

Welcome to NRG V 2012

Another release from NRG, packed with additional features

Drainage Measure

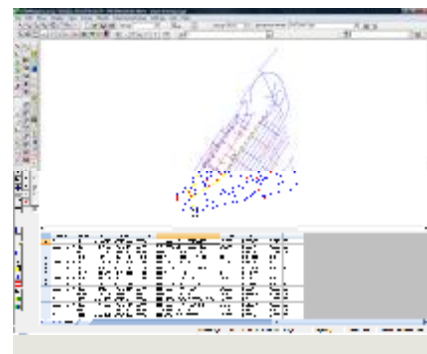
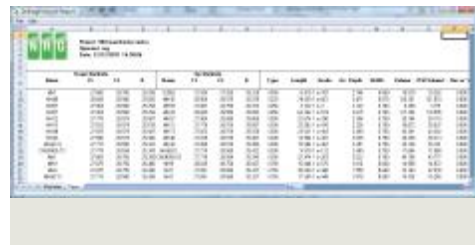
We were recently tasked with measuring the exact quantities of material excavated in a drainage scheme. At first we considered creating a DTM model using the drainage nodes and inverts but preparing a schedule showing each pipe run would have been difficult and anyway the client kept changing the pipe layout so we opted to add a facility into DTM Map to carry out the measure automatically and populate a spreadsheet with all of the answers. We designed the function so that it can also be used in measuring and pipe, service or duct and it can also be used to develop measures in accordance with the traditional method of measurement.

Tunnelling

Again this year we have added to the tunnel profiling and monitoring, particularly for NATM work in response to more clients in India boring their way through the Himalayas. Convergence and trend lines have been added along with a variety of other minor improvements.

What's New

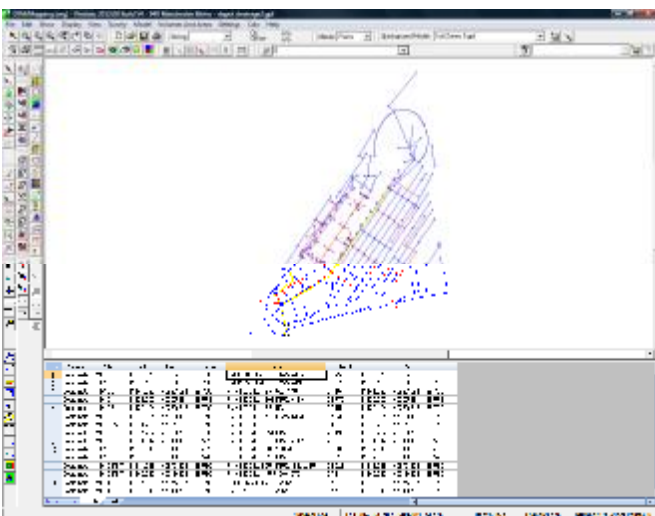
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Pipe and manhole measurement

	Name	Down Manhole FL	Down Manhole CL	Down Manhole IL	Name	Up Manhole FL	Up Manhole CL	Up Manhole IL	Type	Length	Grade	Av. Depth	Width	Volume	TM Volume	Haz m³
9	MH1	27.665	28.790	25.258	S2502	27.934	27.920	25.229	S350	8.915	1 in 307	2.744	0.600	19.570	19.252	0.000
10	MH49	28.609	28.580	25.892	MH36	28.508	28.579	28.070	S225	24.989	1 in 421	2.477	0.675	125.291	121.810	0.000
11	MH57	27.904	28.580	25.768	MH59	27.887	28.780	26.972	S250	3.332	1 in 3	2.722	0.700	6.390	3.791	0.000
12	MH57	27.904	28.580	25.768	MH49	28.609	28.580	25.892	S250	64.342	1 in 519	2.615	0.700	117.794	119.595	0.000
13	MH72	27.775	28.579	25.587	MH57	27.934	28.580	25.658	S300	22.674	1 in 260	2.304	0.750	38.184	38.110	0.000
14	MH73	27.823	28.579	25.539	MH72	27.775	28.579	25.957	S300	22.862	1 in 476	2.325	0.750	38.872	38.637	0.000
15	MH48	27.629	28.579	25.487	MH73	27.823	28.579	25.539	S300	23.531	1 in 453	2.459	0.750	43.391	43.362	0.000
16	MH44	27.880	28.579	25.496	MH48	27.878	28.579	25.487	S300	14.904	1 in 481	2.528	0.750	28.259	28.313	0.000
17	MH65T	27.715	28.580	25.422	MH44	27.880	28.579	25.496	S300	15.884	1 in 467	2.451	0.750	29.198	29.181	0.000
18	CNSB506/21	27.778	28.594	25.343	MH65T	27.715	28.580	25.422	S300	9.579	1 in 122	2.459	0.750	17.664	17.569	0.000
19	MH1	27.665	28.790	25.258	CNSB505/21	27.778	28.594	25.343	S300	22.474	1 in 263	2.622	0.750	44.196	43.777	0.000
20	MH8	27.625	28.790	26.400	MH9	28.029	28.780	26.427	S150	15.444	1 in 572	1.614	0.600	14.989	14.622	0.000
21	MH8	27.625	28.790	26.400	MH7	27.891	28.580	26.327	S150	35.049	1 in 460	1.598	0.600	32.763	32.078	0.000
22	MH65T	27.715	28.580	26.288	MH7	27.891	28.580	26.327	S150	17.345	1 in 445	1.570	0.600	16.335	16.245	0.000

Pipe nodes are entered into DTM Map and lines drawn between the nodes



The lines used will typically determine the trench and pipe types.



A new flag in features manager allows you to set a line type to being a service and used in the measure

On running a measure (from volumes and areas menu), a dialogue is presented allowing you to enter and store parameters for pipes and manholes, these include the width of trench etc

Code	Type	Pipe Dia	Shallow Trench	Deep Trench	Bed
1 S225	Storm	0.225	0.675	0.675	0.100
2 S300	Storm	0.300	0.750	0.750	0.100
3 S450	Storm	0.450	0.900	0.900	0.100
4 S250	Storm	0.250	0.700	0.700	0.100
5 S375	Storm	0.375	0.925	0.825	0.100
6 F150	Foul	0.150	0.600	0.600	0.100
7 F225	Foul	0.225	0.675	0.675	0.100
8 F300	Foul	0.300	0.750	0.750	0.100
9 F375	Foul	0.375	0.825	0.825	0.100
10 S150	Storm	0.150	0.600	0.600	0.100

Trench Type: Use wide trench where average depth is below: 25

Boreholes

The use of boreholes has been made easier and more intuitive.

Rather than an edit tab we have changed it to a separate window allowing the loading and saving of borehole files.

The file currently loaded will be applied to the editor model

Materials are stored within the borehole file and need to be entered into the materials editor found on the borehole editor menu.

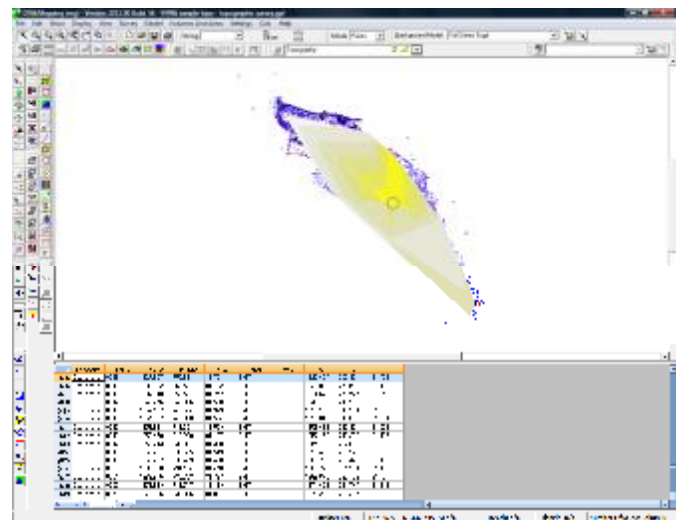
PI Num	Eastng	Northng	Label	Material Name	Material Depth
1	1022.293	1003.290	BH1	Topsoil	0.150
2	1253.658	958.130	BH2	Clas 3	0.200
3	1153.445	788.126	BH3	Unavailable	0.500
4	1325.871	752.759	BH4		
5	1325.871	695.708	BH5		
6	1467.348	702.650	BH6		
7	1319.976	655.430	BH7		
8	1498.297	690.695	BH8		
9	1557.246	472.749	BH9		
10	1541.025	435.905	BH10		

The depths of materials are entered as if they are measured continuously from the ground level to the underside of each material. i.e. they are the accumulative depths

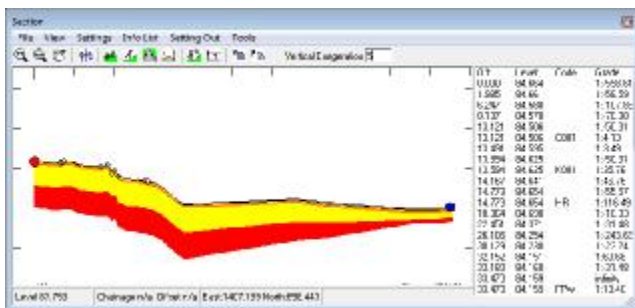
The triangulation will form the convex hull around the triangles and so it may be necessary to introduce additional or dummy boreholes at the extents of the model in order to ensure the area is covered.

New surface models for each of the materials may then be created. This will be a copy of the current model loaded into the editor and adjusted for the depth of material.

Isopachs showing depth of a particular material below the model can be displayed by first selecting the material to draw in the borehole editor and then using the show menu to show Borehole Isopachs



Once boreholes have been entered and materials and depths associated with each one it is possible to view the borehole triangles from the standard show menu and dynamic sections has an option to view borehole materials.



Exclude Surfaces

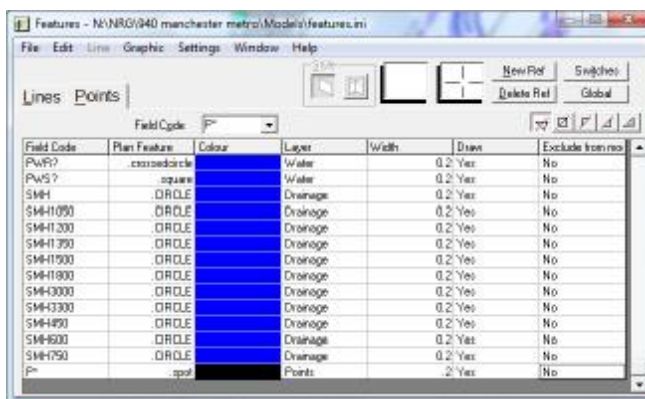
Surfaces are used to differentiate different parts of the surveys, previously we automatically excluded surface zero from volume measures and contouring

Now you can set and surface to be included in measurement and contouring



Features Wildcards

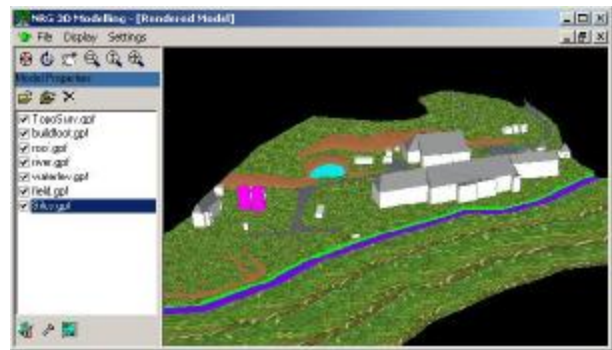
Wildcards have been accommodated in features for a long time using the '?'. We now support '*' wildcards.



The '?' wildcard replaced single characters and the field code needs to be of the same number of characters. Using a '*' at the end of the code recognizes any number of characters

Render

It's back ! the render module now works under windows Vista.

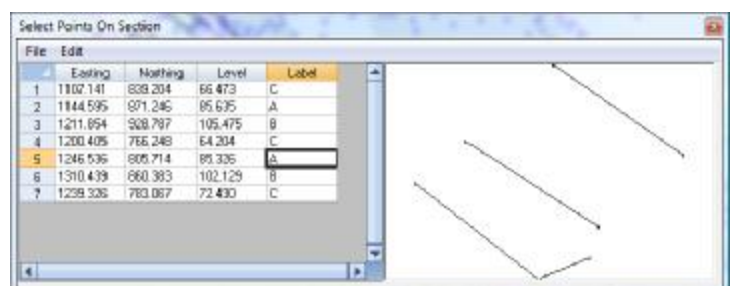


Point selection in dynamic sections

We introduced this as an aid to processing point clouds, the idea being the user can select just the relevant points by viewing them in section.

An option to select points on section can be found under tools in the dynamic sections window. Another window appears with a grid and picture window, the user selects points on the section by right clicking, field codes can be added and the new daring displayed in the picture window.

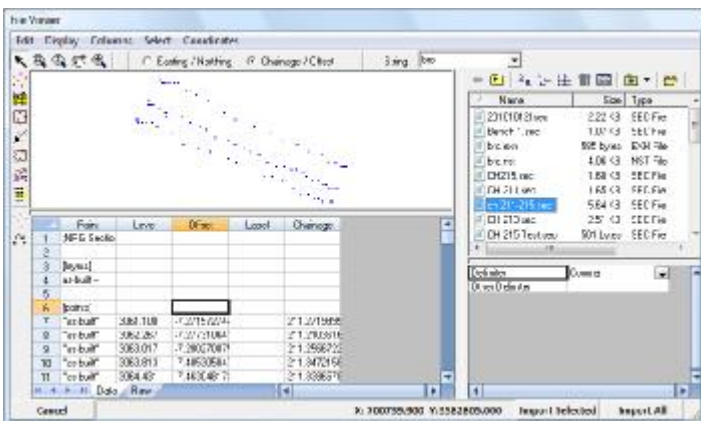
Use File, Save to store the filtered points to a new model.



ASCII Import

Importing ASCII files has been greatly enhanced.

These are files which follow the American Standard Code for Information Interchange; hence the name. It relates to files with text in and can be .CSV, .TXT or any other filetype which is not designed as 'proprietary'



Select File, Import, ASCII

A dialogue will appear with an file explorer panel on the right, use this to navigate to the file you want to import

Set the radio option on the toolbar to determine whether the data is in Eastings and Northings or Chainage and Offset.

Click on the file you want to load

Set the appropriate delimiter for the records in the file, you can view the raw data by selecting the Raw tab

In the Data tab, right click on each column heading and choose the appropriate record for each column.

The data is shown in the grid and a plan is drawn of the points in the picture window


Press the Import All button on the bottom right to import all of the data.


Importing a selection of the data


Select points you want to import using one of the selection options from the toolbar


 Select by rows

 Select by range (East, North)

 Select manually

 Select by polygon

 Select by range (Ch & OS)

 Select by column text

 Unselect all

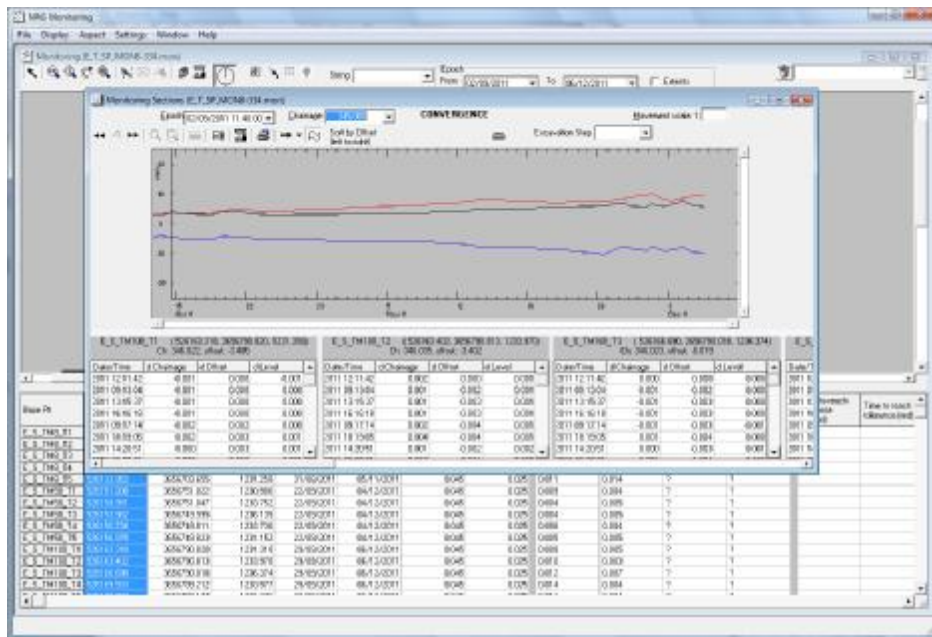
 Reverse selection

Selected points will be highlighted, press import selected to import.

The ASCII import works in DTM Map and Cross Sections

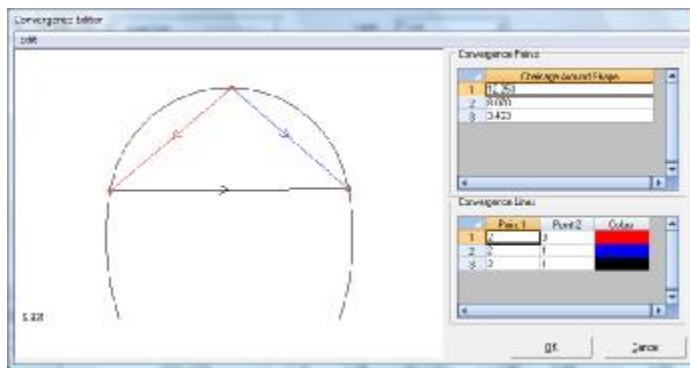
If importing with Cross Sections a second dialogue will appear allowing additional files and shapes to be loaded.

Convergence - Monitoring



Convergence shows how points move relative to each other in cross section and is typically used to demonstrate the compression in a tunnel

The shape editor now allows you to enter approximate convergence points

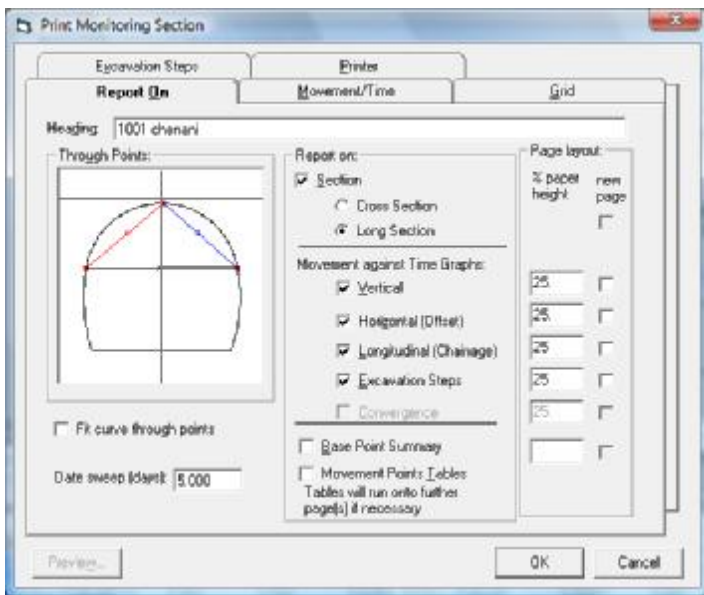


On producing graphs at individual chainages the system will find the nearest observed points to those and report convergence for the lines that have been drawn on the shape.

Trend Lines - Monitoring

Trend lines are graphs of movement shown longitudinally along an alignment.

The position of the long section is selected and the software will choose every point on the shape that is the closest at each interval



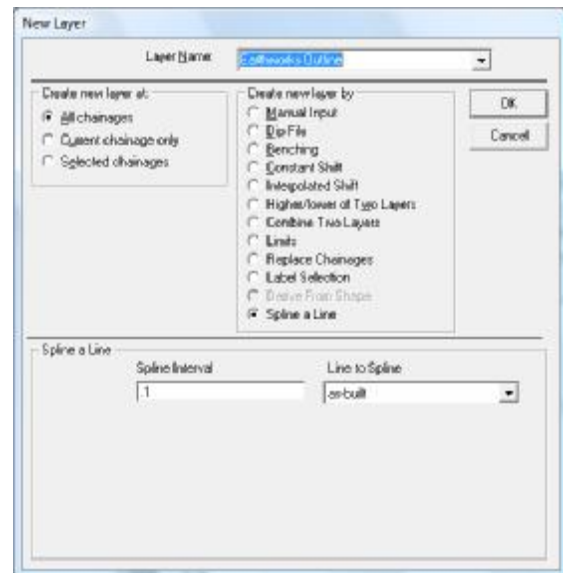
Print outs and date ranges are formatted in the usual way

The excavation time line may also be drawn on the long section with data and chainage as the axis

New layers in sections

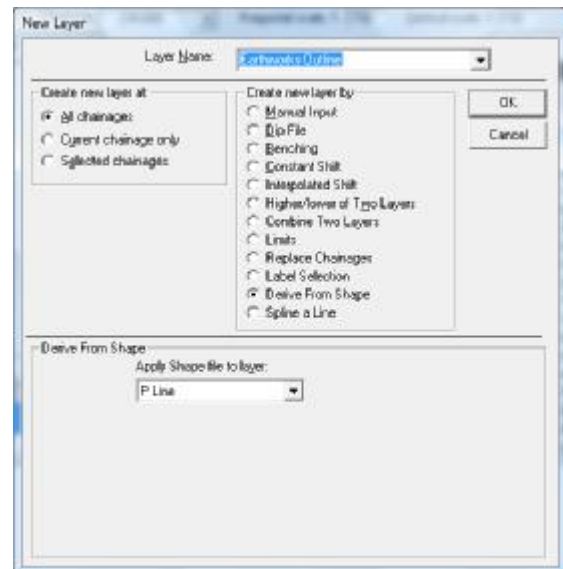
Spline a line

Extra points can be added to a layer using spline techniques with the new layer option of spline a line.



Derive layer from shape

This creates a new layer around a shape that has been entered at an interval chosen by the user.



User Group

Some of you may have spotted that we didn't hold a user group this year.

Attendance in recent years has fallen off, presumably because most of the users are getting what they want from the software already and so we have decided to hold the group on a bi-annual basis

It is a good opportunity to learn how best to use the latest developments in NRG, to highlight your own specific needs of the software and of course get to meet the programmers and other users. So please try to join us next year when we hold it in 2012 around September time

There are several other minor changes that you might come across that we have either forgotten about or thought too trivial to mention but keep us informed on how you are using the software and please feel free to let us have your suggestions and comments

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