

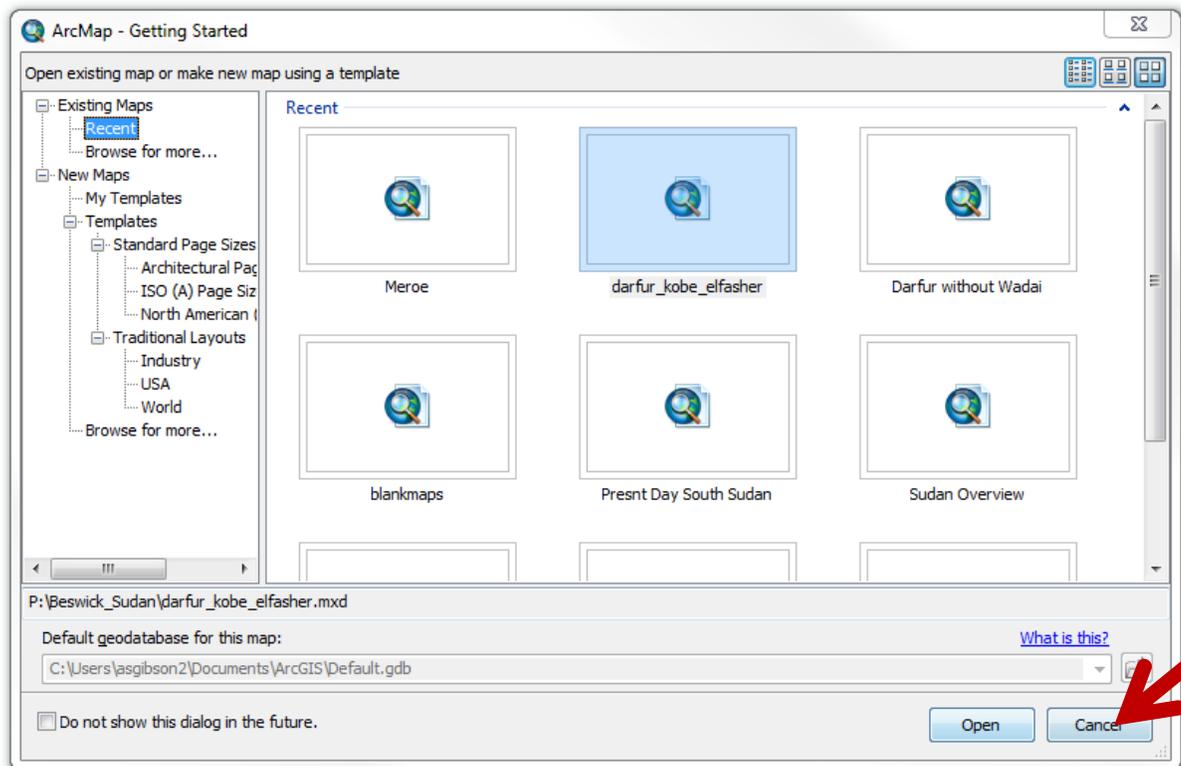
The ArcMap Interface and Using Basic ArcMap Analysis Tools to Create a Map

You will need a computer with ESRI ArcGIS Desktop version 9.3 or higher installed

Save folder with the tutorial data (called GIS_tutorial_data) onto your computer desktop.

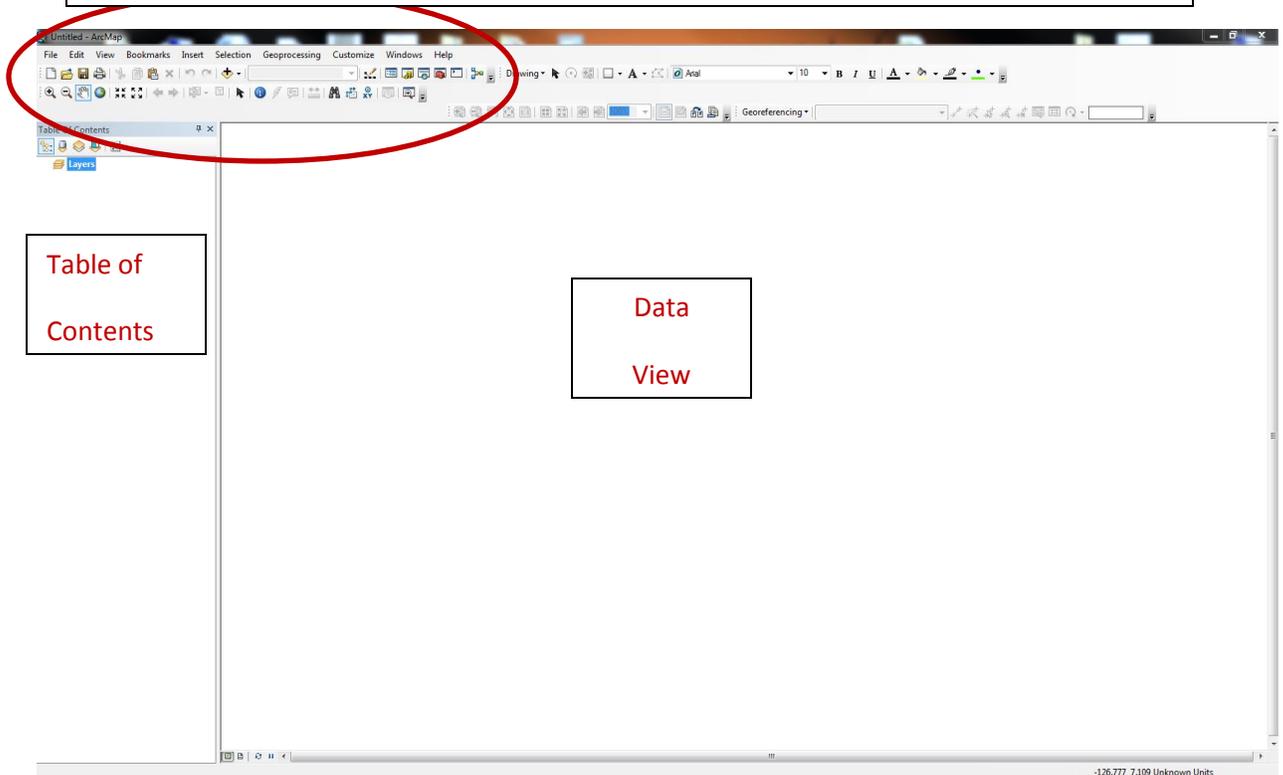
ArcMap Basics and Layout

1. Open ArcMap (start -> All Programs -> ArcMap)
2. Hit **Cancel** on the Getting Started Window. (see below)



3. Take a minute to look at the software screen. Notice the table of contents and the menus at the top of screen. Hover over the tools to see their function. (see below)

Main menu Zoom Scaling Identify Select Pan Add data



4. Click on the ArcCatalog tool 

- a. Click on the connect to folder icon 
- b. Navigate to Desktop -> GIS_tutorial_data and expand the folders beneath it.
 - i. Geodatabases, shapefiles and a raster dataset.

5. Click on the ArcTools tool 

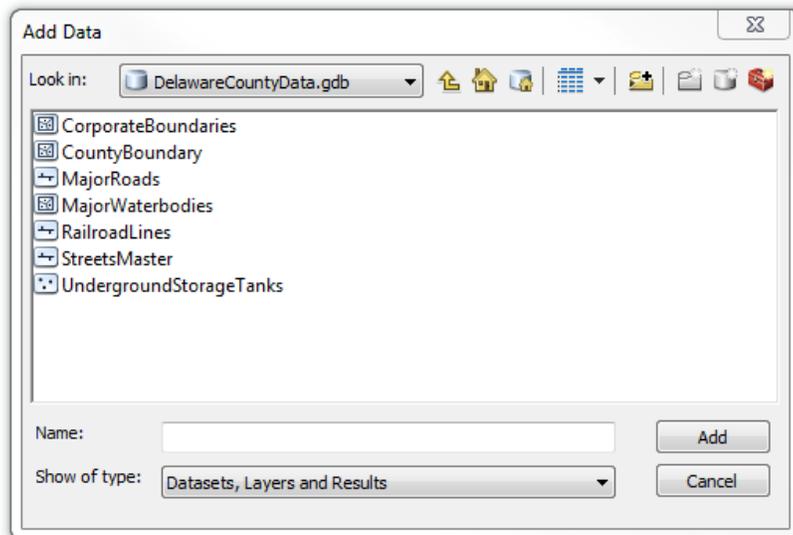
- a. Look at some of the available tools.

6. Click on the Search tool 

- a. Type in the word "buffer" and see all the tools that come up.

Adding Data

1. Click the **Add Data** button on the main menu at the top of the screen 
2. Locate your c:\users\((username))\desktop folder
3. Click on **NREM Data**
4. Here we have two geodatabases and a shapefile. For now we will just open the **DelawareCountyData.gdb** by clicking on it twice. (see below)



5. Click on the first record, hit your shift key and then click on the last file to add them all to ArcMap at once. Click **Add**
6. Notice the feature layers added to the TOC contents on the left. This is the drawing order of your layers. Make sure that they are in correct drawing order.

Zooming In and Out, Full Extent



1. Using your zoom toolset zoom and pan around the map. When finished, click on the full extent globe to go to the full extent.

Explore the Attribute Table

1. Right click on “Underground Storage Tanks” in the Table of Contents, and open the attribute table.
2. Look at the Sub_PROG_T column in the attribute table Notice that there are two different categories in this field (UST and UST\L) (see below)

OBJECTID	PGM_SYS_ID	PRIMARY_NA	COLLECTOR	SUB_PROG_T	DATA_COLLE	HORIZONTAL	NORTHING
1	14557	Mutual Federal Savings Bank	ALIKINS	UST	5/30/2001	014	4450855.59
2	24572	Petro Plus Pantry	ALIKINS	UST	4/29/2003	14	4459886.65
3	24516	Rickers Petro Mart	ALIKINS	UST	2/6/2003	014	4448848.45
4	224423		ALIKINS	UST	2/6/2003	014	4448626.95
5	24473	Rickers Petro Mart	ALIKINS	UST	2/19/2003	014	4452141.71
6	8333	Con-Way Central Express	ALIKINS	UST	2/24/2003	014	4447077.88
7	2255	Hoosier Pete (southside 76)	ALIKINS	UST	3/11/2003	014	4446728.39
8	7020	Village Pantry LLC	ALIKINS	UST/L	1/5/2001	014	4453266.6
9	917	Adams Roofing Co Inc	ALIKINS	UST	1/8/2001	014	4449391.44
10	13430	Marathon Ashland Petroleum Lic	ALIKINS	UST/L	1/8/2001	014	4448808.78
11	2252	G & G Oil Company Of Indiana Inc	ALIKINS	UST/L	1/8/2001	014	4453233.93
12	3307	Crystal Flash Petroleum Corp	ALIKINS	UST/L	1/8/2001	014	4453352.57
13	12926	Marathon Ashland Petroleum Lic	ALIKINS	UST/L	1/23/2001	014	4450015.55
14	5287	City Of Muncie	ALIKINS	UST	1/24/2001	014	4449461.85
15	12657	Vernon L Davis	ALIKINS	UST	1/24/2001	014	4452226.74
16	11710	Speedway SuperAmerica LLC	ALIKINS	UST	1/24/2001	014	4453410.7
17	3393	Jefferson Smurff Corp	ALIKINS	UST/L	1/24/2001	014	4450248.87
18	2451	Ball Corporation	ALIKINS	UST	1/25/2001	014	4450223.04
19	15590	Broadway Marathon	ALIKINS	UST/L	1/29/2001	014	4452199.9
20	19594	Mejor Stores Limited Partnership	ALIKINS	UST	1/4/2001	014	4453200.73
21	253	Swiftly Oil Co Inc	ALIKINS	UST/L	1/5/2001	014	4448156.1
22	6772	Petrol Properties LLC	ALIKINS	UST/L	1/22/2001	014	4448741.63
23	2272	G & G Oil Company Of Indiana Inc	ALIKINS	UST/L	1/22/2001	014	4448955.81
24	2256	G & G Oil Company Of Indiana Inc	ALIKINS	UST/L	1/22/2001	014	4458048.29
25	2251	#9 Auto Truck Plaza Inc	ALIKINS	UST/L	1/22/2001	014	4459496.51
26	617	Speedway SuperAmerica LLC	ALIKINS	UST/L	1/23/2001	014	4459755.54
27	17447	United Parcel Service	ALIKINS	UST/L	1/23/2001	014	4447114.74
28	2259	Hoosier Pete #11		UST/L	<Null>	001	4448096.34925
29	24423	Gas America #65		UST	<Null>	001	4452215.58545
30	22961	Jim Allen		UST	<Null>	001	4451117.93168
31	11328	Village Pantry #641	ALIKINS	UST/L	12/17/2002	014	4455297.68

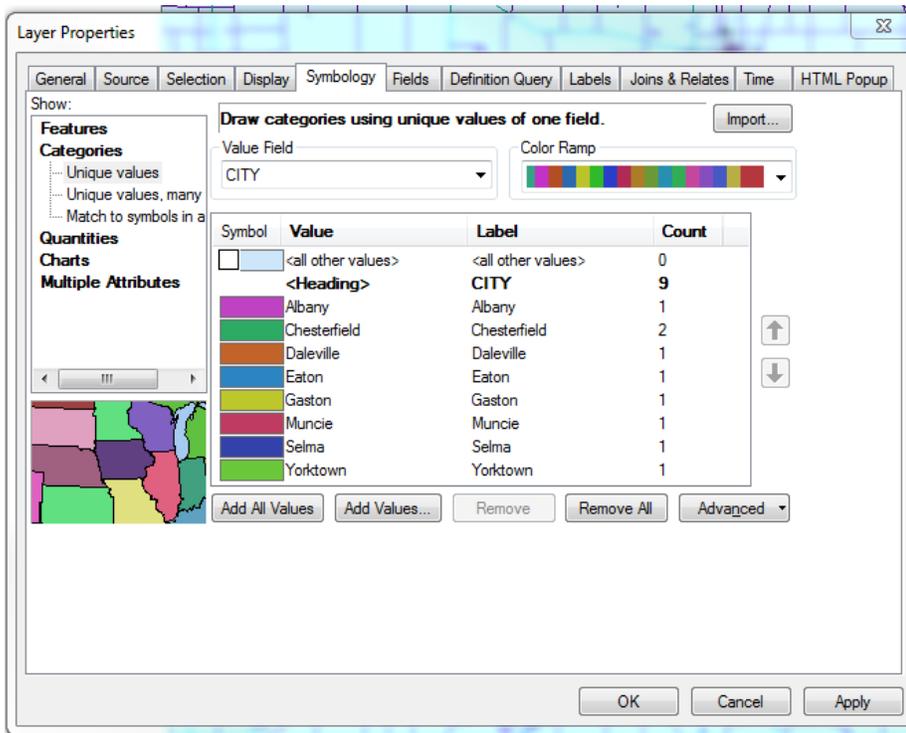
- Now open the attribute table of Corporate Boundaries (right click on the layer in the Table of Contents and open the attribute table).
- Notice the City Field; we will symbolize the layers based on this field. Close the table by hitting the X in the right upper hand corner of the window. (see below)

OBJECTID*	Shape*	PERIMETER	DC_CORPLM1	DC_CORPL_1	CITY	SHAPE_Length	SHAPE_Area
1	Polygon	<Null>	<Null>	<Null>	Chesterfield	4745.340098	1109243.811388
2	Polygon	<Null>	<Null>	<Null>	Chesterfield	3517.530015	645473.208402
3	Polygon	50414.99207	3	2	Albany	53017.155575	46836444.021448
4	Polygon	19101.88036	4	3	Gaston	19372.917704	10102001.245042
5	Polygon	45716.01034	13	12	Daleville	55557.809532	58875876.533004
6	Polygon	35475.94427	2	1	Elton	69483.767937	105923929.444908
7	Polygon	61591.85425	9	8	Yorktown	99582.068423	248025221.641649
8	Polygon	182050.84896	5	4	Muncie	200455.971274	768811979.196639
9	Polygon	43806.92347	8	7	Selma	47683.657959	25185601.596921

Symbology

- Right click on CorporateBoundaries and click on **Properties**.
- Look through the tabs.

- On the **symbology** tab, click categories on the left hand of the window and then choose City for the **Value Field** and click on **Add all Values**. Notice the color ramp options. (see below)



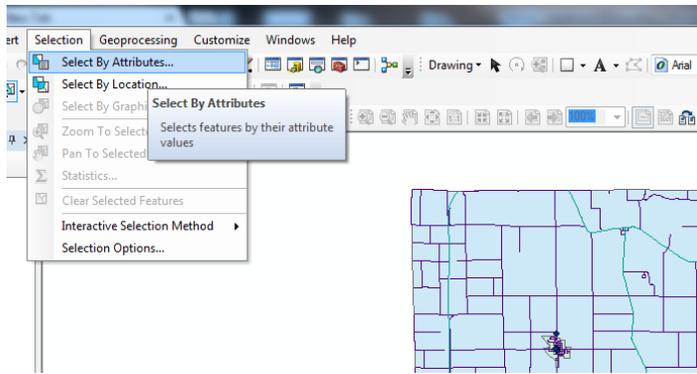
- Change the colors of the other feature layers according to your preference. (Right click on the layers in the tables of contents, choose properties, and go to the symbology tab.)

Analysis

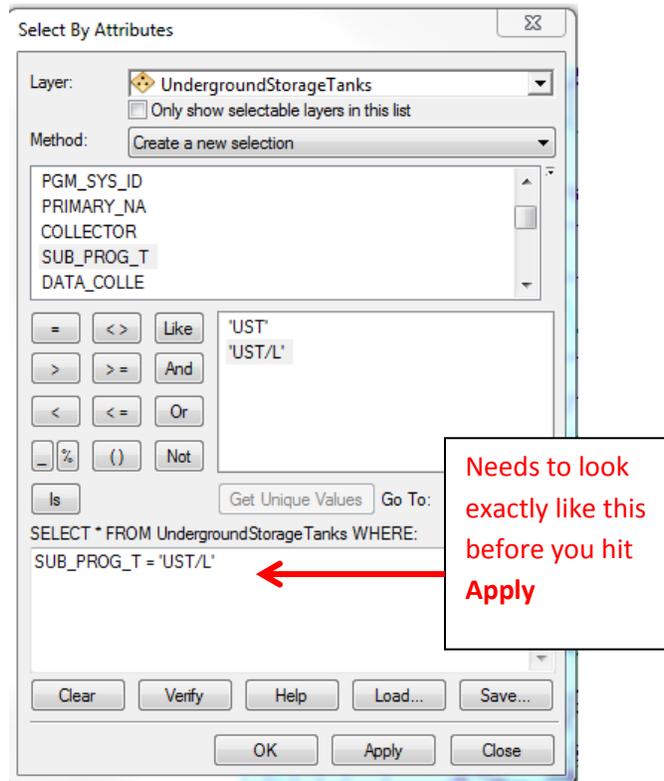
We will be looking at underground storage tanks that are

- 1.) Leaking
- 2.) Within 250 feet of the White River and Prairie Creek Reservoir.

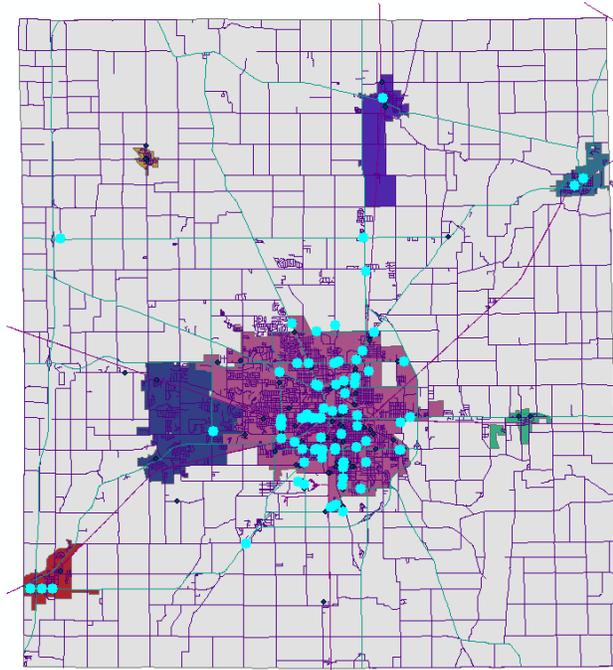
1. Click on **Selection -> Select by Attribute** (see below)



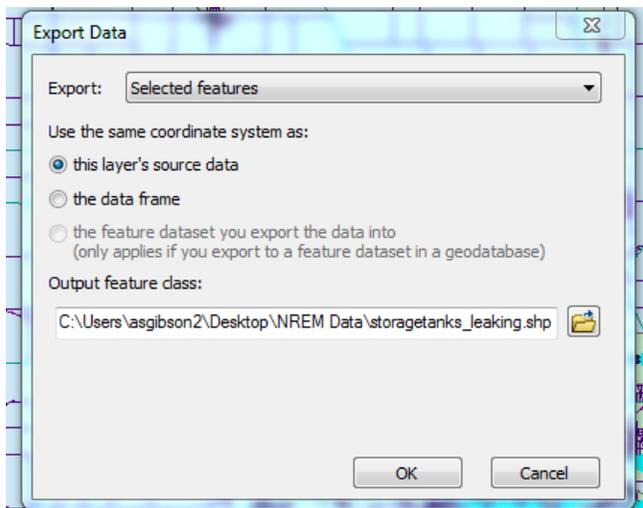
- a. For Layer: **UndergroundStorageTanks**
- b. Method: **Create New selection**
- c. Click on **SUB_PROG_T**
- d. Click on the equal button and then click **Get Unique values.**
- e. Choose **"UST/L"** (leaking storage tanks)
- f. Click **Apply**



Results: with leaking storage tanks highlighted:



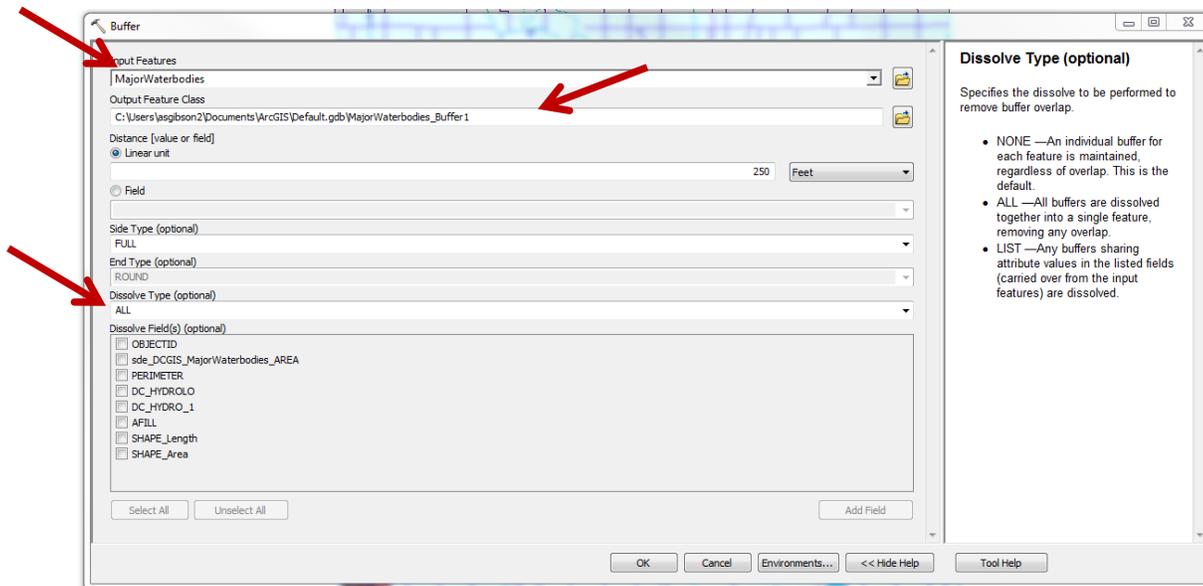
2. With the storage tanks highlighted right click on the **UnderGroundStorageTanks** feature class in the Table of Contents.
3. Choose **Data -> EXPORT DATA**
4. Change the name to **StorageTanks_leaking** and hit **OK**. (see below)



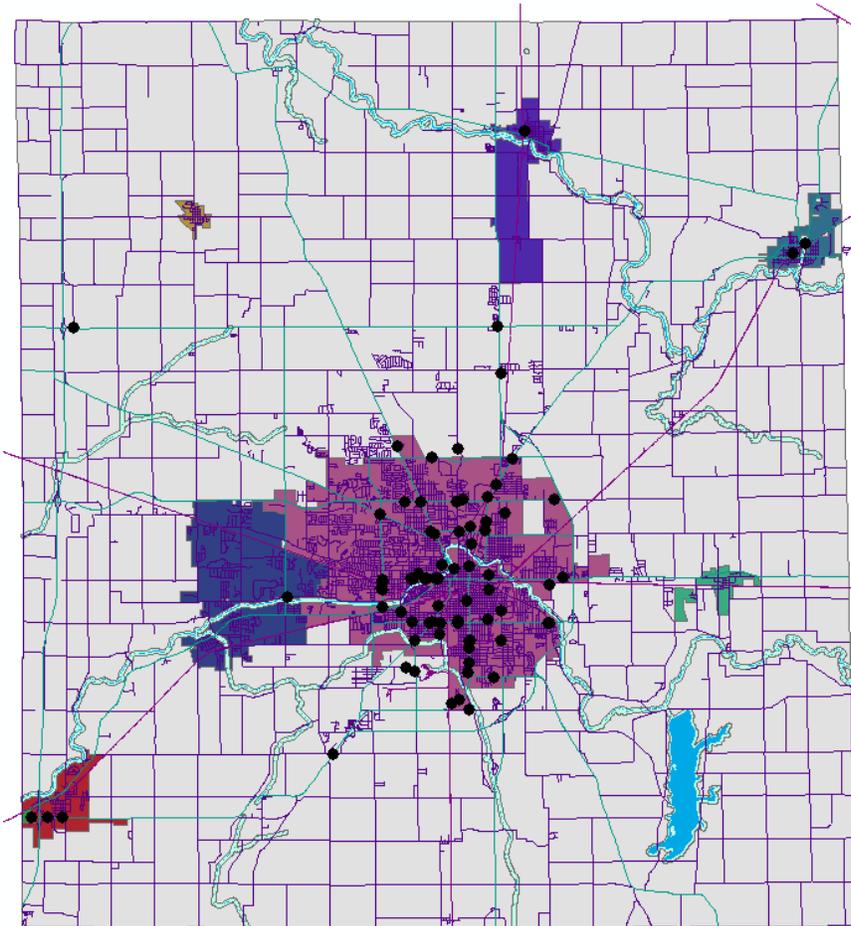
5. Click **Yes** on the window that pops up that asks if you want to add the new layer.
6. Turn off the UnderGroundSTorateTanks layer by clicking on the box beside its name in the table of contents. (not the file you just created)

Buffer the MajorWaterbodies layer

1. Use your **Search** tool and type in **buffer** (or go to Geoprocessing on the main menu and click on buffer. Change the boxes to reflect what is below.

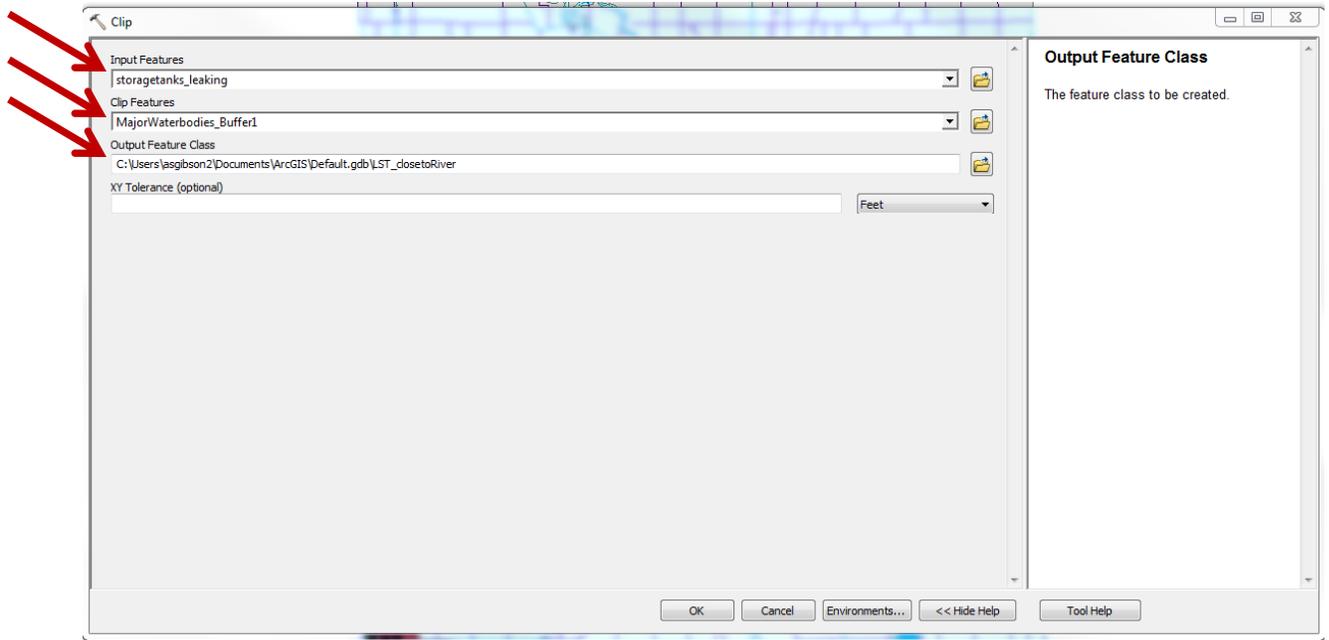


Results should look like this:



Use the **Clip** tool to clip the leaking storage tanks by the water buffer:

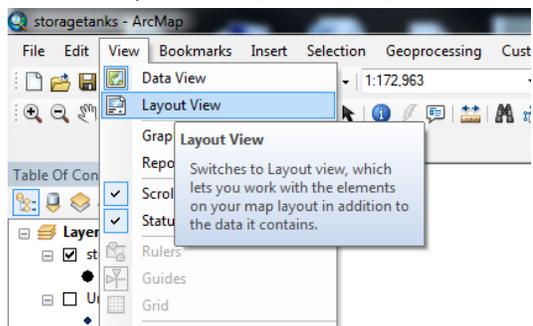
2. Search for clip (or go to **geoprocessing ->clip**)
3. Enter the parameters below and click **OK**.



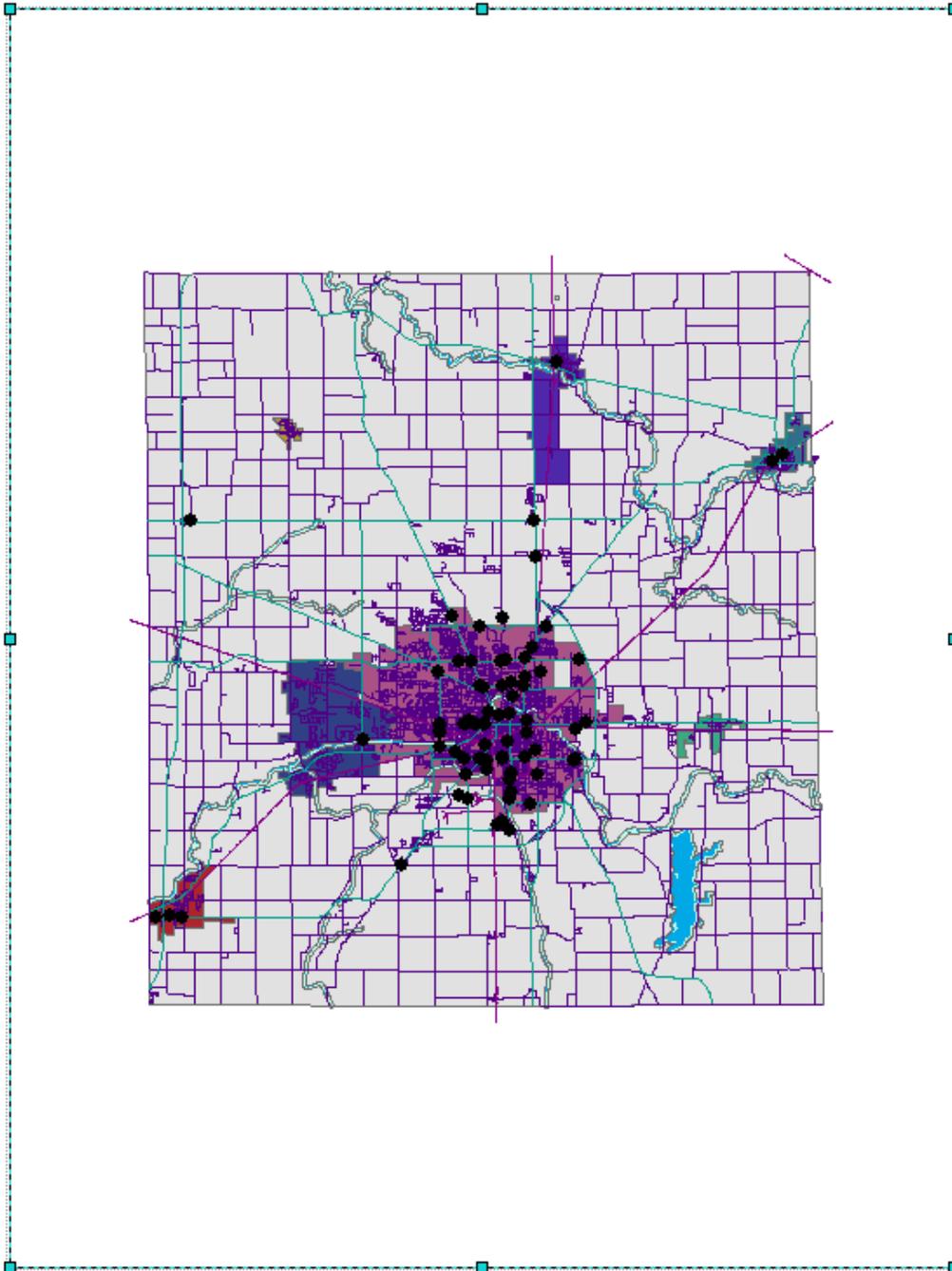
Now you have a layer with Leaking underground storage tanks that are within 250 feet of the major water bodies in Delaware County.

Make a map of your results

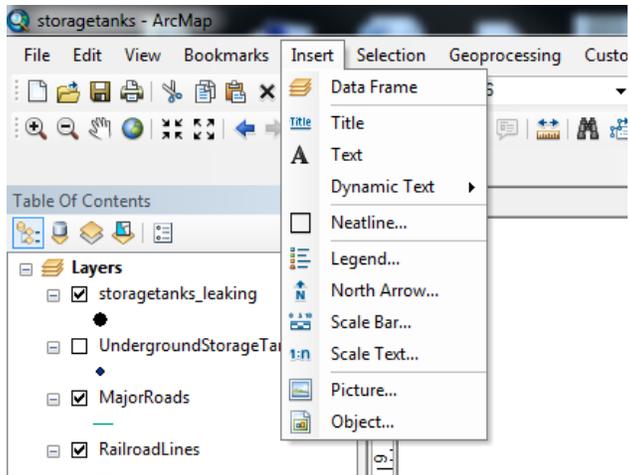
1. Click on Layout view (see below)



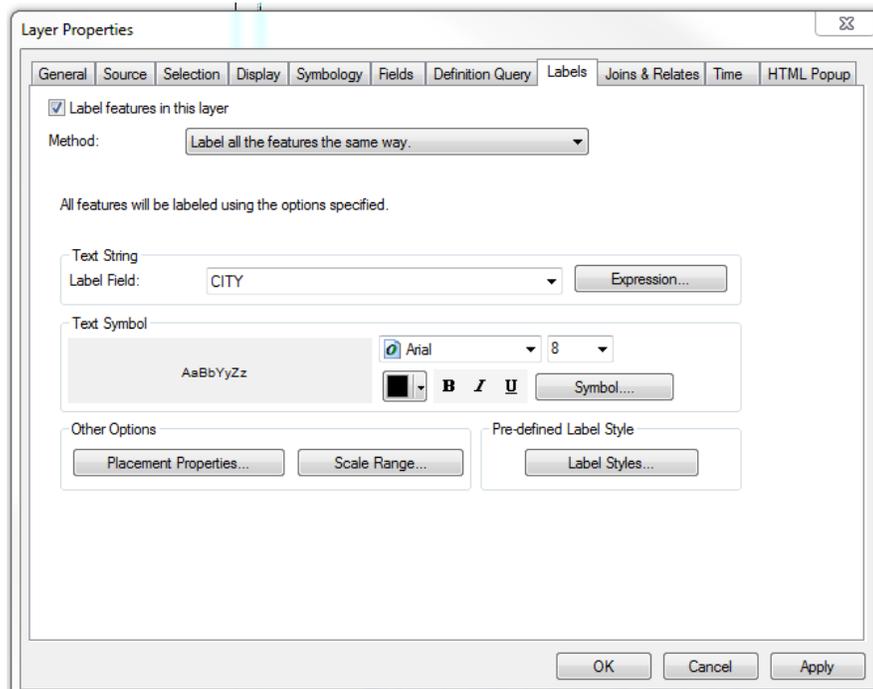
2. Use your selector arrow  to make the data go to the print borders of the page. (results below)



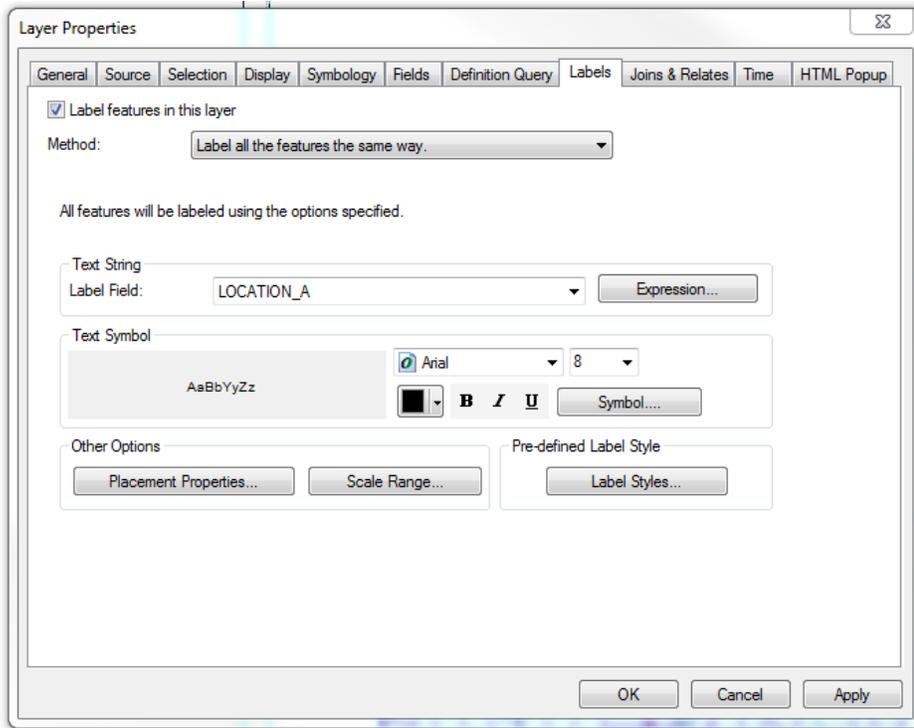
3. Go to **Insert** and add a **title, north arrow** and **scale bar**. Move them to the appropriate area on the map. (see below)



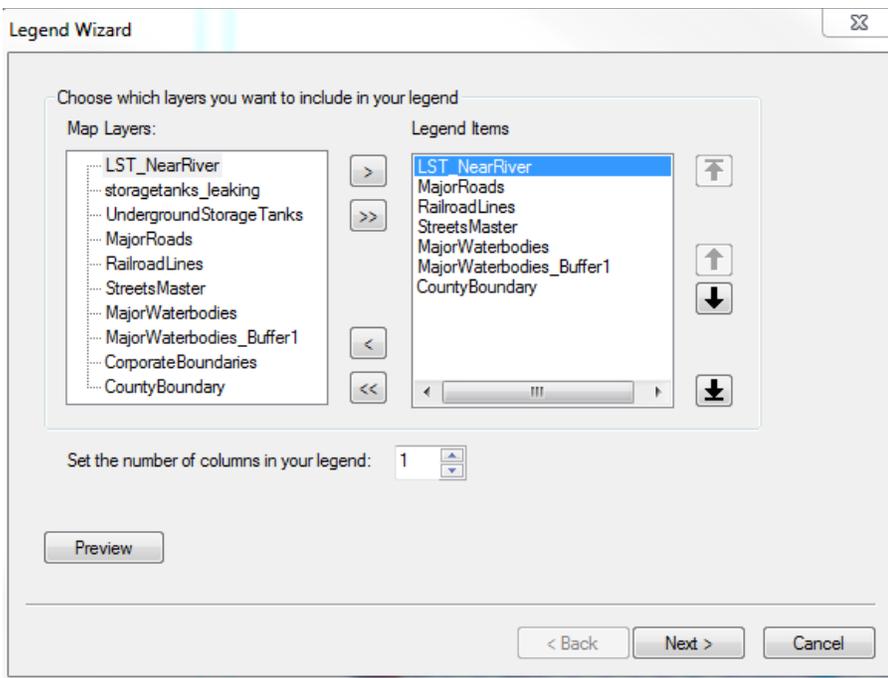
4. Label the Corporate Boundaries layer by right clicking on the layers in the table of contents and going to the labels tab. (see below)



5. Label the LST_nearriver layer using the Location_A field. (see below)



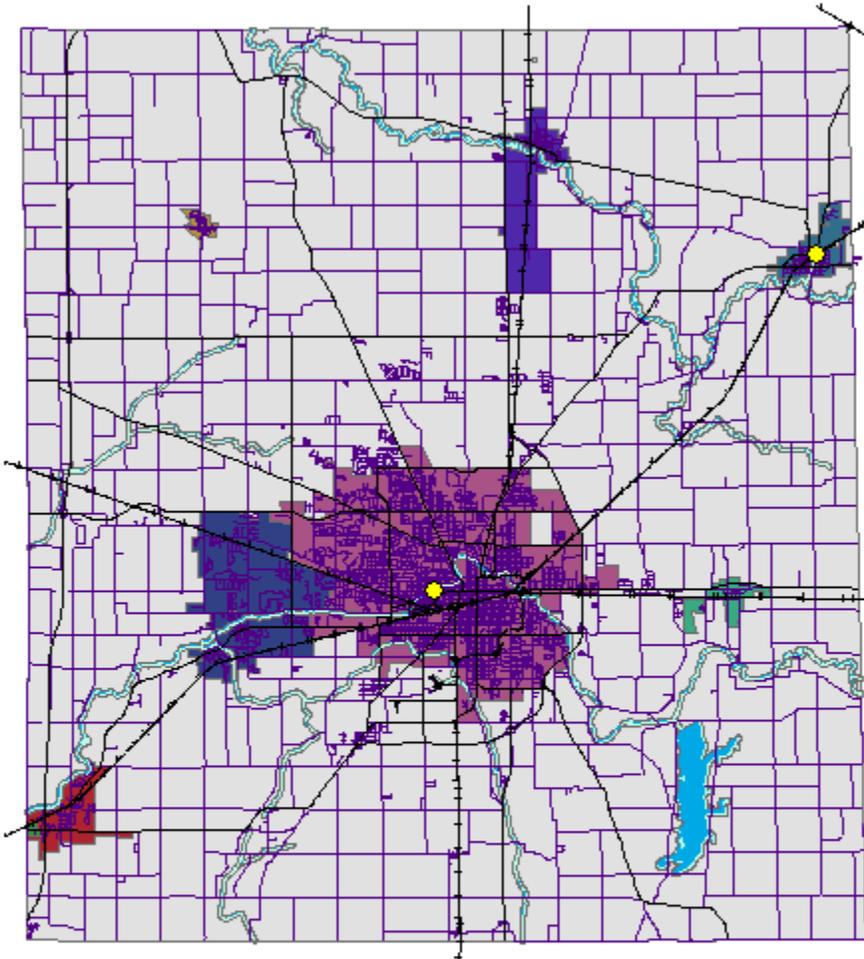
6. Add a legend...remove corporate boundaries from the **Legend Items** and accept all other default by hitting next through the wizard. (see below)



7. File -> Save
8. File -> Export (pdf or jpg)

FINISHED PRODUCT:

Leaking Underground Storage Tanks in Del Co.



Legend

-  LST_NearRiver
-  MajorRoads
-  RailroadLines
-  StreetsMaster
-  MajorWaterbodies
-  MajorWaterbodies_Buffer1
-  CountyBoundary

