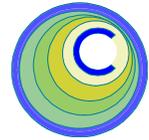


# The CEDRA Corporation's COMMAND OF THE MONTH

A monthly information bulletin

October 2012

FEATURED COMMAND  
Extracting Section  
Town Range Values



## Application Description

Those who have worked with Aliquot descriptions are familiar with the terminology Section-Town-Range. Section, Town and Range values are part of the Public Land Survey System (PLSS), which is a way of subdividing and describing land in the United States. The link below:

[http://www.nationalatlas.gov/articles/boundaries/a\\_plss.html#top](http://www.nationalatlas.gov/articles/boundaries/a_plss.html#top)

offers an excellent description of the PLSS. Those interested in finding out more of the PLSS should visit the above web site.

When processing Aliquot descriptions with the [Aliquot Polygons from Table] command, it is important to have the Section, Town and Range values. A problem arises, however, when the Section, Town and Range values are concatenated into one overall string, rather than appearing as 3 individual values.

As such, the question becomes how does one extract the individual Section, Town and Range values from the overall string.

## The CEDRA Solution

To address the application described above, the [Extract Section-Town-Range] command within the {CEDRA-Aliquot-Tools} toolbar, shown in Figure 1, can be used. In the application described above, the [Extract Section-Town-Range] command would be executed prior to invoking the [Aliquot Polygons from Table] command.

## Extract Section-Town-Range Overview

The *Extract Section-Town-Range* menu command enables the user to extract from a string the section, town and range components. In addition to these 3 components, the command is also designed to accommodate the township and range direction components. As such, up to 5 values can be extracted from a string.

This command operates on the current active polygon layer. If there is no active layer or more than 1 active layer, or a non-polygon active layer, an appropriate warning message is displayed.

### *Command Of The Month bulletin*

*This month's issue discusses how to extract section-town-range values from a string and populate other fields in the active layer.*

Once activated, the user specifies the field to be processed and the character ranges for each of the components.

The user is also able to specify which fields the components are to be stored in. If a component is to be stored in a field that does not exist, the command will create the field for the user. The default Section, Township and Range fields, SECT, TWP and RNG respectively, will be of field type TEXT, with a length of 8, while the default Township and Range Direction fields, TDIR and RDIR respectively, will be of field type TEXT and a length of 2.

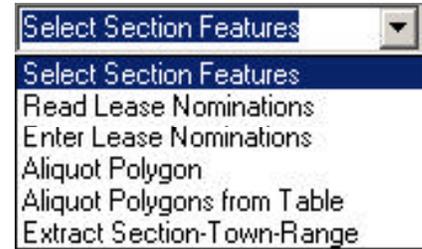
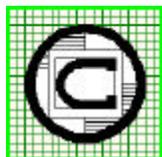


Figure 1  
CEDRA-Aliquot-Tools Toolbar

## Extract Section-Town-Range Operation

To use this tool command, the user should:

- **1** Scroll down in the **Table of Contents** area, and **select** the layer that contains the features to be processed. If a layer contains selected features then only the selected features will be processed, otherwise, all features in the active layer are processed.
- **2** Scroll down in the {CEDRA-Aliquot-Tools} toolbar and **select** the [Extract Section-Town-Range] menu command. Note that:
  - If a layer has not been activated, a polygon layer has not been selected, or if more than one layer has been activated, a warning message box is displayed informing the user with an appropriate message, see Figures 2, 3 and 4. In such case repeat from Step 1.
  - If only one polygon layer has been activated, the dialog box of Figure 5 is displayed.



**The CEDRA Corporation**

**Total CADD for Engineers™  
Bridging Engineering and GIS™**

Phone: 585-232-6998  
Fax: 585-262-2042

151 Sully's Trail - Suite 6  
Pittsford, New York 14534

E-mail: [cedra@cedra.com](mailto:cedra@cedra.com)  
URL: <http://www.cedra.com>

Copyright © 2012 The CEDRA Corporation. The CEDRA logos, CEDRA-AVseries, CEDRA-AVcad, CEDRA-AVcogo, CEDRA-AVparcel, CEDRA-AVland, CEDRA-AVsand, CEDRA-AVwater, CEDRA-DataEditor and CEDRA-DxfExport are trademarks of The CEDRA Corporation.  
ArcView® GIS, 3D Analyst, and ArcGIS are registered trademarks of Environmental Systems Research Institute, Inc. All World Rights Reserved.



Figure 2  
No Layer Selected Warning

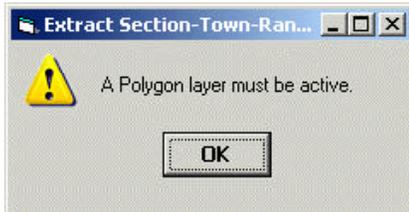


Figure 3  
No Active Polygon Layer  
Warning Message



Figure 4  
More than 1 Active Polygon Layer  
Warning Message

- 3 **Scroll** down in the *Field to be Processed*: data field, and **select** the field containing the strings which are to be parsed. That is, the string that contains all of the Section, Township and Range components.
- 4 **Enter** in the *Section Character Range*: data field the **character positions** in the string denoting the start and end of the section value.
- 5 **Enter** in the *Township Character Range*: data field the **character positions** in the string denoting the start and end of the township value.
- 6 **Enter** in the *Township Direction Character Range*: data field the **character positions** in the string denoting the start and end of the township direction value.

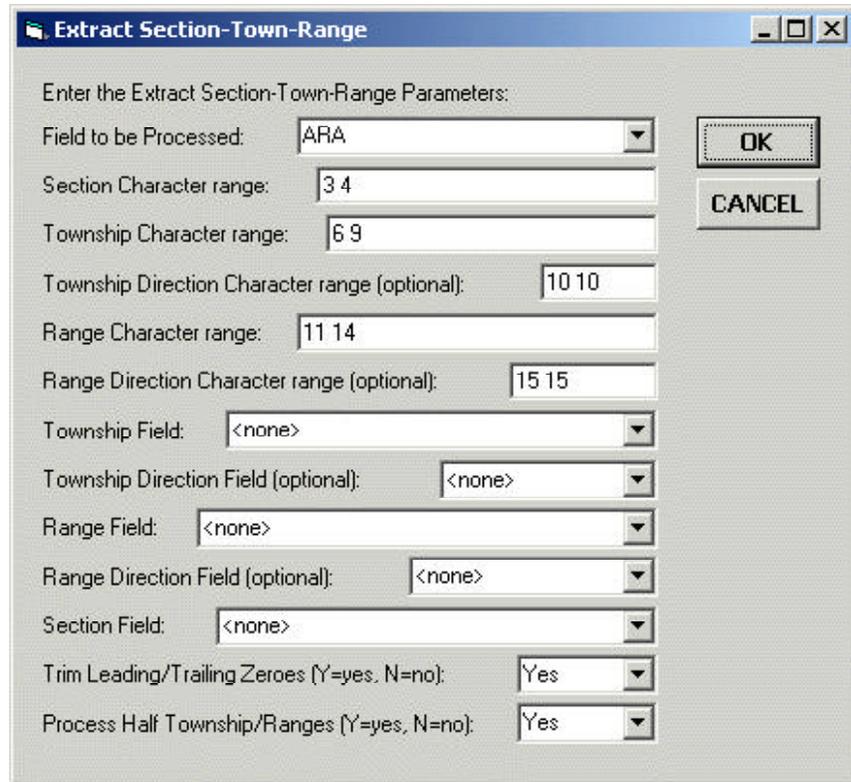


Figure 5 - Extract Section-Town-Range Multi-Input Dialog Box

- 7 **Enter** in the *Range Character Range*: data field the **character positions** in the string denoting the start and end of the range value.
  - Default value **<none>** if this parameter is not to be used
- 8 **Enter** in the *Range Direction Character Range*: data field the **character positions** in the string denoting the start and end of the range direction value.
- 9 **Scroll** down in the *Township Field*: data field, and **select** the attribute that is to contain the township value. Note that this is a required parameter and must be specified. If the user wishes to specify a name that does not exist in the list, the user can enter the desired name directly for this parameter, rather than selecting from the list.
- 10 **Scroll** down in the *Township Direction Field (optional)*: data field, and **select** the:
  - **Attribute** data field that is to contain the township direction component value, or the
- 11 **Scroll** down in the *Range Field*: data field, and **select** the attribute that is to contain the range component value. Note that this is a required parameter and must be specified. If the user wishes to specify a name that does not exist in the list, the user can enter the desired name directly for this parameter, rather than selecting from the list.
- 12 **Scroll** down in the *Range Direction Field (optional)*: data field, and **select** the:

- **Attribute** data field that is to contain the range direction component value, or the
- Default value **<none>** if this parameter is not to be used.

This is an optional parameter and as such does not need to be specified. If the user wishes to specify a name that does not exist in the list, the user can enter the desired name directly for this parameter, rather than selecting from the list.

- **13 Scroll** down in the *Section Field*: data field, and **select** the attribute that is to contain the section component value. Note that this is a required parameter and must be specified. If the user wishes to specify a name that does not exist in the list, the user can enter the desired name directly for this parameter, rather than selecting from the list.
- **14 Scroll** down in the *Trim Leading/Trailing Zeroes (Y=yes, N=no)*: data field, and **select** the:
  - **Yes** option to indicate that any leading or trailing zeroes are to be removed from the township and range values, or the
  - **No** option to indicate that the township and range values are to be left as is.
- **15 Scroll** down in the *Process Half Township/Ranges (Y=yes, N=no)*: data field, and **select** the:
  - **Yes** option to indicate that the township and range value will be modified to reflect a half township or range if the last character in the value is not zero, or the
  - **No** option to indicate that the township and range values are to be left as is.
- **16 Click** at the **OK** button to begin the processing, or **click** at the **Cancel** button to abort the command.

If the OK button is selected, the command will process the selected features in the active layer or all of the features in the active layer if the layer does not contain any selected features.

Using the specified character positions, the command extracts the various Section-Township-Range component values and stores these values in the specified fields. If the field name is **<none>**, the component is skipped. If the field does not exist, the command will create the field as described in the overview of the command.

Upon completion, the command will display in the status bar area, the number of features that were modified

#### Notes

- a. An example of a string that is processed by the [Extract Section-Town-Range] command is:  
T140SR630WS27  
which defines Township 140 south of the survey's Base Line, Range 630 west of the Principal Meridian and Section 27. Note that the sample string shown above does not contain half townships or ranges.
- b. An example of a string containing half townships and ranges is:  
T1405SR6305WS27  
which defines Township 140.5 south of the survey's Base Line, Range 630.5 west of the Principal Meridian and Section 27.
- c. It is possible to process half townships and half ranges. To do so, the user should select the Yes option for the Process Half Township/Range parameter. When this is done, if the value of the township or range component contains more than 3 characters and the last character is not a zero, the command will insert a decimal point into the value. So that a half range value of 6305, see note b above, would be stored as 630.5.

- d. If the field name that is specified for the Township Field, Range Field or Section Field parameters does not exist in the active layer, the command will create the field for the user. In this case, the fields created will be of string type with a maximum length of 8 characters.
- e. If the field name that is specified for the Township Direction Field, or Range Direction Field parameters does not exist in the active layer, the command will create the field for the user. In this case, the fields created will be of string type with a maximum length of 2 characters.

#### Summary

When dealing with Aliquot descriptions sometimes the given dataset does not contain the individual Section, Town and Range values but rather it contains an overall identification string. In these cases it becomes necessary to extract the individual values. The [Extract Section-Town-Range] command provides this functionality.

As always, users who have a need for functionality that is not presently available in CEDRA software should feel free to forward these requests to CEDRA, as well as, any other comments or suggestion you may have.

*If you have a request for Command Of The Month, feel free to phone, fax or e-mail your request to The CEDRA Corporation.*