

# **Pyramid Lake Paiute Tribe Geothermal Energy Project**

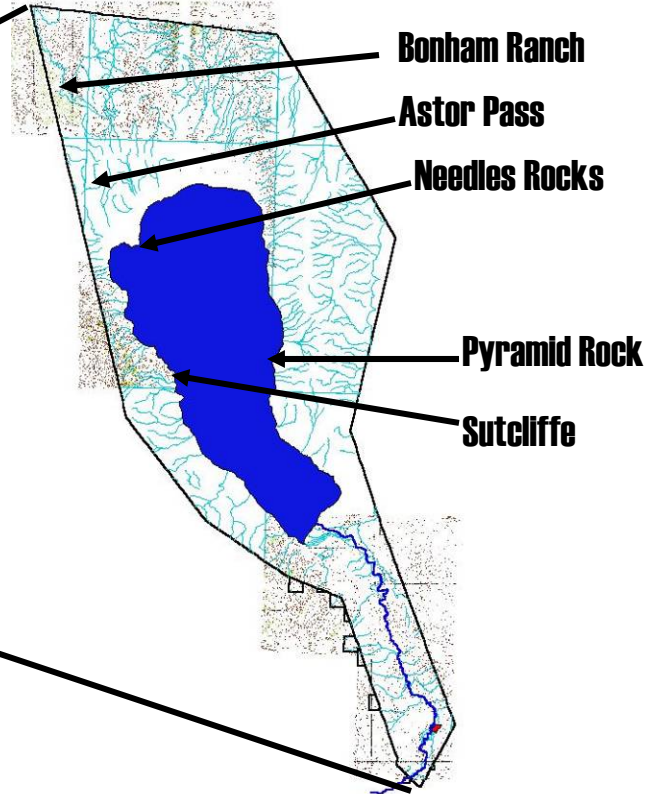
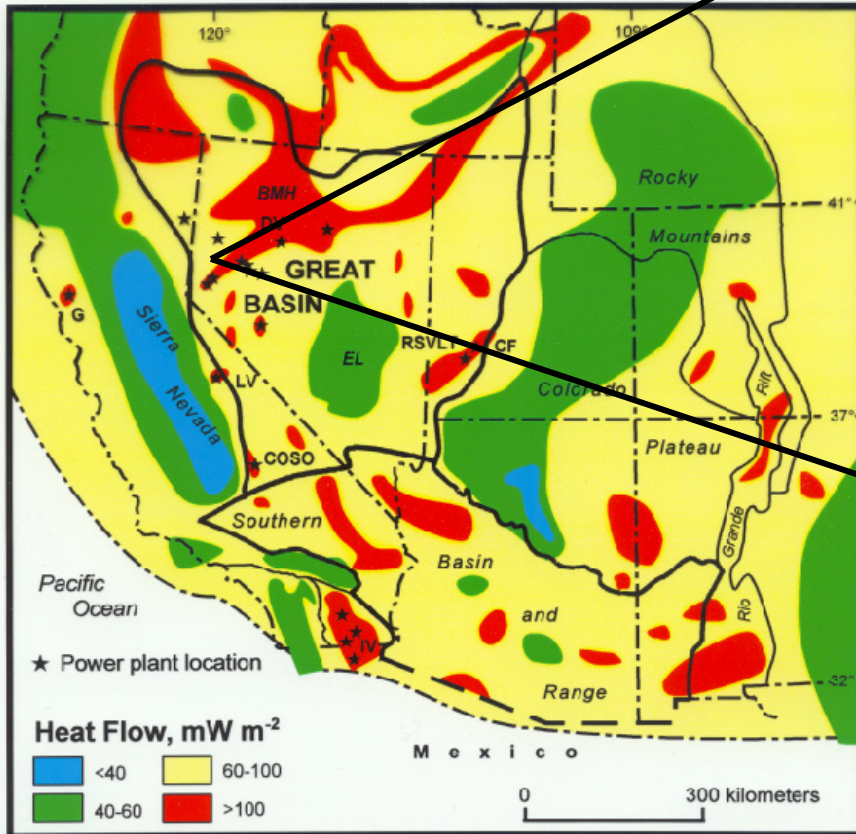
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# GEO THERMAL RESOURCES



*Pyramid Lake Paiute Reservation*



# PYRAMID LAKE PAIUTE TRIBE

- **Largest Nevada Reservation in land base and population, 2300 members**
- **Reservation encompasses 470,000 acres & 330,000 acres cattle range**
- **Pyramid Lake 115,000 acre lake surface**
- **Terminus lake with Truckee River connector to Lake Tahoe, 31 Truckee River miles included on Reservation**
- **Paiute People have lived here for 600 years, geothermal areas spiritual**
- **Needles Geothermal drilling; 1961 and continued early 1980's**
- **Cultural and Spiritual beliefs prohibited development**

# OVERVIEW

A scenic view of a large blue lake, likely Lake Mead, with rocky islands and mountains in the background. The water is a deep blue, and the sky is a pale, hazy blue. The mountains in the distance are rugged and brownish-grey. The foreground shows the calm surface of the lake.

- **Generate database**
- **Geologic mapping**
- **Mapping fault structures**
- **Geophysics**
- **Site gradient and slim holes**
- **NEPA through BIA**

# OBJECTIVES



- **To identify all geothermal resources**
- **Preserve cultural and spiritual sites**
- **Provide tribal economic opportunities**
- **Develop geothermal resources that are economically and culturally feasible**



# SMOKE CREEK DRILL TARGET

- 6 gradient wells sited, 3 drilled
- High water table, desert playa



# WETLANDS AND HOT SPRINGS



- **Cultural sites on BLM Land**
- **Well known surface expression**
- **Fee Lands**
- **Visibility triggered interest**

# ASTOR PASS DRILL TARGET

- **3 Gradient wells to about 500 feet**
- **Isothermal tail near lake**
- **Tufa align with faulting**
- **Not connected to Needles fault**
- **Blind system**
- **Last follow-up hole 205° @ 185 feet**





# Accomplishments

- **Geothermal Resources are known for the Reservation**
- **7 Gradient Wells drilled**
- **1 Slim Hole Well Drilled to 1831 Feet**
- **Initiated Target Resource Testing**
- **Tribal Corporation by laws completed**
- **Performed scoping for Environmental Assessment**



# Exploration Continues

- **Proposed Drilling**
- **Trenching**
- **Soil Sampling**



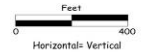
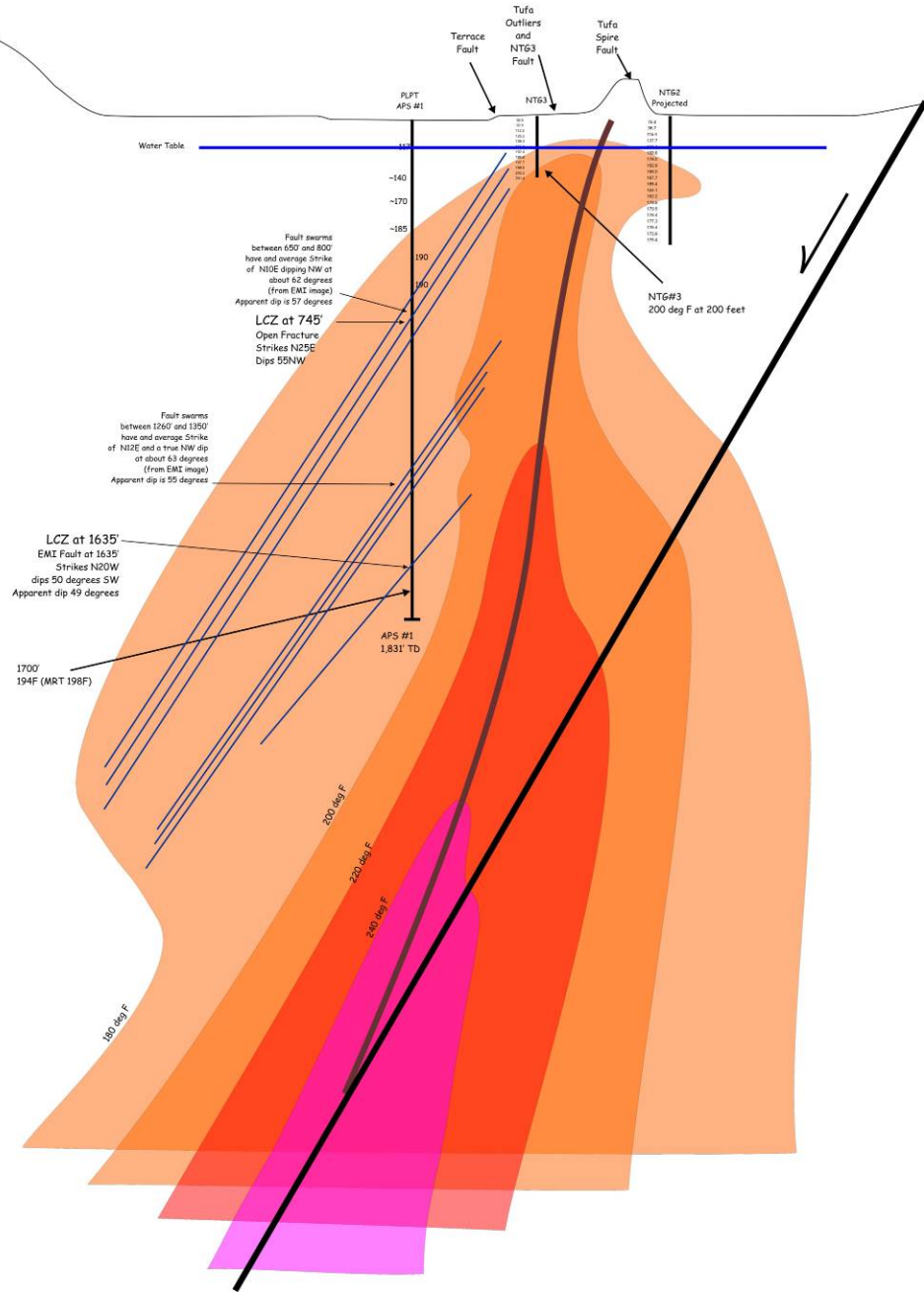
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# Geologic Model

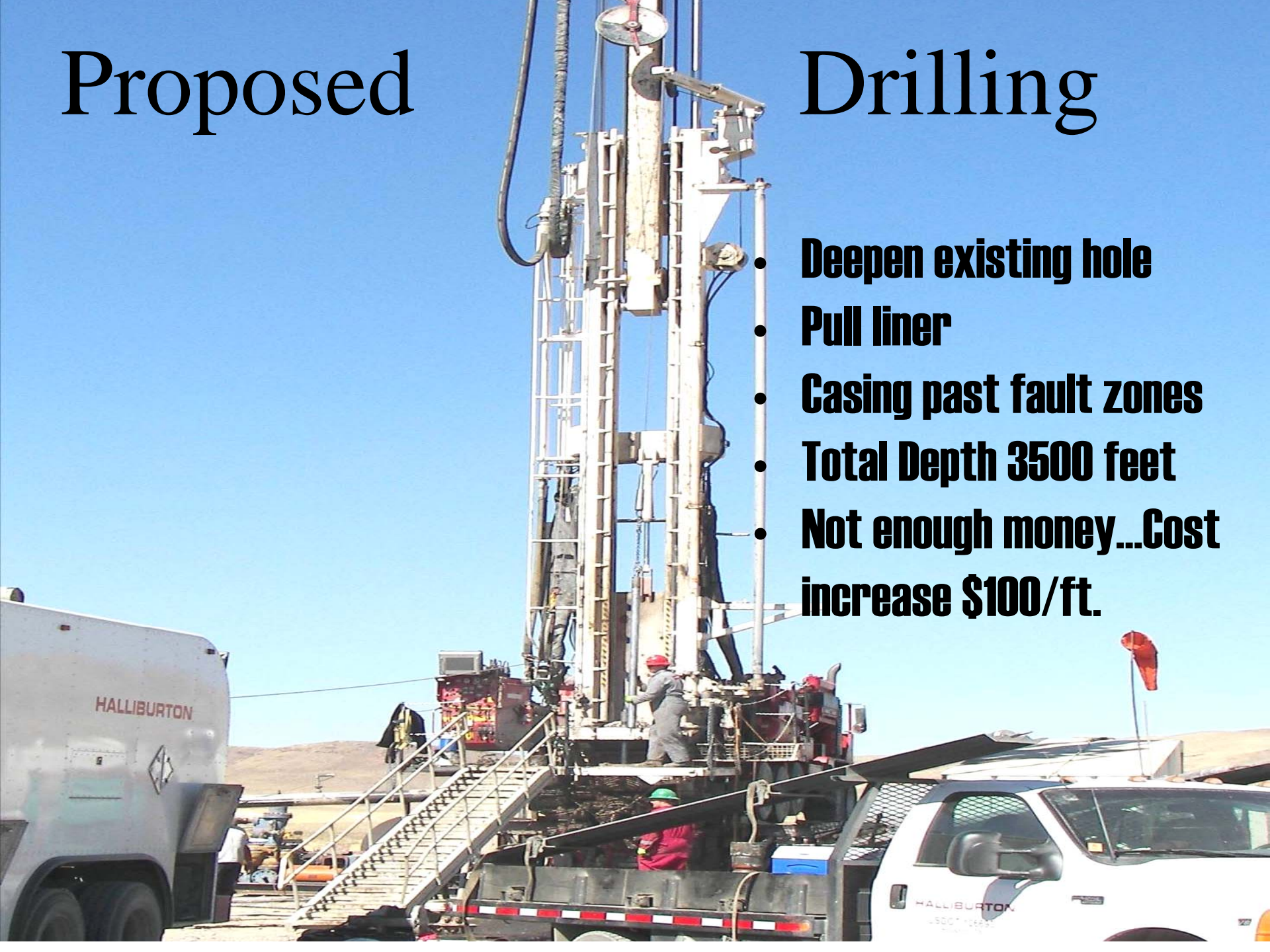


9 Jan 07  
Wm. J. Ehni


# Proposed

# Drilling

- Deepen existing hole
- Pull liner
- Casing past fault zones
- Total Depth 3500 feet
- Not enough money...Cost increase \$100/ft.





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- **Sample B Horizon**
  - **Screen -80 Mesh**
  - **Multi-element ICP**
  - **Looking For As, Hg, and elements unique to local fault zones**

**Soil Sampling**

# Trenching







.....along suspected faults

# PROJECT PARTICIPANTS

- 
- A photograph of three people wearing white hard hats and safety glasses, standing outdoors at a geothermal drilling site. They are looking at a document held by the man on the right. In the background, there is a large piece of drilling equipment on a truck and a white metal container. The sky is clear and blue.
- *Experienced Professionals; UNR Geothermal Group, Bill Ehni, Shuman Moore*
  - *Government Agencies; PLPT Tribal Council, DOE, BIA*
  - *Congressional Support: Senator Harry Reid*



# WORK IN PROGRESS



- **Modify Geologic Model**
- **Site new Slim Hole**
- **Prepare Environmental Assessment**
- **Business plans and partnership discussions**



# NEXT STEPS

- **Drill second Slim Hole**
- **Confirm the geothermic reservoir; site the production well**
- **Characterize the geothermal reservoir; site injection well**
- **Determine economic options for geothermal development in the best interest of the tribe**



# *Questions?*

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