Remember when environmental analysis was fun?



- DUMPStat
- DUMPStat Explorer

Statistical and hydrogeochemical tools for environmental monitoring and assessment

-1.441

-0.536

were calculated.

 $\nabla = (1 - N_0/N) \nabla_1$

-[1-4/46]1.44

 $9y_1 = [(oum[Y_1]^2 | oum[Y_1]^2 / N_1] / (N_1 - 1)]^{1/2}$

 $\begin{aligned} s_{\gamma} &= [(1 \cdot N_0/N)^* s_{Y_1}^2 + \\ & [N_0/N](1 \cdot [N_0/1]/[N-1]) [\overline{Y}_1^2]^N \end{aligned}$

See all the calculations. Worksheets provide

a 'look under the hood' to let you see what

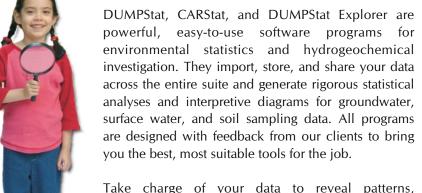
decisions were made and how your limits







Quick and simple tools, with clear and intuitive results



Take charge of your data to reveal patterns, relationships, and trends with the insightful graphs and tables. Have the expertise of a renowned statistician at your fingertips-the most appropriate treatments are automatically applied to your chosen analyses.

Get your work done guickly with one or two clicks, and save your analysis settings as templates for later

CARStat and DUMPStat were created in collaboration with Dr. Robert D. Gibbons, author of Statistical Methods for Groundwater Monitoring (1994), and Statistical Methods for Detection and Quantification of Environmental Contamination (2001). Both programs use methods compliant with USEPA Subtitle C and D regulations and all USEPA and ASTM Standard D6312-98 guidance documents. DUMPStat Explorer was developed in cooperation with experienced hydrologists to deal with 'real world' scenarios by providing industry-standard views and analyses.

DUMPStat Explorer for hydrogeochemical data evaluation



FAST, EASY, DIRECT

- Define your analyses on-the-fly for unencumbered investigation.
- Interactive editing gives you immediate
- Clone new Stiff and Trilinear diagrams with settings from existing patterns. Then edit them the way you want.
- Save ionic templates for quick diagram regeneration.

COMPLETE CONTROL

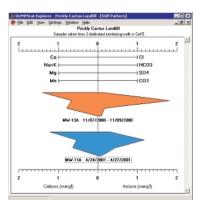
- · Specify treatment of nondetects, J values, and same-day samples.
- Choose the ions you want and how they will appear on graphical output.
- Define an unlimited number of ions, with default or custom specifications.
- Display regression lines for individual or grouped points...or both!

IMAGE IS EVERYTHING

- Drag Stiff patterns to the order you want.
- Choose symbols, colors, titles, printer fonts, and layout.
- Your picture not quite worth a thousand words? Add some of your own with custom text areas.
- WYSIWYG printing for superior

- Save time with live editing
- Interpret your site's chemical data with industry-standard views
- Stiff patterns, Trilinear diagrams, time series, scatter plots and more

Explorer can be used on its own or with existing DUMPStat and CARStat databases to provide evaluation tools for exploring aqueous chemistry data, investigating chemical signatures, and further interpreting statistical results. Explorer creates Stiff patterns, Trilinear diagrams, time series, scatter plots, and more; all with customizable configurations, and unparalleled live interactivity allowing you to see your changes instantly. Data descriptions are saved with output, which can be easily refreshed with your most current data.



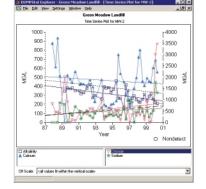
Stiff patterns can be edited on the spot, and dragged to the order you want. Leachate wells can be incorporated by including patterns based on total metals

dissolved metals.

while leaving the downgradient wells using



Create Trilinear diagrams quickly and easily with Explorer. Edit the symbols and colors on the fly, and apply unique ionic profiles to individual wells for leachate comparisons. Custom text boxes allow you to add your



Now you see them, now you don't. Multi-line time series let you choose whether

to display individual or group regression lines, or both. Axes can be auto-scaled to include all data or clipped with the offscale points listed beneath.

POWERFUL ANALYSES

- See gradual and immediate releases with Shewhart-CUSUM intra-well control charts
- Monitor detections of volatile organic or anthropogenic compounds.
- Compare upwind/downwind or upstream/downstream samples with the nonparametric Wilcoxon test.
- Investigate site failures with the confidence limits/assessment analysis.
- Innovative statistical power charts instantly reveal the value of your sitewide sampling strategy.
- Find trends in your data with time series using Sen's nonparametric test.

FLEXIBLE

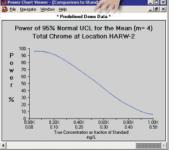
- Limit control chart and prediction limit analyses to specific locations and constituents with sublists.
- WYSIWYG formatting, on-the-spot error checks, and template-saving make data importing quick and easy.
- Fully control your statistical settings, or use DUMPStat's common defaults.
- Define custom limit lines for your graphs.
- tables.

STREAMLINE YOUR WORK

- Make guick work of complex sites or heterogeneous data-organize your analysis settings into zones that you can save and load again.
- integrated.
- Easily manage your site with standard database tools.

- Generate customized data summary

- CARStat and DUMPStat are fully



Get the bottom line with statistical power charts. See how effective your analyses are-power charts show you real-world false positive and false negative rates for your entire facility.

most powerful statistics software available for detection monitoring. DUMPStat automatically handles all the complex details and performs the most appropriate analyses without user intervention. The entire facility is considered, ensuring that calculated limits are balanced for site-wide conditions. CUSUM Outlier

Verity

Backgnd 🔲

Samples

CUSUM |

DUMPStat for groundwater detection monitoring

Get your detection monitoring reports done quickly and expertly

DUMPStat is a statistical package designed for facilities performing ongoing groundwater

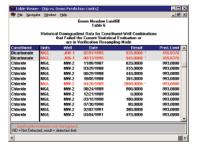
detection monitoring. DUMPStat is used by landfill owners and operators who want the

Spot gradual and immediate releases with DUMPStat' intra-well Shewhart-CUSUM control charts. Clear, customizable graphs display analysis results along with the median reporting limits, user-defined and automatic outliers, and custom limit lines. Axes are displayed in linear or logarithmic scale.

CARStat for compliance, assessment, & remediation

Investigate contaminated sites and monitor remediation efforts

CARStat statistically analyzes data for soil, groundwater, surface water, air, and waste streams for assessment monitoring and corrective action programs. CARStat is used by consultants needing flexible, sophisticated software to perform all aspects of environmental site assessments at industrial plants, disposal facilities, brownfield sites and other installations requiring detailed investigation. CARStat uses a common database and a user interface similar to DUMPStat, and shares many of DUMPStat's tools and features. Results are presented in graphs, tables, and statistical power charts, and calculations are detailed in worksheets.



See the details. Tables show detection frequencies, means, standard deviations, distributional form, calculated limits, and more. DUMPStat and CARStat offer flexible options for multi-page printing.

SOPHISTICATED

Many of DUMPStat's great tools, plus:

- See results of your remediation efforts with specialized analyses.
- Make comparisons to background or regulatory standards.
- Calculate prediction & confidence limits about percentiles for normal, lognormal and nonparametric distributions.
- Group your locations for more powerful soil sampling strategies.
- Land's method used for lognormal data.
- No site licensing restrictions.



What our customers say...



With DUMPStat Explorer, our hydrogeologists can evaluate volumes of geochemical information in a fraction of the time necessary with other software. Its ability to provide real-time analyses makes it a significant cost-saving product for our facilities.

Mark Verwiel
Director
Groundwater Protection Program
WASTE MANAGEMENT INC.

The site locking and data merging capabilities in DUMPStat simplify data management for my team.

Jennifer Lapthorn

Hydrogeology Group Manager
RUMPKE

DUMPStat is powerful, reliable, and intelligently designed. It is my preferred software for statistical evaluation of groundwater monitoring data.

Will Neal Principal GROUNDWORKS CONSULTING

CARStat is a highly sophisticated statistical program that is surprisingly easy to use. It provides site managers, scientists, and engineers with the most technically sound approach to assessment and corrective action monitoring available today.

Raymond Kapp Program Manager EMCON/THE IT GROUP





CARStat

Redefining compliance, assessment, and remediation statistics for large, complex facilities and previously impacted sites.



DUMPStat

Powerful statistics tailored to detection monitoring data analysis and management at landfills and industrial facilities.



DUMPStat Explorer

Classic environmental data visualizations and exploratory tools for investigating chemical signatures and groundwater data.

Download trial versions of all programs at www.discerningsystems.com, or call us at 1-877-374-7744 for a free demo CD. Work with your own data for 30 days to see how easy it is to generate powerful statistics and intuitive diagrams.

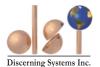


System Requirements

- Windows 9x/NT4(SP4)/Me/2000/XP
- 30 MB available hard disk space
- 800 x 600 256-color display
- CD-ROM drive

About DSI

Established in 1992, Discerning Systems specializes in the creation of software applications for statistical analysis in environmental monitoring and assessment. These programs have been developed in co-operation with renowned environmental statistician Dr. Robert D. Gibbons, and are used by corporations, consultants, municipalities, and government regulators who need rigorous and effective statistics in groundwater and soil sampling. DSI is also known for its friendly and knowledgeable technical support staff.



Discerning Systems Inc. 8557 Government Street Suite 105 Burnaby, BC V3N 4S9 CANADA phone: (604) 298-3748 fax: (604) 298-3648 toll-free:1-877-374-7744

email: info@discerningsystems.com web: http://www.discerningsystems.com

