

Instructions on How to Read ACS Geography Names into Summary File Tables Using Excel

It is strongly advised that data users visit the ACS Summary File GitHub wiki page at <https://github.com/uscensusbureau/acs-summary-file/wiki> for notes on data, geography, variable changes, example code and other important general information about the table-based ACS Summary File format.

This document uses an example of Table B01001 from the 2021 American Community Survey (ACS) 1-year estimates to merge the geography file with the data table for the Table-Based ACS Summary File format. Estimates and margins of error for each data table are combined into one file, while all geography identifiers and labels are combined into another file. The data user must then merge the data table and geography file together using programs like SAS, Python, or Excel, which is explained below.

The steps below are used with the data released in the table-based format from 2021. These steps are the same for all ACS data tables. These steps are very different from the steps used to combine files from original Sequence-Based Summary File format. For more information about the Sequence-Based Summary File format, visit <https://www.census.gov/programs-surveys/acs/data/summary-file/sequence-based.html>.

To read the ACS Summary File into Excel, users will need two files.

1. Summary File data tables
2. Geography File

Accessing the Summary File Tables:

1. Visit the ACS Summary File page at <https://www.census.gov/programs-surveys/acs/data/summary-file.html>

ACS Summary File

The American Community Survey (ACS) Summary File is a unique data product that includes all estimates and margins of error (MOE) from the [Detailed Tables](#) for all geographies published for the ACS. The ACS Summary File allows data users to download statistics for a large number of tables and geographic areas. Currently, there are two methods for downloading the summary file: the new Table-Based Format and original Sequence-Based Format.

Table-Based Format

For the 2018 data release, the Census Bureau tested a new, Table-Based Format for the ACS Summary File. This format groups the estimates and MOE by table ID, removing the need to merge these files. That is, a file is posted for each table containing both the estimates and MOE for all available geographies. Data users only need to merge in geography labels to create complete tables.

The Table-Based Format is the recommended format for the 2021 data release, and it will be the only format starting with the 2022 data release. Check out the [Getting Started](#) and [data year](#) tabs below for information and resources. The resources include instructions for merging the geography labels with each table via Excel or programs like SAS and Python.

Please visit the Census Bureau's [Developer's Forum](#) through Slack to share feedback on the Table-Based Format in the "acs-summary-file" channel. We appreciate hearing about what you like or what we can improve upon.

Changes for the 2021 Data Release

The 2021 data release is the final release of the original Sequence-Based Format; it is available for years 2005 through 2021. More information, including data, instructions and example programs are located on the [ACS Summary File Sequence-Based Format](#) page. Starting with the 2022 data release, the Table-Based Format will be the only format available.

[Getting Started](#) 2021 2020 2019 2018 2017 to 2005

Getting Started

The Table-Based ACS Summary File contains three file types:

Table Labels - Description of each line item in a table

2. Choose your year of interest. In this example, we're choosing 2021.

Changes for the 2021 Data Release

The 2021 data release is the final release of the original Sequence-Based Format; it is available for years 2005 through 2021. More information, including data, instructions and example programs are located on the ACS Summary File Sequence-Based Format page. Starting with the 2022 data release, the Table-Based Format will be the only format available.

Getting Started **2021** 2020 2019 2018 2017 to 2005

Getting Started

The Table-Based ACS Summary File contains three file types:

Table Labels - Description of each line item in a table

Example File Name: ACS2019_Table_Shells.csv
Example: B01001_003 = "SEX BY AGE - Total Males Under 5 Years"

3. Select the appropriate ACS Summary File data (1-Year or 5-Year). In this example, we selected the 2021 1-Year Summary File. This will direct you to the FTP site that houses the data and documentation.

Getting Started **2021** 2020 2019 2018 2017 to 2005

2021

2021 ACS 1-year Estimates	2021 ACS 5-year Estimates
1-Year Summary File (Table-Based)	5-Year Summary File (Table-Based)

Find 2005-2021 Sequence-Based Format.

Geography Files

- 1-year Geography File [1.0 MB]

Table Shells

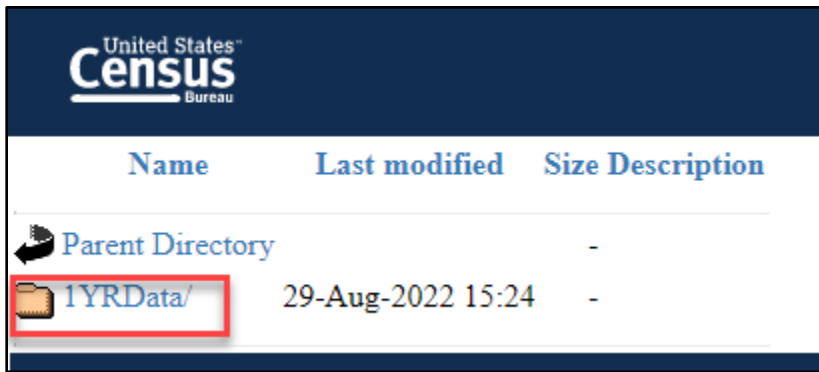
- 2021 Table Shells [6.8 MB]

4. Select the data/ folder to locate all 1-year data tables.

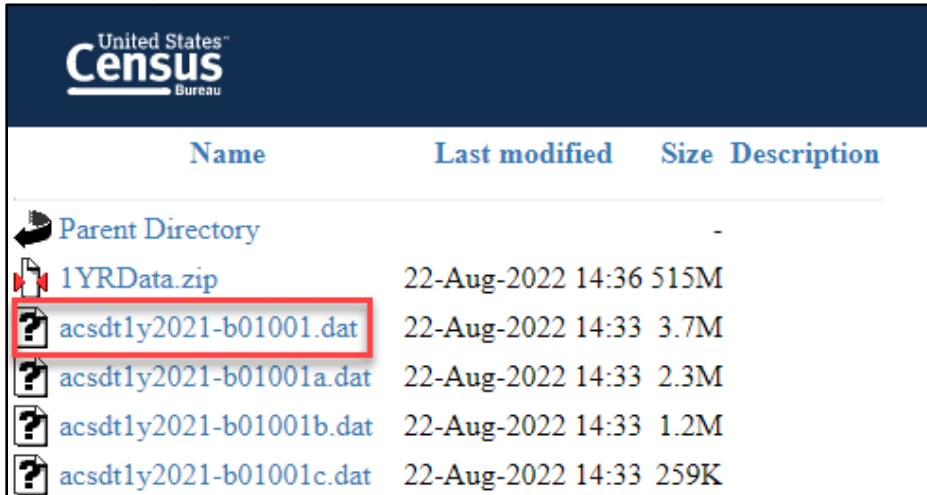
United States
Census
Bureau

Name	Last modified	Size	Description
Parent Directory		-	
data/	10-Aug-2022 09:43	-	
documentation/	29-Aug-2022 15:47	-	

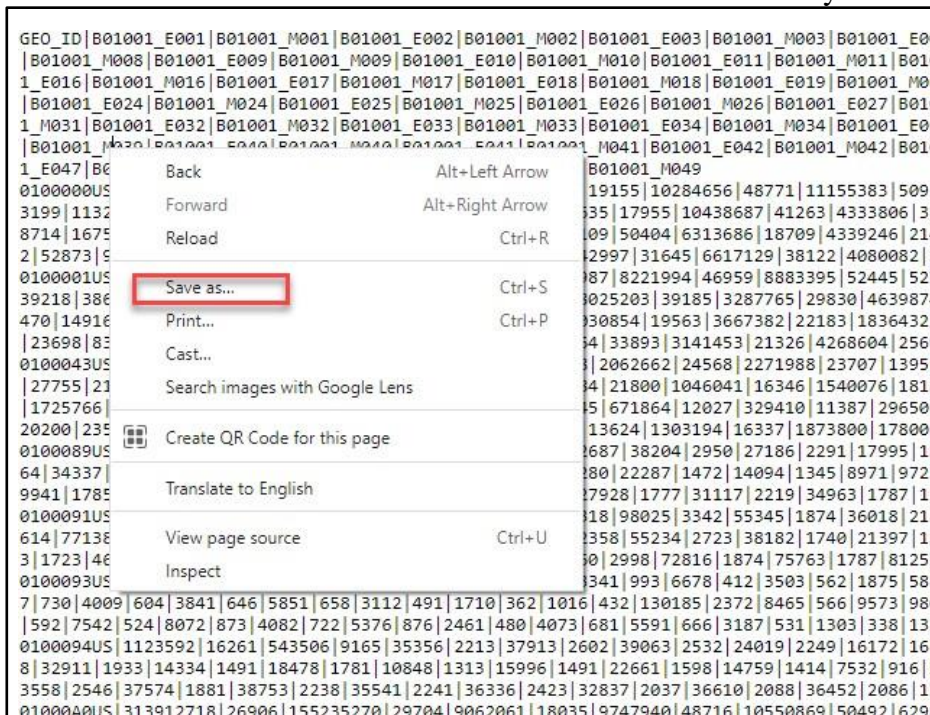
5. Select the 1YRData/ folder



- Choose a data table file. In this example, we're looking for **Table B01001 (acsdt1y2021-b01001.dat)**.

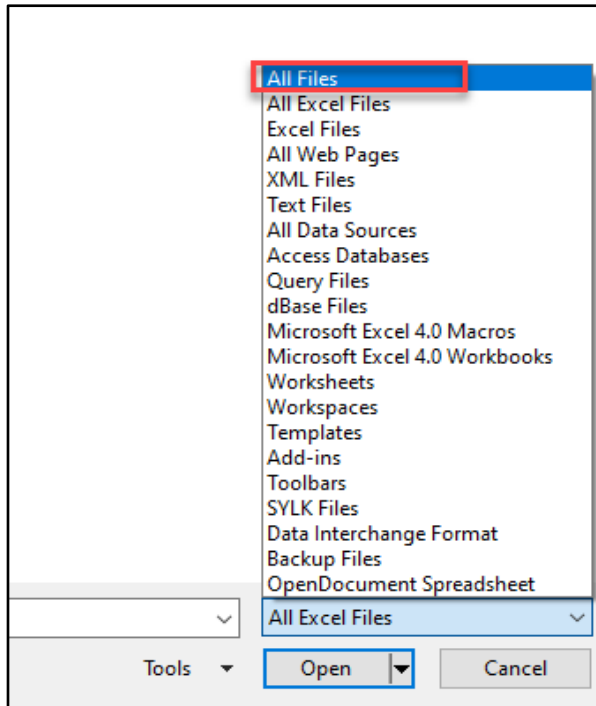


- Once you select Table B01001, it will open as text data. Note: It may take several minutes for all the text to be produced for the data table. Once, table B01001 is produced, right click anywhere on the screen to be able to save the file in a desired location on your computer as a text file.

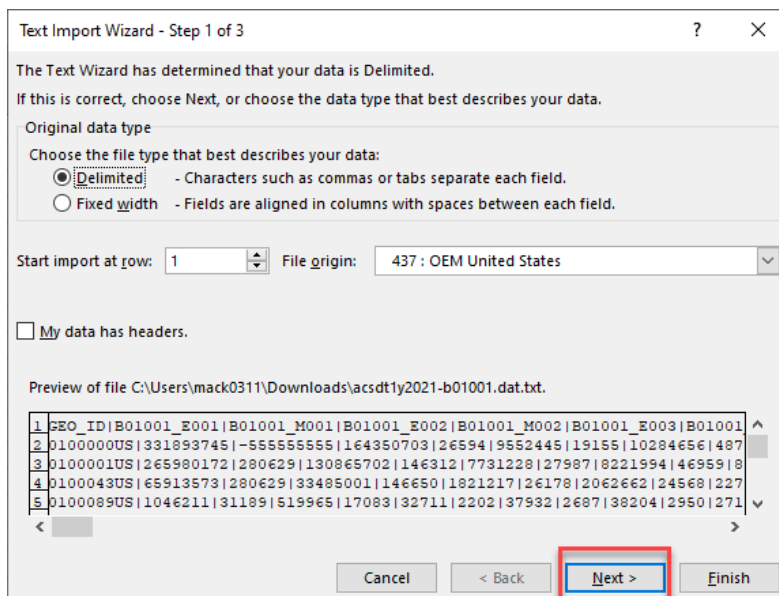


Opening table B01001 (b01001.dat) table in Excel:

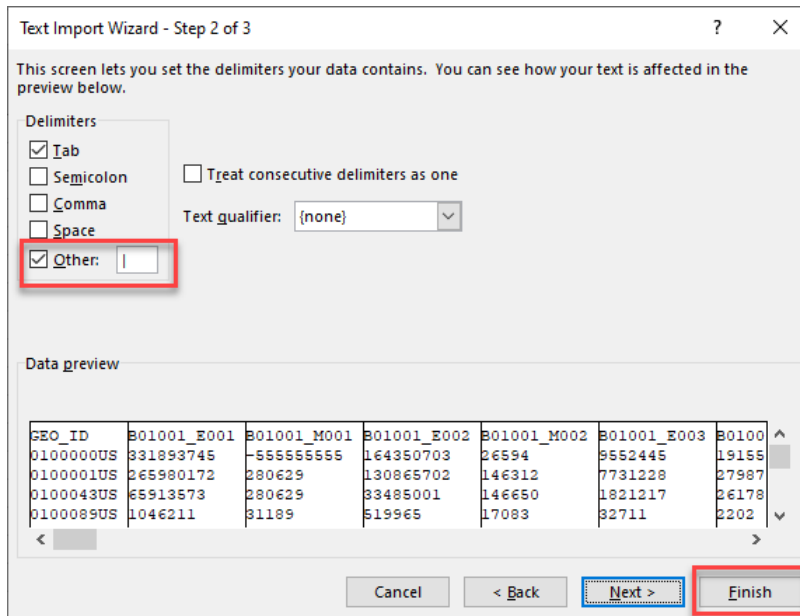
1. Open Excel. Next, open the text file of table B01001. That is, select File > Open > Browse > Select the file, but be sure to change the default file type from All Excel Files to All Files or Text Files in the bottom right corner.



2. Use the Text Import Wizard to open table B01001.
 - a. Step 1: Select Next in Step 1 of the Text Import Wizard.



- b. Step 2: Select the **Other** type of Delimiter and enter the pipe delimiter (vertical bar symbol) in the box next to other. Then select Finish.
- c. The file will open in Excel. Keep in mind that this process may take several minutes. Save the file as an Excel workbook.



Accessing the Geography File:

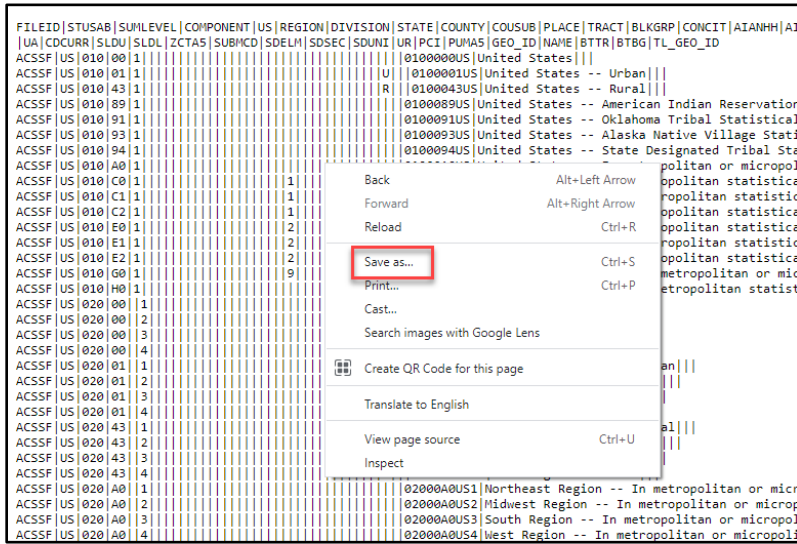
1. The Geography file can be downloaded from the website at Open documentation folder from the FTP site.



2. Select the Geography file- **Geos20211YR.txt**.

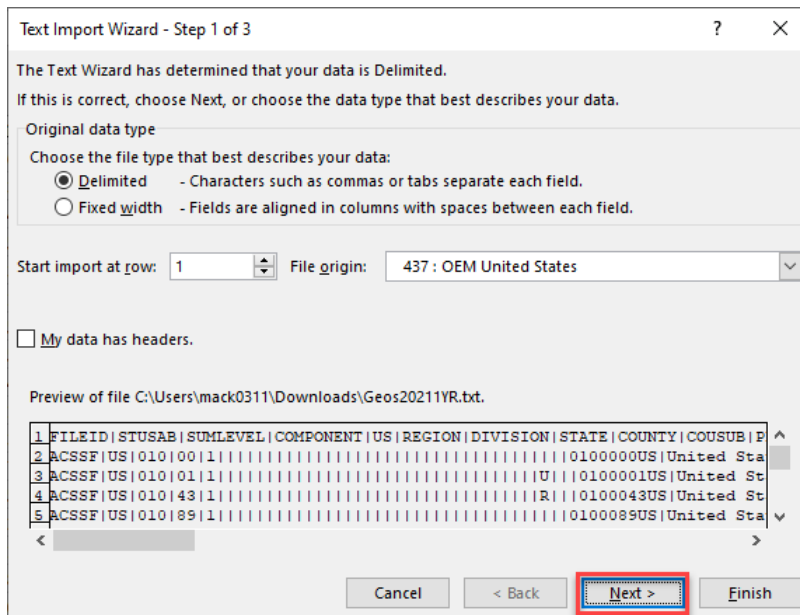


- Once you select the geography file, it will open as text data. Once, the geography text file is produced, right click anywhere on the screen to be able to save the file in a desired location on your computer as a text file.

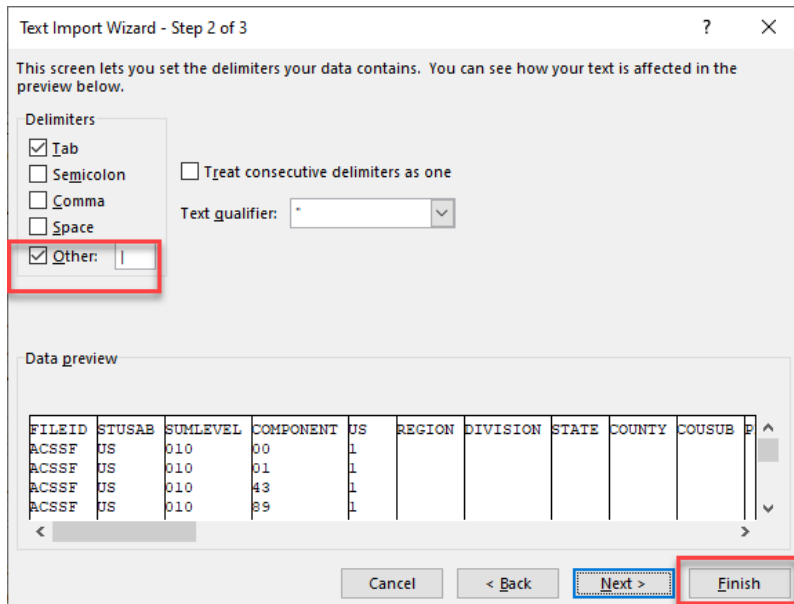


Opening the Geography file in Excel:

- Open the Geography file in Excel. Select File > Open > Browse > Select the file but be sure to change the default file type from All Excel Files to All Files or Text Files in the bottom right corner.
- Use the Text Import Wizard to open the Geography file (GEOs20211YR).
 - Step 1: Select Next in Step 1 of the Text Import Wizard.



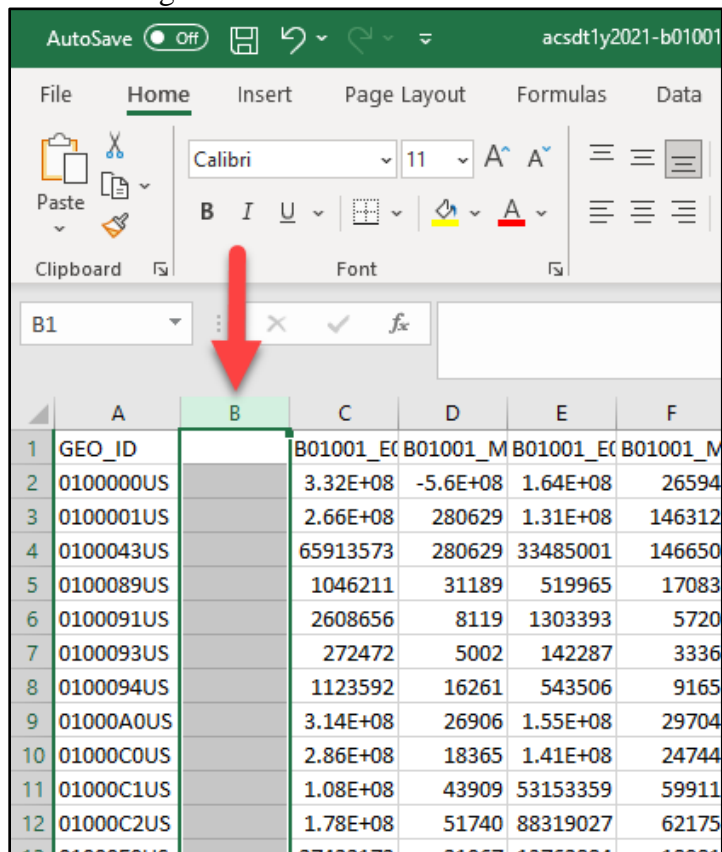
- Step 2: Select the **Other** type of Delimiter and enter the pipe delimiter (vertical bar symbol) in the box next to other. Then select Finish.



- c. The file will open in Excel. Save the file as an Excel workbook.

Merging the Geography names with Table B01001.

1. Open table B01001 in Excel.
2. Insert a column next to the GEO_ID column in the B01001 spreadsheet by right clicking on column B and selecting Insert.



3. Insert the following Vlookup formula =VLOOKUP(A2,Geos20211YR.xlsx!\$A0:\$A0,2,FALSE) in cell B2 of the newly inserted column and press enter.

	A	B	C	D	E	F	G	H	I
1	GEO_ID		B01001_EC	B01001_MB	B01001_EC	B01001_MB	B01001_EC	B01001_MB	B01001_EC
2	0100000US	=VLOOKUP(A2,Geos20211YR.xlsx!\$A0:\$AP,2,FALSE)						19155	10284656
3	0100001US		2.66E+08	280629	1.31E+08	146312	7731228	27987	8221994
4	0100043US		65913573	280629	33485001	146650	1821217	26178	2062662
5	0100089US		1046211	31189	519965	17083	32711	2202	37932
6	0100091US		2608656	8119	1303393	5720	83686	2096	88138

Note: In the VLOOKUP formula, **Geos20211YR.csv!\$A0:\$AP** was inserted after selecting columns AO through AP in the Geography file. This allows Excel to match the GEO_ID in the data table with the GEO_ID in the Geography file.

Also keep in mind that the formula is slightly different from 2018 to 2021 due to changes in the geography files over time. See the formulas below:

- 2018= First year of the Table-Based Summary File format and intended as a prototype for data users to view new format. Users can use the Geography File and cross-reference GEO_IDs as needed and how they see fit.
- 2019 =VLOOKUP(A2,'Geos20195YR.xlsx'!\$AX:\$AY,2,FALSE) - References DADSID and NAME or columns AX and AY
- 2020 =VLOOKUP(A2,'Geos20205YR.xlsx'!\$AV:\$AX,3,FALSE) - References DADSID, GEOID, and NAME or columns AV, AW, and AX.

4. Flash fill the VLOOKUP formula into all rows in column B by double-clicking on the green box in the bottom right corner of cell B2. Note: This may take several minutes.

	A	B	C	D	E
1	GEO_ID		B01001_EC	B01001_MB	B01001_EC
2	0100000US	United States	2.66E+08	-5.6E+08	1.64E+08
3	0100001US		2.66E+08	280629	1.31E+08
4	0100043US		65913573	280629	3348500
5	0100089US		1046211	31189	51996

5. Enter the column name for B2, for example as GEO Name. Table B01001 will appear in Excel as shown below:

	A	B	C	D
1	GEO_ID	GEO Name	B01001_EC	B01001_M
2	0100000US	United Sta	3.32E+08	-5.6E+08
3	0100001US	United Sta	2.66E+08	280629
4	0100043US	United Sta	65913573	280629
5	0100089US	United Sta	1046211	31189
6	0100091US	United Sta	2608656	8119
7	0100093US	United Sta	272472	5002
8	0100094US	United Sta	1123592	16261
9	01000A0US	United Sta	3.14E+08	26906
10	01000C0US	United Sta	2.86E+08	18365
11	01000C1US	United Sta	1.08E+08	43909
12	01000C2US	United Sta	1.78E+08	51740
13	01000E0US	United Sta	27422172	21067
14	01000E1US	United Sta	9247081	97532
15	01000E2US	United Sta	18175091	93756
16	01000G0US	United Sta	17981027	26906
17	01000H0US	United Sta	45403199	18365
18	0200000US1	Northeast	57159838	-5.6E+08
19	0200000US2	Midwest I	68841444	-5.6E+08
20	0200000US3	South Reg	1.27E+08	-5.6E+08
21	0200000US4	West Reg	78667124	-5.6E+08

Tip: To keep the Geography Names in column B as text and not as formulas, simply highlight Column B, copy, then Paste Values in the same location (Column B).