

KOCH EXPLORATION CO LLC

PUMP CANYON AREA EXCEPTION LOCATIONS

GEOLOGIC SUMMARY

- Fruitland coal deposition in the Pump Canyon area is highly variable
 - Exhibits No. 14 & 15 show the disconnected nature of coal seams in the Pump Canyon area - net coal thickness ranges from 41' to 88'
 - This is consistent with the regional Fruitland coal depositional model: a highly dynamic peat swamp environment with rapid lateral facies changes, dissected by a complex channel system
 - The internal structure and permeability of the coal is further effected by changes in ash content and maceral content of plant material
- The unpredictability of individual coal seam thickness and the disconnected nature of the coal seams in the Pump Canyon area cause a significant variability in the volume of gas recovered
 - Parent well cumulative production in the Pump Canyon area ranges from 4 to 25 BCF
 - Parent/child flow rates in the Pump Canyon area ranges from 300 to 1,800 MCF/D
 - The production variability does not support a conclusion that the Fruitland coal reservoir is one big connected tank
- Based on the erratic deposition and compaction history of coals in the Pump Canyon area, the proposed exception locations can be expected to lower abandonment pressures of individual coal seams, increase gas recovery and reduce waste