HYDROLOGIC DATA FOR THE PUERCO RIVER BASIN, WESTERN NEW MEXICO, OCTOBER 1, 1991, THROUGH SEPTEMBER 30, 1992

By Robert L. Gold and Dale R. Rankin

U.S. GEOLOGICAL SURVEY
Open-File Report 94-377

Prepared in cooperation with the
ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
and the
NEW MEXICO ENVIRONMENT DEPARTMENT

Albuquerque, New Mexico
1994

U.S. DEPARTMENT OF THE INTERIOR

BRUCE BABBITT, *Secretary*

U.S. GEOLOGICAL SURVEY

Gordon P. Eaton, *Director*

For additional information
write to:

District Chief
U.S. Geological Survey
Water Resources Division
4501 Indian School Rd. NE, Suite 200
Albuquerque, New Mexico 87110

Copies of this report can
be purchased from:

U.S. Geological Survey
Earth Science Information Center
Open-File Reports Section
Box 25286, MS 517
Denver Federal Center
Denver, Colorado 80225

CONTENTS

FIGURES

TABLES

TABLES--Concluded

CONVERSION FACTORS AND VERTICAL DATUM

Multiply	By	To obtain
inch	25.40	millimeter
foot	0.3048	meter
mile	1.609	kilometer
acre	4,047	square meter
square mile	2.590	square kilometer
acre-foot	1,233	cubic meter
gallon	3.785	liter
cubic foot per second	0.02832	cubic meter per second

Sea level: In this report, "sea level" refers to the National Geodetic Vertical Datum of 1929--a geodetic datum derived from a general adjustment of the first-order level nets of the United States and Canada, formerly called Sea Level Datum of 1929.

HYDROLOGIC DATA FOR THE PUERCO RIVER BASIN, WESTERN NEW MEXICO, OCTOBER 1, 1991, THROUGH SEPTEMBER 30, 1992

By Robert L. Gold and Dale R. Rankin

ABSTRACT

Hydrologic data collected during October 1, 1991, through September 30, 1992, in the Puerco River Basin, western New Mexico, are summarized in this report. The effects of uranium mining and a 1979 mill tailings spill, in combination with naturally occurring and potentially hazardous trace elements, have created a concern that surface water and ground water in the Puerco River Basin may be unsafe for irrigation, livestock watering, and domestic use; therefore, a data collection network was established to monitor the suitabililty of the water resources in the Puerco River Basin.

The data collection network consisted of one streamflow-gaging station, three water-well clusters, and nine streambed sites. The network is located along a reach of the Puerco River beginning near the confluence of the Puerco River and Pipeline Arroyo and ending approximately 9 miles upstream from the New Mexico-Arizona State line. Data tabulated and presented include mean daily discharge, ground-water hydrographs, water quality, and sediment chemistry and particle-size distribution.

INTRODUCTION

The Puerco River in western New Mexico drains an area that contains major uranium deposits (Wirt and others, 1991) and that has been subjected to uranium mining since the late 1950's. Mining activities, which include mine dewatering, have resulted in discharges to the Puerco River that contain radionuclides and other elements. In addition to these routine mine discharges, failure of a tailings pond at a uranium mill on July 16, 1979, resulted in an estimated 94 million gallons of acidic wastewater (Millard and others, 1983) discharging into Pipeline Arroyo and consequently into the Puerco River. The effects of the uranium mining and the spill, in combination with naturally occurring and potentially hazardous trace elements, have created a concern that surface water and ground water in the Puerco River Basin may be unsafe for irrigation, livestock watering, and domestic use. To address these concerns, the U.S. Geological Survey, in cooperation with the Arizona Department of Environmental Quality and the New Mexico Environment Department, collected surface-water, ground-water, sediment, water-quality, and sediment-chemistry data to monitor the suitability of the water resources in the Puerco River Basin.

Purpose and Scope

This report describes the hydrologic data collected in the Puerco River Basin in western New Mexico by the U.S. Geological Survey during October 1, 1991, through September 30, 1992. Included in the report are a summary of the mean daily discharge, ground-water hydrographs, water quality, and sediment chemistry and particle-size distribution. Hydrologic data were

collected from a data collection network, established in 1988 as part of a prior study, consisting of one streamflow-gaging station, three water-well clusters, and nine streambed sites located along a reach of the Puerco River.

Study Area

The study area is a reach of the Puerco River in western New Mexico. The reach begins near the northern headwaters of the Puerco River in McKinley County near the confluence of the Puerco River and Pipeline Arroyo, then extends past the confluence with the South Fork of the Puerco River, through the city of Gallup, and terminates approximately 9 miles upstream from the New Mexico-Arizona State line. The locations of the study area and the data collection sites are shown in figure 1.

Previous Studies

The water resources of the Puerco River Basin have been studied by several Federal and State agencies. Most of these studies were conducted because of the possible effects of uranium deposits and uranium mining in the upper reaches of the Puerco River Basin on water supplies.

In response to the uranium mill tailings spill in 1979, the State of New Mexico Environment Department (NMED) (formerly called the New Mexico Environmental Improvement Division) conducted a program to monitor environmental conditions in the area around and downstream from the spill. Surface water, ground water, soils and sediment, air particulates, vegetation, gamma radiation, and livestock tissues were sampled. Using the results of NMED's sampling program and data collected by eight Federal and State agencies and four private contractors, NMED published a summary report (Millard and others, 1983). Millard and others (1983) analyzed the data to evaluate the impact of the spill on the environment and recommended future studies and means to limit adverse effects of the spill on inhabitants in the area.

The NMED, funded by the U.S. Environmental Protection Agency, compiled a regional assessment of the Grants Mineral Belt from 1978 to 1982. The mineral belt includes the New Mexico part of the Puerco River Basin. The purpose of the assessment was to evaluate the impacts of uranium mining on the quality of surface water and shallow ground water in the Grants Mineral Belt and to evaluate means to control water contamination resulting from uranium mining.

Gallaher and Cary (1986) listed water-quality data collected at various sites and analyses of those data. The report, in part, assessed water-quality conditions in the Puerco River Basin. Gallaher and Cary also included a series of recommendations concerning possible regulatory action to mitigate contamination of water supplies.

Van Metre and Gray (1991) expanded on the work of Gallaher and Cary (1986). Their study included analysis of additional chemical constituents, incorporation of data collected after mine dewaterings ended in February 1986, and evaluation of the relation of constituents to stream discharge and distance from the uranium mines. They also estimated total releases of uranium and gross alpha activity resulting from mine dewatering and the 1979 tailings-pond spill. A lumped-parameter digital computer model was used to investigate the path followed by the uranium that was released by the mines into the alluvial ground water.

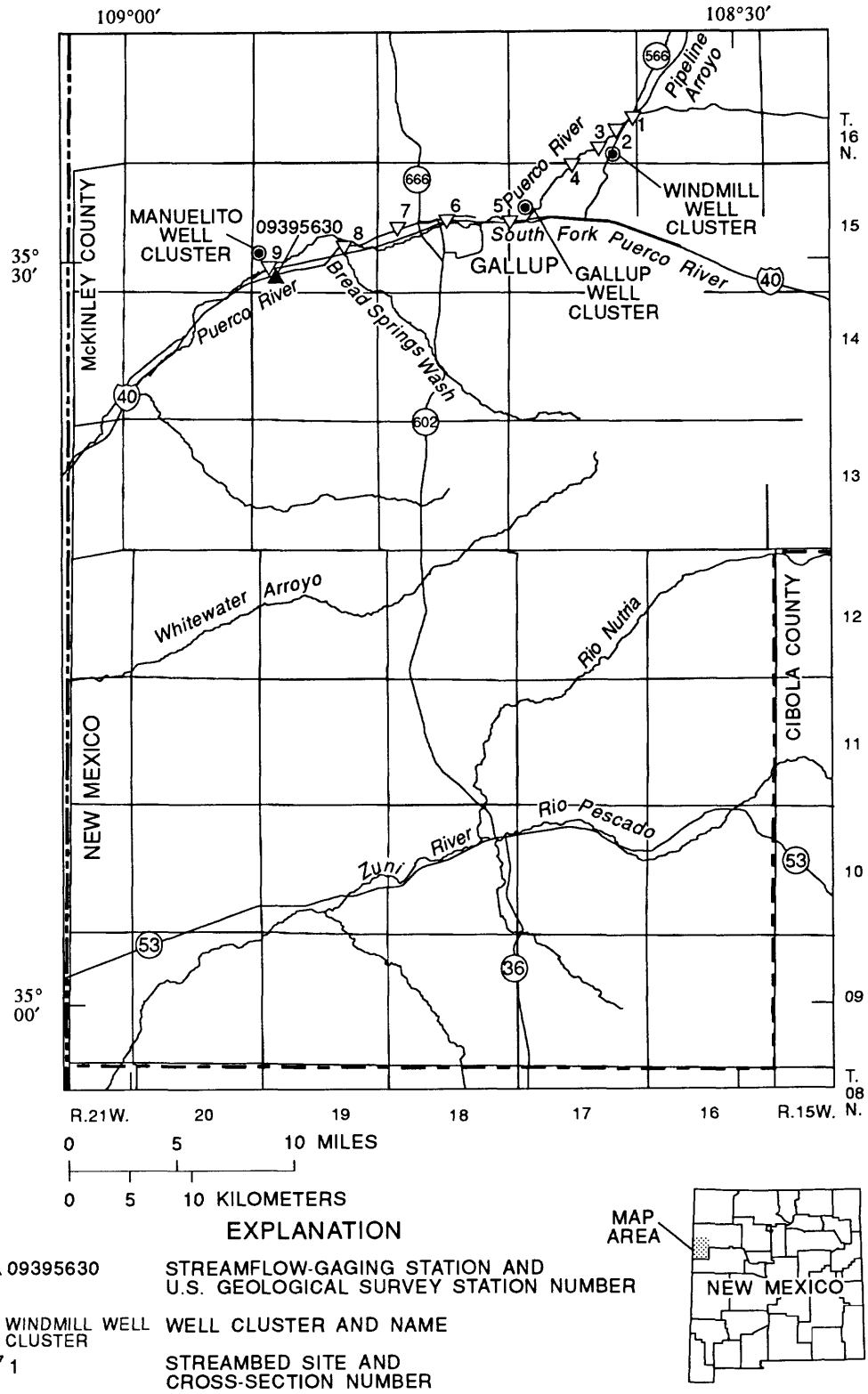


Figure 1.--Location of study area and streamflow-gaging station, well clusters, and streambed sites for the Puerco River Basin study, western New Mexico.

A comprehensive review of historical water-quality data collected in the Puerco River Basin was conducted by the U.S. Geological Survey in the late 1980's. The study surveyed data collected by Federal and State agencies, as well as private companies. Data compiled from 1942 to 1988 were published in a report by Wirt and others (1991). A major part of the publication is an extensive bibliography of geologic, hydrologic, and water-quality investigations in the Puerco River Basin.

In 1985, the U.S. Geological Survey conducted a reconnaissance of the ground-water quality in the Puerco River Basin in cooperation with the Office of Navajo and Hopi Indian Relocation, U.S. Bureau of Indian Affairs. The study resulted from concern about the quality of surface water and ground water in the Puerco River Basin. These waters may serve as water supplies for those living on Navajo Tribal Trust Lands. The results of the reconnaissance study were reported by Webb and others (1987 a,b).

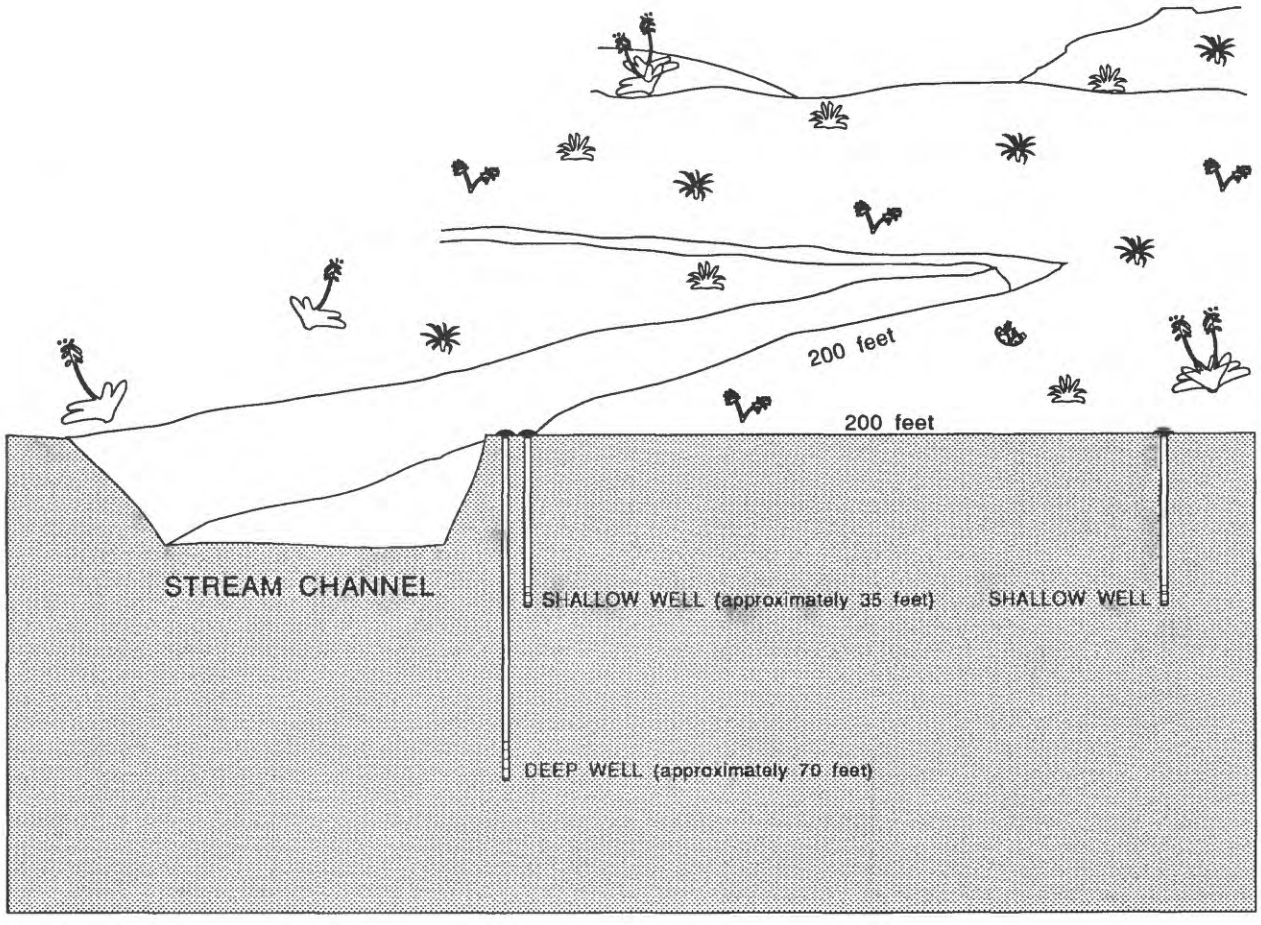
In 1988, the U.S. Geological Survey began a 4-year study of the occurrence and movement of radionuclides and other trace metals in ground water and surface water in the Puerco River Basin in northeastern Arizona and northwestern New Mexico. A data collection network was established using streamflow-gaging stations and observation water wells to monitor water-quality trends in the basin. Some of the sites established for that network are the same sites used for collection of the data published in this report.

DESCRIPTION OF THE DATA COLLECTION NETWORK

The data collection network consisted of one streamflow-gaging station, three observation water-well clusters, and nine streambed sites. The network sites (fig. 1) were distributed along the reach of the Puerco River in New Mexico. The site name, site number, and types of data collected at each data collection site are listed in table 1 (all tables are in the back of the report).

The streamflow-gaging station on the Puerco River was installed and operated to determine changes in water quality and sediment discharge in response to storm runoff, and to record streamflow. Automatic sampling equipment collected water samples when the water level in the river reached a predetermined height. Sampling then continued at set time intervals until the runoff event had passed the gaging station. The water level was continuously monitored and recorded at 15-minute intervals during October 1, 1991, through September 30, 1992. The water level was used to compute streamflow, in cubic feet per second, in the river. Once these computations have been made, the resulting streamflow data can be compared with concurrent water-quality data to determine trends in water quality as related to streamflow.

The water-well clusters were constructed to collect data that could be used to determine changes in ground-water quality adjacent to the Puerco River. Water-quality samples were periodically collected from each well and analyzed. Water levels in three of the wells--two in the Windmill Cluster and one in the Manuelito Cluster--were continuously monitored from April to August 1992. A schematic representation of an idealized well cluster is shown in figure 2.



NOT TO SCALE

Figure 2.--Schematic diagram showing idealized well cluster used for the Puerco River Basin study.

Streambed sites were established to collect data that characterize the chemistry and particle-size distribution of the Puerco River stream-channel sediments. Streambed samples were collected using a plunger-type device at nine preestablished stream cross sections. Each of these cross sections was sampled either March 31 or April 1, 1992.

PRESENTATION OF DATA

Data tabulated and listed in this report are arranged by sampling station. Table 1 lists site names and numbers and the types of data collected. For the streamflow-gaging station, water-quality and sediment data are listed in table 2, and mean daily discharge values for October 1, 1991, through September 30, 1992, are listed in table 3. For the three clusters of observation wells, water-quality constituents are listed in tables 4-12. Hydrographs of water-level data for April to August 1992 for wells equipped with recorders are shown in figures 3-5; in some cases the recorded data are incomplete because of recorder malfunction. Streambed analyses are listed in tables 13-21. Tables 2-21 also give detailed descriptions of each site location.

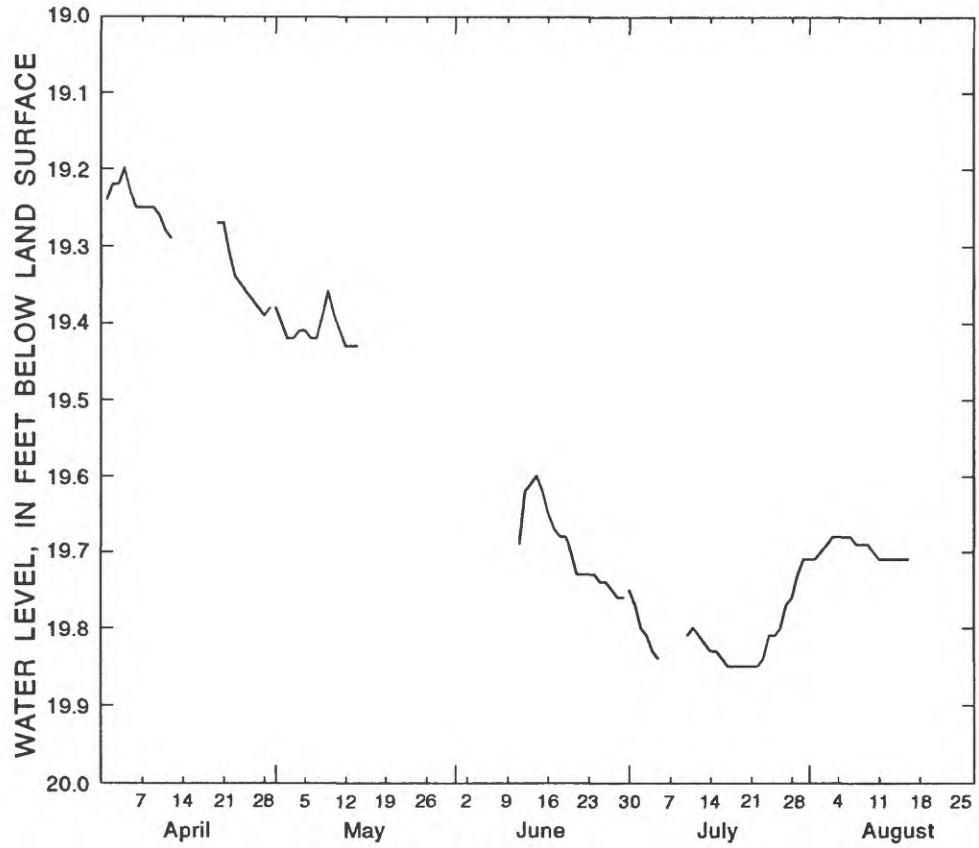


Figure 3.--Daily maximum water levels for Windmill well 3A, Puerco River Basin, April - August 1992.

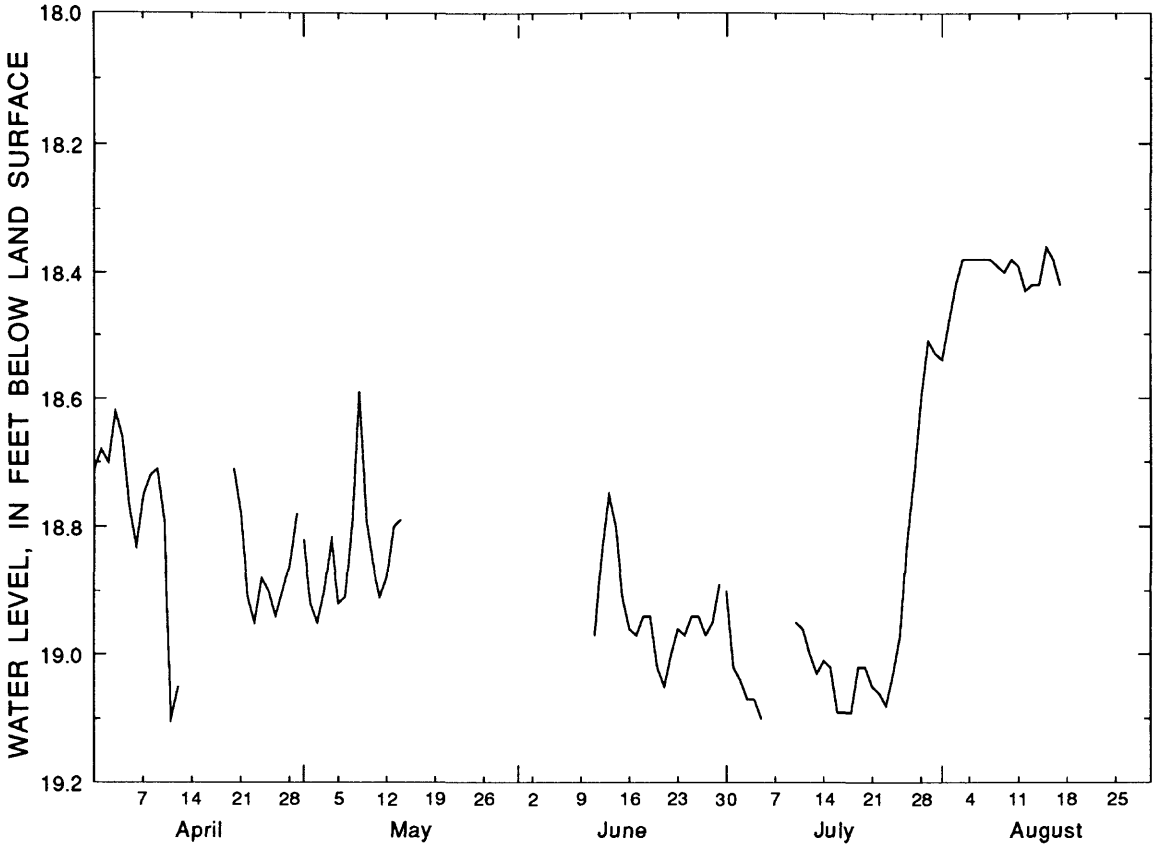


Figure 4.--Daily maximum water levels for Windmill well 3B, Puerco River Basin, April - August 1992.

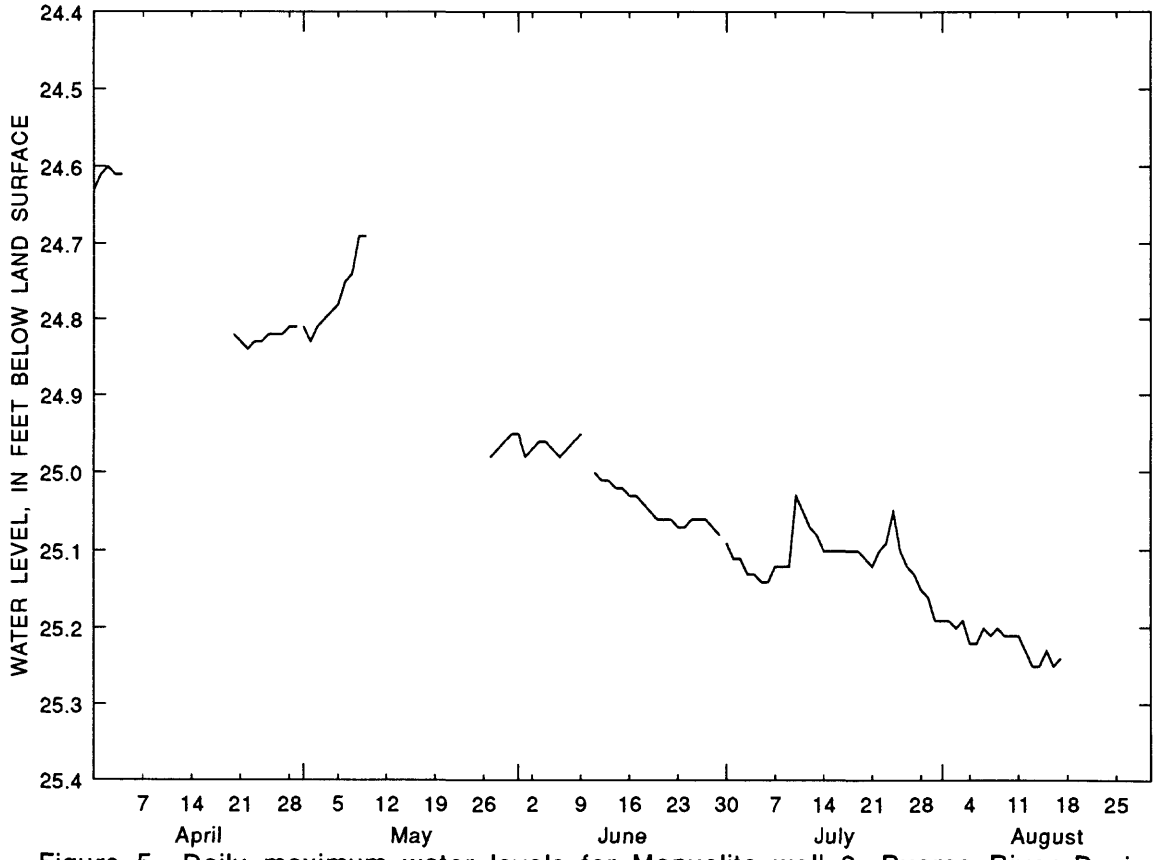


Figure 5.--Daily maximum water levels for Manuelito well 2, Puerco River Basin, April - August 1992.

REFERENCES

Gallaher, B.M., and Cary, S.J., 1986, Impacts of uranium mining on surface and shallow ground waters--Grants Mineral Belt, New Mexico: New Mexico Health and Environment Department, New Mexico Health and Environmental Improvement Division Report, 152 p.

Millard, J., Gallaher, B., Baggett, D., and Cary, D., 1983, The Church Rock uranium mill-tailings spill--A health and environmental assessment, summary report: New Mexico Health and Environment Department, New Mexico Health and Environmental Improvement Division Report, 37 p.

Van Metre, P.C., and Gray, J.R., 1991, Effects of uranium-mining discharges on water quality in the Puerco River basin, Arizona and New Mexico: International Association of Hydrological Sciences, Hydrological Sciences Journal, 38 p.

Webb, R.H., Rink, G.R., and Favor, B.O., 1987a, Distribution of radionuclide and trace elements in ground water, grasses, and surficial sediments associated with the alluvial aquifer along the Puerco River, northeastern Arizona--A reconnaissance sampling program: U.S. Geological Survey Open-File Report 87-206, 108 p.

Webb, R.H., Rink, G.R., and Radtcke, D.B., 1987b, Preliminary assessment of water quality in the alluvial aquifer of the Puerco River basin, northeastern Arizona: U.S. Geological Survey Water-Resources Investigations Report 87-4126, 70 p.

Wirt, L., Van Metre, P.C., and Favor, B.O., 1991, Historical water-quality data, Puerco River basin, Arizona and New Mexico: U.S. Geological Survey Open-File Report 91-196, 339 p.

Table 1.--Data collection sites and types of data collected for the Puerco River Basin study

[Q, streamflow; WQ, water quality; SED, sediment; W, well; WL, water level; BED, sediment chemistry. Locations shown in figure 1]

Site name	Site number	Type of data collected
	Streamflow-gaging station	
Puerco River near Manuelito, N. Mex.	09395630	Q, WQ, SED
	Windmill well cluster	
Windmill drivepoint well	353537108355001	WQ
Windmill well 1	353535108355004	W
Windmill well 3	353536108354901	WL[1], WQ
	Gallup well cluster	
Gallup well 1	353220108400001	WQ
Gallup well 3	353220108400003	WQ
Gallup well 4	353220108400004	WQ
	Manuelito well cluster	
Manuelito drivepoint well	352742108562301	WQ
Manuelito well 2	352742108563301	WL, WQ
Manuelito well 3	352743108563401	WQ
	Puerco River streambed	
Cross section 1	353716108312701	SED, BED
Cross section 2	353640108333601	SED, BED
Cross section 3	353537108353901	SED, BED
Cross section 4	353445108372701	SED, BED
Cross section 5	353153108403201	SED, BED
Cross section 6	353143108444101	SED, BED
Cross section 7	353048108483201	SED, BED
Cross section 8	352933108535301	SED, BED
Cross section 9	352753108563201	SED, BED

[1]Water levels recorded at two wells (A and B)

Table 2.--Water-quality and sediment data for the streamflow-gaging station Puerco River near Manuelito, New Mexico

[Site number: 09395630. Location: McKinley County, latitude 35°27'42", longitude 108°56'42", in sec. 10, T. 14 N., R. 20 W., on right bank on downstream side of Atchison, Topeka, and Santa Fe Railway, 200 feet upstream from Interstate Highway 40, 1.2 miles upstream from Hunting Canyon, and 12.6 miles west of Gallup. µS/cm, microsiemens per centimeter at 25 degrees Celsius; deg C, degrees Celsius; mg/L, milligrams per liter; µg/L, micrograms per liter; pCi/L, picocuries per liter; pCi/g, picocuries per gram; µg/g, micrograms per gram; Sr, strontium; Y, yttrium; Cs, cesium; bot mat, bottom material; U, uranium; Th, thorium; Ra, radium, ds, dry sieve; u, microns; radio, radioactivity; wgt, weight; sed, sediment; susp, suspended; diam, diameter; %, percent; mm, millimeter; nat, natural; wat dis, water dissolved; --, no data; <, less than]

Date	Starting time	Ending time	Discharge, instantaneous (cubic feet per second)	Discharge, mean (cubic feet per second)	Specific conductance (µS/cm)	pH, water whole, field (standard units)	Solids, residue at 180 deg C, dissolved (mg/L)	Alkalinity, lab (mg/L)	Calcium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Potassium, dissolved (mg/L)
July 24, 1992	2340	--	1,800	--	532	--	--	--	--	--	--	--
July 24-25, 1992	2340	0130	--	1,860	552	7.8	342	218	43	7.2	61	3.9
July 25, 1992	0010	--	2,110	--	652	--	--	--	--	--	--	--
July 25, 1992	0050	--	2,050	--	719	--	--	--	--	--	--	--
July 25, 1992	0110	--	1,690	--	568	--	--	--	--	--	--	--
July 25, 1992	0130	--	1,610	--	476	--	--	--	--	--	--	--
August 24, 1992	1030	--	3,640	--	413	--	--	--	--	--	--	--
August 24, 1992	1030	1230	--	3,370	410	8.0	247	165	31	5.0	44	2.9
August 24, 1992	1050	--	2,600	--	347	--	--	--	--	--	--	--
August 24, 1992	1210	--	3,430	--	417	--	--	--	--	--	--	--
August 24, 1992	1230	--	3,330	--	392	--	--	--	--	--	--	--

Date	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)	Silica, dissolved (mg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)	Lead, dissolved (µg/L)
July 24, 1992	--	--	--	--	--	--	--	--	--	--	--
July 24-25, 1992	12	0.70	9.7	61	<0.5	<1.0	<5	<3	<10	39	<10
July 25, 1992	--	--	--	--	--	--	--	--	--	--	--
July 25, 1992	--	--	--	--	--	--	--	--	--	--	--
July 25, 1992	--	--	--	--	--	--	--	--	--	--	--
July 25, 1992	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	7.0	.70	8.2	48	< .5	<1.0	<5	<3	<10	53	<10
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--

Table 2.--Water-quality and sediment data for the streamflow-gaging station Puerco River near Manuelito, New Mexico--Continued

Date	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)	Lithium, dissolved (µg/L)	Selenium, dissolved (µg/L)	Gross beta, dissolved (pCi/L as cesium-137)	Beta, sediment, bottom material total dry as Sr-90/Y-90 (pCi/g)	U-238 2 sigma sediment, suspended total dry weight (pCi/g)
July 24, 1992	--	--	--	--	--	--	--	--	--	--	--	--
July 24-25, 1992	12	<10	<10	<1.0	590	<6	7	8	<1	7.2	28	0.18
July 25, 1992	--	--	--	--	--	--	--	--	--	--	--	--
July 25, 1992	--	--	--	--	--	--	--	--	--	--	--	--
July 25, 1992	--	--	--	--	--	--	--	--	--	--	--	--
July 25, 1992	--	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	<1	<10	<10	<1.0	420	<6	3	6	<1	6.8	27	.15
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--	--

Date	Alpha sediment bot mat dry wgt as Th-230 (pCi/g)	Alpha radio water, dissolved as Th-230 (pCi/L)	Ra-226, dissolved, planchet count (pCi/L)	Uranium -238 water, dissolved (pCi/L)	Uranium -234 water, dissolved (pCi/L)	Uranium -235 water, dissolved (pCi/L)	Aluminum bot mat <63u ds, lab (percent)	Arsenic bot mat <63u ds, lab (µg/g)	Barium bot mat <63u ds, lab (µg/g)	Beryllium bot mat <63u ds, lab (µg/g)	Bismuth bot mat <63u ds, lab (µg/g)	Cadmium bot mat <63u ds, lab (µg/g)
July 24, 1992	--	--	--	--	--	--	--	--	--	--	--	--
July 24-25, 1992	20	3.3	<0.1	1.5	2.3	<0.1	6.0	<10	700	2	<10	<2
July 25, 1992	--	--	--	--	--	--	--	--	--	--	--	--
July 25, 1992	--	--	--	--	--	--	--	--	--	--	--	--
July 25, 1992	--	--	--	--	--	--	--	--	--	--	--	--
July 25, 1992	--	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	20	3.5	.1	.90	1.5	< .1	5.6	<10	790	1	<10	<2
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--	--

Date	Calcium bot mat <63u ds, lab (percent)	Cerium bot mat <63u ds, lab (µg/g)	Chromium bot mat <63u ds, lab (µg/g)	Cobalt bot mat <63u ds, lab (µg/g)	Copper bot mat <63u ds, lab (µg/g)	Europium bot mat <63u ds, lab (µg/g)	Gallium bot mat <63u ds, lab (µg/g)	Gold bot mat <63u ds, lab (µg/g)	Holmium bot mat <63u ds, lab (µg/g)	Iron bot mat <63u ds, lab (percent)	Lanthanum bot mat <63u ds, lab (µg/g)	Lead bot mat <63u ds, lab (µg/g)
July 24, 1992	--	--	--	--	--	--	--	--	--	--	--	--
July 24-25, 1992	0.92	68	29	10	20	<2	13	<8	<4	2.1	37	21
July 25, 1992	--	--	--	--	--	--	--	--	--	--	--	--
July 25, 1992	--	--	--	--	--	--	--	--	--	--	--	--
July 25, 1992	--	--	--	--	--	--	--	--	--	--	--	--
July 25, 1992	--	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	.86	66	25	10	15	<2	12	<8	<4	1.9	36	19
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--	--

Table 2.--Water-quality and sediment data for the streamflow-gaging station Puerco River near Manuelito, New Mexico--Continued

Date	Lithium bot mat <63u ds, lab (µg/g)	Magnesium bot mat <63u ds, lab (percent)	Manganese bot mat <63u ds, lab (µg/g)	Molybdenum bot mat <63u ds, lab (µg/g)	Neodymium bot mat <63u ds, lab (µg/g)	Nickel bot mat <63u ds, lab (µg/g)	Niobium bot mat <63u ds, lab (µg/g)	Phosphorus bot mat <63u ds, lab (percent)	Potassium bot mat <63u ds, lab (percent)	Scandium bot mat <63u ds, lab (µg/g)	Silver bot mat <63u ds, lab (µg/g)	Sodium bot mat <63u ds, lab (percent)
July 24, 1992	--	--	--	--	--	--	--	--	--	--	--	--
July 24-25, 1992	21	0.48	300	<2	30	12	8	0.04	2.1	7	<4	0.96
July 25, 1992	--	--	--	--	--	--	--	--	--	--	--	--
July 25, 1992	--	--	--	--	--	--	--	--	--	--	--	--
July 25, 1992	--	--	--	--	--	--	--	--	--	--	--	--
July 25, 1992	--	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	20	.43	290	<2	29	11	7	.04	2.1	6	<4	.96
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--	--

Date	Strontium bot mat <63u ds, lab (µg/g)	Tantalum bot mat <63u ds, lab (µg/g)	Thorium bot mat <63u ds, lab (µg/g)	Tin bot mat <63u ds, lab (µg/g)	Titanium bot mat <63u ds, lab (percent)	Uranium bot mat <63u ds, lab (µg/g)	Vanadium bot mat <63u ds, lab (µg/g)	Yttrium bot mat <63u ds, lab (µg/g)	Ytterbium bot mat <63u ds, lab (µg/g)	Zinc bot mat <63u ds, lab (µg/g)	Sediment, suspended (mg/L)
July 24, 1992	--	--	--	--	--	--	--	--	--	--	162,000
July 24-25, 1992	170	<40	13	<5	0.35	<100	59	22	2	62	--
July 25, 1992	--	--	--	--	--	--	--	--	--	--	170,000
July 25, 1992	--	--	--	--	--	--	--	--	--	--	147,000
July 25, 1992	--	--	--	--	--	--	--	--	--	--	143,000
July 25, 1992	--	--	--	--	--	--	--	--	--	--	96,400
August 24, 1992	--	--	--	--	--	--	--	--	--	--	56,100
August 24, 1992	150	<40	12	<5	.30	<100	53	19	2	56	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	46,500
August 24, 1992	--	--	--	--	--	--	--	--	--	--	45,800
August 24, 1992	--	--	--	--	--	--	--	--	--	--	36,200
August 24, 1992	--	--	--	--	--	--	--	--	--	--	49,000
August 24, 1992	--	--	--	--	--	--	--	--	--	--	40,000

Date	Sed susp sieve diam, % finer than 0.062 mm	Sed susp fall diam, % finer than 0.002 mm	Sed susp fall diam, % finer than 0.004 mm	Sed susp fall diam, % finer than 0.008 mm	Sed susp fall diam, % finer than 0.016 mm	Sed susp fall diam, % finer than 0.062 mm	Sed susp fall diam, % finer than 0.125 mm	Sed susp fall diam, % finer than 0.250 mm	Mercury total recoverable (µg/L)	Th-232 2 sigma sed, susp, total, dry wgt (pCi/g)	Th-230 sed, susp, total, dry wgt (pCi/g)
July 24, 1992	65	--	--	--	--	--	--	--	--	--	--
July 24-25, 1992	--	--	--	--	--	--	--	--	6.0	0.01	<0.1
July 25, 1992	68	--	--	--	--	--	--	--	--	--	--
July 25, 1992	63	--	--	--	--	--	--	--	--	--	--
July 25, 1992	73	--	--	--	--	--	--	--	--	--	--
July 25, 1992	68	--	--	--	--	--	--	--	--	--	--
August 24, 1992	78	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	2.4	.03	<.1
August 24, 1992	97	--	--	--	--	--	--	--	--	--	--
August 24, 1992	99	--	--	--	--	--	--	--	--	--	--
August 24, 1992	100	37	41	46	54	76	96	100	--	--	--
August 24, 1992	89	--	--	--	--	--	--	--	--	--	--
August 24, 1992	100	--	--	--	--	--	--	--	--	--	--

Table 2.--Water-quality and sediment data for the streamflow-gaging station Puerco River near Manuelito, New Mexico--Concluded

Date	U-238 sed, susp, total, dry wgt (pCi/g)	U-234 2 sigma sed, susp, total, dry wgt (pCi/g)	U-234 sed, susp, total, dry wgt (pCi/g)	Ra-226 2 sigma sed, susp, total, dry wgt (pCi/g)	Ra-226 sed, susp, total, dry wgt (pCi/g)	U-235 2 sigma sed, susp, total, dry wgt (pCi/g)	Th-230 2 sigma sed, susp, total, dry wgt (pCi/g)	Th-232 sed, susp, total, dry wgt (pCi/g)	Alpha, 2 sigma sed, bot mat tot dry Th-230 (pCi/g)	Alpha, 2 sigma sed, bot mat tot dry nat U (µg/g)	Beta, 2 sigma bot mat tot dry Sr-90/ Y-90 (pCi/g)
July 24, 1992	--	--	--	--	--	--	--	--	--	--	--
July 24-25, 1992	1.4	0.18	1.5	0.23	1.3	0.02	0.01	<0.1	9.1	13	8.6
July 25, 1992	--	--	--	--	--	--	--	--	--	--	--
July 25, 1992	--	--	--	--	--	--	--	--	--	--	--
July 25, 1992	--	--	--	--	--	--	--	--	--	--	--
July 25, 1992	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	1.0	.17	1.2	.21	1.1	.02	.02	<.1	9.0	12	4.3
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--

Date	U-235 sed, susp, total, dry wgt (pCi/L)	Alpha, count, 2 sigma wat dis as nat U (µg/L)	Alpha, count, 2 sigma wat dis as Th-230 (pCi/L)	Beta, 2 sigma wat dis as Sr-90 /Y-90 (pCi/L)	Beta, 2 sigma wat dis as Cs-137 (pCi/L)	U-238 2 sigma wat dis (pCi/L)	U-234 2 sigma wat dis (pCi/L)	U-235 2 sigma wat dis (pCi/L)	Ra-226 2 sigma wat dis (pCi/L)	Gross alpha, dis-solved (µg/L as U-nat)	Gross beta, dis-solved (pCi/L as Sr/ Y-90)
July 24, 1992	--	--	--	--	--	--	--	--	--	--	--
July 24-25, 1992	<0.1	1.3	0.96	1.2	1.5	0.18	0.3	0.02	0.084	4.6	5.6
July 25, 1992	--	--	--	--	--	--	--	--	--	--	--
July 25, 1992	--	--	--	--	--	--	--	--	--	--	--
July 25, 1992	--	--	--	--	--	--	--	--	--	--	--
July 25, 1992	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	< .1	1.4	1.0	1.7	1.8	.12	.2	.02	.116	4.8	5.0
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--
August 24, 1992	--	--	--	--	--	--	--	--	--	--	--

Table 3.--Mean daily discharge, in cubic feet per second, at the streamflow-gaging station Puerco River near Manuelito, New Mexico, October 1, 1991, through September 30, 1992

[Site number: 09395630. Location: McKinley County, latitude 35°27'42", longitude 108°56'42", in sec. 10, T. 14 N., R. 20 W., on right bank on downstream side of Atchison, Topeka, and Santa Fe Railway, 200 feet upstream from Interstate Highway 40, 1.2 miles upstream from Hunting Canyon, and 12.6 miles west of Gallup. Drainage area: 990 square miles; period of record: May 1989 to September 1992; e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
1	e1.6	e1.9	e1.0	e.090	e2.4	e6.6	16	e2.9	9.7	2.6	e3.2	207
2	e1.6	e1.7	e1.0	e.90	e2.4	e6.6	e11	e3.3	e8.0	2.8	e3.2	140
3	e1.5	e1.7	e1.0	e.90	e2.4	e6.6	e10	e3.4	e6.8	2.6	e3.4	99
4	e1.5	e1.7	e.00	e.90	e2.4	e6.6	e9.3	e3.4	e5.8	3.0	e3.6	76
5	e1.5	e1.6	e.00	e.90	e2.4	e6.6	e8.7	e3.4	e5.0	3.1	e3.8	66
6	e1.5	e1.5	e.00	e.90	e2.3	e6.6	e8.4	e3.4	e4.4	2.1	e4.0	e6.0
7	e1.5	e1.5	e.00	e.90	e2.3	73	e8.0	e3.5	e3.5	2.6	e4.0	e5.8
8	e1.4	e1.4	e.00	e.90	e2.3	e10	e7.3	17	e3.0	4.1	e4.0	e5.8
9	e1.4	e1.4	e.00	e.90	e2.3	e10	e7.0	22	14	5.1	e4.0	e5.8
10	e1.4	e1.4	e.00	e.90	e2.3	76	e6.4	135	23	60	e4.0	e5.8
11	e1.4	46	e.00	e.90	e2.3	e11	e6.2	22	e3.8	80	19	e5.7
12	e1.4	34	e.00	e1.5	e2.3	e11	e6.0	13	e3.6	107	20	e5.7
13	e1.4	e1.4	e.00	e1.5	38	e11	e6.4	9.8	e3.2	40	7.8	e5.6
14	e1.3	e1.3	e.00	e1.5	31	e11	e6.6	11	e3.2	20	11	e5.6
15	e1.3	77	e.00	e1.5	37	e11	e6.8	5.0	e3.2	14	16	e5.6
16	e1.3	61	e.00	e1.5	e6.4	e11	e6.0	15	e3.1	15	13	e5.6
17	e1.3	e1.2	e.00	e1.5	e6.5	e10	e5.4	55	e3.1	18	27	e5.5
18	e1.3	e1.1	e1.0	e1.4	e6.6	e10	e4.5	39	e3.1	18	51	e5.4
19	e1.2	e1.1	e1.0	e1.4	e6.6	e10	e4.2	42	e3.1	73	e10	113
20	e1.2	e1.1	e1.0	e1.4	e6.6	e10	e3.6	33	e3.1	7.7	e6.0	189
21	e1.2	e1.1	e1.0	e2.5	e6.6	e12	e3.3	76	e3.1	2.8	e6.0	63
22	e1.2	e1.1	e1.0	e2.5	e6.6	e12	e3.0	46	e3.1	7.7	e10	e7.0
23	e1.6	e1.1	e1.0	e2.5	e6.6	e12	e3.0	72	e3.0	30	53	e6.1
24	e1.5	e1.1	e1.0	e2.5	e6.6	e12	e3.0	23	e3.0	112	1,050	e5.4
25	e1.4	e1.0	e1.0	e2.4	e6.6	e12	e3.0	16	2.1	317	143	e5.4

Table 3.--Mean daily discharge, in cubic feet per second, at the streamflow-gaging station Puerco River near Manuelito, New Mexico, October 1, 1991, through September 30, 1992--Concluded

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
26	e1.4	e1.0	e1.0	e2.4	e6.6	e12	e2.9	21	2.8	15	108	e5.4
27	e2.0	e1.0	e1.0	e2.4	e6.6	e12	e2.9	5.0	2.6	6.2	e10	e5.3
28	e1.9	e1.0	e1.0	e2.4	e6.6	e12	e2.9	e5.0	2.1	e3.2	e10	e5.3
29	e1.8	e1.0	e1.0	e2.4	e6.6	e12	e2.9	e6.0	2.2	e3.2	e10	e5.3
30	e2.0	e1.0	e1.0	e2.4	--	25	e2.9	6.6	2.1	e3.2	e10	e5.1
31	e1.9	--	e1.0	e2.4	--	26	--	42	--	e3.2	71	--
Total	45.9	251.4	17.00	49.90	226.2	473.6	177.6	760.7	141.8	984.2	1,699.0	1,077.2
Mean	1.48	8.38	.55	1.61	7.80	15.3	5.92	24.5	4.73	31.7	54.8	35.9
Maximum	2.0	77	1.0	2.5	38	76	16	135	23	317	1,050	207
Minimum	1.2	1.0	.00	.90	2.3	6.6	2.9	2.9	2.1	2.1	3.2	5.1
Acre-feet	91	499	34	99	449	939	352	1,510	281	1,950	3,370	2,140

Table 4.--Selected water-quality data for Windmill well cluster--drivepoint well

[Site number: 353537108355001. Location: McKinley County, latitude 35°35'37", longitude 108°35'50", in sec. 25, T. 16 N., R. 17 W. µS/cm, microsiemens per centimeter at 25 degrees Celsius; deg C, degrees Celsius; mg/L, milligrams per liter; µg/L, micrograms per liter; pCi/L, picocuries per liter; --, no data; <, less than]

Date	Time	Depth of well, total (feet)	Altitude of land-surface datum (feet above sea level)	Specific conductance (µS/cm)	pH, water whole, field (standard units)	Temperature, air (deg C)	Temperature, water (deg C)	Solids, residue at 180 deg C, dissolved (mg/L)	Calcium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Silica, dissolved (mg/L)
April 01, 1992	1345	--	6,672	1,300	7.6	10.0	8.0	994	180	31	100	8.6

Date	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)	Lead, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Silver, dissolved (µg/L)
April 01, 1992	91	<0.5	<1.0	<5	<3	<10	480	<10	2,900	20	<10	1.0

Date	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)	Lithium, dissolved (µg/L)	Selenium, dissolved (µg/L)	Gross beta, dissolved (pCi/L as cesium-137)	Alpha radio water dissolved, as thorium-230 (pCi/L)	Radium-226, dissolved, planchet count (pCi/L)	Uranium -238 water, dissolved (pCi/L)	Uranium -234 water, dissolved (pCi/L)	Uranium -235 water, dissolved (pCi/L)
April 01, 1992	1,500	<6	210	23	<1	120	74	0.2	71	74	2.9

Date	Uranium natural, dissolved (µg/L)	Alpha count, 2 sigma water, dissolved as natural uranium (µg/L)	Alpha count, 2 sigma water, dissolved as thorium -230 (pCi/L)	Beta, 2 sigma water, dissolved as strontium-90/ yttrium-90 (pCi/L)	Beta, 2 sigma water, dissolved as cesium -137 (pCi/L)	Uranium -238 2 sigma water, dissolved (pCi/L)	Uranium -234 2 sigma water, dissolved (pCi/L)	Uranium -235 2 sigma water, dissolved (pCi/L)	Radium-226 2 sigma water, dissolved (pCi/L)
April 01, 1992	260	5.6	4.4	11	15	6.9	7.2	0.46	0.175

Date	Gross alpha, dissolved (µg/L as natural uranium)	Gross beta, dissolved (pCi/L as strontium-90/yttrium-90)
April 01, 1992	110	89

Table 5.--Selected water-quality data for Windmill well cluster--well 1

[Site number: 353535108355004. Location: McKinley County, latitude 35°35'35", longitude 108°35'50", in sec. 25, T. 16 N., R. 17 W. µS/cm, microsiemens per centimeter at 25 degrees Celsius; deg C, degrees Celsius; mg/L, milligrams per liter; µg/L, micrograms per liter; pCi/L, picocuries per liter; --, no data; <, less than]

Date	Time	Depth of well, total (feet)	Altitude of land-surface datum (feet above sea level)	Specific conductance (µS/cm)	pH, water whole, field (standard units)	Temperature, air (deg C)	Temperature, water (deg C)	Solids, residue at 180 deg C, dissolved (mg/L)	Calcium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Silica, dissolved (mg/L)
April 01, 1992	1330	52.00	6,682	7,300	7.4	10.0	11.0	6,590	190	190	1,300	8.7

Date	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)	Lead, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Silver, dissolved (µg/L)
April 01, 1992	<5	<3	<1.0	<1	3	<1	3,700	1	1,000	<50	3	<1.0

Date	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)	Lithium, dissolved (µg/L)	Selenium, dissolved (µg/L)	Gross beta, dissolved (pCi/L as cesium-137)	Alpha radio water, dissolved as thorium-230 (pCi/L)	Radium-226, dissolved, planchet count (pCi/L)	Uranium -238 water, dissolved (pCi/L)	Uranium -234 water, dissolved (pCi/L)	Uranium -235 water, dissolved (pCi/L)
April 01, 1992	3,700	<30	17	54	<1	16	--	<0.1	6.0	8.7	0.2

Date	Uranium natural, dissolved (µg/L)	Alpha count, 2 sigma water, dissolved as natural uranium (µg/L)	Alpha count, 2 sigma water, dissolved as thorium -230 (pCi/L)	Beta, 2 sigma water, dissolved as strontium-90/ yttrium-90 (pCi/L)	Beta, 2 sigma water, dissolved as cesium -137 (pCi/L)	Uranium -238 2 sigma water, dissolved (pCi/L)	Uranium -234 2 sigma water, dissolved (pCi/L)	Uranium -235 2 sigma water, dissolved (pCi/L)	Radium-226 2 sigma water, dissolved (pCi/L)
April 01, 1992	18	3.4	11	8.0	11	0.64	0.9	0.06	0.093

Date	Gross alpha, dissolved (µg/L as natural uranium)	Gross beta, dissolved (pCi/L as strontium-90/ yttrium-90)
April 01, 1992	14	12

Table 6.--Selected water-quality data for Windmill well cluster--well 3

[Site number: 353536108354901. Location: McKinley County, latitude 35°35'36", longitude 108°35'49", in sec. 25, T. 16 N., R. 17 W. µS/cm, microsiemens per centimeter at 25 degrees Celsius; deg C, degrees Celsius; mg/L, milligrams per liter; µg/L, micrograms per liter; pCi/L, picocuries per liter; <, less than]

Date	Time	Depth of well, total (feet)	Altitude of land-surface datum (feet above sea level)	Specific conductance (µS/cm)	pH, water whole, field (standard units)	Temperature, air (deg C)	Temperature, water (deg C)	Solids, residue at 180 deg C, dissolved (mg/L)	Calcium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Silica, dissolved (mg/L)
April 01, 1992	1605	32.00	6,682	5,800	7.6	10.0	11.0	4,910	440	170	730	8.0

Date	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)	Lead, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Silver, dissolved (µg/L)
April 01, 1992	6	<2	<3.0	<20	<9	<30	<9	<30	26	<30	<30	<3.0

Date	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)	Lithium, dissolved (µg/L)	Selenium, dissolved (µg/L)	Gross beta, dissolved (pCi/L as cesium-137)	Alpha radio water dissolved, as thorium-230 (pCi/L)	Radium-226, dissolved, planchet count (pCi/L)	Uranium -238 water, dissolved (pCi/L)	Uranium -234 water, dissolved (pCi/L)	Uranium -235 water, dissolved (pCi/L)
April 01, 1992	5,000	<18	11	83	<1	37	23	<0.1	23	33	0.8

Date	Uranium natural, dissolved (µg/L)	Alpha count, 2 sigma water, dissolved as natural uranium (µg/L)	Alpha count, 2 sigma water, dissolved as thorium -230 (pCi/L)	Beta, 2 sigma water, dissolved as strontium-90/ yttrium-90 (pCi/L)	Beta, 2 sigma water, dissolved as cesium -137 (pCi/L)	Uranium -238 2 sigma water, dissolved (pCi/L)	Uranium -234 2 sigma water, dissolved (pCi/L)	Uranium -235 2 sigma water, dissolved (pCi/L)	Radium-226 2 sigma water, dissolved (pCi/L)
April 01, 1992	63	4.4	3.3	8.3	11	2.2	3.2	0.14	0.112

Date	Gross alpha, dissolved (µg/L as natural uranium)	Gross beta, dissolved (pCi/L as strontium-90/yttrium-90)
April 01, 1992	34	28

Table 7.--Selected water-quality data for Gallup well cluster--well 1

[Site number: 353220108400001. Location: McKinley County, latitude 35°32'20", longitude 108°40'00", in sec. 08, T. 15 N., R. 17 W. µS/cm, microsiemens per centimeter at 25 degrees Celsius; deg C, degrees Celsius; mg/L, milligrams per liter; µg/L, micrograms per liter; pCi/L, picocuries per liter; <, less than]

Date	Time	Depth of well, total (feet)	Altitude of land-surface datum (feet above sea level)	Specific conductance (µS/cm)	pH, water whole, field (standard units)	Temperature, air (deg C)	Temperature, water (deg C)	Solids, residue at 180 deg C, dissolved (mg/L)	Calcium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Silica, dissolved (mg/L)
April 01, 1992	0900	25.00	6,600	2,100	7.5	4.0	11.0	1,560	140	34	350	13

Date	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L	Lead, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Silver, dissolved (µg/L)
April 01, 1992	13	<2	<3.0	<20	<9	<30	40	<30	40	<30	<30	<3.0

Date	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)	Lithium, dissolved (µg/L)	Selenium, dissolved (µg/L)	Gross beta, dissolved (pCi/L as cesium-137)	Alpha radio water dissolved as thorium-230 (pCi/L)	Radium-226, dissolved, planchet count (pCi/L)	Uranium -238 water, dissolved (pCi/L)	Uranium -234 water, dissolved (pCi/L)	Uranium -235 water, dissolved (pCi/L)
April 01, 1992	1,800	<18	15	32	1	22	15	<0.1	11	15	0.5

Date	Uranium natural, dissolved (µg/L)	Alpha count, 2 sigma water, dissolved as natural uranium (µg/L)	Alpha count, 2 sigma water, dissolved as thorium -230 (pCi/L)	Beta, 2 sigma water, dissolved as strontium-90/ yttrium-90 (pCi/L)	Beta, 2 sigma water, dissolved as cesium -137 (pCi/L)	Uranium -238 2 sigma water, dissolved (pCi/L)	Uranium -234 2 sigma water, dissolved (pCi/L)	Uranium -235 2 sigma water, dissolved (pCi/L)	Radium-226 2 sigma water, dissolved (pCi/L)
April 01, 1992	35	3.7	2.9	4.0	5.4	1.1	1.4	0.09	0.101

Date	Gross alpha, dissolved (µg/L as natural uranium)	Gross beta, dissolved (pCi/L as strontium-90/yttrium-90)
April 01, 1992	24	17

Table 8.--Selected water-quality data for Gallup well cluster--well 3

[Site number: 353220108400003. Location: McKinley County, latitude 35°32'20", longitude 108°40'00", in sec. 08, T. 15 N., R. 17 W. µS/cm, microsiemens per centimeter at 25 degrees Celsius; deg C, degrees Celsius; mg/L, milligrams per liter; µg/L, micrograms per liter; pCi/L, picocuries per liter; --, no data; <, less than]

Date	Time	Depth of well, total (feet)	Altitude of land-surface datum (feet above sea level)	Specific conductance (µS/cm)	pH, water whole, field (standard units)	Temperature, air (deg C)	Temperature, water (deg C)	Solids, residue at 180 deg C, dissolved (mg/L)	Calcium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Silica, dissolved (mg/L)
April 01, 1992	1000	--	6,600	1,500	7.7	6.0	11.0	1,010	41	6.9	310	11

Date	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)	Lead, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Silver, dissolved (µg/L)
April 01, 1992	10	<0.5	<1.0	<5	<3	<10	<3	10	350	10	<10	<1.0

Date	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)	Lithium, dissolved (µg/L)	Selenium, dissolved (µg/L)	Gross beta, dissolved (pCi/L as cesium-137)	Alpha radio water, dissolved as thorium-230 (pCi/L)	Radium-226, dissolved, planchet count (pCi/L)	Uranium -238 water, dissolved (pCi/L)	Uranium -234 water, dissolved (pCi/L)	Uranium -235 water, dissolved (pCi/L)
April 01, 1992	370	<6	<3	16	<1	12	9.7	<0.1	6.0	8.7	0.3

Date	Uranium natural, dissolved (µg/L)	Alpha count, 2 sigma water, dissolved as natural uranium (µg/L)	Alpha count, 2 sigma water, dissolved as thorium -230 (pCi/L)	Beta, 2 sigma water, dissolved as strontium-90/ yttrium-90 (pCi/L)	Beta, 2 sigma water, dissolved as cesium -137 (pCi/L)	Uranium -238 2 sigma water, dissolved (pCi/L)	Uranium -234 2 sigma water, dissolved (pCi/L)	Uranium -235 2 sigma water, dissolved (pCi/L)	Radium-226 2 sigma water, dissolved (pCi/L)
April 01, 1992	19	1.4	1.0	2.5	3.3	0.62	0.9	0.06	0.081

Date	Gross alpha, dissolved (µg/L as natural uranium)	Gross beta, dissolved (pCi/L as strontium-90/yttrium-90)
April 01, 1992	16	9.3

Table 9.--Selected water-quality data for Gallup well cluster--well 4

[Site number: 353220108400004. Location: McKinley County, latitude 35°32'20", longitude 108°40'00", in sec. 08, T. 15 N., R. 17 W. µS/cm, microsiemens per centimeter at 25 degrees Celsius; deg C, degrees Celsius; mg/L, milligrams per liter; µg/L, micrograms per liter; pCi/L, picocuries per liter; --, no data; <, less than]

Date	Time	Depth of well, total (feet)	Altitude of land-surface datum (feet above sea level)	Specific conductance (µS/cm)	pH, water whole, field (standard units)	Temperature, air (deg C)	Temperature, water (deg C)	Solids, residue at 180 deg C, dissolved (mg/L)	Calcium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Silica, dissolved (mg/L)
March 31, 1992	1605	--	6,600	1,320	7.4	6.0	12.0	860	57	11	240	14

Date	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)	Lead, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Silver, dissolved (µg/L)
March 31, 1992	15	<0.5	<1.0	<5	<3	<10	11	<10	140	<10	<10	<1.0

Date	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)	Lithium, dissolved (µg/L)	Selenium, dissolved (µg/L)	Gross beta, dissolved (pCi/L as cesium-137)	Alpha radio water, dissolved as thorium-230 (pCi/L)	Radium-226, dissolved, planchet count (pCi/L)	Uranium -238 water, dissolved (pCi/L)	Uranium -234 water, dissolved (pCi/L)	Uranium -235 water, dissolved (pCi/L)
March 31, 1992	540	<6	<3	25	<1	19	18	<0.1	11	16	0.4

Date	Uranium natural, dissolved (µg/L)	Alpha count, 2 sigma water, dissolved as natural uranium (µg/L)	Alpha count, 2 sigma water, dissolved as thorium -230 (pCi/L)	Beta, 2 sigma water, dissolved as strontium-90/ yttrium-90 (pCi/L)	Beta, 2 sigma water, dissolved as cesium -137 (pCi/L)	Uranium -238 2 sigma water, dissolved (pCi/L)	Uranium -234 2 sigma water, dissolved (pCi/L)	Uranium -235 2 sigma water, dissolved (pCi/L)	Radium-266 2 sigma water, dissolved (pCi/L)
March 31, 1992	29	3.8	2.5	2.9	3.9	1.1	1.6	0.08	0.129

Date	Gross alpha, dissolved (µg/L as natural uranium)	Gross beta, dissolved (pCi/L as strontium-90/yttrium-90)
March 31, 1992	26	14

Table 10.--Selected water-quality data for Manuelito well cluster--drivepoint well

[Site number: 352742108562301. Location: McKinley County, latitude 35°27'42", longitude 108°56'23", in sec. 10, T. 14 N., R. 20 W. µS/cm, microsiemens per centimeter at 25 degrees Celsius; deg C, degrees Celsius; mg/L, milligrams per liter; µg/L, micrograms per liter; pCi/L, picocuries per liter; --, no data; <, less than]

Date	Time	Depth of well, total (feet)	Altitude of land-surface datum (feet above sea level)	Specific conductance (µS/cm)	pH, water whole, field (standard units)	Temperature, air (deg C)	Temperature, water (deg C)	Solids, residue at 180 deg C, dissolved (mg/L)	Calcium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Silica, dissolved (mg/L)
March 31, 1992	1200	--	6,290	1,980	7.7	8.0	11.5	1,360	110	26	320	11

Date	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)	Lead, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Silver, dissolved (µg/L)
March 31, 1992	37	<2	<3.0	20	<9	<30	320	<30	3,500	<30	<30	<3.0

Date	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)	Lithium, dissolved (µg/L)	Selenium, dissolved (µg/L)	Gross beta, dissolved (pCi/L as cesium-137)	Alpha radio water, dissolved as thorium-230 (pCi/L)	Radium-226, dissolved, planchet count (pCi/L)	Uranium -238 water, dissolved (pCi/L)	Uranium -234 water, dissolved (pCi/L)	Uranium -235 water, dissolved (pCi/L)
March 31, 1992	1,500	<18	41	<12	<1	12	--	0.1	5.1	6.4	0.2

Date	Uranium natural, dissolved (µg/L)	Alpha count, 2 sigma water, dissolved as natural uranium (µg/L)	Alpha count, 2 sigma water, dissolved as thorium -230 (pCi/L)	Beta, 2 sigma water, dissolved as strontium-90/ yttrium-90 (pCi/L)	Beta, 2 sigma water, dissolved as cesium -137 (pCi/L)	Uranium -238 2 sigma water, dissolved (pCi/L)	Uranium -234 2 sigma water, dissolved (pCi/L)	Uranium -235 2 sigma water, dissolved (pCi/L)	Radium-226 2 sigma water, dissolved (pCi/L)
March 31, 1992	15	2.2	6.3	2.9	3.8	0.53	0.7	0.05	0.130

Date	Gross alpha, dissolved (µg/L as natural uranium)	Gross beta, dissolved (pCi/L as strontium-90/yttrium-90)
March 31, 1992	10	9.3

Table 11.--Selected water-quality data for Manuelito well cluster--well 2

[Site number: 352742108563301. Location: McKinley County, latitude 35°27'42", longitude 108°56'33", in sec. 10, T. 14 N., R. 20 W. µS/cm, microsiemens per centimeter at 25 degrees Celsius; deg C, degrees Celsius; mg/L, milligrams per liter; µg/L, micrograms per liter; pCi/L, picocuries per liter; --, no data; <, less than]

Date	Time	Depth of well, total (feet)	Altitude of land-surface datum (feet above sea level)	Specific conductance (µS/cm)	pH, water whole, field (standard units)	Temperature, air (deg C)	Temperature, water (deg C)	Solids, residue at 180 deg C, dissolved (mg/L)	Calcium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Silica, dissolved (mg/L)
March 31, 1992	0830	85.00	6,300	810	7.7	6.0	12.0	513	31	16	150	9.4

Date	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)	Lead, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Silver, dissolved (µg/L)
March 31, 1992	230	<0.5	<1.0	<5	<3	<10	1,600	<10	130	30	<10	<1.0

Date	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)	Lithium, dissolved (µg/L)	Selenium, dissolved (µg/L)	Gross beta, dissolved (pCi/L as cesium-137)	Alpha radio water, dissolved as thorium-230 (pCi/L)	Radium-226, dissolved, planchet count (pCi/L)	Uranium -238 water, dissolved (pCi/L)	Uranium -234 water, dissolved (pCi/L)	Uranium -235 water, dissolved (pCi/L)
March 31, 1992	770	<6	3	6	<1	2.4	--	0.1	<0.1	<0.1	<0.1

Date	Uranium natural, dissolved (µg/L)	Alpha count, 2 sigma water, dissolved as natural uranium (µg/L)	Alpha count, 2 sigma water, dissolved as thorium -230 (pCi/L)	Beta, 2 sigma water, dissolved as strontium-90/ yttrium-90 (pCi/L)	Beta, 2 sigma water, dissolved as cesium -137 (pCi/L)	Uranium -238 2 sigma water, dissolved (pCi/L)	Uranium -234 2 sigma water, dissolved (pCi/L)	Uranium -235 2 sigma water, dissolved (pCi/L)	Radium-226 2 sigma water, dissolved (pCi/L)
March 31, 1992	<1.0	0.45	<0.60	0.98	1.3	0.02	0.0	0.01	0.138

Date	Gross alpha, dissolved (µg/L as natural uranium)	Gross beta, dissolved (pCi/L as strontium-90/yttrium-90)
March 31, 1992	<0.6	1.8

Table 12.--Selected water-quality data for Manuelito well cluster--well 3

[Site number: 352743108563401. Location: McKinley County, latitude 35°27'43", longitude 108°56'34", in sec. 10, T. 14 N., R. 20 W. µS/cm, microsiemens per centimeter at 25 degrees Celsius; deg C, degrees Celsius; mg/L, milligrams per liter; µg/L, micrograms per liter; pCi/L, picocuries per liter; --, no data; <, less than]

Date	Time	Depth of well, total (feet)	Altitude of land-surface datum (feet above sea level)	Specific conductance (µS/cm)	pH, water whole, field (standard units)	Temperature, air (deg C)	Temperature, water (deg C)	Solids, residue at 180 deg C, dissolved (mg/L)	Calcium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Silica, dissolved (mg/L)
March 31, 1992	1115	60.00	6,300	2,700	7.2	8.0	12.5	1,970	75	41	560	11

Date	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)	Lead, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Silver, dissolved (µg/L)
March 31, 1992	26	<2	<3.0	<10	<9	<30	31	30	1,200	<30	<30	<3.0

Date	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)	Lithium, dissolved (µg/L)	Selenium, dissolved (µg/L)	Gross beta, dissolved (pCi/L as cesium-137)	Alpha radio water, dissolved as thorium-230 (pCi/L)	Radium-226, dissolved, planchet count (pCi/L)	Uranium -238 water, dissolved (pCi/L)	Uranium -234 water, dissolved (pCi/L)	Uranium -235 water, dissolved (pCi/L)
March 31, 1992	1,800	<18	45	25	<1	11	--	<0.1	4.7	7.5	0.2

Date	Uranium natural, dissolved (µg/L)	Alpha count, 2 sigma water, dissolved as natural uranium (µg/L)	Alpha count, 2 sigma water, dissolved as thorium -230 (pCi/L)	Beta, 2 sigma water, dissolved as strontium 90/ yttrium 90 (pCi/L)	Beta, 2 sigma water, dissolved as cesium -137 (pCi/L)	Uranium -238 2 sigma water, dissolved (pCi/L)	Uranium -234 2 sigma water, dissolved (pCi/L)	Uranium -235 2 sigma water, dissolved (pCi/L)	Radium-226 2 sigma water, dissolved (pCi/L)
March 31, 1992	22	2.7	11	3.6	4.7	0.50	0.8	0.05	0.103

Date	Gross alpha, dissolved (µg/L as natural uranium)	Gross beta, dissolved (pCi/L as strontium-90/yttrium-90)
March 31, 1992	16	8.0

Table 13.--Selected Puerco River sediment-chemistry and particle-size data for cross section 1

[Site number: 353716108312701. Location: McKinley County, latitude 35°37'16", longitude 108°31'27", in sec. 15, T. 16 N., R. 16 W. pCi/g, picocuries per gram; pCi/L, picocuries per liter; %, percent; mm, millimeter; --, no data; <, less than]

Date	Time	Number of sampling points (count)	Uranium-238 2 sigma sediment, suspended, total, dry weight (pCi/g)	Thorium-232 2 sigma sediment, suspended, total, dry weight (pCi/g)	Thorium-230 sediment, suspended, total, dry weight (pCi/g)	Uranium-238 sediment, suspended, total, dry weight (pCi/g)	Uranium-234 2 sigma sediment, suspended, total, dry weight (pCi/g)	Uranium-234 sediment, suspended, total, dry weight (pCi/g)
March 31, 1992	1100	1	--	0.06	0.4	0.7	0.11	0.8

Date	Uranium-235 2 sigma sediment, suspended, total, dry weight (pCi/g)	Thorium-230 2 sigma sediment, suspended, total, dry weight (pCi/g)	Thorium-232 sediment, suspended, total, dry weight (pCi/g)	Uranium-235 sediment, suspended, total, dry weight (pCi/L)	Bed material sieve diameter, % finer than 0.125 mm	Bed material sieve diameter, % finer than 0.250 mm	Bed material sieve diameter, % finer than 0.500 mm
March 31, 1992	0.02	0.07	0.3	<0.1	16	44	85

Date	Bed material sieve diameter, % finer than 1.00 mm	Bed material sieve diameter, % finer than 2.00 mm	Bed material sieve diameter, % finer than 4.00 mm	Bed material sieve diameter, % finer than 8.00 mm	Bed material sieve diameter, % finer than 16.0 mm	Bed material sieve diameter, % finer than 0.062 mm	Sediment material fall diameter, % finer than 0.031 mm
March 31, 1992	97	99	100	--	--	6	0

Table 14.--Selected Puerco River [illegible]-chemistry and particle-size data for cross section 2

[Site number: 353640108333601. Location: McKinley County, latitude 35°36'40", longitude 108°33'36", in sec. 17, T. 16 N., R. 16 W. pCi/g, picocuries per gram; pCi/L, picocuries per liter; %, percent; mm, millimeter; --, no data; <, less than]

Date	Time	Number of sampling points (count)	Uranium-238 2 sigma sediment suspended, total, dry weight (pCi/g)	Thorium-232 2 sigma sediment suspended, total, dry weight (pCi/g)	Thorium-230 sediment, suspended, total, dry weight (pCi/g)	Uranium-238 sediment, suspended, total, dry weight (pCi/g)	Uranium-234 2 sigma sediment, suspended total, dry weight (pCi/g)	Uranium-234 sediment, suspended, total, dry weight (pCi/g)
March 31, 1992	1200	1	--	0.06	0.6	0.6	0.09	0.6

Date	Uranium-235 2 sigma sediment, suspended, total, dry weight (pCi/g)	Thorium-230 2 sigma sediment, suspended, total, dry weight (pCi/g)	Thorium-232 sediment, suspended, total, dry weight (pCi/g)	Uranium-235 sediment, suspended, total, dry weight (pCi/L)	Bed material sieve diameter, % finer than 0.125 mm	Bed material sieve diameter, % finer than 0.250 mm	Bed material sieve diameter, % finer than 0.500 mm
March 31, 1992	0.01	0.09	0.3	<0.1	9	46	90

Date	Bed material sieve diameter, % finer than 1.00 mm	Bed material sieve diameter, % finer than 2.00 mm	Bed material sieve diameter, % finer than 4.00 mm	Bed material sieve diameter, % finer than 8.00 mm	Bed material sieve diameter, % finer than 16.0 mm	Bed material sieve diameter, % finer than 0.062 mm	Sediment material fall diameter, % finer than 0.031 mm
March 31, 1992	98	100	--	--	--	3	0

Table 15.--Selected Puerco River sediment-chemistry and particle-size data for cross section 3

[Site number: 353537108353901. Location: McKinley County, latitude 35°35'37", longitude 108°35'39", in sec. 25, T. 16 N., R. 17 W. pCi/g, picocuries per gram; pCi/L, picocuries per liter; %, percent; mm, millimeter; --, no data; <, less than]

Date	Time	Number of sampling points (count)	Uranium-238 2 sigma sediment suspended, total, dry weight (pCi/g)	Thorium-232 2 sigma sediment suspended, total, dry weight (pCi/g)	Thorium-230 sediment, suspended, total, dry weight (pCi/g)	Uranium-238 sediment, suspended, total, dry weight (pCi/g)	Uranium-234 2 sigma sediment, suspended, total, dry weight (pCi/g)	Uranium-234 sediment, suspended, total, dry weight (pCi/g)
March 31, 1992	1300	1	--	0.06	0.6	0.7	0.10	0.7

Date	Uranium-235 2 sigma sediment, suspended, total, dry weight (pCi/g)	Thorium-230 2 sigma sediment, suspended, total, dry weight (pCi/g)	Thorium-232 sediment, suspended, total, dry weight (pCi/g)	Uranium-235 sediment, suspended, total, dry weight (pCi/L)	Bed material sieve diameter, % finer than 0.125 mm	Bed material sieve diameter, % finer than 0.250 mm	Bed material sieve diameter, % finer than 0.500 mm
March 31, 1992	0.02	0.08	0.3	<0.1	30	79	97

Date	Bed material sieve diameter, % finer than 1.00 mm	Bed material sieve diameter, % finer than 2.00 mm	Bed material sieve diameter, % finer than 4.00 mm	Bed material sieve diameter, % finer than 8.00 mm	Bed material sieve diameter, % finer than 16.0 mm	Bed material sieve diameter, % finer than 0.062 mm	Sediment material fall diameter, % finer than 0.031 mm
March 31, 1992	100	--	--	--	--	9	0

Table 16.--Selected Puerco River sediment-chemistry and particle-size data for cross section 4

[Site number: 353445108372701. Location: McKinley County, latitude 35°34'45", longitude 108°37'27", in sec. 34, T. 16 N., R. 17 W. pCi/g, picocuries per gram; pCi/L, picocuries per liter; %, percent; mm, millimeter; --, no data; <, less than]

Date	Time	Number of sampling points (count)	Uranium-238 2 sigma sediment suspended, total, dry weight (pCi/g)	Thorium-232 2 sigma sediment suspended, total, dry weight (pCi/g)	Thorium-230 sediment, suspended, total, dry weight (pCi/g)	Uranium-238 sediment, suspended, total, dry weight (pCi/g)	Uranium-234 2 sigma sediment, suspended, total, dry weight (pCi/g)	Uranium-234 sediment, suspended, total, dry weight (pCi/g)
April 01, 1992	0800	1	--	0.08	0.9	0.7	0.10	0.7

Date	Uranium-235 2 sigma sediment, suspended, total, dry weight (pCi/g)	Thorium-230 2 sigma sediment, suspended, total, dry weight (pCi/g)	Thorium-232 sediment, suspended, total, dry weight (pCi/g)	Uranium-235 sediment, suspended, total, dry weight (pCi/L)	Bed material sieve diameter, % finer than 0.125 mm	Bed material sieve diameter, % finer than 0.250 mm	Bed material sieve diameter, % finer than 0.500 mm
April 01, 1992	0.02	0.12	0.5	<0.1	18	52	89

Date	Bed material sieve diameter, % finer than 1.00 mm	Bed material sieve diameter, % finer than 2.00 mm	Bed material sieve diameter, % finer than 4.00 mm	Bed material sieve diameter, % finer than 8.00 mm	Bed material sieve diameter, % finer than 16.0 mm	Bed material sieve diameter, % finer than 0.062 mm	Sediment material fall diameter, % finer than 0.031 mm
April 01, 1992	98	99	100	--	--	7	0

Table 17.--Selected Puerco River sediment-chemistry and particle-size data for cross section 5

[Site number: 353153108403201. Location: McKinley County, latitude 35°31'53", longitude 108°40'32", in sec. 18, T. 15 N., R. 17 W. pCi/g, picocuries per gram; pCi/L, picocuries per liter; %, percent; mm, millimeter; --, no data; <, less than]

Date	Time	Number of sampling points (count)	Uranium-238 2 sigma sediment suspended, total, dry weight (pCi/g)	Thorium-232 2 sigma sediment suspended, total, dry weight (pCi/g)	Thorium-230 sediment, suspended, total, dry weight (pCi/g)	Uranium-238 sediment, suspended, total, dry weight (pCi/g)	Uranium-234 2 sigma sediment, suspended, total, dry weight (pCi/g)	Uranium-234 sediment, suspended, total, dry weight (pCi/g)
April 01, 1992	0900	1	--	0.05	0.4	0.5	0.07	0.4

Date	Uranium-235 2 sigma sediment, suspended, total, dry weight (pCi/g)	Thorium-230 2 sigma sediment, suspended, total, dry weight (pCi/g)	Thorium-232 sediment, suspended, total, dry weight (pCi/g)	Uranium-235 sediment, suspended, total, dry weight (pCi/L)	Bed material sieve diameter, % finer than 0.125 mm	Bed material sieve diameter, % finer than 0.250 mm	Bed material sieve diameter, % finer than 0.500 mm
April 01, 1992	0.02	0.07	0.3	<0.1	19	61	92

Date	Bed material sieve diameter, % finer than 1.00 mm	Bed material sieve diameter, % finer than 2.00 mm	Bed material sieve diameter, % finer than 4.00 mm	Bed material sieve diameter, % finer than 8.00 mm	Bed material sieve diameter, % finer than 16.0 mm	Bed material sieve diameter, % finer than 0.062 mm	Sediment material fall diameter, % finer than 0.031 mm
April 01, 1992	98	99	100	--	--	2	0

Table 18.--Selected Puerco River sediment-chemistry and particle-size data for cross section 6

[Site number: 353143108444101. Location: McKinley County, latitude 35°31'43", longitude 108°44'41", in sec. 16, T. 15 N., R. 18 W. pCi/g, picocuries per gram; pCi/L, picocuries per liter; %, percent; mm, millimeter; --, no data; <, less than]

Date	Time	Number of sampling points (count)	Uranium-238 2 sigma sediment suspended, total, dry weight (pCi/g)	Thorium-232 2 sigma sediment suspended, total, dry weight (pCi/g)	Thorium-230 sediment, suspended, total, dry weight (pCi/g)	Uranium-238 sediment, suspended, total, dry weight (pCi/g)	Uranium-234 2 sigma sediment, suspended, total, dry weight (pCi/g)	Uranium-234 sediment, suspended, total, dry weight (pCi/g)
April 01, 1992	1000	1	--	0.08	0.6	0.5	0.08	0.5

Date	Uranium-235 2 sigma sediment, suspended, total, dry weight (pCi/g)	Thorium-230 2 sigma sediment, suspended, total, dry weight (pCi/g)	Thorium-232 sediment, suspended, total, dry weight (pCi/g)	Uranium-235 sediment, suspended, total, dry weight (pCi/L)	Bed material sieve diameter, % finer than 0.125 mm	Bed material sieve diameter, % finer than 0.250 mm	Bed material sieve diameter, % finer than 0.500 mm
April 01, 1992	0.01	09	0.5	<0.1	26	73	96

Date	Bed material sieve diameter, % finer than 1.00 mm	Bed material sieve diameter, % finer than 2.00 mm	Bed material sieve diameter, % finer than 4.00 mm	Bed material sieve diameter, % finer than 8.00 mm	Bed material sieve diameter, % finer than 16.0 mm	Bed material sieve diameter, % finer than 0.062 mm	Sediment material fall diameter, % finer than 0.031 mm
April 01, 1992	98	99	99	100	--	6	0

Table 19.--Selected Puerco River sediment-chemistry and particle-size data for cross section 7

[Site number: 353048108483201. Location: McKinley County, latitude 35°30'48", longitude 108°48'32", in sec. 24, T. 15 N., R. 19 W. pCi/g, picocuries per gram; pCi/L, picocuries per liter; %, percent; mm, millimeter; --, no data; <, less than]

Date	Time	Number of sampling points (count)	Uranium-238 2 sigma sediment suspended, total, dry weight (pCi/g)	Thorium-232 2 sigma sediment suspended, total, dry weight (pCi/g)	Thorium-230 sediment, suspended, total, dry weight (pCi/g)	Uranium-238 sediment, suspended, total, dry weight (pCi/g)	Uranium-234 2 sigma sediment, suspended, total, dry weight (pCi/g)	Uranium-234 sediment, suspended, total, dry weight (pCi/g)
March 31, 1992	1400	1	--	0.07	0.6	0.6	0.09	0.6

Date	Uranium-235 2 sigma sediment, suspended, total, dry weight (pCi/g)	Thorium-230 2 sigma sediment, suspended, total, dry weight (pCi/g)	Thorium-232 sediment, suspended, total, dry weight (pCi/g)	Uranium-235 sediment, suspended, total, dry weight (pCi/L)	Bed material sieve diameter, % finer than 0.125 mm	Bed material sieve diameter, % finer than 0.250 mm	Bed material sieve diameter, % finer than 0.500 mm
March 31, 1992	0.02	0.09	0.5	<0.1	22	59	90

Date	Bed material sieve diameter, % finer than 1.00 mm	Bed material sieve diameter, % finer than 2.00 mm	Bed material sieve diameter, % finer than 4.00 mm	Bed material sieve diameter, % finer than 8.00 mm	Bed material sieve diameter, % finer than 16.0 mm	Bed material sieve diameter, % finer than 0.062 mm	Sediment material fall diameter, % finer than 0.031 mm
March 31, 1992	96	99	99	100	--	5	0

Table 20.--Selected Puerco River sediment-chemistry and particle-size data for cross section 8

[Site number: 352933108535301. Location: McKinley County, latitude 35°29'33", longitude 108°53'53", in sec. 31, T. 15 N., R. 19 W. pCi/g, picocuries per gram; pCi/L, picocuries per liter; %, percent; mm, millimeter; --, no data; <, less than]

Date	Time	Number of sampling points (count)	Uranium-238 2 sigma sediment suspended, total, dry weight (pCi/g)	Thorium-232 2 sigma sediment suspended, total, dry weight (pCi/g)	Thorium-230 sediment, suspended, total, dry weight (pCi/g)	Uranium-238 sediment, suspended, total, dry weight (pCi/g)	Uranium-234 2 sigma sediment, suspended, total, dry weight (pCi/g)	Uranium-234 sediment, suspended, total, dry weight (pCi/g)
March 31, 1992	1500	1	--	0.09	0.7	0.5	0.08	0.5

Date	Uranium-235 2 sigma sediment, suspended, total, dry weight (pCi/g)	Thorium-230 2 sigma sediment, suspended, total, dry weight (pCi/g)	Thorium-232 sediment, suspended, total, dry weight (pCi/g)	Uranium-235 sediment, suspended, total, dry weight (pCi/L)	Bed material sieve diameter, % finer than 0.125 mm	Bed material sieve diameter, % finer than 0.250 mm	Bed material sieve diameter, % finer than 0.500 mm
March 31, 1992	0.02	0.0	0.6	<0.1	18	55	93

Date	Bed material sieve diameter, % finer than 1.00 mm	Bed material sieve diameter, % finer than 2.00 mm	Bed material sieve diameter, % finer than 4.00 mm	Bed material sieve diameter, % finer than 8.00 mm	Bed material sieve diameter, % finer than 16.0 mm	Bed material sieve diameter, % finer than 0.062 mm	Sediment material fall diameter, % finer than 0.031 mm
March 31, 1992	97	98	98	99	100	5	0

Table 21.--Selected Puerco River sediment-chemistry and particle-size data for cross section 9

[Site number: 352753108563201. Location: McKinley County, latitude 35°27'53", longitude 108°56'32", in sec. 10, T. 14 N., R. 20 W. pCi/g, picocuries per gram; pCi/L, picocuries per liter; %, percent; mm, millimeter; --, no data; <, less than]

Date	Time	Number of sampling points (count)	Uranium-238 2 sigma sediment suspended, total, dry weight (pCi/g)	Thorium-232 2 sigma sediment suspended, total, dry weight (pCi/g)	Thorium-230 sediment, suspended, total, dry weight (pCi/g)	Uranium-238 sediment, suspended, total, dry weight (pCi/g)	Uranium-234 2 sigma sediment, suspended, total, dry weight (pCi/g)	Uranium-234 sediment, suspended, total, dry weight (pCi/g)
March 31, 1992	1600	1	0.08	0.07	0.5	0.5	0.09	0.6

Date	Uranium-235 2 sigma sediment, suspended, total, dry weight (pCi/g)	Thorium-230 2 sigma sediment, suspended, total, dry weight (pCi/g)	Thorium-232 sediment, suspended, total, dry weight (pCi/g)	Uranium-235 sediment, suspended, total, dry weight (pCi/L)	Bed material sieve diameter, % finer than 0.125 mm	Bed material sieve diameter, % finer than 0.250 mm	Bed material sieve diameter, % finer than 0.500 mm
March 31, 1992	0.01	0.07	0.4	<0.1	18	66	97

Date	Bed material sieve diameter, % finer than 1.00 mm	Bed material sieve diameter, % finer than 2.00 mm	Bed material sieve diameter, % finer than 4.00 mm	Bed material sieve diameter, % finer than 8.00 mm	Bed material sieve diameter, % finer than 16.0 mm	Bed material sieve diameter, % finer than 0.062 mm	Sediment material fall diameter, % finer than 0.031 mm
March 31, 1992	99	100	--	--	--	9	0

☆U.S. GOVERNMENT PRINTING OFFICE:1994-576-509/05139