

**PAUL BACA PROFESSIONAL COURT REPORTERS**

**OIL CONSERVATION  
DIVISION**

**CASE #: 14291**

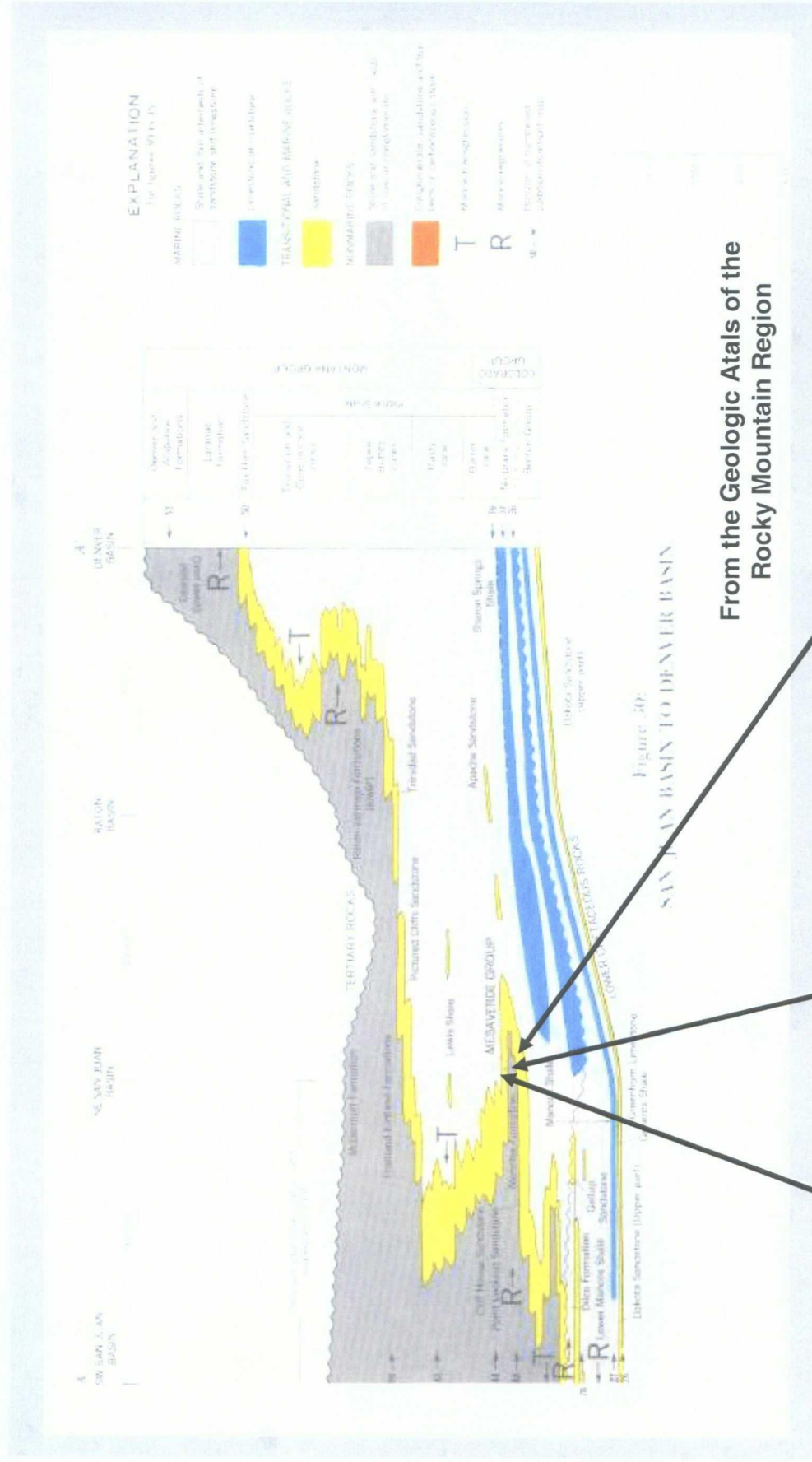
**EXHIBIT**

**4**

# Geology Mesaverde Formation Rosa Unit, San Juan Basin



# San Juan Basin Regional Cross Section



From the Geologic Atals of the  
Rocky Mountain Region

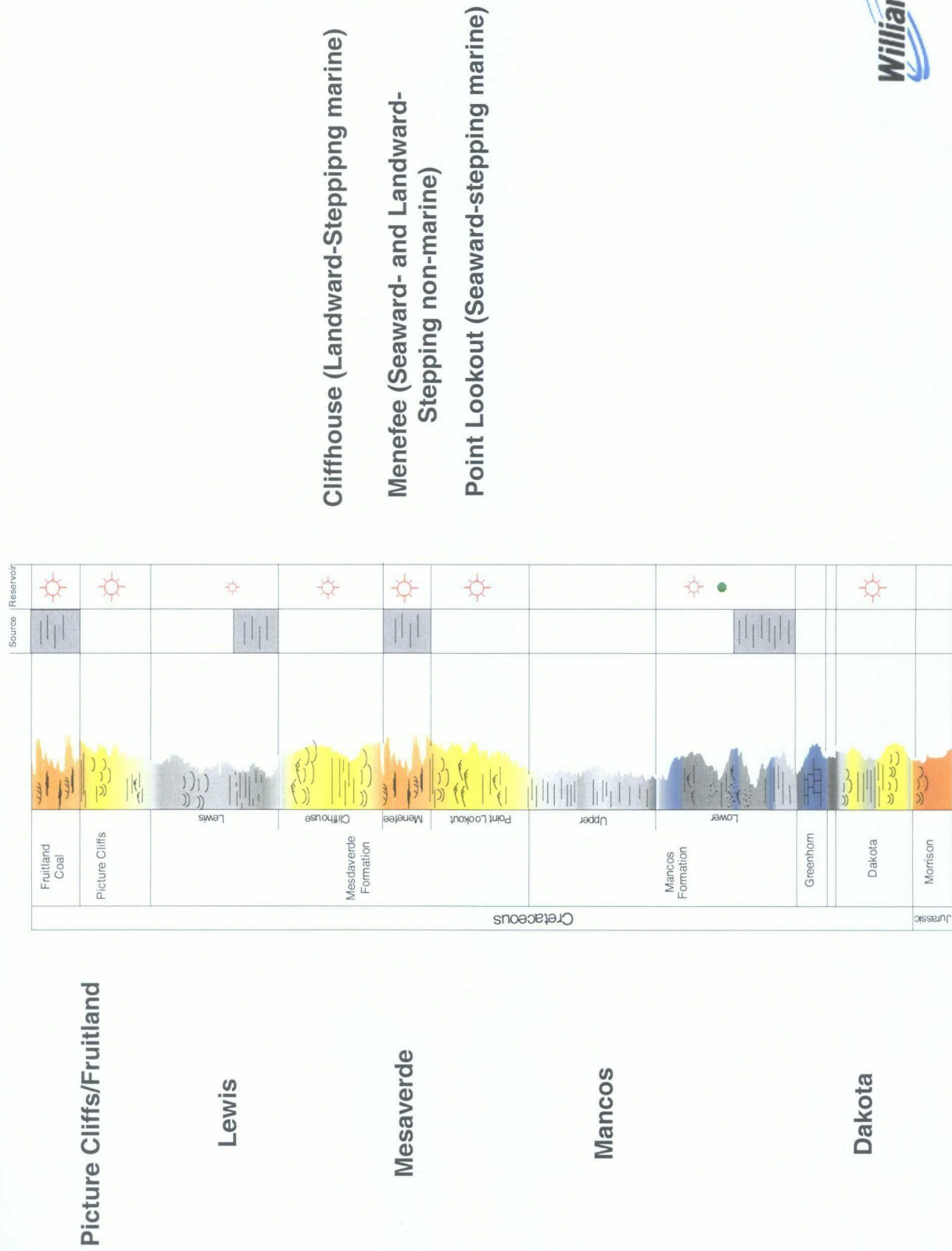
Cliffhouse Landward-  
stepping (marine)

Manefee Seaward- and  
Landward-stepping  
(non-marine)

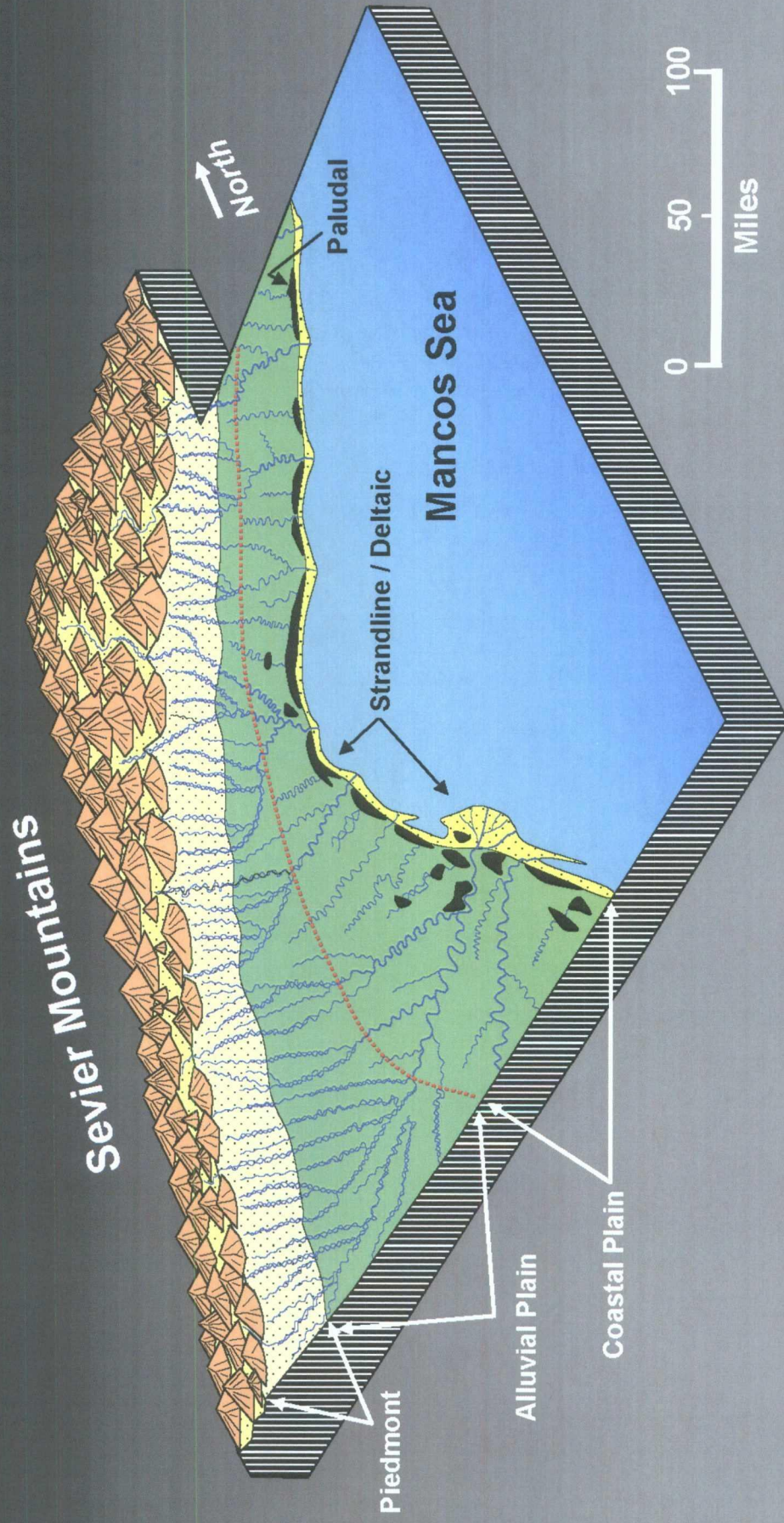
Point Lookout  
Seaward-stepping  
(marine)



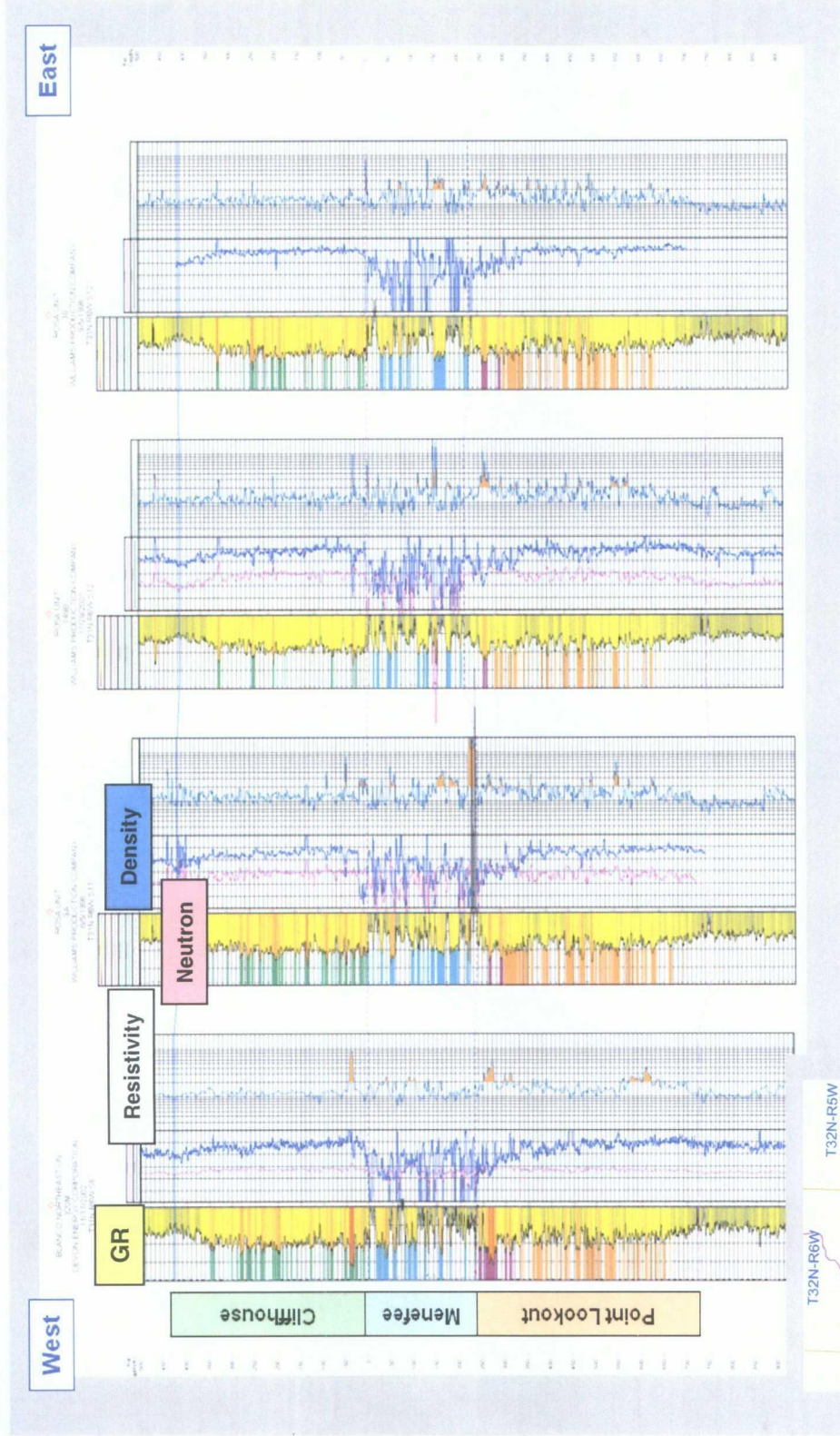
# San Juan Basin Stratigraphic Column



# Regional Depositional Model



# Mesaverde Cross Section – Rosa Unit (T31N-R6W)

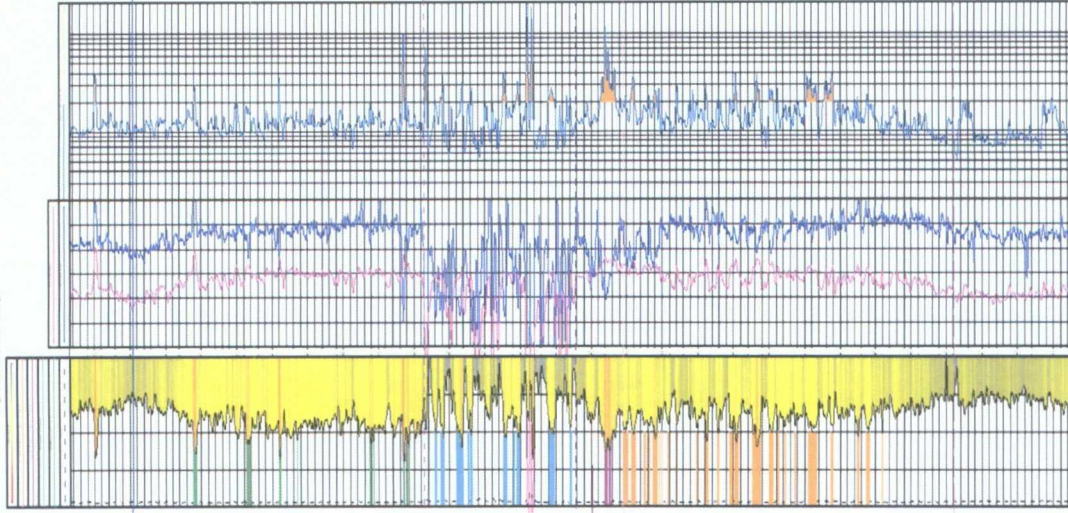


Variable open-hole log character within  
Mesaverde formations – Related to  
depositional facies and lateral continuity



# Cliffhouse – Landward-stepping Marine

ROSA UNIT  
149B  
WILLIAMS PRODUCTION COMPANY  
11/28/2001  
T311N R6W 512

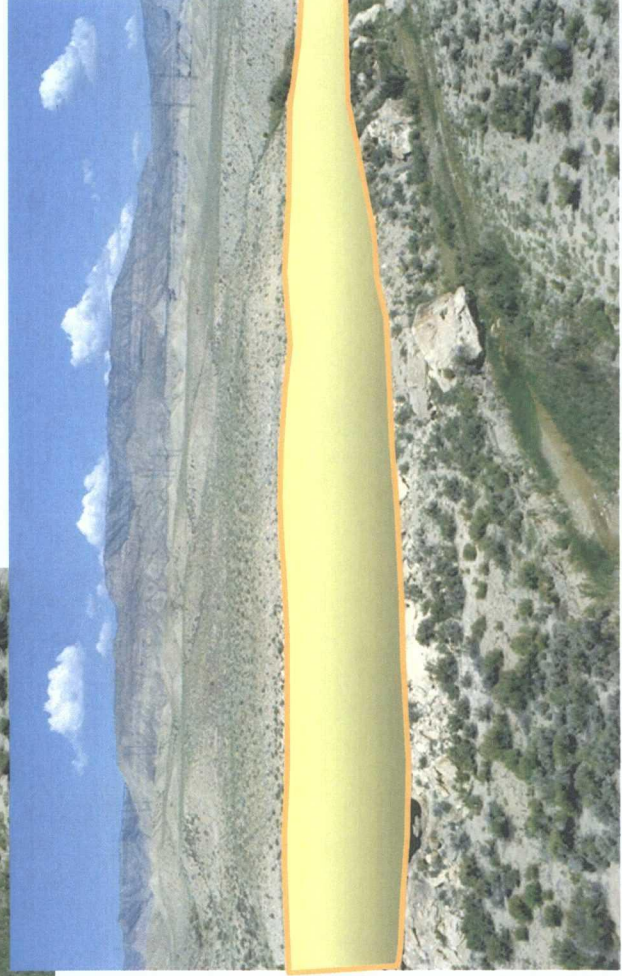
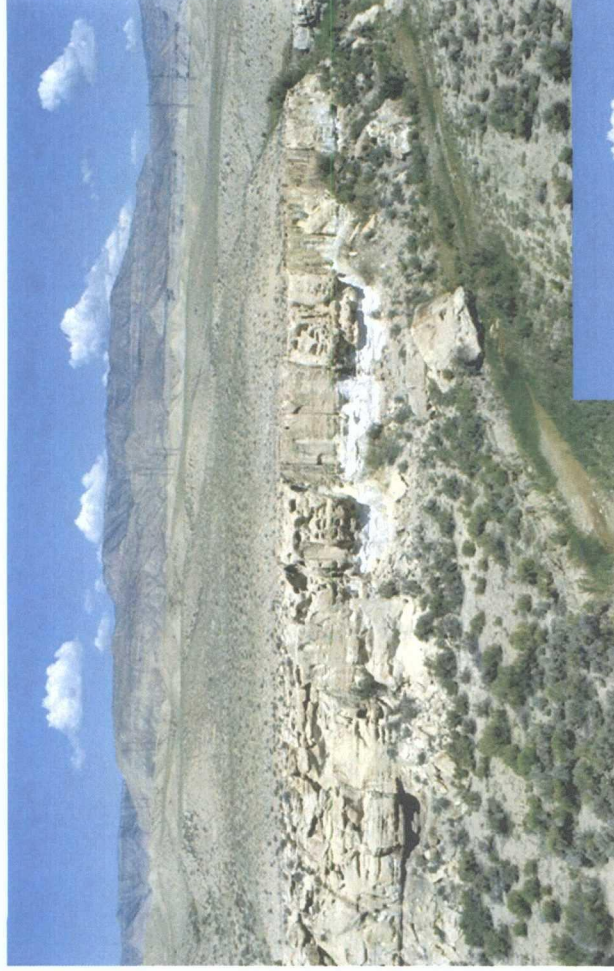


Outcrop Photo of Cliffhouse Sandstone

- Note homogeneous nature of sandstone
- Note homogeneous open-hole log response
- Lateral continuity of sand bodies likely

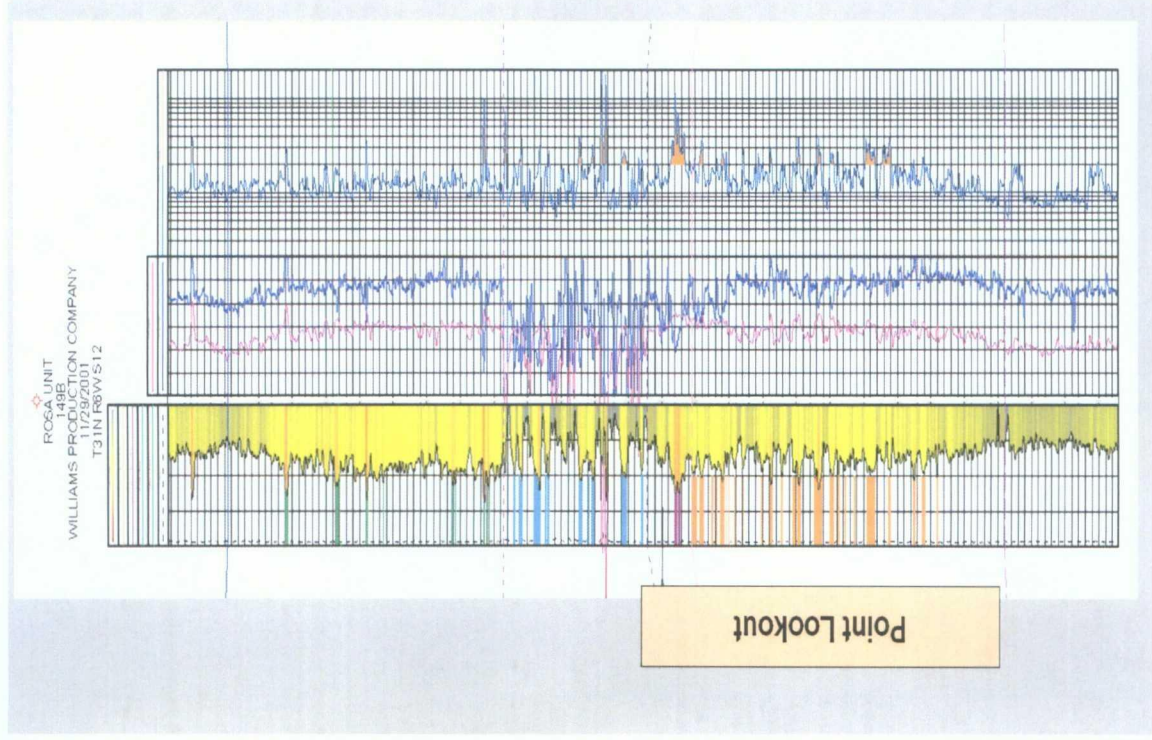


## Cliffhouse – Landward-stepping Marine



Laterally continuous  
sand bodies

# Point Lookout Seaward-Stepping Marine

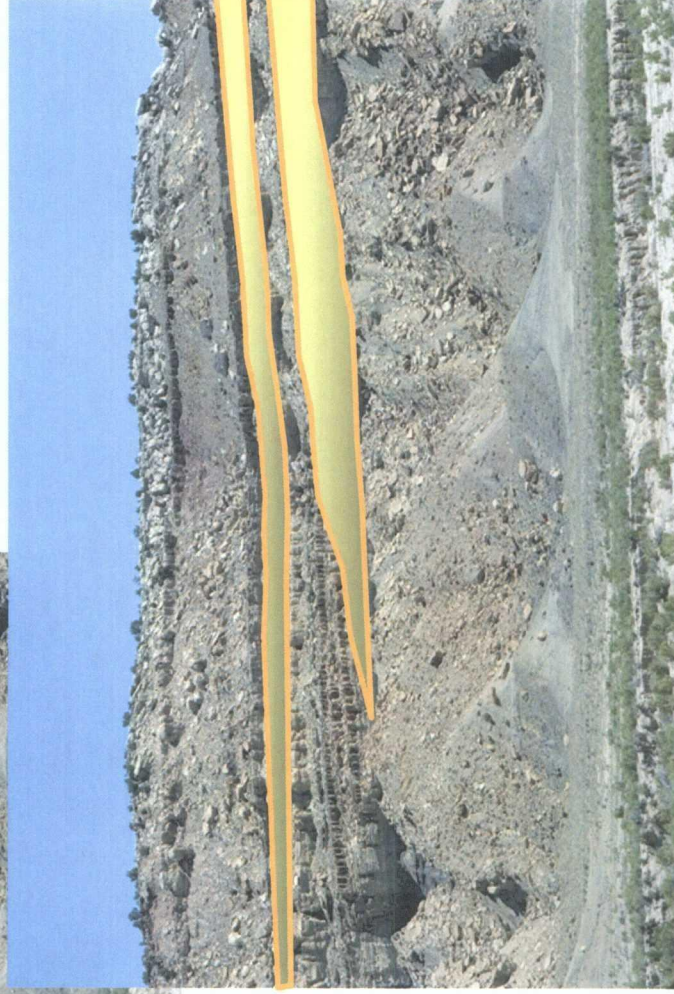
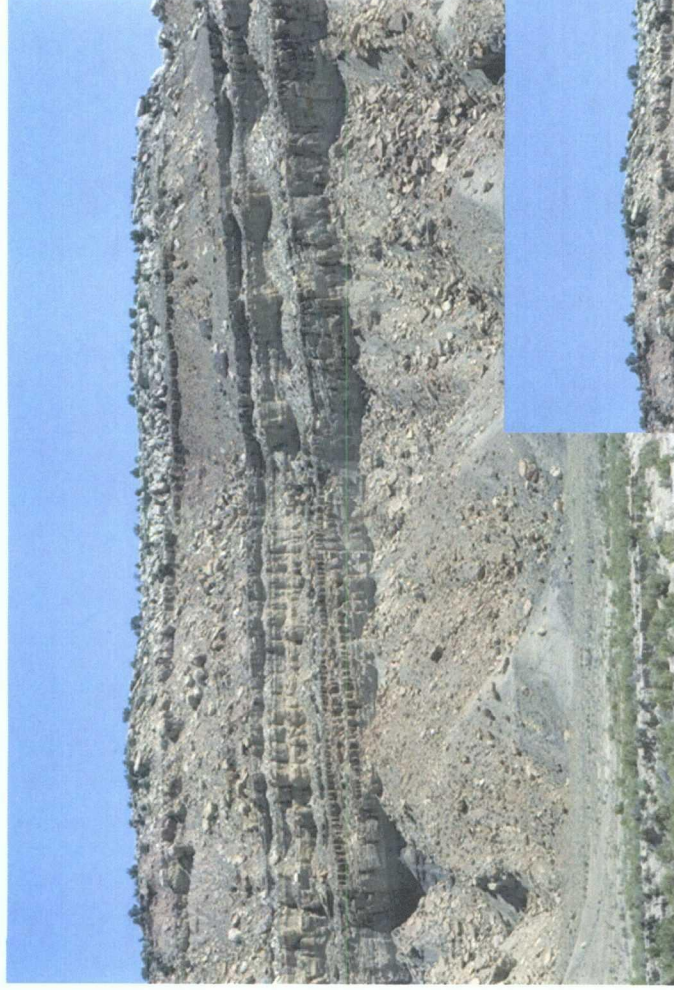


Outcrop Photo of Point Lookout Sandstone

- Note heterogeneous nature of sandstone
- Note heterogeneous nature of open-hole log responses
- Lateral continuity of sand bodies less likely

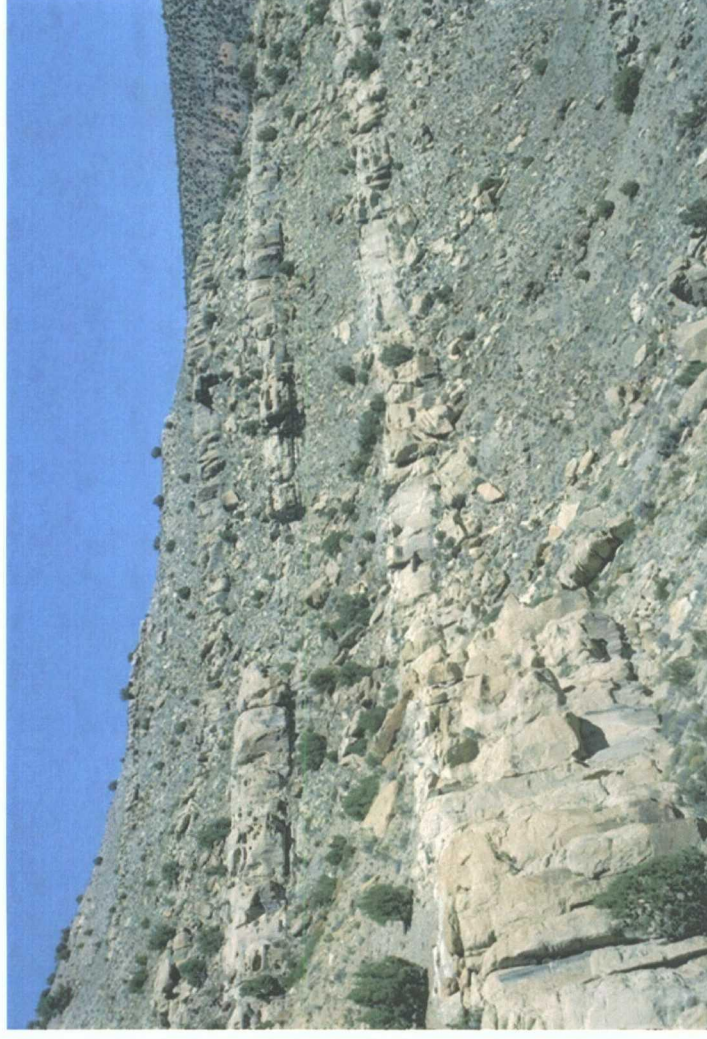
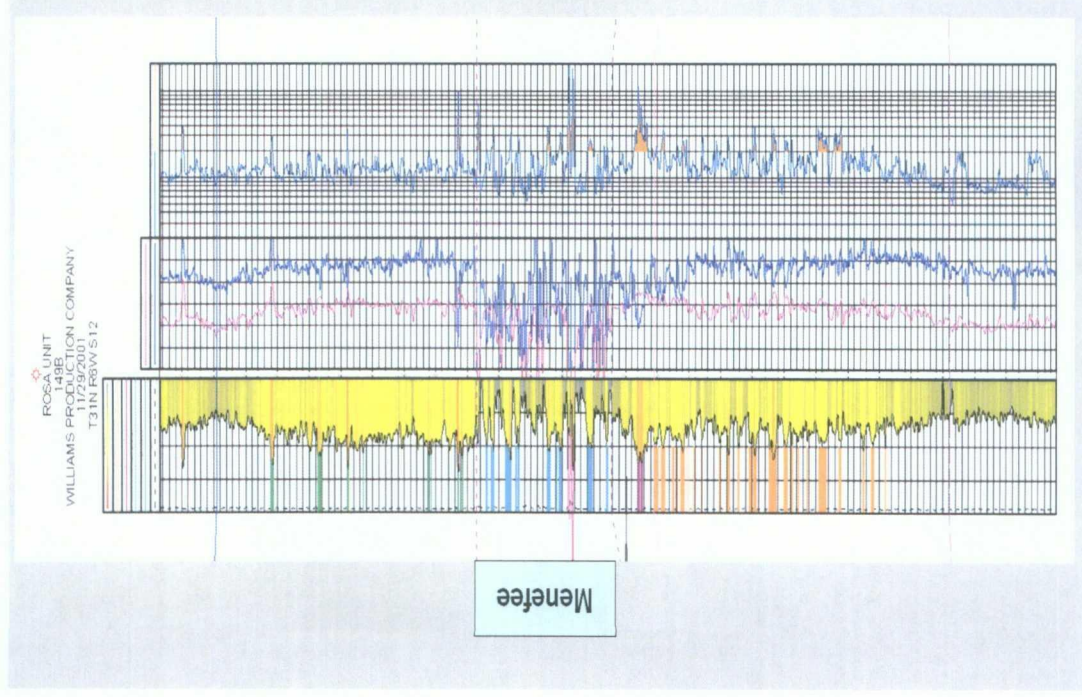


## Point Lookout – Seaward-Stepping Marine



**Laterally continuous &  
discontinuous sand bodies**

# Menefee – Non-marine

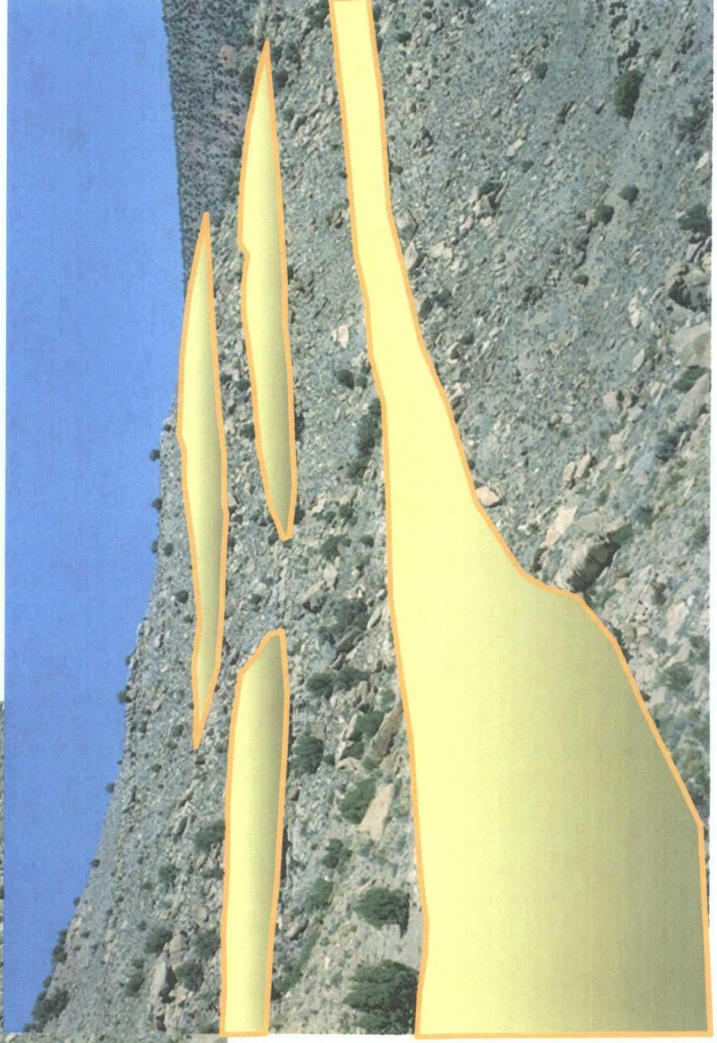
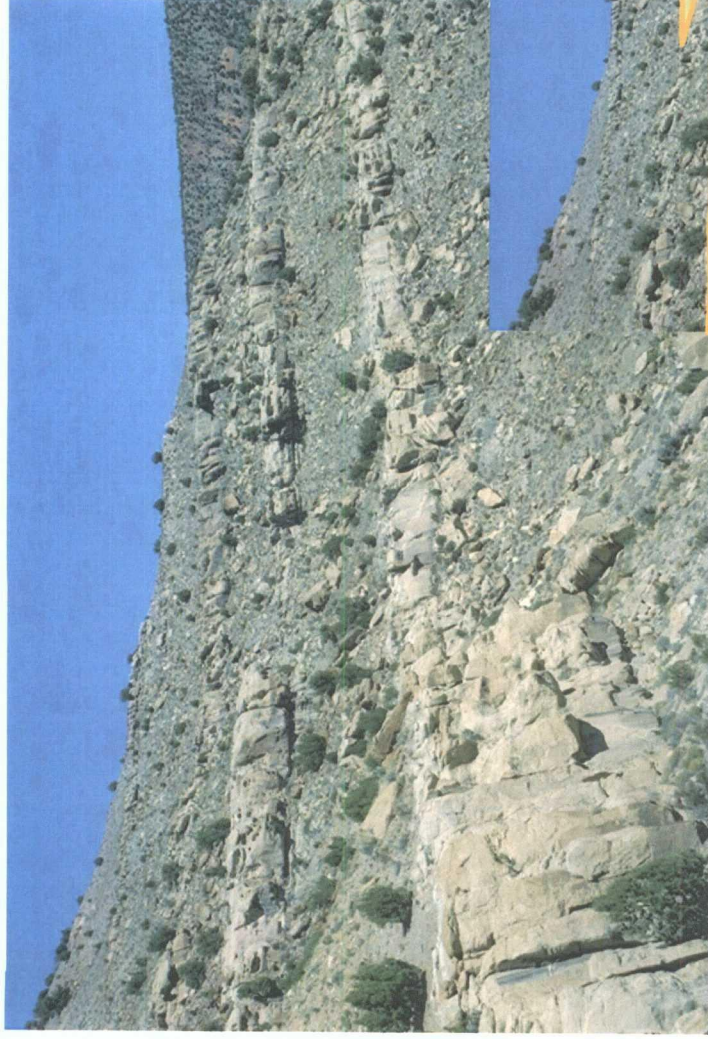


Outcrop Photo of Menefee Sandstone

- Note discontinuous sandstones
- Note highly heterogeneous character of open-hole log responses
- Lateral continuity of sand bodies highly likely



## Menefee – Non-marine



**Laterally discontinuous  
sand bodies**