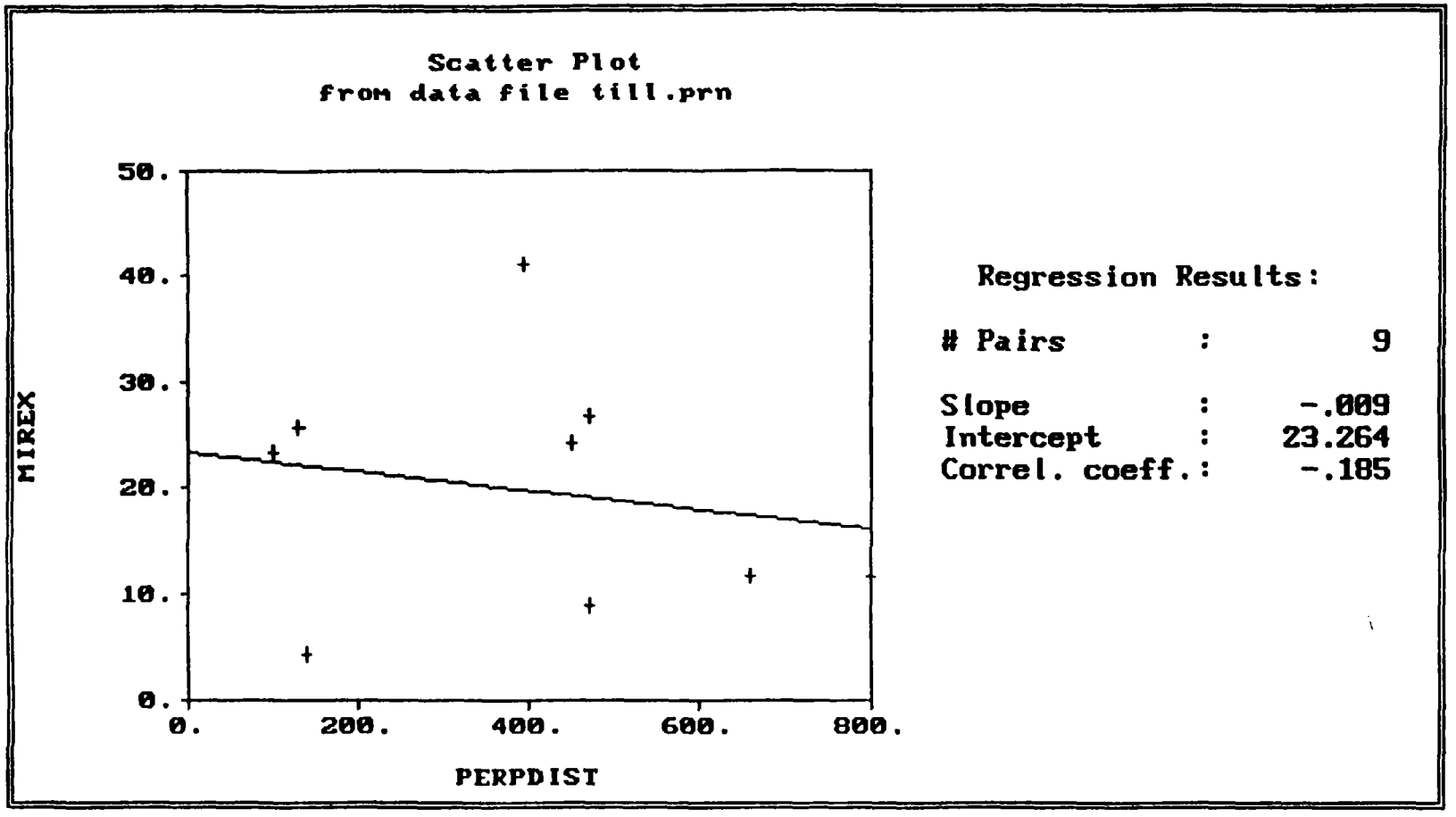

Scatter Plot
from data file TILL.PRN
MIREX
50.
40.
30.
20.
10.
0.
9.2
9.6
10.0
10.4
LN (TOC)
Regression Results:
Pairs : 9
Slope : -2.981
Intercept : 49.109
Correl. coeff.: -.103

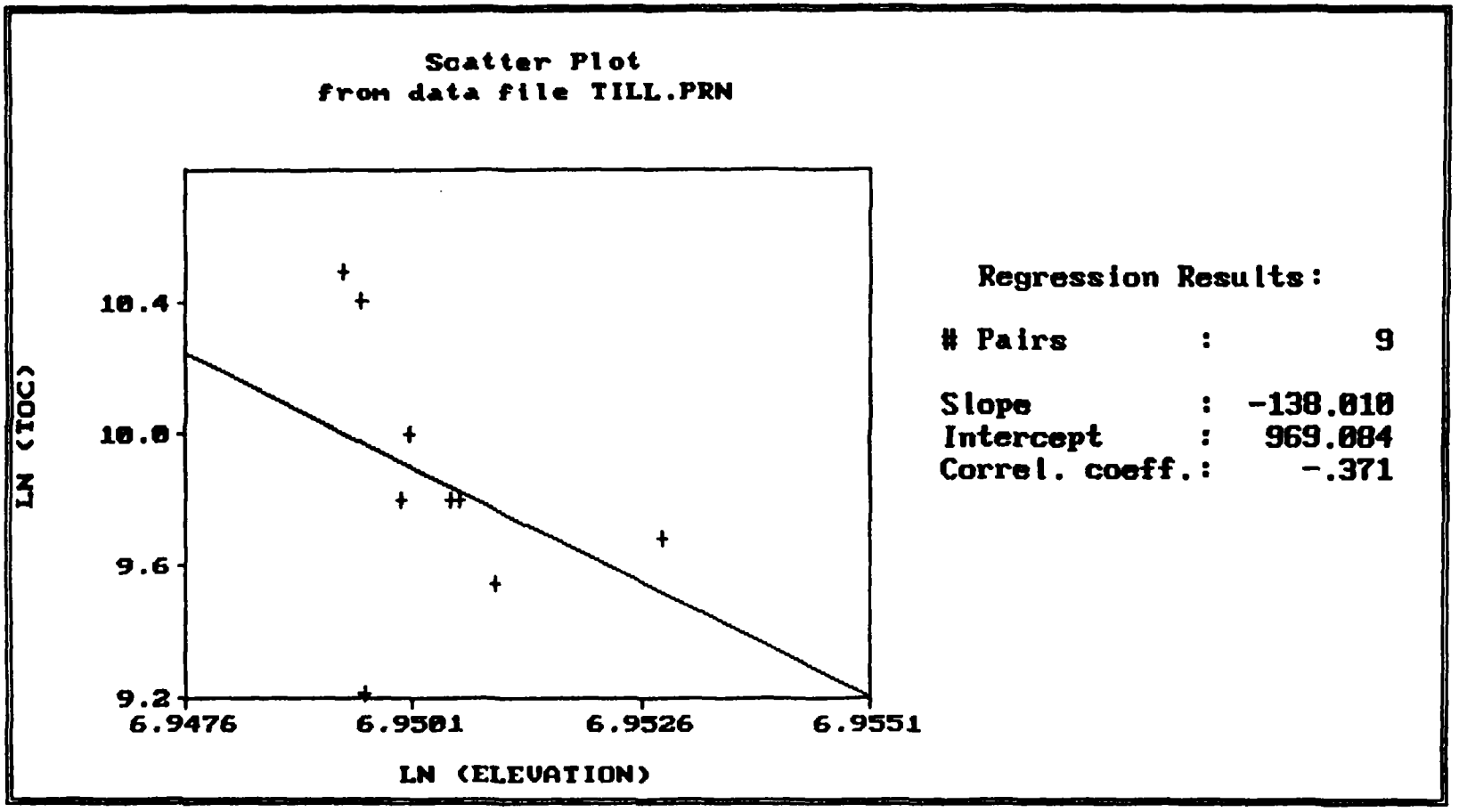

Scatter Plot
from data file TILL.PRN
MIREX
50.
40.
30.
20.
10.
0.
.0
.2
.4
.6
.8
D10
Regression Results:
Pairs : 9
Slope : -2.101
Intercept : 20.478
Correl. coeff.: -.039

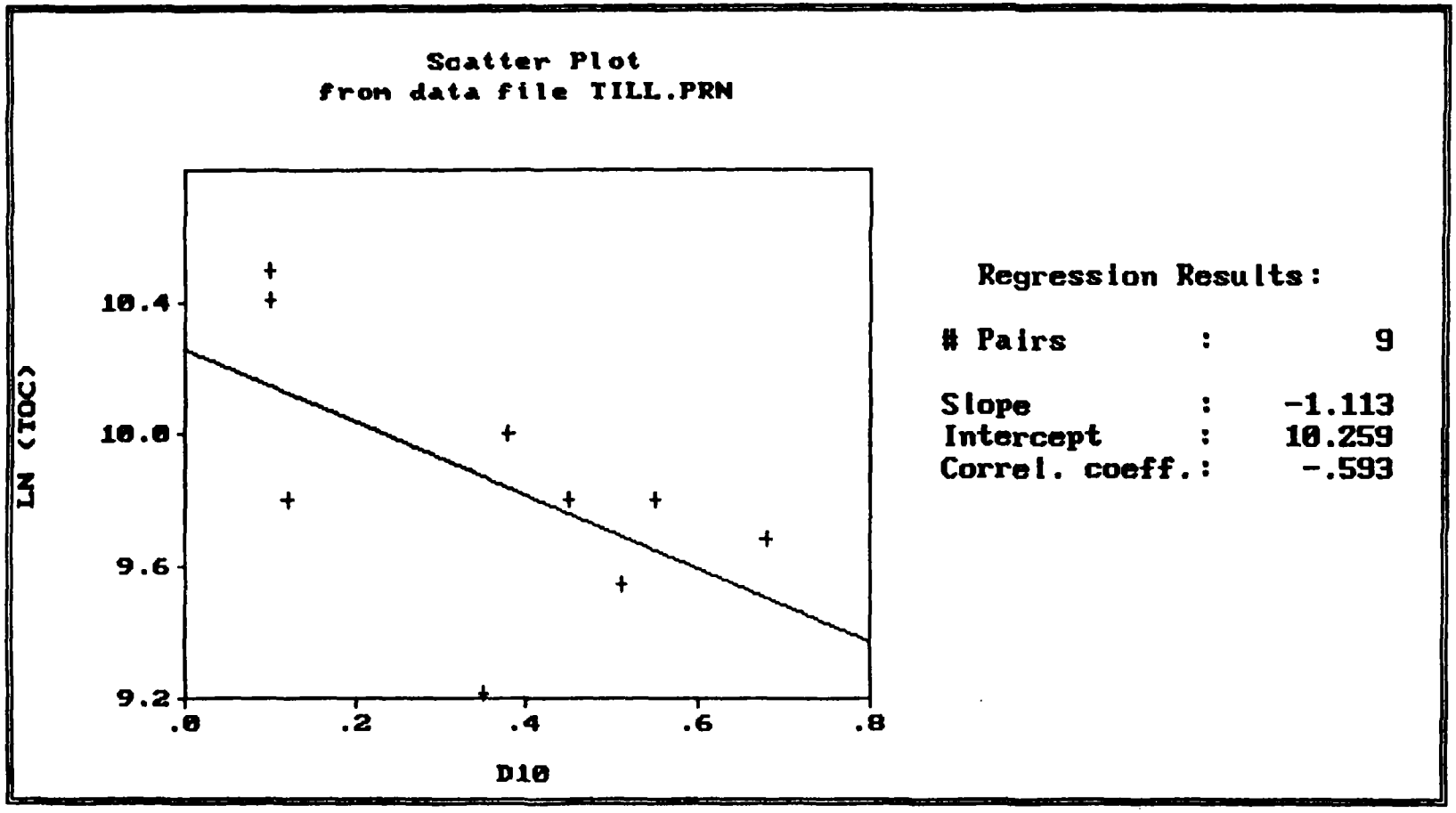

Scatter Plot
from data file TILL.PRN
MIREX
50.
40.
30.
20.
10.
0.
1.5
3.0
4.5
6.0
7.5
9.0
10.5
D30
Regression Results:
Pairs : 9
Slope : .134
Intercept : 18.908
Correl. coeff.: .033

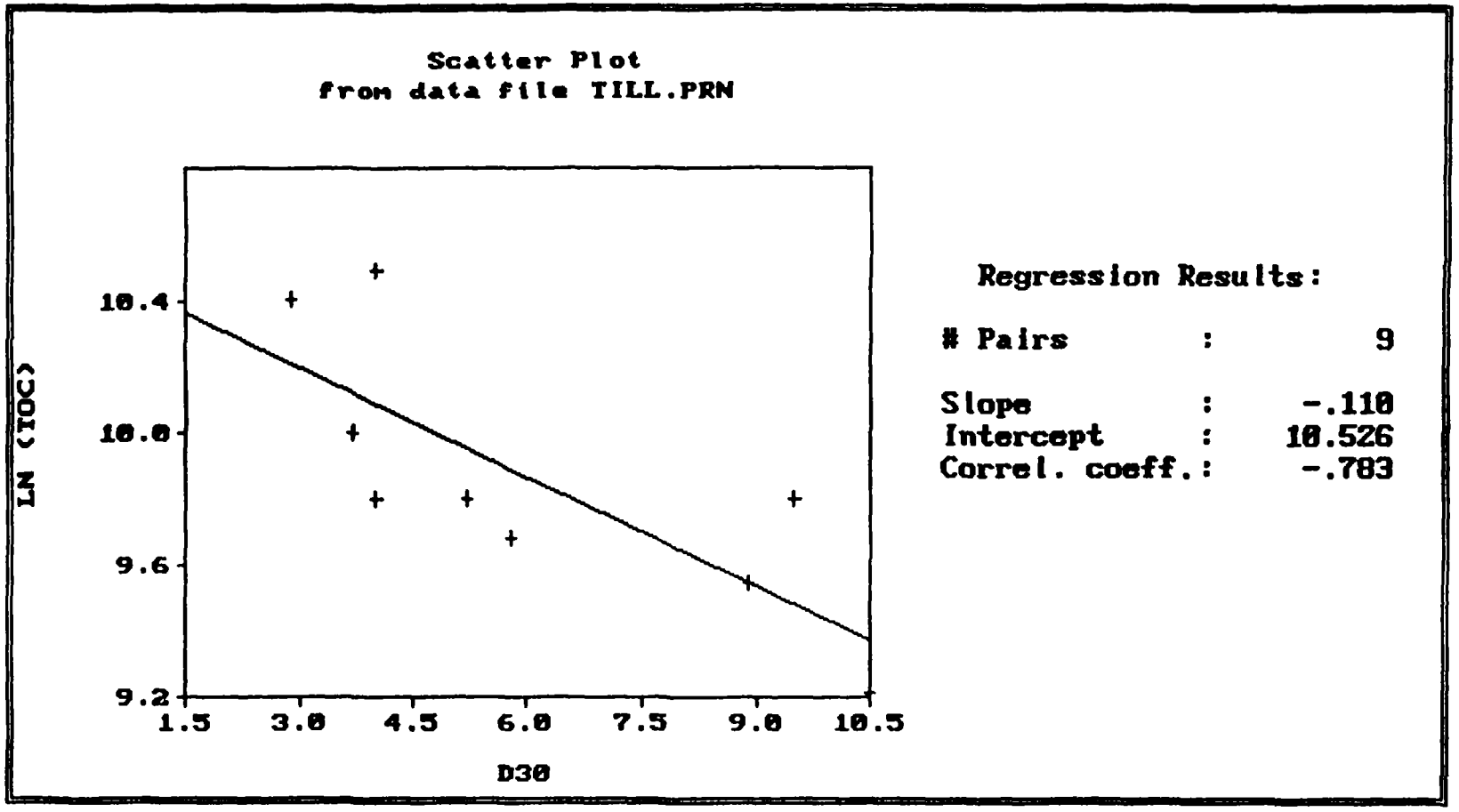

Scatter Plot
from data file TILL.PRN
MIREX
50.
40.
30.
20.
10.
0.
2.7
3.0
3.3
3.6
LN (D60)
Regression Results:
Pairs : 9
Slope : -1.233
Intercept : 23.675
Correl. coeff.: -.040

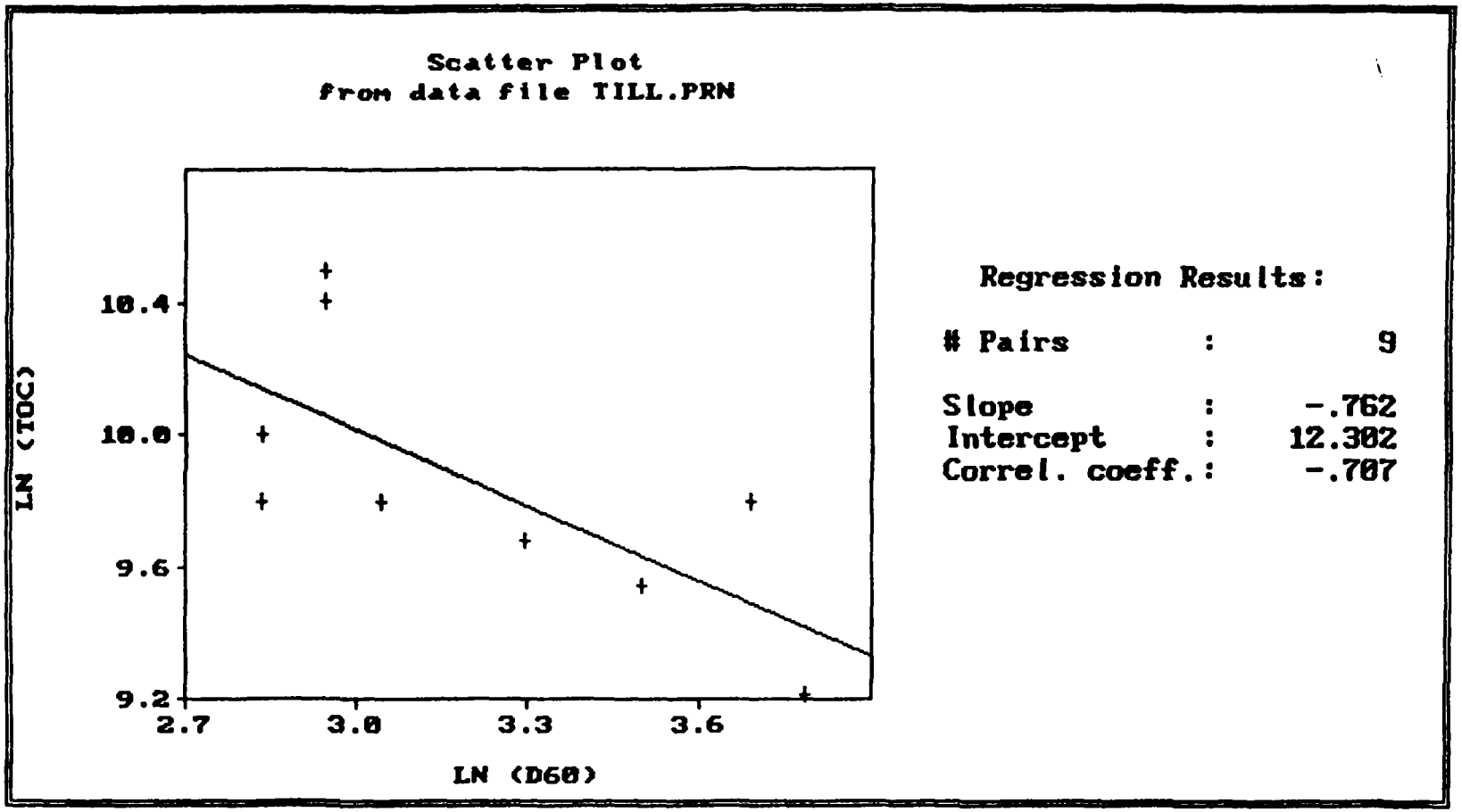

Scatter Plot
from data file TILL.PRN
MIREX
50.
40.
30.
20.
10.
0.
4.
6.
8.
10.
12.
ELEVDIFF
Regression Results:
Pairs : 9
Slope : .019
Intercept : 19.595
Correl. coeff.: .003

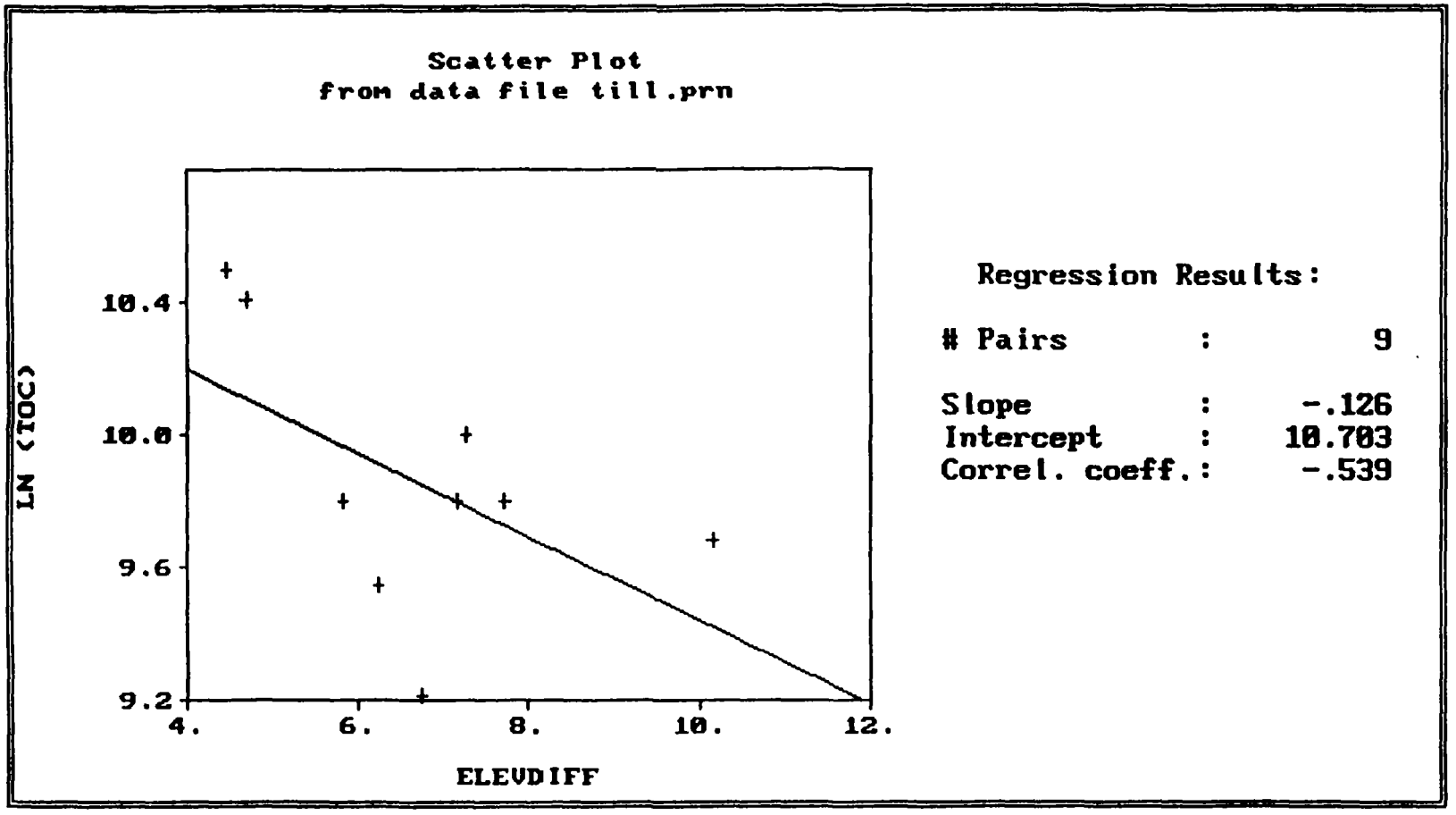

Scatter Plot
from data file till.prn
MIREX
50.
40.
30.
20.
10.
0.
0.
200.
400.
600.
800.
PERPDIST
Regression Results:
Pairs : 9
Slope : -.009
Intercept : 23.264
Correl. coeff. : -.185

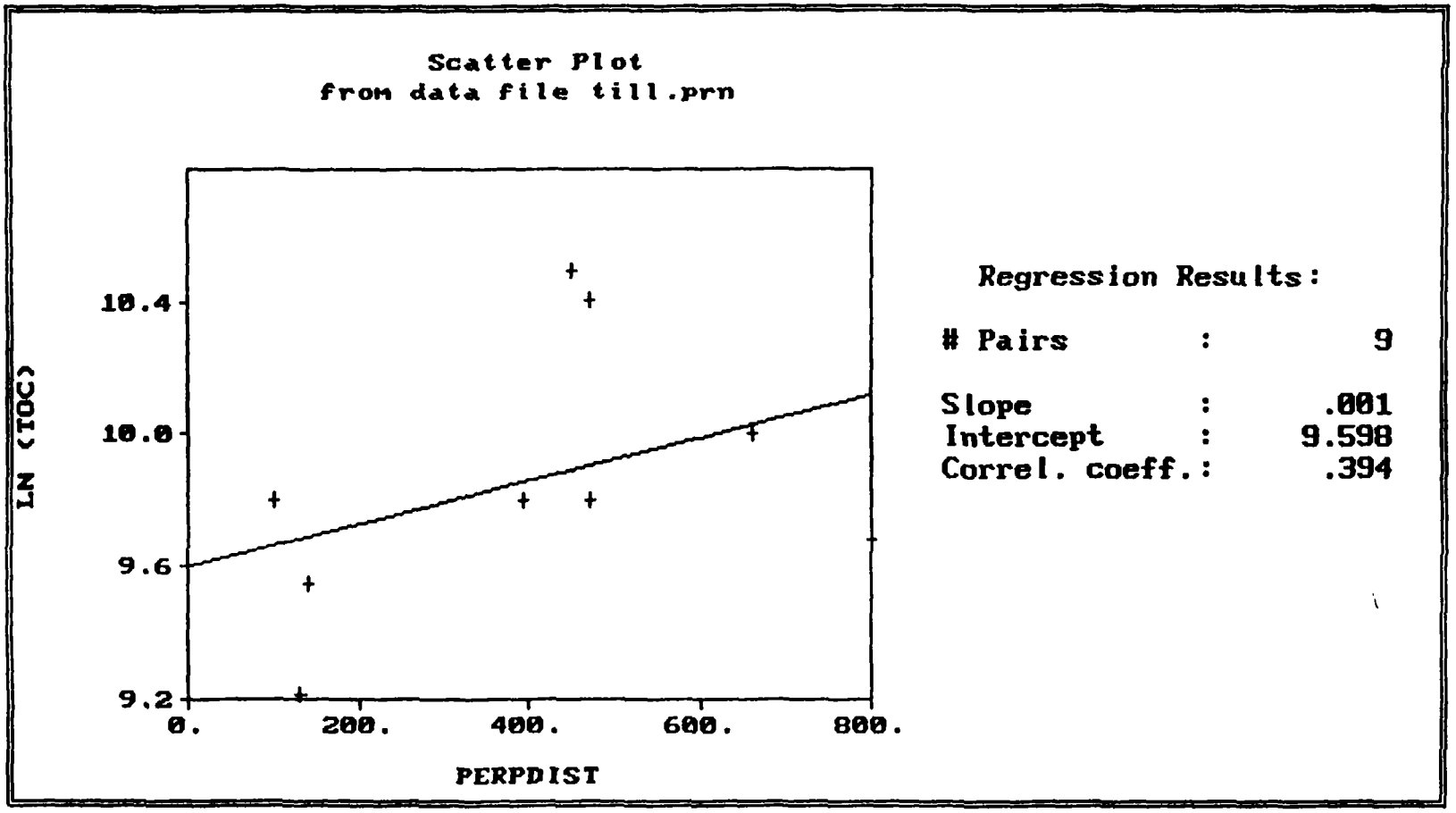

Scatter Plot
from data file TILL.PRN
LN (TOC)
10.4
10.0
9.6
9.2
6.9476
6.9501
6.9526
6.9551
LN (ELEVATION)
Regression Results:
Pairs : 9
Slope : -138.010
Intercept : 969.084
Correl. coeff.: -.371


Scatter Plot
from data file TILL.PRN
LN (TOC)
10.4
10.0
9.6
9.2
.0
.2
.4
.6
.8
D10
Regression Results:
Pairs : 9
Slope : -1.113
Intercept : 10.259
Correl. coeff.: -.593


Scatter Plot
from data file TILL.PRN
LN (TOC)
10.4
10.0
9.6
9.2
1.5
3.0
4.5
6.0
7.5
9.0
10.5
D30
Regression Results:
Pairs : 9
Slope : -.110
Intercept : 10.526
Correl. coeff.: -.783

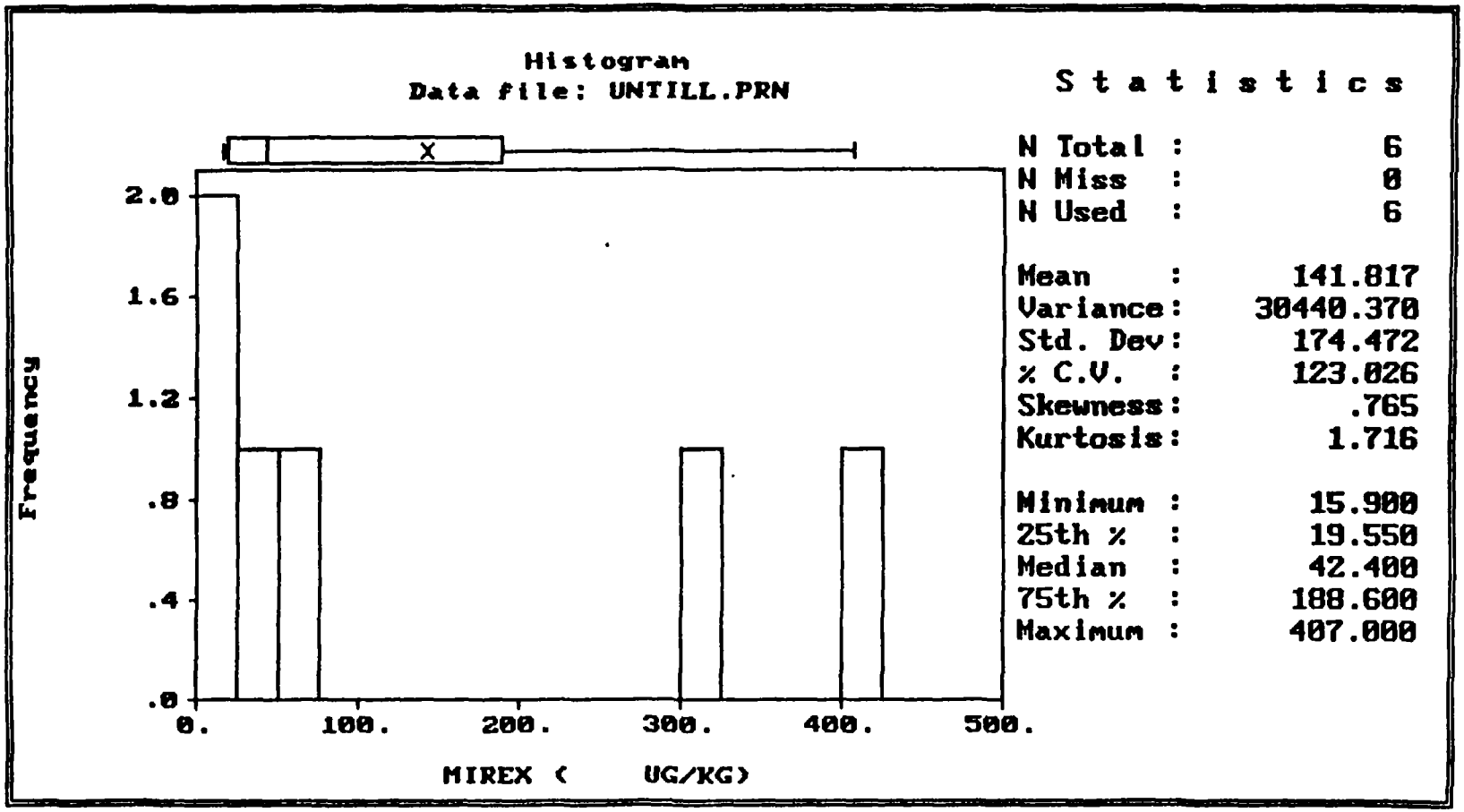

Scatter Plot
From data file TILL.PRN
LN (TOC)
10.4
10.0
9.6
9.2
2.7
3.0
3.3
3.6
LN (D60)
Regression Results:
Pairs : 9
Slope : -.762
Intercept : 12.302
Correl. coeff.: -.707

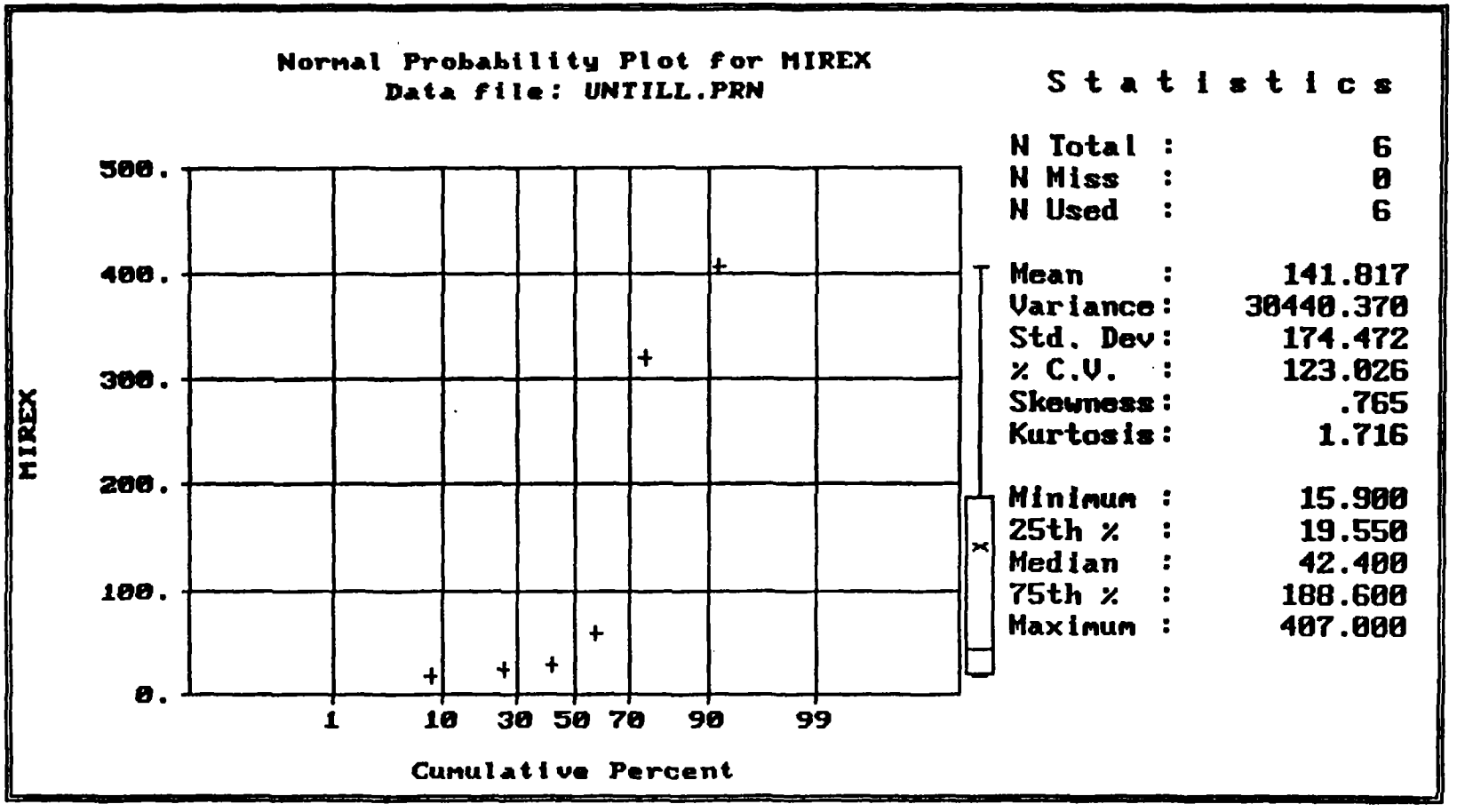

Scatter Plot
from data file till.prn
LN (TOC)
10.4
10.0
9.6
9.2
4.
6.
8.
10.
12.
ELEVDIFF
Regression Results:
Pairs : 9
Slope : -.126
Intercept : 10.703
Correl. coeff.: -.539

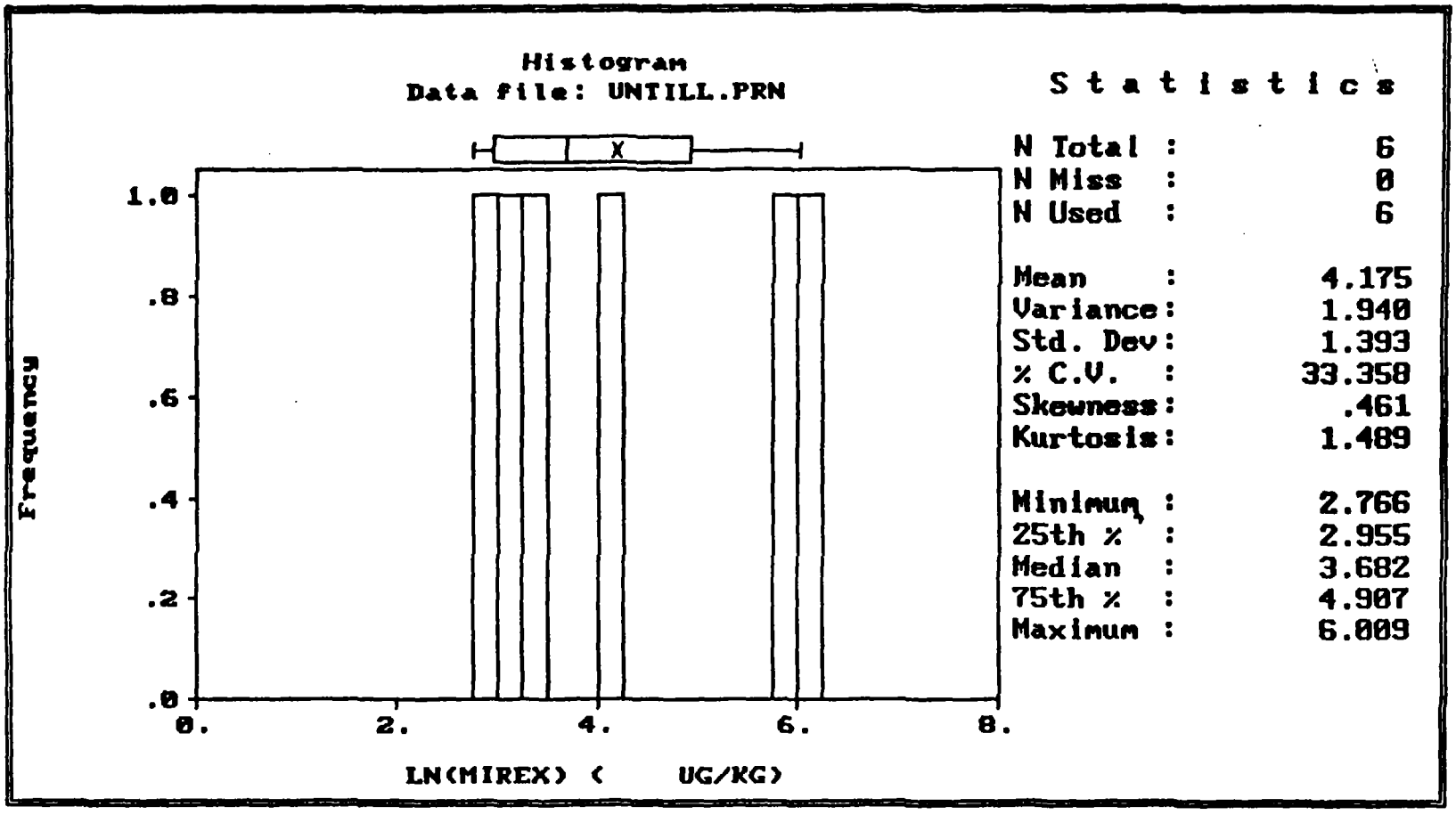

Scatter Plot
from data file till.prn
LN (TOC)
10.4
10.0
9.6
9.2
0.
200.
400.
600.
800.
PERPDIST
Regression Results:
Pairs : 9
Slope : .001
Intercept : 9.598
Correl. coeff.: .394

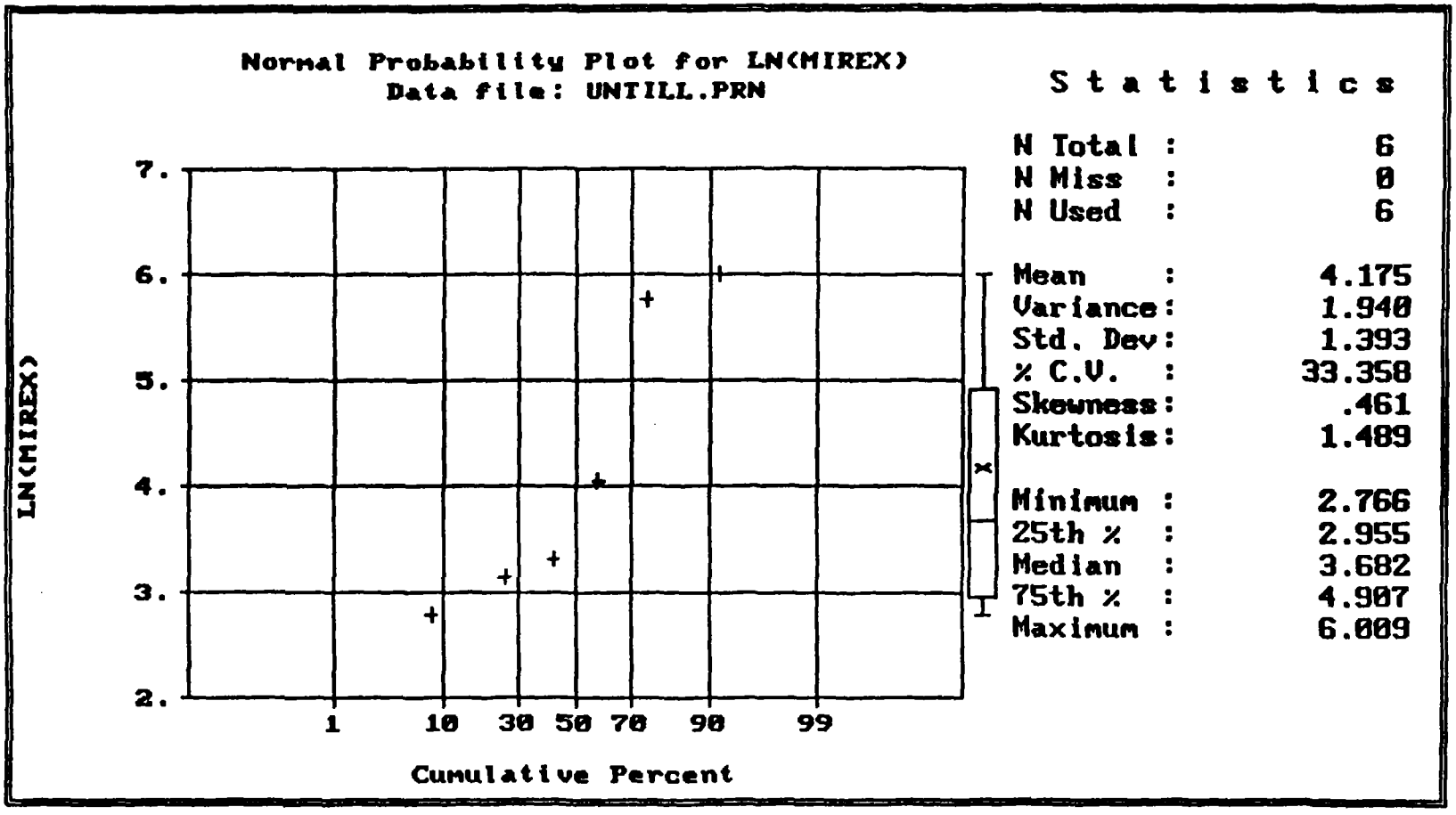
UNTILLED

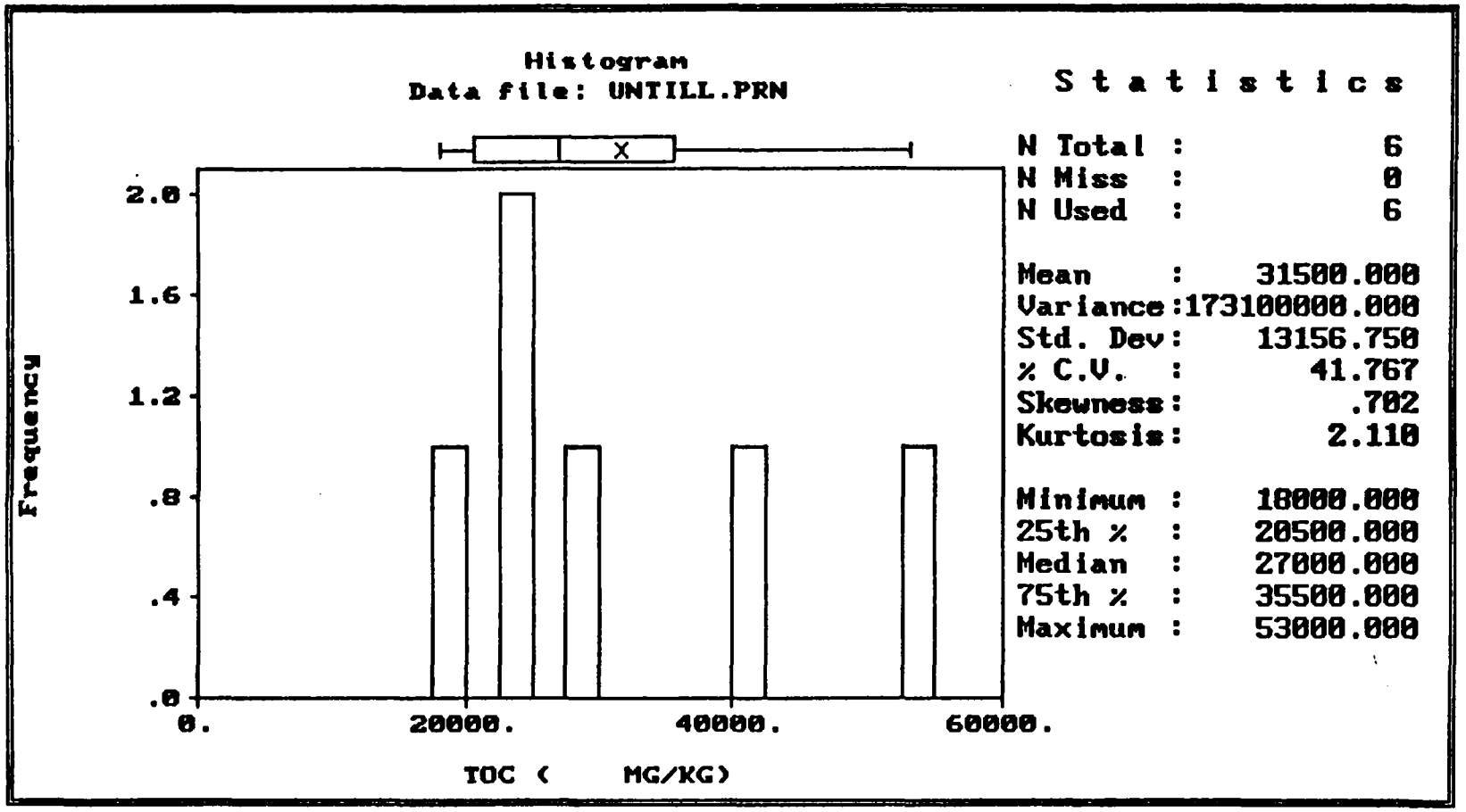
(AREA 3)

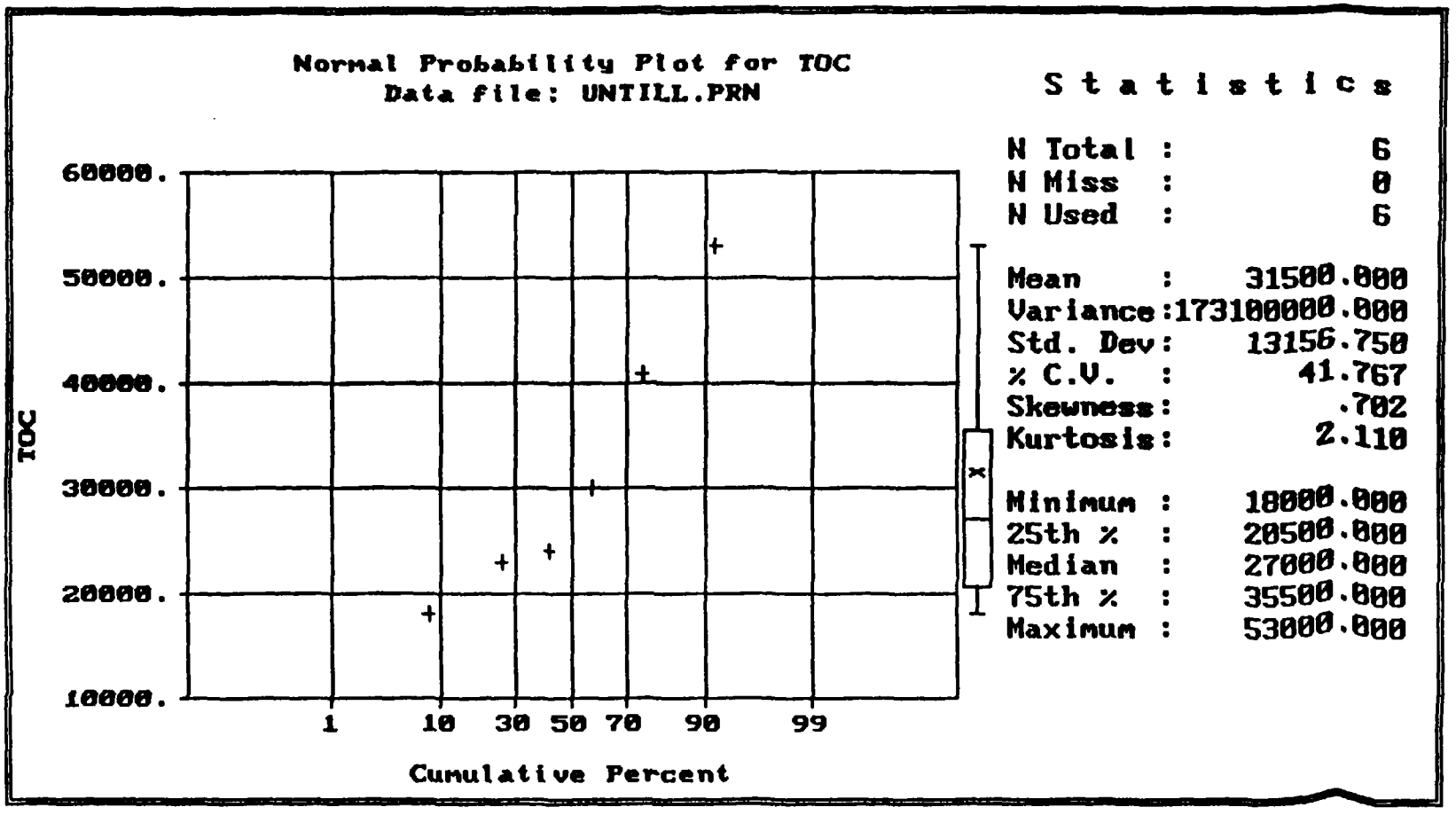

Histogram
Data file: UNTILL.PRN
Statistics
N Total : 6
N Miss : 0
N Used : 6
Mean : 141.817
Variance: 30440.370
Std. Dev: 174.472
% C.V. : 123.026
Skewness: .765
Kurtosis: 1.716
Minimum : 15.900
25th % : 19.550
Median : 42.400
75th % : 188.600
Maximum : 407.000
Frequency
2.0
1.6
1.2
.8
.4
.0
0.
100.
200.
300.
400.
500.
MIREX (UG/KG)

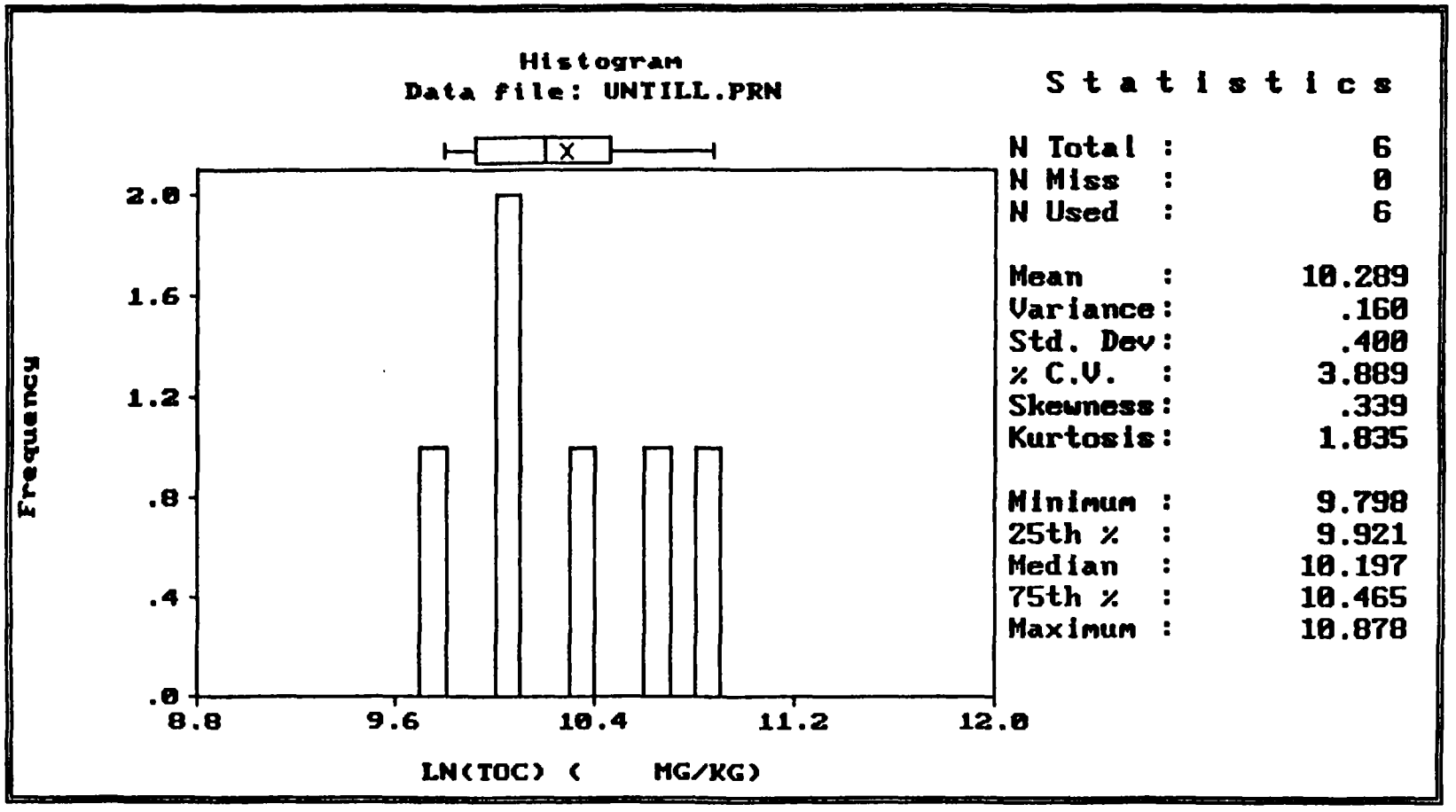

Normal Probability Plot for MIREX
Data file: UNTILL.PRN
MIREX
500.
400.
300.
200.
100.
0.
1
10
30
50
70
90
99
Cumulative Percent
S t a t i s t i c s
N Total : 6
N Miss : 0
N Used : 6
Mean : 141.817
Variance: 30440.370
Std. Dev: 174.472
% C.V. : 123.026
Skewness: .765
Kurtosis: 1.716
Minimum : 15.900
25th % : 19.550
Median : 42.400
75th % : 188.600
Maximum : 407.000

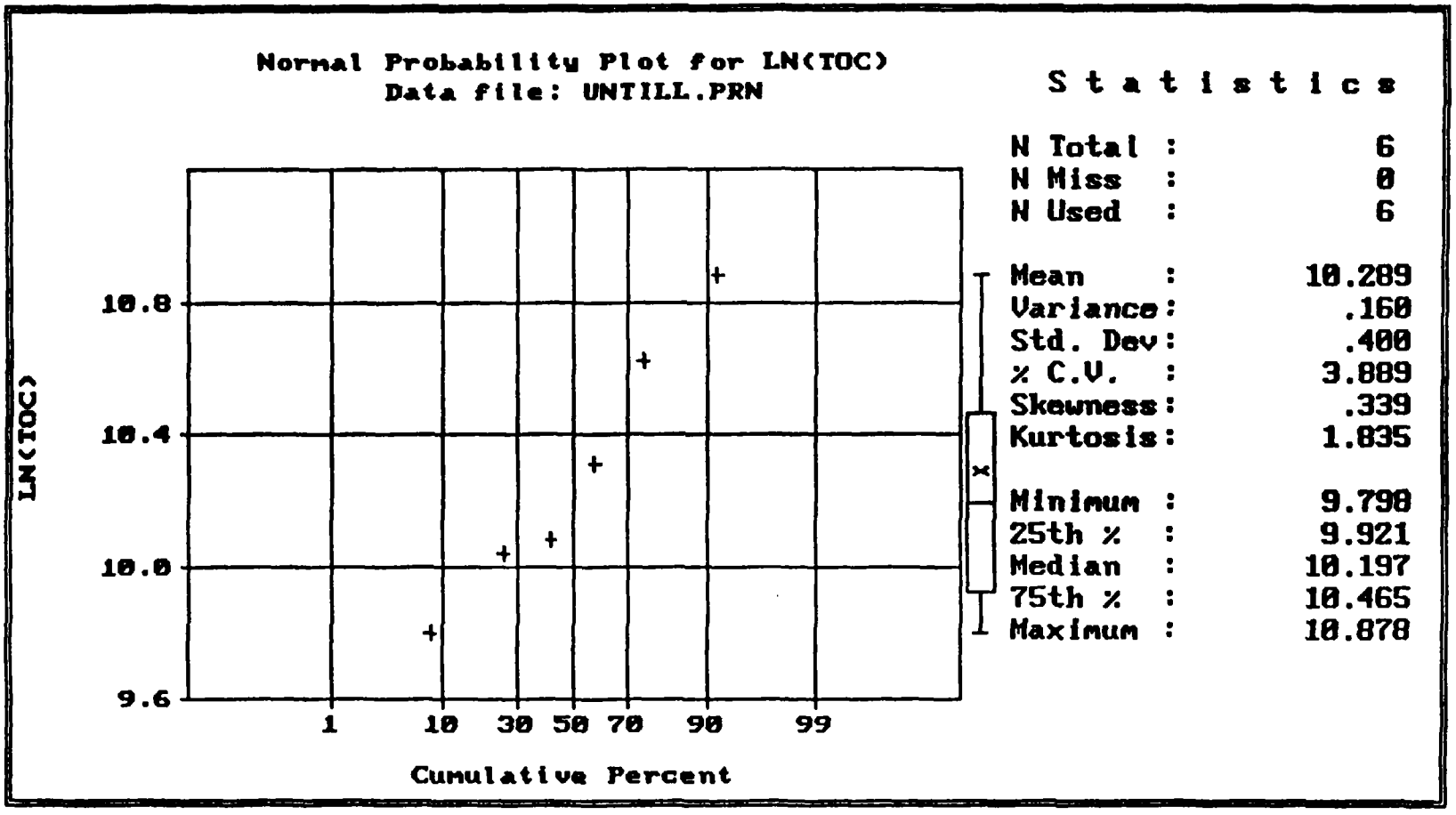

Histogram
Data file: UNTILL.PRN
Frequency
1.0
.8
.6
.4
.2
.0
0.
2.
4.
6.
8.
LN(MIREX) (UG/KG)
Statistics
N Total : 6
N Miss : 0
N Used : 6
Mean : 4.175
Variance: 1.940
Std. Dev: 1.393
% C.V. : 33.358
Skewness: .461
Kurtosis: 1.489
Minimum : 2.766
25th % : 2.955
Median : 3.682
75th % : 4.907
Maximum : 6.009

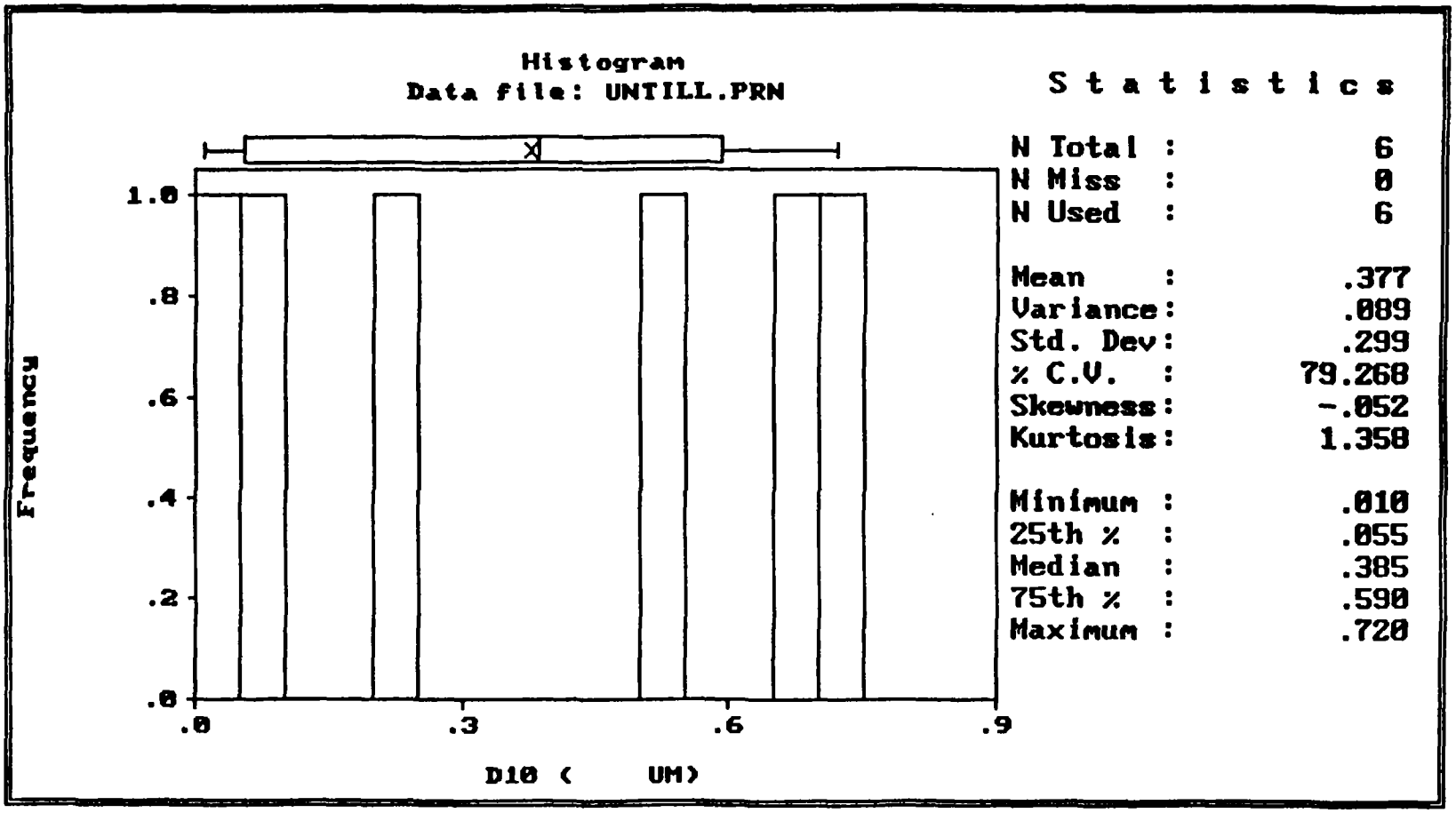

Normal Probability Plot for LN(MIREX)
Data file: UNTILL.PRN
LN(MIREX)
7.
6.
5.
4.
3.
2.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 6
N Miss : 0
N Used : 6
Mean : 4.175
Variance: 1.940
Std. Dev: 1.393
% C.V. : 33.358
Skewness: .461
Kurtosis: 1.489
Minimum : 2.766
25th % : 2.955
Median : 3.682
75th % : 4.907
Maximum : 6.009

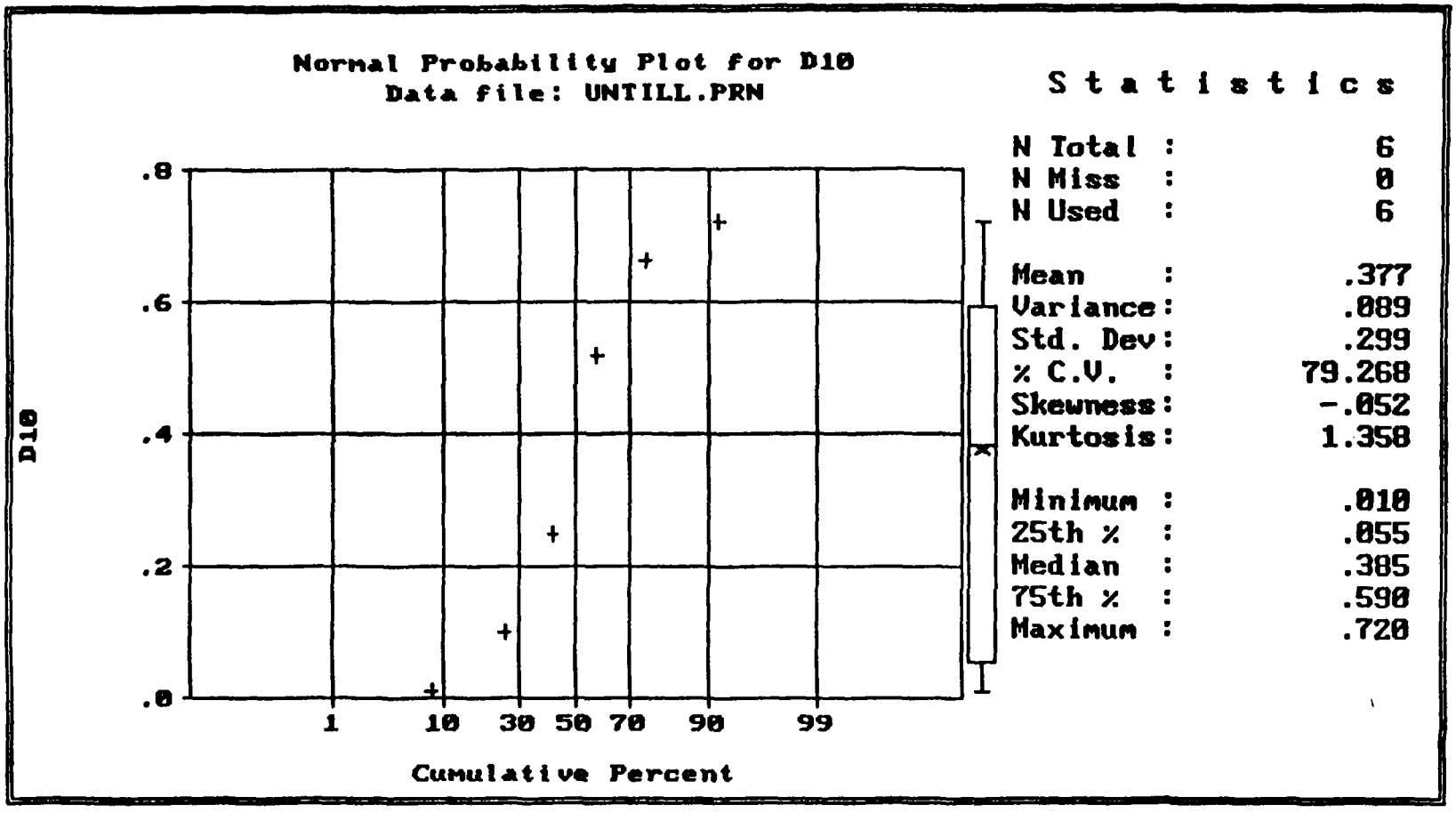

Histogram
Data file: UNTILL.PRN
Frequency
2.0
1.6
1.2
.8
.4
.0
0.
20000.
40000.
60000.
TOC (MG/KG)
Statistics
N Total : 6
N Miss : 0
N Used : 6
Mean : 31500.000
Variance : 173100000.000
Std. Dev : 13156.750
% C.V. : 41.767
Skewness : .702
Kurtosis : 2.110
Minimum : 18000.000
25th % : 20500.000
Median : 27000.000
75th % : 35500.000
Maximum : 53000.000

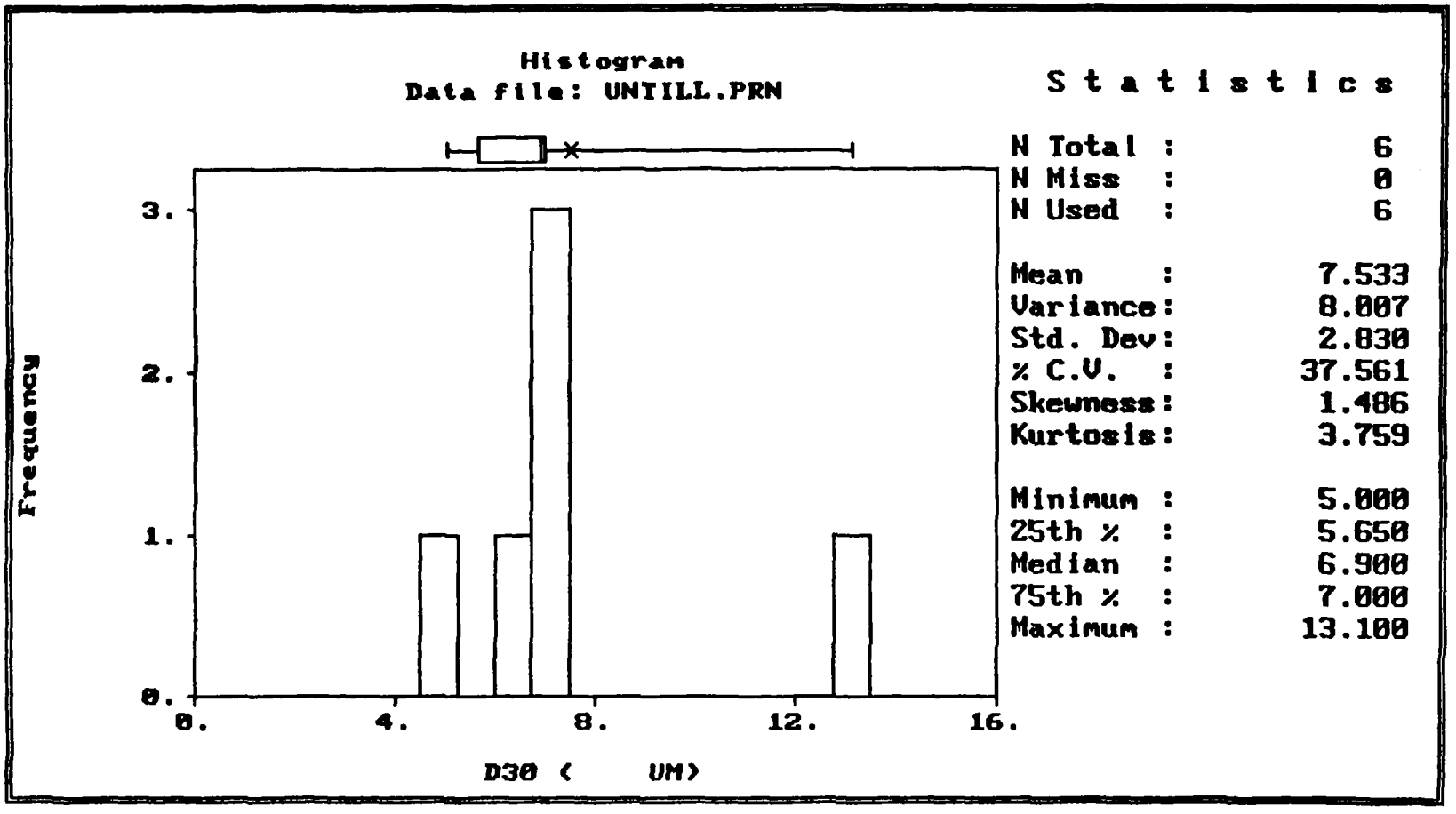

Normal Probability Plot for TOC
Data file: UNTILL.PRN
TOC
60000.
50000.
40000.
30000.
20000.
10000.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 6
N Miss : 0
N Used : 6
Mean : 31500.000
Variance : 173100000.000
Std. Dev : 13156.750
% C.V. : 41.767
Skewness : .702
Kurtosis : 2.110
Minimum : 18000.000
25th % : 20500.000
Median : 27000.000
75th % : 35500.000
Maximum : 53000.000

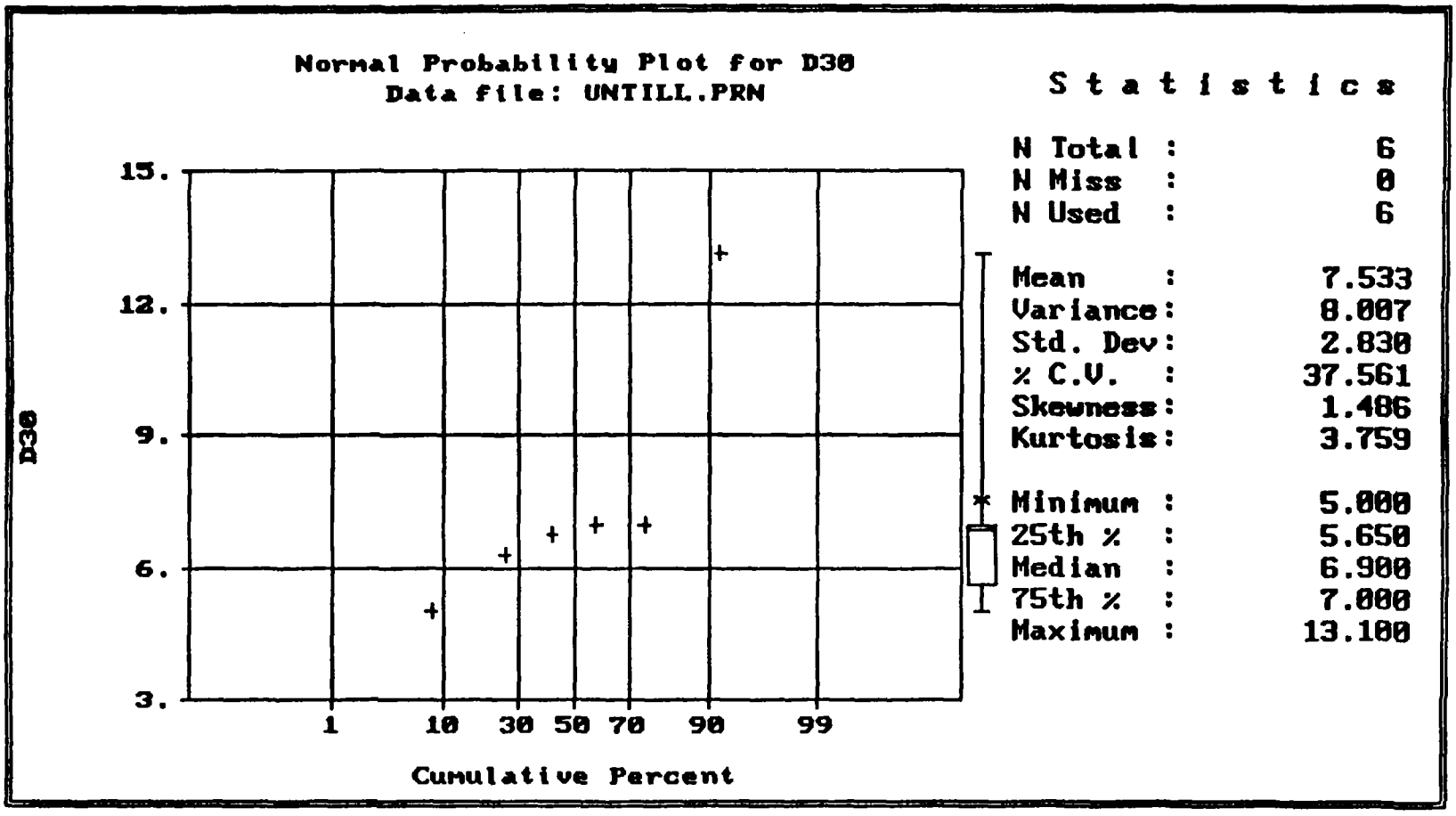

Histogram
Data file: UNTILL.PRN
Frequency
2.0
1.6
1.2
.8
.4
.0
8.8
9.6
10.4
11.2
12.0
LN(TOC) (MG/KG)
Statistics
N Total : 6
N Miss : 0
N Used : 6
Mean : 10.289
Variance: .160
Std. Dev: .400
% C.V. : 3.889
Skewness: .339
Kurtosis: 1.835
Minimum : 9.798
25th % : 9.921
Median : 10.197
75th % : 10.465
Maximum : 10.878

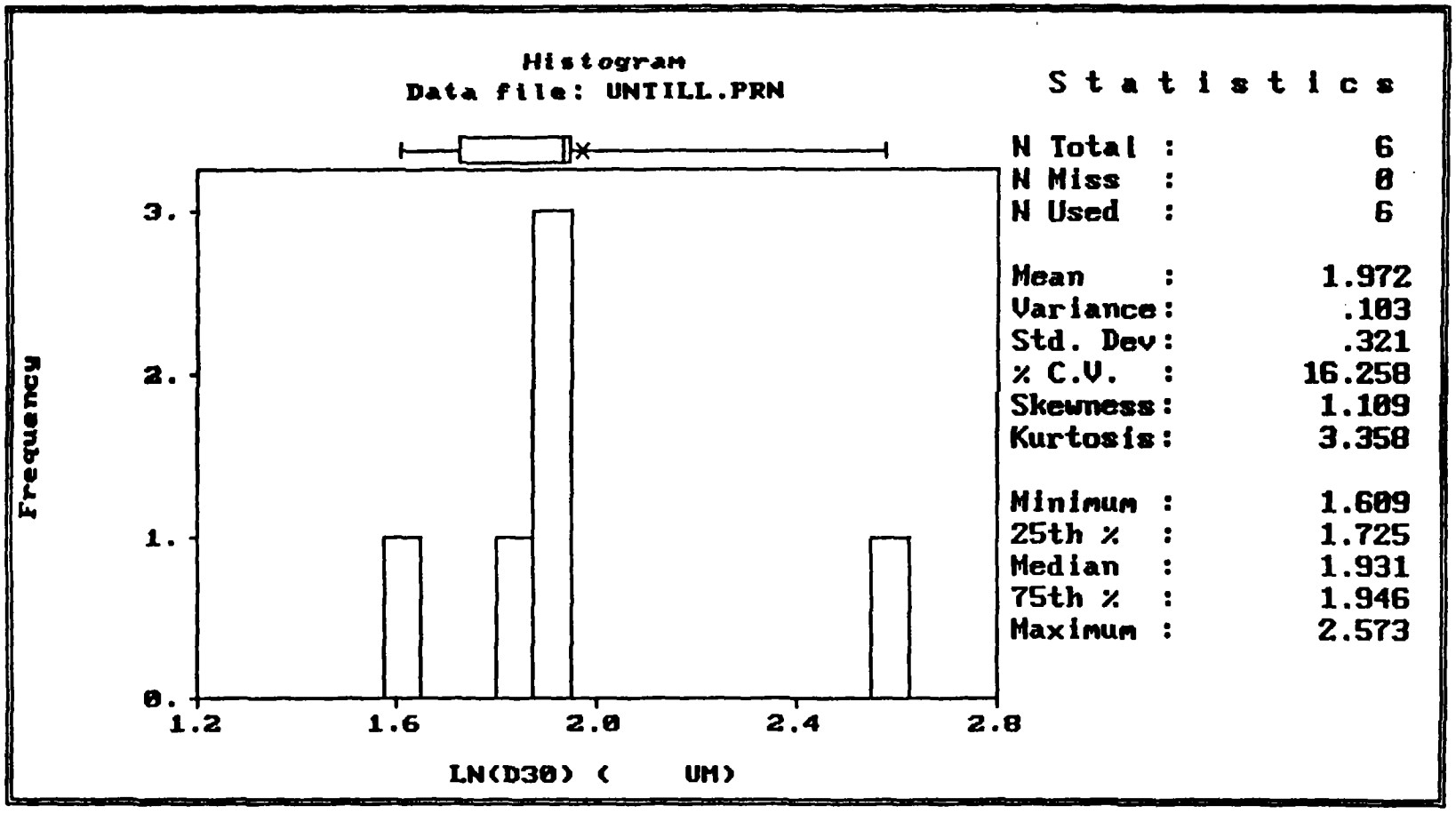

Normal Probability Plot for LN(TOC)
Data file: UNTILL.PRN
LN(TOC)
10.8
10.4
10.0
9.6
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 6
N Miss : 0
N Used : 6
Mean : 10.289
Variance : .160
Std. Dev : .400
% C.V. : 3.889
Skewness : .339
Kurtosis : 1.835
Minimum : 9.798
25th % : 9.921
Median : 10.197
75th % : 10.465
Maximum : 10.878

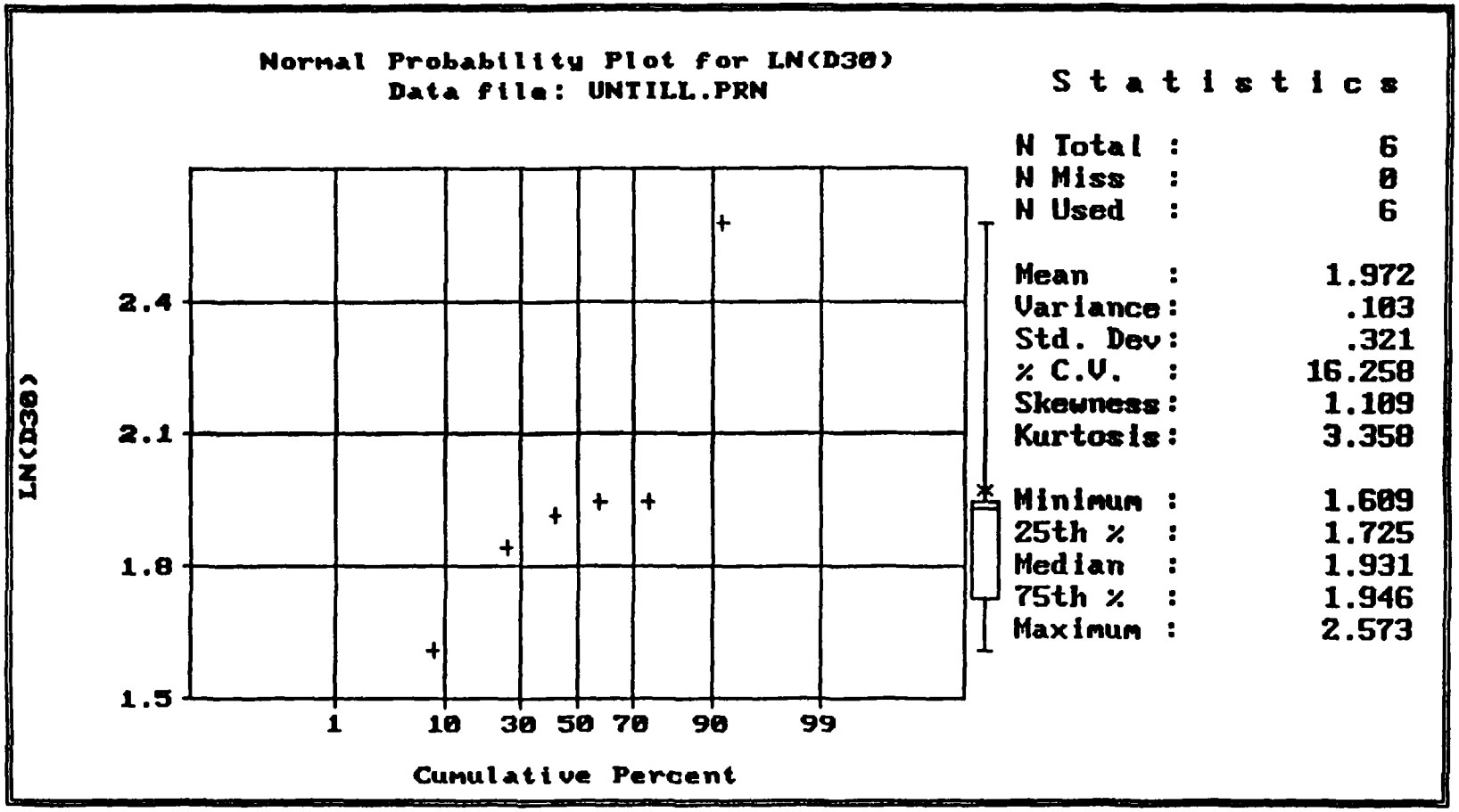

Histogram
Data file: UNTILL.PRN
Frequency
1.0
.8
.6
.4
.2
.0
.0
.3
.6
.9
D10 (UM)
Statistics
N Total : 6
N Miss : 0
N Used : 6
Mean : .377
Variance: .089
Std. Dev: .299
% C.V. : 79.268
Skewness: -.052
Kurtosis: 1.358
Minimum : .010
25th % : .055
Median : .385
75th % : .590
Maximum : .720

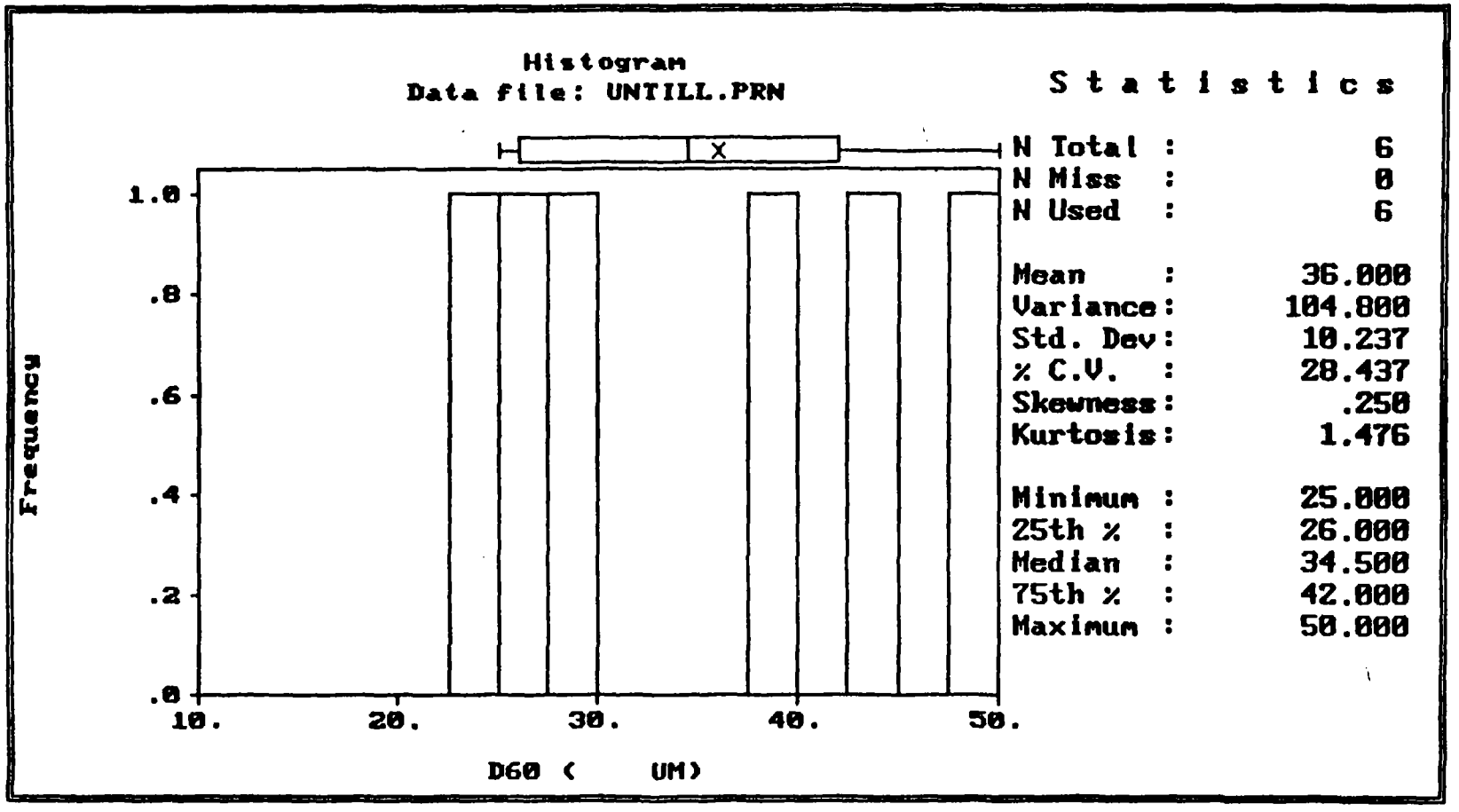

Normal Probability Plot for D10
Data file: UNTILL.PRN
D10
.8
.6
.4
.2
.0
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 6
N Miss : 0
N Used : 6
Mean : .377
Variance : .089
Std. Dev : .299
% C.V. : 79.268
Skewness : -.052
Kurtosis : 1.358
Minimum : .010
25th % : .055
Median : .385
75th % : .590
Maximum : .720

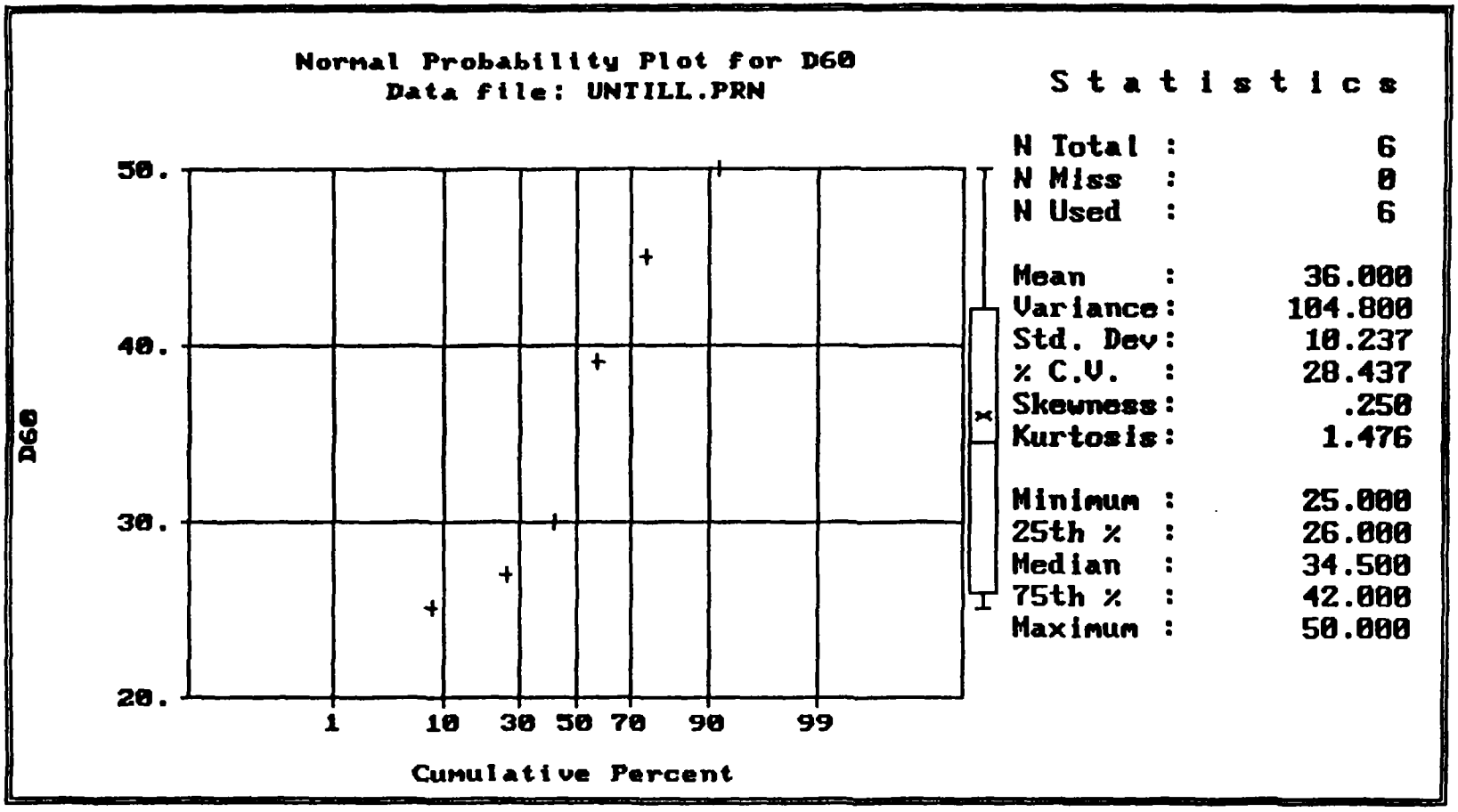

Histogram
Data file: UNTILL.PRN
Frequency
3.
2.
1.
0.
0.
4.
8.
12.
16.
D30 (UM)
Statistics
N Total : 6
N Miss : 0
N Used : 6
Mean : 7.533
Variance : 8.007
Std. Dev : 2.830
% C.V. : 37.561
Skewness : 1.486
Kurtosis : 3.759
Minimum : 5.000
25th % : 5.650
Median : 6.900
75th % : 7.000
Maximum : 13.100

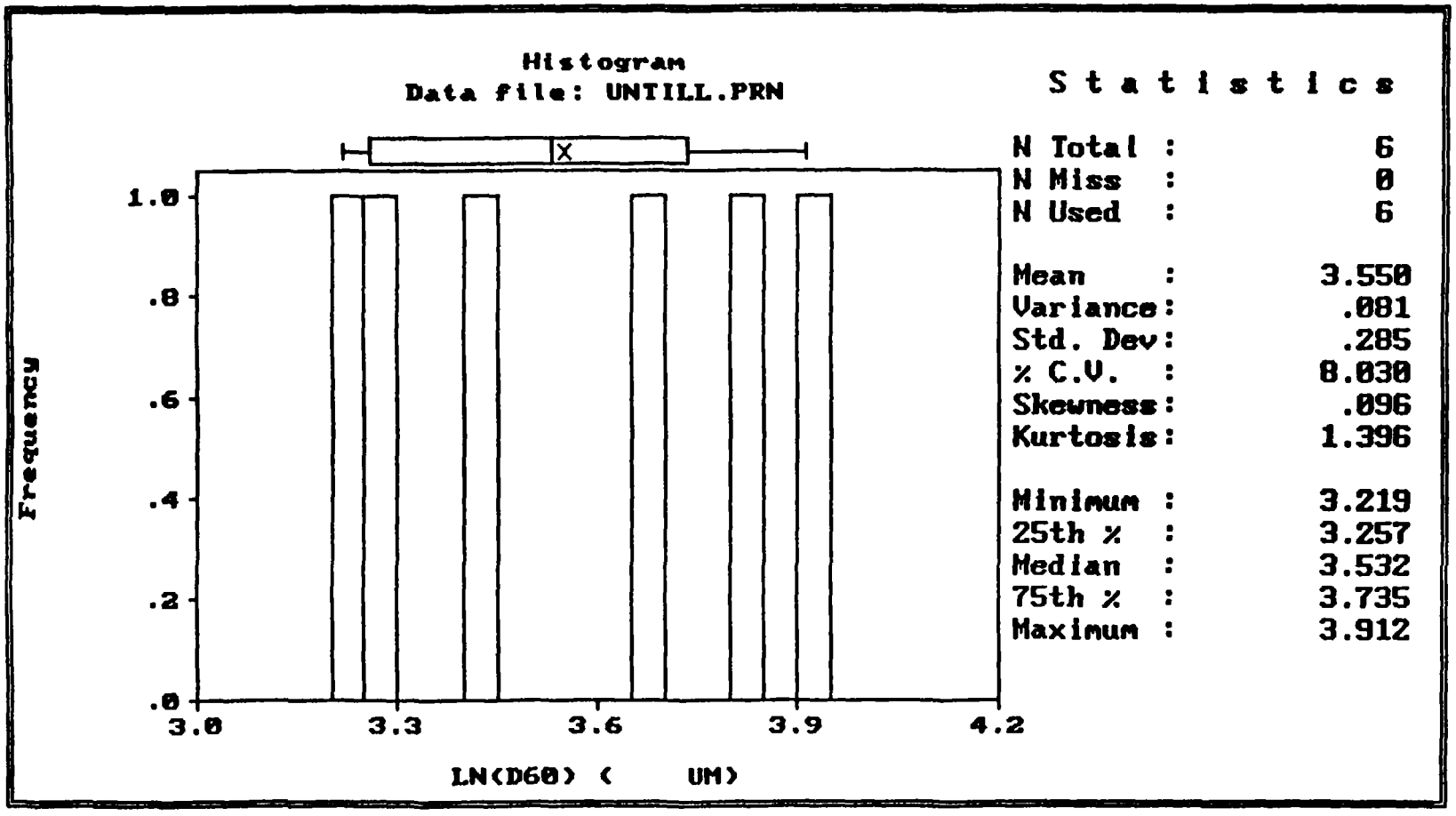

Normal Probability Plot for D30
Data file: UNTILL.PRN
D30
15.
12.
9.
6.
3.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 6
N Miss : 0
N Used : 6
Mean : 7.533
Variance : 8.007
Std. Dev : 2.830
% C.V. : 37.561
Skewness : 1.486
Kurtosis : 3.759
Minimum : 5.000
25th % : 5.650
Median : 6.900
75th % : 7.000
Maximum : 13.100

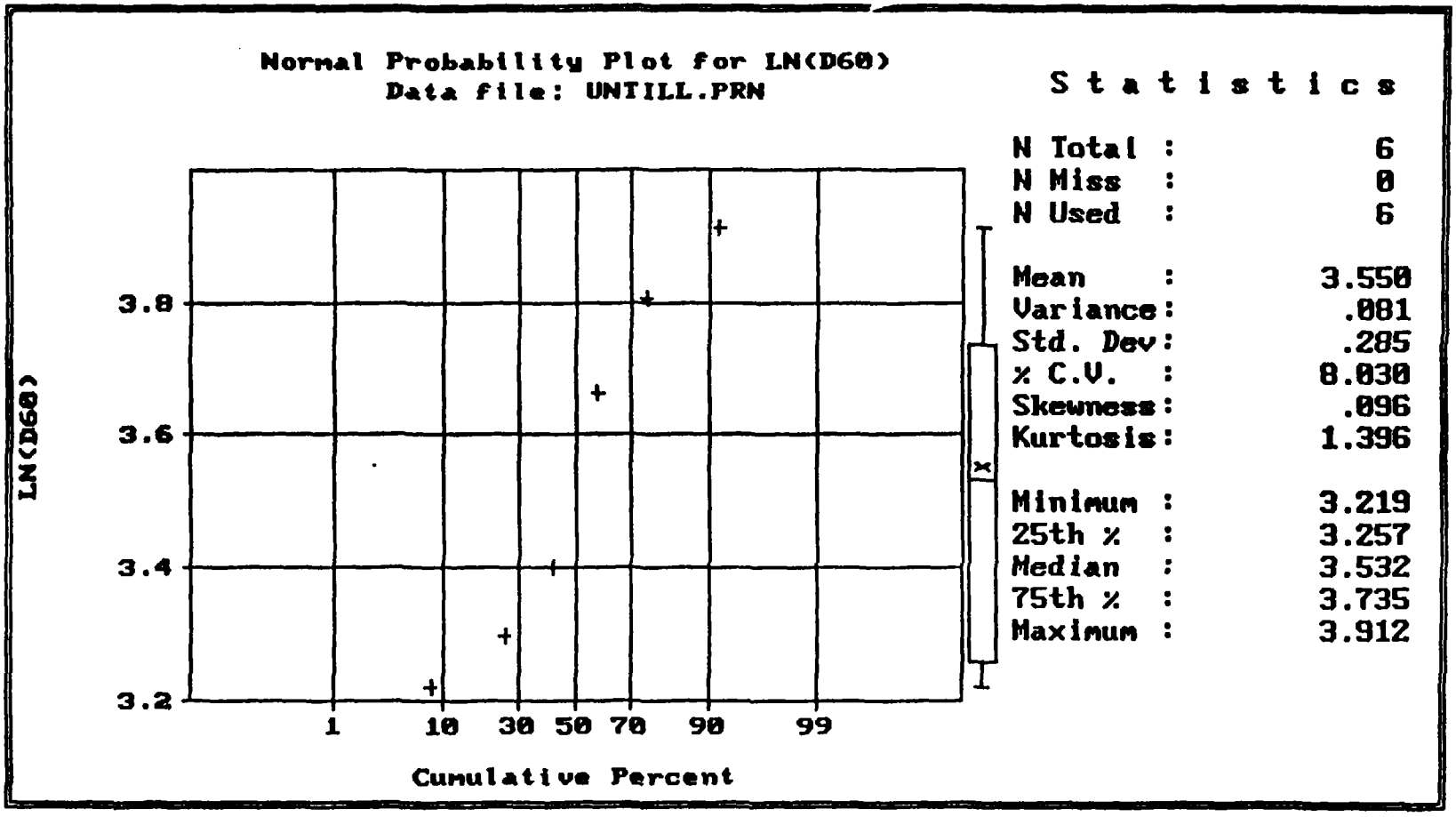

Histogram
Data file: UNTILL.PRN
Frequency
3.
2.
1.
0.
1.2
1.6
2.0
2.4
2.8
LN(D30) (UM)
Statistics
N Total : 6
N Miss : 0
N Used : 6
Mean : 1.972
Variance: .103
Std. Dev: .321
% C.V. : 16.258
Skewness: 1.109
Kurtosis: 3.358
Minimum : 1.609
25th % : 1.725
Median : 1.931
75th % : 1.946
Maximum : 2.573

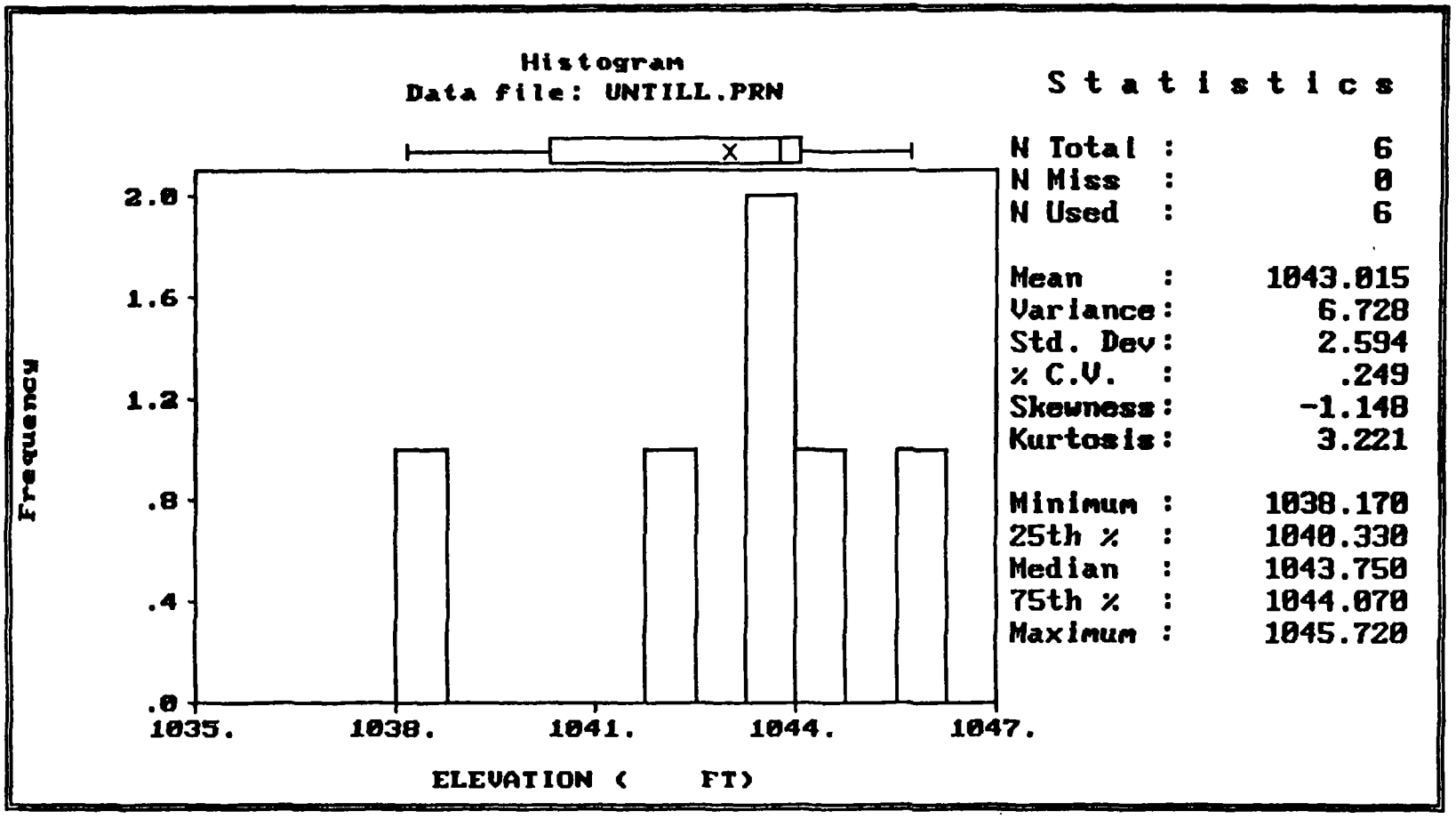

Normal Probability Plot for LN(D30)
Data file: UNTILL.PRN
LN(D30)
2.4
2.1
1.8
1.5
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 6
N Miss : 0
N Used : 6
Mean : 1.972
Variance: .103
Std. Dev: .321
% C.V. : 16.258
Skewness: 1.109
Kurtosis: 3.358
Minimum : 1.609
25th % : 1.725
Median : 1.931
75th % : 1.946
Maximum : 2.573

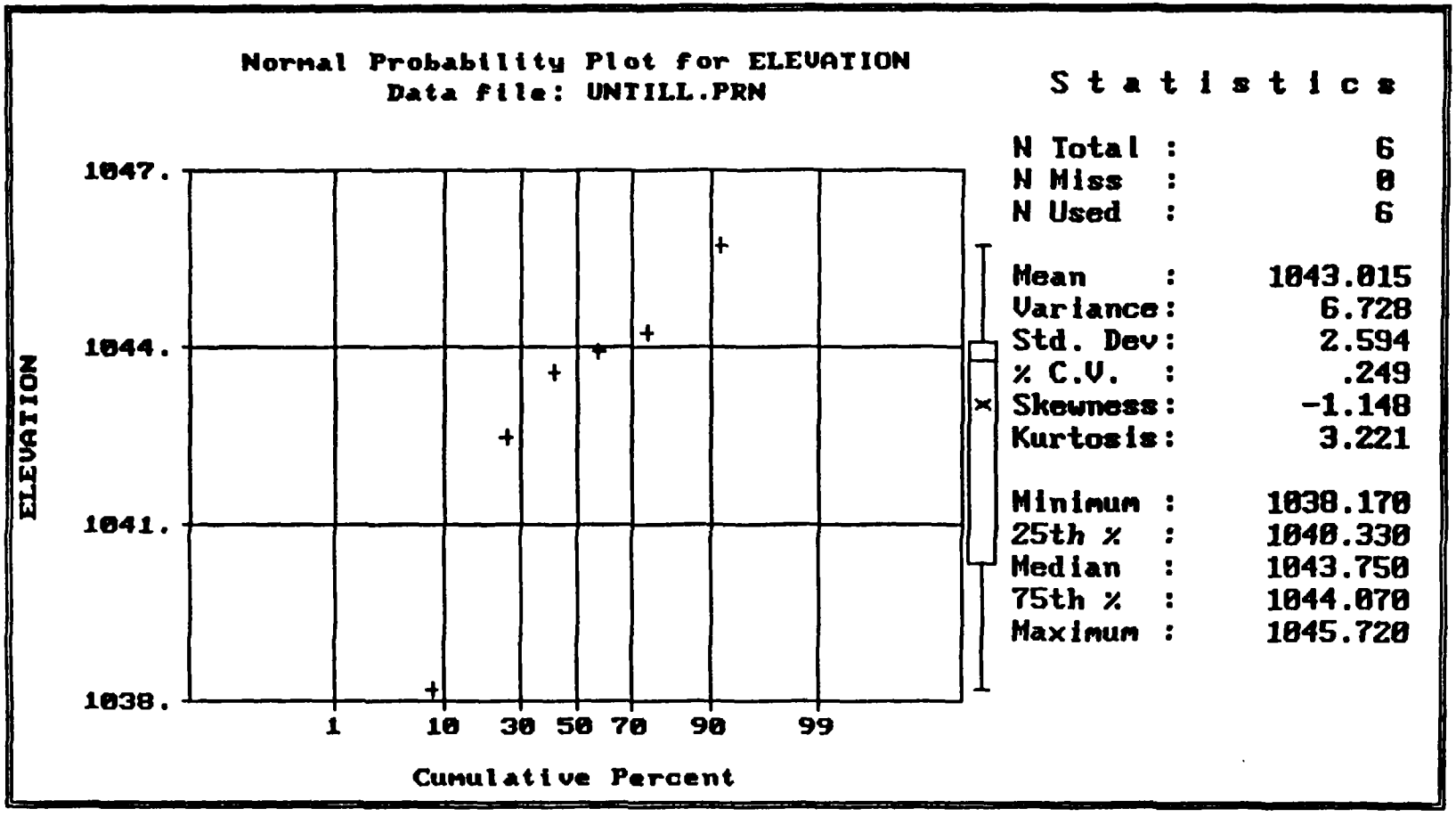

Histogram
Data file: UNTILL.PRN
Statistics
N Total : 6
N Miss : 0
N Used : 6
Mean : 36.000
Variance: 104.800
Std. Dev: 10.237
% C.V. : 28.437
Skewness: .250
Kurtosis: 1.476
Minimum : 25.000
25th % : 26.000
Median : 34.500
75th % : 42.000
Maximum : 50.000
Frequency
1.0
.8
.6
.4
.2
.0
10.
20.
30.
40.
50.
D60 (UM)

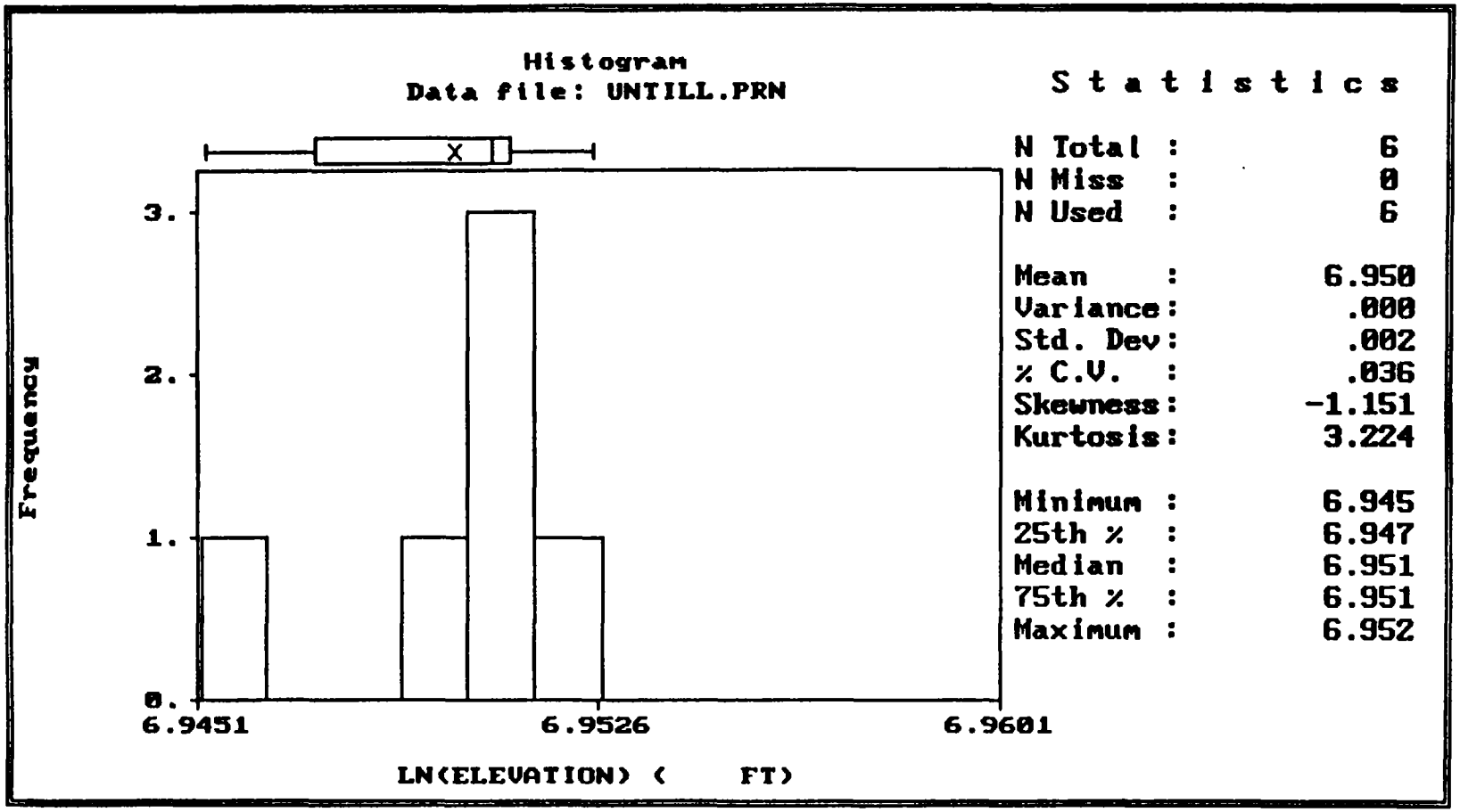

Normal Probability Plot for D60
Data file: UNTILL.PRN
D60
50.
40.
30.
20.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 6
N Miss : 0
N Used : 6
Mean : 36.000
Variance : 104.800
Std. Dev : 10.237
% C.V. : 28.437
Skewness : .250
Kurtosis : 1.476
Minimum : 25.000
25th % : 26.000
Median : 34.500
75th % : 42.000
Maximum : 50.000

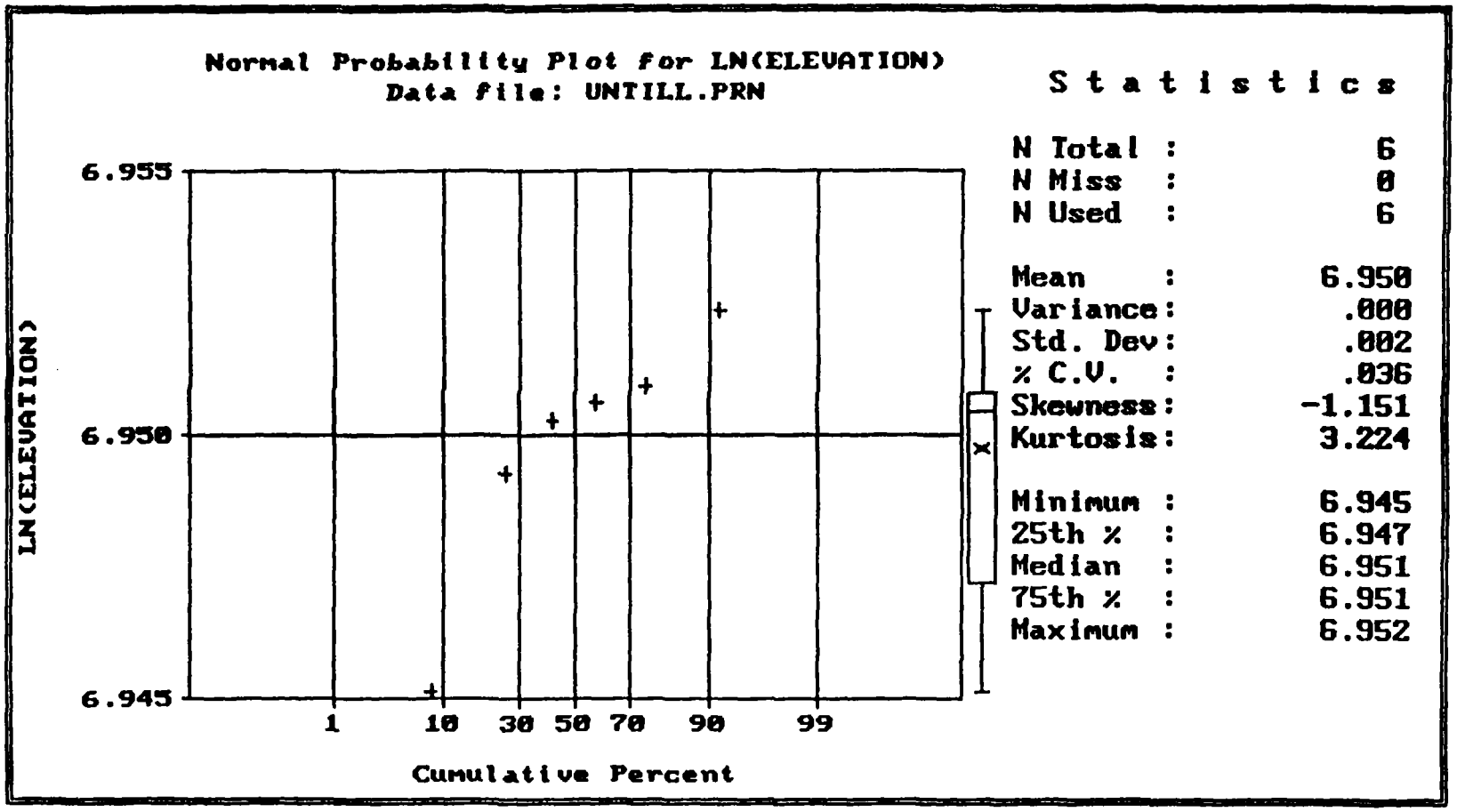

Histogram
Data file: UNTILL.PRN
Frequency
1.0
.8
.6
.4
.2
.0
3.0
3.3
3.6
3.9
4.2
LN(D60) (UM)
Statistics
N Total : 6
N Miss : 0
N Used : 6
Mean : 3.550
Variance: .081
Std. Dev: .285
% C.V. : 8.030
Skewness: .096
Kurtosis: 1.396
Minimum : 3.219
25th % : 3.257
Median : 3.532
75th % : 3.735
Maximum : 3.912

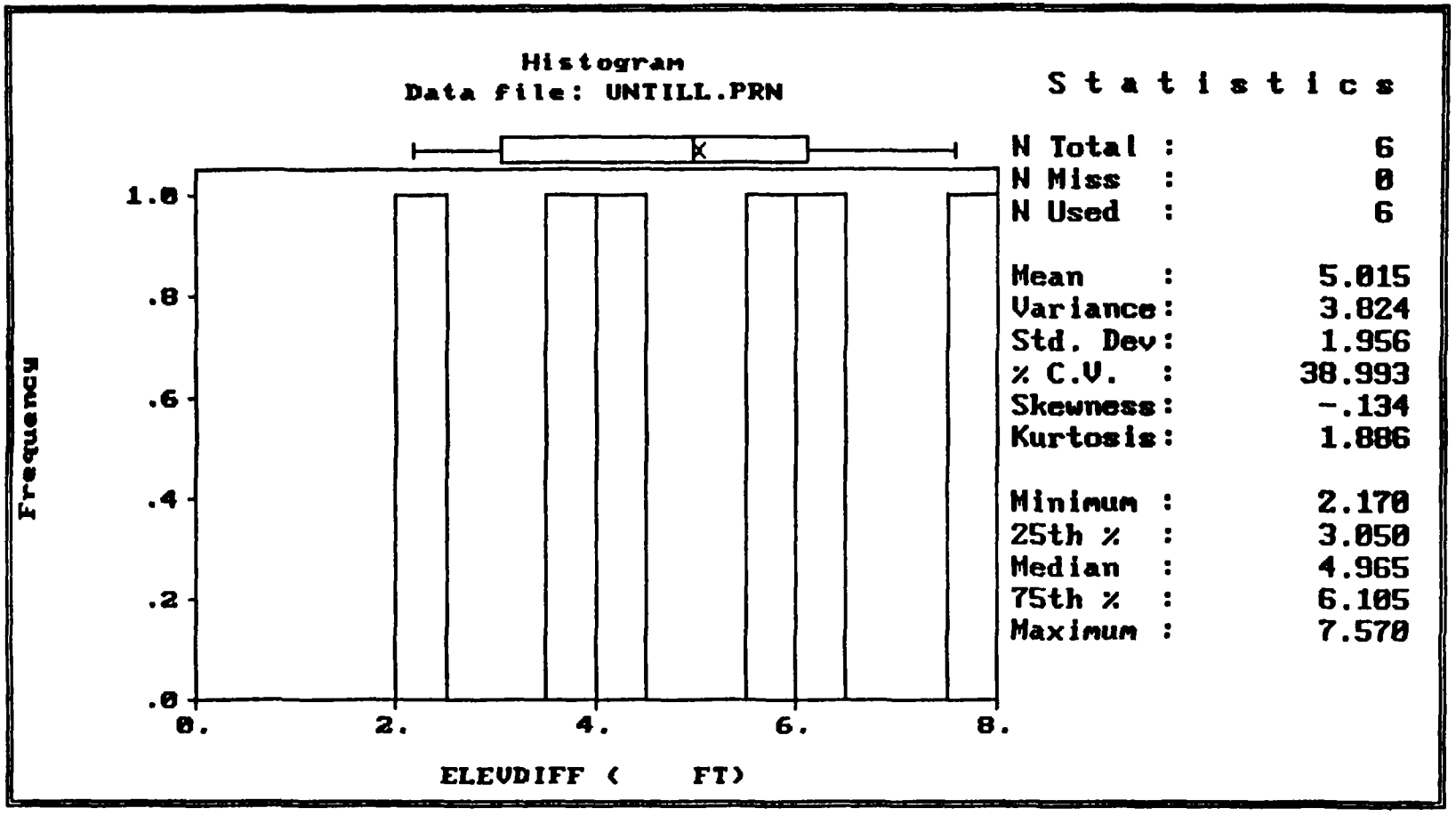

Normal Probability Plot for LN(D60)
Data file: UNTILL.PRN
LN(D60)
3.8
3.6
3.4
3.2
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 6
N Miss : 0
N Used : 6
Mean : 3.550
Variance : .081
Std. Dev : .285
% C.V. : 8.030
Skewness : .096
Kurtosis : 1.396
Minimum : 3.219
25th % : 3.257
Median : 3.532
75th % : 3.735
Maximum : 3.912

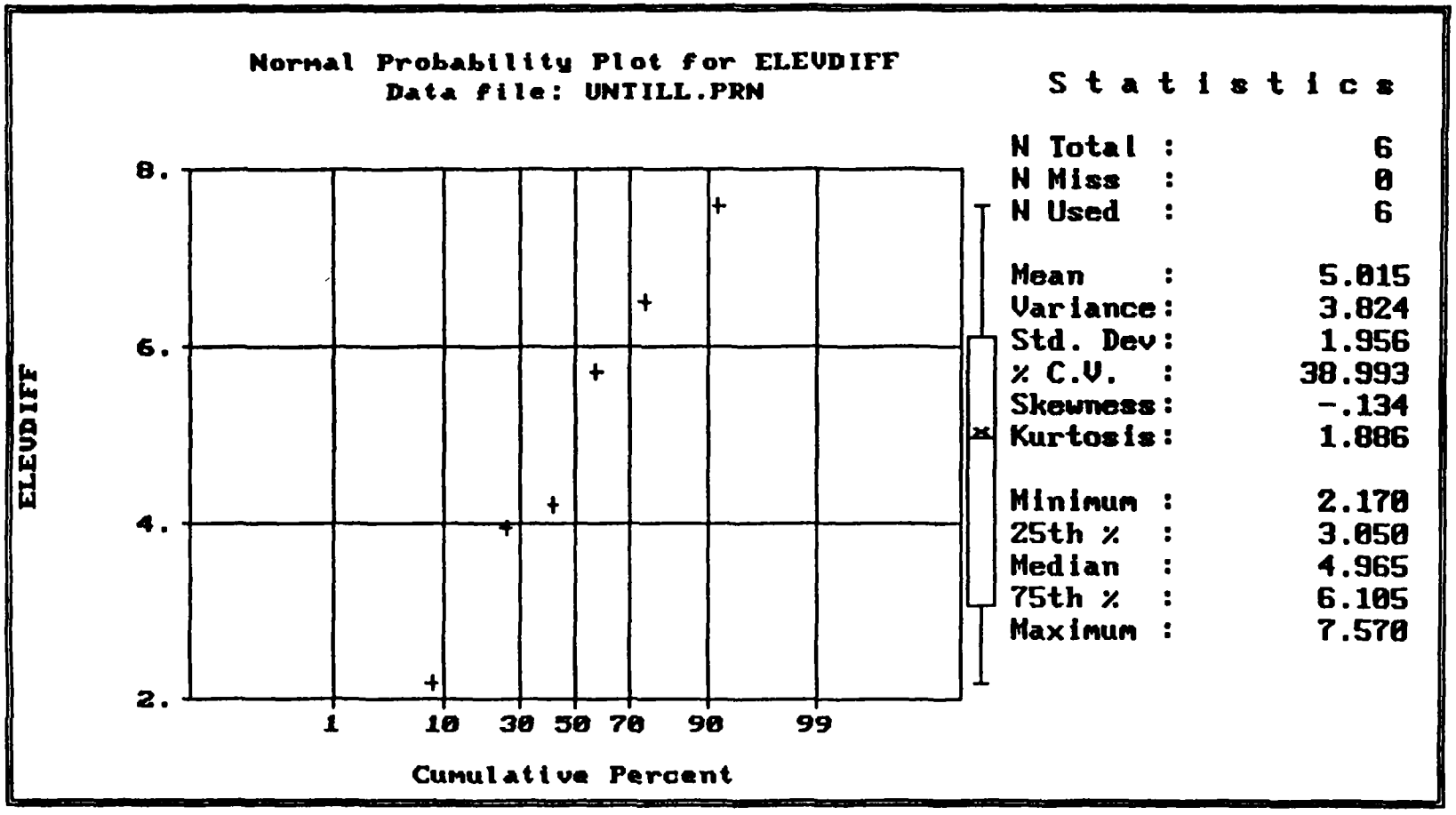

Histogram
Data file: UNTILL.PRN
Statistics
N Total : 6
N Miss : 0
N Used : 6
Mean : 1043.015
Variance: 6.728
Std. Dev: 2.594
% C.V. : .249
Skewness: -1.148
Kurtosis: 3.221
Minimum : 1038.170
25th % : 1040.330
Median : 1043.750
75th % : 1044.070
Maximum : 1045.720
Frequency
2.0
1.6
1.2
.8
.4
.0
1035.
1038.
1041.
1044.
1047.
ELEVATION (FT)

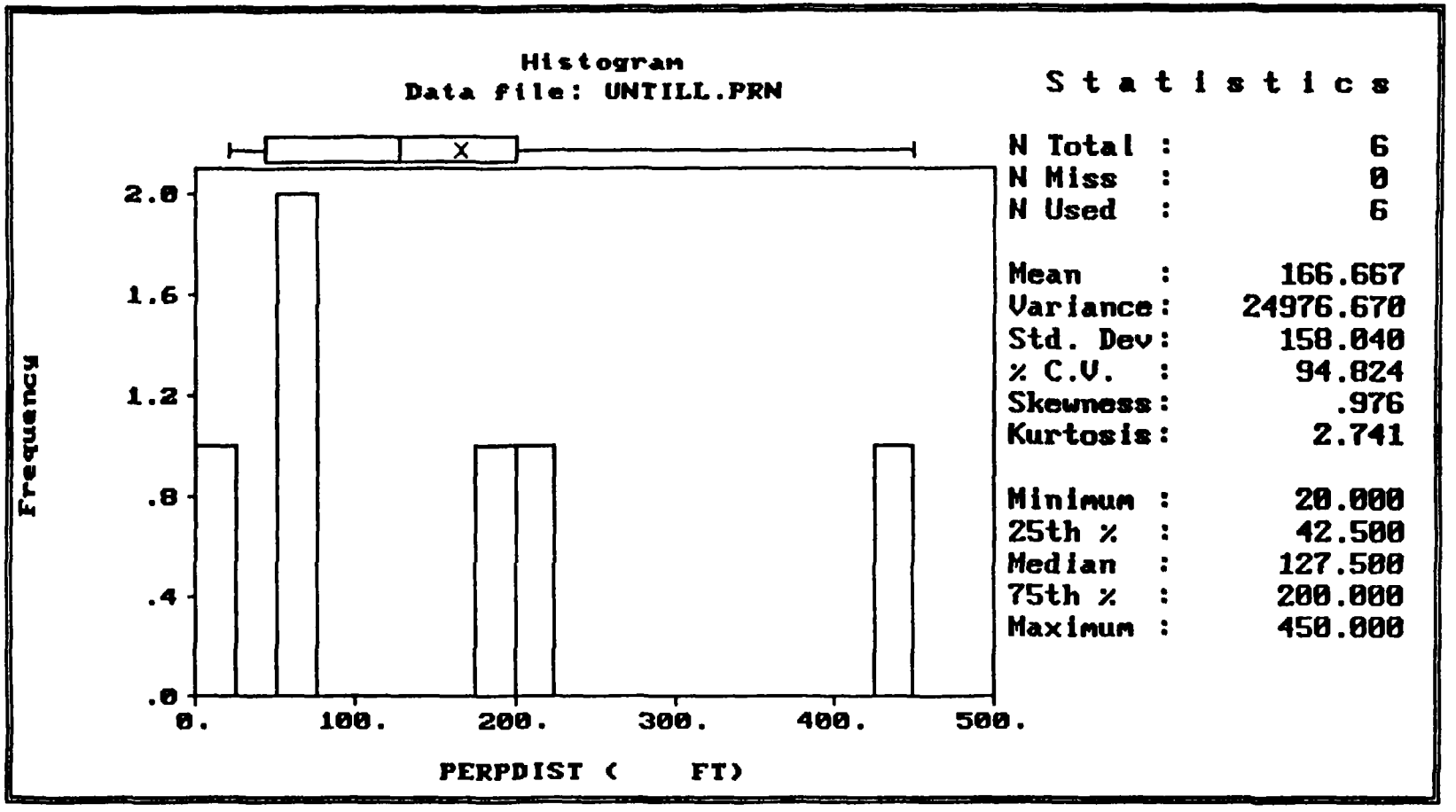

Normal Probability Plot for ELEVATION
Data file: UNTILL.PRN
ELEVATION
1047.
1044.
1041.
1038.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 6
N Miss : 0
N Used : 6
Mean : 1043.015
Variance: 6.728
Std. Dev: 2.594
% C.V. : .249
Skewness: -1.148
Kurtosis: 3.221
Minimum : 1038.170
25th % : 1040.330
Median : 1043.750
75th % : 1044.070
Maximum : 1045.720

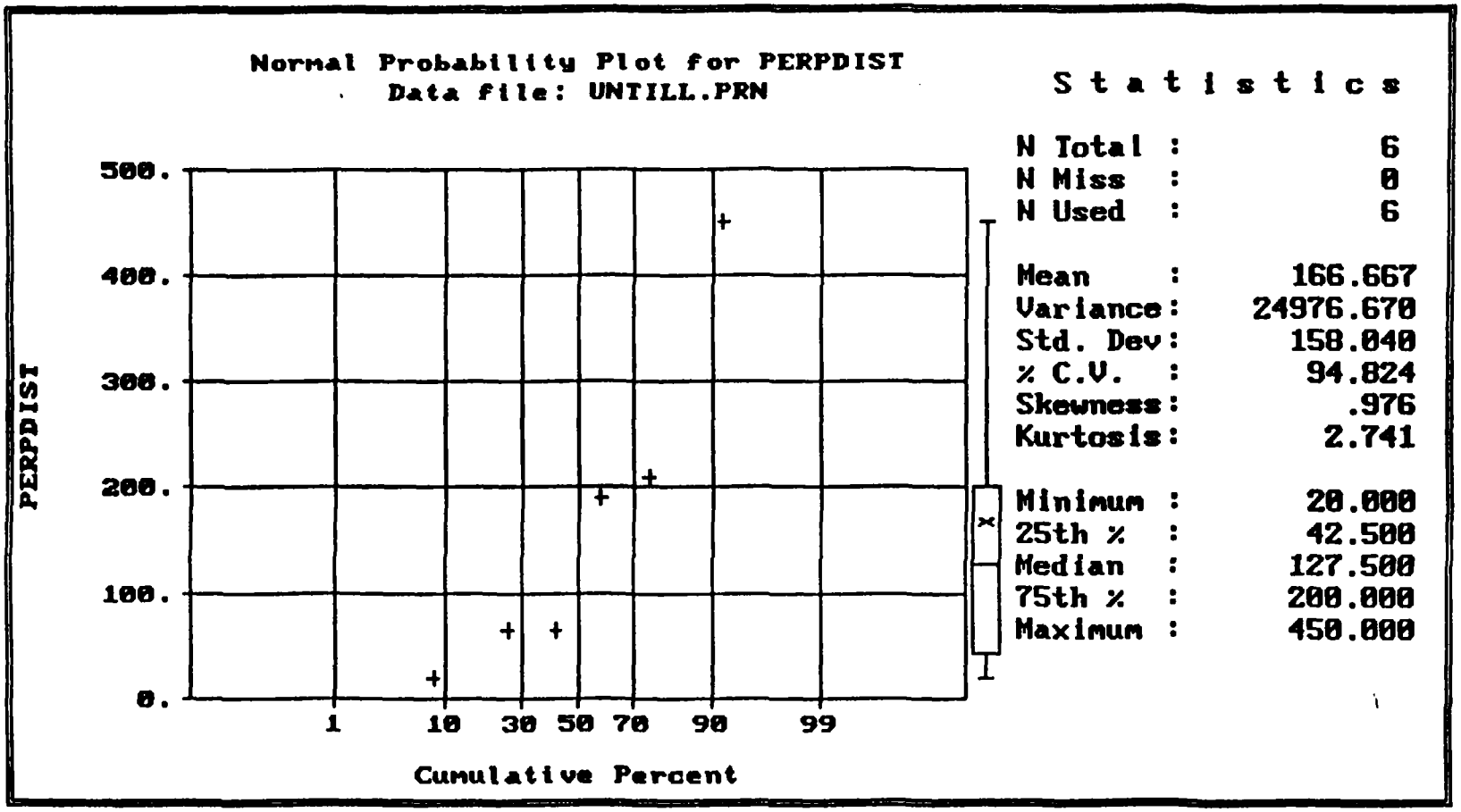

Histogram
Data file: UNTILL.PRN
Statistics
N Total : 6
N Miss : 0
N Used : 6
Mean : 6.950
Variance: .000
Std. Dev: .002
% C.V. : .036
Skewness: -1.151
Kurtosis: 3.224
Minimum : 6.945
25th % : 6.947
Median : 6.951
75th % : 6.951
Maximum : 6.952
Frequency
3.
2.
1.
0.
6.9451
6.9526
6.9601
LN(ELEVATION) (FT)

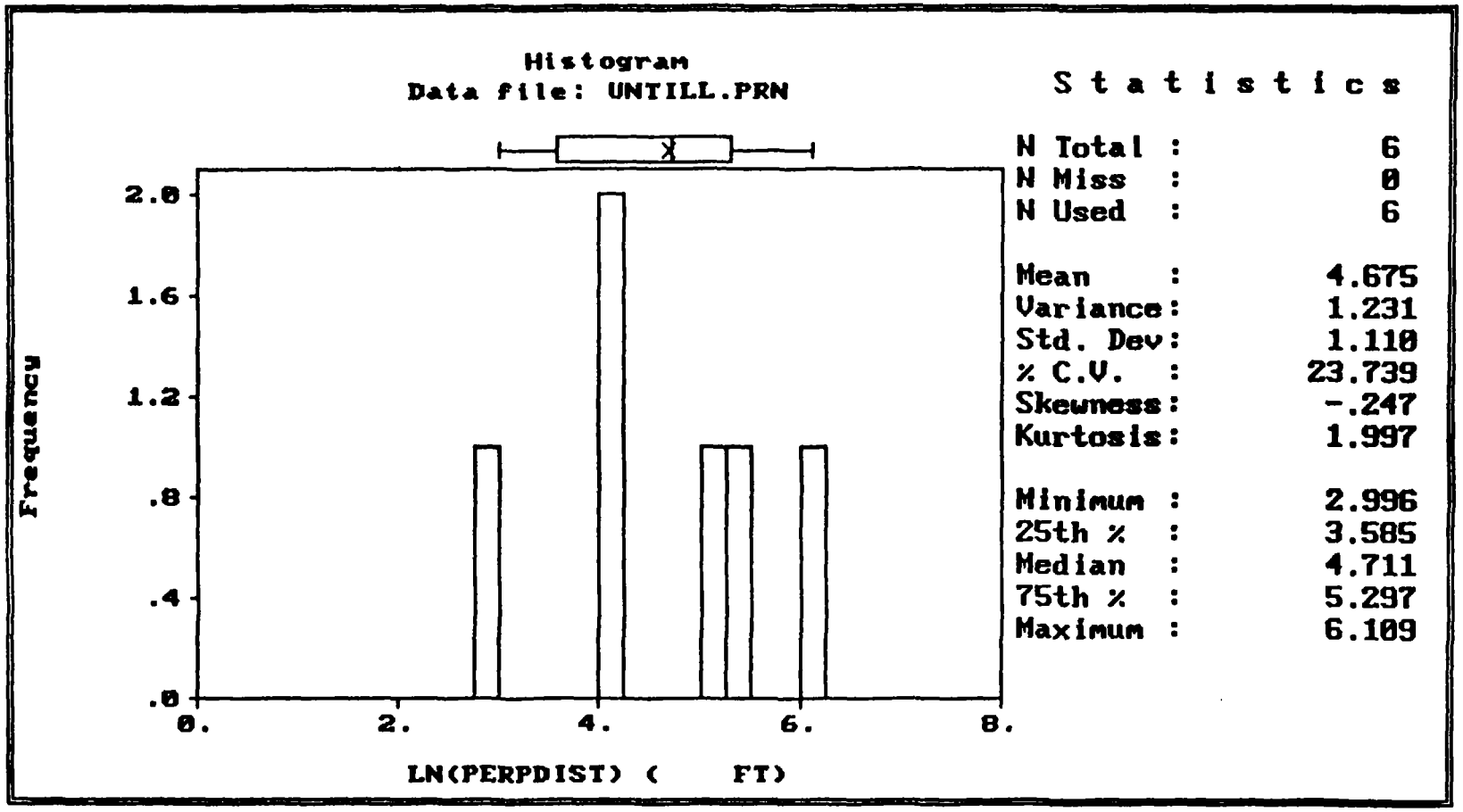

Normal Probability Plot for LN(ELEVATION)
Data file: UNTILL.PRN
6.955
6.950
6.945
LN(ELEVATION)
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 6
N Miss : 0
N Used : 6
Mean : 6.950
Variance: .000
Std. Dev: .002
% C.V. : .036
Skewness: -1.151
Kurtosis: 3.224
Minimum : 6.945
25th % : 6.947
Median : 6.951
75th % : 6.951
Maximum : 6.952

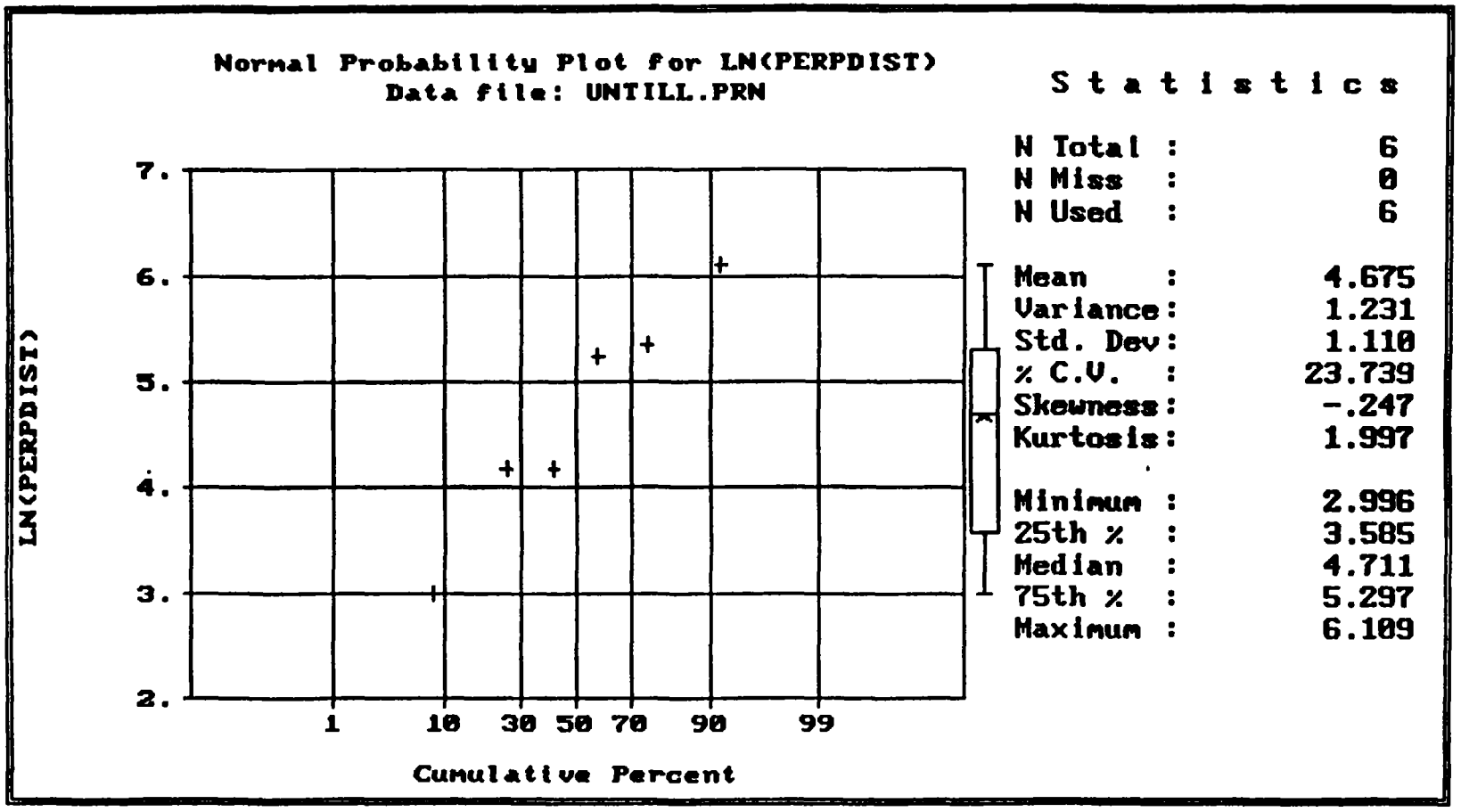

Histogram
Data file: UNTILL.PRN
Statistics
N Total : 6
N Miss : 0
N Used : 6
Mean : 5.015
Variance: 3.824
Std. Dev: 1.956
% C.V. : 38.993
Skewness: -.134
Kurtosis: 1.886
Minimum : 2.170
25th % : 3.050
Median : 4.965
75th % : 6.105
Maximum : 7.570
Frequency
1.0
.8
.6
.4
.2
.0
0.
2.
4.
6.
8.
ELEVDIFF (FT)

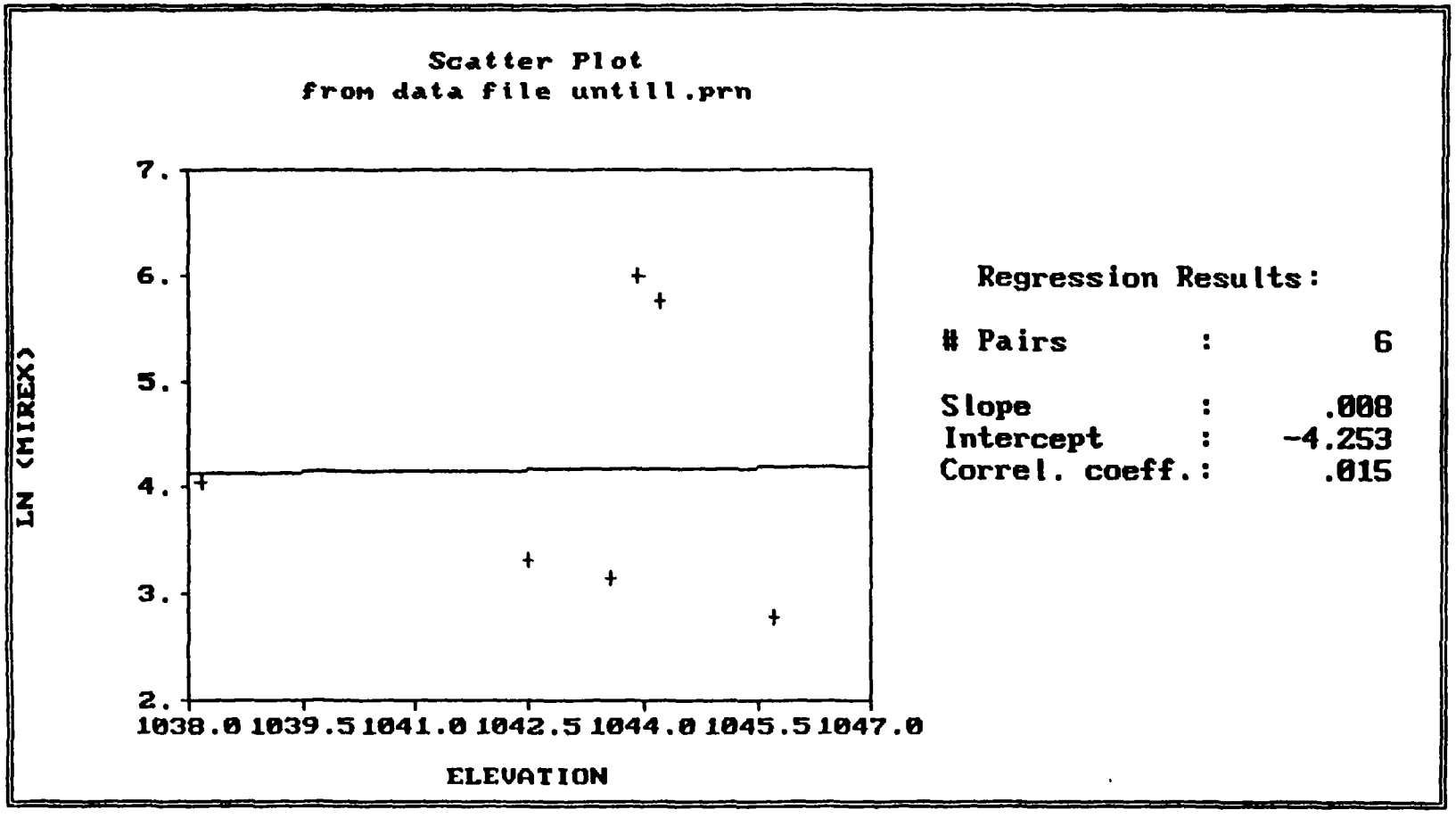

Normal Probability Plot for ELEVDIFF
Data file: UNTILL.PRN
ELEVDIFF
8.
6.
4.
2.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 6
N Miss : 0
N Used : 6
Mean : 5.015
Variance: 3.824
Std. Dev: 1.956
% C.V. : 38.993
Skewness: -.134
Kurtosis: 1.886
Minimum : 2.170
25th % : 3.050
Median : 4.965
75th % : 6.105
Maximum : 7.570

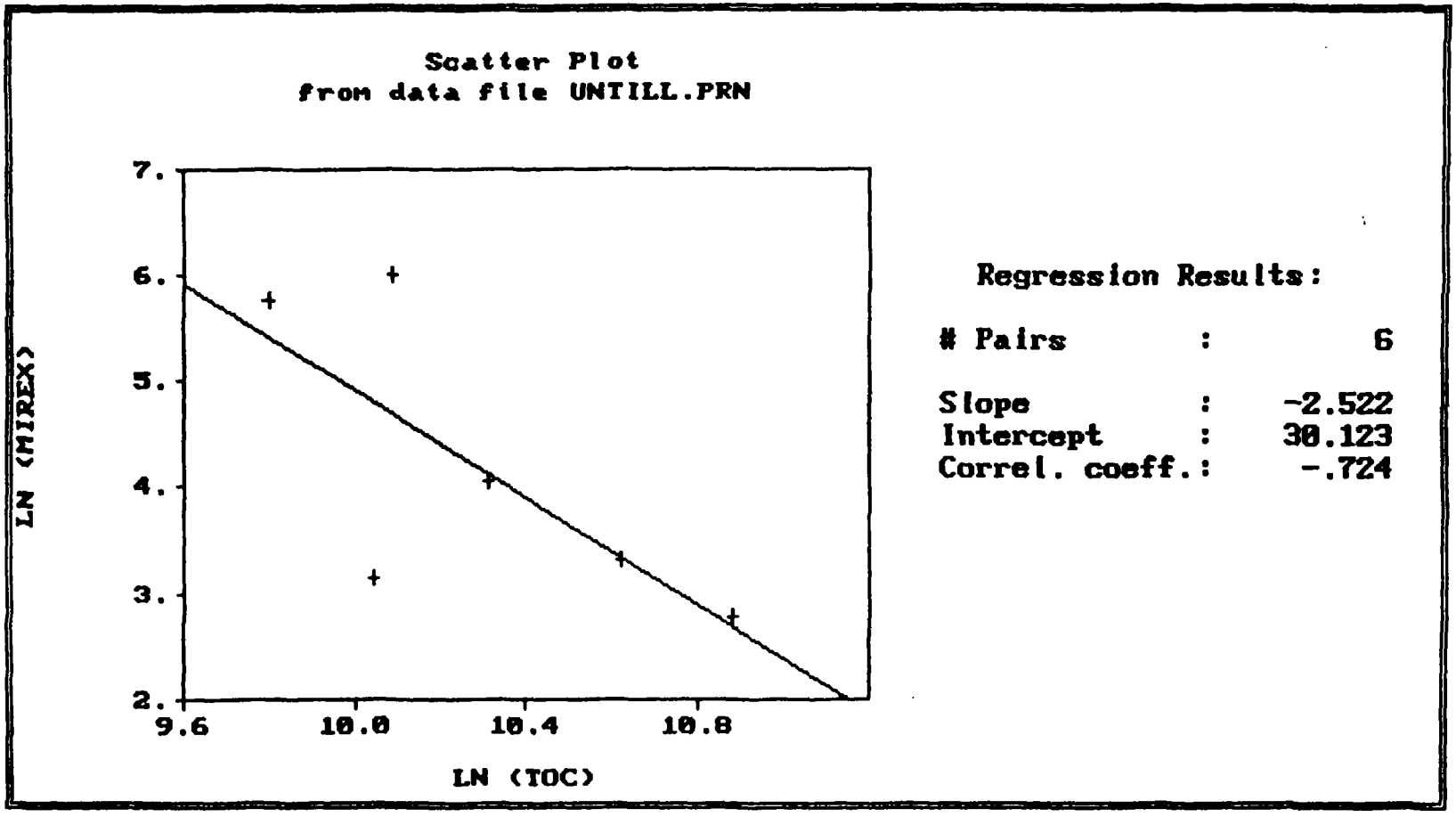

Histogram
Data file: UNTILL.PRN
Statistics
N Total : 6
N Miss : 0
N Used : 6
Mean : 166.667
Variance : 24976.670
Std. Dev : 158.040
% C.V. : 94.824
Skewness : .976
Kurtosis : 2.741
Minimum : 20.000
25th % : 42.500
Median : 127.500
75th % : 200.000
Maximum : 450.000
Frequency
2.0
1.6
1.2
.8
.4
.0
0.
100.
200.
300.
400.
500.
PERPDIST (FT)

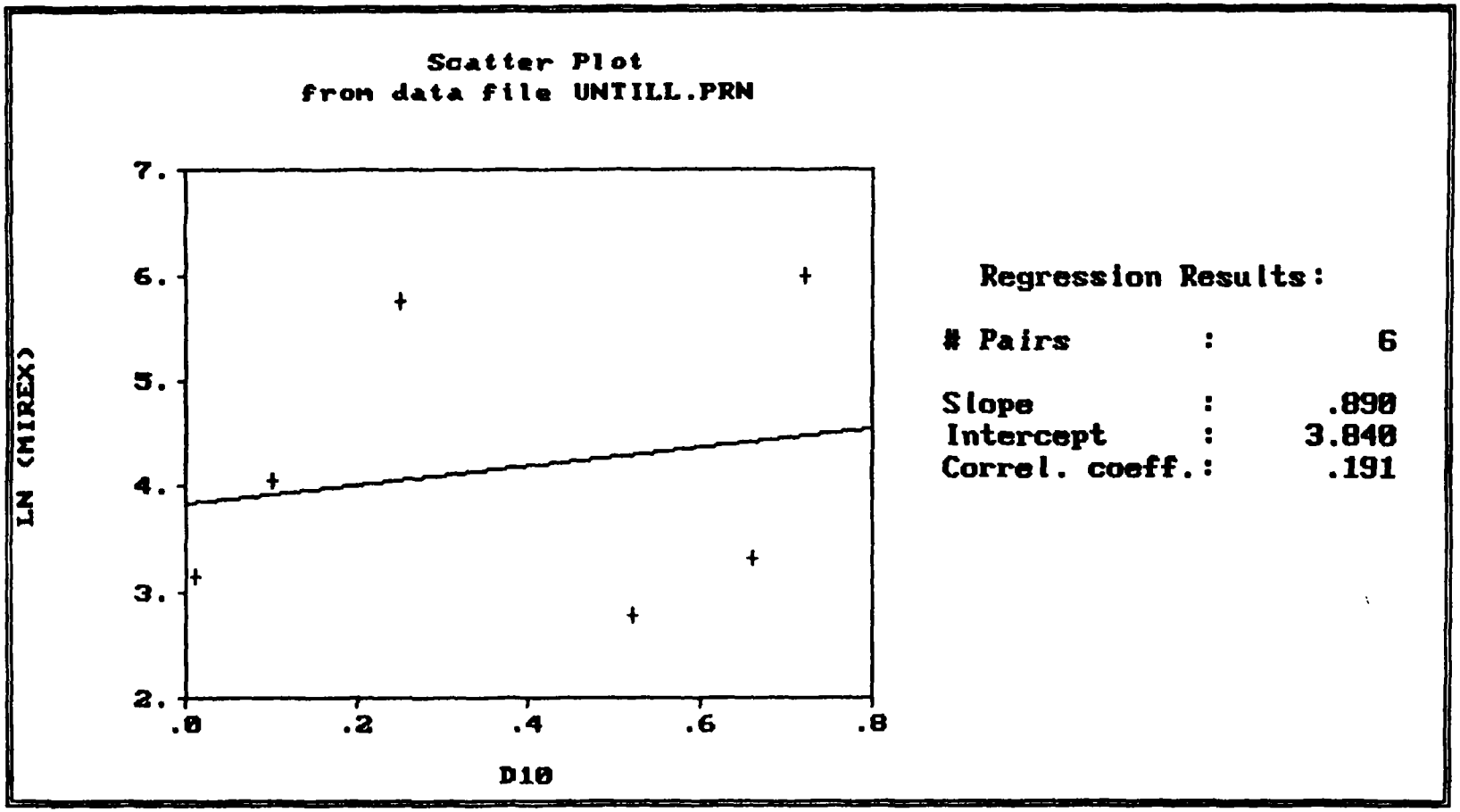

Normal Probability Plot for PERPDIST
Data file: UNTILL.PRN
PERPDIST
500.
400.
300.
200.
100.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 6
N Miss : 0
N Used : 6
Mean : 166.667
Variance: 24976.670
Std. Dev: 158.040
% C.V. : 94.824
Skewness: .976
Kurtosis: 2.741
Minimum : 20.000
25th % : 42.500
Median : 127.500
75th % : 200.000
Maximum : 450.000

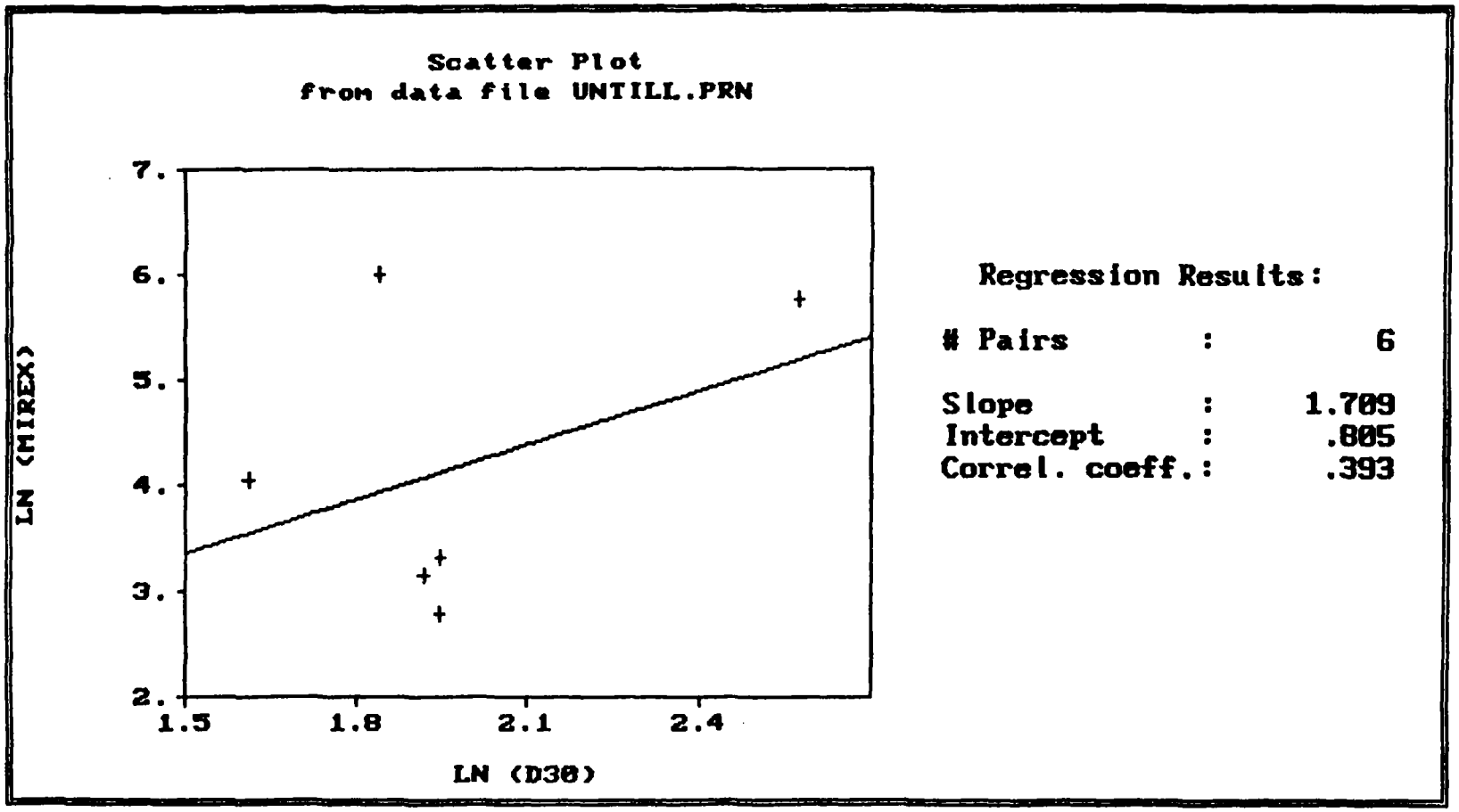

Histogram
Data file: UNTILL.PRN
Frequency
2.0
1.6
1.2
.8
.4
.0
0.
2.
4.
6.
8.
LN(PERPDIST) (FT)
Statistics
N Total : 6
N Miss : 0
N Used : 6
Mean : 4.675
Variance: 1.231
Std. Dev: 1.110
% C.V. : 23.739
Skewness: -.247
Kurtosis: 1.997
Minimum : 2.996
25th % : 3.585
Median : 4.711
75th % : 5.297
Maximum : 6.109

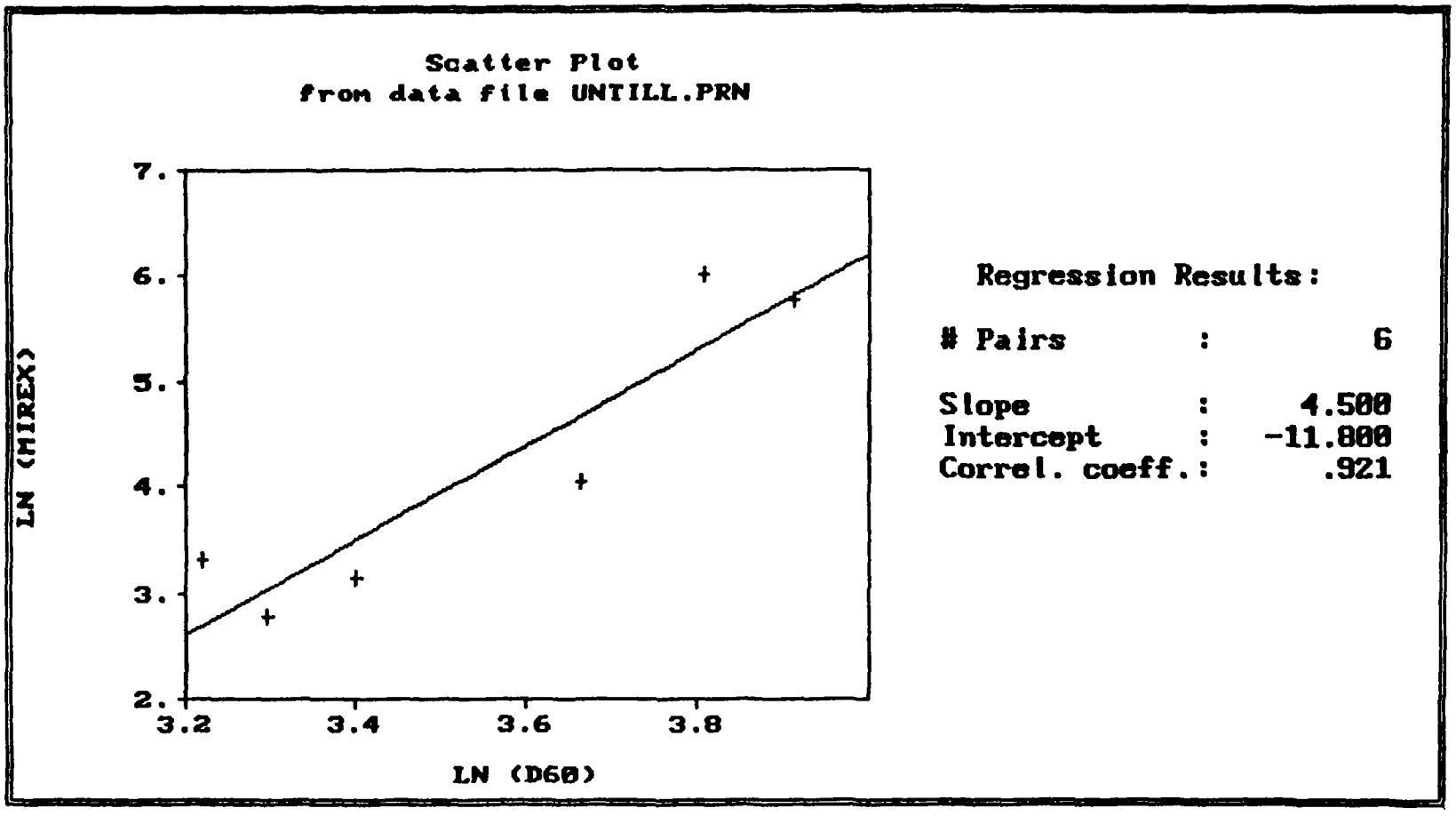

Normal Probability Plot for LN(PERPDIST)
Data file: UNTILL.PRN
LN(PERPDIST)
7.
6.
5.
4.
3.
2.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 6
N Miss : 0
N Used : 6
Mean : 4.675
Variance: 1.231
Std. Dev: 1.110
% C.V. : 23.739
Skewness: -.247
Kurtosis: 1.997
Minimum : 2.996
25th % : 3.585
Median : 4.711
75th % : 5.297
Maximum : 6.109

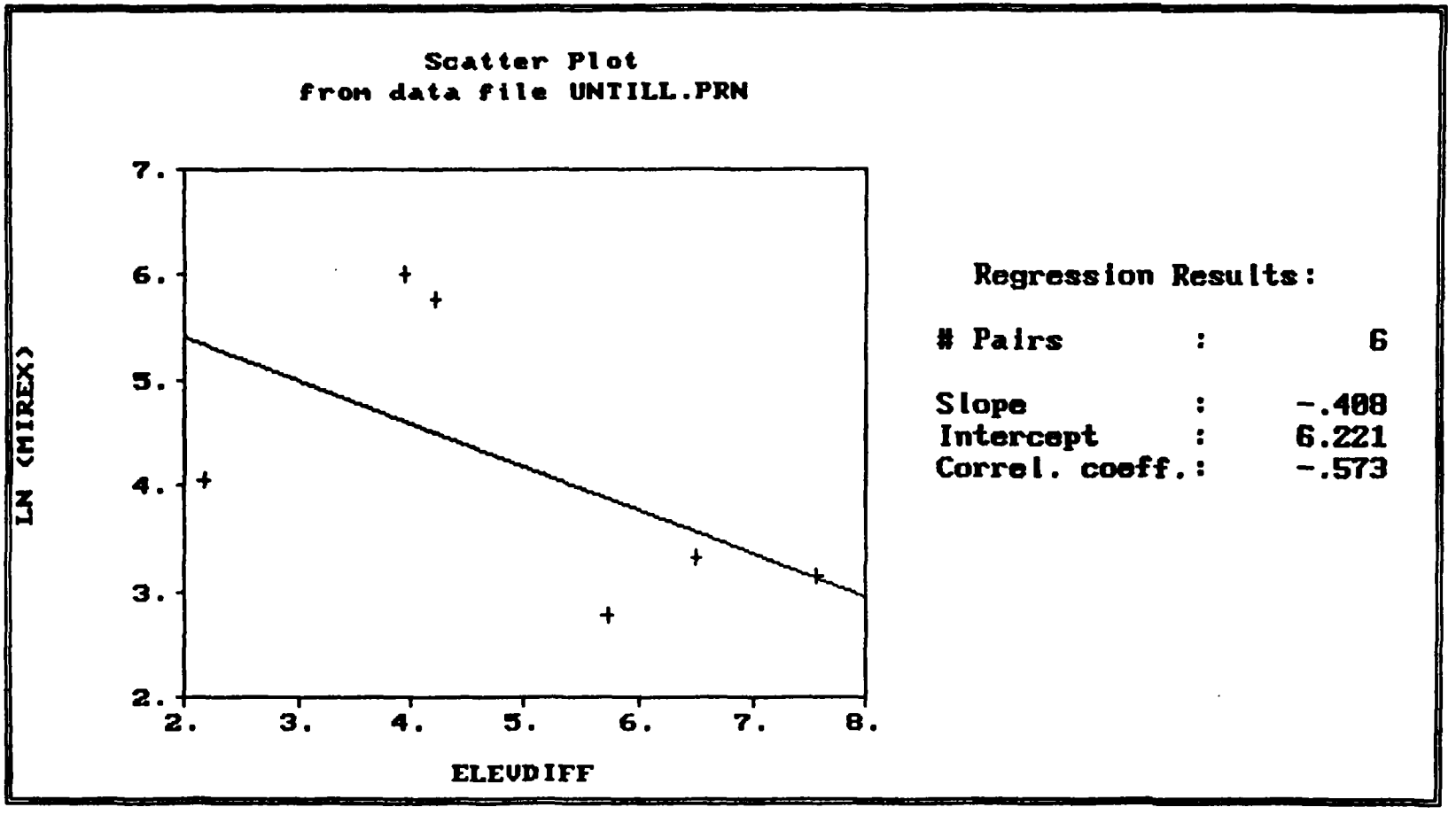

Scatter Plot
from data file untill.prn
LN (MIREX)
7.
6.
5.
4.
3.
2.
1038.0 1039.5 1041.0 1042.5 1044.0 1045.5 1047.0
ELEVATION
Regression Results:
Pairs : 6
Slope : .008
Intercept : -4.253
Correl. coeff.: .015

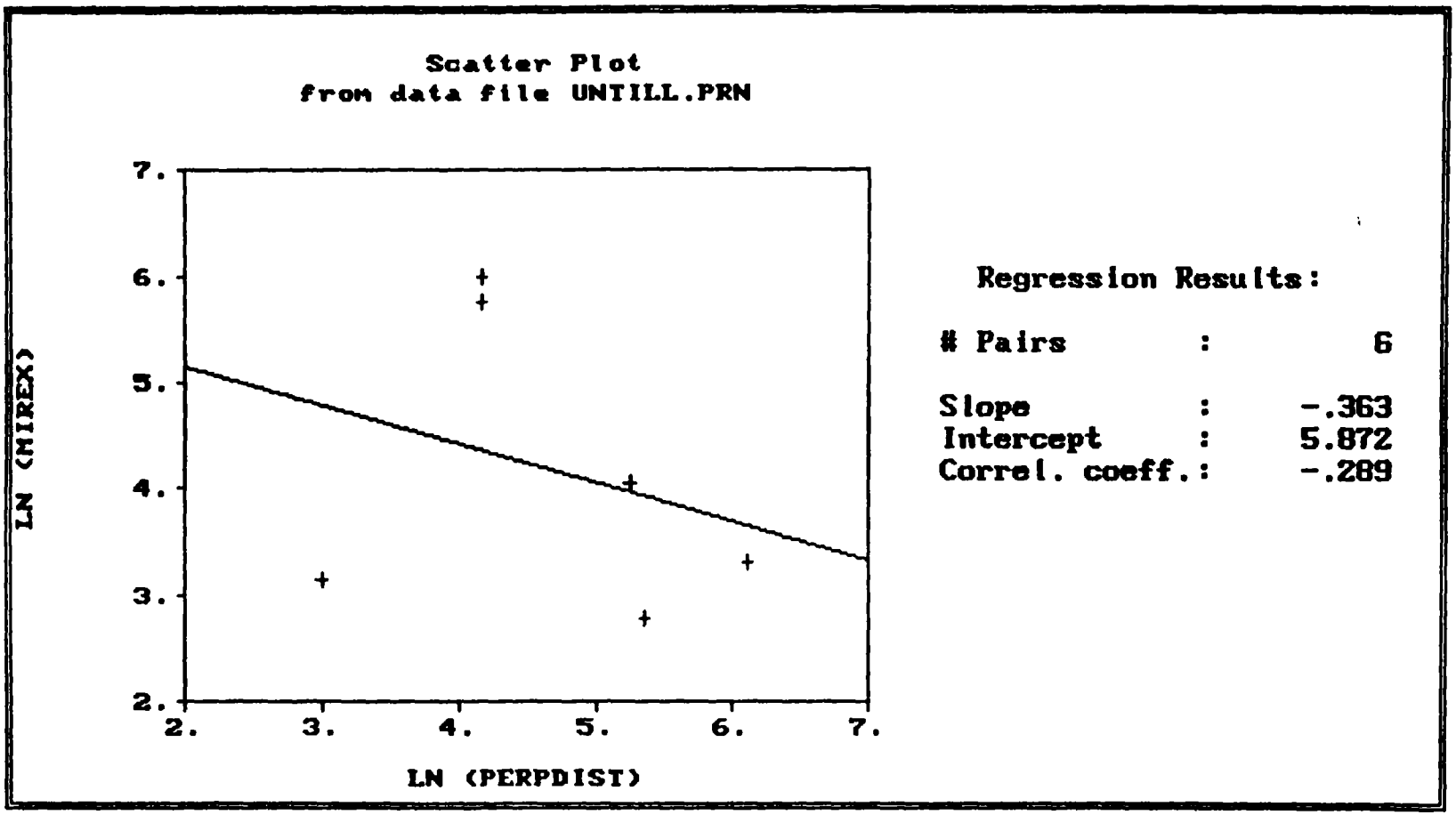

Scatter Plot
from data file UNTILL.PRN
7.
6.
5.
4.
3.
2.
LN (MIREX)
9.6
10.0
10.4
10.8
LN (TOC)
Regression Results:
Pairs : 6
Slope : -2.522
Intercept : 30.123
Correl. coeff.: -.724

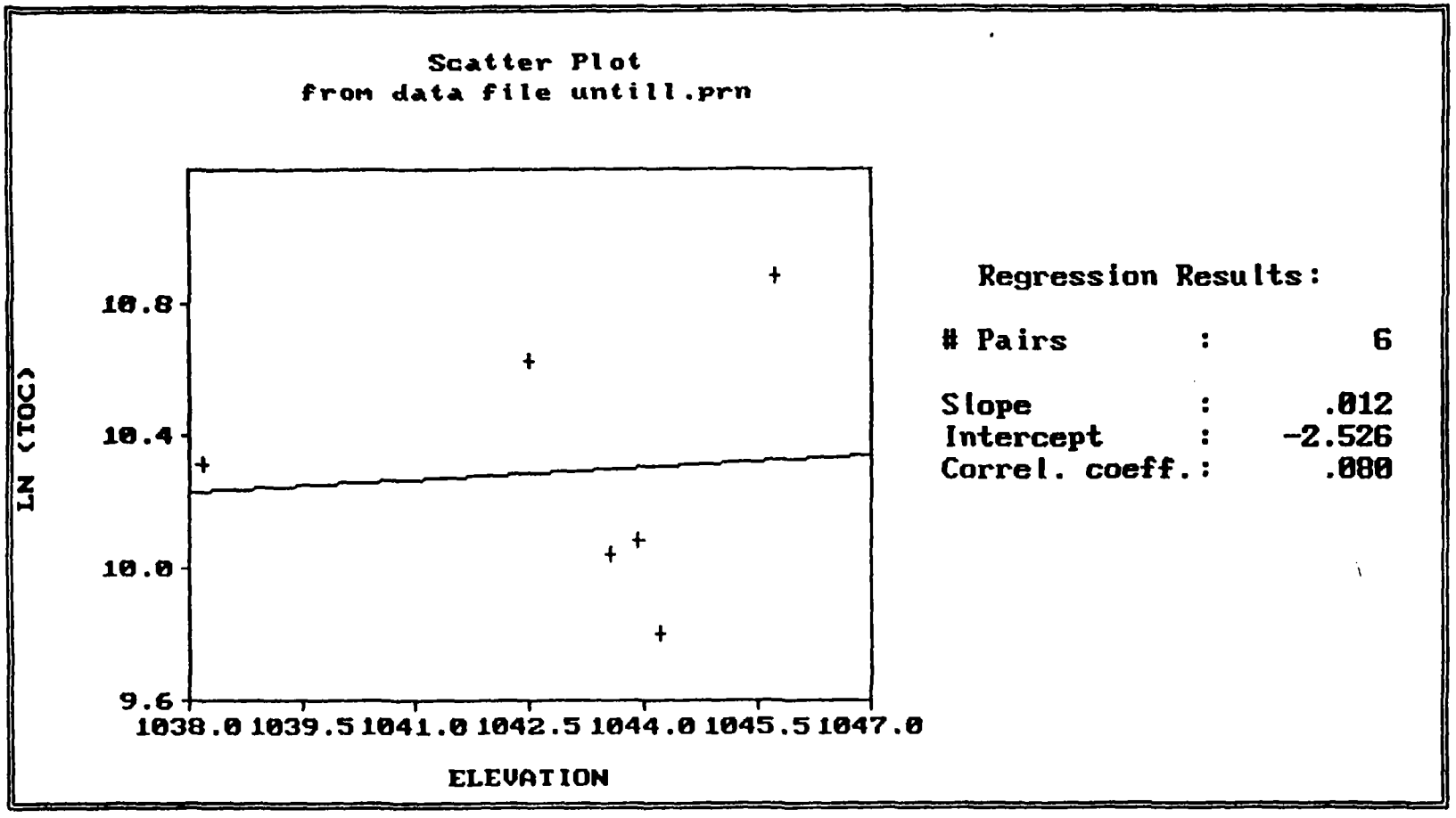

Scatter Plot
from data file UNTILL.PRN
LN (MIREX)
7.
6.
5.
4.
3.
2.
.0
.2
.4
.6
.8
D10
Regression Results:
Pairs : 6
Slope : .890
Intercept : 3.840
Correl. coeff.: .191

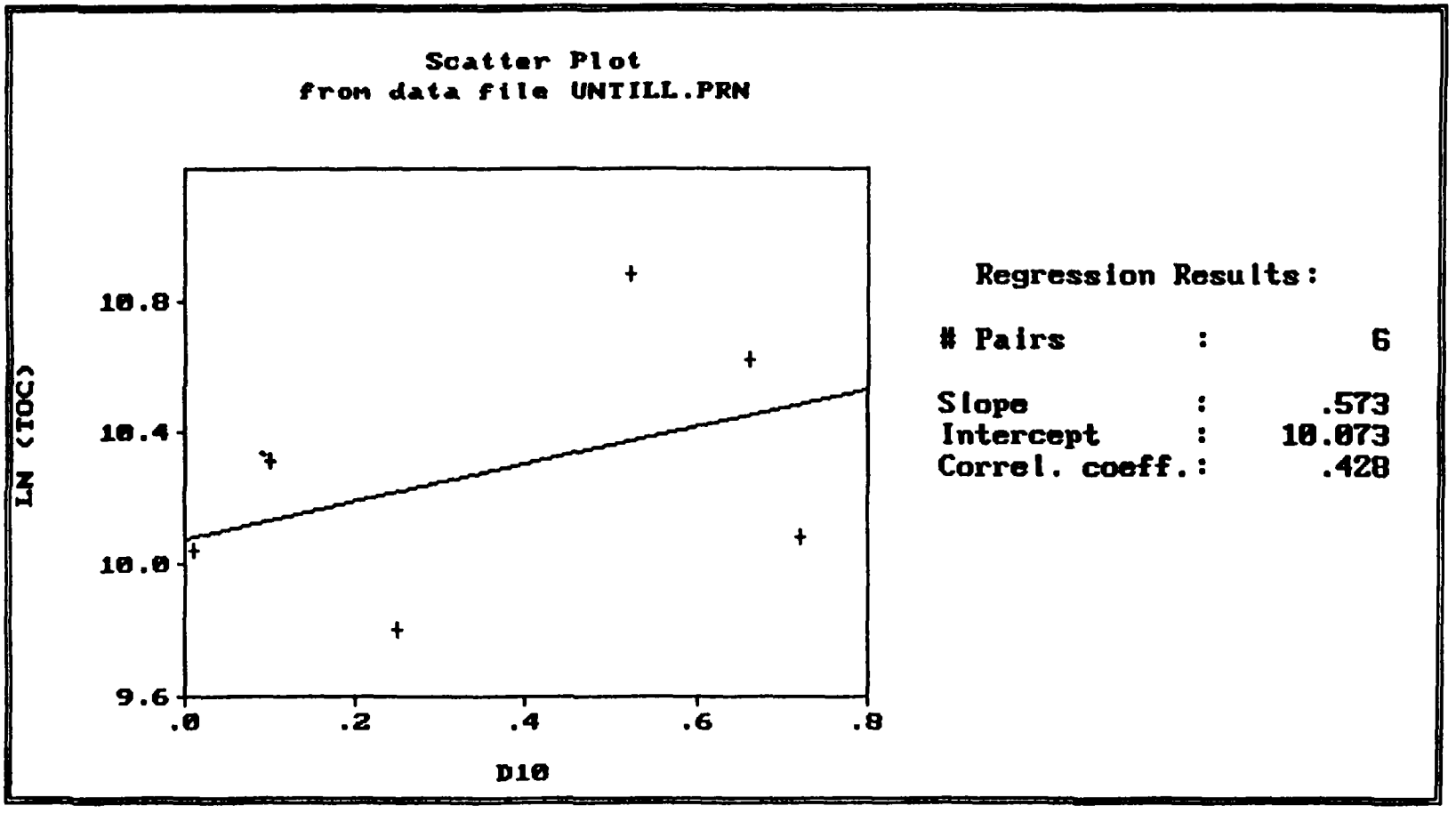

Scatter Plot
from data file UNTILL.PRN
LN (MIREX)
7.
6.
5.
4.
3.
2.
1.5
1.8
2.1
2.4
LN (D30)
Regression Results:
Pairs : 6
Slope : 1.709
Intercept : .805
Correl. coeff.: .393

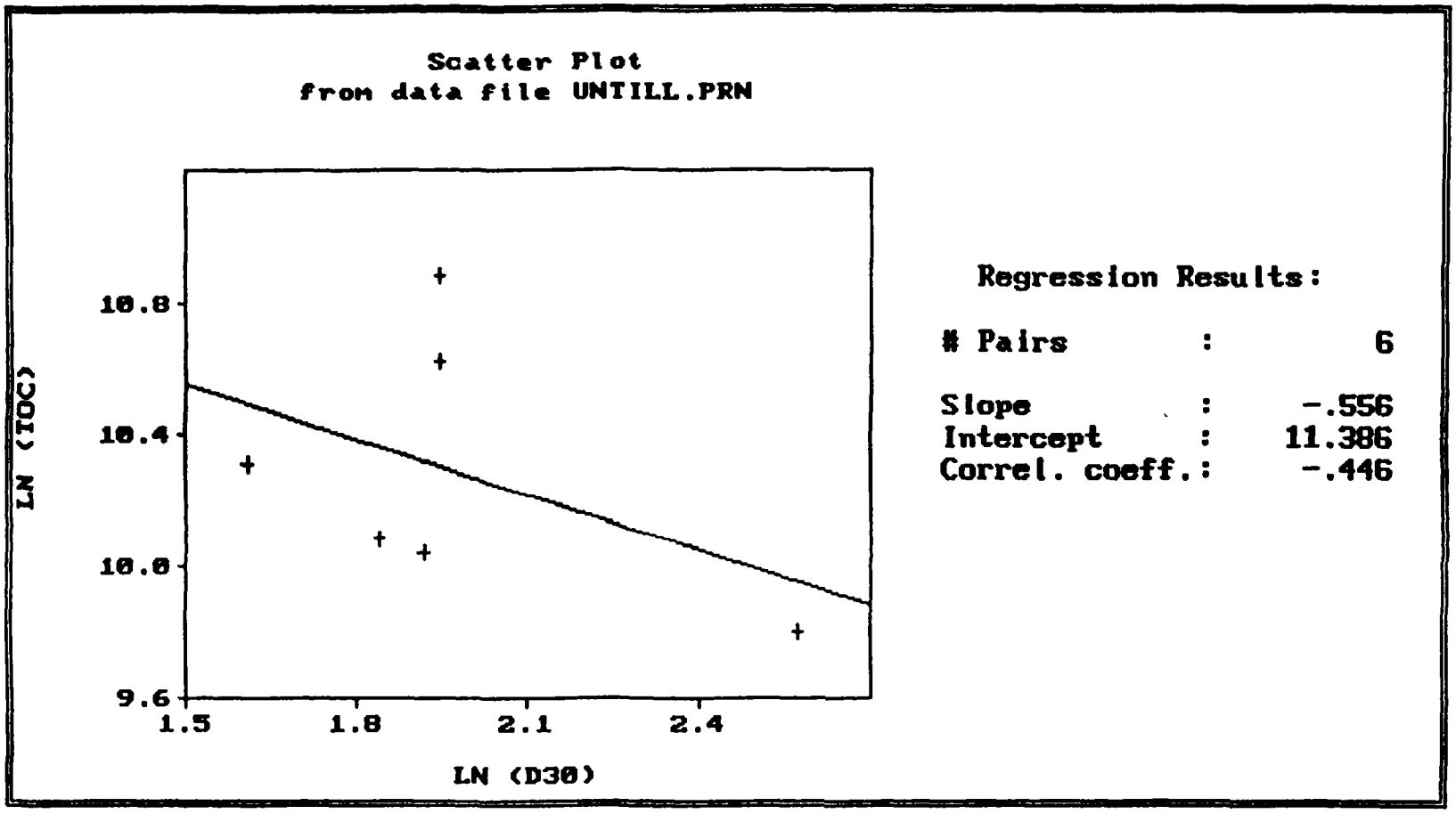

Scatter Plot
from data file UNTILL.PRN
LN (MIREX)
7.
6.
5.
4.
3.
2.
3.2
3.4
3.6
3.8
LN (D60)
Regression Results:
Pairs : 6
Slope : 4.500
Intercept : -11.800
Correl. coeff.: .921

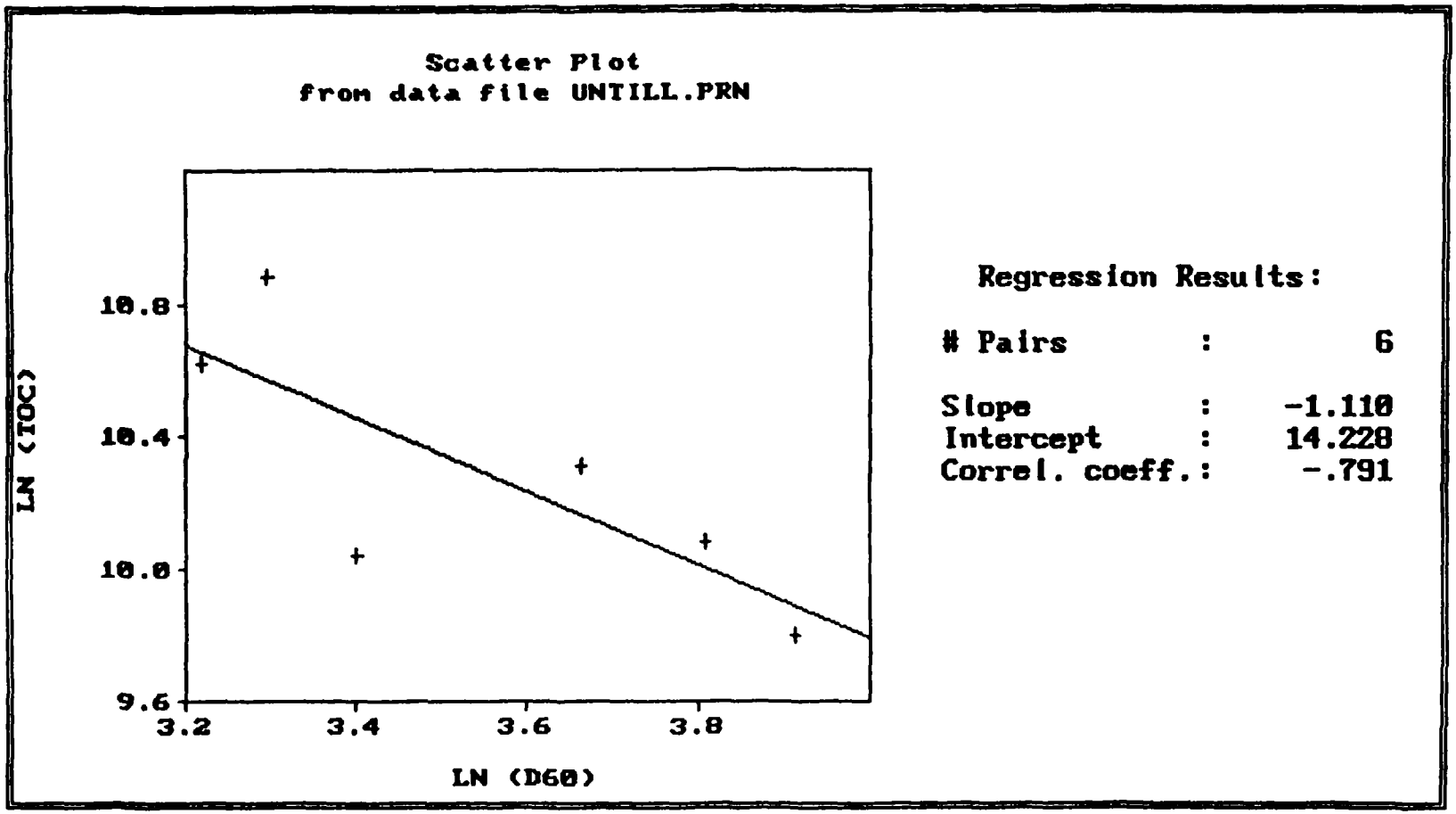

Scatter Plot
from data file UNTILL.PRN
LN (MIREX)
7.
6.
5.
4.
3.
2.
2.
3.
4.
5.
6.
7.
8.
ELEVDIFF
Regression Results:
Pairs : 6
Slope : -.408
Intercept : 6.221
Correl. coeff.: -.573

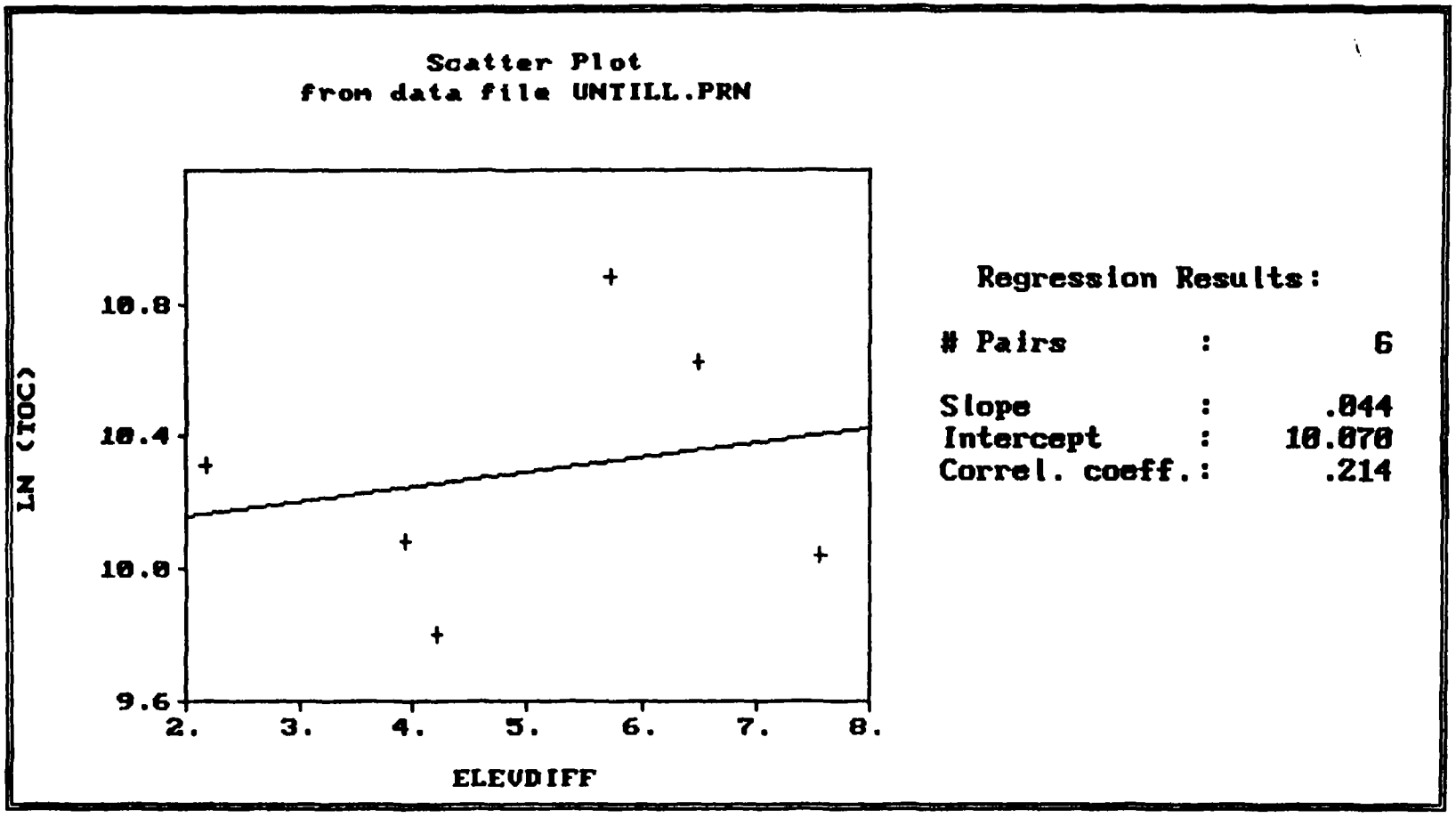

Scatter Plot
from data file UNTILL.PRN
7.
6.
5.
4.
3.
2.
2.
3.
4.
5.
6.
7.
LN (HIREX)
LN (PERPDIST)
Regression Results:
Pairs : 6
Slope : -.363
Intercept : 5.872
Correl. coeff.: -.289

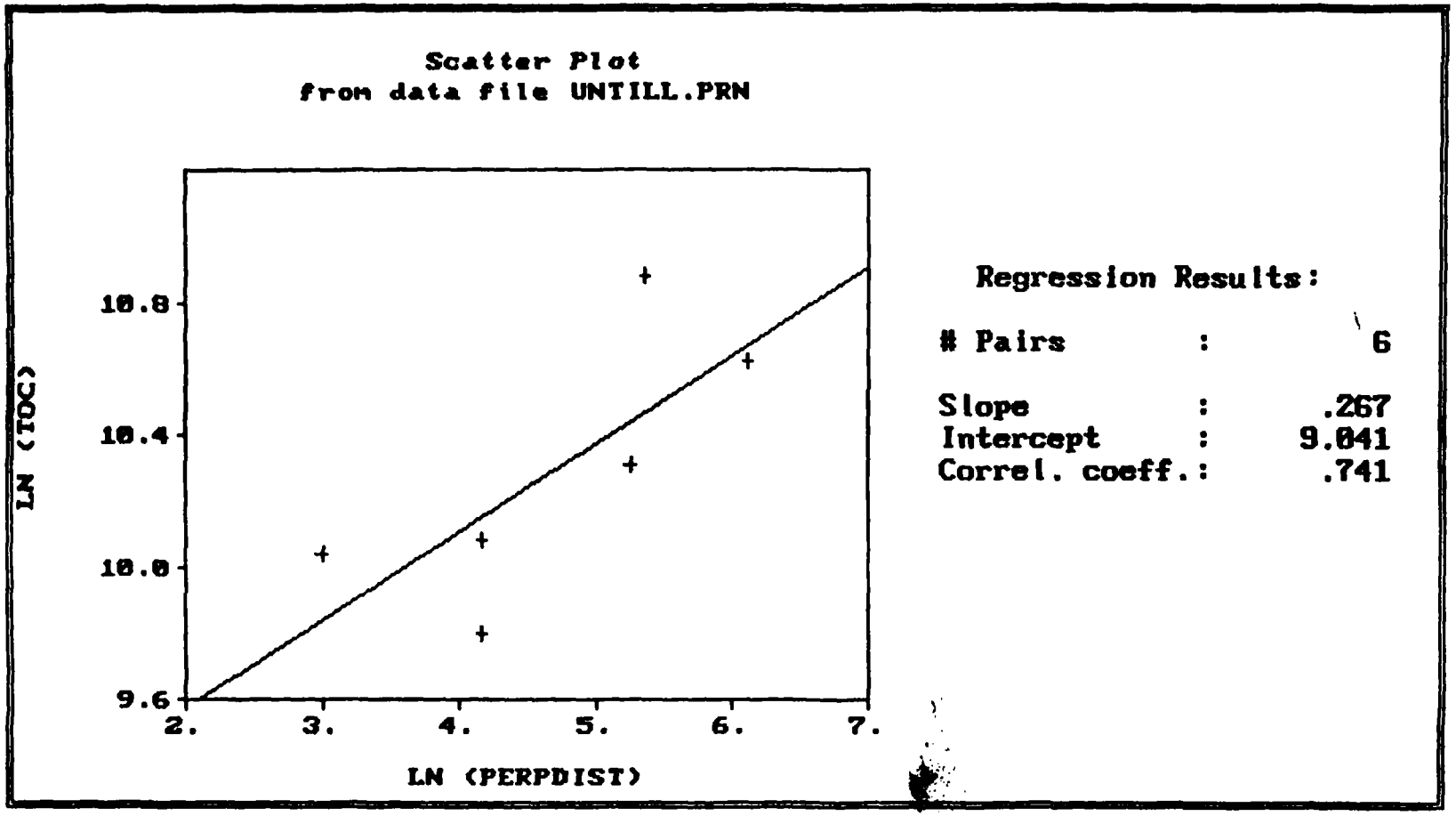

Scatter Plot
from data file untill.prn
LN (TOC)
10.8
10.4
10.0
9.6
1038.0 1039.5 1041.0 1042.5 1044.0 1045.5 1047.0
ELEVATION
Regression Results:
Pairs : 6
Slope : .012
Intercept : -2.526
Correl. coeff. : .080


Scatter Plot
from data file UNTILL.PRN
LN (TOC)
10.8
10.4
10.0
9.6
.0
.2
.4
.6
.8
D10
Regression Results:
Pairs : 6
Slope : .573
Intercept : 10.073
Correl. coeff.: .428


Scatter Plot
from data file UNTILL.PRN
LN (TOC)
10.8
10.4
10.0
9.6
1.5
1.8
2.1
2.4
LN (D30)
Regression Results:
Pairs : 6
Slope : -.556
Intercept : 11.386
Correl. coeff.: -.446


Scatter Plot
from data file UNTILL.PRN
LN (TOC)
10.8
10.4
10.0
9.6
3.2
3.4
3.6
3.8
LN (D60)
Regression Results:
Pairs : 6
Slope : -1.110
Intercept : 14.228
Correl. coeff.: -.791


Scatter Plot
from data file UNTILL.PRN
LN (TOC)
10.8
10.4
10.0
9.6
2.
3.
4.
5.
6.
7.
8.
ELEVDIFF
Regression Results:
Pairs : 6
Slope : .044
Intercept : 10.070
Correl. coeff.: .214


Scatter Plot
from data file UNTILL.PRN
LN (TOC)
10.8
10.4
10.0
9.6
2.
3.
4.
5.
6.
7.
LN (PERPDIST)
Regression Results:
Pairs : 6
Slope : .267
Intercept : 9.041
Correl. coeff.: .741

APPENDIX 5

SUPPORTING DOCUMENT FOR THE STUDY OF THE EFFECTS OF INCORPORATING PAST DATA WITH NEW DATA

AREAS 2, 3, AND 5

(NEW DATA ONLY)

Multiple Regression Results

. Var. : LNMIREX Multiple R : .80198223 F = 13.38999
R² : .64317549 df = 7, 52
No. of cases: 60 adjusted R² : .59514142 p = .000000
Standard error of estimate: 1.330275250
Intercept: 262.15823049 Std.Error: 43.03344 t(52) = 6.0920 p < .00000

LNELEV β=-.7124 TOC β=-.1313 LND10 β=.22133 LND30 β=-.2748
LND60 β=-.0532 LNELDIFF β=-.6068 LNPERDIS β=-.2158

(significant β's are higlighted)

F7-alpha: .050

d - Descriptive stats o - cOvar. of weights r - pRedict dep. var.
w - regression Weights p - Partial corr. u - redUndancy
a - Analysis of variance
e - current swEEp matrix

<cr>-residual analysis <esc>-previous

eader of RAW DATA file: c:\css\data\mflbc\OVERBANK.CSS

css/3: tiple ress.	Regression Weights					
variable	BETA	St. Err. of BETA	B	St. Err. of B	t(52)	p-level
LNELEV	-.712366	.123566	-35.9605	6.237656	-5.76507	.000000
TOC	-.131293	.101990	-.0000	.000015	-1.28731	.203688
LND10	.221332	.149783	.3260	.220589	1.47768	.145524
LND30	-.274770	.298353	-.6121	.664611	-.92096	.361326
LND60	-.053248	.226988	-.1332	.567630	-.23458	.815453
LNELDIFF	-.606828	.117446	-2.0476	.396292	-5.16686	.000004
LNPERDIS	-.215822	.115603	-.4529	.242580	-1.86692	.067555

css/3: multiple regress.	Variables not in the Equation					
Variable	Beta in	Partial Cor.	Semipart Cor.	Tolernce	Minimum Tolernce	t(52)
EASTING	2.44107	.329523	.196840	.006502	.006502	2.49248
NORTHING	-.27698	-.246032	-.146967	.281549	.069954	-1.81274
ELEV	16.25822	.263303	.157283	.000094	.000093	1.94914
MIREX	.39290	.557935	.333281	.719543	.076694	4.80121
D10	.05008	.060944	.036405	.528473	.071048	.43604
D30	.14283	.127235	.076004	.283176	.061593	.91608
D60	.20482	.105519	.063032	.094706	.064784	.75779
CU	-.01068	-.011380	-.006798	.405482	.063768	-.08127
CC	.01619	.017486	.010446	.416435	.055912	.12490
ELEVDIFF	.55784	.331435	.197982	.125959	.072593	2.50872
PERPDIST	-.00635	-.005047	-.003015	.225193	.077072	-.03604

css/3: multiple regress.	Variables not in the Equation	
Variable	p-level	
EASTING	.015909	
NORTHING	.075646	
ELEV	.056683	
MIREX	.000014	
D10	.664615	
D30	.363852	
D60	.451998	
CU	.935538	
CC	.901086	
ELEVDIFF	.015273	
PERPDIST	.971388	

c~s/3: :iple .ress.	Variables currently in the Equation						
Variable	Beta in	Partial Cor.	Semipart Cor.	Tolernce	R-square	t(53)	
LNELEV	-.712366	-.624443	-.477563	.449422	.550578	-5.76507	
TOC	-.131293	-.175739	-.106637	.659681	.340319	-1.28731	
LND10	.221332	.200746	.122407	.305862	.694138	1.47768	
LND30	-.274771	-.126685	-.076290	.077088	.922912	-.92096	
LND60	-.053248	-.032514	-.019432	.133182	.866818	-.23458	
LNELDIFF	-.606829	-.582438	-.428009	.497478	.502523	-5.16686	
LNPERDIS	-.215822	-.250632	-.154651	.513467	.486533	-1.86692	

css/3: multiple regress.	Variables currently in the Equation

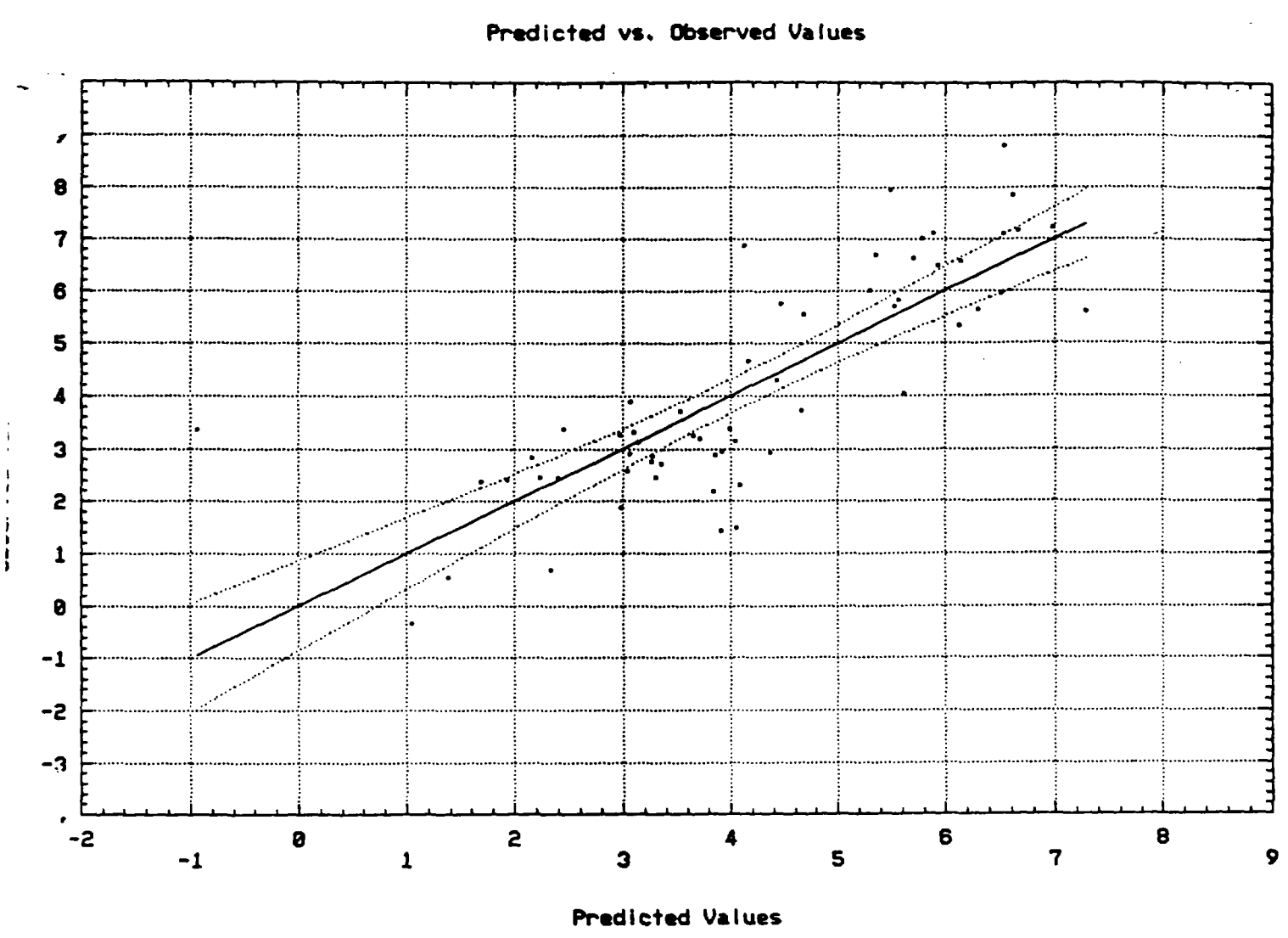
Variable	p-level
LNELEV	.000000
TOC	.203581
LND10	.145411
LND30	.361246
LND60	.815436
LNELDIFF	.000004
LNPERDIS	.067448

css/3: multiple regress.	Predicted and Residual Values				
Case No.	Observed Value	Predictd Value	Residual	Standard Pred. v.	Standard Residual
SS-15-01	3.186353	3.716679	-.53033	-.27329	-.39866
SS-15-02	3.317816	3.094742	.22307	-.64422	.16769
SS-15-03	4.046554	5.626378	-1.57982	.86567	-1.18759
SS-15-04	1.432701	3.908697	-2.47600	-.15877	-1.86127
SS-15-05	2.186051	3.847299	-1.66125	-.19539	-1.24880
SS-15-06	3.144152	3.135364	.00879	-.62000	.00661
SS-15-07	5.768321	4.459496	1.30883	.16973	.98388
SS-15-08	3.148453	4.036597	-.88814	-.08249	-.66764
SS-15-09	3.250375	3.656092	-.40572	-.30943	-.30499
SS-15-10	6.008813	5.298684	.71013	.67023	.53382
SS-15-11	3.284664	2.969392	.31527	-.71898	.23700
SS-15-12	3.716008	3.532346	.18366	-.38323	.13806
SS-15-13	2.766319	3.262378	-.49606	-.54424	-.37290
SS-15-14	2.451005	3.304925	-.85392	-.51887	-.64191
SS-15-15	2.459589	2.402778	.05681	-1.05692	.04271
SS-09-01	3.992681	4.003977	-.01130	-.10195	-.00849
-09-02	2.850707	2.156786	.69392	-1.20363	.52164
-09-03	2.322388	4.075559	-1.75317	-.05925	-1.31790
SS-09-04	3.885679	3.073868	.81181	-.65667	.61026
SS-09-05	2.879199	3.855461	-.97626	-.19052	-.73388
SS-09-06	3.374169	2.456506	.91766	-1.02487	.68983
SS-09-07	2.917771	3.055071	-.13730	-.66788	-.10321
SS-09-08	7.962067	5.489194	2.47287	.78385	1.85892
SS-09-09	3.363842	-.940477	4.30432	-3.05087	3.23566
SS-09-10	4.304065	4.426191	-.12213	.14987	-.09181
SS-09-11	6.864848	4.114297	2.75055	-.03615	2.06766
SS-09-12	6.484635	5.924569	.56007	1.04352	.42102
SS-09-13	3.740048	4.656241	-.91619	.28707	-.68872
SS-09-14	8.802372	6.530186	2.27219	1.40471	1.70806
SS-09-15	5.707110	5.531135	.17598	.80887	.13228
SS-09-21	.553885	1.382168	-.82828	-1.66562	-.62264
SS-09-22	2.873565	3.271496	-.39793	-.53881	-.29913
SS-09-23	2.379546	1.690621	.68893	-1.48166	.51788
SS-09-24	2.587764	3.039469	-.45171	-.67719	-.33956
SS-09-25	3.380995	3.984750	-.60376	-.11341	-.45386
SS-09-26	2.721295	3.350722	-.62943	-.49155	-.47315
SS-09-27	2.944439	3.916366	-.97193	-.15420	-.73062
SS-09-28	-.329894	1.050313	-1.38021	-1.86354	-1.03754
SS-09-29	.688135	2.334465	-1.64633	-1.09766	-1.23759
SS-09-30	1.486140	4.050025	-2.56389	-.07448	-1.92733

css/3: multiple regress.	Predicted and Residual Values				
Case No.	Observed Value	Predictd Value	Residual	Standard Pred. v.	Standard Residual
SS-28-01	4.653960	4.161251	.49271	-.00815	.37038
SS-28-02	7.863267	6.610439	1.25283	1.45258	.94178
SS-28-03	5.598422	7.281441	-1.68302	1.85277	-1.26517
SS-28-04	2.415914	1.925947	.48997	-1.34131	.36832
SS-28-05	5.817111	5.569755	.24736	.83190	.18594
SS-28-06	7.215240	6.975179	.24006	1.67011	.18046
SS-28-07	1.871802	2.976549	-1.10475	-.71471	-.83047
SS-28-08	6.575076	6.141494	.43358	1.17289	.32593
SS-28-09	5.645447	6.297852	-.65240	1.26615	-.49043
SS-28-10	7.106606	6.533992	.57261	1.40698	.43045
SS-28-11	6.630683	5.703619	.92706	.91174	.69690
SS-28-12	5.327876	6.130604	-.80273	1.16640	-.60343
SS-28-13	7.122867	5.890259	1.23261	1.02305	.92658
SS-28-14	5.556828	4.670945	.88588	.29584	.66594
SS-28-15	2.923162	4.362982	-1.43982	.11217	-1.08235
SS-28-16	5.942800	6.512083	-.56928	1.39392	-.42794
·28-17	2.451005	2.226879	.22413	-1.16183	.16848
·28-18	6.688354	5.347561	1.34079	.69938	1.00791
·28-19	7.162397	6.664859	.49754	1.48503	.37401
SS-28-20	7.021084	5.780210	1.24087	.95742	.93280
Minimum	-.329894	-.940477	-2.56389	-3.05087	-1.92733
Maximum	8.802372	7.281441	4.30432	1.85277	3.23566
Mean	4.174909	4.174912	-.00000	.00000	-.00000
Median	3.377582	4.020287	.03280	-.09222	.02466

css/3: multiple regress.	Predicted and Residual Values			
Case No.	Std.Err. Pred.Val	Mahalns. Distance	Deleted Residual	Cook's Distance
SS-15-01	.425875	5.06357	-.59089	.002528
SS-15-02	.361148	3.36516	.24082	.000302
SS-15-03	.536358	8.60797	-1.88650	.040866
SS-15-04	.331350	2.67719	-2.63978	.030539
SS-15-05	.377012	3.75558	-1.80633	.018512
SS-15-06	.926825	27.65610	.01708	.000010
SS-15-07	.368436	3.54244	1.41756	.010888
SS-15-08	.261490	1.29638	-.92384	.002329
SS-15-09	.364221	3.43948	-.43860	.001019
SS-15-10	.388089	4.03814	.77619	.003622
SS-15-11	.447716	5.69971	.35555	.001011
SS-15-12	.414786	4.75276	.20344	.000284
SS-15-13	.422316	4.96293	-.55166	.002167
SS-15-14	.447260	5.68612	-.96275	.007401
SS-15-15	.525619	8.22774	.06732	.000050
SS-09-01	.634246	12.42837	-.01462	.000003
-09-02	.330132	2.65034	.73946	.002379
-09-03	.464991	6.22539	-1.99719	.034425
-09-04	.361781	3.38043	.87665	.004015
SS-09-05	.503906	7.48245	-1.13981	.013168
SS-09-06	.415593	4.77511	1.01691	.007129
SS-09-07	.363688	3.42654	-.14839	.000116
SS-09-08	.461934	6.13090	2.81194	.067346
SS-09-09	.587090	10.50821	5.34546	.393119
SS-09-10	.427167	5.10031	-.13617	.000135
SS-09-11	.458995	6.04068	3.12226	.081978
SS-09-12	.448035	5.70923	.63173	.003198
SS-09-13	.357115	3.26860	-.98735	.004963
SS-09-14	.501512	7.40221	2.64863	.070429
SS-09-15	.408425	4.57818	.19429	.000251
SS-09-21	.442535	5.54594	-.93135	.006781
SS-09-22	.409617	4.61069	-.43961	.001294
SS-09-23	.491640	7.07532	.79791	.006142
SS-09-24	.380305	3.83873	-.49191	.001397
SS-09-25	.319570	2.42155	-.64073	.001674
SS-09-26	.353505	3.18305	-.67725	.002288
SS-09-27	.459640	6.06044	-1.10369	.010273
SS-09-28	.493204	7.12669	-1.60016	.024861
SS-09-29	.386547	3.99832	-1.79816	.019284
SS-09-30	.397228	4.27744	-2.81488	.049905

css/3: multiple regress.	Predicted and Residual Values			
Case No.	Std.Err. Pred.Val	Mahalns. Distance	Deleted Residual	Cook's Distance
SS-28-01	.831184	22.05037	.80825	.018015
SS-28-02	.456053	5.95093	1.41968	.016732
SS-28-03	.571844	9.91910	-2.06452	.055633
SS-28-04	.709351	15.79279	.68464	.009414
SS-28-05	.344076	2.96376	.26509	.000332
SS-28-06	.503832	7.47997	.28026	.000796
SS-28-07	.560658	9.49677	-1.34337	.022643
SS-28-08	.342055	2.91753	.46428	.001007
SS-28-09	.472120	6.44811	-.74642	.004957
SS-28-10	.519224	8.00499	.67553	.004911
SS-28-11	.330827	2.66565	.98818	.004266
SS-28-12	.813338	21.07185	-1.28194	.043393
SS-28-13	.481997	6.76232	1.41888	.018669
SS-28-14	.677669	14.32768	1.19635	.026236
SS-28-15	.532511	8.47089	-1.71456	.033274
SS-28-16	.352033	3.14844	-.61215	.001854
S-28-17	.714168	16.02142	.31488	.002019
S-28-18	.468088	6.32174	1.53026	.020480
SS-28-19	.472704	6.46651	.56944	.002892
SS-28-20	.480142	6.70282	1.42674	.018732
Minimum	.261490	1.29638	-2.81488	.000003
Maximum	.926825	27.65610	5.34546	.393119
Mean	.468180	6.88333	.01368	.020572
Median	.447875	5.70447	.04220	.004960


Predicted vs. Observed Values
8
7
6
5
4
3
2
1
0
-1
-2
-3
-2
-1
0
1
2
3
4
5
6
7
8
9
Predicted Values

AREAS 3 AND 5

(MINUS AREA 2 EFFECTS)

Multiple Regression Results

. Var. : LNMIREX Multiple R : .80612732 F = 9.809481
R^2: .64984126 df = 7, 37
No. of cases: 45 adjusted R^2: .58359501 p = .000001
Standard error of estimate: 1.206529903
Intercept: 145.98939354 Std.Error: 52.59859 t(37) = 2.7755 p < .00859

LNELEV β=-.3766 TOC β=-.1046 LND10 β=.43264 LND30 β=-.5656
LND60 β=-.1371 LNELDIFF β=-.3226 LNPERDIS β=-.5136

(significant β's are higlighted)

F7-alpha: .050

d - Descriptive stats o - cOvar. of weights r - pRedict dep. var.
w - regression Weights p - Partial corr. u - redUndancy
a - Analysis of variance
e - current swEEp matrix

<cr>-residual analysis <esc>-previous

Header of RAW DATA file: c:\css\data\mflbc\OVERBAN4.CSS

css/3: tiple ess.	Regression Weights					
variable	BETA	St. Err. of BETA	B	St. Err. of B	t(37)	p-level
LNELEV	-.376619	.152760	-18.9102	7.670151	-2.46543	.018447
TOC	-.104576	.123600	-.0000	.000015	-.84608	.402944
LND10	.432636	.181487	.5544	.232566	2.38384	.022376
LND30	-.565563	.347563	-1.0606	.651754	-1.62723	.112177
LND60	-.137131	.263900	-.2851	.548650	-.51963	.606416
LNELDIFF	-.322552	.128777	-1.0816	.431837	-2.50474	.016787
LNPERDIS	-.513588	.144234	-.9150	.256954	-3.56079	.001037

css/3: multiple regress.	Variables not in the Equation					
Variable	Beta in	Partial Cor.	Semipart Cor.	Tolernce	Minimum Tolernce	t(37)
EASTING	2.56501	.427431	.252929	.009723	.009723	2.83678
NORTHING	-.42756	-.388602	-.229952	.289257	.069915	-2.53050
ELEV	22.34885	.448072	.265143	.000141	.000140	3.00720
MIREX	.52084	.688022	.407131	.611019	.075438	5.68856
D10	.04135	.049997	.029585	.511977	.071404	.30036
D30	.10406	.093730	.055464	.284070	.064059	.56487
D60	-.03616	-.018675	-.011051	.093423	.070523	-.11207
CU	-.12327	-.125218	-.074097	.361308	.062202	-.75727
CC	-.10030	-.102688	-.060765	.367067	.054360	-.61940
ELEVDIFF	.29205	.144240	.085353	.085412	.073036	.87458
PERPDIST	-.11787	-.094744	-.056064	.226256	.078329	-.57104

css/3: multiple regress.	Variables not in the Equation

Variable	p-level
EASTING	.007350
NORTHING	.015775
ELEV	.004719
MIREX	.000002
D10	.765588
D30	.575572
D60	.911373
CU	.453685
CC	.539446
ELEVDIFF	.387442
PERPDIST	.571428

css/3: tiple ress.	Variables currently in the Equation						
Variable	Beta in	Partial Cor.	Semipart Cor.	Tolernce	R-square	t(38)	
LNELEV	-.376619	-.375633	-.239842	.405550	.594450	-2.46543	
TOC	-.104576	-.137769	-.082309	.619481	.380519	-.84608	
LND10	.432636	.364882	.231905	.287325	.712675	2.38384	
LND30	-.565563	-.258427	-.158299	.078342	.921658	-1.62723	
LND60	-.137131	-.085117	-.050551	.135889	.864111	-.51963	
LNELDIFF	-.322552	-.380760	-.243666	.570675	.429325	-2.50474	
LNPERDIS	-.513588	-.505195	-.346400	.454911	.545089	-3.56079	

css/3: multiple regress.	Variables currently in the Equation

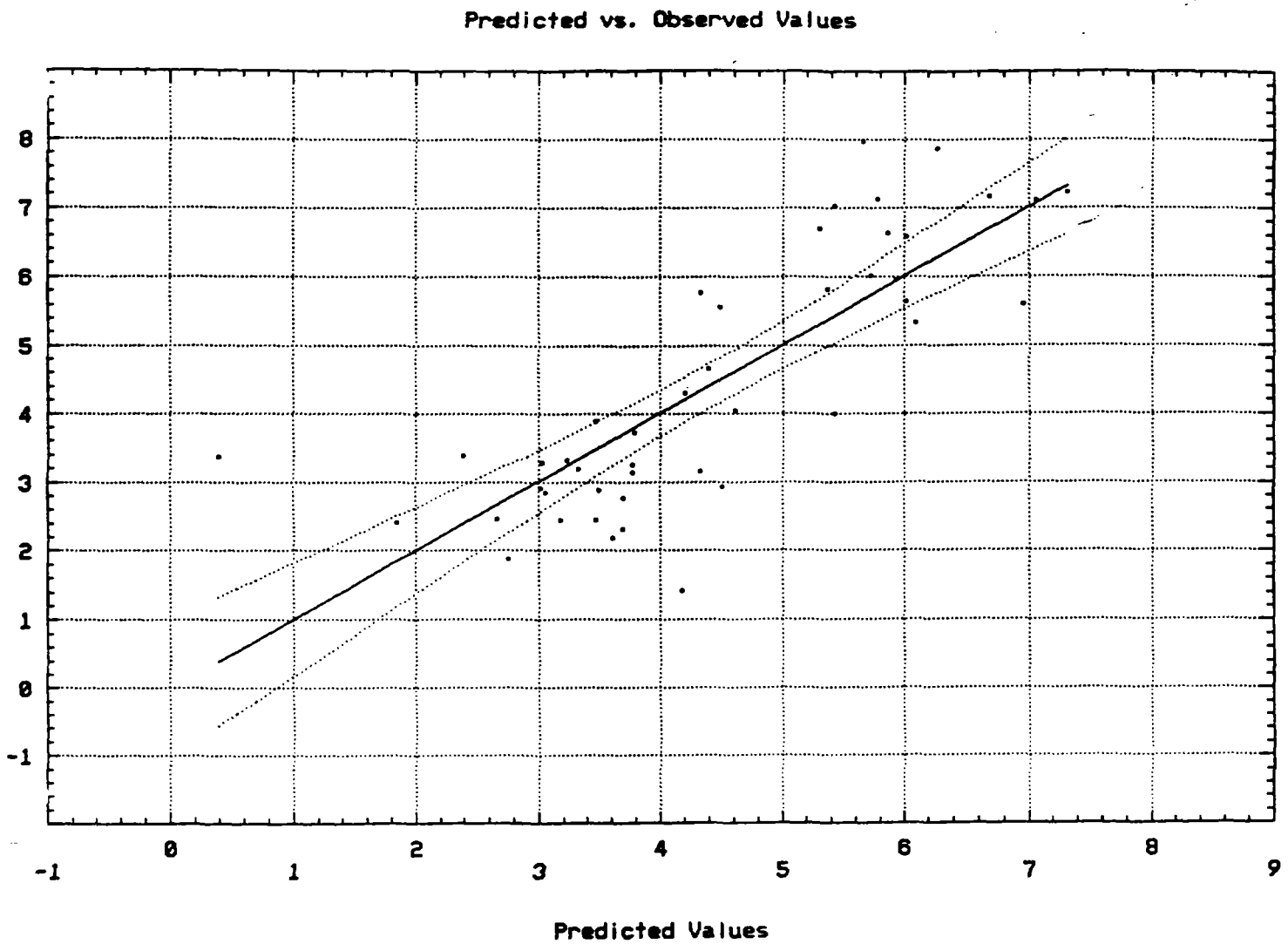
Variable	p-level
LNELEV	.018315
TOC	.402802
LND10	.022232
LND30	.111954
LND60	.606335
LNELDIFF	.016661
LNPERDIS	.001014

css/3: multiple regress.	Predicted and Residual Values				
Case No.	Observed Value	Predictd Value	Residual	Standard Pred. v.	Standard Residual
SS-15-01	3.186353	3.320520	-.13417	-.73993	-.11120
SS-15-02	3.317816	3.230413	.08740	-.79971	.07244
SS-15-03	4.046554	4.606256	-.55970	.11311	-.46389
SS-15-04	1.432701	4.175525	-2.74282	-.17266	-2.27332
SS-15-05	2.186051	3.604035	-1.41798	-.55182	-1.17526
SS-15-06	3.144152	3.777531	-.63338	-.43672	-.52496
SS-15-07	5.768321	4.329155	1.43917	-.07073	1.19281
SS-15-08	3.148453	4.324098	-1.17565	-.07409	-.97440
SS-15-09	3.250375	3.773551	-.52318	-.43936	-.43362
SS-15-10	6.008813	5.725449	.28336	.85565	.23486
SS-15-11	3.284664	3.030867	.25380	-.93210	.21035
SS-15-12	3.716008	3.788768	-.07276	-.42926	-.06030
SS-15-13	2.766319	3.699374	-.93305	-.48857	-.77334
SS-15-14	2.451005	3.472751	-1.02175	-.63893	-.84685
SS-15-15	2.459589	2.666595	-.20701	-1.17378	-.17157
SS-09-01	3.992681	5.421504	-1.42882	.65400	-1.18424
09-02	2.850707	3.053173	-.20247	-.91730	-.16781
09-03	2.322388	3.693091	-1.37070	-.49274	-1.13607
SS-09-04	3.885679	3.467989	.41769	-.64209	.34619
SS-09-05	2.879199	3.499260	-.62006	-.62134	-.51392
SS-09-06	3.374169	2.386954	.98722	-1.35931	.81823
SS-09-07	2.917771	3.025460	-.10769	-.93569	-.08926
SS-09-08	7.962067	5.652036	2.31003	.80695	1.91461
SS-09-09	3.363842	.391010	2.97283	-2.68355	2.46395
SS-09-10	4.304065	4.203882	.10018	-.15385	.08303
SS-28-01	4.653960	4.398625	.25534	-.02464	.21163
SS-28-02	7.863267	6.267208	1.59606	1.21509	1.32285
SS-28-03	5.598422	6.960869	-1.36245	1.67531	-1.12923
SS-28-04	2.415914	1.850396	.56552	-1.71530	.46871
SS-28-05	5.817111	5.372331	.44478	.62137	.36864
SS-28-06	7.215240	7.319599	-.10436	1.91331	-.08650
SS-28-07	1.871802	2.754774	-.88297	-1.11528	-.73183
SS-28-08	6.575076	6.023897	.55118	1.05366	.45683
SS-28-09	5.645447	6.017667	-.37222	1.04953	-.30851
SS-28-10	7.106606	7.055949	.05066	1.73839	.04199
SS-28-11	6.630683	5.867229	.76345	.94972	.63277
SS-28-12	5.327876	6.095730	-.76785	1.10132	-.63642
SS-28-13	7.122867	5.781674	1.34119	.89296	1.11161
SS-28-14	5.556828	4.487610	1.06922	.03439	.88619
SS-28-15	2.923162	4.508698	-1.58554	.04839	-1.31413

css/3: multiple regress.	Predicted and Residual Values				
Case No.	Observed Value	Predictd Value	Residual	Standard Pred. v.	Standard Residual
SS-28-16	5.942800	5.929487	.01331	.99102	.01103
SS-28-17	2.451005	3.176452	-.72545	-.83551	-.60127
SS-28-18	6.688354	5.307862	1.38049	.57860	1.14418
SS-28-19	7.162397	6.693348	.46905	1.49782	.38876
SS-28-20	7.021084	5.421063	1.60002	.65370	1.32613
Minimum	1.432701	.391010	-2.74282	-2.68355	-2.27332
Maximum	7.962067	7.319599	2.97283	1.91331	2.46395
Mean	4.435770	4.435771	-.00000	.00000	-.00000
Median	3.885679	4.324098	-.07276	-.07409	-.06030

css/3: multiple regress.	Predicted and Residual Values			
Case No.	Std.Err. Pred.Val	Mahalns. Distance	Deleted Residual	Cook's Distance
SS-15-01	.416823	4.27369	-.15235	.000238
SS-15-02	.359783	2.93476	.09593	.000070
SS-15-03	.551353	8.21053	-.70743	.008974
SS-15-04	.315390	2.02880	-2.94399	.050854
SS-15-05	.358425	2.90528	-1.55524	.018329
SS-15-06	.894324	23.19720	-1.40573	.093229
SS-15-07	.340769	2.53214	1.56392	.016754
SS-15-08	.250451	.91815	-1.22858	.005585
SS-15-09	.340195	2.52033	-.56836	.002205
SS-15-10	.426798	4.52804	.32389	.001127
SS-15-11	.431112	4.63991	.29094	.000928
SS-15-12	.393303	3.69775	-.08141	.000060
SS-15-13	.439197	4.85257	-1.07558	.013163
SS-15-14	.420018	4.35450	-1.16264	.014067
SS-15-15	.496636	6.47732	-.24923	.000904
SS-09-01	.783146	17.56017	-2.46909	.220556
09-02	.443057	4.95550	-.23402	.000634
-09-03	.472430	5.76830	-1.61892	.034505
-09-04	.414462	4.21436	.47357	.002272
SS-09-05	.506896	6.78852	-.75296	.008593
SS-09-06	.440207	4.87943	1.13881	.014824
SS-09-07	.430702	4.62923	-.12342	.000167
SS-09-08	.569765	8.83444	2.97303	.169257
SS-09-09	.649886	11.78809	4.18787	.436937
SS-09-10	.508685	6.84342	.12184	.000227
SS-28-01	.793460	18.05168	.44992	.007518
SS-28-02	.436597	4.78376	1.83654	.037925
SS-28-03	.559702	8.49091	-1.73604	.055692
SS-28-04	.692894	13.53365	.84381	.020164
SS-28-05	.319140	2.10071	.47824	.001374
SS-28-06	.507120	6.79537	-.12675	.000244
SS-28-07	.553945	8.29714	-1.11881	.022657
SS-28-08	.327677	2.26762	.59507	.002243
SS-28-09	.453397	5.23570	-.43343	.002278
SS-28-10	.524801	7.34687	.06248	.000063
SS-28-11	.309543	1.91835	.81725	.003775
SS-28-12	.782852	17.54628	-1.32618	.063580
SS-28-13	.460418	5.42961	1.56979	.030814
SS-28-14	.650946	11.82976	1.50824	.056857
SS-28-15	.499555	6.56522	-1.91359	.053904

css/3: multiple regress.	Predicted and Residual Values			
Case No.	Std.Err. Pred.Val	Mahalns. Distance	Deleted Residual	Cook's Distance
SS-28-16	.352896	2.78640	.01456	.000002
SS-28-17	.714308	14.44448	-1.11694	.037548
SS-28-18	.455031	5.28054	1.60941	.031635
SS-28-19	.461638	5.46361	.54949	.003796
SS-28-20	.462938	5.49994	1.87624	.044502
Minimum	.250451	.91815	-2.94399	.000002
Maximum	.894324	23.19720	4.18787	.436937
Mean	.488282	6.84445	-.01600	.035356
Median	.455031	5.28054	-.08141	.008974


Predicted vs. Observed Values
8
7
6
5
4
3
2
1
0
-1
-1
0
1
2
3
4
5
6
7
8
9
Predicted Values

AREAS 2 AND 5

(MINUS AREA 3 EFFECTS)

Multiple Regression Results

). Var. : LNMIREX	Multiple R :	.89614950	F = 15.73061
	R^2:	.80308393	df = 7, 27
No. of cases: 35	adjusted R^2:	.75203161	p = .000000
Standard error of estimate:		.957388296	
Intercept: 388.47784257	Std.Error:	93.48880	t(27) = 4.1553 p < .00029

LNELEV ß=-.5691	TOC ß=-.2149	LN_D10 ß=.24505	LN_D30 ß=-.3996	
LN_D60 ß=-.1989	LN_ELDIF ß=-.3004	LN_PERP ß=-.2834		

(significant ß's are higlighted)

F7-alpha: .050

d - Descriptive stats	o - cOvar. of weights	r - pRedict dep. var.
w - regression Weights	p - Partial corr.	u - redUndancy
a - Analysis of variance		
e - current swEEp matrix		

<cr>-residual analysis <esc>-previous

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css/3: tiple ;ress.	Regression Weights					
variable	BETA	St. Err. of BETA	B	St. Err. of B	t(27)	p-level
LNELEV	-.569110	.143331	-54.1202	13.63023	-3.97060	.000478
TOC	-.214947	.107190	-.0000	.00001	-2.00529	.055050
LN_D10	.245051	.185236	.3042	.22996	1.32291	.196959
LN_D30	-.399620	.336112	-.7760	.65264	-1.18895	.244812
LN_D60	-.198862	.233960	-.4190	.49299	-.84998	.402810
LN_ELDIF	-.300375	.106298	-1.3524	.47859	-2.82578	.008767
LN_PERP	-.283437	.163509	-.5181	.29890	-1.73347	.094420

css/3: multiple regress.	Variables not in the Equation					
Variable	Beta in	Partial Cor.	Semipart Cor.	Tolernce	Minimum Tolernce	t(27)
EASTING	.56850	.053754	.023853	.001760	.001760	.274487
NORTHING	-.42492	-.059836	-.026552	.003905	.003905	-.305654
ELEV	14.33533	.055814	.024768	.000003	.000003	.285041
MIREX	.37115	.498680	.221291	.355498	.062206	2.933575
D10	.16285	.247437	.109801	.454596	.056257	1.302180
D30	.13291	.156524	.069458	.273088	.051858	.808081
D60	-.18118	-.118123	-.052417	.083698	.059568	-.606556
CU	.01486	.018857	.008368	.316917	.058378	.096168
CC	.04387	.055829	.024774	.318844	.053851	.285119
ELEVDIFF	-.22087	-.117680	-.052221	.055901	.055901	-.604250
PERPDIST	-.11000	-.107779	-.047827	.189037	.063717	-.552787

css/3: multiple regress.	Variables not in the Equation	
Variable	p-level	
EASTING	.785799	
NORTHING	.762213	
ELEV	.777788	
MIREX	.006757	
D10	.203854	
D30	.426107	
D60	.549213	
CU	.924097	
CC	.777729	
ELEVDIFF	.550722	
PERPDIST	.584958	

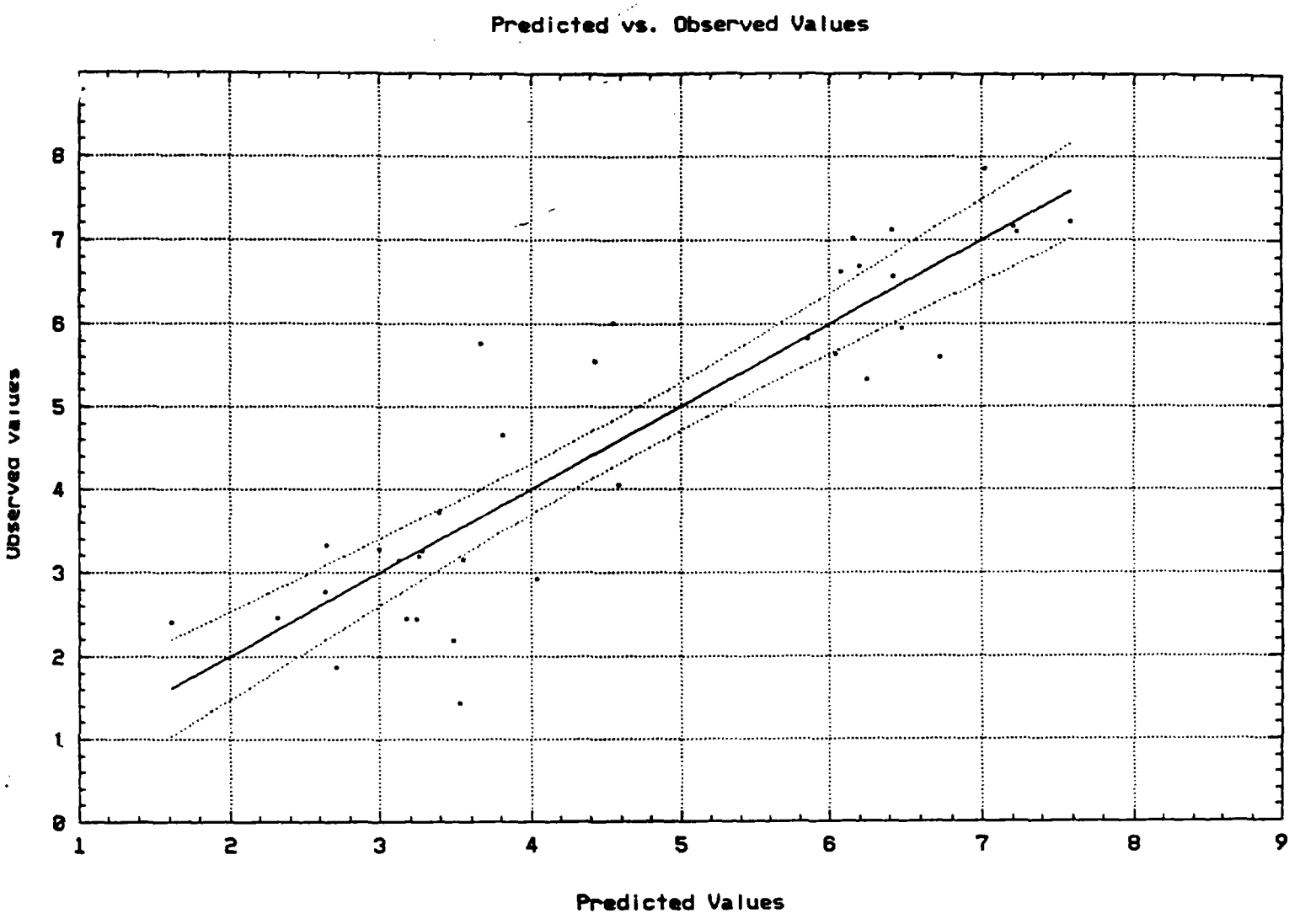
css/3: tiple ,ress.	Variables currently in the Equation						
Variable	Beta in	Partial Cor.	Semipart Cor.	Tolernce	R-square	t(28)	
LNELEV	-.569110	-.607168	-.339090	.355008	.644992	-3.97060	
TOC	-.214947	-.360038	-.171252	.634764	.365236	-2.00529	
LN_D10	.245051	.246724	.112977	.212553	.787447	1.32291	
LN_D30	-.399620	-.223049	-.101536	.064558	.935442	-1.18895	
LN_D60	-.198862	-.161433	-.072589	.133239	.866761	-.84998	
LN_ELDIF	-.300375	-.477746	-.241322	.645456	.354545	-2.82578	
LN_PERP	-.283437	-.316461	-.148039	.272795	.727206	-1.73347	

css/3: multiple regress.	Variables currently in the Equation

Variable	p-level
LNELEV	.000455
TOC	.054684
LN_D10	.196567
LN_D30	.244446
LN_D60	.402545
LN_ELDIF	.008603
LN_PERP	.094013

css/3: multiple regress.	Predicted and Residual Values				
Case No.	Observed Value	Predictd Value	Residual	Standard Pred. v.	Standard Residual
SS-15-01	3.186353	3.257192	-.07084	-.79192	-.07399
SS-15-02	3.317816	2.652911	.66491	-1.14265	.69450
SS-15-03	4.046554	4.586568	-.54001	-.02035	-.56405
SS-15-04	1.432701	3.526782	-2.09408	-.63545	-2.18729
SS-15-05	2.186051	3.484350	-1.29830	-.66008	-1.35608
SS-15-06	3.144152	3.131637	.01252	-.86480	.01307
SS-15-07	5.768321	3.664975	2.10335	-.55525	2.19696
SS-15-08	3.148453	3.548526	-.40007	-.62283	-.41788
SS-15-09	3.250375	3.279517	-.02914	-.77897	-.03044
SS-15-10	6.008813	4.554002	1.45481	-.03925	1.51956
SS-15-11	3.284664	2.994614	.29005	-.94433	.30296
SS-15-12	3.716008	3.388997	.32701	-.71542	.34157
SS-15-13	2.766319	2.640771	.12555	-1.14970	.13114
SS-15-14	2.451005	3.244903	-.79390	-.79906	-.82923
SS-15-15	2.459589	2.321383	.13821	-1.33507	.14436
SS-28-01	4.653960	3.810784	.84318	-.47062	.88070
28-02	7.863267	7.018299	.84497	1.39103	.88258
-28-03	5.598422	6.727816	-1.12939	1.22244	-1.17966
SS-28-04	2.415914	1.619865	.79605	-1.74223	.83148
SS-28-05	5.817111	5.854903	-.03779	.71579	-.03947
SS-28-06	7.215240	7.584521	-.36928	1.71967	-.38572
SS-28-07	1.871802	2.717112	-.84531	-1.10539	-.88293
SS-28-08	6.575076	6.429209	.14587	1.04912	.15236
SS-28-09	5.645447	6.043434	-.39799	.82522	-.41570
SS-28-10	7.106606	7.229002	-.12240	1.51333	-.12784
SS-28-11	6.630683	6.077634	.55305	.84507	.57766
SS-28-12	5.327876	6.252569	-.92469	.94660	-.96585
SS-28-13	7.122867	6.415249	.70762	1.04102	.73911
SS-28-14	5.556828	4.429013	1.12782	-.11180	1.17801
SS-28-15	2.923162	4.039553	-1.11639	-.33784	-1.16608
SS-28-16	5.942800	6.485423	-.54262	1.08175	-.56677
SS-28-17	2.451005	3.180604	-.72960	-.83638	-.76207
SS-28-18	6.688354	6.200657	.48770	.91647	.50940
SS-28-19	7.162397	7.210851	-.04845	1.50279	-.05061
SS-28-20	7.021084	6.153513	.86757	.88911	.90619
Minimum	1.432701	1.619865	-2.09408	-1.74223	-2.18729
Maximum	7.863267	7.584521	2.10335	1.71967	2.19696
Mean	4.621631	4.621633	-.00000	.00000	-.00000
Median	4.653960	4.039553	-.02914	-.33784	-.03044

css/3: multiple regress.	Predicted and Residual Values			
Case No.	Std.Err. Pred.Val	Mahalns. Distance	Deleted Residual	Cook's Distance
SS-15-01	.396942	4.87318	-.08554	.000172
SS-15-02	.336135	3.21969	.75839	.009669
SS-15-03	.595798	12.19599	-.88133	.041024
SS-15-04	.303761	2.45126	-2.32848	.074433
SS-15-05	.338594	3.28123	-1.48390	.037560
SS-15-06	.748524	19.81185	.03220	.000086
SS-15-07	.358179	3.78744	2.44566	.114169
SS-15-08	.303828	2.45277	-.44488	.002718
SS-15-09	.299060	2.34614	-.03229	.000014
SS-15-10	.654620	14.92434	2.73216	.475935
SS-15-11	.389933	4.66861	.34773	.002735
SS-15-12	.340412	3.32703	.37434	.002416
SS-15-13	.466677	7.10717	.16468	.000879
SS-15-14	.361934	3.88772	-.92628	.016722
SS-15-15	.430989	5.91884	.17333	.000830
SS-28-01	.674444	15.90167	1.67386	.189621
28-02	.388128	4.61653	1.01115	.022916
28-03	.519898	9.05484	-1.60173	.103174
SS-28-04	.577684	11.40751	1.25182	.077808
SS-28-05	.288219	2.10998	-.04156	.000021
SS-28-06	.450305	6.55028	-.47418	.006784
SS-28-07	.471569	7.27741	-1.11609	.041214
SS-28-08	.288009	2.10549	.16038	.000317
SS-28-09	.384355	4.50842	-.47446	.004948
SS-28-10	.455343	6.71952	-.15818	.000772
SS-28-11	.273284	1.79891	.60211	.004028
SS-28-12	.643370	14.38266	-1.68614	.175091
SS-28-13	.442535	6.29294	.89988	.023595
SS-28-14	.524764	9.24339	1.61217	.106489
SS-28-15	.419143	5.54528	-1.38110	.049858
SS-28-16	.336760	3.23529	-.61924	.006470
SS-28-17	.701919	17.30440	-1.57759	.182441
SS-28-18	.437293	6.12186	.61627	.010805
SS-28-19	.388980	4.64109	-.05803	.000076
SS-28-20	.398842	4.92928	1.04976	.026082
Minimum	.273284	1.79891	-2.32848	.000014
Maximum	.748524	19.81185	2.73216	.475935
Mean	.439721	6.80000	.01528	.051768
Median	.398842	4.92928	-.03229	.010805


Predicted vs. Observed Values
Observed Values
Predicted Values
0
1
2
3
4
5
6
7
8
9

AREAS 2, 3, AND 5

ALL DATA
(OLD AND NEW)

```
ÕááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááÇ
'  "ultiple Regression Results                                                   °
)  áááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááÇ
!  p. Var. : LNMIREX    Multiple R :  .82539941     F = 11.29870                °
'                               R»:  .68128419    df =  7, 37                  °
' No. of cases: 45      adjusted R»:  .62098660     p =  .000000                °
'        Standard error of estimate:  1.387404273                               °
' Intercept: 291.39708887  Std.Error: 48.35999  t(   37) = 6.0256  p <  .00000 °
ÌááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááÇ
°    LNELEV Ã=-.8491      TOC Ã=-.2248    LN_D10 Ã=.10179    LN_D30 Ã=-.1194   °
°    LN_D60 Ã=-.1553  LN_ELDIF Ã=-.6349   LN_PERP Ã=-.0350                     °
°                                                                               °
°                                                                               °
°                                                                               °
°                                                                               °
° (significant Ã's are higlighted)                                              °
Ûáááááááááááááááááááááááááááááááááááááááááááááááááááá F7-alpha: .050 áááááááÇ
  d - Descriptive stats      o - cOvar. of weights     r - pRedict dep. var.    °
  w - regression Weights     p - Partial corr.         u - redUndancy           °
  a - Analysis of variance                                                      °
  e - current swEEp matrix                                                      °
ááááááááááááááááááááááááááááááááááááá <cr>-residual analysis   <esc>-previous ááÌ
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```

css/3: multiple regress.	Regression Weights					
variable	BETA	St. Err. of BETA	B	St. Err. of B	t(37)	p-level
LNELEV	-.849097	.148063	-40.2664	7.021551	-5.73469	.000001
TOC	-.224783	.136846	-.0000	.000021	-1.64260	.108938
LN_D10	.101790	.207740	.1698	.346450	.48999	.627036
LN_D30	-.119414	.404090	-.2653	.897698	-.29551	.769255
LN_D60	-.155262	.281850	-.3920	.711635	-.55087	.585035
LN_ELDIF	-.634880	.137773	-2.1709	.471100	-4.60814	.000047
LN_PERP	-.034998	.134521	-.0868	.333498	-.26017	.796179

css/3: multiple regress.	Variables not in the Equation					
Variable	Beta in	Partial Cor.	Semipart Cor.	Tolernce	Minimum Tolernce	t(37)
EASTING	5.47021	.281710	.159039	.000845	.000845	1.761606
NORTHING	-1.18019	-.082668	-.046670	.001564	.001564	-.497712
ELEV	26.81653	.125546	.070877	.000007	.000007	.759282
MIREX	.38075	.573231	.323617	.722425	.052589	4.197478
D10	.05241	.062473	.035269	.452820	.050345	.375569
D30	.14599	.129437	.073074	.250546	.043714	.783213
D60	.18282	.096312	.054373	.088449	.052539	.580569
CU	-.19491	-.144195	-.081405	.174435	.052246	-.874304
CC	.04239	.030761	.017366	.167814	.014959	.184653
ELEVDIFF	.53530	.341942	.193043	.130051	.049477	2.183254
PERPDIST	.38960	.255966	.144505	.137573	.052591	1.588723

css/3: multiple regress.	Variables not in the Equation	
Variable	p-level	
EASTING	.086398	
NORTHING	.621633	
ELEV	.452495	
MIREX	.000162	
D10	.709382	
D30	.438487	
D60	.565051	
CU	.387593	
CC	.854510	
ELEVDIFF	.035436	
PERPDIST	.120633	

ɜs/3: ɹltiple egress.	Variables currently in the Equation						
Variable	Beta in	Partial Cor.	Semipart Cor.	Tolernce	R-square	t(38)	
LNELEV	-.849097	-.685982	-.532244	.392923	.607077	-5.73469	
TOC	-.224784	-.260704	-.152452	.459980	.540021	-1.64260	
LN_D10	.101790	.080293	.045476	.199600	.800400	.48999	
LN_D30	-.119414	-.048525	-.027427	.052753	.947247	-.29551	
LN_D60	-.155262	-.090193	-.051127	.108434	.891566	-.55087	
LN_ELDIF	-.634880	-.603857	-.427688	.453807	.546193	-4.60815	
LN_PERP	-.034998	-.042732	-.024146	.476017	.523983	-.26017	

css/3: multiple regress.	Variables currently in the Equation

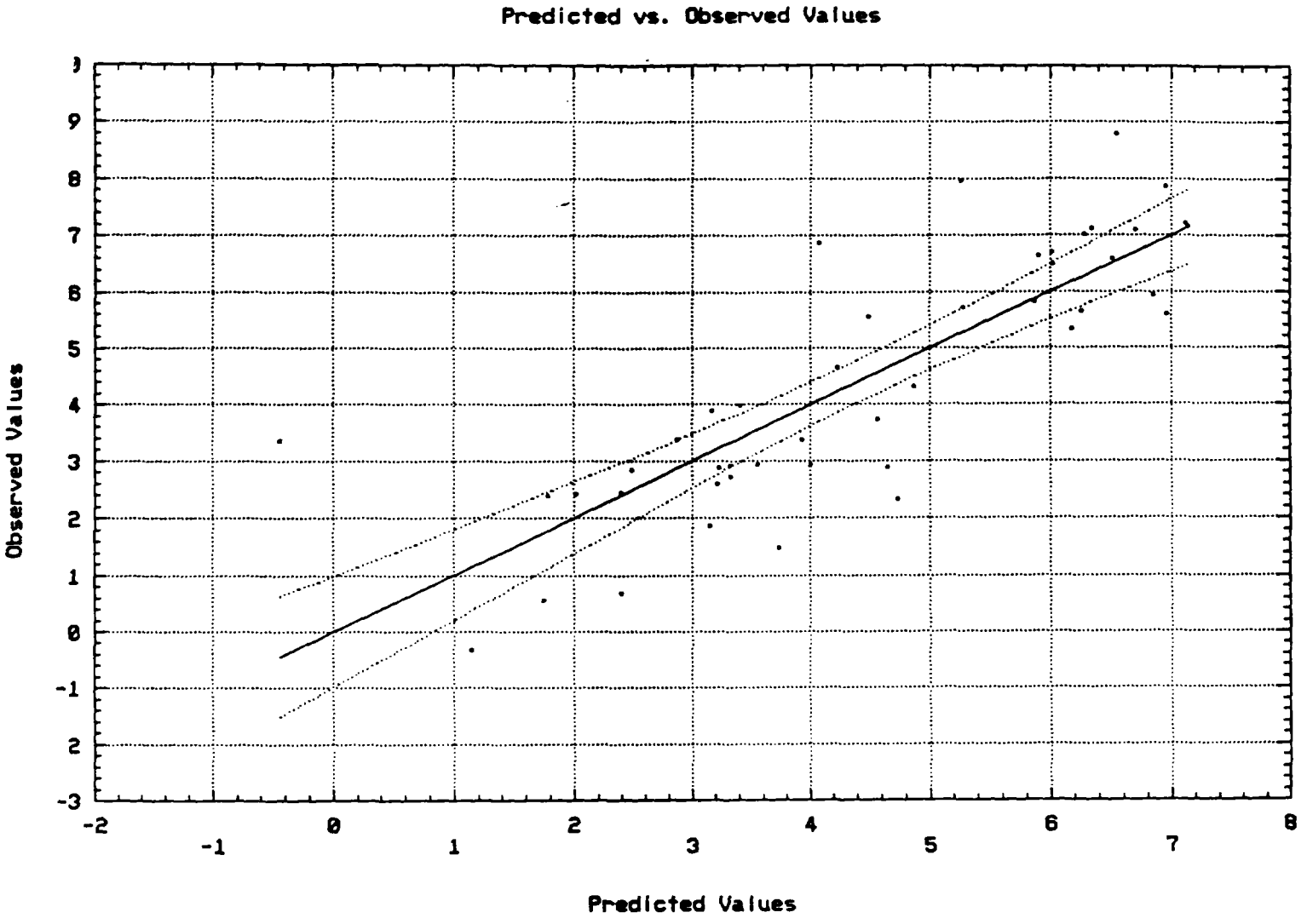
Variable	p-level
LNELEV	.000001
TOC	.108716
LN_D10	.626961
LN_D30	.769211
LN_D60	.584948
LN_ELDIF	.000045
LN_PERP	.796141

css/3: multiple regress.	Predicted and Residual Values				
Case No.	Observed Value	Predictd Value	Residual	Standard Pred. v.	Standard Residual
SS-09-01	3.992681	3.409865	.58282	-.56010	.42008
SS-09-02	2.850707	2.488270	.36244	-1.05555	.26123
SS-09-03	2.322388	4.741520	-2.41913	.15580	-1.74364
SS-09-04	3.885679	3.171098	.71458	-.68846	.51505
SS-09-05	2.879199	4.651845	-1.77265	.10759	-1.27767
SS-09-06	3.374169	2.869965	.50420	-.85035	.36342
SS-09-07	2.917771	3.327020	-.40925	-.60464	-.29498
SS-09-08	7.962067	5.259391	2.70268	.43421	1.94801
SS-09-09	3.363842	-.442510	3.80635	-2.63114	2.74351
SS-09-10	4.304065	4.872314	-.56825	.22611	-.40958
SS-09-11	6.864848	4.078897	2.78595	-.20043	2.00803
SS-09-12	6.484635	6.024475	.46016	.84552	.33167
SS-09-13	3.740048	4.571757	-.83171	.06453	-.59947
SS-09-14	8.802372	6.541960	2.26041	1.12372	1.62924
SS-09-15	5.707110	5.282179	.42493	.44646	.30628
·09-21	.553885	1.746679	-1.19279	-1.45423	-.85973
09-22	2.873565	3.230640	-.35708	-.65645	-.25737
›s-09-23	2.379546	1.780451	.59910	-1.43608	.43181
SS-09-24	2.587764	3.215439	-.62768	-.66463	-.45241
SS-09-25	3.380995	3.933685	-.55269	-.27850	-.39836
SS-09-26	2.721295	3.326552	-.60526	-.60489	-.43625
SS-09-27	2.944439	3.555275	-.61084	-.48193	-.44027
SS-09-28	-.329894	1.147998	-1.47789	-1.77608	-1.06522
SS-09-29	.688135	2.400842	-1.71271	-1.10255	-1.23447
SS-09-30	1.486140	3.741289	-2.25515	-.38193	-1.62545
SS-28-01	4.653960	4.235406	.41855	-.11629	.30168
SS-28-02	7.863267	6.955398	.90787	1.34598	.65437
SS-28-03	5.598422	6.969701	-1.37128	1.35367	-.98838
SS-28-04	2.415914	2.018091	.39782	-1.30832	.28674
SS-28-05	5.817111	5.875440	-.05833	.76539	-.04204
SS-28-06	7.215240	7.121630	.09361	1.43535	.06747
SS-28-07	1.871802	3.147912	-1.27611	-.70093	-.91978
SS-28-08	6.575076	6.507802	.06727	1.10535	.04849
SS-28-09	5.645447	6.258071	-.61262	.97110	-.44156
SS-28-10	7.106606	6.703821	.40279	1.21073	.29032
SS-28-11	6.630683	5.901381	.72930	.77934	.52566
SS-28-12	5.327876	6.182127	-.85425	.93027	-.61572
SS-28-13	7.122867	6.345268	.77760	1.01797	.56047
SS-28-14	5.556828	4.496107	1.06072	.02386	.76454
SS-28-15	2.923162	4.006324	-1.08316	-.23944	-.78071

css/3: multiple regress.	Predicted and Residual Values				
Case No.	Observed Value	Predictd Value	Residual	Standard Pred. v.	Standard Residual
SS-28-16	5.942800	6.845693	-.90289	1.28700	-.65078
SS-28-17	2.451005	2.392980	.05802	-1.10678	.04182
SS-28-18	6.688354	6.016831	.67152	.84141	.48401
SS-28-19	7.162397	7.138268	.02413	1.44429	.01739
SS-28-20	7.021084	6.282467	.73862	.98421	.53237
Minimum	-.329894	-.442510	-2.41913	-2.63114	-1.74364
Maximum	8.802372	7.138268	3.80635	1.44429	2.74351
Mean	4.451719	4.451725	-.00001	.00000	-.00000
Median	3.992681	4.496107	.05802	.02386	.04182

css/3: multiple regress.	Predicted and Residual Values			
Case No.	Std.Err. Pred.Val	Mahalns. Distance	Deleted Residual	Cook's Distance
SS-09-01	.756280	12.09633	.82920	.013267
SS-09-02	.410636	2.87665	.39723	.000898
SS-09-03	.599204	7.22943	-2.97383	.107122
SS-09-04	.412933	2.91989	.78403	.003536
SS-09-05	.648571	8.63749	-2.26835	.073018
SS-09-06	.485876	4.41855	.57469	.002630
SS-09-07	.407944	2.82628	-.44798	.001127
SS-09-08	.566937	6.36933	3.24443	.114142
SS-09-09	.746190	11.74979	5.35550	.538761
SS-09-10	.521336	5.23495	-.66168	.004014
SS-09-11	.524965	5.32175	3.25147	.098292
SS-09-12	.506098	4.87707	.53079	.002435
SS-09-13	.404401	2.76050	-.90893	.004558
SS-09-14	.570649	6.46585	2.72068	.081319
SS-09-15	.457131	3.79891	.47668	.001602
[illegible]-09-21	.555267	6.06997	-1.42029	.020982
-09-22	.464638	3.95709	-.40218	.001178
-09-23	.570220	6.45466	.72086	.005700
SS-09-24	.436042	3.36836	-.69647	.003111
SS-09-25	.358056	1.95277	-.59213	.001516
SS-09-26	.409912	2.86308	-.66314	.002493
SS-09-27	.536607	5.60426	-.71829	.005012
SS-09-28	.592677	7.05161	-1.80779	.038728
SS-09-29	.425376	3.15833	-1.89041	.021815
SS-09-30	.460555	3.87074	-2.53443	.045964
SS-28-01	.954594	19.85196	.79483	.019421
SS-28-02	.594260	7.09457	1.11185	.014728
SS-28-03	.659883	8.97583	-1.77218	.046137
SS-28-04	.800918	13.68522	.59666	.007704
SS-28-05	.406510	2.79959	-.06381	.000023
SS-28-06	.584416	6.82934	.11380	.000149
SS-28-07	.596905	7.16658	-1.56597	.029476
SS-28-08	.423919	3.13006	.07420	.000033
SS-28-09	.545628	5.82742	-.72471	.005275
SS-28-10	.579862	6.70815	.48804	.002702
SS-28-11	.408682	2.84006	.79860	.003594
SS-28-12	.921320	18.42517	-1.52811	.066870
SS-28-13	.750603	11.90077	1.09938	.022973
SS-28-14	.802771	13.75313	1.59457	.055280
SS-28-15	.647515	8.60621	-1.38480	.027125

css/3: multiple regress.	Predicted and Residual Values			
Case No.	Std.Err. Pred.Val	Mahalns. Distance	Deleted Residual	Cook's Distance
SS-28-16	.406659	2.80237	-.98775	.005443
SS-28-17	.770104	12.57866	.08386	.000141
SS-28-18	.600157	7.25557	.82611	.008293
SS-28-19	.641075	8.41651	.03068	.000013
SS-28-20	.606091	7.41919	.91282	.010326
Minimum	.358056	1.95277	-2.97383	.000013
Maximum	.954594	19.85196	5.35550	.538761
Mean	.567342	6.84444	.03106	.033754
Median	.566937	6.36933	.07420	.005700


Predicted vs. Observed Values
Observed Values
Predicted Values
9
8
7
6
5
4
3
2
1
0
-1
2
-3
-2
-1
0
1
2
3
4
5
6
7
8

APPENDIX 6

VARIOGRAM ANALYSIS SUPPORTING DOCUMENTS

AREA 2

VARIOGRAM ANALYSIS
(OMNIDIRECTIONAL)

OPTIONS

Variable LN (MIREX)
Minimum : -.330
Maximum : 8.80

Pair File : a2ss.pcf
Min. Distance : 30.7
Max. Distance : .117E+04

Direction

Direction : .000
Tolerance : 90.000
Max Bandwidth: MAX

Lag Spacing

Minimum : .000
Maximum : 1172.291
Increment : 200.000

Lag	Distance	Lag	Distance
1	200.000	13	
2	400.000	14	
3	600.000	15	
4	800.000	16	
5	1000.000	17	
6	1200.000	18	
7		19	
8		20	
9		21	
10		22	
11		23	
12		24	

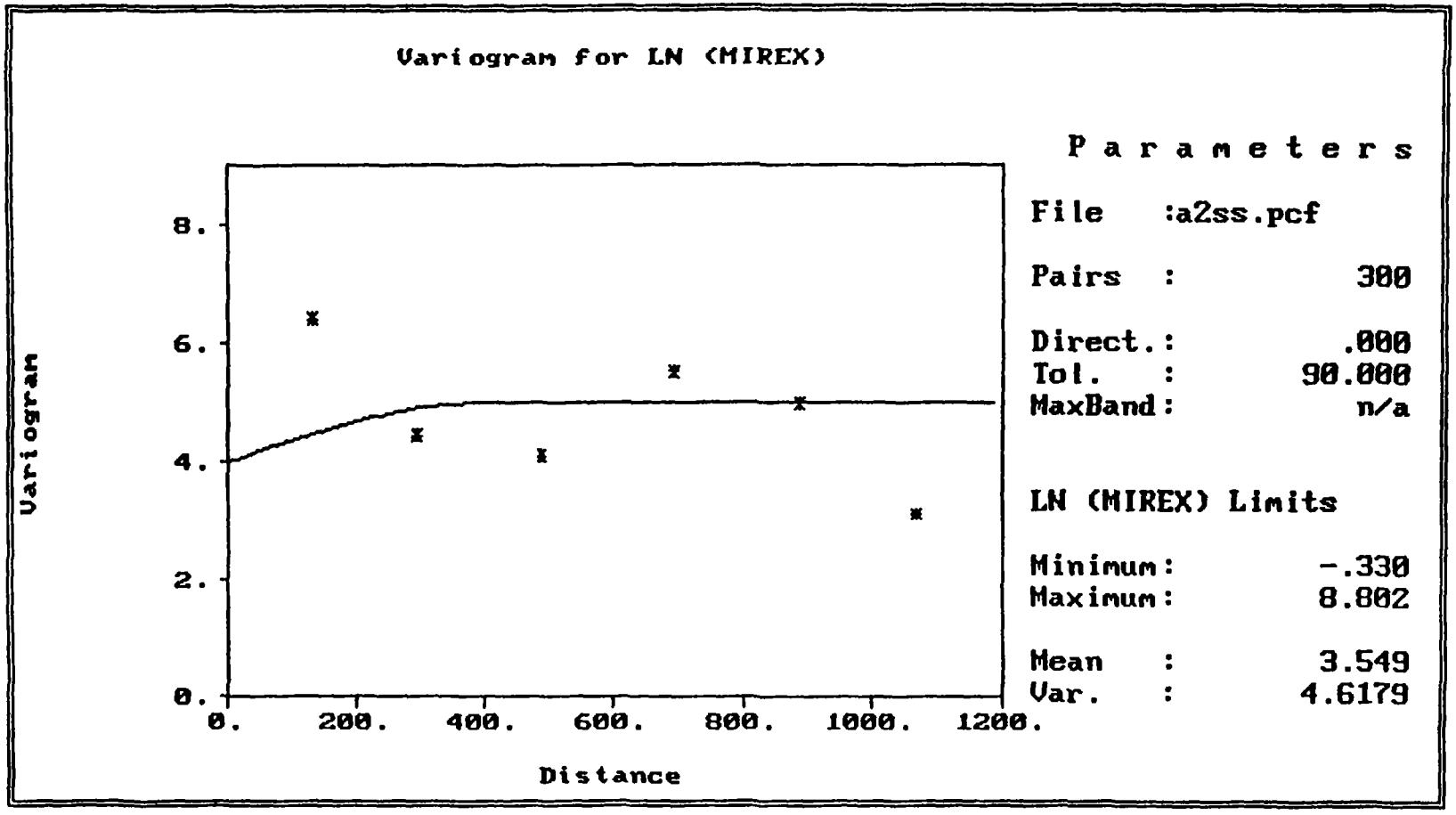
Direction New Lags Change Lags Post Plot Execute Quit
Specify pair orientation (selection) criteria

R E S U L T S

Variable: LN (MIREX)		Direction :	.000
Minimum : -.330	Estimator : Variogram	Tolerance :	90.000
Maximum : 8.802	Total Pairs : 300	BandWidth :	n/a

	Pairs	Avg Distance	Estimate		Pairs	Avg Distance	Estimate
1	43	131.930	6.412	13			
2	93	295.981	4.436	14			
3	88	488.823	4.099	15			
4	47	692.600	5.541	16			
5	23	888.580	4.997	17			
6	6	1067.755	3.115	18			
7				19			
8				20			
9				21			
10				22			
11				23			
12				24			

Type Plot Box Plot Lag Results Model Quit
Plot the selected estimator vs. average distance


Variogram for LN (MIREX)
Variogram
8.
6.
4.
2.
0.
0.
200.
400.
600.
800.
1000.
1200.
Distance
Parameters
File :a2ss.pcf
Pairs : 300
Direct.: .000
Tol. : 90.000
MaxBand: n/a
LN (MIREX) Limits
Minimum: -.330
Maximum: 8.802
Mean : 3.549
Var. : 4.6179

M O D E L

	Pairs	Avg Distance	Value
1	43	131.930	6.412
	93	295.981	4.436
	88	488.823	4.099
	47	692.600	5.541
5	23	888.580	4.997
6	6	1067.755	3.115
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			

	Pairs	Avg Distance	Value
18			
19			
20			
21			
22			
23			
24			

Model

Nugget : 4.000

Type	Sill	Range
Spherical	1.000	400.000

Model Plot Options Quit
Plot the variogram and Model

O P T I O N S

Variable :TOC
Minimum : .130E+05
imum : .510E+05

Pair File : a2ss.pcf
Min. Distance : 30.7
Max. Distance : .117E+04

Direction

Direction : .000
Tolerance : 90.000
Max Bandwidth: MAX

Lag Spacing

Minimum : .000
Maximum : 1172.291
Increment : 200.000

Lag	Distance	Lag	Distance
1	200.000	13	
2	400.000	14	
3	600.000	15	
4	800.000	16	
5	1000.000	17	
6	1200.000	18	
7		19	
8		20	
9		21	
10		22	
11		23	
12		24	

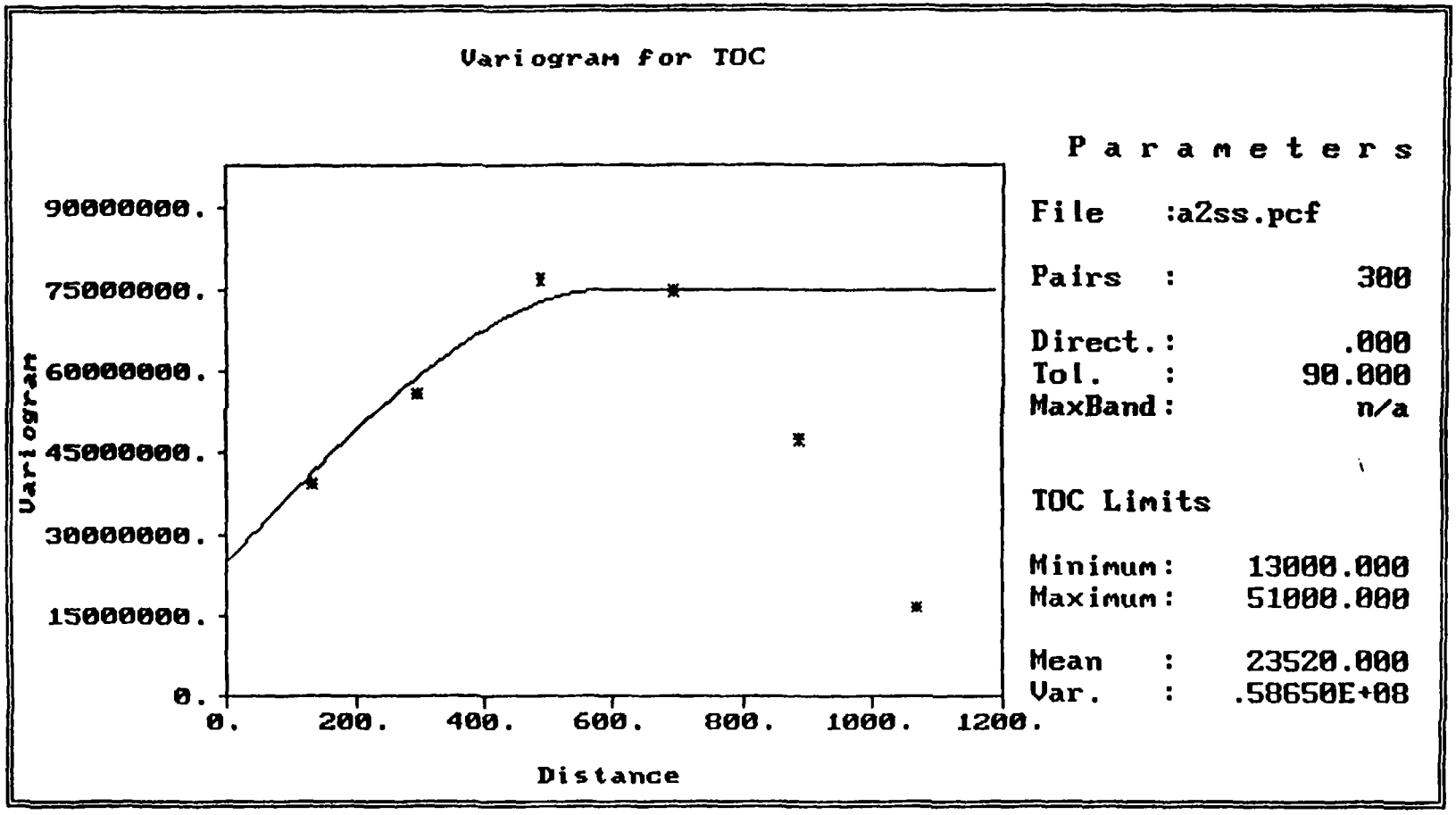
Direction New Lags Change Lags Post Plot Execute Quit
Specify pair orientation (selection) criteria

R E S U L T S

Variable: TOC			Direction : .000
Minimum : 13000.000	Estimator : Variogram		Tolerance : 90.000
Maximum : 51000.000	Total Pairs : 300		BandWidth : n/a

	Pairs	Avg Distance	Estimate		Pairs	Avg Distance	Estimate
1	43	131.930	39244180.000	13			
2	93	295.981	55892460.000	14			
3	88	488.823	76750000.000	15			
4	47	692.600	74446780.000	16			
5	23	888.580	47391290.000	17			
6	6	1067.755	16583330.000	18			
7				19			
8				20			
9				21			
10				22			
11				23			
12				24			

Type Plot Box Plot Lag Results Model Quit
Plot the selected estimator vs. average distance


Variogram for TOC
Variogram
90000000.
75000000.
60000000.
45000000.
30000000.
15000000.
0.
0.
200.
400.
600.
800.
1000.
1200.
Distance
Parameters
File :a2ss.pcf
Pairs : 300
Direct.: .000
Tol. : 90.000
MaxBand: n/a
TOC Limits
Minimum: 13000.000
Maximum: 51000.000
Mean : 23520.000
Var. : .58650E+08

M O D E L

	Pairs	Avg Distance	Value
1	43	131.930	39244180.000
	93	295.981	55892460.000
	88	488.823	76750000.000
	47	692.600	74446780.000
5	23	888.580	47391290.000
6	6	1067.755	16583330.000
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			

	Pairs	Avg Distance	Value
18			
19			
20			
21			
22			
23			
24			

Model

Nugget : 25000000.000

Type	Sill	Range
Spherical	50000000.000	600.000

Model Plot Options Quit
Plot the variogram and Model

AREA 3

VARIOGRAM ANALYSIS (OMNIDIRECTIONAL)

O P T I O N S

Variable LN (MIREX)
Minimum : 1.43
Maximum : 6.01

Pair File : a3ss.pcf
Min. Distance : 31.9
Max. Distance : .194E+04

Direction

Direction : .000
Tolerance : 90.000
Max Bandwidth: MAX

Lag Spacing

Minimum : .000
Maximum : 1937.372
Increment : 400.000

Lag	Distance	Lag	Distance
1	400.000	13	
2	800.000	14	
3	1200.000	15	
4	1600.000	16	
5	2000.000	17	
6		18	
7		19	
8		20	
9		21	
10		22	
11		23	
12		24	

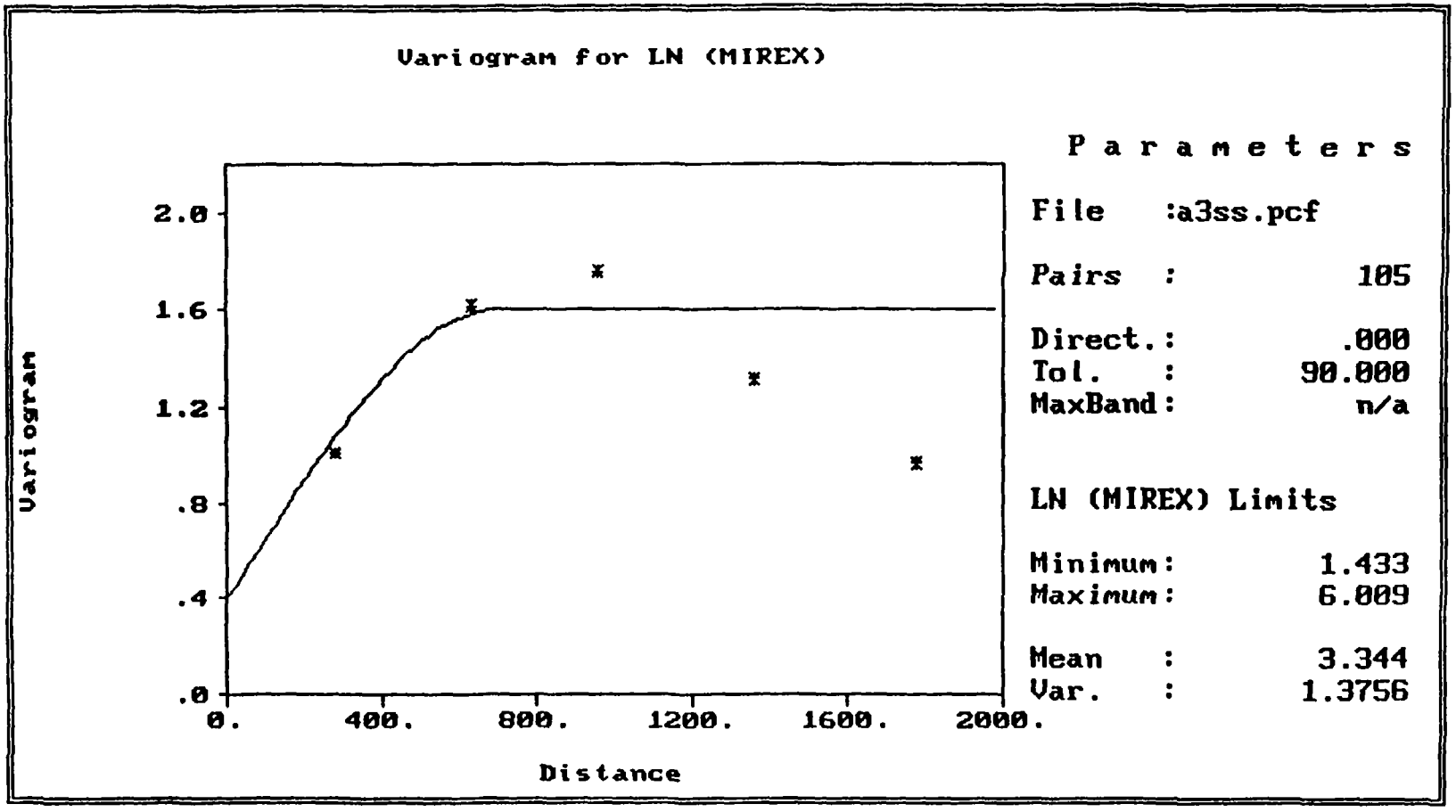
Direction New Lags Change Lags Post Plot Execute Quit
Specify pair orientation (selection) criteria

R E S U L T S

Variable: LN (MIREX)		Direction : .000
Minimum : 1.433	Estimator : Variogram	Tolerance : 90.000
Maximum : 6.009	Total Pairs : 105	BandWidth : n/a

	Pairs	Avg Distance	Estimate		Pairs	Avg Distance	Estimate
1	14	279.242	1.007	13			
2	40	633.427	1.615	14			
3	25	957.476	1.757	15			
4	20	1361.392	1.316	16			
5	6	1780.650	.966	17			
6				18			
7				19			
8				20			
9				21			
10				22			
11				23			
12				24			

Type Plot Box Plot Lag Results Model Quit
Plot the selected estimator vs. average distance


Variogram for LN (MIREX)
Variogram
2.0
1.6
1.2
.8
.4
.0
0.
400.
800.
1200.
1600.
2000.
Distance
Parameters
File :a3ss.pcf
Pairs : 105
Direct.: .000
Tol. : 90.000
MaxBand: n/a
LN (MIREX) Limits
Minimum: 1.433
Maximum: 6.009
Mean : 3.344
Var. : 1.3756

M O D E L

	Pairs	Avg Distance	Value
1	14	279.242	1.007
	40	633.427	1.615
	25	957.476	1.757
	20	1361.392	1.316
5	6	1780.650	.966
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			

	Pairs	Avg Distance	Value
18			
19			
20			
21			
22			
23			
24			

Model

Nugget : .400

Type	Sill	Range
Spherical	1.200	700.000

Model Plot Options Quit
Plot the variogram and Model

O P T I O N S

Variable :TOC
Minimum : .100E+05
Maximum : .530E+05

Pair File : a3ss.pcf
Min. Distance : 31.9
Max. Distance : .194E+04

Direction

Direction : .000
Tolerance : 90.000
Max Bandwidth: MAX

Lag Spacing

Minimum : .000
Maximum : 1937.372
Increment : 400.000

Lag	Distance	Lag	Distance
1	400.000	13	
2	800.000	14	
3	1200.000	15	
4	1600.000	16	
5	2000.000	17	
6		18	
7		19	
8		20	
9		21	
10		22	
11		23	
12		24	

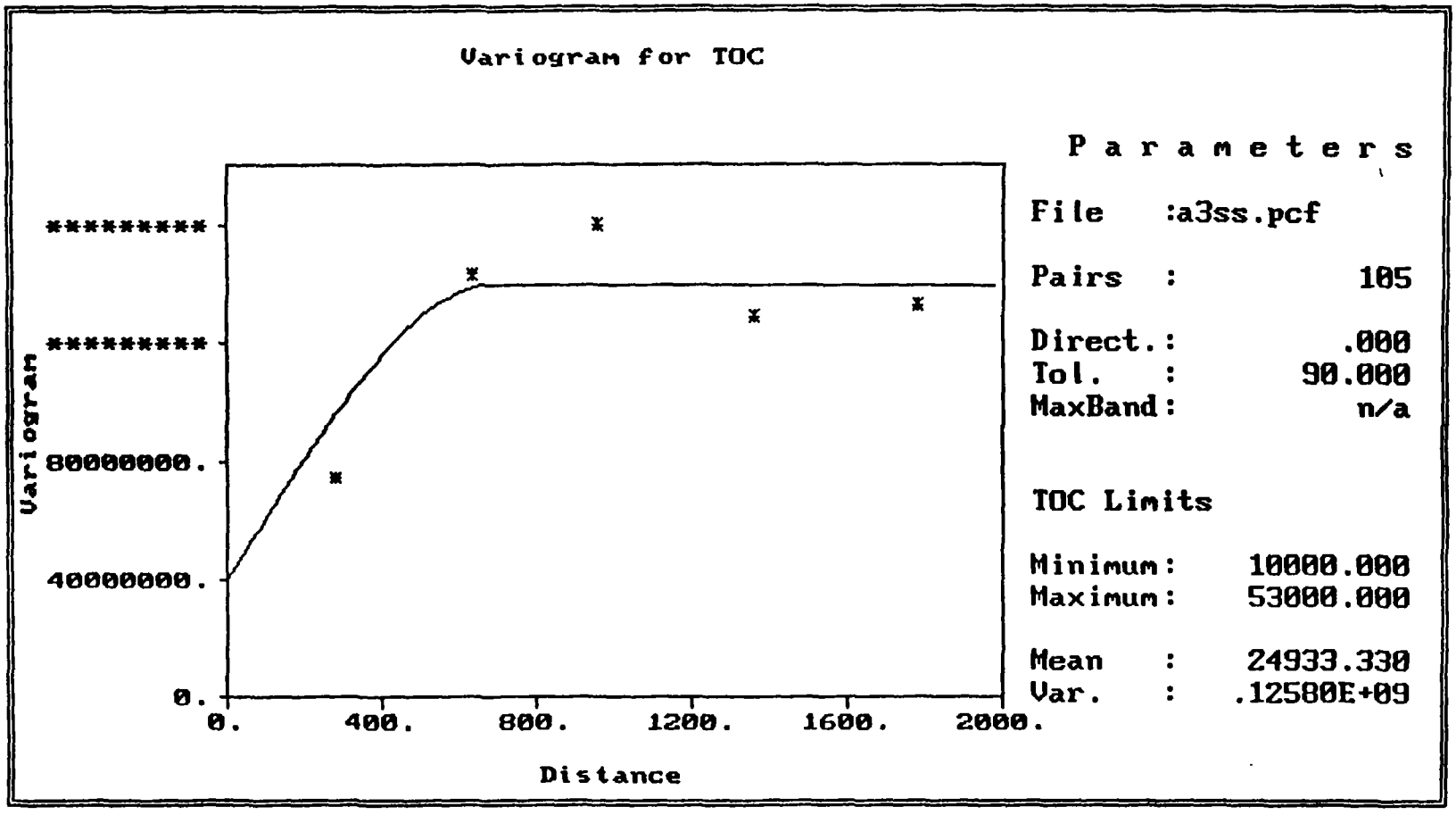
Direction New Lags Change Lags Post Plot Execute Quit
Compute results - display graphics and modelling menu

R E S U L T S

Variable: TOC				Direction :	.000
Minimum :	10000.000	Estimator :	Variogram	Tolerance :	90.000
Maximum :	53000.000	Total Pairs :	105	BandWidth :	n/a

	Pairs	Avg Distance	Estimate		Pairs	Avg Distance	Estimate
1	14	279.242	74714290.000	13			
2	40	633.427	143262500.000	14			
3	25	957.476	159980000.000	15			
4	20	1361.392	128950000.000	16			
5	6	1780.650	132833300.000	17			
6				18			
7				19			
8				20			
9				21			
10				22			
11				23			
12				24			

Type Plot Box Plot Lag Results Model Quit
Plot the selected estimator vs. average distance


Variogram for TOC
****
****
80000000.
40000000.
0.
Variogram
0.
400.
800.
1200.
1600.
2000.
Distance
Parameters
File :a3ss.pcf
Pairs : 105
Direct.: .000
Tol. : 90.000
MaxBand: n/a
TOC Limits
Minimum: 10000.000
Maximum: 53000.000
Mean : 24933.330
Var. : .12580E+09

M O D E L

	Pairs	Avg Distance	Value
1	14	279.242	74714290.000
	40	633.427	143262500.000
	25	957.476	159980000.000
	20	1361.392	128950000.000
5	6	1780.650	132833300.000
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			

	Pairs	Avg Distance	Value
18			
19			
20			
21			
22			
23			
24			

Model

Nugget : 40000000.000

Type	Sill	Range
Spherical	.1000000E+09	700.000

Model Plot Options Quit
Plot the variogram and Model

AREA 5

VARIOGRAM ANALYSIS (OMNIDIRECTIONAL)

O P T I O N S

Variable LN (MIREX)
Minimum : 1.87
:imum : 7.86

Pair File : A1SS.pcf
Min. Distance : 92.4
Max. Distance : .198E+04

Direction

Direction : .000
Tolerance : 90.000
Max Bandwidth: MAX

Lag Spacing

Minimum : .000
Maximum : 1978.814
Increment : 200.000

Lag	Distance	Lag	Distance
1	200.000	13	
2	400.000	14	
3	600.000	15	
4	800.000	16	
5	1000.000	17	
6	1200.000	18	
7	1400.000	19	
8	1600.000	20	
9	1800.000	21	
10	2000.000	22	
11		23	
12		24	

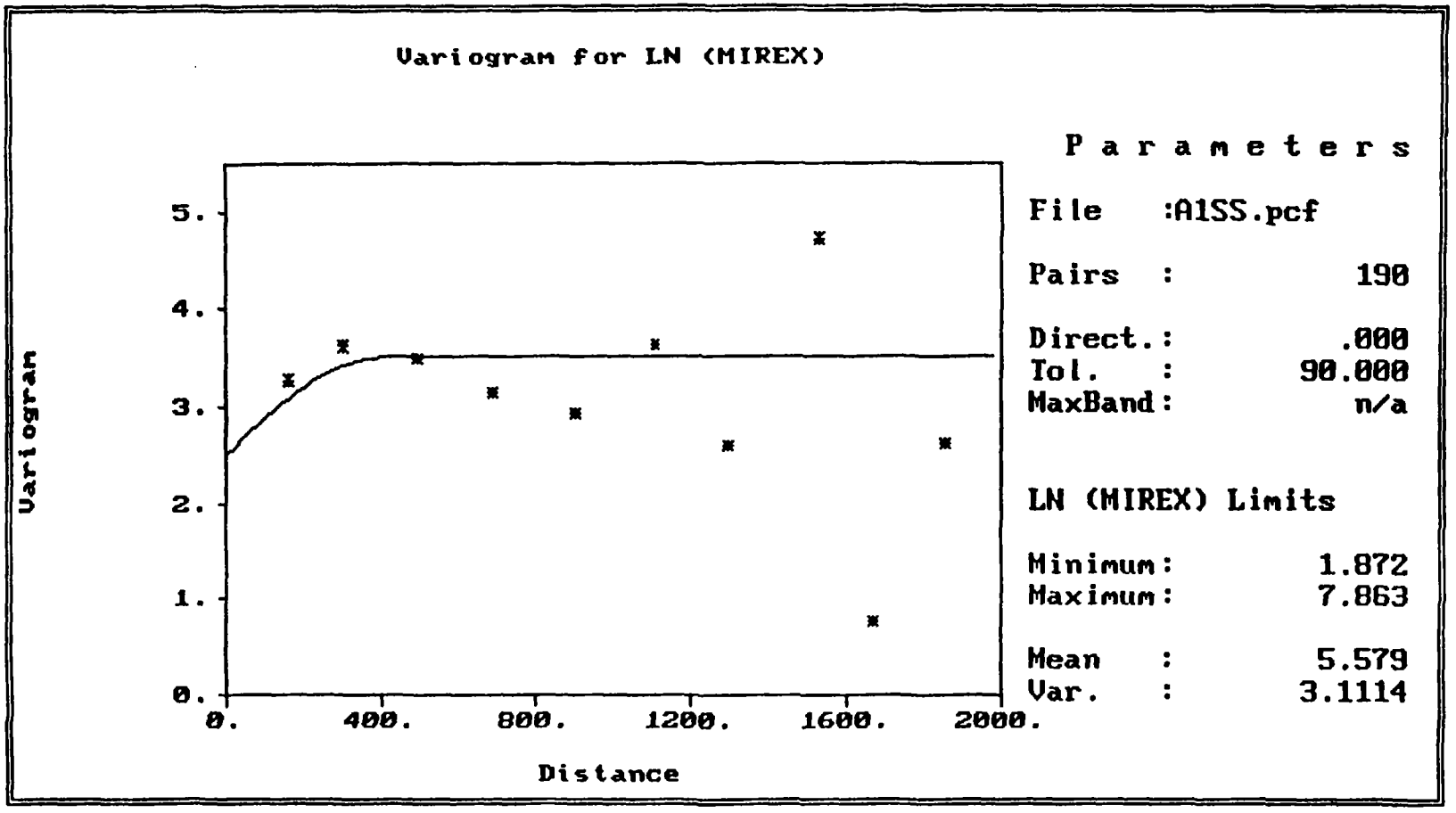
Direction New Lags Change Lags Post Plot Execute Quit
Compute results - display graphics and modelling menu

R E S U L T S

Variable: LN (MIREX)		Direction : .000
Minimum : 1.872	Estimator : Variogram	Tolerance : 90.000
imum : 7.863	Total Pairs : 190	BandWidth : n/a

	Pairs	Avg Distance	Estimate		Pairs	Avg Distance	Estimate
1	13	163.124	3.257	13			
2	35	301.688	3.620	14			
3	39	490.563	3.489	15			
4	26	691.035	3.136	16			
5	25	906.338	2.915	17			
6	19	1110.302	3.631	18			
7	14	1298.462	2.585	19			
8	9	1529.955	4.722	20			
9	6	1673.179	.772	21			
10	4	1858.211	2.611	22			
11				23			
12				24			

Type Plot Box Plot Lag Results Model Quit
Plot the selected estimator vs. average distance


Variogram for LN (MIREX)
Variogram
5.
4.
3.
2.
1.
0.
0.
400.
800.
1200.
1600.
2000.
Distance
Parameters
File :A1SS.pcf
Pairs : 190
Direct.: .000
Tol. : 90.000
MaxBand: n/a
LN (MIREX) Limits
Minimum: 1.872
Maximum: 7.863
Mean : 5.579
Var. : 3.1114

M O D E L

	Pairs	Avg Distance	Value
1	13	163.124	3.257
	35	301.688	3.620
	39	490.563	3.489
	26	691.035	3.136
5	25	906.338	2.915
6	19	1110.302	3.631
7	14	1298.462	2.585
8	9	1529.955	4.722
9	6	1673.179	.772
10	4	1858.211	2.611
11			
12			
13			
14			
15			
16			
17			

	Pairs	Avg Distance	Value
18			
19			
20			
21			
22			
23			
24			

Model

Nugget : 2.500

Type	Sill	Range
Spherical	1.000	400.000

Model Plot Options Quit
Plot the variogram and Model

O P T I O N S

Variable :TOC
Minimum : .920E+04
Maximum : .770E+05

Pair File : A1SS.pcf
Min. Distance : 92.4
Max. Distance : .198E+04

Direction

Direction : .000
Tolerance : 90.000
Max Bandwidth: MAX

Lag Spacing

Minimum : .000
Maximum : 1978.814
Increment : 300.000

Lag	Distance	Lag	Distance
1	300.000	13	
2	600.000	14	
3	900.000	15	
4	1200.000	16	
5	1500.000	17	
6	1800.000	18	
7	2100.000	19	
8		20	
9		21	
10		22	
11		23	
12		24	

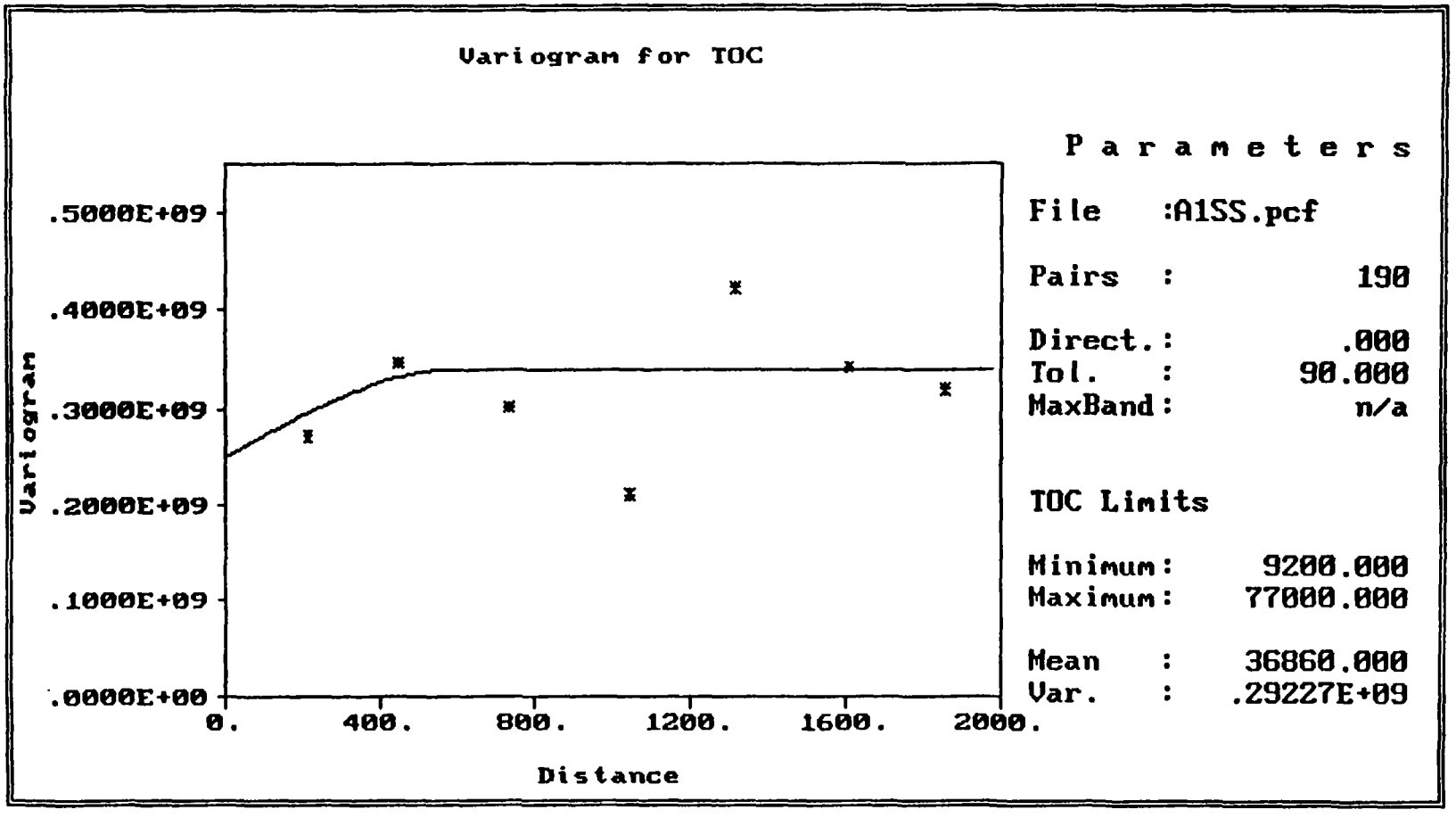
Direction New Lags Change Lags Post Plot Execute Quit
Compute results - display graphics and modelling menu

R E S U L T S

Variable: TOC		Direction : .000
Minimum : 9200.000	Estimator : Variogram	Tolerance : 90.000
:imum : 77000.000	Total Pairs : 190	BandWidth : n/a

	Pairs	Avg Distance	Estimate		Pairs	Avg Distance	Estimate
1	30	211.500	271871300.000	13			
2	57	446.783	346298300.000	14			
3	37	737.370	301129800.000	15			
4	33	1043.588	209573900.000	16			
5	16	1316.112	423715000.000	17			
6	13	1609.950	341860000.000	18			
7	4	1858.211	319495000.000	19			
8				20			
9				21			
10				22			
11				23			
12				24			

Type Plot Box Plot Lag Results Model Quit
Plot the selected estimator vs. average distance


Variogram for TOC
Variogram
.5000E+09
.4000E+09
.3000E+09
.2000E+09
.1000E+09
.0000E+00
0.
400.
800.
1200.
1600.
2000.
Distance
Parameters
File :A1SS.pcf
Pairs : 190
Direct. : .000
Tol. : 90.000
MaxBand : n/a
TOC Limits
Minimum : 9200.000
Maximum : 77000.000
Mean : 36860.000
Var. : .29227E+09

M O D E L

	Pairs	Avg Distance	Value
1	30	211.500	271871300.000
	57	446.783	346298300.000
	37	737.370	301129800.000
	33	1043.588	209573900.000
5	16	1316.112	423715000.000
6	13	1609.950	341860000.000
7	4	1858.211	319495000.000
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			

	Pairs	Avg Distance	Value
18			
19			
20			
21			
22			
23			
24			

Model

Nugget :250000000.000

Type	Sill	Range
Spherical	90000000.000	600.000

Model Plot Options Quit
Plot the variogram and Model

AREA 2

VARIOGRAM ANALYSIS (DIRECTIONAL)

OPTIONS

Variable LN (MIREX)
Minimum : -.330
Maximum : 8.80

Pair File : a2ss.pcf
Min. Distance : 30.7
Max. Distance : .117E+04

Direction

Direction : 20.000
Tolerance : 30.000
Max Bandwidth: MAX

Lag Spacing

Minimum : .000
Maximum : 1172.291
Increment : 250.000

Lag	Distance	Lag	Distance
1	250.000	13	
2	500.000	14	
3	750.000	15	
4	1000.000	16	
5	1250.000	17	
6		18	
7		19	
8		20	
9		21	
10		22	
11		23	
12		24	

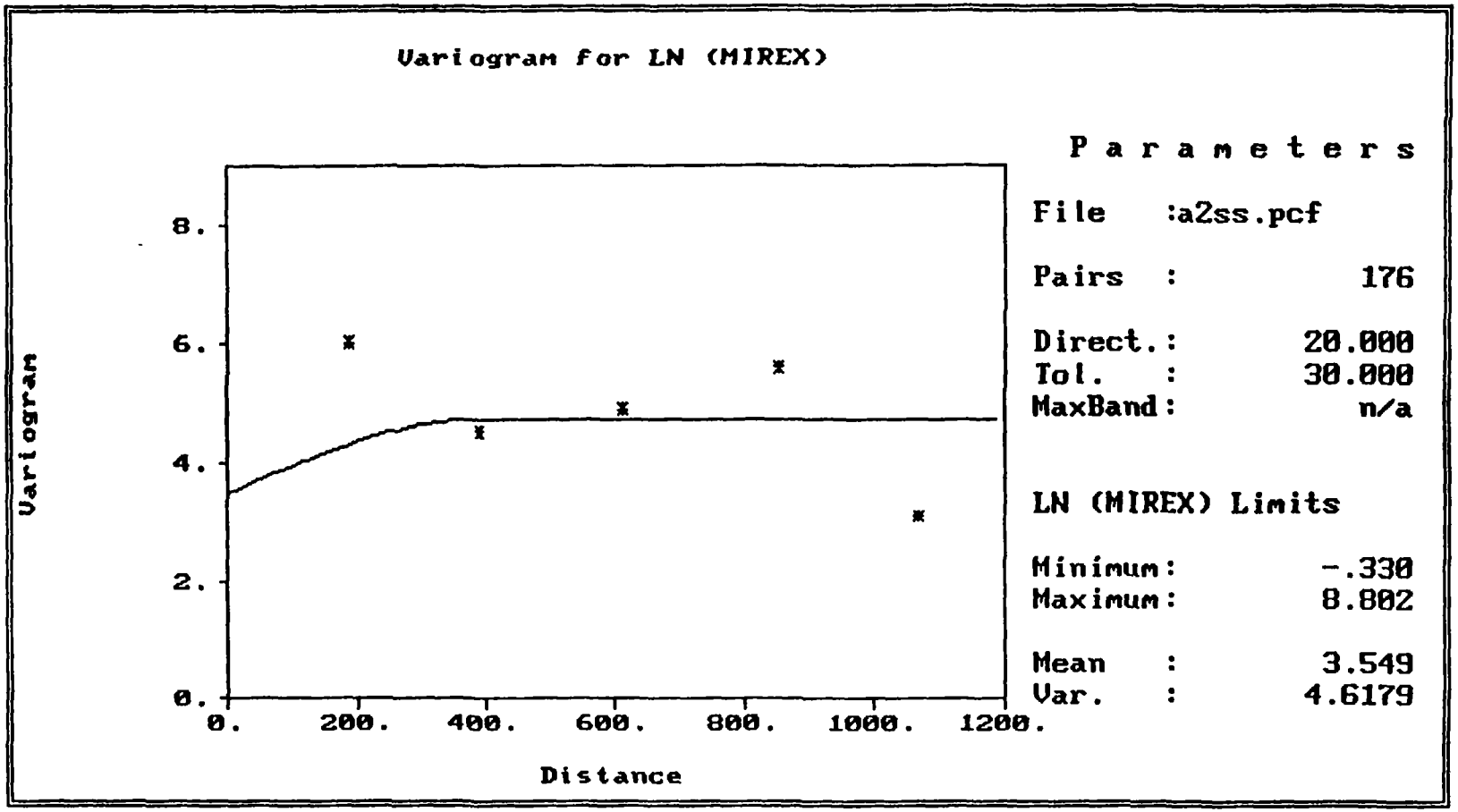
Direction New Lags Change Lags Post Plot Execute Quit
Specify pair orientation (selection) criteria

R E S U L T S

Variable: LN (MIREX)		Direction : 20.000
Minimum : -.330	Estimator : Variogram	Tolerance : 30.000
Maximum : 8.802	Total Pairs : 176	BandWidth : n/a

	Pairs	Avg Distance	Estimate		Pairs	Avg Distance	Estimate
1	36	187.517	6.023	13			
2	53	391.398	4.528	14			
3	51	611.739	4.903	15			
4	30	854.167	5.621	16			
5	6	1067.755	3.115	17			
6				18			
7				19			
8				20			
9				21			
10				22			
11				23			
12				24			

Type Plot Box Plot Lag Results Model Quit
Plot the selected estimator vs. average distance


Variogram for LN (MIREX)
Variogram
8.
6.
4.
2.
0.
0.
200.
400.
600.
800.
1000.
1200.
Distance
Parameters
File :a2ss.pcf
Pairs : 176
Direct.: 20.000
Tol. : 30.000
MaxBand: n/a
LN (MIREX) Limits
Minimum: -.330
Maximum: 8.802
Mean : 3.549
Var. : 4.6179

M O D E L

	Pairs	Avg Distance	Value
1	36	187.517	6.023
	53	391.398	4.528
	51	611.739	4.903
	30	854.167	5.621
5	6	1067.755	3.115
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			

	Pairs	Avg Distance	Value
18			
19			
20			
21			
22			
23			
24			

Model

Nugget : 3.500

Type	Sill	Range
Spherical	1.250	400.000

Model Plot Options Quit
Plot the variogram and Model

O P T I O N S

Variable LN (MIREX)
Minimum : -.330
imum : 8.80

Pair File : a2ss.pcf
Min. Distance : 30.7
Max. Distance : .117E+04

Direction

Direction : 110.000
Tolerance : 30.000
Max Bandwidth: MAX

Lag Spacing

Minimum : .000
Maximum : 1172.291
Increment : 150.000

Lag	Distance	Lag	Distance
1	150.000	13	
2	300.000	14	
3	450.000	15	
4	600.000	16	
5	750.000	17	
6	900.000	18	
7	1050.000	19	
8	1200.000	20	
9		21	
10		22	
11		23	
12		24	

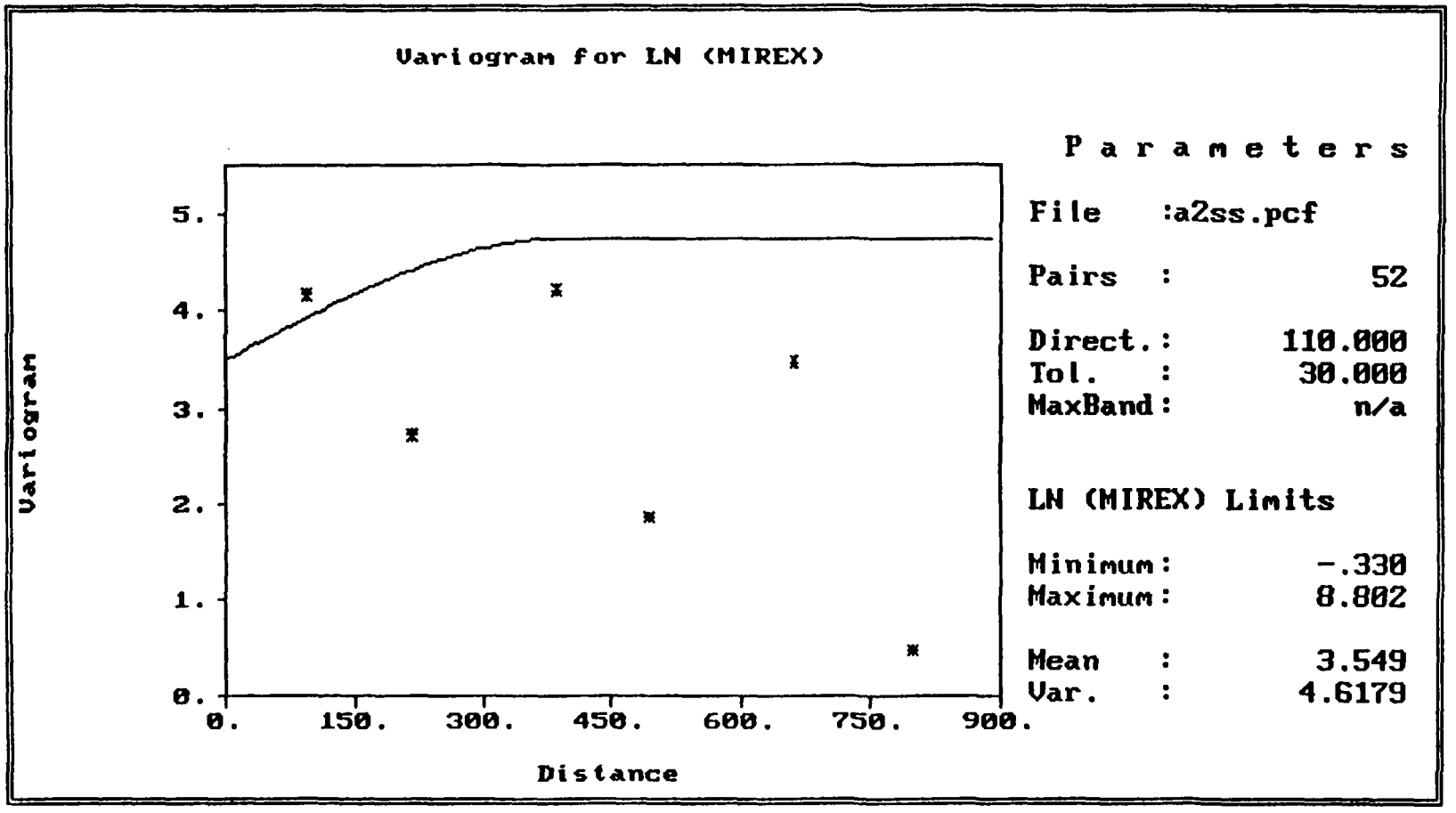
Direction New Lags Change Lags Post Plot Execute Quit
Specify pair orientation (selection) criteria

R E S U L T S

Variable: LN (MIREX)		Direction : 110.000
Minimum : -.330	Estimator : Variogram	Tolerance : 30.000
:imum : 8.802	Total Pairs : 52	BandWidth : n/a

	Pairs	Avg Distance	Estimate		Pairs	Avg Distance	Estimate
1	13	93.254	4.163	13			
2	13	216.844	2.724	14			
3	14	386.387	4.200	15			
4	9	492.881	1.852	16			
5	2	662.088	3.473	17			
6	1	798.951	.484	18			
7				19			
8				20			
9				21			
10				22			
11				23			
12				24			

Type Plot Box Plot Lag Results Model Quit
Plot the selected estimator vs. average distance


Variogram for LN (MIREX)
Variogram
5.
4.
3.
2.
1.
0.
0.
150.
300.
450.
600.
750.
900.
Distance
Parameters
File :a2ss.pcf
Pairs : 52
Direct.: 110.000
Tol. : 30.000
MaxBand: n/a
LN (MIREX) Limits
Minimum: -.330
Maximum: 8.802
Mean : 3.549
Var. : 4.6179

M O D E L

	Pairs	Avg Distance	Value
1	13	93.254	4.163
	13	216.844	2.724
	14	386.387	4.200
	9	492.881	1.852
5	2	662.088	3.473
6	1	798.951	.484
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			

	Pairs	Avg Distance	Value
18			
19			
20			
21			
22			
23			
24			

Model

Nugget : 3.500

Type	Sill	Range
Spherical	1.250	400.000

Model Plot Options Quit
Plot the variogram and Model

O P T I O N S

Variable :TOC
Minimum : .130E+05
imum : .510E+05

Pair File : a2ss.pcf
Min. Distance : 30.7
Max. Distance : .117E+04

Direction

Direction : 20.000
Tolerance : 30.000
Max Bandwidth: MAX

Lag Spacing

Minimum : .000
Maximum : 1172.291
Increment : 150.000

Lag	Distance	Lag	Distance
1	150.000	13	
2	300.000	14	
3	450.000	15	
4	600.000	16	
5	750.000	17	
6	900.000	18	
7	1050.000	19	
8	1200.000	20	
9		21	
10		22	
11		23	
12		24	

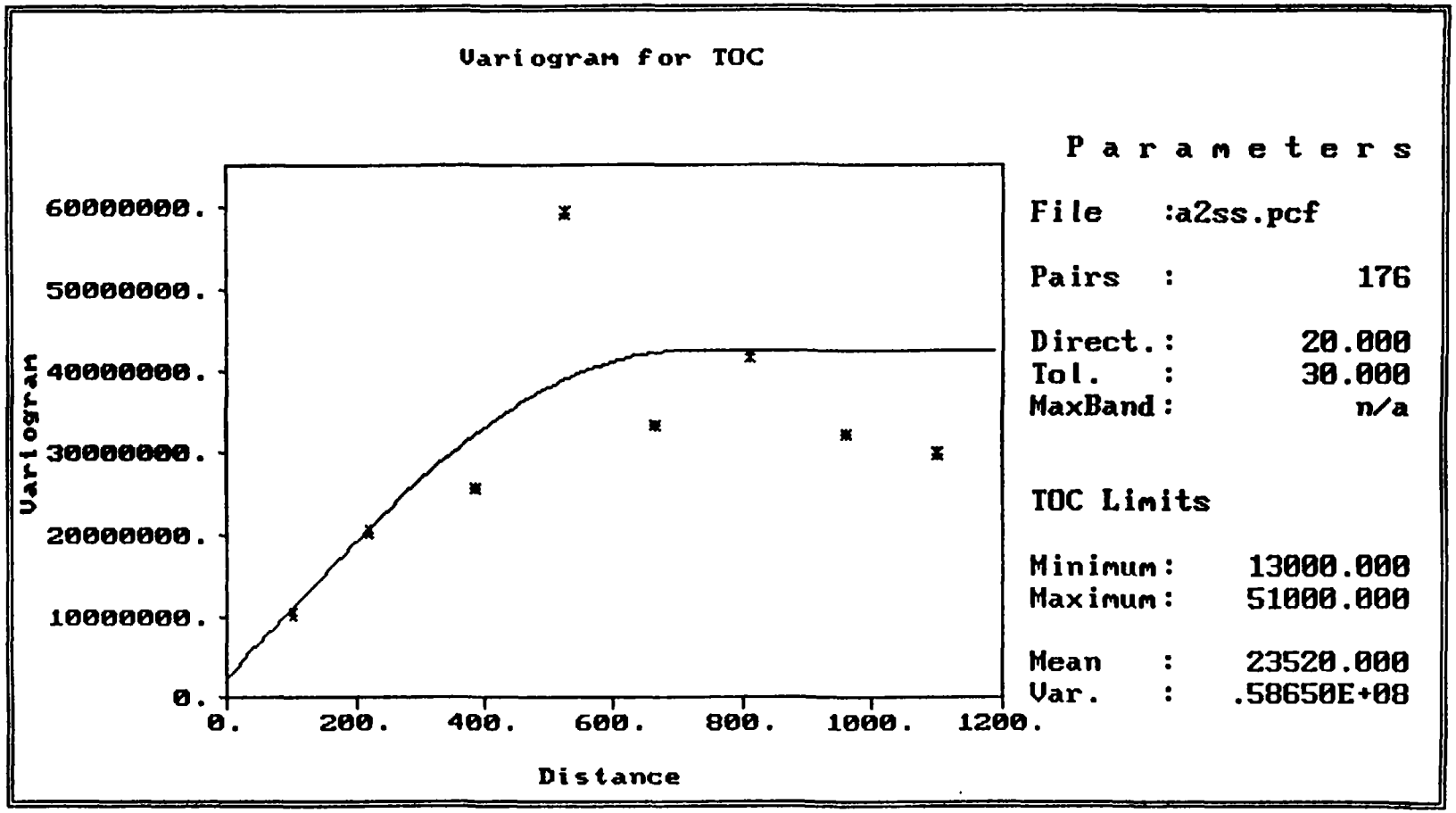
Direction New Lags Change Lags Post Plot Execute Quit
Specify pair orientation (selection) criteria

R E S U L T S

Variable: TOC				Direction :	20.000
Minimum :	13000.000	Estimator :	Variogram	Tolerance :	30.000
imum :	51000.000	Total Pairs :	176	BandWidth :	n/a

	Pairs	Avg Distance	Estimate		Pairs	Avg Distance	Estimate
1	7	102.202	10285710.000	13			
2	36	220.633	20333330.000	14			
3	34	387.006	25529410.000	15			
4	36	526.106	59152770.000	16			
5	27	664.340	33425920.000	17			
6	20	811.649	41900000.000	18			
7	13	961.111	32230770.000	19			
8	3	1101.376	29833330.000	20			
9				21			
10				22			
11				23			
12				24			

Type Plot Box Plot Lag Results Model Quit
Plot the selected estimator vs. average distance


Variogram for TOC
Variogram
60000000.
50000000.
40000000.
30000000.
20000000.
10000000.
0.
0.
200.
400.
600.
800.
1000.
1200.
Distance
Parameters
File :a2ss.pcf
Pairs : 176
Direct.: 20.000
Tol. : 30.000
MaxBand: n/a
TOC Limits
Minimum: 13000.000
Maximum: 51000.000
Mean : 23520.000
Var. : .58650E+08

M O D E L

	Pairs	Avg Distance	Value
1	7	102.202	10285710.000
2	36	220.633	20333330.000
3	34	387.006	25529410.000
4	36	526.106	59152770.000
5	27	664.340	33425920.000
6	20	811.649	41900000.000
7	13	961.111	32230770.000
8	3	1101.376	29833330.000
9			
10			
11			
12			
13			
14			
15			
16			
17			

	Pairs	Avg Distance	Value
18			
19			
20			
21			
22			
23			
24			

Model

Nugget : 2500000.000

Type	Sill	Range
Spherical	40000000.000	700.000

Model Plot Options Quit
Plot the variogram and Model

O P T I O N S

Variable :TOC
Minimum : .130E+05
imum : .510E+05

Pair File : a2ss.pcf
Min. Distance : 30.7
Max. Distance : .117E+04

Direction

Direction : 110.000
Tolerance : 30.000
Max Bandwidth: MAX

Lag Spacing

Minimum : .000
Maximum : 1172.291
Increment : 150.000

Lag	Distance	Lag	Distance
1	150.000	13	
2	300.000	14	
3	450.000	15	
4	600.000	16	
5	750.000	17	
6	900.000	18	
7	1050.000	19	
8	1200.000	20	
9		21	
10		22	
11		23	
12		24	

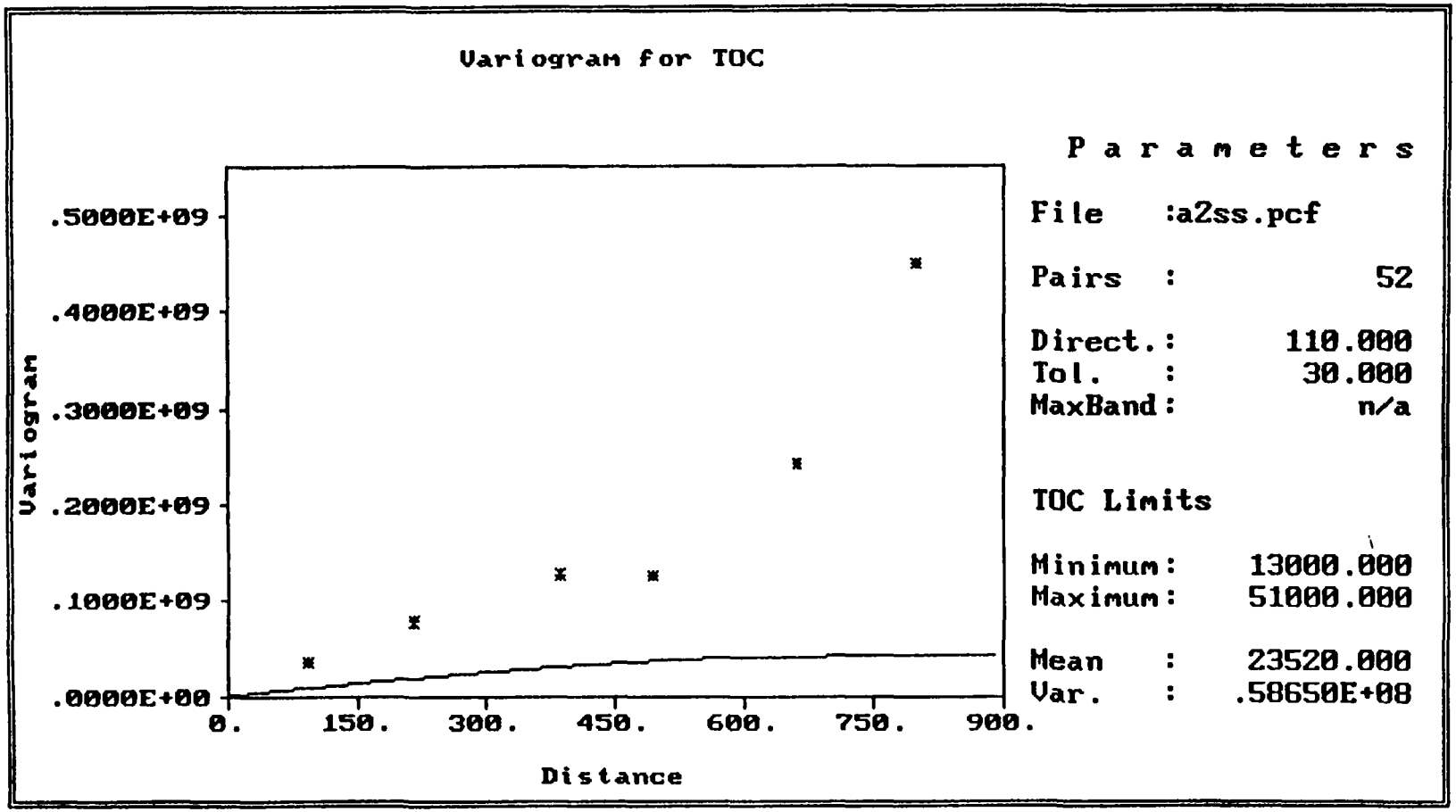
Direction New Lags Change Lags Post Plot Execute Quit
Specify pair orientation (selection) criteria

RESULTS

Variable: TOC		Direction : 110.000
Minimum : 13000.000	Estimator : Variogram	Tolerance : 30.000
imum : 51000.000	Total Pairs : 52	BandWidth : n/a

	Pairs	Avg Distance	Estimate		Pairs	Avg Distance	Estimate
1	13	93.254	36923080.000	13			
2	13	216.844	78038450.000	14			
3	14	386.387	126964300.000	15			
4	9	492.881	126500000.000	16			
5	2	662.088	242500000.000	17			
6	1	798.951	450000000.000	18			
7				19			
8				20			
9				21			
10				22			
11				23			
12				24			

Type Plot Box Plot Lag Results Model Quit
Plot the selected estimator vs. average distance


Variogram for TOC
Variogram
.5000E+09
.4000E+09
.3000E+09
.2000E+09
.1000E+09
.0000E+00
0.
150.
300.
450.
600.
750.
900.
Distance
Parameters
File :a2ss.pcf
Pairs : 52
Direct.: 110.000
Tol. : 30.000
MaxBand: n/a
TOC Limits
Minimum: 13000.000
Maximum: 51000.000
Mean : 23520.000
Var. : .58650E+08

M O D E L

	Pairs	Avg Distance	Value
1	13	93.254	36923080.000
	13	216.844	78038450.000
	14	386.387	126964300.000
4	9	492.881	126500000.000
5	2	662.088	242500000.000
6	1	798.951	450000000.000
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			

	Pairs	Avg Distance	Value
18			
19			
20			
21			
22			
23			
24			

Model

Nugget : 2500000.000

Type	Sill	Range
Spherical	40000000.000	700.000

Model Plot Options Quit
Plot the variogram and Model

AREA 3

VARIOGRAM ANALYSIS (DIRECTIONAL)

O P T I O N S

Variable LN (MIREX)
Minimum : 1.43
M mum : 6.01

Pair File : a3ss.pcf
Min. Distance : 31.9
Max. Distance : .194E+04

Direction

Direction : 140.000
Tolerance : 30.000
Max Bandwidth: MAX

Lag Spacing

Minimum : .000
Maximum : 1937.372
Increment : 300.000

Lag	Distance	Lag	Distance
1	300.000	13	
2	600.000	14	
3	900.000	15	
4	1200.000	16	
5	1500.000	17	
6	1800.000	18	
7	2100.000	19	
8		20	
9		21	
10		22	
11		23	
12		24	

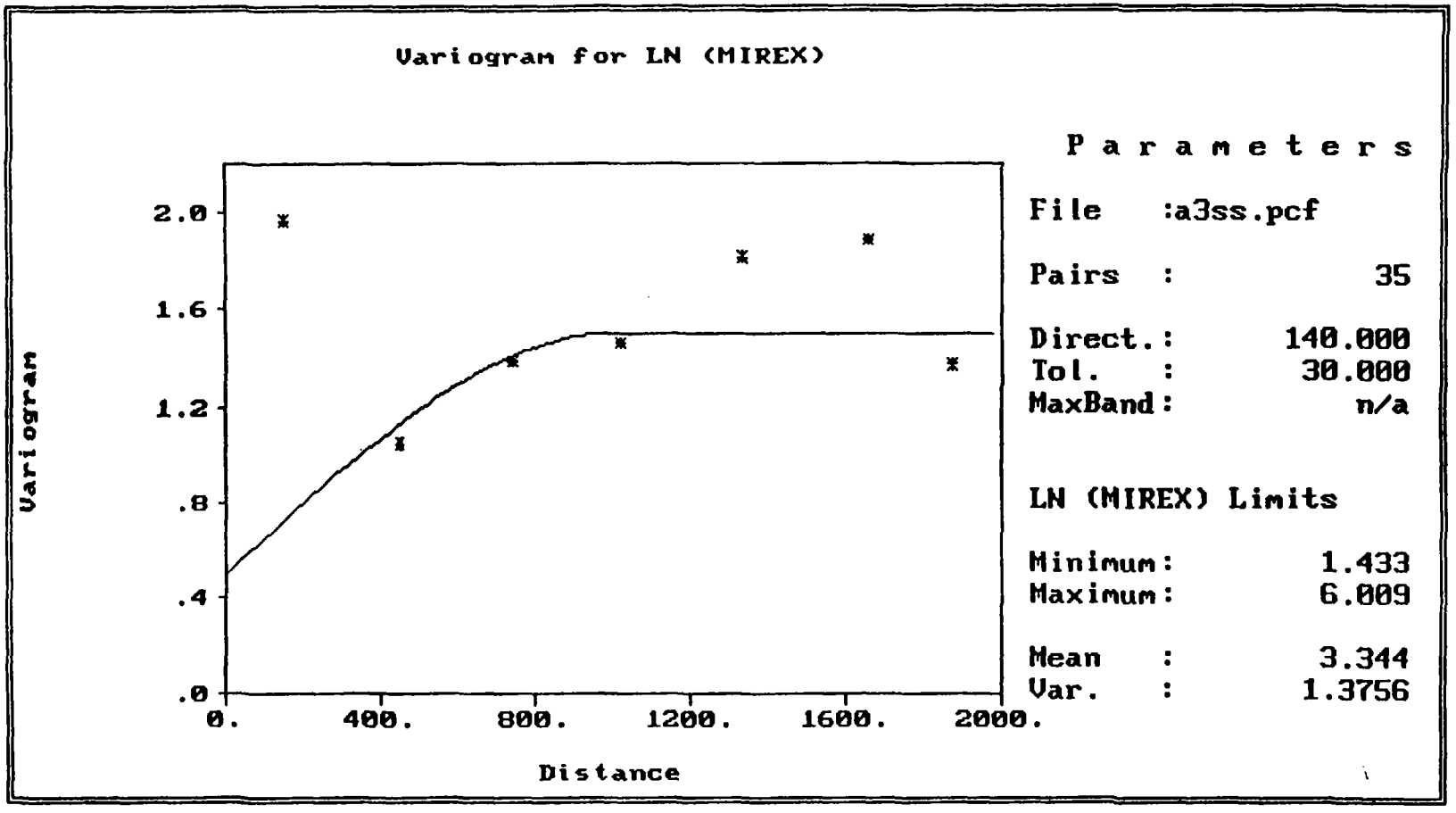
Direction New Lags Change Lags Post Plot Execute Quit
Specify pair orientation (selection) criteria

R E S U L T S

Variable: LN (MIREX)		Direction : 140.000
Minimum : 1.433	Estimator : Variogram	Tolerance : 30.000
Maximum : 6.009	Total Pairs : 35	BandWidth : n/a

	Pairs	Avg Distance	Estimate		Pairs	Avg Distance	Estimate
1	2	151.638	1.966	13			
2	6	449.620	1.048	14			
3	13	743.011	1.386	15			
4	5	1021.212	1.462	16			
5	5	1336.411	1.813	17			
6	2	1660.739	1.886	18			
7	2	1874.020	1.372	19			
8				20			
9				21			
10				22			
11				23			
12				24			

Type Plot Box Plot Lag Results Model Quit
Plot the selected estimator vs. average distance


Variogram for LN (MIREX)
Variogram
2.0
1.6
1.2
.8
.4
.0
0.
400.
800.
1200.
1600.
2000.
Distance
Parameters
File :a3ss.pcf
Pairs : 35
Direct.: 140.000
Tol. : 30.000
MaxBand: n/a
LN (MIREX) Limits
Minimum: 1.433
Maximum: 6.009
Mean : 3.344
Var. : 1.3756

M O D E L

	Pairs	Avg Distance	Value
1	2	151.638	1.966
	6	449.620	1.048
	13	743.011	1.386
	5	1021.212	1.462
5	5	1336.411	1.813
6	2	1660.739	1.886
7	2	1874.020	1.372
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			

	Pairs	Avg Distance	Value
18			
19			
20			
21			
22			
23			
24			

Model

Nugget : .500

Type	Sill	Range
Spherical	1.000	1000.000

Model Plot Options Quit
Plot the variogram and Model

O P T I O N S

Variable LN (MIREX)
Minimum : 1.43
Maximum : 6.01

Pair File : a3ss.pcf
Min. Distance : 31.9
Max. Distance : .194E+04

Direction

Direction : 50.000
Tolerance : 30.000
Max Bandwidth: MAX

Lag Spacing

Minimum : .000
Maximum : 1937.372
Increment : 300.000

Lag	Distance	Lag	Distance
1	300.000	13	
2	600.000	14	
3	900.000	15	
4	1200.000	16	
5	1500.000	17	
6	1800.000	18	
7	2100.000	19	
8		20	
9		21	
10		22	
11		23	
12		24	

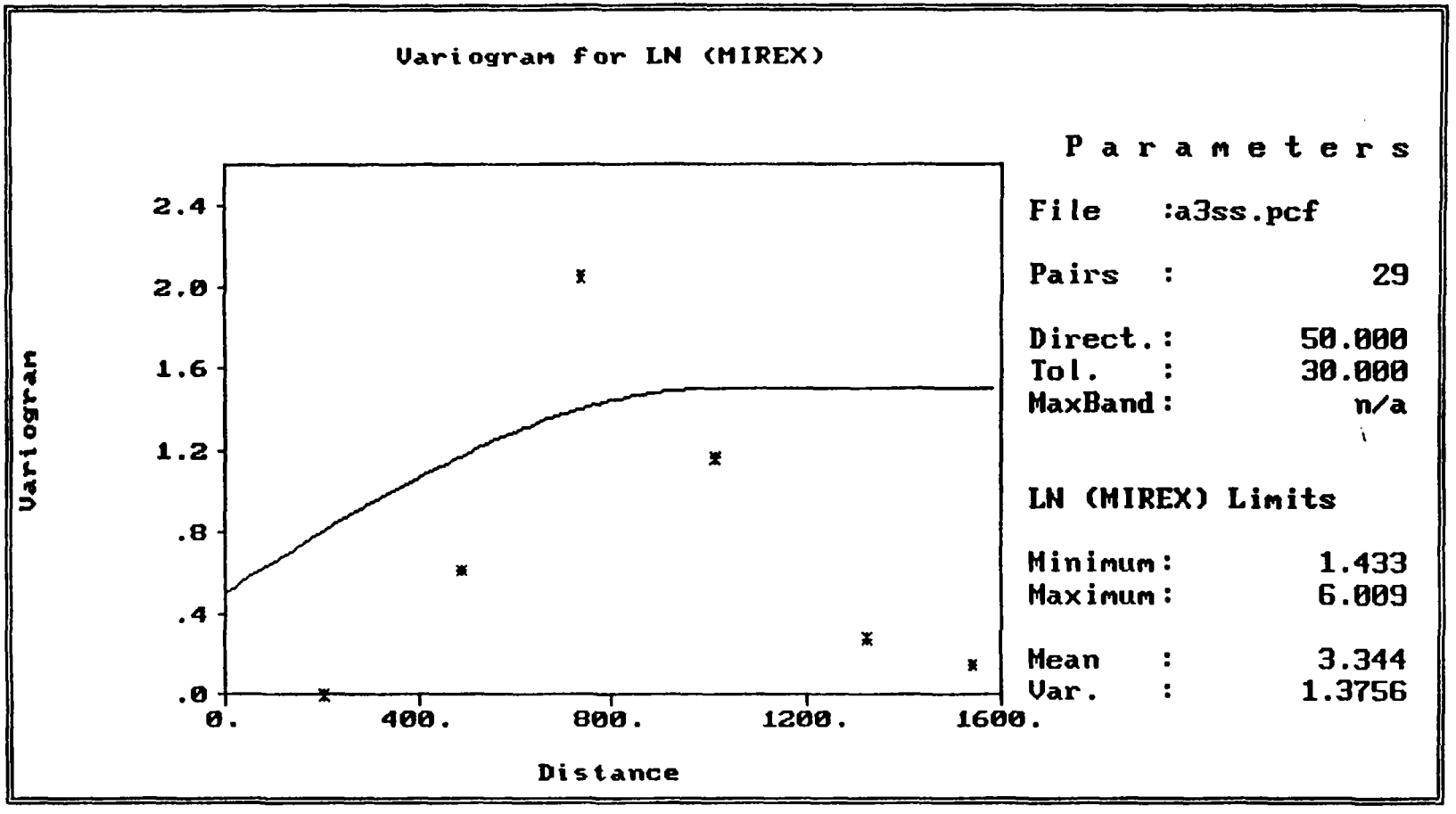
Direction New Lags Change Lags Post Plot Execute Quit
Specify pair orientation (selection) criteria

R E S U L T S

Variable: LN (MIREX)		Direction : 50.000
Minimum : 1.433	Estimator : Variogram	Tolerance : 30.000
Maximum : 6.009	Total Pairs : 29	BandWidth : n/a

	Pairs	Avg Distance	Estimate		Pairs	Avg Distance	Estimate
1	1	204.377	.000	13			
2	6	485.612	.608	14			
3	10	735.276	2.048	15			
4	7	1012.804	1.164	16			
5	3	1327.813	.278	17			
6	2	1543.191	.151	18			
7				19			
8				20			
9				21			
10				22			
11				23			
12				24			

Type Plot Box Plot Lag Results Model Quit
Plot the selected estimator vs. average distance


Variogram for LN (MIREX)
Variogram
2.4
2.0
1.6
1.2
.8
.4
.0
0.
400.
800.
1200.
1600.
Distance
Parameters
File :a3ss.pcf
Pairs : 29
Direct.: 50.000
Tol. : 30.000
MaxBand: n/a
LN (MIREX) Limits
Minimum: 1.433
Maximum: 6.009
Mean : 3.344
Var. : 1.3756

M O D E L

	Pairs	Avg Distance	Value
1	1	204.377	.000
	6	485.612	.608
	10	735.276	2.048
	7	1012.804	1.164
5	3	1327.813	.278
6	2	1543.191	.151
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			

	Pairs	Avg Distance	Value
18			
19			
20			
21			
22			
23			
24			

Model

Nugget : .500

Type	Sill	Range
Spherical	1.000	1000.000

Model Plot Options Quit
Plot the variogram and Model

O P T I O N S

Variable :TOC
Minimum : .100E+05
Maximum : .530E+05

Pair File : a3ss.pcf
Min. Distance : 31.9
Max. Distance : .194E+04

Direction

Direction : 140.000
Tolerance : 30.000
Max Bandwidth: MAX

Lag Spacing

Minimum : .000
Maximum : 1937.372
Increment : 300.000

Lag	Distance	Lag	Distance
1	300.000	13	
2	600.000	14	
3	900.000	15	
4	1200.000	16	
5	1500.000	17	
6	1800.000	18	
7	2100.000	19	
8		20	
9		21	
10		22	
11		23	
12		24	

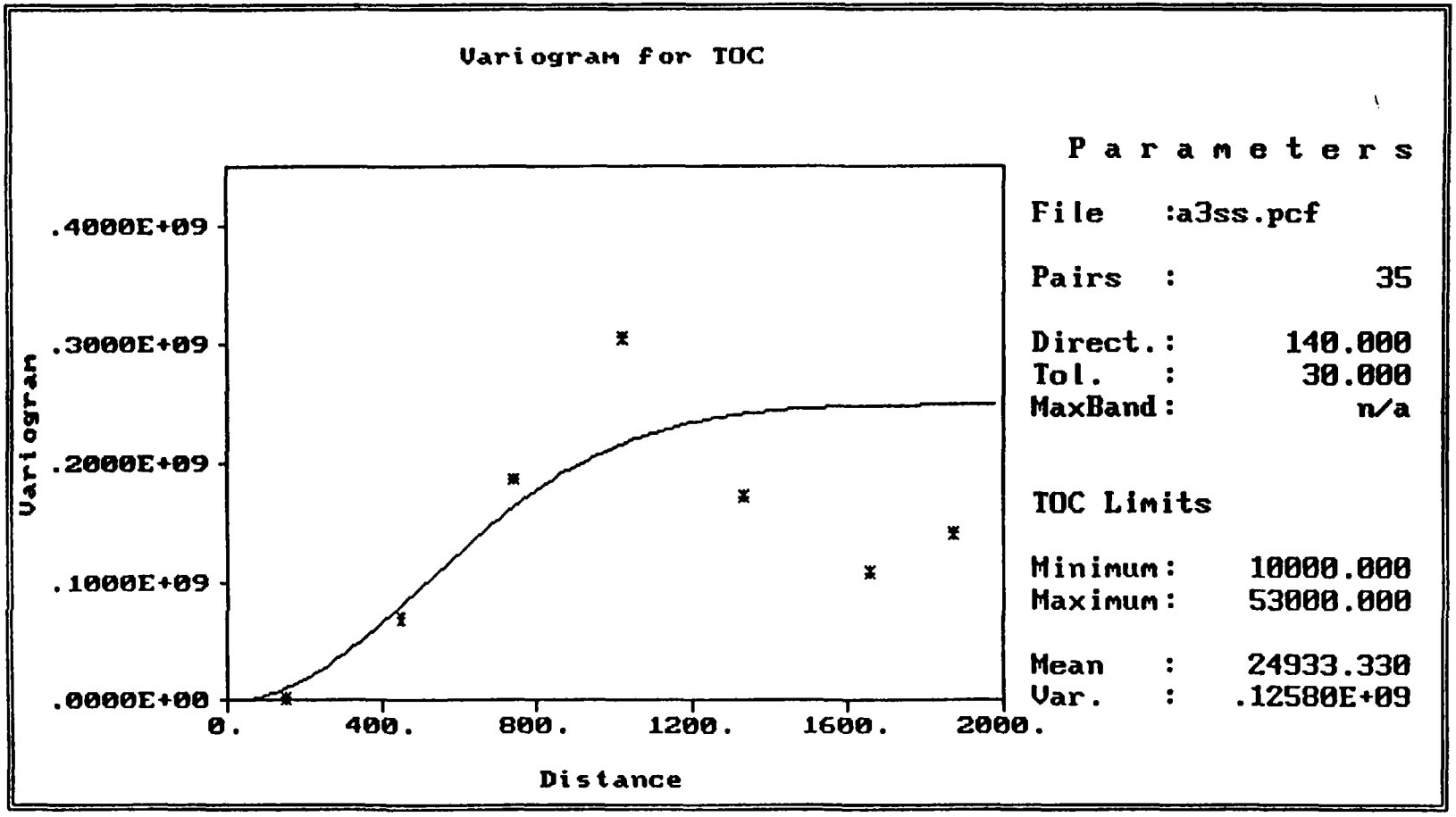
Direction New Lags Change Lags Post Plot Execute Quit
Specify pair orientation (selection) criteria

R E S U L T S

Variable: TOC				Direction :	140.000
Minimum :	10000.000	Estimator :	Variogram	Tolerance :	30.000
imum :	53000.000	Total Pairs :	35	BandWidth :	n/a

	Pairs	Avg Distance	Estimate		Pairs	Avg Distance	Estimate
1	2	151.638	2250000.000	13			
2	6	449.620	70166660.000	14			
3	13	743.011	186769200.000	15			
4	5	1021.212	305900000.000	16			
5	5	1336.411	171800000.000	17			
6	2	1660.739	108250000.000	18			
7	2	1874.020	141250000.000	19			
8				20			
9				21			
10				22			
11				23			
12				24			

Type Plot Box Plot Lag Results Model Quit
Plot the selected estimator vs. average distance


Variogram for TOC
Variogram
.4000E+09
.3000E+09
.2000E+09
.1000E+09
.0000E+00
0.
400.
800.
1200.
1600.
2000.
Distance
Parameters
File :a3ss.pcf
Pairs : 35
Direct.: 140.000
Tol. : 30.000
MaxBand: n/a
TOC Limits
Minimum: 10000.000
Maximum: 53000.000
Mean : 24933.330
Var. : .12580E+09

M O D E L

	Pairs	Avg Distance	Value
1	2	151.638	2250000.000
	6	449.620	70166660.000
	13	743.011	186769200.000
	5	1021.212	305900000.000
5	5	1336.411	171800000.000
6	2	1660.739	108250000.000
7	2	1874.020	141250000.000
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			

	Pairs	Avg Distance	Value
18			
19			
20			
21			
22			
23			
24			

Model

Nugget : .000

Type	Sill	Range
Gaussian	.2500000E+09	1250.000

Model Plot Options Quit
Plot the variogram and Model

O P T I O N S

Variable :TOC
Minimum : .100E+05
Maximum : .530E+05

Pair File : a3ss.pcf
Min. Distance : 31.9
Max. Distance : .194E+04

Direction

Direction : 50.000
Tolerance : 30.000
Max Bandwidth: MAX

Lag Spacing

Minimum : .000
Maximum : 1937.372
Increment : 300.000

Lag	Distance	Lag	Distance
1	300.000	13	
2	600.000	14	
3	900.000	15	
4	1200.000	16	
5	1500.000	17	
6	1800.000	18	
7	2100.000	19	
8		20	
9		21	
10		22	
11		23	
12		24	

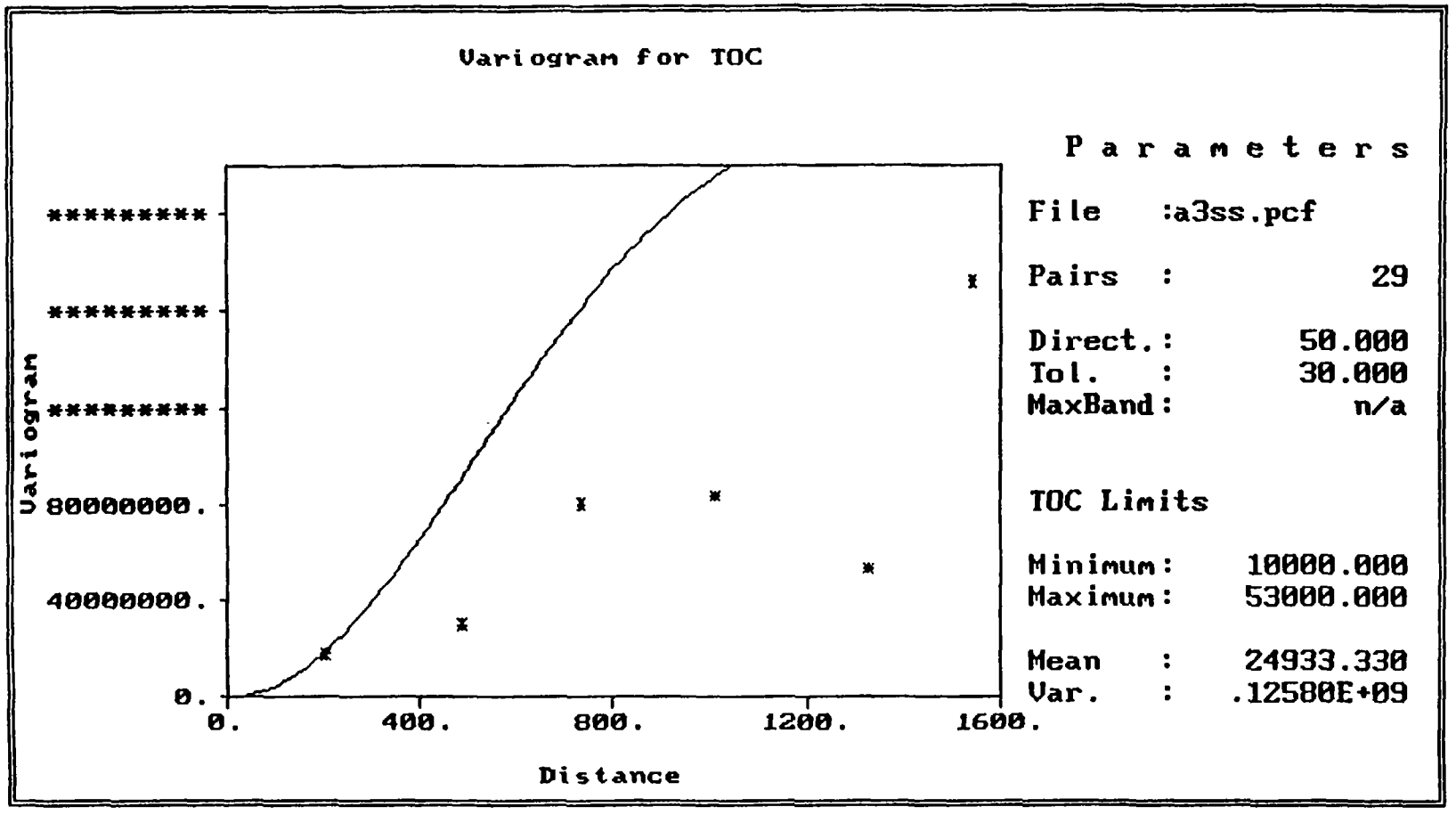
Direction New Lags Change Lags Post Plot Execute Quit
Specify pair orientation (selection) criteria

R E S U L T S

Variable: TOC		Direction : 50.000
Minimum : 10000.000	Estimator : Variogram	Tolerance : 30.000
Maximum : 53000.000	Total Pairs : 29	BandWidth : n/a

	Pairs	Avg Distance	Estimate		Pairs	Avg Distance	Estimate
1	1	204.377	18000000.000	13			
2	6	485.612	30000000.000	14			
3	10	735.276	80100000.000	15			
4	7	1012.804	83571430.000	16			
5	3	1327.813	53500000.000	17			
6	2	1543.191	172250000.000	18			
7				19			
8				20			
9				21			
10				22			
11				23			
12				24			

Type Plot Box Plot Lag Results Model Quit
Plot the selected estimator vs. average distance


Variogram for TOC
****
****
****
80000000.
40000000.
0.
Variogram
0.
400.
800.
1200.
1600.
Distance
Parameters
File :a3ss.pcf
Pairs : 29
Direct.: 50.000
Tol. : 30.000
MaxBand: n/a
TOC Limits
Minimum: 10000.000
Maximum: 53000.000
Mean : 24933.330
Var. : .12580E+09

M O D E L

	Pairs	Avg Distance	Value
1	1	204.377	18000000.000
	6	485.612	30000000.000
	10	735.276	80100000.000
	7	1012.804	83571430.000
5	3	1327.813	53500000.000
6	2	1543.191	172250000.000
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			

	Pairs	Avg Distance	Value
18			
19			
20			
21			
22			
23			
24			

Model

Nugget : .000

Type	Sill	Range
Gaussian	.2500000E+09	1250.000

Model Plot Options Quit
Plot the variogram and Model

AREA 5

VARIOGRAM ANALYSIS (DIRECTIONAL)

O P T I O N S

Variable LN (MIREX)
Minimum : 1.87
imum : 7.86

Pair File : A1SS.pcf
Min. Distance : 92.4
Max. Distance : .198E+04

Direction

Direction : 90.000
Tolerance : 30.000
Max Bandwidth: MAX

Lag Spacing

Minimum : .000
Maximum : 1978.814
Increment : 350.000

Lag	Distance	Lag	Distance
1	350.000	13	
2	700.000	14	
3	1050.000	15	
4	1400.000	16	
5	1750.000	17	
6	2100.000	18	
7		19	
8		20	
9		21	
10		22	
11		23	
12		24	

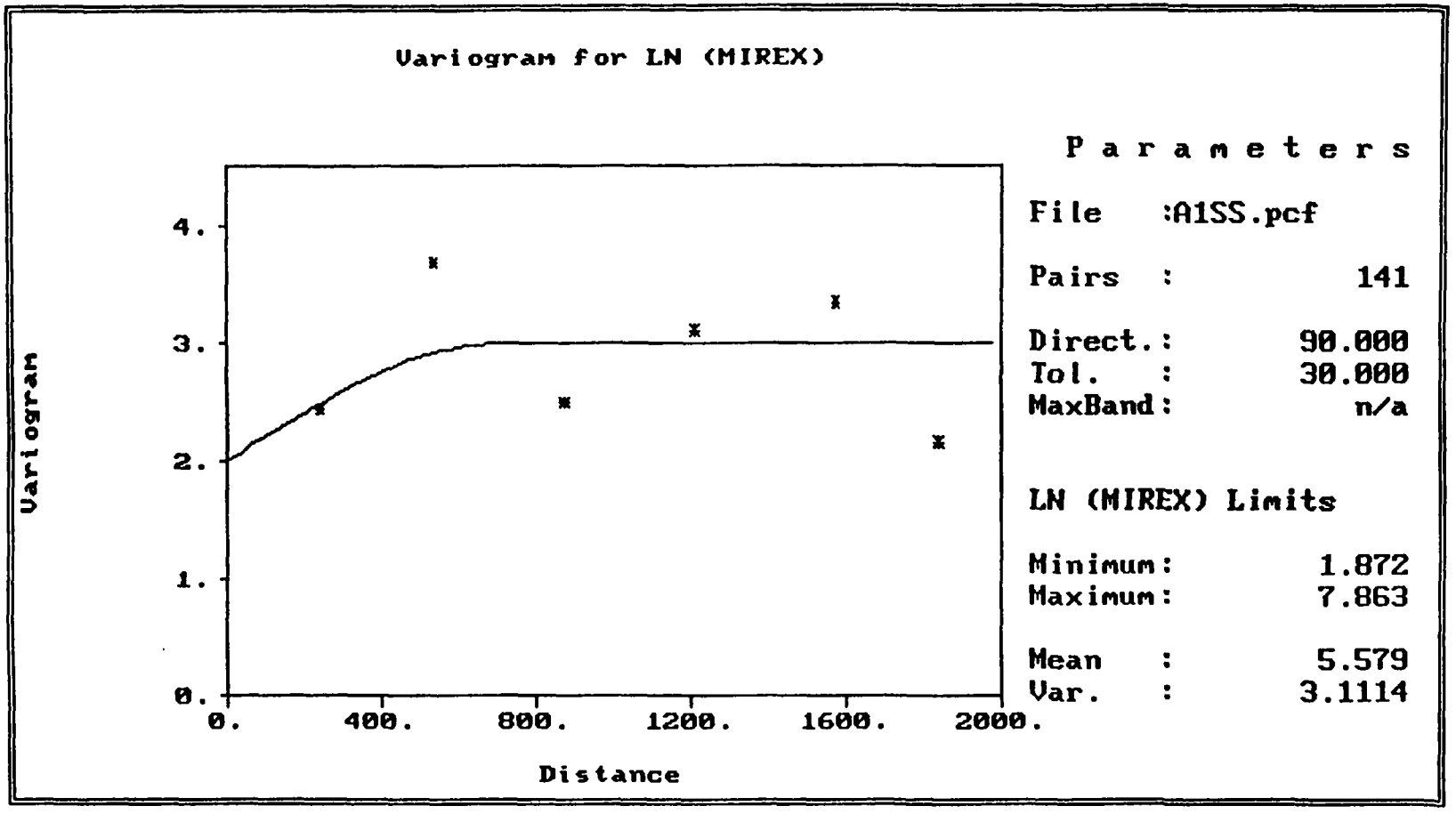
Direction New Lags Change Lags Post Plot Execute Quit
Specify pair orientation (selection) criteria

R E S U L T S

Variable: LN (MIREX)		Direction : 90.000
Minimum : 1.872	Estimator : Variogram	Tolerance : 30.000
imum : 7.863	Total Pairs : 141	BandWidth : n/a

	Pairs	Avg Distance	Estimate		Pairs	Avg Distance	Estimate
1	20	239.551	2.448	13			
2	38	535.701	3.686	14			
3	35	874.774	2.504	15			
4	29	1211.553	3.109	16			
5	14	1574.689	3.341	17			
6	5	1839.173	2.160	18			
7				19			
8				20			
9				21			
10				22			
11				23			
12				24			

Type Plot Box Plot Lag Results Model Quit
Plot the selected estimator vs. average distance


Variogram for LN (MIREX)
Variogram
4.
3.
2.
1.
0.
0.
400.
800.
1200.
1600.
2000.
Distance
Parameters
File :A1SS.pcf
Pairs : 141
Direct.: 90.000
Tol. : 30.000
MaxBand: n/a
LN (MIREX) Limits
Minimum: 1.872
Maximum: 7.863
Mean : 5.579
Var. : 3.1114

M O D E L

	Pairs	Avg Distance	Value
1	20	239.551	2.448
	38	535.701	3.686
	35	874.774	2.504
	29	1211.553	3.109
5	14	1574.689	3.341
6	5	1839.173	2.160
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			

	Pairs	Avg Distance	Value
18			
19			
20			
21			
22			
23			
24			

Model

Nugget : 2.000

Type	Sill	Range
Spherical	1.000	700.000

Model Plot Options Quit
Plot the variogram and Model

O P T I O N S

Variable LN (MIREX)
Minimum : 1.87
M imum : 7.86

Pair File : A1SS.pcf
Min. Distance : 92.4
Max. Distance : .198E+04

Direction

Direction : .000
Tolerance : 30.000
Max Bandwidth: MAX

Lag Spacing

Minimum : .000
Maximum : 1978.814
Increment : 100.000

Lag	Distance	Lag	Distance
1	100.000	13	1300.000
2	200.000	14	1400.000
3	300.000	15	1500.000
4	400.000	16	1600.000
5	500.000	17	1700.000
6	600.000	18	1800.000
7	700.000	19	1900.000
8	800.000	20	2000.000
9	900.000	21	
10	1000.000	22	
11	1100.000	23	
12	1200.000	24	

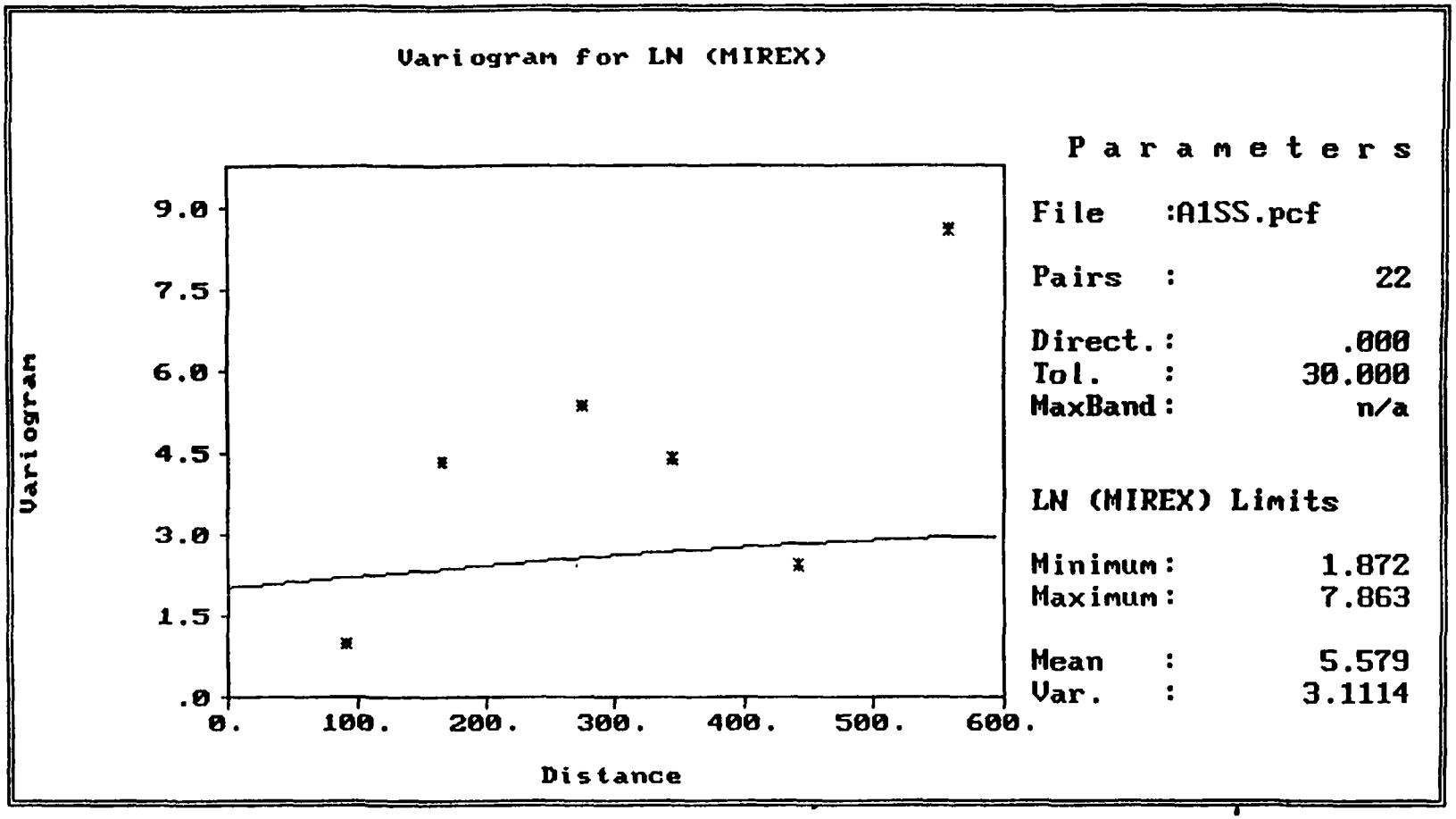
Direction New Lags Change Lags Post Plot Execute Quit
Compute results - display graphics and modelling menu

R E S U L T S

Variable: LN (MIREX)		Direction : .000
Minimum : 1.872	Estimator : Variogram	Tolerance : 30.000
Maximum : 7.863	Total Pairs : 22	BandWidth : n/a

	Pairs	Avg Distance	Estimate		Pairs	Avg Distance	Estimate
1	1	92.358	.977	13			
2	5	166.108	4.342	14			
3	4	274.886	5.385	15			
4	5	344.490	4.389	16			
5	5	442.135	2.422	17			
6	2	557.456	8.597	18			
7				19			
8				20			
9				21			
10				22			
11				23			
12				24			

Type Plot Box Plot Lag Results Model Quit
Plot the selected estimator vs. average distance


Variogram for LN (MIREX)
Variogram
9.0
7.5
6.0
4.5
3.0
1.5
.0
0.
100.
200.
300.
400.
500.
600.
Distance
Parameters
File :A1SS.pcf
Pairs : 22
Direct.: .000
Tol. : 30.000
MaxBand: n/a
LN (MIREX) Limits
Minimum: 1.872
Maximum: 7.863
Mean : 5.579
Var. : 3.1114

M O D E L

	Pairs	Avg Distance	Value
1	1	92.358	.977
	5	166.108	4.342
	4	274.886	5.385
	5	344.490	4.389
5	5	442.135	2.422
6	2	557.456	8.597
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			

	Pairs	Avg Distance	Value
18			
19			
20			
21			
22			
23			
24			

Model

Nugget : 2.000

Type	Sill	Range
Spherical	1.000	700.000

Model Plot Options Quit
Plot the variogram and Model

O P T I O N S

Variable :TOC
Minimum : .920E+04
Maximum : .770E+05

Pair File : A1SS.pcf
Min. Distance : 92.4
Max. Distance : .198E+04

Direction

Direction : 90.000
Tolerance : 30.000
Max Bandwidth: MAX

Lag Spacing

Minimum : .000
Maximum : 1978.814
Increment : 400.000

Lag	Distance	Lag	Distance
1	400.000	13	
2	800.000	14	
3	1200.000	15	
4	1600.000	16	
5	2000.000	17	
6		18	
7		19	
8		20	
9		21	
10		22	
11		23	
12		24	

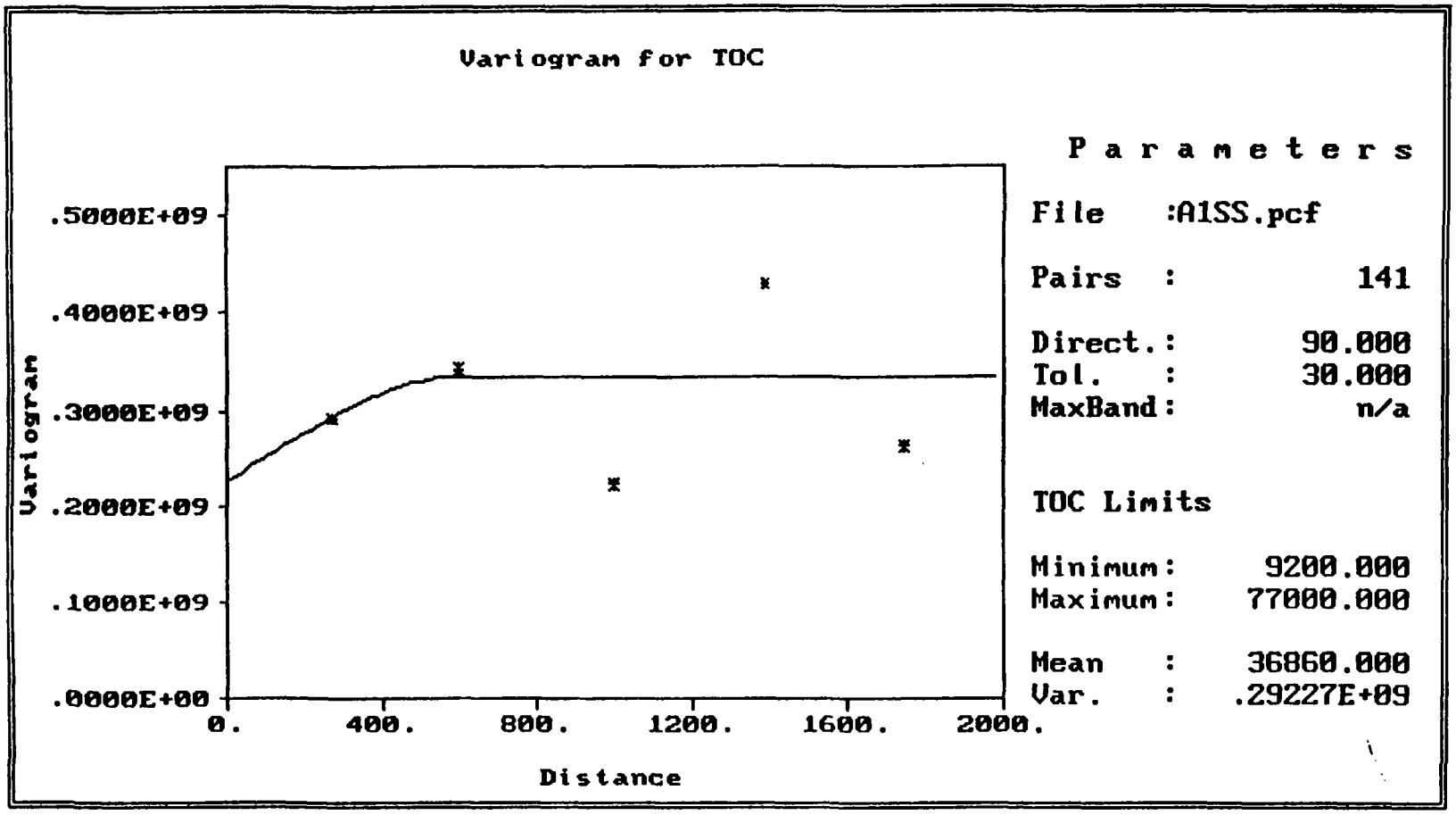
Direction New Lags Change Lags Post Plot Execute Quit
Specify pair orientation (selection) criteria

R E S U L T S

Variable: TOC		Direction : 90.000
Minimum : 9200.000	Estimator : Variogram	Tolerance : 30.000
Maximum : 77000.000	Total Pairs : 141	BandWidth : n/a

	Pairs	Avg Distance	Estimate		Pairs	Avg Distance	Estimate
1	25	267.238291645600	.000	13			
2	42	598.966342682400	.000	14			
3	41	997.166222538600	.000	15			
4	23	1389.047429342600	.000	16			
5	10	1747.191262672000	.000	17			
6				18			
7				19			
8				20			
9				21			
10				22			
11				23			
12				24			

Type Plot Box Plot Lag Results Model Quit
Plot the selected estimator vs. average distance


Variogram for TOC
Variogram
.5000E+09
.4000E+09
.3000E+09
.2000E+09
.1000E+09
.0000E+00
0.
400.
800.
1200.
1600.
2000.
Distance
Parameters
File :A1SS.pcf
Pairs : 141
Direct.: 90.000
Tol. : 30.000
MaxBand: n/a
TOC Limits
Minimum: 9200.000
Maximum: 77000.000
Mean : 36860.000
Var. : .29227E+09

M O D E L

	Pairs	Avg Distance	Value
1	25	267.238	291645600.000
2	42	598.966	342682400.000
3	41	997.166	222538600.000
4	23	1389.047	429342600.000
5	10	1747.191	262672000.000
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			

	Pairs	Avg Distance	Value
18			
19			
20			
21			
22			
23			
24			

Model

Nugget :225000000.000

Type	Sill	Range
Spherical	.1100000E+09	600.000

Model Plot Options Quit
Plot the variogram and Model

O P T I O N S

Variable :TOC
Minimum : .920E+04
imum : .770E+05

Pair File : A1SS.pcf
Min. Distance : 92.4
Max. Distance : .198E+04

Direction

Direction : .000
Tolerance : 30.000
Max Bandwidth: MAX

Lag Spacing

Minimum : .000
Maximum : 1978.814
Increment : 100.000

Lag	Distance	Lag	Distance
1	100.000	13	1300.000
2	200.000	14	1400.000
3	300.000	15	1500.000
4	400.000	16	1600.000
5	500.000	17	1700.000
6	600.000	18	1800.000
7	700.000	19	1900.000
8	800.000	20	2000.000
9	900.000	21	
10	1000.000	22	
11	1100.000	23	
12	1200.000	24	

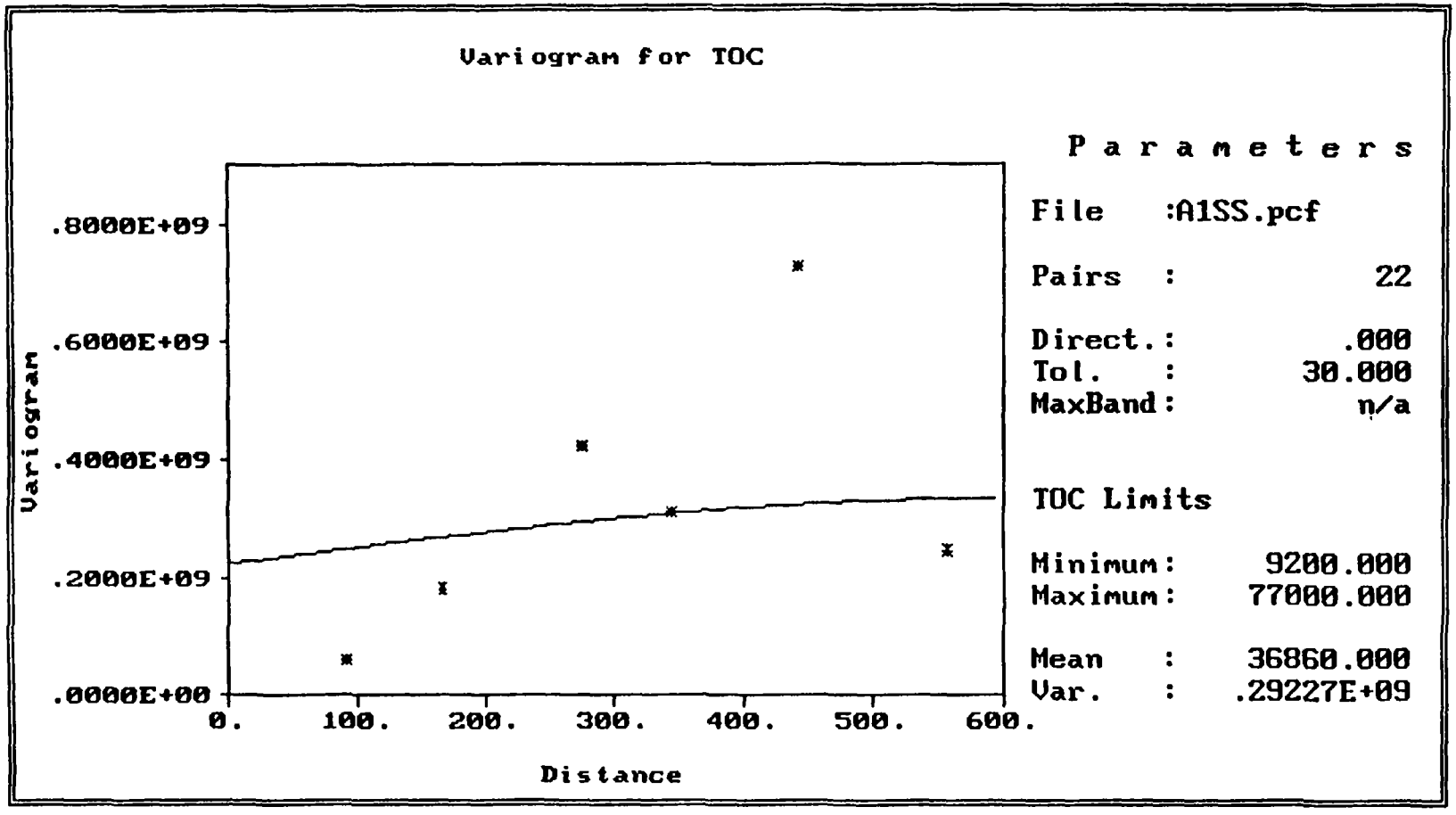
Direction New Lags Change Lags Post Plot Execute Quit
Specify pair orientation (selection) criteria

R E S U L T S

Variable: TOC		Direction : .000
Minimum : 9200.000	Estimator : Variogram	Tolerance : 30.000
imum : 77000.000	Total Pairs : 22	BandWidth : n/a

	Pairs	Avg Distance	Estimate		Pairs	Avg Distance	Estimate
1	1	92.358	60500000.000	13			
2	5	166.108181	500000.000	14			
3	4	274.886423	375000.000	15			
4	5	344.490311	400000.000	16			
5	5	442.135728	599900.000	17			
6	2	557.456246	500000.000	18			
7				19			
8				20			
9				21			
10				22			
11				23			
12				24			

Type Plot Box Plot Lag Results Model Quit
Plot the selected estimator vs. average distance


Variogram for TOC
Variogram
.8000E+09
.6000E+09
.4000E+09
.2000E+09
.0000E+00
0.
100.
200.
300.
400.
500.
600.
Distance
Parameters
File :A1SS.pcf
Pairs : 22
Direct.: .000
Tol. : 30.000
MaxBand: n/a
TOC Limits
Minimum: 9200.000
Maximum: 77000.000
Mean : 36860.000
Var. : .29227E+09

M O D E L

	Pairs	Avg Distance	Value
1	1	92.358	60500000.000
	5	166.108	181500000.000
	4	274.886	423375000.000
	5	344.490	311400000.000
5	5	442.135	728599900.000
6	2	557.456	246500000.000
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			

	Pairs	Avg Distance	Value
18			
19			
20			
21			
22			
23			
24			

Model

Nugget :225000000.000

Type	Sill	Range
Spherical	.1100000E+09	600.000

Model Plot Options Quit
Plot the variogram and Model

APPENDIX 7

CROSS-VALIDATION SUPPORTING DOCUMENTS

AREA 2

(OMNIDIRECTIONAL)

O P T I O N S

Data File : c:\geoeas\mflbc\data\a2ss.prn

ariable: EASTING	Search Ellipse Parameters		
Variable: NORTHING		Distance type :	Euclidean
Kriging : MIREX	R Major : 400.000	Num. sectors :	1
Log option: On	R Minor : 400.000	Max pts/sector:	8
	Angle : .000	Min pts to use:	1
Kriging Type: Ordinary	Min Dist: .000	Empty sectors :	0

Variogram Model

Nugget: 4.000 Global Mean:

	Type	Sill	Major Range	Minor Range	Ellipse Angle
1	Spherical	1.000	400.000	400.000	.000
2		.000	.000	.000	.000
3		.000	.000	.000	.000
4		.000	.000	.000	.000

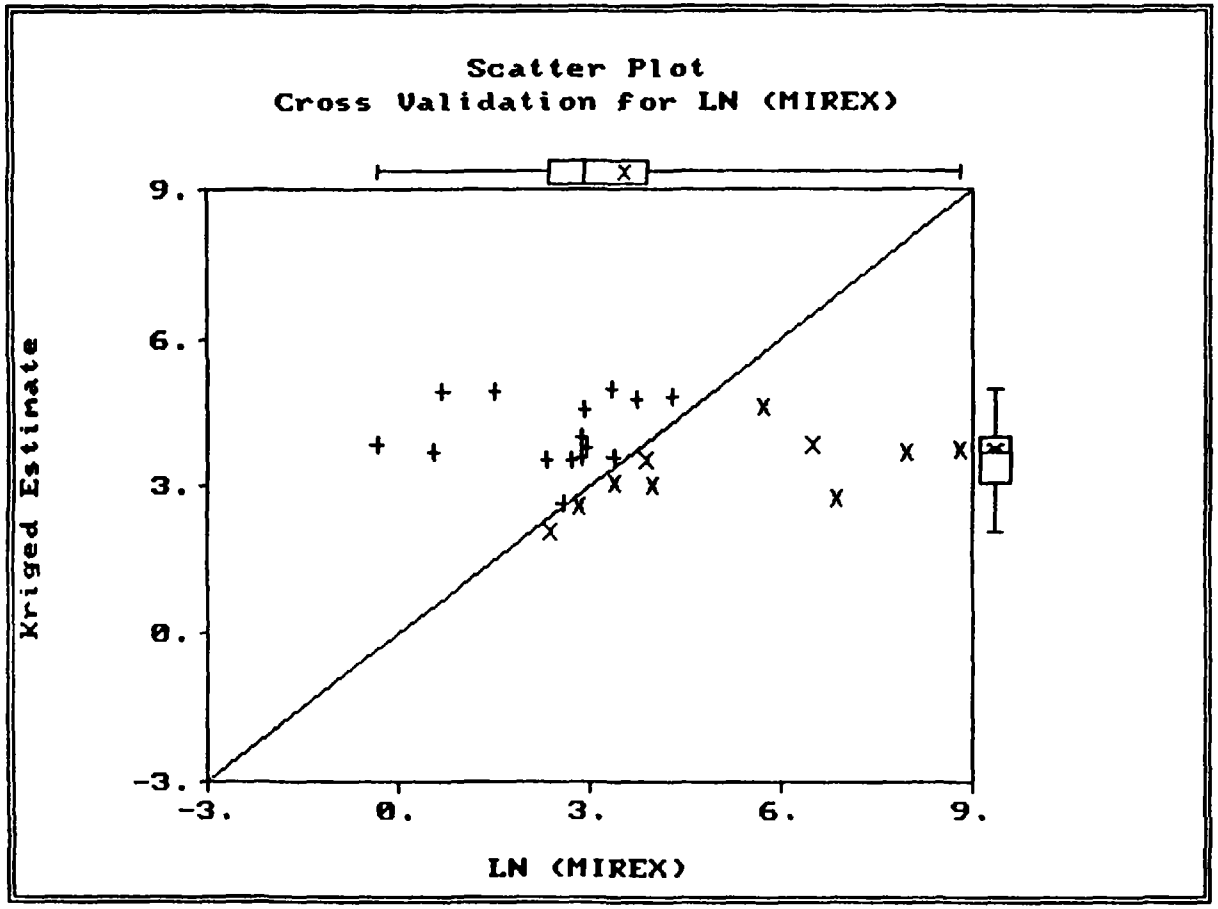
Type Search Model Execute Debug Quit
Enter parameters for neighborhood search

RESULTS

Data File : c:\geoeas\mflbc\data\a2ss.prn
Y ariable : EASTING
ariable : NORTHING
.ging : LN (MIREX) # Data used : 25
Type : Ordinary # Missing data : 0

	Variable	Estimate	Difference	Kriging Std	Zscore
Minimum	-.330	2.080	-5.037	2.204	-2.280
25th %tile	2.380	3.049	-.962	2.229	-.386
Median	2.918	3.676	.201	2.263	.087
75th %tile	3.886	3.988	1.109	2.323	.460
Maximum	8.802	4.967	4.223	2.588	1.860
N	25	25	25	25	25
Mean	3.549	3.766	.216	2.299	.085
Std. Dev.	2.193	.803	2.389	.099	1.056

Error Map Scatter Plot Histogram Write Examine Quit
Map of kriging error (differences)


Scatter Plot
Cross Validation for LN (MIREX)
Kriged Estimate
LN (MIREX)
9.
6.
3.
0.
-3.
-3.
0.
3.
6.
9.

O P T I O N S

Data File : c:\geoeas\mflbc\data\a2ss.prn

ariable: EASTING	Search Ellipse Parameters		
Y Variable: NORTHING		Distance type :	Euclidean
Kriging : TOC	R Major : 600.000	Num. sectors :	1
Log option: Off	R Minor : 600.000	Max pts/sector:	8
	Angle : .000	Min pts to use:	1
Kriging Type: Ordinary	Min Dist: .000	Empty sectors :	0

Variogram Model

Nugget: 25000000.000 Global Mean:

	Type	Sill	Major Range	Minor Range	Ellipse Angle
1	Spherical	50000000.000	600.000	600.000	.000
2		.000	.000	.000	.000
3		.000	.000	.000	.000
4		.000	.000	.000	.000

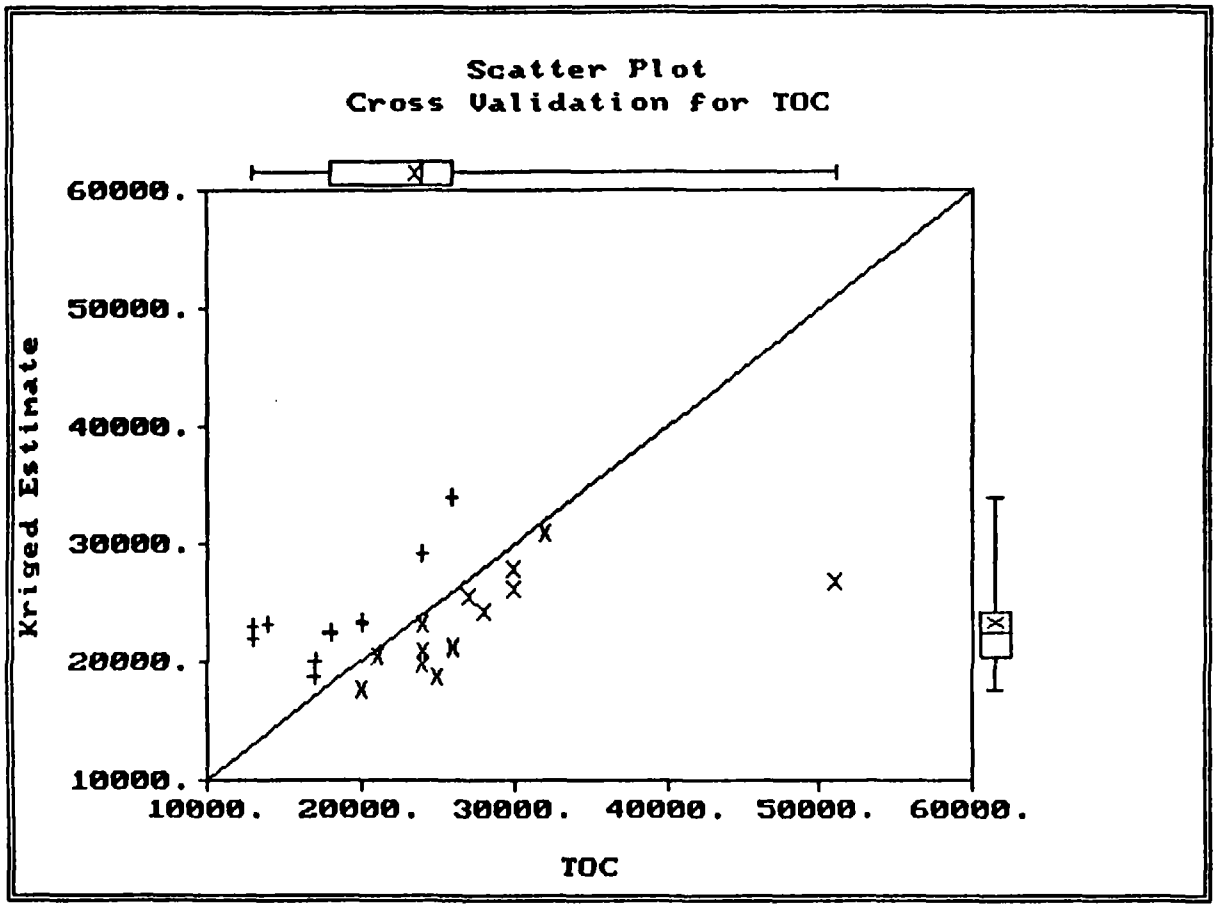
Type Search Model Execute Debug Quit
Enter parameters for neighborhood search

R E S U L T S

Data File : c:\geoeas\mflbc\data\a2ss.prn
'ariable : EASTING
'ariable : NORTHING
.iging : TOC # Data used : 25
Type : Ordinary # Missing data : 0

	Variable	Estimate	Difference	Kriging Std	Zscore
Minimum	13000.000	17514.900	-24089.080	6127.452	-3.267
25th %tile	18000.000	20410.090	-3786.193	6355.625	-.581
Median	24000.000	22515.190	-960.287	6597.343	-.127
75th %tile	26000.000	24213.810	3285.836	7373.842	.515
Maximum	51000.000	34059.670	9845.906	9118.138	1.306
N	25	25	25	25	25
Mean	23520.000	23392.120	-127.876	7032.388	-.010
Std. Dev.	7816.223	4040.335	6944.600	829.987	.977

Error Map Scatter Plot Histogram Write Examine Quit
Map of kriging error (differences)


Scatter Plot
Cross Validation for TOC
Kriged Estimate
60000.
50000.
40000.
30000.
20000.
10000.
10000.
20000.
30000.
40000.
50000.
60000.
TOC

AREA 3

(OMNIDIRECTIONAL)

OPTIONS

Data File : c:\geoeas\mflbc\data\a3ss.prn

ariable: EASTING	Search Ellipse Parameters		
ariable: NORTHING		Distance type :	Euclidean
ıging : MIREX	R Major : 700.000	Num. sectors :	1
Log option: On	R Minor : 700.000	Max pts/sector:	8
	Angle : .000	Min pts to use:	1
Kriging Type: Ordinary	Min Dist: .000	Empty sectors :	0

Variogram Model

Nugget: .400 Global Mean:

	Type	Sill	Major Range	Minor Range	Ellipse Angle
1	Spherical	1.200	700.000	700.000	.000
2		.000	.000	.000	.000
3		.000	.000	.000	.000
4		.000	.000	.000	.000

Type Search Model Execute Debug Quit
Enter parameters for neighborhood search

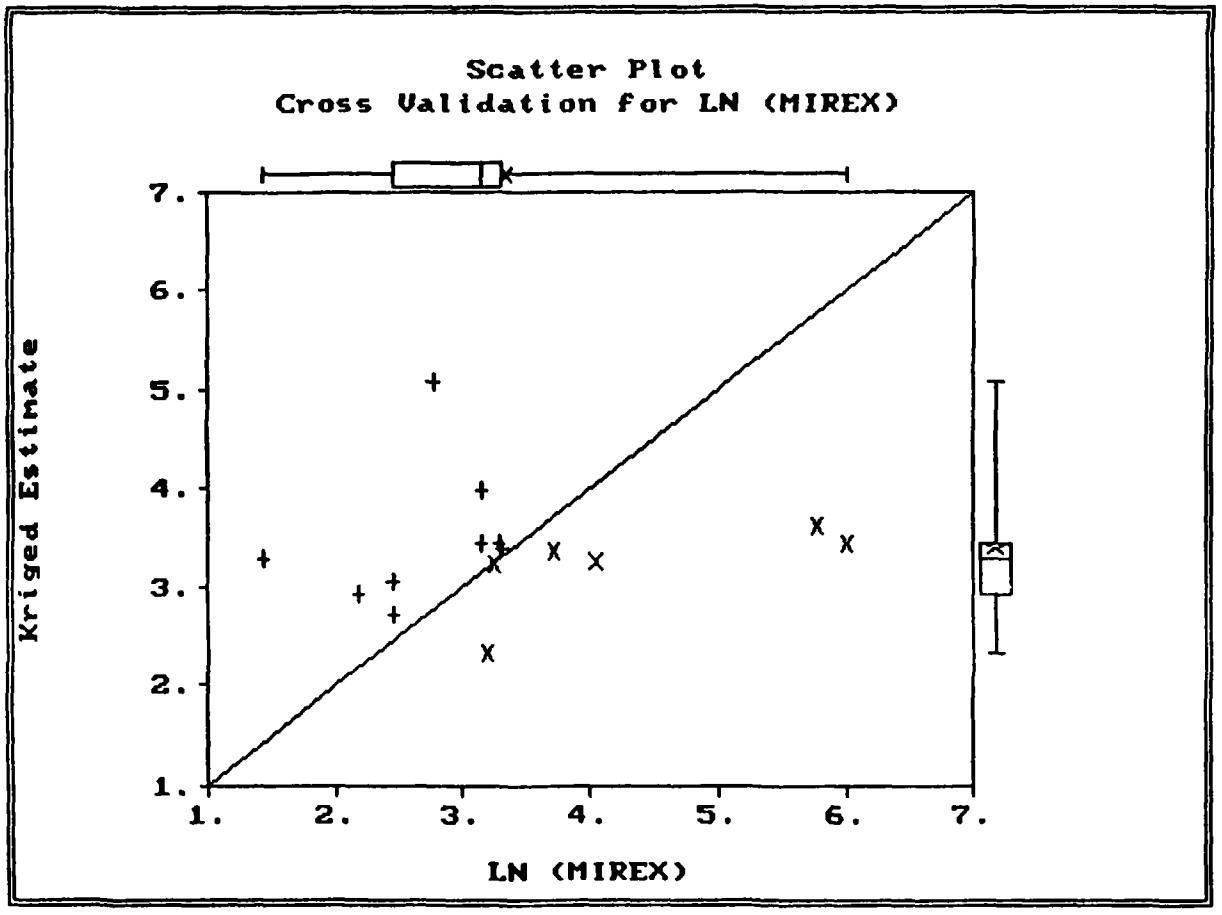
R E S U L T S

Data File : c:\geoeas\mflbc\data\a3ss.prn
ariable : EASTING
ariable : NORTHING
ging : LN (MIREX)
Type : Ordinary

Data used : 15
Missing data : 0

	Variable	Estimate	Difference	Kriging Std	Zscore
Minimum	1.433	2.312	-2.569	.907	-2.335
25th %tile	2.451	2.904	-.875	1.004	-.962
Median	3.148	3.287	.066	1.144	.050
75th %tile	3.318	3.440	.590	1.230	.534
Maximum	6.009	5.068	2.301	1.425	2.011
N	15	15	15	15	15
Mean	3.344	3.364	.020	1.156	.014
Std. Dev.	1.214	.613	1.289	.156	1.127

Error Map Scatter Plot Histogram Write Examine Quit
Map of kriging error (differences)


Scatter Plot
Cross Validation for LN (MIREX)
Kriged Estimate
LN (MIREX)
1.
2.
3.
4.
5.
6.
7.

O P T I O N S

Data File : c:\geoeas\mflbc\data\a3ss.prn

ariable: EASTING	Search Ellipse Parameters		
Variable: NORTHING		Distance type :	Euclidean
Kriging : TOC	R Major : 700.000	Num. sectors :	1
Log option: Off	R Minor : 700.000	Max pts/sector:	8
	Angle : .000	Min pts to use:	1
Kriging Type: Ordinary	Min Dist: .000	Empty sectors :	0

Variogram Model

Nugget: 40000000.000 Global Mean:

	Type	Sill	Major Range	Minor Range	Ellipse Angle
1	Spherical	100000000.000	700.000	700.000	.000
2		.000	.000	.000	.000
3		.000	.000	.000	.000
4		.000	.000	.000	.000

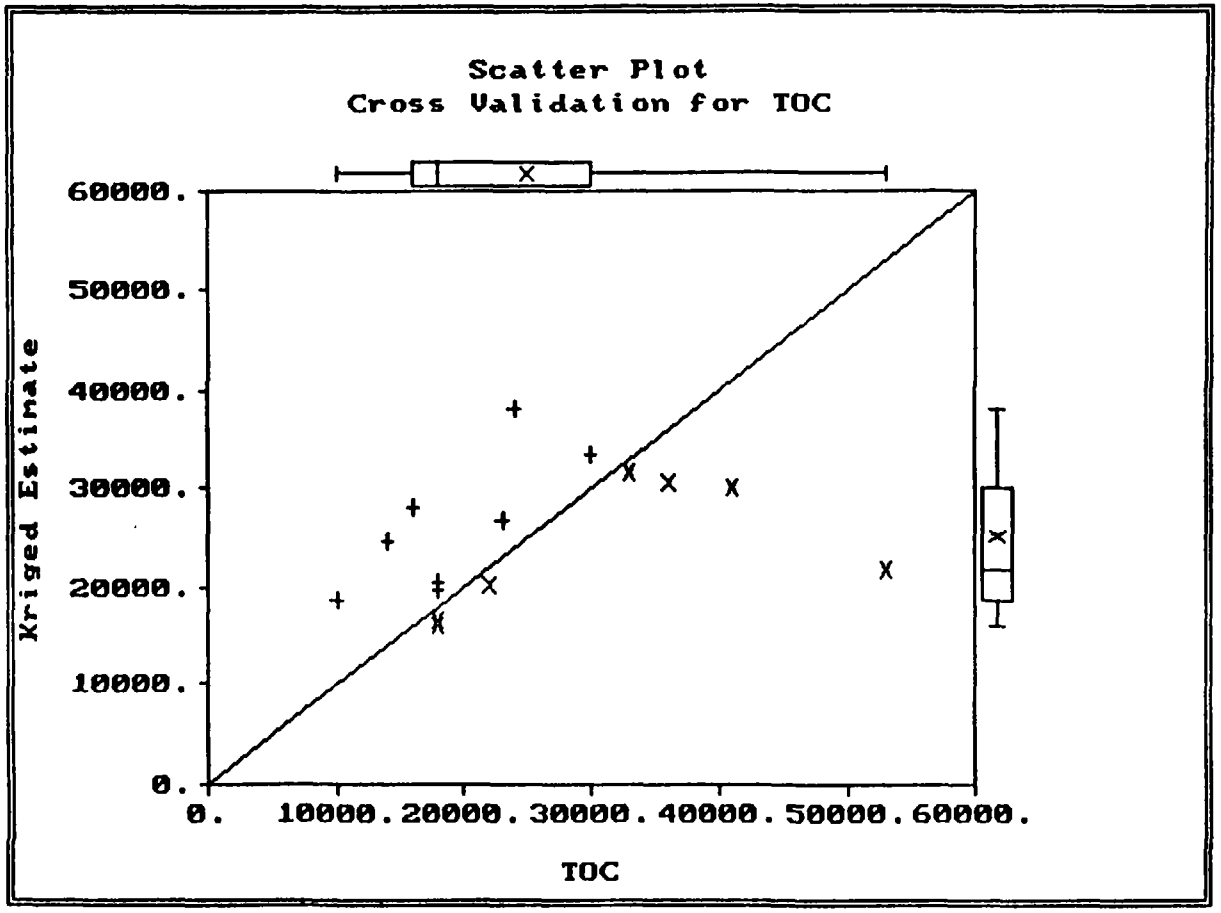
Type Search Model Execute Debug Quit
Enter parameters for neighborhood search

R E S U L T S

Data File : c:\geoeas\mf1bc\data\a3ss.prn
Variable : EASTING
Variable : NORTHING
Kriging : TOC # Data used : 15
Type : Ordinary # Missing data : 0

	Variable	Estimate	Difference	Kriging Std	Zscore
Minimum	10000.000	16072.590	-31171.930	8877.737	-2.862
25th %tile	16000.000	18739.660	-5337.336	9651.138	-.600
Median	18000.000	21828.070	-1283.051	10891.330	-.145
75th %tile	30000.000	30139.790	3774.307	11580.830	.293
Maximum	53000.000	38204.180	14204.180	13386.600	1.354
N	15	15	15	15	15
Mean	24933.330	25119.900	186.568	10983.440	-.000
Std. Dev.	11609.520	6734.547	11011.000	1352.866	.999

Error Map Scatter Plot Histogram Write Examine Quit
Map of kriging error (differences)


Scatter Plot
Cross Validation for TOC
Kriged Estimate
60000.
50000.
40000.
30000.
20000.
10000.
0.
0.
10000.
20000.
30000.
40000.
50000.
60000.
TOC

AREA 5

(OMNIDIRECTIONAL)

O P T I O N S

Data File : c:\geoeas\mflbc\data\alss.prn

Variable: EASTING	Search Ellipse Parameters	
Variable: NORTHING		Distance type : Euclidean
Kriging : MIREX	R Major : 400.000	Num. sectors : 1
Log option: On	R Minor : 400.000	Max pts/sector: 8
	Angle : .000	Min pts to use: 1
Kriging Type: Ordinary	Min Dist: .000	Empty sectors : 0

Variogram Model

Nugget: 2.500 Global Mean: .000

	Type	Sill	Major Range	Minor Range	Ellipse Angle
1	Spherical	1.000	400.000	400.000	.000
2		.000	.000	.000	.000
3					.000
4					.000

Type Search Model Execute Debug Quit
Enter parameters for neighborhood search

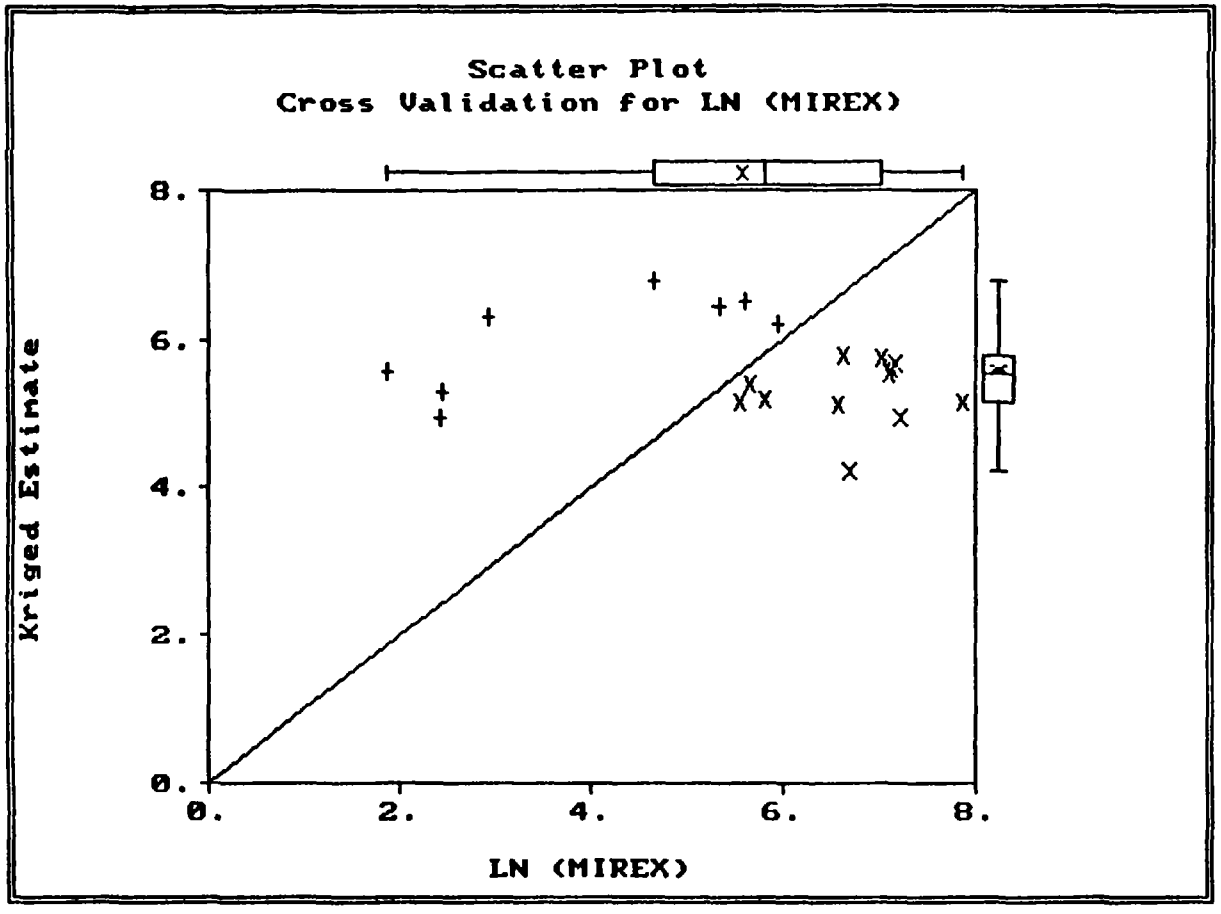
R E S U L T S

Data File : c:\geoeas\mflbc\data\a1ss.prn
ariable : EASTING
ariable : NORTHING
.ging : LN (MIREX)
Type : Ordinary

Data used : 20
Missing data : 0

	Variable	Estimate	Difference	Kriging Std	Zscore
Minimum	1.872	4.224	-2.720	1.910	-1.251
25th %tile	4.654	5.137	-1.535	1.934	-.797
Median	5.817	5.533	-.641	1.959	-.331
75th %tile	7.021	5.791	1.121	2.054	.573
Maximum	7.863	6.778	3.697	2.261	1.887
N	20	20	20	20	20
Mean	5.579	5.575	-.005	2.000	-.009
Std. Dev.	1.810	.625	2.011	.092	1.002

Error Map Scatter Plot Histogram Write Examine Quit
Scatter plot of results


Scatter Plot
Cross Validation for LN (MIREX)
Kriged Estimate
LN (MIREX)
0.
2.
4.
6.
8.

O P T I O N S

Data File : c:\geoeas\mflbc\data\alss.prn

riable: EASTING	Search Ellipse Parameters		
ariable: NORTHING		Distance type :	Euclidean
Kriging : TOC	R Major : 600.000	Num. sectors :	1
Log option: Off	R Minor : 600.000	Max pts/sector:	8
	Angle : .000	Min pts to use:	1
Kriging Type: Ordinary	Min Dist: .000	Empty sectors :	0

Variogram Model

Nugget: 250000000.000 Global Mean:

	Type	Sill	Major Range	Minor Range	Ellipse Angle
1	Spherical	90000000.000	600.000	600.000	.000
2		.000	.000	.000	.000
3					.000
4					.000

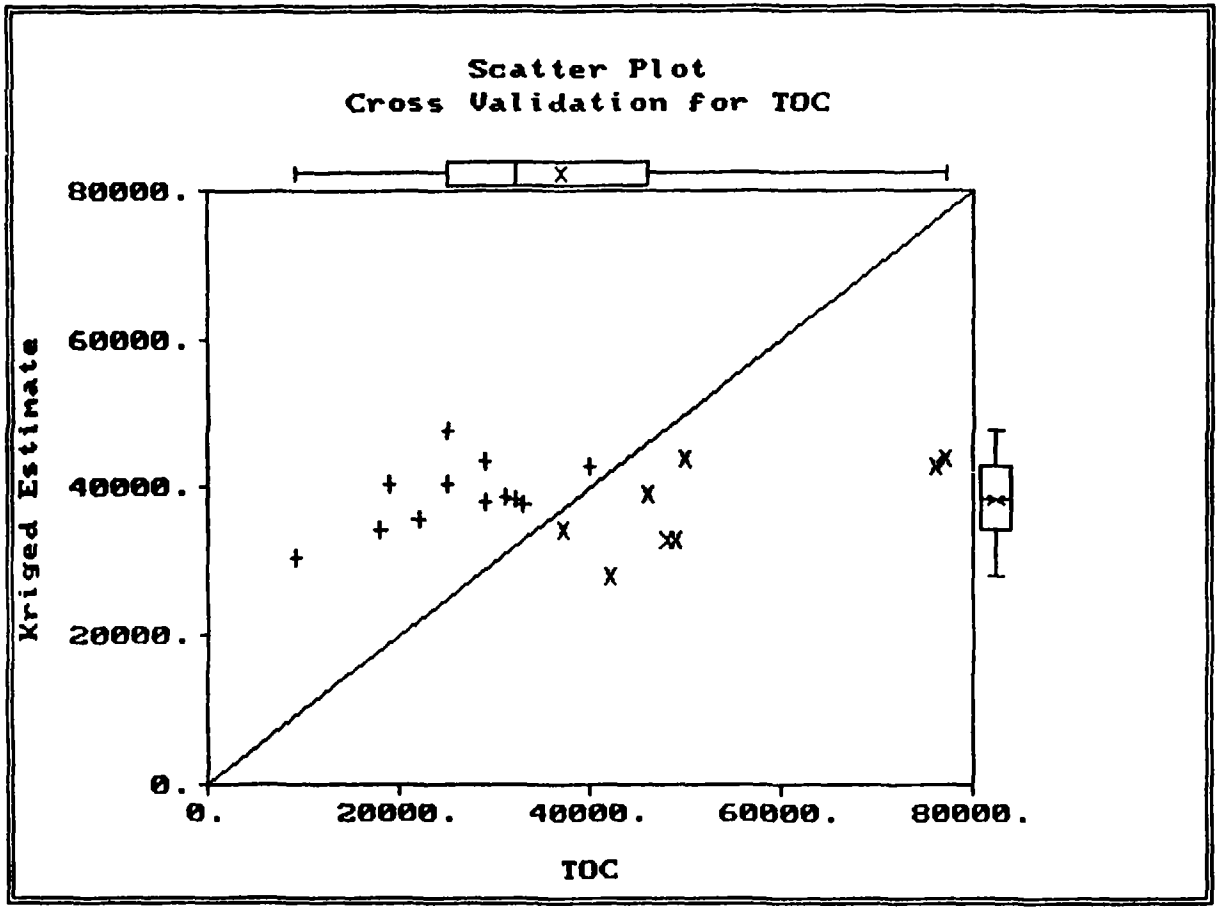
Type Search Model Execute Debug Quit
Enter parameters for neighborhood search

R E S U L T S

Data File : c:\geoeas\mflbc\data\a1ss.prn
Variable : EASTING
Variable : NORTHING
Kriging : TOC # Data used : 20
Type : Ordinary # Missing data : 0

	Variable	Estimate	Difference	Kriging Std	Zscore
Minimum	9200.000	27833.690	-33272.810	18117.670	-1.809
25th %tile	25000.000	34111.340	-14166.310	18355.500	-.735
Median	32000.000	38343.030	4715.656	18503.240	.254
75th %tile	46000.000	42727.190	14410.510	18955.150	.788
Maximum	77000.000	47795.870	22795.870	21585.840	1.225
N	20	20	20	20	20
Mean	36860.000	38233.390	1373.391	18748.490	.066
Std. Dev.	17540.100	5163.607	17005.390	751.221	.908

Error Map Scatter Plot Histogram Write Examine Quit
Map of kriging error (differences)


Scatter Plot
Cross Validation for TOC
80000.
60000.
40000.
20000.
0.
Kriged Estimate
0.
20000.
40000.
60000.
80000.
TOC

AREA 2

(DIRECTIONAL)

O P T I O N S

Data File : c:\geoeas\mflbc\data\a2ss.prn

'ariable: EASTING	Search Ellipse Parameters		
ariable: NORTHING		Distance type :	Euclidean
Kriging : MIREX	R Major : 400.000	Num. sectors :	1
Log option: On	R Minor : 300.000	Max pts/sector:	8
	Angle : 20.000	Min pts to use:	1
Kriging Type: Ordinary	Min Dist: .000	Empty sectors :	0

Variogram Model

Nugget: 3.500 Global Mean:

	Type	Sill	Major Range	Minor Range	Ellipse Angle
1	Spherical	1.250	400.000	300.000	20.000
2					
3		.000	.000	.000	
4		.000	.000	.000	

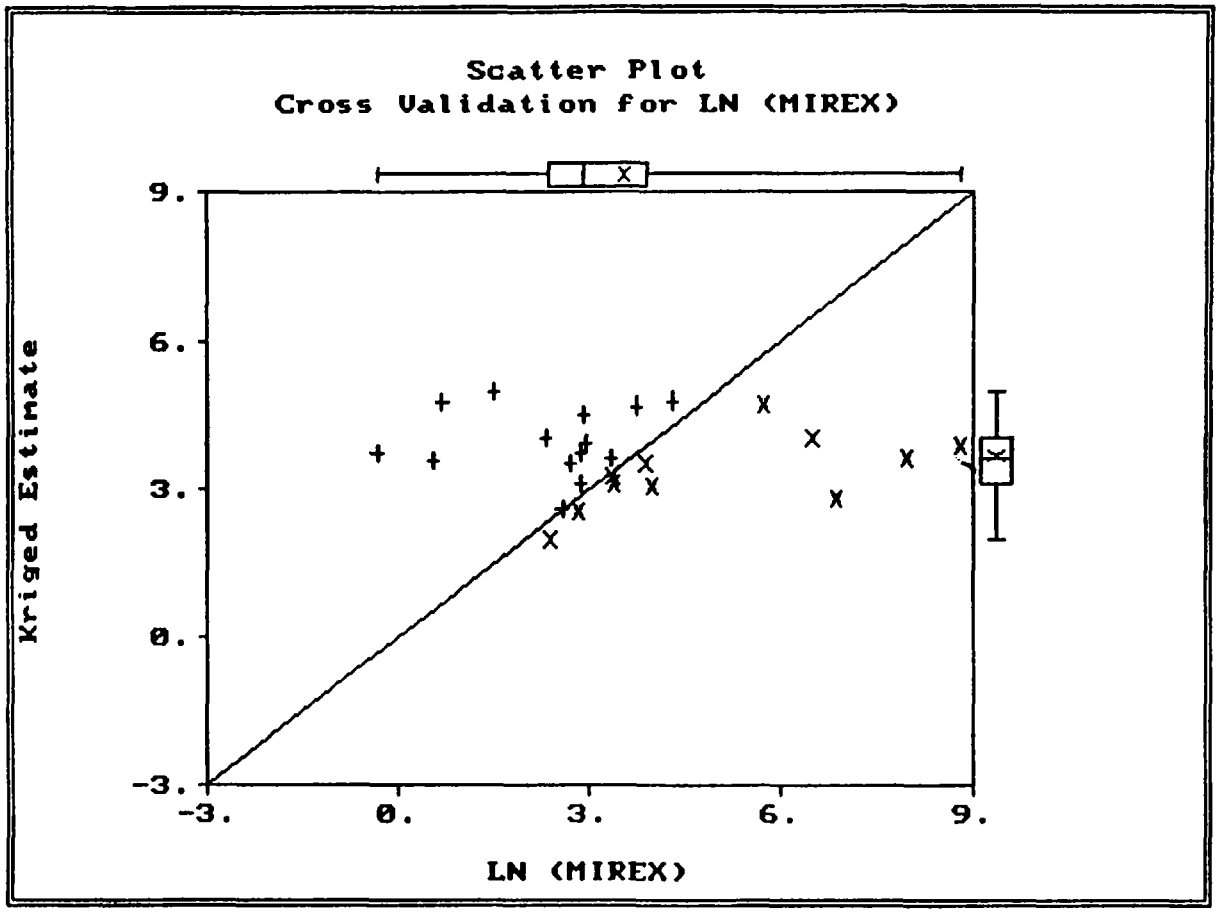
Type Search Model Execute Debug Quit
Specify variogram model

R E S U L T S

Data File : c:\geoeas\mflbc\data\a2ss.prn
ariable : EASTING
ariable : NORTHING
iging : LN (MIREX) # Data used : 25
Type : Ordinary # Missing data : 0

	Variable	Estimate	Difference	Kriging Std	Zscore
Minimum	-.330	1.968	-4.902	2.096	-2.327
25th %tile	2.380	3.121	-.940	2.141	-.387
Median	2.918	3.612	.007	2.188	.003
75th %tile	3.886	4.038	.962	2.291	.455
Maximum	8.802	5.013	4.099	2.668	1.861
N	25	25	25	25	25
Mean	3.549	3.692	.143	2.242	.054
Std. Dev.	2.193	.788	2.335	.140	1.070

Error Map Scatter Plot Histogram Write Examine Quit
Map of kriging error (differences)


Scatter Plot
Cross Validation for LN (MIREX)
Kriged Estimate
9.
6.
3.
0.
-3.
-3.
0.
3.
6.
9.
LN (MIREX)

O P T I O N S

Data File : c:\geoeas\mflbc\data\a2ss.prn

'ariable: EASTING	Search Ellipse Parameters		
ariable: NORTHING		Distance type :	Euclidean
kriging : TOC	R Major : 700.000	Num. sectors :	1
Log option: Off	R Minor : 400.000	Max pts/sector:	8
	Angle : 20.000	Min pts to use:	1
Kriging Type: Ordinary	Min Dist: .000	Empty sectors :	0

Variogram Model

Nugget: 2500000.000 Global Mean:

	Type	Sill	Major Range	Minor Range	Ellipse Angle
1	Spherical	40000000.000	700.000	400.000	20.000
2					
3		.000	.000	.000	
4		.000	.000	.000	

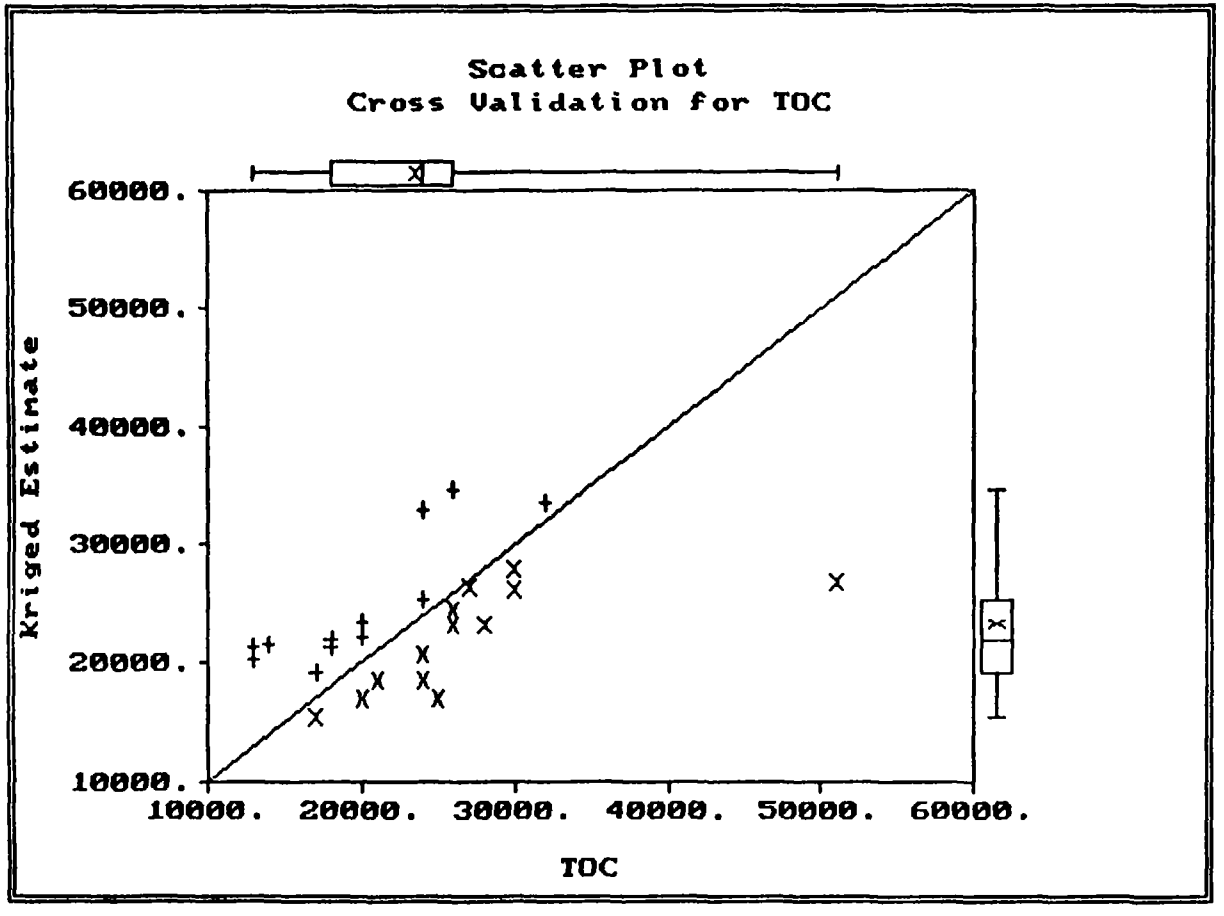
Type Search Model Execute Debug Quit
Begin kriging the sample values

R E S U L T S

Data File : c:\geoeas\mflbc\data\a2ss.prn
ariable : EASTING
ariable : NORTHING
ging : TOC # Data used : 25
Type : Ordinary # Missing data : 0

	Variable	Estimate	Difference	Kriging Std	Zscore
Minimum	13000.000	15355.530	-24141.470	2988.052	-4.725
25th %tile	18000.000	18960.270	-3389.383	3530.847	-1.103
Median	24000.000	21948.610	-1616.338	3839.648	-.279
75th %tile	26000.000	25391.410	3225.436	5108.995	.952
Maximum	51000.000	34561.760	8797.730	7259.480	2.243
N	25	25	25	25	25
Mean	23520.000	23239.480	-280.523	4451.744	-.030
Std. Dev.	7816.223	5099.558	6891.358	1169.315	1.502

Error Map Scatter Plot Histogram Write Examine Quit
Map of kriging error (differences)


Scatter Plot
Cross Validation for TOC
Kriged Estimate
60000.
50000.
40000.
30000.
20000.
10000.
10000.
20000.
30000.
40000.
50000.
60000.
TOC

AREA 3

(DIRECTIONAL)

O P T I O N S

Data File : c:\geoeas\mflbc\data\a3ss.prn

ariable: EASTING	Search Ellipse Parameters		
Y Variable: NORTHING		Distance type :	Euclidean
Kriging : MIREX	R Major : 1000.000	Num. sectors :	1
Log option: On	R Minor : 800.000	Max pts/sector:	8
	Angle : 140.000	Min pts to use:	1
Kriging Type: Ordinary	Min Dist: .000	Empty sectors :	0

Variogram Model

Nugget: .500 Global Mean:

	Type	Sill	Major Range	Minor Range	Ellipse Angle
1	Spherical	1.000	1000.000	800.000	140.000
2					
3		.000	.000	.000	
4		.000	.000	.000	

Type Search Model Execute Debug Quit
Specify variogram model

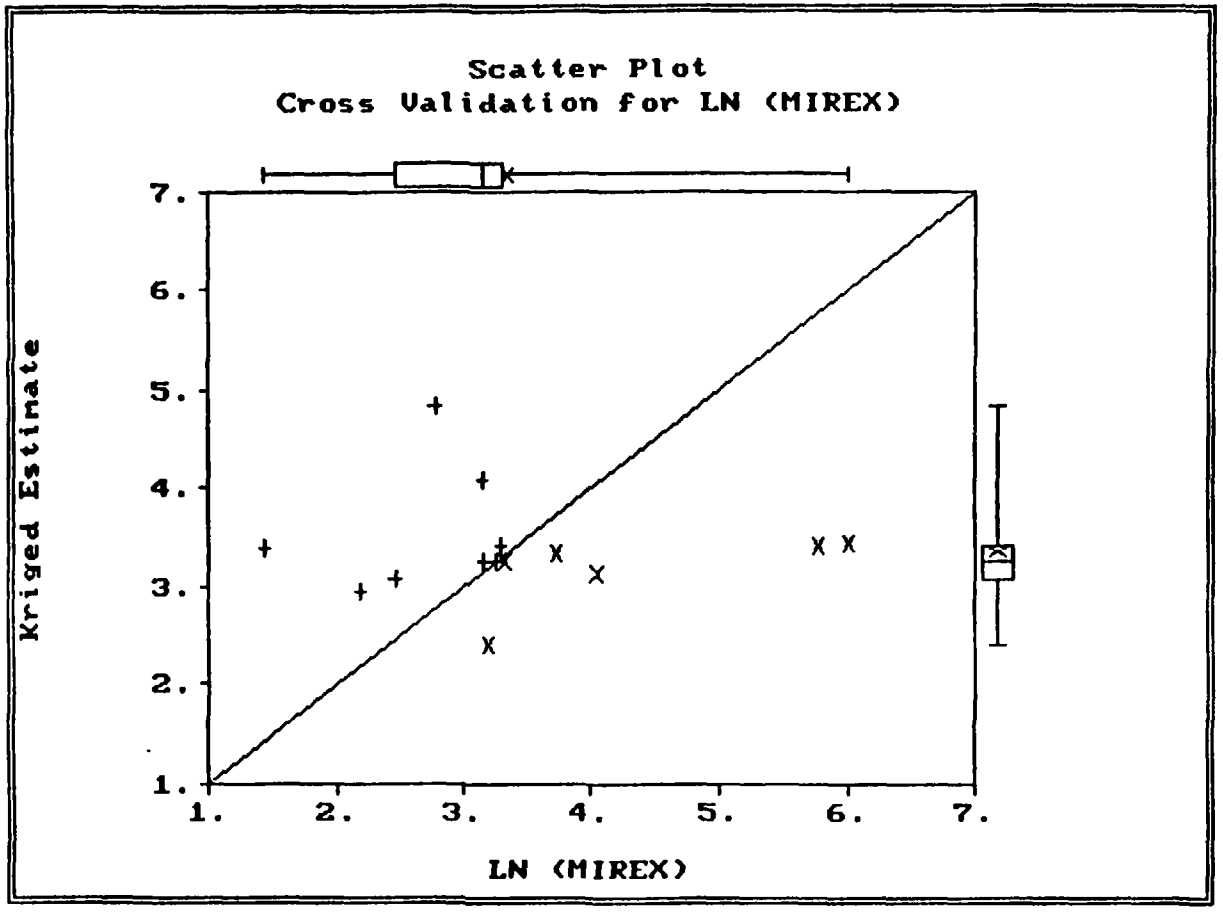
R E S U L T S

Data File : c:\geoeas\mflbc\data\a3ss.prn
'ariable : EASTING
ariable : NORTHING
..iging : LN (MIREX)
Type : Ordinary

Data used : 15
Missing data : 0

	Variable	Estimate	Difference	Kriging Std	Zscore
Minimum	1.433	2.392	-2.573	.935	-2.435
25th %tile	2.451	3.069	-.921	.986	-.850
Median	3.148	3.254	.001	1.063	.001
75th %tile	3.318	3.401	.618	1.129	.582
Maximum	6.009	4.838	2.071	1.274	1.882
N	15	15	15	15	15
Mean	3.344	3.351	.007	1.090	.007
Std. Dev.	1.214	.542	1.312	.103	1.205

Error Map Scatter Plot Histogram Write Examine Quit
Map of kriging error (differences)


Scatter Plot
Cross Validation for LN (MIREX)
Kriged Estimate
LN (MIREX)
7.
6.
5.
4.
3.
2.
1.
1.
2.
3.
4.
5.
6.
7.

O P T I O N S

Data File : c:\geoeas\mflbc\data\a3ss.prn

ariable: EASTING	Search Ellipse Parameters		
ariable: NORTHING		Distance type :	Euclidean
Kriging : TOC	R Major : 1250.000	Num. sectors :	1
Log option: Off	R Minor : 700.000	Max pts/sector:	8
Kriging Type: Ordinary	Angle : 140.000	Min pts to use:	1
	Min Dist: .000	Empty sectors :	0

Variogram Model

Nugget: .000 Global Mean:

	Type	Sill	Major Range	Minor Range	Ellipse Angle
1	Gaussian	250000000.000	1250.000	700.000	140.000
2		.000	.000	.000	.000
3		.000	.000	.000	.000
4		.000	.000	.000	.000

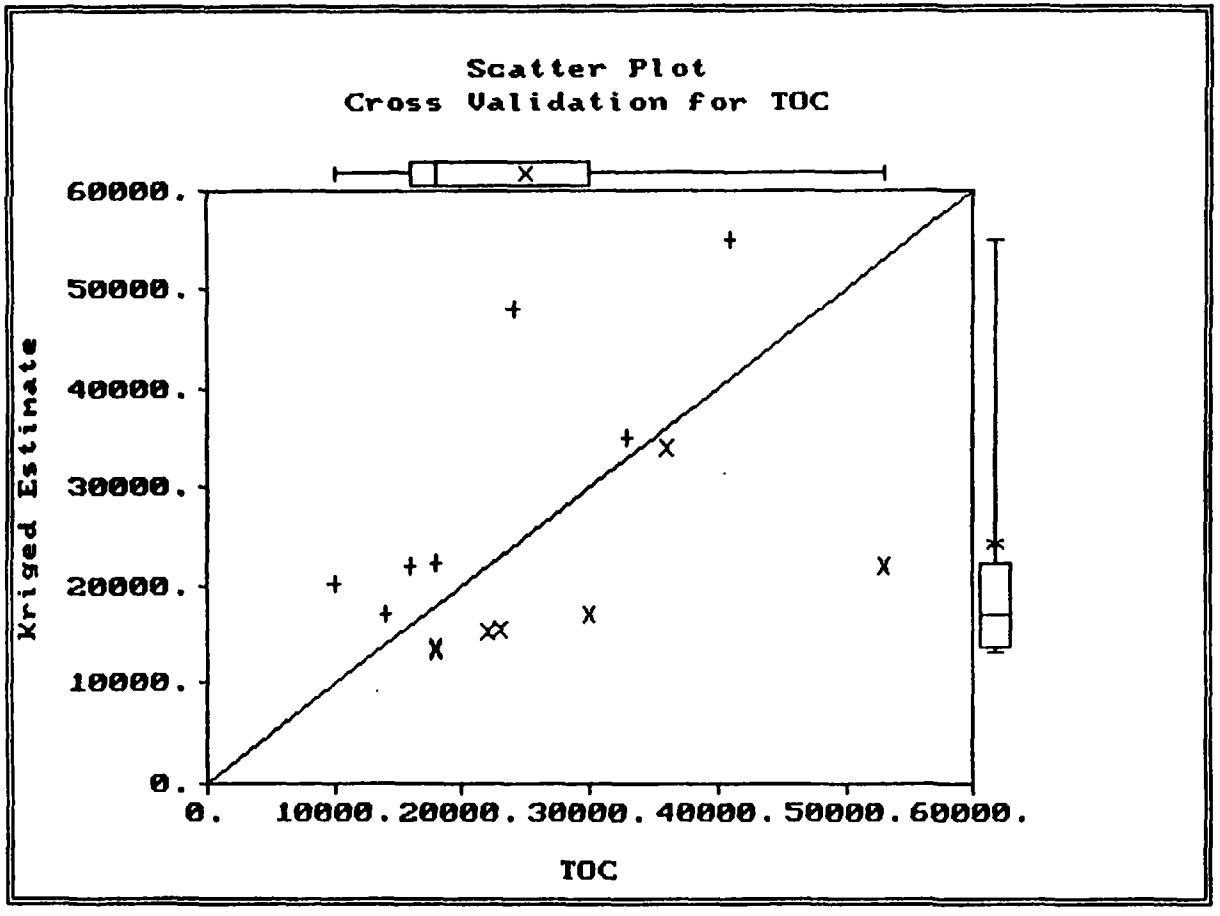
Type Search Model Execute Debug Quit
Enter parameters for neighborhood search

R E S U L T S

Data File : c:\geoeas\mflbc\data\a3ss.prn
Variable : EASTING
Variable : NORTHING
Kriging : TOC # Data used : 15
Type : Ordinary # Missing data : 0

	Variable	Estimate	Difference	Kriging Std	Zscore
Minimum	10000.000	13294.100	-30940.030	547.372	-5.354
25th %tile	16000.000	13792.870	-7426.312	1245.959	-3.377
Median	18000.000	17175.250	-4207.130	5258.774	-.733
75th %tile	30000.000	22245.480	4245.482	6953.395	2.475
Maximum	53000.000	54994.400	23896.460	10127.000	4.544
N	15	15	15	15	15
Mean	24933.330	24264.440	-668.890	4969.703	.012
Std. Dev.	11609.520	12954.430	12578.400	3157.745	2.928

Error Map Scatter Plot Histogram Write Examine Quit
Map of kriging error (differences)


Scatter Plot
Cross Validation for TOC
Kriged Estimate
60000.
50000.
40000.
30000.
20000.
10000.
0.
0. 10000. 20000. 30000. 40000. 50000. 60000.
TOC

AREA 5

(DIRECTIONAL)

OPTIONS

Data File : c:\geoeas\mflbc\data\a1ss.prn

ariable: EASTING	Search Ellipse Parameters		
ariable: NORTHING		Distance type :	Euclidean
riging : MIREX	R Major : 700.000	Num. sectors :	1
Log option: On	R Minor : 300.000	Max pts/sector:	8
	Angle : 90.000	Min pts to use:	1
Kriging Type: Ordinary	Min Dist: .000	Empty sectors :	0

Variogram Model

Nugget: 2.000 Global Mean:

	Type	Sill	Major Range	Minor Range	Ellipse Angle
1	Spherical	1.000	700.000	300.000	90.000
2		.000	.000	.000	.000
3		.000	.000	.000	.000
4		.000	.000	.000	.000

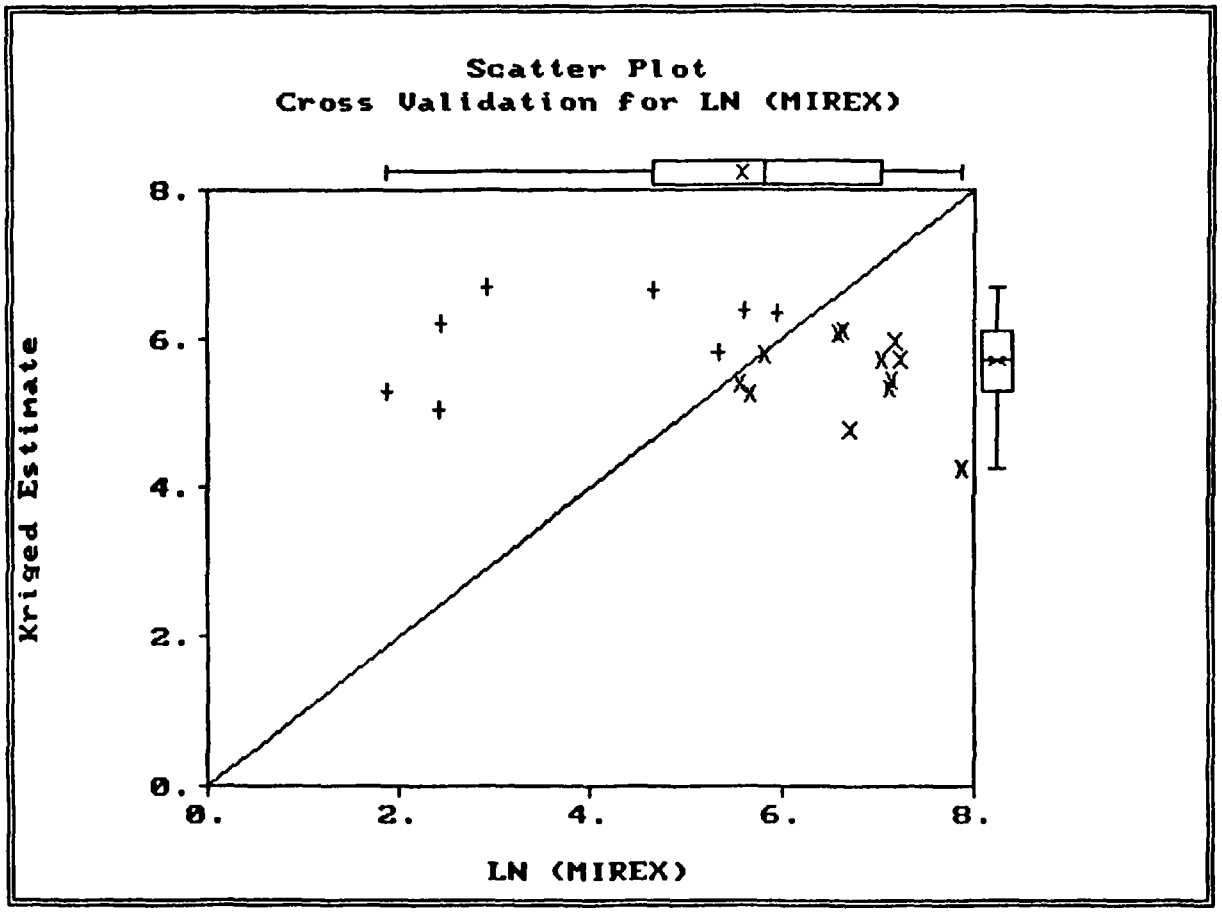
Type Search Model Execute Debug Quit
Enter parameters for neighborhood search

R E S U L T S

Data File : c:\geoeas\mflbc\data\a1ss.prn
Y Variable : EASTING
X Variable : NORTHING
Gridding : LN (MIREX)
Type : Ordinary
Data used : 20
Missing data : 0

	Variable	Estimate	Difference	Kriging Std	Zscore
Minimum	1.872	4.239	-3.625	1.676	-1.999
25th %tile	4.654	5.275	-1.519	1.723	-.881
Median	5.817	5.720	-.406	1.759	-.239
75th %tile	7.021	6.083	.766	1.813	.417
Maximum	7.863	6.691	3.767	1.902	2.163
N	20	20	20	20	20
Mean	5.579	5.700	.120	1.776	.054
Std. Dev.	1.810	.626	2.056	.069	1.142

Error Map Scatter Plot Histogram Write Examine Quit
Map of kriging error (differences)


Scatter Plot
Cross Validation for LN (MIREX)
Kriged Estimate
LN (MIREX)
0.
2.
4.
6.
8.

O P T I O N S

Data File : c:\geoeas\mflbc\data\a1ss.prn

Variable: EASTING	Search Ellipse Parameters		
Variable: NORTHING		Distance type :	Euclidean
Kriging : TOC	R Major : 600.000	Num. sectors :	1
Log option: Off	R Minor : 600.000	Max pts/sector:	8
	Angle : 90.000	Min pts to use:	1
Kriging Type: Ordinary	Min Dist: .000	Empty sectors :	0

Variogram Model

Nugget: 225000000.000 Global Mean:

	Type	Sill	Major Range	Minor Range	Ellipse Angle
1	Spherical	110000000.000	600.000	300.000	90.000
2		.000	.000	.000	
3		.000	.000	.000	
4		.000	.000	.000	

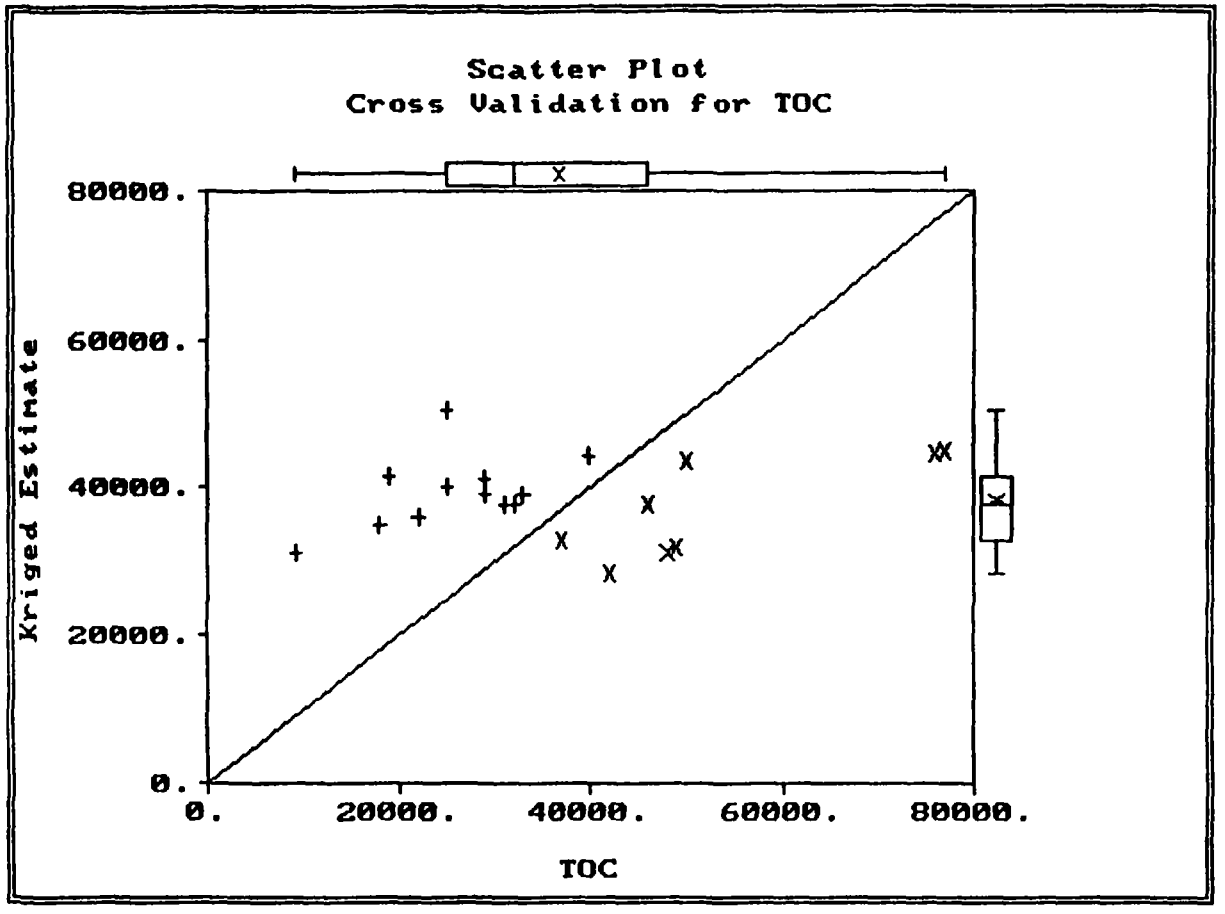
Type Search Model Execute Debug Quit
Specify variogram model

R E S U L T S

Data File : c:\geoeas\mflbc\data\a1ss.prn
'ariable : EASTING
ariable : NORTHING
.ging : TOC # Data used : 20
Type : Ordinary # Missing data : 0

	Variable	Estimate	Difference	Kriging Std	Zscore
Minimum	9200.000	28478.460	-32158.050	17903.610	-1.754
25th %tile	25000.000	32850.530	-13521.540	18335.920	-.698
Median	32000.000	37709.050	5660.398	18523.790	.301
75th %tile	46000.000	41476.850	13924.750	19009.750	.758
Maximum	77000.000	50628.910	25628.910	21148.200	1.354
N	20	20	20	20	20
Mean	36860.000	38399.680	1539.684	18766.120	.074
Std. Dev.	17540.100	5694.335	17138.870	706.355	.917

Error Map Scatter Plot Histogram Write Examine Quit
Map of kriging error (differences)


Scatter Plot
Cross Validation for TOC
Kriged Estimate
80000.
60000.
40000.
20000.
0.
0.
20000.
40000.
60000.
80000.
TOC

APPENDIX 8

KRIGING SUPPORTING DOCUMENTS

AREA 2

K R I G E O P T I O N S

Title: a2ss.grd - kriged estimates of data from a2ss.prn

:a

Data File : a2ss.prn
Output File : a2-m-dir.grd

Polygon

Polygon File:
Sample Select: No

Type

Type of Kriging : Ordinary
Point or Block : Block 2x2

Grid Parameters

		X	Y
Variable	:	EASTING	NORTHING
Origin	:	2446612.000	468807.900
Spacing	:	50.000	50.000
Number	:	30	20

Search Parameters

Major Radius	:	400.000	# Sectors : 1
Minor Radius	:	300.000	Max in Sector: 16
Ellipse Angle	:	20.000	Min. to use : 8
Distance Type:		Euclidean	Empty Sectors: 0

Data Polygon Type Grid Search Variables/Models Title Execute Quit
This option invokes the Variables and Variogram Models screen

Variables and Models Selection

List of Variables to Krige

1 lnMirex «
2 TOC -
3
4
5
6
7
8
9
10

Variable : lnMirex Global Mean :

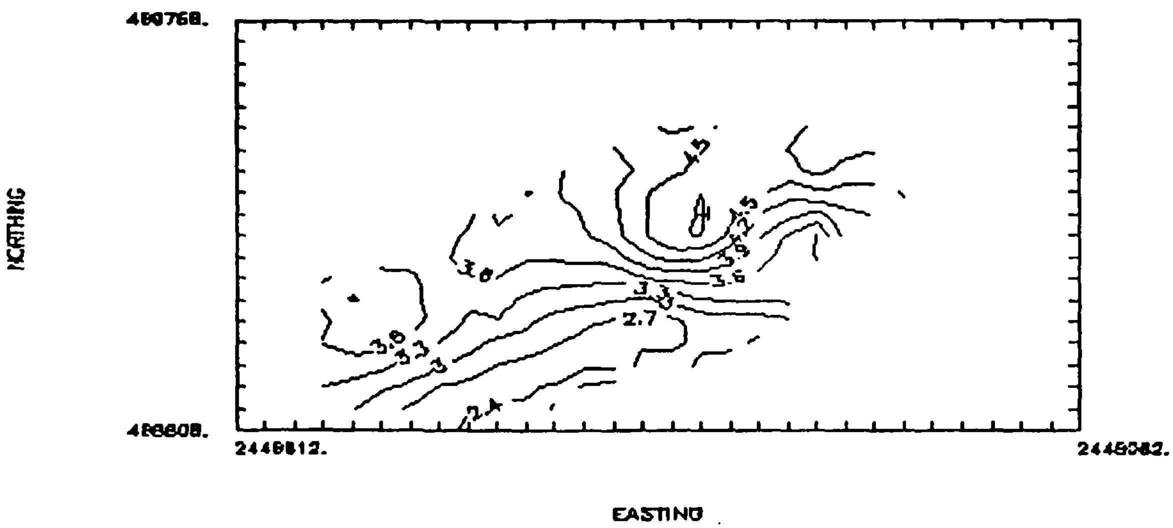
Variogram Model Parameters

Nugget : 3.500

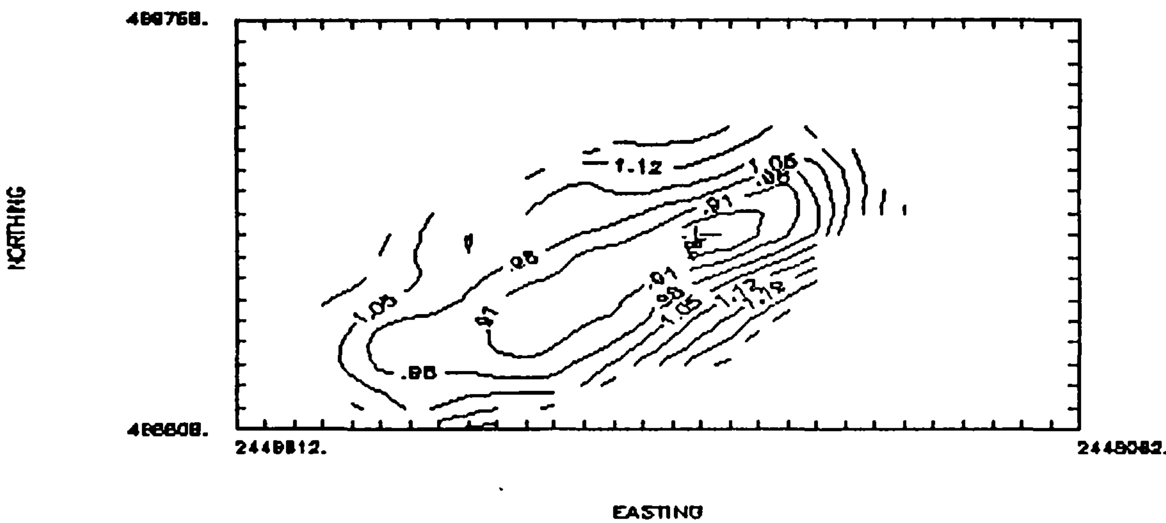
#	Type	Sill Value	Major Range	Minor Range	Angle
1	Spherical	1.250	400.000	300.000	20.00
2					
3					
4					

New Variable Edit Delete Quit
Select a variable and edit the variogram model parameters

Kriging estimates produced from data file a2ss.grd
Contours for xlnMirex



Kriging estimates produced from data file a2ae.grd
Contours for KSDInMirex



KRIGE OPTIONS

Title: a2ss.grd - kriged estimates of data from a2ss.prn

ta

Data File : a2ss.prn
Output File : a2-t-dir.grd

Polygon

Polygon File:
Sample Select: No

Type

Type of Kriging : Ordinary
Point or Block : Block 2x2

Grid Parameters

	X	Y
Variable :	EASTING	NORTHING
Origin :	2446612.000	468807.900
Spacing :	50.000	50.000
Number :	30	20

Search Parameters

Major Radius :	700.000	# Sectors :	1
Minor Radius :	400.000	Max in Sector:	16
Ellipse Angle:	20.000	Min. to use :	8
Distance Type:	Euclidean	Empty Sectors:	0

Data Polygon Type Grid Search Variables/Models Title Execute Quit
This option invokes the Variables and Variogram Models screen

Variables and Models Selection

List of riables to Krige

1 lnMirex
2 TOC «
3
4
5
6
7
8
9
10

Variable : TOC Global Mean :

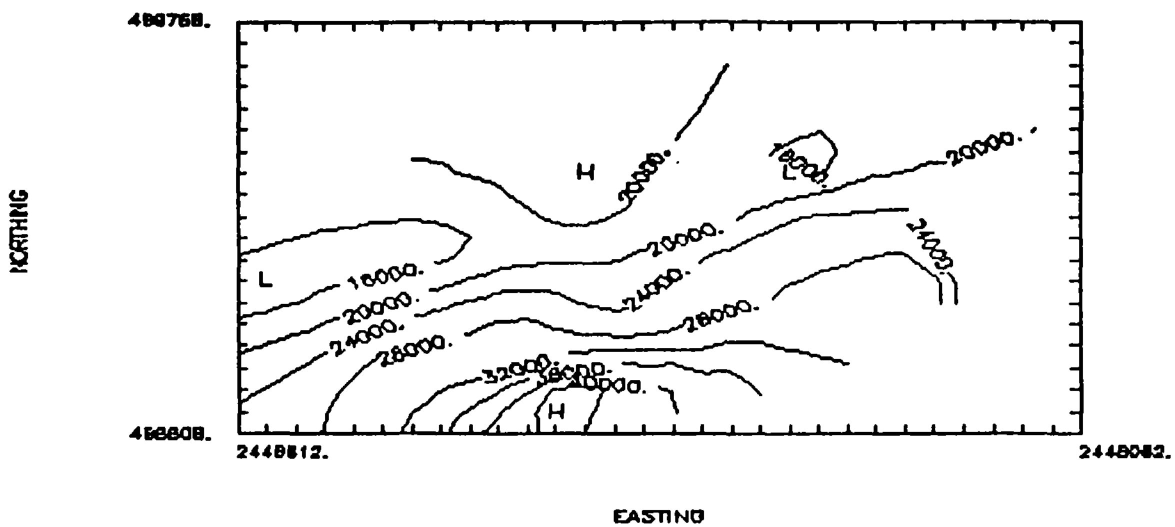
Variogram Model Parameters

Nugget : 2500000.000

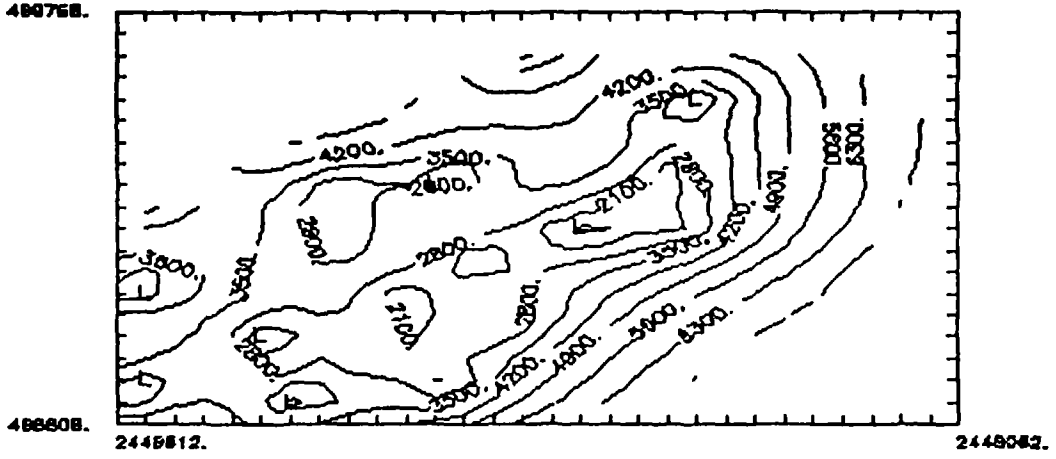
#	Type	Sill Value	Major Range	Minor Range	Angle
1	Spherical	40000000.000	700.000	400.000	20.00
2					
3					
4					

New Variable Edit Delete Quit
Select a variable and edit the variogram model parameters

Kriging estimates produced from data file a2se.grd
Contours for %TOC



Kriging estimates produced from data file a2aa.grd
Contours for KSOTOC



AREA 3

KRIGE OPTIONS

Title: a3ss.grd - kriged estimates of data from a3ss.prn

a

Data File : a3ss.prn
Output File : a3-m-dir.grd

Polygon

Polygon File:
Sample Select: No

Type

Type of Kriging : Ordinary
Point or Block : Block 2x2

Grid Parameters

	X	Y
Variable :	EASTING	NORTHING
Origin :	2459151.000	475051.600
Spacing :	50.000	50.000
Number :	40	40

Search Parameters

Major Radius :	1000.000	# Sectors :	1
Minor Radius :	800.000	Max in Sector:	16
Ellipse Angle:	140.000	Min. to use :	8
Distance Type:	Euclidean	Empty Sectors:	0

Data Polygon Type Grid Search Variables/Models Title Execute Quit
This option invokes the Variables and Variogram Models screen

Variables and Models Selection

List of riables to Krige

1 lnMirex «
2 TOC
3
4
5
6
7
8
9
10

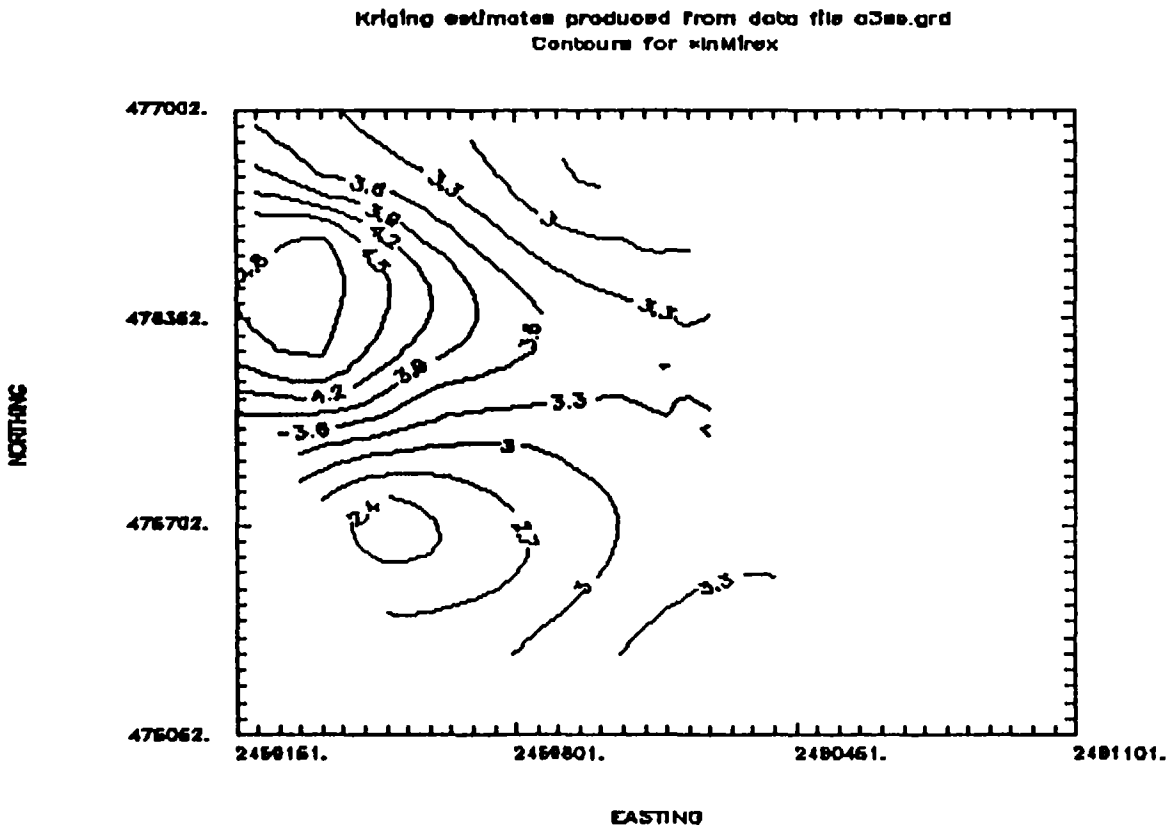
Variable : lnMirex Global Mean :

Variogram Model Parameters

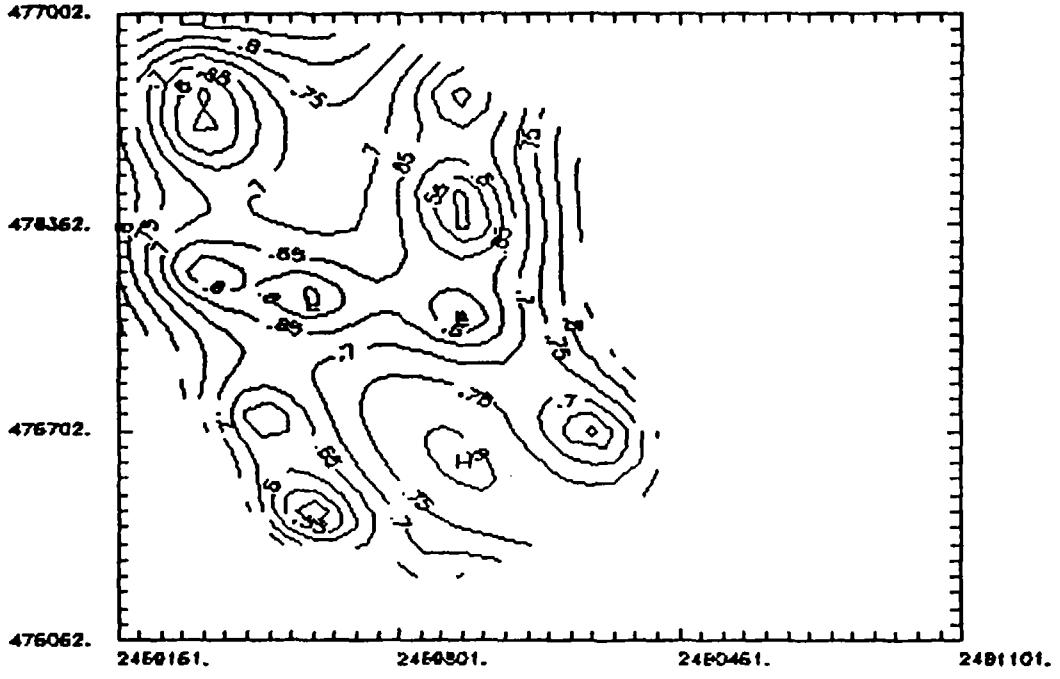
Nugget : .500

#	Type	Sill Value	Major Range	Minor Range	Angle
1	Spherical	1.000	1000.000	800.000	140.00
2					
3					
4					

New Variable Edit Delete Quit
Select a variable and edit the variogram model parameters


Kriging estimates produced from data file a3aa.grd
Contours for *inMirex
477002.
476382.
476702.
476062.
NORTHING
2459161.
2459801.
2460461.
2461101.
EASTING
3.6
3.3
3.9
4.2
4.5
3.6
3.9
4.2
3.3
3
2.4
2.7
3
3.3

Kriging estimates produced from data file a3aa.grd
Contours for KSOInMirex



KRIGE OPTIONS

Title: a3ss.grd - kriged estimates of data from a3ss.prn

a

Data File : a3ss.prn
Output File : a3-t-dir.grd

Polygon

Polygon File:
Sample Select: No

Type

Type of Kriging : Ordinary
Point or Block : Block 2x2

Grid Parameters

	X	Y
Variable :	EASTING	NORTHING
Origin :	2459151.000	475051.600
Spacing :	50.000	50.000
Number :	40	40

Search Parameters

Major Radius :	1250.000	# Sectors :	1
Minor Radius :	700.000	Max in Sector:	16
Ellipse Angle:	140.000	Min. to use :	8
Distance Type:	Euclidean	Empty Sectors:	0

Data Polygon Type Grid Search Variables/Models Title Execute Quit
This option invokes the Variables and Variogram Models screen

Variables and Models Selection

List of Variables to Krige

1 lnMirex
2 TOC «
3
4
5
6
7
8
9
10

Variable : TOC

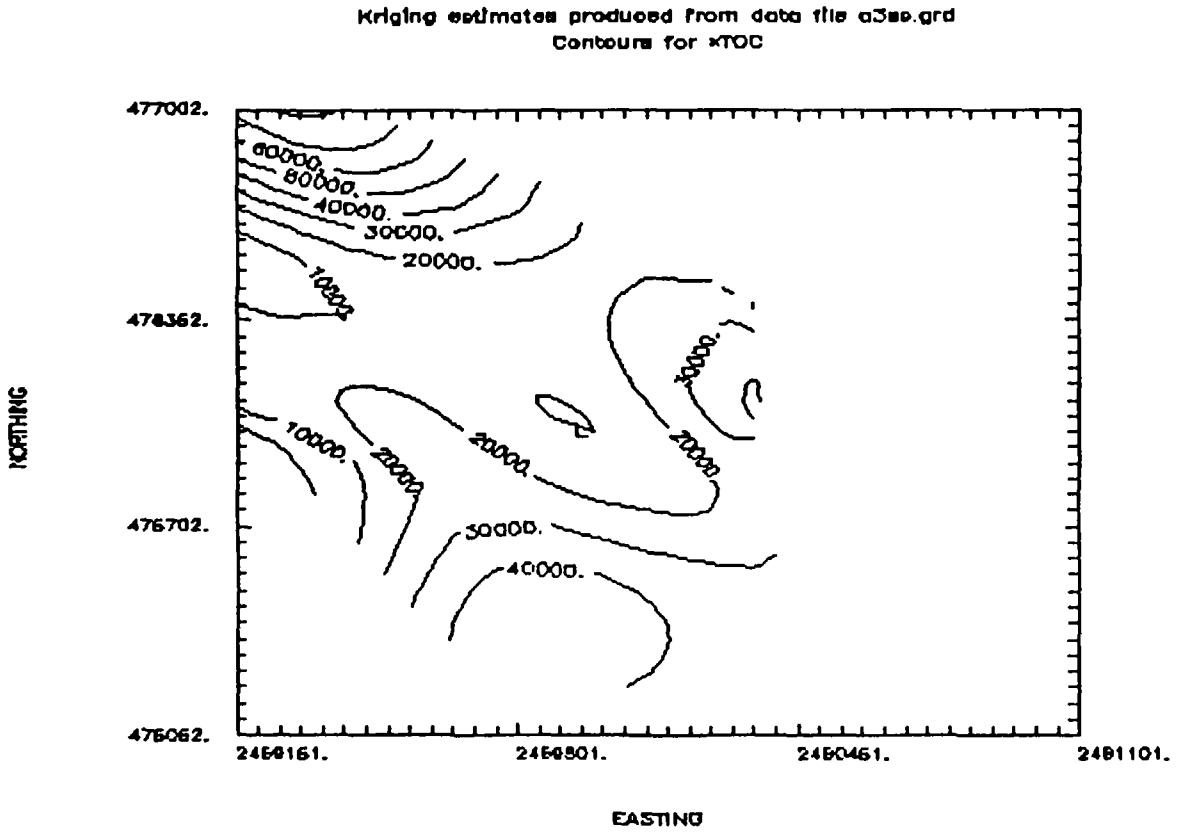
Global Mean :

Variogram Model Parameters

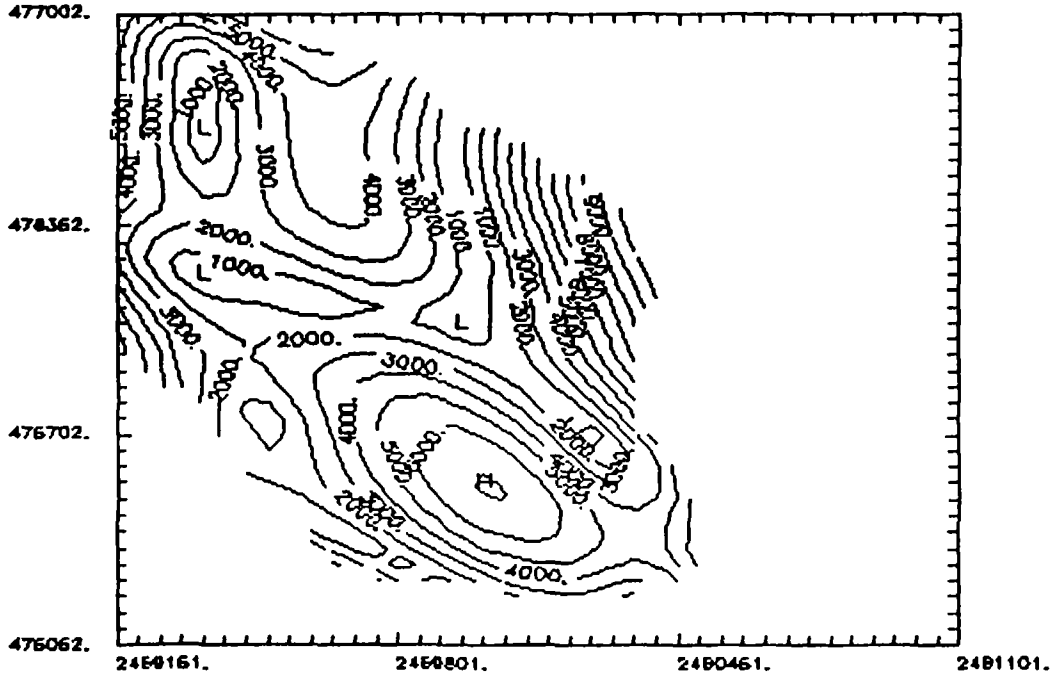
Nugget : .000

#	Type	Sill Value	Major Range	Minor Range	Angle
1	Gaussian	250000000.000	1250.000	700.000	140.00
2					
3					
4					

New Variable Edit Delete Quit
Select a variable and edit the variogram model parameters


Kriging estimates produced from data file a3ss.grd
Contours for xTOC
477002.
476362.
476702.
476062.
NORTHING
60000.
80000.
40000.
30000.
20000.
10000.
30000.
20000.
10000.
20000.
20000.
30000.
40000.
2489161.
2489501.
2489841.
2490181.
EASTING

Kriging estimates produced from data file a3aa.grd
Contours for KSDTOC



AREA 5

KRIGE OPTIONS

Title: a1ss.grd - kriged estimates of data from a1ss.prn

:a

Data File : a1ss.prn
Output File : a1-m-dir.grd

Polygon

Polygon File:
Sample Select: No

Type

Type of Kriging : Ordinary
Point or Block : Block 2x2

Grid Parameters

	X	Y
Variable :	EASTING	NORTHING
Origin :	2472462.000	440760.500
Spacing :	50.000	50.000
Number :	20	50

Search Parameters

Major Radius :	700.000	# Sectors :	1
Minor Radius :	300.000	Max in Sector:	16
Ellipse Angle:	90.000	Min. to use :	8
Distance Type:	Euclidean	Empty Sectors:	0

Data Polygon Type Grid Search Variables/Models Title Execute Quit
Enter parameters for the neighborhood search

Variables and Models Selection

List of riables to Krige

Variable : lnMirex Global Mean :

1 lnMirex «
2 TOC
3
4
5
6
7
8
9
10

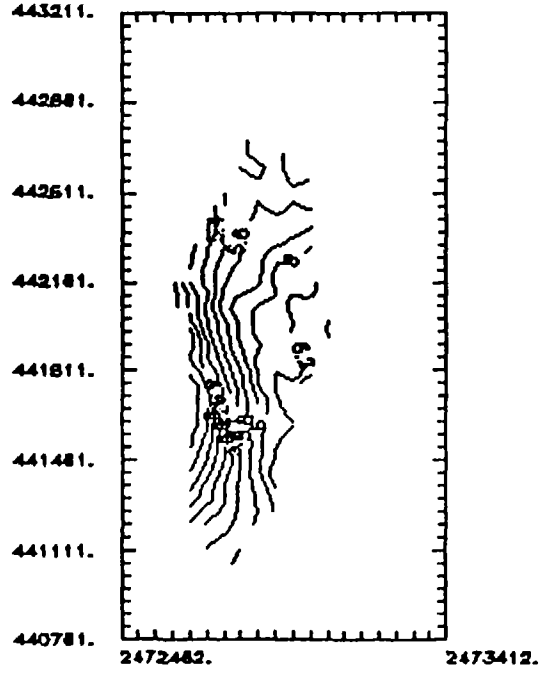
Variogram Model Parameters

Nugget : 2.000

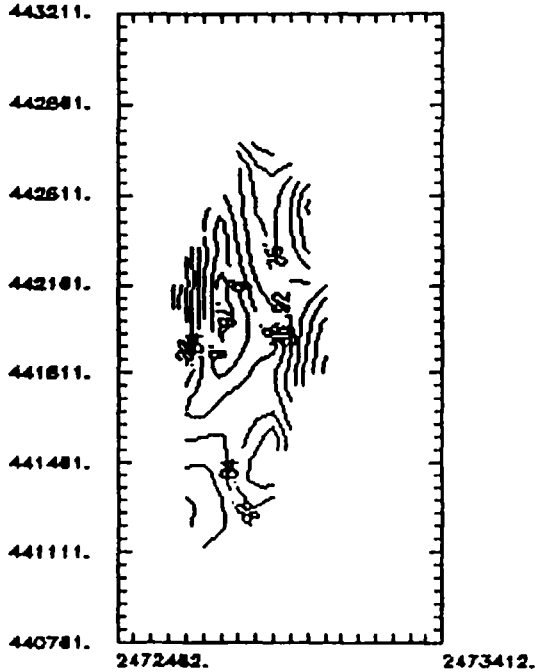
#	Type	Sill Value	Major Range	Minor Range	Angle
1	Spherical	1.000	700.000	300.000	90.00
2					
3					
4					

New Variable Edit Delete Quit
Select a variable and edit the variogram model parameters

Kriging estimates produced from data file a1ss.grd
Contours for xinMinex



Kriging estimates produced from data file a1ss.grd
Contours for KSDInMirex



KRIGE OPTIONS

Title: alss.grd - kriged estimates of data from alss.prn

Data File : alss.prn
Output File : al-t-dir.grd

Polygon

Polygon File:
Sample Select: No

Type

Type of Kriging : Ordinary
Point or Block : Block 2x2

Grid Parameters

	X	Y
Variable :	EASTING	NORTHING
Origin :	2472462.000	440760.500
Spacing :	50.000	50.000
Number :	20	50

Search Parameters

Major Radius :	600.000	# Sectors :	1
Minor Radius :	300.000	Max in Sector:	16
Ellipse Angle:	90.000	Min. to use :	8
Distance Type:	Euclidean	Empty Sectors:	0

Data Polygon Type Grid Search Variables/Models Title Execute Quit
This option invokes the Variables and Variogram Models screen

Variables and Models Selection

List of riables to Krige

Variable : TOC Global Mean :

1 lnMirex
2 TOC «
3
4
5
6
7
8
9
10

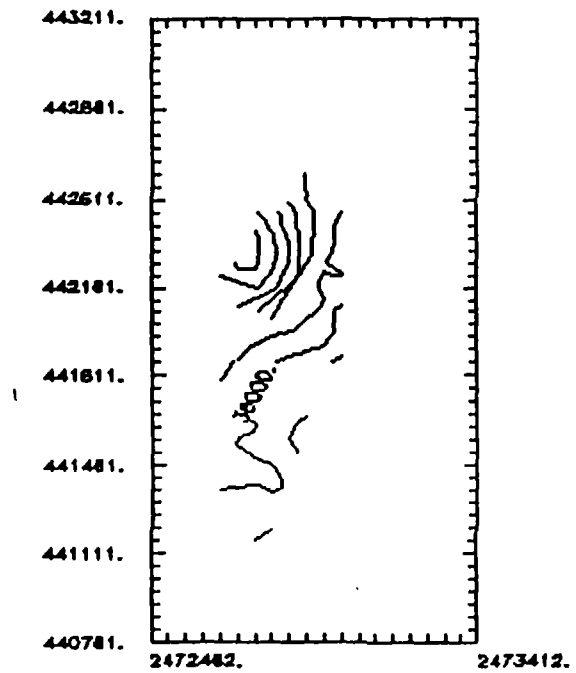
Variogram Model Parameters

Nugget : 225000000.000

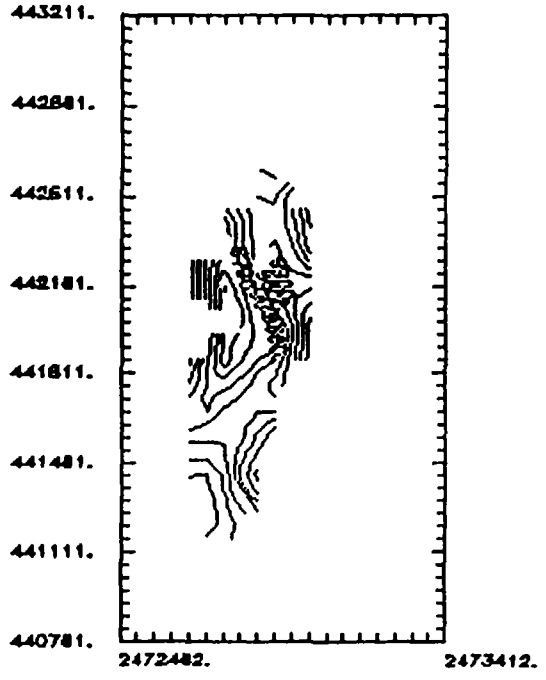
#	Type	Sill Value	Major Range	Minor Range	Angle
1	Spherical	110000000.000	600.000	300.000	90.00
2					
3					
4					

New Variable Edit Delete Quit
Select a variable and edit the variogram model parameters

Kriging estimates produced from data file a1ee.grd
Contours for xTOC



Kriging estimates produced from data file o1se.grd
Contours for KSOTOC



APPENDIX 9

SENSITIVITY ANALYSIS SUPPORTING DOCUMENTS

AREA 5

O P T I O N S

Data File : c:\geoeas\mflbc\data\alss.prn

riable: EASTING	Search Ellipse Parameters		
Y variable: NORTHING		Distance type :	Euclidean
Kriging : MIREX	R Major : 400.000	Num. sectors :	1
Log option: On	R Minor : 400.000	Max pts/sector:	8
	Angle : .000	Min pts to use:	1
Kriging Type: Ordinary	Min Dist: .000	Empty sectors :	0

Variogram Model

Nugget: 2.500 Global Mean: .000

	Type	Sill	Major Range	Minor Range	Ellipse Angle
1	Spherical	1.000	400.000	400.000	.000
2		.000	.000	.000	.000
3					.000
4					.000

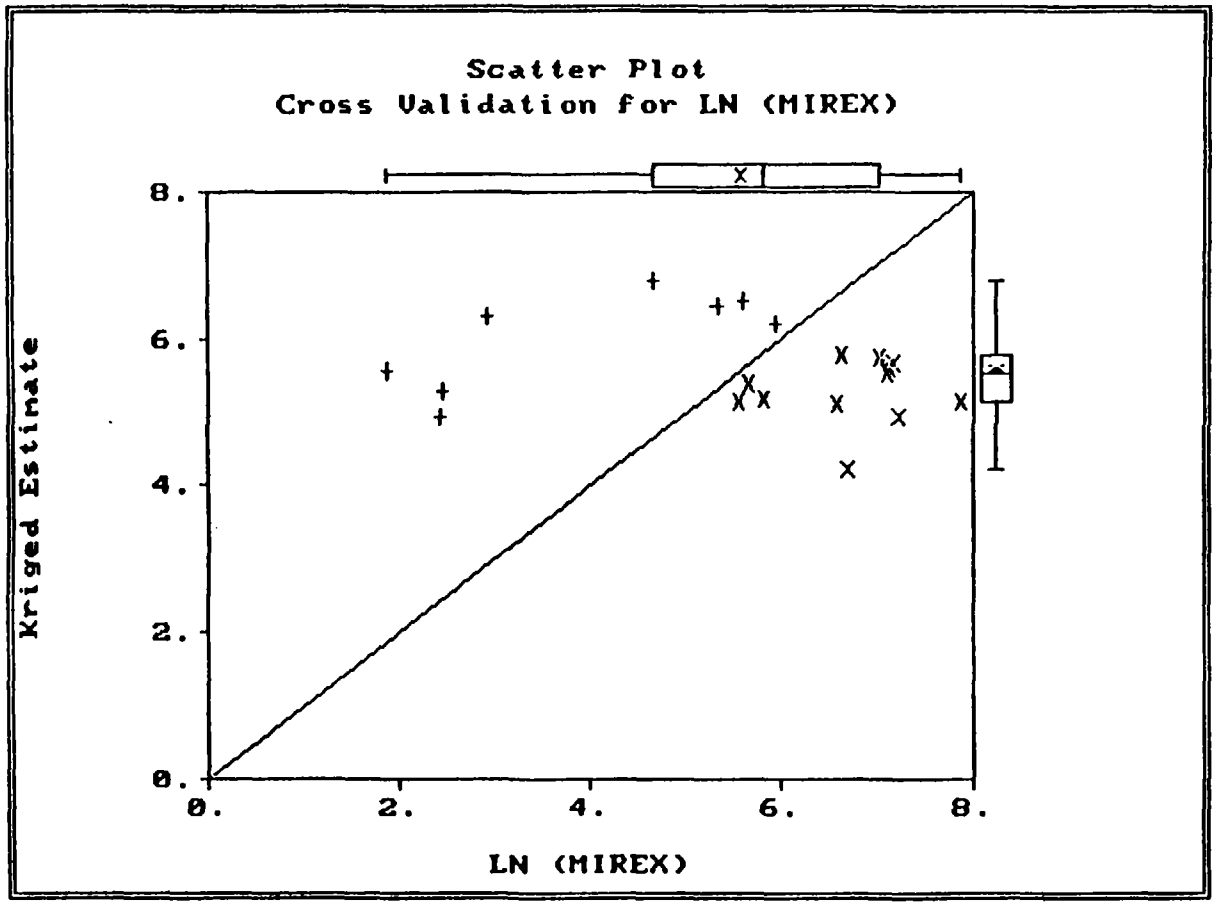
Type Search Model Execute Debug Quit
Enter parameters for neighborhood search

R E S U L T S

Data File : c:\geoeas\mflbc\data\a1ss.prn
Y ariable : EASTING
riable : NORTHING
K_ging : LN (MIREX)
Type : Ordinary
Data used : 20
Missing data : 0

	Variable	Estimate	Difference	Kriging Std	Zscore
Minimum	1.872	4.224	-2.720	1.910	-1.251
25th %tile	4.654	5.137	-1.535	1.934	-.797
Median	5.817	5.533	-.641	1.959	-.331
75th %tile	7.021	5.791	1.121	2.054	.573
Maximum	7.863	6.778	3.697	2.261	1.887
N	20	20	20	20	20
Mean	5.579	5.575	-.005	2.000	-.009
Std. Dev.	1.810	.625	2.011	.092	1.002

Error Map Scatter Plot Histogram Write Examine Quit
Scatter plot of results


Scatter Plot
Cross Validation for LN (MIREX)
Kriged Estimate
LN (MIREX)
0.
2.
4.
6.
8.

O P T I O N S

Data File : c:\geoeas\mflbc\data\a1ss.prn

ariable: EASTING	Search Ellipse Parameters		
↓ ariable: NORTHING		Distance type :	Euclidean
Kriging : MIREX	R Major : 400.000	Num. sectors :	1
Log option: On	R Minor : 400.000	Max pts/sector:	8
	Angle : .000	Min pts to use:	1
Kriging Type: Ordinary	Min Dist: .000	Empty sectors :	0

Variogram Model

Nugget: 2.500 Global Mean:

	Type	Sill	Major Range	Minor Range	Ellipse Angle
1	Exponent.	1.000	400.000	400.000	.000
2					
3					
4					

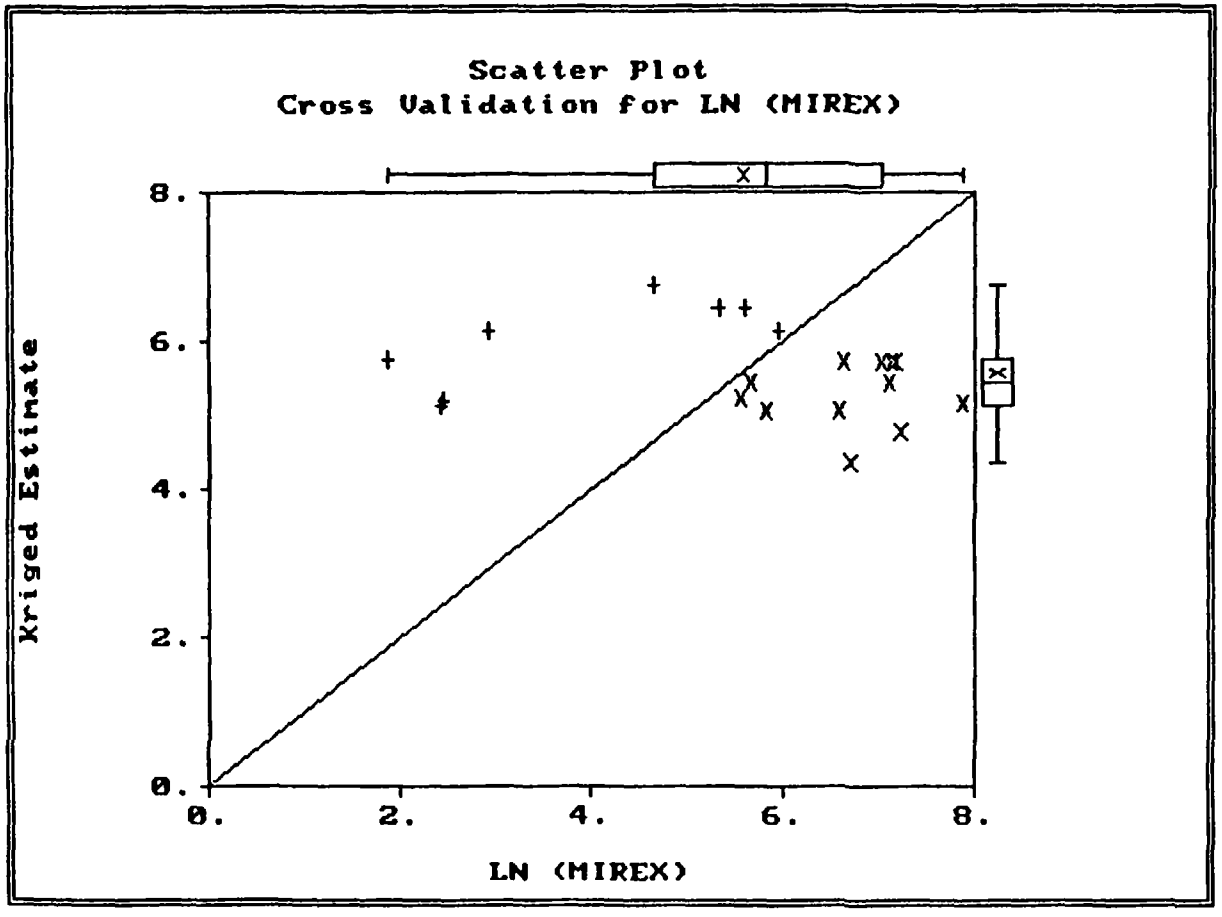
Type Search Model Execute Debug Quit
Begin kriging the sample values

R E S U L T S

Data File : c:\geoeas\mflbc\data\a1ss.prn
Variable : EASTING
Variable : NORTHING
Kriging : LN (MIREX)
Type : Ordinary
Data used : 20
Missing data : 0

	Variable	Estimate	Difference	Kriging Std	Zscore
Minimum	1.872	4.350	-2.727	1.935	-1.247
25th %tile	4.654	5.132	-1.516	1.961	-.770
Median	5.817	5.446	-.782	1.977	-.399
75th %tile	7.021	5.730	1.105	2.054	.558
Maximum	7.863	6.754	3.858	2.257	1.967
N	20	20	20	20	20
Mean	5.579	5.561	-.018	2.018	-.013
Std. Dev.	1.810	.606	2.025	.087	1.001

Error Map Scatter Plot Histogram Write Examine Quit
Map of kriging error (differences)


Scatter Plot
Cross Validation for LN (MIREX)
Kriged Estimate
LN (MIREX)
0.
2.
4.
6.
8.

OPTIONS

Data File : c:\geoeas\mflbc\data\a1ss.prn

ıriable: EASTING	Search Ellipse Parameters	
ıriable: NORTHING		Distance type : Euclidean
Kriging : MIREX	R Major : 400.000	Num. sectors : 1
Log option: On	R Minor : 400.000	Max pts/sector: 8
	Angle : .000	Min pts to use: 1
Kriging Type: Ordinary	Min Dist: .000	Empty sectors : 0

Variogram Model

Nugget: 2.500 Global Mean:

	Type	Sill	Major Range	Minor Range	Ellipse Angle
1	Gaussian	1.000	400.000	400.000	.000
2					
3					
4					

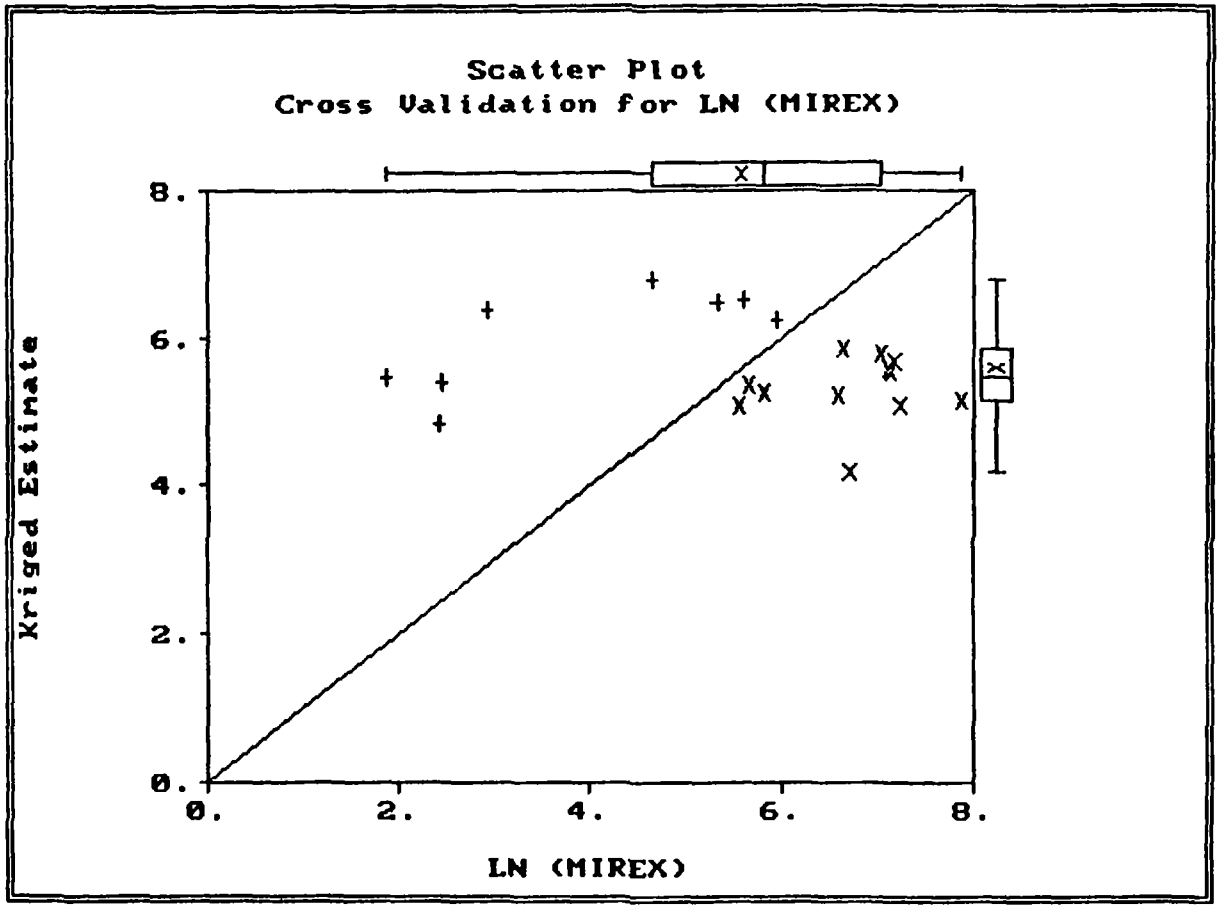
Type Search Model Execute Debug Quit
Specify variogram model

R E S U L T S

Data File : c:\geoeas\mflbc\data\a1ss.prn
Variable : EASTING
Variable : NORTHING
Kriging : LN (MIREX) # Data used : 20
Type : Ordinary # Missing data : 0

	Variable	Estimate	Difference	Kriging Std	Zscore
Minimum	1.872	4.168	-2.715	1.848	-1.298
25th %tile	4.654	5.149	-1.532	1.878	-.829
Median	5.817	5.468	-.558	1.911	-.297
75th %tile	7.021	5.851	1.125	2.012	.591
Maximum	7.863	6.794	3.596	2.227	1.878
N	20	20	20	20	20
Mean	5.579	5.588	.008	1.950	-.005
Std. Dev.	1.810	.640	2.000	.097	1.022

Error Map Scatter Plot Histogram Write Examine Quit
Map of kriging error (differences)


Scatter Plot
Cross Validation for LN (MIREX)
Kriged Estimate
LN (MIREX)
0.
2.
4.
6.
8.

OPTIONS

Data File : c:\geoeas\mflbc\data\a1ss.prn

ıriable: EASTING	Search Ellipse Parameters
. ariable: NORTHING	
Kriging : MIREX	R Major : 400.000
Log option: On	R Minor : 400.000
	Angle : .000
Kriging Type: Ordinary	Min Dist: .000

			Distance type :	Euclidean
			Num. sectors :	1
			Max pts/sector:	8
			Min pts to use:	1
			Empty sectors :	0

Variogram Model

Nugget: 1.250 Global Mean:

	Type	Sill	Major Range	Minor Range	Ellipse Angle
1	Spherical	1.000	400.000	400.000	.000
2					
3					
4					

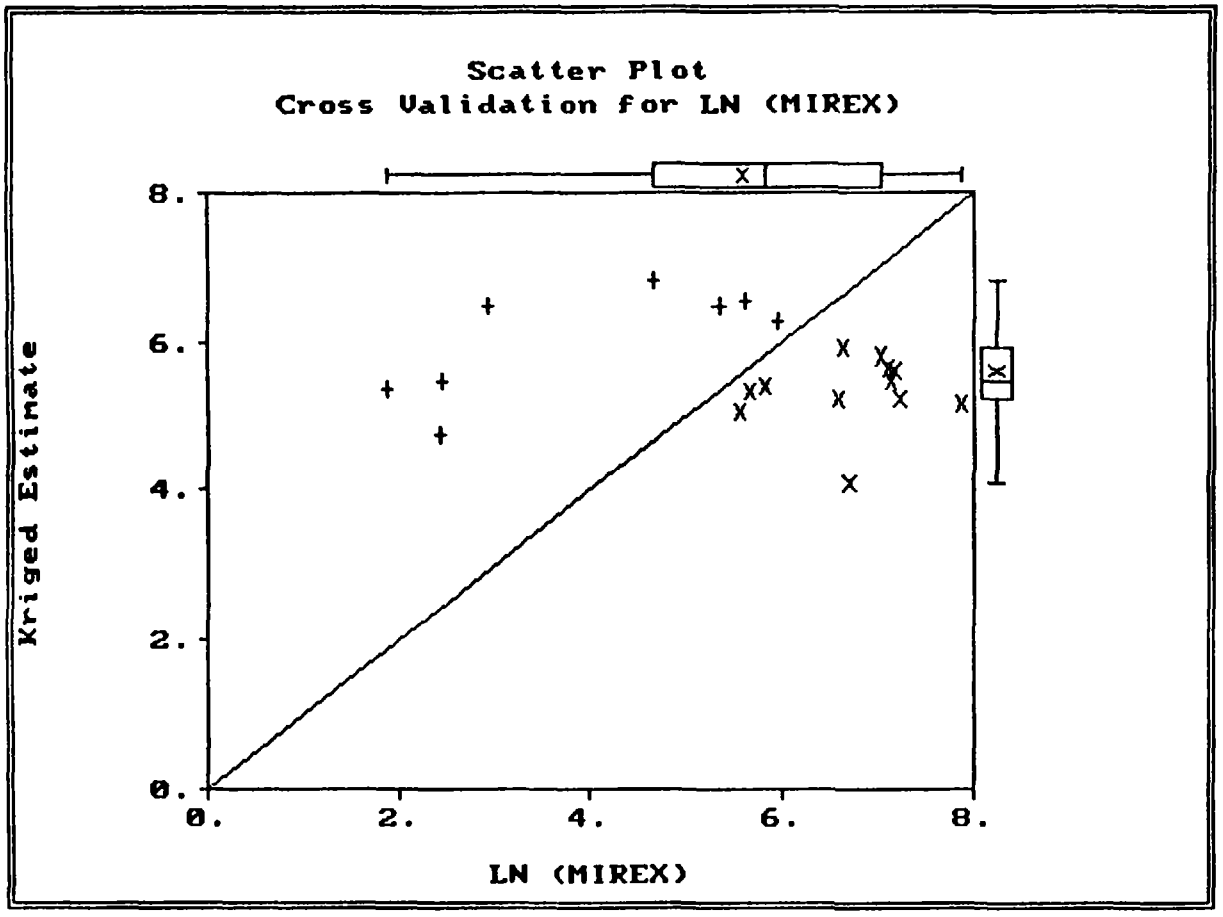
Type Search Model Execute Debug Quit
Specify variogram model

R E S U L T S

Data File : c:\geoeas\mflbc\data\a1ss.prn
'ariable : EASTING
'ariable : NORTHING
ging : LN (MIREX)
Type : Ordinary
Data used : 20
Missing data : 0

	Variable	Estimate	Difference	Kriging Std	Zscore
Minimum	1.872	4.068	-2.710	1.467	-1.688
25th %tile	4.654	5.224	-1.546	1.500	-1.007
Median	5.817	5.449	-.515	1.535	-.335
75th %tile	7.021	5.910	1.151	1.614	.759
Maximum	7.863	6.809	3.532	1.798	2.376
N	20	20	20	20	20
Mean	5.579	5.599	.019	1.561	-.002
Std. Dev.	1.810	.671	1.999	.084	1.275

Error Map Scatter Plot Histogram Write Examine Quit
Map of kriging error (differences)


Scatter Plot
Cross Validation for LN (MIREX)
Kriged Estimate
LN (MIREX)
0.
2.
4.
6.
8.

O P T I O N S

Data File : c:\geoeas\mflbc\data\alss.prn

riable: EASTING	Search Ellipse Parameters		
ariable: NORTHING		Distance type :	Euclidean
Kriging : MIREX	R Major : 400.000	Num. sectors :	1
Log option: On	R Minor : 400.000	Max pts/sector:	8
	Angle : .000	Min pts to use:	1
Kriging Type: Ordinary	Min Dist: .000	Empty sectors :	0

Variogram Model

Nugget: 5.000 Global Mean:

	Type	Sill	Major Range	Minor Range	Ellipse Angle
1	Spherical	1.000	400.000	400.000	.000
2		.000			
3		.000			
4					

Type Search Model Execute Debug Quit
Specify variogram model

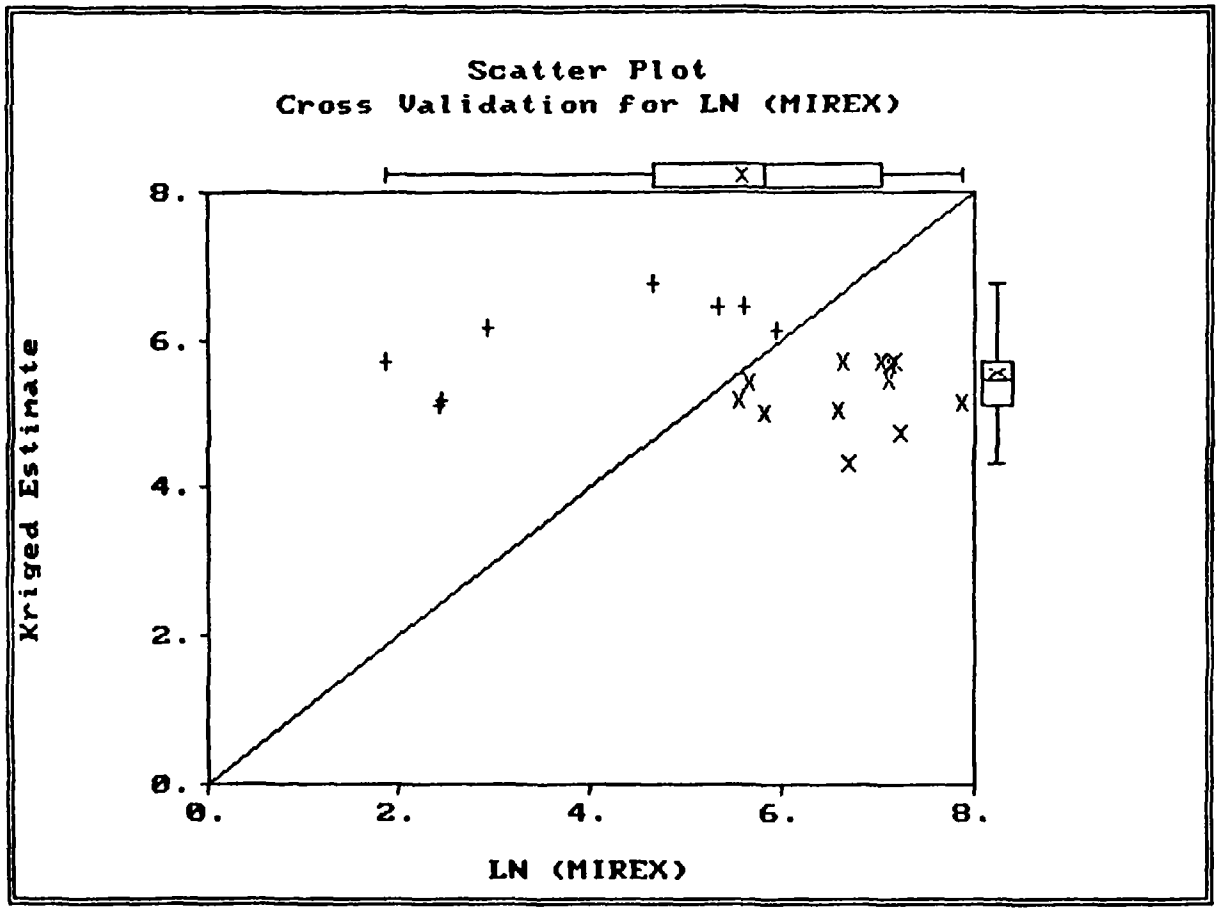
R E S U L T S

Data File : c:\geoeas\mflbc\data\a1ss.prn
X ariable : EASTING
ariable : NORTHING
ging : LN (MIREX)
Type : Ordinary

Data used : 20
Missing data : 0

	Variable	Estimate	Difference	Kriging Std	Zscore
Minimum	1.872	4.337	-2.727	2.553	-.947
25th %tile	4.654	5.127	-1.521	2.596	-.585
Median	5.817	5.461	-.817	2.608	-.314
75th %tile	7.021	5.715	1.104	2.713	.422
Maximum	7.863	6.757	3.842	2.977	1.483
N	20	20	20	20	20
Mean	5.579	5.557	-.022	2.665	-.011
Std. Dev.	1.810	.613	2.028	.113	.759

Error Map Scatter Plot Histogram Write Examine Quit
Map of kriging error (differences)


Scatter Plot
Cross Validation for LN (MIREX)
Kriged Estimate
LN (MIREX)
0.
2.
4.
6.
8.

OPTIONS

Data File : c:\geoeas\mflbc\data\alss.prn

ariable: EASTING	Search Ellipse Parameters		
ariable: NORTHING		Distance type :	Euclidean
Kriging : MIREX	R Major : 400.000	Num. sectors :	1
Log option: On	R Minor : 400.000	Max pts/sector:	8
	Angle : .000	Min pts to use:	1
Kriging Type: Ordinary	Min Dist: .000	Empty sectors :	0

Variogram Model

Nugget: 2.500 Global Mean:

	Type	Sill	Major Range	Minor Range	Ellipse Angle
1	Spherical	.500	400.000	400.000	.000
2		.000			
3		.000			
4		.000	.000	.000	

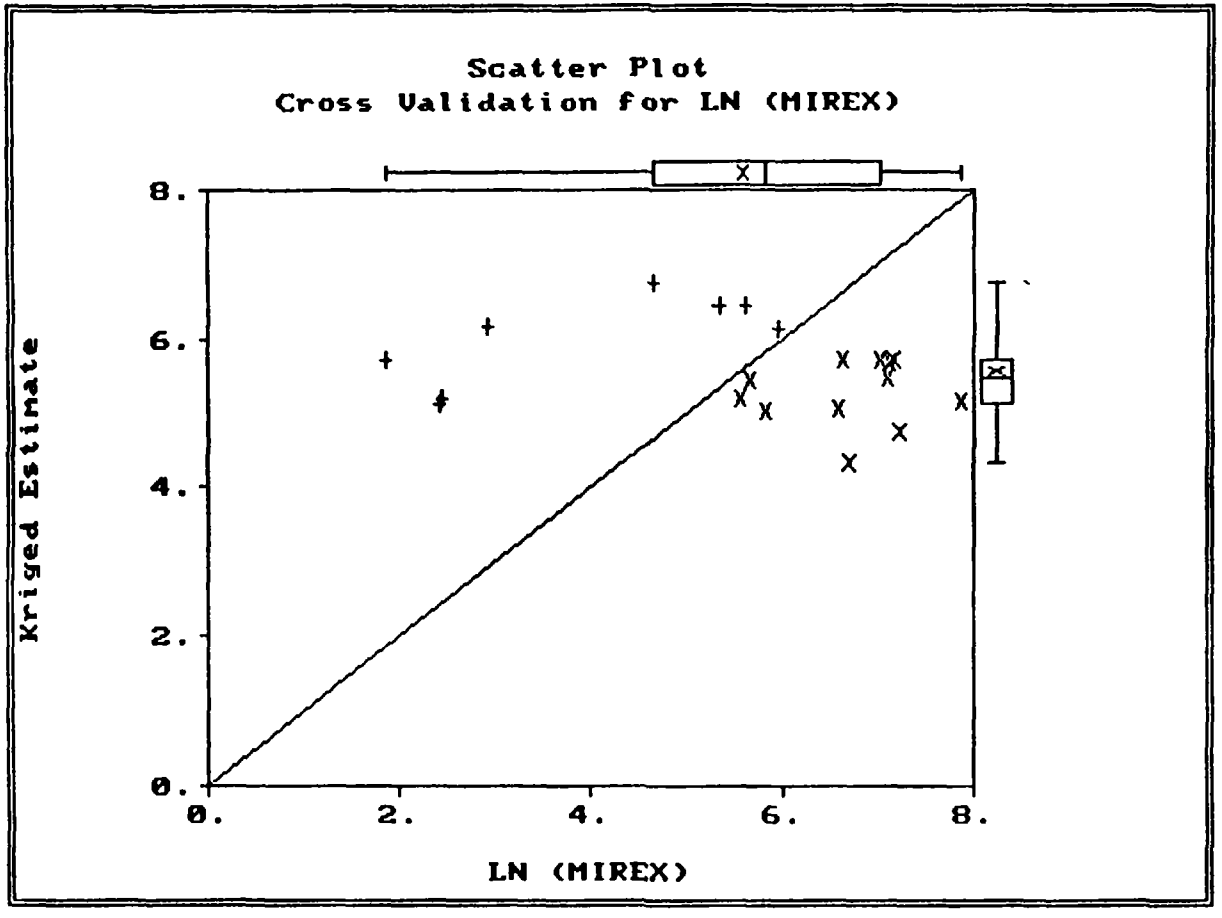
Type Search Model Execute Debug Quit
Specify variogram model

---------- R E S U L T S ----------

Data File : c:\geoeas\mflbc\data\alss.prn
Y Variable : EASTING
riable : NORTHING
ging : LN (MIREX) # Data used : 20
Type : Ordinary # Missing data : 0

	Variable	Estimate	Difference	Kriging Std	Zscore
Minimum	1.872	4.337	-2.727	1.805	-1.339
25th %tile	4.654	5.127	-1.521	1.836	-.828
Median	5.817	5.461	-.817	1.844	-.444
75th %tile	7.021	5.715	1.104	1.918	.596
Maximum	7.863	6.757	3.842	2.105	2.097
N	20	20	20	20	20
Mean	5.579	5.557	-.022	1.884	-.016
Std. Dev.	1.810	.613	2.028	.080	1.074

Error Map Scatter Plot Histogram Write Examine Quit
Map of kriging error (differences)


Scatter Plot
Cross Validation for LN (MIREX)
Kriged Estimate
LN (MIREX)
0.
2.
4.
6.
8.

O P T I O N S

Data File : c:\geoeas\mflbc\data\a1ss.prn

ariable: EASTING	Search Ellipse Parameters		
ariable: NORTHING		Distance type :	Euclidean
Kriging : MIREX	R Major : 400.000	Num. sectors :	1
Log option: On	R Minor : 400.000	Max pts/sector:	8
	Angle : .000	Min pts to use:	1
Kriging Type: Ordinary	Min Dist: .000	Empty sectors :	0

Variogram Model

Nugget: 2.500 Global Mean:

	Type	Sill	Major Range	Minor Range	Ellipse Angle
1	Spherical	2.000	400.000	400.000	.000
2		.000			
3		.000			
4		.000	.000	.000	

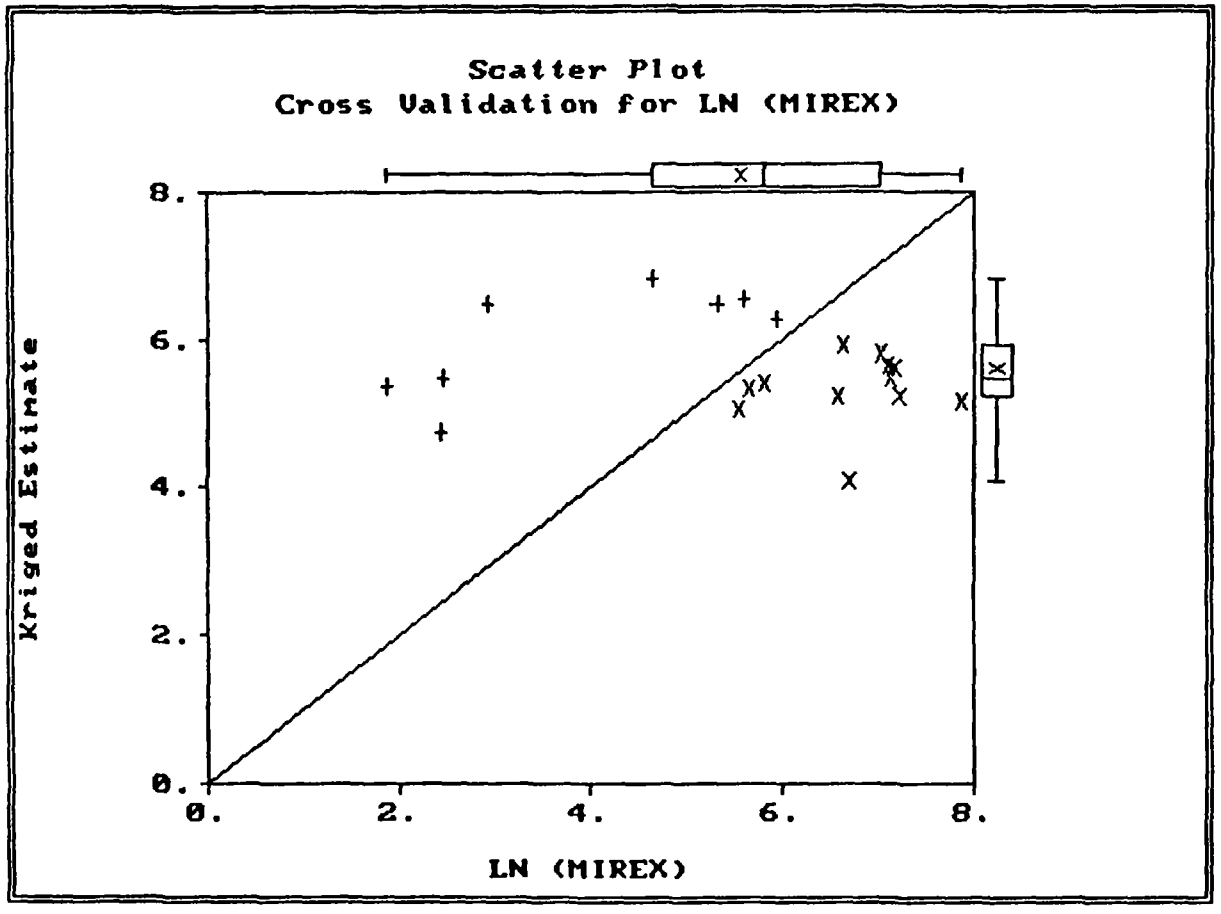
Type Search Model Execute Debug Quit
Specify variogram model

R E S U L T S

Data File : c:\geoeas\mflbc\data\a1ss.prn
Variable : EASTING
Variable : NORTHING
iging : LN (MIREX)
Type : Ordinary
Data used : 20
Missing data : 0

	Variable	Estimate	Difference	Kriging Std	Zscore
Minimum	1.872	4.068	-2.710	2.074	-1.194
25th %tile	4.654	5.224	-1.546	2.122	-.712
Median	5.817	5.449	-.515	2.171	-.237
75th %tile	7.021	5.910	1.151	2.282	.536
Maximum	7.863	6.809	3.532	2.543	1.680
N	20	20	20	20	20
Mean	5.579	5.599	.019	2.207	-.001
Std. Dev.	1.810	.671	1.999	.119	.902

Error Map Scatter Plot Histogram Write Examine Quit
Map of kriging error (differences)


Scatter Plot
Cross Validation for LN (MIREX)
Kriged Estimate
LN (MIREX)
0.
2.
4.
6.
8.

O P T I O N S

Data File : c:\geoeas\mflbc\data\a1ss.prn

ariable: EASTING	Search Ellipse Parameters		
ariable: NORTHING		Distance type :	Euclidean
Kriging : MIREX	R Major : 400.000	Num. sectors :	1
Log option: On	R Minor : 400.000	Max pts/sector:	8
	Angle : .000	Min pts to use:	1
Kriging Type: Ordinary	Min Dist: .000	Empty sectors :	0

Variogram Model

Nugget: 2.500 Global Mean:

	Type	Sill	Major Range	Minor Range	Ellipse Angle
1	Spherical	1.000	200.000	200.000	.000
2		.000			
3		.000			
4		.000	.000	.000	

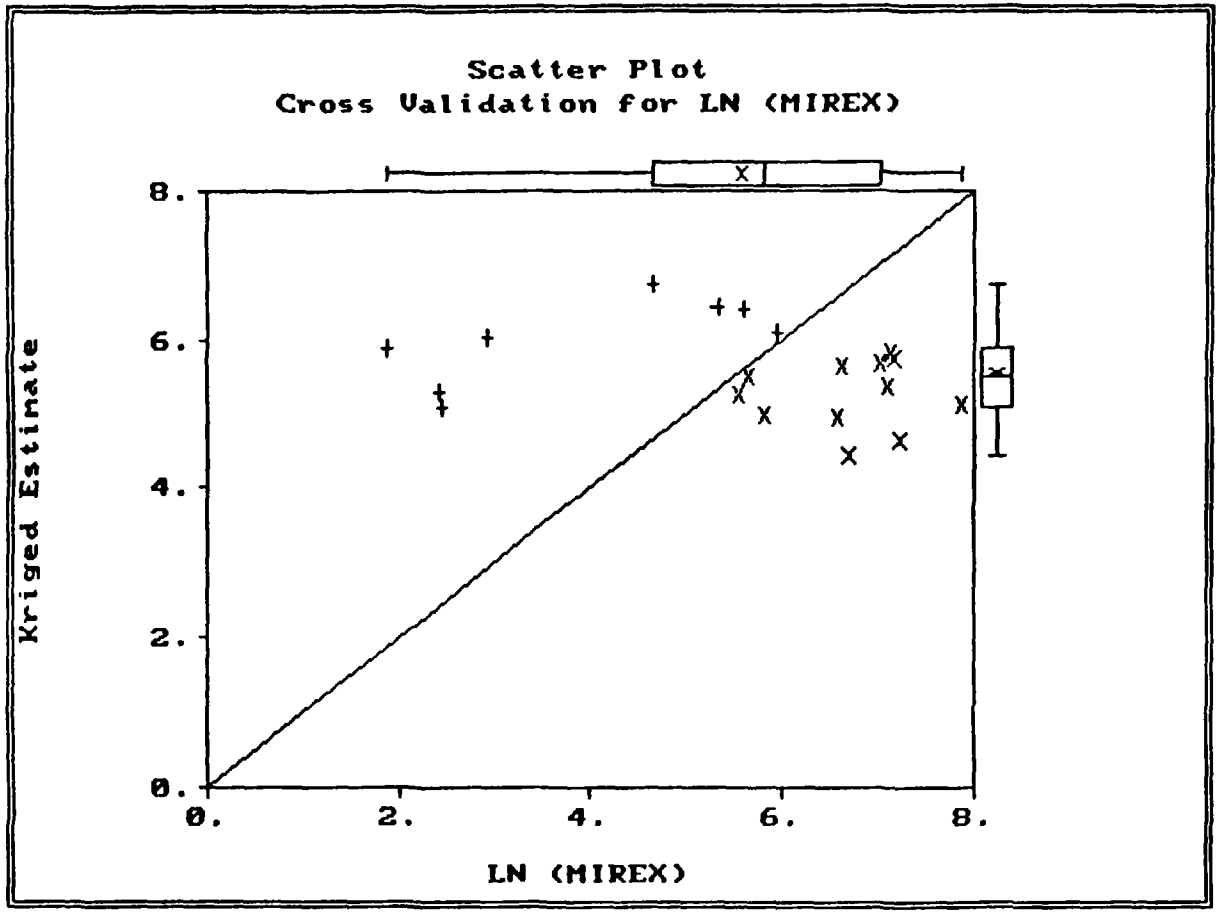
Type Search Model Execute Debug Quit
Specify variogram model

R E S U L T S

Data File : c:\geoeas\mflbc\data\alss.prn
'ariable : EASTING
ariable : NORTHING
Kriging : LN (MIREX)
Type : Ordinary
Data used : 20
Missing data : 0

	Variable	Estimate	Difference	Kriging Std	Zscore
Minimum	1.872	4.440	-2.736	1.992	-1.286
25th %tile	4.654	5.094	-1.644	2.005	-.814
Median	5.817	5.499	-.851	2.036	-.424
75th %tile	7.021	5.887	1.113	2.092	.547
Maximum	7.863	6.731	4.016	2.292	2.003
N	20	20	20	20	20
Mean	5.579	5.550	-.029	2.071	-.017
Std. Dev.	1.810	.605	2.044	.087	.986

Error Map Scatter Plot Histogram Write Examine Quit
Map of kriging error (differences)


Scatter Plot
Cross Validation for LN (MIREX)
Kriged Estimate
LN (MIREX)
0.
2.
4.
6.
8.

```
---------- O P T I O N S ----------

Data File : H:\cfg\rsflei\temp\a1ss.prn
```

ıriable: EASTING	Search Ellipse Parameters		
ariable: NORTHING		Distance type :	Euclidean
Kriging : MIREX	R Major : 400.000	Num. sectors :	1
Log option: On	R Minor : 400.000	Max pts/sector:	8
	Angle : .000	Min pts to use:	1
Kriging Type: Ordinary	Min Dist: .000	Empty sectors :	0

Variogram Model

Nugget: 2.500 Global Mean:

	Type	Sill	Major Range	Minor Range	Ellipse Angle
1	Spherical	1.000	800.000	800.000	.000
2					
3					
4		.000	.000	.000	.000

```
Type  Search  Model  Execute  Debug  Quit
Enter parameters for neighborhood search
```

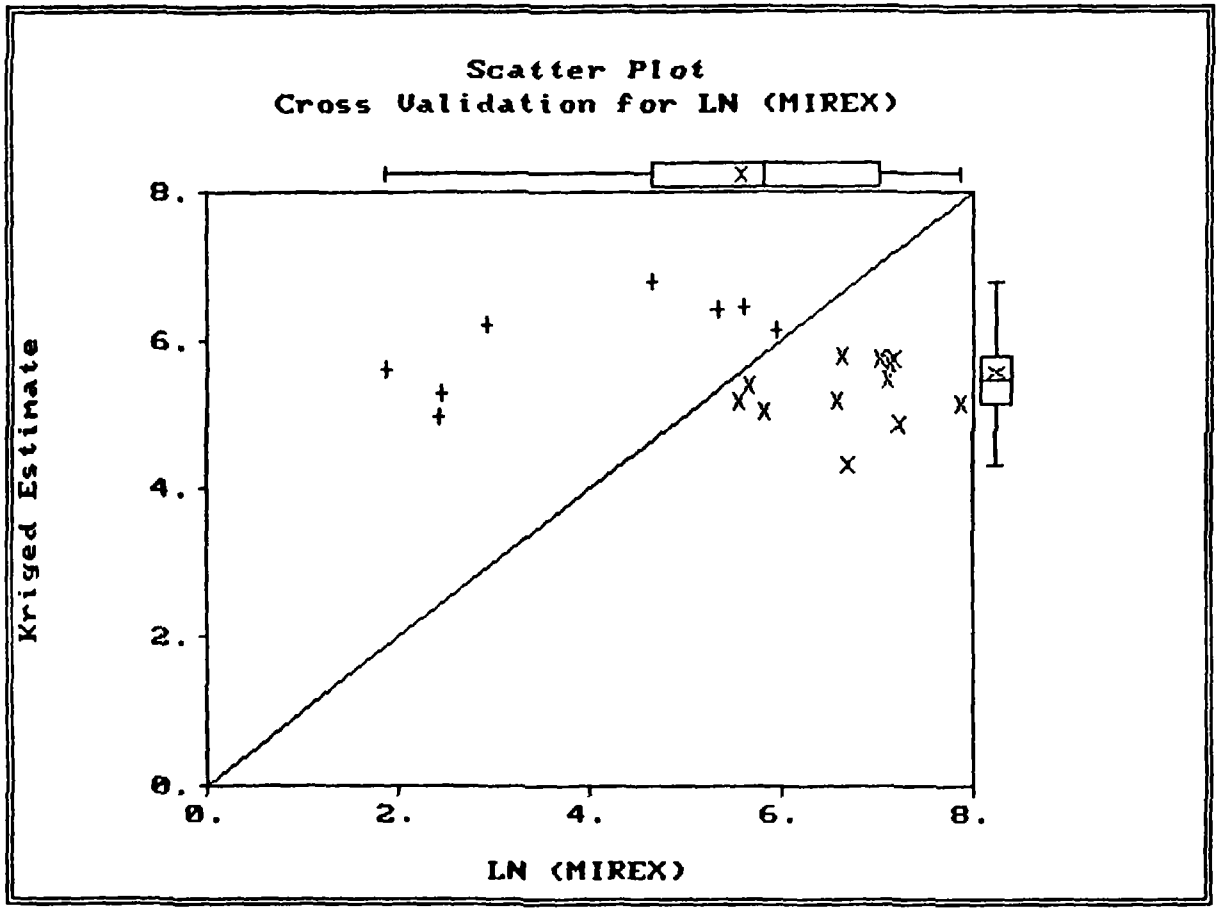
R E S U L T S

Data File : c:\geoeas\mflbc\data\alss.prn
'ariable : EASTING
'ariable : NORTHING
.ging : LN (MIREX)
Type : Ordinary

Data used : 20
Missing data : 0

	Variable	Estimate	Difference	Kriging Std.	Zscore
Minimum	1.872	4.330	-2.725	1.794	-1.321
25th %tile	4.654	5.139	-1.447	1.831	-.800
Median	5.817	5.451	-.763	1.845	-.416
75th %tile	7.021	5.762	1.081	1.920	.585
Maximum	7.863	6.773	3.740	2.130	2.042
N	20	20	20	20	20
Mean	5.579	5.569	-.011	1.888	-.011
Std. Dev.	1.810	.604	2.002	.088	1.057

Error Map Scatter Plot Histogram Write Examine Quit
Map of kriging error (differences)


Scatter Plot
Cross Validation for LN (MIREX)
Kriged Estimate
LN (MIREX)
0.
2.
4.
6.
8.

AREA 3

OPTIONS

Data File : c:\geoeas\mflbc\data\a3ss.prn

ariable: EASTING	Search Ellipse Parameters		
ariable: NORTHING		Distance type :	Euclidean
Kriging : MIREX	R Major : 700.000	Num. sectors :	1
Log option: On	R Minor : 700.000	Max pts/sector:	8
	Angle : .000	Min pts to use:	1
Kriging Type: Ordinary	Min Dist: .000	Empty sectors :	0

Variogram Model

Nugget: .400 Global Mean:

	Type	Sill	Major Range	Minor Range	Ellipse Angle
1	Spherical	1.200	700.000	700.000	.000
2		.000			
3		.000			
4		.000	.000	.000	

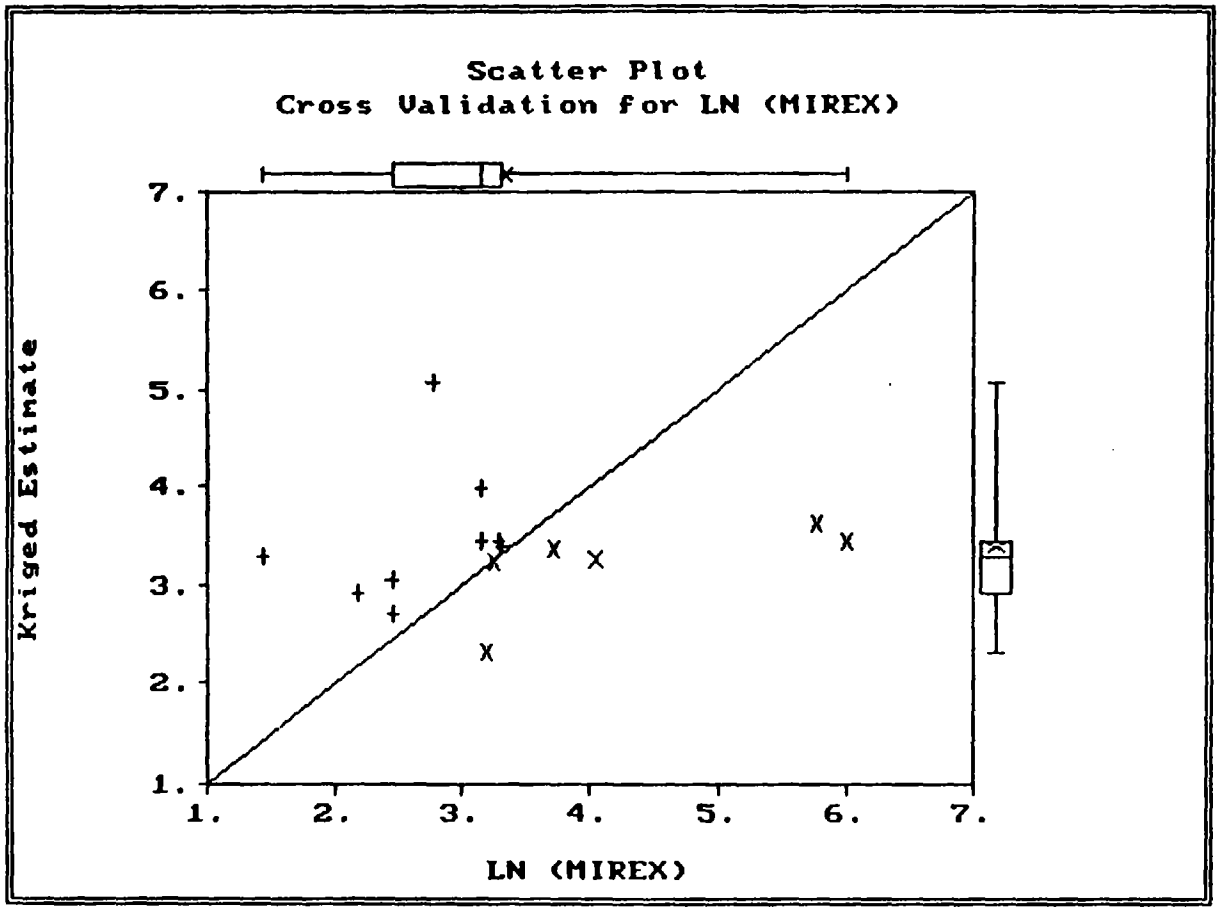
Type Search Model Execute Debug Quit
Specify variogram model

R E S U L T S

Data File : c:\geoeas\mflbc\data\a3ss.prn
'ariable : EASTING
ariable : NORTHING
ging : LN (MIREX) # Data used : 15
Type : Ordinary # Missing data : 0

	Variable	Estimate	Difference	Kriging Std	Zscore
Minimum	1.433	2.312	-2.569	.907	-2.335
25th %tile	2.451	2.904	-.875	1.004	-.962
Median	3.148	3.287	.066	1.144	.050
75th %tile	3.318	3.440	.590	1.230	.534
Maximum	6.009	5.068	2.301	1.425	2.011
N	15	15	15	15	15
Mean	3.344	3.364	.020	1.156	.014
Std. Dev.	1.214	.613	1.289	.156	1.127

Error Map Scatter Plot Histogram Write Examine Quit
Map of kriging error (differences)


Scatter Plot
Cross Validation for LN (MIREX)
Kriged Estimate
LN (MIREX)
7.
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O P T I O N S

Data File : c:\geoeas\mflbc\data\a3ss.prn

'ariable: EASTING	Search Ellipse Parameters		
/ariable: NORTHING		Distance type :	Euclidean
Kriging : MIREX	R Major : 700.000	Num. sectors :	1
Log option: On	R Minor : 700.000	Max pts/sector:	8
	Angle : .000	Min pts to use:	1
Kriging Type: Ordinary	Min Dist: .000	Empty sectors :	0

Variogram Model

Nugget: .400 Global Mean:

	Type	Sill	Major Range	Minor Range	Ellipse Angle
1	Exponent.	1.200	700.000	700.000	.000
2		.000			
3		.000			
4		.000	.000	.000	

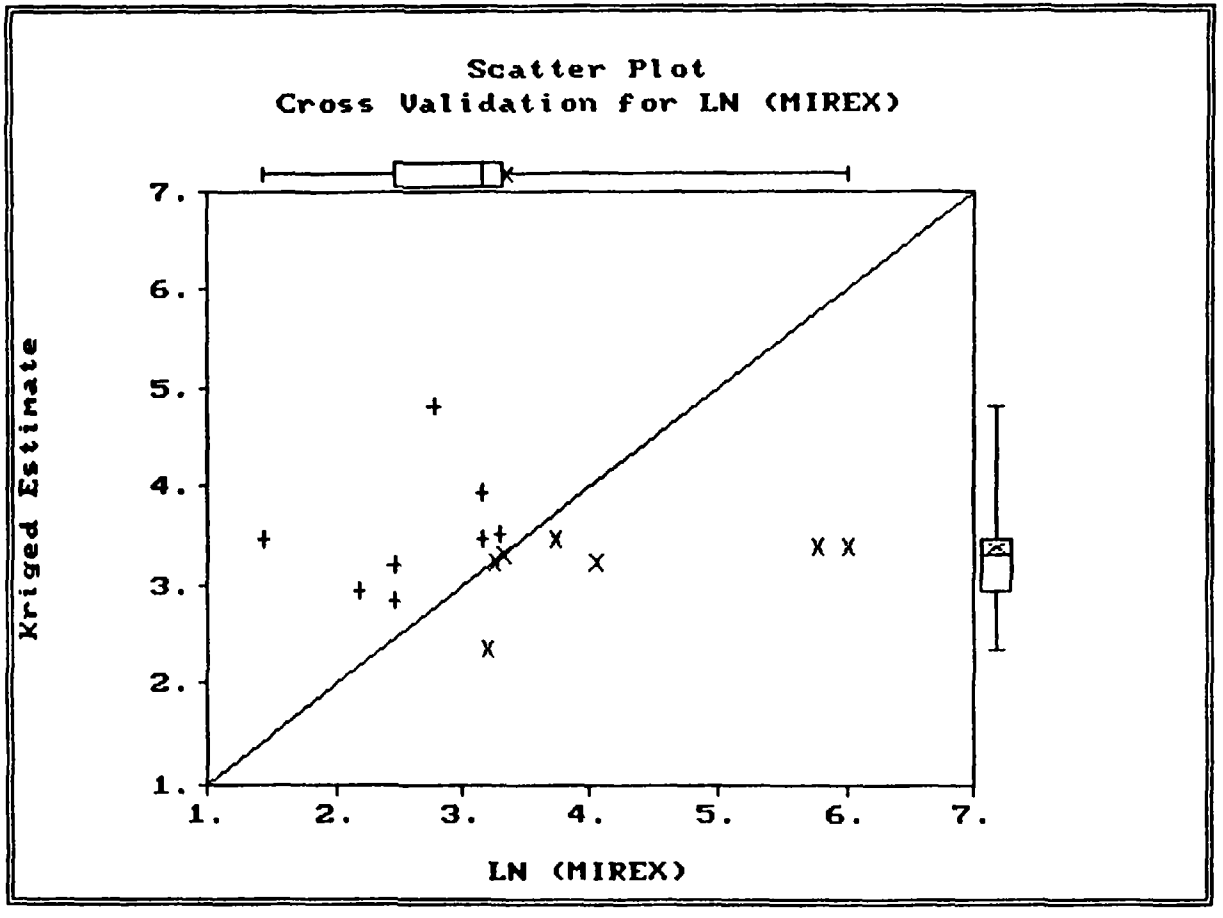
Type Search Model Execute Debug Quit
Specify variogram model

R E S U L T S

Data File : c:\geoeas\mflbc\data\a3ss.prn
Y Variable : EASTING
Variable : NORTHING
Logging : LN (MIREX)
Type : Ordinary
Data used : 15
Missing data : 0

	Variable	Estimate	Difference	Kriging Std	Zscore
Minimum	1.433	2.345	-2.617	.966	-2.195
25th %tile	2.451	2.949	-.841	1.108	-.870
Median	3.148	3.308	-.009	1.219	-.007
75th %tile	3.318	3.459	.761	1.285	.630
Maximum	6.009	4.812	2.046	1.451	1.678
N	15	15	15	15	15
Mean	3.344	3.368	.023	1.217	.019
Std. Dev.	1.214	.535	1.316	.135	1.080

Error Map Scatter Plot Histogram Write Examine Quit
Map of kriging error (differences)


Scatter Plot
Cross Validation for LN (MIREX)
Kriged Estimate
LN (MIREX)
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OPTIONS

Data File : c:\geoeas\mflbc\data\a3ss.prn

ıriable: EASTING	Search Ellipse Parameters		
ı riable: NORTHING		Distance type :	Euclidean
Kriging : MIREX	R Major : 700.000	Num. sectors :	1
Log option: On	R Minor : 700.000	Max pts/sector:	8
	Angle : .000	Min pts to use:	1
Kriging Type: Ordinary	Min Dist: .000	Empty sectors :	0

Variogram Model

Nugget: .400 Global Mean:

	Type	Sill	Major Range	Minor Range	Ellipse Angle
1	Gaussian	1.200	700.000	700.000	.000
2		.000			
3		.000			
4		.000	.000	.000	

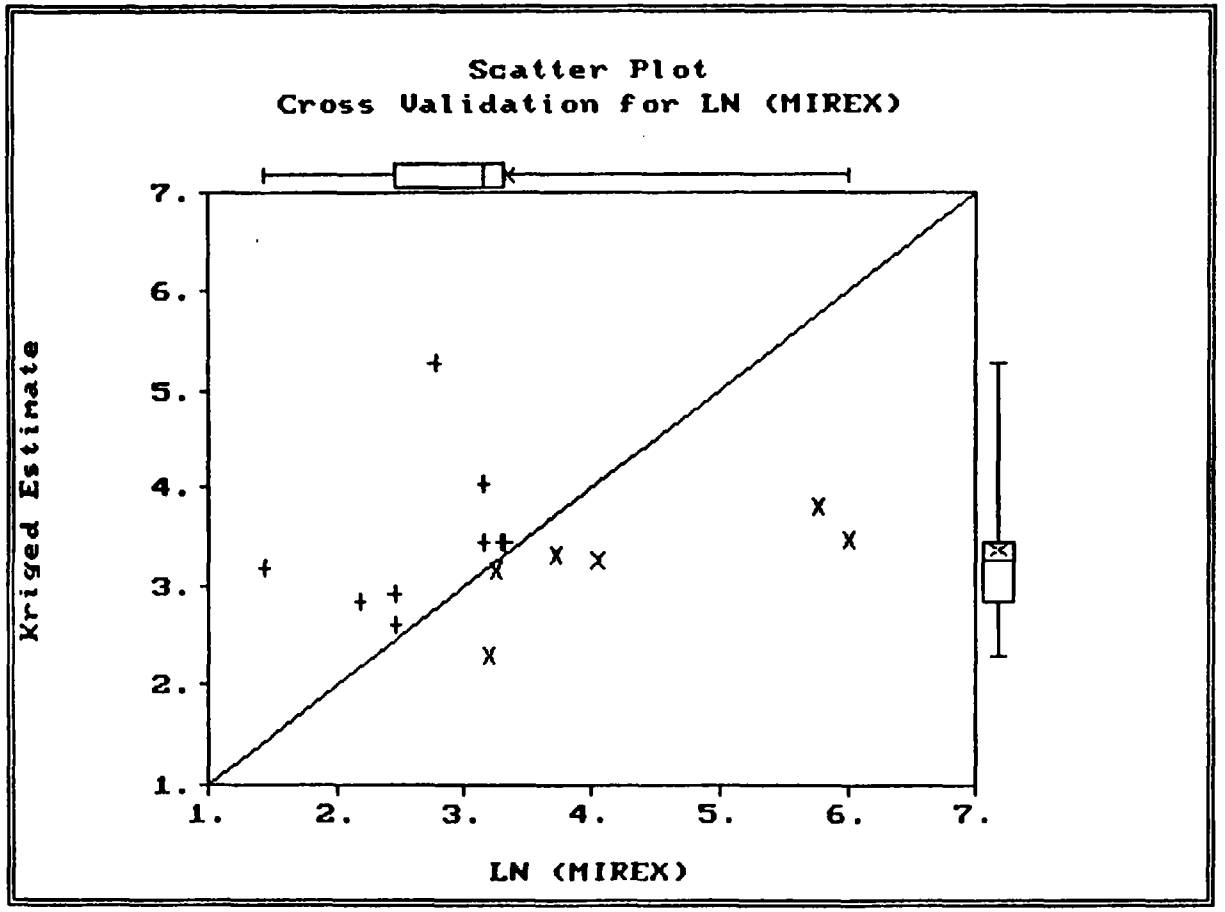
Type Search Model Execute Debug Quit
Specify variogram model

R E S U L T S

Data File : c:\geoeas\mflbc\data\a3ss.prn
Variable : EASTING
Variable : NORTHING
ging : LN (MIREX)
Type : Ordinary
Data used : 15
Missing data : 0

	Variable	Estimate	Difference	Kriging Std	Zscore
Minimum	1.433	2.286	-2.543	.830	-2.711
25th %tile	2.451	2.848	-.901	.843	-1.076
Median	3.148	3.250	.112	.996	.092
75th %tile	3.318	3.446	.463	1.105	.499
Maximum	6.009	5.269	2.503	1.335	2.514
N	15	15	15	15	15
Mean	3.344	3.361	.016	1.031	.010
Std. Dev.	1.214	.687	1.276	.168	1.276

Error Map Scatter Plot Histogram Write Examine Quit
Map of kriging error (differences)


Scatter Plot
Cross Validation for LN (MIREX)
Kriged Estimate
LN (MIREX)
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O P T I O N S

Data File : c:\geoeas\mflbc\data\a3ss.prn

'ariable: EASTING	Search Ellipse Parameters		
/ariable: NORTHING		Distance type :	Euclidean
Kriging : MIREX	R Major : 700.000	Num. sectors :	1
Log option: On	R Minor : 700.000	Max pts/sector:	8
	Angle : .000	Min pts to use:	1
Kriging Type: Ordinary	Min Dist: .000	Empty sectors :	0

Variogram Model

Nugget: .200 Global Mean:

	Type	Sill	Major Range	Minor Range	Ellipse Angle
1	Spherical	1.200	700.000	700.000	.000
2					
3					
4					

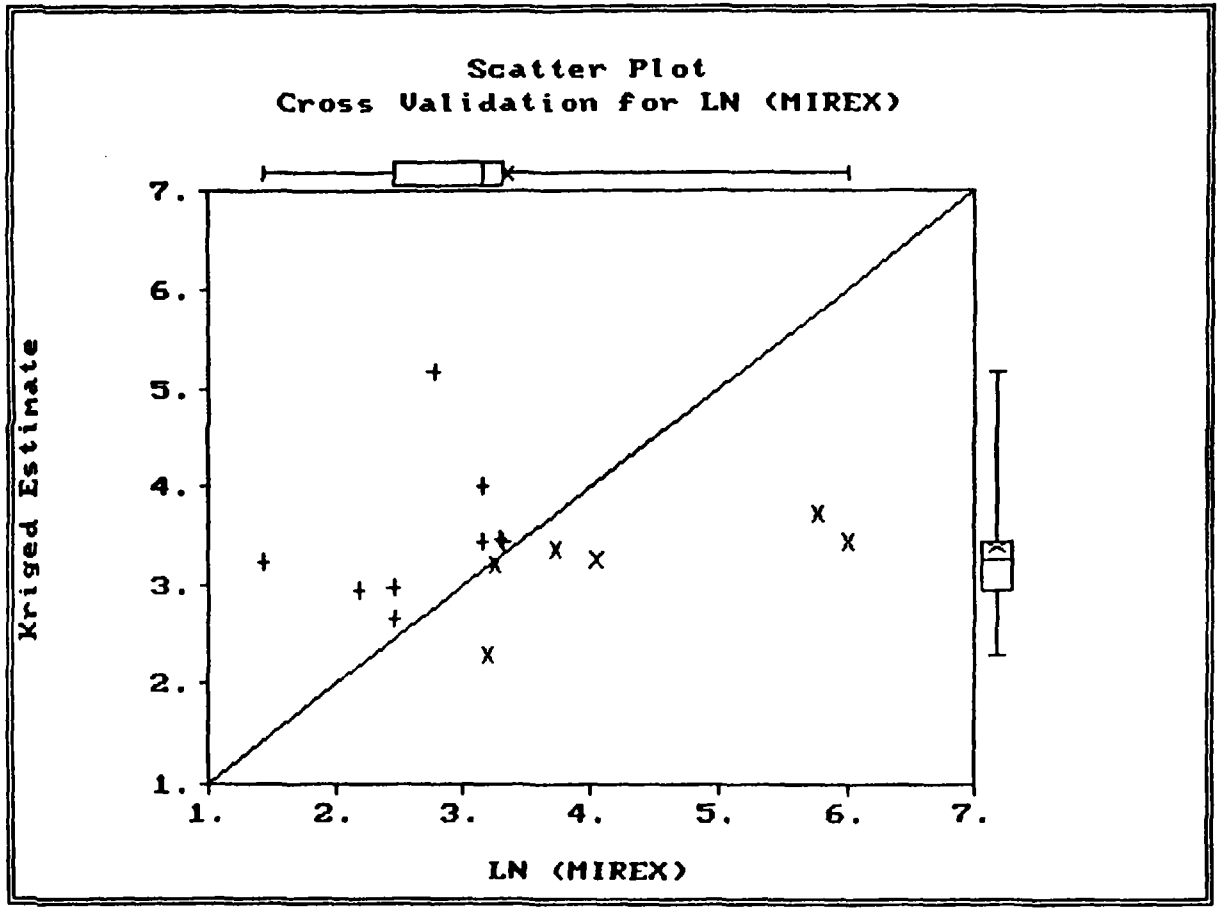
Type Search Model Execute Debug Quit
Specify variogram model

R E S U L T S

Data File : c:\geoeas\mflbc\data\a3ss.prn
Variable : EASTING
Variable : NORTHING
Kriging : LN (MIREX) # Data used : 15
Type : Ordinary # Missing data : 0

	Variable	Estimate	Difference	Kriging Std	Zscore
Minimum	1.433	2.289	-2.572	.709	-2.674
25th %tile	2.451	2.951	-.898	.851	-1.259
Median	3.148	3.247	.121	1.007	.099
75th %tile	3.318	3.439	.507	1.118	.521
Maximum	6.009	5.186	2.420	1.314	2.403
N	15	15	15	15	15
Mean	3.344	3.372	.027	1.024	.020
Std. Dev.	1.214	.652	1.287	.186	1.288

Error Map Scatter Plot Histogram Write Examine Quit
Map of kriging error (differences)


Scatter Plot
Cross Validation for LN (MIREX)
Kriged Estimate
LN (MIREX)
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O P T I O N S

Data File : c:\geoeas\mflbc\data\a3ss.prn

riable: EASTING	Search Ellipse Parameters		
Y variable: NORTHING		Distance type :	Euclidean
Kriging : MIREX	R Major : 700.000	Num. sectors :	1
Log option: On	R Minor : 700.000	Max pts/sector:	8
	Angle : .000	Min pts to use:	1
Kriging Type: Ordinary	Min Dist: .000	Empty sectors :	0

Variogram Model

Nugget: .800 Global Mean:

	Type	Sill	Major Range	Minor Range	Ellipse Angle
1	Spherical	1.200	700.000	700.000	.000
2		.000	.000	.000	
3		.000	.000	.000	
4		.000	.000	.000	

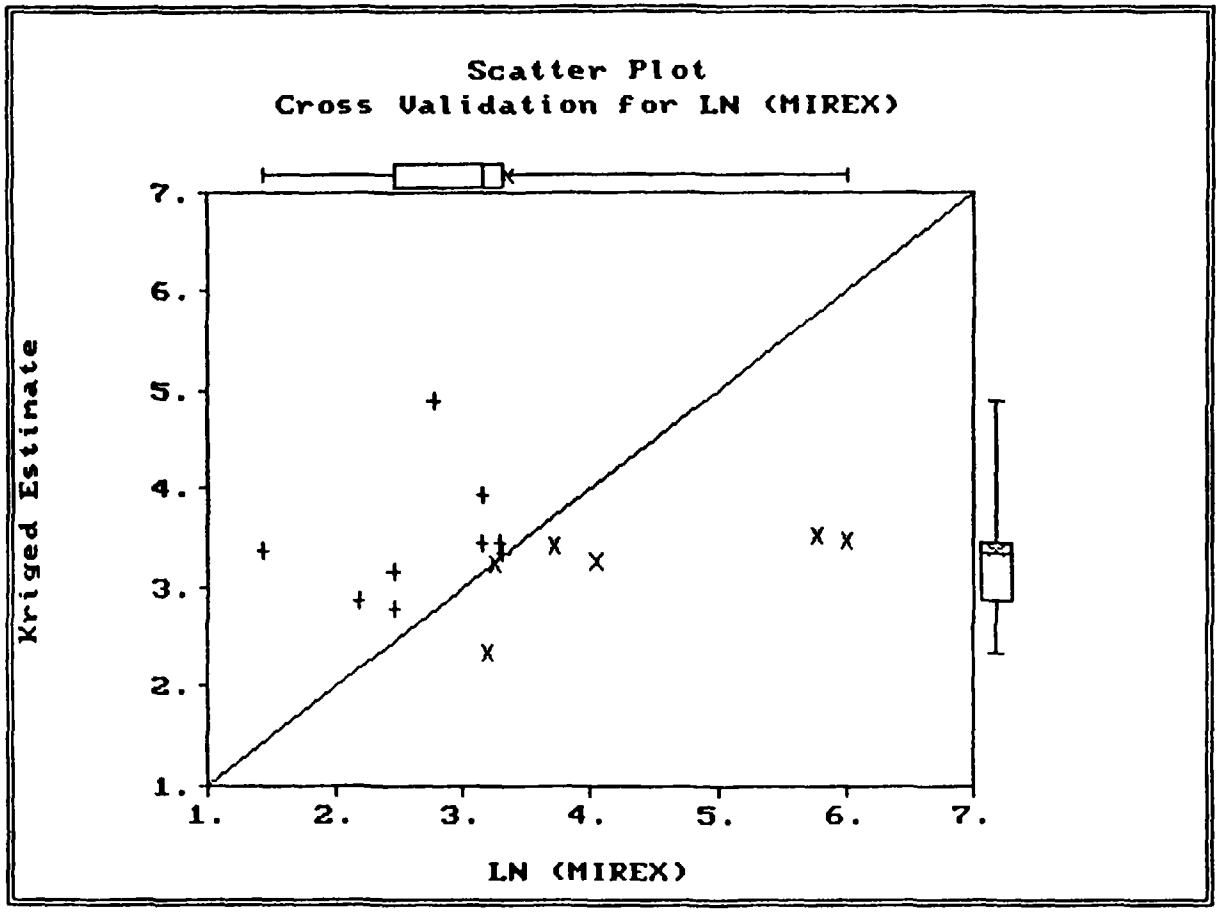
Type Search Model Execute Debug Quit
Specify variogram model

R E S U L T S

Data File : c:\geoeas\mflbc\data\a3ss.prn
X Variable : EASTING
Y Variable : NORTHING
Kriging : LN (MIREX) # Data used : 15
Type : Ordinary # Missing data : 0

	Variable	Estimate	Difference	Kriging Std	Zscore
Minimum	1.433	2.357	-2.558	1.188	-1.932
25th %tile	2.451	2.855	-.829	1.240	-.698
Median	3.148	3.329	.011	1.346	.007
75th %tile	3.318	3.441	.669	1.416	.528
Maximum	6.009	4.890	2.124	1.623	1.555
N	15	15	15	15	15
Mean	3.344	3.359	.015	1.370	.011
Std. Dev.	1.214	.560	1.283	.127	.940

Error Map Scatter Plot Histogram Write Examine Quit
Map of kriging error (differences)


Scatter Plot
Cross Validation for LN (MIREX)
Kriged Estimate
LN (MIREX)
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O P T I O N S

Data File : c:\geoeas\mflbc\data\a3ss.prn

ariable: EASTING	Search Ellipse Parameters		
ariable: NORTHING		Distance type :	Euclidean
Kriging : MIREX	R Major : 700.000	Num. sectors :	1
Log option: On	R Minor : 700.000	Max pts/sector:	8
	Angle : .000	Min pts to use:	1
Kriging Type: Ordinary	Min Dist: .000	Empty sectors :	0

Variogram Model

Nugget: .400 Global Mean:

	Type	Sill	Major Range	Minor Range	Ellipse Angle
1	Spherical	.600	700.000	700.000	.000
2		.000	.000	.000	
3		.000	.000	.000	
4		.000	.000	.000	

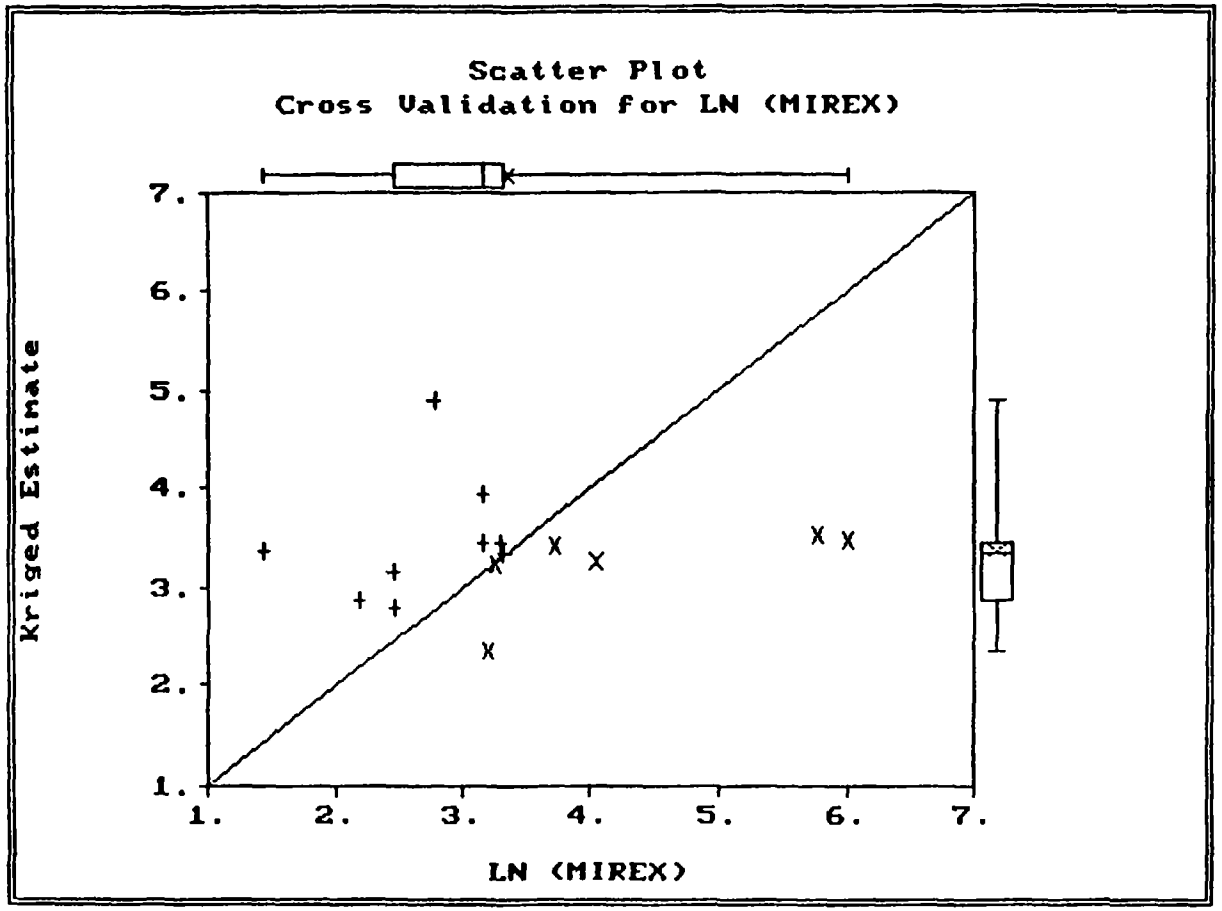
Type Search Model Execute Debug Quit
Specify variogram model

R E S U L T S

Data File : c:\geoeas\mflbc\data\a3ss.prn
Variable : EASTING
Variable : NORTHING
Kriging : LN (MIREX)
Type : Ordinary
Data used : 15
Missing data : 0

	Variable	Estimate	Difference	Kriging Std	Zscore
Minimum	1.433	2.357	-2.558	.840	-2.733
25th %tile	2.451	2.855	-.829	.877	-.987
Median	3.148	3.329	.011	.952	.010
75th %tile	3.318	3.441	.669	1.001	.747
Maximum	6.009	4.890	2.124	1.148	2.199
N	15	15	15	15	15
Mean	3.344	3.359	.015	.969	.016
Std. Dev.	1.214	.560	1.283	.090	1.330

Error Map Scatter Plot Histogram Write Examine Quit
Map of kriging error (differences)


Scatter Plot
Cross Validation for LN (MIREX)
Kriged Estimate
LN (MIREX)
7.
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O P T I O N S

Data File : c:\geoeas\mflbc\data\a3ss.prn

ariable: EASTING	Search Ellipse Parameters		
Variable: NORTHING		Distance type :	Euclidean
Kriging : MIREX	R Major : 700.000	Num. sectors :	1
Log option: On	R Minor : 700.000	Max pts/sector:	8
	Angle : .000	Min pts to use:	1
Kriging Type: Ordinary	Min Dist: .000	Empty sectors :	0

Variogram Model

Nugget: .400 Global Mean:

	Type	Sill	Major Range	Minor Range	Ellipse Angle
1	Spherical	2.400	700.000	700.000	.000
2		.000	.000	.000	
3		.000	.000	.000	
4		.000	.000	.000	

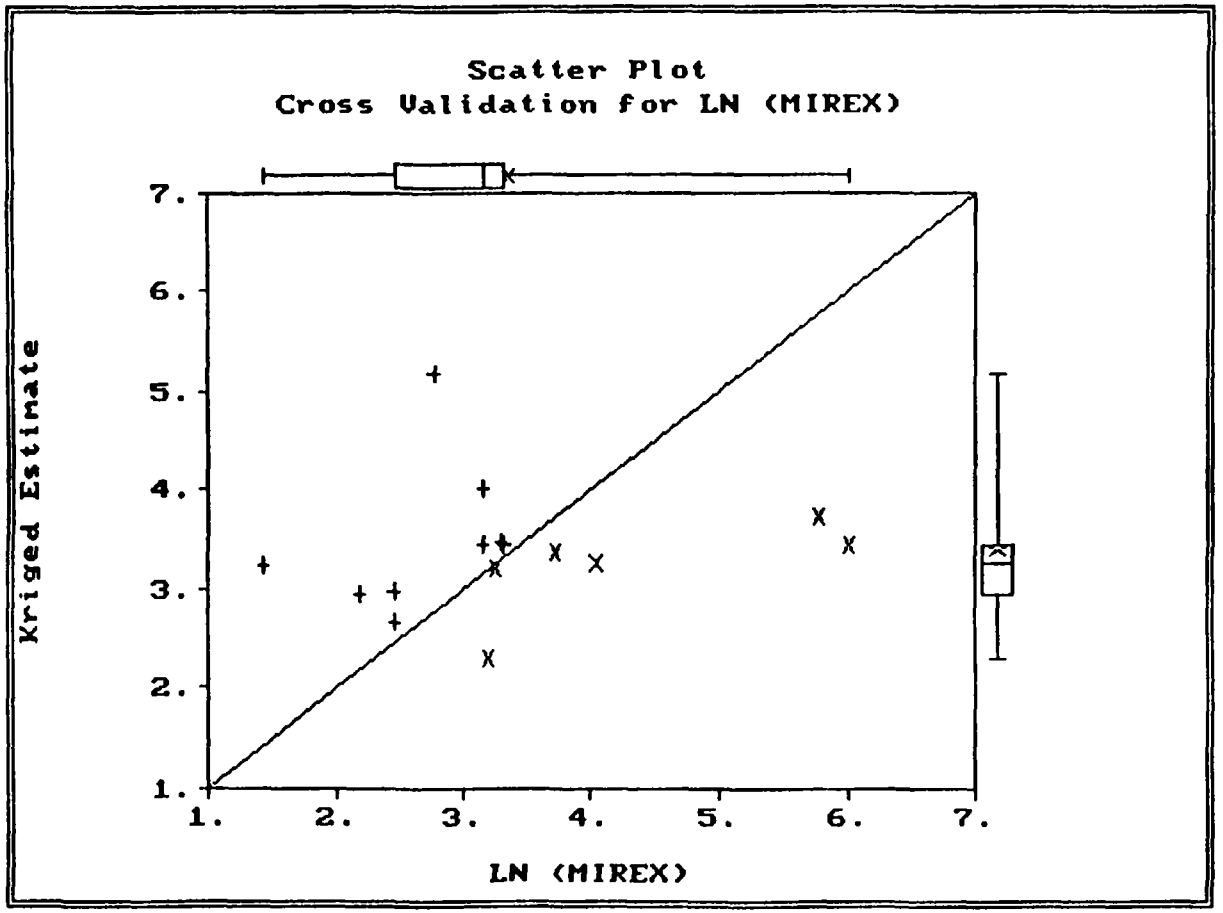
Type Search Model Execute Debug Quit
Specify variogram model

R E S U L T S

Data File : c:\geoeas\mf1bc\data\a3ss.prn
X ariable : EASTING
ariable : NORTHING
ging : LN (MIREX)
Type : Ordinary
Data used : 15
Missing data : 0

	Variable	Estimate	Difference	Kriging Std	Zscore
Minimum	1.433	2.289	-2.572	1.003	-1.891
25th %tile	2.451	2.951	-.898	1.204	-.890
Median	3.148	3.247	.121	1.424	.070
75th %tile	3.318	3.439	.507	1.581	.368
Maximum	6.009	5.186	2.420	1.858	1.699
N	15	15	15	15	15
Mean	3.344	3.372	.027	1.449	.014
Std. Dev.	1.214	.652	1.287	.262	.911

Error Map Scatter Plot Histogram Write Examine Quit
Map of kriging error (differences)


Scatter Plot
Cross Validation for LN (MIREX)
Kriged Estimate
LN (MIREX)
7.
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O P T I O N S

Data File : c:\geoeas\mflbc\data\a3ss.prn

ariable: EASTING	Search Ellipse Parameters		
.ariable: NORTHING		Distance type :	Euclidean
Kriging : MIREX	R Major : 700.000	Num. sectors :	1
Log option: On	R Minor : 700.000	Max pts/sector:	8
	Angle : .000	Min pts to use:	1
Kriging Type: Ordinary	Min Dist: .000	Empty sectors :	0

Variogram Model

Nugget: .400 Global Mean:

	Type	Sill	Major Range	Minor Range	Ellipse Angle
1	Spherical	1.200	350.000	350.000	.000
2		.000	.000	.000	
3		.000	.000	.000	
4		.000	.000	.000	

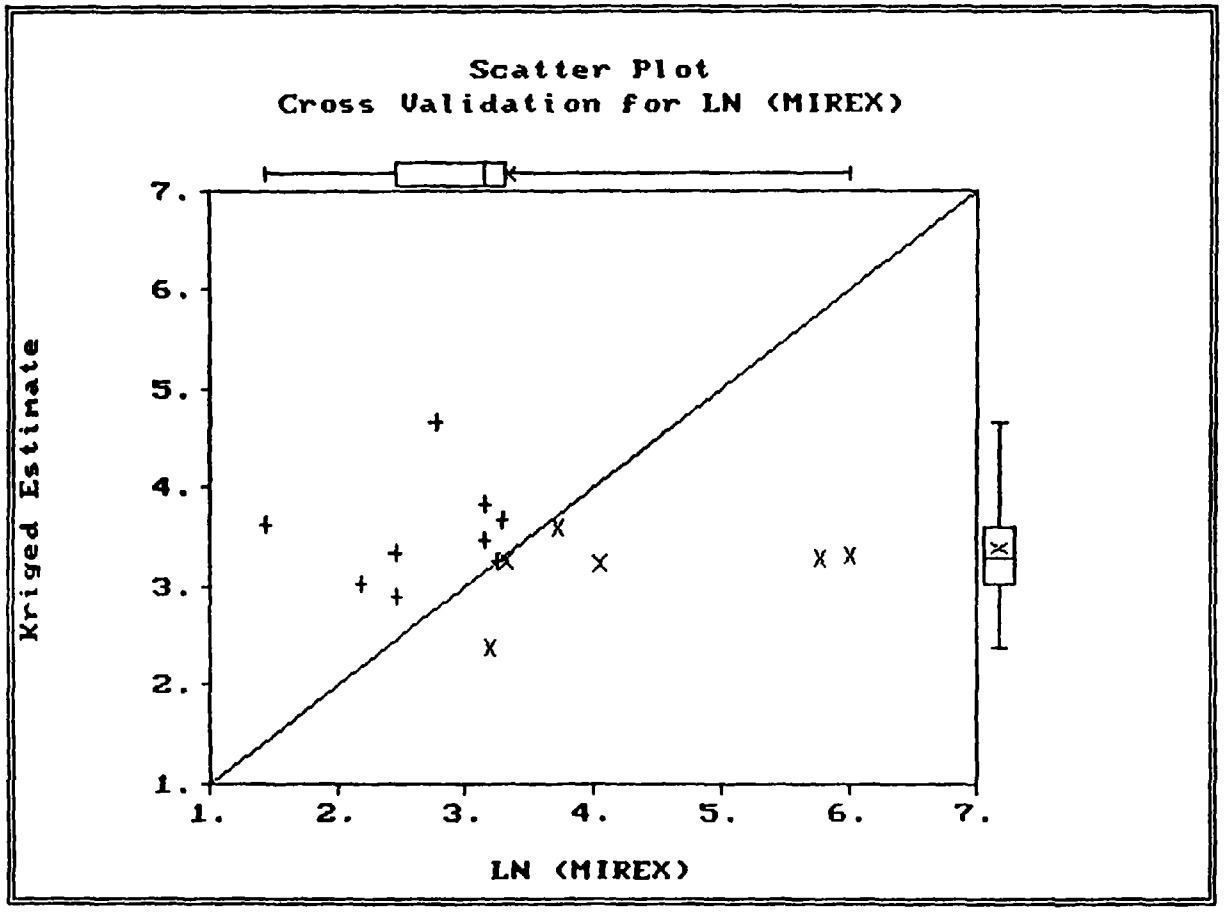
Type Search Model Execute Debug Quit
Specify variogram model

R E S U L T S

Data File : c:\geoeas\mflbc\data\a3ss.prn
Variable : EASTING
Variable : NORTHING
Kriging : LN (MIREX) # Data used : 15
Type : Ordinary # Missing data : 0

	Variable	Estimate	Difference	Kriging Std	Zscore
Minimum	1.433	2.358	-2.709	.985	-2.127
25th %tile	2.451	3.023	-.828	1.182	-.840
Median	3.148	3.274	.011	1.328	.008
75th %tile	3.318	3.596	.689	1.374	.511
Maximum	6.009	4.650	2.182	1.549	1.550
N	15	15	15	15	15
Mean	3.344	3.383	.038	1.298	.028
Std. Dev.	1.214	.500	1.352	.158	1.039

Error Map Scatter Plot Histogram Write Examine Quit
Map of kriging error (differences)


Scatter Plot
Cross Validation for LN (MIREX)
Kriged Estimate
LN (MIREX)
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O P T I O N S

Data File : c:\geoeas\mflbc\data\a3ss.prn

'ariable: EASTING	Search Ellipse Parameters		
Variable: NORTHING		Distance type :	Euclidean
Kriging : MIREX	R Major : 700.000	Num. sectors :	1
Log option: On	R Minor : 700.000	Max pts/sector:	8
	Angle : .000	Min pts to use:	1
Kriging Type: Ordinary	Min Dist: .000	Empty sectors :	0

Variogram Model

Nugget: .400 Global Mean:

	Type	Sill	Major Range	Minor Range	Ellipse Angle
1	Spherical	1.200	1400.000	1400.000	.000
2		.000	.000	.000	.000
3		.000	.000	.000	.000
4		.000	.000	.000	.000

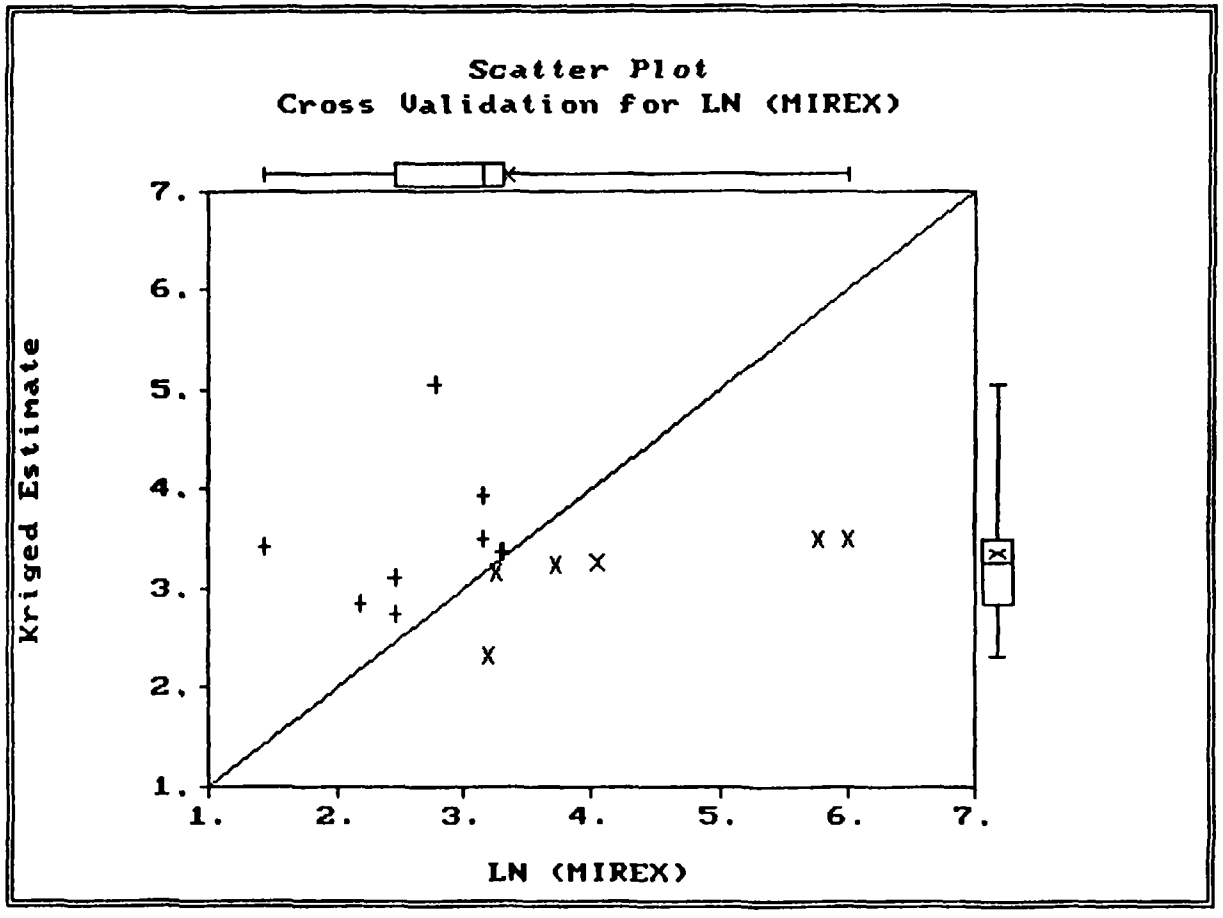
Type Search Model Execute Debug Quit
Enter parameters for neighborhood search

R E S U L T S

Data File : c:\geoeas\mflbc\data\a3ss.prn
Variable : EASTING
Variable : NORTHING
Kriging : LN (MIREX) # Data used : 15
Type : Ordinary # Missing data : 0

	Variable	Estimate	Difference	Kriging Std	Zscore
Minimum	1.433	2.316	-2.524	.840	-2.706
25th %tile	2.451	2.834	-.871	.868	-1.037
Median	3.148	3.248	.037	.933	.035
75th %tile	3.318	3.479	.648	1.000	.709
Maximum	6.009	5.048	2.282	1.183	2.307
N	15	15	15	15	15
Mean	3.344	3.343	-.001	.968	-.003
Std. Dev.	1.214	.604	1.309	.099	1.357

Error Map Scatter Plot Histogram Write Examine Quit
Map of kriging error (differences)


Scatter Plot
Cross Validation for LN (MIREX)
Kriged Estimate
LN (MIREX)
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