

Pebble Geo User Guide

V1.2

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Introduction

Pebble Geo is a simple, Windows desktop application for producing borehole logs from Excel and AGS data formats.

Our intention is that you will be able to pick up and use the software with no training required. However, just in case we haven't quite reached this ambition yet, we have put together this guide to help you.

The software is a collaborative project founded by Ben Wood, Tracee Findlater and Tanya Richmond under the trading name Pebble Geo. The team has extensive experience in developing software solutions for the geosciences.

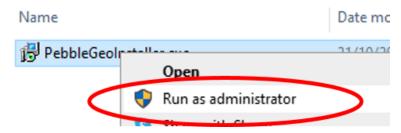
You can find further information about the project, and sign up to the mailing list, on our website www.pebblegeo.com

You can also reach us by email hello@pebblegeo.com

Follow our page on LinkedIn for latest updates www.linkedin.com/company/pebblegeo/

Installing Pebble Geo

Download the installer for Windows from www.pebblegeo.com. You do not need to purchase a licence key to do this. The installer file is called PebbleGeoInstaller.exe and double-clicking on this file will begin the installation process. If you experience any issues at this stage, try using Right-click > Run as administrator.



You may be presented with security messages like the examples below, but the exact wording will depend on your version of Windows. If you see a blue blocking message, click on "Show Info" or "Show More" to expand the options. Click through these security screens to confirm that you trust the application.

User Account Control

Do you want to allow this app from an unknown publisher to make changes to your device?

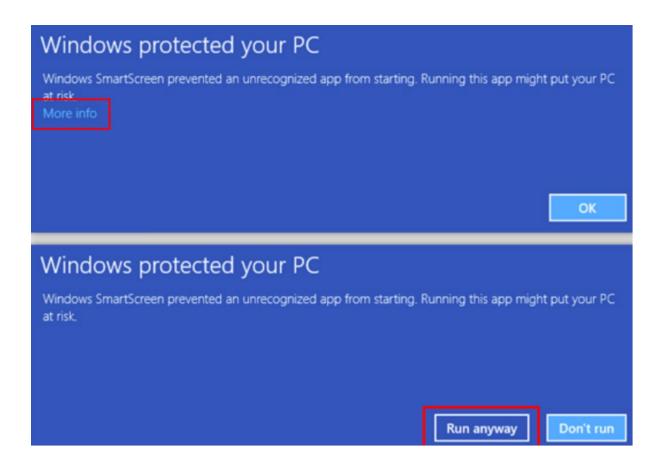
PebbleGeoInstaller.exe

Publisher: Unknown

File origin: Hard drive on this computer

Show more details





Next, read and accept the license agreement. Note that Pebble Geo uses a number of Open Source software libraries as linked libraries, so you are also accepting these standard third-party licenses as part of the process.



Finally, you will be prompted to choose a folder location, and specify whether or not you would like a shortcut created, then click "Install". The install process will normally take less than a minute to complete.

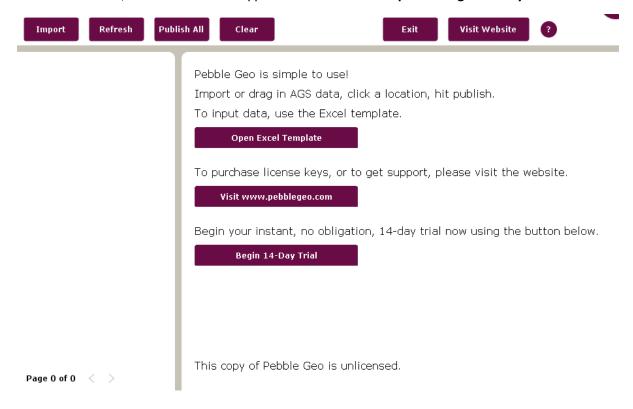
Licensing Pebble Geo

Run Pebble Geo from the desktop shortcut, or from the Windows start menu.



The first time Pebble Geo is run it will be in **unlicensed** mode. The unlicensed mode will allow AGS and Excel files to be imported and the summary information will be visible, but it will not allow you to publish locations (boreholes, trial pits) to pdf logs. The publish button will still be enabled, but will only produce a standard, sample log in order that you can see an example of the output from Pebble Geo.

In unlicensed mode, the home screen will appear as follows. Note the option to begin a 14-day trial.



Trial Licence

A trial license is the perfect way to explore the full functionality of the software and decide if it is fit for purpose. A 14-day, no-cost, no-obligation trial can be enabled immediately from within the software itself. You will not have to enter any information in order to activate the trial.

Please note: only one trial licence can be issued to you, so it is important not to begin the 14 day trial period until you are ready to try the software out fully.

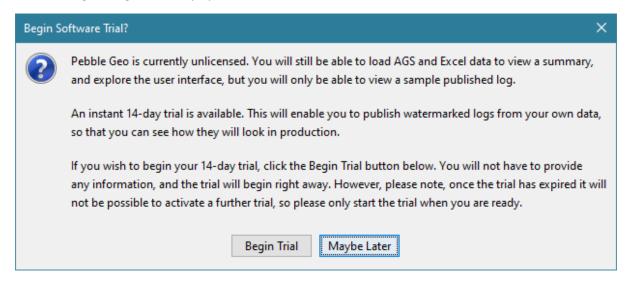
Please note: the trial license enables both the Excel and AGS capabilities of Pebble Geo so that you can explore the full capability of the software.

Clicking on the **Begin 14-Day Trial** button on the home screen:

Begin your instant, no obligation, 14-day trial now using the button below.

Begin 14-Day Trial

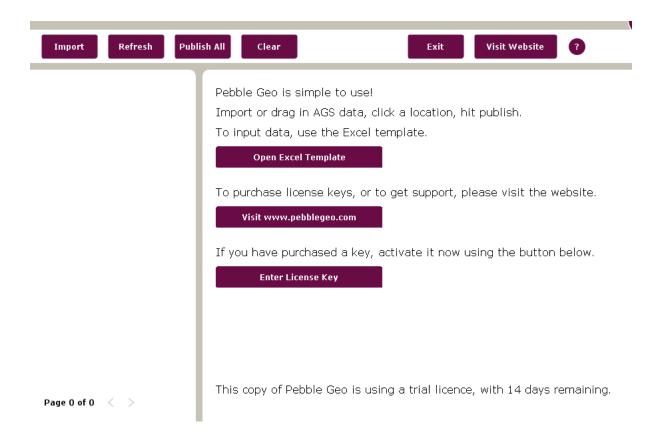
The following message will be displayed:



Clicking the **Begin Trial** button will prompt to restart Pebble Geo. The next time Pebble Geo starts the title bar will have changed to reflect the new license status.



The home screen will also have changed, with a new button to Enter License Key.

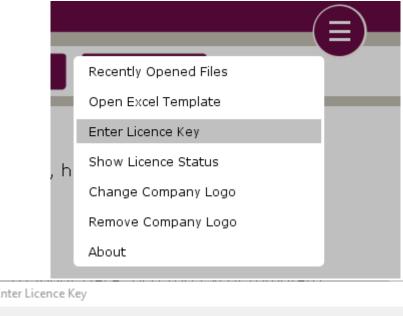


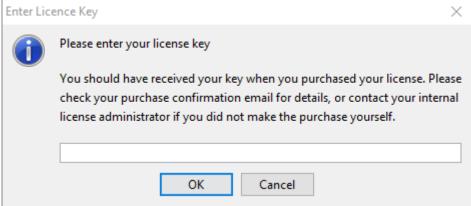
Activating a License

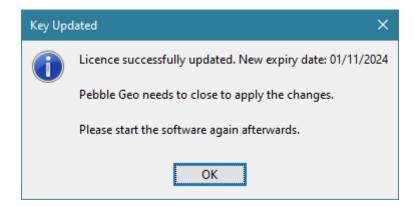
If you just want to see what Pebble Geo can do, you should use the option of a trial license. See above section for how to activate the trial.

Commercial Pebble Geo licenses take the form of simple activation keys which can be purchased at any time and entered into the software. If you are ready to purchase the software please visit www.pebblegeo.com for details of available bundles and prices. You can choose activation keys with support for Excel, AGS or both.

If you purchase a license via the website you will receive an email containing an activation key. The key is in the form of a string of characters, which you must enter in its entirety within Pebble Geo itself. You can either use the button **Enter License Key** on the home screen (see above) or use the menu option **Enter License Key**.







If you have any difficulties with this step, make sure that you have copied the activation key exactly, and there are no leading or trailing spaces or extra characters, and try inputting it again. If the problem persists, please contact support.

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When you restart Pebble Geo after entering an activation key the title bar will give you information on the updated license status. The exact message will depend on the license type you have purchased.

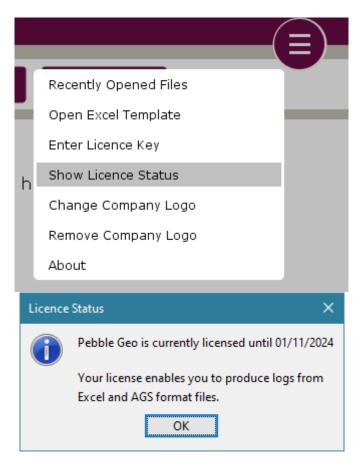


Note that there are three types of licenses available;

- (1) Excel this level allows you to publish logs from data entered into a custom Excel template.,
- (2) AGS this level allows you to publish logs from data imported from an AGS 3 or AGS 4 data file,
- (3) Excel + AGS this level allows you to publish logs from both Excel and AGS formats.

Please note: it is not possible to change/upgrade your license type after purchase. If you need additional functionality in the future you will need to purchase a new, separate activation key.

You can check the current status of your license at any time using **Show Licence Status** option under the main menu.

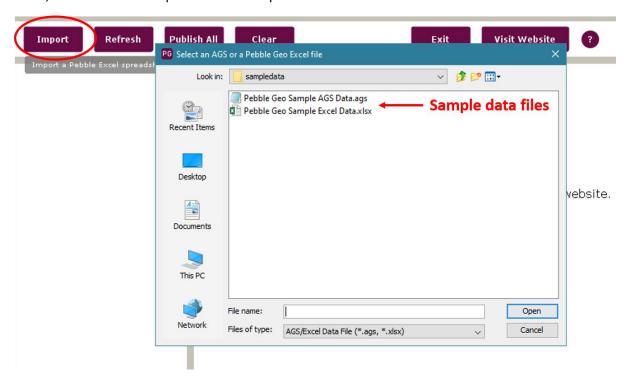


Importing Data

Pebble Geo supports the following data formats:

- Custom Excel template (included with Pebble Geo)
- AGS 3.x
- ➤ AGS 4.x

Pebble Geo includes basic sample data files (AGS 4 and Excel). After starting the software, you can access these by clicking the **Import** button in the main toolbar. Pebble Geo will open the file browse dialog in the **sample data** folder, which contains a sample Excel and a sample AGS 4 data file.



Importing AGS and Excel Files

To load an Excel or AGS file, click on the **Import** button in the toolbar and browse for the file, or simply 'drag-and-drop' the file anywhere on the Pebble Geo user interface.

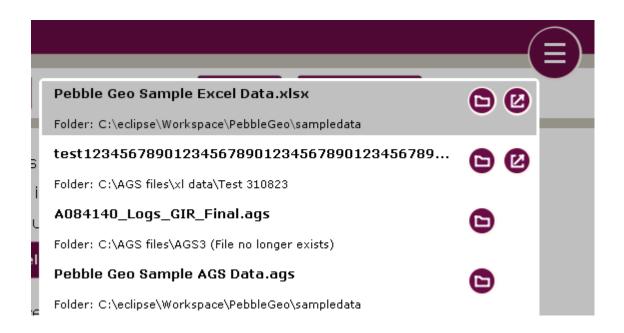


Please note: loading a data file will instantly replace any data that you have currently imported within the session. You cannot view the contents of two data files at the same time. Importing data into Pebble Geo will never affect the data in the actual data files.

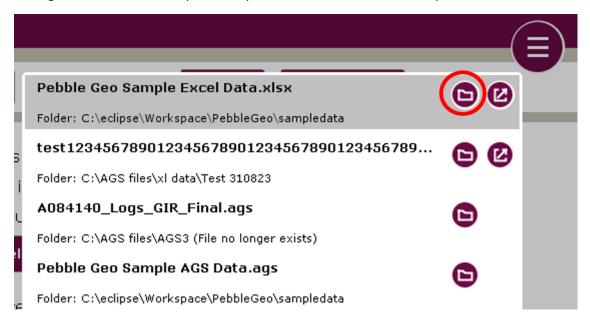
Importing Recent Files

You can quickly import data files that you have imported previously using the **Recently Opened Files** option under the main menu. This menu option remembers up to ten previously-loaded files.

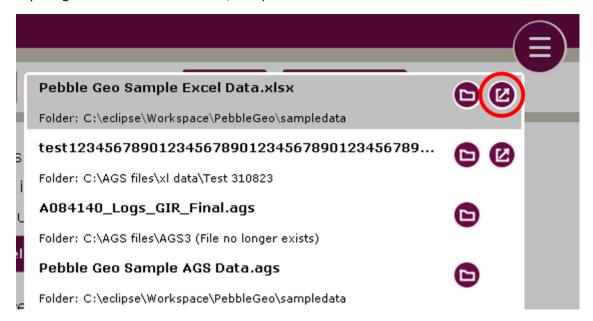
A sub-menu will appear:



Clicking on a **folder button** will open the respective folder in a new Windows Explorer window.

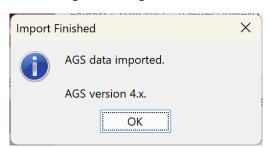


Clicking on the **open file** button, will give you two options, opening the file just in Excel, or opening it in Excel and importing it to Pebble Geo. Please note, this option is not available for AGS files.



Clicking on a file name will just import the data file into Pebble Geo.

Depending on the size and complexity of the data, importing data files may take a few seconds. When the data is loaded you should see a confirmation message something like this.



When loading an AGS data file, the message will inform you whether the file is AGS 3.x or 3.x.

Clearing the Session

You can clear all data in the current session by clicking the Clear button in the main toolbar. This action **does not** delete the original data from the data file, it simply clears the Pebble Geo session.



Troubleshooting Data Imports

Pebble Geo may become unresponsive whilst loading large or complex files. Please wait for the confirmation message before clicking any further buttons. Imports should take no longer than a few seconds, so if the import

takes significantly longer, try re-starting the software. If the problem persists your data file may be incompatible. Contact support for assistance.

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When loading data from an AGS file, if problems occur you should refer back to the data provider for advice.

When loading data from an Excel template that you have populated yourself, if problems occur due to incorrect or incomplete data entries within the spreadsheet, Pebble Geo should display a general-purpose message to tell you that there was a problem loading the data. If this happens, re-open your spreadsheet and check for errors/inconsistencies in the data inputting.

TIP BOX – likely import problems include:

Non unique LOCA_ID in LOCA worksheet

Blank line above first LOCA_ID

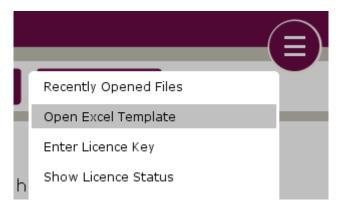
Blank LOCA ID

Non numeric values in numeric fields

Inputting Data Using Excel

You can input location data manually using the specially-designed Pebble Geo Excel template. The template is designed to be simple to use, and mimics the structure of the AGS data standard.

You can access the Excel template from within Pebble Geo. Click the **Open Excel Template** option under the main menu. The template will launch in Excel.



Please note: once the template (XLTX) is launched, make sure to save out a copy as an Excel worksheet (XLSX). It is important to make sure you choose the correct location for storing the file and that you give the file a unique name. This will help to avoid accidental overwriting of the file in the future.

The Excel template is multi-sheet, with each sheet corresponding to a GROUP (table) of the data you would expect to find in AGS 4.x tables.



Further information is available on the >>> INSTRUCTIONS <<< worksheet, including the following snippet:

General Instructions

Use this template to enter location data such as boreholes and trial pits. The template is designed to load easily into Pebble Geo.

Save the template as an Excel Workbook (*.xlsx) with a unique file name using "Save As".

Enter your data into the Excel Workbook and save in the normal way.

Import the Excel Workbook via import or just drag it in. The data will appear within Pebble Geo.

If you need to make edits to the data, simply edit into this Excel Workbook and save. You can then update the data in an existing Pebble Geo session by clicking the Refresh button in Pebble Geo or reimport into a new Pebble Geo session. Borehole logs are created via the Publish button inside Pebble Geo.

AGS 4 and Data Validation Fields

Throughout the template you will see references to AGS 4 fields. These are there to help you understand how the data entry fields relate to the AGS standard fields.

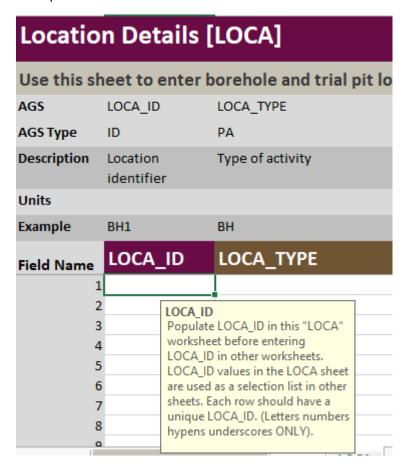
Various legend codes are embedded as data validation lists. When you enter data into certain AGS-aware fields you will have the option to select from a preset list of typical AGS-like values.



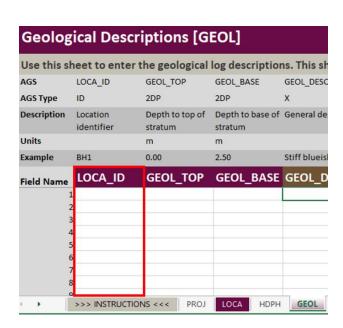
Important Note on LOCA ID

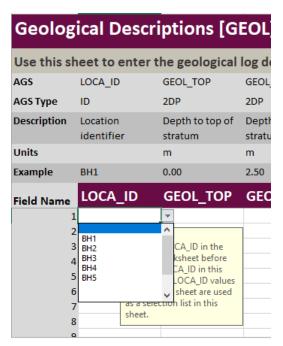
Make sure to input at least one row into the LOCA sheet and save the worksheet.

LOCA_ID can be composed of letters, numbers, hypens and underscores. Other special characters eg & may cause problems and should not be used.



No other worksheet is compulsory, but all completed worksheets, apart from the PROJ sheet, will require you to select a LOCA_ID (1st column), from a drop-down list of values entered in the LOCA worksheet.





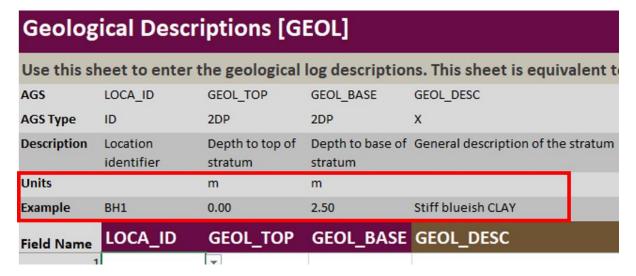
For LOCA_ID, you MUST use a value from the drop down list. However for Excel formatting reasons, the spreadsheet will not force this behaviour.

Mandatory and Optional Fields

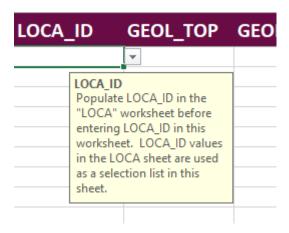
On all completed worksheets, the fields with titles in aubergine are mandatory. Those with brown titles are optional. Only the worksheets needed require completion. For instance, if there is no sample information, all fields in the SAMP worksheet can be left blank.

Information to help data entry

There is also example and unit information on each worksheet, which is intended to clarify the type of data that should be entered into any given field.



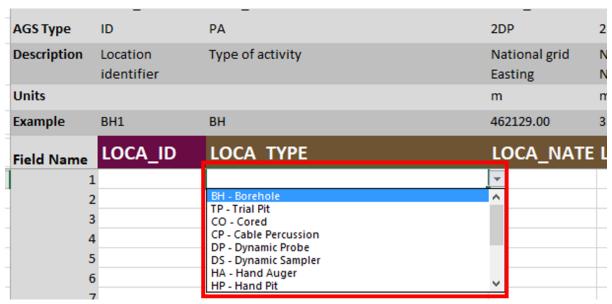
Information boxes, which appear when some cells are active, also give further information about the type of information required:



Functionality to help data entry

Drop down lists

Some fields have drop down lists to facilitate data entry.



In most cases, if there is a drop down menu you MUST select one of the drop down values.

The exceptions are GEOL_DESC (see GEOL_DESC) and LOCA_ID (see Important Note on LOCA_ID).

GEOL_DESC

GEOL_DESC has a drop down list of AGS names but the user can input any text.

The drop down values can be used as "Starter Text" which is then adapted eg "Silty sandy gravelly cobbly CLAY" from the drop down might become "Firm brown silty sandy gravelly cobbly CLAY with cobble sized fragments of asphalt".

Alternatively the user can write the description into the cell without using the drop down values.

Tab between fields

The TAB key can be used to move horizontally between fields.

At the end of each row TAB will take you to the next line

Normal Excel Functionality

Normal Excel functionality can be used to facilitate data entry.

Drag down can be used to get a sequence of borehole numbers

Or to copy the same information

Today's date can be input using control and semicolon (CNTL;)

Cut and Paste

In situations where data is coming from another spreadsheet, cut and paste will work.

However, you are advised to PASTE VALUES, as in some cells pasting everything can overwrite the validation.

Save and Import

Once all the required data has been entered into all the necessary worksheets within the spreadsheet, save the spreadsheet. It is now ready to import into Pebble Geo, in the usual way (drag the file into the software, or click the Import button and browse for the XLSX file).

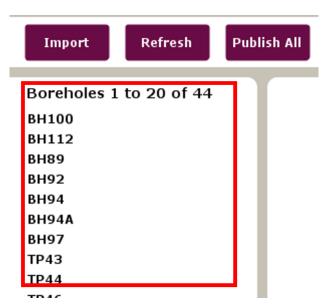
Using the Refresh Button

As you input data into Excel, you can pull this through into Pebble Geo at any time and have the dataset update within the software. Simply save your worksheet in Excel, and then click the Refresh button in Pebble Geo to update the data in the session with your latest changes. In case you need reminding to refresh your data, the Refresh button is highlighted as soon as changes to the spreadsheet are detected by Pebble Geo.

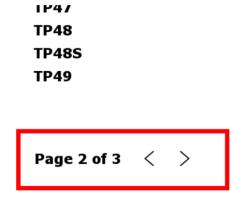


Viewing Location Summary Data

When a data file is loaded, a list of available locations (boreholes, trial pits, etc.) will appear in the panel on the left-hand side of the screen.

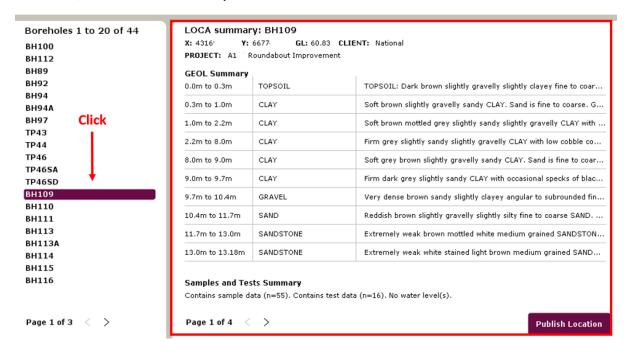


Ten locations at a time are displayed as a list on this panel. The list is displayed in the order the locations appear in the input file. Use the backwards and forwards arrows at the bottom of the panel to move through the contents of the file, page-by-page.



Click on the ID of a location in the list to view summary data in the right-hand panel. The summary shows basic information for the first ten geology intervals in the log, as well as collar information and sample and test counts for the location.

Please note: You cannot edit this data directly within Pebble Geo, it is only for summary purposes. If you need to edit data, use the custom Excel template.



If there is more than one page of downhole summary information, move between the pages using the backwards and forwards arrows at the bottom of the right-hand panel.

SU.ZITI to SU.SZITI COAL Very weak t

Samples and Tests Summary

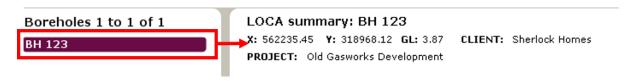
Contains sample data (n=55). Contains test data (n=16). No wa

Page 3 of 4 〈 〉

Publishing Logs

With an AGS or Excel file loaded, locations (boreholes, trial pits, etc.) can be published to PDF logs. Locations can be published individually, or you can publish the entire dataset to PDF in a single action.

To publish an individual location, click on the ID in the left-hand panel to view the summary data in the right-hand panel.



In the summary panel that appears on the right-hand side, click the **Publish Location** button in the bottom right of the panel.

LOCA summary: BH 123

X: 562235.45 Y: 318968.12 GL: 3.87 CLIENT: Sherlock Homes

PROJECT: Old Gasworks Development

GEOL Summary

0.0m to 0.35m	TOPSOIL	TOPSOIL
0.35m to 0.55m	MADE GROUND	MADE GROUND
0.55m to 0.9m	CLAY	Soft brown mottled grey slightly sandy slightly gravelly CLAY. San
0.9m to 1.2m	GRAVEL	Very dense brown sandy slightly clayey angular to subrounded fin
1.2m to 3.4m	SAND	Reddish brown slightly gravelly slightly silty fine to coarse SAND. \dots
3.4m to 4.6m	SANDSTONE	Medium strong thinly laminated white and purple stained light bro
4.6m to 6.8m	SANDSTONE	Extremely weak white stained light brown medium grained SAND
6.8m to 8.1m	SANDSTONE	Medium strong thinly laminated white and purple stained light bro
8.1m to 9.65m	MUDSTONE	Weak thinly laminated greenish grey stained dark reddish brown
9.65m to 9.85m	CHALK	CHALK

Samples and Tests Summary

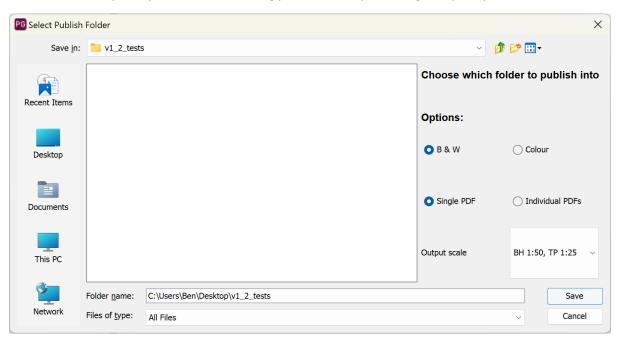
Contains sample data (n=3). Contains test data (n=6). Contains water level(s).



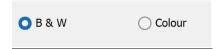
To publish all locations in the dataset, click the Publish All button in the main toolbar.



Clicking a Publish button will open a file browser dialog (shown below). Use this to select the folder to export into. The dialog also provides a number of options on the right-hand panel. Within the session, Pebble Geo will remember which options you selected last, saving you time when performing multiple exports.



B & W / Colour



Pebble Geo comes pre-loaded with a unit/layer colour scheme for the legend column which is based on the British Geological Survey's unlithified deposits coding scheme (see https://nora.nerc.ac.uk/id/eprint/9179/). The default option is to export logs in black & white, but you can select Colour to apply this colour scheme to exported logs.

Example of Colour option	Example of B & W option					

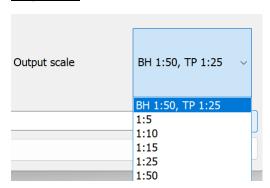
(thickness)			(thickness)		4
(m)	Legend		(m)	Legend	
(1.00)		Sand generic Gravel generic	(1.00)		Sand generic Gravel generic
(1.00)		Graver generio	(1.00)		Graver generic
12.00	alle alle	Peat generic	12.00		Peat generic

Single PDF / Individual PDFs



This option is used by the **Publish All** button. The **Single PDF** option will collate all locations into a single PDF file. The option for **Individual PDFs** will create a separate PDF file for each location. The default is to collate to a single file.

Output Scale



This option controls how many metres of log to display per-page on exported logs (the output scale). The default is to export boreholes at 1:50 (10m per-page) and trial pits at 1:25 (5m per-page). Click the drop-down to select from other presets.

TIP BOX – Units per page (m)

For locations where there is a lot of information, or lots of very thin layers, causing descriptions run into one-another, try using a larger scale by selecting a smaller value for the scale, e.g 1:10.

Published Results

The publish format for Pebble Geo is PDF. If you selected to export individual PDFs for a Publish All operation, or if you are just exporting a single location, the PDF files will be named using the location ID (LOCA_ID), plus a suffix indicating the scale of the log (units per page).



Please note: when publishing logs into a folder, Pebble Geo will overwrite any existing files with the same name.

Please note: Google Chrome does not always render PDF ornaments correctly. Please view logs using a supported PDF viewer such as Adobe Acrobat (free).

When the publish operation is complete, Pebble Geo will either open the PDF log, or (in the case of a **Publish All** operation), will open a new Windows Explorer window showing the folder containing the PDFs. A typical log looks like the example below (real-world example data downloaded from the British Geological Survey digital accessions open database, some details obscured).

PG Pebble Geo				Borehole Log									BH1 Sheet				
123 Main Street Anytown			Hole Type IP+CP+RC	Easting 431690.05							Northing 667747.45		Ground Level (m) 60.83	Scale 1:50			
Theshire AB12 3CD												Project ABC123		Start Date 2019-05-02	End Date 2019-05-13		
Client Nation		ads			Contractor The Soil Contractors							s		Consultant The Soil Engineers			
Inst/	ter els	S	ampl	es and Te	sts	Coring			Frac	Level	Depth	Strata					
Inst/ Backfill	Wa Lev	Depth (m)	Type/ Ref	Res	sults	Core Run	TCR (%)	SCR (%)		FI	(m)	(m)	Legend		Description		
		0.00 0.00 0.00 0.00 - 0.30 0.30 0.30 0.30 - 1.00 0.50 0.50 1.00 1.00 1.00 1.00 1.20 - 1.65 1.20 - 1.70 2.00 2.00	PID D 1 2 8 3 PID D 4 ES 5 PID IVAN ES 6 PID IVAN D 8 ES 9 T D 10 ES 13	<0. <0. N=6 (1	1ppm 2.4 8.8 1ppm 41 .1.1.2.1.2)						60.53 59.83	(0.30) 0.30 (0.70) 1.00 (1.20)		sand. Soft brown slightly is angular to subrouse to subrouse content. Safine to coarse of sa subrounded of san	gravelly sandy CLAY. unded fine to coarse of grey slightly sandy slight is fine to coarse. Grandstone and mudstone distone.	ghtly clayey fine to coarse. Sand is fine to coarse. Grave sandstone and mudstone. ghtly gravelly CLAY with low avel is angular to subrounde. Cobbles are subangular to	- 0.5 - 1.0 d - 1.5 - 2.0
- - - - - - -		2.20 2.20 2.20 2.20 - 2.65 3.00 3.00 3.00 3.20 3.20 - 3.65	PID D 15 ES 16 U 14 PID D 17 ES 18 SPT D 19	<0.	4.4 1ppm 5.7,6.6,9,8)							2.20		Sand is fine to coal of sandstone and n sandstone.	rse. Gravel is angular to	ELAY with low cobble content o subrounded fine to coates subangular to subrounded of lium	L .

Collar Information

The header of the log displays key collar information including LOCA_ID / HOLE_ID, scale information, page number, coordinates, and so on. If you have set a logo image, this will appear in top left.

Inst / Backfill

Displays backfill intervals and pipe details, based on AGS BKFL_LEG and PIPE_TYPE values.

Water Levels

Displays water strike and rest levels, based on AGS WSTG_DPTH, WSTD_POST and WSTD_NMIN values.

Samples and Tests

Displays sample information based on AGS SAMP_TOP, SAMP_BASE and SAMP_TYPE / SAMP_REF values. Also displays certain test result data based on AGS ISPT_REP, IPID_RES and IVAN.IVAN_IVAN values.

Coring

Displays rock quality data by depth in the case of logs containing any rotary core sections.

Frac

Displays fracture spacing data by depth, if available.

Level

Displays elevation levels, in metres, for the base of each layer in the GEOL_LEG (geology) log.

Depth (thickness)

Displays vertical depth, in metres, to the base of each layer, and the (thickness) of each layer in the GEOL_LEG (geology log.

Legend

Displays ornamented layer for the GEOL_LEG (geology) log.

Description

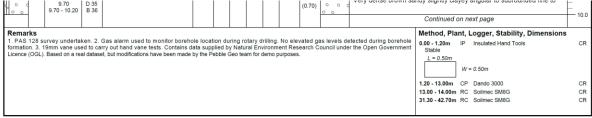
Displays text descriptions for each layer based on GEOL_DESC, GEOL_GEOL and DETL_DESC values. GEOL_DESC is always displayed at the top of the text box, together with [GEOL_GEOL] in square brackets (if available). DETL_DESC values (if available) are displayed based on their depth values, unless space is limited, in which case they will be appended underneath the main GEOL_DESC text.

Remarks

Remarks (based on LOCA_REM) and logger information (based on HDPH_LOG) appear at the bottom of the page. Remarks are truncated if insufficient space is available (i.e. in the case of very long remarks).

Method, Plant, Logger, Stability, Dimensions

In the bottom right corner a box displays exploratory hole depth related information, including method, plant, logger, and so on. In the case of trial pits this box also shows hole dimensions.



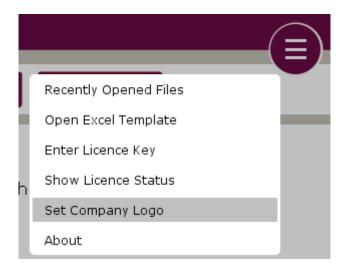
Created using Pebble Geo

AGS 3.x, AGS 4.x and Trial Pits

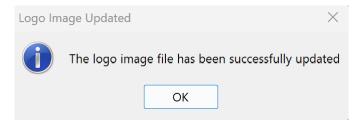
Pebble Geo uses a default log template, meaning there is no extra configuration work to do before publishing a log from your data. The same layout is applied to all logs, whether the input is AGS3, AGS4 or Excel, and regardless of the drilling method.

Setting a Custom Logo

You can use your company logo at the top-left of the logs. Click the **Set Company Logo** option from the main menu.



Browse for an image file (PNG or JPEG/JPG format only). A confirmation message is displayed.



Once set, the company logo can be quickly and easily removed or replaced at any time using the **Change Company Logo** and the **Remove Company Logo** options under the main menu.

