Chena Hot Springs Resort

The Chena Vision

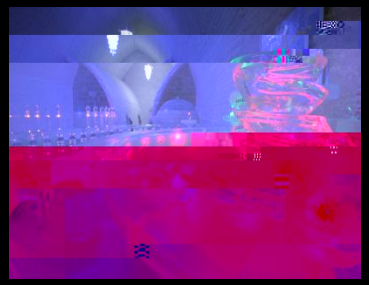
Become a self-sustaining community in terms of energy, food, and fuel to the greatest possible extent.

Chena Hot Springs Renewables

Geothermal Generator

Water Ram Irrigation System

Geothermal District Heating System



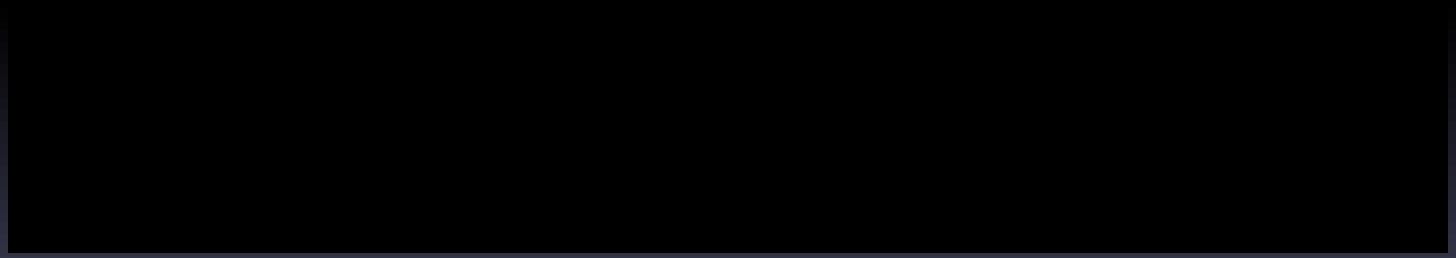
Year Round Ice Museum

Year Round Production Greenhouse

All Season Feed System

**Just a few of Chena's many renewable projects.*

How an ORC Works



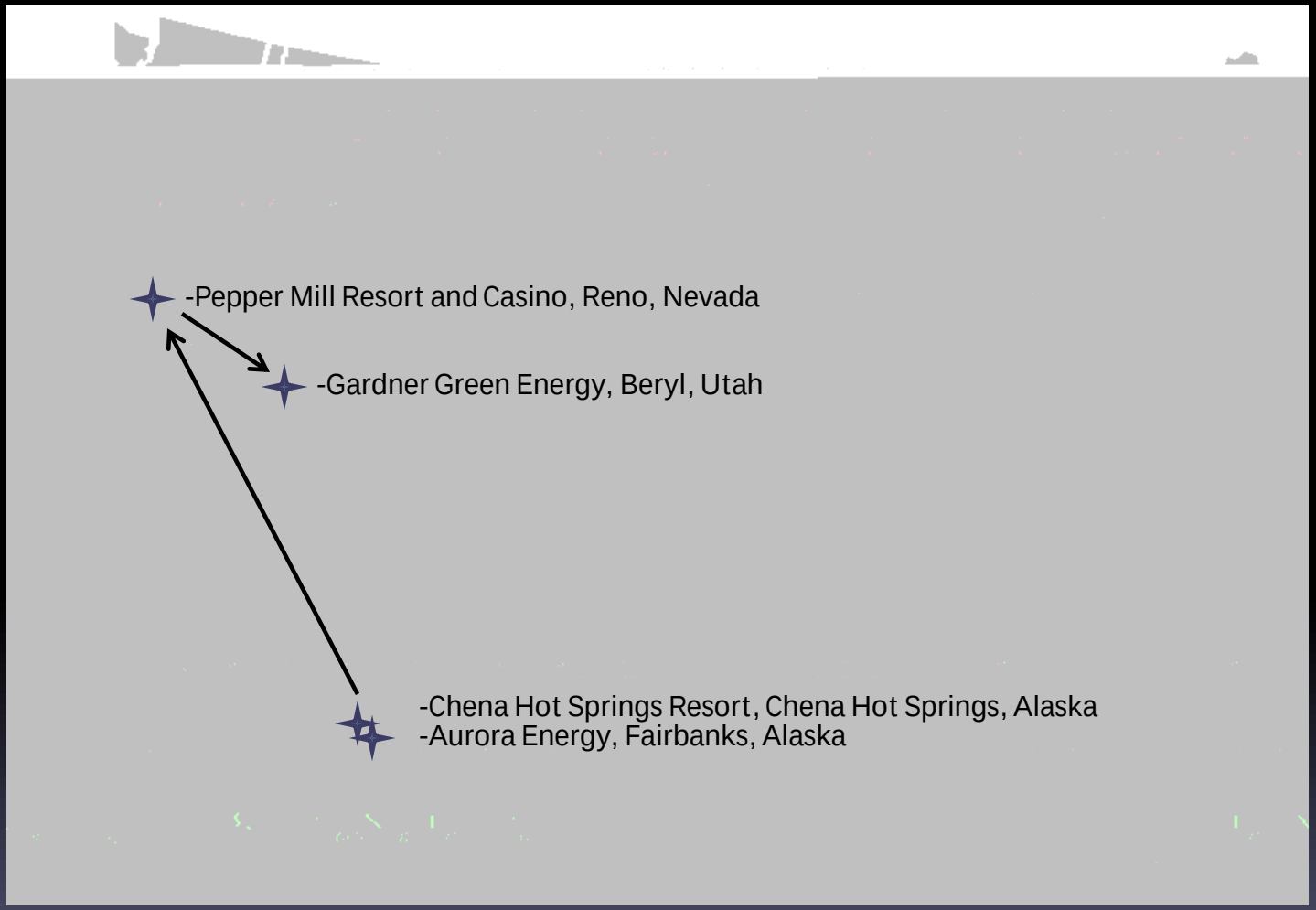
Chena Hot Springs Geothermal Power Plant

- 400 kW net; installed in 2006
- Uses 900 gpm of 160ºF water
- Air and water cooled
- Reduced local cost of power from 30¢ to 5¢
- Total project cost $2 million
- Savings of $500,000 in 2009
- Simple Payback: 4 years

Chena Power Mobile Geothermal Power Plant

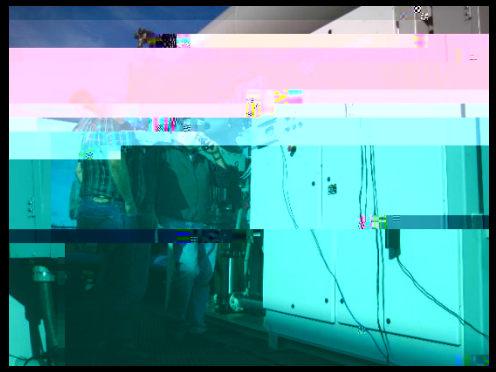
Revolutionary Unit

Where has the Mobile ORC been?



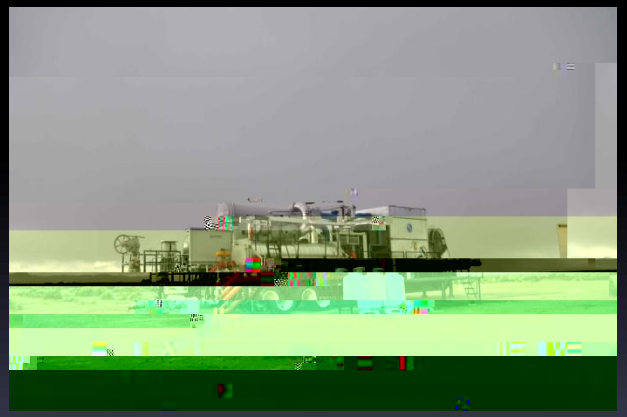
Chena Power Mobile Geothermal Power Plant

Chena Hot Springs Resort, Chena Hot Springs, Alaska



Aurora Energy, Fairbanks, Alaska

Pepper Mill Resort & Casino, Reno, Nevada



Gardner Green Energy, Beryl, Utah

Chena Fresh Greenhouse

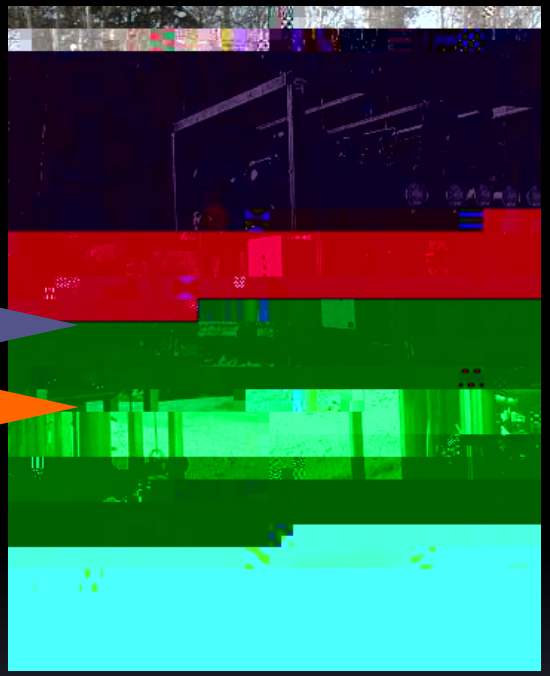
Completed in 2006

Three Pressure Absorption Chiller

Three Pressure Absorption Chiller

Monument Creek Provides Cooling Water (~40F)

Geothermal Wells Provide Hot Water (~165F



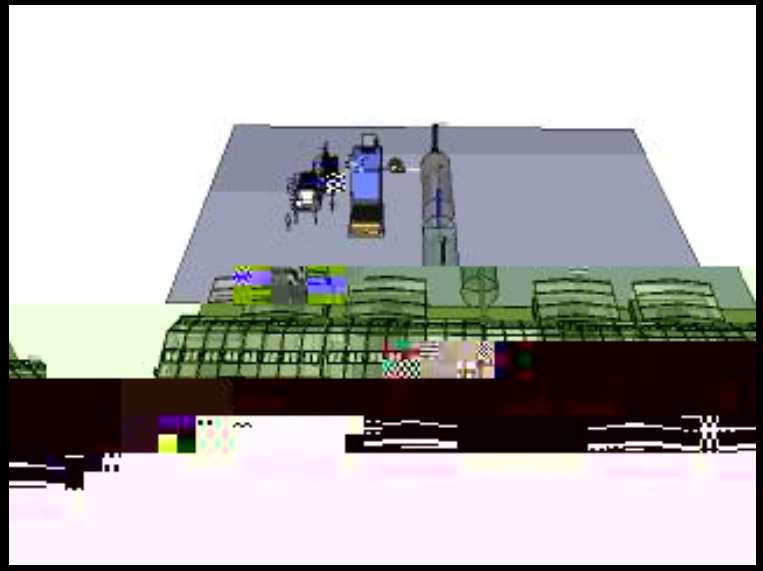
Approximately 15 tons of Refrigeration Required for Ice Museum (180,000 BTU per hour)

Future Drilling at Chena

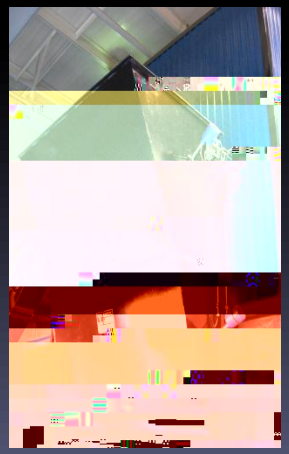
A team from the University of Alaska Fairbanks conducted interference testing on the wells at Chena Hot Springs to gather data from the reservoir in 2009.

Chena Power, LLC
Clean Biomass Power Plant

- 600kW gross, 500kW net output
- Fuel is 5000 tons of paper, cardboard and brush supplemented with farmed willow
- Designed for rural village application – thermal oil boiler
- Increased efficiency over geothermal installation through addition of a topping cycle
- Co-located with heat load (space heating, greenhouses)
- CO2 capture through food production and algae based biofuel production



Cardboard bales ready to be used as fuel to power the power plant



Boiler fuel intake

Engineers doing a system check

Sustainable is Attainable

CHENA HOT SPRINGS RESORT

www.chenahotsprings.com

CHENA POWER

www.chenapower.com

Bernie Karl

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“Do what you can, with what you have, where you are.”

-President Theodore Roosevelt