



## Site Description

### Teels Marsh

(updated 2010)

Geologic setting: The Teels Marsh playa has extensive borate deposits, which suggests a possible association with geothermal fluids ([Coolbaugh et al., 2006](#) and [Kratt et al., 2006](#)). Follow-up investigations identified cold springs with fluid geochemistry suggestive of high geothermal reservoir temperatures (Coolbaugh et al., 2006).

Temperature anomalies occur in two separate zones, both of which are adjacent to a Quaternary fault on the western margin of Teels Marsh basin.

#### Geothermal features:

***Teels Marsh playa*** ([map](#)): Researchers at UNR and DRI acquired direct evidence of geothermal activity at Teels Marsh. Shallow temperatures reach 35°C, in contrast to background temperatures of 16-18°C. A shallow (2m) temperature survey uncovered two thermal anomalies along an active range-front fault west of the playa. These anomalies have a combined strike length of almost 4 km, related to thermal groundwater upwelling along fault planes. After reaching the water table, fluids continue down-gradient and mix with non-thermal groundwaters. At the playa surface, fluids form cold springs with anomalous geothermometer temperatures and borate-rich evaporite crusts. No hot springs or wells are known in the Teels Marsh basin.

Teels Marsh was revisited in May 2008 to verify if the anomaly is produced by geothermal groundwaters. A probe was inserted to 9.5m near the highest 2-meter temperatures. Temperatures increase rapidly with depth; a bottom-hole temperature of 65°C was measured at 9.5m ([data plot](#)).

#### ***Huntoon Valley:***

Leasing information: In 2010 Caldera performed a hydroprobe survey that found 97°C and 78°C water at ~30m depth under the northern and southern anomalies, respectively. Cation and silica geothermometer estimates from water samples are in the 155°C to 170°C range. Caldera plans additional work on the property in 2011.



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Bibliography:

