

**Pennsylvania Department of Conservation and Natural Resources,
Bureau of Topographic and Geologic Survey**

FY 2014 National Geological and Geophysical Data Preservation Grant

Final Technical Report

Cover Page

Award Number: G14AP00136; Proposal 2014-0009 - Pennsylvania

Title: Data Entry for Water Well Records into PaGWIS

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Project Term: 08/15/2014 through 12/31/2015

Report Submittal Date: December 21, 2015

Abstract

The goal of this project was to add thousands of previously unavailable water well completion reports to the public Pennsylvania Groundwater Information System (PaGWIS) database. The records had been stored as scanned images of paper reports on an internal bureau server. The new records were created in PaGWIS by digitizing basic water well information and attaching the report image file. The basic data included county, municipality, well owner, driller, and date drilled, which are searchable attributes of the database. Much additional information is included in the well report image file. A total of 54,966 new records were entered into the system through work accomplished through this grant. In addition, locations for about 6,550 of these new records were assigned for the water wells. Data from this set of original paper records are now available to the public through this grant. This work greatly improves the ability of the Pennsylvania Geological Survey to meet the mandate of the Water Well Drillers License Act to collect data on water wells and make them available to the public. The digitization of these records substantially expanded the usable, public database of water well completion reports. Through this data preservation grant, the PaGWIS database is a much improved repository of water well completion reports.

Project Goals and Accomplishments

The primary goal of this project was to improve the Pennsylvania Groundwater Information System (PaGWIS) by entering about 49,500 paper water well records. The PaGWIS database is publicly available on the Pennsylvania Geological Survey's web site. These water well records were submitted between the addition of the last batch of scanned records that occurred in 2005 and the inception of digital data entry by water well drillers in June 2009. These water well completion reports had not been included in PaGWIS and existed only on an internal server at the bureau. The paper reports had been first scanned in portable document format (pdf) then converted to Graphics Interchange Format (gif) for access through the Internet. Through this grant, the 49,500 records were added to PaGWIS and are now online. Because of good progress in attaining goals of the grant, an additional 5,466 water well records also were inserted into PaGWIS. These were recently scanned records beyond the 2005-2009 interval, and included paper reports submitted through May 2015. Thus, a total of 54,966 new records were entered into the system through this grant. In addition, coordinate locations for approximately 6,550 of the new PaGWIS records were assigned and entered into PaGWIS.

The project goals and accomplishments are summarized in the following table.

Summary of Project Goals and Accomplishments

Goal	Accomplishment
Enter 49,500 records into the PaGWIS database	A total of 54,966 new records were entered into PaGWIS through this grant. This total included 5,466 additional records later than the 2005-2009 interval. For each record created, the digital image of the paper water well completion report was attached, and basic information, including county, municipality, well owner, driller, and date drilled, was entered.
Digitize the location of as many of the 49,500 records as possible	Locations for 6,550 of the new records were determined using internal applications and Internet information tools. These locations also are in PaGWIS and are searchable by latitude and longitude. An additional 1,396 wells were prepared with locations that are ready to be processed; 575 wells with one location also were completed (these records will be processed later in-house). Thus, 8,521 wells that didn't have locations will be assigned coordinates through this grant.

The addition of the nearly 55,000 water wells increases the number of water well records in PaGWIS by approximately 10 percent. This group of records added the public database includes records submitted as paper forms after 2005. Through this grant and other efforts in the past 18 months, the bureau has added about 96,000 well records to the PaGWIS database. The newly added records are available at <http://www.dcnr.state.pa.us/topogeo/groundwater/pagwis/index.htm>.

Data from this set of original paper records are now available to the public through this grant. This work greatly improves the ability of the Pennsylvania Geological Survey to meet the mandate of the Water Well Drillers License Act to make data on water wells available to the public. The digitization of these records expands the usable, public database of water well completion reports, and enhances the system so that it is more searchable by location and attribute.

The combination of Federal funds and matching state funds enabled the grant project to be successfully completed. Matching state funds were used to hire temporary clerical employees to establish the initial record and enter the skeletal data. The Federal funds were used to hire interns to establish the location coordinates.