

Geothermal Resource Information Layer for Oregon

Geothermal Working Group

What is this Project About?

- Statewide database of geothermal systems
- Downloadable geothermal data

This work is supported by the Department of Energy under Grant No. DEFG36-04R021599 and an Interagency Agreement with the Oregon Department of Energy and DOGAMI, No. I07075



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Tasks:

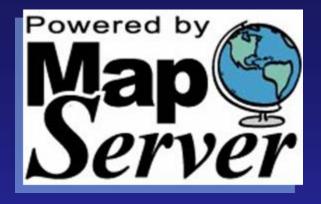
Compile DOGAMI's geothermal data

GIS compatibility

Interactive Website



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The software used to build the map page is Map-Fu (http://sourceforge.net/projects/map-fu/) developed as part of the Oregon Sustainable Community Digital Library (OSCDL) by Academic & Research Computing at Portland State University.

Co-authors: Deb Schueller and Tim Welch





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So, what does GTILO look like?



www.bowhunting.net

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GTILO - Geothermal Information Layer for Oregon

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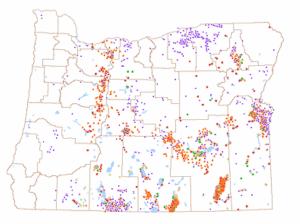
What is the Geothermal Information Layer for Oregon?

The interactive GTILO map lets you view information on location, temperature, and other features of thermal springs and wells (geothermal exploration, geothermal test, and water wells) as well as known geothermal resource areas and direct-use areas. More background information.

What do I need to view the map?

To view the map, **your browser must be** <u>JavaScript enabled</u>, and if you are using Internet Explorer, allow ActiveX controls. The map itself is image intensive. Users with slower internet connections may find that resizing the browser window to a smaller size will help the map image load faster. If you are unfamiliar with online map tools, please read the help file first. Access the interactive map using one of the methods to the right.

Map Help Download Geothermal Data Additional Resources Funding Disclaimer



GO TO MAP

Website woes? Email webmaster@dogami.state.or.us



www.oregongeology.com

Virtual tour...





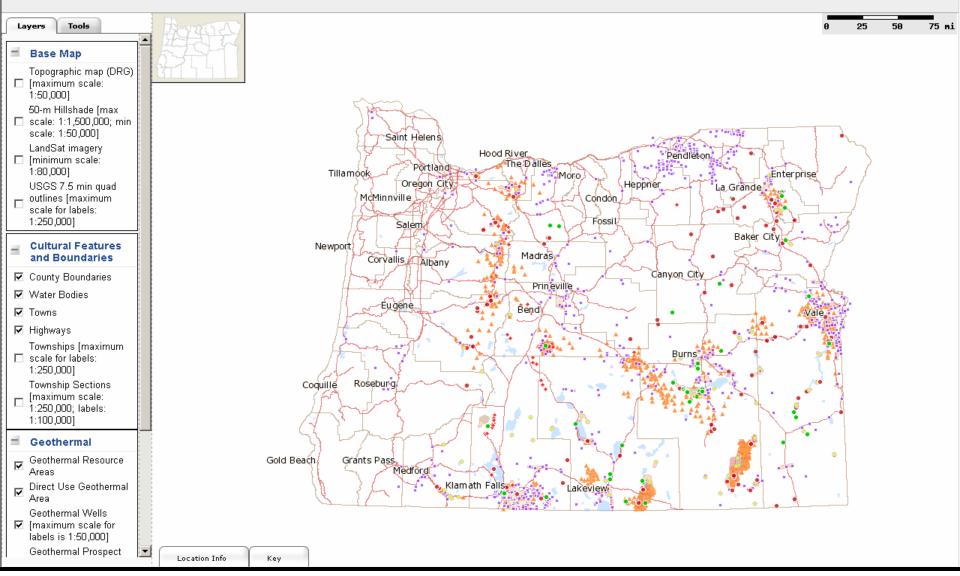
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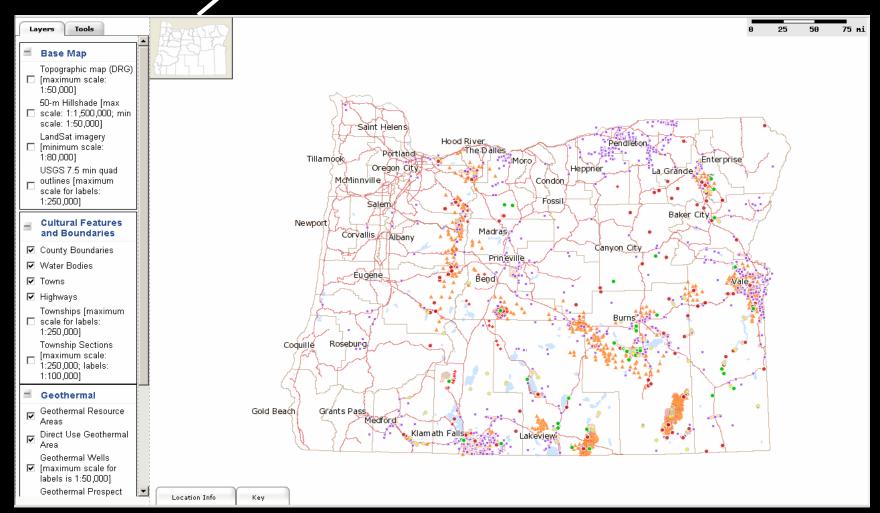


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Layers and Tools tab

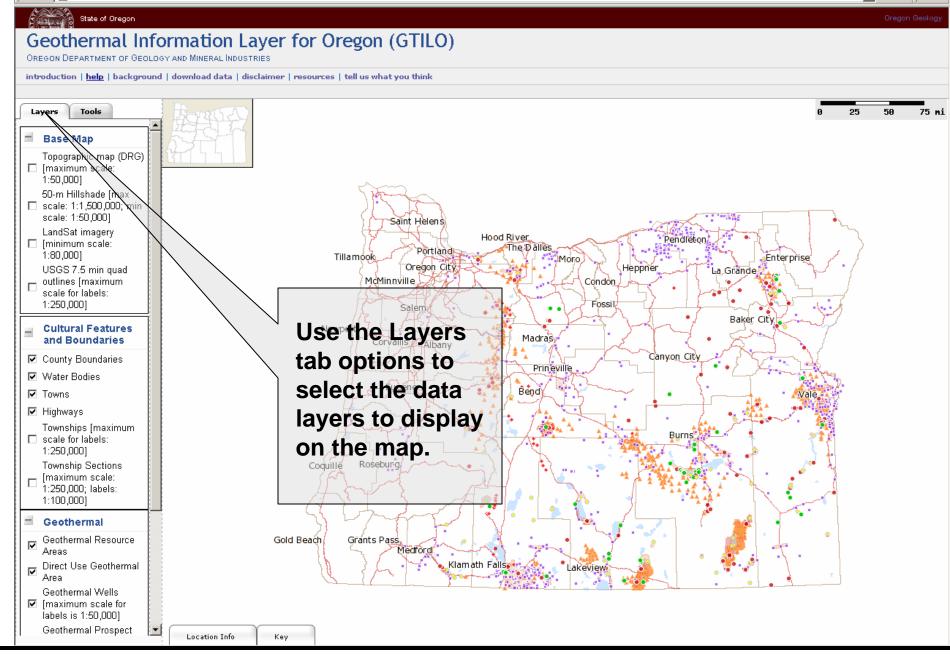
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popup Mapinfo, Key (Legend), and Info Query Tab

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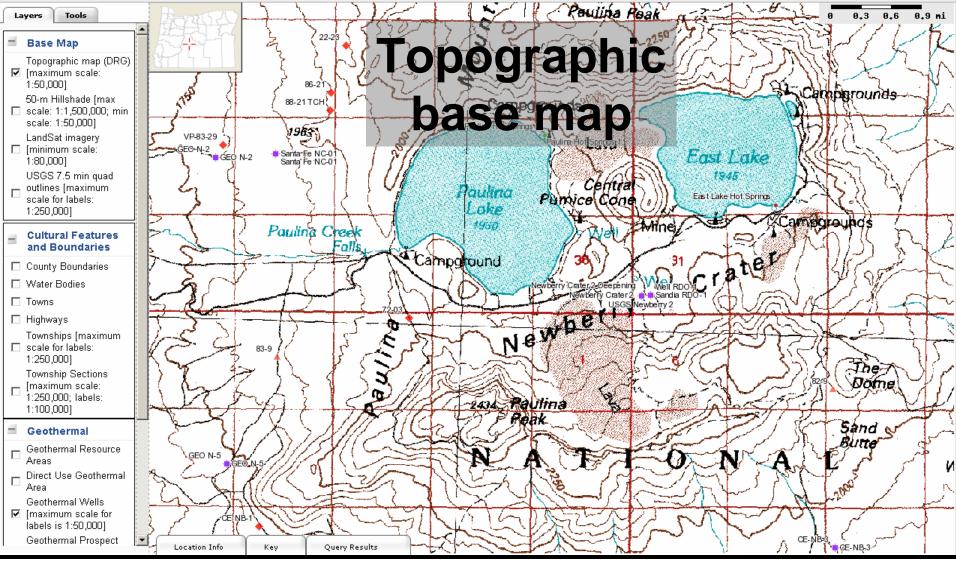
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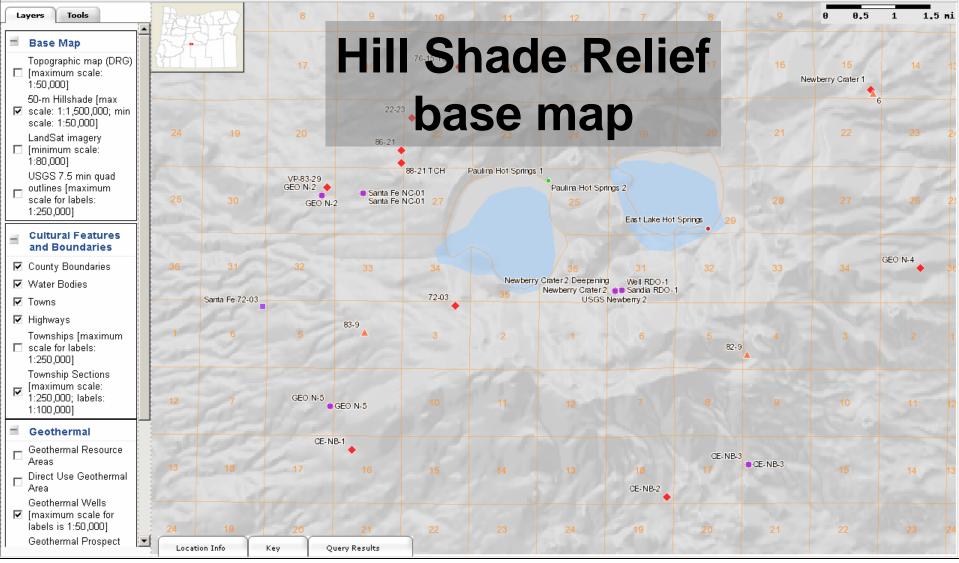


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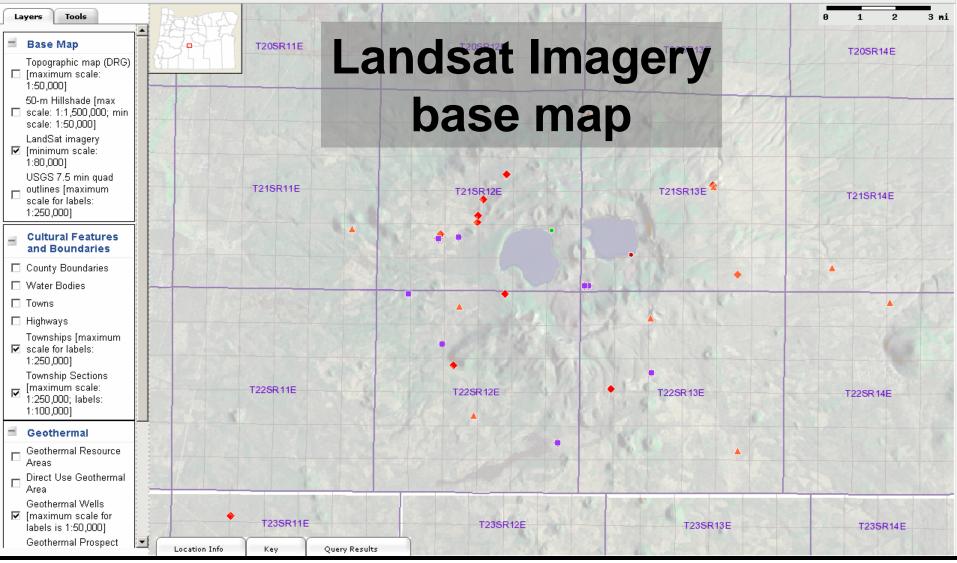
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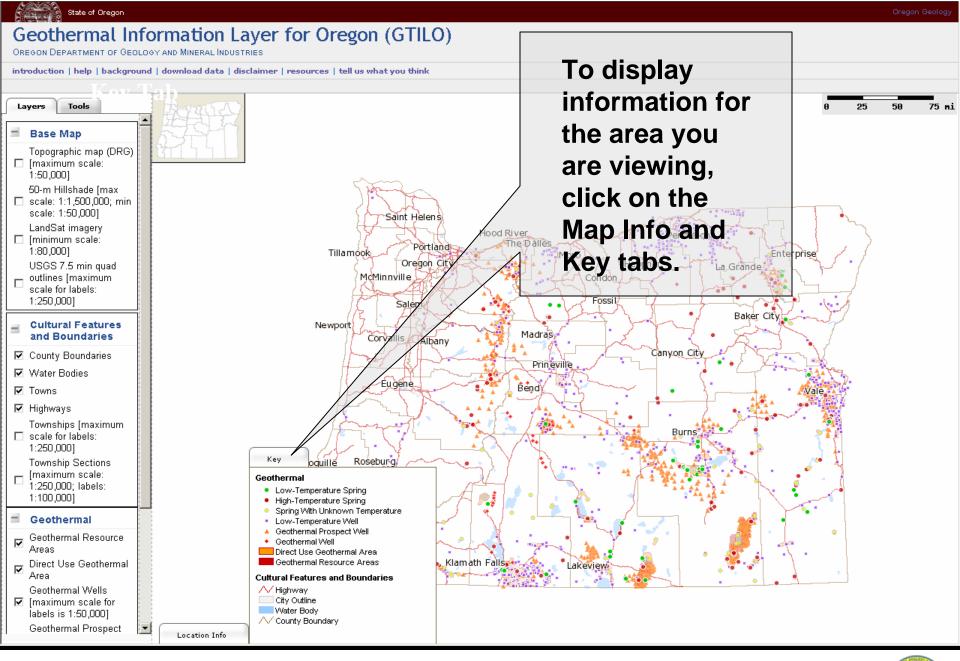
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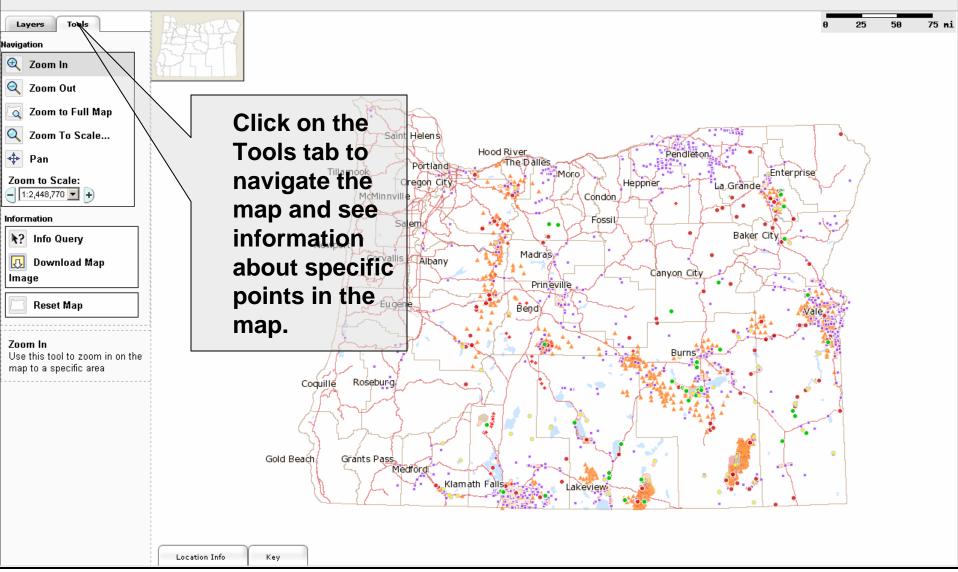


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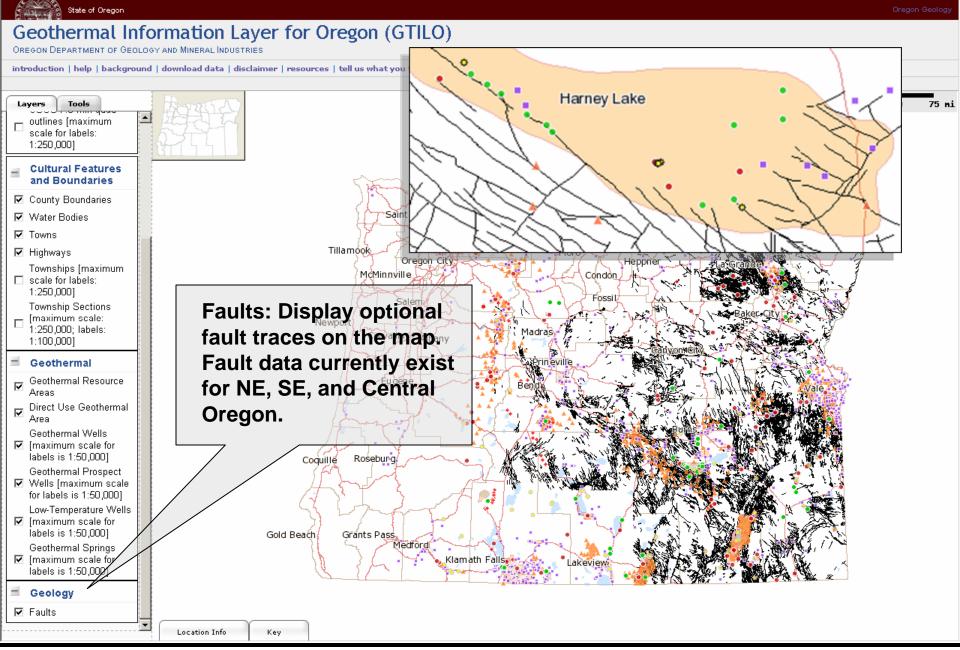


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legend			Temperature: 45 °C (113 °F) Spring class: high (> 25 °C)		
			KGRA: na Direct use: Juntura		
			Reference ID: BlacGL1994a County: Malheur		
			7.5-minute (24K) topo map: Jonesboro		
			30-minute (100K) topo map: Vale Latitude: 43.7948		
			Longitude: -117.959		
			Direct Use Geothermal Area		
			Name: Juntura DUGA County: Malheur		
			30-minute (100K) topo map: Stinking Water Mountains,		
	Location Info	Key	Vale Acres: 12408.6		

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What does GTILO offer?

http://cozart.org/images/lightning.jpg

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GTILO coverages... Warm and Hot MapInfo Professional - [Geothermal_Prospect_Wells Browser] 👱 File Edit Tools Objects Query Table Options Browse Vertical Mapper Window Help Springs ◎ i ⁄ + ◎ ⊠ X 높 D ≥ X X & A & B & A SITE PERMIT NO PROJECT COMPANY COUNT' Lafdec Quad100k Quad24k 29bnno I MC Ranch (MC GP-NP1 Varner Vallev 42 1968 -119.851 Ade Calderwood Re: U.S. Geological Survey Lake. 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Source Data

See <u>Download Data</u> for full GTILO reference information. Note that some sources, such as Brown et al., 1980, contain multiple plates or figures. Each plate or figure counts as one source. You can use the Info Query tool on the web map to see the Reference ID of the source data used at any particular location on the compilation map. DOGAMI source publications are available for viewing at state university libraries and at DOGAMI main and branch office libraries. You can purchase DOGAMI source publications from <u>Nature of the Northwest</u>.

Reference ID	Reference
AMAX1998a	Amax Exploration, Inc., 1998 data release, Beulah, Oregon, Temperature-depth, gradient, thermal conductivity, heat flow, map and lithology data, Holes B 1-14, 1975. (AMAX-5).
AMAX1998b	Amax Exploration, Inc., 1998 data release, Burns, Oregon, Temperature-depth, gradient, thermal conductivity, heat flow, map and lithology data, Holes BN 1-13, 1975. (AMAX-8).
AMAX1998c	Amax Exploration, Inc., 1998 data release, La Grande, Oregon, Temperature-depth, gradient, thermal conductivity, heat flow, map and lithology data, Holes LG 1-14, 1975. (AMAX-7).
AMAX1998d	Amax Exploration, Inc., 1998 data release, North Vale, Oregon, Temperature-depth, gradient, thermal conductivity, heat flow, map and lithology data, Holes NV 1-18, 1975. (AMAX-2).
AMAX1998e	Amax Exploration, Inc., 1998 data release, Vale, Oregon, Temperature-depth, gradient, thermal conductivity, heat flow, map and lithology data, V 1-19, 1975. (AMAX-1).
AMAX1998f	Amax Exploration, Inc., 1998 data release, Wagontire, Oregon, Temperature-depth, gradient, thermal conductivity, heat flow, and mar for 11 alls, and AMS).
AresJF1998	Arestad, J.F., R.W. Potter II, and G.E. Stewart, Stratigraphic test drilling in the Newberry Crater KGRA, Oregon, Geothermal Resources incil By stin, 8, Nov. 1988. (M43).
AshwMS1982	Ashwell, M.S., 1982, Thermal springs near Madras, Oregon, Oregon Geology v. 44, n. 01.
AyreFR1951	Ayres, F.D., and Creswell, A.E., 1951, The Mount Hood Fumaroles, Mazama, v. 33, n. 13, p. 33-40.
BacoCR1983	Bacon, C.R., 1983, Eruptive history of Mount Mazama, Cascade Range, U.S.A., Journal of Volcanology and Geothernessea.ch. 1 . 57-115.
BacoCR1996	Bacon, C. R., and Nathenson, Manuel, 1996, Geothermal resources in the Crater Lake area, Oregon: U. S. 🗲 ogical Surve Or -E ^y (Report 96-663, 34 pages
BargKE1990	Bargarv, K.E., 1990, Hydrothermal alteration in geothermal drill hole CTGH-1, High Cascade Range, Oregon, Caron Geoli, V. 52, n. 04.
BargKE1994	Bargarv, K.E., 1994, Hydrothermal alteration in the SUNEDCO 58-28 geothermal drill hole near Breitenbush Hot ings, Songon, Oregon Geology v. 56, n. 04.
BargKE1999	Bargar, K.E., and Keith, T.E., 1999, Hydrothermal mineralogy of core from geothermal drill holes at Newberry volce segon, U.S. Geological Survey professional paper 1578, p. 83-86.
BarrW1980	Barrish, W., Bond, J.G., Kauffman, J.D., and Vendatakrishnan, R., 1980, Geology of the La Gran Care Oregon, Oregon Department of Geology and Mineral Industries.
BenoWR1983	Benoit, W.R., 1983, An explorationist viewpoint of the high-temperature geothermal potential of the scade range in Oregon, Geothermal Resources Council Transaction, v. 7, p. 227-232, 1983.
BensSM1984a	Benson, S.M., et. al., 1984, Data from pumping and injection tests, and chemical saming in the generative and aquifer at Klamath Falls, Oregon U.S. Geological Survey Open-File Report OFR 84-146.
BensSM1984b	Benson, S.M., Sammel, E.A., Solbau, R.D., and Lai, C.H., 1984a, Interpretation of aquitor data, U.S. Geological Survey Water-Resources Investigations Report 84-4216, p. 5.1-5.55.
BergJ₩1967a	Berg, J.W., Jr., and Thirvuvathukal, J.W., 1967, Gravity maps of Oregon inshar and offshore, Oregon Department of Geology and Mineral Industries Geologic Map Series GMS-4.
BergJW1967b	Berg, J.W., Jr., and Thirvuvathukal, J.W., 1967, Complete Bouge Gravit, nom Map of Oregon, Oregon Department of Geology and Mineral Industries Geologic Map Series GMS-4-b, map.
BerrDA1984	Berri, D.A., 1984, Geology and Hydrothermal Alteration and a stream of the state of
BerrGW1980	Berry, G.W., Grim, P.J., and Ikelman, J.A The al spring list for the United States, National Oceanic and Atmospheric Administration Documentation 12.
BlacDD1969	Blackwell, D.D., 1969, Heat flow deter vations in the thwo yrn United States, J. Geophys. Res., 74, 992-1007, 1969.
BlacDD1978	Blackwell, D.D., Hull, D.A., Bowen, R.O. L., 1978, Heat flow of Oregon, Oregon Department of Geology and Mineral Industries Special Paper 4, 42 p. 1 pl., 1:1,000,000.
BlacDD1979	Blackwell, D.D., 1979, Heat flow and geothermal growent study of the Newberry Volcano and vicinity, Central, Oregon, Report for OXY Geothermal, Inc., p. 25, Mar. 1979. (M20).
BlacDD1981a	Blackwell, D.D., Black, G.L., and Priest, G. Geothermal gradient data for Oregon, 1981, Oregon Department of Geology and Mineral Industries Open-File Report O-81-03, 3 parts (a, b, and c), 374 p.
BlacDD1981b	Blackwell, D.D., 1981, Aspects of low temperature geothermal resource assessment with examples from Kansas and Oregon, p. 1-22, Glenwood Springs Tech. Conf. Proc. I, U. S. Dept. Energy Rep. DOE/ID/12079-39 ESL-59. (DR22)
BlacDD1982a	Blackwell, D.D., Black, G.L., and Priest, G.R., 1982, Geothermal gradient data for Oregon (1981), 1982, Oregon Department of Geology and Mineral Industries Open-File Report O-82-04, 430 p.
BlacDD1982b	Blackwell, D.D., Bowen, R.G., Hull, D.A., Riccio, J., and Steele, J.L., 1982, Heat flow, arc volcanism, and subduction in central Oregon, Journal of Geophysical Research, v. 87, p. 8735-8754
BlacDD1986a	Blackwell, D.D., Black, G.L., and Priest, G.R., 1986, Geothermal gradient data for Oregon (1982-1984), 1986, Oregon Department of Geology and Mineral Industries Open-File Report O-86- 02, 107 p.

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Permit Wells, Geothermal (hot and warm)

GTILO - Geothermal Information Layer for Oregon

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Download Data

Geothermal Layer Data

Download <u>GTILO release 1.zip</u> - as of June 28, 2007 (438 KB zip file) (includes .shp and .tab files for Known Geothermal Areas (KGRAs), Direct Use Geothermal Areas, Geothermal Exploration Permit (Prospect) Wells, of oth Springs, Low-Temperature Wells, plus metadata files)

View Metadata: HTML file; text file; XML file as of June 28, 2007

Geophysical Logs

- Excel spreadsheet as of June 28, 2007 (18KB) list of permit numbers, hole numbers, companies, and relation the following thermal geophysical logs that you can download in the following zip files.
- DOGAMI Open-File Report 0-94-09.zip (351 KB zip file)- geochemistry of selected thermal springs and wells,
- Geothermal geophysical logs in PDF format grouped into zip files by well name as of June 28, 2007. Not may all be added as they as scanned.

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Offers GIS Capabilities...





Grass GIS



Quantum GIS









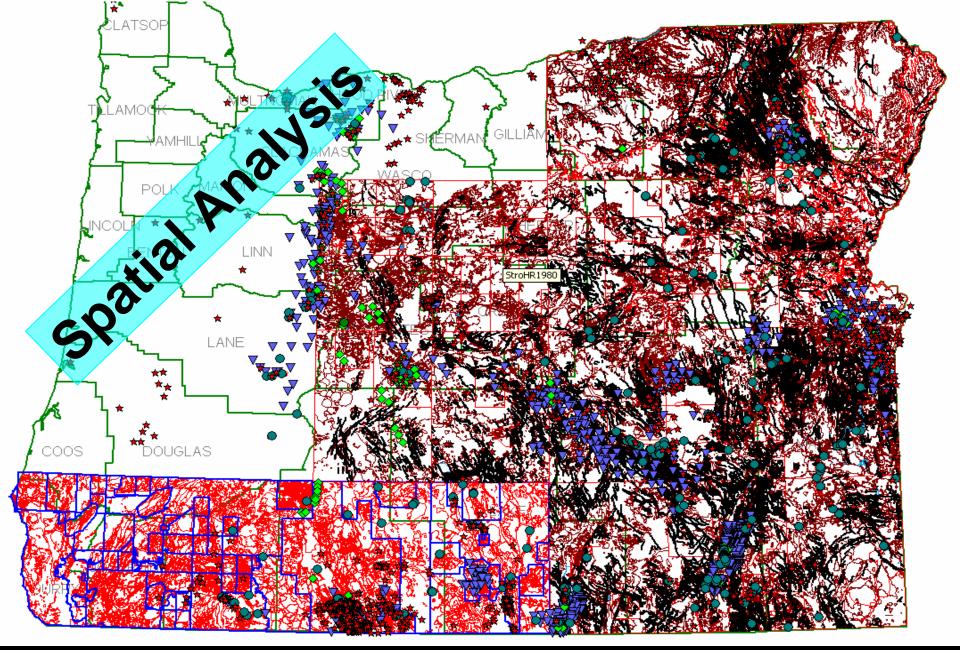




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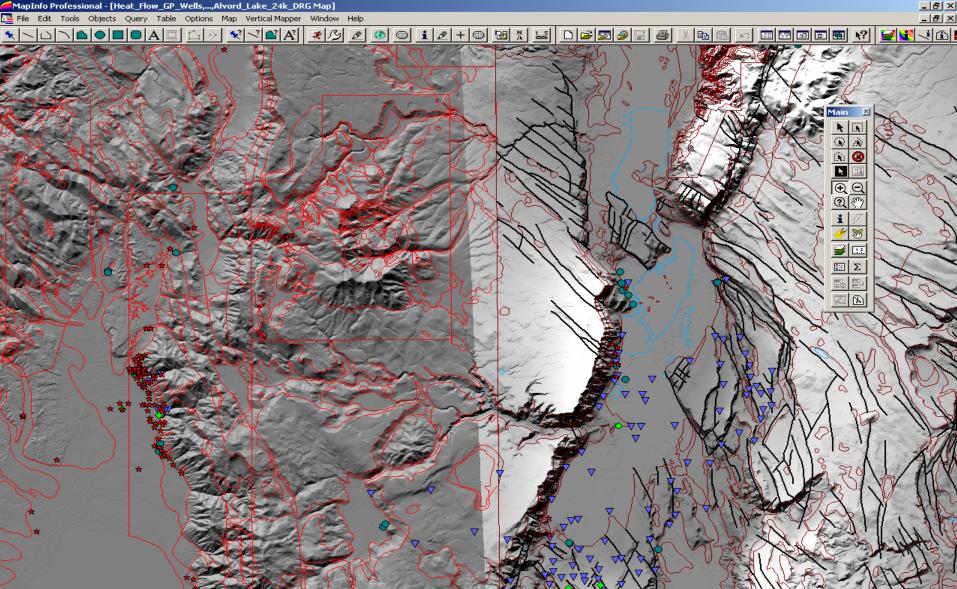
Not a product endorsement



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What's -



– Next?



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Web interface improvements **Temperature and depth database Compiled geochemistry database Updated low-temperature database** Scanning - well records & permits



Oregon Geothermal Working Group

Oregon Department of Geology and Mineral Industries

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"No activity, whether building, landscaping, producing art, or breathing, is without environmental consequences! Whether we like it or not, we extract (resources) to be able to live, even to be able to protest extraction." (Ron Geitey)

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