GEOL 551: Applied Petroleum Geology   
Assignment #1 - Due 1/4/2019  
  
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1. Highly Connected Features (Least Squares)  
   
  
2. Disconnected Features (Linear Projection 1)  
   
  
3. Simple Weighting with Slopes (Linear Projection 2)  
   
  
4. Simple Weighting without Slopes (Moving Average)  
  
   
  
  
  
5. Distance Grid  
   
  
6. Closest Point  
   
  
  
  
  
  
  
7. Minimum Curvature (no faults)  
   
  
8. Kingdom - Flex Gridding (no faults)

The figures above are listed as follow.

1. Highly Connected Features (Least Squares)  
2. Disconnected Features (Linear Projection 1)  
3. Simple Weighting with Slopes (Linear Projection 2)  
4. Simple Weighting without Slopes (Moving Average)  
5. Distance Grid  
6. Closest Point  
7. Minimum Curvature (no faults)  
8. Kingdom - Flex Gridding (no faults)

The worst Thickness Isopach map is derived from Distance Grid (Figure 5). This map shows a constant thickness of 66 ft throughout, which is inaccurate for the Sooner Field. The second worst Thickness Isopach map is derived from Closest Point (Figure 6). This map is not geologically correct for the Sooner Field since the contour intervals shows a constant block of thicknesses with drastic thickness changes throughout each blocks.

The best Thickness Isopach map is derived from the Flex Gridding (Figure 8). This gridding method is effective for this particular Sooner Field structural setting. For example, the surrounding contour of wells 44, 58, and 56 seemed to be reasonably geologically more accurate with subtle thickness changes when compared to the other methods such as the Highly Connected Features (Figure 1) and Disconnected Features (Figure 2) which shows a geologically inaccurate and more drastic thickness changes throughout each data points.