

Dynamic Mapping of Kansas Oil and Gas Data with Spatial Data Engines and Internet Map Server

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The Kansas Geological Survey (www.kgs.ku.edu) is the major repository of petroleum data for the state. It has an extensive collection of geologic, well, lease, field, and production data covering more than 300,000 oil and gas wells, 30,000 active leases and two million geologic horizons in a relational database management system. The data are of multiple overlapping scales, constantly changing through multiple internal and external sources. Data are inherently geographic (fields and wells have specific legal locations) but were not geographically visible. We have developed Internet Map Server (IMS) applications that dynamically render tabular legal field boundaries based on the Public Land Survey System (down to parcel sizes as small as ten acres) with spatial data sets. The data can be queried and displayed using multiple themes that include geographic base layers, infrastructure, stratigraphy, production, and year of discovery. IMS and spatial data engines are being used to spatially and graphically integrate large tabular data sets. Displayed data are linked to online tools for quality control of the large tabular data sets. In addition to display, the spatial display provides query capabilities to access data for online analysis using tools being developed through the GEMINI Project. Initial work through the MIDCARB Project has linked spatial and tabular data of interest to carbon sequestration across states and organizations.