
Appendix 1: Water-level database for Yucca Flat, 1951–2003

The database distributed with this report is in Microsoft® Access 2000 format. It contains 17 tables with hydrologic information for 216 wells in Yucca Flat. The tables include information on well sites, well construction, borehole lithology, aquifers, and water levels. Descriptions of the types of information in the database tables are listed in table 10. These descriptions also are stored in the database. A general description of each table can be read in the Access project window by opening the database, selecting “view,” and then selecting “details.” Descriptions of each table column can be made to appear at the bottom of the database window screen by opening a table and moving the cursor to the column of interest.

A Microsoft® Excel workbook also is distributed with this report as an interface to the water-level database. Most of the water-level information from the database is provided in the spreadsheet. Different hydrographs from Yucca Flat can be selected using Excel’s built-in AutoFilter.

Table 10. Description of Microsoft® Access database for Yucca Flat water-level measurements

[Fixed variables: A set of variables that applies to a column in the database. Abbreviations: NA, not applicable; HA, hydrographic area]

Site Information			
Access table name	Table column name	Description	Fixed variables
YF_sitefile	USGS_local_nm	USGS local well name	NA
YF_sitefile	USGS_site_id	USGS unique well identification number	NA
YF_sitefile	station_nm	USGS official NWIS site name (format is: hydrographic area, township, range, section, sequence number, USGS local name)	NA
YF_sitefile	redbk_nm	Official DOE hole name at well site	NA
YF_sitefile	lat_va	Latitude, in degrees, minutes, and decimal seconds; datum is North American Datum of 1927	NA
YF_sitefile	long_va	Longitude, in degrees, minutes, and decimal seconds; datum is North American Datum of 1927	NA
YF_sitefile	dec_lat_va	Latitude, in decimal degrees; datum is North American Datum of 1983	NA
YF_sitefile	dec_long_va	Longitude, in decimal degrees; datum is North American Datum of 1983	NA
YF_sitefile	easting	Universal Transverse Mercator Projection easting, in meters, Zone 11, North American Datum of 1927	NA
YF_sitefile	northing	Universal Transverse Mercator Projection northing, in meters, Zone 11, North American Datum of 1927	NA
YF_sitefile	coord_meth	Method used to measure horizontal coordinates	Unknown; Survey
YF_sitefile	coord_acy	Accuracy of horizontal latitude and longitude coordinates	Hndrth second; Second
YF_sitefile	state	State where well is located	NEVADA
YF_sitefile	county	County where well is located	NYE
YF_sitefile	map_nm	1:24,000 USGS topographic quadrangle on which well is located	NA
YF_sitefile	alt_va	Altitude of land surface at well, in feet; datum is National Geodetic Vertical Datum of 1929	NA
YF_sitefile	alt_meth	Method used to measure land-surface altitude	DGPS (differential GPS); Level; Reported; Map
YF_sitefile	alt_acy_va	Accuracy of land-surface altitude, in feet	NA
YF_sitefile	hyd_area_nu	Hydrographic area where well is located	HA159 (Yucca Flat); HA160 (Frenchman Flat); HA158A (Groom Lake Valley)
YF_sitefile	huc	Hydrologic Unit Code	NA
YF_sitefile	NTS area number	NTS area number	NA

Table 10. Description of Microsoft® Access database for Yucca Flat water-level measurements—Continued

Site Information—Continued			
Access table name	Table column name	Description	Fixed variables
YF_sitefile	site_rmks_tx	General remarks about the well site	NA
YF_sitefile	site_use_1	Primary use of well site	Destroyed; Test; Withdrawal
YF_sitefile	site_use_2	Secondary use of well site	Test; Observation; Withdrawal
YF_sitefile	water_use_1	Use of water at well site	Unused; Institutional
YF_gw_ls_alt	ls_alt_seq_nu	Sequence number of measured land-surface altitude	NA
YF_gw_ls_alt	ls_alt	Altitude of land surface at well, in feet; datum is National Geodetic Vertical Datum of 1929	NA
YF_gw_ls_alt	ls_alt_src	Source of land-surface altitude	NA
YF_gw_ls_alt	ls_alt_acc	Accuracy of land-surface altitude measurement, in feet	NA
YF_gw_ls_alt	ls_alt_meth	Method used to determine land-surface altitude	DGPS (differential GPS); L (level); U (unknown)
YF_gw_ls_alt	ls_alt_dt	Date land-surface altitude was determined, in yymmdd format	NA
YF_gw_ls_alt	ls_alt_dtm	Date land-surface altitude was determined	NA
YF_gw_ls_alt	ls_alt_dtm_acc	Accuracy of date when land-surface altitude was determined	Year; Day
YF_gw_ls_alt	ls_desc	Description of land-surface where altitude was measured	NA
YF_gw_mpnt	mpnt_seq_nu	Sequence number of well measuring point	NA
YF_gw_mpnt	mpnt_begin_dtm	Date measuring point was established	NA
YF_gw_mpnt	mpnt_end_dtm	Date measuring point was discontinued	NA
YF_gw_mpnt	mpnt_ht_va	Height of measuring point above land surface, in feet	NA
YF_gw_mpnt	mpnt_alt_va	Altitude of measuring point, in feet; datum is National Geodetic Vertical Datum of 1929	NA
YF_gw_mpnt	mpnt_alt_meth	Method used to measure measuring-point altitude	DGPS (differential GPS); L (level)
YF_gw_mpnt	mpnt_alt_acy_va	Accuracy of measuring-point altitude, in feet	NA
YF_gw_mpnt	mpnt_ds	Description of measuring point	NA
YF_gw_rmks	gw_rmks_seq_nu	Sequence number of remark	NA
YF_gw_rmks	gw_rmks_dtm	Date corresponding to remark	NA
YF_gw_rmks	gw_rmks_dtm_acc	Accuracy of date entry (“Year” means remark date only applies to the year)	Day; Month; Year

Table 10. Description of Microsoft® Access database for Yucca Flat water-level measurements—Continued

Well-Construction Records			
Access table name	Table column name	Description	Fixed variables
YF_gw_cons	cons_begin_dtm	Date well construction began	NA
YF_gw_cons	cons_end_dtm	Date well construction was completed	NA
YF_gw_cons	hole_depth_va	Depth of hole, in feet, that was drilled prior to establishing well site	NA
YF_gw_cons	well_depth_va	Depth of well, in feet; generally considered the depth that is accessible.	NA
YF_gw_cons	depth_src	Source of information for hole-depth and well-depth data	Driller; Other reported; Geologist
YF_gw_cons	cons_contractor_nm	Name of drilling contractor	NA
YF_gw_cons	cons_src	Source of construction data	Other reported; Geologist; Driller
YF_gw_cons	cons_meth	Drilling method	Air rotary; Hydraulic rotary; Cable tool; Reverse rotary
YF_gw_cons	finish	Type of finish around open interval	Perf or Slotted; Gravel pck, perf; Gravel pck, scrm; Open hole
YF_gw_cons	seal	Type of well seal above open interval	Cement grout
YF_gw_cons	seal_depth_va	Depth to bottom of seal, in feet below land surface	NA
YF_gw_hole	hole_seq_nu	Sequence number of hole interval	NA
YF_gw_hole	hole_top_va	Top of hole interval, in feet below land surface	NA
YF_gw_hole	hole_bottom_va	Bottom of hole interval, in feet below land surface	NA
YF_gw_hole	hole_dia_va	Diameter of hole interval, in inches	NA
YF_gw_csng	csng_seq_nu	Sequence number of casing interval	NA
YF_gw_csng	csng_top_va	Top of casing interval, in feet below land surface	NA
YF_gw_csng	csng_bottom_va	Bottom of casing interval, in feet below land surface	NA
YF_gw_csng	csng_dia_va	Diameter of casing interval, in inches	NA
YF_gw_csng	csng_material	Casing material	Steel carbon; Stainless steel; Steel; Galvanized iron; Fiberglass
YF_gw_csng	csng_thick_va	Thickness of casing, in inches	NA
YF_gw_open	open_seq_nu	Sequence number of open interval	NA
YF_gw_open	open_top_va	Top of open interval, in feet below land surface	NA
YF_gw_open	open_bottom_va	Bottom of open interval, in feet below land surface	NA
YF_gw_open	open_dia_va	Diameter of open interval, in inches	NA
YF_gw_open	open_material	Material comprising open interval	Steel; Other; Stainless steel; Steel carbon
YF_gw_open	open	Type of opening	Perforated; Open hole; Screen; Other

Table 10. Description of Microsoft® Access database for Yucca Flat water-level measurements—Continued

Borehole lithology and aquifer data			
Access table name	Table column name	Description	Fixed variables
YF_gw_lith	lith_seq_nu	Sequence number of lithologic interval	NA
YF_gw_lith	lith_top_va	Top of lithologic interval, in feet below land surface	NA
YF_gw_lith	lith_bottom_va	Bottom of lithologic interval, in feet below land surface	NA
YF_gw_lith	lith_descr_tx	Lithologic description of lithologic interval	NA
YF_gw_lith	lith_rmk	Other remarks pertinent to the lithology of the interval	NA
YF_lith_tops	vf_top	Depth to top of valley fill, in feet below land surface	NA
YF_lith_tops	tert_volc_top	Depth to top of Tertiary volcanics, in feet below land surface	NA
YF_lith_tops	pre_T_carbs_top	Depth to top of pre-Tertiary carbonate rocks, in feet below land surface	NA
YF_lith_tops	pre_T_clastic_top	Depth to top of pre-Tertiary clastic rocks, in feet below land surface	NA
YF_lith_tops	lith_top_src	Source of information for depth to top of lithologic unit	Reported (data reported on lithologic log or other documented source); Estimated (data estimated from nearby logs or some other source)
YF_gw_aqfr	aqfr_cd_1	Code for primary aquifer contributing water to well	C (pre-Tertiary carbonate rocks); F (valley fill); S (pre-Tertiary clastic rocks); V (volcanic rocks); X (igneous or metamorphic rocks)
YF_gw_aqfr	aqfr_cd_2	Code for secondary aquifer contributing water to well	C (pre-Tertiary carbonate rocks); F (valley fill); P (paleocolluvium); S (pre-Tertiary clastic rocks); V (volcanic rocks); X (igneous or metamorphic rocks)
YF_gw_aqfr	aqfr_cd_3	Code for tertiary aquifer contributing water to well	C (pre-Tertiary carbonate rocks); S (pre-Tertiary clastic rocks); V (volcanic rocks); X (igneous or metamorphic rocks)
YF_gw_aqfr	aqfr	Primary aquifer contributing water to well	NA
YF_gw_aqfr	aqfr_era	Geologic era of primary aquifer	NA
YF_gw_aqfr	aqfr_system	Geologic system of primary aquifer	NA
YF_gw_aqfr	aqfr_series	Geologic series of primary aquifer	NA

Table 10. Description of Microsoft® Access database for Yucca Flat water-level measurements—Continued

Water-level data			
Access table name	Table column name	Description	Fixed variables
YF_gw_lev	lev_dtm	Date and time water level was measured	NA
YF_gw_lev	lev_dtm_acc	Accuracy to which the water-level date was entered	Minute; Day; Month; Year
YF_gw_lev	lev_ddy	Date, as a decimal year, that water level was measured	NA
YF_gw_lev	lev_va	Depth to water, in feet below land surface	NA
YF_gw_lev	sl_lev_va	Water-level altitude, in feet above sea level; datum is National Geodetic Vertical Datum of 1929	NA
YF_gw_lev	lev_src	Source of water-level measurement	USGS; Other reported; Geologist; Driller
YF_gw_lev	lev_status	Status of water-level measurement	Dry; Nearby pumping; Obstruction; Other; Pumping; Recently pumped
YF_gw_lev	lev_meth	Method of water-level measurement	Airline; Calib. elec. Tape; Electric tape (uncalibrated); Geophysical log; Other; Pressure gage; Reported; Steel tape; Transducer; Unknown
YF_gw_lev	lev_acy	Accuracy of water-level measurement, in feet	Nearest 1/10 foot; Nearest 1/100 foot; Nearest foot; Not nearest foot
YF_gw_lev	lev_party_tx	Organization making measurement	EG&G (NTS contractor); F&S (Fenix & Scisson--NTS contractor); NTS (USGS measurements collected after about 1996 for Nevada Test Site Program); NV013 (Desert Research Institute); Shaw (Shaw Environmental, Inc.); WTP (USGS measurements collected prior to about 1996 for NTS Weapons Testing Program)
YF_wl_rmks	wl_rmks_seq_nu	Sequence number of remark	NA
YF_wl_rmks	wl_rmks_dtm	Date of water level corresponding to remark	NA
YF_wl_rmks	wl_rmks_dtm_acc	Accuracy of date entry ("Year" means remark date only applies to the year)	Day; Month; Year
YF_wl_rmks	wl_rmks_tx	Remark relating to specific water level	NA

Table 10. Description of Microsoft® Access database for Yucca Flat water-level measurements—Continued

Water-level data--Continued			
Access table name	Table column name	Description	Fixed variables
YF_wl_attrib_gen	wl_attrib_gen	Attribute assigned to water level to describe the general hydrologic condition at the time of measurement	Insufficient data; Localized conditions; None; Nonstatic level; Steady state—LOCAL; Steady state—REGIONAL; Suspect; Transient—REGIONAL
YF_wl_attrib_det	wl_attrib_det_seq_nu	Sequence number of detailed hydrologic condition	NA
YF_wl_attrib_det	wl_attrib_det	Attribute assigned to water level to describe the detailed hydrologic condition at the time of measurement	Abrupt change; Anomalous – high; Anomalous – low; Borehole deviation; Consistent; Declining trend; Dry; Elevated; Equilibration; Erratic/Unstable; Injection/Recovery; Limited data; Maximum estimate; Minimum estimate; Nearby drilling effect; Nuclear-test effect; Obstruction; Packer test; Pumping area; Pumping/Recovery; Rising trend; Suspected perched water; Testing area; Undeveloped; Well-construction effect
YF_hyd_narrative	hyd_narrative	Narrative discussing well site, hydrograph, and specific water levels.	NA