

FY 2013 NGGDPP Final Report

Award Number: G13AP00077

Name of the State Geological Survey: Indiana Geological Survey

Project Title: Indiana Data Preservation Program 2013

Principal Investigator(s): Richard Hill
Indiana Geological Survey/Indiana University
611 North Walnut Grove Avenue
Bloomington, IN 47405
Phone: 812.855.9583
FAX: 812.855.2862
E-mail: hill2@indiana.edu

Legal Applicant: The Trustees of Indiana University
PO Box 1847
Bloomington IN 47402-1847

FEIN: 35-6001673

Applicant Institution: (*Address for all Correspondence*) Indiana University
P.O. Box 1847
Bloomington, IN 47402-1847
Phone: 812.855.0516
Fax: 812.855.9943
rugs@indiana.edu

Term: 08/15/2013 through 08/14/2014

Submittal Date: 10/09/2014

Abstract

In 2009, the Indiana Geological Survey (IGS) identified approximately 55,000 individual sediment samples of unconsolidated surficial materials in its sample collections that needed to be preserved. NGGDPP grants have supported the preservation of 33,000 of those samples over the past three grant periods. An estimated 22,000 samples remain to be preserved. The IGS is proposing to preserve these remaining sediment samples by identifying, bagging, labeling, and placing them in core boxes. An accompanying geophysical (gamma-ray) log database will be updated to document the preservation of these samples. Currently, the samples are stored in open paper cups in a deteriorating, un-weatherized offsite building. Moisture is damaging the integrity of the paper cups, and some samples have become contaminated by insect and rodent droppings. A number of the cups have spilled, rendering these samples useless.

Our preservation efforts will produce inventory records that will be entered into the internal inventories of the IGS data collections. The sample information will be cross-referenced to existing paper and digital data records, creating a more complete and accessible data set.

Project Goals

The goal of this project is to rescue and preserve sediment samples by identifying, bagging, labeling, and boxing them before they become unusable. The physical sample inventory will then be linked to the data records.

In the proposed project, we will preserve the estimated 22,000 samples, their ID numbers will be verified from the locational information in the gamma-ray log database, and the database will be updated as the samples are preserved. Each sample will be re-packaged into a whirl-pak bag and labeled both inside and outside with a tag label. The bags will be stored in core boxes, labeled with both IGS standard inventory tracking QR codes and information that identifies the specific log-sample number.

Project Objectives

In the project proposal, we committed to completing the preservation of the individual sediment samples relating to the surficial gamma-ray logs, verifying their ID numbers from the locational information in the Surficial Gamma-Ray Log Database, and updating the database as the samples were preserved. Each sample was to be re-packaged into a whirl-pak bag and labeled on the outside and on the inside of the bag, using a tag label. The bags would be stored in core boxes labeled with both IGS standard inventory tracking QR codes and information that identifies the specific log-sample number.

Project activities and accomplishments:

Grant Objective 4 – During the grant period, a total of 16,186 gamma-ray log sample cups were processed and archived. While the original estimate totaled 22,000 sample cups, as processing was conducted, nearly 5,000 samples were discarded as being duplicates samples, spilled samples, and those having illegible labels. All of the 16,186 gamma-ray log sediment samples have been processed into 2,061 core boxes, and represent 1,675 unique gamma-logs. Each of the core boxes is labeled inside and out with a Quick Reference Code (QR Code) for easy location and access. The samples are also documented in the Surficial Gamma-Ray Log Database, and arranged in one building (see Figure 1). This completes the preservation of the existing sample cups processed under this NNGDPP grant.

After processing the samples into core boxes, the spreadsheet was thoroughly checked for duplicates, discrepancies, and data entry errors, and were entered into the Surficial Gamma-Ray Log Database. After further consolidation and relabeling, the boxes were shelved chronologically to expedite locating samples. The first two numbers of the sample ID number designates the year the sample was collected. Thus, storing the samples chronologically makes logical sense.

At the completion of the project, a small balance remained in the budget; those remaining funds were used to digitize 60 gamma-ray electric logs. These logs correspond to wells where sediment samples were collected. These sample cups were processed and entered into the Surficial Gamma-Ray Log Database, thereby providing a complete set of data that is readily available for examination by our staff, clients, and the public.



Figure 1. Photos show the completed, well-organized, and properly labelled sediments sample boxes.

The Indiana Geological Survey developed and maintains an online interactive map called IndianaMap. IndianaMap is the largest publicly available collection of Indiana geographic information system (GIS) map data, having more than 260 GIS layers available for viewing and downloading. It is made possible by an alliance of more than 140 partners from federal, state, local organizations and agencies, and universities. The IGS provides 50 geologic GIS layers to IndianaMap, one of which is the Surficial Gamma-Ray Log Database layer. This database includes those samples preserved and archived from the NGGDPP project. On the IndianaMap website, gamma-ray log locations that have archived samples can be viewed at:

<http://maps.indiana.edu/index.html?x=607654&y=4381692.5&z=0&sBasemap=bm1&URLLayers=Geology Surficial Gamma Ray Logs> .

Select the *Legend* button (the toolbar at the upper left, the fourth button from the left) to see the sample availability for each gamma-ray log.

The Indiana Geological Survey is very pleased to have had the opportunity through NGGDPP to capture, re-package, and document these samples and data. In total, 47,885 samples were processed during the past five years. This data set is a valuable resource and is now available to IGS scientists and the public for examination and analysis.