

Before Start

Large data set (48,842 rows {records} including header row)

Working with Tables and Filtering Methods

Use *Table names* and *field references* as instructed in formulas

Use cell references in formulas when possible

Example of syntax (note the square brackets)

...NameOtable[nameOfield],A1,....

Auto-fit column width(s) as necessary

- Getting Started
 - Open the .csv file
 - Save As an .xlsx file (add your team name to the beginning of the file name)
 - **Create a new worksheet** called "All MI Data"
 - **Create a new worksheet** called "MI_Data_2024"
 - Make the **tab color** for the All Michigan Data worksheet Blue
 - On the "fiscal_year_revenue_START_2025" worksheet **wrap text** of Row 1 and align to top to see all column headers
 - **Delete** the Offshore Region **column**
 - **Insert** 6 blank **rows** above row 1
 - **Create a Table** from the data
- Use the **Field filters** to display only Michigan data from year 2024
 - Copy/Paste the filtered data (including column headers) to cell A1 of the MI-Data_2024 worksheet
- On the "fiscal_year_revenue_START_2025" worksheet clear all filters
 - Use the **field filter** to only display with no blanks in State field
 - **Format** Revenue column **as Accounting** and auto-fit the column width to see the values
 - Copy the column headers (A7:K7) and paste starting in cell A1
- Use **Advanced Filtering**. Leveraging the copied Field headers along with rows 2 and 3 to filter the data to a Mineral Lease Type of "Oil & Gas" (type in I2) and Fiscal Year "2024" (type in A2) or just a Commodity of "Oil & gas (pre-production)" (type in J3) HINT: Have a cell of the table selected first then **Data tab / Sort & Filter / Advanced** – Use the table as the List Range and A1:K3 as the Criteria Range
- Aggregates
 - In cell A4 type "Total Count"
 - In cell A5 type "Filtered Total"

- In cell B4 use a **COUNT function**, table name and Fiscal Year field reference to **create a formula** to count the total number of records.
- In cell B5 use the **SUBTOTAL function** along with the table name a field reference to Fiscal Year, to count the number of displayed-filtered records.
- State of Michigan Data
 - Return to the “fiscal_year_revenue_START_2025” worksheet and **clear any filters**
 - **Turn on Filtering** for the table (if not already)
 - Use the State field drop down arrow **filter only records** for the state of Michigan
 - Copy/paste the data to the worksheet "All MI Data"
- Historical Analysis
 - **Create a table** from the new Michigan data on the “All MI Data” worksheet
 - **Name the Table** "AllMIData" (*HINT: name the table, not the range*)
 - In cell M2 type “Oil & Gas”
 - In cell M3 type “Hardrock”
 - In cell N2 calculate the Total Revenue for Mineral Lease Types of “Oil & Gas” by using the **SUMIF function**, Table name and field reference
 - In cell N3 calculate the Total Revenue for Mineral Lease Types of “Hardrock” by using the **SUMIF function**, Table name and field reference
 - **Format** N2 and N3 **as Currency**
- Michigan County Analysis
 - In cell M5 use the **UNIQUE function** to create a list of all the counties represented in the table. Use the “AllMIData” table name and “County” field reference as the array argument in the formula.
 - **Copy/paste values** of the county names, in place (M5:M32)
 - In cell N5 use **COUNTIF** along with the table name, “County” field reference and M5 cell reference as the criteria argument to count the number of records for that county
 - Copy the formula down to calculate how many records for each county.
 - In cell O5 use **SUMIF** to calculate the Total Revenue for each county. Use the Table name, field reference(s) and a cell reference in the formula
 - Copy the formula down to calculate the Revenue for each county.
 - **Format** the Revenue values for each county **as currency** (column O)
 - Select all the data in this new table including the county names, count and revenue (M5:O32)
 - **Turn on Filtering**
 - **Sort** by County A-Z
 - In cell M35 type “Most records?”
 - In M36 type “Revenue”
 - To find which county has the most records, in N35 Use **XLOOKUP**, to lookup the **MAX value** in N5:N32 to return the county name from M5:M32
 - To retrieve the Revenue for the county name in cell N35, in N36 Use a **VLOOKUP** to write a formula that looks-up the county in cell N36 to return the Revenue for that

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county located in the 3rd column of the table with an exact match type. (answer the question in cell M36 using the new county table you created)

- **Format** the result in N36 as **Accounting**

- PART II – Pivot Analysis for 2024
 - Go to the “MI_Data_2024” worksheet
 - **Create a table** from the data
 - **Name the Table** “MITwentyFour”
 - **Insert a Pivot Table** on a new worksheet
 - **Complete the Pivot Table** in the PivotTable Fields pane by dragging “Revenue Type” into the “Filters” field, “County” into the “Rows” field and “Revenue” into the “Values” field.
 - **Change the “Sum of Revenue”** by using the down arrow and clicking on “Value Field Settings” to **Show Values As a % of the Grand Total**.
 - **Change the filter** in B2 to reflect only “Royalties”

- Tie-Breaker (create any necessary tables to write formulas to solve)
 - Create a new worksheet tab
 - Name the worksheet “TB”
 - What county (of all counties and states) had the most revenue?
 - How much was the total revenue for that county?
 - In what state is that county located?

End of Instructions

About the Data:

This dataset includes revenue from natural resources by month. Natural resources are extracted from federal lands, federal waters, and Native American lands. The data is further broken down by location, lease type, revenue type (e.g., bonuses, rents, and royalties), and commodity/product information. It does not include privately-owned lands or U.S. state lands. Federal revenue data is available by location. Native American data is only available at the national level to protect private and personally identifiable information. The dataset is tracked and managed by the Department of the Interior's Office of Natural Resources Revenue. It contains revenue data from January 2003-present.

Source:

[Monthly revenue of U.S. natural resources \(Data.gov\)](https://catalog.data.gov/dataset/monthly-revenue-of-u-s-natural-resources)

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