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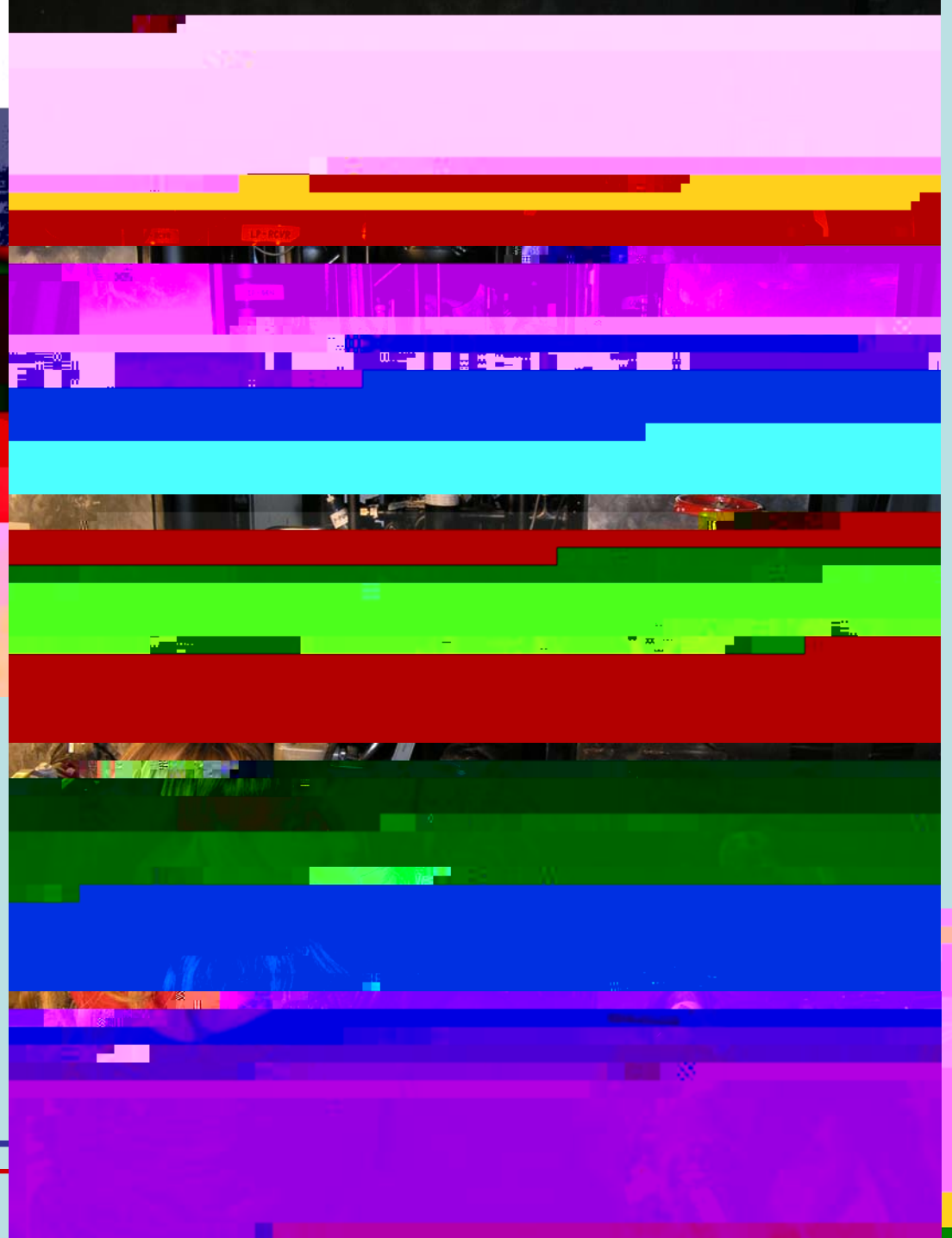
Geothermal Energy



Keeping ice cold with hot water

Geothermal Energy from Oil and Gas Fields

Base Load

Green, no emissions

Located in industrialized areas

Financing by long term loans

Lowers cost of production

Multibillion dollar market in Texas alone

Large scale gas resources developed with geopressure

The Past Year

August 20, 2006; Chena Power Plant Inaugurated

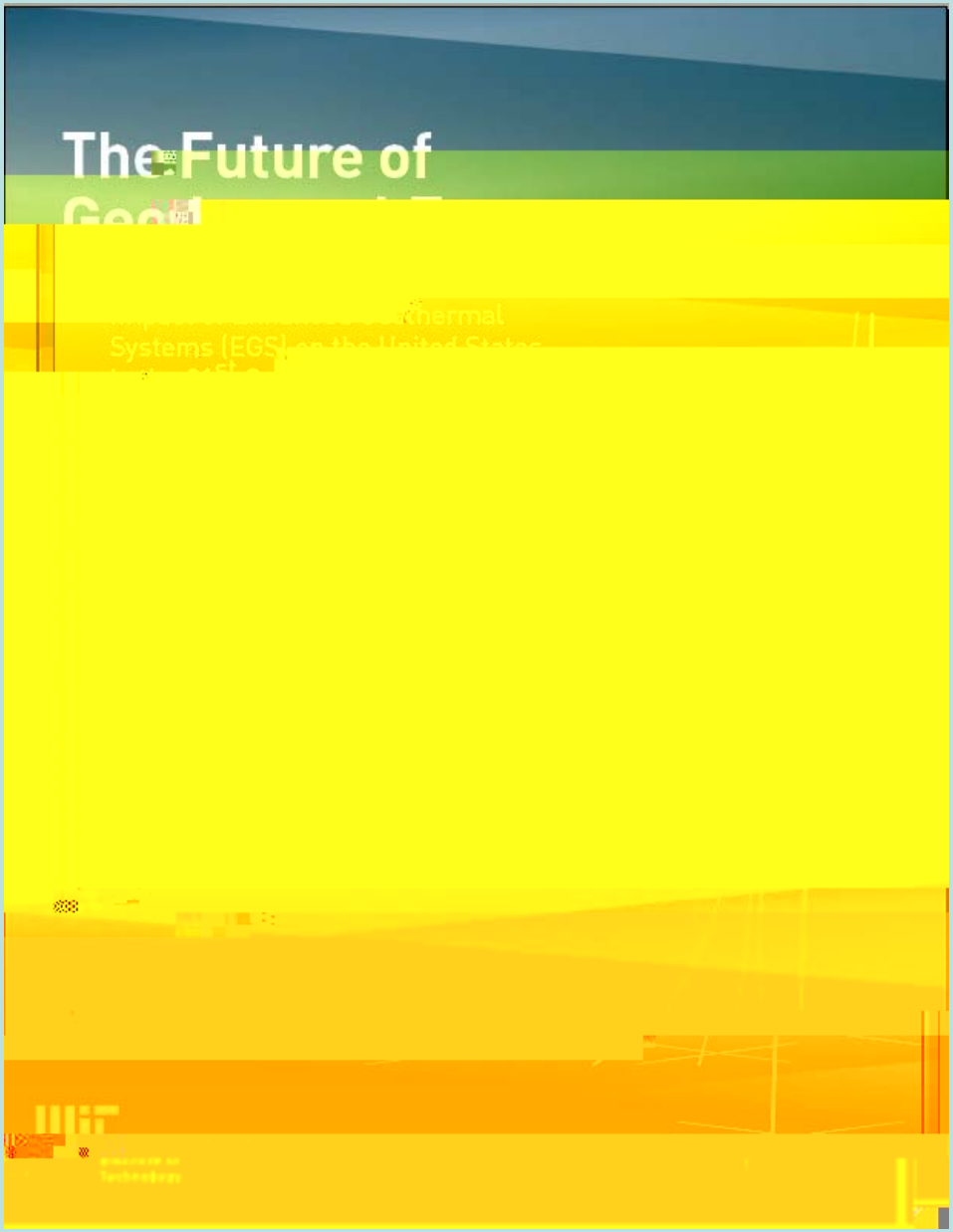
September 01, 2006; TXU announces plans for 14,000 MW of new coal and nuclear power

January 18, 2007; Ormat Buys Texas geothermal leases

January, 2007; *Future of Geothermal Report*, MIT released

January 2007; Ormat and RMOTC sign Cooperative R&D agreement for 1st coproduced power project

Continuing; EGS activity in Europe and Australia


The Future of
Systems (EGS)

Estimated total geothermal resource base and recoverable resource given in EJ or 10^{+18} Joules.

[redacted]

LOCATIONS

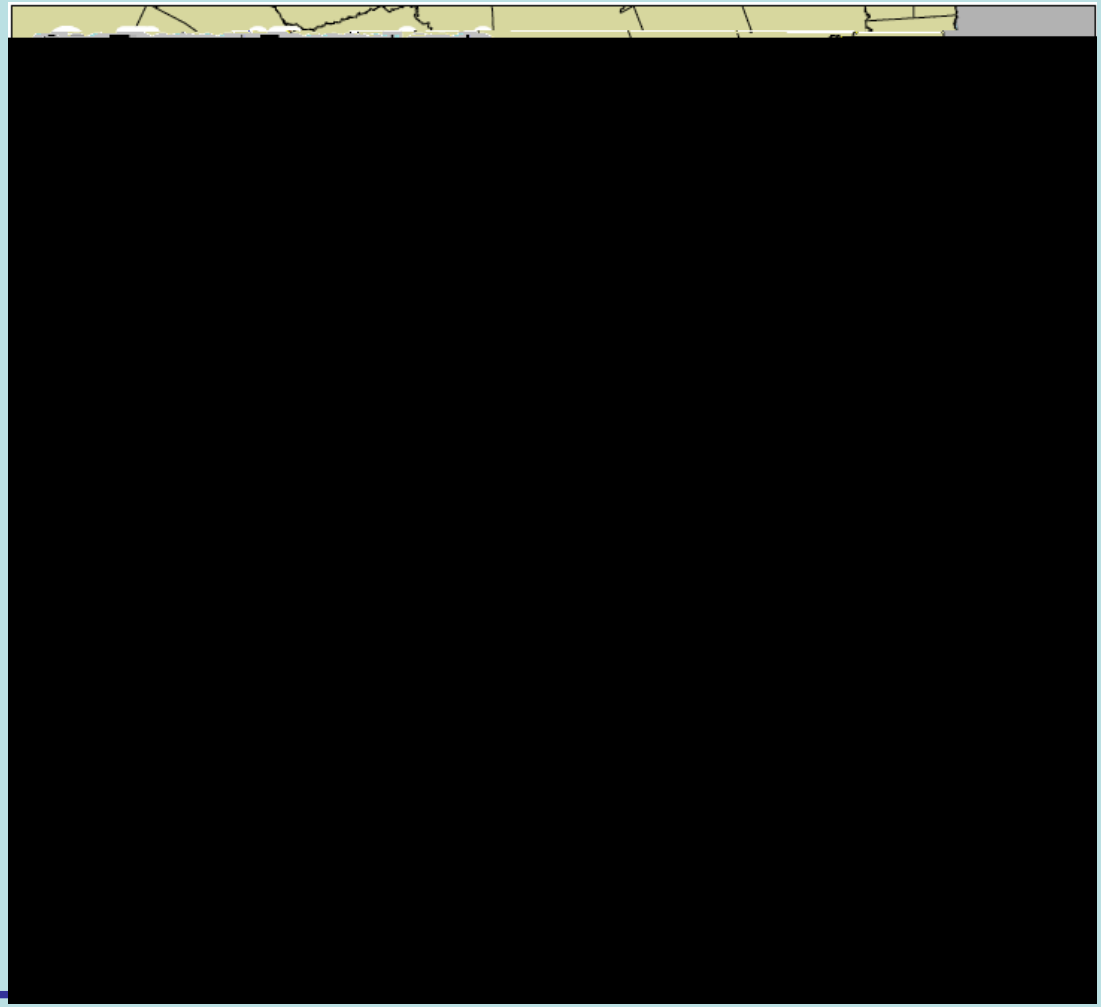
Amarillo

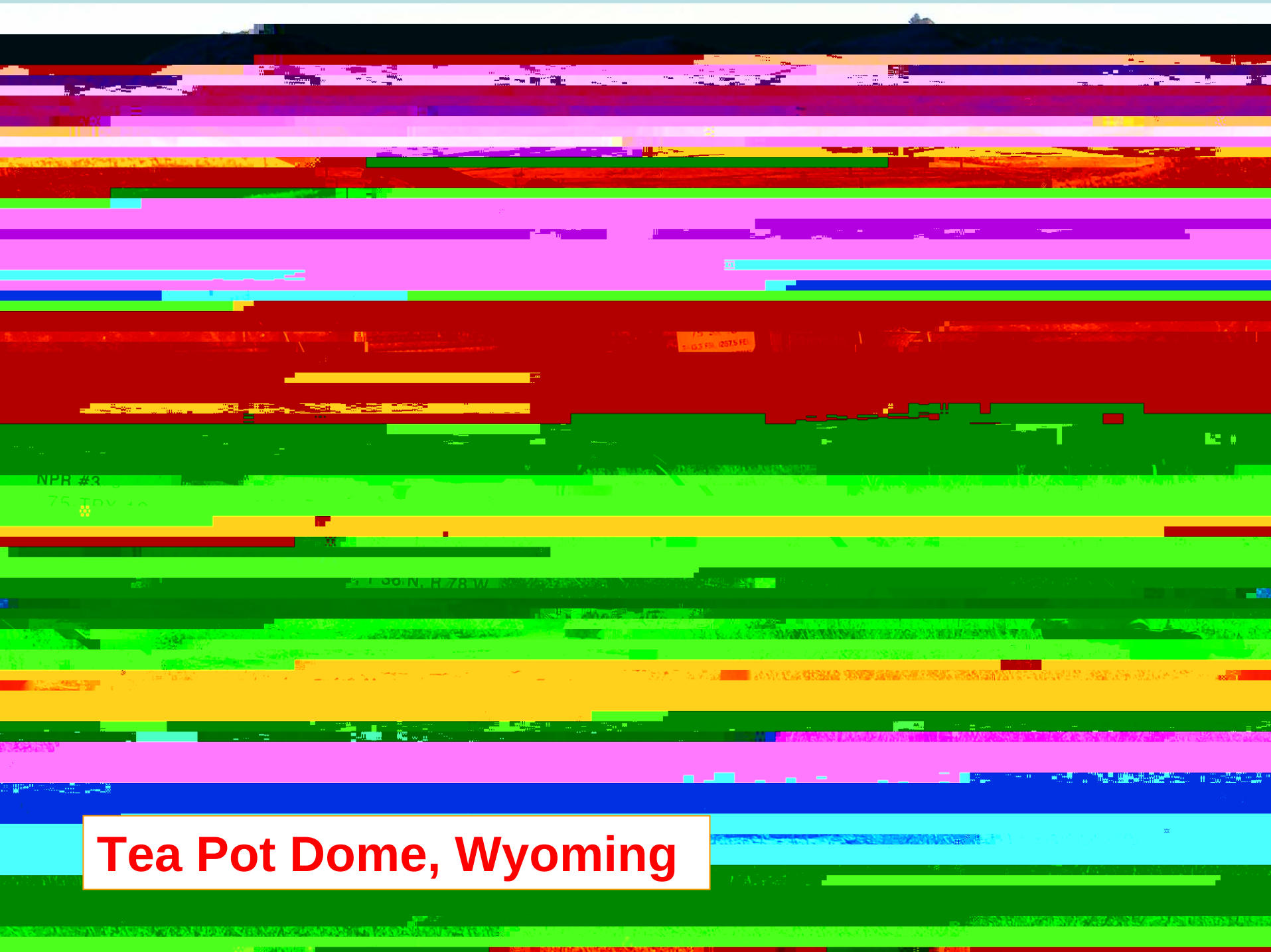
(27) disclosed)

[redacted]

Houston

Competitive Lease of Texas Lands
January 18, 2007





Tea Pot Dome, Wyoming

Scenarios for Development in Sedimentary Basins

Coproduced fluids
Geopressure fluids
Sedimentary EGS

These are briefly described, resource base discussed, and examples of development given for each category

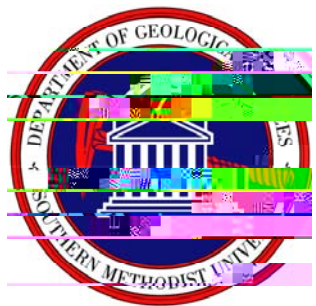
The resource base for these 3 types of geothermal development is briefly summarized: HUGE!

Advantages for O&G industry

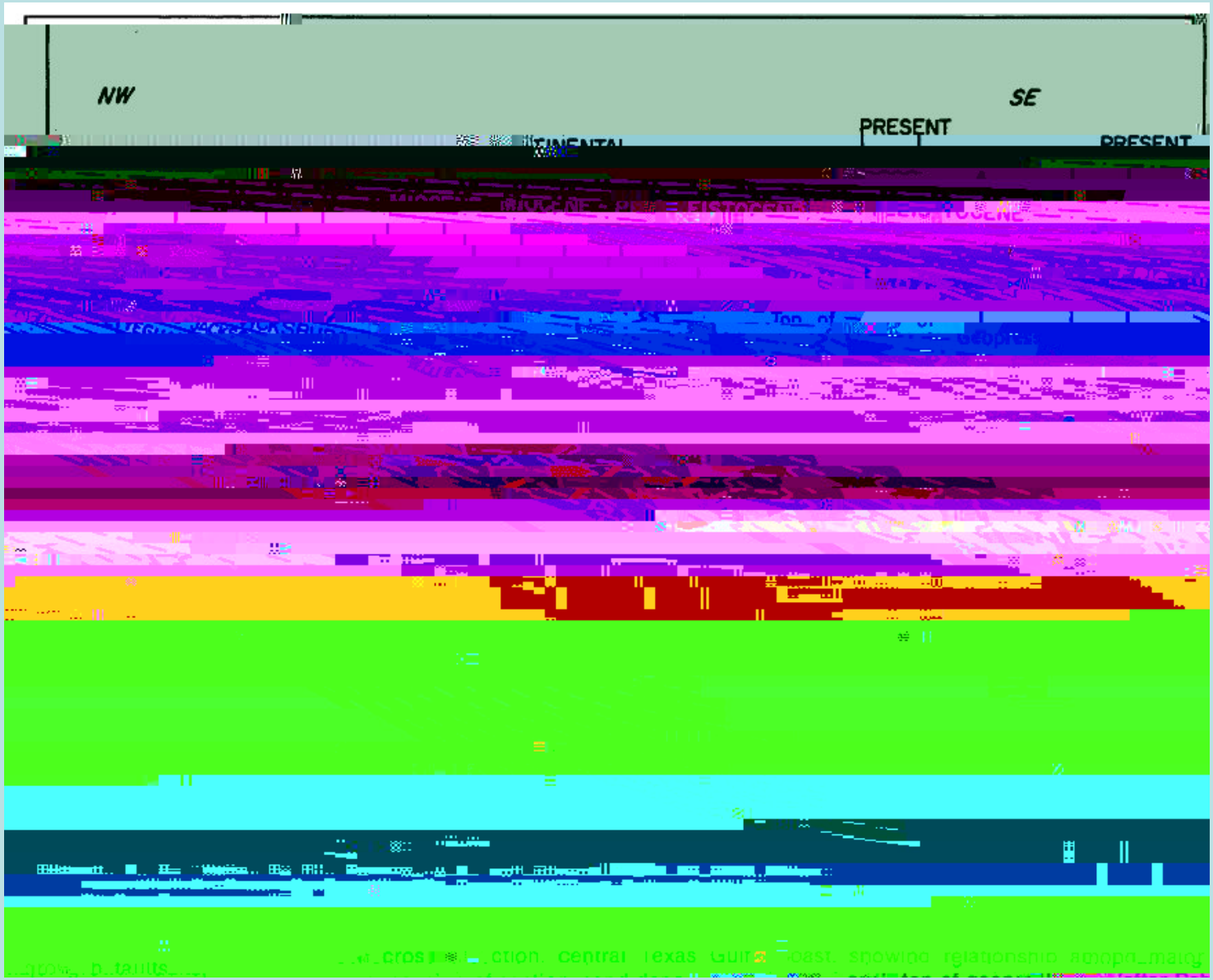
Secondary recovery, pays costs of pumping in water floods
Technology grounded in practices of hydrocarbon industry
Infrastructure exists already: roads, power lines (run pumps?), etc.
Financial strength of O&G companies
Can use *existing* reservoir or *modify* it after production ends

Advantages to Local Economy/Environment

Extends life of technologies and the companies that use and develop it
Increases tax revenue and jobs for local economies that would be otherwise lost

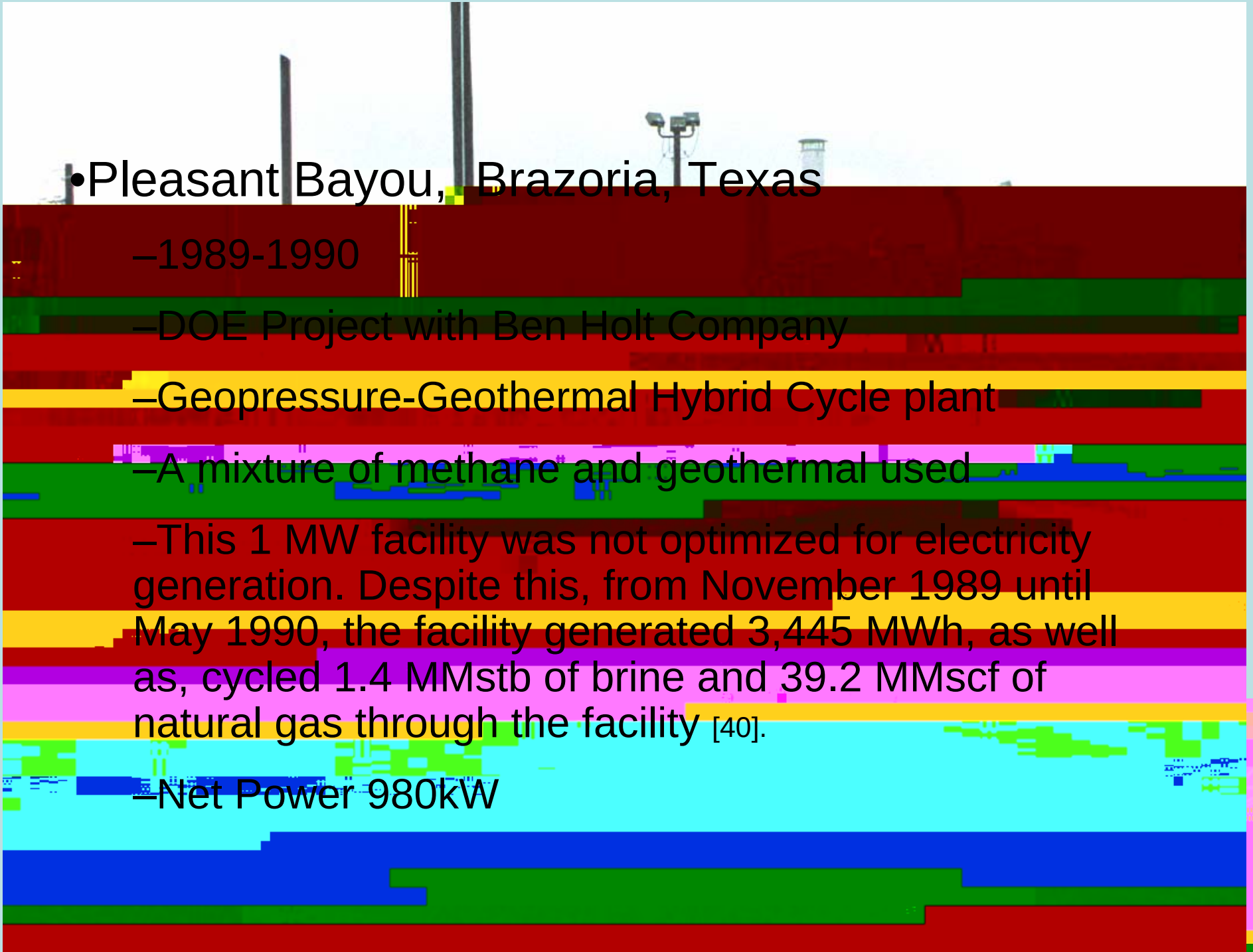


AAPG 1972 BHT Database


NW
SE
PRESENT
PRESENT

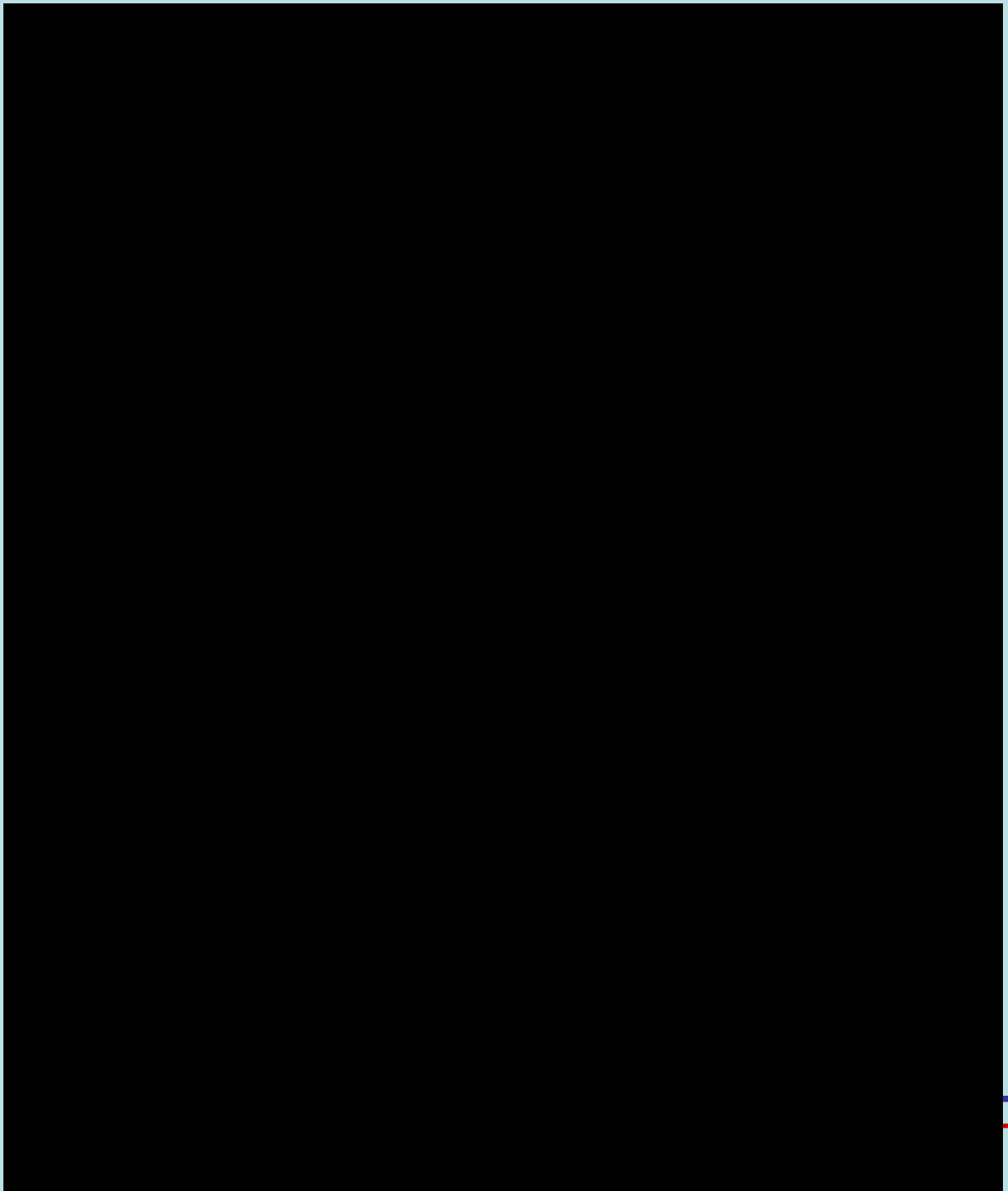
Geopressure

- Pleasant Bayou, Brazoria, Texas 1989-1990



- Pleasant Bayou, Brazoria, Texas
  - –1989-1990
  - –DOE Project with Ben Holt Company
  - –Geopressure-Geothermal Hybrid Cycle plant
  - –A mixture of methane and geothermal used
  - –This 1 MW facility was not optimized for electricity generation. Despite this, from November 1989 until May 1990, the facility generated 3,445 MWh, as well as, cycled 1.4 MMstb of brine and 39.2 MMscf of natural gas through the facility [40].
  - –Net Power 980kW

6 km Depth Temperatures



The EGS resource base for Texas