NGGDPP Final Technical Report – FY 2015
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Name of State Geological Survey: Kentucky Geological Survey

Project Title: Kentucky Geological Survey FY2015 Geologic Data Preservation Project

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Abstract:
Most of the remaining unpreserved datasets held by the Kentucky Geological Survey have preservation issues that relate to determining geographic coordinate locations, converting various kinds of records to modern electronic database formats, and scanning documents for archival and public dissemination. The first objective (Grant Objective 3 – create or update digital infrastructure) of this project were several scanning and data entry projects in order to digitally preserve valuable data currently stored on paper throughout the survey, and to update the KGS database with information about and from these documents through data entry into the KGS enterprise database. Most of the records that were preserved through this effort are oil and gas related documents which are associated with specific wells. KGS is legislatively mandated to archive and make available oil and gas records for wells permitted through the Kentucky Division of Oil and Gas, and this effort not only preserved these records, but also help fulfill our mandate to provide these documents to the public in a user-friendly manner.

KGS also houses an extensive core and well samples library facility, which contains over 22 million vertical feet of cores and well samples. Most of these core and well samples are preserved in appropriate boxes, however a significant number of well samples were stored in standard banker boxes, which lost integrity over the years, putting these samples at risk of being lost. A second objective (Grant Objective 4 – rescue data) of this project was to purchase stronger boxes to rescue well sample bags stored in the standard banker boxes.

Project Goals and Accomplishments:

A. Grant Objective 3 – create or update digital infrastructure

1. **Goal:** Review 20,000 oil and gas paper records for documents and wells missing from the Kentucky Oil and Gas Repository which are stored in filing cabinets at the KGS office in western Kentucky. Compare well records and documents to the current digital archive, and scan and add digital images along with relevant well record information to the online resource for each missing oil and gas well record.
   Results: From the filing cabinets of well records in the KGS western Kentucky office, approximately 32,000 paper records were reviewed for missing documents and well records from the Kentucky Oil and Gas Repository. From these records, 17,010 missing documents were located, scanned, and added to the Kentucky Oil and Gas Repository and digital archive. Of these 17,010 newly scanned documents, 14,559 are page-sized documents and 2451 are electronic logs. This document search and scanning resulted in 2184 new wells added to the Repository. These documents and wells are now available online at http://kgs.uky.edu/kgsweb/DataSearching/OilGas/OGSearch.asp.

2. **Goal:** Scan approximately 500 sheets of brine analyses from existing oil and gas records. Catalog in the KGS oil and gas data repository, and add digital images to the online resource for each related oil and gas well record.
   Results: The entire KGS set of 490 brine analysis sheets from 490 Kentucky oil and gas wells were scanned and are now available through the Kentucky Oil and Gas Repository at http://kgs.uky.edu/kgsweb/DataSearching/OilGas/OGSearch.asp

3. **Goal:** Scan 24 publications from the US Department of Energy Morgantown Energy Technology Center—Eastern Gas Shales Project. Enter metadata about each publication into the KGS publications database and distribute online through the existing KGS online publications catalog.
   Results: 25 publications were scanned and archived, and made available online through the KGS publications search page at http://kgs.uky.edu/kgsweb/pubs/pubsearch.asp?pubtype=Eastern%20Gas%20Shales%20Project%20Series&searchtype=typeofpub

4. **Goal:** Scan approximately 1,000 sheets of core analysis data (porosity and permeability) from approximately 400 wells with core analyses.
   Results: During this grant funding period, a total of 436 sheets from 251 oil and gas wells were scanned. This is below the proposed total, but all available core analysis sheets were scanned. To-date, a total of 7,485 sheets of core analysis data from 4,212 oil and gas wells have been scanned, archived, and made available to the public through the KGS oil and gas repository.

5. **Goal:** Keypunch data from scanned core analyses data sheets into the KGS database using an existing data entry application which was developed and is maintained by KGS. Data can be accessed by KGS researchers. Data from approximately 2000 wells will be entered into the database using the data entry application.
   Results: 2443 core analyses records from 1717 oil and gas wells were entered into the KGS database. This is below the proposed amount of 2000 wells because the amount of analyses per well to enter exceeded the predicted amount.

B. Grant Objective 4 – rescue data:

Goal: Purchase new high-strength well sample boxes and migrate bagged well samples from deteriorating boxes at the KGS well sample and core library.

Results: 1000 boxes were purchased with grant funding and well samples were migrated to the new high-strength well sample boxes and stored in the KGS well sample and core library.