

**National Geological and Geophysical Data Preservation Program**

**Award Number: G09AP00084**

**FINAL TECHNICAL REPORT**

**FY 2009-2010**

**New Jersey Geological Survey**

**Geoscientific Data Preservation Project - Inventory and Metadata**

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**Abstract**

New Jersey Geological Survey's (NJGS) geological and geophysical data were inventoried as part of the National Geological and Geophysical Data Preservation Programs Fiscal Year (FY) 2007-08 funding activities. Eighteen (18) different types of collections were identified of which three items are physical collections namely rock cores, geochemical samples and thin sections. The remaining fifteen items are derived and indirect collections like maps, paper reports, 2-D seismic reflection data, geophysical well logs data, and field notes.

In this, FY 2009-10, activities the NJGS's on-line survey of inventoried collections was updated to include the rock cuttings (well cuttings) from about 900 wells and hand samples from more than 900 locations. Also, metadata in eXtensible Markup Language (XML) format were created for two physical collections, rock core (ID#P1294) consisting of 94 samples and 924 geochemical samples (ID#P1295). The metadata for these two collections were entered into the National Digital Catalog (NDC). A sediment core collection which included the offshore vibracore data consisting of 209 samples were added to the inventory list. Originally the vibracore samples were listed in the rock core collection. The metadata in XML format for the sediment core (ID#P1651) vibracore collection were also entered into the NDC. The total federal funding for the FY 2009 project was \$30,825.

**Introduction**

The New Jersey Geological Survey (NJGS) applied for and obtained a one-year grant of \$30,825.00 grant from United States Geological Survey's (USGS) National Geological and Geophysical Data Preservation Program (NGGDPP) for the fiscal year (FY) 2009. The State of New Jersey matched this grant (1:1). The grant was used to

inventory two of NJGS's geological and geophysical data collections and to create metadata in eXtensible Markup Language (XML) format for three physical collections, rock core (ID#P1294), geochemical samples (ID#P1295) and sediment cores (ID#P1651) that are in the inventory, and to upload the metadata into the National Digital Catalog (NDC). The inventoried collections were the rock cuttings (well cuttings) and the hand samples. The inventory was performed using the criteria established by the program.

At the end of the one-year grant period, the deliverables were the updating of the on-line survey of the state's geological and geophysical collection holdings with two collections, creating and uploading of metadata for the two collections in the NDC and this final technical report that documents and summarizes the results of the inventory and metadata creation.

Eighteen items were identified in the list of collections in FY 2007-10. The collections are accessible and used by all outside users, by appointment, and are mainly used for research, teaching, reference, land management, hazard mitigation and engineering studies. Of the eighteen items, three are physical collections namely rock cores, geochemical samples and thin sections. The rock cores are stored at three different facilities. The geochemical samples are stored in the NJGS facility.

The first part of the project involved the inventorying of two additional physical sample collections. These are the rock (well) cuttings and hand samples collections. The New Jersey Geological Survey (NJGS) over the last hundred years has collected samples from about 1,000 deep water wells and a few wildcat oil wells. These samples which are mainly cuttings were not inventoried under the FY2007 grant. Most of the well samples are stored offsite at the Rutgers University core facility. For many of the wells there is limited information on location which will require additional work in obtaining accurate locations for the inventory.

In addition, there is a collection of hand samples of ores from many of the early mines which were inventoried. The NJGS has been updating the locations of all the abandoned mines using GPS. About 900 mine ore samples have been inventoried and cataloged. NJGS Staff, over a number of years, have collected hand samples during their field surveys. These samples were also inventoried and cataloged.

The NJGS's on-line survey of inventoried collections was updated to include the rock cuttings and hand samples (fig 1).

The second part of this project included the development of the metadata for rock cores (ID#P1294) collection of 94 samples. The rock core consists of 94 core holes with over of 54,000 feet of NJGS core and the entry of the metadata into the NDC. New Jersey Coastal Plain core consist of 13 core holes stored at the Rutgers University Core Storage facility. Five New Jersey Coastal Plain core holes core were not included because they were collected under National Science Foundation (NSF) grants and NJGS has no authority over them.

## Inventory of Geologic and Geophysical Collections at State Geological Surveys

### Adding to a List of Collections

ID

| #                                  | Collection ID | Type of Collection | Category   | Current Media | Unit of Measurement | Quantity | Amount Unknown? | Expand | D |  |
|------------------------------------|---------------|--------------------|--|---------------|---------------------|----------|-----------------|--------|---|--|
| <input type="button" value="Add"/> | 1             | P1099              | Derived and Indirect<br>Maps                               | Paper         | Items               |          | Yes             | Expand | D |  |
|                                    | 2             | P1292              | Derived and Indirect<br>Paper reports                      | Paper         | Items               |          | Yes             | Expand | D |  |
|                                    | 3             | P1293              | Derived and Indirect<br>Field notes                        | Paper         | Items               |          | Yes             | Expand | D |  |
|                                    | 4             | P1294              | Physical Geoscience<br>Rock cores                          | Physical      | Other               |          | Yes             | Expand | D |  |
|                                    | 5             | P1295              | Physical Geoscience<br>Geochemical samples                 | Physical      | Items               |          | Yes             | Expand | D |  |
|                                    | 6             | P1296              | Physical Geoscience<br>Thin sections and polished sections | Physical      | Items               |          | Yes             | Expand | D |  |
|                                    | 7             | P1297              | Derived and Indirect<br>Lithology logs                     | Paper         | Items               | 3,800    |                 | Expand | D |  |
|                                    | 8             | P1298              | Derived and Indirect<br>Geophysical                        | Digital       | Other               |          | Yes             | Expand | D |  |
|                                    | 9             | P1299              | Derived and Indirect<br>2-D and 3-D seismic reflection     | Digital       | Other               | 1,050    |                 | Expand | D |  |
|                                    | 10            | P1300              | Derived and Indirect<br>Photographs                        | Physical      | Items               |          | Yes             | Expand | D |  |
|                                    | 11            | P1302              | Derived and Indirect<br>Seismic data                       | Digital       | Other               | 250      |                 | Expand | D |  |
|                                    | 12            | P1303              | Derived and Indirect<br>Maps                               | Digital       | Items               | 250      |                 | Expand | D |  |
|                                    | 13            | P1304              | Derived and Indirect<br>Paper reports                      | Digital       | Items               | 40       |                 | Expand | D |  |
|                                    | 14            | P1305              | Derived and Indirect<br>Field notes                        | Digital       | Items               | 8,200    |                 | Expand | D |  |
|                                    | 15            | P1306              | Derived and Indirect<br>Well logs                          | Digital       | Items               | 230      |                 | Expand | D |  |
|                                    | 16            | P1307              | Derived and Indirect<br>Well logs                          | Paper         | Items               | 510      |                 | Expand | D |  |
|                                    | 17            | P1309              | Derived and Indirect<br>Geochemical Data                   | Digital       | Items               | 150      |                 | Expand | D |  |
|                                    | 18            | P1364              | Derived and Indirect<br>2-D and 3-D seismic reflection     | Paper         | Other               | 1,000    |                 | Expand | D |  |
|                                    | 19            | P1649              | Physical Geoscience<br>Hand samples                        | Physical      | Items               |          |                 | Expand | D |  |
|                                    | 20            | P1650              | Physical Geoscience<br>Rock cuttings                       | Physical      | Items               | 860      |                 | Expand | D |  |
|                                    | 21            | P1651              | Physical Geoscience<br>Sediment cores                      | Physical      | Items               | 209      |                 | Expand | D |  |
| Total:                             |               | 21                 |  |               |                     |          |                 |        |   |  |

Figure 1. Updated List of Collections of the New Jersey Geological Survey

The NJ Zinc Company mine core comprise of core from 60 boreholes. The mine core grid system locations were converted into latitude/longitude coordinates, since the mine system is oblique to true north and has a different elevation datum. Forty seven (47) of the NJ Zinc Company mine core holes core are stored at the Sterling Hill Mining Museum and the rest at the Rutgers University Core Storage facility. Also in the collection are 21 mine core holes with 6,700 feet of core, which the NJGS assumed responsibility for when the US Bureau of Mines closed and are stored at the Rutgers University Core Storage facility. These core are also located by individual mine grids which were converted. Metadata were also created for 209 offshore vibracore sediment

core (ID#P1651). The NJGS's on-line survey of inventoried collections was updated to include the vibracore sediment core (fig. 1). The offshore vibracore cores were originally included in the project proposal and inventoried collections as part of rock core collection. They are now cataloged as a separate collection. NJGS drilled these vibracore in support of NJDEP beach nourishment projects and offshore geologic studies. These vibracore cores serve as ground-truth for marine seismic data; characterization of specific sand; or correlations. NJGS retains both the sampled and archive halves of the core in 5-ft lengths. One hundred eighty nine (189) vibracore cores are housed at the NJGS Core Storage Facility and twenty (20) cores are housed at the Rutgers University Core Storage Facility. Twenty one (21) of the 230 offshore vibracore included in the project proposal were eventually not drilled but will be in the future, hence were not included in the metadata.

The geochemical samples (ID#P1295) collection currently has 924 samples. The metadata were developed for all the 924 samples currently in the collection. The geochemical samples comprise of 337 whole rock samples and 587 mineral samples. Chemical analyses and other information about these samples can be obtained by contacting the NJGS.

The 924 geochemical samples and 209 vibracore sediment core samples data existed in MS Excel™ spreadsheets. The 94 rock core data existed in hardcopy and were entered into another MS Excel™ spreadsheet. The elements/attributes required for the NDC (as indicated in the NGGDPP metadata profile) that were not already in the spreadsheet were added and saved as a Comma Separated Value (CSV) files. The CSV files were then converted to XML format suitable to be uploaded into the NDC. Locations of all the samples were plotted using GIS and entries were adequately checked to perform data quality assurance. Three XML files (p1294.xml, p1295.xml and p1651.xml) were uploaded into the NDC after validation on July 1, 2010.

## **Summary**

The on-line inventory of the New Jersey Geological Survey's (NJGS) geologic and geophysical collections was updated with the addition of three physical collections: hand samples (ID#P1649), rock cuttings (ID#P1650) and sediment core (ID#P1651). The inventory now contains twenty one (21) items (fig. 1).

Metadata in XML format were created for 94 rock cores (ID#P1294), 924 geochemical samples (ID#P1295) and 209 sediment cores (ID#P1651) of the NJGS's physical collections. The metadata for the three collections were uploaded into the National Digital Catalog.

This report, the updating of New Jersey's on-line inventory with three collections and creating and uploading of metadata for three collections fulfills the non-financial requirements of the FY 2009-10 NGGDPP Grant requirements.