SCAL, Inc.
SPECIAL CORE ANALYSIS LABORATORIES, INC.

SM Energy Co.

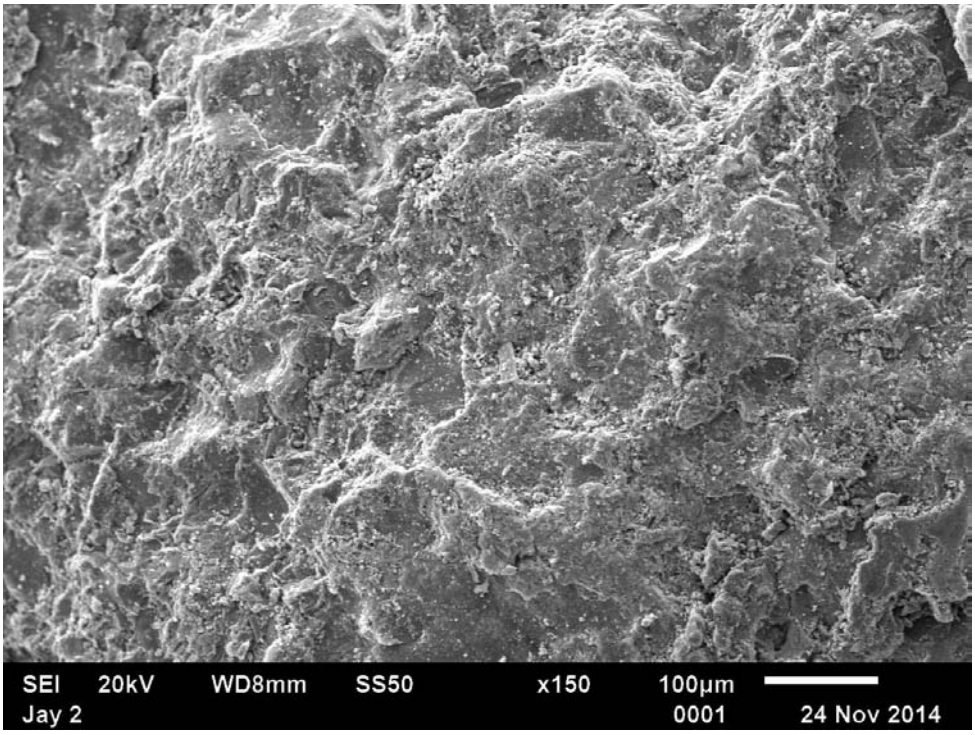
SEM Report

Jay Smith 1

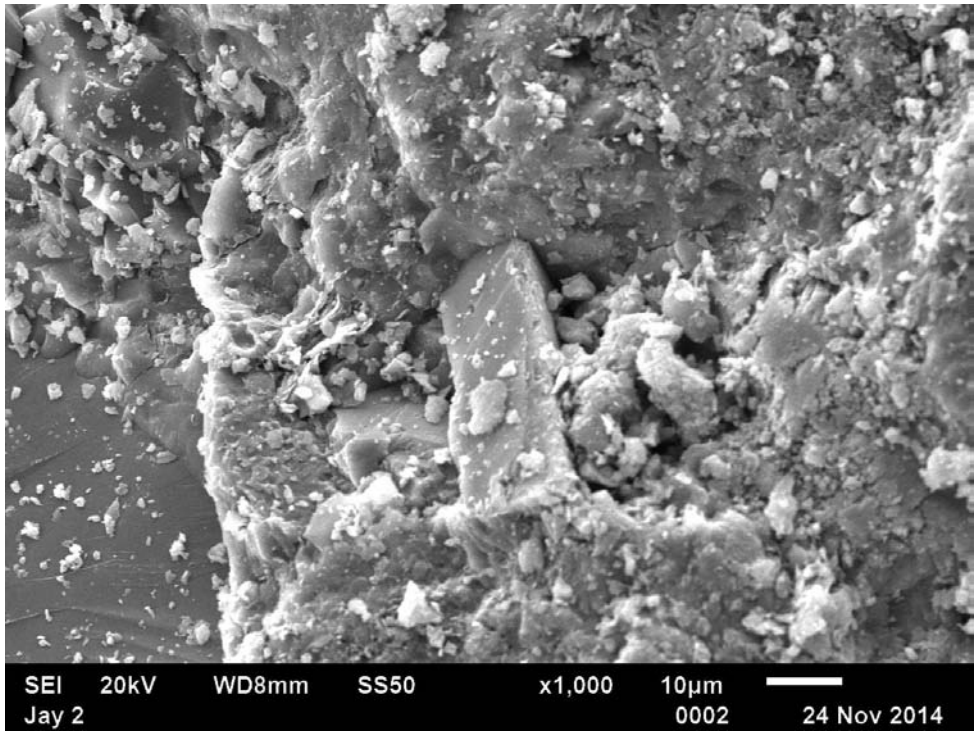
P. O. Box 9730 * Midland, TX 79708-2730 * 1-888-561-5407 * (432)-561-5406 * FAX (432)-561-5339
http://www.scalinc.com * mv@scalinc.com

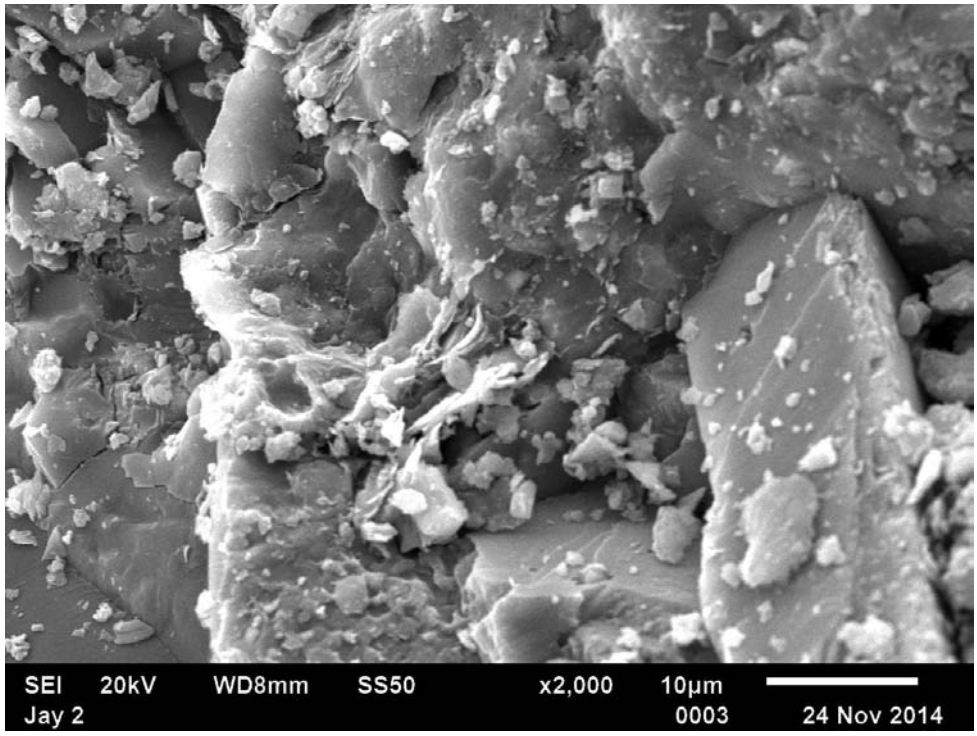
SEM EXAMINATION OF SAMPLE #2 FROM JAY SMITH 1 WELL

Sandstone is mainly composed of tightly packed fine grains of detrital quartz and feldspars in the size range of 50-150 microns as displayed in Figures 1 and 5.

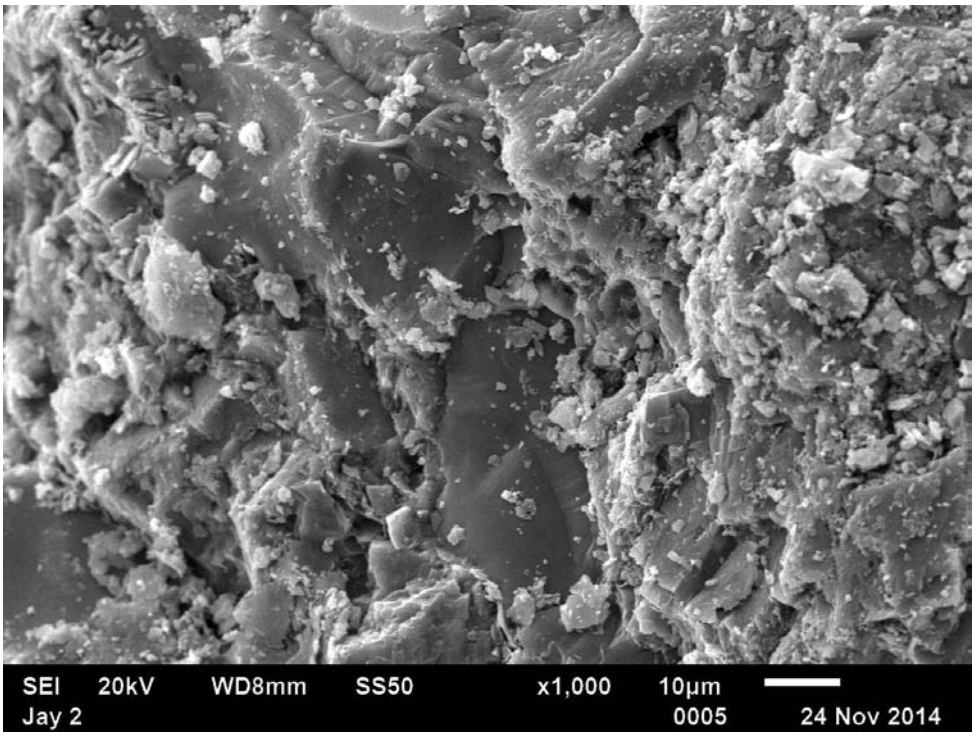


The primary pores are mostly up to 10 microns in size but fairly well filled with fine particles in the size range of about 1-5 microns. Typical such pores are displayed in Figures 2 and 3.

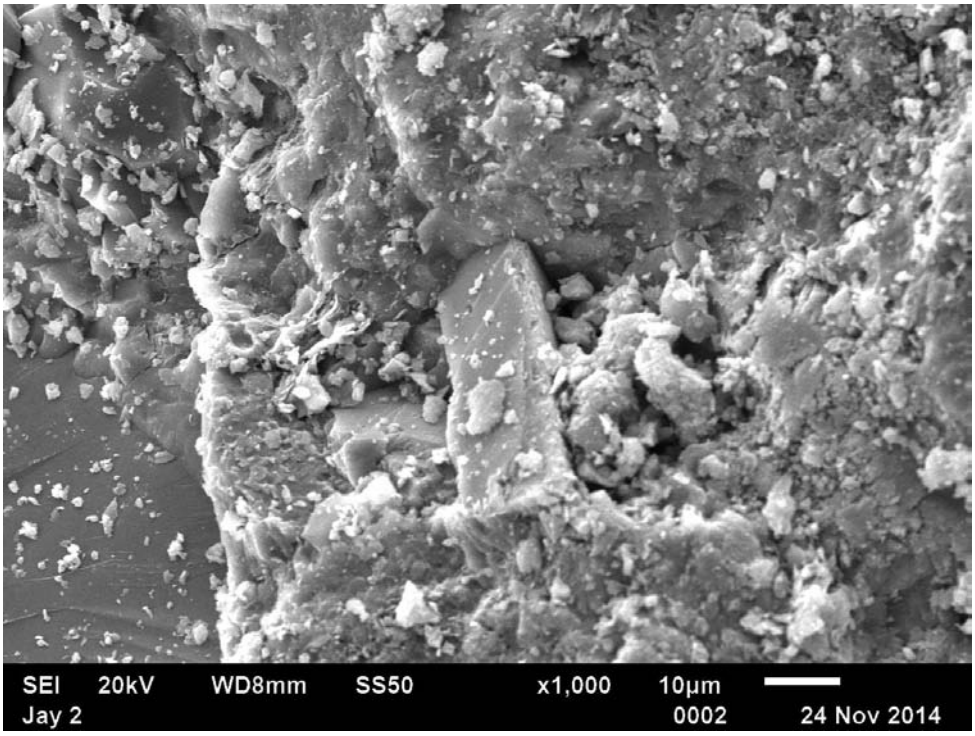

SEI 20kV WD8mm SS50 x1,000 10µm
Jay 2 0002 24 Nov 2014

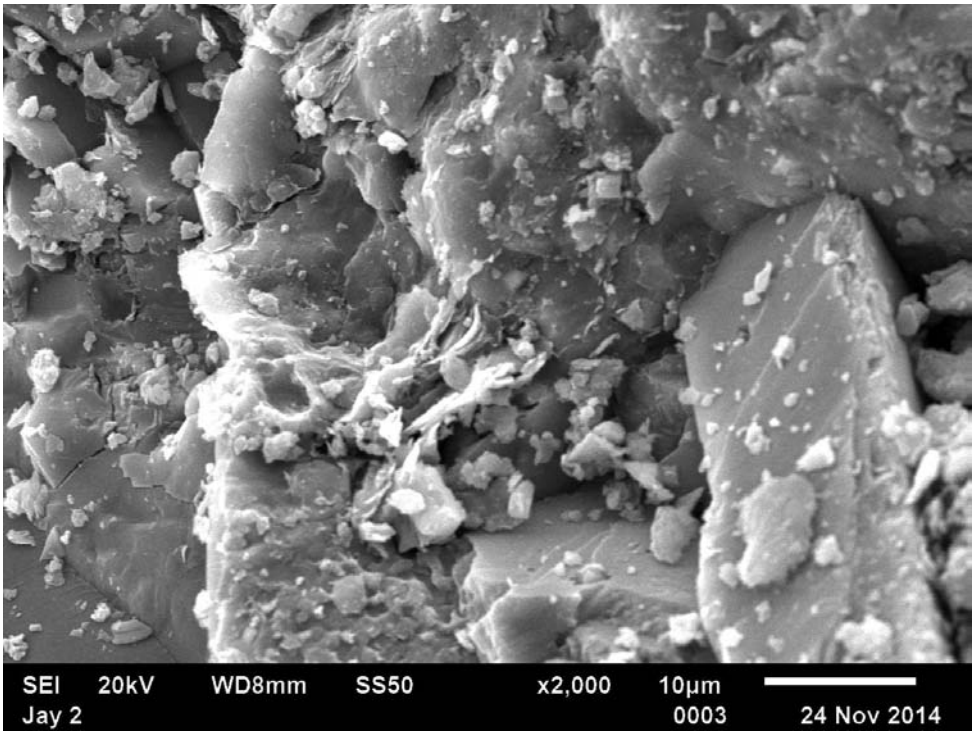

SEI 20kV WD8mm SS50 x2,000 10µm
Jay 2 0003 24 Nov 2014

A close view of the pore-filling aggregates of fine-grained cherts are shown in Figure 5.

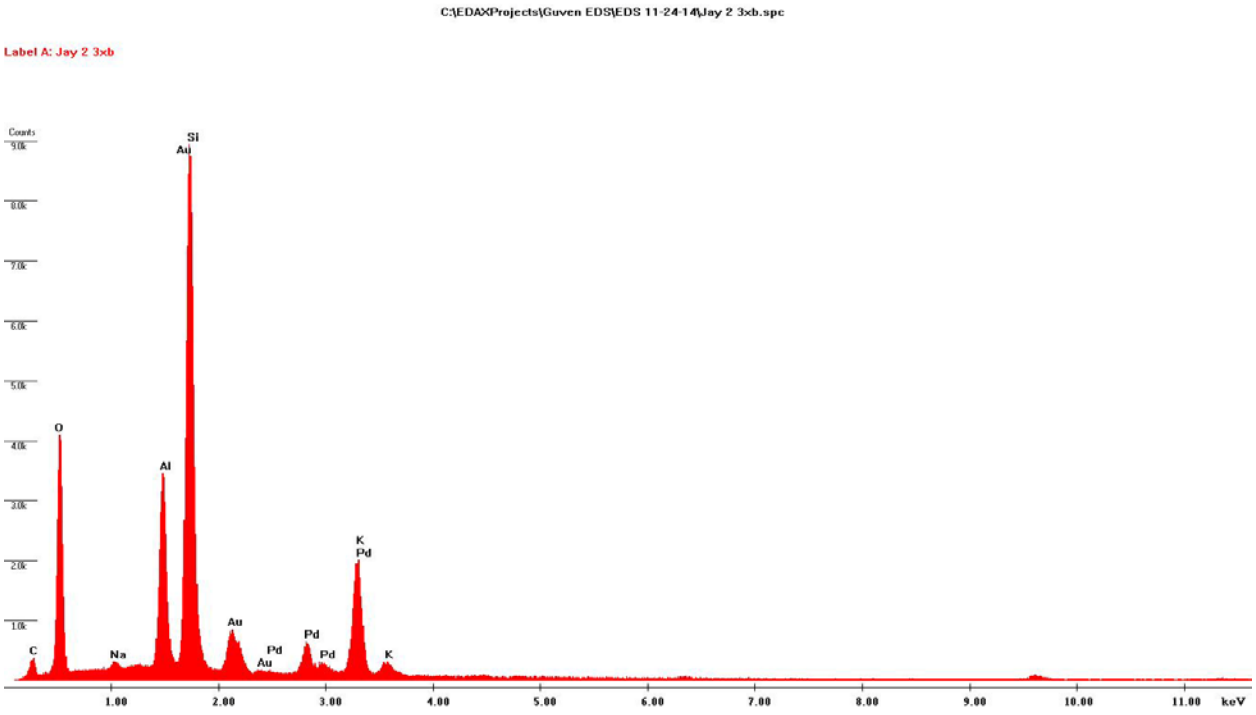


Illite and mica platelets also appear up to 50 microns in size in Figures 2 and 3.

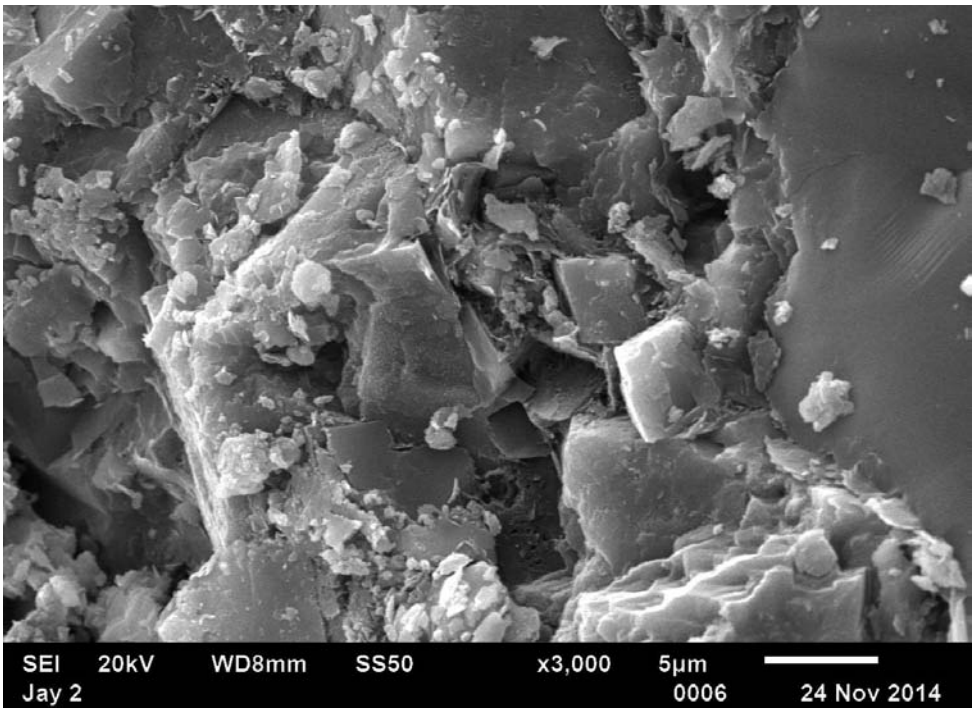




Typical X-ray spectra from the K-felspar are displayed in Figure 3xb.



Typical authigenite ankerite rhombs (ferroan dolomite) appear at about 5 microns in size as shown in Figure 6.



X-Ray spectra (EDS) in Figure 6x are obtained from the ankerite rhomb and show strong lines of Mg, Ca, and Fe; the additional Si, Al and K spectra are related to the adjacent K-feldspar.