Ernest Berkman et al., J Geol Geophys 2017, 6:5 (Suppl)
DOI: 10.4172/2381-8719-C1-0011

Regional geology and exploration potential of Kazakhstan and Uzbekistan utilizing public domain information including gravity and magnetic data

Ernest Berkman and **Bruce Howe**
Emerald Exploration Consultants, Inc., USA

The findings are derived from public domain sources in the area of Kazakhstan. The geologic setting, plate tectonics, geothermal regime, satellite imagery, and gravity and magnetic data are discussed. Our analysis shows the presence of basin areas. These basins appear to contain sedimentary rocks of Paleozoic, Jurassic, and Cretaceous age, which are considered to be prospective for hydrocarbon accumulation, since they produce in the adjacent prolific Caspian and West Siberian basins. The basins are underlain with a thick section of Paleozoic strata resting on a variegated granitic basement, associated with several tectonic plates. The Paleozoic strata contain a series of extensional/trans-tensional older basins. Uplift and movement along strike-slip faults associated with major lineaments produced a regional angular unconformity, was followed by further deposition. This can easily be identified on nonproprietary seismic data. Abrupt surface elevation variations relate to the sub-thrusting and movement of the underlying tectonic plates. Regional gravity shows the basin shape and major structural elements involving the geologic features. The work of Sandwell etal, 1997, was reviewed and compared to WGM2012 to ensure that the best data was utilized. The difference between the Isostatic and Bouguer values was displayed. This regional map portrays major tectonic features as positive features, and basins as negative "noses" from larger negative elements. The magnetic data is enhanced with the utilization of published high resolution aeromagnetic data. Observations from the magnetic data are consistent with the other data. There are amplitude and character changes between the magnetic data overlying the various tectonic plates.

Biography

Ernest Berkman has graduated from the Colorado School of Mines in Geophysical Engineering, 1958. He has worked for Mobil Oil for 20 years and then started EMEX. At EMEX, his experience includes prospect analysis and regional geological/geophysical studies including reflection, gravity, magnetics, MT, refraction analysis, in North America and worldwide; plus a lot of shallow seismic for coal mine development and site characterization. Interpretation background includes site characterization, and technical writing, modeling, quality control, project and team management, industrial teaching, and mentoring. He has been a Member of the SEG since 1955. He has 28 geological and geophysical papers.

ernieemex@aol.com

Notes: