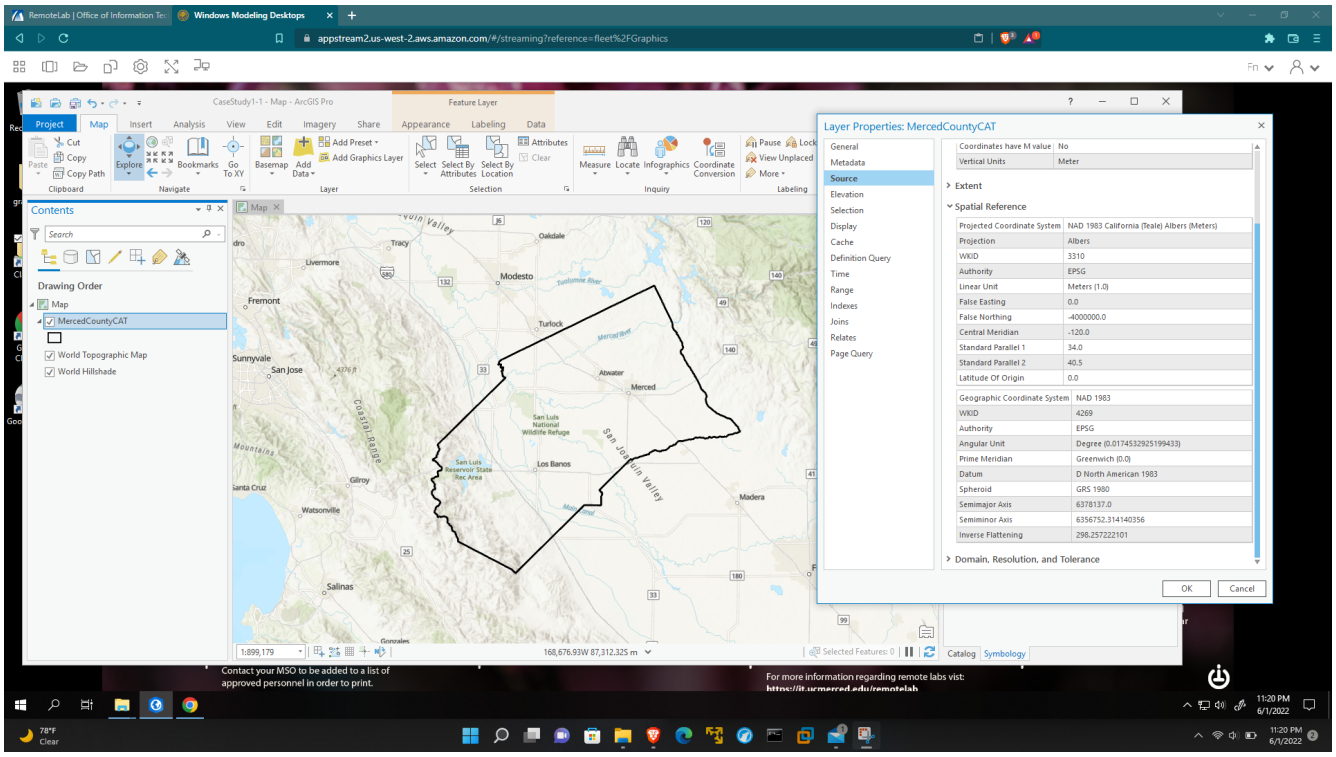
Hao Dinh Mai
Engr 180
Professor Brown
June 1, 2022
Lab01_CaseStudy1-1

"Converting, Streamlining, and Projecting Well Data for Merced County" - An Interactive Introductory Lesson to ArchGIS Projection and Projection Conversion Tools

Section 4

- Spatial reference for shapefile data confirmation screenshot:



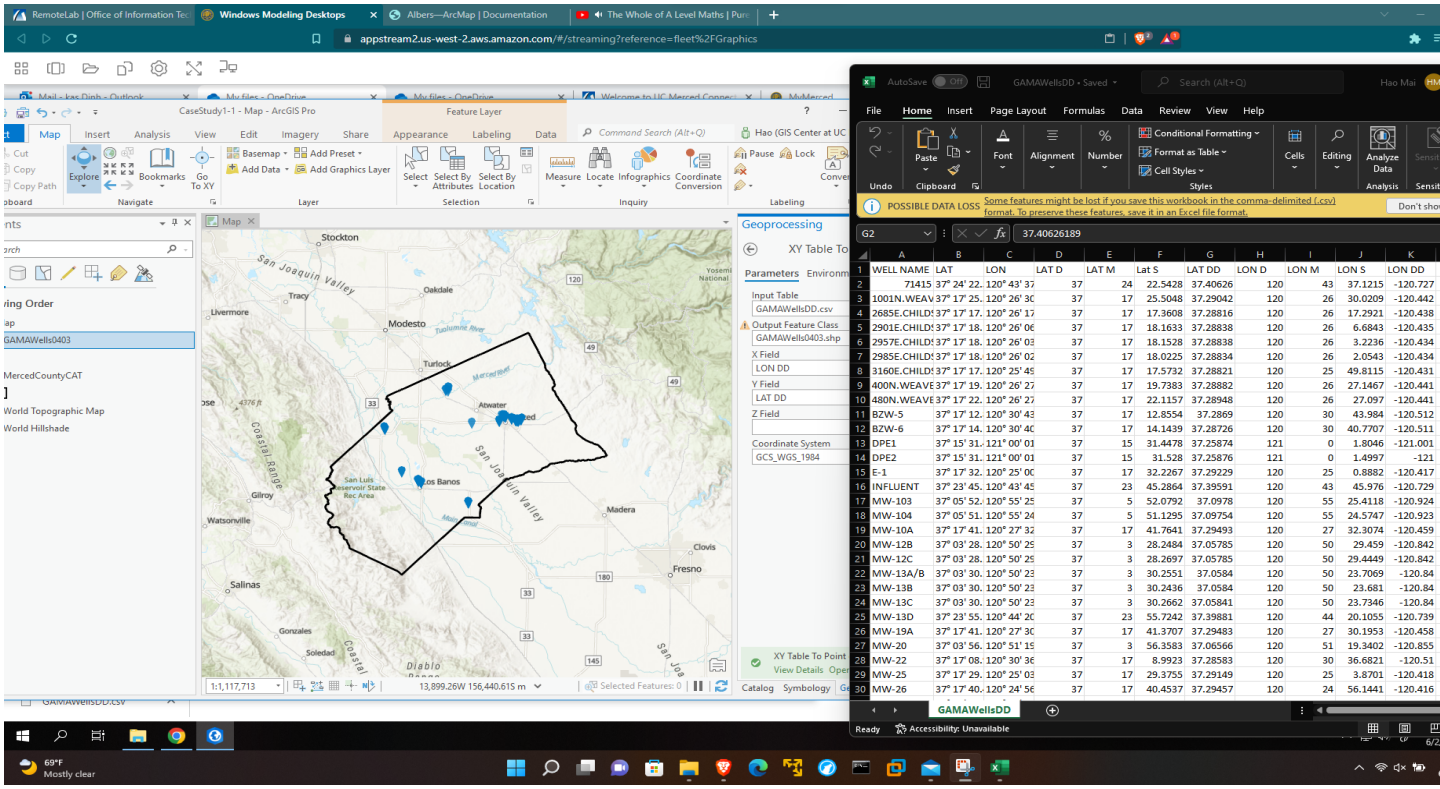
- Written explanation on why this specific projection method is employed for exemplification for such data:

The datum for this project is NAD 1983 California (Teale) Albert (Meters); the projection method is Albers - according to a published ArcGIS paper by Berkeley University, "Projections: what you need to know for GIS" published by Geospatial Innovation Facility stated that the main datum references derives from the NAD83; more specifically, the last two digit after NAD indicated the year. This datum updates the

horizontal map projection data of North America. According to the website, ArcMap, in the map subcategory, the albers projection refers to a conic projection of a landbase map. Adhering to the mission statement of shouldering the managerial position of identifying a landbase location of where the contaminated wells are, the most viable method of map projection will be Albers.

- Screenshot of map after data form DD file converted from DMS via excel. Thereby, according to the newly converted longitude and latitude coordinate, the run operation outputs:

Section 6

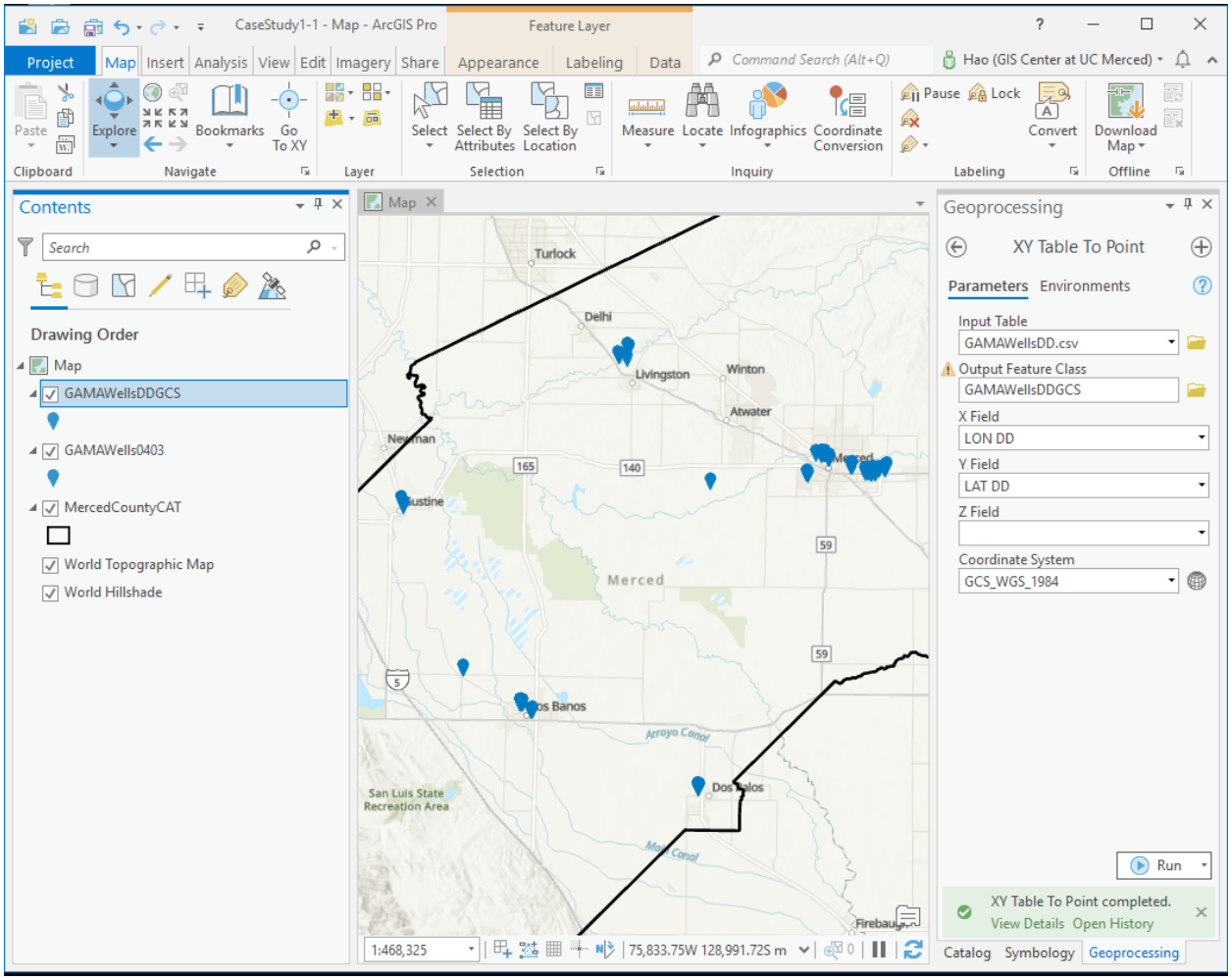


- Question: where are the well points showing up in your map display ?

  According to the data converted via excel and interpretation by ArcGIS shows that the map shows the well to be scattered across the San Joaquin Country; however, the well locations are concentrated on either the left side of the valley, laterally north-south to the city of Los Banos, and to the right of the map amongst at and Merced appears to also be a concentrated numbers of wells.

Section 7

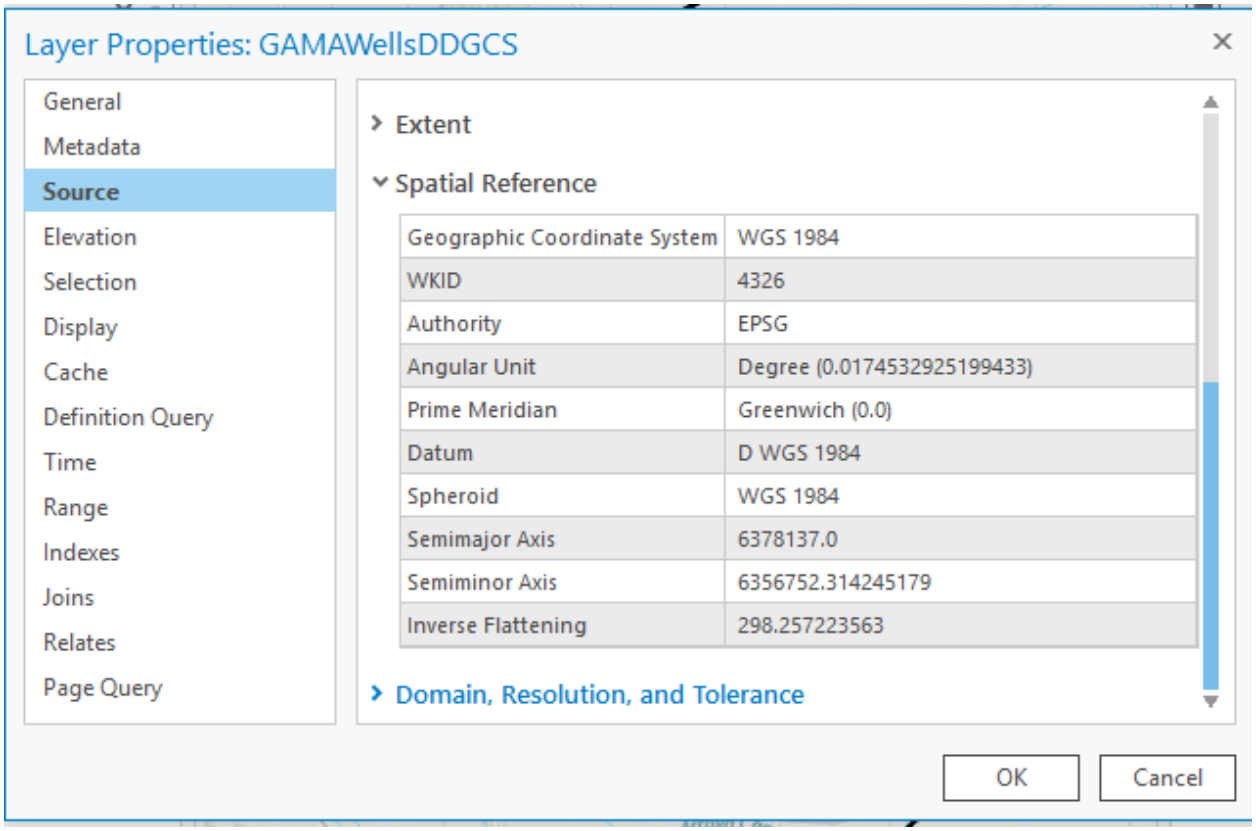
- ScreenShot delivery requirement to be set side-by-side to screenshot from section 6



- The zoom to layer operant for the file, GAMAWellsDDGCS, shows the city of the country of San Joaquin, specifically, the city of Merced upt to scale view of wells that are located inside the shapefile parameter. Though, We can see that the scaling is not up to par due to the fact that one the right hand side of the map, there is some distortion in the clusters of blue pin icons that are clustered. I believe the distortion is due to the right hand side data of wells with the city of Las bonas, Dos Palos and Gustine due northing-southing.

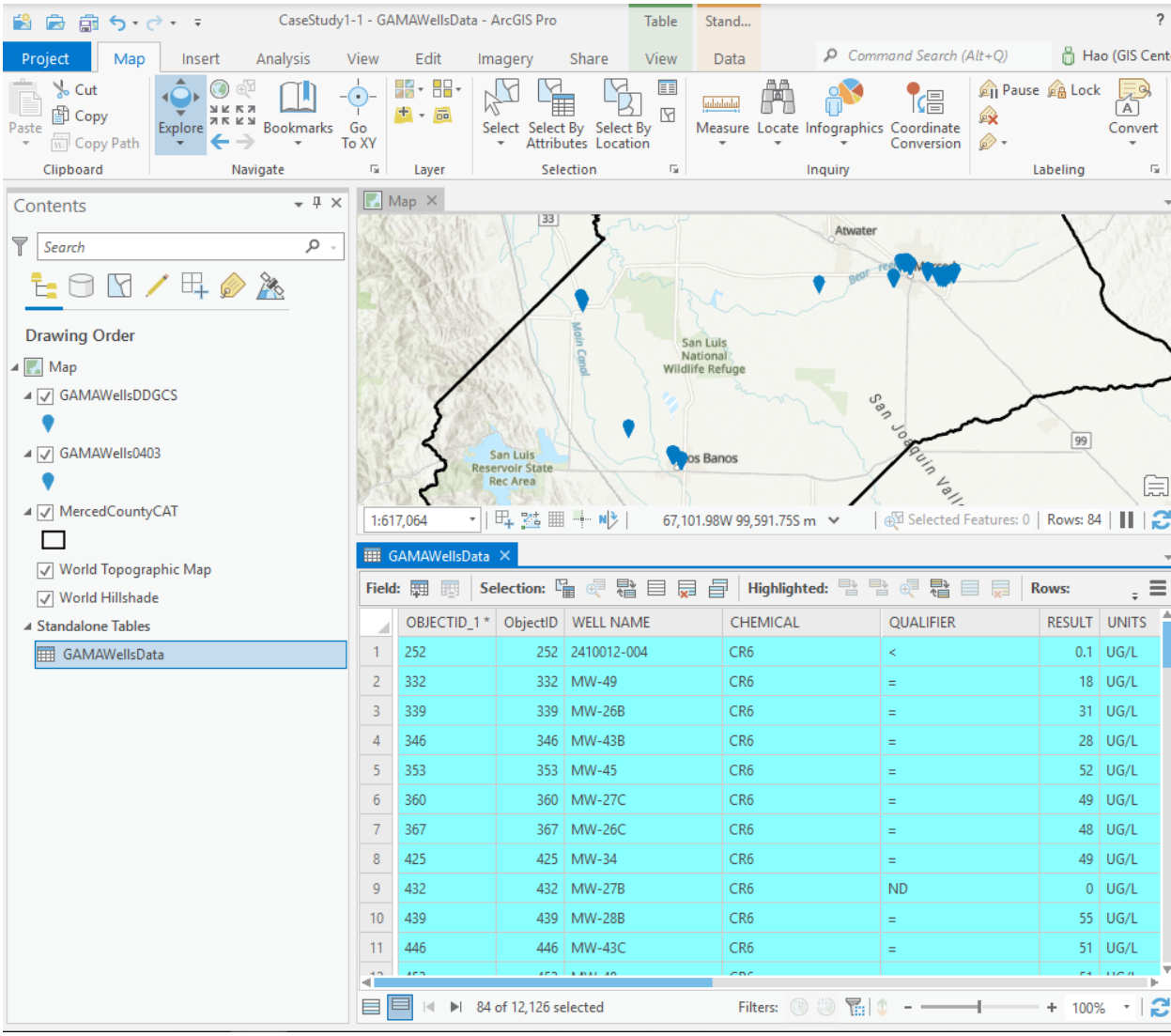
Section 9c

- The following will depict the spatial reference to the data GAMAWELLsDDGCS:

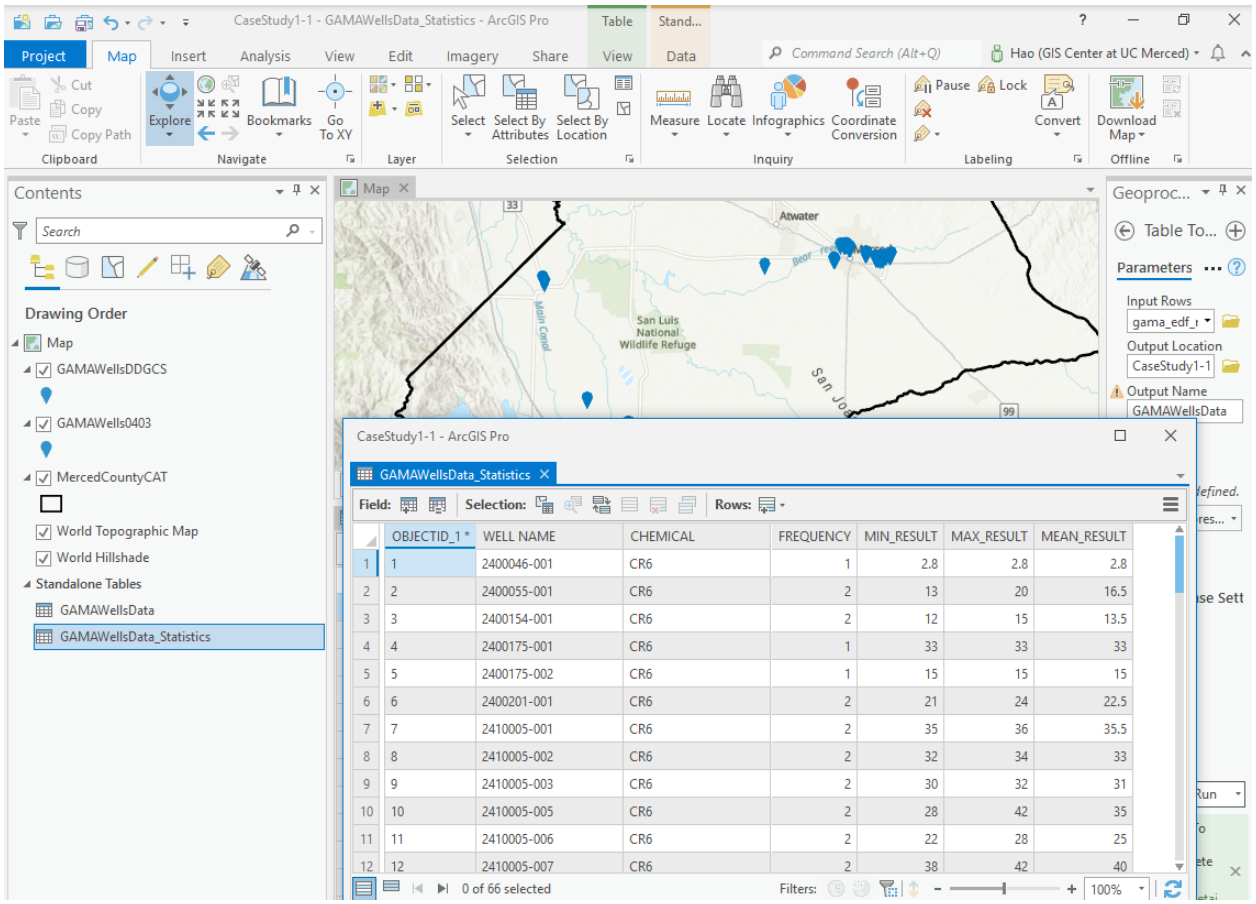


Procedure Screenshot in examining GAMAWELLDATA after import to Geodatabase:

- Identifying the contaminated well with criteria of chemical is defined as CR6.



- Calculating the minimum, maximum and mean of ‘GAMAWELLDATA’ and printing the statistics:



OBJECTID_1 *	WELL NAME	CHEMICAL	FREQUENCY	MIN_RESULT	MAX_RESULT	MEAN_RESULT
1	2400046-001	CR6	1	2.8	2.8	2.8
2	2400055-001	CR6	2	13	20	16.5
3	2400154-001	CR6	2	12	15	13.5
4	2400175-001	CR6	1	33	33	33
5	2400175-002	CR6	1	15	15	15
6	2400201-001	CR6	2	21	24	22.5
7	2410005-001	CR6	2	35	36	35.5
8	2410005-002	CR6	2	32	34	33
9	2410005-003	CR6	2	30	32	31
10	2410005-005	CR6	2	28	42	35
11	2410005-006	CR6	2	22	28	25
12	2410005-007	CR6	2	38	42	40

Section 13

Symbolizing data by using ArcGIS Pro is done through locating the symbology tab within the software, analysis of an imported dataset in geodatabase and representing these data to users' references. Factors such as coloration scheme, secluding individual data and making subcategories of the data set through grouping operation, the appliance of symbol representing these datas in terms of data and font size, assigning names and legend composition is done to emphasis detail and clarity of the map. Furthermore, there is a niche ability in ArcGIS - the ability to classify and categorize data to user's preference in terms of the font size with correlation to what the data set represents through means of a legend. Substantially, the ability to use and manipulate symbology within ArcGIS is imperative in the approach of a clear message deliverance; first, through data import and concise construction of a legend for user's reference, symology further adds to the detail depth of a map.

The method I employ for the construction to the 'GamaWelldata" static output is per the instruction of the case study 1 reference for this lab. First I upload the 'gama_edf_merced_clean.cvs' file onto my project's geodatabase, and through the selection operation to find the data for chemical name which data is equal to CR6, I was able to retrieve a summary panel with all the selected data. Now that the data has been identified and accounted for, I browse for the option the summarize located within the right-click panel of data columns headers which generated a field. This field will allow the user to retain what field of data they want and what mathematical operation will be performed on the data within the field of the retained headers.

Reference and Citation

- ArcMap. (n.d.). Retrieved June 1, 2022, from https://desktop.arcgis.com/en/arcmap/latest/map/projections/albers.htm
- Projections: What You Need To Know for GIS [Digital image]. (n.d.). Retrieved June 1, 2022, from http://gif.berkeley.edu/documents/Projections_Datums.pdf
- Brown, M. (2022, May 26). *Case Study 1-1: Converting, Streamlining, and Projecting Well Data for Merced County* [PDF].