

BDM SUBCONTRACT FACT SHEET

CONTRACT TITLE: Characterization of Fracture Reservoirs Using Static and Dynamic Data: From Sonic and 3D-Seismic to Permeability Distribution

ID NUMBER: G4S51731 Related WA #: 95-A01	CONTRACT PERFORMANCE PERIOD 03/29/1996 to 04/14/1998
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FUNDING (1000's)	BDM SHARE	OTHER SHARE	TOTAL
PRIOR FISCAL YRS	483	2,028	2,511
FISCAL YR 1998	267	0	267
FUTURE FUNDS	0	0	0
TOTAL EST'D FUNDS	750	2,028	2,778

PROJECT DESCRIPTION:

This project is aimed at investigating advanced theoretical and numerical model studies linked with a balanced petrophysical, and engineering program for the development of advanced concept of borehole and surface seismic and fluid flow dynamic to relate permeability anisotropy to acoustic and seismic signatures to understand the reservoir fracture system and to predict the permeability distribution through heterogeneous reservoirs using multiphase production data.

Accomplishments:

A methodology has been developed for building high resolution velocity model within available well control. This is a self-consistent velocity/attenuation model that can be used to predict permeability distribution from crosswell and/or surface seismic data.

Petrophysical, geological and seismic data from two reservoirs, Buena Vista Hills and Lodgepole, were analyzed. These data have been used to validate geophysical and petroleum engineering concepts for reservoir characterization.

Developed a new procedure called "structure preserving inversion" to efficiently integrate dynamic data such as transient pressure, tracer and multiphase production history into stochastic reservoir models.