



Spatial Query

QGIS 2.4 - WINDOWS 7 - AUGUST 2014

Goal for this lesson:

In this lesson you will learn how to create a spatial query. Find geographical objects using other geographical objects. Ex: Find a point which is inside a polygon, or Find a polygon which is intersected by a line.

After finding the wanted objects, attribute data is to be joined by location. Ex: If a point is inside a polygon. Add the polygon attribute to the point attributelist.

The steps are:

- Open vector layers
- Create Spatial Query from Vector menu
- Join by location
- Calculate with GroupStat

Data: Spatial.Zip

Source: DGU.dk edited data

Cadastral: Contains polygons for landowners area

Water_Catchment: Contains polygons for Water Catchment areas

Water_Drill: Contains points for Water drilling holes

Open Vector layers

Open the 3 layers: Water_drill, Cadastral and Water_Catchment

Spatial Query

A new regulation about water supply has been made. If a water drill hole is in a water catchment area, both Parish council and owner of the land has to be notified.

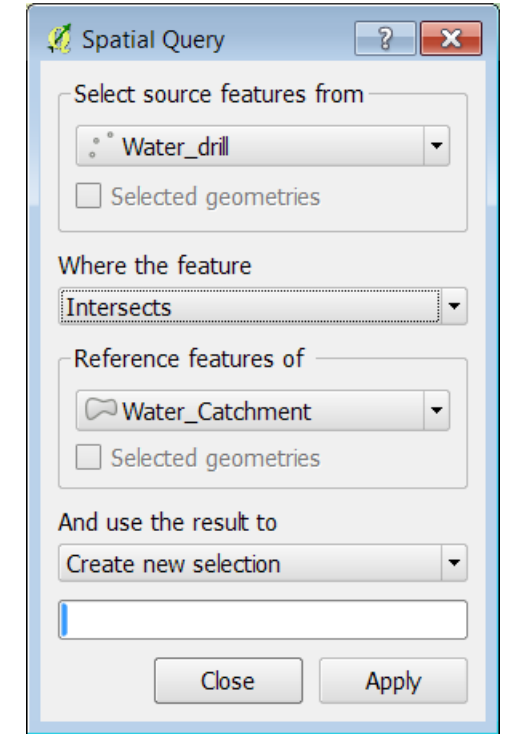
So you have to split the task:

- Find all the Water_Drill which are in a Water_Catchment
- Find all the selected Water_Drill which are in Cadastral map
- Save the selection of Water_Drill as a temporary Layer
- Join attributes for the Temporary layer with the Cadastral map

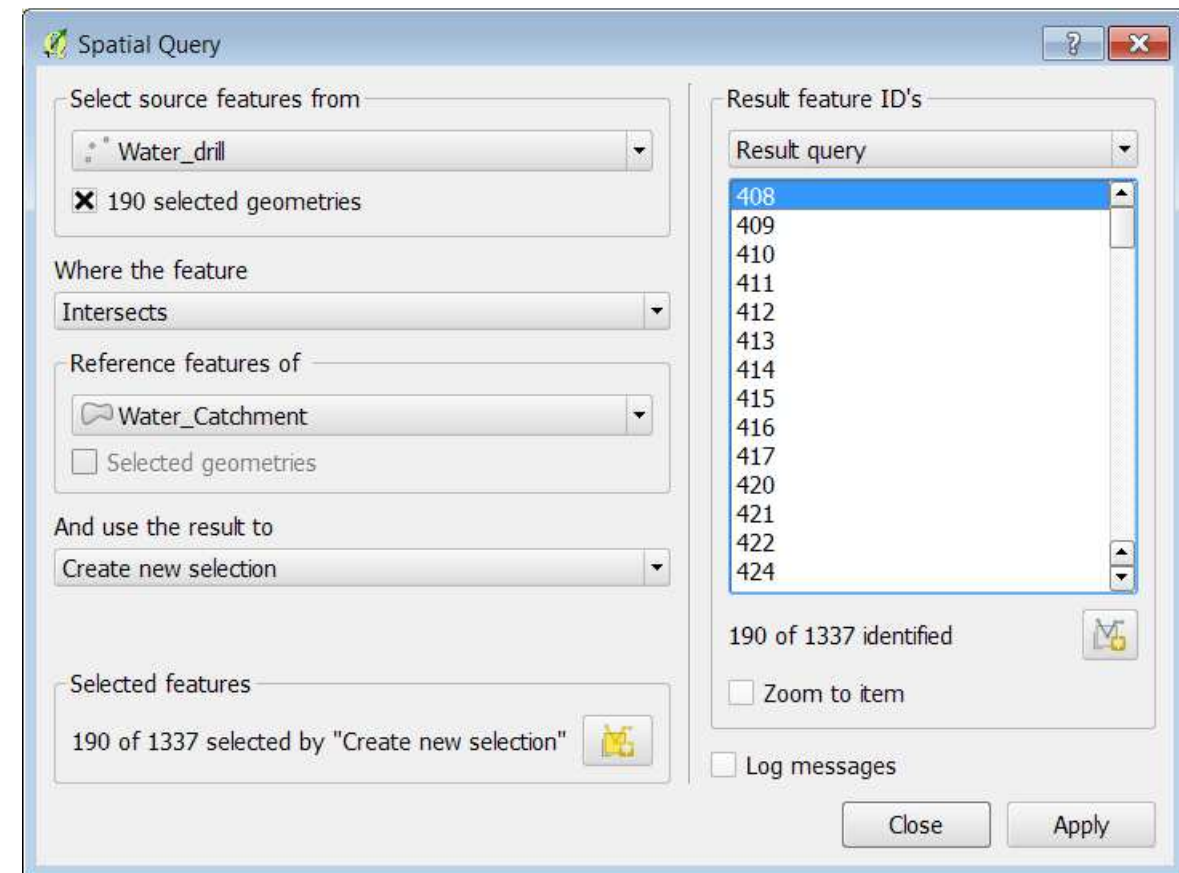
Click **Vector>Spatial Query> Spatial Query**

Fill out as shown in this dialog

Click **Apply**



190 objects from Water_drill will be selected.



In the same dialog choose to find all the Water_Drill which both intersect with Water_Catchment and Cadastral.

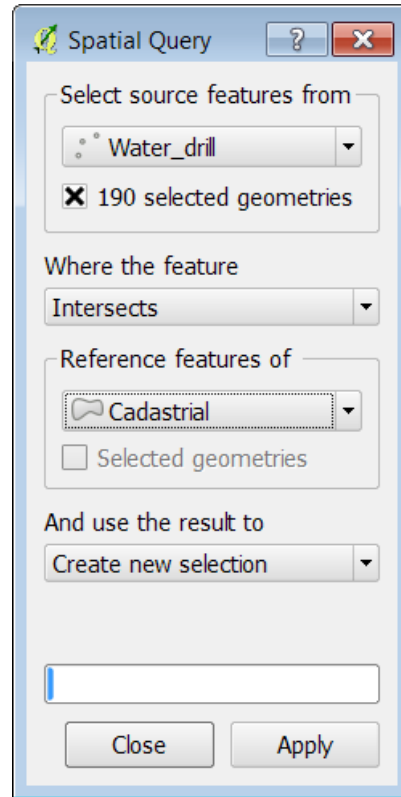
Fill in as shown in this dialog

Click on **Apply**

22 Water_Drill features are selected

Click on **Create layer with list of items** Marked with a red circle.

The layer is only a temporary layer.



Join by Location

Open the attribute table for **Water_drill < Intersects > Cadastral**

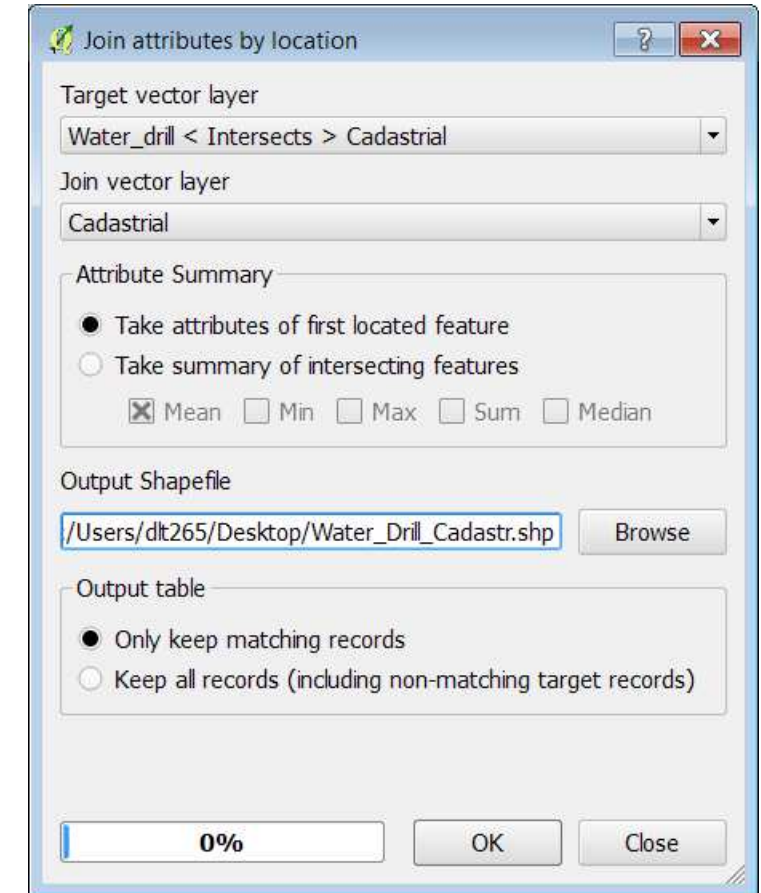
In this table you only see information about drill hole name, drill depth and elevation. You also need information about the parish name and cadastral number. This can be done by joining the tables by the objects location

Click on **Vector>Data management tools> Join attributes by Location**

Fill in the dialog as shown

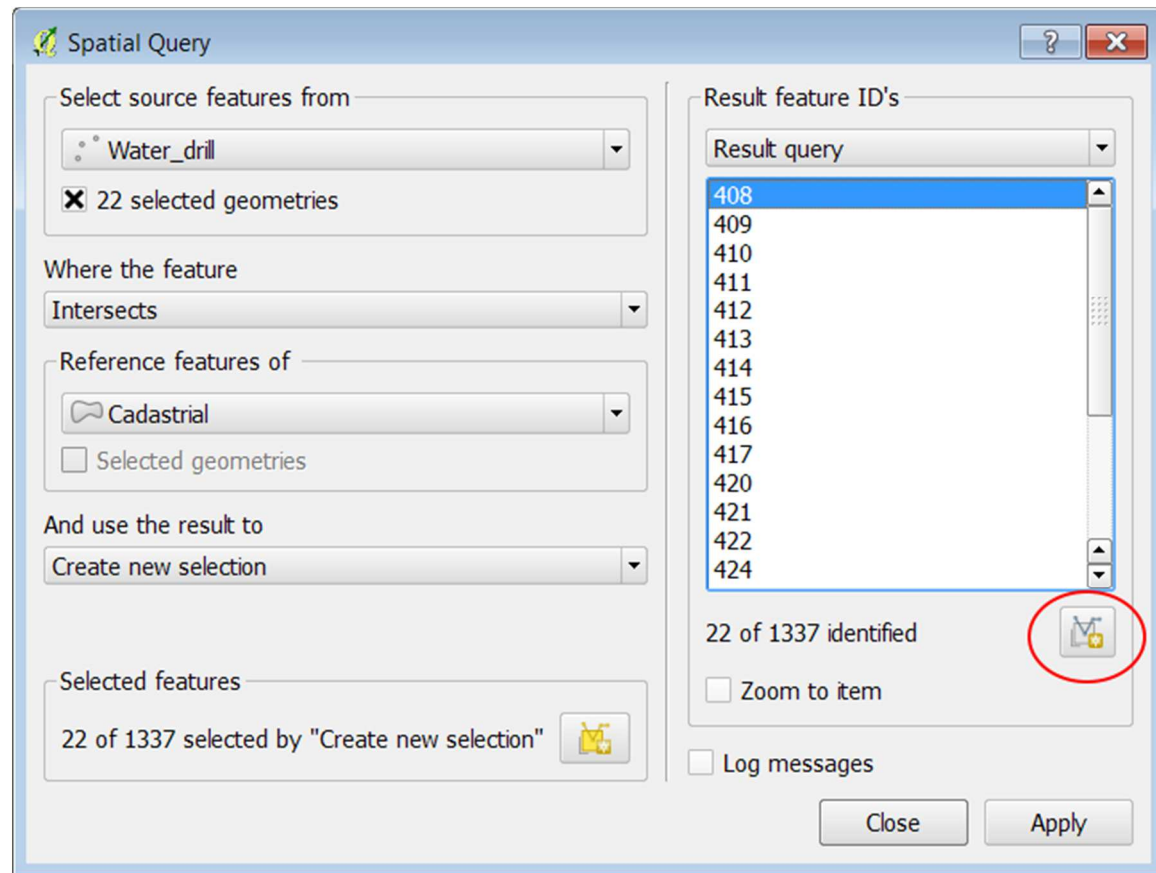
Set the output shapefile name as Water_Drill_Cadastr

Click **OK**
Click **Yes**
Click **Close**



Open the attribute table for the new layer. The attributes for the Cadastral layer is now joined with the Drill.

	DGU_NO	Elev_m	Depth_m	OBJECTID	CADST_DIST	CADAST_CD	CADAST_NO	MUNICNAME	MUNICCODE	PARISH
0	34. 427	47.0	10.9	122153	Sohngaards...	2005058.00...	1aez	Aalborg Ko...	851	Hans Egede
1	34. 2167	46.6	6.0	120309	Sohngaards...	2005058.00...	17t	Aalborg Ko...	851	Hans Egede
2	34. 475	40.0	6.4	122146	Sohngaards...	2005058.00...	1aeb	Aalborg Ko...	851	Hans Egede
3	34. 425	42.5	8.3	122153	Sohngaards...	2005058.00...	1aez	Aalborg Ko...	851	Hans Egede
4	34. 3219	45.3	62.0	122011	Sohngaards...	2005058.00...	1a	Aalborg Ko...	851	Hans Egede
5	34. 3327	44.3	77.0	122011	Sohngaards...	2005058.00...	1a	Aalborg Ko...	851	Hans Egede
6	34. 2945	47.9	105.0	122011	Sohngaards...	2005058.00...	1a	Aalborg Ko...	851	Hans Egede
7	34. 3328	47.6	90.0	122011	Sohngaards...	2005058.00...	1a	Aalborg Ko...	851	Hans Egede
8	34. 3331	46.3	90.0	122011	Sohngaards...	2005058.00...	1a	Aalborg Ko...	851	Hans Egede
9	34. 3329	44.6	85.0	122011	Sohngaards...	2005058.00...	1a	Aalborg Ko...	851	Hans Egede
10	34. 1312	47.5	6.5	122163	Sdr. Trander...	621352.000...	7000l	Aalborg Ko...	851	Sdr Tranders
11	34. 993	40.0	6.2	122002	Sohngaards...	2005058.00...	1aie	Aalborg Ko...	851	Hans Egede
12	34. 1601	31.4	8.5	122163	Sdr. Trander...	621352.000...	7000l	Aalborg Ko...	851	Sdr Tranders
13	34. 2717	35.0	4.0	104485	Nr. Tranders	2005057.00...	15hf	Aalborg Ko...	851	Veinaard



GroupStat plugin

In spreadsheets Pivot tables are used for calculating and viewing data in a 'simple' way.

In QGIS a smaller version of Pivot are available – it's called **GroupStat**

You have to calculate and view:
How many drill holes there are in each Parish.

Click on **Vector>GroupStat>GroupStat**

Choose the layer Water_Drill_Cadastr
In **Fields** window - drag **Parish** to **Rows** window
Drag **Count** to **Value**
Drag **DGU_NO** to **Value**
Click **Calculate**

