

National Geological and Geophysical Data Preservation Program

Award Number: G10AP00109

FINAL TECHNICAL REPORT

FY 2010-2011

New Jersey Geological Survey

Geoscientific Data Preservation Project - Metadata and Digital Infrastructure

By

Suhas Ghatge

Research Scientist

New Jersey Geological Survey

P.O. Box 420, Mail Code:29-01

Trenton, NJ 08625-420

Phone: (609) 292-1185

Fax: (609) 633-1004

E-Mail: [Suhas.Ghatge@dep.state.nj.us](mailto:Sahas.Ghatge@dep.state.nj.us)

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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. In FY 2009-10 activities the NJGS's on-line survey of inventoried collections was updated to include the rock cuttings (well cuttings), hand samples and sediment core. Also, metadata were created for three physical collections, rock core (#P1294), geochemical samples (#P1295) and the sediment core (#P1651). and were entered into the National Digital Catalog (NDC).

The FY 2010-2011 project consisted of two priorities. The first priority involved the creation of metadata for digital geophysical logs of about 230 wells (#P1306) and entering the metadata in the NDC. The second priority is the digital infrastructure, which involved the scanning of paper geophysical well logs from 285 wells (#P1307) and seven paper geologic maps (#P1099) and digitizing them. The digitized maps produced digital GIS coverages for the seven geologic maps. This project expanded the digital geologic map database for New Jersey. Metadata for the 515 wells with paper digital geophysical logs (#P1306 and #P1307) and seven scanned and digitized geologic maps together with the 139 digital and 133 paper geologic maps (#P1303 and #P1099 respectively) were created in XML format and entered into the NDC. The total federal funding for the FY 2010 project was \$26,759.

Introduction

The New Jersey Geological Survey (NJGS) applied for and obtained a one-year grant of \$26,759.00 grant from United States Geological Survey's (USGS) National Geological and Geophysical Data Preservation Program (NGGDPP) for the fiscal year (FY) 2010. The State of New Jersey matched this grant (1:1).

In FY 2007 eighteen items were identified in the list of collections. 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. In FY 2009 two additional physical sample collections were identified. These are the rock (well) cuttings and hand samples collections. The NJGS has collected samples from about 1,000 deep water wells and a few wildcat oil wells. Most of the well samples are stored offsite at the Rutgers University core facility. In addition, there is a collection of hand samples of ores from many of the early mines which were inventoried. The second part of this project included the development of the metadata for rock cores (#P1294) collection of 94 samples. Metadata were also created for 209 offshore vibracore sediment core (#P1651). The NJGS's on-line survey of inventoried collections was updated to include the vibracore sediment core. The inventory now contains twenty one (21) items. The offshore vibracore cores are housed at the NJGS Core Storage Facility and at the Rutgers University Core Storage Facility. The geochemical samples (#P1295) collection currently has 924 samples. The metadata were developed for all the 924 samples in the collection. The metadata were uploaded into the NDC

The FY 2010 grant was used to create metadata in eXtensible Markup Language (XML) format for 515 wells (Fig. 1) that have paper and digital geophysical logs (#P1307 and #P1306 respectively) and all the 146 digital and 133 paper geologic maps (# P1303 and #P1099 respectively) including the seven geologic maps that were scanned and digitized in this project (Fig. 2). The geologic quadrangle maps that were scanned and digitized were Boonton, Central Park, Dover, Hackensack, Jersey City, Roselle and, Weehawken. The metadata for the digital geophysical well logs and geologic maps were uploaded into the National Digital Catalog (NDC). The seven digitized maps produced digital GIS coverages and are available for download from the NJGS website as Digital Data Series DGS10-2 Surficial Geology of New Jersey (Scale 1:24,000).

At the end of the one-year grant period, the deliverables were metadata for the paper and digital geologic maps and digital geophysical well log collections uploaded into the NDC and this final technical report that documents and summarizes the results of the metadata creation and digital infrastructure priorities.

The digital and paper geophysical well logs of 515 wells (#P1306 and P1307 respectively) and 146 digital and 133 paper geologic maps (#P1303 and #P1099 respectively) data existed in MS Excel™ spreadsheets. 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 wells and maps were plotted using GIS and entries were adequately checked to perform data quality assurance. Four XML files (p1099.xml, p1303.xml p1307 and p1306.xml) were uploaded into the NDC after validation.

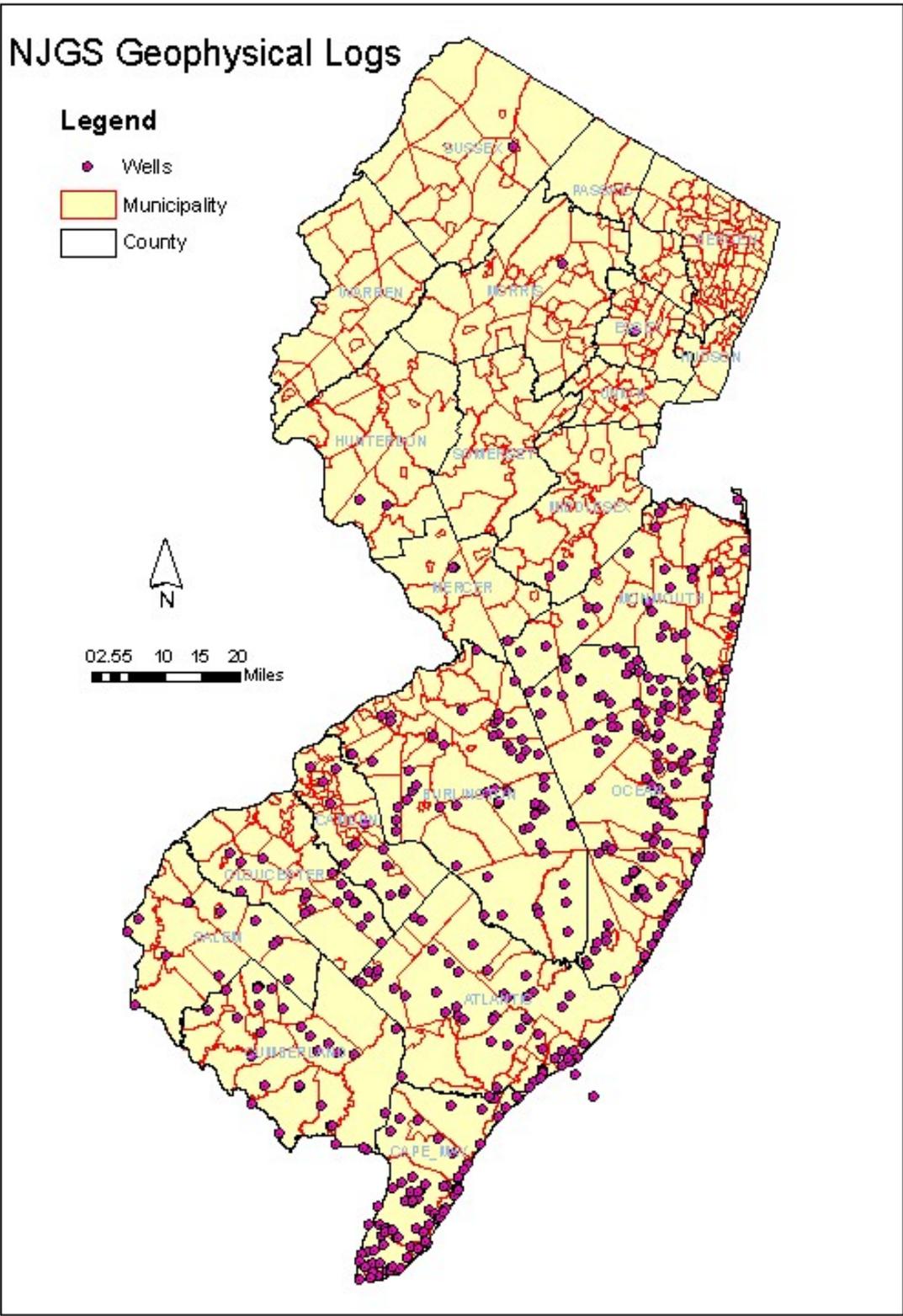


Figure 1. Wells with geophysical logs

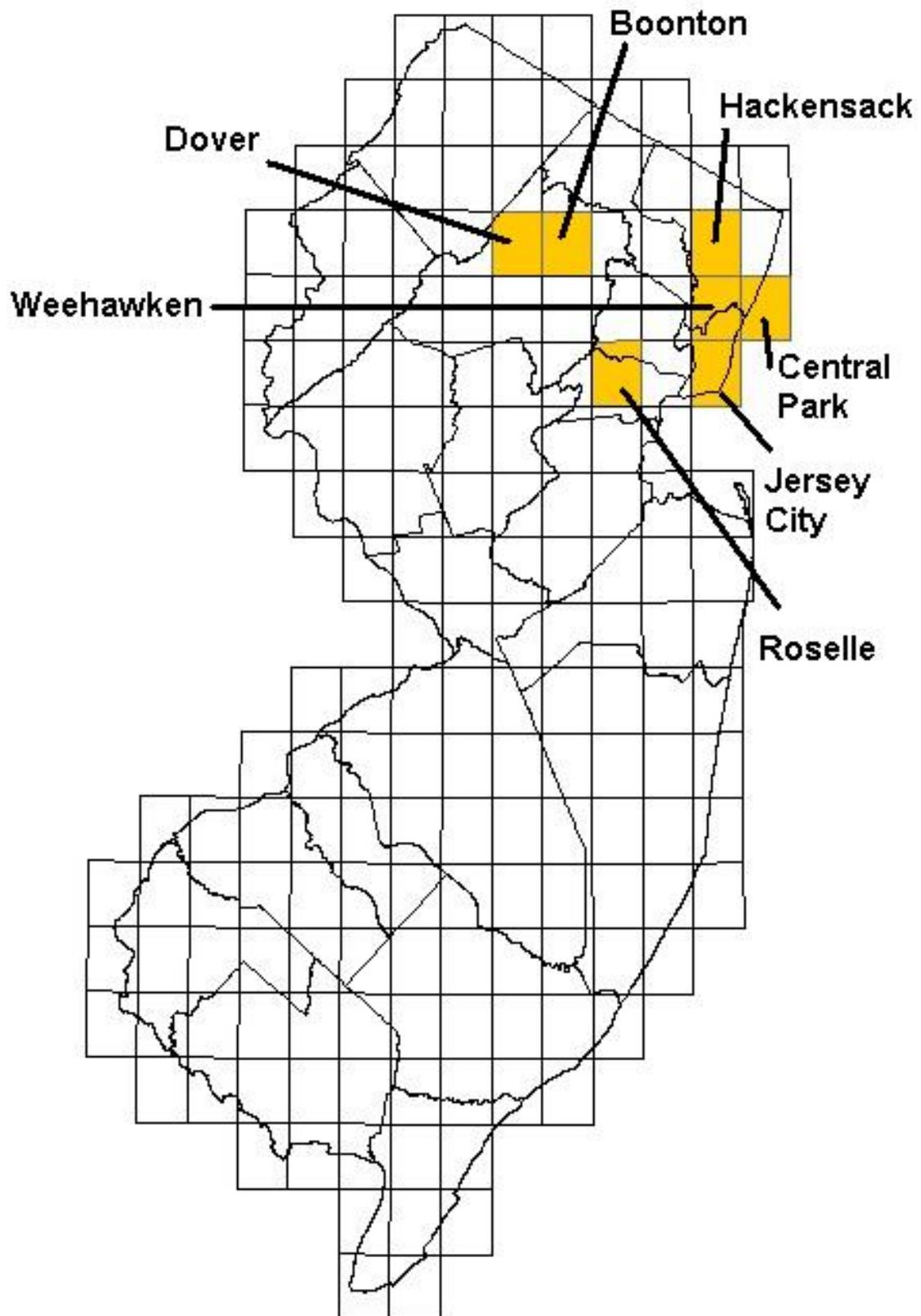


Figure 2. Scanned and Digitized Geologic Quadrangles

Summary

Seven paper geologic maps and geophysical logs from 285 wells were scanned and digitized for the digital infrastructure priority of this project. Metadata in XML format were created for 515 wells that have paper (#P1307) and digital (#P1306) geophysical logs, and the 146 digital (#P1303) and 133 paper (#P1099) geologic maps. The metadata were checked for quality assurance and were uploaded into the National Digital Catalog (NDC). The seven digitized maps produced digital GIS coverages which can be downloaded from the NJGS website.

This report and the creating and uploading of metadata for three collections in the NDC fulfill the non-financial requirements of the FY 2010-11 NGGDPP Grant requirements.