WQDB Metadata

1. These data represent the results of water-quality monitoring activities in Lake Powell and from Glen Canyon Dam releases. These data were collected by the Bureau of Reclamation's Upper Colorado Regional Office and Glen Canyon Environmental Studies program (1964-1996) and subsequently by the U.S. Geological Survey's Grand Canyon Monitoring and Research Center (1996-2008).

2. These data are part of the WQDB, a Microsoft Access relational database that contains the results of Lake Powell water-quality monitoring activities from 1964 to 2008. The WQDB is comprised of 8 tables of related information and several pre-defined queries to display different types of information from the database. The following tables make up the WQDB:

Table Name	**Description**
tblStations	A listing of Lake Powell sampling stations, geographical coordinates, and locations within mainchannel and tributary arms of the reservoir
tblSurface	A listing of site visits to various sampling locations
tblProfiles	Depth-profiles of common water-quality parameters associated with site visits
tblSecchi	Secchi-depth transparency observations associated with site visits
tblSamples	Water sample collection information with links to sample analyses
tblAlkalinity	Field alkalinity determinations performed on collected samples
tblMajor Ions	Results of laboratory analyses for the determination of major ionic constituents
tblNutrients	Results of laboratory analyses for the determination of nutrient compounds of phosphorus and nitrogen

3. The data represented in these files are completely described in the following report:

   Vernieu, W.S., 2009, Physical and chemical data for water in Lake Powell and from Glen Canyon Dam releases. Utah-Arizona, 1964-2008, U.S. Geological Data Series 471, 23 p. (http://pubs.usgs.gov/ds/471)

   Historical and current methods are described in the body of the report. Database structure and contents of data tables are described in detail in the report appendix. Further assistance may be obtained from the author:

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4. The geographic coordinates of sampling locations were determined with hand-help geographic positioning systems and represent the approximate locations of sampling activities. Actual reservoir sampling activities may take place within a 100-m radius of the given sampling location.

5. The following pre-defined queries are included in the WQDB. Results of these queries are also available at http://www.gcmrc.gov/products/other_data/gcmrc.aspx. Select the "Physical" program from the GCMRC database and the name of the query (prefaced with "Lake Powell"). Each of these queries may be sub-queried for selected Station Groups or date ranges.

Query Name	**Description**
qryStation Groups at Primary Stations	A listing of the 27 primary station groups of the current monitoring program
qrySite Visits at Primary Stations	Site visits at the 27 primary station groups
qryProfiles at Primary Stations	Water-quality depth profiles at the 27 primary station groups
qryMajor Ions at Primary Stations	Results of laboratory analyses for the determination of major ionic constituents at the 27 primary station groups
qryNutrients at Primary Stations	Results of laboratory analyses for the determination of nutrient compounds of phosphorus and nitrogen at the 27 primary station groups