# Code characterization

#### General description:

Code that reads multiple Excel files (input files) and writes into a single predefined half empty excel file (output file).

The code will extract values and text from multiple Excel files and export them to sheets at the output Excel file. Each input excel file will result in a new sheet at the output Excel file.

All text search should not be Case or space sensitive – example: CHSC=ch sc

All variables should be made easy to change manually in the future.

Input files: multiple Excel files containing information on several sheets.

Output file: single excel file with multiple sheets.

2 example Excel files are attached: 1 input file: EEN-24, 1 output file: InSitu\_results Example.

1 condition table is also attached: Table1 – the table will change and grow over time

# <u>Iteration over 1 input file</u>

#### 1. Create first sheet in output file

Open first Excel file from a defined folder. The folder will contain multiple Excel files (the code will run all

Excel files in a certain folder. path to the folder should be easy to define at the beginning of the code)

Open Sheet named "Point" (sheet name should be available for editing in the future)

Look for cell "Borehole" (cell name should be available for editing in the future)

Extract Text from the cell under "borehole" – Example: EEN-24

Open new sheet at the output file and name it EEN-24

#### 2. Extract data from sheet "POINT"

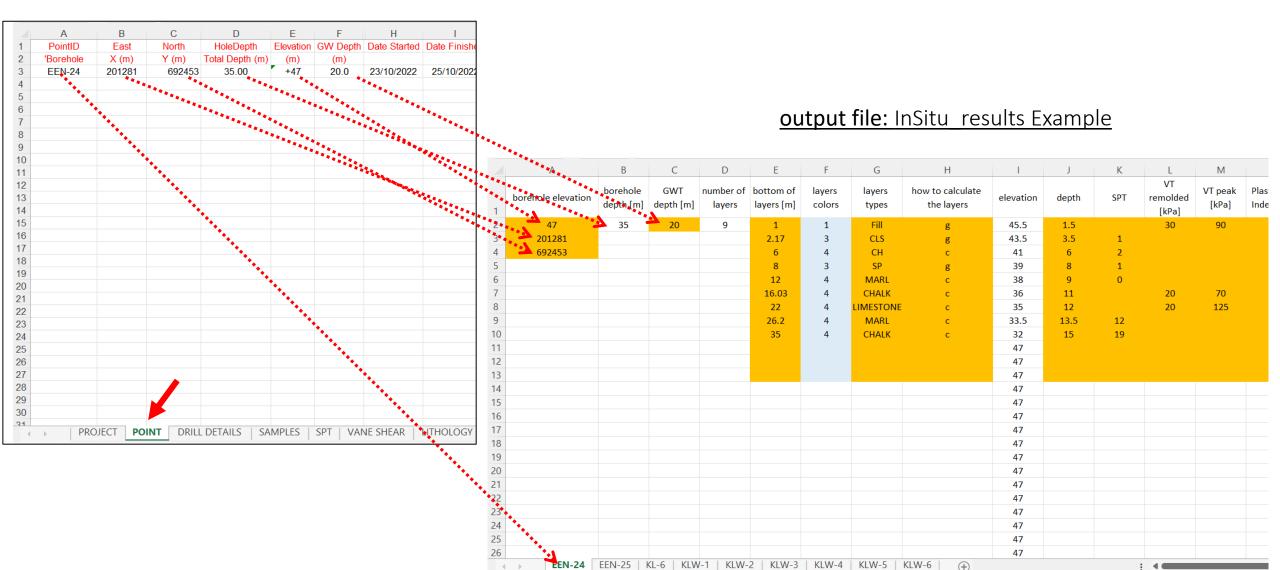
Look for cell with the text: x (m) (cell name should be available for editing in the future)

Extract the value from 1 cell under to cell A3 in sheet EEN-24

Extract the rest of the needed values to the appropriate cells in sheet EEN-24 – visual description in the following page

# Extract data from sheet "point"

## input file: EEN-24



#### 3. Extract data from sheet "LITHOLOGY"

Look for cell with the text: Bottom (cell name should be available for editing in the future)

Look for cell with the text: USCS (cell name should be available for editing in the future)

Extract layer names and bottoms: Extract the values from the columns under Bottom and USCS

If values in column USCS appear in two consecutive cells or more, only the last values of column Bottom and USCS will be transferred to the output file.

<u>Determine values at column layers colors in output file:</u> The values will be determined according to predetermined condition table that we will provided - table matching between values from column USCS to numbers (the condition table values should be available for editing in the future). The numbers will be inserted to the column under layers colors, respectively to the columns in USCS column.

<u>Determine values at column how to calculate the layers in output file</u>: The values will be determined according to predetermined condition table that we will provided - table matching between values from column USCS to letters (the condition table values should be available for editing in the future). The letters will be inserted to the column under how to calculate the layers, respectively to the columns in USCS column.

# Extract data from sheet "LITHOLOGY"

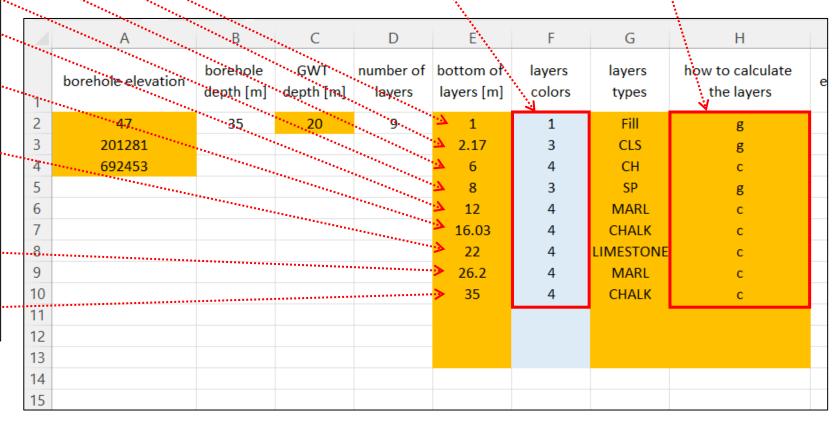
## input file: EEN-24, sheet LITHOLOGY

4	А	В	С	D	Е
1	PointID	Depth	Bottom	Graphic	USCS
2	'Borehole	(m)	(m)		
3	EEN-24	0	1		FILL
4	EEN-24	1	2.17		CLS
5	EEN-24	2.17	4.45		CH
6	EEN-24	4.45	6		СН
7	EEN-24	6	6.03		SP
8	EEN-24	6.03	8		SP
9	EEN-24	8	10.02		MARL
10	EEN-24	10.02	12		MARL
11	EEN-24	12	14.05		CHALK
12	EEN-24	14.05	16		CHALK
13	EEN-24	16	16.03		CHALK
14	EEN-24	16.03	18		LIMESTONE
15	EEN-24	18	18.45		LIMESTONE
16	EEN-24	18.45	20.07		LIMESTONE
17	EEN-24	20.07	22		LIMESTONE
18	EEN-24	22	22.45		MARL
19	EEN-24	22.45	24		MARL
20	EEN-24	24	24.06		MARL
21	EEN-24	24.06	26		MARL
22	EEN-24	26	26.13		MARL
23	EEN-24	26.13	26.2		MARL
24	EEN-24	26.2	28		CHALK
25	EEN-24	28	28.32		CHALK
26	EEN-24	28.32	35		CHALK
27					
28					

Layer colors values will be determined according to the values in column USCS in a predetermined condition table

Layer colors values will be determined according to the values in column USCS in a predetermined condition table

#### output file: InSitu results Example



#### 3. Extract data from sheet "SPT"

Look for cell with the text: Nspt (cell name should be available for editing in the future)

Look for cell with the text: Depth (cell name should be available for editing in the future)

Extract the values from the columns under Nspt and Depth

Insert Nspt values in a column under the cell with the text SPT (at K column in the Insitu results Example)

Insert Depth values in a column under the cell with the text depth (at J column in the Insitu\_results Example)

Values from SPT column and depth column will be inserted at the same row, and the same order the were extracted.

#### 4. Extract data from sheet "VANE SHEAR"

Look for cell with the text: Vane Undisturbed, Vane Remolded and Depth (cell names should be available for editing in the future)

Extract the values from the three columns under those values

Deciding where to insert values: look for the closest value between the depth column in the output file (was created while inserting data from "SPT" sheet at the last stage) and the depth column in the "VANE SHEAR" sheet in the input file, insert the Vane Undisturbed and the Vane Remolded values at the appropriate row in the input file.

# Extract data from sheet "SPT"

# input file: EEN-24, sheet SPT

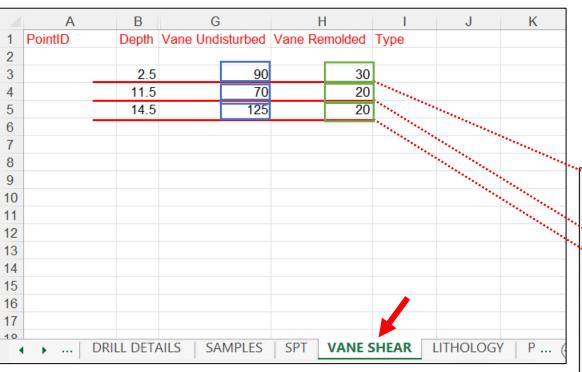
4	В	С	D	Е	F	G	Н
	Depth	Blows 1st	Blows 2nd	Blows 3rd	Total penetration	Nspt	Penetration
2							
3	2	5	5	5	45	10	30
1	4	3	4	6	45	10	30
5	6	7	7	7	45	14	30
3	8	7	10	15	45	25	30
7	10	20	30	50	45	80	30
3	12	20	30	45	45	75	30
)	14	50	0	0	5	100	5
0	16	50	0	0	3	100	3
1	18	<b>2</b> 6	27	23	45	50	30
2	20	50	0	0	7	100	7
3	22	47	20	33	5	100	5
4	24	50	0	0	6	100	6
5	26	50	0	0	13	100	13
6	28	9	20	50	32	100	17
7	30	50	0	0	8	100	8
8	32	50	0	0	12	100	12
9			********				*******
0				· · · · · · · · · · · · · · · · · · ·	******		******
1					************	****	
2							******
3							
4							
5							
6							
7							
8							
9							
0							

## output file: InSitu results Example

		Н	1	J		K	L	M	N	0
	1	how to calculate the layers	elevation	depth		SPT	VT remolded [kPa]	VT peak [kPa]	Plasticity Index [%]	Pressumeter test [MPa]
	2	g	45	2		10	30	90		
	3	g	43	4		10				
	4	С	41	6		14				
	5	g g	39	8		25				
	6		37	10		80				
٠,	7	С	35.	12		75	20	70		
		ËC	33	14		100	20	125		
	9	C	31	16		100				
	10	С	29	18		50				
	11		27	20		100				
	12		25	22		100				
	13		23	24		100				
	14		21	26		100				
	15		19	28		100				
	16		17	30		100				
	17		15	32		100				

# Extract data from sheet "VANE SHEAR"

## input file: EEN-24, sheet VANE SHEAR



## output file: InSitu results Example

1	H H	1	J	K	L	M	N	0
.1	how to calculate the layers	elevation	depth	SPT	VT remolded [kPa]	VT peak [kPa]	Plasticity Index [%]	Pressumeter test [MPa]
2	g g	45 <u>.</u>	2	10	30	90		
3	g.	43	4	10				
4		41	6	14				
5	g	. 39	8	25				
6	C	37	10	80				
7	С	· 35 · 7	12	75	20	70		
8	Е с	337	14	100	20	125		
9	С	31	16	100				
10	С	29	18	50				
11		27	20	100				
12		25	22	100				
13		23	24	100				
14		21	26	100				
15		19	28	100				
16		17	30	100				
17		15	32	100				