

**NGGDPP Final Technical Report – FY 2012
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Name of State Geological Survey: Kentucky Geological Survey

Project Title: 2012 National Geological and Geophysical Data Preservation for Kentucky

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Abstract:

The Kentucky Geological Survey has conducted stratigraphic and geochemical studies of limestone quarries since 1949. A small number of geologists were involved with this activity that spanned their careers. The product of that 60-year program is a collection of field notes including measured sections, diagrams, photographs, unit descriptions, physical rock samples and lab analyses of those samples. Because the program is no longer active and the individuals are retired or deceased, the digitization of those materials is a current priority of our preservation program.

Previous data preservation efforts have cataloged the sample sites, determined geographic locations, and resolved site identifiers that will permit linking the locations to the Kentucky Transportation Cabinet's records pertaining to the same operations. This project will facilitate the development of an internet service showing the geologic context of limestone quarries, with links to the historical field notes and analytical data. This proposal is to scan and organize the documents for each site to facilitate that goal and to make available the chemical analyses obtained from the samples as well as graphical summaries of the data.

Objectives:

Scan all documents in field note folders associated with limestone aggregate program. Convert scans to Adobe pdf format, review contents for duplicate pages, and order documents for clarity. Update the electronic inventory to document the contents of each folder.

Document all chemical analyses associated with samples taken during the aggregate program according to quarry site, sample footages, and chemical results. Enter all chemical data into an enterprise database to facilitate future data dissemination. Create bar graphs for each sample section to illustrate vertical and stratigraphic variation of constituents. Convert graphs to Adobe pdf for Web dissemination.

Results:

All documents in 456 field note folders have been scanned to TIFF format. 475 individual Adobe pdf files have been created to include the raw scanned documents. 73 of the pdf files have been reviewed and prepared for final dissemination.

15,214 limestone sample analyses were identified, associated with measured section sites, and entered into a database. Sample footages were reviewed and compared to documents and published sections and corrections were made. Graphs of each section were prepared in Microsoft Excel and examples were converted to pdf format to test the conversion process.

Future work:

The review and ordering of documents in the scanned field note files has proved to be more laborious than anticipated. That effort will continue until all files have been reviewed. The chemical database is nearly complete. Final transfer of all data to the KGS enterprise database will be completed in the 2013 FY. The final task for the preservation effort will be to create a Web service to facilitate dissemination of all the data. That is anticipated to be complete in 2014 FY.

Additional KGS Preservation Work:

KGS has a large collection of topographic and other basemaps contributed by private companies that show the locations of drill holes related to various kinds of exploration. Basemaps for coal exploration drilling were inventoried, documented, and scanned for more efficient retrieval. 188 maps were scanned in FY 2012. These maps are for internal KGS project work.

A complete review of coal quality sampling and analyses was conducted during this year. All related documents (field notes and analytical results sheets) were scanned and converted to Adobe pdf. A total of 2,600 documents were scanned. New analyses for 2,718 samples were identified during this review and data were appended to the KGS coal quality database. These data are disseminated by an existing Web service.

All documents related to the KGS Well Sample and Core Facility core holdings were organized by call number and are being scanned into Adobe pdf. Folders for 334 call numbers have been scanned. This work is ongoing. Theses by 20 students that used materials from the WS&CF have also been scanned to facilitate dissemination.

KGS has numerous documents associated with non-coal mineral resources located throughout the state, most of which were contributed to the KGS by private entities. These 16,910 documents were scanned in previous years, but were inventoried into a database and organized in FY 2012. The documents were also converted into a pdf format, and this format along with the inventory database for the documents will facilitate dissemination of these documents via a Web service which is planned for near-future development.