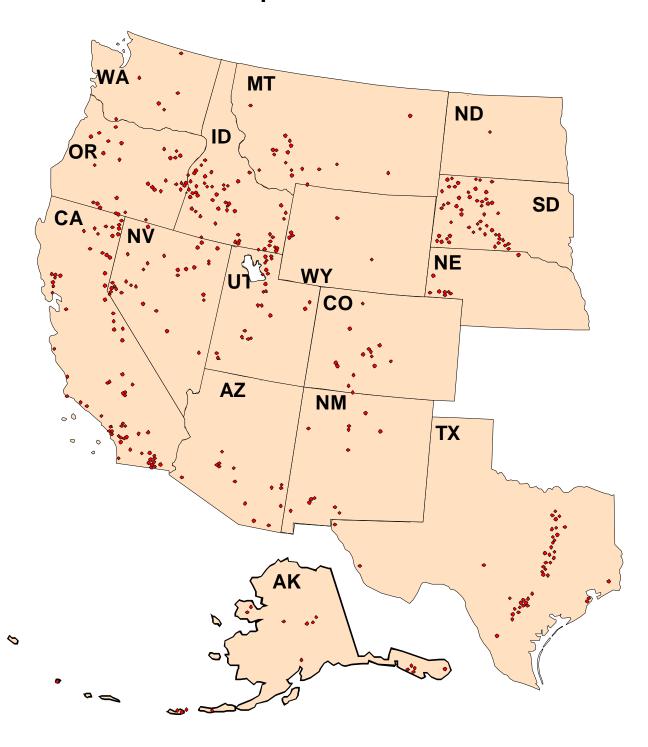
Communities with Geothermal Resource Development Potential





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Introduction

A collocated community was defined as a community with wells and springs with a temperature of 122°F (50°C) and above and located within 5 miles (8 km) of a community. The purpose of this compilation was to identify and encourage those communities to develop their geothermal resources. Historically, most of the communities that were identified have experienced some development of their geothermal resources. There were 404 communities identified in the sixteen western states.

However, depending on the characteristics of the resource, the potential exists for increased geothermal development for applications such as space- and district heating industrial, greenhouse and aquaculture operations, resort/spa facilities and possible electric power generation in some areas. The temperature criteria used to define the potential for different direct-use application is shown below.

- A temperature of 122°F and above can be used for Resort/Spa Facilities and Greenhouse and Aquaculture operations
- A temperature of 145°F and above can be used for Space and District Heating
- A temperature of 180°F and above can be used for Industrial Applications
- A temperature of 200°F and above can be used for Power Generation

Of the 404 communities identified there are 58 communities that have a potential for electric power generation, 33 additional communities with a potential for industrial applications, and 113 more with a potential for space and district heating and all of the 404 communities have a potential for resort/spa facilities and greenhouse and aquaculture applications.

Alaska Collocated Communities

The Alaska database was compiled from information provided by Shirley Liss and reports from the Alaska Division of Geological and Geophysical Surveys, Fairbanks, AK.

The above mentioned database was further searched and compiled to include only those wells and springs with a temperature of 122°F (50°C) and above and located within 5 miles (8 km) of a community. The purpose of this compilation was to identify and encourage those communities to develop their geothermal resources. Historically, most of the communities that were identified have experienced some development of their geothermal resources. However, depending on the characteristics of the resource, the potential exists for increased geothermal development for applications such as space- and district heating industrial, greenhouse and aquaculture operations, resort/spa facilities and possible electric power generation in some areas.

There are 17 communities identified in Alaska with a temperature at or above 122°F (50°C). The communities are listed below and the information included for each community is: highest reported temperature, total flow, number of wells and/or springs and what potential applications could be utilized at the given temperature.

There are three communities that have a potential for electric power generation, one additional community with a potential for industrial applications, and seven more with a potential for space and district heating and all of the 17 communities have a potential for resort/spa facilities and greenhouse and aquaculture applications.

Adak

Temp 154°F

Depth

Flow listed as 8 gpm

2 wells or springs

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Akutan

Temp 209°F

Depth

Flow listed as 159 gpm

7 wells or springs

With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Baranof

Temp 124°F

Depth

Flow listed as 79 gpm

2 wells or springs

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Bell Island Hot Springs

Temp 196°F

Depth

Flow listed as 106 gpm

2 wells or springs

With this temperature there is a possibility of an industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Chena Hot Springs

Temp 145°F

Depth

Flow listed as 225 gpm

3 wells or springs

Circle Hot Springs

Temp 136°F

Depth

Flow listed as 407 gpm

2 wells or springs

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Goddard

Temp 151°F

Depth

Flow listed as 26 gpm

1 well or spring

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Makushin

Temp 207°F

Depth

Flow listed as 90 gpm

8 wells or springs

With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Manley Hot Springs

Temp 140°F

Depth

Flow listed as 375 gpm

4 wells or springs

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Melozi Springs

Temp 131°F

Depth

Flow not listed

1 well or spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Morzhovoi

Temp 144°F

Depth

Flow listed as 59 gpm

1 well or spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Nancy

Temp 169°F

Depth 2,073 ft

No flow listed

1 well

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Portage

Temp 176°F

Depth

Flow listed as 24 gpm

1 well or spring

Pilgrim Springs

Temp 205°F

Depth 164 ft

Flow listed as 305 gpm

6 wells or springs

With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Serpentine Hot Springs

Temp 167°F

Depth

Flow listed as 137 gpm

2 wells or springs

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Sitka

Temp 153°F

Depth

No flow listed

1 well or spring

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Unalaska

Temp 122°F

Depth 56 ft

Flow listed as 48 gpm

1 well

Arizona Collocated Communities

The well and spring information came from the original database compiled for the report "Geothermal Resource Database - Arizona" by James C. Witcher from Southwest Technology Development Institute, Las Cruces, NM. Witcher (1995a) noted that almost all of Arizona wells and springs found in Arizona at elevations below 1,524 m mean-sea level (5,000 feet) exceed 20°C. Accordingly, the new database is restricted to thermal wells and springs exceeding 30°C, except of a few sites at higher elevations. Witcher (1995a) also noted that most thermal well occurrences are located along the trend of lower heat flow, where many irrigation wells tap deep-seated aquifers that are overlain by thermally-insulating, low thermal-conductivity sediments in highly-developed agricultural areas. He notes that in Arizona the thermal fluids are more valued for irrigation of field crops, municipal water supply and industrial uses than for the heat carried by the waters. Recommendations include establishing a strong in-state advocate for direct-use geothermal applications.

The above mentioned database was further searched and compiled to include only those wells and springs with a temperature of 122°F (50°C) and above and located within 5 miles (8 km) of a community. The purpose of this compilation was to identify and encourage those communities to develop their geothermal resources. Historically, most of the communities that were identified have experienced some development of their geothermal resources. However, depending on the characteristics of the resource, the potential exists for increased geothermal development for applications such as space- and district heating industrial, greenhouse and aquaculture operations, resort/spa facilities and possible electric power generation in some areas.

There are 14 communities identified in Arizona with a temperature at or above 122°F (50°C). The communities are listed below by county and the information included for each community is: highest reported temperature, total flow, number of wells and/or springs and what potential applications could be utilized at the given temperature.

There is one community with a potential for industrial applications, and four more with a potential for space and district heating and all of the 14 communities have a potential for resort/spa facilities and greenhouse and aquaculture applications.

Cochise County

McNeal

Temp 129°F

Depth 4,209 ft

Flow listed at 100 gpm

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

San Simon

Temp 134°F

Depth 6,667 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Sierra Vista

Temp 154°F

Depth

No flow listed

6 wells

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Graham County

Pima / Glenbar

Temp 138°F

Depth 3,766 ft

Flow listed at 1,000 gpm

1 well

Greenlee County

Clifton

Temp 160°F

Depth

No flow listed

2 springs

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Guthrie

Temp 183°F

Depth

No flow listed

1 spring

With this temperature there is a possibility of an industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Maricopa County

Avondale

Temp 122°F

Depth 1,499 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Litchfield Park

Temp 133°F

Depth 2,320 ft

No flow listed

3 wells

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Mesa

Temp 130°F

Depth 1,001 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Perryville

Temp 167°F

Depth 919 ft

Flow listed as 1,600 gpm

1 well

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Pima County

Tucson

Temp 126°F

Depth 2,500 ft

Flow listed as 1,860 gpm

1 well

Pinal County

Coolidge

Temp 161°F

Depth 2,566 ft

Flow listed as 5,085 gpm

8 wells

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Yauapai County

Morristown

Temp 132°F

Depth

Flow listed as 340 gpm

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Yuma County

Wellton/Roll

Temp 140°F

Depth

No flow listed

1 spring

California Collocated Communities

The well and spring information came from the original database compiled for the report "California Low-Temperature Geothermal Resources Update - 1993" by Les Youngs, Department of Conservation, Division of Mines and Geology, Sacramento, CA. Youngs estimates that there may be 58 distinct low-temperature resource areas, and an additional 194 "singular" thermal occurrences. These resources occur in volcanic terranes in northern California, in the Basin and Range Province in the northeastern part of the state, within the Long Valley caldera, and along faults in the sedimentary basins in southern California. Young recommended seven areas for comprehensive resource studies and a technical study for one area.

The above mentioned database was further searched and compiled to include only those wells and springs with a temperature of 122°F (50°C) and above and located within 5 miles (8 km) of a community. The purpose of this compilation was to identify and encourage those communities to develop their geothermal resources. Historically, most of the communities that were identified have experienced some development of their geothermal resources. However, depending on the characteristics of the resource, the potential exists for increased geothermal development for applications such as space- and district heating industrial, greenhouse and aquaculture operations, resort/spa facilities and possible electric power generation in some areas.

There are 70 communities identified in California with a temperature at or above 122°F (50°C). The communities are listed below by county and the information included for each community is: highest reported temperature, total flow, number of wells and/or springs and what potential applications could be utilized at the given temperature.

There are 26 communities that have a potential for electric power generation, seven additional communities with a potential for industrial applications, and 11 more with a potential for space and district heating and all of the 70 communities have a potential for resort/spa facilities and greenhouse and aquaculture applications.

Alpine County

Markleeville

Temp 149°F

Depth

Flow listed as 230 gpm

2 springs

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Colusa County

Wilbur Springs

Temp 347°F

Depth 8,898 ft

Flow listed as 87 gpm

3 springs and 2 wells

There is one well listed at 347°F with a depth of 8,898 ft. This was an exploration well. With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation. The next highest temperature is 156°F. With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Contra Costa County

Byron

Temp 124°F

Depth 246 ft

Flow listed as 159 gpm

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Imperial County

Bombay Beach Temp 190°F Depth 659 ft Flow listed as 703 gpm With this temperature there is a possibility of an industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Brawley

Temp 280°F

Depth 8,350 ft

Flow listed as 132 gpm

5 wells

There is one well listed at 280°F with a depth of 8,350 ft. This could be a power plant well. With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation. The next highest temperature is 126°F. With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Calexico, Heber and El Centro

Temp 334°F

Depth 5,023 ft

Flow listed as 2,245 gpm

2 wells

These are power plant wells and very deep. No other wells listed in the area. With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Calipatria

Temp 680°F

Depth 5,023 ft

Flow listed as 1,823 gpm

7 wells

These are power plant wells and very deep. No other wells listed in the area. With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Glamis

Temp 160°F

Depth 679 ft

No flow listed

1 well

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Holtville

Temp 399°F

Depth 6,000 ft

Flow listed as 634 gpm

5 wells

Four of these wells are probably exploration wells and very deep. With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation. The last well has a temp of 181°F with a depth of 1,407 ft. With this temperature there is a possibility of an industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Niland

Temp 658°F

Depth 4,396 ft

Flow listed as 4,755 gpm

5 wells

All of these wells are probably exploration wells and very deep. With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation. The shallowest well is 1,696 ft with a temp of 221°F.

Salton City

Temp 138°F

Depth 1,982 ft

No flow listed

2 wells

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Westmorland

Temp 133°F

Depth 1,240 ft

Flow listed as 42 gpm

3 wells

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Inyo County

Bishop

Temp 136°F

Depth

Flow 528 gpm

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Coso Junction

Temp 207°F

Depth 6,496 ft

Flow 2,008 gpm

3 springs

With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Kern County

Johannesburg and Randsburg

Temp 205°F

Depth 774 ft

No flow listed

1 well

With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Lake Isabella

Temp 129°F

Depth

Flow listed as 110 gpm

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Miracle Hot Springs

Temp 122°F

Depth

Flow listed as 13 gpm

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Lake County

Clear Lake and Lower Lake

Temp 369°F

Depth 7,824 ft

Flow listed as 113 gpm

2 springs 4 wells

With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation. There are 3 wells located in the Lake County Ag Park that has an average temperature of 140°F and a depth of 900 ft. With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Kelseyville

Temp 147°F

Depth 591 ft

Flow listed as 502 gpm

3 wells

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Middletown / Cobb

Temp 212°F

Depth

Flow listed as 18 gpm

3 springs

With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Lassen County

Bieber

Temp 194°F

Depth

Flow listed as 57 gpm

2 springs

With this temperature there is a possibility of an industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Litchfield

Temp 175°F

Depth 1,424 ft

Flow listed as 1,045 gpm

2 wells

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Susanville

Temp 174°F

Depth 928 ft

Flow listed as 1,359 gpm

6 wells

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Wendel

Temperature 225°F

Depth 1,096 ft

Flow listed as 2,184 gpm

2 wells 2 springs

With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Los Angeles County

Los Angeles / Encino

Temp 132°F

Depth

No flow listed

1 well

Modoc County

Alturas

Temp 187°F

Depth 2,939 ft

Flow listed as 80 gpm

2 wells

With this temperature there is a possibility of an industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Canby

Temp 241°F

Depth 3,396 ft

Flow listed as 330 gpm

2 wells 1 spring

With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Cedarville

Temp 208°F

Depth 637 ft

Flow listed as 852 gpm

4 springs 3 wells

With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Day

Temp 164°F

Depth

Flow listed as 79 gpm

1 spring

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Eagleville

Temp 133°F

Depth

Flow listed as 132 gpm

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Fort Bidwell

Temp 127°F

Depth 78 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Lake City

Temp 320°F

Depth 4,948 ft

Flow listed as 362 gpm

1 well 1 spring

The well was an exploration well and is quite deep. With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Likely

Temp 171°F

Depth

Flow listed as 3 gpm

1 spring

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Mono County

Benton

Temp 135°F

Depth

Flow listed as 211 gpm

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Bridgeport

Temp 180°F

Depth 984 ft

Flow listed as 119 gpm

2 springs 1 well

With this temperature there is a possibility of an industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Lee Vining

Temp 187°F

Depth 4,002 ft

Flow listed as 71 gpm

3 wells 2 springs

With this temperature there is a possibility of an industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Mammoth Lakes

Temp 351°F

Depth 1,598 ft

Flow listed as 4,172 gpm

4 wells 5 springs

With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Monterey County

Tassajara Hot Springs

Temp 140°F

Depth

Flow listed as 50 gpm

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Napa County

Calistoga

Temp 280°F

Depth 800 ft

Flow listed as 1,175 gpm

35 wells

With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Orange County

Costa Mesa, Huntington Beach and Newport Beach

Temp 218°F

Depth 9,111 ft

No flow listed

1 well

This well is probably an exploration well and very deep With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Yorda Linda

Temp 163°F

Depth

Flow not listed

1 well

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Placer County

Drakesbad

Temp 264°F

Depth 1,270 ft

Flow listed as 237 gpm

9 springs 1 well

With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Riverside County

Desert Hot Springs

Temp 199°F

Depth 492 ft

Flow 13 gpm

3 wells

With this temperature there is a possibility of an industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Hemet and Temecula

Temp 129°F

Depth

No flow listed

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Lake Elsinore, Widomar and Winchester

Temp 129°F

Depth

No flow listed

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

San Bernardino County

Colton

Temp 136°F

Depth 850 ft

No flow listed

3 wells

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Highland

Temp 129°F

Depth 932 ft

Flow listed as 4,993 gpm

4 wells

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Red Mountain

Temp 205°F

Depth 774 ft

No flow listed

1 well

With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

San Bernardino

Temp 138°F

Depth 548 ft

Flow listed as 160 gpm

6 springs 3 wells

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Trona

Temp 136°F

Depth 600 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Twentynine Palms

Temp 145°F

Depth 400 ft

No flow listed

2 wells

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

San Diego County

San Diego

Temp 163°F

Depth 6,085 ft

No flow listed

2 wells

These are oil wells and very deep. With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Warner Springs

Temp 133°F

Depth

Flow listed as 132 gpm

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

San Luis Obispo County

San Luis Obispo

Temp 131°F

Depth 1,998 ft

Flow listed as 50 gpm

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Santa Barbara County

Gaviota

Temp 154°F

Depth

No flow listed

1 springs

Montecito

Temp 133°F

Depth

Flow listed as 201 gpm

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Shasta County

Big Bend

Temp 180°F

Depth 820 ft

Flow listed as 127 gpm

2 springs 1 well

With this temperature there is a possibility of an industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Sierra County

Loyalton

Temp 201°F

Depth 1,099 ft

Flow listed as 40 gpm

4 wells

With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Sonoma County

Boyes Hot springs / Sonoma

Temp 128°F

Depth 1,299 ft

Flow listed as 200 gpm

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Ventura County

Ojai / Meiners Oaks

Temp 124°F

Depth

Flow listed as 57 gpm

2 springs

Colorado Collocated Communities

The well and spring information came from the original database compiled for the report "1992-1993 Low-Temperature Geothermal Assessment Program, Colorado" Open File Report 95-1 by James A. Cappa and H. Thomas Hemborg, Colorado Geological Survey, Denver, CO. Cappa and Hemborg (1995) identified 93 geothermal areas, each generally less than 8 km² in size. The great majority of the geothermal areas occur west of the Front Range within the Rocky Mountain Province. Recommended R&D activities include the compilation of oil and water-well data, geological and geophysical studies, thermal gradient drilling, water sampling and fluid geochemistry for six areas.

The above mentioned database was further searched and compiled to include only those wells and springs with a temperature of 122°F (50°C) and above and located within 5 miles (8 km) of a community. The purpose of this compilation was to identify and encourage those communities to develop their geothermal resources. Historically, most of the communities that were identified have experienced some development of their geothermal resources. However, depending on the characteristics of the resource, the potential exists for increased geothermal development for applications such as space- and district heating industrial, greenhouse and aquaculture operations, resort/spa facilities and possible electric power generation in some areas.

There are 15 communities identified in Colorado with a temperature at or above 122°F (50°C). The communities are listed below by county and the information included for each community is: highest reported temperature, total flow, number of wells and/or springs and what potential applications could be utilized at the given temperature.

There is one community with a potential for industrial applications, and 5 more with a potential for space and district heating and all of the 15 communities have a potential for resort/spa facilities and greenhouse and aquaculture applications.

Archuleta County

Chromo

Temp 140°F

Depth 1,709 ft

Flow listed as 93 gpm

1 well

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Pagosa Springs

Temp 135°F

Depth 499 ft

Flow listed as 370 gpm

2 wells 1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Chaffee County

Buena Vista

Temp 129°F

Depth

Flow listed as 450 gpm

3 springs

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Mt Princeton Hot springs / Nathrop

Temp 181°F

Depth 180 ft

Flow listed as 40 gpm

3 wells 4 springs

With this temperature there is a possibility of an industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Poncha Springs

Temp 158°F

Depth

Flow listed as 228 gpm

5 springs

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Fremont County

Florence / Portland

Temp 131°F

Depth

Flow 87 gpm

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Garfield County

Glenwood Springs

Temp 124°F

Depth

Flow listed as 1,625 gpm

5 springs

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Gunnison County

Waunita Hot Springs / White Pine

Temp 158°F

Depth

Flow 196 gpm

4 springs

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Mineral County

Wagon Wheel Gap / Creede

Temp 131°F

Depth

Flow listed as 32 gpm

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Ouray County

Ouray

Temp 153°F

Depth

Flow listed as 77 gpm

3 springs

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Ridgeway

Temp 122°F

Depth

Flow listed as 396 gpm

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Park County

Hartsel

Temp 126°F

Depth

Flow listed as 54 gpm

1 spring

Routt County

Steamboat Springs / Mad Creek

Temp 147°F

Depth

Flow listed as 75 gpm

4 springs

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Saguache County

Mineral Hot Springs / Villa Grove

Temp 140°F

Depth

Flow listed as 113 gpm

1 well 3 springs

Idaho Collocated Communities

The well and spring information came from the original database compiled for the report "Overview of Geothermal Investigations in Idaho, 1989 to 1993" by William J. Dansart, John D. Kauffman and Leland L. Mink, University of Idaho, Moscow, ID. Geothermal resource areas occur throughout the state, except the northernmost panhandle. The geologic setting of the hydrothermal occurrences varies greatly, including fault and fracture-controlled resources of the Idaho batholith, fault-controlled reservoirs of the northern Basin and Range Province, the Island Park-Yellowstone caldera complex, and the extensive volcanic reservoirs of the Snake River Plain. Dansart, et al. recommended site-specific studies for nine geothermal resource areas, conceptual and numerical models (2 areas), geologic, geophysical, drilling and feasibility studies (7 areas).

The above mentioned database was further searched and compiled to include only those wells and springs with a temperature of 122°F (50°C) and above and located within 5 miles (8 km) of a community. The purpose of this compilation was to identify and encourage those communities to develop their geothermal resources. Historically, most of the communities that were identified have experienced some development of their geothermal resources. However, depending on the characteristics of the resource, the potential exists for increased geothermal development for applications such as space- and district heating industrial, greenhouse and aquaculture operations, resort/spa facilities and possible electric power generation in some areas.

There are 51 communities identified in Idaho with a temperature at or above 122°F (50°C). The communities are listed below by county and the information included for each community is: highest reported temperature, total flow, number of wells and/or springs and what potential applications could be utilized at the given temperature.

There are three communities that have a potential for electric power generation, three additional communities with a potential for industrial applications, and 22 more with a potential for space and district heating and all of the 51 communities have a potential for resort/spa facilities and greenhouse and aquaculture applications.

Ada County

Boise

Temp 174°F

Depth 1,283 ft

No flow listed

18 wells

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Eagle

Temp 142°F

Depth 341 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Star

Temp 346°F

Depth 14,010 ft

No flow listed

1 well

This well is probably an exploration well and very deep. With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Adams County

New Meadows

Temp 160°F

Depth

No flow listed

3 wells 4 springs

Starkey / Fruitvale

Temp 131°F

Depth

No flow listed

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Bear Lake County

Dingle

Temp 133°F

Depth 39 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Lanark / Ovid

Temp124°F

Depth 95 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Wardboro / Montpelier

Temp 165°F

Depth 11,483 ft

No flow listed

1 well

This could have been an exploration well and it is very deep. With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Blaine County

Carey

Temp 126°F

Depth

Flow not listed

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Gimlet / Hailey

Temp 122°F

Depth

No flow listed

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Hailey

Temp 163°F

Depth

No flow listed

2 wells 1 spring

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Ketchum

Temp 159°F

Depth

Flow listed as 0.5 gpm

3 springs

Magic City

Temp 166°F

Depth

Flow not listed

1 well 1 spring

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Boise County

Crouch

Temp 183°F

Depth 190 ft

No flow listed

24 wells 1 spring

With this temperature there is a possibility of an industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Garden Valley

Temp 178°F

Depth

No flow listed

7 springs

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Lowman

Temp 149°F

Depth

No flow listed

4 springs

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Bonneville County

Swan Valley

Temp 284°F

Depth 16,177 ft

No flow listed

2 wells

Both of these wells were probably exploration wells and very deep. With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Camas County

Corral

Temp 163°F

Depth 59 ft

No flow listed

1 well 6 springs

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Canyon County

Bowmont

Temp 124°F

Depth 318 ft

No flow listed

1 well

Caldwell

Temp 152°F

Depth 2,132 ft

No flow listed

2 wells

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Caribou County

Bancroft

Temp 129°F

Depth 208 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Soda Springs

Temp 124°F

Depth 62 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Thatcher

Temp 122°F

Depth 66 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Cassia County

Albion

Temp 140°F

Depth 446 ft

No flow listed

l well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Almo

Temp 140°F

Depth

No flow listed

2 wells

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Bridge

Temp 294°F

Depth 4,987 ft

Flow listed as 143 gpm

8 wells

Looks like several exploration wells. The only other well with a depth and temperature has a temp of 198oF and a depth of 414 ft. With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Malta / Keogh

Temp 171°F

Depth

No flow listed

2 wells

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Custer County

Challis

Temp 122°F

Depth

No flow listed

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Obsidian

Temp 122°F

Depth

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Stanley

Temp 136°F

Depth

No flow listed

3 springs

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Sunbeam

Temp 170°F

Depth

No flow listed

4 springs

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Elmore County

Atlanta

Temp 140°F

Depth

No flow listed

3 springs

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Pine

Temp 140°F

Depth

No flow listed

4 springs

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Franklin County

Cleveland / Perry

Temp 131°F

Depth

No flow listed

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Preston

Temp 180°F

Depth

No flow listed

1 well 2 springs

With this temperature there is a possibility of an industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Fremont County

Newdale

Temp 189°F

Depth

No flow listed

3 wells

With this temperature there is a possibility of an industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Gem County

Sweet

Temp 151°F

Depth

No flow listed

1 spring

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Lemhi County

Tendoy

Temp 146°F

Depth

No flow listed

1 spring

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Onieda County

Woodruff

Temp 145°F

Depth

No flow listed

1 well

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Owyhee County

Bruneau

Temp 122°F

Depth

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Grand View

Temp 183°F

Depth 2,520 ft

No flow listed

13 wells

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Murphy Hot Springs

Temp 126°F

Depth

No flow listed

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Oreana

Temp 167°F

Depth 2,835 ft

No flow listed

3 wells

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Payette County

Payette

Temp 135°F

Depth 2,775 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Teton County

Bates

Temp 158°F

Depth 6,572 ft

No flow listed

1 well

The well looks like this was an exploration well. With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Twin Falls County

Buhl

Temp 162°F

Depth 591 ft

No flow listed

18 wells 4 springs

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Valley County

Alpha

Temp 145°F

Depth

No flow listed

1 spring

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Warm Lake / Knox

Temp 138°F

Depth

No flow listed

4 springs

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Washington County

Cambridge

Temp 158°F

Depth

No flow listed

2 springs

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Midvale

Temp 124°F

Depth

Flow listed as 206 gpm

2 springs

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Weiser

Temp 171°F

Depth 312 ft

No flow listed

8 wells

Montana Collocated Resources

The well and spring information came from the original database compiled for the report "Geothermal Resources of Montana" by John Metesh of the Montana Bureau of Mines and Geology, Butte, MT. Thermal wells and springs occur throughout all areas of Montana but mainly in the western third of the state (the Northern Rocky Mountains). Metesh identified five geothermal resources collocated with communities and recommended them as priority study areas needing geophysical exploration and deep drilling (1 area), detailed temperature, fluid chemistry and a feasibility study (1 area), deep drilling and a feasibility study (1 area), and resource studies (2 areas).

The above mentioned database was further searched and compiled to include only those wells and springs with a temperature of 122°F (50°C) and above and located within 5 miles (8 km) of a community. The purpose of this compilation was to identify and encourage those communities to develop their geothermal resources. Historically, most of the communities that were identified have experienced some development of their geothermal resources. However, depending on the characteristics of the resource, the potential exists for increased geothermal development for applications such as space- and district heating industrial, greenhouse and aquaculture operations, resort/spa facilities and possible electric power generation in some areas.

There are 18 communities identified in Montana with a temperature at or above 122°F (50°C). The communities are listed below by county and the information included for each community is: highest reported temperature, total flow, number of wells and/or springs and what potential applications could be utilized at the given temperature.

There are two communities that have a potential for electric power generation, one additional community with a potential for industrial applications, and six more with a potential for space and district heating and all of the 18 communities have a potential for resort/spa facilities and greenhouse and aquaculture applications.

Beaverhead County

Jackson

Temp 140°F

Depth

Flow listed as 264 gpm

2 springs

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Deer Lodge County

Raderburg

Temp 171°F

Depth

Flow listed as 159 gpm

1 spring

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Warm Springs / Anaconda

Temp 174°F

Depth

Flow listed as 19 gpm

2 wells 1 spring

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Gallatin County

Bozeman

Temp 138°F

Depth 541 ft

Flow listed as 342 gpm

3 wells 2 springs

Jefferson County

Alhambra

Temp 134°F

Depth

Flow listed as 129 gpm

2 springs

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Boulder

Temp 165°F

Depth 125 ft

Flow listed as 110 gpm

3 springs

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Whitehall

Temp 122°F

Depth

Flow listed as 40 gpm

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Lewis and Clark County

Helena

Temp 150°F

Depth

Flow listed as 60 gpm

1 well

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Marysville

Temp 206°F

Depth 6,791 ft

No flow listed

1 well

This could be an exploration well. With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Madison County

Ennis

Temp 189°F

Depth 1,220 ft

Flow listed as 8 gpm

2 wells 1 spring

With this temperature there is a possibility of an industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Norris

Temp 122°F

Depth

Flow listed as 112 gpm

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Park County

Corwin Springs

Temp 149°F

Depth

Flow listed as 132 gpm

1 spring

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Springdale

Temp 140°F

Depth

Flow listed as 1321 gpm

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Roosevelt County

Wolf Point

Temp 124°F

Depth 105 ft

Flow listed as 26 gpm

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Rosebud County

Colstrip

Temp 205°F

Depth 1,221 ft

Flow listed as 5 gpm

1 well

With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Sanders County

Hot Springs

Temp 125°F

Depth

Flow listed as 456 gpm

3 wells

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Silver Bow County

Crackerville / Anaconda

Temp 143°F

Depth

Flow listed as 250 gpm

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Stillwater County

Rapelje

Temp 156°F

Depth

Flow listed as 291 gpm

1 well

Nebraska Collocated Resources

The wells and springs database was compiled from the following publications: "An Inventory of Geothermal Resources in Nebraska - Final Report" by Willaim Gosnold and Duane A. Eversoll, June 30, 1983, Under Contract No. AS07-79ET27205, the University of Nebraska, Lincoln, Nebraska and "Geothermal Resources of Nebraska, 1982". NOAA map, scale 1:500,000.

The above mentioned database was further searched and compiled to include only those wells and springs with a temperature of 122°F (50°C) and above and located within 5 miles (8 km) of a community. The purpose of this compilation was to identify and encourage those communities to develop their geothermal resources. Historically, most of the communities that were identified have experienced some development of their geothermal resources. However, depending on the characteristics of the resource, the potential exists for increased geothermal development for applications such as space- and district heating industrial, greenhouse and aquaculture operations, resort/spa facilities and possible electric power generation in some areas.

There are nine communities identified in Nebraska with a temperature at or above 122°F (50°C). The communities are listed below by county and the information included for each community is: highest reported temperature, total flow, number of wells and/or springs and what potential applications could be utilized at the given temperature.

There are four communities that have a potential for industrial applications, and four more with a potential for space and district heating and all of the nine communities have a potential for resort/spa facilities and greenhouse and aquaculture applications.

Cheyenne County

Brownson, Huntsman, Ordiville, and Sidney

Temp 185°F

Depth 4,954 ft

No flow listed

2 wells

These were probably exploration wells. With this temperature there is a possibility of an industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Lodgepole

Temp 158°F

Depth 3,763 ft

No flow listed

1 well

This was probably an exploration well. With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Potter

Temp 158°F

Depth 5,840 ft

No flow listed

2 wells

These were probably exploration wells. With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Keya Paha County

Burton

Temp 126°F

Depth 1,772 ft

No flow listed

2 wells

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Kimball County

Kimball

Temp 158°F

Depth

No flow listed

1 well

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Scottsbluff County

Gering

Temp 176°F

Depth

No flow listed

1 well

Nevada Collocated Resources

The well and spring information came from the original database compiled for the report "Nevada Low Temperature Geothermal Resource Assessment: 1994" by Larry J. Garside, Nevada Bureau of Mines and Geology, University of Nevada, Reno. Essentially all of Nevada lies within the Basin and Range Province, an area of crustal extension which has remained geologically active since the mid-Miocene. In east-central and southern Nevada, the low- to moderate-temperature resources may be related to regional groundwater circulation in fractured carbonate-rock aquifers. Recommended studies to expedite geothermal utilization include data compilation, geological and geophysical surveys, water chemistry, and feasibility studies.

The above mentioned database was further searched and compiled to include only those wells and springs with a temperature of 122°F (50°C) and above and located within 5 miles (8 km) of a community. The purpose of this compilation was to identify and encourage those communities to develop their geothermal resources. Historically, most of the communities that were identified have experienced some development of their geothermal resources. However, depending on the characteristics of the resource, the potential exists for increased geothermal development for applications such as space- and district heating industrial, greenhouse and aquaculture operations, resort/spa facilities and possible electric power generation in some areas.

There are 30 communities identified in Nevada with a temperature at or above 122°F (50°C). The communities are listed below by county and the information included for each community is: highest reported temperature, total flow, number of wells and/or springs and what potential applications could be utilized at the given temperature.

There are six communities that have a potential for electric power generation, five additional communities with a potential for industrial applications, and 10 more with a potential for space and district heating and all of the 30 communities have a potential for resort/spa facilities and greenhouse and aquaculture applications.

Carson City County

Carson City

Temp 122°F

Depth

Flow listed as 75 gpm

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Stewart

Temp 122°F

Depth

Flow listed as 350 gpm

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Churchhill County

Fallon

Temp 201°F

Depth 187 ft

No flow listed

1 well

With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Stillwater

Temp 205°F

Depth 66 ft

No flow listed

2 wells

With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Douglas County

Minden / Genoa

Temp 145°F

Depth

Flow listed as 35 gpm

2 springs

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Elko County

Carlin

Temp 174°F

Depth

Flow listed as 300 gpm

2 springs

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Cobre / Oasis

Temp 170°F

Depth 4,603 ft

No flow listed

1 well

This is probably an exploration well. With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Contact

Temp 140°F

Depth

Flow listed as 5 gpm

1 well 2 springs

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Elko

Temp 176°F

Depth 853 ft

Flow listed as 20 gpm

1 well 1 spring

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Rowland

Temp 171°F

Depth

Flow listed as 30 gpm

1 spring

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Wells

Temp 142°F

Depth

Flow listed as 10 gpm

2 springs

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Wild Horse

Temp 129°F

Depth

No flow listed

1 spring

Eureka County

Beowawe

Temp 208°F

Depth

Flow listed as 103 gpm

3 springs

With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Crescent Valley

Temp 140°F

Depth

Flow listed as 33 gpm

2 springs

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Humboldt County

Denio

Temp 181°F

Depth

Flow listed as 1,000 gpm

2 springs

With this temperature there is a possibility of an industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Golconda

Temp 165°F

Depth 259 ft

Flow listed as 198 gpm

1 well 1 spring

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Lincoln County

Caliente

Temp 153°F

Depth 89 ft

Flow listed as 1,400 gpm

1 well

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Lyon County

Hazen

Temp 187°F

Depth

No flow listed

2 springs

With this temperature there is a possibility of an industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Wabuska

Temp 207°F

Depth 489 ft

Flow listed as 1,514 gpm

1 well 1 spring

With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Nye County

Carvers

Temp 195°F

Depth 801 ft

Flow listed as 1,145 gpm

1 well 1 spring

With this temperature there is a possibility of an industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Gabbs

Temp 129°F

Depth 276 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Warm Springs

Temp 145°F

Depth

Flow listed as 45 gpm

1 spring

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Pershing County

Humboldt

Temp 324°F

Depth 1,854 ft

No flow listed

2 wells

With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Lovelock / Colado

Temp 140°F

Depth

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Story County

Virginia City

Temp 170°F

Depth 2,999 ft

No flow listed

1 well

This could be an exploration well. With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Washoe County

Gerlach

Temp 193°F

Depth

Flow listed as 130 gpm

3 springs

With this temperature there is a possibility of an industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Reno

Temp 190°F

Depth 328 ft

No flow listed

107 wells

With this temperature there is a possibility of an industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Steamboat

Temp 235°F

Depth 371 ft

Flow listed as 13 gpm

1 well 1 spring

With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

White Pine County

Cherry Creek

Temp 142°F

Depth

No flow listed

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Warm Springs

Temp 174°F

Depth

Flow listed as 625 gpm

1 spring

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

New Mexico Collocated Communities

The well and spring information came from the original database compiled for the report "A Geothermal Resource Data Base New Mexico" by James C. Witcher, Southwest Technology Development Institute, Las Cruces, NM. Almost all of the thermal occurrences are located in the western half of the state, within the Colorado Plateau, Basin and Range, and Rocky Mountains physiographic provinces. Witcher has identified eight resource areas with near-term utilization potential which need site-specific geologic, drilling, reservoir testing, and feasibility studies.

The above mentioned database was further searched and compiled to include only those wells and springs with a temperature of 122°F (50°C) and above and located within 5 miles (8 km) of a community. The purpose of this compilation was to identify and encourage those communities to develop their geothermal resources. Historically, most of the communities that were identified have experienced some development of their geothermal resources. However, depending on the characteristics of the resource, the potential exists for increased geothermal development for applications such as space- and district heating industrial, greenhouse and aquaculture operations, resort/spa facilities and possible electric power generation in some areas.

There are 12 communities identified in New Mexico with a temperature at or above 122°F (50°C). The communities are listed below by county and the information included for each community is: highest reported temperature, total flow, number of wells and/or springs and what potential applications could be utilized at the given temperature.

There is one community that has a potential for electric power generation, four have a potential for space and district heating and all of the 12 communities have a potential for resort/spa facilities and greenhouse and aquaculture applications.

Dona Ana County

Las Cruces

Temp 157°F

Depth 2,572 ft

Flow listed as 3 gpm

9 wells

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Radium Springs

Temp 170°F

Depth 121 ft

No flow listed

8 wells

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Grant County

Faywood

Temp 127°F

Depth

Flow listed as 3 gpm

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Hurley

Temp 144°F

Depth 522 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

San Juan / Sherman

Temp 138°F

Depth

Flow listed as 3 gpm

8 springs

Hidalgo County

Cotton City

Temp 225°F

Depth 440 ft

Flow listed as 200 gpm

13 wells

With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

McKinley County

Fort Wingate

Temp 131°F

Depth 1.942 ft

Flow listed as 23 gpm

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Rio Arriba County

Ojo Caliente / Gallegos

Temp 132°F

Depth 89 ft

No flow listed

1 well 1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

San Miguel County

Las Vegas

Temp 131°F

Depth

No flow listed

2 wells

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Sandoval County

Jemez Pueblo / San Ysidro

Temp 136°F

Depth 240 ft

Flow listed as 150 gpm

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Jemez Springs

Temp 164°F

Depth

Flow listed as 52 gpm

5 springs 1 well

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Valencia County

Valencia

Temp 176°F

Depth 722 ft

No flow listed

1 well

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

North Dakota Collocated Community

The wells and springs database was compiled from information from the Well Inventory Retrieval System from the North Dakota State Water Commission Website <www.swc.state.nd.us>. The files included Site Inventory, Water Chemistry, Water Levels, and Lithology.

The above mentioned database was further searched and compiled to include only those wells and springs with a temperature of 122°F (50°C) and above and located within 5 miles (8 km) of a community. The purpose of this compilation was to identify and encourage those communities to develop their geothermal resources. Historically, most of the communities that were identified have experienced some development of their geothermal resources. However, depending on the characteristics of the resource, the potential exists for increased geothermal development for applications such as space- and district heating industrial, greenhouse and aquaculture operations, resort/spa facilities and possible electric power generation in some areas.

There is 1 community identified in North Dakota with a temperature at or above 122°F (50°C). The community is listed below by county and the information included for that community is: highest reported temperature, total flow, number of wells and/or springs and what potential applications could be utilized at the given temperature.

This community has a potential for resort/spa facilities and greenhouse and aquaculture applications.

McLean County

Turtle Lake Temp 129°F Depth No flow listed 1 well

Oregon Collocated Communities

A 1994 Oregon Department of Geology and Mineral Industries (DOGAMI) report entitled "Low-Temperature Geothermal Database for Oregon" by G. Black compiled a database of thermal wells and springs. These thermal wells and springs may represent more than 200 resources areas. The study concluded that the entire state east of the Cascade Range, except for the crest of the Wallowa Mountains, was favorable for the discovery at shallow depth (<3000 ft (<1000 m)) for thermal water sufficient temperature for direct-use applications.

The above mentioned database was further searched and compiled to include only those wells and springs with a temperature of 122°F (50°C) and above and located within 5 miles (8 km) of a community. The purpose of this compilation was to identify and encourage those communities to develop their geothermal resources. Historically, most of the communities that were identified have experienced some development of their geothermal resources. However, depending on the characteristics of the resource, the potential exists for increased geothermal development for applications such as space- and district heating industrial, greenhouse and aquaculture operations, resort/spa facilities and possible electric power generation in some areas.

There are 32 communities identified in Oregon with a temperature at or above 122°F (50°C). The communities are listed below by county and the information included for each community is: highest reported temperature, total flow, number of wells and/or springs and what potential applications could be utilized at the given temperature.

There are nine communities that have a potential for electric power generation, six additional communities with a potential for industrial applications, and seven more with a potential for space and district heating and all of the 32 communities have a potential for resort/spa facilities and greenhouse and aquaculture applications.

Baker County

Haines

Temp 134°F

Depth 125 ft

Flow listed as 304 gpm

2 wells 1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Sumpter / Bourne

Temp 134°F

Depth 345 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Clackamas County

Government Camp

Temp 250°F

Depth 4,678 ft

Flow listed as 110 gpm

3 wells

These are probably exploration wells. With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Crooke County

Powell Butte

Temp 135°F

Depth 1,512 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Harney County

Burns

Temp 160°F

Depth 2,283 ft

No flow listed

2 wells

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Crane

Temp 180°F

Depth 164 ft

Flow listed as 185 gpm

2 well 1 spring

With this temperature there is a possibility of an industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Fields

Temp 206°F

Depth

Flow listed as 5 gpm

3 springs

With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Harney

Temp 161°F

Depth 941 ft

Flow listed as 264 ft

2 well

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Lawen

Temp 136°F

Depth 1,834 ft

Flow listed as 9 gpm

2 wells

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Klamath County

Bonanza

Temp 201°F

Depth 230 ft

No flow listed

2 wells

With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Lorella

Temp 142°F

Depth

Flow listed as 40 gpm

2 wells

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Klamath Falls

Temp 221°F

Depth 656 ft

Flow listed as 2,213 gpm

Over 550 wells

With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Lake County

Adel

Temp 250°F

Depth 643 ft

Flow listed as 16 gpm

3 wells 1 spring

With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Lakeview

Temp 235°F

Depth 607 ft

Flow listed as 1,727 gpm

32 wells 4 springs

With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

New Pine Creek

Temp 192°F

Depth 560 ft

Flow listed as 3,963 gpm

4 wells

With this temperature there is a possibility of an industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Paisley / Summer Lake

Temp 231°F

Depth 689 ft

Flow listed as 20 gpm

5 wells 1 spring

With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Lane County

McCredie Springs

Temp 163°F

Depth

Flow listed as 20 gpm

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

McKenzie Bridge

Temp 192°F

Depth 426 ft

Flow listed as 104 gpm

2 wells 3 springs

With this temperature there is a possibility of an industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Linn County

Jefferson

Temp 136°F

Depth 4,915 ft

No flow listed

1 well

This was probably an exploration well. With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Malheur County

Adrain

Temp 174°F

Depth 1,345 ft

Flow listed as 16 gpm

4 wells 3 springs

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Beulah

Temp 140°F

Depth

Flow listed as 13 gpm

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Harper / Little Valley

Temp 158°F

Depth 410 ft

Flow listed as 145 gpm

2 wells 1 spring

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Nyssa

Temp 183°F

Depth 1,568 ft

No flow listed

1 well

With this temperature there is a possibility of an industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Ontario

Temp 334°F

Depth 10,052 ft

No flow listed

1 well

This well is probably an exploration well and very deep. With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Riverside

Temp 145°F

Depth

Flow listed as 59 gpm

1 spring

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Vale

Temp 239°F

Depth 266 ft

Flow listed as 770 gpm

32 wells 1 spring

With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Marion County

Breitenbush Hot Spring / Idanha

Temp 192°F

Depth 1,017 ft

Flow listed as 900 gpm

6 wells 1 spring

With this temperature there is a possibility of an industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Silverton / Scott Mills

Temp 162°F

Depth 7,805 ft

No flow listed

1 well

This is probably an exploration well. With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Umatilla County

Lehman Springs

Temp 142°F

Depth

No flow listed

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Union County

Pondosa / Medical Springs

Temp 142°F

Depth

Flow listed as 53 gpm

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Union / Cove

Temp 185°F

Depth

Flow listed as 1,626 gpm

2 wells 2 springs

With this temperature there is a possibility of an industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Wasco County

Kehneeta

Temp 133°F

Depth

No flow listed

3 springs

South Dakota Collocated Communities

The well and Spring database was compiled from the references - South Dakota Database (Report of Investigations No. 110-Geothermal Potentials in South Dakota) by Robert A. Schoon and Duncan J. McGregor South Dakota Geological Survey - Department of Natural Resouce Development, Vermillion, South Dakota — 1974 and NOAA webpage - http://www.ngdc.noaa.gov/cgi-bin/seg/globsys/springret? springs.men+MAIN_- MENU+South

The above mentioned database was further searched and compiled to include only those wells and springs with a temperature of 122°F (50°C) and above and located within 5 miles (8 km) of a community. The purpose of this compilation was to identify and encourage those communities to develop their geothermal resources. Historically, most of the communities that were identified have experienced some development of their geothermal resources. However, depending on the characteristics of the resource, the potential exists for increased geothermal development for applications such as space- and district heating industrial, greenhouse and aquaculture operations, resort/spa facilities and possible electric power generation in some areas.

There are 58 communities identified in South Dakota with a temperature at or above 122°F (50°C). The communities are listed below by county and the information included for each community is: highest reported temperature, total flow, number of wells and/or springs and what potential applications could be utilized at the given temperature.

There are two communities that have a potential for electric power generation, two additional communities with a potential for industrial applications, and 16 more with a potential for space and district heating and all of the 58 communities have a potential for resort/spa facilities and greenhouse and aquaculture applications.

Butte County

Newell and Nisland

Temp 138°F

Depth 5,759 ft

No flow listed

1 well

This well is probably an exploration well and very deep. With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Corson County

Athboy and Morristown

Temp 149°F

Depth 6,642 ft

No flow listed

2 wells

These wells are probably exploration wells and very deep. With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Custer

Temp 150°F

Depth 7,134 ft

No flow listed

2 wells

These wells are probably exploration wells and very deep. With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

McIntosh

Temp 161°F

Depth 7,470 ft

No flow listed

1 well

This well is probably and exploration well and very deep. With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Sherman

Temp 130°F

Depth 5,820 ft

No flow listed

1 well

This well is probably an exploration well and very deep. With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Dewey County

Bear Creek

Temp 156°F

Depth 5,373 ft

No flow listed

8 wells

These wells are probably exploration wells and very deep. With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Eagle Butte and North Eagle Butte

Temp 128°F

Depth 4,322 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Lantry

Temp 150°F

Depth 5,140 ft

No flow listed

4 wells

These wells are probably exploration wells and very deep. With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Fall River County

Cottonwood and Provo

Temp 138°F

Depth 3,846 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Edgemont

Temp 138°F

Depth 3,249 ft

No flow listed

6 wells

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Limestone

Temp 130°F

Depth 4,110 ft

No flow listed

2 wells

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Oelrich

Temp 124°F

Depth 4,065 ft

No flow listed

2 wells

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Smithwick

Temp 124°F

Depth 3,704 ft

No flow listed

3 wells

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Haakon County

Cherry Creek

Temp 125°F

Depth 3,542 ft

No flow listed

2 wells

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Elbon

Temp 147°F

Depth 5,040 ft

No flow listed

1 well

This well is probably an exploration well and very deep. With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Grindstone

Temp 135°F

Depth 5,485 ft

No flow listed

1 well

This well is probably an exploration well and very deep. With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Lucerne

Temp 122°F

Depth 4,500 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Midland

Temp 136°F

Depth 2,800 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Ottumwa

Temp 142°F

Depth 4,260 ft

No flow listed

2 wells

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Harding County

Buffalo

Temp 129°F

Depth 4,843 ft

No flow listed

2 wells

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Gustave

Temp 127°F

Depth 3,863 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Karienen

Temp 211°F

Depth 9,293 ft

No flow listed

3 wells

These wells are probably exploration wells and very deep. With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Ladner

Temp 196°F

Depth 7,471 ft

No flow listed

6 wells

These wells are probably exploration wells and very deep. With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Ralph

Temp 139°F

Depth 5,352 ft

No flow listed

1 well

This well is probably an exploration well and very deep. With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Reva

Temp 195°F

Depth 8,817 ft

No flow listed

1 well

This well is probably an exploration well and very deep. With this temperature there is a possibility of an industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Sky Ranch

Temp 169°F

Depth 7,896 ft

No flow listed

2 wells

These wells are probably exploration wells and very deep. With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Jackson County

Indian Creek

Temp 138°F

Depth 3,882 ft

No flow listed

2 wells

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Kodoka

Temp 130°F

Depth 3,145 ft

No flow listed

2 wells

Philip Junction

Temp 146°F

Depth 4,780 ft

No flow listed

1 well

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Jones County

Murdo

Temp 140°F

Depth 2,280 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Okaton

Temp 137°F

Depth 3,728 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Westover

Temp 142°F

Depth 2,944 ft

No flow listed

4 wells

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Lawrence County

Spearfish

Temp 122°F

Depth 6,800 ft

No flow listed

1 well

This well is probably an exploration well and very deep. With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Meade County

Enning

Temp 149°F

Depth 6,542 ft

No flow listed

2 wells

These wells are probably exploration wells and very deep. With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Fairpoint

Temp 127°F

Depth 4,686 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Red Owl

Temp 168°F

Depth 6,250 ft

No flow listed

1 well

This well is probably an exploration well and very deep. With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Mellette County

Badnation

Temp 130°F

Depth 2,170 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

White River

Temp 149°F

Depth 2,600 ft

No flow listed

3 wells

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Zickrick

Temp 122°F

Depth 1,700 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Pennington County

Caputa

Temp 122°F

Depth 2,809 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Conata

Temp 158°F

Depth 3,751 ft

No flow listed

2 wells

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Perkins County

Cedar Canyon / Imogene

Temp 142°F

Depth 5,330 ft

No flow listed

1 well

This well is probably an exploration well and very deep. With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Chance

Temp 185°F

Depth 8,318 ft

No flow listed

1 well

With this temperature there is a possibility of an industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Usta

Temp 159°F

Depth 6,618 ft

No flow listed

2 wells

These wells are probably exploration wells and very deep. With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Stanley County

Bunker

Temp 132°F

Depth 4,012 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Mission Ridger

Temp 122°F

Depth 4,000 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Todd County

Rosebud

Temp 154°F

Depth 2,500 ft

No flow listed

1 well

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Tripp County

Carter

Temp 130°F

Depth 2,865 ft

No flow listed

2 wells

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Ideal

Temp 127°F

Depth 1,365 ft

No flow listed

2 wells

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Keyapaha

Temp 128°F

Depth 3,010 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Ziebach County

Chase

Temp 144°F

Depth 5,320 ft

No flow listed

1 well

This well is probably an exploration well and very deep. With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Red Elm Temp 152°F Depth 5,945 ft No flow listed 2 wells

These wells are probably exploration wells and very deep. With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Texas Collocated Communities

The well and spring database was compiled from the following references listed - Integration of Geothermal Data along the Balcones/Ouachita Trend, Central Texas, 1983, Woodruff, Gever, Snyder, and Wuerch and Geothermal Resources of Texas, 1982. NOAA map

The above mentioned database was further searched and compiled to include only those wells and springs with a temperature of 122°F (50°C) and above and located within 5 miles (8 km) of a community. The purpose of this compilation was to identify and encourage those communities to develop their geothermal resources. Historically, most of the communities that were identified have experienced some development of their geothermal resources. However, depending on the characteristics of the resource, the potential exists for increased geothermal development for applications such as space- and district heating industrial, greenhouse and aquaculture operations, resort/spa facilities and possible electric power generation in some areas.

There are 43 communities identified in Texas with a temperature at or above 122°F (50°C). The communities are listed below by county and the information included for each community is: highest reported temperature, total flow, number of wells and/or springs and what potential applications could be utilized at the given temperature.

There are two communities that have a potential for electric power generation, 11 additional communities with a potential for space and district heating and all of the 43 communities have a potential for resort/spa facilities and greenhouse and aquaculture applications.

Atascosa County

Campbellton

Temp 147°F

Depth 4,133 ft

Flow listed as 290 gpm

3 wells

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Fashing

Temp 155°F

Depth 4,334 ft

No flow listed

4 wells

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Bell County

Rogers

Temp 127°F

Depth 3,584 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Bexar County

Somerset

Temp 132°F

Depth 4,518 ft

Flow listed as 250 gpm

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Brazoria County

Liverpool and Peterson Landing Temp 301°F Depth 16,500 ft

No flow listed

1 well

This well is probably an exploration well and very deep. With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Burleson County

Birch Creek

Temp 132°F

Depth 3,839 ft

Flow listed as 100 gpm

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Concho County

Eden

Temp 130°F

Depth 4,095 ft

No flow listed

2 wells

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Dallas County

Balch Springs and Mesquite

Temp 135°F

Depth 4,084 ft

Flow listed as 139 gpm

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Dallas and Garland

Temp 124°F

Depth 3,689 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

El Paso County

Ft Bliss Military Base

Temp 136°F

Depth 450 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Fall County

Lott

Temp 135°F

Depth 3,305 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Marlin

Temp 156°F

Depth 3,531 ft

No flow listed

3 wells

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

McClanahan

Temp 148°F

Depth 3,708 ft

No flow listed

2 wells

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Otto

Temp 142°F

Depth 3,840 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Perry

Temp 142°F

Depth 3,708 ft

No flow listed

2 wells

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Rosebud and Zipperlandville

Temp 153°F

Depth 3,692 ft

Flow listed as 825 gpm

1 well

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Gonzales County

Smiley

Temp 130°F

Depth 2,967 ft

Flow listed as 351 gpm

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Hardin County

Batson

Temp 125°F

Depth

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Hill County

Brandon and Mortens

Temp 135°F

Depth 2,652 ft

No flow listed

l well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Hubbard

Temp 134°F

Depth 3,555 ft

No flow listed

1 well

Karnes County

Deweesville

Temp 140°F

Depth 3,807 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Falls City

Temp 148°F

Depth 3,564 ft

Flow listed as 925 gpm

1 well

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Gillet

Temp 124°F

Depth 2,650 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Pawelekville

Temp 138°F

Depth 4,711 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Coy City

Temp 177°F

Depth 6,003 ft

No flow listed

2 wells

These wells are probably exploration wells and very deep. With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Karnes City

Temp 162°F

Depth 3,750 ft

No flow listed

2 wells

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Live Oak County

Esseville

Temp 150°F

Depth 4,842 ft

Flow listed as 200 gpm

1 well

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

McLennan County

Axtell

Temp 131°F

Depth 3,082 ft

No flow listed

2 wells

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Elk

Temp 130°F

Depth 2,993 ft

No flow listed

2 wells

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Riesel

Temp 145°F

Depth 3,323 ft

No flow listed

2 wells

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

McMullen County

Cross

Temp 124°F

Depth 3.998 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Tilden

Temp 149°F

Depth 4,588 ft

Flow listed as 1850 gpm

4 wells

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Milam County

Buckholts

Temp 129°F

Depth 3,448 ft

Flow listed as 274 gpm

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Thorndale and Demold

Temp 126°F

Depth 2,231 ft

Flow listed as 20 gpm

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Navarro County

Corsiana

Temp 138°F

Depth 2,983 ft

No flow listed

2 wells

Presidio County

Cleveland Breaks

Temp 124°F

Depth 138 ft

Flow listed as 12 gpm

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Webb County

Olton

Temp 122°F

Depth 2,200 ft

No flow listed

1 well

Utah Collocated Communities

The well and spring information came from the original database compiled for the report "Low-Temperature Geothermal Water in Utah: A Compilation of Data for Thermal Wells and Springs Through 1993" - Open File Report 311, Utah Geological Survey by Robert E. Blackett. Utah comprises parts of three major physiographic provinces, the Colorado Plateaus, the Middle Rocky Mountains and the Basin and Range. Hydrothermal resources with temperatures greater than 50°C occur in each province, and in the Transition Zone between the Basin and Range and Colorado Plateaus in central Utah.

The above mentioned database was further searched and compiled to include only those wells and springs with a temperature of 122°F (50°C) and above and located within 5 miles (8 km) of a community. The purpose of this compilation was to identify and encourage those communities to develop their geothermal resources. Historically, most of the communities that were identified have experienced some development of their geothermal resources. However, depending on the characteristics of the resource, the potential exists for increased geothermal development for applications such as space- and district heating industrial, greenhouse and aquaculture operations, resort/spa facilities and possible electric power generation in some areas.

There are 23 communities identified in Utah with a temperature at or above 122°F (50°C). The communities are listed below by county and the information included for each community is: highest reported temperature, total flow, number of wells and/or springs and what potential applications could be utilized at the given temperature.

There are four communities that have a potential for electric power generation, two additional communities with a potential for industrial applications, and four more with a potential for space and district heating and all of the 23 communities have a potential for resort/spa facilities and greenhouse and aquaculture applications.

Box Elder County

Bear River City

Temp 225°F

Depth 11,004 ft

Flow listed as 6 gpm

1 wel

This well is probably an exploration well and very deep. With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Corinne

Temp 165°F

Depth 502 ft

Flow listed as 40 gpm

1 well

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Honevville

Temp 131°F

Depth

Flow listed as 951 gpm

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Plymouth

Temp 126°F

Depth

Flow listed as 1,598 gpm

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Cache County

Logan

Temp 131°F

Depth 180 ft

Flow listed as 19 gpm

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Newton / Trenton

Temp 124°F

Depth 5,207 ft

Flow listed as 75 gpm

2 wells

These wells are probably exploration wells and very deep. With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Davis County

Clinton

Temp 138°F

Depth

No flow listed

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Iron County

Beryl

Temp 300°F

Depth 12,297 ft

Flow listed as 1,000 gpm

2 wells

One of these wells is probably an exploration well. With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Newcastle

Temp 207°F

Depth 499 ft

Flow listed as 1,506 gpm

3 wells

With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Juab County

Eureka

Temp 130°F

Depth

Flow listed as 2,695 gpm

1 mine

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Millard County

Cove Fort / Sulphurdale

Temp 352°F

Depth 3,921 ft

No flow listed

3 wells

With this temperature there is a possibility of a power production, industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Meadow / Hatton

Temp 153°F

Depth 89 ft

Flow listed as 4 gpm

1 spring 1 well

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Salt Lake County

Bluffdale

Temp 185°F

Depth 738 ft

Flow listed as 1,100 gpm

6 wells

With this temperature there is a possibility of an industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Riverton / Alpine

Temp 174°F

Depth 410 ft

Flow listed as 150 gpm

1 well

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Salt Lake City / Sandy

Temp 131°F

Depth

Flow listed as 230 gpm

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

San Pete County

Fairview

Temp 131°F

Depth 9,107 ft

Flow listed as 293 gpm

1 well

This well is probably an exploration well and very deep. With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Sevier County

Joseph

Temp 145°F

Depth

Flow listed as 32 gpm

1 spring

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Monroe / Austin

Temp 180°F

Depth

Flow listed as 300 gpm

2 springs

With this temperature there is a possibility of an industrial application, space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Uintah County

Jensen

Temp 132°F

Depth 4,130 ft

Flow listed as 4 gpm

2 wells

Ouray

Temp 135°F

Depth 5,614 ft

No flow listed

1 well

This well is probably an exploration well and very deep. With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Utah County

Goshen

Temp 142°F

Depth

No flow listed

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Weber County

North Ogden

Temp 137°F

Depth

Flow listed as 32 gpm

2 springs

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Ogden

Temp 134°F

Depth

Flow listed as 5 gpm

1 spring

Washington Collocated Communities

The well and spring information came from the original database compiled for the report "Low-Temperature Geothermal Resources of Washington" by J. Eric Schuster and R. Gordon Bloomquist, Washington Division of Geology and Earth Resources, Olympia, WA. Most of the thermal springs occur in the Cascade Range, associated with stratovolcanoes. In contrast 97% of the thermal wells are located in the Columbia Basin of southeastern Washington. These thermal wells are strongly associated with the Columbia River Basalt Group and the Columbia Basin.

The above mentioned database was further searched and compiled to include only those wells and springs with a temperature of 122°F (50°C) and above and located within 5 miles (8 km) of a community. The purpose of this compilation was to identify and encourage those communities to develop their geothermal resources. Historically, most of the communities that were identified have experienced some development of their geothermal resources. However, depending on the characteristics of the resource, the potential exists for increased geothermal development for applications such as space- and district heating industrial, greenhouse and aquaculture operations, resort/spa facilities and possible electric power generation in some areas.

There are 6 communities identified in Washington with a temperature at or above 122°F (50°C). The communities are listed below by county and the information included for each community is: highest reported temperature, total flow, number of wells and/or springs and what potential applications could be utilized at the given temperature.

There are two communities that have a potential for space and district heating and all of the 6 communities have a potential for resort/spa facilities and greenhouse and aquaculture applications.

Benton County

Hanford Works

Temp 140°F

Depth 4,344 ft

No flow listed

1 well

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Grant County

Mattawa

Temp 164°F

Depth 5,003 ft

No flow listed

1 well

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

King County

Hyak

Temp 122°F

Depth

Flow listed as 92 gpm

1 spring

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Lincoln County

Irby

Temp 150°F

Depth 4,406 ft

No flow listed

l well

With this temperature there is a possibility of space or district heating, resort/spa facility, greenhouse and aquaculture operation.

Okanogan County

Oroville

Temp 122°F

Depth No flow listed 2 springs

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Skamania County

Home Valley Temp 122°F Depth No flow listed 1 spring

Wyoming Collocated Communities

The well and spring was compiled from the original GEOTHERM database which was sent to our office by Henry Heasler, University of Wyoming, Special Data and Visualization Center, Laramie, WY.

The above mentioned database was further searched and compiled to include only those wells and springs with a temperature of 122°F (50°C) and above and located within 5 miles (8 km) of a community. The purpose of this compilation was to identify and encourage those communities to develop their geothermal resources. Historically, most of the communities that were identified have experienced some development of their geothermal resources. However, depending on the characteristics of the resource, the potential exists for increased geothermal development for applications such as space- and district heating industrial, greenhouse and aquaculture operations, resort/spa facilities and possible electric power generation in some areas.

There are 5 communities identified in Wyoming with a temperature at or above 122°F (50°C). The communities are listed below by county and the information included for each community is: highest reported temperature, total flow, number of wells and/or springs and what potential applications could be utilized at the given temperature.

All of the 17 communities have a potential for resort/spa facilities and greenhouse and aquaculture applications.

Hot Springs County

Thermopolis
Temp 133°F
Depth 741
Flow listed as 8,236 gpm
10 springs 5 wells

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

Lincoln County

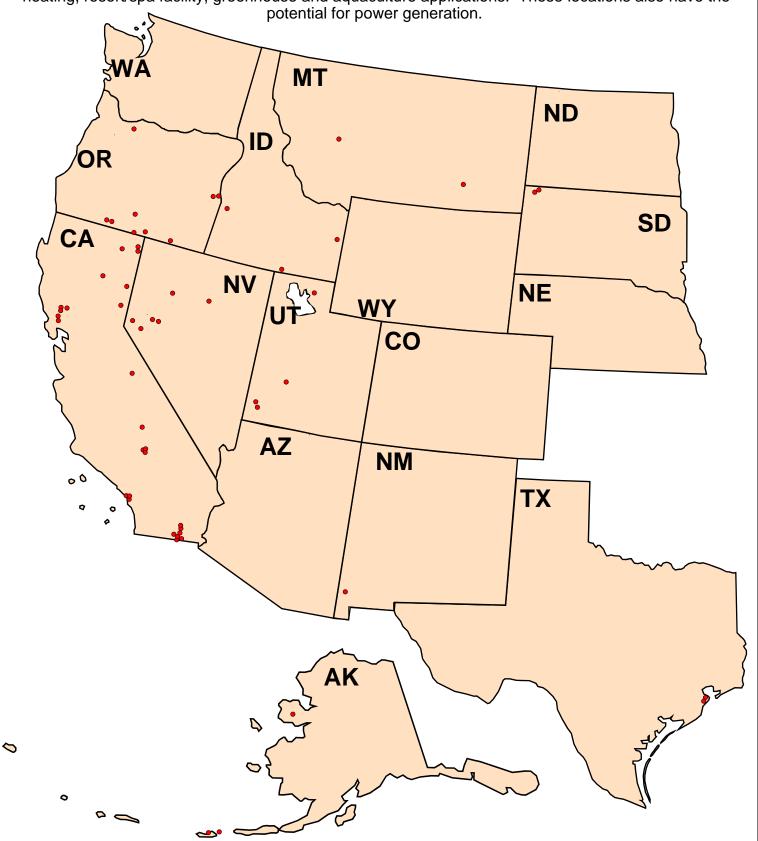
Auburn, Grover and Turnerville Temp 144°F Depth Flow listed as 37 gpm 3 springs

With this temperature there is a possibility of resort/spa facility, greenhouse and aquaculture operation.

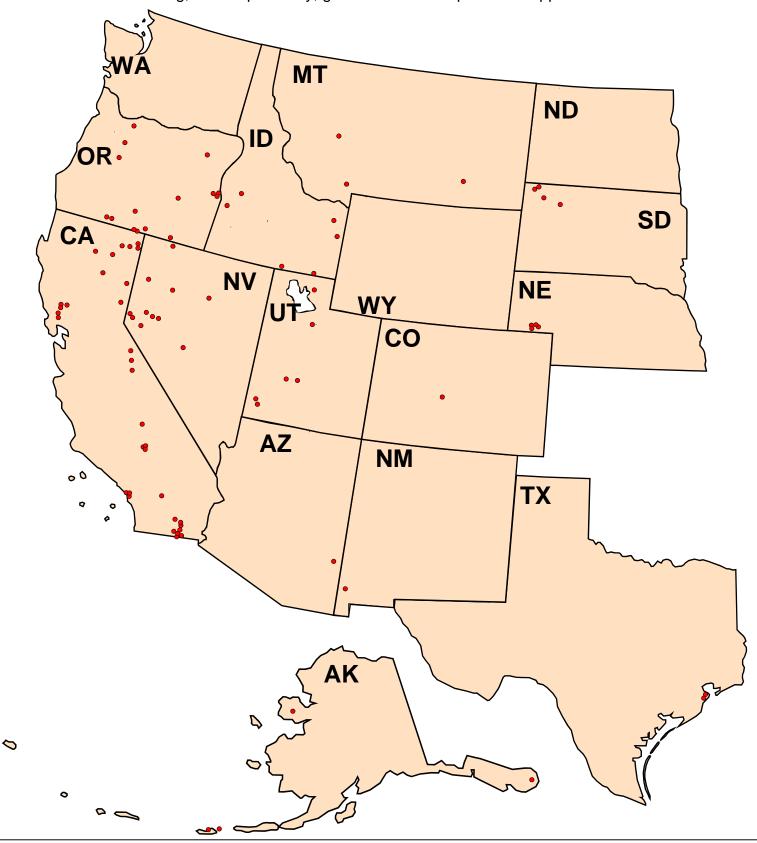
Natrona County

Alcova Temp 138°F Depth Flow listed as 100 gpm 2 springs

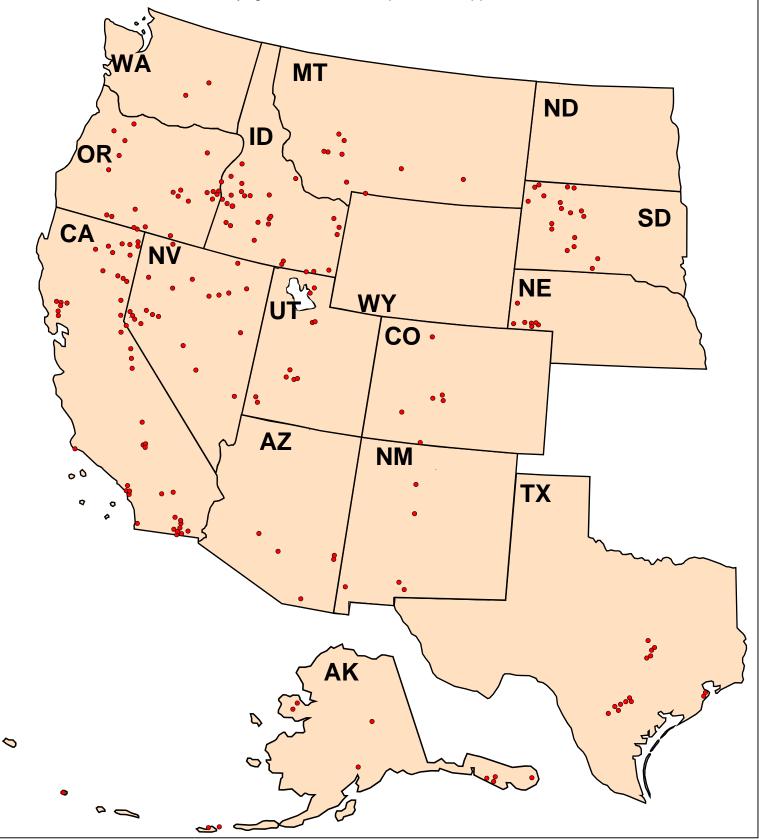
The geothermal resources (wells and springs) shown on this map have a temperature greater than or equal to 50°C (122°F) and are located within 8 km (5 miles) of a community. These locations have the possiblity for the following direct-use applications - industrial applications, space or district heating, resort/spa facility, greenhouse and aquaculture applications. These locations also have the



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