OIL,GAS & OTHER REGULATED WELLS IN NEW YORK STATE.

DATA-3400 DATA VISUALIZATION NARRATIVE

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1. QUESTION / PURPOSE

Oil and gas wells extract natural resources from the ground, primarily oil and natural gas. These resources are used to power homes and industries. They are also used as raw materials for various products, ensuring that these resources are extracted safely and environmentally responsibly. How have the quantity and output of oil and production of oil and gas wells and their regulation changed over time in New York?

2. AUDIENCE

My audience for this visualization would be the New York State Department of Environment Conservation. If I had to narrow it down to a single person, it would be the regulatory agency director responsible for overseeing the oil and gas industries in New York. My audience may care about understanding the current state of oil and gas wells in New York and identifying in using the data to make informed decisions about future policies regarding these wells. My audience needs to monitor and regulate the wells. The audience may need to use the data to identify the potential areas of non-compliance and take appropriate action to address the issues.

The benefits may include improved monitoring and regulation of oil and gas wells, leading to a safer and healthy environment for residents in New York. If the audience does not act on data, risks may include increased environmental contamination or public risks.

3. SINGLE SENTENCE

The visualizations showcase wells' geographical distribution and production data, providing insights into New York's energy landscape.

4. DATA

The oil, gas, and other regulated wells dataset contains information on the location, production, and regulatory status of New York State wells used to extract oil, gas, and other natural resources and are subject to state regulations governing drilling and operation. The dataset includes data on wells drilled since the 1900s and is regularly updated by the New York State Department of Environmental Conservation (DEC). I got the data from data.world. I did a bit of cleaning to make the visualization clear.

5. CHART TYPES + UNITS

Bar charts, geographical maps, scatter plots, and line charts will help the visualization because scatter plots show the relationship between depth and kickoff. The line charts show the data over time beginning from 1860. The map details the various companies and locations in New York.

6. LOCATION IS EVERYTHING

This data incorporates a spatial element in your visualization using maps. Specifically, location-based data would include data with geographical location, such as stores, population density, and mobility data that tracks the movement of people or objects across space, such as transportation data, etc.

7. PROCESS

03/03/23   I wanted to see what questions my data might answer, so I began adding dimensions and measures to Tableau. I quickly realized there were some issues with the sources and data. So I started thinking about the vast data I have. I returned to a few content videos that were made for this course to see if I could clear some "Nulls" and better connect my data. I learned a lot playing around with the different dimensions I have. I'm now wondering if I have the correct data to answer my questions for the audience to view visualizations. I also thought about narrowing my question and purpose to be more specific. Here is an image of my initial exploration.
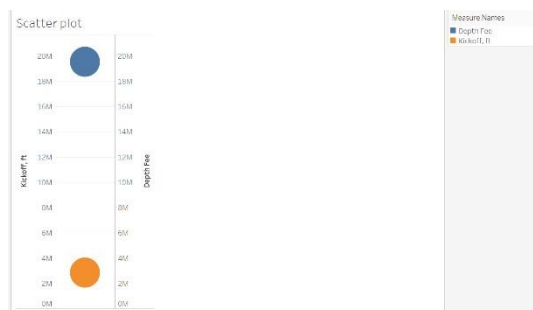

03/11/23   I did not feel like it does not tell any story about what I thought. So, I changed the scatter plot according to the story and started to think of a geographical map of New York. Here's the picture of the map I made for this project.
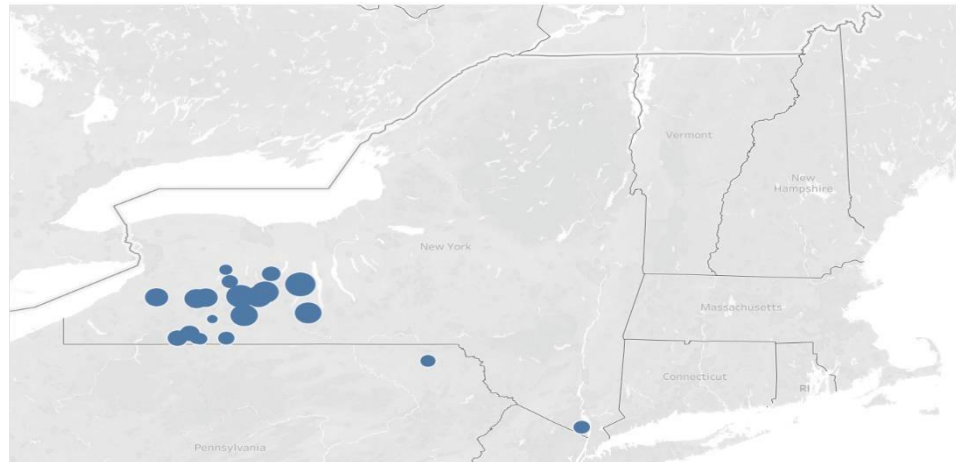
I felt happy because some points were showing on the map, and I decided to move to a line graph showing trends from 1900 to 2018. Here is the screenshot.
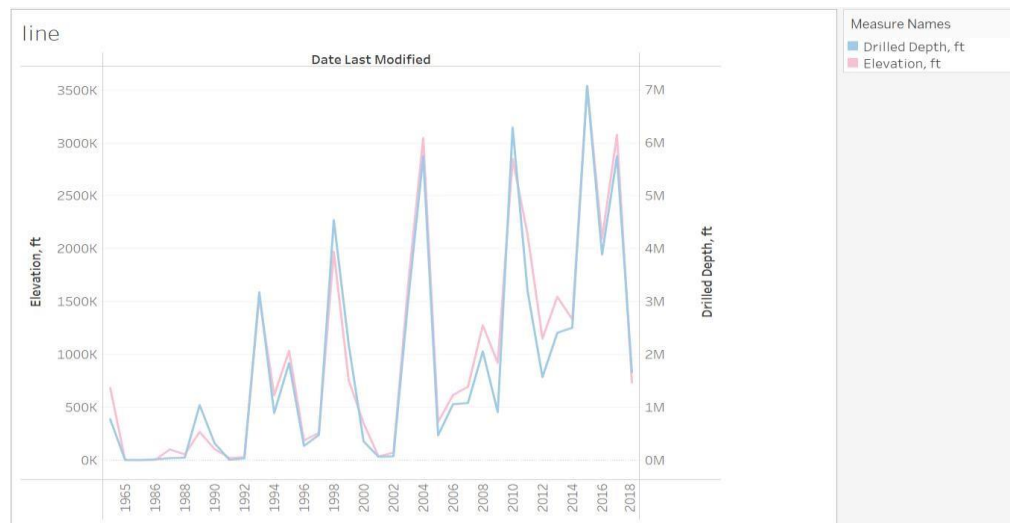

03/27/23   I had completed 50% of the project and started to do a bar chart. I need clarification about what dimensions I should use for the bar graph to tell my story. So, I made a bar chart between depth fee and well type. The screenshot is attached below.
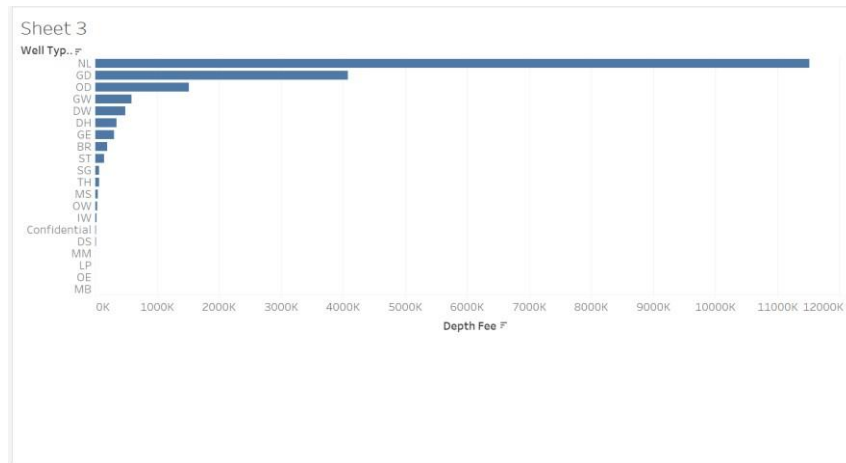
04/06/23   Now, I need just a scatter plot to finish and to tell a story about the graphs I made earlier. So, I started what could be the relationship between the depths and elevated depth. So, I tried making that scatter plot. Later I realized it was not connected to my story. So, I changed my story and thought of doing by well types in New York. Now, I must change every sheet and connect it with the well type.
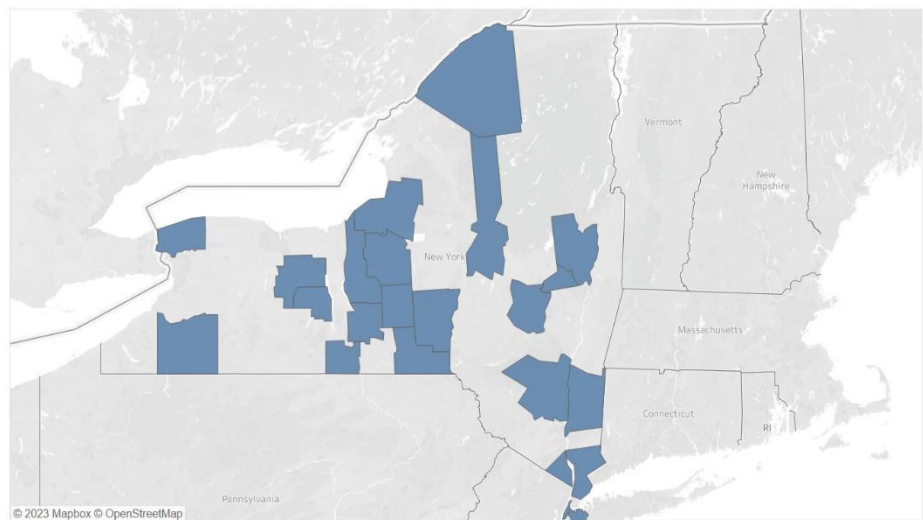

This graph looks good to me, and I started to do other charts similarly; I decided to add colors at the end because I knew there were a lot of data points in this project. So, I would like to add colors at the end.

04/11/23   I remember 20 different colors could be shown in the visualizations, but I have more than 20 well types. I checked that my data was missing for some well types and narrowed them down to 12 well types. Similarly, when I checked the line graph data from 1900, many null values existed for the well types. To present it better, I wanted to show the visualizations from 2000 to 2018. This graph looks good to me.

Sheet 2
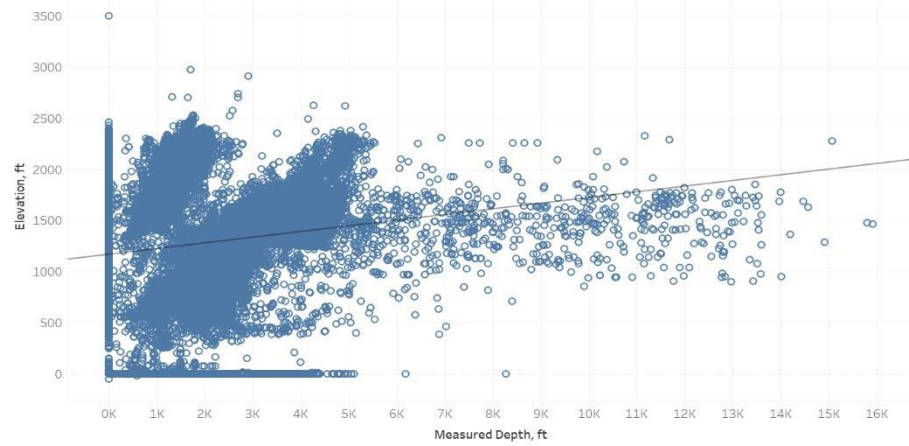
I know that I still need to add colors to filter them. From the peer critique review, I got feedback to add more about the story and colors that need to be added to the sheets, and titles could be improved.

The figure below is a line chart between the elevation vs. drilled depth from 2000 to 2018.

Elevation vs Drilled Depth from 2000 to 2018.
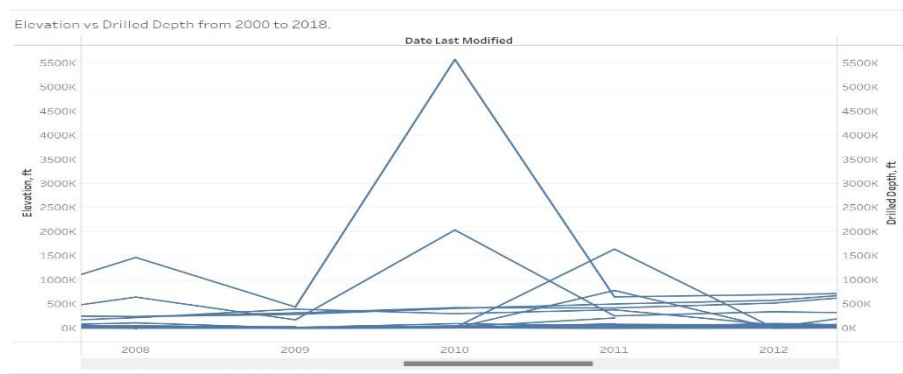
04/17/23   Now, Only a few things are left: a story, the titles for each sheet that should be narrated to my audience and the perfect colors representing the graphs. Finally, I added the colors and made a story. After my presentation, I got a response from the peers that legends are missing in the dashboard and why I chose Oi, and why only New York particularly? So, I remembered those points to be added to the story. Here are my screenshots.
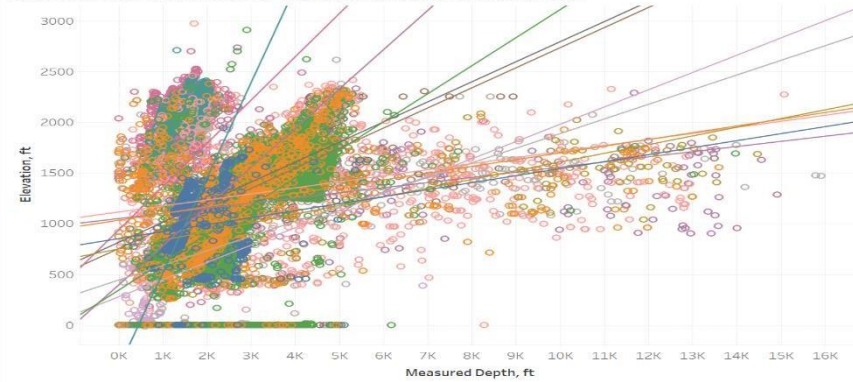
Regulated Wells Map of New York state's Oil and gas industry.
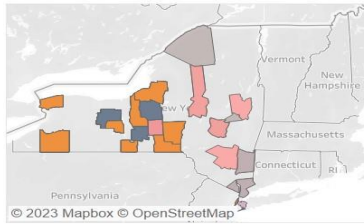

© 2023 Mapbox © OpenStreetMap
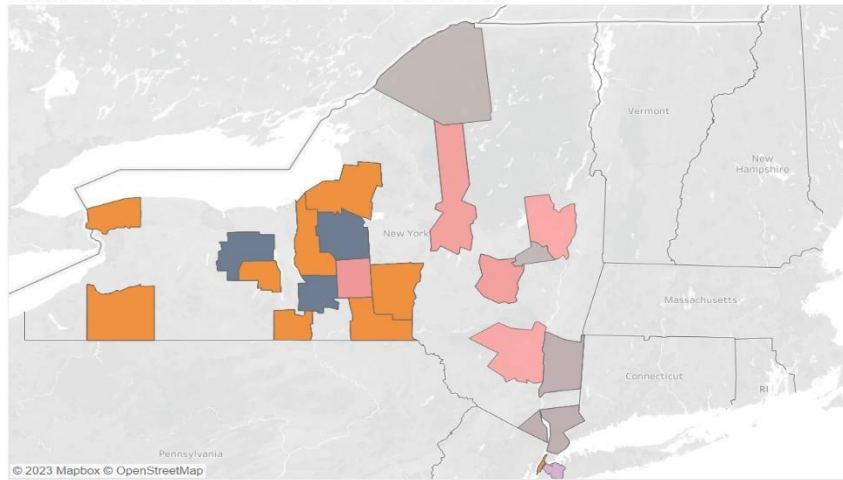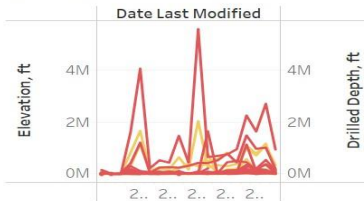
Drilled Depth by Well Type for natural resource extraction.
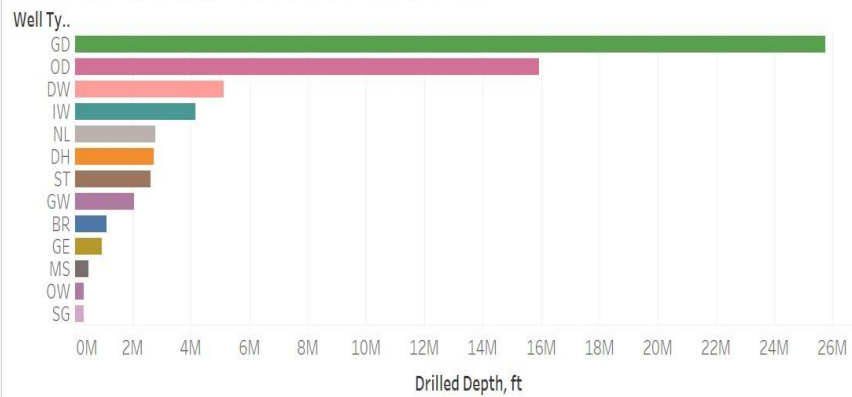
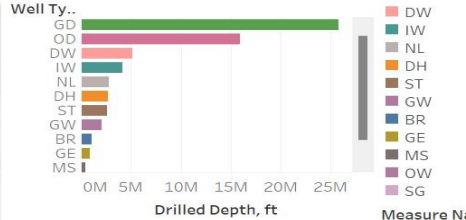Elevation vs Measured Depth for regulated wells in oil & gas extraction.

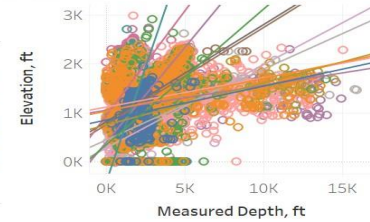Regulated Wells Map of New York state's Oil and gas industry.

Drilled Depth by Well Type for natural resource extraction.

Elevation vs Drilled Depth for regulated wells in the oil & gas industry: 2000 to 2018.

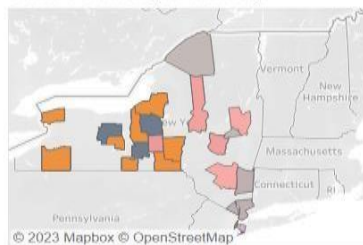Elevation vs Measured Depth for regulated wells in oil & gas extraction.

04/26/2023 I added a takeaway title for my project, this project can be considered an exploratory analysis because it explores a dataset to gain insights and identify patterns and relationships. This project focuses on understanding the data and identifying trends, patterns and relationships between dimensions. The goal is to analyse the oil, gas and other regulated wells in New York to identify trends and patterns in their production and regulation. This will involve analyzing various variables, locations, and production levels to gain insights how these wells operate and are regulated and I'm glad to complete the project.
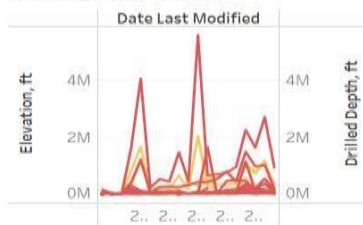
Exploring the Geographical Distribution of Oil & gas Wells in New York

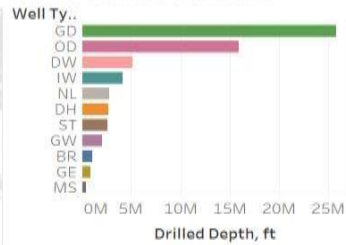An overview of New York's Oil and gas Industries.

Regulated Wells Map of New York state's Oil and gas industry.

Drilled Depth by Well Type for natural resource extraction.

Elevation vs Drilled Depth for regulated wells in the oil & gas industry: 2000 to 2018.

Elevation vs Measured Depth for regulated wells in oil & gas extraction.