

What's New in VSP 6.0?

VSP 6.0 is a major new release of the software. Features new since version 5.0 include:

Sampling Designs

For **Trend Designs** - Added the following: (1) new **Graph Types**, (2) support for **Well Grouping** to Data Analysis, including graphs, tests and summary statistics, (3) **Confidence Intervals** and **Prediction Intervals** to time series plots, (4) **Comparison Test** to predicted values, (5) beta version of design to account for **Exogenous Variables in Trends** (variation of **Multiple-Regression / ANOVA Modeling**), (6) **Comparison to Predicted Values** on time series plots, (7) **Season and Location Tests for Homogeneity**, (8) support for multiple analytes to plots, (9) Non-Detect support for Mann-Kendall and Seasonal-Kendall tests for trends, (10) Outlier Test. Made improvements to several plots. Some display issues were corrected for the Graph View of some designs.

For **UXO Designs** –Added the following: (1) option for indicator kriging to truncate imported estimates to be between [0,1] for geostatistical mapping, (2) added testing of indicator kriging threshold for geostatistical mapping to ensure that the threshold is within the density values, (3) a new geostatistical mapping option to **Delineate High Density Areas**, which automatically delineates high density areas from either kriged data or from target markers, or to manually define high density areas, (4) **Color-Coded Histograms** to display which high density areas contributed to anomaly density distributions, (5) **Side-by-Side Box Plots** for displaying density distributions of high density areas, (6) option to select a specific area of a map for displaying an anomaly density histogram, (7) line simplification support when importing course-over-ground data, (8) **Import from / Export to Geosoft** (UXO project data in a single text file), (9) anomaly filtering for UXO find targets design. Resized dialog of **Geostatistical Mapping of UXO Density** for better display at various screen resolutions. Improved **Transect Compliance Sampling design** for UXO (new design uses cleanup grids and equal length transects). Improved interface with KT3D to avoid memory errors. Made improvements to GAMV function.

For **Combined Judgment Random Designs** – Made improvements to mathematical implementation of underling model.

For **Multi-Increment Sampling Designs** - Added the following: (1) multi-increment sampling to the Compare Average to Reference Average and Construct Confidence Interval on a Mean designs, (2) grouped placement of increments, (3) help files and report generators for multi-increment sampling. Improved systematic placement of increment samples.

For **Locate Hot Spots Designs** – Added the capability to augment an existing design with additional samples **Using existing locations** to ensure that a hotspot of a desired size will be detected.

Added **Item Sampling**, which includes a new conversational style design interface. Added the following: (1) reports, (2) support for picking judgment items for combined judgment random item design, (3) editable labels to items. Improved Coordinate View display for items.

Added **Radiological Transect Surveying** designs which builds upon the methodologies developed for the UXO designs. Designs include: (1) **Transect spacing needed to locate a hot spot**, which computes

the transect spacing needed to traverse a hot spot of a specified size and shape, (2) **Locate and mark hot spots**, which locates hot areas from survey data, and contains tools for automatically or manually delineating hot areas and providing statistics for those areas, (3) **Geostatistical analysis**, which uses kriging to locate hot areas from survey data, and contains tools for automatically or manually delineating hot areas and providing statistics for those areas, (4) **Post-survey probability of sampling in a hot spot**, which uses a monte-carlo simulation to determine the probability that a particular survey pattern would traverse a hot spot of a specified size, shape, and orientation. All designs include on-line help and report generators.

Added ability to calculate confidence or percent clean given number of samples for Acceptance Sampling, Compliance Sampling and Non-Parametric UTL designs. Added ability to calculate the fraction less than action level given number of samples for Non-Parametric UTL design.

Added **Analyze Sampling Redundancy** which includes options to **Analyze Spatial Redundancy** and **Analyze Temporal Redundancy**.

Combined all the **Presence/Absence** designs into a single dialog.

Updated Stratified Sampling design.

Updated Sequential Sampling design.

Added Two-Sample t DQA test.

Moved **Mean vs. Fixed** designs to all-in-one, sentence-based dialog.

Moved **Mean vs. Reference** designs to all-in-one, sentence-based dialog.

Building Features

Added the following: (1) blocking of cell samples on walls behind elevated surfaces, (2) popup menu that includes access to dialog for selecting a different current room. Improved the following: (1) control over Surface Overlays, blocking of samples behind elevated surfaces. Added Z-Offset to map import which facilitates multiple floors in a single building design.

Maps

Added the following: (1) **Well Grouping** options to use with Trend Designs, (2) allow UTM Conversion to output feet as well as meters for Lat / Long maps (SHP files), (3) option to draw a circle by entering a radius and then a center point, (4) color legends for sample areas when colored by value, (5) display of sample and sample area information on status bar when mousing over, (6) support for using **Font Symbols** as sample location markers on a map, (7) **UTM Conversion** support to **Load World File** function, (7) ability to **Export World File**, (8) **Map Layer Control Bar** which supports layers on Map View, (9) support for layers when loading DXF file, (10) **Google Earth Calibration**, (10) **Properties Bar** which supports Sample Areas and Samples and support for Z-Offset when loading map files.. Made improvements to: (1) **Combine Areas**, (2) rotating sample areas, (3) Layer Control, (4) Sample Area Uncombine, (5)

User Interface

Redesigned Data Entry page and data import process for many modules. The new design enables users to specify mappings on the fly to provide maximum flexibility to import tabular data.

Miscellaneous

The **Expert Mentor** now supports Sampling Design Selection guidance and has been updated.

The Analyte Correlation tool has added a **Pairs Plot**, tool tips when mousing over data points on correlation plots, and a custom confidence interval.

Added beta version of **Multiple Regression / ANOVA Modeling** tool.

Updated several reports to handle multiple analytes.

Made Improvements to currency symbol support, allowing user to override system settings.

Added **Group Comparison Tool** using Analysis of Variance (ANOVA) and Kruskal-Wallis tests.

Added **Probability and Uncertainty Maps** to geostatistical analysis tool.

Added a Multi-Gaussian check feature to the geostatistical analysis tool.

Made Quasi-Random sampling Option the default.

Probability and Uncertainty mapping added to Geostatistical Analysis.

Added TIFF and GeoTIFF picture support.

Improvements to various help files and report generators.

Improvements to Historical sampling support.