

**AAPG Annual Meeting
March 10-13, 2002
Houston, Texas**

Christopher M. Prince¹, John L. Shafer² (1) Petro Image, LLC, Columbia, SC (2) Reservoir Management Group, Inc, Houston, TX

Routine Core Analysis From Digitally Archived Core Images

Digitally archived core images cannot take the place of a slabbed core, but a digital archive of core accessed from the internet or the corporate intranet enhances the ability to view, manipulate, and analyze the core, while remaining immune from the effects of desiccation. Depending upon the quality of the imagery and the illumination used, they can be processed for a wide variety of information ranging from net pay to bed thickness spectra and grain size logs.

Most of the available imagery is either in the form of 1:1 or 1:2-scale photographs, or low-resolution digital images. Such images are useful for viewing, and qualitative assessments of bedforms and facies. They can also be filtered to produce binary images, "sand masks", of the interval. The pay zones are then be tallied, providing an accurate assessment of pay. When compared with standard techniques, the image analysis techniques indicated less pay, but when compared with profile permeabilities, it provided a very accurate delineation of high permeability pay zones.

Sand masks can also be used to generate bed thickness spectra, assess core variability with depth, and they can be easily filtered to remove pay beds that are below a minimum thickness, and then reprocessed to better estimate pay where the continuity of thin beds may be questionable. High-resolution imagery (1100-2700dpi) can be automatically processed using textural filters to create the sand masks, and then reprocessed using spatial analysis to generate grain size logs of the pay intervals.