

Ten Reasons to fall in love with GeoStudio 2007



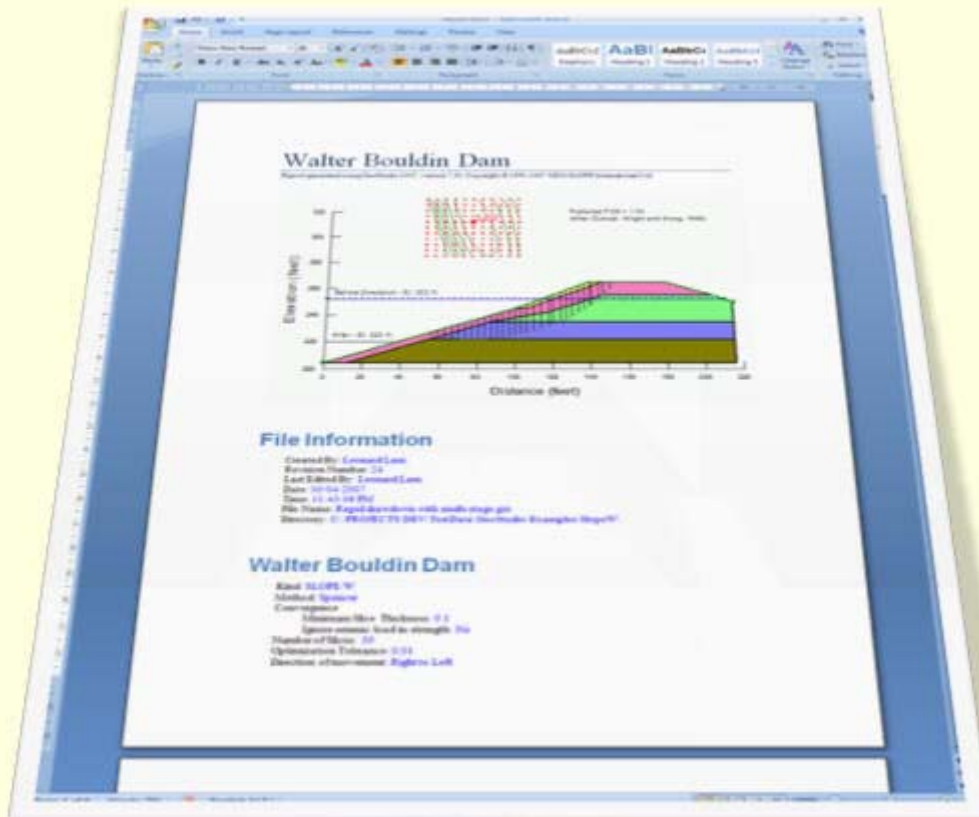
We think you'll agree, once you've spent some time with GeoStudio 2007, you won't want to look anywhere else. We're confident that using GeoStudio 2007 will increase the types of problems you can analyze and make it easier to model typical geotechnical problems.

We've highlighted **ten reasons to fall in love with GeoStudio 2007**:

1. Generate a comprehensive [report](#) of your SLOPE/W analysis.
2. [Integrate](#) all your analyses in a single project file.
3. [Define](#) your problem without worrying about the mesh.
4. [Fine-tune your mesh](#) using powerful mesh-constraint options.
5. Analyze [rapid drawdown](#) in SLOPE/W using a multi-staged undrained strength method.
6. Use [AIR/W](#) to model a wide range of air-groundwater interaction problems.
7. Quickly solve your analysis with new [multi-threaded solvers](#) that take advantage of the latest multicore processors.
8. Use [new material models and improved functions](#) to quickly and accurately define material properties.
9. Extend GeoStudio with your own [Add-In functions and constitutive models](#).
10. Plot results anywhere in your domain using [all-new graphing](#) capabilities.

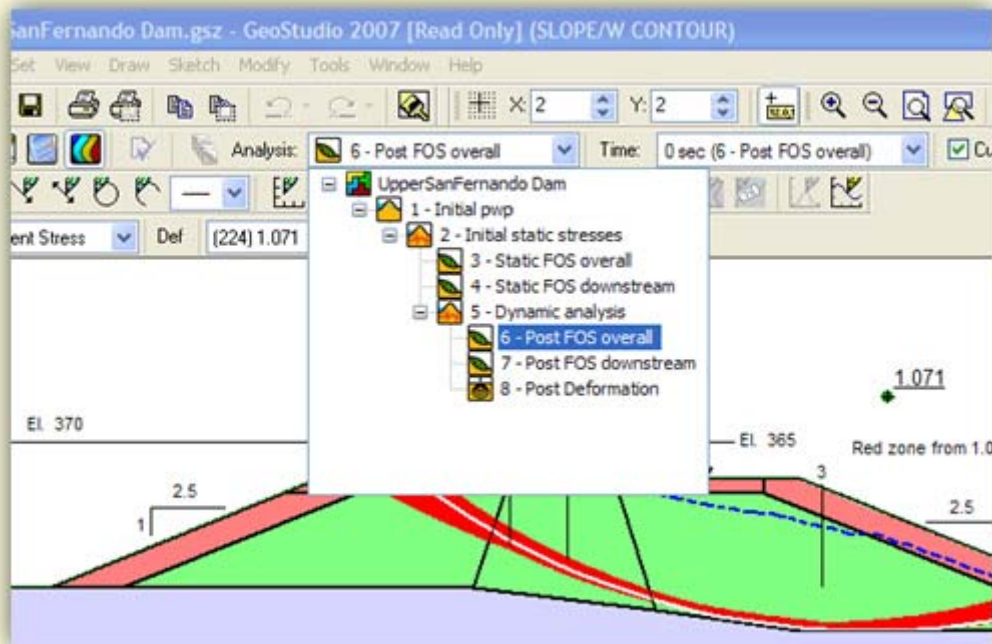
1. Generate a comprehensive report of your SLOPE/W analysis.

SLOPE/W generates detailed reports of your input and primary result parameters. Submit them to a regulator or file them for safekeeping. [View a sample report.](#)



2. Integrate all your analyses in a single project file.

Stay organized when you're solving multiple analysis types on a common geometry. Set up related analyses in one file and solve them with a single click of the mouse. Change the geometry or boundary conditions and re-solve the entire sequence with another click. Simulate staged construction sequences with moving boundary conditions by linking together analyses for each stage.

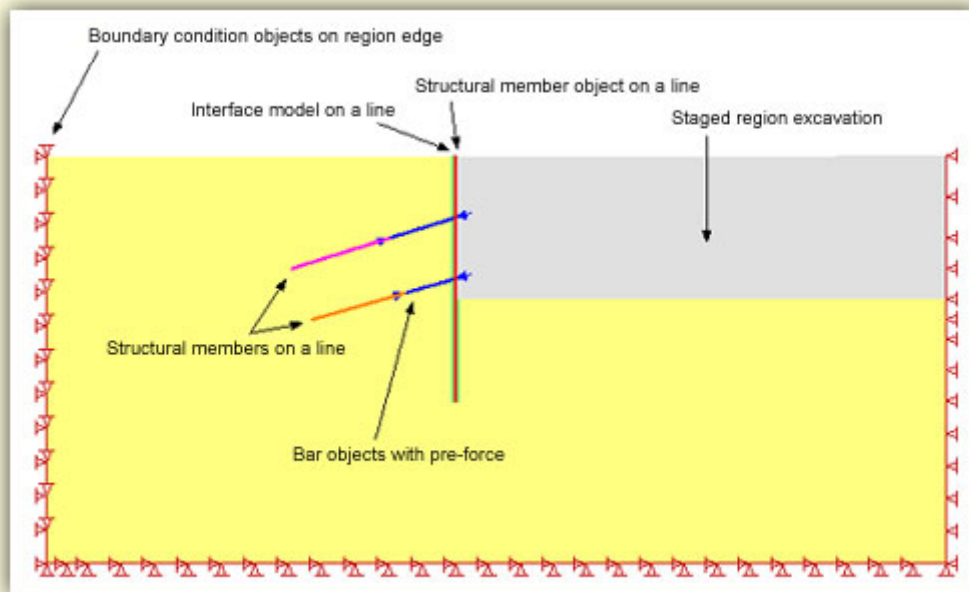


This example shows a sequence of SEEP/W, SIGMA/W, SLOPE/W and QUAKE/W analyses, with a final post-earthquake deformation analysis in SIGMA/W.

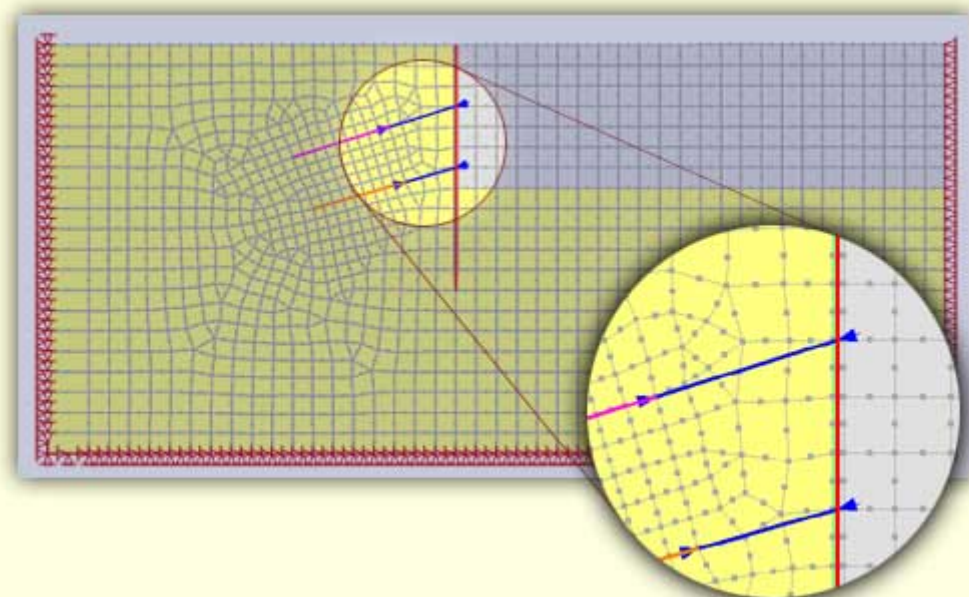
3. Define your problem without worrying about the mesh.

GeoStudio 2007 will change how you think about a problem definition. Apply materials and boundary conditions directly to your geometry without ever thinking about meshing. Later changes to the mesh will preserve the problem definition.

Consider this fully-defined problem built with no consideration of the mesh, followed by the default generated mesh:

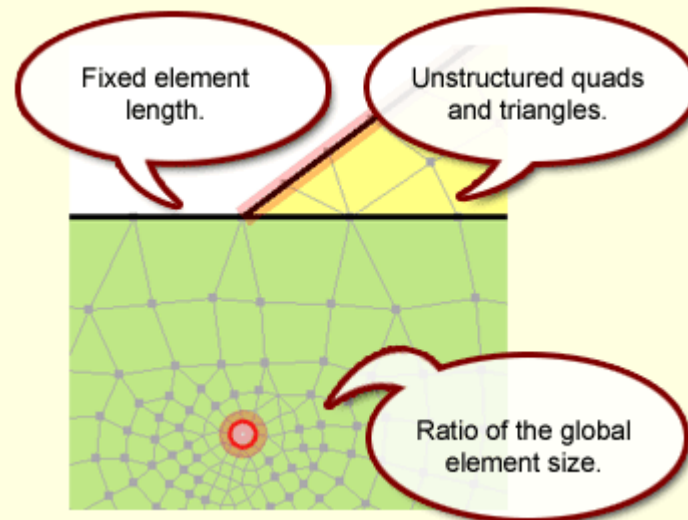


Here is the default mesh generated for this model:



4. Fine-tune your mesh using powerful mesh-constraint options.

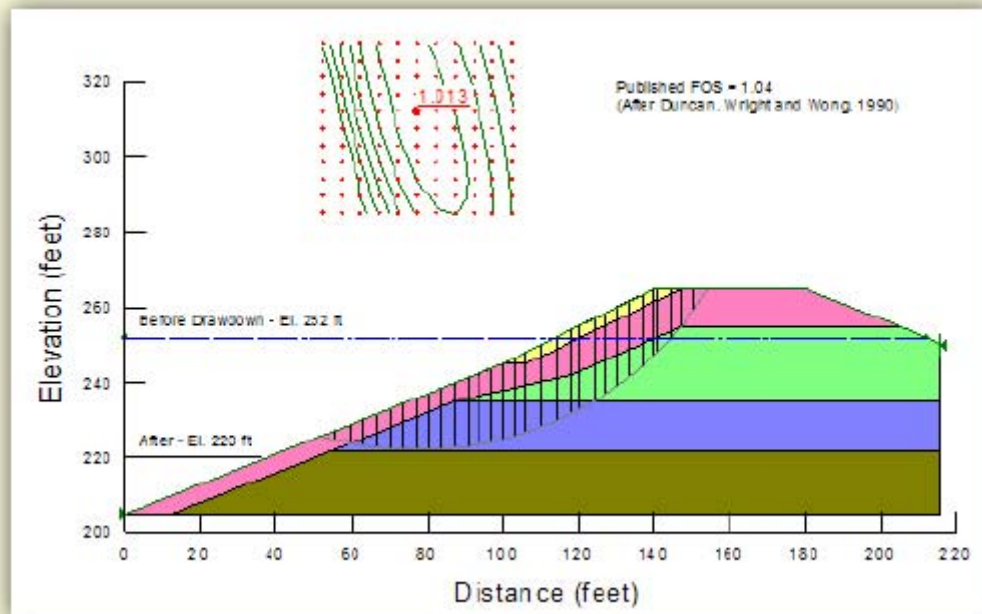
In the [previous point](#) we showed that you can define a finite element model without worrying about the mesh. But when you do need to fine-tune the mesh, GeoStudio 2007 gives you powerful controls over the mesh patterns and element size.



- Choose from a variety of mesh patterns including unstructured quads and triangles;
- adjust the global element size and the entire mesh will be regenerated;
- force a finer mesh around specific lines or points using a ratio of the global element size and the mesh seamlessly transitions from coarse to fine.

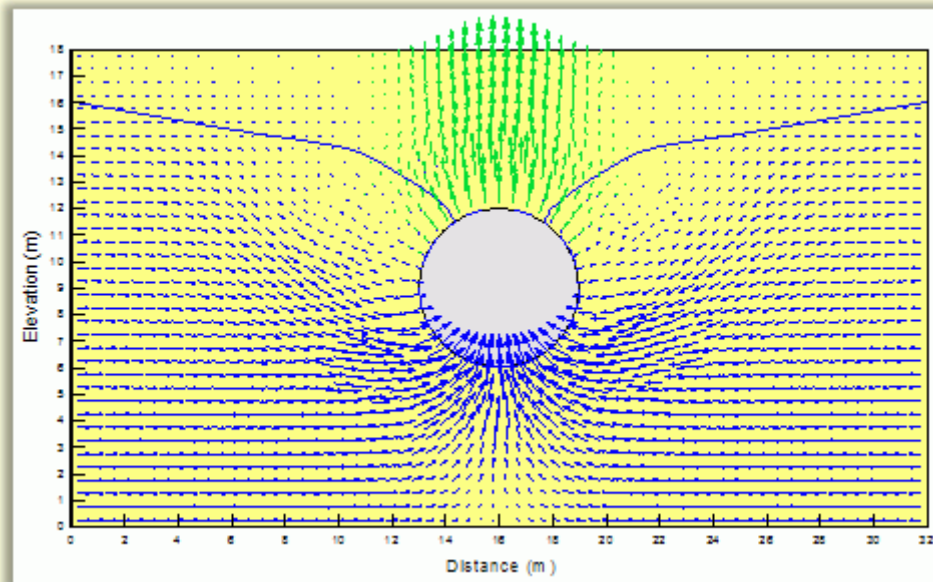
5. Analyze rapid drawdown in SLOPE/W using a multi-staged undrained strength method.

By popular demand... Specify the initial and final elevations of the reservoir and assess the factor of safety.



6. Use AIR/W to model a wide range of air-groundwater interaction problems.

GeoStudio 2007 introduces AIR/W, a brand new product to solve for air flow in response to thermal or air pressure gradients. AIR/W couples air and water pressure with temperature so you can consider the true (Ua-Uw) matric suction phenomenon.

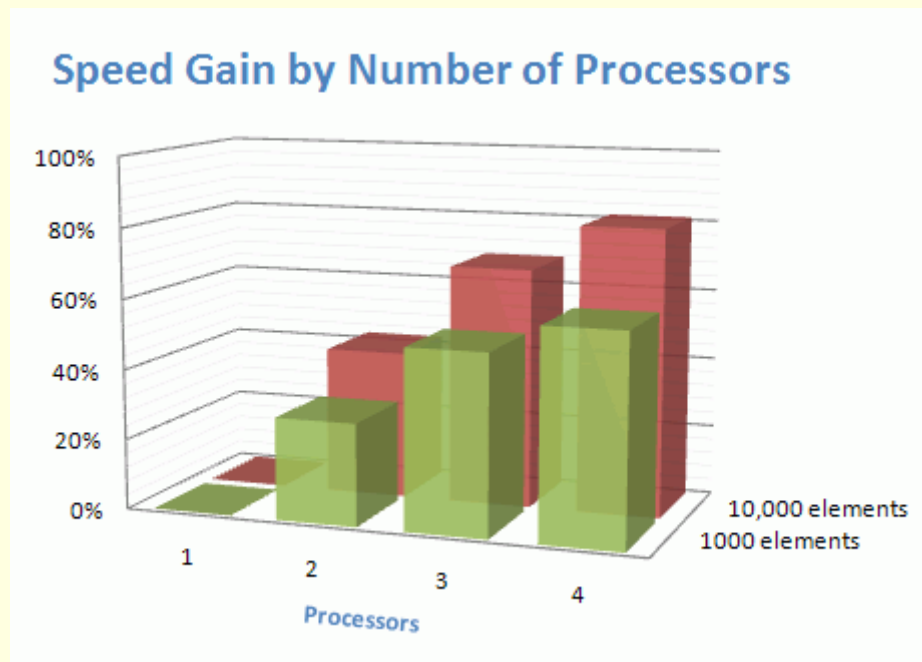


This example demonstrates simultaneous air and water flow in a tunneling project.

7. Quickly solve your analysis with new multi-threaded solvers that take advantage of the latest multicore processors.

Take full advantage of the power of your Intel® Core™ 2 Duo or other multicore processor by making all cores work together to solve your analysis in a fraction of the time.

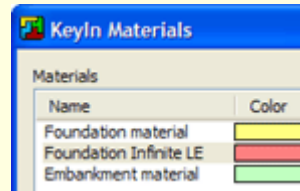
Additional processing cores result in substantial increases in solver speed.



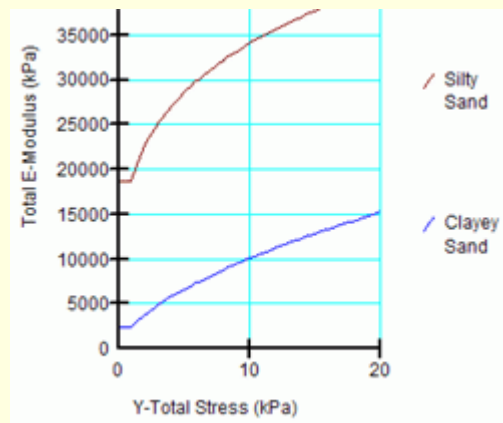
*Actual speed improvements depend on many factors. Your results may vary.

8. Use new material models and improved functions to quickly and accurately define material properties.

Soil properties can be shared between different analyses and even different products. Where applicable, soil models allow for different levels of complexity so that you don't need to enter properties that are not relevant to an analysis.



Functions have been completely redesigned. Plot and compare several functions on the same graph.



9. Extend GeoStudio with your own Add-In functions and constitutive models.

Add-Ins extend the power of GeoStudio in nearly infinite ways. [Download an Add-In from our growing library](#), or [write your own](#) using freely-available tools, in any .NET programming language.

With just a few lines of code you can write your own soil property or boundary condition function. The more adventurous can even write a complete constitutive model for SIGMA/W.

```
public class SineCurve
```

```
{
```

```
    public double Initial_Amplitude;
```

```
    public double Maximum_Amplitude;
```

```
    public double Wavelength;
```

```
    public SineCurve()
```

```
{
```

```
        Wavelength = 1.0; // a default value
```

```
        Maximum_Amplitude = 3.0; // a default value
```

```
        Initial_Amplitude = 1.0; // a default value
```

```
}
```

```
// this is
```

```
public double
```

```
{
```

```
    // de
```

```
    doubl
```

```
    k = 6
```

```
    d = 1
```

```
    // calculate the value
```

```
    y = Math.Sin(k*x+d);
```

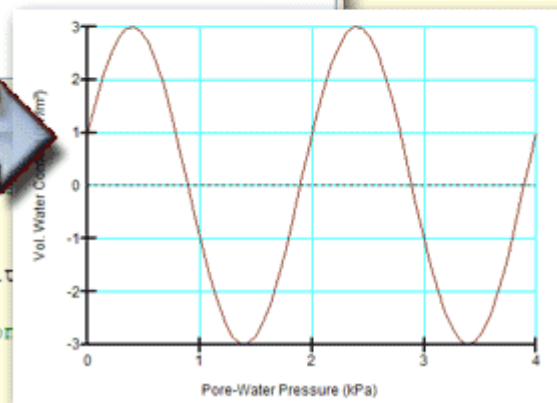
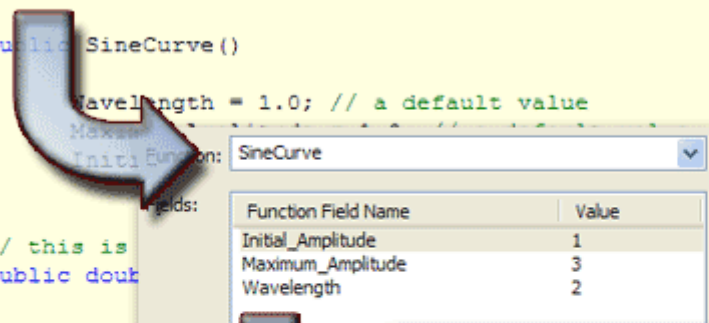
```
    y = y * Maximum_Amplitude;
```

```
    // return the function
```

```
    return (y);
```

```
}
```

```
}
```



10. Plot results anywhere in your domain using all-new graphing capabilities.

Graphing has been redesigned from the inside out. Save graph definitions so you can review them every time you access CONTOUR or re-solve the analysis. Graph along any arbitrary line, plane or at any point. Superimpose graphs to compare related data.

