

NovoLAB User's Manual (Novo Tech Software Ltd)

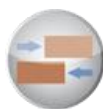
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1. Contents

NovoLAB 2.3 User's Manual **(Lab. Test Processing and Log Drafting Software)**



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1.1 Starting to use NovoLAB

1.1.1 License Agreement

NovoLAB End User License Agreement

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1.1.2 Getting Started ...

Getting Started

 We recommend minimum 1024*768 screen resolution for using NovoLAB.

 If you are using the dongle key version, please make sure that it is plugged to your computer before you run the program.

 To invoke the help page associated with each page of software, click on the  button on top-right corner of each page in NovoLAB.

 Make sure you prepare backup from your data periodically. Your database file is the NovoLAB.MDB file ([see more](#)).

 After the first installation on each computer, please open the [general preferences](#)(See 1.10.1) pages and set the preferences. Next, open the [laboratory tests default settings](#)(See 1.10.2) page and set default values. These are very important steps in NovoLAB installation and setup, otherwise you may end up with incorrect results.

- 🔗 Review the [data entry and reporting steps](#) (See 1.1.4) recommended for using NovoLAB.
- 🔗 Please contact us at support@novotechsoftware.com with any questions or suggestions.

1.1.3 Units System

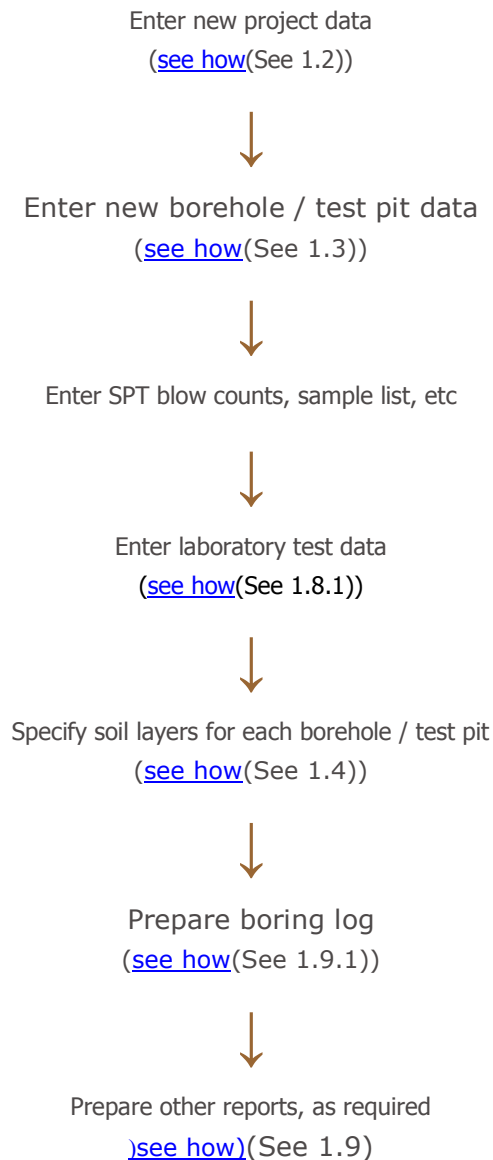
Units System

This version of NovoLAB supports Metric units (kg, cm).

1.1.4 Work Flow

Workflow

The following describes the data entry steps using NovoLAB, starting from project initiation to reporting:





Prepare database backup
([see how](#)(See 1.1.8))

1.1.5 NovoLAB Main Screen

NovoLAB Main Screen

The main screen of NovoLAB provides access to the main toolbar and shows additional information on the status-bar below the screen. The current project name is shown on the top-right corner of the screen. You can minimize the screen by clicking on the  icon beside the project name. The following describes the function of different tabs on the main toolbar:

File tab: this tab provides access to list of [projects](#)(See 1.2) and [boreholes](#)(See 1.3).

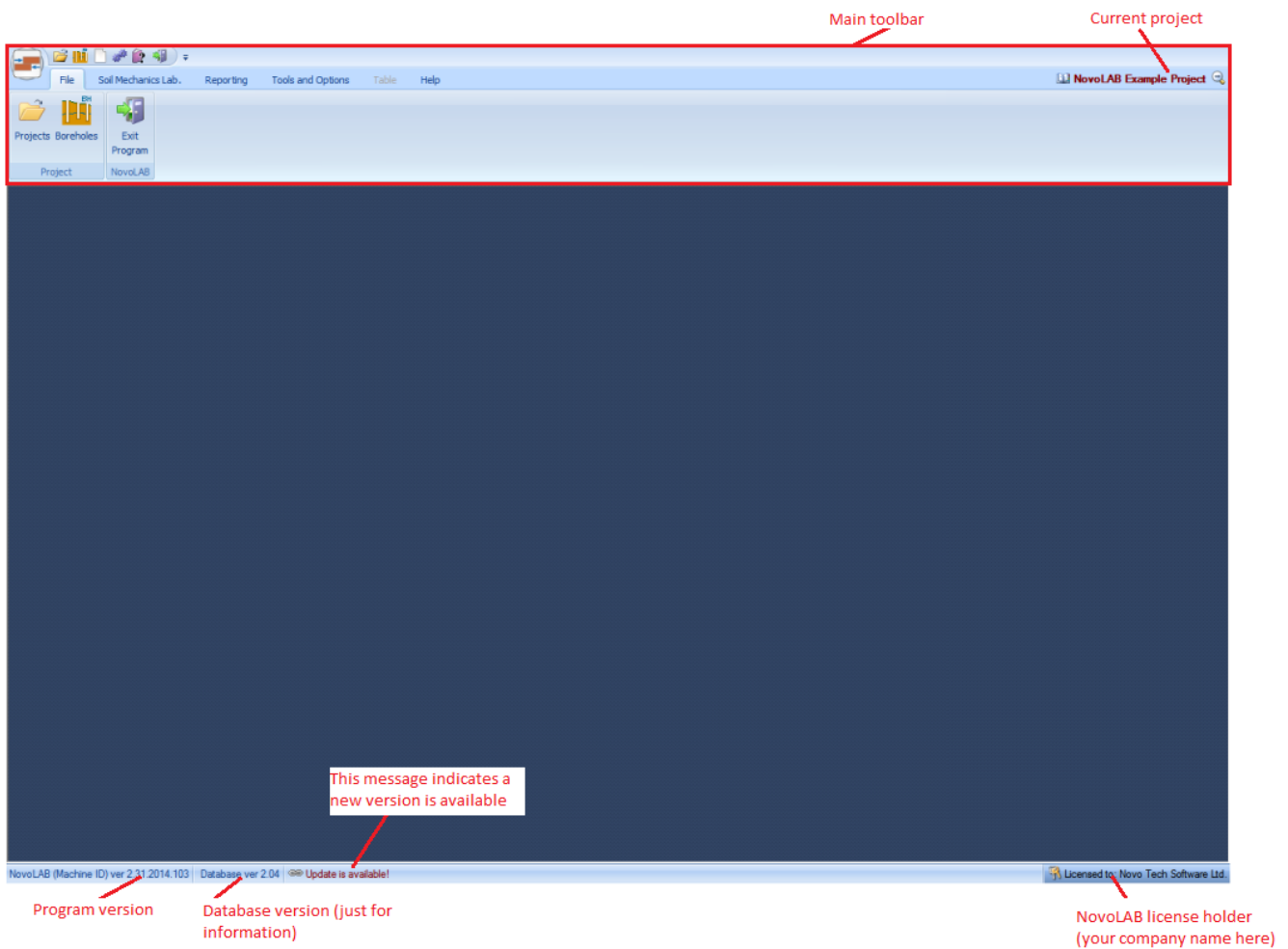
Soil Mechanics Lab. tab: this tab provides access to data entry pages for [laboratory test](#)(See 1.8.1) pages, such as sieve analysis, Atterberg limits, etc. ([see more](#)(See 1.8.1))

Reporting tab: this tab provides access to [boring log](#)(See 1.9.1), [tests summary report](#)(See 1.9.8), etc. ([see more](#)(See 1.9))

Tools & Options tab: this tab allows you to configure [general preferences](#)(See 1.10.1) and [default test settings](#)(See 1.10.2).

Tables tab: provides features for [working with data entry tables](#)(See 1.7), such as deleting a row, exporting table to Excel and importing data from text file into the table.

Help tab: this tab provides access to this help file, [license manager](#)(See 1.1.6) page and more.



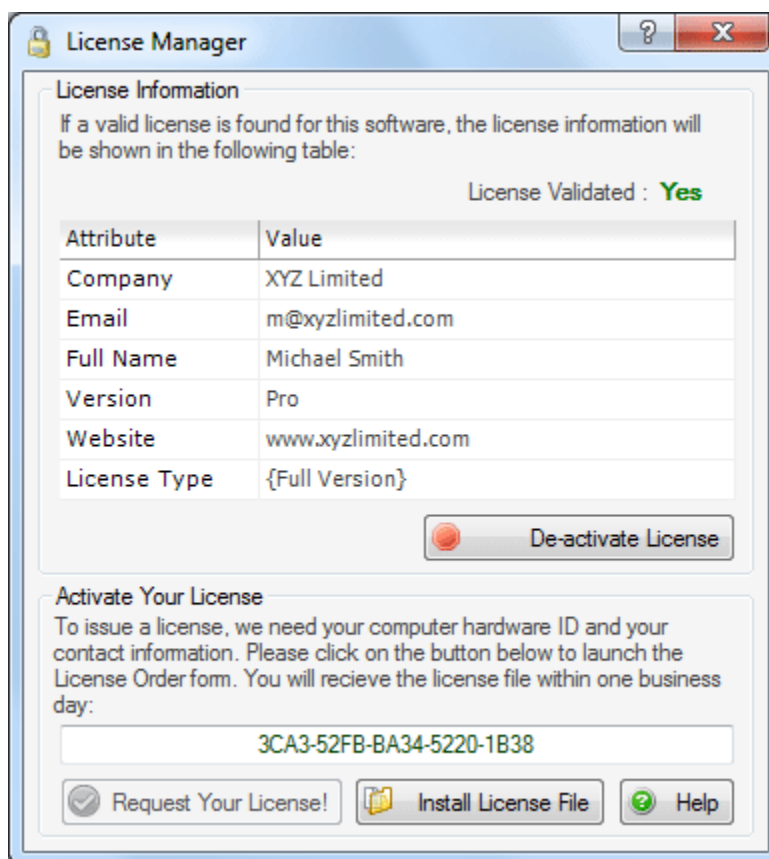
Status-bar: this is located at the bottom of the screen and provides information on versioning and type of NovoLAB license you currently use. If an update is available you will see a notification on the status bar. For more information on how to update NovoLAB, read [this article](#) (See 1.1.7).

1.1.6 License Manager

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License Manager

The information you provided to us during your purchase of NovoLAB, will be stored in your License File and it is used in the header of the reports. You can check your License information by clicking on "License Manager" button from Help tab of the [main toolbar](#) (See 1.1.5), as shown below:



If you have purchased the software but not yet received a license file from us, please click on **Request Your License!** button and follow the [instructions](#) to request a license file. When you receive the license file (*.license), please click on **Install License File** button on this dialog to load and activate the license (program simply copies the license file into the installation folder, you can do this manually as well).

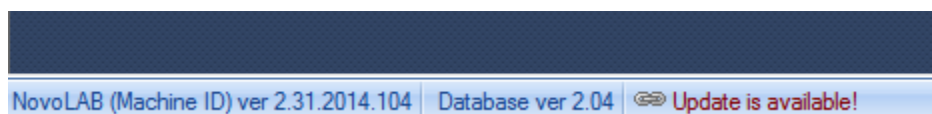
You can also use this dialog [to De-activate](#) your license (in case of license transfer).

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1.1.7 Updating NovoLAB

Updating NovoLAB

If an update of NovoLAB is available, the following notification will be shown on the statusbar at the bottom of your screen:



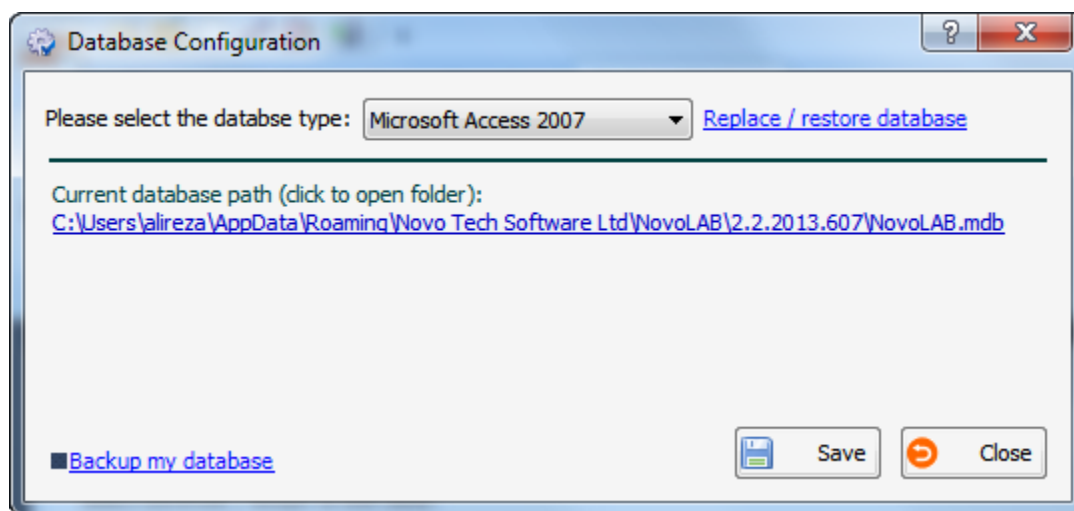
In order to update NovoLAB please follow these steps:

1. Click on the red Update is available! link from the statusbar. If you have a valid update subscription this will take you to Novo Tech website to download new version (you can [renew your subscription here](#))
2. Prepare a [backup](#) (See 1.1.8) from your database and save it in a safe place
3. Uninstall NovoLAB from Windows control panel > Add or Remove Programs page
4. Install new version
5. Restore your database ([see how](#) (See 1.1.8))

1.1.8 Backup & Restore

Database Configuration

It is necessary to regularly backup the database and be prepared in case of hard disk failure or infection by a computer virus. By having a backup of your database you will be able to use the database by reinstalling NovoLAB. For this purpose click on "Database Configuration" from the "Tools and Options" menu on the [main toolbar](#) (See 1.1.5). The following page will appear:



NovoLAB comes with Microsoft Access database, so please do not change the database type without consulting Novo Tech technical team.

Preparing a Backup

Click on the link [Backup my database](#) in the bottom left of your screen. Save the back up file in location of you choice. All your project data is stored in this database file. We recommend you save the backup file on a CD or flash drive, it is recommended to save the backup file in a folder with a name that indicates the backup date.

The second method is to click on the path shown below the "Current database path" (see the above screenshot). This will open the folder; now you can easily copy the database file to your desired location.

Database Restore

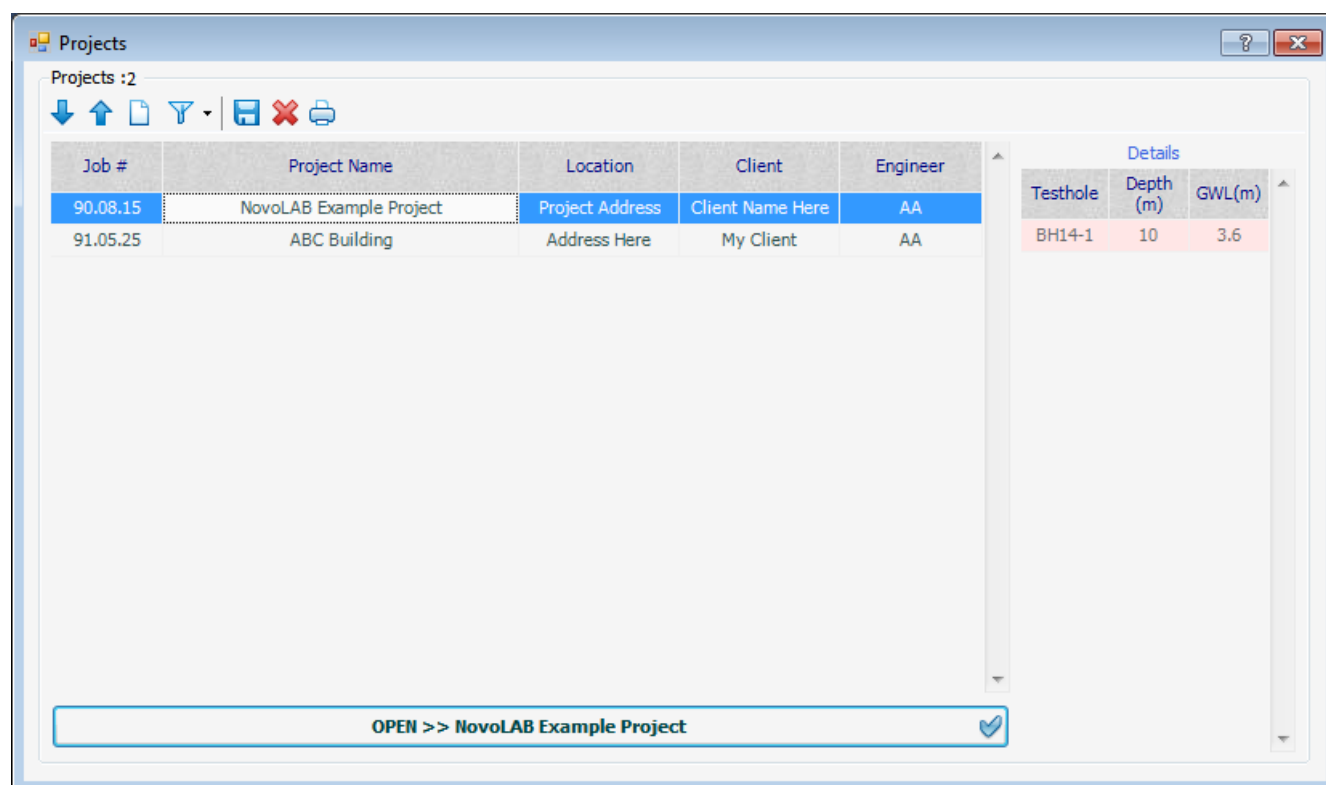
If you want to restore your data, click on the link [Replace / restore database](#) in the upper right of your screen and locate

where the backup file of your database is saved. NovoLAB will replace the existing database with your backup. Please note that the actual database file extension is **.mdb** and the extension of the database backup file is **_mdb**.

1.2 Projects List

Projects List

The purpose of this page is to provide a list of projects, and can be accessed from the File tab on the [main toolbar](#) (See 1.1.5). This page consists of a toolbar, list of projects and a list of test holes for selected project.

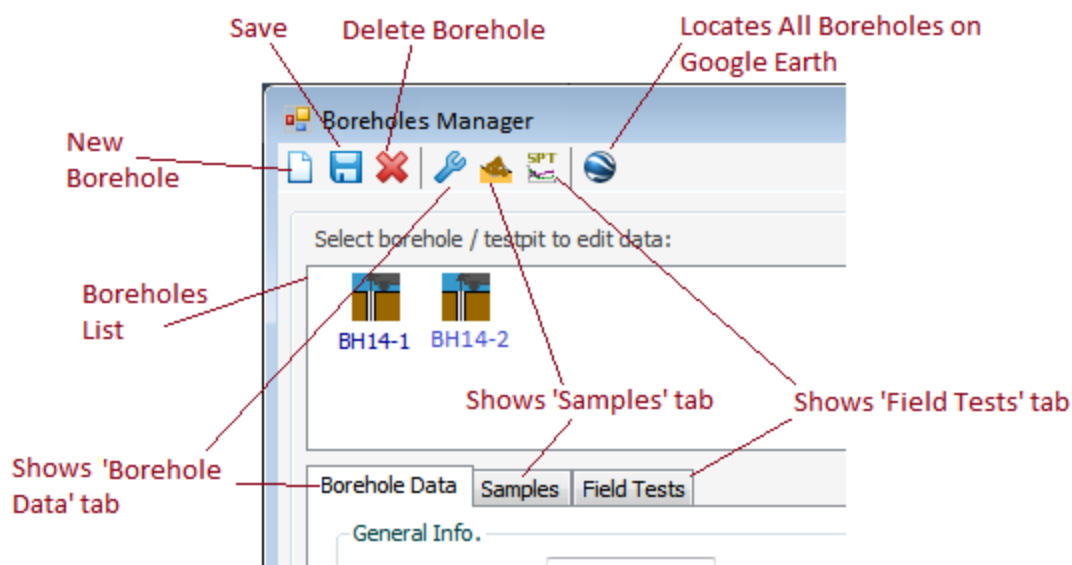


Using toolbar you can create new project, delete an existing project, filter projects and save change. You can also print a list of all projects. Once you click on the list of projects, you can export the project list using the Projects Table tab on the main toolbar.

1.3 Boreholes List

Boreholes Manager

On this page you can manage the list of boreholes and edit their properties. The main parts of this page are described below:



Toolbar

This toolbar is used to insert / save /delete boreholes. The toolbar also provides quick access to the main sections of the borehole data such as "Borehole Data", "Samples" and "Field Tests". If the borehole is actually a test pit, the drilling method "Test Pit" should be selected (see all [drilling methods](#) (See 1.5)). Please note the deleted data cannot be restored.

Borehole List Panel

This list is located below the toolbar, and lists all boreholes and test pits (with different icons). Click on any boreholes to view and edit its information.

Borehole Data tab

Using this tab you can specify name, method of drilling, total depth, groundwater level, fill thickness, coordinates, etc. Please note:

- Name of borehole should be unique in the current project
- Depth of a sample may not be greater than the total depth of borehole
- Depth of a test field may not be greater than the total depth of the borehole

Samples tab

This section is used for entering a list of samples for selected borehole by specifying their depth, type, color, sample number (Code or ID), and a visual description. If the gradation tests is previously conducted on this sample, the last column will show the USCS soil classification.

Borehole Data Samples Field Tests					
Depth (m)	Type	Color	Sample #	Sample Description	Soil Classification
1.5	Disturbed	Grey	100		SP
3	Disturbed	Grey	101		SC

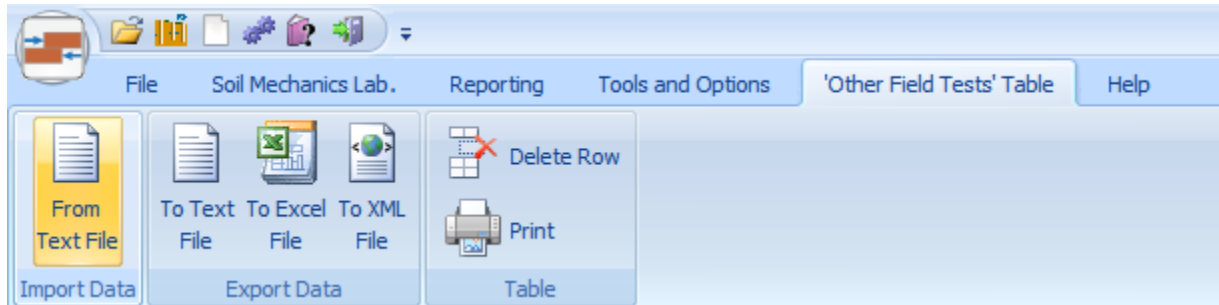
For various sample types please see [this article](#) (See 1.6).

Field Tests tab

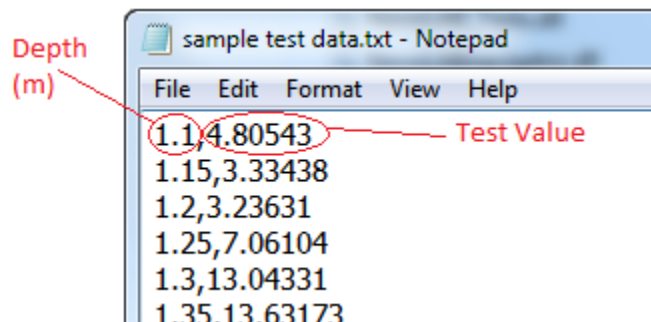
In this section, the results of standard penetration tests, or CPT, etc. can be entered.

Borehole Data				Samples		Field Tests	
Test Type: SPT				Other Field Test :			
Depth (m)	N	Eq. N60	Consistency	Depth (m)	Value		
1	11	11	<Medium Dense>				
2	12	12	<Medium Dense>				

The other field tests could consist of CPT, Vane shear, Down-hole / Cross-hole shear wave velocity and similar tests. For ease of data entry, you can also import the test result from a Text file. To do this, click on the table, then select "From Text File" menu from the [main toolbar](#) (See 1.1.5).



The following described the format of the text file to be prepared for importing field test data.



Locating Boreholes on Google Earth

To use this feature, you need the UTM coordinates of the boreholes. Click on Google Earth icon, then specify the zone name and number to open Google Earth 3D model ([more](#) (See 1.9.3)).

1.4 Entering Soil Layers

Soil Layering

This page is accessed from Reporting tab of the [main toolbar](#) (See 1.1.5) and is used for defining subsurface soil layers. These layers will be shown on the [boring log](#) (See 1.9.1). You need to specify the bottom depth of each layer, as well as its dominant soil class, layer title and layer description. The divider line between the subsequent layers can be of type solid, dashed and dotted.

Soil Layers

Borehole Information

Select borehole: **BH-1** Groundwater (m): **2.6** Fill (m): **0.6** Depth (m): **12.5**

Soil Layers Comments Sieve and SPT Test Results

Please enter subsurface soil layers (from existing ground):

Top (m)	Bottom (m)	Thickness (m)	Soil Class (USCS)	Layer Title	Lythology Description	Dividing Line Style
0	1	1	FL	FILL	Includes trace organics and sand and cobbles	Dash
1	1.5	0.5	GM	GRAVEL	Gravel with some sand, trace silt and clay, occasional cobbles, moist	Solid
1.5	2.5	1	SM	SAND	Silty sand with gravel, trace organics, moist	Dash
2.5	6.5	4	SC	CLAYEY SAND	Clayey sand With gravel, trace silt	Solid
6.5	7.5	1	SC-SM	SAND	Clayey - Silty Sand With Gravel	Dash
7.5	8.5	1	SP	SAND	Poorly Graded Sand With Gravel	Dash
8.5	9.5	1	SW	SAND	Well Graded Sand With Gravel	Dash
9.5	11	1.5	SC	SAND	Clayey Sand With Gravel, Clayey Sand With	Solid

[Delete Layer](#)

Save Close

You can also use Comments tab to enter comments at certain depth. Comments will be shown on the boring log if they are selected as part of the log (see [log designer](#)(See 1.10.3)).

1.5 Drilling Methods

Drilling Methods

The following drilling methods are supported in NovoLAB; if you don't see the boring method you are looking for, just [contact us](#)(See 3.1) and we will send you a customized database with additional drilling methods:

- Mud Rotary
- Test Pit
- Solid Stem Auger (STA)
- Hollow Stem Auger (HSA)
- Hand Auger
- Sonic (vibratory)
- Direct Push (DP)
- Air Rotary

- Percussion
- Cable Tool
- Reverse Circulation
- Diamond Core
- Hydraulic Rotary

1.6 Sample Types

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Sample Types

The following sample types are supported in NovoLAB; if you don't see the one you are looking for, just [contact us](#) (See 3.1) and we will send you a customized database with additional drilling methods:

- Disturbed
- Undisturbed
- Shelby / U4
- Core Cutter (for test pits)
- SPT Split Spoon
- Percolation Test ([see more](#) (See 1.8.7))
- Field Density
- Water

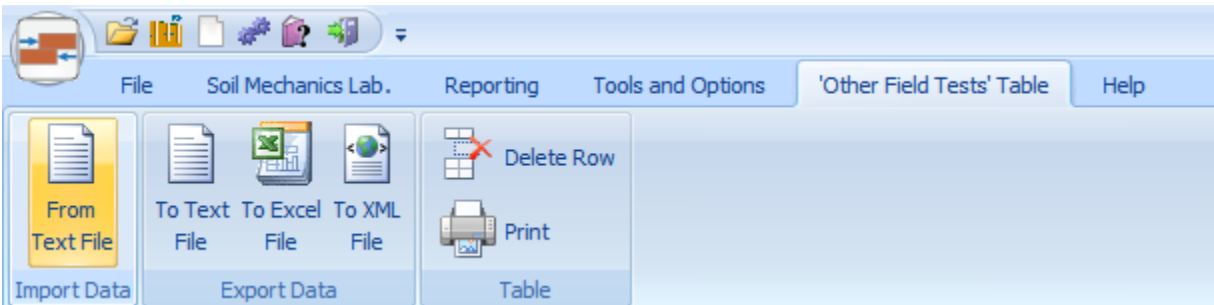
1.7 Working with Tables

Working with Tables

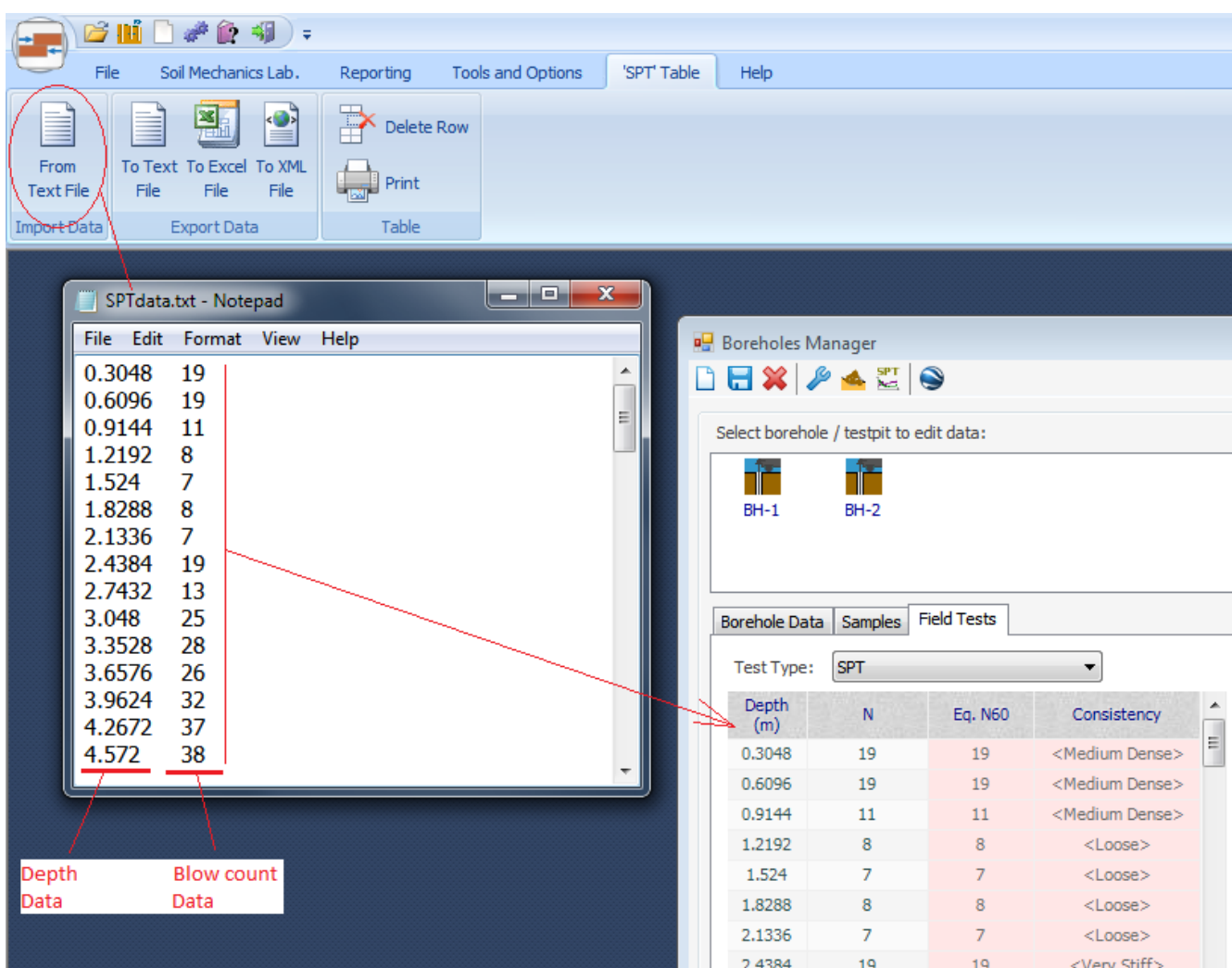
Most of the data entry and on-screen results in NovoLAB use tables. The following is an example of a table. Please note that data should be entered in the white cells. The red cells are automatically calculated by the program.

Time (sec)	H1 (cm)	H2 (cm)	K (cm/sec)
10800	62	61.5	$K = 1.1 \times 10^{-6}$
9000	61.5	61.1	$K = 1.06 \times 10^{-6}$
9000	61.1	60.8	$K = 8.01 \times 10^{-7}$

You can add / delete rows to most of tables (if they are used for data entry). All tables can be exported to Excel, XML and Text formats. Tables such as SPT blow counts or other field tests can import data from a tabular text file. In order to work with a table, click on it. The following menu on the main toolbar allows you to perform several functions:



Importing from Text File: When importing from a text file to a table (such as SPT blow counts), the text file needs to be comma or tab separated and each line should contain the same numbers as in the table. The following screenshot shows importing Depth and SPT Blows data from a text file when on the [boreholes manager](#) (See 1.3) page:

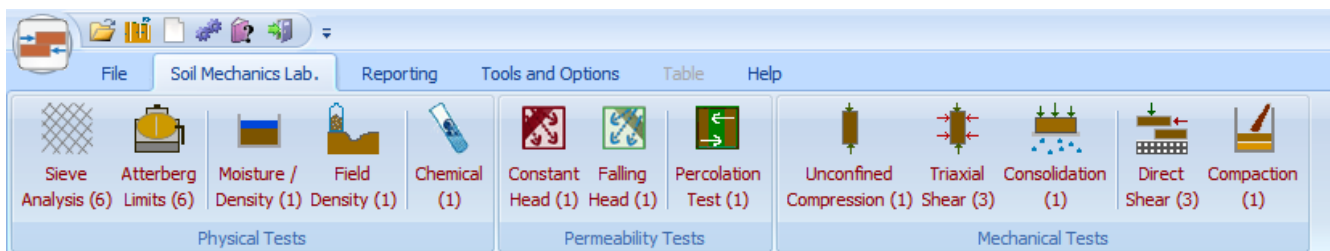


1.8 Laboratory Tests

1.8.1 General

Soil Mechanics Lab. Menu

In order to access to soil mechanics tests data entry pages, please use "Soil Mechanics Lab." menu from the [main toolbar](#) (See 1.1.5).



The numbers in bracket show the total number of tests for each test. For example the above screenshot indicates data for 3 direct shear tests are entered into this project.

1.8.1.1 Test Data Entry

Soil Mechanics Lab. Menu

In order to access to soil mechanics tests data entry pages, please use "Soil Mechanics Lab." menu from the [main toolbar](#) (See 1.1.5).



The numbers in bracket show the total number of tests for each test. For example the above screenshot indicates data for 3 direct shear tests are entered into this project.

1.8.1.2 Tests Toolbar

Tests Toolbar

This toolbar is shown at the top of all test pages and allows you to navigate through the tests, save, delete, [copy](#) (See 1.8.1.3) and [print](#) the test results.



In order to enter new test data select the borehole and sample from the lists on the left side of the test toolbar; this will clear all fields and you can start data entry for this new test.

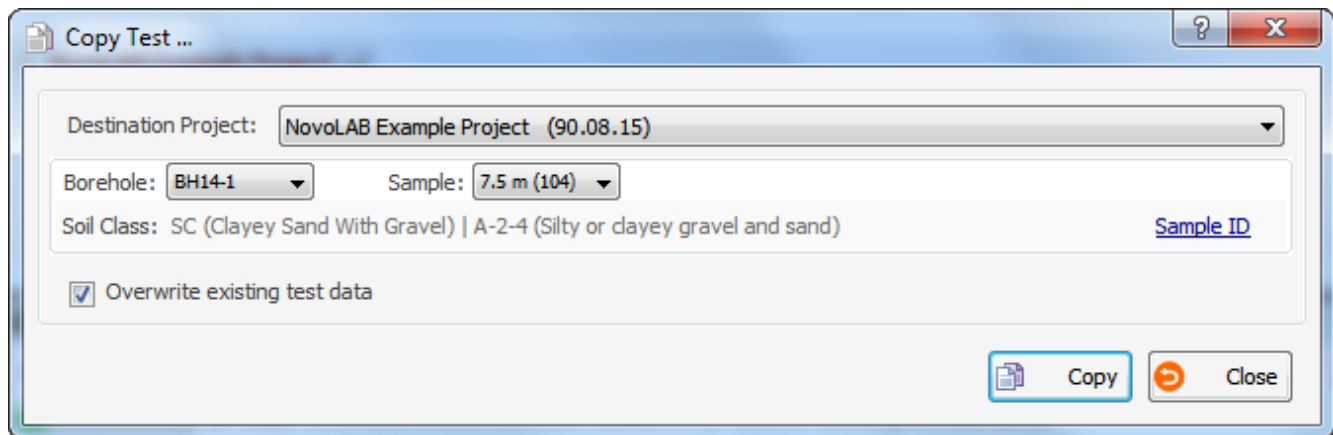
Please note deleted test data cannot be recovered.

1.8.1.3 Copying a Test

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Copy Test

This feature is used to copy all test data from one sample to another sample (even in a different project), and can be accessed through the [test toolbar](#) (See 1.8.1.2).



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1.8.2 Sieve Analysis Test

Sieve Analysis Test (C136)

This page is used for data entry of sieve analysis test and to view / print the test results. This page can be accessed from the [Soil Mechanics Lab](#). (See 1.8.1) menu. The main input data consists of sample weight, Atterberg limits and hydrometer data.

Weights: In most cases one sample is used for sieve analysis. However, if the sample is divided to two parts (i.e. retained above the sieve #4 (4.75 mm opening) and below sieve #4) select the "2-Part Sieve Test (#4)" checkbox and enter the weight of the second sample as well. In addition, please enter the weight of the retained soil on each sieve in the table. Please note that data should be entered in the white cells. The red cells are automatically calculated by the program.

Sieve Analysis Test

Borehole: BH14-1 Sample: 3 m (101) 2 / 6

Soil Class: SC (Clayey Sand With Gravel) | A-2-6 (Silty or clayey gravel and sand) Sample ID

Dry Weight (gr): 3000 ☐ 2-Part Sieve Test (#4)

Tested By:

Atterberg Limits

☐ Test Results Not Available LL: 32.4

☐ None LL, PI PL: 19.1

☐ None PI [Read From Atterberg Test](#)

Sieve	Opening (mm)	Retained (gr)	Passed (gr)	Percent Passing
3"	76.1			
2"	50.08			
1.5"	38.1		3000	100
1"	25.4	63	2937	97.9
3/4"	19	128	2809	93.6
1/2"	12.57	254	2555	85.2
3/8"	9.51	153	2402	80.1
# 3	6.35			
# 4	4.75	369	2033	67.8
# 8	2.36	344	1689	56.3
# 10	2			
# 12	1.5			
# 16	1.18	324	1365	45.5
# 20	0.85			
# 25	0.707			
# 30	0.6			
		Total=2268 (gr)	Pan=732 (gr)	

Hydrometer ☒ Double Hydrometer

Time (min)	Reading
0.5	43
1	40
2	36
3	34
4	32
8	30
15	25
30	21
60	16
120	13
240	11

Weight (gr): 50

Tempr (oc): 15

Type: 152 H

Gs: 2.8

Meniscus: 0

Zero Corr.: 0

Solution: sodium hexametapho

example : 23.16

[Del Hydrometer](#)

☐ Only Used Sieves D10 (mm) 0.005

☐ Only Active Sieves D30 (mm) 0.305

☐ Show Filters D50 (mm) 1.575

D60 (mm) 2.958

Clay (%) 8

Silt (%) 16.4

Sand (%) 43.4

Gravel (%) 32.2

USCS SC

AASHTO A-2-6

Cc 6.29

Cu 591.6

PI (%) 13.3

[Edit Filter Curves](#)

Atterberg Limits: If Atterberg limits test is done on this sample you can click on "Read From Atterberg Test" button, and LL and PL will be automatically retrieved from database and will be placed in the corresponding fields. If Atterberg limits data for this sample has not been entered in NovoLAB, simply enter LL and PL values or select from the appropriate checkboxes on the left.

Hydrometer: If hydrometer test (below sieve #200) is conducted, enter data in the corresponding tables. Please note depending on type of hydrometer used (151H or 152H) data with different formats should be entered (follow the example shown on screen when selecting the hydrometer type).

- Only Used Sieves: select this checkbox to see only those sieves with non-zero retained weights. This allows you to quickly check your input data with the laboratory sheets for any data entry error.
- Only Active Sieves: select this checkbox to only show the sieves mostly used in your laboratory (hence, a faster data entry). See [this article](#) (See 1.8.2.2) for more information.
- Show Filters: if this checkbox is selected, filter curves are shown on the sieve analysis report. To edit the filter curves data click on "Edit Filter Curves" button.

Test Results

After data entry, click on calculate button from the [tests toolbar](#) (See 1.8.1.2). Test results will be shown in the table on the bottom-right corner of the screen. You can print the unconfined compression test report by using the [tests toolbar](#) (See 1.8.1.2).

1.8.2.1 Sieve Test

Sieve Analysis Test (C136)

This page is used for data entry of sieve analysis test and to view / print the test results. This page can be accessed from the [Soil Mechanics Lab](#). (See 1.8.1) menu. The main input data consists of sample weight, Atterberg limits and hydrometer data.

Weights: In most cases one sample is used for sieve analysis. However, if the sample is divided to two parts (i.e. retained above the sieve #4 (4.75 mm opening) and below sieve #4) select the "2-Part Sieve Test (#4)" checkbox and enter the weight of the second sample as well. In addition, please enter the weight of the retained soil on each sieve in the table. Please note that data should be entered in the white cells. The red cells are automatically calculated by the program.

Sieve Analysis Test

Borehole: BH14-1 Sample: 3 m (101) Soil Class: SC (Clayey Sand With Gravel) | A-2-6 (Silty or clayey gravel and sand)

Dry Weight (gr): 3000 ☐ 2-Part Sieve Test (#4)

Tested By:

Atterberg Limits

☐ Test Results Not Available LL: 32.4

☐ None LL, PI PL: 19.1

☐ None PI

Sieve	Opening (mm)	Retained (gr)	Passed (gr)	Percent Passing
3"	76.1			
2"	50.08			
1.5"	38.1		3000	100
1"	25.4	63	2937	97.9
3/4"	19	128	2809	93.6
1/2"	12.57	254	2555	85.2
3/8"	9.51	153	2402	80.1
# 3	6.35			
# 4	4.75	369	2033	67.8
# 8	2.36	344	1689	56.3
# 10	2			
# 12	1.5			
# 16	1.18	324	1365	45.5
# 20	0.85			
# 25	0.707			
# 30	0.6			
		Total=2268 (gr)	Pan=732 (gr)	

Hydrometer **Double Hydrometer**

Time (min) Reading

0.5	43
1	40
2	36
3	34
4	32
8	30
15	25
30	21
60	16
120	13
240	11

Weight (gr): 50

Tempr (oc): 15

Type: 152 H

Gs: 2.8

Meniscus: 0

Zero Corr.: 0

Solution: sodium hexametaphosphate

example : 23.16

☐ Only Used Sieves ☐ Only Active Sieves ☐ Show Filters

D10 (mm)	0.005
D30 (mm)	0.305
D50 (mm)	1.575
D60 (mm)	2.958
Clay (%)	8
Silt (%)	16.4
Sand (%)	43.4
Gravel (%)	32.2
USCS	SC
AASHTO	A-2-6
Cc	6.29
Cu	591.6
PI (%)	13.3

Atterberg Limits: If Atterberg limits test is done on this sample you can click on "Read From Atterberg Test" button, and LL and PL will be automatically retrieved from database and will be placed in the corresponding fields. If Atterberg limits data for this sample has not been entered in NovoLAB, simply enter LL and PL values or select from the appropriate checkboxes on the left.

Hydrometer: If hydrometer test (below sieve #200) is conducted, enter data in the corresponding tables. Please note depending on type of hydrometer used (151H or 152H) data with different formats should be entered (follow the example shown on screen when selecting the hydrometer type).

- Only Used Sieves: select this checkbox to see only those sieves with non-zero retained weights. This allows you to quickly check your input data with the laboratory sheets for any data entry error.
- Only Active Sieves: select this checkbox to only show the sieves mostly used in your laboratory (hence, a faster data entry). See [this article](#) (See 1.8.2.2) for more information.

- Show Filters: if this checkbox is selected, filter curves are shown on the sieve analysis report. To edit the filter curves data click on "Edit Filter Curves" button.

Test Results

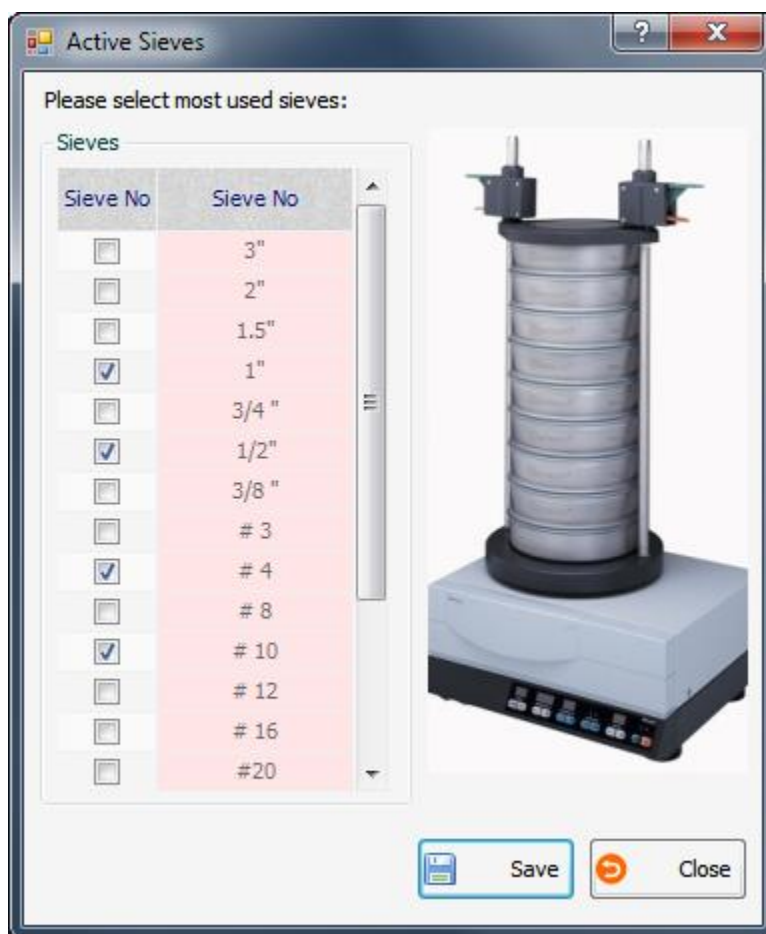
After data entry, click on calculate button from the [tests toolbar](#) (See 1.8.1.2). Test results will be shown in the table on the bottom-right corner of the screen. You can print the unconfined compression test report by using the [tests toolbar](#) (See 1.8.1.2).

1.8.2.2 My Sieves

Active Sieves

This page is used to specify the sieves you use in your laboratory. To access this page click on "My Sieves" buttons from the "Tools and Options" menu on the [main toolbar](#) (See 1.1.5).

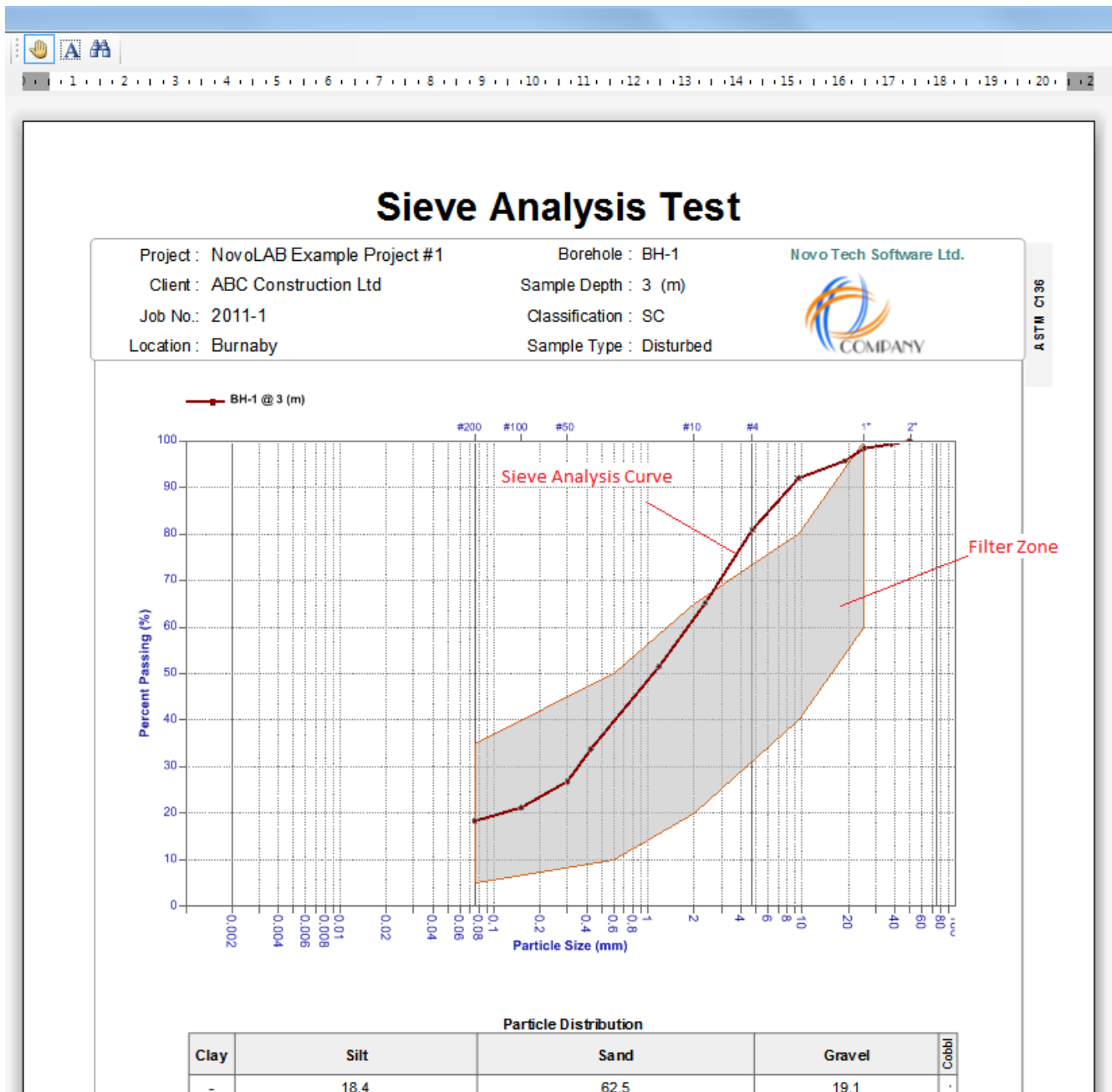
Although NovoLAB database includes a complete list of all standard sieves, if you don't use all these sieves in your laboratory you can deselect them from this list. The advantage is that on sieve analysis page, you can select to show the "active sieves" only; this will ease data entry.



1.8.2.3 Filter Zones

Filter Zones

This feature is used to plot filter zones on sieve analysis curve in order to determine if the material being tested conforms with certain particle size distribution criteria. This feature can be accessed from [sieve analysis](#) (See 1.8.2) page.



1.8.3 Moisture and Density Test

Moisture / Density Test (ASTM D4643, D2216)

This page is used for data entry of moisture / density determination test and to view / print the results. This page can be accessed from the [Soil Mechanics Lab](#). (See 1.8.1) menu. Please enter the required input data and press calculate button to see the results. If the actual input data is not available (e.g. test is conducted by another laboratory) click on "Input data not available" checkbox and enter the test results manually.

Density & Moisture Test

Borehole: BH14-1 Sample: 1.5 m (100)

Soil Class: SP (Poorly Graded Sand With Gravel) | A-2-4 (Silty or clayey gravel and sand) [Sample ID](#)

Input Data

Cont. Weight: (gr) 5.5

Wet Weight + Cont. Weight: (gr) 86.5

Dry Weight + Cont. Weight: (gr) 71.6

Dry Sample Volume: (cm3) 35.3

☐ Input Data Not Available

Test Results

Dry Density: (gr/cm3) 1.87

Moisture Content (%): 22.54

Tested By:

Test Results

After data entry, click on calculate button from the [tests toolbar](#) (See 1.8.1.2). Test results will be shown on the right side of the screen. You can print the test report by using the [tests toolbar](#) (See 1.8.1.2).

1.8.4 Atterberg Limits Test

Atterberg Limits Test (ASTM D4318)

This page is used for data entry of Atterberg limits test and to view / print the results. This page can be accessed from the [Soil Mechanics Lab](#). (See 1.8.1) menu.

Data entry should be done in separate tables for liquid limit and plastic limit tests. Input data simply consists of container weight as well as dry and wet weight of soil samples. Enter minimum 3 samples to obtain a reasonable test results. Please note that data should be entered in the white cells. The red cells are automatically calculated by the program.

Atterberg Limits Test

Borehole: Sample: 1 / 6

Soil Class: SP (Poorly Graded Sand With Gravel) | A-2-4 (Silty or clayey gravel and sand) [Sample ID](#)

Liquid Limit Test

Con. weight (gr)	Con.+ wet weight (gr)	Con.+ dry weight (gr)	No. Blows	Moisture (%)
50.1	94.62	83.13	17	34.8
59.01	94.68	85.65	23	33.9
48.42	90	79.61	30	33.3
				-

LL = 33.7 %

Plastic Limit Test

Con. weight (gr)	Con.+ wet weight (gr)	Con.+ dry weight (gr)	Moisture (%)
8.34	9.16	9.04	17.1
8.72	9.39	9.29	17.5

PL = 17.3 %



Tested by :

Test Results

After data entry, click on calculate button from the [tests toolbar](#) (See 1.8.1.2). Test results including LL and PL will be shown below each table. You can print the compaction test report by using the [tests toolbar](#) (See 1.8.1.2).

1.8.5 Field Density Test

Field Density Test (ASTM D6938)

This page is used for data entry of field density test and to view / print the results. This page can be accessed from the [Soil Mechanics Lab](#). (See 1.8.1) menu. Please enter the required input data and press calculate button to see the results.

Field Density Test ? X

Borehole: BH14-1 Sample: 1.5 m (100) 1 / 1

Soil Class: SP (Poorly Graded Sand With Gravel) | A-2-4 (Silty or clayey gravel and sand) [Sample ID](#)

Input Data

Sand Unit Weight: (gr/cm³) 1.4

Excavated Soil Weight: (gr)

Wet: 216.5 Dry: 200

Weight of Bottle and Sand: (gr)

After: 750 Before: 856.5

Weight of Sand in Cone: (gr) 253.2

Tested By:



Test Results

Moisture (%): 7.6 Dry Density : (gr/cm³) 1.91

Test Results

After data entry, click on calculate button from the [tests toolbar](#) (See 1.8.1.2). Test results will be shown at the bottom of the screen. You can print the test report by using the [tests toolbar](#) (See 1.8.1.2).

1.8.6 Chemical Test

Chemical Tests

This page is used for data entry of soil and water chemical test results ([see how](#) (See 1.6) to specify a sample as type of 'water'), and to view / print the report. This page can be accessed from the [Soil Mechanics Lab](#). (See 1.8.1) menu. For data entry simply find the desired chemical test and enter the corresponding test results in front of it.

Soil and water chemical tests

Borehole: **BH14-1** Sample: **1.5 m (100)** 1 / 1

Soil Class: **SP (Poorly Graded Sand With Gravel) | A-2-4 (Silty or clayey gravel and sand)** [Sample ID](#)

Soil Chemical Tests	Test Result
pH value	7.5
Electrical Conductivity	
Test 4	
Test 5	
Solubale Sulphate Content	0.11
Gypsum Content (BS 1377)	
Gypsum Content (FAO)	
Chloride Content (ASTM D1411)	0.004
Organic Matter (AASHTO T194)	
Test 11	
Total Carbonate (BS 1377)	
Dissolved Carbonate/Bicarbonate	
Nitrate Content	
Test 15	
Test 16	
Test 17	
Test 18	
Test 19	
Test 20	

Test Results

You can print the compaction test report by using the [tests toolbar](#) (See 1.8.1.2).

1.8.7 Hydraulic Conductivity Test

Permeability Test (ASTM D2434)

This page is used for data entry of falling head and constant head permeability test, and to view / print the test results. This page can be accessed from the [Soil Mechanics Lab](#). (See 1.8.1) menu. After entering the sample and apparatus information, please enter water head and time readings in the table. Please note that data should be entered in the white cells. The red cells are automatically calculated by the program.

Permeability Test (Falling Head)

Borehole: **BH01** Sample: **1.5 m (50)** 1 / 2

Soil Class: SC (Clayey Sand With Gravel) | A-2-6 (Silty or clayey gravel and sand) [Sample ID](#)

Sample Info.

Diameter (cm): **10.52** Specific Gravity Gs: **2.57**
 Height (cm): **12.1** Pipe Diameter (cm): **3.66**
 Dry Weight (gr): **1680** Temp (oC): **28**
 Wet Weight (gr): **1932** Insitu Dry Density (gr/cm3): **2.57**

Test Readings

Time (sec)	H1 (cm)	H2 (cm)	K (cm/sec)
10800	62	61.5	$K = 1.1 \times 10^{-6}$
9000	61.5	61.1	$K = 1.06 \times 10^{-6}$
9000	61.1	60.8	$K = 8.01 \times 10^{-7}$

Test Results



Moisture Content: **15**
 Void Ratio: **0.61**
 Saturation %: **63.2**
 Dry Density (gr/cm3): **1.6**
 Relative Density %: **62.26**
 Permeability Coeff.: **9.87×10^{-7}**

Tested By:

Percolation Test

This page can be accessed from the [Soil Mechanics Lab](#). (See 1.8.1) menu and is used to enter hydraulic conductivity of soil to be shown on the borehole logs when:

- This represents a field test results such as percolation test
- This is a laboratory test results but details of data is not available to be used in Permeability Test page

In order to enter permeability of soil make sure the sample is defined as [Percolation type](#) (See 1.6) on [borehole manager page](#) (See 1.3). Select the sample from the [test toolbar](#) (See 1.8.1.2) and enter the test results.

Field Permeability Test

Borehole: **BH-1** Sample: **10 m (S11)** 0/0

Soil Class: SC (Clayey Sand With Gravel) | A-4 (A-4, Silty soils) [Sample ID](#)

Test Results

☒ This is a lab. test

K = **3.6** X 10⁻⁶ Tested By: **na**

Only samples of type 'Percolation' will be shown here

Test Results

Test results entered on this page will be shown on the [borehole log](#) (See 1.9.1).

1.8.8 Unconfined Compression Test

Unconfined Compression Test (ASTM D2166)

This page is used for data entry of Unconfined Compression Test and to view / print the test results. This page can be accessed from the [Soil Mechanics Lab](#). (See 1.8.1) menu. After entering the sample information and moisture data, please enter data for force reading and axial displacement. Please note that data should be entered in the white cells. The red cells are automatically calculated by the program. You can also specify a picture of the sample (typically taken after the test).

Unconfined Compression Test

Borehole: BH14-1 Sample: 1.5 m (100)

Soil Class: SP (Poorly Graded Sand With Gravel) | A-2-4 (Silty or clayey gravel and sand) [Sample ID](#)

Sample Info.

Diameter (cm): 3.8 Height (cm): 8.2

Ring Factor: 0.045 Gauge Factor: 0.01

Gauge Step: 5 Moisture: Moist

Loading Rate (mm/min): 1 Tested By:

Moisture Content

Cont. Weight (gr): 6.5

Cont. & Dry Weight (gr): 159

Cont. & Wet Weight (gr): 195

Results

Qu (kg/cm²): 0.65

Cu (kg/cm²): 0.32

Moisture: 23.61

Dry Density (gr/cm³): 1.64

Sample Photo

Readings

Axial Def. Readings	Force Readings	Axial Strain (%)	Shear Stress (kg/cm ²)
0	0	0	0
6	12	0.07	0.048
15	33	0.18	0.131
23	55	0.28	0.218
30	75	0.37	0.296
37	94	0.45	0.371
44	110	0.54	0.434
53	124	0.65	0.489
63	133	0.77	0.524
73	143	0.89	0.562
81	152	0.99	0.597
91	160	1.11	0.628
99	166	1.21	0.651
107	166	1.3	0.65

Shift + Ins : insert a row

- Please enter zero for both force reading and axial displacement for the first reading.
- In order to delete a row of data, select the row and press Shift+Delete buttons. Please note deleted data cannot be recovered.
- In order to insert a new row in between existing rows, press Shift+Insert.

Test Results

After data entry, click on calculate button from the [tests toolbar](#) (See 1.8.1.2). Test results including unconfined shear strength (Qu) will be shown in the table on the bottom of the screen. You can print the unconfined compression test report by using the [tests toolbar](#) (See 1.8.1.2).

1.8.9 Triaxial Compression Test

Triaxial Shear Test (ASTM D4767)

This page is used for data entry of Triaxial shear test and to view / print the results and can be accessed from the [Soil Mechanics Lab](#). (See 1.8.1) menu. After selecting the test type and entering gauge settings you need to enter sample information for each step of the test. You should enter minimum 2 sample data; though most tests have 3 samples tested. Please follow this steps for data entry:

1. Enter general information required for Test Data section on left side of the page
2. Enter samples information

3. Enter vertical displacement and force reading for each sample

Actual force (kgf) for each sample= "load reading" x "Ring factor"

Actual vertical displacement (mm) is automatically calculated based on "Vertical gauge step" x "Vertical gauge factor"

Please note that data should be entered in the white cells. The red cells are automatically calculated by the program. Also start the test readings of each sample from zero.

Triaxial Compression Test

Borehole: **BH14-1** Sample: **1.5 m (100)** 1 / 3

Soil Class: **SP (Poorly Graded Sand With Gravel) | A-2-4 (Silty or clayey gravel and sand)** [Sample ID](#)

Test Data

Test type : **CU**

Moisture : **Saturated**

Vertical gauge step: **20**

Vertical gauge factor: **0.01**

Specific Gravity (Gs): **2.7**

Tested by:



C (kg/cm2)	0
Phi (deg)	49.8
C' (kg/cm2)	5.08
Phi' (deg)	49.8

Readings

Sample	Sample #1	Sample #2	Sample #3
Conf. Stress (kg/cm2)	0.5	1	1.5
Diameter (cm)	3.8	3.8	3.8
Height (cm)	8	8	8
Ring Factor	1	1	1
Wet Weight Before (gr)	165	177.2	177.2
Wet Weight After (gr)	163	165	165
Dry Weight (gr)	150	155	155
B (%)	100	100	100
Dry Density (gr/cm3)	1.65	1.71	1.71
Moisture Before	10	14.32	14.32
Moisture After	8.67	6.45	6.45

Vertical Reading	Pore Pressure	Load	Pore Pressure	Load	Pore Pressure	Load
0	0	7.76	0	3.21	0	4.5
20	0	8.85	0	8.88	0	12.45
40	0	9.47	0	11.9	0	16.69
60	0	9.78	0	13.55	0	18.98
80	0	10.15	0	14.5	0	20.31
100	0	10.45	0	14.99	0	21.02
120	0	10.6	0	15.6	0	21.85
140	0	10.77	0	16.01	0	22.44
160	0	10.9	0	16.3	0	22.86

Edit reading of sample:

↓ Multiply by: **1** Mirror Delete Readings

You can adjust the readings of a sample by selecting it from the list below the table, choosing the multiplier and clicking on **Multiply by** hyperlink. This will adjust all force readings of the sample accordingly, hence, adjusting friction angle and cohesion.

You can also delete the entire data of a sample by selecting it from the same list and clicking on **Delete Readings** hyperlink. Please note deleted data cannot be recovered.

Test Results

After data entry, click on calculate button from the [tests toolbar](#) (See 1.8.1.2). Test results including F and cohesion for effective and total stress condition (depending of type of Triaxial test) will be shown in the table on the left-bottom corner of the screen. You can print the compaction test report by using the [tests toolbar](#) (See 1.8.1.2).

1.8.10 Consolidation Test

Consolidation Test (ASTM D2435)

This page is used for data entry of 1-D consolidation test and to view / print the results. This page can be accessed from the [Soil Mechanics Lab](#). (See 1.8.1) menu. After entering the sample information please enter vertical displacement gauge readings for each step of the loading. You can enter as many loads as you want but please follow this steps for data entry:

1. Enter sample information
2. Enter loads (normal stresses) in the left table
3. After all loads are entered, click on each load and enter vertical displacement reading in the right table

Please note that data should be entered in the white cells. The red cells are automatically calculated by the program.

Consolidation Test

Borehole: BH14-1 Sample: 1.5 m (100)

Soil Class: SP (Poorly Graded Sand With Gravel) | A-2-4 (Silty or clayey gravel and sand)

Sample Info.

Diameter (cm): 6.15

Height (cm): 2

Gs: 2.7

Ver. gauge factor: 0.01

Tested By:

Test Type: Consolidation

Drainage: One way

Dry weight (gr): 87.72

Wet weight before (gr): 109.12

Wet weight after (gr): 109.13

Stress (kg/cm ²)	Calibration Reading	Time (min)	Reading	Settlement (mm)
0.25		0	0	0
0.5		0.1	0.4	0.004
1		0.25	0.7	0.007
2		0.5	0.95	0.01
4		1	1.15	0.012
8		2	1.35	0.014
16		4	1.5	0.015
8		8	1.65	0.016
4		15	1.75	0.018
2		30	1.82	0.018
1		60	1.9	0.019
0.5		120	1.95	0.02
0.25		240	1.98	0.02
		480	2	0.02
		1440	2	0.02

Test Results

Cc: 0.162

Cs: 0.014

Pc (kg/cm²): 1.316

Dry Density: 1.48

Void Ratio: 0.829

Saturation(%): 79.5

In order to delete a reading, simply press Delete button. Please note deleted data cannot be recovered. The time intervals for recording the vertical gauge readings can be set in [Tests Default Settings](#) (See 1.10.2) page.

Test Results

After data entry, click on calculate button from the [tests toolbar](#) (See 1.8.1.2). Test results including Cc, Cs, Pc, dry density, void ratio (e) and degree of saturation of this sample will be shown in the table on the right-bottom corner of the screen. You can print the compaction test report by using the [tests toolbar](#) (See 1.8.1.2).

1.8.11 Direct Shear Test

Direct Shear Test (ASTM D3080)

This page is used for data entry of direct shear test and to view / print the results and can be accessed from the [Soil Mechanics Lab](#). (See 1.8.1) menu. After selecting the test method, shear box type, gauge factors, etc. you need to enter sample information for each step of the test. You should enter minimum 2 sample data; though most tests have 3 samples tested. Please follow this steps for data entry:

1. Enter general information required for Test Data section on left side of the page
2. Enter samples information
3. Enter vertical displacement and force reading for each sample

Actual force (kgf) for each sample= "force reading" x "Ring factor"

Actual vertical displacement (mm) = "vertical displacement" x "Vertical gauge factor"

Actual horizontal displacement (mm) is automatically calculated based on "Horizontal gauge step" x "Horizontal gauge factor"

Please note that data should be entered in the white cells. The red cells are automatically calculated by the program. Also start the test readings of each sample from zero.


Direct Shear Test

Borehole: BH14-1
 Sample: 1.5 m (100)
1 / 3
Soil Class: SP (Poorly Graded Sand With Gravel) | A-2-4 (Silty or clayey gravel and sand)
Sample ID

Moisture: Saturated

Test Method: Slow

Specific Gravity (Gs): 2.65

Horizontal Gauge Factor: 0.01

Horizontal Gauge Step: 1.05

Vertical Gauge Factor: 0.01

Tested By:

Type of Shear Box: Square

B (cm): 30

H (cm): 15

☐ Sample is remoulded
 ☒ Calculate effective area

Test Results

C = 0.1 (kg/cm²)

$\Phi = 35.2 \text{ deg.}$



Sample	Sample #1	Sample #2	Sample #3			
Normal Stress (kg/cm ²)	3	3.5	4			
Wet Weight Before (gr)	26230	26312	26312			
Wet Weight After (gr)	26240	26260	26250			
Dry Weight (gr)	25300	25300	25300			
Ring Factor	12.18	12.18	12.18			
Moisture Before	3.68	4	4			
Dry Density (gr/cm ³)	1.87	1.87	1.87			
Void Ratio	0.41	0.41	0.41			
Hor. Disp.	Ver. Disp.	Force Reading	Ver. Disp.	Force Reading	Ver. Disp.	Force Reading
0		0		0		0
1.05		26.3		58.12		55.79
2.1		46.69		85.73		85.09
3.15		66.06		98.5		104.51
4.2		84.87		110.51		117.27
5.25		95.9		123.28		128.13
6.3		113.31		132.47		143.29
7.35		121.21		139.57		152.25
8.4		135.17		145.93		162.2
9.45		143.35		153.05		172.61

Readings of sample #:
 Multiply by: 1
Delete
Mirror

NovoLAB supports any type and size of shear box, just select the type and enter width (B) and height (H) of the box.

By selecting "Calculate effective area" checkbox, the effective contact area between the top and bottom half of the box is calculated, and normal and shear stress will be corrected accordingly.

You can also adjust the readings of a sample by selecting it from the list below the table, choosing the multiplier and clicking on **Multiply by** hyperlink. This will adjust all force readings of the sample accordingly, hence, adjusting friction angle and cohesion.

You can also delete the entire data of a sample by selecting it from the same list and clicking on Delete hyperlink. Please note deleted data cannot be recovered.

Test Results

After data entry, click on calculate button from the [tests toolbar](#)(See 1.8.1.2). Test results including F and cohesion will be shown in the table on the left-bottom corner of the screen. You can print the compaction test report by using the [tests toolbar](#)(See 1.8.1.2).

1.8.12 Compaction Test

Compaction Test (ASTM D698)

This page is used for data entry of compaction test and to view / print the results. This page can be accessed from the [Soil Mechanics Lab](#).(See 1.8.1) menu. After entering the test type, mold volume and specific gravity, please enter data for each test. This page accepts up to 5 tests while minimum 3 tests are required to obtain the test results. Please note that data should be entered in the white cells. The red cells are automatically calculated by the program. The following types of compaction tests are covered in NovoLAB:

- AASHTO T-99 (ST.)
- AASHTO T-180 (MOD.)
- ASTM D-1557 (MOD.)
- ASTM D-698 (ST.)

Compaction Test

Borehole: BH-1

Sample: 1 m (S1)

Soil Class: SM (Silty Sand With Gravel) | A-7-5 (Clayey soils)

Sample ID

Test

Type: AASHTO T-99 (ST.)

Mold Volume (cm3): 944

Specific Gravity: 2.67

Tested By: Andrew Milani



Test Details

Test	#1	#2	#3	#4	#5					
Mold + Wet Soil W (gr)	5726	5836	5902	5956	5892					
Mold W (gr)	4050	4050	4050	4050	4050					
Wet Soil (gr)	1676	1786	1852	1906	1842					
Wet Density (gr/cm3)	1.78	1.89	1.96	2.02	1.95					
Cont. + Wet Soil W (gr)	74.76	74.76	71.32	71.32	70.28	70.28	69.42	69.42	94.26	94.26
Cont. + Dry Soil W (gr)	71.93	71.93	68.55	68.55	67.24	67.24	64.99	64.99	87.95	87.95
Cont. W (gr)	45.85	45.85	46.23	46.23	44.8	44.8	35.3	35.3	48.54	48.54
Water W (gr)	2.83	2.83	2.77	2.77	3.04	3.04	4.43	4.43	6.31	6.31
Soil Dry W (gr)	26.08	26.08	22.32	22.32	22.44	22.44	29.69	29.69	39.41	39.41
Moisture Content (%)	10.9	10.9	12.4	12.4	13.5	13.5	14.9	14.9	16	16
Average Moisture (%)	10.9	12.4	13.5	14.9	16					
Dry Density (gr/cm3)	1.61	1.68	1.73	1.76	1.68					

Delete Test Data:

Layers

3

Drop Height (cm)

30.48

Hammer Weight (gr)

2.5

Blows/Layer

25

Max. Dry Density (gr/cm3)

1.76

Optimum Moisture

14.7

In order to delete one of the tests, select the test number from the list below the main table and click on **X** button. Please note deleted data cannot be recovered.

Test Results

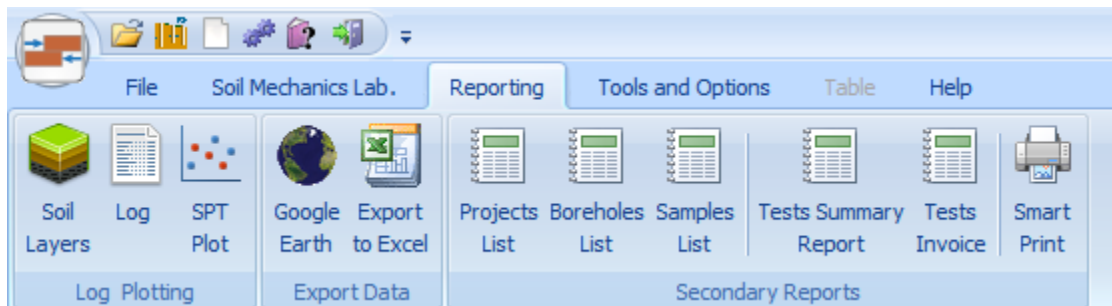
After data entry, click on calculate button from the [tests toolbar](#) (See 1.8.1.2). Test results including optimum moisture content and maximum dry density of soil will be shown in the table on the right-bottom corner of the screen. You can print the compaction test report by using the [tests toolbar](#) (See 1.8.1.2).

1.9 Reporting

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Reports

NovoLAB offers a variety of reports. These can be accessed from "Reporting" tab of the [main toolbar](#) (See 1.1.5), as shown below:



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1.9.1 Boring Log

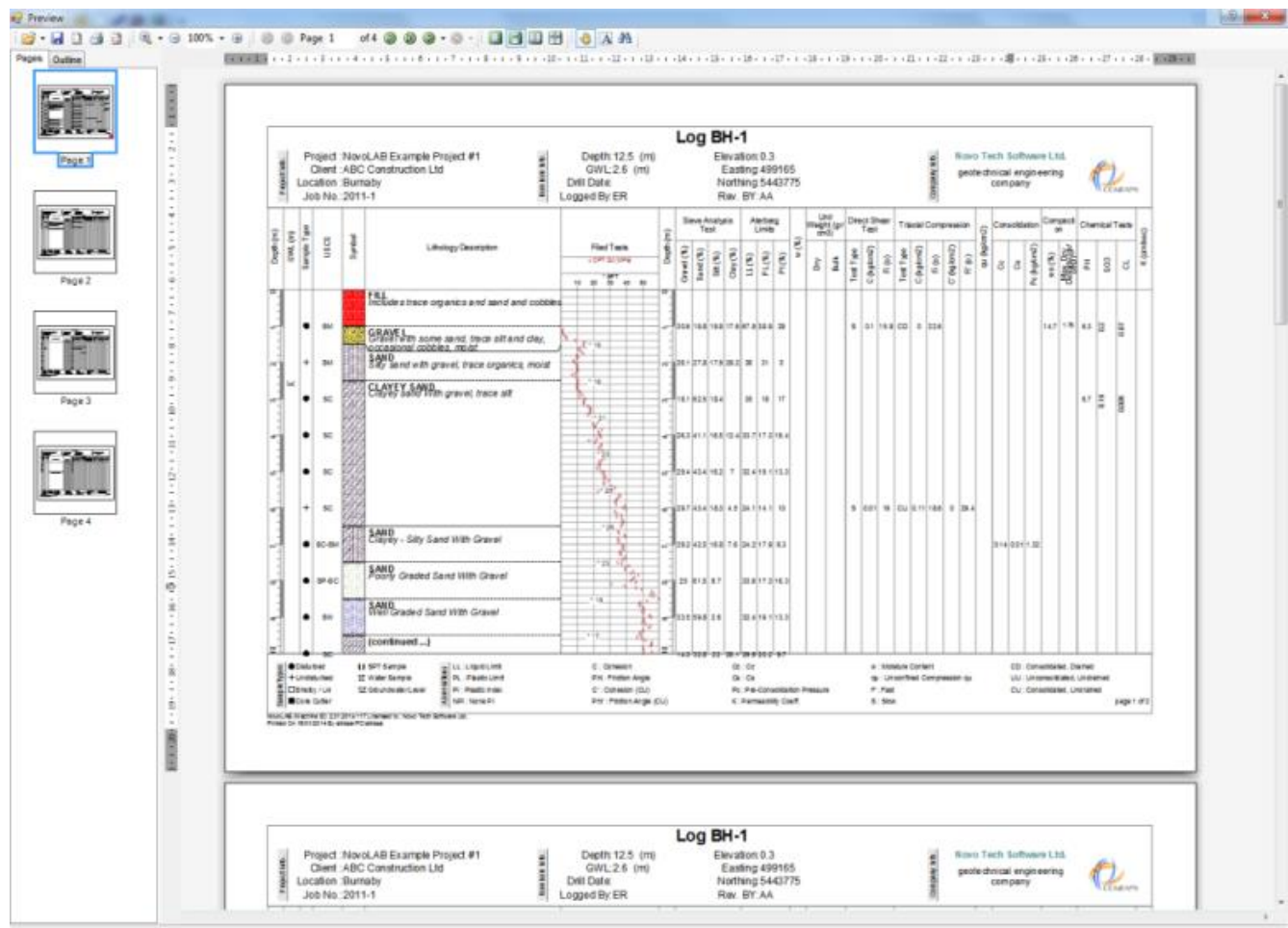
Boring Log Report

Boring log is the main part of a geotechnical report. In order to prepare the boring log choose Reporting tab of the main toolbar, and click on Boring Log button. This makes some time

depending on number of boreholes and tests in current project. In the meanwhile you will notice the progress report on the bottom of your screen:



Prior to preparing the boring log make sure you have defined the subsurface soil layers for each borehole / test pit using the [Soil Layering](#) (See 1.4) page. The following is a sample screenshot of boring log:

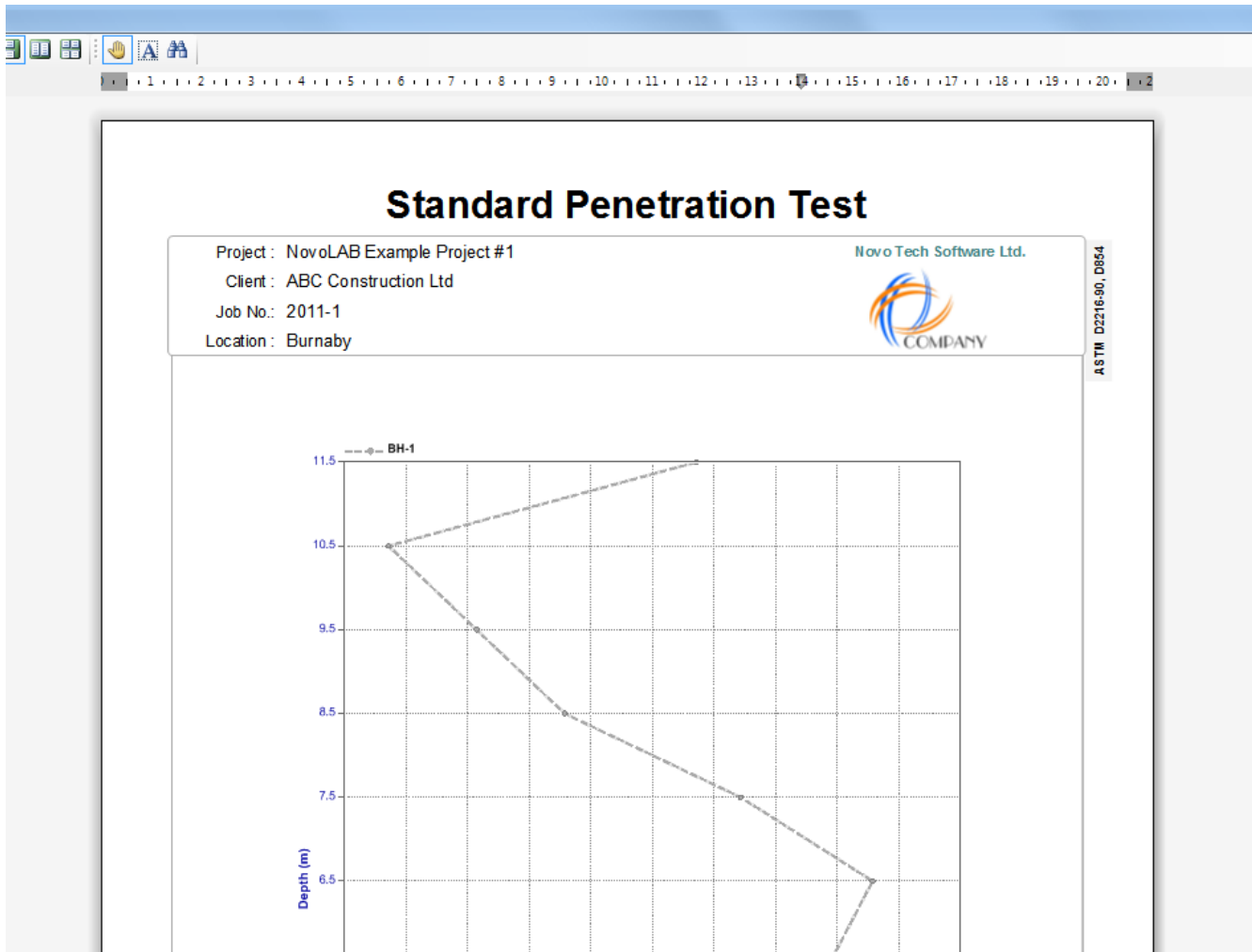


You can specify the columns presented on the boring log using the [log designer](#) (See 1.10.3) feature.

1.9.2 SPT Plot

SPT Plot

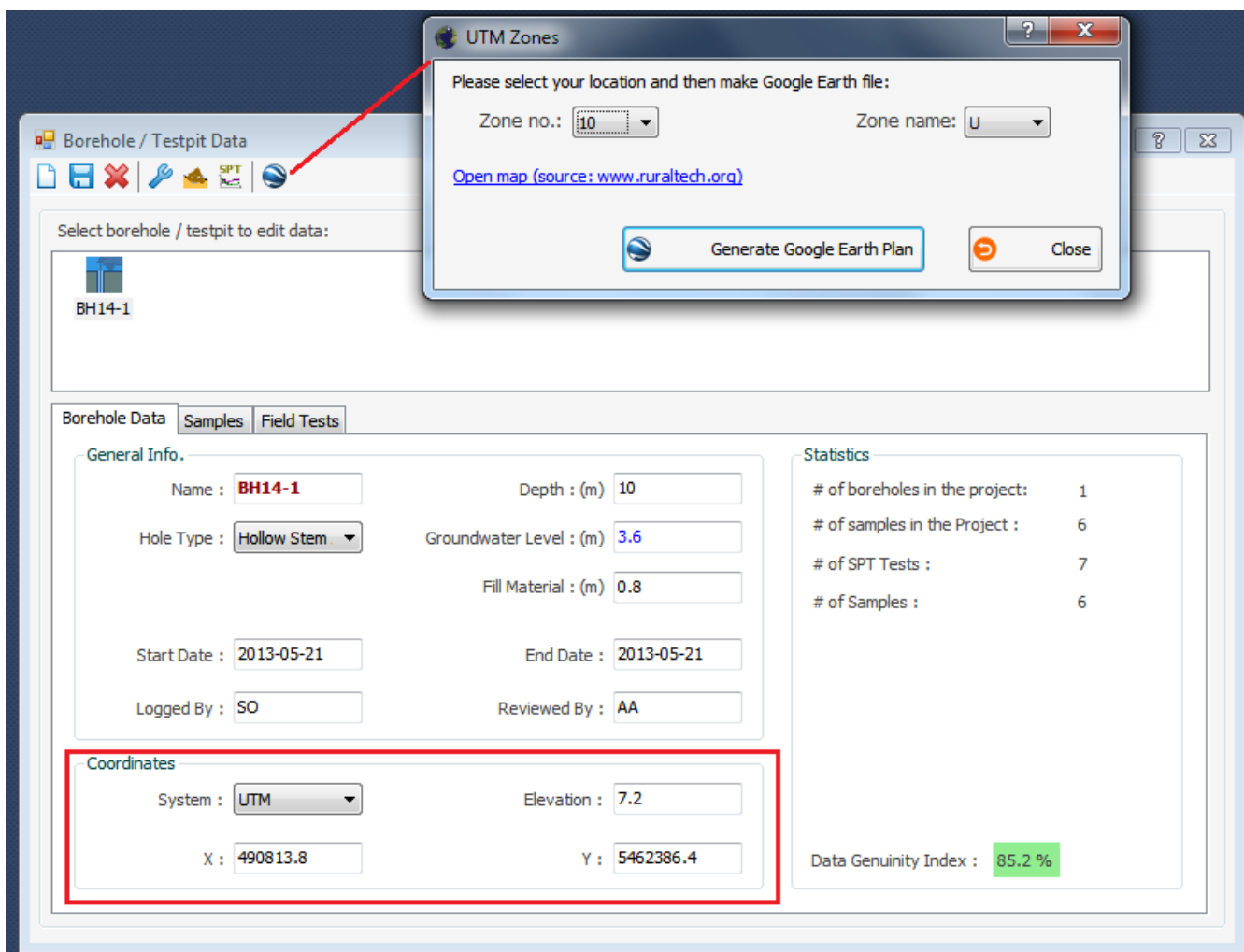
To prepare a report consisting a plot of SPT blow counts versus depth for all boreholes of the current project, from the [main toolbar](#) (See 1.1.5), click on "SPT Plot" button from the "Reporting" tab. This will show the following report:



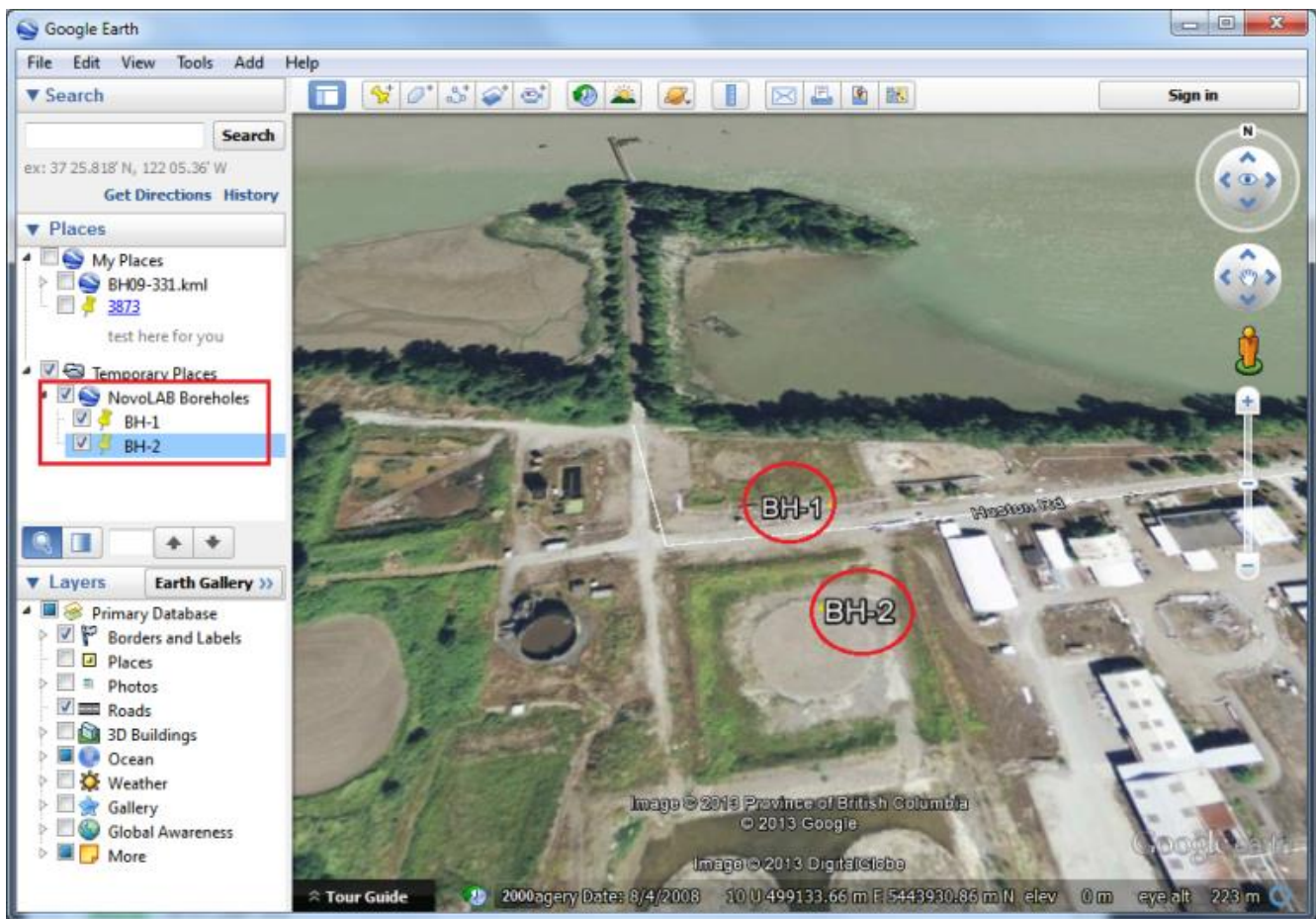
1.9.3 Google Earth Model

Google Earth 3D Plan View

This feature is designed to locate the boreholes on Google Earth 3D map. If you don't have Google Earth installed on your computer you can install it from [this page](#). In order to access this feature, choose Reporting tab of the [main toolbar](#) (See 1.1.5) and click on Google Earth button. Alternatively you can open [Boreholes Manager](#) (See 1.3) page and click on the Google Earth icon (see below). To use this feature, you need the UTM coordinates of the boreholes.



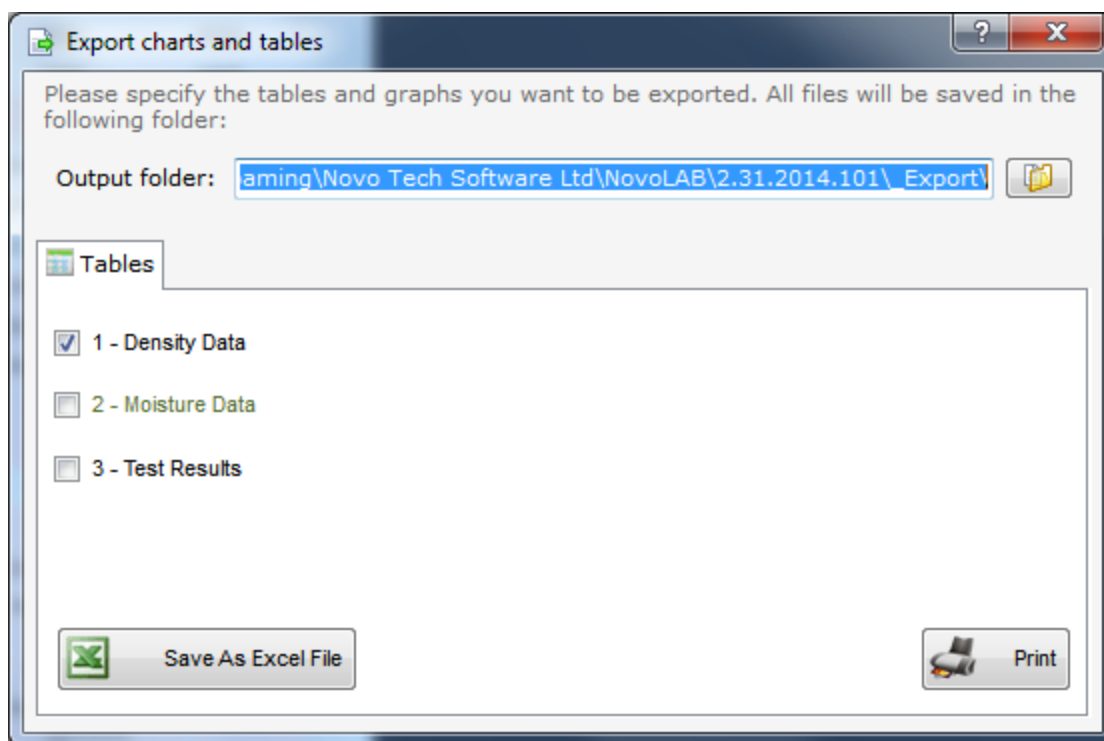
After clicking on Google Earth button, you need to specify the zone name and number of the project site ([see more](#)(See 1.9.3)). Then Google Earth will open and show the boreholes on 3D map.



1.9.4 Export to MS Excel

Export to Microsoft Excel

All tables in NovoLAB can be exported to Excel. In order to export a table, click on "Export to Excel" on the Reporting tab of the [main toolbar](#) (See 1.1.5). Another page pops up:

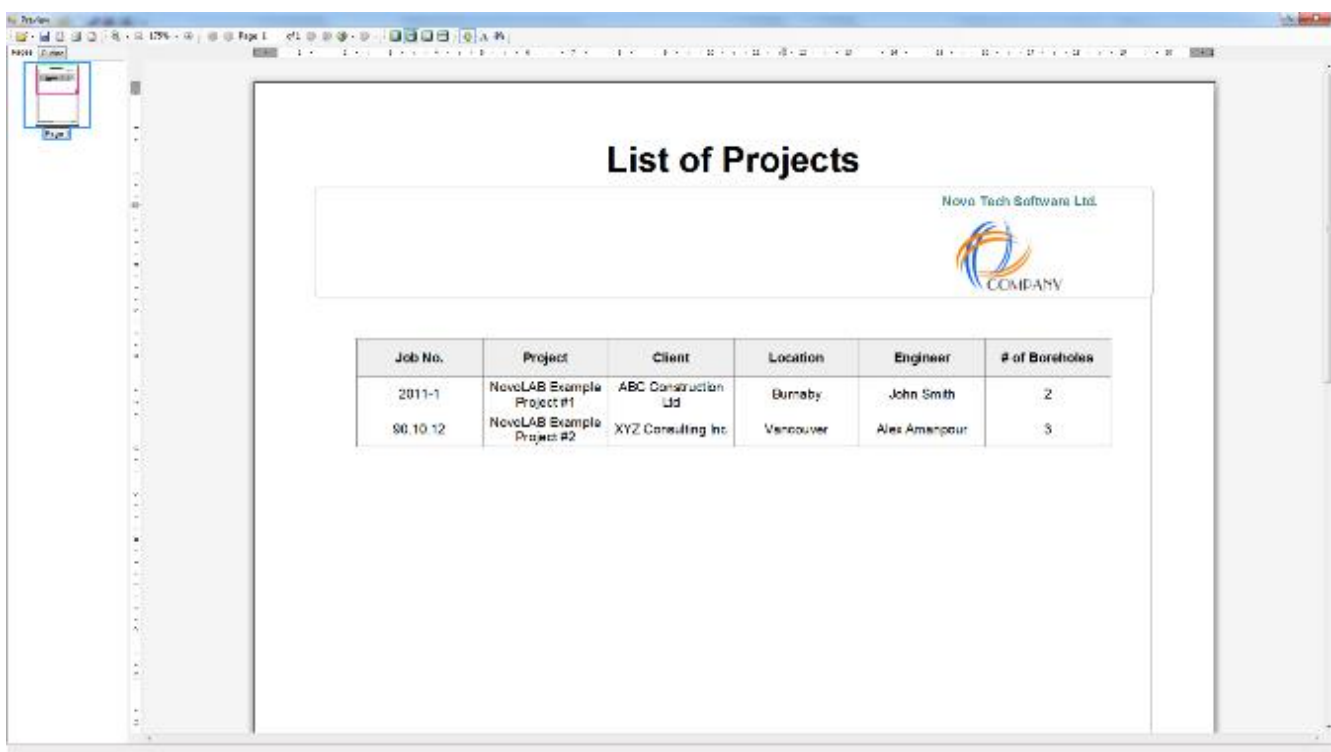


Now select the output folder and choose tables to export, then click on "Save as Excel File" button.

1.9.5 Projects List

Projects List Report

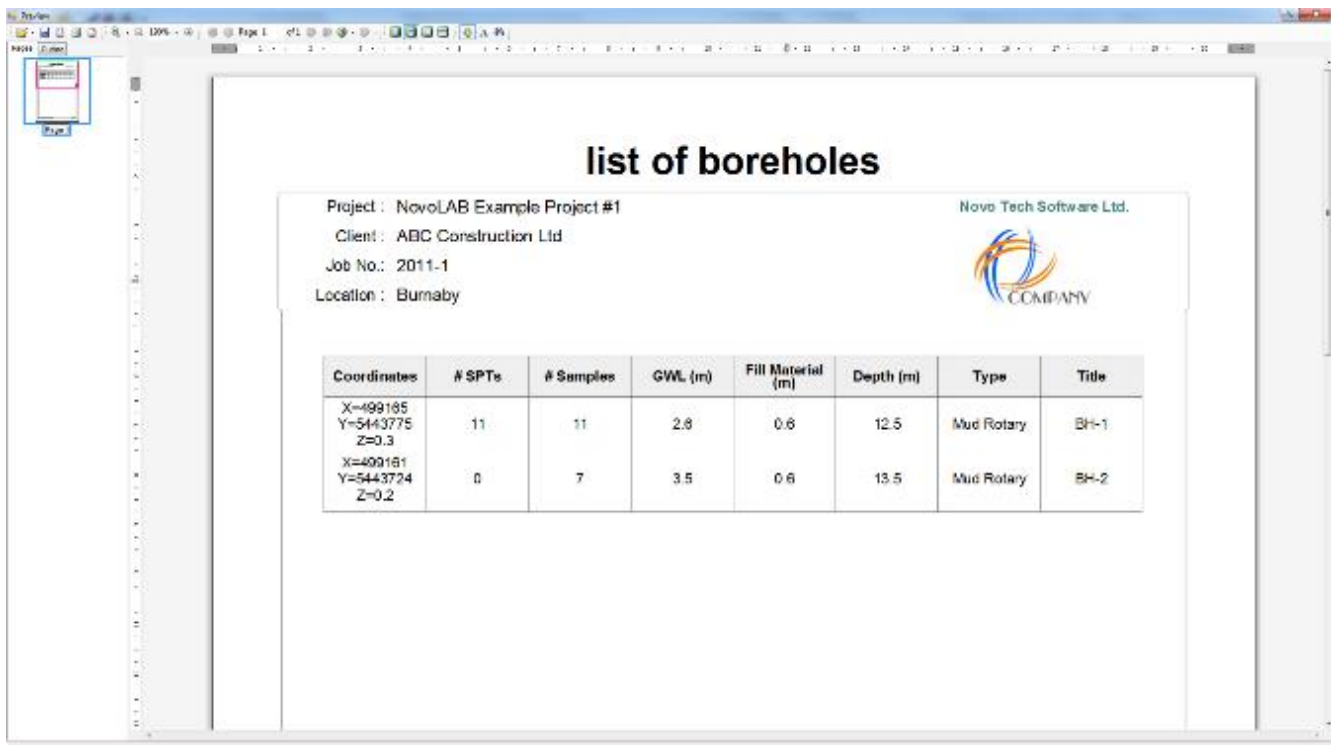
To prepare a report listing all the projects saved in the database select "Projects List" button from the "Reporting" tab on the [main toolbar](#) (See 1.1.5). This will show the following report:



1.9.6 Boreholes List

Boreholes List Report

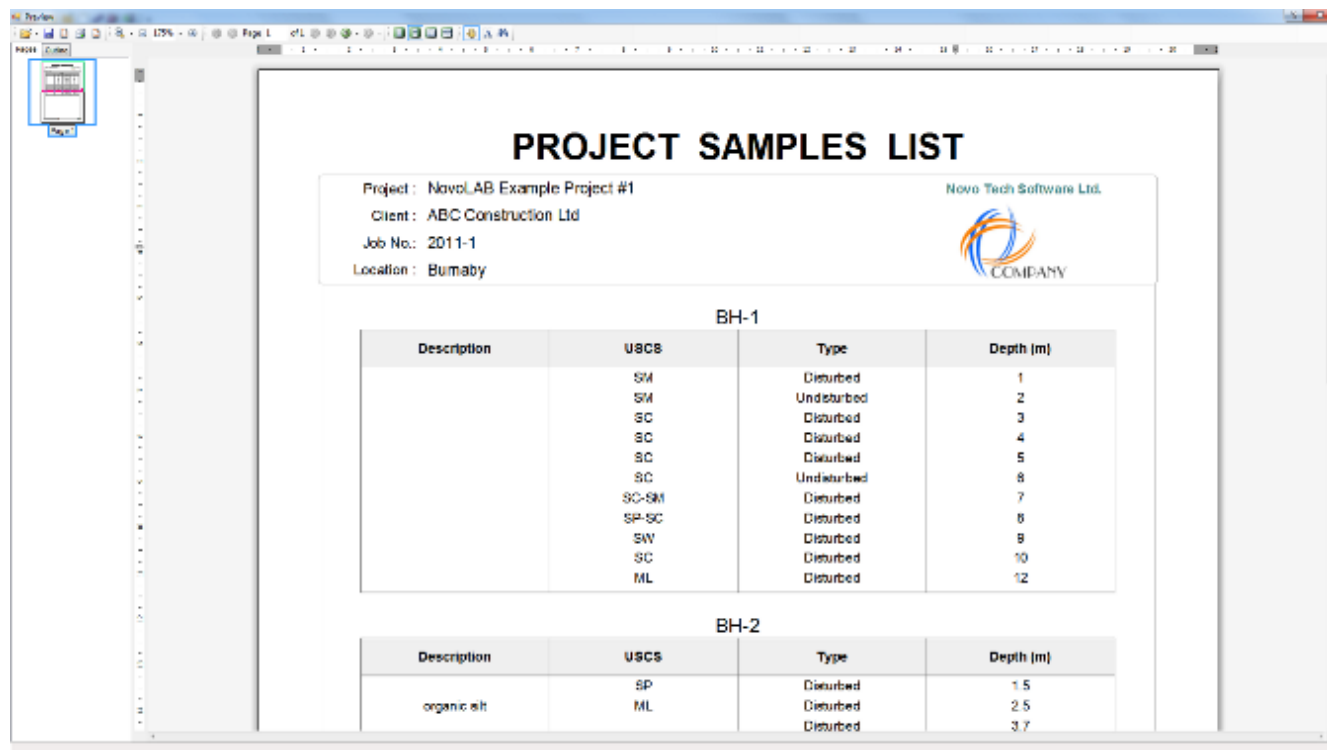
To prepare a report listing the current project boreholes from the [main toolbar](#) (See 1.1.5), click on "Boreholes List" button from the "Reporting" tab. This will show the following report:



1.9.7 Samples List

Samples List Report

To prepare a report listing the current project's samples click on "Samples List" button from the "Reporting" tab on the [main toolbar](#) (See 1.1.5). This will show the following report:



PROJECT SAMPLES LIST

Project : NovoLAB Example Project #1
 Client : ABC Construction Ltd
 Job No.: 2011-1
 Location : Bumaby

Novo Tech Software Ltd.

 COMPANY

BH-1

Description	USCS	Type	Depth (m)
	SM	Disturbed	1
	SM	Undisturbed	2
	SC	Disturbed	3
	SC	Disturbed	4
	SC	Disturbed	5
	SC	Undisturbed	8
	SC-SM	Disturbed	7
	SP-SC	Disturbed	8
	SW	Disturbed	9
	SC	Disturbed	10
	ML	Disturbed	12

BH-2

Description	USCS	Type	Depth (m)
	SP	Disturbed	1.5
organic silt	ML	Disturbed	2.5
		Disturbed	3.7

1.9.8 Tests Summary

Tests Summary Report

This report provides a summary of all laboratory tests in the current project. To access this report choose "Reporting" tab from the [main toolbar](#) (See 1.1.5), and click on "Tests Summary Report". The following shows a similar report:

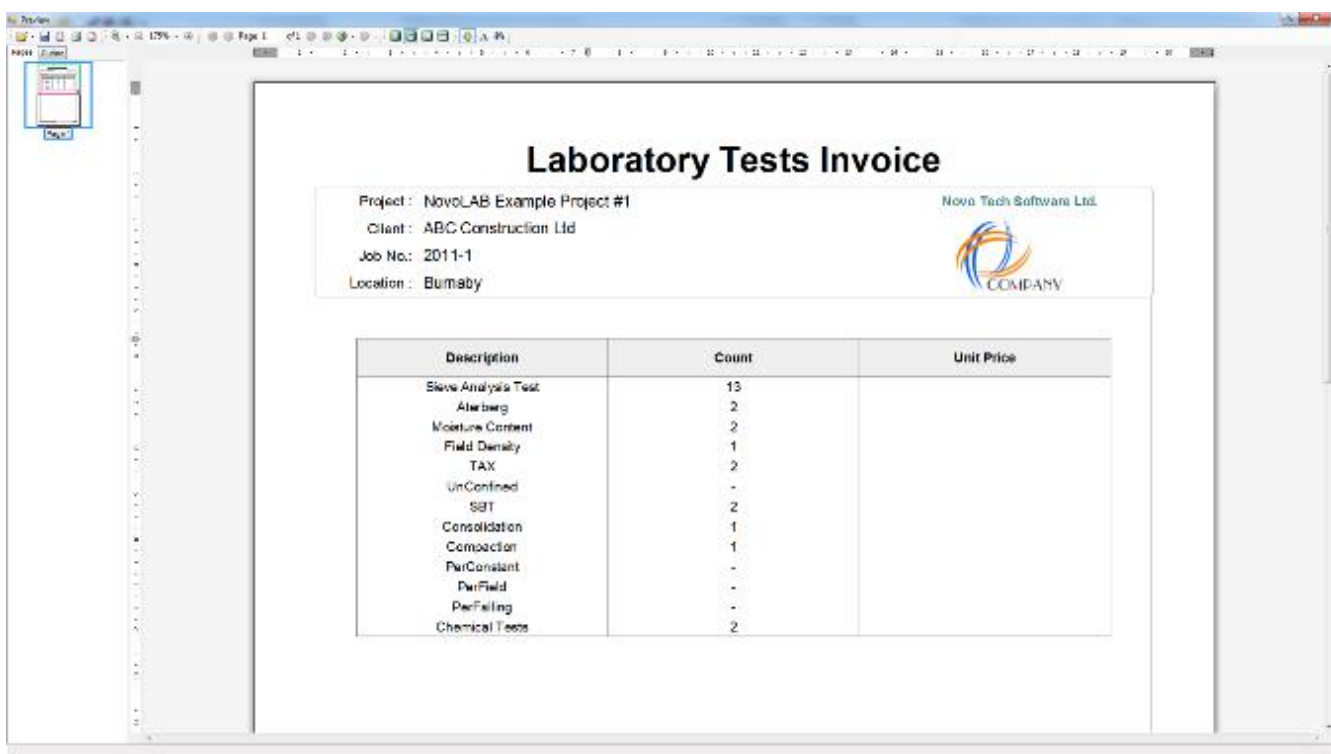


Borehole	Sample Depth (m)	Soil Class	D10	D30	D60	Clay (%)	Silt (%)	Sand (%)	Gravel (%)	Cobble (%)	LL	PL
BH01	1.5	SC (A-2-6)	0.31	0.351	3.749	9.2	13.4	41.1	36.3	12.3	33.6	17.3
BH01	3	SC (A-2-6)		0.39	3.595	6	15.2	43.4	35.4		32.4	19.1
BH01	4.5	SW-SC (A-2-4)		2.887	13.05	1.1	4.9	31.2	62.8		23.1	14.8
BH01	6	SW-SC (A-2-4)		3.282	12.824	2.5	4.4	28.1	65		24.1	14.1
BH01	7.5	SC (A-2-4)	0.445	0.662	5.879	4.6	11.5	40.5	31.1	0.1	25	16.3
BH02	2	SC (A-2-4)		1.077	12.084		6.5	27.3	66.2		24.2	17.9
BH02	4	SW (A-2-4)		2.43	12.85		4.6	34.6	60.8		24	15.1
BH02	6	SC (A-2-4)		0.41	4.068		19.7	42.5	37.8		25.2	15.8
BH02	8	SW (A-2-4)	0.559	4.775	19.524		4	25.9	70.1	0.1	22.3	14.3
BH02	10	SC-SM (A-2-4)	0.311	3.329		22.2	43	34.7	23.4		17.5	
TP01	2	SC (A-2-6)	0.445	0.351	3.749	9.2	13.4	41.1	36.3		33.6	17.3
TP01	4	SW (A-2-6)		2.43	12.85		4.6	34.6	60.8	32.4	19.1	
TP01	6	SC (A-2-4)		0.41	4.068		19.7	42.5	37.8	25.2	15.8	
TP01	8	SW (A-2-4)	0.559	4.775	19.524		4	25.9	70.1	0.1	22.3	14.3
TP01	10	SC-SM (A-2-4)	0.311	3.329		22.2	43	34.7	23.4		17.5	

Borehole	Sample Depth (m)	Soil Class	Liquid Limit (LL)	Plastic Limit (PL)
BH01	1.5	SC (A-2-6)	33.6	17.3
BH01	3	SC (A-2-6)	32.4	19.1

Tests Invoice Report

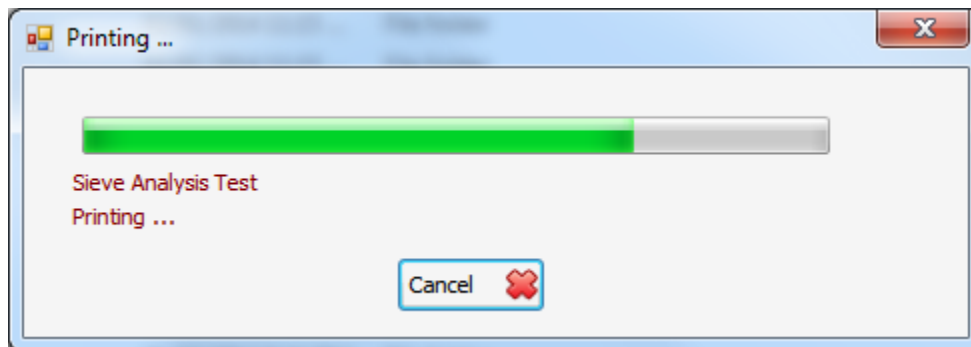
42



1.9.10 Smart Print

Smart Print

This feature allows you to print all laboratory tests and boring logs in just one click. To access this page click on "Reporting" tab from the [main toolbar](#) (See 1.1.5) and click on Smart Print button. NovoLAB opens each test page and prepares the reports, so please be patient while program is working as depending on size of the project this may take some time.



1.9.11 Sample Identification

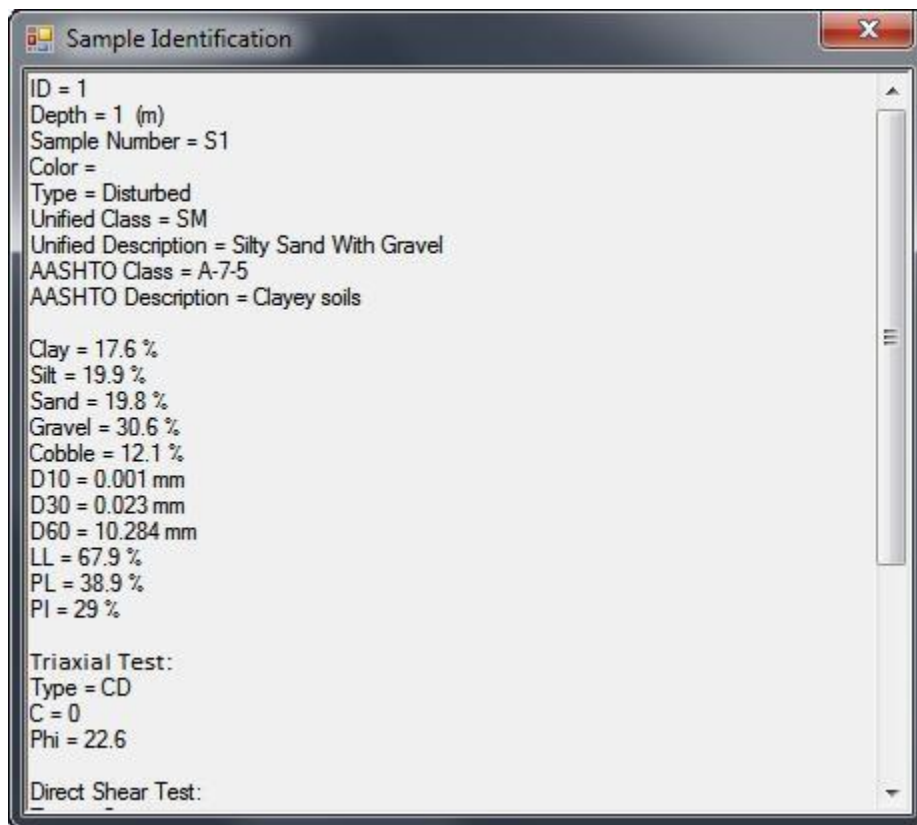
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Sample ID

The Sample ID link located on the right end of the [test toolbar](#) (See 1.8.1.2) on laboratory test pages of NovoLAB and provides more information about the results of tests done on this sample:



The summary includes sieve test analysis, Atterberg limits, moisture content, compaction and all other mechanical properties of this sample:



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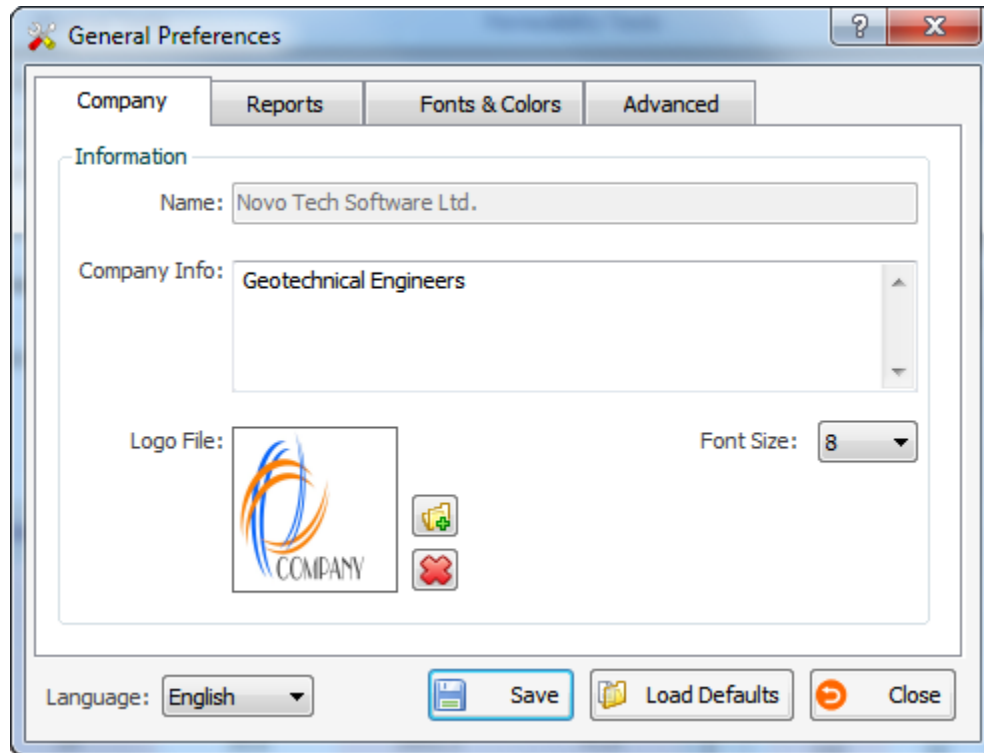
1.10 Tools and Options

1.10.1 Preferences

General Preferences

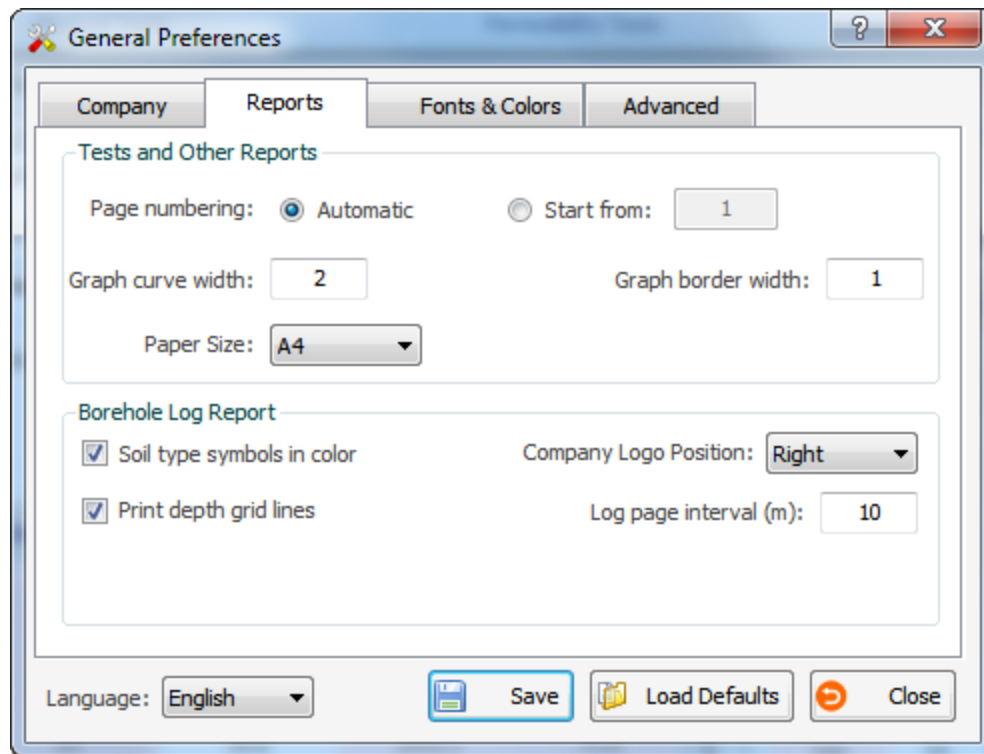
This page can be reached from "Tools & Options" tab on the [main toolbar](#) (See 1.1.5) and is designed to set the general preferences such as your company information, fonts, etc. and is described below:

Company: this tab is used to enter your company information including a brief text and company logo. You can also specify the size of your company name printed on the reports. Please note that company name is fixed in the [license file](#) (See 1.1.6) you received during activation of NovoLAB. If you want to change company name, [contact us](#) (See 3.1).

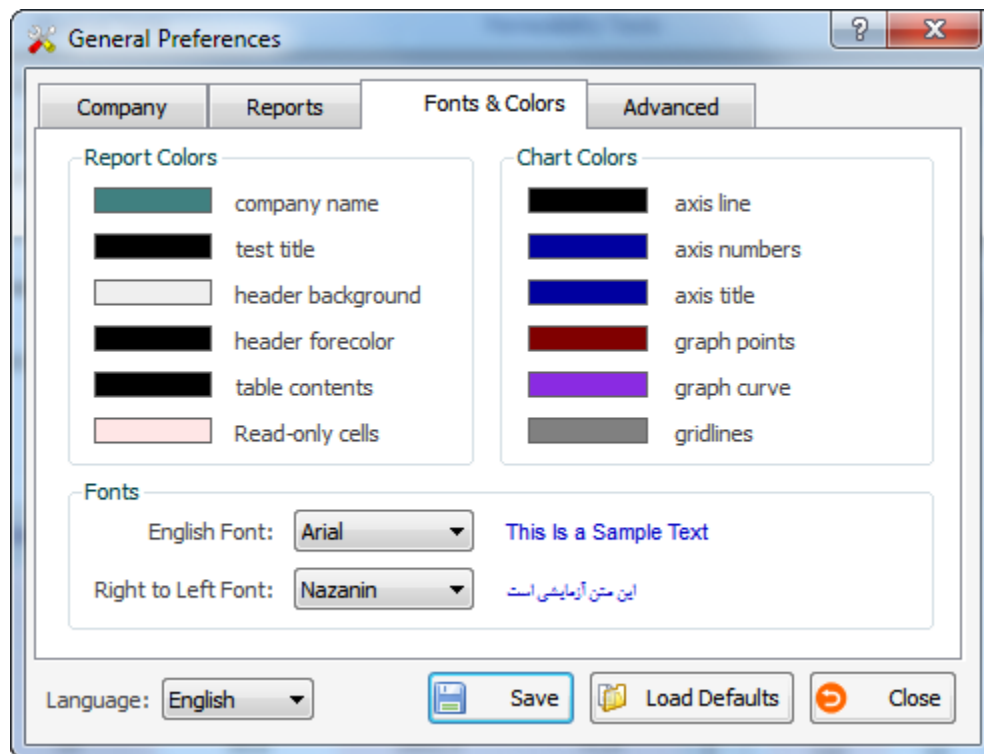


Reports: this tab is used for report settings as described below:

- Page numbering: if 'Automatic' is selected, page number in a report starts from 1. If you want to start page numbers from a different number, select 'Start From' option.
- Graph curve width: is used to set the line width of the plots shown on the reports. Choose between a range of 1 to 4.
- Paper size: choose between A4 (210 mm x 297 mm) or Letter size (8.5" x 11").
- Soil type symbols in color: if selected, soil type shading column in boring log will be shown in color, otherwise it will be black and white.
- Print depth grid lines: if selected, a horizontal grid line will be printed on the log for each 2 m of depth.
- Log page interval: this specifies the page length of boring logs.



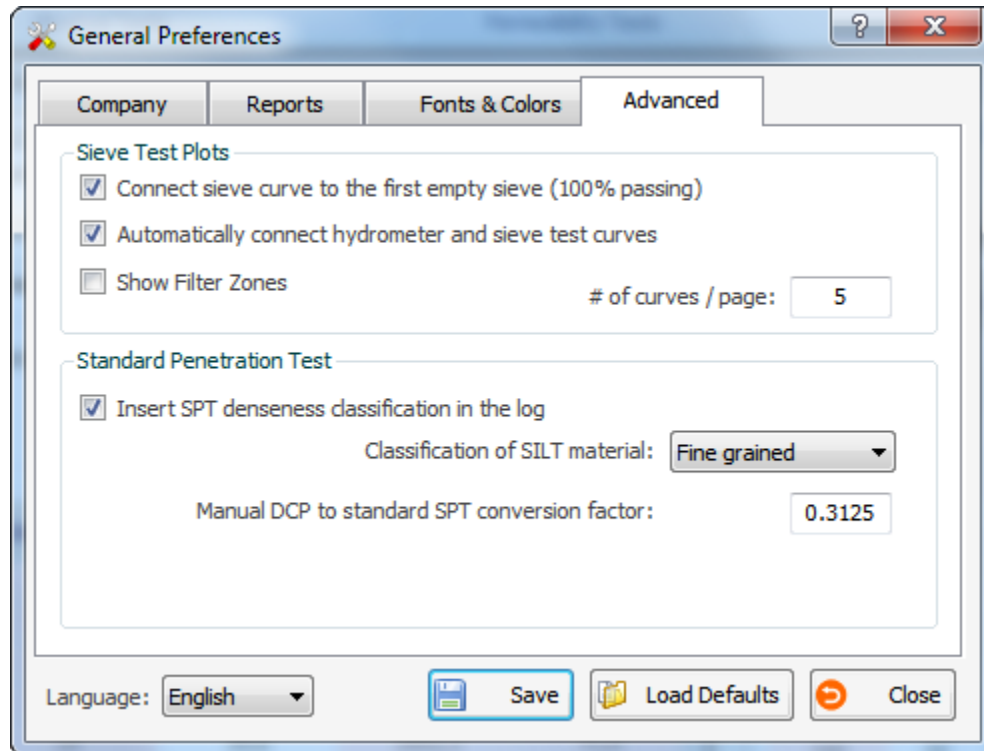
Fonts and Colors: this tab is mainly used to select fonts and colors used in the reports and on data entry pages.



Advanced: this tab is used for sieve analysis and SPT settings as described below:

- **Connect sieve curve:** if selected, the first empty sieve above the first used sieve (with a non-zero retained weight) will be assigned to 100% passing when plotting the sieve curve

- Automatically connecting hydrometer and sieve: these two curves usually do not match on the sieve analysis graph at the particle size of 0.075 mm (#200). If this option is selected, NovoLAB automatically adjusts the hydrometer to percent passing at sieve #200.
- Show filter zones: you can define upper bound and lower bound for filter. This will be printed on sieve analysis report for comparison of material particle size distribution to the sieve requirements ([read more](#)(See 1.8.2.3)).
- # of curves / page: up to 5 sieve tests can be plotted on the same plot. NovoLAB will automatically group the tests based on the desired number.



1.10.2 Lab. Tests Default Settings

Lab. Test Default Settings

This page can be reached from "Tools & Options" tab on the [main toolbar](#)(See 1.1.5) and it is designed to specify the default input data for laboratory tests. Setting default values will facilitate data entry. For example, parameters such as gauge factors and ring factors rarely change in a laboratory unless the equipment are replaced. We recommend you set these default values first thing after you install NovoLAB. This way you don't need to enter these parameters each time you input data for tests.

Default Lab. Test Settings

Triaxial, Direct Shear, Unconfined | Permeability, Field Density, Consolidation, Compaction | Sieve Analysis, Hydrometer

Direct Shear Test

Hor. Gauge Step: 50

Hor. Gauge Factor: 0.01

Vert. Gauge Factor: 0.01

Ring Factor: 1

Diameter / Width (cm): 10

Height (cm): 2

☒ Calculate Effective Area

Unconfined Test

Loading Rate (mm/min) : 1

Vert. Gauge Factor: 0.01

Ver. Gauge Step: 50

Ring Factor: 1

3 Axial Test

Ver. Gauge Step: 50

Vert. Gauge Factor: 0.01

Ring Factor: 1

[Set as default settings](#)

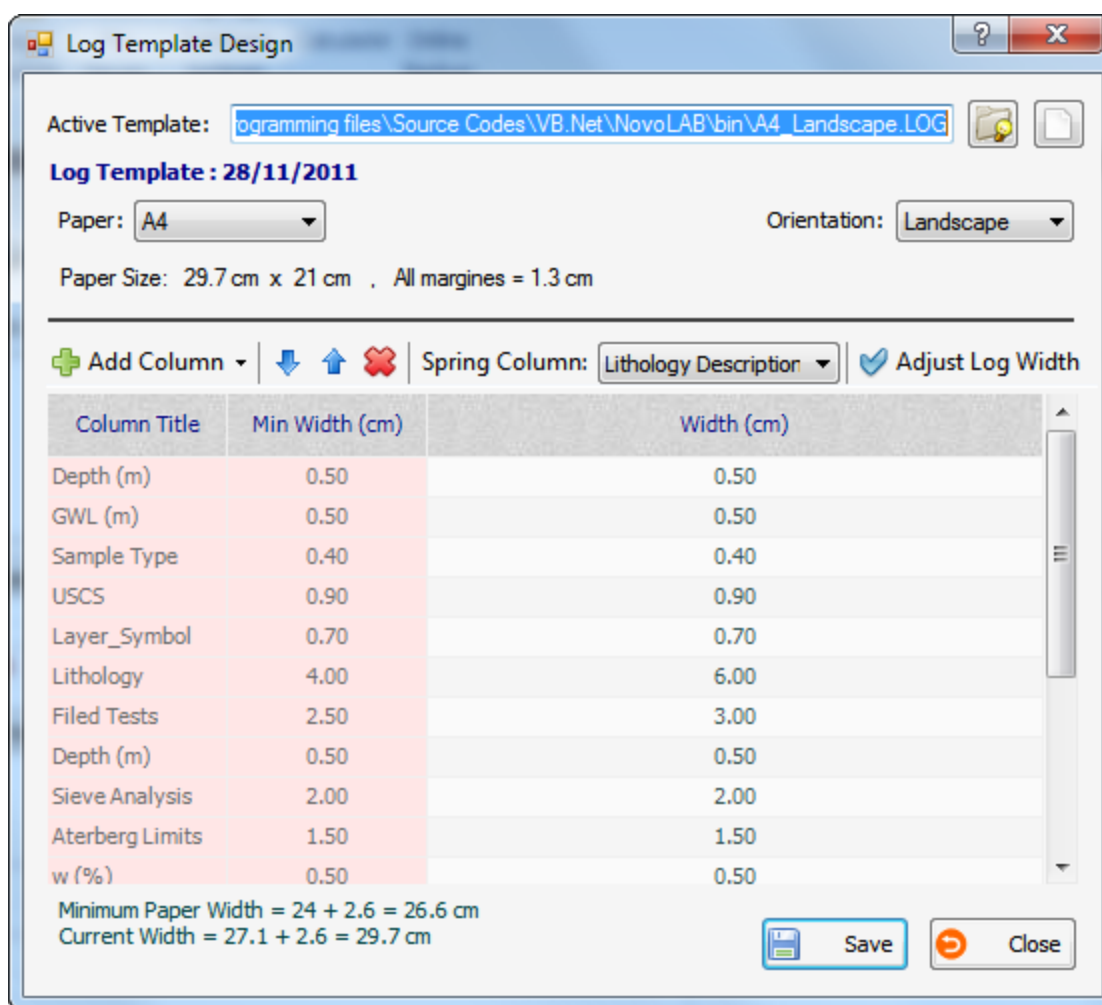
Gauge factors are in 0.01mm
Ring factors are in kgf/div

Close Save

1.10.3 Log Template Designer

Log Template

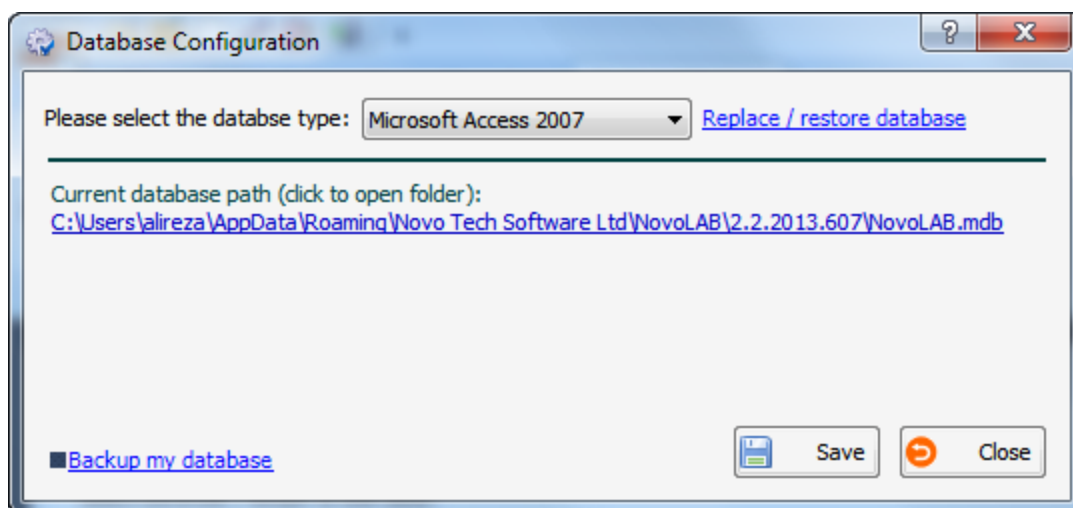
This page is used for designing the boring log template and can be accessed from the Tools & Options tab on the [main toolbar](#) (See 1.1.5). To add a column to the log template click on the green + icon and select the column to add. You can specify the column order and remove a column from the log template. We recommend specifying one column as 'Spring column' so the program can adjust the width of this column to fit the paper size.



1.10.4 Database Settings

Database Configuration

It is necessary to regularly backup the database and be prepared in case of hard disk failure or infection by a computer virus. By having a backup of your database you will be able to use the database by reinstalling NovoLAB. For this purpose click on "Database Configuration" from the "Tools and Options" menu on the [main toolbar](#) (See 1.1.5). The following page will appear:



NovoLAB comes with Microsoft Access database, so please do not change the database type without consulting Novo Tech technical team.

Preparing a Backup

Click on the link [Backup my database](#) in the bottom left of your screen. Save the back up file in location of you choice. All your project data is stored in this database file. We recommend you save the backup file on a CD or flash drive, it is recommended to save the backup file in a folder with a name that indicates the backup date.

The second method is to click on the path shown below the "Current database path" (see the above screenshot). This will open the folder; now you can easily copy the database file to your desired location.

Database Restore

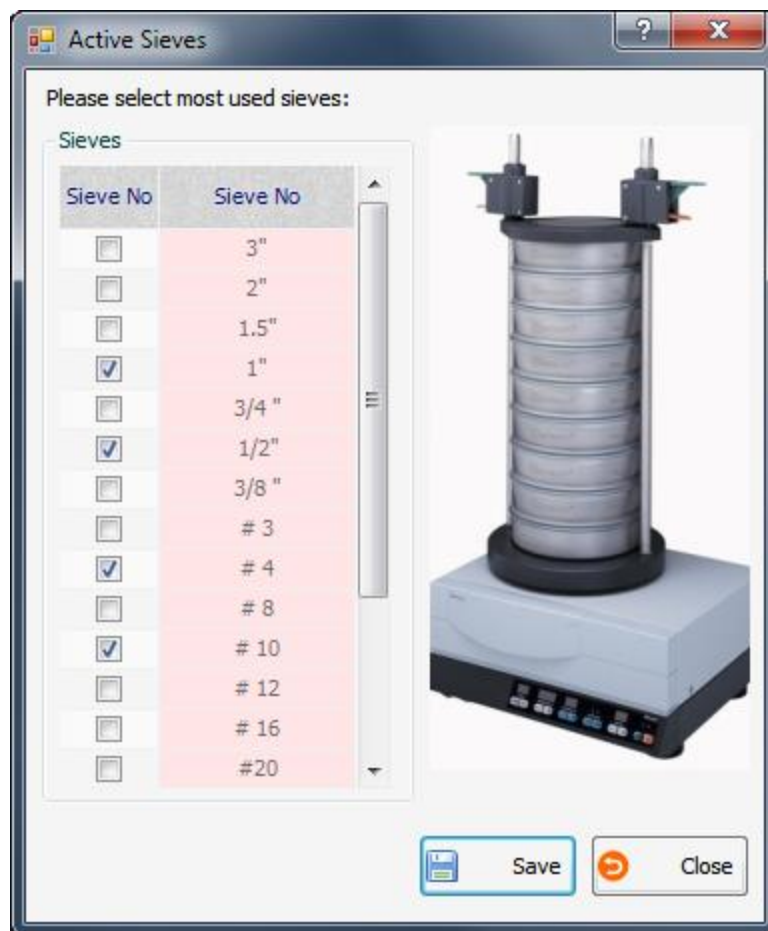
If you want to restore your data, click on the link [Replace / restore database](#) in the upper right of your screen and locate where the backup file of your database is saved. NovoLAB will replace the existing database with your backup. Please note that the actual database file extension is **.mdb** and the extension of the database backup file is **_mdb**.

1.10.5 Active Sieves

Active Sieves

This page is used to specify the sieves you use in your laboratory. To access this page click on "My Sieves" buttons from the "Tools and Options" menu on the [main toolbar](#) (See 1.1.5).

Although NovoLAB database includes a complete list of all standard sieves, if you don't use all these sieves in your laboratory you can deselect them from this list. The advantage is that on sieve analysis page, you can select to show the "active sieves" only; this will ease data entry.



1.10.6 Windows Calculator

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Calculator

In order to open Windows calculator click on Settings and Tools menu from the main toolbar, and click on Calculator button.

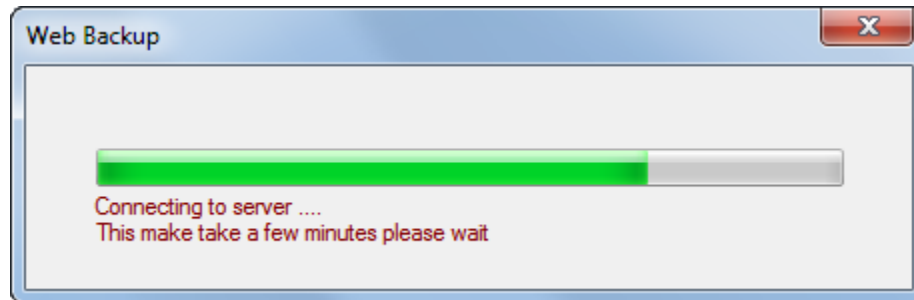
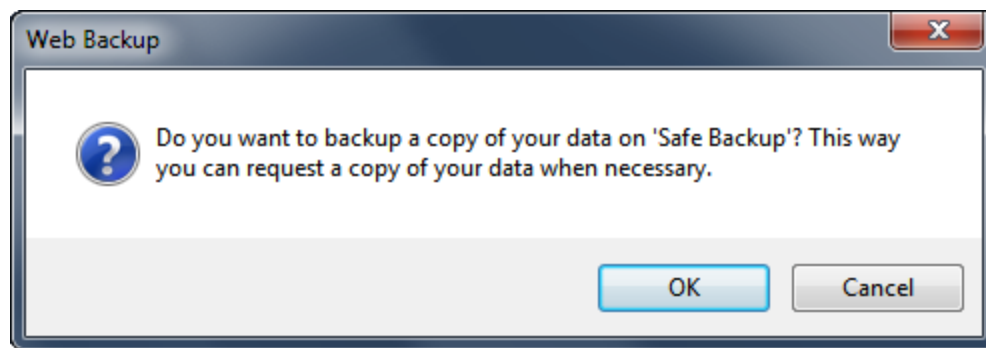
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1.10.7 Online Backup

Online Backup

Users can backup a copy of their data on Novo Tech web server. In case you loose your data you can ask us for a copy of the file; you can then [restore](#)(See 1.1.8) your database.

Disclaimer: You are not charged separately by Novo Tech for the Online Backup feature. We do not guarantee your data file will be available upon request (in case of server failure, etc.), however, we consider this as an additional factor of safety that helps our users to restore their data if they choose to leave a copy of their database on our server. This feature is currently free, and optional.



2. Online Resources

2.1 Novo Tech Website

<http://www.novotechsoftware.com>

2.2 NovoLAB Updates

<http://www.novotechsoftware.com/updatelogs/novolab.txt>

2.3 Other Novo Tech Solutions

<http://www.novotechsoftware.com/products/>

2.4 Contact Us

<http://www.novotechsoftware.com/contact-us/>

3. Annex

3.1 Contact Us

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Contact Us

Should you have any questions or comments please email us at support@novotechsoftware.com or leave us a message [online](#).

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