Laboratory 1 (Case Study 1-1)

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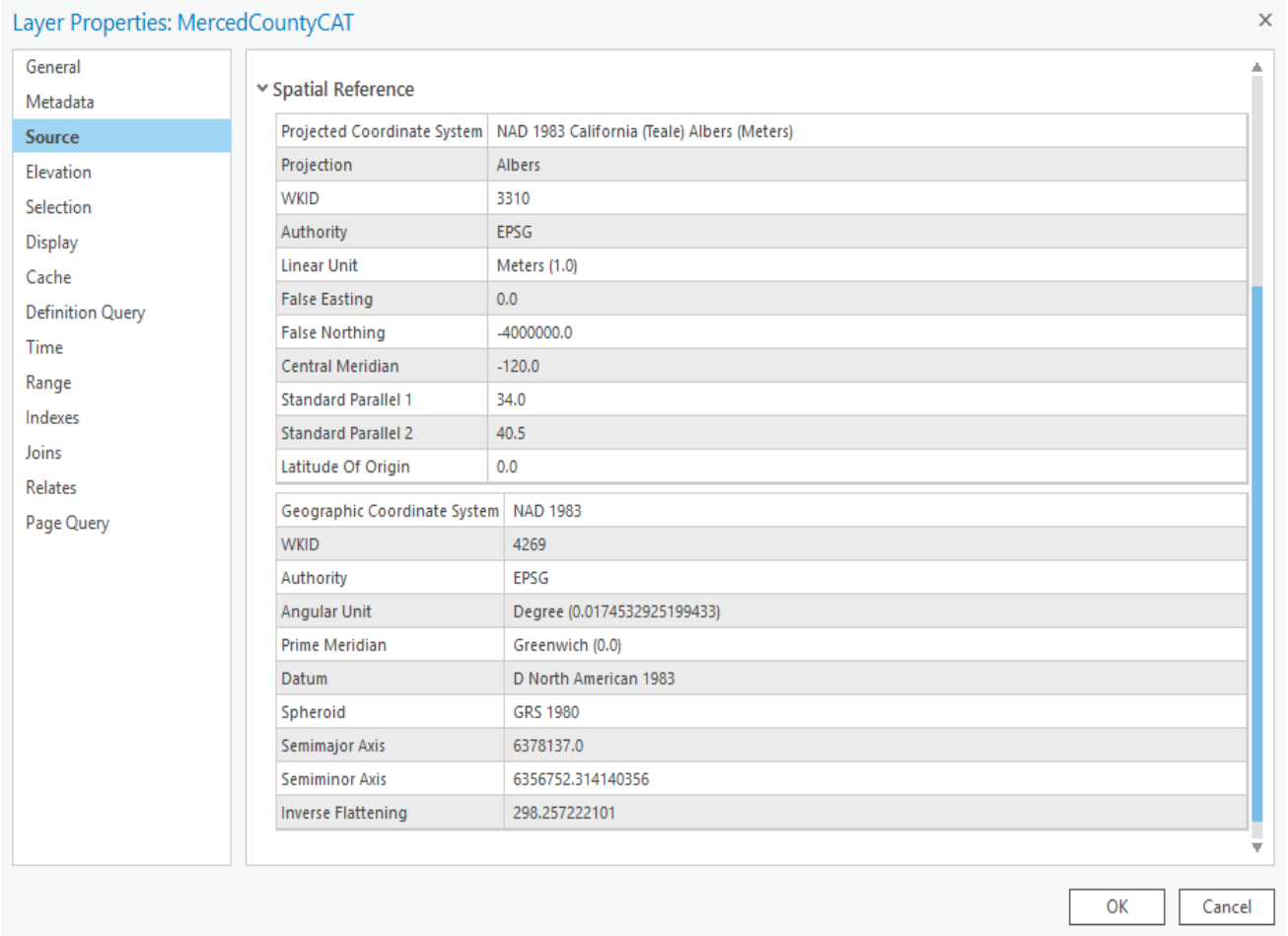
Deliverables:

Submit all listed deliverables below in a SINGLE .pdf document on Catcourses.

Section 4

• Screenshot the Spatial Reference portion for submission. This confirms our data is in an appropriate California-specific projection.



• In a written component, identify the PROJECTION used and describe why it is appropriate for mapping contaminated wells in Merced County.

- The projection is Albers and it is appropriate for mapping contained wells in Merced County because Merced is located in the mid-latitude and most counties in California are E-W land masses which means that Albers would be a good projection to use. Albers is also good for mapping small regions which is also why it's a good projection because we only solely focus on contaminations in Merced county rather than all the counties in California.
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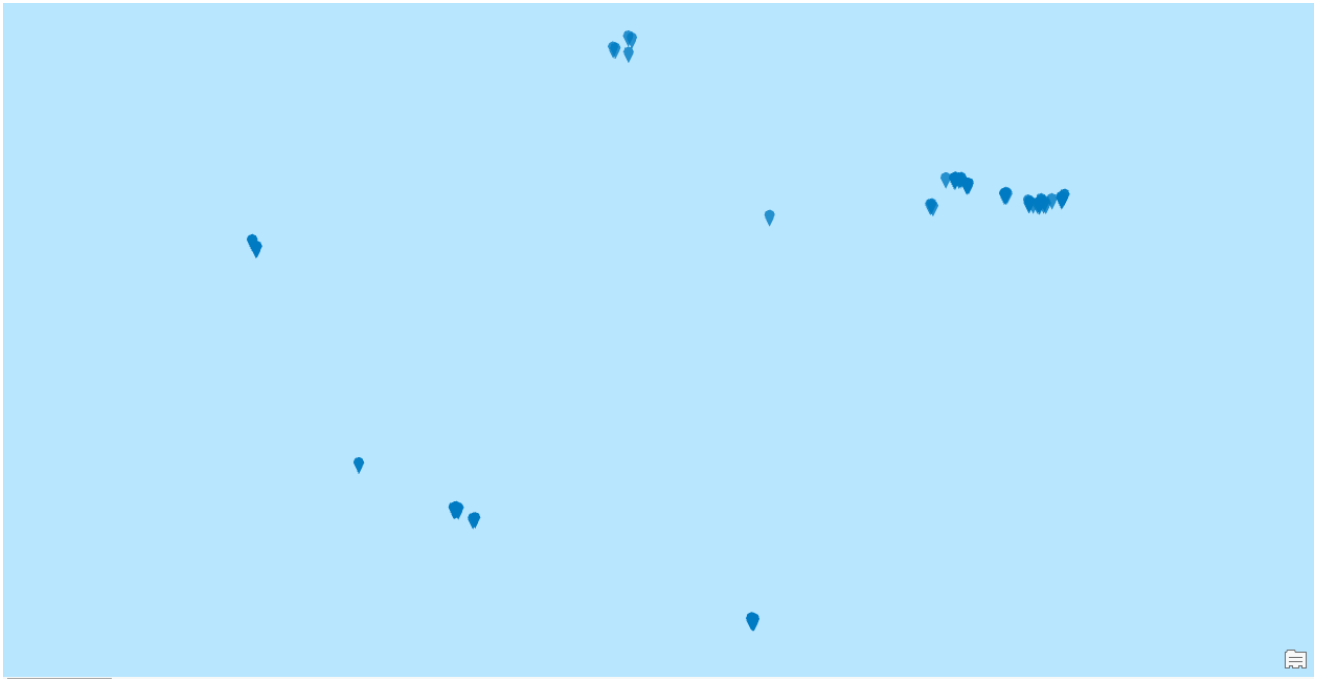
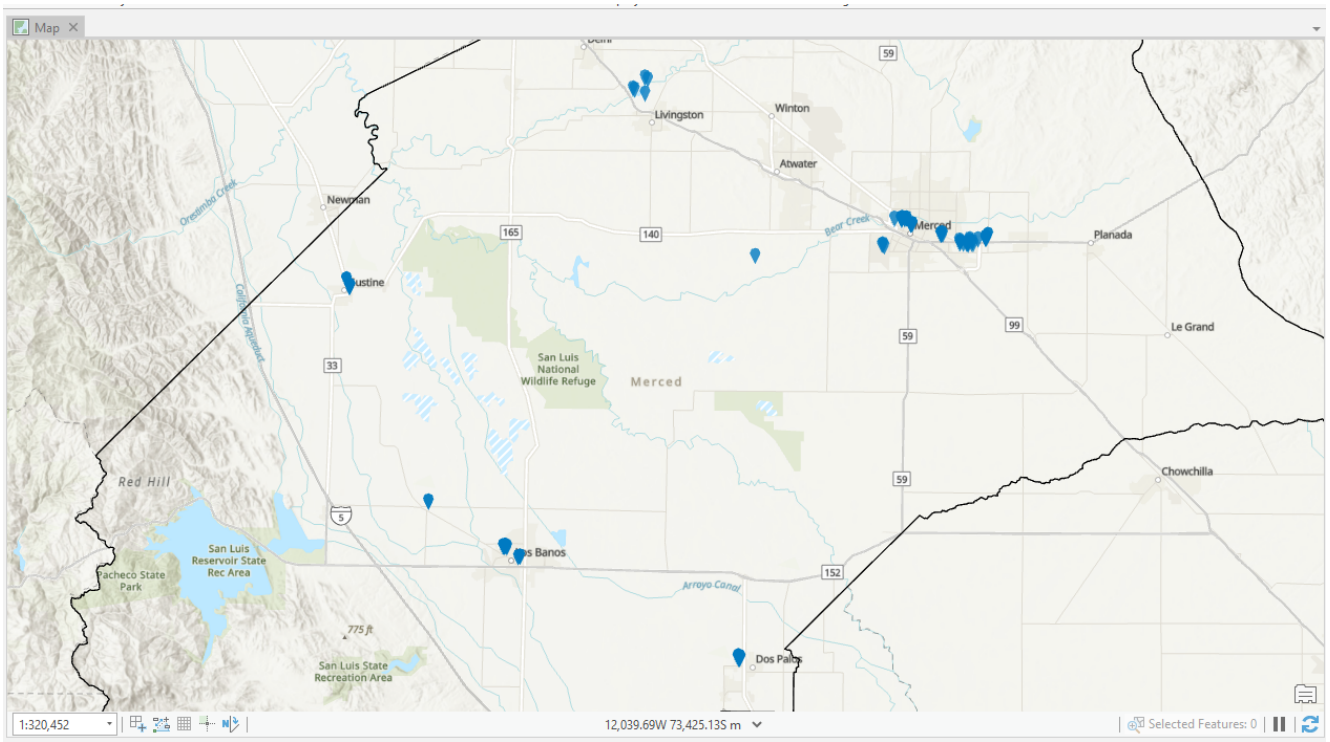
Sections 6/7

Answer: Where are the well points showing up in your map display? Where should they be showing up based on the information from your coworker? Can you speculate on what is going on?

- The well points are in the ocean in the map display. The Merced county wells should show up within Merced County based on the info from your coworker. My speculation is that it is using the wrong spatial reference and its a map projection issue.

• Side by side screenshots of incorrectly projected (ocean) and unprojected well locations.





Section 9c

• Screenshot and submit the Spatial Reference information for both GAMAWellsDDPRJ and GAMAWellsDDGCS.

GAMAWellsDDGCS Spatial Reference Info:

Spatial Reference

Geographic Coordinate System	WGS 1984
WKID	4326
Authority	EPSG
Angular Unit	Degree (0.0174532925199433)
Prime Meridian	Greenwich (0.0)
Datum	D WGS 1984
Spheroid	WGS 1984
Semimajor Axis	6378137.0
Semiminor Axis	6356752.314245179
Inverse Flattening	298.257223563

GAMAWellsDDPRJ Spatial Reference Info:

Spatial Reference

Projected Coordinate System	NAD 1983 California (Teale) Albers (Meters)
Projection	Albers
WKID	3310
Authority	EPSG
Linear Unit	Meters (1.0)
False Easting	0.0
False Northing	-4000000.0
Central Meridian	-120.0
Standard Parallel 1	34.0
Standard Parallel 2	40.5
Latitude Of Origin	0.0

Geographic Coordinate System	NAD 1983
WKID	4269
Authority	EPSG
Angular Unit	Degree (0.0174532925199433)
Prime Meridian	Greenwich (0.0)
Datum	D North American 1983
Spheroid	GRS 1980
Semimajor Axis	6378137.0
Semiminor Axis	6356752.314140356
Inverse Flattening	298.257222101

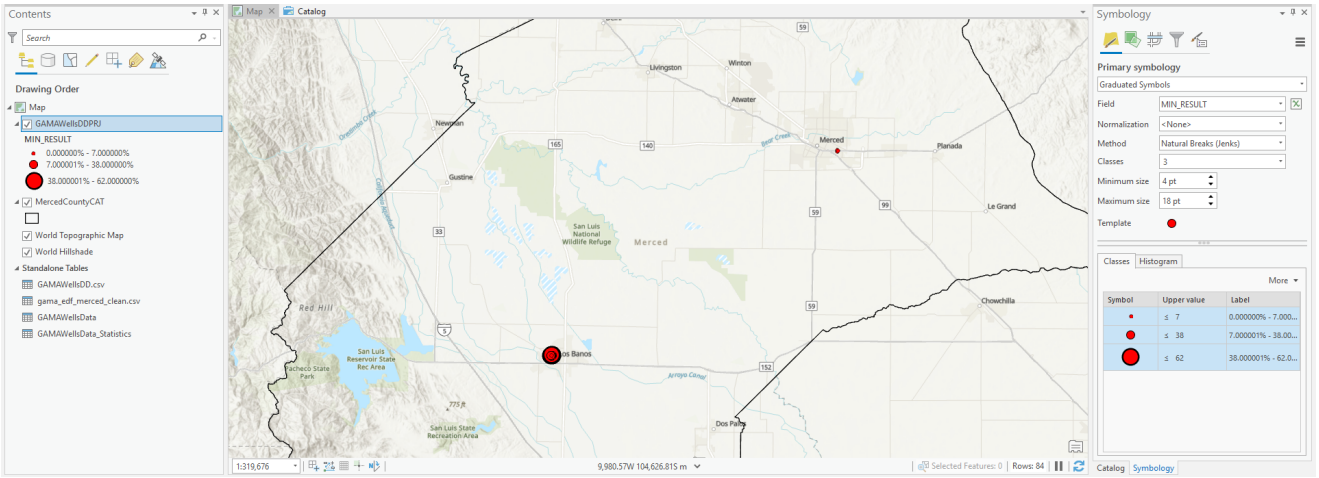
Section 13

Briefly summarize what it means to normalize quantitative data. List the seven data classification methods. Then, describe how you could apply normalization to the CR6 measurements.

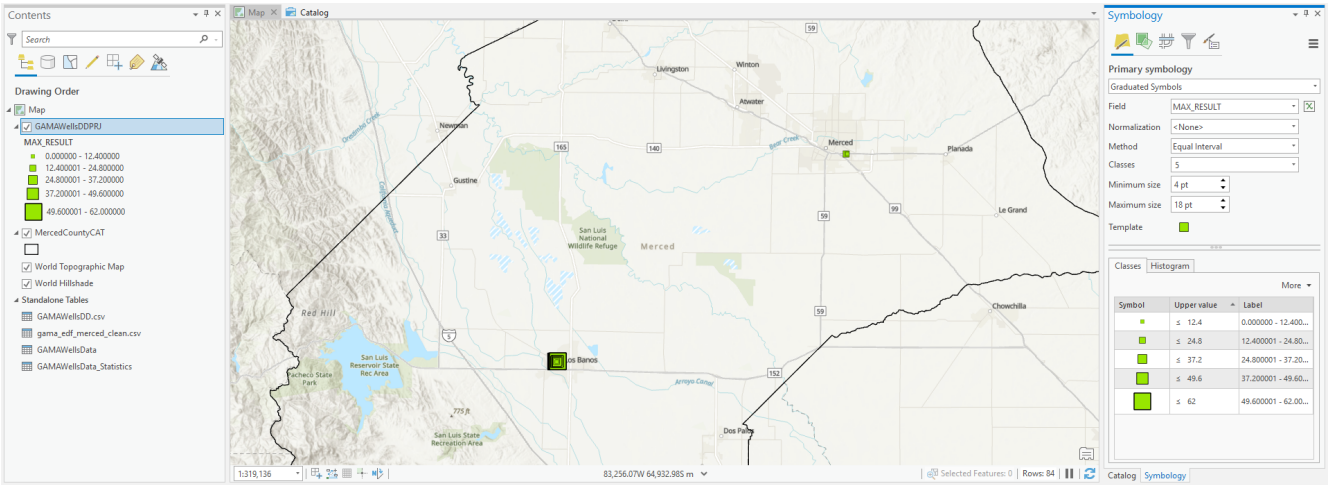
- To normalize quantitative data is to make the data less cluttered and messy. It makes it readable and more accessible to people which makes it easier to understand the purpose and importance that the data is trying to convey to the audience. Since it's more organized, the data becomes higher quality data, since it can be used more efficiently. It can also reduce redundant and unimportant data. The seven data classification methods are defined interval, equal interval, manual interval, quantile, natural breaks (Jenks), geometrical interval, and standard deviation. Applying normalization to the CR6 measurements can make data about the CR6 measurements less cluttered and easy to read. If it was cluttered, understanding the CR6 measurements would be very difficult and probably cause a lot of confusion. Applying normalization to the CR6 measurements ultimately makes the audience looking at the data understand it better causing them to be aware about it and possibly making the audience take action to prevent more CR6 from spreading.

Submit a screenshot of 3 side by side different symbologies

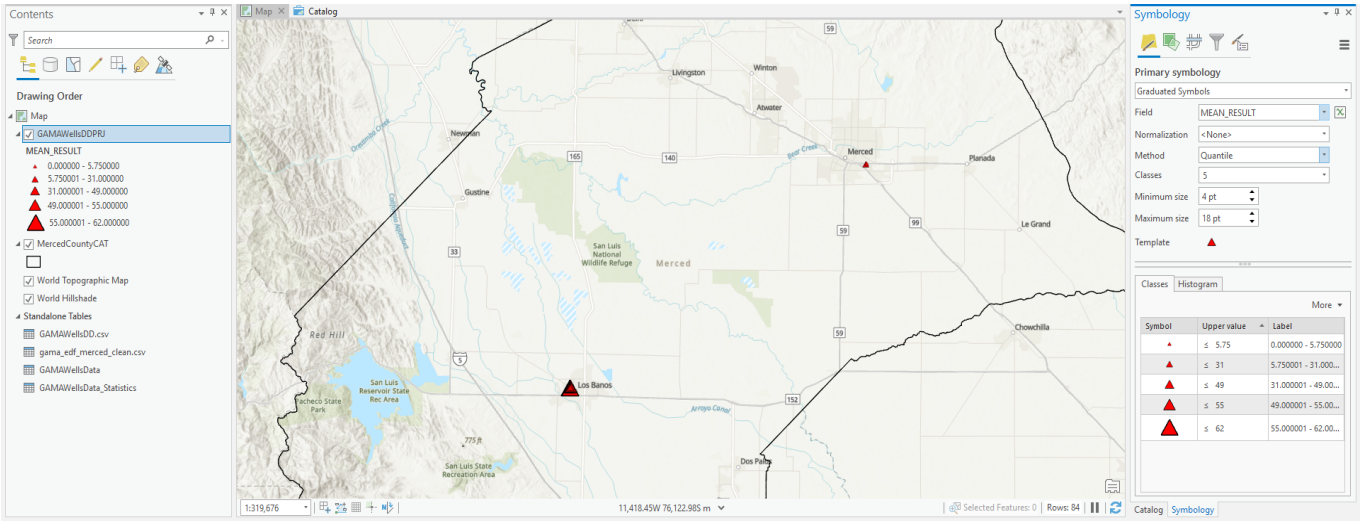
Minimum concentration for hexavalent chromium:



Maximum concentration for hexavalent chromium:



Average concentration for hexavalent chromium:



References:

"Albers Equal Area Conic-Help." *ArcGIS Desktop*, ESRI, https://desktop.arcgis.com/en/arcmap/10.5/map/projections/albers-equal-area-conic.htm.