

Physical Thermal Territory (PTT):

France (Country) + Châtel-Guyon (PTT)

This factsheet shows one of the relevant PTT of the [Thermecowat project](#). A Physical Thermal Territory (PTT) is a designated physiographic area that encompasses one or more thermal water sources and their catchment areas.

Relevant Physical Thermal Territory description and their thermal establishments



Physical Thermal Territory description

Châtel-Guyon is a medium-sized town in the foothills of the Plateau des Dômes. Surrounded by nature, Châtel-Guyon offers a blend of urban attractions and outdoor activities. A new thermal therapy and wellness establishment has recently replaced the historic thermal facilities.



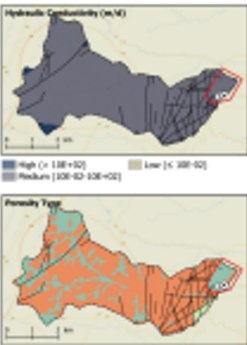
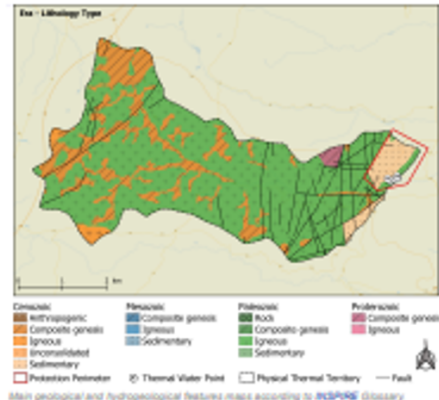
Thermal establishments

[SAS Resort thermal de Châtel-Guyon](#) - Aixa resort

Geological, hydrogeological and geothermal settings

Geological and hydrogeological settings description

Châtel-Guyon lies on the western edge of the Oligocene Limagne basin, right onto the main border fault separating the Variscan basement to the west from the sedimentary infill to the east. The Variscan basement is highly fractured (N-S and NE-SW) and comprises Devonian monzonite (390-355 Ma) showing significant evidence of hydrothermal alteration, and intruded later by Carboniferous granite (355-335 Ma). A thin Eocene sedimentary detrital sequence locally covers this basement. Springs are associated with horsts, they are along the fault limiting the Chalusset and Calvine horsts to the west (N40).



Geothermal play type (*)

CV3: Fault-controlled hydrothermal circulation related to large-scale extensional domains

* Classification according to [Brock et al. \(2016\)](#).

Thermal water points: flow rate, temperature and geothermal potential



Total Geothermal Potential
>3.21 MW

Thermal water point	Flowrate (L/s)	T° (°C)	Geothermal potential (MW)
BSS001RXXCE	16.64	35.80	1.10
BSS001RXXCG	16.64	36.50	1.15
BSS001RXXCF	13.89	35.60	0.91
BSS001RXXKW	0.83	34.10	0.05
BSS001RXXLF	0.08	28.20	0.00
BSS001RXXVH	NaN	30.90	No data

* Geothermal potential has been assessed by fixing a minimum cooling temperature of 20°C.

Physical Thermal Territory (PTT):

France (Country) + Châtel-Guyon (PTT)

This factsheet shows one of the relevant PTT of the [Thermecowat project](#). A Physical Thermal Territory (PTT) is a designated physiographic area that encompasses one or more thermal water sources and their catchment areas.

References

Relevant references for the Physical Thermal Territory characterization

- BERTIN C.; ROUZAIRE D. (2005) - Amélioration de la connaissance des ressources en eau souterraine des sites thermaux en Auvergne. Site de Châtelguyon. Rapport final. BRGM/RP-53430-FR, 141 p. 38 fig., 2 ph.
 - HOTTIN A.M., BELIN J.M., BOIS J.P., DEYRIEUX G., MORICE E. (1989) Carte géol. France (1/50000), feuille SAINT-GERVAIS-D'AUVERGNE (685) - Orléans : BRGM. Notice explicative par HOTTIN A.M., PERICHAUD J.J., BOIS J.P., D'ARCY D. (1989), 66 p.
 - JEAMBRUN M., GIOT D., BOUILLER R., BAUDRY D., CAMUS G. (1973) - Carte géol. France (1/50 000), feuille Clermont-Ferrand (693) - Orléans : BRGM. Notice explicative par AUBERT M., BOUILLER R., CAMUS G., COCHET A., D'ARCY D., GIOT D., JEAMBRUN M., ROCHE A., BONHOMMET N. (1973), 64 p.
 - MICHARD, GIL, FOULLAC, Christian, GRIMAUD, Daniel, et al. Une méthode globale d'estimation des températures des réservoirs alimentant les sources thermales. Exemple du Massif Central Français. Geochimica et Cosmochimica Acta, 1981, vol. 45, no 7, p. 1199-1207.
 - MOECK, Inga S. Catalog of geothermal play types based on geologic controls. Renewable and sustainable energy reviews, 2014, 37, Jg., S. 867-882.
 - MILLOT, Romain et NÉGREL, Philippe. Multi-isotopic tracing (87Li, 511B, 87Sr/86Sr) and chemical geothermometry: evidence from hydro-geothermal systems in France. Chemical Geology, 2007, vol. 244, no 3-4, p. 664-678.
 - RIHS, Sophie et CONDOMINES, Michel. An improved method for Ra isotope (226Ra, 228Ra, 224Ra) measurements by gamma spectrometry in natural waters: application to CO2-rich thermal waters from the French Massif Central. Chemical Geology, 2002, vol. 182, no 2-4, p. 409-421.
 - VIGOUROUX P. (1999) - Atlas des périmètres de protection des sources d'eau minérale en France. BRGM/RR-40486-FR, 270 p. 2 vol., 38 cartes
- Web:
- INFOTERRE (BRGM) : <https://infotere.brgm.fr>
 - ARS AUVERGNE RHONE-ALPES : www.auvergne-rhone-alpes.ars.sante.fr
 - ARS NOUVELLE AQUITAINE : www.ars.nouvelle.aquitaine.sante.fr

