

A Superlative Genealogical Tool for Google Earth By Richard Rands

Late one evening a few weeks ago I was in the final steps of polishing a lesson about researching U.S. land grants. I was trying to come up with a way to explain how townships, ranges, sections, and quarters were used to describe the parcels of land in land patents and deeds. As I scanned down the lengthy list of web sites that my Google search of the topic had returned, I noticed one that mentioned the use of Google Earth to accurately plot real estate (earthpoint.blogspot.com by Bill Clark). The web site was actually a blog by someone who had figured out a way to overlay the boundaries of land plots onto a Google Earth view of the region. The experiment expanded to include township and range data from the BLM database and the National Atlas of Township and Range. Needless to say, my lesson preparation required a complete revision to demonstrate this astonishing new discovery.

The process of locating the exact location of your ancestor's land patent is now just a few clicks away, or, conversely, if you know where the family's farm was, you can determine the township and range specifications. The direct link to the site is www.earthpoint.us/Townships.aspx. Every researcher working on U.S. land records should become familiar with its features. In fact, with the ability to track down land patents so easily, everyone with ancestors who settled in the western states should make use of the site. The only prerequisite is to have Google Earth loaded on your computer, preferably version 5 or later. The township feature on EarthPoint will automatically open Google Earth for you, so you can start by going to the EarthPoint web site first.

Let's try an example. Suppose you have reason to believe your ancestor received a land grant, but you do not know the details. The General Land Office (GLO) of the Bureau of Land Management (BLM) offers a land patent search site at the following URL:
www.glorerecords.blm.gov/PatentSearch/Default.asp?

Keep in mind that some states were not part of the federal land patent system, including the original thirteen colonies plus Florida, Texas, and Hawaii. The GLO search site has a basic search facility where you enter a state, last name, and first name.

Bureau of Land Management - General Land Office Records

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Land Patent Search

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Basic | Standard | Accession/Serial #

- 1 Select a state.** State: (required) NEVADA
- 2 Enter the name of the patentee or warrantee.** Last Name: (required) George
First Name: Smith
- 3 Click Search.** Search Search Tips

This site does not cover the **thirteen colonies**, their territories, and a few other states. We do have [resource links](#), though, for most states.

- [What's a land patent?](#)
- Our [Glossary page](#) has details on what the search fields mean.
- When will land patents be available for your state? [Check here.](#)

• Want to search **all states at once**? Use the *Standard* search tab, and select ALL STATES.

• This page has our **QuickHelp** feature. Just click on the name above or beside the field to see a brief explanation of what the field means and how to use it.

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If you already know some of the details of the patent, you can select the standard search facility. Suppose an ancestor, George Smith, settled in Nevada, somewhere around Carson City about 1860. As shown below, there are eight hits for George Smith in Nevada. Remember that it took at least five years from the time of settlement on a homestead until the patent would be issued. The entry for George S. Smith in Washoe county in June 1867 corresponds with other family history records.

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Results List

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Home > Land Patent Search > Results List

Click on a **Patentee Name** to view the full land patent information. An *ITALIC* entry denotes data that has not been indexed against the land patent document, and therefore has no image associated with it.

| View Image | Patentee Name | State | County | Issue Date | Land Office | Doc. Nr. | Accession/Serial Nr. |
|------------|---------------------------------|-------|------------|------------|-------------------------|----------|----------------------|
| | <i>SMITH, GEORGE</i> | NV | Washoe | 7/25/1876 | Assigned For Automation | 545 | NVNVAA 005438 |
| | SMITH, GEORGE C | NV | Lyon | 8/30/1920 | Carson City | 09897 | 770643 |
| | SMITH, GEORGE D | NV | Clark | 5/29/1922 | Carson City | 011862 | 865157 |
| | SMITH, GEORGE H | NV | Washoe | 7/28/1954 | Washington Ofc | 025443 | 1145807 |
| | SMITH, GEORGE J | NV | Clark | 9/16/1960 | Nevada | 029918 | 1212779 |
| | <i>SMITH, GEORGE J</i> | NV | Washoe | 7/21/1904 | Assigned For Automation | 39392 | NVNVAA 006038 |
| | <i>SMITH, GEORGE S</i> | NV | Washoe | 6/15/1867 | Assigned For Automation | 374 | NVNVAA 005431 |
| | SMITH, GEORGE T | NV | White Pine | 11/30/1917 | Elko | 0677 | 609947 |

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A click on the link for George S. Smith returns a screen titled the Land Patent Details, including the fact that the patent consisted of 160 acres.

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Land Patent Details

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Home > Land Patent Search > Results List > Land Patent Details

Accession/Serial #: NVNVAA 005431 | BLM Serial #: NVNVAA 005431

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Patent Description | Legal Land Description | Document Image | Certified Copy

Note: This record has not been checked against the Legal Land Patent. We don't have an electronic image for this document.

| Names | | Survey | |
|-----------------------|---|-----------------------|---------------|
| Patentee: | GEORGE S SMITH | State: | NEVADA |
| | | Acres: | 160 |
| | | Metes/Bounds: | No |
| Title Transfer | | Document Numbers | |
| Issue Date: | 6/15/1867 | Document Nr.: | 374 |
| Land Office: | Assigned For Automation | Accession/Serial Nr.: | NVNVAA 005431 |
| Cancelled: | No | BLM Serial Nr.: | NVNVAA 005431 |
| U.S. Reservations: | No | | |
| Mineral Reservations: | No | | |
| Authority: | April 24, 1820: Sale-Cash Entry (3 Stat. 566) | | |

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This particular description indicates that the original document has yet to be digitized, but a click on the Legal Land Description tab reveals that the patent actually involved three separate pieces of land as shown below.

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Land Patent Details

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Accession/Serial #: NVNVAA 005431 BLM Serial #: NVNVAA 005431

previous next

Patent Description | Legal Land Description | Document Image | Certified Copy

Note: This record has not been checked against the Legal Land Patent. We don't have an electronic image for this document.

| Aliquot Parts | Sec./Block | Township | Range | Fract. Section | Meridian | State | Counties | Survey Nr. |
|---------------|------------|----------|-------|----------------|--------------|-------|----------|------------|
| SENE | 7/ | 17-N | 20-E | No | Mount Diablo | NV | Washoe | |
| N1/2NW | 8/ | 17-N | 20-E | No | Mount Diablo | NV | Washoe | |
| SWNW | 8/ | 17-N | 20-E | No | Mount Diablo | NV | Washoe | |

Note: Legal land descriptions can be used to help find the precise location of the land. For more information, please see our description of the [Rectangular Survey System](#).

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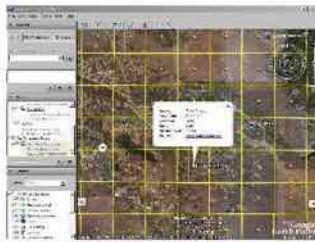
The first piece is the southeast quarter of the northeast quarter (SENE) of section 7 in township 17 North, range 20 East, based on the Mount Diablo meridian. A quarter of a quarter is actually a sixteenth of a section, or 40 acres. The second entry is the north half of the northwest quarter (N1/2NW) of section 8 of the same township and range, or 80 acres. The remaining 40 acres is the southwest quarter of the northwest quarter of section 8.

Now is the point where you can bring up the EarthPoint web site and view the exact location of these plots overlaid onto Google Earth. There are several buttons at the site that will take you to Google Earth depending on your needs. The first is to view the entire BLM township, range, and section data anywhere you look on Google Earth. As soon as you zero in on a region that contains less than 2,000 townships, the boundaries will appear. The second button can be used to view a specific patent description by state, meridian, township, range, and section as defined in a grant description. For example, this button would be used to view the patent plots for George S. Smith described above. The third button choice can be used if you happen to know the latitude and longitude of the plot. The last button will display the full U.S. Public Land Survey without the section divisions.

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- Utilities
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- Convert Lat/Lon
- Grid Systems
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Township and Range - Public Land Survey System on Google Earth.

This page maps the United States Public Land Survey System onto Google Earth. For more information about the land survey, Wikipedia has a good [article](#). You can read about locating parcels at [Earth Point Blog](#).



Click for larger image.

There are two data sets to choose from, "BLM" and "National Atlas".

BLM Township, Range, and Section

Displays townships, one-mile sections, and even quarter-sections if you zoom in close enough. You must zoom into a central or western State in order to see the data.

Hide Icons

When making a screen shot, it might be helpful to hide the icons. Be sure to include the [trademarks](#) displayed at the bottom of the screen in any published material.

Click just once. The screen is updated as you move around in Google Earth.

Proposed Fees

Township and Range.
Grid Systems - \$.01 per earth move, first few moves free.
ExcelToKml - \$.0001 per line, first 200 lines free.

[more...](#)

Share your story with Google

Interesting project? Google wants to hear about it!

[more...](#)

New Movie

I made a short video highlighting a few real estate features of Earth Point. It is a bit rough, but please enjoy.

[more...](#)

States with complete BLM coverage

Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming

States with limited BLM coverage

Alabama, Arkansas, Florida, Illinois, Indiana, Kansas, Michigan, Minnesota, Mississippi, Missouri, North Dakota (central and western portions are covered), Ohio, Oklahoma, South Dakota (western part is covered)

Convert Township, Range, and Section to Latitude and Longitude

Enter Township and Range. Optionally enter Section. Google Earth flies you there using BLM data. Hint: pause for a moment after choosing each of the criteria. This allows the data to be loaded into the drop-down boxes.

State

Principal Meridian

Township

Range

Section

If you want to see the surrounding townships, then once you have clicked the "Fly To" button, come back and click one of the buttons above.

Convert Latitude and Longitude to Township and Section

Enter latitude and longitude. Find the corresponding township and section. The BLM database is searched first. If nothing is found then the National Atlas database is searched. Note that the National Atlas database has only townships, no sections.

Latitude Examples: 42°38'19.39"N, 43 38 19.39, 43.63871944444445

Longitude Examples: 116°14'28.86"W, 116 14 28.86, -116.2413513489235

If you want to see the surrounding townships, then once you have clicked the "Fly To" button, come back and click one of the buttons above.

National Atlas Township and Range

Full coverage of the United States Public Land Survey, with less accuracy than the BLM dataset. Does not include the one-mile sections. You must zoom into a central or western State in order to see the data.

Hide Icons

When making a screen shot, it might be helpful to hide the icons. Be sure to include the [trademarks](#) displayed at the bottom of the screen in any published material.

Click just once. The screen is updated as you move around in Google Earth.

Hint

To view the first entry for George S. Smith's patent, the southeast quarter of the northeast quarter (SENE) of section 7 in township 17 North, range 20 East, the second option should be used. The search items are dynamic, so that as you fill in a field, the subsequent fields are modified so that only the allowable selections can be made. In this example, when you select Nevada as the state, the choices for the Principle Meridian are narrowed to Mount Diablo or San Bernardino. Leaving the meridian set for Mount Diablo, select the township as 017N, and the range as 020E. A township will always have 36 sections, so this option will not change. Enter section 7 and click on Fly To On Google Earth.

Convert Township, Range, and Section to Latitude and Longitude

Enter Township and Range. Optionally enter Section. Google Earth flies you there using BLM data. Hint: pause for a moment after choosing each of the criteria. This allows the data to be loaded into the drop-down boxes.

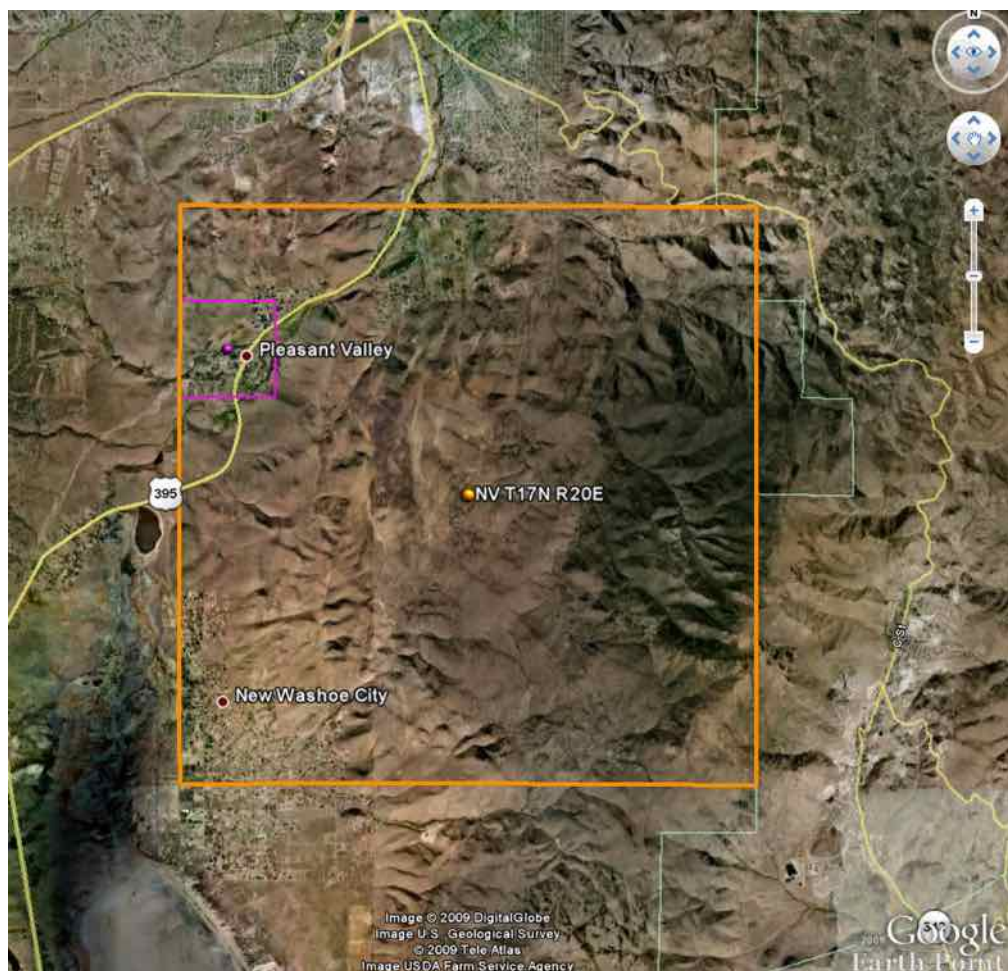
| | |
|--------------------|--------------|
| State | Nevada |
| Principal Meridian | Mount Diablo |
| Township | 017 N |
| Range | 020 E |
| Section | 007 |

View

Fly To On Google Earth

If you want to see the surrounding townships, then once you have clicked the "Fly To" button, come back and click one of the buttons above.

Google Earth will open, and the view will zoom in to the township 17N-20E outlined in orange with section 7 outlined in pink.



If you drag your mouse pointer into the space of each area, it will show the respective designation. From there it is easy to imagine the section divided into quarters and then to divide each quarter into quarters or halves. We can see that the first portion of George S. Smith's patent consists of the area immediately north of Pleasant Valley, Nevada, where modern day state highway 395 divides the patent diagonally.



I have added in the lines that show the northeast quarter and its southeast quarter (SENE) to show the first 40-acre plot of George S. Smith's patent. In fact, it is easy to see that the southern border of the plot still exists even today, dividing the farmland from the subdivided home lots. In rural areas, you will often see that land patent borders have not changed from the original plots. If you return to the EarthPoint web site and enter section 8, when you click on the Fly To Google Earth button, section 8 will be added to the view and you will be able to see the additional two portions of George Smith's patent. Furthermore, going back to the BLM record search, you will be able to determine that nine years later, George Smith also took possession of the entire 160-acre southeast quarter of section 7, which today would constitute well over half the town of Pleasant Valley.