

NGGDPP Final Report

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Name of the State Geological Survey: Indiana Geological Survey

Project Title: Indiana Data Preservation Project 2014

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Abstract:

The Indiana Geological Survey (IGS) has a collection of approximately 40,000 processed grain-size sediment samples. These samples are kept in individual packets labeled with an identifier and are stored in about 700 core boxes. Each box is hand-labeled, but the label does not list the attributes of the packets within. The IGS also has descriptions and calculated statistics for these samples in both paper and digital formats. However, the sample and its analysis are not tied together in an inventory or linked in a database. The collection originated from other samples derived from the IGS unconsolidated sediment sample collection, which contain drill-cuttings from more than 4,000 water wells; these unconsolidated sediment samples are linked to the IGS Gamma-Ray Log Database.

The IGS is proposing to: 1) inventory approximately 40,000 sample packets, 2) label each of the 700 boxes using the IGS standard inventory tracking quick response (QR) codes, and 3) identify information obtained from the grain-size analysis processing records and enter that information into the IGS Inventory Database. Additionally, for each sample packet sourced from an unconsolidated sediment sample, entries will be made into the IGS Surficial Gamma-Ray Log Database indicating the availability of sediment samples and their grain-size analyses.

These preservation efforts will produce inventory records that will be entered into the U.S. Geological Survey National Digital Catalog (NDC), as well as into the internal inventories of the IGS data collections. The sample information will be cross-referenced from existing paper and digital data records, creating a more complete and accessible data set.

Project Goals:

- Inventory and catalogue approximately 40,000 grain-size sediment samples that are stored in approximately 700 core boxes (fig. 1) and analyze/associate them with existing IGS records and databases (fig 2).
- Enter the data from the grain-size sample boxes and analysis records (standardized IGS inventory tracking QR codes and identification information) into the IGS Inventory Database (fig. 3).
- Make these records and databases available to researchers, clients, and customers online via IndianaMap, an interactive map and geographic information system (GIS) that is already in place at the IGS (<http://maps.indiana.edu>).



Figure 1. Photograph of some of the approximately 700 core boxes containing grain-size samples that were stored at the IGS before the data preservation, inventory, and cataloging process.

Project activities and accomplishments:

During the grant period, a total of 28,762 sieve analysis samples, collected from 1967 through 1997, were inventoried, cataloged, and archived. The original estimate to process 40,000 samples was a rough calculation that was based on counting the total number of samples in five randomly selected boxes to estimate an average for all boxes. When all the boxes were removed from the shelving units, we discovered that some boxes contained samples that were not as densely stored. Approximately 3,700 samples could not be recovered because of poor environmental conditions or improper storage containers, and we discovered that some sample boxes belonged in other collections.

During the cataloging process, we arranged samples into categories by grain sieve size and then, chronologically within each sieve size. This method was defined by IGS geologists who use these samples for their research. The sieve size categories are: less than 2mm, sand, granules, and pebbles. The 28,762 sieve samples were repackaged, labeled, and stored in 609 core boxes. We created a spreadsheet to record the sample numbers, grain sieve size, box or container number, and any notes that were on the

individual sample containers. The core boxes were labeled with the standard IGS container label and are now housed in the IGS “Ideal Laundry” building. The data was cross-referenced with sieve analysis data sheets to link analyses with their physical samples. If detailed locational information existed for the sieve sample, we considered the analysis to be more current, and in a digital format. If further investigation was needed to determine a more accurate location, we considered the analysis to be older, existing only in a non-digital paper format. The link to the physical samples will help determine if further time should be spent on defining the locations and converting the analyses to a digital format.



Figure 2. Photograph showing some of the properly labeled and archived core boxes containing sieve samples after the data preservation, inventory, and cataloging processes were completed.

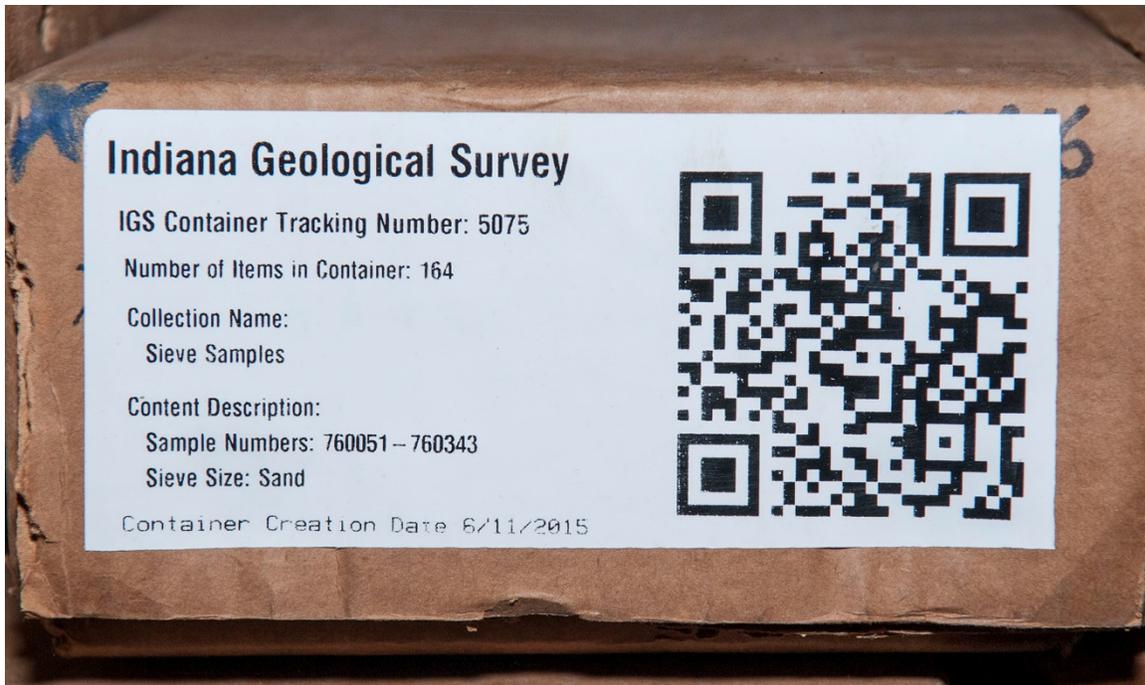


Figure 3. Typical label of a sieve sample core box showing select information from the IGS inventory database with the QR Code linked to the record in the database. Access to the QR Code database is restricted to registered IGS staff.

The NGGDPP database is not currently allowing IGS staff to upload its inventory database. We are investigating this situation and will work with the NGGDPP staff to add our inventory database.

The Indiana Geological Survey is very pleased to have had the opportunity through NGGDPP to capture, re-package, and document these sieve samples. This data set is a valuable resource and now is available to IGS scientists and the public for examination, analysis, and use in geologic research.