

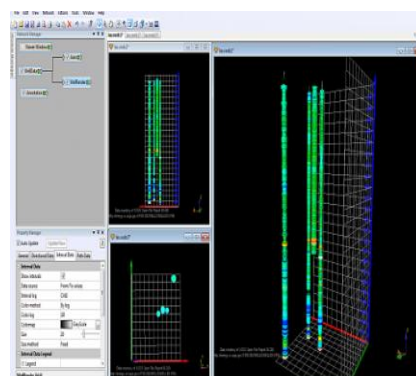
# VOXLER 3

Create powerful, fast, customized 3D images of your data with Voxler 3. Easily import data in a multitude of file formats to create stunning models that visualize the relationships across your data set. This robust, yet user-friendly program gives you the power to display your data in a variety of formats and colors, capture video animation of your moving model, and select from several image and data export options.

## FEATURES

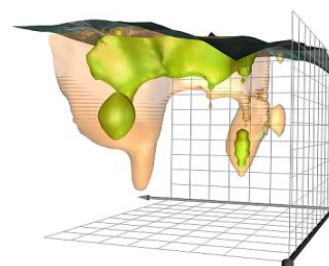
### Explore the world of three-dimensional visualization with Voxler

Voxler takes your raw, complex data and models it in a rich, interactive, 3D visual environment. The updated, easy-to-understand user interface allows you to quickly visualize and examine your data. With robust data compatibility, importing data into Voxler is fast and easy. You can filter anomalies, duplicates, or areas you want eliminated. Interactively manipulate your data while viewing the results, and personalize Voxler with a multitude of settings.



## ISOSURFACE

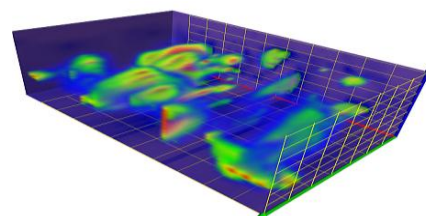
A **Voxler** isosurface extends the concept of the contour line (a line of constant data value in two dimensions) to display a surface of constant data value in three dimensions. Color-code and combine multiple Isosurfaces by data value to show discrete values through a 3D grid. Isosurfaces display surfaces of constant data value. Specify the color and transparency for each surface to indicate its value.



## Volume Rendering

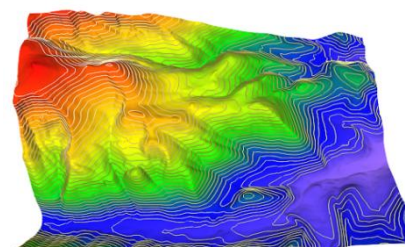
Volume rendering is a 3D display of data that simulates the transmission and absorption of light through the points in the volume. Using Voxler's VolRender module, a rendered volume assigns a color and transparency value to every element in the 3D grid. The VolRender is particularly good at displaying chemical concentration values, contamination plumes, and other types of geophysical data in full 3D

A rendered volume displays a color for every element in the 3D grid. Add transparency to those elements in the grid that you don't want rendered.



## CONTOURS

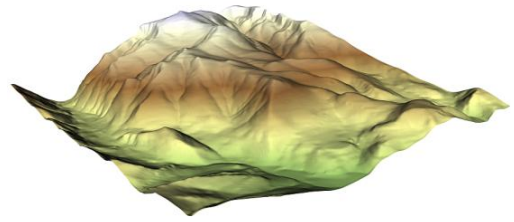
Contours display lines of constant data value along a plane. For a Surfer grid, the contours can be draped over the 3D surface. Voxler's contours can be orientated in any direction though a 3D volume and allow for full control of the contour levels, the line widths, and the color mapping. Elevation contours draped over Heightfield that was generated from a Surfer grid file.



## HeightFields

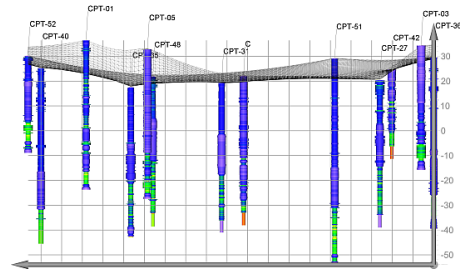
A Heightfield displays data values as colors for a 2D grid, a 2D orthogonal slice of a uniform 3D grid, or along a 2D curvilinear lattice. The data magnitude is also depicted by the amount of displacement above or below the slice. The displacement is perpendicular to the plane or curvilinear lattice and is adjusted by the scale factor. Voxler allows imagery to be overlaid on Heightfields. Heightfields can also be displayed as points and lines.

*This HeightField, which is generated from a Surfer grid file, displays elevation.*



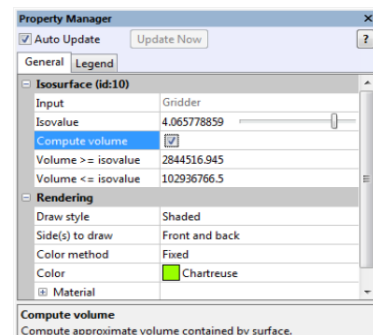
## 3DBorehole Models

Voxler 3 can model straight and deviated well bore in full 3D space. Once a well path is modeled, multiple log variable can be rendered along the well paths simultaneously. In this image, differences in soil type are represented by different colors, differences in friction ratios are represented by different size disks rendered along the bore path. All of the properties are fully editable in Voxler.



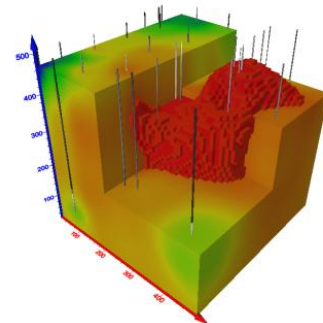
## Volumetric Computations

Voxler 3 now gives you the ability to compute volumes using both the Isosurface module and the FaceRender module. With a click of the mouse, volumes can be found above or below the specified isovalue or from the number of blocks being displayed by the FaceRender.



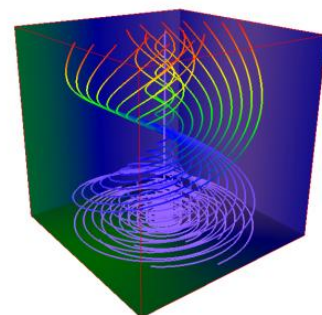
## Block Models

Voxler's Face Render module displays un-interpolated voxel data in a block style model. Target component values are represented by the different colored blocks. The number of blocks, the average block value, and the volume if the blocks being displayed can be calculated and found in the Property Manager.



## STREAM LINES

Stream lines are used to display the path of particles through a velocity field, the distribution of velocities of a medium in 3D space. Different colors indicate the magnitude of the velocities. The technique injects massless particles at specified seed points and traces their paths through the field. The particles stop when the new velocity is zero, the maximum stream length is exceeded, or when the stream intersects the bounds of the field



## VECTOR PLOTS

A vector plot displays lines or arrows indicating the direction and magnitude indicated by the components of a 3D grid or point data set. The magnitude of the vectors is shown by length and color.

## SCATTER PLOTS

A scatter plot displays symbols at the XYZ location specified in the data file. If the data file has a value at each data point, specify different colors for different data values. Voxler offers several symbol choices and labeling options to customize the plot.

## Ortho and Oblique Images

Orthographic images and oblique images display slices of data. Ortho images can also be used to display georeferenced image files at the correct map location. Oblique images display the image at any 3D direction

### Clip Planes

Add a clip plane to any graphic to remove the portion on one side of the clip plane. Add multiple clip planes at different angles to display the area of interest without obstruction.

## AXES

Add axes to a plot to display the XYZ coordinate ranges. Axes are color-coded to identify each direction. Change the plane of the axis labels the axis and rotate the labels around a point centered at each tick mark.

## BOUNDING BOX

The bounding box is a part of a plot that shows the limits of the XYZ data ranges. It is a good way to show the ranges when the settings produce a graphic that does not cover the entire range, as for some isosurfaces. It also provides a good reference system to orient the graphic output.

## 3D GRIDDING

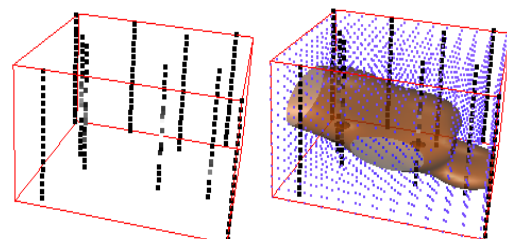
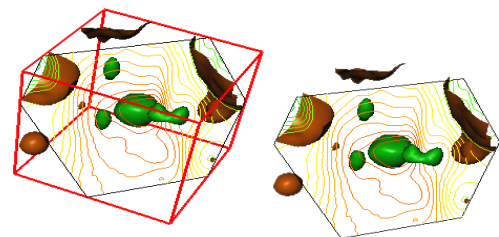
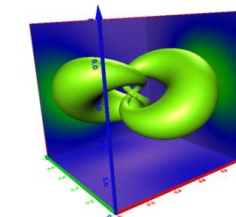
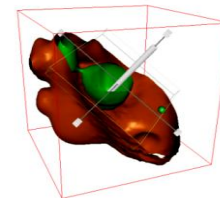
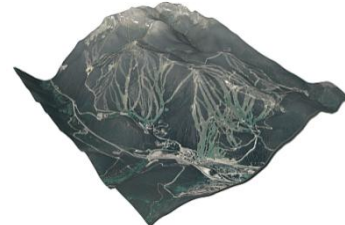
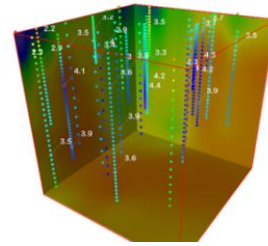
Voxler can take scattered XYZC data (XYZ coordinates with a data value C) and produce a uniform 3D grid using Inverse Distance, and Local Polynomial gridding methods. It also can calculate a large number of Data Metrics within the specified search radii, including minimum, maximum, median, mean, quartiles, standard deviation, variance, count, density, and distance to nearest and farthest point.

## MORE COMPUTATIONAL OPERATIONS

Voxler provides a number of computational options including filters for eliminating duplicate data points, removing data points based on the X, Y, Z, or data values, calculating normal, distance-weighted, Gaussian averaging, data metrics, and image processing.

Other computational modules calculate gradient, grid math with up to three 3D grid files, merge up to five 3D grid files, resample, subset, and transform operations.

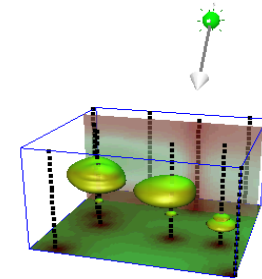
Voxler's computational modules shown from the **Network / Computational** command.



## **ADDING LIGHT TO A SCENE**

Lighting options include ambient light, camera headlight, directional, point, and spot lights with settings for color, intensity and direction. Use the graphical Dragger tool to aim and position directional, point, and spot lights.

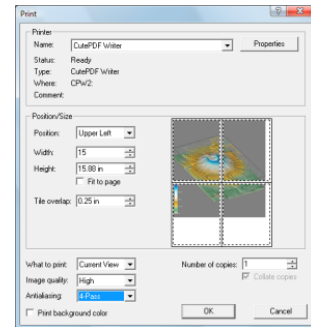
Use the Dragger tool (shown in the upper portion of the illustration) to graphically position an angle to a directional green light on the scene.



## **PRINTING**

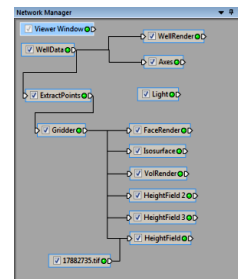
Voxler features an improved print dialog with a print preview that is especially helpful when printing graphics that cover several pages. Don't guess at how many pages a large plot will need! View the page requirements in the dialog preview. Print everything, or just the current view. Control image quality, add antialiasing to smooth a print out, and print the background color as needed.

Control your printed output with precision and ease. Preview the look of a large plot that spans several pages before you send the print job to the printer.



## **NETWORK MANAGER**

The Voxler Network Manager graphically displays the modules (input data, computational, graphic output, info) and their connections. "LED" lights display green, yellow, or red to indicate the status of the module. Click on a module to select it and to display its settings in the Properties Manager.



## **PROPERTY MANAGER**

The Property Manager lists the settings for the selected module with edit boxes, sliders, and buttons for changing the settings.

## **AUTOMATION**

Create your own scripts to automate repetitive tasks. You do not need to spend time doing the same process over and over again – write a simple script to simplify your workflow. Operations performed interactively can be controlled using an automation-compatible programming language such as Visual Basic, C++, or Perl. Voxler 3 includes Scriptor™, a built-in Visual Basic compatible programming environment that lets you write, edit, debug, and run scripts. Why do more work than you need when you have Voxler working for you?

## **CAPTURE VIDEO**

Voxler 3 adds a video record procedure so you can save animation to an AVI file. You can make changes to your maps and images, and have them recorded in the AVI to share with other users. Video settings allow you to control the quality and file size of the output AVI file.

## **SYSTEM REQUIREMENTS**

- Windows XP, Vista, or 7 operating system or higher
- 512 MB minimum RAM for simple data, 1 GB RAM recommended
- 100 MB of hard disk space
- Video card with 1024x768x16-bit color minimum resolution
- Video driver with OpenGL acceleration highly recommended.